Development of a Robust Indirect Approach for MM→QM Free Energy Calculations that Combines Force-matched Reference Potential and Bennett's Acceptance Ratio Methods: Supporting Information

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Abstract

The tables within this document are the raw data used to perform the statistics shown in the manuscript. In each table:

- The $\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$ column is the reference TI calculation. The reference calculation is evaluated with 11 alchemical states $\lambda = (0.0, 0.1, \cdots, 0.9, 1.0)$, each simulated for 200 ps. The $dU/d\lambda$ is integrated from a cubic spline.

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- The $\Delta\Delta G_M^{N_\lambda}$ columns are differences between the reference value and the value computed with method M from N_λ alchemical states. For example, $\Delta G_{\mathrm{BAR}}^{N_\lambda=2} = \Delta G_{\mathrm{TI3}}^{N_\lambda=11} + \Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$

- The MM' rows correspond to the use of different MM intermediate Hamiltonians. The rows whose MM' is left blank perform the MM-to-QM transformation without an intermediate MM Hamiltonian.

- The $\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$ values use trapezoidal-rule integration, but all other values ($N_\lambda > 2$) use cubic spline integration.

- The simulation times are the total length of the simulation. The first half of each simulation is discarded as equilibration.

- The IEXP values are free energy pertubation analysis of the QM trajectories and MM energies evaluated at each QM trajectory frame

- the DEXP values are free energy pertubation analysis of the MM trajectories and QM energies evaluated at each MM trajectory frame

Figures 1 and 2 within the supporting information are analogous to Figures 4 and 5 in the main document, respectively; however, the figures in the supporting information display the mean signed errors and the distribution of errors in $\Delta A^{\mathrm{MM}\rightarrow QM}$ rather than the mean unsigned errors.

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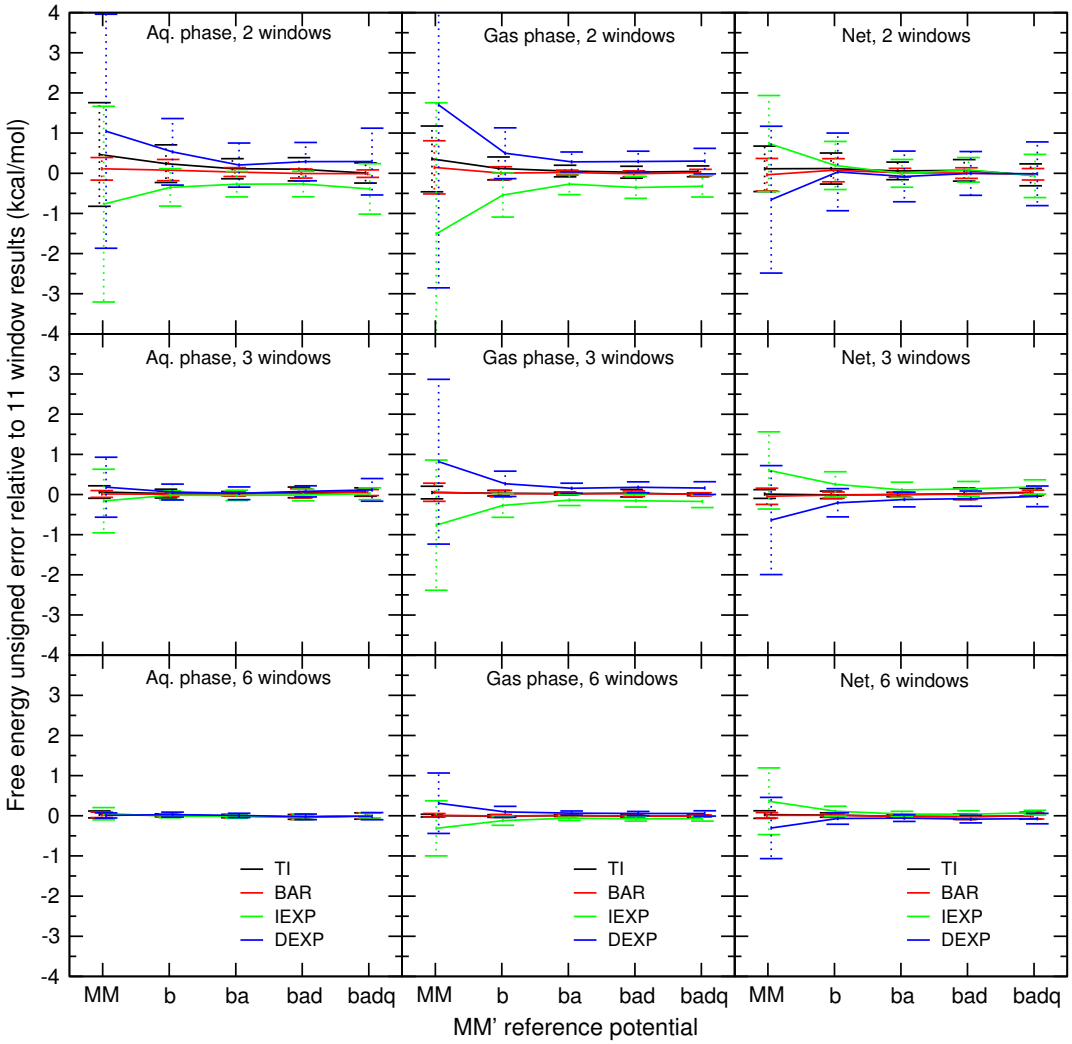

Figure 1: The solvation free energy mean signed errors of the MM→QM transformations using different analysis methods and MM′ intermediate Hamiltonian states. The vertical bars are standard deviations.

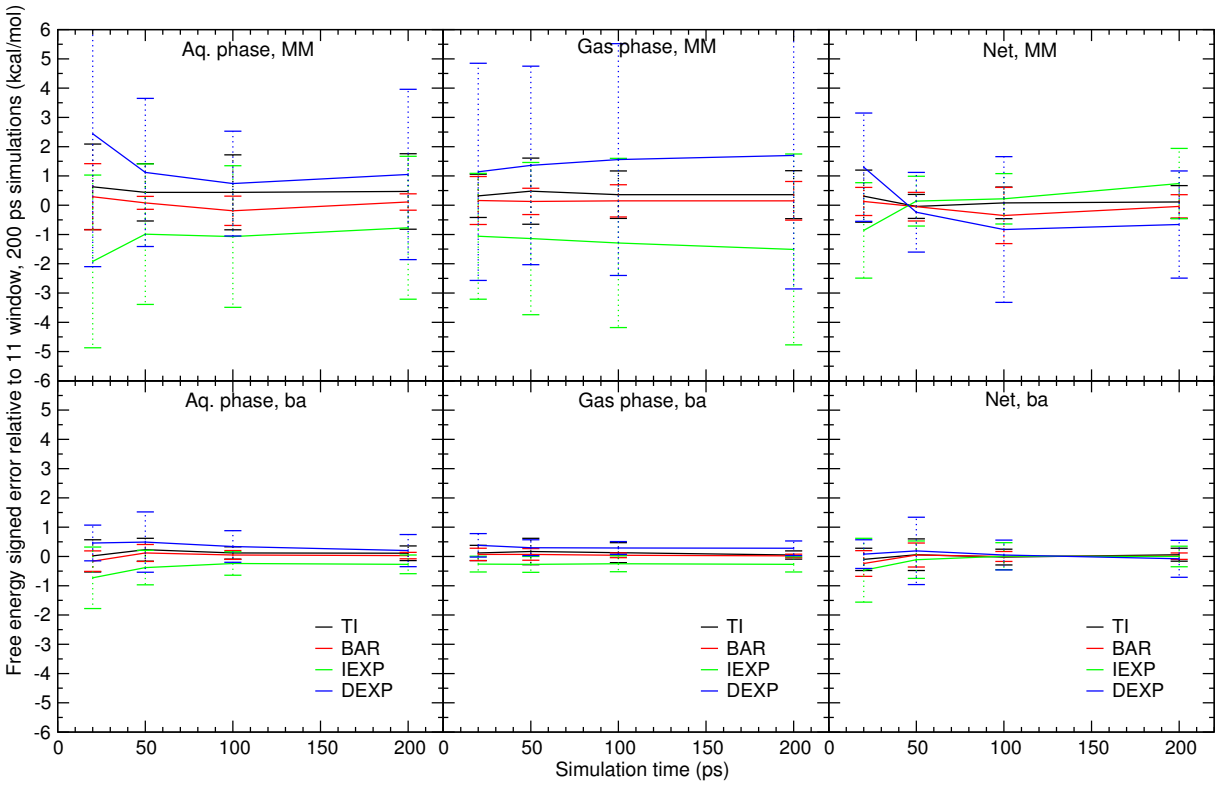

Figure 2: Convergence of the solvation free energy mean signed errors of the MM→QM transformations for 2 λ window (i.e., end-state only) simulations as a function of simulation time in ps. In each case, the first half of the simulations were considered as "equilibration" and the second half considered as "production" and used for statistical data collection. The vertical bars are standard deviations.

Table 1: MM-to-QM net solvation free energy correction values from 2-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
CO_3^{2-}		-6.45 ± 0.12	2.14 ± 0.37	-1.51 ± 0.74	4.08 ± 0.40	-7.10 ± 0.63
	b	-6.47 ± 0.07	1.54 ± 0.15	1.03 ± 0.34	-0.61 ± 0.25	3.29 ± 0.27
	ba	-6.13 ± 0.06	0.78 ± 0.13	0.34 ± 0.29	-0.49 ± 0.40	1.79 ± 0.32
	bad	-6.09 ± 0.06	0.99 ± 0.14	0.20 ± 0.33	-0.54 ± 0.53	1.75 ± 0.37
	badq	-6.07 ± 0.06	0.57 ± 0.13	0.05 ± 0.28	-0.33 ± 0.44	0.23 ± 0.34
$CH_3NH_3^+$		1.79 ± 0.04	0.19 ± 0.11	0.13 ± 0.13	-0.30 ± 0.16	0.24 ± 0.25
	b	1.89 ± 0.03	0.09 ± 0.06	0.08 ± 0.08	-0.18 ± 0.11	0.12 ± 0.14
	ba	1.89 ± 0.03	-0.04 ± 0.05	-0.06 ± 0.05	-0.09 ± 0.07	-0.07 ± 0.09
	bad	1.79 ± 0.04	0.12 ± 0.05	0.12 ± 0.05	0.26 ± 0.07	-0.09 ± 0.09
	badq	1.80 ± 0.03	0.00 ± 0.04	-0.01 ± 0.05	0.11 ± 0.07	-0.16 ± 0.13
NH_4^+		5.64 ± 0.04	0.28 ± 0.09	-0.02 ± 0.10	-0.38 ± 0.15	0.21 ± 0.27
	b	5.69 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.03	-0.02 ± 0.03
	ba	5.68 ± 0.01	-0.00 ± 0.02	-0.00 ± 0.02	-0.02 ± 0.02	0.01 ± 0.02
	bad	5.68 ± 0.01	-0.00 ± 0.02	-0.00 ± 0.02	-0.02 ± 0.02	0.01 ± 0.02
	badq	5.70 ± 0.02	-0.02 ± 0.03	-0.03 ± 0.03	-0.03 ± 0.03	-0.02 ± 0.03
$CH_3CO_2^-$		-9.33 ± 0.08	-0.60 ± 0.23	0.23 ± 0.60	1.11 ± 0.54	0.55 ± 0.60
	b	-9.52 ± 0.07	0.02 ± 0.16	-0.13 ± 0.25	-0.16 ± 0.30	-0.17 ± 0.30
	ba	-9.29 ± 0.05	0.31 ± 0.11	0.04 ± 0.19	-0.64 ± 0.33	0.40 ± 0.30
	bad	-9.14 ± 0.05	0.19 ± 0.11	-0.01 ± 0.21	-0.27 ± 0.41	0.21 ± 0.34
	badq	-9.27 ± 0.07	0.06 ± 0.14	0.23 ± 0.41	-1.29 ± 0.46	1.94 ± 0.45
H_3O^+		6.51 ± 0.05	0.24 ± 0.13	0.00 ± 0.24	1.80 ± 0.57	-0.86 ± 0.36
	b	6.42 ± 0.04	0.11 ± 0.10	0.23 ± 0.16	1.64 ± 0.35	-0.40 ± 0.29
	ba	6.35 ± 0.02	-0.04 ± 0.04	-0.04 ± 0.04	0.14 ± 0.05	-0.20 ± 0.05

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Table 1 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.04 ± 0.04	-0.04 ± 0.04	0.14 ± 0.05	-0.20 ± 0.05
	badq	6.41 ± 0.02	0.05 ± 0.04	0.05 ± 0.04	0.12 ± 0.06	0.00 ± 0.06
C_6H_5Cl		0.38 ± 0.04	-0.07 ± 0.09	0.11 ± 0.11	-0.10 ± 0.17	0.24 ± 0.23
	b	0.55 ± 0.04	0.01 ± 0.10	0.08 ± 0.10	-0.29 ± 0.14	0.50 ± 0.18
	ba	-0.04 ± 0.03	-0.01 ± 0.10	-0.01 ± 0.11	-0.17 ± 0.13	-0.40 ± 0.34
	bad	-0.22 ± 0.04	0.05 ± 0.09	0.09 ± 0.10	0.14 ± 0.14	0.05 ± 0.23
	badq	-0.40 ± 0.04	0.09 ± 0.09	0.15 ± 0.10	0.49 ± 0.35	-0.01 ± 0.16
C_6H_{14}		-0.43 ± 0.03	0.04 ± 0.08	0.07 ± 0.09	0.59 ± 0.17	-0.58 ± 0.18
	b	-0.56 ± 0.04	0.09 ± 0.08	0.06 ± 0.09	0.17 ± 0.12	-0.12 ± 0.14
	ba	-0.45 ± 0.08	-0.05 ± 0.10	-0.06 ± 0.11	0.25 ± 0.18	-0.39 ± 0.15
	bad	-0.47 ± 0.03	-0.13 ± 0.06	-0.09 ± 0.08	0.28 ± 0.21	-0.45 ± 0.12
	badq	-0.47 ± 0.03	-0.07 ± 0.07	-0.04 ± 0.09	0.42 ± 0.22	-0.37 ± 0.12
CH_3OH		-2.16 ± 0.03	-0.06 ± 0.08	0.01 ± 0.12	0.12 ± 0.25	-0.55 ± 0.28
	b	-2.13 ± 0.03	-0.18 ± 0.08	-0.16 ± 0.13	0.02 ± 0.25	-0.55 ± 0.26
	ba	-2.13 ± 0.03	-0.08 ± 0.07	-0.01 ± 0.14	-0.05 ± 0.22	-0.69 ± 0.46
	bad	-1.99 ± 0.04	-0.25 ± 0.08	-0.21 ± 0.12	-0.05 ± 0.24	-0.25 ± 0.16
	badq	-1.99 ± 0.04	-0.18 ± 0.09	-0.24 ± 0.14	0.27 ± 0.37	-0.85 ± 0.28
C_2H_6		0.05 ± 0.02	-0.03 ± 0.08	-0.01 ± 0.06	0.06 ± 0.12	-0.10 ± 0.06
	b	0.06 ± 0.04	-0.01 ± 0.06	-0.04 ± 0.06	0.00 ± 0.09	0.01 ± 0.07
	ba	0.09 ± 0.10	-0.05 ± 0.10	-0.05 ± 0.10	-0.09 ± 0.12	0.04 ± 0.10
	bad	0.13 ± 0.12	0.02 ± 0.12	0.01 ± 0.12	-0.08 ± 0.13	0.09 ± 0.13
	badq	0.07 ± 0.08	-0.03 ± 0.09	-0.04 ± 0.09	-0.08 ± 0.10	-0.03 ± 0.10
$(CH_2)_4O$		-1.97 ± 0.05	-0.32 ± 0.12	-0.28 ± 0.19	0.96 ± 0.32	-2.43 ± 0.57
	b	-2.04 ± 0.05	-0.10 ± 0.14	-0.25 ± 0.27	0.47 ± 0.22	-1.61 ± 0.36

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Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	-0.04 ± 0.09	0.04 ± 0.13	0.22 ± 0.17	0.21 ± 0.16
	bad	-2.20 ± 0.03	-0.22 ± 0.10	-0.30 ± 0.13	0.25 ± 0.17	-0.85 ± 0.26
	badq	-2.16 ± 0.03	0.07 ± 0.09	0.01 ± 0.11	0.42 ± 0.14	-0.80 ± 0.17
$C(NH_2)_3^+$		-0.97 ± 0.06	-0.06 ± 0.24	0.33 ± 0.32	0.23 ± 0.25	1.14 ± 0.36
	b	-0.24 ± 0.06	0.36 ± 0.21	0.17 ± 0.24	0.19 ± 0.22	0.35 ± 0.42
	ba	-0.60 ± 0.05	0.06 ± 0.17	-0.15 ± 0.16	-0.28 ± 0.39	-0.03 ± 0.32
	bad	-0.36 ± 0.05	0.12 ± 0.16	-0.04 ± 0.14	0.12 ± 0.25	-0.10 ± 0.25
	badq	-0.02 ± 0.05	-0.24 ± 0.13	-0.21 ± 0.15	-0.13 ± 0.31	-0.85 ± 0.45
$C_6H_5NH_2$		-3.04 ± 0.04	0.16 ± 0.10	0.09 ± 0.21	0.77 ± 0.26	-0.97 ± 0.29
	b	-3.06 ± 0.04	0.17 ± 0.09	0.06 ± 0.20	0.89 ± 0.53	-0.34 ± 0.24
	ba	-3.09 ± 0.05	0.11 ± 0.09	-0.10 ± 0.13	-0.23 ± 0.18	-0.73 ± 0.35
	bad	-3.22 ± 0.04	0.09 ± 0.08	-0.03 ± 0.12	-0.10 ± 0.22	0.00 ± 0.13
	badq	-3.26 ± 0.08	-0.26 ± 0.17	-0.31 ± 0.53	-1.18 ± 0.47	1.20 ± 0.43
CH_3CONH_2		-3.59 ± 0.05	-0.14 ± 0.12	0.17 ± 0.19	2.77 ± 0.22	-0.39 ± 0.30
	b	-3.41 ± 0.04	-0.06 ± 0.11	0.32 ± 0.20	1.31 ± 0.50	-0.00 ± 0.18
	ba	-3.52 ± 0.05	-0.18 ± 0.11	0.08 ± 0.16	0.67 ± 0.17	-0.40 ± 0.29
	bad	-3.50 ± 0.04	-0.09 ± 0.10	0.18 ± 0.17	0.69 ± 0.40	-0.20 ± 0.27
	badq	-3.59 ± 0.04	0.13 ± 0.09	0.18 ± 0.11	0.49 ± 0.21	-0.07 ± 0.14
H_2O		-3.62 ± 0.03	-0.09 ± 0.07	-0.12 ± 0.14	-0.59 ± 0.14	0.14 ± 0.21
	b	-3.72 ± 0.03	0.03 ± 0.07	-0.05 ± 0.16	-0.43 ± 0.24	-0.17 ± 0.23
	ba	-3.78 ± 0.03	0.20 ± 0.07	0.14 ± 0.16	-0.31 ± 0.20	0.43 ± 0.24
	bad	-3.79 ± 0.03	0.20 ± 0.07	0.14 ± 0.16	-0.31 ± 0.20	0.43 ± 0.24
	badq	-3.72 ± 0.03	0.01 ± 0.07	0.00 ± 0.14	-0.33 ± 0.21	-0.08 ± 0.23
C_2H_5OH		-2.71 ± 0.04	0.16 ± 0.09	0.19 ± 0.15	0.31 ± 0.17	-0.06 ± 0.23

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Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	0.10 ± 0.08	0.10 ± 0.16	-0.16 ± 0.19	0.43 ± 0.20
	ba	-2.72 ± 0.05	-0.10 ± 0.09	-0.03 ± 0.15	0.50 ± 0.21	-1.16 ± 0.16
	bad	-2.79 ± 0.05	0.03 ± 0.09	-0.06 ± 0.13	0.54 ± 0.20	-0.58 ± 0.21
	badq	-2.83 ± 0.04	0.01 ± 0.09	-0.07 ± 0.13	0.36 ± 0.23	-1.29 ± 0.16
C_6H_6		-0.94 ± 0.02	0.06 ± 0.05	-0.02 ± 0.07	0.35 ± 0.15	-0.42 ± 0.13
	b	-0.86 ± 0.02	-0.11 ± 0.05	-0.16 ± 0.06	0.04 ± 0.14	-0.50 ± 0.13
	ba	-0.70 ± 0.08	0.05 ± 0.09	0.00 ± 0.10	0.17 ± 0.22	-0.08 ± 0.13
	bad	-0.59 ± 0.16	0.06 ± 0.17	-0.01 ± 0.17	0.09 ± 0.26	-0.04 ± 0.18
	badq	-0.67 ± 0.02	-0.04 ± 0.04	-0.01 ± 0.06	0.13 ± 0.20	0.01 ± 0.11
C_6H_5OH		-2.17 ± 0.03	-0.02 ± 0.09	0.01 ± 0.13	0.81 ± 0.32	-0.23 ± 0.20
	b	-2.13 ± 0.04	-0.04 ± 0.08	-0.05 ± 0.13	0.39 ± 0.28	-0.24 ± 0.23
	ba	-2.26 ± 0.03	0.09 ± 0.08	0.09 ± 0.13	0.38 ± 0.23	-0.07 ± 0.24
	bad	-2.22 ± 0.03	0.10 ± 0.08	0.14 ± 0.13	0.32 ± 0.24	0.14 ± 0.20
	badq	-2.36 ± 0.06	-0.83 ± 0.15	-0.14 ± 0.44	-0.57 ± 0.34	0.95 ± 0.36

Table 2: MM-to-QM net solvation free energy correction values from 3-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	0.09 ± 0.28	-0.73 ± 0.53	3.86 ± 0.44	-5.72 ± 0.57
	b	-6.47 ± 0.07	-0.04 ± 0.14	0.00 ± 0.14	0.03 ± 0.24	0.46 ± 0.20
	ba	-6.13 ± 0.06	0.04 ± 0.12	0.01 ± 0.11	-0.09 ± 0.29	0.30 ± 0.21
	bad	-6.09 ± 0.06	0.32 ± 0.12	0.20 ± 0.14	0.25 ± 0.37	0.32 ± 0.22
	badq	-6.07 ± 0.06	0.02 ± 0.12	0.00 ± 0.11	0.24 ± 0.25	-0.01 ± 0.18
$CH_3NH_3^+$		1.79 ± 0.04	0.09 ± 0.09	0.09 ± 0.08	-0.04 ± 0.14	0.11 ± 0.14
	b	1.89 ± 0.03	0.03 ± 0.06	0.03 ± 0.06	0.13 ± 0.08	-0.01 ± 0.08
	ba	1.89 ± 0.03	-0.03 ± 0.05	-0.03 ± 0.05	-0.06 ± 0.05	-0.03 ± 0.06
	bad	1.79 ± 0.04	0.02 ± 0.05	0.04 ± 0.05	0.15 ± 0.07	-0.08 ± 0.06
	badq	1.80 ± 0.03	0.07 ± 0.04	0.06 ± 0.04	0.13 ± 0.05	-0.01 ± 0.06
NH_4^+		5.64 ± 0.04	-0.05 ± 0.07	-0.08 ± 0.06	-0.07 ± 0.14	0.01 ± 0.10
	b	5.69 ± 0.02	0.02 ± 0.02	0.01 ± 0.02	0.02 ± 0.03	0.00 ± 0.03
	ba	5.68 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	-0.00 ± 0.02	0.01 ± 0.02
	bad	5.68 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	-0.00 ± 0.02	0.01 ± 0.02
	badq	5.70 ± 0.02	0.02 ± 0.03	0.01 ± 0.02	0.01 ± 0.03	0.01 ± 0.03
$CH_3CO_2^-$		-9.33 ± 0.08	0.13 ± 0.17	0.06 ± 0.19	1.61 ± 0.49	-0.18 ± 0.34
	b	-9.52 ± 0.07	0.08 ± 0.13	-0.00 ± 0.13	0.31 ± 0.21	-0.28 ± 0.21
	ba	-9.29 ± 0.05	-0.01 ± 0.11	-0.02 ± 0.11	-0.12 ± 0.17	-0.06 ± 0.18
	bad	-9.14 ± 0.05	-0.06 ± 0.10	-0.08 ± 0.11	0.04 ± 0.22	-0.11 ± 0.17
	badq	-9.27 ± 0.07	0.10 ± 0.13	0.08 ± 0.14	-0.15 ± 0.29	0.50 ± 0.31
H_3O^+		6.51 ± 0.05	0.21 ± 0.12	0.06 ± 0.11	0.98 ± 0.36	-1.11 ± 0.22
	b	6.42 ± 0.04	-0.10 ± 0.10	-0.08 ± 0.10	0.59 ± 0.20	-0.47 ± 0.17
	ba	6.35 ± 0.02	0.03 ± 0.04	0.02 ± 0.03	0.12 ± 0.05	-0.07 ± 0.04

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Table 2 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	0.03 ± 0.04	0.02 ± 0.03	0.12 ± 0.05	-0.07 ± 0.04
	badq	6.41 ± 0.02	0.00 ± 0.03	0.01 ± 0.03	0.04 ± 0.04	0.00 ± 0.04
C_6H_5Cl		0.38 ± 0.04	0.08 ± 0.09	0.10 ± 0.07	0.17 ± 0.12	-0.03 ± 0.13
	b	0.55 ± 0.04	-0.08 ± 0.09	-0.07 ± 0.08	-0.22 ± 0.10	0.15 ± 0.11
	ba	-0.04 ± 0.03	-0.02 ± 0.09	0.00 ± 0.07	0.08 ± 0.10	-0.24 ± 0.17
	bad	-0.22 ± 0.04	0.04 ± 0.09	0.03 ± 0.07	0.22 ± 0.12	-0.03 ± 0.12
	badq	-0.40 ± 0.04	0.02 ± 0.08	0.04 ± 0.07	0.26 ± 0.14	-0.07 ± 0.11
C_6H_{14}		-0.43 ± 0.03	-0.07 ± 0.07	-0.04 ± 0.06	0.26 ± 0.10	-0.32 ± 0.09
	b	-0.56 ± 0.04	0.01 ± 0.07	0.01 ± 0.06	0.19 ± 0.09	-0.16 ± 0.10
	ba	-0.45 ± 0.08	-0.11 ± 0.09	-0.09 ± 0.09	0.11 ± 0.13	-0.38 ± 0.16
	bad	-0.47 ± 0.03	-0.03 ± 0.06	-0.03 ± 0.06	0.14 ± 0.09	-0.23 ± 0.07
	badq	-0.47 ± 0.03	0.07 ± 0.07	0.05 ± 0.06	0.30 ± 0.11	-0.20 ± 0.10
CH_3OH		-2.16 ± 0.03	-0.10 ± 0.08	-0.09 ± 0.07	0.21 ± 0.14	-0.30 ± 0.11
	b	-2.13 ± 0.03	0.05 ± 0.07	0.02 ± 0.08	0.21 ± 0.14	-0.22 ± 0.13
	ba	-2.13 ± 0.03	-0.05 ± 0.08	-0.05 ± 0.10	0.10 ± 0.14	-0.32 ± 0.22
	bad	-1.99 ± 0.04	-0.19 ± 0.07	-0.20 ± 0.07	-0.01 ± 0.14	-0.35 ± 0.12
	badq	-1.99 ± 0.04	0.13 ± 0.09	0.06 ± 0.09	0.35 ± 0.16	-0.35 ± 0.16
C_2H_6		0.05 ± 0.02	0.03 ± 0.04	0.04 ± 0.03	0.05 ± 0.07	-0.03 ± 0.04
	b	0.06 ± 0.04	-0.07 ± 0.05	-0.07 ± 0.05	-0.05 ± 0.06	-0.06 ± 0.06
	ba	0.09 ± 0.10	0.02 ± 0.10	0.00 ± 0.10	-0.01 ± 0.10	0.04 ± 0.10
	bad	0.13 ± 0.12	0.08 ± 0.12	0.07 ± 0.12	0.04 ± 0.13	0.11 ± 0.12
	badq	0.07 ± 0.08	-0.05 ± 0.09	-0.05 ± 0.08	-0.04 ± 0.09	-0.05 ± 0.09
$(CH_2)_4O$		-1.97 ± 0.05	-0.06 ± 0.10	-0.14 ± 0.12	0.79 ± 0.28	-1.14 ± 0.29
	b	-2.04 ± 0.05	-0.13 ± 0.11	-0.23 ± 0.13	0.69 ± 0.24	-1.02 ± 0.22

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Table 2 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	0.10 ± 0.09	0.08 ± 0.08	0.38 ± 0.17	-0.13 ± 0.16
	bad	-2.20 ± 0.03	-0.08 ± 0.08	-0.13 ± 0.09	0.08 ± 0.13	-0.35 ± 0.14
	badq	-2.16 ± 0.03	0.14 ± 0.08	0.11 ± 0.07	0.41 ± 0.13	-0.23 ± 0.11
$C(NH_2)_3^+$		-0.97 ± 0.06	-0.24 ± 0.14	-0.20 ± 0.20	-0.03 ± 0.17	-0.39 ± 0.39
	b	-0.24 ± 0.06	0.23 ± 0.13	0.13 ± 0.12	0.87 ± 0.21	-0.03 ± 0.23
	ba	-0.60 ± 0.05	-0.07 ± 0.09	-0.12 ± 0.09	0.02 ± 0.26	-0.22 ± 0.16
	bad	-0.36 ± 0.05	-0.02 ± 0.09	-0.07 ± 0.09	0.14 ± 0.16	-0.19 ± 0.16
	badq	-0.02 ± 0.05	0.09 ± 0.10	0.04 ± 0.10	0.34 ± 0.14	-0.34 ± 0.22
$C_6H_5NH_2$		-3.04 ± 0.04	0.04 ± 0.10	0.07 ± 0.11	0.77 ± 0.18	-0.66 ± 0.18
	b	-3.06 ± 0.04	-0.03 ± 0.09	-0.00 ± 0.10	0.42 ± 0.18	-0.36 ± 0.16
	ba	-3.09 ± 0.05	0.04 ± 0.09	0.03 ± 0.08	0.25 ± 0.15	-0.37 ± 0.14
	bad	-3.22 ± 0.04	0.13 ± 0.08	0.09 ± 0.07	0.28 ± 0.15	-0.09 ± 0.09
	badq	-3.26 ± 0.08	0.27 ± 0.15	0.14 ± 0.17	0.46 ± 0.30	0.21 ± 0.37
CH_3CONH_2		-3.59 ± 0.05	0.01 ± 0.10	0.09 ± 0.11	0.88 ± 0.15	-0.35 ± 0.20
	b	-3.41 ± 0.04	-0.16 ± 0.10	-0.05 ± 0.11	0.75 ± 0.30	-0.88 ± 0.24
	ba	-3.52 ± 0.05	0.04 ± 0.10	0.05 ± 0.10	0.59 ± 0.14	-0.21 ± 0.14
	bad	-3.50 ± 0.04	0.26 ± 0.08	0.29 ± 0.09	0.54 ± 0.18	-0.13 ± 0.24
	badq	-3.59 ± 0.04	0.05 ± 0.07	0.08 ± 0.07	0.36 ± 0.11	-0.18 ± 0.09
H_2O		-3.62 ± 0.03	-0.08 ± 0.07	-0.08 ± 0.08	-0.16 ± 0.11	-0.03 ± 0.11
	b	-3.72 ± 0.03	-0.01 ± 0.07	0.01 ± 0.09	-0.12 ± 0.12	-0.06 ± 0.23
	ba	-3.78 ± 0.03	0.07 ± 0.07	0.11 ± 0.09	0.03 ± 0.16	0.12 ± 0.11
	bad	-3.79 ± 0.03	0.07 ± 0.07	0.11 ± 0.09	0.03 ± 0.16	0.12 ± 0.11
	badq	-3.72 ± 0.03	0.22 ± 0.07	0.19 ± 0.08	0.21 ± 0.14	0.11 ± 0.11
C_2H_5OH		-2.71 ± 0.04	0.15 ± 0.08	0.15 ± 0.08	0.39 ± 0.14	-0.09 ± 0.16

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Table 2 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	0.06 ± 0.08	0.07 ± 0.10	0.16 ± 0.20	-0.05 ± 0.14
	ba	-2.72 ± 0.05	0.03 ± 0.09	-0.02 ± 0.09	0.41 ± 0.14	-0.31 ± 0.12
	bad	-2.79 ± 0.05	0.01 ± 0.09	-0.04 ± 0.08	0.49 ± 0.16	-0.42 ± 0.10
	badq	-2.83 ± 0.04	-0.08 ± 0.08	-0.08 ± 0.09	0.26 ± 0.13	-0.53 ± 0.11
C_6H_6		-0.94 ± 0.02	0.00 ± 0.05	0.00 ± 0.05	0.15 ± 0.08	-0.26 ± 0.09
	b	-0.86 ± 0.02	-0.05 ± 0.05	-0.07 ± 0.04	0.06 ± 0.08	-0.28 ± 0.09
	ba	-0.70 ± 0.08	0.00 ± 0.09	0.00 ± 0.09	0.03 ± 0.10	-0.05 ± 0.10
	bad	-0.59 ± 0.16	-0.29 ± 0.17	-0.23 ± 0.17	-0.22 ± 0.19	-0.25 ± 0.19
	badq	-0.67 ± 0.02	0.00 ± 0.05	0.00 ± 0.04	0.00 ± 0.09	-0.01 ± 0.14
C_6H_5OH		-2.17 ± 0.03	-0.02 ± 0.08	-0.04 ± 0.07	0.38 ± 0.17	-0.33 ± 0.12
	b	-2.13 ± 0.04	0.05 ± 0.08	0.04 ± 0.07	0.26 ± 0.16	-0.22 ± 0.14
	ba	-2.26 ± 0.03	-0.06 ± 0.07	-0.04 ± 0.07	0.14 ± 0.13	-0.20 ± 0.16
	bad	-2.22 ± 0.03	0.03 ± 0.07	0.05 ± 0.06	0.13 ± 0.12	0.00 ± 0.12
	badq	-2.36 ± 0.06	-0.09 ± 0.12	-0.01 ± 0.14	0.05 ± 0.32	0.37 ± 0.24

Table 3: MM-to-QM net solvation free energy correction values from 6-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
CO_3^{2-}		-6.45 ± 0.12	0.26 ± 0.18	0.04 ± 0.17	3.53 ± 0.38	-3.23 ± 0.35
	b	-6.47 ± 0.07	0.07 ± 0.09	0.05 ± 0.08	-0.04 ± 0.12	0.21 ± 0.11
	ba	-6.13 ± 0.06	-0.03 ± 0.08	-0.04 ± 0.07	-0.05 ± 0.11	0.08 ± 0.10
	bad	-6.09 ± 0.06	-0.20 ± 0.09	-0.19 ± 0.08	-0.18 ± 0.11	-0.14 ± 0.10
	badq	-6.07 ± 0.06	0.06 ± 0.08	0.07 ± 0.07	0.13 ± 0.13	0.02 ± 0.11
$CH_3NH_3^+$		1.79 ± 0.04	-0.12 ± 0.07	-0.13 ± 0.06	-0.02 ± 0.09	-0.16 ± 0.08
	b	1.89 ± 0.03	0.01 ± 0.04	0.01 ± 0.04	0.00 ± 0.04	0.01 ± 0.05
	ba	1.89 ± 0.03	-0.03 ± 0.04	-0.03 ± 0.04	-0.04 ± 0.04	-0.02 ± 0.04
	bad	1.79 ± 0.04	0.03 ± 0.04	0.04 ± 0.04	0.08 ± 0.04	-0.00 ± 0.04
	badq	1.80 ± 0.03	0.06 ± 0.03	0.05 ± 0.03	0.07 ± 0.04	0.03 ± 0.04
NH_4^+		5.64 ± 0.04	0.01 ± 0.05	0.01 ± 0.04	0.02 ± 0.07	0.01 ± 0.06
	b	5.69 ± 0.02	0.01 ± 0.02	0.01 ± 0.02	0.01 ± 0.02	0.01 ± 0.02
	ba	5.68 ± 0.01	-0.00 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.00 ± 0.01
	bad	5.68 ± 0.01	-0.00 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.00 ± 0.01
	badq	5.70 ± 0.02	0.00 ± 0.02	0.00 ± 0.02	0.00 ± 0.02	-0.01 ± 0.02
$CH_3CO_2^-$		-9.33 ± 0.08	0.16 ± 0.11	0.11 ± 0.10	0.56 ± 0.20	-0.17 ± 0.16
	b	-9.52 ± 0.07	0.05 ± 0.09	0.01 ± 0.08	0.29 ± 0.13	-0.19 ± 0.11
	ba	-9.29 ± 0.05	-0.09 ± 0.07	-0.07 ± 0.07	-0.04 ± 0.09	-0.10 ± 0.09
	bad	-9.14 ± 0.05	0.04 ± 0.07	0.03 ± 0.06	0.16 ± 0.09	-0.08 ± 0.09
	badq	-9.27 ± 0.07	0.22 ± 0.08	0.21 ± 0.10	0.18 ± 0.16	0.24 ± 0.16
H_3O^+		6.51 ± 0.05	-0.00 ± 0.08	-0.01 ± 0.06	0.25 ± 0.10	-0.26 ± 0.09
	b	6.42 ± 0.04	-0.01 ± 0.06	-0.01 ± 0.05	0.20 ± 0.08	-0.15 ± 0.09
	ba	6.35 ± 0.02	-0.04 ± 0.03	-0.04 ± 0.02	-0.01 ± 0.03	-0.06 ± 0.03

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Table 3 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.04 ± 0.03	-0.04 ± 0.02	-0.01 ± 0.03	-0.06 ± 0.03
	badq	6.41 ± 0.02	0.02 ± 0.03	0.02 ± 0.02	0.03 ± 0.03	0.02 ± 0.03
C_6H_5Cl		0.38 ± 0.04	0.07 ± 0.05	0.07 ± 0.04	0.09 ± 0.07	0.05 ± 0.07
	b	0.55 ± 0.04	0.05 ± 0.05	0.04 ± 0.05	0.01 ± 0.08	0.08 ± 0.08
	ba	-0.04 ± 0.03	0.07 ± 0.05	0.06 ± 0.05	0.07 ± 0.06	0.05 ± 0.07
	bad	-0.22 ± 0.04	0.05 ± 0.06	0.05 ± 0.05	0.08 ± 0.07	0.03 ± 0.07
	badq	-0.40 ± 0.04	-0.01 ± 0.05	0.01 ± 0.04	0.05 ± 0.06	-0.03 ± 0.06
C_6H_{14}		-0.43 ± 0.03	0.10 ± 0.04	0.09 ± 0.04	0.22 ± 0.05	-0.03 ± 0.05
	b	-0.56 ± 0.04	0.04 ± 0.05	0.04 ± 0.04	0.11 ± 0.06	-0.03 ± 0.06
	ba	-0.45 ± 0.08	0.01 ± 0.08	0.02 ± 0.08	0.12 ± 0.09	-0.09 ± 0.09
	bad	-0.47 ± 0.03	-0.09 ± 0.04	-0.10 ± 0.04	0.02 ± 0.07	-0.24 ± 0.08
	badq	-0.47 ± 0.03	-0.04 ± 0.04	-0.04 ± 0.03	0.07 ± 0.05	-0.15 ± 0.05
CH_3OH		-2.16 ± 0.03	-0.01 ± 0.05	-0.00 ± 0.05	0.10 ± 0.08	-0.10 ± 0.07
	b	-2.13 ± 0.03	0.04 ± 0.05	0.02 ± 0.05	0.09 ± 0.08	-0.04 ± 0.07
	ba	-2.13 ± 0.03	-0.08 ± 0.05	-0.09 ± 0.05	-0.01 ± 0.08	-0.17 ± 0.09
	bad	-1.99 ± 0.04	0.05 ± 0.05	0.04 ± 0.05	0.10 ± 0.08	-0.02 ± 0.07
	badq	-1.99 ± 0.04	0.00 ± 0.06	-0.02 ± 0.06	0.08 ± 0.08	-0.15 ± 0.08
C_2H_6		0.05 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.02	0.00 ± 0.04	-0.03 ± 0.03
	b	0.06 ± 0.04	-0.01 ± 0.05	-0.01 ± 0.05	-0.01 ± 0.05	-0.01 ± 0.05
	ba	0.09 ± 0.10	-0.01 ± 0.10	-0.01 ± 0.10	-0.03 ± 0.10	-0.01 ± 0.10
	bad	0.13 ± 0.12	0.02 ± 0.12	0.02 ± 0.12	-0.01 ± 0.12	0.03 ± 0.12
	badq	0.07 ± 0.08	0.02 ± 0.08	0.02 ± 0.08	0.01 ± 0.08	0.03 ± 0.08
$(CH_2)_4O$		-1.97 ± 0.05	0.04 ± 0.07	0.02 ± 0.06	0.38 ± 0.10	-0.36 ± 0.11
	b	-2.04 ± 0.05	-0.10 ± 0.08	-0.11 ± 0.07	0.21 ± 0.10	-0.45 ± 0.11

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Table 3 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	0.02 ± 0.05	0.01 ± 0.05	0.07 ± 0.07	-0.03 ± 0.07
	bad	-2.20 ± 0.03	-0.10 ± 0.05	-0.11 ± 0.05	-0.01 ± 0.07	-0.20 ± 0.08
	badq	-2.16 ± 0.03	0.04 ± 0.05	0.04 ± 0.04	0.15 ± 0.06	-0.07 ± 0.06
$C(NH_2)_3^+$		-0.97 ± 0.06	-0.10 ± 0.09	-0.12 ± 0.10	0.14 ± 0.14	-0.21 ± 0.19
	b	-0.24 ± 0.06	0.15 ± 0.09	0.10 ± 0.07	0.30 ± 0.11	0.03 ± 0.11
	ba	-0.60 ± 0.05	-0.07 ± 0.07	-0.09 ± 0.06	0.05 ± 0.11	-0.16 ± 0.09
	bad	-0.36 ± 0.05	-0.08 ± 0.06	-0.09 ± 0.06	-0.02 ± 0.09	-0.14 ± 0.09
	badq	-0.02 ± 0.05	-0.04 ± 0.07	-0.05 ± 0.07	0.08 ± 0.11	-0.16 ± 0.11
$C_6H_5NH_2$		-3.04 ± 0.04	0.09 ± 0.06	0.10 ± 0.06	0.31 ± 0.10	-0.17 ± 0.09
	b	-3.06 ± 0.04	-0.02 ± 0.06	0.00 ± 0.05	0.21 ± 0.08	-0.21 ± 0.08
	ba	-3.09 ± 0.05	0.02 ± 0.06	0.01 ± 0.06	0.12 ± 0.09	-0.11 ± 0.07
	bad	-3.22 ± 0.04	-0.02 ± 0.05	-0.03 ± 0.05	0.06 ± 0.08	-0.13 ± 0.07
	badq	-3.26 ± 0.08	-0.18 ± 0.10	-0.19 ± 0.09	0.03 ± 0.15	-0.31 ± 0.14
CH_3CONH_2		-3.59 ± 0.05	-0.04 ± 0.07	-0.02 ± 0.06	0.22 ± 0.09	-0.26 ± 0.10
	b	-3.41 ± 0.04	0.07 ± 0.06	0.08 ± 0.06	0.34 ± 0.10	-0.13 ± 0.09
	ba	-3.52 ± 0.05	-0.02 ± 0.06	-0.02 ± 0.06	0.13 ± 0.08	-0.15 ± 0.08
	bad	-3.50 ± 0.04	0.01 ± 0.06	0.03 ± 0.06	0.21 ± 0.08	-0.20 ± 0.11
	badq	-3.59 ± 0.04	-0.12 ± 0.06	-0.10 ± 0.06	0.08 ± 0.08	-0.28 ± 0.07
H_2O		-3.62 ± 0.03	-0.07 ± 0.05	-0.05 ± 0.05	-0.03 ± 0.08	-0.07 ± 0.07
	b	-3.72 ± 0.03	0.02 ± 0.05	0.02 ± 0.05	0.04 ± 0.08	-0.01 ± 0.07
	ba	-3.78 ± 0.03	0.05 ± 0.05	0.06 ± 0.06	0.05 ± 0.09	0.05 ± 0.09
	bad	-3.79 ± 0.03	0.05 ± 0.05	0.06 ± 0.06	0.05 ± 0.09	0.05 ± 0.09
	badq	-3.72 ± 0.03	-0.02 ± 0.05	-0.01 ± 0.06	0.04 ± 0.09	-0.09 ± 0.12
C_2H_5OH		-2.71 ± 0.04	-0.01 ± 0.05	0.01 ± 0.05	0.11 ± 0.07	-0.10 ± 0.09

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Table 3 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	-0.04 ± 0.05	-0.03 ± 0.05	0.03 ± 0.08	-0.08 ± 0.08
	ba	-2.72 ± 0.05	-0.02 ± 0.06	-0.04 ± 0.06	0.17 ± 0.10	-0.20 ± 0.09
	bad	-2.79 ± 0.05	-0.04 ± 0.06	-0.05 ± 0.06	0.11 ± 0.09	-0.20 ± 0.09
	badq	-2.83 ± 0.04	0.05 ± 0.06	0.05 ± 0.06	0.19 ± 0.08	-0.14 ± 0.09
C_6H_6		-0.94 ± 0.02	0.06 ± 0.03	0.05 ± 0.03	0.12 ± 0.04	-0.02 ± 0.04
	b	-0.86 ± 0.02	-0.01 ± 0.03	-0.02 ± 0.03	0.01 ± 0.04	-0.06 ± 0.04
	ba	-0.70 ± 0.08	0.02 ± 0.09	0.02 ± 0.09	0.04 ± 0.09	0.00 ± 0.09
	bad	-0.59 ± 0.16	-0.01 ± 0.16	-0.01 ± 0.16	-0.01 ± 0.16	-0.02 ± 0.16
	badq	-0.67 ± 0.02	-0.00 ± 0.03	-0.01 ± 0.02	0.00 ± 0.04	-0.02 ± 0.03
C_6H_5OH		-2.17 ± 0.03	0.07 ± 0.05	0.05 ± 0.05	0.18 ± 0.08	-0.06 ± 0.07
	b	-2.13 ± 0.04	0.00 ± 0.05	0.00 ± 0.05	0.14 ± 0.07	-0.14 ± 0.07
	ba	-2.26 ± 0.03	-0.01 ± 0.05	-0.00 ± 0.04	0.09 ± 0.06	-0.07 ± 0.06
	bad	-2.22 ± 0.03	-0.04 ± 0.05	-0.04 ± 0.04	0.02 ± 0.06	-0.08 ± 0.06
	badq	-2.36 ± 0.06	-0.04 ± 0.09	-0.04 ± 0.09	0.12 ± 0.14	-0.10 ± 0.13

Table 4: MM-to-QM net solvation free energy correction values from 2-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	1.99 ± 0.58	-3.86 ± 0.77	2.33 ± 0.39	-10.05 ± 0.65
	b	-6.47 ± 0.07	1.56 ± 0.24	0.56 ± 0.47	-1.10 ± 0.45	1.98 ± 0.46
	ba	-6.13 ± 0.06	0.50 ± 0.19	0.06 ± 0.38	-0.84 ± 0.31	0.99 ± 0.46
	bad	-6.09 ± 0.06	0.64 ± 0.19	-0.24 ± 0.32	-0.81 ± 0.46	1.03 ± 0.26
	badq	-6.07 ± 0.06	0.39 ± 0.18	-0.22 ± 0.25	-0.78 ± 0.47	0.98 ± 0.26
$CH_3NH_3^+$		1.79 ± 0.04	0.44 ± 0.17	0.06 ± 0.22	-0.33 ± 0.30	0.28 ± 0.27
	b	1.89 ± 0.03	-0.02 ± 0.09	-0.02 ± 0.14	-0.07 ± 0.24	0.14 ± 0.19
	ba	1.89 ± 0.03	-0.14 ± 0.07	-0.14 ± 0.08	0.01 ± 0.13	-0.11 ± 0.09
	bad	1.79 ± 0.04	0.17 ± 0.07	0.15 ± 0.08	0.29 ± 0.12	0.21 ± 0.11
	badq	1.80 ± 0.03	0.15 ± 0.06	0.14 ± 0.07	0.22 ± 0.18	0.13 ± 0.12
NH_4^+		5.64 ± 0.04	0.02 ± 0.13	-0.40 ± 0.22	-0.36 ± 0.32	-1.60 ± 0.58
	b	5.69 ± 0.02	-0.05 ± 0.03	-0.05 ± 0.03	-0.06 ± 0.04	-0.06 ± 0.05
	ba	5.68 ± 0.01	-0.01 ± 0.02	-0.02 ± 0.02	-0.06 ± 0.04	0.05 ± 0.04
	bad	5.68 ± 0.01	-0.01 ± 0.02	-0.02 ± 0.02	-0.06 ± 0.04	0.05 ± 0.04
	badq	5.70 ± 0.02	0.01 ± 0.03	0.01 ± 0.03	-0.05 ± 0.04	0.07 ± 0.04
$CH_3CO_2^-$		-9.33 ± 0.08	0.10 ± 0.35	0.66 ± 0.69	0.63 ± 0.62	1.30 ± 0.55
	b	-9.52 ± 0.07	0.65 ± 0.21	0.22 ± 0.38	0.12 ± 0.44	0.69 ± 0.37
	ba	-9.29 ± 0.05	-0.02 ± 0.17	-0.16 ± 0.28	-1.17 ± 0.30	0.52 ± 0.26
	bad	-9.14 ± 0.05	0.07 ± 0.18	-0.24 ± 0.32	-1.02 ± 0.39	-0.74 ± 0.59
	badq	-9.27 ± 0.07	-0.75 ± 0.22	-0.50 ± 0.41	-1.55 ± 0.37	-0.27 ± 0.43
H_3O^+		6.51 ± 0.05	-0.08 ± 0.19	-0.70 ± 0.39	-2.03 ± 0.21	0.67 ± 0.38
	b	6.42 ± 0.04	-0.11 ± 0.17	-0.35 ± 0.26	-0.77 ± 0.26	-0.38 ± 0.38
	ba	6.35 ± 0.02	-0.16 ± 0.05	-0.16 ± 0.05	-0.05 ± 0.08	-0.28 ± 0.07

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Table 4 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.16 ± 0.05	-0.16 ± 0.05	-0.05 ± 0.08	-0.28 ± 0.07
	badq	6.41 ± 0.02	-0.11 ± 0.05	-0.12 ± 0.05	-0.09 ± 0.07	-0.18 ± 0.08
C_6H_5Cl		0.38 ± 0.04	-0.20 ± 0.13	-0.13 ± 0.14	-0.31 ± 0.30	0.28 ± 0.19
	b	0.55 ± 0.04	0.21 ± 0.10	0.25 ± 0.11	-0.14 ± 0.18	0.48 ± 0.18
	ba	-0.04 ± 0.03	0.05 ± 0.10	0.06 ± 0.12	0.01 ± 0.14	-0.40 ± 0.35
	bad	-0.22 ± 0.04	-0.09 ± 0.09	-0.07 ± 0.10	-0.13 ± 0.14	-0.11 ± 0.23
	badq	-0.40 ± 0.04	-0.07 ± 0.09	-0.01 ± 0.10	0.25 ± 0.36	-0.12 ± 0.15
C_6H_{14}		-0.43 ± 0.03	-0.31 ± 0.11	-0.27 ± 0.13	0.28 ± 0.28	-0.76 ± 0.21
	b	-0.56 ± 0.04	-0.02 ± 0.10	0.01 ± 0.14	0.38 ± 0.17	-0.15 ± 0.15
	ba	-0.45 ± 0.08	-0.19 ± 0.12	-0.23 ± 0.14	-0.08 ± 0.19	-0.31 ± 0.19
	bad	-0.47 ± 0.03	-0.25 ± 0.10	-0.22 ± 0.11	-0.04 ± 0.17	-0.27 ± 0.12
	badq	-0.47 ± 0.03	0.01 ± 0.11	0.08 ± 0.13	-0.02 ± 0.17	0.15 ± 0.17
CH_3OH		-2.16 ± 0.03	-0.19 ± 0.12	-0.10 ± 0.30	0.39 ± 0.26	-0.34 ± 0.38
	b	-2.13 ± 0.03	-0.22 ± 0.12	-0.07 ± 0.18	0.37 ± 0.24	-0.99 ± 0.30
	ba	-2.13 ± 0.03	-0.05 ± 0.11	0.11 ± 0.23	0.29 ± 0.24	0.18 ± 0.24
	bad	-1.99 ± 0.04	-0.04 ± 0.12	0.11 ± 0.22	0.26 ± 0.30	-0.32 ± 0.32
	badq	-1.99 ± 0.04	-0.13 ± 0.12	-0.08 ± 0.19	0.62 ± 0.36	-0.61 ± 0.25
C_2H_6		0.05 ± 0.02	0.04 ± 0.09	0.08 ± 0.07	0.06 ± 0.12	0.02 ± 0.11
	b	0.06 ± 0.04	-0.09 ± 0.06	-0.07 ± 0.07	-0.11 ± 0.09	-0.17 ± 0.24
	ba	0.09 ± 0.10	-0.07 ± 0.11	-0.06 ± 0.11	-0.10 ± 0.13	0.04 ± 0.12
	bad	0.13 ± 0.12	-0.16 ± 0.13	-0.13 ± 0.13	-0.09 ± 0.16	-0.30 ± 0.18
	badq	0.07 ± 0.08	-0.09 ± 0.09	-0.08 ± 0.09	-0.09 ± 0.14	-0.03 ± 0.11
$(CH_2)_4O$		-1.97 ± 0.05	-0.50 ± 0.17	-0.67 ± 0.29	0.18 ± 0.33	-1.11 ± 0.28
	b	-2.04 ± 0.05	-0.24 ± 0.18	0.00 ± 0.40	0.22 ± 0.28	-0.66 ± 0.42

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Table 4 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	-0.01 ± 0.12	0.22 ± 0.24	0.73 ± 0.45	-0.60 ± 0.54
	bad	-2.20 ± 0.03	-0.31 ± 0.13	-0.29 ± 0.20	0.78 ± 0.36	-0.62 ± 0.36
	badq	-2.16 ± 0.03	0.06 ± 0.14	0.04 ± 0.16	0.42 ± 0.36	-0.26 ± 0.22
$C(NH_2)_3^+$		-0.97 ± 0.06	0.11 ± 0.41	-0.20 ± 0.32	0.24 ± 0.50	0.01 ± 0.51
	b	-0.24 ± 0.06	-1.20 ± 0.36	-0.04 ± 0.31	0.56 ± 0.28	0.44 ± 0.49
	ba	-0.60 ± 0.05	-0.80 ± 0.30	-0.03 ± 0.24	0.56 ± 0.32	0.31 ± 0.31
	bad	-0.36 ± 0.05	0.06 ± 0.21	-0.09 ± 0.23	0.62 ± 0.38	0.20 ± 0.29
	badq	-0.02 ± 0.05	-0.15 ± 0.20	0.01 ± 0.21	0.31 ± 0.29	-1.08 ± 0.57
$C_6H_5NH_2$		-3.04 ± 0.04	0.38 ± 0.15	0.13 ± 0.23	0.44 ± 0.35	-0.60 ± 0.26
	b	-3.06 ± 0.04	0.16 ± 0.15	-0.13 ± 0.19	0.40 ± 0.30	-2.20 ± 0.50
	ba	-3.09 ± 0.05	0.01 ± 0.11	-0.22 ± 0.18	-0.14 ± 0.22	-1.09 ± 0.33
	bad	-3.22 ± 0.04	0.35 ± 0.13	-0.07 ± 0.17	0.01 ± 0.16	-0.61 ± 0.29
	badq	-3.26 ± 0.08	-0.37 ± 0.24	-0.27 ± 0.62	-2.10 ± 0.52	1.51 ± 0.44
CH_3CONH_2		-3.59 ± 0.05	-0.25 ± 0.16	-0.09 ± 0.28	0.71 ± 0.40	-1.06 ± 0.44
	b	-3.41 ± 0.04	-0.12 ± 0.15	-0.17 ± 0.22	0.96 ± 0.46	-0.69 ± 0.29
	ba	-3.52 ± 0.05	0.21 ± 0.13	0.31 ± 0.24	0.11 ± 0.27	0.73 ± 0.22
	bad	-3.50 ± 0.04	-0.02 ± 0.12	0.01 ± 0.23	0.11 ± 0.27	0.27 ± 0.21
	badq	-3.59 ± 0.04	0.35 ± 0.11	0.40 ± 0.18	0.32 ± 0.17	0.45 ± 0.29
H_2O		-3.62 ± 0.03	-0.05 ± 0.11	-0.18 ± 0.19	0.06 ± 0.37	0.20 ± 0.18
	b	-3.72 ± 0.03	-0.01 ± 0.10	-0.08 ± 0.18	-0.13 ± 0.31	-0.03 ± 0.29
	ba	-3.78 ± 0.03	0.17 ± 0.11	0.04 ± 0.19	-0.01 ± 0.30	0.24 ± 0.22
	bad	-3.79 ± 0.03	0.17 ± 0.11	0.04 ± 0.19	-0.01 ± 0.30	0.24 ± 0.22
	badq	-3.72 ± 0.03	0.14 ± 0.10	0.10 ± 0.20	-0.05 ± 0.28	0.41 ± 0.23
C_2H_5OH		-2.71 ± 0.04	-0.09 ± 0.12	-0.14 ± 0.21	-0.20 ± 0.32	0.26 ± 0.20

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Table 4 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-2.60 ± 0.04	-0.14 ± 0.12	-0.17 ± 0.20	-0.17 ± 0.54	0.13 ± 0.21
	ba	-2.72 ± 0.05	0.28 ± 0.12	0.31 ± 0.24	0.29 ± 0.16	0.22 ± 0.40
	bad	-2.79 ± 0.05	0.00 ± 0.13	-0.08 ± 0.22	0.30 ± 0.50	-0.29 ± 0.27
	badq	-2.83 ± 0.04	0.07 ± 0.12	0.18 ± 0.24	0.31 ± 0.44	-0.09 ± 0.24
C_6H_6		-0.94 ± 0.02	0.08 ± 0.09	0.07 ± 0.10	0.73 ± 0.14	-0.76 ± 0.24
	b	-0.86 ± 0.02	0.18 ± 0.07	0.17 ± 0.08	0.45 ± 0.14	0.08 ± 0.11
	ba	-0.70 ± 0.08	0.07 ± 0.11	0.03 ± 0.11	0.53 ± 0.15	-0.16 ± 0.13
	bad	-0.59 ± 0.16	0.25 ± 0.18	0.15 ± 0.18	0.42 ± 0.21	0.01 ± 0.21
	badq	-0.67 ± 0.02	0.06 ± 0.07	0.06 ± 0.08	0.38 ± 0.12	-0.23 ± 0.14
C_6H_5OH		-2.17 ± 0.03	-0.13 ± 0.13	-0.16 ± 0.22	0.90 ± 0.53	-0.78 ± 0.25
	b	-2.13 ± 0.04	-0.15 ± 0.11	-0.07 ± 0.20	0.39 ± 0.44	0.11 ± 0.28
	ba	-2.26 ± 0.03	-0.12 ± 0.11	-0.05 ± 0.18	0.12 ± 0.38	0.57 ± 0.17
	bad	-2.22 ± 0.03	-0.42 ± 0.11	-0.43 ± 0.20	0.13 ± 0.20	-1.33 ± 0.53
	badq	-2.36 ± 0.06	-0.59 ± 0.21	-0.52 ± 0.43	-2.02 ± 0.35	0.86 ± 0.32

Table 5: MM-to-QM net solvation free energy correction values from 3-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	0.90 ± 0.43	-0.28 ± 0.75	2.51 ± 0.57	-5.19 ± 0.63
	b	-6.47 ± 0.07	-0.14 ± 0.20	-0.15 ± 0.17	-0.37 ± 0.34	0.14 ± 0.29
	ba	-6.13 ± 0.06	-0.04 ± 0.16	-0.07 ± 0.15	-0.26 ± 0.26	0.02 ± 0.34
	bad	-6.09 ± 0.06	-0.04 ± 0.16	-0.08 ± 0.17	-0.63 ± 0.27	-0.29 ± 0.33
	badq	-6.07 ± 0.06	-0.48 ± 0.18	-0.46 ± 0.14	-0.31 ± 0.25	-1.00 ± 0.40
$CH_3NH_3^+$		1.79 ± 0.04	0.09 ± 0.14	0.08 ± 0.13	0.24 ± 0.36	0.10 ± 0.22
	b	1.89 ± 0.03	-0.08 ± 0.09	-0.07 ± 0.09	-0.05 ± 0.12	-0.02 ± 0.14
	ba	1.89 ± 0.03	-0.06 ± 0.07	-0.07 ± 0.06	-0.02 ± 0.07	-0.11 ± 0.08
	bad	1.79 ± 0.04	0.02 ± 0.05	0.05 ± 0.07	0.06 ± 0.10	0.07 ± 0.08
	badq	1.80 ± 0.03	0.04 ± 0.05	0.06 ± 0.05	0.05 ± 0.08	0.09 ± 0.07
NH_4^+		5.64 ± 0.04	-0.03 ± 0.11	-0.13 ± 0.11	-0.16 ± 0.30	-0.34 ± 0.45
	b	5.69 ± 0.02	-0.01 ± 0.03	-0.02 ± 0.03	-0.01 ± 0.03	-0.02 ± 0.03
	ba	5.68 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.04 ± 0.03	0.01 ± 0.02
	bad	5.68 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.04 ± 0.03	0.01 ± 0.02
	badq	5.70 ± 0.02	-0.01 ± 0.03	0.00 ± 0.03	-0.03 ± 0.03	0.03 ± 0.03
$CH_3CO_2^-$		-9.33 ± 0.08	0.23 ± 0.27	0.10 ± 0.27	0.47 ± 0.56	0.47 ± 0.38
	b	-9.52 ± 0.07	0.53 ± 0.18	0.44 ± 0.19	0.78 ± 0.49	0.24 ± 0.32
	ba	-9.29 ± 0.05	0.24 ± 0.16	0.15 ± 0.16	-0.13 ± 0.31	0.24 ± 0.20
	bad	-9.14 ± 0.05	-0.46 ± 0.15	-0.45 ± 0.18	-0.35 ± 0.31	-0.67 ± 0.38
	badq	-9.27 ± 0.07	-0.16 ± 0.17	-0.19 ± 0.18	-0.20 ± 0.39	-0.26 ± 0.35
H_3O^+		6.51 ± 0.05	-0.12 ± 0.17	-0.24 ± 0.18	-0.51 ± 0.22	-0.42 ± 0.37
	b	6.42 ± 0.04	-0.26 ± 0.18	-0.27 ± 0.14	0.05 ± 0.21	-0.80 ± 0.27
	ba	6.35 ± 0.02	-0.09 ± 0.05	-0.11 ± 0.04	-0.04 ± 0.06	-0.16 ± 0.05

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Table 5 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.09 ± 0.05	-0.11 ± 0.04	-0.04 ± 0.06	-0.16 ± 0.05
	badq	6.41 ± 0.02	-0.09 ± 0.04	-0.10 ± 0.04	-0.08 ± 0.06	-0.13 ± 0.06
C_6H_5Cl		0.38 ± 0.04	0.26 ± 0.12	0.19 ± 0.09	0.11 ± 0.17	0.11 ± 0.28
	b	0.55 ± 0.04	0.00 ± 0.09	0.03 ± 0.08	-0.11 ± 0.11	0.16 ± 0.11
	ba	-0.04 ± 0.03	0.02 ± 0.10	0.04 ± 0.08	0.17 ± 0.11	-0.24 ± 0.17
	bad	-0.22 ± 0.04	0.05 ± 0.09	0.01 ± 0.07	0.15 ± 0.12	-0.05 ± 0.12
	badq	-0.40 ± 0.04	-0.12 ± 0.09	-0.11 ± 0.08	0.05 ± 0.15	-0.16 ± 0.11
C_6H_{14}		-0.43 ± 0.03	-0.19 ± 0.09	-0.19 ± 0.08	0.08 ± 0.12	-0.45 ± 0.13
	b	-0.56 ± 0.04	-0.19 ± 0.09	-0.15 ± 0.08	0.05 ± 0.12	-0.29 ± 0.12
	ba	-0.45 ± 0.08	-0.09 ± 0.11	-0.12 ± 0.11	-0.00 ± 0.15	-0.20 ± 0.14
	bad	-0.47 ± 0.03	-0.18 ± 0.09	-0.20 ± 0.07	-0.07 ± 0.11	-0.25 ± 0.10
	badq	-0.47 ± 0.03	0.07 ± 0.10	0.08 ± 0.09	0.03 ± 0.10	0.02 ± 0.18
CH_3OH		-2.16 ± 0.03	-0.15 ± 0.11	-0.18 ± 0.14	0.22 ± 0.22	-0.37 ± 0.22
	b	-2.13 ± 0.03	-0.14 ± 0.11	-0.16 ± 0.11	0.27 ± 0.20	-0.52 ± 0.20
	ba	-2.13 ± 0.03	-0.04 ± 0.11	-0.06 ± 0.12	0.19 ± 0.20	-0.09 ± 0.16
	bad	-1.99 ± 0.04	0.04 ± 0.10	0.03 ± 0.11	0.21 ± 0.20	-0.05 ± 0.17
	badq	-1.99 ± 0.04	0.30 ± 0.11	0.22 ± 0.11	0.55 ± 0.23	-0.07 ± 0.18
C_2H_6		0.05 ± 0.02	-0.02 ± 0.05	0.00 ± 0.04	0.01 ± 0.07	-0.02 ± 0.06
	b	0.06 ± 0.04	-0.09 ± 0.06	-0.09 ± 0.06	-0.08 ± 0.07	-0.12 ± 0.09
	ba	0.09 ± 0.10	0.00 ± 0.11	-0.01 ± 0.11	-0.06 ± 0.11	0.04 ± 0.11
	bad	0.13 ± 0.12	-0.03 ± 0.13	-0.05 ± 0.12	-0.04 ± 0.13	-0.06 ± 0.13
	badq	0.07 ± 0.08	-0.07 ± 0.09	-0.07 ± 0.09	-0.08 ± 0.09	-0.04 ± 0.09
$(CH_2)_4O$		-1.97 ± 0.05	0.03 ± 0.17	-0.11 ± 0.15	0.96 ± 0.34	-1.18 ± 0.30
	b	-2.04 ± 0.05	-0.31 ± 0.18	-0.27 ± 0.18	0.44 ± 0.36	-1.05 ± 0.39

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Table 5 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	-0.04 ± 0.12	-0.01 ± 0.11	0.20 ± 0.31	-0.15 ± 0.24
	bad	-2.20 ± 0.03	-0.09 ± 0.13	-0.13 ± 0.14	0.30 ± 0.22	-0.47 ± 0.22
	badq	-2.16 ± 0.03	0.09 ± 0.12	0.06 ± 0.10	0.31 ± 0.19	-0.13 ± 0.14
$C(NH_2)_3^+$		-0.97 ± 0.06	-0.23 ± 0.23	-0.09 ± 0.24	0.04 ± 0.60	-0.38 ± 0.40
	b	-0.24 ± 0.06	-0.04 ± 0.20	0.17 ± 0.19	0.70 ± 0.29	0.16 ± 0.37
	ba	-0.60 ± 0.05	-0.23 ± 0.16	-0.13 ± 0.17	0.43 ± 0.20	-0.20 ± 0.23
	bad	-0.36 ± 0.05	-0.04 ± 0.14	-0.13 ± 0.13	0.18 ± 0.21	-0.16 ± 0.18
	badq	-0.02 ± 0.05	-0.25 ± 0.15	-0.24 ± 0.13	-0.01 ± 0.23	-0.58 ± 0.33
$C_6H_5NH_2$		-3.04 ± 0.04	0.16 ± 0.14	0.21 ± 0.12	0.53 ± 0.16	-0.48 ± 0.20
	b	-3.06 ± 0.04	0.14 ± 0.14	0.13 ± 0.13	0.55 ± 0.22	-0.90 ± 0.28
	ba	-3.09 ± 0.05	-0.28 ± 0.11	-0.28 ± 0.10	0.04 ± 0.21	-0.68 ± 0.16
	bad	-3.22 ± 0.04	0.16 ± 0.12	0.13 ± 0.11	0.31 ± 0.16	-0.34 ± 0.17
	badq	-3.26 ± 0.08	0.85 ± 0.21	0.80 ± 0.23	0.31 ± 0.38	0.86 ± 0.31
CH_3CONH_2		-3.59 ± 0.05	-0.08 ± 0.15	-0.08 ± 0.13	0.59 ± 0.26	-0.57 ± 0.22
	b	-3.41 ± 0.04	0.01 ± 0.12	-0.02 ± 0.12	0.49 ± 0.22	-0.48 ± 0.17
	ba	-3.52 ± 0.05	0.20 ± 0.13	0.22 ± 0.13	0.28 ± 0.19	0.10 ± 0.17
	bad	-3.50 ± 0.04	-0.10 ± 0.12	-0.06 ± 0.12	0.13 ± 0.22	-0.42 ± 0.33
	badq	-3.59 ± 0.04	-0.14 ± 0.12	0.02 ± 0.10	0.17 ± 0.14	-0.58 ± 0.27
H_2O		-3.62 ± 0.03	-0.29 ± 0.12	-0.28 ± 0.14	-0.05 ± 0.24	-0.38 ± 0.19
	b	-3.72 ± 0.03	0.23 ± 0.10	0.17 ± 0.10	0.20 ± 0.17	0.24 ± 0.15
	ba	-3.78 ± 0.03	0.34 ± 0.10	0.28 ± 0.10	0.38 ± 0.19	0.24 ± 0.15
	bad	-3.79 ± 0.03	0.34 ± 0.10	0.28 ± 0.10	0.38 ± 0.19	0.24 ± 0.15
	badq	-3.72 ± 0.03	-0.01 ± 0.10	0.01 ± 0.12	0.09 ± 0.21	0.03 ± 0.25
C_2H_5OH		-2.71 ± 0.04	0.15 ± 0.11	0.09 ± 0.12	0.09 ± 0.19	0.12 ± 0.16

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Table 5 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-2.60 ± 0.04	-0.13 ± 0.11	-0.13 ± 0.11	-0.14 ± 0.31	-0.10 ± 0.17
	ba	-2.72 ± 0.05	0.08 ± 0.12	0.11 ± 0.12	0.17 ± 0.15	0.12 ± 0.17
	bad	-2.79 ± 0.05	0.01 ± 0.13	-0.04 ± 0.13	0.36 ± 0.24	-0.38 ± 0.17
	badq	-2.83 ± 0.04	-0.07 ± 0.12	-0.06 ± 0.13	0.21 ± 0.23	-0.22 ± 0.15
C_6H_6		-0.94 ± 0.02	0.02 ± 0.07	0.02 ± 0.07	0.40 ± 0.10	-0.28 ± 0.11
	b	-0.86 ± 0.02	0.03 ± 0.06	0.07 ± 0.05	0.17 ± 0.08	0.01 ± 0.07
	ba	-0.70 ± 0.08	0.13 ± 0.10	0.11 ± 0.09	0.29 ± 0.11	-0.01 ± 0.11
	bad	-0.59 ± 0.16	-0.43 ± 0.18	-0.32 ± 0.17	-0.20 ± 0.21	-0.40 ± 0.18
	badq	-0.67 ± 0.02	-0.10 ± 0.07	-0.06 ± 0.06	0.02 ± 0.08	-0.16 ± 0.09
C_6H_5OH		-2.17 ± 0.03	-0.24 ± 0.13	-0.24 ± 0.12	0.34 ± 0.37	-0.60 ± 0.15
	b	-2.13 ± 0.04	-0.10 ± 0.11	-0.10 ± 0.11	0.04 ± 0.26	-0.05 ± 0.15
	ba	-2.26 ± 0.03	0.27 ± 0.10	0.17 ± 0.10	0.27 ± 0.23	0.30 ± 0.11
	bad	-2.22 ± 0.03	-0.12 ± 0.10	-0.18 ± 0.10	-0.06 ± 0.14	-0.40 ± 0.27
	badq	-2.36 ± 0.06	0.57 ± 0.19	0.41 ± 0.22	0.76 ± 0.54	0.36 ± 0.38

Table 6: MM-to-QM net solvation free energy correction values from 6-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	-0.17 ± 0.27	-0.35 ± 0.26	1.72 ± 0.40	-2.68 ± 0.43
	b	-6.47 ± 0.07	0.25 ± 0.13	0.21 ± 0.11	0.27 ± 0.23	0.25 ± 0.16
	ba	-6.13 ± 0.06	-0.10 ± 0.11	-0.11 ± 0.11	-0.12 ± 0.15	-0.10 ± 0.16
	bad	-6.09 ± 0.06	-0.16 ± 0.12	-0.16 ± 0.11	-0.08 ± 0.18	-0.26 ± 0.17
	badq	-6.07 ± 0.06	-0.15 ± 0.11	-0.15 ± 0.09	-0.17 ± 0.13	-0.18 ± 0.13
$CH_3NH_3^+$		1.79 ± 0.04	0.02 ± 0.09	0.03 ± 0.08	0.00 ± 0.14	0.09 ± 0.13
	b	1.89 ± 0.03	-0.03 ± 0.05	-0.03 ± 0.05	-0.03 ± 0.07	-0.02 ± 0.07
	ba	1.89 ± 0.03	-0.02 ± 0.05	-0.03 ± 0.04	-0.02 ± 0.05	-0.04 ± 0.05
	bad	1.79 ± 0.04	0.01 ± 0.05	0.02 ± 0.04	0.02 ± 0.05	0.02 ± 0.05
	badq	1.80 ± 0.03	0.09 ± 0.04	0.09 ± 0.04	0.07 ± 0.05	0.09 ± 0.05
NH_4^+		5.64 ± 0.04	0.01 ± 0.07	-0.02 ± 0.06	0.02 ± 0.12	-0.04 ± 0.13
	b	5.69 ± 0.02	-0.03 ± 0.02	-0.03 ± 0.02	-0.03 ± 0.03	-0.04 ± 0.03
	ba	5.68 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.01	-0.02 ± 0.02	-0.00 ± 0.02
	bad	5.68 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.01	-0.02 ± 0.02	-0.00 ± 0.02
	badq	5.70 ± 0.02	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.03	0.02 ± 0.03
$CH_3CO_2^-$		-9.33 ± 0.08	0.03 ± 0.17	0.01 ± 0.15	0.23 ± 0.27	-0.22 ± 0.26
	b	-9.52 ± 0.07	-0.02 ± 0.12	-0.01 ± 0.11	0.04 ± 0.17	-0.03 ± 0.15
	ba	-9.29 ± 0.05	-0.21 ± 0.10	-0.23 ± 0.10	-0.23 ± 0.14	-0.22 ± 0.15
	bad	-9.14 ± 0.05	-0.10 ± 0.10	-0.10 ± 0.09	-0.21 ± 0.13	-0.02 ± 0.14
	badq	-9.27 ± 0.07	-0.38 ± 0.12	-0.37 ± 0.11	-0.35 ± 0.18	-0.35 ± 0.17
H_3O^+		6.51 ± 0.05	-0.01 ± 0.12	-0.01 ± 0.11	0.03 ± 0.16	-0.24 ± 0.19
	b	6.42 ± 0.04	-0.05 ± 0.10	-0.06 ± 0.08	-0.07 ± 0.12	-0.05 ± 0.12
	ba	6.35 ± 0.02	-0.02 ± 0.03	-0.02 ± 0.03	0.00 ± 0.04	-0.05 ± 0.04

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Table 6 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.02 ± 0.03	-0.02 ± 0.03	0.00 ± 0.04	-0.05 ± 0.04
	badq	6.41 ± 0.02	-0.04 ± 0.03	-0.04 ± 0.03	-0.04 ± 0.04	-0.06 ± 0.03
C_6H_5Cl		0.38 ± 0.04	0.18 ± 0.08	0.17 ± 0.06	0.15 ± 0.09	0.19 ± 0.10
	b	0.55 ± 0.04	0.13 ± 0.06	0.12 ± 0.06	0.09 ± 0.08	0.15 ± 0.08
	ba	-0.04 ± 0.03	-0.03 ± 0.06	-0.02 ± 0.05	0.00 ± 0.07	-0.05 ± 0.08
	bad	-0.22 ± 0.04	0.00 ± 0.06	-0.01 ± 0.05	0.02 ± 0.07	-0.02 ± 0.07
	badq	-0.40 ± 0.04	-0.03 ± 0.05	-0.01 ± 0.05	0.01 ± 0.07	-0.04 ± 0.07
C_6H_{14}		-0.43 ± 0.03	0.00 ± 0.06	-0.02 ± 0.04	0.13 ± 0.07	-0.17 ± 0.08
	b	-0.56 ± 0.04	-0.06 ± 0.07	-0.06 ± 0.06	0.04 ± 0.09	-0.15 ± 0.08
	ba	-0.45 ± 0.08	-0.10 ± 0.09	-0.10 ± 0.08	-0.08 ± 0.09	-0.17 ± 0.11
	bad	-0.47 ± 0.03	-0.19 ± 0.06	-0.19 ± 0.04	-0.11 ± 0.06	-0.29 ± 0.07
	badq	-0.47 ± 0.03	-0.16 ± 0.06	-0.15 ± 0.04	-0.12 ± 0.06	-0.15 ± 0.06
CH_3OH		-2.16 ± 0.03	0.08 ± 0.07	0.07 ± 0.07	0.19 ± 0.11	-0.05 ± 0.11
	b	-2.13 ± 0.03	0.03 ± 0.07	0.03 ± 0.06	0.12 ± 0.10	-0.07 ± 0.10
	ba	-2.13 ± 0.03	-0.20 ± 0.08	-0.19 ± 0.07	-0.05 ± 0.14	-0.29 ± 0.13
	bad	-1.99 ± 0.04	0.13 ± 0.07	0.13 ± 0.06	0.21 ± 0.10	0.07 ± 0.09
	badq	-1.99 ± 0.04	-0.18 ± 0.08	-0.17 ± 0.07	-0.02 ± 0.12	-0.28 ± 0.09
C_2H_6		0.05 ± 0.02	0.00 ± 0.03	0.01 ± 0.03	0.01 ± 0.04	0.01 ± 0.03
	b	0.06 ± 0.04	-0.02 ± 0.05	-0.02 ± 0.05	-0.02 ± 0.06	-0.02 ± 0.06
	ba	0.09 ± 0.10	-0.07 ± 0.10	-0.06 ± 0.10	-0.08 ± 0.11	-0.04 ± 0.10
	bad	0.13 ± 0.12	-0.06 ± 0.12	-0.06 ± 0.12	-0.05 ± 0.12	-0.07 ± 0.12
	badq	0.07 ± 0.08	-0.05 ± 0.08	-0.05 ± 0.08	-0.06 ± 0.09	-0.03 ± 0.08
$(CH_2)_4O$		-1.97 ± 0.05	0.13 ± 0.10	0.09 ± 0.08	0.43 ± 0.12	-0.23 ± 0.12
	b	-2.04 ± 0.05	-0.15 ± 0.12	-0.16 ± 0.09	0.19 ± 0.17	-0.47 ± 0.14

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Table 6 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	0.04 ± 0.08	0.06 ± 0.07	0.08 ± 0.12	0.06 ± 0.11
	bad	-2.20 ± 0.03	0.12 ± 0.08	0.10 ± 0.07	0.30 ± 0.12	-0.05 ± 0.10
	badq	-2.16 ± 0.03	0.10 ± 0.08	0.10 ± 0.06	0.23 ± 0.10	0.00 ± 0.10
$C(NH_2)_3^+$		-0.97 ± 0.06	-0.18 ± 0.14	-0.10 ± 0.12	-0.01 ± 0.18	-0.20 ± 0.20
	b	-0.24 ± 0.06	-0.39 ± 0.12	-0.33 ± 0.11	-0.01 ± 0.18	-0.40 ± 0.18
	ba	-0.60 ± 0.05	-0.17 ± 0.10	-0.17 ± 0.11	0.10 ± 0.18	-0.25 ± 0.14
	bad	-0.36 ± 0.05	-0.06 ± 0.08	-0.10 ± 0.09	-0.09 ± 0.13	-0.10 ± 0.13
	badq	-0.02 ± 0.05	-0.36 ± 0.09	-0.38 ± 0.08	-0.32 ± 0.12	-0.40 ± 0.12
$C_6H_5NH_2$		-3.04 ± 0.04	0.10 ± 0.09	0.10 ± 0.08	0.35 ± 0.12	-0.18 ± 0.13
	b	-3.06 ± 0.04	-0.05 ± 0.08	-0.04 ± 0.07	0.22 ± 0.11	-0.35 ± 0.11
	ba	-3.09 ± 0.05	-0.03 ± 0.09	-0.02 ± 0.06	0.15 ± 0.11	-0.24 ± 0.10
	bad	-3.22 ± 0.04	0.06 ± 0.07	0.07 ± 0.07	0.16 ± 0.10	-0.10 ± 0.11
	badq	-3.26 ± 0.08	0.27 ± 0.15	0.27 ± 0.17	0.48 ± 0.25	-0.04 ± 0.28
CH_3CONH_2		-3.59 ± 0.05	0.15 ± 0.10	0.13 ± 0.08	0.41 ± 0.16	-0.16 ± 0.15
	b	-3.41 ± 0.04	0.11 ± 0.09	0.09 ± 0.08	0.36 ± 0.12	-0.21 ± 0.12
	ba	-3.52 ± 0.05	0.13 ± 0.09	0.14 ± 0.08	0.15 ± 0.11	0.10 ± 0.13
	bad	-3.50 ± 0.04	-0.03 ± 0.08	-0.02 ± 0.08	0.09 ± 0.12	-0.14 ± 0.13
	badq	-3.59 ± 0.04	0.01 ± 0.06	0.03 ± 0.06	0.10 ± 0.10	-0.02 ± 0.09
H_2O		-3.62 ± 0.03	0.09 ± 0.07	0.07 ± 0.07	0.13 ± 0.12	0.01 ± 0.12
	b	-3.72 ± 0.03	-0.02 ± 0.07	-0.01 ± 0.06	0.03 ± 0.09	-0.05 ± 0.09
	ba	-3.78 ± 0.03	0.08 ± 0.07	0.08 ± 0.08	0.12 ± 0.11	0.05 ± 0.11
	bad	-3.79 ± 0.03	0.08 ± 0.07	0.08 ± 0.08	0.12 ± 0.11	0.05 ± 0.11
	badq	-3.72 ± 0.03	-0.17 ± 0.07	-0.15 ± 0.07	-0.11 ± 0.11	-0.20 ± 0.11
C_2H_5OH		-2.71 ± 0.04	-0.20 ± 0.07	-0.19 ± 0.07	-0.18 ± 0.11	-0.20 ± 0.10

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Table 6 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	0.03 ± 0.07	0.03 ± 0.08	0.03 ± 0.13	0.04 ± 0.11
	ba	-2.72 ± 0.05	-0.05 ± 0.09	-0.03 ± 0.08	0.10 ± 0.17	-0.11 ± 0.12
	bad	-2.79 ± 0.05	-0.10 ± 0.08	-0.10 ± 0.08	0.05 ± 0.15	-0.21 ± 0.11
	badq	-2.83 ± 0.04	0.29 ± 0.08	0.26 ± 0.07	0.39 ± 0.10	0.14 ± 0.11
C_6H_6		-0.94 ± 0.02	0.05 ± 0.05	0.05 ± 0.04	0.18 ± 0.06	-0.09 ± 0.07
	b	-0.86 ± 0.02	0.01 ± 0.04	0.03 ± 0.03	0.09 ± 0.05	-0.03 ± 0.05
	ba	-0.70 ± 0.08	-0.01 ± 0.09	-0.01 ± 0.09	0.08 ± 0.10	-0.09 ± 0.10
	bad	-0.59 ± 0.16	-0.01 ± 0.17	0.00 ± 0.16	0.02 ± 0.17	-0.03 ± 0.17
	badq	-0.67 ± 0.02	-0.08 ± 0.04	-0.08 ± 0.03	-0.03 ± 0.05	-0.14 ± 0.05
C_6H_5OH		-2.17 ± 0.03	0.10 ± 0.07	0.08 ± 0.07	0.21 ± 0.11	-0.03 ± 0.09
	b	-2.13 ± 0.04	0.01 ± 0.07	0.00 ± 0.07	0.05 ± 0.12	-0.02 ± 0.10
	ba	-2.26 ± 0.03	0.16 ± 0.07	0.14 ± 0.06	0.18 ± 0.10	0.13 ± 0.08
	bad	-2.22 ± 0.03	-0.05 ± 0.07	-0.07 ± 0.06	-0.02 ± 0.08	-0.10 ± 0.08
	badq	-2.36 ± 0.06	-0.31 ± 0.13	-0.27 ± 0.13	-0.20 ± 0.22	-0.47 ± 0.21

Table 7: MM-to-QM net solvation free energy correction values from 2-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
CO_3^{2-}		-6.45 ± 0.12	0.12 ± 0.86	-1.66 ± 0.74	0.91 ± 0.47	-4.24 ± 0.59
	b	-6.47 ± 0.07	1.51 ± 0.36	0.05 ± 0.45	-2.01 ± 0.26	2.13 ± 0.40
	ba	-6.13 ± 0.06	1.71 ± 0.25	1.25 ± 0.43	-1.77 ± 0.26	4.16 ± 0.38
	bad	-6.09 ± 0.06	1.05 ± 0.27	0.54 ± 0.40	-1.70 ± 0.25	2.82 ± 0.35
	badq	-6.07 ± 0.06	0.27 ± 0.30	-0.47 ± 0.37	-1.49 ± 0.23	-0.24 ± 0.48
$CH_3NH_3^+$		1.79 ± 0.04	0.02 ± 0.22	-0.09 ± 0.27	-0.17 ± 0.33	-0.26 ± 0.41
	b	1.89 ± 0.03	-0.11 ± 0.14	-0.08 ± 0.17	0.43 ± 0.41	-0.01 ± 0.33
	ba	1.89 ± 0.03	-0.10 ± 0.10	-0.13 ± 0.10	0.18 ± 0.18	-0.24 ± 0.12
	bad	1.79 ± 0.04	0.07 ± 0.10	0.04 ± 0.09	0.37 ± 0.19	-0.20 ± 0.17
	badq	1.80 ± 0.03	0.20 ± 0.08	0.19 ± 0.09	0.31 ± 0.20	0.20 ± 0.11
NH_4^+		5.64 ± 0.04	0.50 ± 0.20	0.06 ± 0.25	-0.52 ± 0.34	-0.09 ± 0.36
	b	5.69 ± 0.02	-0.03 ± 0.03	-0.04 ± 0.05	-0.07 ± 0.05	-0.02 ± 0.08
	ba	5.68 ± 0.01	-0.05 ± 0.03	-0.05 ± 0.05	-0.05 ± 0.05	-0.04 ± 0.06
	bad	5.68 ± 0.01	-0.05 ± 0.03	-0.05 ± 0.05	-0.05 ± 0.05	-0.04 ± 0.06
	badq	5.70 ± 0.02	-0.05 ± 0.03	-0.05 ± 0.04	-0.07 ± 0.06	-0.04 ± 0.06
$CH_3CO_2^-$		-9.33 ± 0.08	-0.67 ± 0.54	0.38 ± 0.70	-0.30 ± 0.59	1.87 ± 0.59
	b	-9.52 ± 0.07	0.90 ± 0.37	-0.37 ± 0.54	-0.66 ± 0.53	0.16 ± 0.61
	ba	-9.29 ± 0.05	0.16 ± 0.22	0.21 ± 0.31	-0.41 ± 0.27	1.39 ± 0.29
	bad	-9.14 ± 0.05	-0.10 ± 0.23	-0.32 ± 0.40	-1.02 ± 0.43	0.06 ± 0.52
	badq	-9.27 ± 0.07	0.29 ± 0.26	0.37 ± 0.47	-2.51 ± 0.43	3.40 ± 0.40
H_3O^+		6.51 ± 0.05	0.30 ± 0.33	0.24 ± 0.56	-0.92 ± 0.76	1.84 ± 0.32
	b	6.42 ± 0.04	0.40 ± 0.24	0.48 ± 0.46	-0.22 ± 0.42	1.29 ± 0.35
	ba	6.35 ± 0.02	-0.05 ± 0.07	-0.06 ± 0.07	-0.09 ± 0.10	-0.10 ± 0.10

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Table 7 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.05 ± 0.07	-0.06 ± 0.07	-0.09 ± 0.10	-0.10 ± 0.10
	badq	6.41 ± 0.02	0.03 ± 0.07	0.03 ± 0.08	-0.10 ± 0.09	0.11 ± 0.09
C_6H_5Cl		0.38 ± 0.04	0.20 ± 0.21	0.32 ± 0.23	-0.15 ± 0.30	0.58 ± 0.31
	b	0.55 ± 0.04	0.19 ± 0.16	0.07 ± 0.18	0.45 ± 0.39	0.11 ± 0.26
	ba	-0.04 ± 0.03	-0.07 ± 0.13	-0.07 ± 0.13	0.42 ± 0.33	-0.30 ± 0.26
	bad	-0.22 ± 0.04	-0.09 ± 0.13	-0.09 ± 0.13	0.62 ± 0.33	-0.39 ± 0.27
	badq	-0.40 ± 0.04	0.13 ± 0.13	0.16 ± 0.14	0.44 ± 0.22	0.02 ± 0.29
C_6H_{14}		-0.43 ± 0.03	0.06 ± 0.15	0.00 ± 0.18	0.09 ± 0.24	-1.15 ± 0.53
	b	-0.56 ± 0.04	0.41 ± 0.15	0.32 ± 0.15	0.46 ± 0.17	-0.55 ± 0.34
	ba	-0.45 ± 0.08	0.13 ± 0.16	0.12 ± 0.18	0.23 ± 0.20	0.06 ± 0.20
	bad	-0.47 ± 0.03	0.03 ± 0.14	0.08 ± 0.15	0.33 ± 0.18	-0.17 ± 0.24
	badq	-0.47 ± 0.03	-0.11 ± 0.14	-0.11 ± 0.18	0.11 ± 0.29	-0.41 ± 0.24
CH_3OH		-2.16 ± 0.03	-0.06 ± 0.18	-0.20 ± 0.22	-0.02 ± 0.39	-0.75 ± 0.49
	b	-2.13 ± 0.03	-0.25 ± 0.16	-0.27 ± 0.20	-0.26 ± 0.28	-0.28 ± 0.33
	ba	-2.13 ± 0.03	-0.22 ± 0.16	-0.31 ± 0.21	-0.27 ± 0.28	0.01 ± 0.25
	bad	-1.99 ± 0.04	-0.01 ± 0.15	-0.02 ± 0.22	-0.35 ± 0.25	0.18 ± 0.34
	badq	-1.99 ± 0.04	-0.21 ± 0.17	-0.15 ± 0.19	-0.10 ± 0.22	-1.29 ± 0.44
C_2H_6		0.05 ± 0.02	-0.04 ± 0.10	0.00 ± 0.09	0.08 ± 0.13	0.02 ± 0.12
	b	0.06 ± 0.04	-0.15 ± 0.09	-0.17 ± 0.09	-0.25 ± 0.13	-0.20 ± 0.16
	ba	0.09 ± 0.10	-0.12 ± 0.12	-0.13 ± 0.12	-0.13 ± 0.14	-0.15 ± 0.14
	bad	0.13 ± 0.12	-0.14 ± 0.14	-0.14 ± 0.14	-0.11 ± 0.16	-0.17 ± 0.15
	badq	0.07 ± 0.08	-0.12 ± 0.11	-0.12 ± 0.11	-0.11 ± 0.13	-0.27 ± 0.19
$(CH_2)_4O$		-1.97 ± 0.05	-0.50 ± 0.26	-0.02 ± 0.46	1.14 ± 0.50	-0.52 ± 0.45
	b	-2.04 ± 0.05	-0.60 ± 0.31	-0.12 ± 0.52	0.41 ± 0.39	-0.87 ± 0.47

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Table 7 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	-0.26 ± 0.18	-0.08 ± 0.32	-0.03 ± 0.39	0.14 ± 0.34
	bad	-2.20 ± 0.03	-0.81 ± 0.20	-0.80 ± 0.32	0.04 ± 0.46	-1.51 ± 0.28
	badq	-2.16 ± 0.03	-0.11 ± 0.18	-0.01 ± 0.23	0.22 ± 0.31	-0.21 ± 0.28
$C(NH_2)_3^+$		-0.97 ± 0.06	-1.12 ± 0.79	-0.33 ± 0.62	-1.09 ± 0.54	0.54 ± 0.47
	b	-0.24 ± 0.06	-1.51 ± 0.50	-0.64 ± 0.49	-0.34 ± 0.59	-0.95 ± 0.50
	ba	-0.60 ± 0.05	-1.16 ± 0.43	-0.77 ± 0.33	-0.79 ± 0.21	-0.29 ± 0.53
	bad	-0.36 ± 0.05	-0.64 ± 0.28	-0.48 ± 0.24	-0.44 ± 0.16	0.37 ± 0.50
	badq	-0.02 ± 0.05	0.16 ± 0.24	0.03 ± 0.26	-0.43 ± 0.22	0.66 ± 0.28
$C_6H_5NH_2$		-3.04 ± 0.04	0.50 ± 0.22	0.70 ± 0.40	2.28 ± 0.54	0.09 ± 0.41
	b	-3.06 ± 0.04	0.26 ± 0.21	0.33 ± 0.35	1.16 ± 0.48	-0.14 ± 0.28
	ba	-3.09 ± 0.05	-0.02 ± 0.20	-0.19 ± 0.24	0.01 ± 0.37	-0.25 ± 0.34
	bad	-3.22 ± 0.04	0.10 ± 0.19	-0.06 ± 0.25	0.16 ± 0.38	-0.34 ± 0.29
	badq	-3.26 ± 0.08	-1.07 ± 0.35	-0.81 ± 0.50	-3.36 ± 0.35	1.84 ± 0.38
CH_3CONH_2		-3.59 ± 0.05	0.07 ± 0.25	0.00 ± 0.55	1.00 ± 0.53	0.21 ± 0.40
	b	-3.41 ± 0.04	-0.03 ± 0.24	0.29 ± 0.40	2.46 ± 0.36	0.61 ± 0.29
	ba	-3.52 ± 0.05	0.20 ± 0.24	0.49 ± 0.49	1.40 ± 0.57	-0.90 ± 0.58
	bad	-3.50 ± 0.04	-0.29 ± 0.24	-0.28 ± 0.47	1.38 ± 0.56	-1.05 ± 0.38
	badq	-3.59 ± 0.04	0.48 ± 0.18	0.76 ± 0.32	1.09 ± 0.22	1.26 ± 0.32
H_2O		-3.62 ± 0.03	-0.18 ± 0.17	-0.39 ± 0.30	-0.60 ± 0.24	-0.28 ± 0.36
	b	-3.72 ± 0.03	0.30 ± 0.14	0.14 ± 0.31	-0.64 ± 0.24	0.81 ± 0.36
	ba	-3.78 ± 0.03	0.37 ± 0.13	0.18 ± 0.29	-0.52 ± 0.32	0.71 ± 0.29
	bad	-3.79 ± 0.03	0.37 ± 0.13	0.18 ± 0.29	-0.52 ± 0.32	0.71 ± 0.29
	badq	-3.72 ± 0.03	0.00 ± 0.13	-0.08 ± 0.34	-0.54 ± 0.30	0.04 ± 0.45
C_2H_5OH		-2.71 ± 0.04	-0.12 ± 0.18	-0.11 ± 0.26	-0.28 ± 0.26	-1.64 ± 0.40

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Table 7 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	-0.35 ± 0.16	-0.25 ± 0.17	-0.69 ± 0.22	0.26 ± 0.26
	ba	-2.72 ± 0.05	0.07 ± 0.20	0.01 ± 0.28	-0.10 ± 0.15	-0.76 ± 0.51
	bad	-2.79 ± 0.05	0.10 ± 0.19	0.08 ± 0.27	-0.08 ± 0.15	-0.18 ± 0.45
	badq	-2.83 ± 0.04	0.33 ± 0.18	0.57 ± 0.23	0.46 ± 0.19	0.15 ± 0.41
C_6H_6		-0.94 ± 0.02	0.06 ± 0.11	0.03 ± 0.13	0.67 ± 0.30	-0.30 ± 0.13
	b	-0.86 ± 0.02	0.14 ± 0.09	0.13 ± 0.10	0.20 ± 0.12	0.07 ± 0.12
	ba	-0.70 ± 0.08	0.29 ± 0.14	0.22 ± 0.14	0.42 ± 0.16	-0.41 ± 0.38
	bad	-0.59 ± 0.16	0.23 ± 0.19	0.19 ± 0.18	0.30 ± 0.21	-0.20 ± 0.26
	badq	-0.67 ± 0.02	0.05 ± 0.08	0.05 ± 0.08	0.16 ± 0.12	0.04 ± 0.11
C_6H_5OH		-2.17 ± 0.03	0.17 ± 0.20	0.22 ± 0.30	0.34 ± 0.36	0.05 ± 0.34
	b	-2.13 ± 0.04	-0.43 ± 0.19	-0.37 ± 0.25	-0.11 ± 0.28	-0.69 ± 0.28
	ba	-2.26 ± 0.03	0.14 ± 0.18	0.11 ± 0.24	-0.32 ± 0.24	0.12 ± 0.32
	bad	-2.22 ± 0.03	0.02 ± 0.18	-0.10 ± 0.33	-0.36 ± 0.35	0.10 ± 0.28
	badq	-2.36 ± 0.06	-1.33 ± 0.36	0.05 ± 0.75	-1.15 ± 0.50	1.09 ± 0.56

Table 8: MM-to-QM net solvation free energy correction values from 3-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	-0.14 ± 0.72	-1.26 ± 0.82	0.78 ± 0.61	-3.75 ± 0.64
	b	-6.47 ± 0.07	0.10 ± 0.33	-0.02 ± 0.25	0.11 ± 0.28	0.06 ± 0.35
	ba	-6.13 ± 0.06	0.10 ± 0.28	0.37 ± 0.23	-0.57 ± 0.24	0.95 ± 0.34
	bad	-6.09 ± 0.06	0.92 ± 0.24	0.82 ± 0.23	0.30 ± 0.46	1.24 ± 0.40
	badq	-6.07 ± 0.06	-0.49 ± 0.30	-0.60 ± 0.22	0.72 ± 0.40	-0.88 ± 0.31
$CH_3NH_3^+$		1.79 ± 0.04	-0.32 ± 0.22	-0.29 ± 0.17	-0.16 ± 0.29	-0.46 ± 0.28
	b	1.89 ± 0.03	-0.03 ± 0.11	-0.04 ± 0.12	0.07 ± 0.19	-0.10 ± 0.22
	ba	1.89 ± 0.03	-0.00 ± 0.09	-0.02 ± 0.08	0.07 ± 0.11	-0.09 ± 0.10
	bad	1.79 ± 0.04	0.01 ± 0.08	0.02 ± 0.07	0.14 ± 0.10	-0.10 ± 0.10
	badq	1.80 ± 0.03	0.10 ± 0.09	0.12 ± 0.07	0.14 ± 0.10	0.09 ± 0.12
NH_4^+		5.64 ± 0.04	0.17 ± 0.17	0.15 ± 0.15	0.02 ± 0.26	-0.03 ± 0.29
	b	5.69 ± 0.02	-0.04 ± 0.04	-0.04 ± 0.04	-0.05 ± 0.04	-0.03 ± 0.05
	ba	5.68 ± 0.01	-0.04 ± 0.02	-0.05 ± 0.02	-0.05 ± 0.03	-0.04 ± 0.04
	bad	5.68 ± 0.01	-0.04 ± 0.02	-0.05 ± 0.02	-0.05 ± 0.03	-0.04 ± 0.04
	badq	5.70 ± 0.02	-0.06 ± 0.03	-0.07 ± 0.03	-0.08 ± 0.04	-0.06 ± 0.03
$CH_3CO_2^-$		-9.33 ± 0.08	0.72 ± 0.41	0.35 ± 0.38	0.85 ± 0.57	1.07 ± 0.42
	b	-9.52 ± 0.07	-0.20 ± 0.30	-0.27 ± 0.29	-0.58 ± 0.42	-0.30 ± 0.47
	ba	-9.29 ± 0.05	-0.38 ± 0.25	-0.30 ± 0.21	-0.38 ± 0.31	-0.10 ± 0.33
	bad	-9.14 ± 0.05	0.03 ± 0.23	-0.07 ± 0.21	-0.29 ± 0.32	0.09 ± 0.33
	badq	-9.27 ± 0.07	-0.15 ± 0.22	-0.09 ± 0.27	-1.20 ± 0.36	1.11 ± 0.32
H_3O^+		6.51 ± 0.05	0.17 ± 0.32	-0.02 ± 0.35	0.76 ± 0.70	0.48 ± 0.49
	b	6.42 ± 0.04	0.09 ± 0.22	0.16 ± 0.27	0.15 ± 0.37	0.17 ± 0.42
	ba	6.35 ± 0.02	-0.11 ± 0.07	-0.09 ± 0.06	-0.08 ± 0.07	-0.14 ± 0.08

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Table 8 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.11 ± 0.07	-0.09 ± 0.06	-0.08 ± 0.07	-0.14 ± 0.08
	badq	6.41 ± 0.02	0.00 ± 0.07	0.01 ± 0.06	-0.02 ± 0.08	0.02 ± 0.08
C_6H_5Cl		0.38 ± 0.04	0.13 ± 0.20	0.21 ± 0.16	0.06 ± 0.21	0.01 ± 0.26
	b	0.55 ± 0.04	-0.06 ± 0.16	-0.01 ± 0.12	0.06 ± 0.18	-0.22 ± 0.19
	ba	-0.04 ± 0.03	0.00 ± 0.13	-0.03 ± 0.10	0.35 ± 0.17	-0.19 ± 0.13
	bad	-0.22 ± 0.04	-0.15 ± 0.11	-0.16 ± 0.10	0.09 ± 0.22	-0.20 ± 0.15
	badq	-0.40 ± 0.04	0.17 ± 0.12	0.17 ± 0.09	0.23 ± 0.15	0.13 ± 0.15
C_6H_{14}		-0.43 ± 0.03	0.03 ± 0.18	0.06 ± 0.13	0.40 ± 0.18	-0.63 ± 0.30
	b	-0.56 ± 0.04	0.21 ± 0.15	0.24 ± 0.10	0.49 ± 0.18	-0.21 ± 0.21
	ba	-0.45 ± 0.08	-0.18 ± 0.13	-0.14 ± 0.12	-0.05 ± 0.16	-0.16 ± 0.15
	bad	-0.47 ± 0.03	-0.12 ± 0.11	-0.08 ± 0.10	0.12 ± 0.19	-0.17 ± 0.14
	badq	-0.47 ± 0.03	-0.14 ± 0.13	-0.13 ± 0.11	-0.02 ± 0.17	-0.32 ± 0.17
CH_3OH		-2.16 ± 0.03	-0.12 ± 0.16	-0.14 ± 0.14	-0.03 ± 0.26	-0.29 ± 0.25
	b	-2.13 ± 0.03	-0.11 ± 0.16	-0.16 ± 0.13	0.12 ± 0.18	-0.27 ± 0.18
	ba	-2.13 ± 0.03	-0.06 ± 0.15	-0.11 ± 0.13	-0.09 ± 0.17	-0.14 ± 0.19
	bad	-1.99 ± 0.04	0.10 ± 0.16	0.10 ± 0.13	-0.04 ± 0.15	0.02 ± 0.22
	badq	-1.99 ± 0.04	-0.16 ± 0.20	-0.17 ± 0.15	0.27 ± 0.27	-0.81 ± 0.28
C_2H_6		0.05 ± 0.02	-0.05 ± 0.07	-0.04 ± 0.08	0.01 ± 0.11	-0.05 ± 0.10
	b	0.06 ± 0.04	-0.18 ± 0.08	-0.18 ± 0.07	-0.21 ± 0.09	-0.19 ± 0.10
	ba	0.09 ± 0.10	-0.04 ± 0.12	-0.05 ± 0.12	-0.02 ± 0.12	-0.08 ± 0.12
	bad	0.13 ± 0.12	-0.10 ± 0.13	-0.10 ± 0.13	-0.09 ± 0.14	-0.12 ± 0.14
	badq	0.07 ± 0.08	0.01 ± 0.10	-0.02 ± 0.09	0.00 ± 0.11	-0.05 ± 0.11
$(CH_2)_4O$		-1.97 ± 0.05	0.05 ± 0.21	-0.03 ± 0.20	0.79 ± 0.31	-0.65 ± 0.39
	b	-2.04 ± 0.05	-0.50 ± 0.30	-0.49 ± 0.26	0.41 ± 0.38	-1.11 ± 0.34

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Table 8 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	-0.16 ± 0.18	-0.14 ± 0.20	0.04 ± 0.39	-0.30 ± 0.24
	bad	-2.20 ± 0.03	-0.16 ± 0.17	-0.28 ± 0.16	0.16 ± 0.29	-0.68 ± 0.22
	badq	-2.16 ± 0.03	-0.17 ± 0.18	-0.17 ± 0.18	0.25 ± 0.26	-0.35 ± 0.22
$C(NH_2)_3^+$		-0.97 ± 0.06	-0.13 ± 0.36	0.01 ± 0.34	-0.17 ± 0.34	0.33 ± 0.43
	b	-0.24 ± 0.06	-0.47 ± 0.28	-0.32 ± 0.28	0.27 ± 0.43	-0.63 ± 0.34
	ba	-0.60 ± 0.05	-0.96 ± 0.26	-0.80 ± 0.23	-1.34 ± 0.43	-0.81 ± 0.32
	bad	-0.36 ± 0.05	-0.49 ± 0.20	-0.46 ± 0.16	-0.24 ± 0.16	-0.44 ± 0.33
	badq	-0.02 ± 0.05	-0.16 ± 0.20	-0.15 ± 0.17	-0.14 ± 0.18	-0.06 ± 0.24
$C_6H_5NH_2$		-3.04 ± 0.04	0.16 ± 0.22	0.23 ± 0.20	1.22 ± 0.46	-0.30 ± 0.30
	b	-3.06 ± 0.04	0.15 ± 0.17	0.21 ± 0.16	0.49 ± 0.27	-0.08 ± 0.24
	ba	-3.09 ± 0.05	0.17 ± 0.19	0.07 ± 0.14	0.39 ± 0.20	-0.18 ± 0.21
	bad	-3.22 ± 0.04	0.56 ± 0.17	0.44 ± 0.16	0.59 ± 0.25	0.21 ± 0.23
	badq	-3.26 ± 0.08	-1.18 ± 0.26	-1.03 ± 0.28	-2.06 ± 0.35	-0.04 ± 0.35
CH_3CONH_2		-3.59 ± 0.05	0.04 ± 0.24	0.11 ± 0.25	0.71 ± 0.40	-0.47 ± 0.41
	b	-3.41 ± 0.04	-0.20 ± 0.23	-0.08 ± 0.21	0.80 ± 0.27	-0.46 ± 0.30
	ba	-3.52 ± 0.05	0.33 ± 0.22	0.40 ± 0.24	0.85 ± 0.48	-0.42 ± 0.53
	bad	-3.50 ± 0.04	-0.20 ± 0.21	-0.14 ± 0.20	0.54 ± 0.46	-1.09 ± 0.43
	badq	-3.59 ± 0.04	0.24 ± 0.18	0.33 ± 0.19	0.59 ± 0.21	0.08 ± 0.48
H_2O		-3.62 ± 0.03	-0.21 ± 0.16	-0.22 ± 0.15	-0.28 ± 0.16	-0.45 ± 0.29
	b	-3.72 ± 0.03	0.11 ± 0.13	0.13 ± 0.15	-0.26 ± 0.16	0.39 ± 0.25
	ba	-3.78 ± 0.03	0.39 ± 0.13	0.38 ± 0.12	0.02 ± 0.16	0.58 ± 0.19
	bad	-3.79 ± 0.03	0.39 ± 0.13	0.38 ± 0.12	0.02 ± 0.16	0.58 ± 0.19
	badq	-3.72 ± 0.03	0.10 ± 0.15	0.06 ± 0.18	0.14 ± 0.19	0.04 ± 0.35
C_2H_5OH		-2.71 ± 0.04	-0.15 ± 0.17	-0.12 ± 0.16	-0.15 ± 0.18	-0.59 ± 0.24

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Table 8 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	-0.01 ± 0.17	-0.09 ± 0.14	0.21 ± 0.40	-0.07 ± 0.19
	ba	-2.72 ± 0.05	0.40 ± 0.20	0.38 ± 0.16	0.45 ± 0.19	-0.22 ± 0.38
	bad	-2.79 ± 0.05	-0.16 ± 0.15	-0.12 ± 0.16	-0.15 ± 0.15	-0.30 ± 0.33
	badq	-2.83 ± 0.04	-0.22 ± 0.16	-0.12 ± 0.16	0.12 ± 0.25	-0.07 ± 0.23
C_6H_6		-0.94 ± 0.02	0.07 ± 0.11	0.06 ± 0.08	0.35 ± 0.14	-0.23 ± 0.10
	b	-0.86 ± 0.02	-0.11 ± 0.09	-0.05 ± 0.08	0.02 ± 0.09	-0.18 ± 0.12
	ba	-0.70 ± 0.08	0.15 ± 0.12	0.16 ± 0.11	0.27 ± 0.13	-0.08 ± 0.19
	bad	-0.59 ± 0.16	-0.50 ± 0.18	-0.35 ± 0.17	-0.28 ± 0.19	-0.54 ± 0.20
	badq	-0.67 ± 0.02	-0.31 ± 0.10	-0.24 ± 0.07	-0.14 ± 0.11	-0.32 ± 0.16
C_6H_5OH		-2.17 ± 0.03	0.34 ± 0.16	0.34 ± 0.20	0.45 ± 0.28	0.13 ± 0.26
	b	-2.13 ± 0.04	-0.27 ± 0.18	-0.28 ± 0.18	0.02 ± 0.35	-0.74 ± 0.33
	ba	-2.26 ± 0.03	-0.06 ± 0.17	-0.03 ± 0.18	0.02 ± 0.27	-0.12 ± 0.23
	bad	-2.22 ± 0.03	-0.32 ± 0.15	-0.30 ± 0.18	-0.18 ± 0.27	-0.29 ± 0.22
	badq	-2.36 ± 0.06	-0.30 ± 0.28	-0.32 ± 0.41	-0.14 ± 0.43	0.58 ± 0.47

Table 9: MM-to-QM net solvation free energy correction values from 6-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	-0.74 ± 0.46	-0.80 ± 0.42	-0.14 ± 0.56	-1.87 ± 0.61
	b	-6.47 ± 0.07	-0.09 ± 0.19	-0.10 ± 0.17	0.21 ± 0.42	-0.18 ± 0.27
	ba	-6.13 ± 0.06	0.22 ± 0.17	0.25 ± 0.15	0.04 ± 0.22	0.39 ± 0.22
	bad	-6.09 ± 0.06	0.27 ± 0.17	0.29 ± 0.13	0.30 ± 0.22	0.35 ± 0.21
	badq	-6.07 ± 0.06	-0.33 ± 0.17	-0.31 ± 0.15	-0.20 ± 0.21	-0.54 ± 0.21
$CH_3NH_3^+$		1.79 ± 0.04	-0.19 ± 0.15	-0.20 ± 0.12	0.10 ± 0.17	-0.26 ± 0.17
	b	1.89 ± 0.03	-0.05 ± 0.08	-0.05 ± 0.07	-0.03 ± 0.09	-0.06 ± 0.11
	ba	1.89 ± 0.03	0.00 ± 0.07	-0.01 ± 0.06	0.02 ± 0.07	-0.06 ± 0.07
	bad	1.79 ± 0.04	-0.05 ± 0.06	-0.06 ± 0.05	-0.00 ± 0.07	-0.12 ± 0.07
	badq	1.80 ± 0.03	-0.04 ± 0.05	-0.03 ± 0.04	-0.01 ± 0.06	-0.04 ± 0.06
NH_4^+		5.64 ± 0.04	0.19 ± 0.12	0.16 ± 0.09	0.29 ± 0.16	0.10 ± 0.12
	b	5.69 ± 0.02	-0.03 ± 0.03	-0.03 ± 0.03	-0.03 ± 0.03	-0.03 ± 0.03
	ba	5.68 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.02	-0.02 ± 0.02
	bad	5.68 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.02	-0.02 ± 0.02
	badq	5.70 ± 0.02	-0.04 ± 0.03	-0.04 ± 0.03	-0.04 ± 0.03	-0.03 ± 0.03
$CH_3CO_2^-$		-9.33 ± 0.08	0.32 ± 0.27	0.16 ± 0.22	0.78 ± 0.49	0.14 ± 0.30
	b	-9.52 ± 0.07	0.51 ± 0.17	0.47 ± 0.15	0.50 ± 0.21	0.37 ± 0.23
	ba	-9.29 ± 0.05	-0.14 ± 0.16	-0.16 ± 0.12	0.11 ± 0.20	-0.24 ± 0.18
	bad	-9.14 ± 0.05	-0.04 ± 0.14	-0.08 ± 0.12	-0.17 ± 0.16	-0.03 ± 0.17
	badq	-9.27 ± 0.07	-0.31 ± 0.18	-0.33 ± 0.16	-0.38 ± 0.29	-0.17 ± 0.21
H_3O^+		6.51 ± 0.05	0.15 ± 0.19	0.10 ± 0.16	0.31 ± 0.30	0.09 ± 0.22
	b	6.42 ± 0.04	-0.13 ± 0.15	-0.11 ± 0.12	-0.12 ± 0.18	-0.09 ± 0.17
	ba	6.35 ± 0.02	0.07 ± 0.04	0.07 ± 0.04	0.08 ± 0.06	0.06 ± 0.06

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Table 9 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	0.07 ± 0.04	0.07 ± 0.04	0.08 ± 0.06	0.06 ± 0.06
	badq	6.41 ± 0.02	-0.08 ± 0.04	-0.07 ± 0.04	-0.08 ± 0.05	-0.06 ± 0.06
C_6H_5Cl		0.38 ± 0.04	0.41 ± 0.11	0.42 ± 0.09	0.40 ± 0.13	0.40 ± 0.14
	b	0.55 ± 0.04	0.15 ± 0.09	0.14 ± 0.07	0.16 ± 0.11	0.12 ± 0.11
	ba	-0.04 ± 0.03	-0.05 ± 0.08	-0.05 ± 0.07	0.03 ± 0.10	-0.12 ± 0.10
	bad	-0.22 ± 0.04	0.05 ± 0.08	0.05 ± 0.07	0.14 ± 0.09	-0.03 ± 0.10
	badq	-0.40 ± 0.04	0.24 ± 0.08	0.23 ± 0.07	0.29 ± 0.09	0.17 ± 0.10
C_6H_{14}		-0.43 ± 0.03	-0.13 ± 0.10	-0.13 ± 0.08	0.02 ± 0.11	-0.32 ± 0.13
	b	-0.56 ± 0.04	-0.01 ± 0.10	0.02 ± 0.08	0.13 ± 0.10	-0.18 ± 0.13
	ba	-0.45 ± 0.08	-0.22 ± 0.11	-0.19 ± 0.09	-0.15 ± 0.11	-0.24 ± 0.11
	bad	-0.47 ± 0.03	-0.11 ± 0.09	-0.11 ± 0.07	0.00 ± 0.09	-0.22 ± 0.10
	badq	-0.47 ± 0.03	-0.25 ± 0.10	-0.25 ± 0.07	-0.11 ± 0.11	-0.38 ± 0.11
CH_3OH		-2.16 ± 0.03	0.21 ± 0.10	0.20 ± 0.10	0.24 ± 0.15	0.10 ± 0.14
	b	-2.13 ± 0.03	0.30 ± 0.10	0.27 ± 0.07	0.33 ± 0.10	0.18 ± 0.12
	ba	-2.13 ± 0.03	-0.08 ± 0.11	-0.07 ± 0.10	0.07 ± 0.17	-0.20 ± 0.17
	bad	-1.99 ± 0.04	-0.14 ± 0.10	-0.16 ± 0.08	-0.12 ± 0.11	-0.23 ± 0.12
	badq	-1.99 ± 0.04	-0.40 ± 0.10	-0.41 ± 0.08	-0.35 ± 0.12	-0.45 ± 0.12
C_2H_6		0.05 ± 0.02	-0.10 ± 0.05	-0.10 ± 0.04	-0.08 ± 0.06	-0.11 ± 0.06
	b	0.06 ± 0.04	-0.06 ± 0.06	-0.07 ± 0.05	-0.07 ± 0.07	-0.07 ± 0.07
	ba	0.09 ± 0.10	-0.06 ± 0.11	-0.07 ± 0.10	-0.07 ± 0.11	-0.05 ± 0.11
	bad	0.13 ± 0.12	-0.06 ± 0.13	-0.07 ± 0.12	-0.07 ± 0.13	-0.07 ± 0.13
	badq	0.07 ± 0.08	-0.01 ± 0.09	-0.02 ± 0.09	-0.01 ± 0.09	-0.02 ± 0.09
$(CH_2)_4O$		-1.97 ± 0.05	-0.21 ± 0.15	-0.25 ± 0.12	0.07 ± 0.19	-0.50 ± 0.17
	b	-2.04 ± 0.05	-0.30 ± 0.17	-0.34 ± 0.15	0.04 ± 0.22	-0.61 ± 0.21

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Table 9 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	0.04 ± 0.12	0.02 ± 0.11	0.09 ± 0.16	0.00 ± 0.17
	bad	-2.20 ± 0.03	-0.20 ± 0.12	-0.24 ± 0.12	-0.08 ± 0.18	-0.41 ± 0.17
	badq	-2.16 ± 0.03	-0.16 ± 0.11	-0.16 ± 0.10	-0.02 ± 0.14	-0.26 ± 0.13
$C(NH_2)_3^+$		-0.97 ± 0.06	0.06 ± 0.23	0.08 ± 0.21	0.42 ± 0.26	-0.19 ± 0.32
	b	-0.24 ± 0.06	-0.03 ± 0.16	-0.01 ± 0.16	0.15 ± 0.21	-0.21 ± 0.23
	ba	-0.60 ± 0.05	-0.30 ± 0.15	-0.32 ± 0.16	-0.14 ± 0.26	-0.44 ± 0.21
	bad	-0.36 ± 0.05	-0.30 ± 0.13	-0.32 ± 0.11	-0.03 ± 0.18	-0.46 ± 0.16
	badq	-0.02 ± 0.05	0.01 ± 0.14	0.03 ± 0.11	0.09 ± 0.16	-0.02 ± 0.15
$C_6H_5NH_2$		-3.04 ± 0.04	0.16 ± 0.15	0.18 ± 0.13	0.58 ± 0.18	-0.16 ± 0.19
	b	-3.06 ± 0.04	-0.02 ± 0.13	-0.03 ± 0.12	0.19 ± 0.19	-0.19 ± 0.17
	ba	-3.09 ± 0.05	-0.03 ± 0.12	-0.04 ± 0.10	0.20 ± 0.17	-0.20 ± 0.14
	bad	-3.22 ± 0.04	0.13 ± 0.11	0.11 ± 0.09	0.18 ± 0.13	-0.00 ± 0.16
	badq	-3.26 ± 0.08	0.07 ± 0.21	0.13 ± 0.16	0.15 ± 0.23	-0.11 ± 0.29
CH_3CONH_2		-3.59 ± 0.05	0.14 ± 0.15	0.17 ± 0.16	0.40 ± 0.22	-0.08 ± 0.26
	b	-3.41 ± 0.04	0.40 ± 0.15	0.38 ± 0.12	0.66 ± 0.17	0.18 ± 0.17
	ba	-3.52 ± 0.05	0.08 ± 0.14	0.10 ± 0.14	0.24 ± 0.22	-0.06 ± 0.24
	bad	-3.50 ± 0.04	0.26 ± 0.12	0.23 ± 0.13	0.41 ± 0.23	0.06 ± 0.23
	badq	-3.59 ± 0.04	0.08 ± 0.11	0.10 ± 0.10	0.20 ± 0.14	0.01 ± 0.15
H_2O		-3.62 ± 0.03	0.10 ± 0.11	0.10 ± 0.11	0.18 ± 0.14	-0.04 ± 0.21
	b	-3.72 ± 0.03	-0.08 ± 0.10	-0.06 ± 0.11	-0.07 ± 0.17	-0.02 ± 0.17
	ba	-3.78 ± 0.03	0.00 ± 0.10	0.02 ± 0.08	-0.02 ± 0.12	0.04 ± 0.14
	bad	-3.79 ± 0.03	0.00 ± 0.10	0.02 ± 0.08	-0.02 ± 0.12	0.04 ± 0.14
	badq	-3.72 ± 0.03	0.07 ± 0.10	0.08 ± 0.10	0.16 ± 0.17	-0.01 ± 0.16
C_2H_5OH		-2.71 ± 0.04	0.13 ± 0.12	0.12 ± 0.09	0.23 ± 0.14	-0.06 ± 0.17

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Table 9 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-2.60 ± 0.04	-0.27 ± 0.11	-0.28 ± 0.09	-0.18 ± 0.15	-0.34 ± 0.15
	ba	-2.72 ± 0.05	-0.09 ± 0.12	-0.09 ± 0.11	0.04 ± 0.15	-0.19 ± 0.16
	bad	-2.79 ± 0.05	-0.13 ± 0.12	-0.15 ± 0.11	-0.02 ± 0.19	-0.18 ± 0.17
	badq	-2.83 ± 0.04	0.14 ± 0.11	0.16 ± 0.11	0.24 ± 0.15	0.07 ± 0.19
C_6H_6		-0.94 ± 0.02	0.20 ± 0.06	0.20 ± 0.05	0.29 ± 0.08	0.09 ± 0.07
	b	-0.86 ± 0.02	-0.01 ± 0.07	0.00 ± 0.05	0.08 ± 0.09	-0.06 ± 0.08
	ba	-0.70 ± 0.08	-0.01 ± 0.10	0.00 ± 0.09	0.04 ± 0.11	-0.08 ± 0.11
	bad	-0.59 ± 0.16	-0.02 ± 0.17	-0.01 ± 0.17	0.02 ± 0.18	-0.04 ± 0.18
	badq	-0.67 ± 0.02	0.04 ± 0.05	0.03 ± 0.04	0.06 ± 0.05	0.01 ± 0.06
C_6H_5OH		-2.17 ± 0.03	0.04 ± 0.11	0.06 ± 0.10	0.12 ± 0.14	-0.06 ± 0.15
	b	-2.13 ± 0.04	-0.10 ± 0.09	-0.12 ± 0.08	-0.05 ± 0.12	-0.20 ± 0.11
	ba	-2.26 ± 0.03	0.02 ± 0.09	0.02 ± 0.08	0.01 ± 0.12	0.01 ± 0.12
	bad	-2.22 ± 0.03	-0.19 ± 0.09	-0.18 ± 0.08	-0.23 ± 0.12	-0.16 ± 0.13
	badq	-2.36 ± 0.06	-0.02 ± 0.18	-0.01 ± 0.15	-0.23 ± 0.20	0.13 ± 0.27

Table 10: MM-to-QM net solvation free energy correction values from 2-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
CO_3^{2-}		-6.45 ± 0.12	2.99 ± 1.93	1.14 ± 0.97	-1.60 ± 0.71	3.87 ± 0.65
	b	-6.47 ± 0.07	1.46 ± 0.70	-0.25 ± 0.61	-3.54 ± 0.42	3.24 ± 0.49
	ba	-6.13 ± 0.06	0.31 ± 0.62	-1.53 ± 0.57	-3.17 ± 0.39	0.02 ± 0.45
	bad	-6.09 ± 0.06	1.54 ± 0.66	0.60 ± 0.48	-3.12 ± 0.39	4.41 ± 0.33
	badq	-6.07 ± 0.06	1.33 ± 0.46	-0.32 ± 0.66	-2.52 ± 0.36	1.89 ± 0.57
$CH_3NH_3^+$		1.79 ± 0.04	0.26 ± 0.48	-0.02 ± 0.48	0.19 ± 0.59	0.42 ± 0.45
	b	1.89 ± 0.03	-0.19 ± 0.24	-0.32 ± 0.26	0.17 ± 0.33	-0.85 ± 0.29
	ba	1.89 ± 0.03	-0.10 ± 0.20	-0.12 ± 0.21	-0.05 ± 0.26	-0.50 ± 0.28
	bad	1.79 ± 0.04	-0.01 ± 0.16	0.01 ± 0.16	-0.13 ± 0.21	0.29 ± 0.17
	badq	1.80 ± 0.03	-0.02 ± 0.18	-0.05 ± 0.18	-0.12 ± 0.26	0.06 ± 0.22
NH_4^+		5.64 ± 0.04	0.43 ± 0.25	0.14 ± 0.36	-1.42 ± 0.18	1.60 ± 0.37
	b	5.69 ± 0.02	-0.01 ± 0.09	-0.02 ± 0.08	0.01 ± 0.11	-0.06 ± 0.09
	ba	5.68 ± 0.01	-0.03 ± 0.08	-0.03 ± 0.07	-0.06 ± 0.11	0.01 ± 0.10
	bad	5.68 ± 0.01	-0.03 ± 0.08	-0.03 ± 0.07	-0.06 ± 0.11	0.01 ± 0.10
	badq	5.70 ± 0.02	0.03 ± 0.07	0.02 ± 0.07	0.02 ± 0.10	0.04 ± 0.08
$CH_3CO_2^-$		-9.33 ± 0.08	-1.43 ± 0.99	-0.55 ± 0.82	-6.22 ± 0.53	5.83 ± 0.75
	b	-9.52 ± 0.07	0.38 ± 0.72	0.11 ± 0.71	-0.10 ± 0.50	0.42 ± 0.57
	ba	-9.29 ± 0.05	-0.60 ± 0.46	-0.83 ± 0.60	-1.84 ± 0.57	-0.22 ± 0.47
	bad	-9.14 ± 0.05	-0.11 ± 0.56	-0.31 ± 0.53	-2.07 ± 0.51	2.01 ± 0.40
	badq	-9.27 ± 0.07	-0.31 ± 0.64	-1.84 ± 0.77	-3.16 ± 0.54	-0.38 ± 0.62
H_3O^+		6.51 ± 0.05	0.91 ± 0.78	-0.35 ± 0.62	-0.86 ± 0.42	-0.84 ± 0.64
	b	6.42 ± 0.04	0.33 ± 0.55	0.38 ± 0.54	0.21 ± 0.62	0.42 ± 0.55
	ba	6.35 ± 0.02	-0.09 ± 0.16	-0.11 ± 0.15	0.11 ± 0.19	-0.18 ± 0.20

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Table 10 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.09 ± 0.16	-0.11 ± 0.15	0.11 ± 0.19	-0.18 ± 0.20
	badq	6.41 ± 0.02	-0.38 ± 0.17	-0.38 ± 0.15	0.00 ± 0.24	-0.80 ± 0.22
C_6H_5Cl		0.38 ± 0.04	0.05 ± 0.42	0.73 ± 0.44	0.27 ± 0.54	2.04 ± 0.54
	b	0.55 ± 0.04	0.16 ± 0.35	0.18 ± 0.34	-0.12 ± 0.42	-0.01 ± 0.50
	ba	-0.04 ± 0.03	-0.03 ± 0.28	-0.02 ± 0.28	0.17 ± 0.26	0.03 ± 0.36
	bad	-0.22 ± 0.04	0.15 ± 0.28	0.15 ± 0.34	-0.20 ± 0.37	0.22 ± 0.42
	badq	-0.40 ± 0.04	-0.12 ± 0.33	-0.07 ± 0.32	-0.37 ± 0.28	0.32 ± 0.28
C_6H_{14}		-0.43 ± 0.03	0.04 ± 0.27	-0.32 ± 0.40	-0.73 ± 0.28	-0.64 ± 0.43
	b	-0.56 ± 0.04	-0.19 ± 0.26	-0.40 ± 0.29	-0.17 ± 0.37	-0.77 ± 0.38
	ba	-0.45 ± 0.08	0.03 ± 0.32	-0.17 ± 0.33	-0.87 ± 0.37	0.78 ± 0.34
	bad	-0.47 ± 0.03	-0.46 ± 0.25	-0.54 ± 0.29	-0.79 ± 0.36	-0.66 ± 0.42
	badq	-0.47 ± 0.03	-0.33 ± 0.26	-0.44 ± 0.35	-1.00 ± 0.42	0.05 ± 0.30
CH_3OH		-2.16 ± 0.03	0.27 ± 0.29	0.30 ± 0.54	-0.62 ± 0.51	1.59 ± 0.33
	b	-2.13 ± 0.03	-0.21 ± 0.24	-0.03 ± 0.30	-1.05 ± 0.19	1.26 ± 0.27
	ba	-2.13 ± 0.03	-0.07 ± 0.27	-0.34 ± 0.52	-1.10 ± 0.44	0.42 ± 0.39
	bad	-1.99 ± 0.04	-0.41 ± 0.24	-0.26 ± 0.41	-1.10 ± 0.42	0.80 ± 0.24
	badq	-1.99 ± 0.04	-0.46 ± 0.31	-0.71 ± 0.40	-1.06 ± 0.23	-1.11 ± 0.51
C_2H_6		0.05 ± 0.02	0.01 ± 0.16	-0.01 ± 0.15	0.02 ± 0.18	-0.49 ± 0.32
	b	0.06 ± 0.04	0.08 ± 0.17	0.01 ± 0.20	-0.19 ± 0.13	-0.08 ± 0.29
	ba	0.09 ± 0.10	-0.03 ± 0.14	-0.05 ± 0.15	-0.27 ± 0.12	0.01 ± 0.21
	bad	0.13 ± 0.12	-0.05 ± 0.16	-0.07 ± 0.16	-0.26 ± 0.14	-0.13 ± 0.26
	badq	0.07 ± 0.08	0.01 ± 0.16	-0.06 ± 0.12	-0.25 ± 0.11	-0.02 ± 0.14
$(CH_2)_4O$		-1.97 ± 0.05	-0.18 ± 0.65	0.17 ± 0.80	1.23 ± 0.60	-0.57 ± 0.60
	b	-2.04 ± 0.05	-1.34 ± 0.69	-0.82 ± 0.80	1.07 ± 0.60	-1.77 ± 0.61

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Table 10 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	-0.44 ± 0.32	0.10 ± 0.56	-0.27 ± 0.55	1.00 ± 0.40
	bad	-2.20 ± 0.03	-0.95 ± 0.38	-0.79 ± 0.52	-0.44 ± 0.53	-0.46 ± 0.48
	badq	-2.16 ± 0.03	0.44 ± 0.37	-0.08 ± 0.33	-0.68 ± 0.21	0.45 ± 0.33
$C(NH_2)_3^+$		-0.97 ± 0.06	0.80 ± 0.83	-0.60 ± 0.80	-2.63 ± 0.35	3.86 ± 0.79
	b	-0.24 ± 0.06	-3.88 ± 1.25	-1.63 ± 0.72	0.21 ± 0.40	-5.80 ± 0.71
	ba	-0.60 ± 0.05	0.56 ± 0.66	-0.02 ± 0.46	-0.16 ± 0.40	0.17 ± 0.43
	bad	-0.36 ± 0.05	0.14 ± 0.46	-0.12 ± 0.43	-0.55 ± 0.45	0.06 ± 0.50
	badq	-0.02 ± 0.05	-0.28 ± 0.46	-0.14 ± 0.48	-0.37 ± 0.43	-0.20 ± 0.54
$C_6H_5NH_2$		-3.04 ± 0.04	-0.23 ± 0.42	0.17 ± 0.75	-0.52 ± 0.57	0.98 ± 0.54
	b	-3.06 ± 0.04	-0.20 ± 0.43	0.06 ± 0.65	0.30 ± 0.58	0.14 ± 0.35
	ba	-3.09 ± 0.05	-1.11 ± 0.35	-0.62 ± 0.47	-1.52 ± 0.49	0.66 ± 0.22
	bad	-3.22 ± 0.04	-0.56 ± 0.42	-0.37 ± 0.56	-1.42 ± 0.47	0.92 ± 0.42
	badq	-3.26 ± 0.08	-0.73 ± 0.85	0.37 ± 0.58	-1.21 ± 0.41	2.32 ± 0.51
CH_3CONH_2		-3.59 ± 0.05	0.86 ± 0.37	0.64 ± 0.65	-0.83 ± 0.37	2.04 ± 0.56
	b	-3.41 ± 0.04	0.66 ± 0.38	0.97 ± 0.47	-0.27 ± 0.37	2.33 ± 0.34
	ba	-3.52 ± 0.05	-0.29 ± 0.26	-0.51 ± 0.35	-0.92 ± 0.22	-0.27 ± 0.33
	bad	-3.50 ± 0.04	-0.10 ± 0.26	-0.19 ± 0.31	-0.91 ± 0.22	0.49 ± 0.27
	badq	-3.59 ± 0.04	0.73 ± 0.29	0.36 ± 0.31	-0.01 ± 0.20	0.51 ± 0.30
H_2O		-3.62 ± 0.03	0.44 ± 0.27	0.57 ± 0.26	-0.22 ± 0.23	1.46 ± 0.16
	b	-3.72 ± 0.03	0.44 ± 0.33	0.27 ± 0.36	0.29 ± 0.41	0.61 ± 0.37
	ba	-3.78 ± 0.03	0.14 ± 0.27	0.26 ± 0.32	0.67 ± 0.43	0.28 ± 0.40
	bad	-3.79 ± 0.03	0.14 ± 0.27	0.26 ± 0.32	0.67 ± 0.43	0.28 ± 0.40
	badq	-3.72 ± 0.03	0.28 ± 0.27	0.39 ± 0.33	0.66 ± 0.42	0.66 ± 0.29
C_2H_5OH		-2.71 ± 0.04	-0.39 ± 0.36	-0.24 ± 0.60	-0.80 ± 0.43	-0.04 ± 0.54

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Table 10 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	-0.15 ± 0.32	0.11 ± 0.61	-1.07 ± 0.52	1.27 ± 0.40
	ba	-2.72 ± 0.05	-0.15 ± 0.40	-0.25 ± 0.50	-0.43 ± 0.36	0.28 ± 0.55
	bad	-2.79 ± 0.05	-0.19 ± 0.39	-0.15 ± 0.51	-0.44 ± 0.35	-0.27 ± 0.54
	badq	-2.83 ± 0.04	-0.22 ± 0.38	-0.21 ± 0.37	-0.51 ± 0.33	0.30 ± 0.31
C_6H_6		-0.94 ± 0.02	-0.13 ± 0.23	-0.12 ± 0.27	-0.09 ± 0.29	-0.17 ± 0.28
	b	-0.86 ± 0.02	0.00 ± 0.19	0.10 ± 0.22	-0.12 ± 0.25	0.48 ± 0.21
	ba	-0.70 ± 0.08	-0.10 ± 0.20	-0.08 ± 0.20	-0.13 ± 0.23	-0.02 ± 0.21
	bad	-0.59 ± 0.16	-0.35 ± 0.25	-0.30 ± 0.25	-0.22 ± 0.26	-0.67 ± 0.32
	badq	-0.67 ± 0.02	-0.12 ± 0.18	-0.05 ± 0.20	-0.20 ± 0.19	-0.10 ± 0.30
C_6H_5OH		-2.17 ± 0.03	0.55 ± 0.36	0.56 ± 0.38	0.22 ± 0.37	1.20 ± 0.28
	b	-2.13 ± 0.04	0.06 ± 0.29	0.30 ± 0.33	1.01 ± 0.51	0.64 ± 0.27
	ba	-2.26 ± 0.03	0.33 ± 0.42	0.25 ± 0.35	1.81 ± 0.55	-1.09 ± 0.55
	bad	-2.22 ± 0.03	0.64 ± 0.32	0.75 ± 0.42	1.73 ± 0.55	0.97 ± 0.43
	badq	-2.36 ± 0.06	0.53 ± 0.52	2.76 ± 0.66	0.34 ± 0.53	5.23 ± 0.40

Table 11: MM-to-QM net solvation free energy correction values from 3-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	1.29 ± 1.75	0.42 ± 0.97	-1.34 ± 0.74	2.06 ± 0.70
	b	-6.47 ± 0.07	0.19 ± 0.41	-0.26 ± 0.42	-2.09 ± 0.31	1.33 ± 0.45
	ba	-6.13 ± 0.06	-0.97 ± 0.47	-1.24 ± 0.40	-1.82 ± 0.36	-1.04 ± 0.49
	bad	-6.09 ± 0.06	-0.31 ± 0.44	-0.36 ± 0.36	-2.02 ± 0.32	1.12 ± 0.37
	badq	-6.07 ± 0.06	-0.37 ± 0.39	-0.27 ± 0.49	-1.69 ± 0.32	0.23 ± 0.63
$CH_3NH_3^+$		1.79 ± 0.04	0.29 ± 0.34	0.16 ± 0.29	0.16 ± 0.43	0.32 ± 0.35
	b	1.89 ± 0.03	0.30 ± 0.21	0.19 ± 0.16	0.42 ± 0.23	-0.10 ± 0.20
	ba	1.89 ± 0.03	0.30 ± 0.19	0.22 ± 0.15	0.32 ± 0.19	0.02 ± 0.20
	bad	1.79 ± 0.04	-0.02 ± 0.12	-0.01 ± 0.11	-0.10 ± 0.15	0.11 ± 0.12
	badq	1.80 ± 0.03	-0.01 ± 0.14	-0.02 ± 0.11	-0.09 ± 0.16	0.05 ± 0.14
NH_4^+		5.64 ± 0.04	-0.36 ± 0.35	-0.18 ± 0.25	-0.64 ± 0.29	0.07 ± 0.30
	b	5.69 ± 0.02	-0.02 ± 0.05	-0.03 ± 0.05	-0.03 ± 0.06	-0.03 ± 0.07
	ba	5.68 ± 0.01	-0.09 ± 0.07	-0.08 ± 0.06	-0.10 ± 0.09	-0.06 ± 0.08
	bad	5.68 ± 0.01	-0.09 ± 0.07	-0.08 ± 0.06	-0.10 ± 0.09	-0.06 ± 0.08
	badq	5.70 ± 0.02	-0.03 ± 0.09	-0.02 ± 0.06	-0.01 ± 0.09	-0.03 ± 0.09
$CH_3CO_2^-$		-9.33 ± 0.08	0.14 ± 0.75	0.22 ± 0.67	-1.76 ± 0.60	3.03 ± 0.68
	b	-9.52 ± 0.07	0.22 ± 0.59	-0.04 ± 0.46	0.64 ± 0.61	-0.02 ± 0.55
	ba	-9.29 ± 0.05	-1.27 ± 0.33	-1.21 ± 0.34	-1.59 ± 0.41	-1.01 ± 0.40
	bad	-9.14 ± 0.05	0.49 ± 0.46	0.20 ± 0.38	-0.58 ± 0.45	1.22 ± 0.39
	badq	-9.27 ± 0.07	-0.50 ± 0.55	-0.45 ± 0.63	-0.75 ± 0.67	-0.17 ± 0.66
H_3O^+		6.51 ± 0.05	0.63 ± 0.62	0.59 ± 0.44	-0.25 ± 0.40	-0.88 ± 0.78
	b	6.42 ± 0.04	-0.70 ± 0.47	-0.47 ± 0.43	-0.59 ± 0.48	-0.84 ± 0.62
	ba	6.35 ± 0.02	0.02 ± 0.14	0.00 ± 0.10	0.11 ± 0.14	-0.08 ± 0.13

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Table 11 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	0.02 ± 0.14	0.00 ± 0.10	0.11 ± 0.14	-0.08 ± 0.13
	badq	6.41 ± 0.02	-0.20 ± 0.14	-0.24 ± 0.12	-0.05 ± 0.17	-0.42 ± 0.15
C_6H_5Cl		0.38 ± 0.04	0.05 ± 0.30	0.14 ± 0.27	-0.07 ± 0.40	0.87 ± 0.35
	b	0.55 ± 0.04	-0.18 ± 0.26	-0.11 ± 0.24	-0.27 ± 0.29	-0.17 ± 0.35
	ba	-0.04 ± 0.03	0.16 ± 0.22	0.13 ± 0.18	0.13 ± 0.22	0.17 ± 0.23
	bad	-0.22 ± 0.04	0.30 ± 0.24	0.24 ± 0.20	0.19 ± 0.31	0.34 ± 0.28
	badq	-0.40 ± 0.04	0.35 ± 0.26	0.30 ± 0.25	0.14 ± 0.27	0.31 ± 0.34
C_6H_{14}		-0.43 ± 0.03	-0.28 ± 0.29	-0.22 ± 0.23	-0.48 ± 0.29	-0.36 ± 0.37
	b	-0.56 ± 0.04	-0.20 ± 0.24	-0.21 ± 0.19	-0.21 ± 0.24	-0.42 ± 0.27
	ba	-0.45 ± 0.08	-0.02 ± 0.25	-0.05 ± 0.21	-0.44 ± 0.23	0.29 ± 0.27
	bad	-0.47 ± 0.03	-0.41 ± 0.29	-0.45 ± 0.18	-0.34 ± 0.22	-0.59 ± 0.27
	badq	-0.47 ± 0.03	-0.52 ± 0.32	-0.46 ± 0.23	-0.68 ± 0.30	-0.54 ± 0.34
CH_3OH		-2.16 ± 0.03	0.01 ± 0.30	0.02 ± 0.26	-0.21 ± 0.41	0.53 ± 0.25
	b	-2.13 ± 0.03	-0.02 ± 0.39	-0.09 ± 0.26	0.10 ± 0.39	0.21 ± 0.27
	ba	-2.13 ± 0.03	0.49 ± 0.46	0.41 ± 0.34	0.32 ± 0.36	-0.27 ± 0.53
	bad	-1.99 ± 0.04	0.27 ± 0.28	0.16 ± 0.26	-0.20 ± 0.29	0.31 ± 0.38
	badq	-1.99 ± 0.04	-0.39 ± 0.30	-0.45 ± 0.22	-0.46 ± 0.27	-0.71 ± 0.37
C_2H_6		0.05 ± 0.02	0.00 ± 0.22	0.00 ± 0.14	0.18 ± 0.17	-0.32 ± 0.24
	b	0.06 ± 0.04	0.30 ± 0.15	0.24 ± 0.11	0.19 ± 0.14	0.23 ± 0.18
	ba	0.09 ± 0.10	0.08 ± 0.17	0.04 ± 0.14	0.05 ± 0.19	0.05 ± 0.17
	bad	0.13 ± 0.12	0.10 ± 0.17	0.07 ± 0.15	0.02 ± 0.15	0.04 ± 0.19
	badq	0.07 ± 0.08	0.04 ± 0.14	0.02 ± 0.11	-0.05 ± 0.12	0.02 ± 0.13
$(CH_2)_4O$		-1.97 ± 0.05	1.24 ± 0.50	0.98 ± 0.46	2.41 ± 0.76	0.91 ± 0.50
	b	-2.04 ± 0.05	-0.37 ± 0.57	-0.64 ± 0.47	0.31 ± 0.72	-0.78 ± 0.51

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Table 11 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	0.12 ± 0.26	0.06 ± 0.25	-0.16 ± 0.38	0.66 ± 0.25
	bad	-2.20 ± 0.03	-0.54 ± 0.29	-0.61 ± 0.25	-0.60 ± 0.39	-0.39 ± 0.33
	badq	-2.16 ± 0.03	-0.03 ± 0.29	-0.08 ± 0.25	-0.19 ± 0.34	0.13 ± 0.27
$C(NH_2)_3^+$		-0.97 ± 0.06	0.25 ± 0.69	0.25 ± 0.59	-0.52 ± 0.54	1.67 ± 0.79
	b	-0.24 ± 0.06	-1.28 ± 0.70	-0.43 ± 0.52	0.72 ± 0.37	-4.26 ± 0.86
	ba	-0.60 ± 0.05	-0.01 ± 0.49	-0.18 ± 0.32	0.43 ± 0.47	-0.49 ± 0.42
	bad	-0.36 ± 0.05	-0.55 ± 0.31	-0.52 ± 0.32	-0.62 ± 0.44	-0.38 ± 0.39
	badq	-0.02 ± 0.05	0.51 ± 0.36	0.34 ± 0.29	0.45 ± 0.31	0.48 ± 0.39
$C_6H_5NH_2$		-3.04 ± 0.04	-0.02 ± 0.29	-0.09 ± 0.35	-0.61 ± 0.42	0.67 ± 0.43
	b	-3.06 ± 0.04	-0.58 ± 0.40	-0.58 ± 0.34	-0.18 ± 0.57	-0.44 ± 0.30
	ba	-3.09 ± 0.05	0.08 ± 0.42	-0.22 ± 0.30	-0.10 ± 0.38	0.14 ± 0.27
	bad	-3.22 ± 0.04	-0.92 ± 0.30	-0.88 ± 0.26	-1.42 ± 0.33	-0.29 ± 0.37
	badq	-3.26 ± 0.08	-0.25 ± 0.46	-0.02 ± 0.44	-0.51 ± 0.45	1.03 ± 0.38
CH_3CONH_2		-3.59 ± 0.05	1.24 ± 0.32	1.22 ± 0.33	0.32 ± 0.27	1.60 ± 0.50
	b	-3.41 ± 0.04	-0.12 ± 0.40	0.05 ± 0.32	0.06 ± 0.39	0.44 ± 0.26
	ba	-3.52 ± 0.05	0.24 ± 0.32	0.09 ± 0.22	0.17 ± 0.26	-0.02 ± 0.28
	bad	-3.50 ± 0.04	0.08 ± 0.22	0.02 ± 0.19	-0.21 ± 0.27	0.33 ± 0.20
	badq	-3.59 ± 0.04	-0.27 ± 0.30	-0.09 ± 0.22	-0.15 ± 0.22	-0.48 ± 0.38
H_2O		-3.62 ± 0.03	0.31 ± 0.31	0.32 ± 0.21	0.37 ± 0.31	0.61 ± 0.19
	b	-3.72 ± 0.03	0.52 ± 0.28	0.41 ± 0.21	0.56 ± 0.36	0.58 ± 0.24
	ba	-3.78 ± 0.03	-0.32 ± 0.21	-0.24 ± 0.18	-0.10 ± 0.29	-0.14 ± 0.23
	bad	-3.79 ± 0.03	-0.32 ± 0.21	-0.24 ± 0.18	-0.10 ± 0.29	-0.14 ± 0.23
	badq	-3.72 ± 0.03	-0.15 ± 0.23	-0.07 ± 0.18	0.03 ± 0.29	0.05 ± 0.22
C_2H_5OH		-2.71 ± 0.04	0.10 ± 0.32	0.04 ± 0.29	-0.13 ± 0.31	0.30 ± 0.34

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Table 11 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	0.84 ± 0.24	0.72 ± 0.33	0.10 ± 0.44	1.43 ± 0.24
	ba	-2.72 ± 0.05	-0.05 ± 0.32	-0.10 ± 0.30	-0.29 ± 0.35	0.18 ± 0.37
	bad	-2.79 ± 0.05	0.20 ± 0.45	0.07 ± 0.30	0.58 ± 0.46	-0.04 ± 0.42
	badq	-2.83 ± 0.04	0.49 ± 0.37	0.32 ± 0.30	0.24 ± 0.30	0.32 ± 0.43
C_6H_6		-0.94 ± 0.02	-0.18 ± 0.22	-0.17 ± 0.17	-0.08 ± 0.25	-0.19 ± 0.20
	b	-0.86 ± 0.02	0.14 ± 0.17	0.11 ± 0.13	0.07 ± 0.19	0.29 ± 0.14
	ba	-0.70 ± 0.08	0.18 ± 0.23	0.11 ± 0.17	0.24 ± 0.23	0.09 ± 0.18
	bad	-0.59 ± 0.16	-0.21 ± 0.23	-0.22 ± 0.20	-0.17 ± 0.22	-0.35 ± 0.25
	badq	-0.67 ± 0.02	0.11 ± 0.16	0.08 ± 0.12	0.04 ± 0.17	0.11 ± 0.17
C_6H_5OH		-2.17 ± 0.03	0.87 ± 0.38	0.80 ± 0.29	0.83 ± 0.32	0.43 ± 0.47
	b	-2.13 ± 0.04	0.24 ± 0.32	0.17 ± 0.22	0.73 ± 0.39	0.28 ± 0.20
	ba	-2.26 ± 0.03	0.48 ± 0.28	0.37 ± 0.20	0.98 ± 0.48	-0.03 ± 0.41
	bad	-2.22 ± 0.03	0.47 ± 0.20	0.48 ± 0.19	0.65 ± 0.42	0.80 ± 0.24
	badq	-2.36 ± 0.06	-0.05 ± 0.44	0.31 ± 0.43	-0.03 ± 0.47	1.99 ± 0.34

Table 12: MM-to-QM net solvation free energy correction values from 6-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-6.45 ± 0.12	1.23 ± 0.98	1.42 ± 0.78	-0.36 ± 0.91	1.71 ± 0.77
	b	-6.47 ± 0.07	0.17 ± 0.34	0.16 ± 0.26	-0.30 ± 0.32	0.43 ± 0.35
	ba	-6.13 ± 0.06	-0.22 ± 0.32	-0.18 ± 0.25	-0.41 ± 0.32	-0.27 ± 0.37
	bad	-6.09 ± 0.06	-0.79 ± 0.30	-0.74 ± 0.23	-1.21 ± 0.30	-0.36 ± 0.33
	badq	-6.07 ± 0.06	-0.08 ± 0.28	-0.05 ± 0.21	-0.44 ± 0.29	0.31 ± 0.31
$CH_3NH_3^+$		1.79 ± 0.04	0.02 ± 0.26	0.00 ± 0.19	0.01 ± 0.28	0.01 ± 0.25
	b	1.89 ± 0.03	0.17 ± 0.17	0.14 ± 0.12	0.24 ± 0.18	0.04 ± 0.17
	ba	1.89 ± 0.03	-0.08 ± 0.12	-0.08 ± 0.09	-0.04 ± 0.14	-0.15 ± 0.13
	bad	1.79 ± 0.04	0.07 ± 0.12	0.09 ± 0.09	0.07 ± 0.12	0.09 ± 0.11
	badq	1.80 ± 0.03	-0.13 ± 0.11	-0.13 ± 0.08	-0.16 ± 0.12	-0.09 ± 0.10
NH_4^+		5.64 ± 0.04	0.18 ± 0.23	0.13 ± 0.15	0.22 ± 0.29	0.26 ± 0.18
	b	5.69 ± 0.02	-0.07 ± 0.05	-0.07 ± 0.03	-0.07 ± 0.04	-0.07 ± 0.05
	ba	5.68 ± 0.01	0.01 ± 0.05	0.01 ± 0.03	-0.01 ± 0.05	0.01 ± 0.05
	bad	5.68 ± 0.01	0.01 ± 0.05	0.01 ± 0.03	-0.01 ± 0.05	0.01 ± 0.05
	badq	5.70 ± 0.02	-0.01 ± 0.06	-0.01 ± 0.03	0.00 ± 0.05	-0.01 ± 0.06
$CH_3CO_2^-$		-9.33 ± 0.08	0.88 ± 0.50	0.75 ± 0.39	0.60 ± 0.49	1.54 ± 0.52
	b	-9.52 ± 0.07	0.11 ± 0.31	0.10 ± 0.23	0.17 ± 0.30	0.02 ± 0.31
	ba	-9.29 ± 0.05	-0.36 ± 0.28	-0.42 ± 0.23	-0.57 ± 0.31	-0.14 ± 0.33
	bad	-9.14 ± 0.05	0.47 ± 0.32	0.44 ± 0.23	0.24 ± 0.31	0.64 ± 0.31
	badq	-9.27 ± 0.07	-0.44 ± 0.31	-0.43 ± 0.25	-1.07 ± 0.34	0.05 ± 0.43
H_3O^+		6.51 ± 0.05	0.61 ± 0.40	0.56 ± 0.30	0.76 ± 0.41	0.32 ± 0.40
	b	6.42 ± 0.04	0.64 ± 0.30	0.61 ± 0.23	0.68 ± 0.33	0.54 ± 0.30
	ba	6.35 ± 0.02	-0.01 ± 0.10	-0.01 ± 0.07	0.03 ± 0.10	-0.04 ± 0.09

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Table 12 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	6.35 ± 0.02	-0.01 ± 0.10	-0.01 ± 0.07	0.03 ± 0.10	-0.04 ± 0.09
	badq	6.41 ± 0.02	-0.25 ± 0.10	-0.26 ± 0.07	-0.19 ± 0.11	-0.34 ± 0.10
C_6H_5Cl		0.38 ± 0.04	0.12 ± 0.20	0.15 ± 0.14	-0.05 ± 0.23	0.44 ± 0.20
	b	0.55 ± 0.04	-0.19 ± 0.18	-0.15 ± 0.14	-0.19 ± 0.18	-0.25 ± 0.28
	ba	-0.04 ± 0.03	0.02 ± 0.16	0.01 ± 0.11	0.06 ± 0.15	-0.01 ± 0.15
	bad	-0.22 ± 0.04	0.12 ± 0.18	0.11 ± 0.13	0.05 ± 0.18	0.10 ± 0.21
	badq	-0.40 ± 0.04	0.16 ± 0.16	0.15 ± 0.12	0.08 ± 0.17	0.19 ± 0.19
C_6H_{14}		-0.43 ± 0.03	0.47 ± 0.23	0.47 ± 0.16	0.55 ± 0.21	0.31 ± 0.22
	b	-0.56 ± 0.04	-0.22 ± 0.20	-0.23 ± 0.14	-0.05 ± 0.22	-0.36 ± 0.18
	ba	-0.45 ± 0.08	0.18 ± 0.19	0.16 ± 0.15	0.10 ± 0.19	0.19 ± 0.19
	bad	-0.47 ± 0.03	-0.14 ± 0.18	-0.14 ± 0.12	-0.14 ± 0.15	-0.22 ± 0.19
	badq	-0.47 ± 0.03	0.11 ± 0.20	0.09 ± 0.15	0.06 ± 0.22	0.12 ± 0.23
CH_3OH		-2.16 ± 0.03	0.18 ± 0.23	0.17 ± 0.16	0.17 ± 0.26	0.23 ± 0.21
	b	-2.13 ± 0.03	-0.26 ± 0.18	-0.26 ± 0.13	-0.38 ± 0.17	-0.14 ± 0.18
	ba	-2.13 ± 0.03	0.23 ± 0.17	0.25 ± 0.14	0.07 ± 0.18	0.33 ± 0.21
	bad	-1.99 ± 0.04	-0.04 ± 0.21	-0.07 ± 0.16	-0.01 ± 0.23	-0.06 ± 0.19
	badq	-1.99 ± 0.04	-0.19 ± 0.21	-0.25 ± 0.14	-0.19 ± 0.18	-0.36 ± 0.20
C_2H_6		0.05 ± 0.02	-0.21 ± 0.10	-0.20 ± 0.07	-0.14 ± 0.10	-0.27 ± 0.10
	b	0.06 ± 0.04	0.09 ± 0.09	0.09 ± 0.08	0.06 ± 0.09	0.08 ± 0.11
	ba	0.09 ± 0.10	-0.04 ± 0.12	-0.03 ± 0.12	-0.06 ± 0.12	-0.02 ± 0.13
	bad	0.13 ± 0.12	-0.15 ± 0.15	-0.15 ± 0.13	-0.14 ± 0.14	-0.16 ± 0.15
	badq	0.07 ± 0.08	-0.03 ± 0.11	-0.04 ± 0.10	-0.05 ± 0.11	-0.04 ± 0.11
$(CH_2)_4O$		-1.97 ± 0.05	-0.07 ± 0.29	-0.09 ± 0.25	0.03 ± 0.37	-0.16 ± 0.36
	b	-2.04 ± 0.05	-0.41 ± 0.32	-0.51 ± 0.26	-0.18 ± 0.38	-0.66 ± 0.32

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Table 12 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-2.28 ± 0.03	0.03 ± 0.16	0.00 ± 0.12	-0.16 ± 0.18	0.23 ± 0.16
	bad	-2.20 ± 0.03	-0.78 ± 0.22	-0.79 ± 0.16	-0.70 ± 0.25	-0.82 ± 0.23
	badq	-2.16 ± 0.03	0.20 ± 0.20	0.21 ± 0.15	0.17 ± 0.19	0.20 ± 0.20
$C(NH_2)_3^+$		-0.97 ± 0.06	0.03 ± 0.42	-0.01 ± 0.31	-0.08 ± 0.49	0.21 ± 0.50
	b	-0.24 ± 0.06	-0.33 ± 0.36	-0.27 ± 0.32	0.45 ± 0.33	-1.11 ± 0.47
	ba	-0.60 ± 0.05	-0.05 ± 0.24	-0.05 ± 0.19	-0.13 ± 0.26	-0.10 ± 0.24
	bad	-0.36 ± 0.05	-0.14 ± 0.24	-0.08 ± 0.17	-0.06 ± 0.20	-0.24 ± 0.28
	badq	-0.02 ± 0.05	-0.24 ± 0.26	-0.26 ± 0.18	-0.19 ± 0.29	-0.19 ± 0.24
$C_6H_5NH_2$		-3.04 ± 0.04	0.04 ± 0.28	0.00 ± 0.22	0.00 ± 0.28	-0.02 ± 0.31
	b	-3.06 ± 0.04	-0.03 ± 0.28	-0.07 ± 0.20	0.06 ± 0.32	-0.12 ± 0.30
	ba	-3.09 ± 0.05	0.13 ± 0.21	0.07 ± 0.14	-0.04 ± 0.21	0.27 ± 0.18
	bad	-3.22 ± 0.04	-0.14 ± 0.24	-0.20 ± 0.18	-0.21 ± 0.32	-0.04 ± 0.23
	badq	-3.26 ± 0.08	0.21 ± 0.37	0.24 ± 0.30	0.31 ± 0.41	0.36 ± 0.35
CH_3CONH_2		-3.59 ± 0.05	0.34 ± 0.25	0.40 ± 0.22	0.27 ± 0.29	0.56 ± 0.29
	b	-3.41 ± 0.04	0.42 ± 0.22	0.43 ± 0.18	0.34 ± 0.24	0.50 ± 0.24
	ba	-3.52 ± 0.05	-0.09 ± 0.25	-0.11 ± 0.17	0.13 ± 0.25	-0.32 ± 0.22
	bad	-3.50 ± 0.04	0.26 ± 0.21	0.27 ± 0.13	0.33 ± 0.17	0.24 ± 0.19
	badq	-3.59 ± 0.04	0.15 ± 0.20	0.21 ± 0.13	0.20 ± 0.16	0.04 ± 0.18
H_2O		-3.62 ± 0.03	0.13 ± 0.21	0.15 ± 0.14	0.18 ± 0.18	0.10 ± 0.22
	b	-3.72 ± 0.03	-0.34 ± 0.21	-0.30 ± 0.14	-0.17 ± 0.26	-0.38 ± 0.20
	ba	-3.78 ± 0.03	0.66 ± 0.17	0.64 ± 0.11	0.69 ± 0.18	0.60 ± 0.15
	bad	-3.79 ± 0.03	0.66 ± 0.17	0.64 ± 0.11	0.69 ± 0.18	0.60 ± 0.15
	badq	-3.72 ± 0.03	0.30 ± 0.21	0.33 ± 0.16	0.52 ± 0.22	0.18 ± 0.26
C_2H_5OH		-2.71 ± 0.04	0.13 ± 0.24	0.12 ± 0.18	0.14 ± 0.29	0.12 ± 0.24

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Table 12 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	b	-2.60 ± 0.04	-0.03 ± 0.21	-0.01 ± 0.16	-0.17 ± 0.25	0.13 ± 0.22
	ba	-2.72 ± 0.05	-0.53 ± 0.23	-0.50 ± 0.19	-0.53 ± 0.27	-0.49 ± 0.26
	bad	-2.79 ± 0.05	-0.29 ± 0.23	-0.29 ± 0.16	-0.30 ± 0.22	-0.26 ± 0.24
	badq	-2.83 ± 0.04	-0.03 ± 0.22	-0.05 ± 0.16	-0.07 ± 0.19	-0.13 ± 0.24
C_6H_6		-0.94 ± 0.02	0.28 ± 0.15	0.28 ± 0.10	0.31 ± 0.14	0.24 ± 0.15
	b	-0.86 ± 0.02	0.31 ± 0.11	0.29 ± 0.08	0.26 ± 0.10	0.34 ± 0.10
	ba	-0.70 ± 0.08	0.11 ± 0.15	0.10 ± 0.13	0.17 ± 0.17	0.07 ± 0.16
	bad	-0.59 ± 0.16	-0.09 ± 0.20	-0.10 ± 0.18	-0.05 ± 0.22	-0.14 ± 0.20
	badq	-0.67 ± 0.02	0.08 ± 0.10	0.06 ± 0.08	0.06 ± 0.13	0.08 ± 0.12
C_6H_5OH		-2.17 ± 0.03	0.33 ± 0.20	0.34 ± 0.15	0.38 ± 0.22	0.36 ± 0.18
	b	-2.13 ± 0.04	-0.10 ± 0.16	-0.09 ± 0.11	-0.04 ± 0.17	-0.09 ± 0.16
	ba	-2.26 ± 0.03	0.20 ± 0.20	0.18 ± 0.14	0.35 ± 0.22	0.04 ± 0.20
	bad	-2.22 ± 0.03	0.02 ± 0.20	0.02 ± 0.14	0.12 ± 0.22	0.01 ± 0.22
	badq	-2.36 ± 0.06	0.83 ± 0.36	0.86 ± 0.26	0.99 ± 0.36	1.13 ± 0.31

Table 13: MM-to-QM aqueous-phase solvation free energy correction values from 2-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
CO_3^{2-}		-165240.53 ± 0.11	5.25 ± 0.37	1.15 ± 0.71	-9.87 ± 0.40	12.16 ± 0.60
	b	-165222.41 ± 0.06	1.50 ± 0.16	0.98 ± 0.35	-0.87 ± 0.26	3.41 ± 0.28
	ba	-165287.40 ± 0.05	0.73 ± 0.14	0.29 ± 0.29	-0.69 ± 0.40	1.85 ± 0.31
	bad	-165339.45 ± 0.05	0.95 ± 0.15	0.16 ± 0.33	-0.65 ± 0.53	1.74 ± 0.37
	badq	-165328.69 ± 0.05	0.56 ± 0.13	0.04 ± 0.28	-0.37 ± 0.44	0.22 ± 0.34
$CH_3NH_3^+$		-60348.42 ± 0.04	0.32 ± 0.10	0.05 ± 0.13	-0.59 ± 0.15	0.20 ± 0.24
	b	-60352.99 ± 0.02	0.07 ± 0.04	0.03 ± 0.05	-0.20 ± 0.08	0.11 ± 0.09
	ba	-60355.28 ± 0.01	0.06 ± 0.03	0.04 ± 0.04	0.03 ± 0.06	-0.03 ± 0.08
	bad	-60355.56 ± 0.02	0.03 ± 0.04	0.02 ± 0.04	0.02 ± 0.06	-0.05 ± 0.08
	badq	-60351.61 ± 0.01	0.02 ± 0.03	0.01 ± 0.04	0.03 ± 0.06	-0.11 ± 0.12
NH_4^+		-35650.57 ± 0.04	0.30 ± 0.10	0.00 ± 0.11	-0.38 ± 0.16	0.24 ± 0.27
	b	-35656.79 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.04 ± 0.02	0.03 ± 0.02
	ba	-35657.95 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.04 ± 0.02	0.02 ± 0.02
	bad	-35657.95 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.04 ± 0.02	0.02 ± 0.02
	badq	-35657.18 ± 0.01	-0.02 ± 0.02	-0.03 ± 0.02	-0.05 ± 0.02	0.00 ± 0.02
$CH_3CO_2^-$		-143235.31 ± 0.07	0.11 ± 0.22	-0.03 ± 0.56	-1.16 ± 0.53	1.52 ± 0.52
	b	-143222.40 ± 0.05	0.59 ± 0.14	-0.15 ± 0.20	-1.24 ± 0.28	0.58 ± 0.24
	ba	-143272.32 ± 0.04	0.35 ± 0.11	0.12 ± 0.18	-0.90 ± 0.32	0.84 ± 0.29
	bad	-143277.15 ± 0.04	0.03 ± 0.11	-0.17 ± 0.20	-1.09 ± 0.40	0.71 ± 0.33
	badq	-143305.89 ± 0.06	0.06 ± 0.14	0.18 ± 0.41	-1.74 ± 0.45	2.03 ± 0.44
H_3O^+		-48062.72 ± 0.05	0.46 ± 0.14	0.12 ± 0.24	0.65 ± 0.57	0.49 ± 0.35
	b	-48067.54 ± 0.04	0.17 ± 0.11	0.21 ± 0.15	0.57 ± 0.35	0.56 ± 0.28
	ba	-48070.58 ± 0.01	0.02 ± 0.03	0.02 ± 0.03	0.08 ± 0.05	-0.02 ± 0.05

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Table 13 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-48070.58 ± 0.01	0.02 ± 0.03	0.02 ± 0.03	0.08 ± 0.05	-0.02 ± 0.05
	badq	-48070.60 ± 0.01	0.07 ± 0.03	0.07 ± 0.03	0.07 ± 0.05	0.08 ± 0.06
C_6H_5Cl		-433851.87 ± 0.03	0.07 ± 0.08	0.18 ± 0.09	-0.09 ± 0.14	0.16 ± 0.19
	b	-433850.81 ± 0.04	0.15 ± 0.10	0.21 ± 0.11	-0.02 ± 0.14	0.51 ± 0.17
	ba	-433854.43 ± 0.03	0.05 ± 0.09	0.05 ± 0.11	-0.10 ± 0.12	-0.39 ± 0.34
	bad	-433856.05 ± 0.03	0.09 ± 0.09	0.11 ± 0.09	-0.11 ± 0.13	0.20 ± 0.22
	badq	-433860.24 ± 0.04	0.07 ± 0.09	0.11 ± 0.10	0.31 ± 0.35	0.01 ± 0.15
C_6H_{14}		-148579.99 ± 0.03	-0.13 ± 0.08	-0.07 ± 0.09	-0.10 ± 0.16	-0.13 ± 0.17
	b	-148580.59 ± 0.03	-0.01 ± 0.08	-0.04 ± 0.09	-0.33 ± 0.10	0.19 ± 0.14
	ba	-148579.49 ± 0.03	-0.07 ± 0.08	-0.07 ± 0.09	-0.13 ± 0.16	0.06 ± 0.13
	bad	-148579.45 ± 0.03	-0.20 ± 0.07	-0.15 ± 0.08	-0.08 ± 0.20	-0.10 ± 0.12
	badq	-148576.82 ± 0.03	-0.14 ± 0.08	-0.11 ± 0.09	0.02 ± 0.21	-0.05 ± 0.12
CH_3OH		-72530.37 ± 0.03	0.01 ± 0.09	0.06 ± 0.12	-0.36 ± 0.25	-0.03 ± 0.28
	b	-72530.81 ± 0.03	-0.12 ± 0.09	-0.12 ± 0.13	-0.39 ± 0.25	-0.11 ± 0.26
	ba	-72530.76 ± 0.03	0.02 ± 0.08	0.07 ± 0.14	-0.45 ± 0.22	-0.18 ± 0.46
	bad	-72530.78 ± 0.03	-0.12 ± 0.08	-0.10 ± 0.12	-0.43 ± 0.24	0.29 ± 0.16
	badq	-72530.61 ± 0.03	-0.07 ± 0.09	-0.15 ± 0.13	-0.13 ± 0.37	-0.33 ± 0.28
C_2H_6		-50024.16 ± 0.02	-0.03 ± 0.08	-0.01 ± 0.06	-0.03 ± 0.12	0.01 ± 0.06
	b	-50024.32 ± 0.01	0.00 ± 0.04	-0.03 ± 0.04	-0.04 ± 0.08	0.06 ± 0.06
	ba	-50024.08 ± 0.01	-0.02 ± 0.03	-0.02 ± 0.03	-0.03 ± 0.06	0.05 ± 0.03
	bad	-50024.17 ± 0.01	0.04 ± 0.03	0.03 ± 0.03	-0.03 ± 0.06	0.09 ± 0.04
	badq	-50024.33 ± 0.01	-0.01 ± 0.03	-0.02 ± 0.03	-0.03 ± 0.06	-0.04 ± 0.06
$(CH_2)_4O$		-145701.53 ± 0.05	0.18 ± 0.12	0.08 ± 0.17	-0.34 ± 0.31	-0.42 ± 0.56
	b	-145701.13 ± 0.05	0.64 ± 0.14	0.25 ± 0.21	-1.02 ± 0.20	0.87 ± 0.31

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Table 13 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-145699.24 ± 0.03	0.07 ± 0.09	0.13 ± 0.12	-0.04 ± 0.16	0.63 ± 0.15
	bad	-145700.24 ± 0.03	-0.10 ± 0.09	-0.20 ± 0.12	-0.08 ± 0.17	-0.37 ± 0.25
	badq	-145684.45 ± 0.03	0.17 ± 0.09	0.11 ± 0.10	0.13 ± 0.13	-0.28 ± 0.16
$C(NH_2)_3^+$		-128902.19 ± 0.05	1.46 ± 0.20	0.13 ± 0.23	-1.23 ± 0.24	1.73 ± 0.21
	b	-128907.35 ± 0.05	1.13 ± 0.18	-0.10 ± 0.15	-1.04 ± 0.22	0.46 ± 0.32
	ba	-128933.28 ± 0.04	0.61 ± 0.15	-0.20 ± 0.11	-0.68 ± 0.24	0.01 ± 0.20
	bad	-128936.23 ± 0.04	0.63 ± 0.14	-0.10 ± 0.10	-0.55 ± 0.24	0.06 ± 0.17
	badq	-128918.95 ± 0.04	0.18 ± 0.12	-0.14 ± 0.13	-0.64 ± 0.30	-0.57 ± 0.44
$C_6H_5NH_2$		-180230.53 ± 0.04	0.02 ± 0.11	0.01 ± 0.20	-0.39 ± 0.25	0.09 ± 0.29
	b	-180230.55 ± 0.04	0.19 ± 0.10	0.12 ± 0.19	-0.08 ± 0.53	0.80 ± 0.24
	ba	-180233.99 ± 0.04	0.13 ± 0.10	-0.08 ± 0.14	-0.63 ± 0.18	-0.27 ± 0.35
	bad	-180233.04 ± 0.04	0.13 ± 0.09	0.00 ± 0.13	-0.50 ± 0.22	0.46 ± 0.14
	badq	-180262.07 ± 0.07	0.00 ± 0.17	-0.11 ± 0.53	-1.87 ± 0.48	2.25 ± 0.44
CH_3CONH_2		-131079.14 ± 0.05	-0.35 ± 0.13	0.01 ± 0.20	1.70 ± 0.22	0.39 ± 0.30
	b	-131078.83 ± 0.04	-0.28 ± 0.12	0.11 ± 0.19	-0.09 ± 0.49	1.01 ± 0.18
	ba	-131083.77 ± 0.04	-0.32 ± 0.11	-0.04 ± 0.16	-0.15 ± 0.16	0.21 ± 0.29
	bad	-131084.84 ± 0.04	-0.21 ± 0.11	0.08 ± 0.17	-0.11 ± 0.40	0.45 ± 0.27
	badq	-131071.30 ± 0.03	-0.04 ± 0.09	0.02 ± 0.10	-0.36 ± 0.20	0.49 ± 0.14
H_2O		-47896.99 ± 0.03	-0.05 ± 0.08	-0.08 ± 0.14	-0.73 ± 0.14	0.35 ± 0.21
	b	-47897.87 ± 0.03	0.04 ± 0.08	-0.04 ± 0.16	-0.57 ± 0.24	-0.02 ± 0.23
	ba	-47898.10 ± 0.03	0.19 ± 0.08	0.13 ± 0.16	-0.61 ± 0.20	0.70 ± 0.24
	bad	-47898.10 ± 0.03	0.19 ± 0.08	0.13 ± 0.16	-0.61 ± 0.20	0.70 ± 0.24
	badq	-47897.84 ± 0.03	0.00 ± 0.08	-0.01 ± 0.14	-0.63 ± 0.21	0.19 ± 0.23
C_2H_5OH		-97165.69 ± 0.04	0.21 ± 0.10	0.23 ± 0.16	-0.09 ± 0.17	0.38 ± 0.23

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Table 13 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97165.97 ± 0.04	0.11 ± 0.09	0.11 ± 0.16	-0.39 ± 0.19	0.68 ± 0.20
	ba	-97166.30 ± 0.04	0.01 ± 0.09	0.03 ± 0.15	-0.26 ± 0.21	-0.35 ± 0.16
	bad	-97166.59 ± 0.04	0.11 ± 0.10	-0.01 ± 0.13	-0.24 ± 0.20	0.25 ± 0.20
	badq	-97165.26 ± 0.03	0.13 ± 0.09	0.01 ± 0.12	-0.35 ± 0.23	-0.48 ± 0.15
C_6H_6		-145560.94 ± 0.02	0.12 ± 0.05	0.05 ± 0.07	-0.09 ± 0.15	0.18 ± 0.13
	b	-145561.20 ± 0.02	-0.09 ± 0.05	-0.14 ± 0.06	-0.13 ± 0.14	-0.29 ± 0.13
	ba	-145564.93 ± 0.02	0.00 ± 0.05	-0.05 ± 0.06	-0.04 ± 0.21	0.04 ± 0.10
	bad	-145563.51 ± 0.02	-0.02 ± 0.05	-0.09 ± 0.06	-0.08 ± 0.20	-0.03 ± 0.09
	badq	-145563.88 ± 0.02	-0.08 ± 0.04	-0.05 ± 0.06	0.00 ± 0.20	0.06 ± 0.11
C_6H_5OH		-192696.13 ± 0.03	0.01 ± 0.09	0.00 ± 0.13	0.03 ± 0.32	0.46 ± 0.20
	b	-192696.41 ± 0.04	-0.03 ± 0.09	-0.05 ± 0.14	-0.07 ± 0.28	0.21 ± 0.23
	ba	-192700.83 ± 0.03	0.12 ± 0.09	0.11 ± 0.13	0.02 ± 0.23	0.31 ± 0.24
	bad	-192699.26 ± 0.03	0.13 ± 0.09	0.16 ± 0.13	-0.04 ± 0.24	0.52 ± 0.20
	badq	-192711.46 ± 0.06	-0.76 ± 0.16	-0.08 ± 0.44	-1.01 ± 0.35	1.49 ± 0.36

Table 14: MM-to-QM aqueous-phase solvation free energy correction values from 3-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
CO_3^{2-}		-165240.53 ± 0.11	0.57 ± 0.28	0.16 ± 0.47	-3.07 ± 0.41	2.98 ± 0.54
	b	-165222.41 ± 0.06	0.11 ± 0.15	0.11 ± 0.15	0.04 ± 0.25	0.66 ± 0.21
	ba	-165287.40 ± 0.05	0.09 ± 0.13	0.04 ± 0.12	-0.13 ± 0.29	0.39 ± 0.21
	bad	-165339.45 ± 0.05	0.31 ± 0.13	0.18 ± 0.15	0.20 ± 0.37	0.33 ± 0.23
	badq	-165328.69 ± 0.05	0.03 ± 0.12	0.01 ± 0.11	0.23 ± 0.25	0.01 ± 0.19
$CH_3NH_3^+$		-60348.42 ± 0.04	0.07 ± 0.09	0.04 ± 0.08	-0.13 ± 0.13	0.07 ± 0.14
	b	-60352.99 ± 0.02	0.01 ± 0.05	0.00 ± 0.04	0.06 ± 0.07	0.01 ± 0.05
	ba	-60355.28 ± 0.01	0.03 ± 0.03	0.04 ± 0.03	0.02 ± 0.04	0.02 ± 0.05
	bad	-60355.56 ± 0.02	0.01 ± 0.04	0.01 ± 0.04	0.04 ± 0.05	-0.03 ± 0.05
	badq	-60351.61 ± 0.01	0.06 ± 0.03	0.05 ± 0.03	0.08 ± 0.04	0.01 ± 0.05
NH_4^+		-35650.57 ± 0.04	-0.07 ± 0.08	-0.09 ± 0.07	-0.09 ± 0.15	0.01 ± 0.11
	b	-35656.79 ± 0.01	0.01 ± 0.02	0.01 ± 0.01	0.00 ± 0.02	0.02 ± 0.02
	ba	-35657.95 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.01 ± 0.01	0.01 ± 0.01
	bad	-35657.95 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.01 ± 0.01	0.01 ± 0.01
	badq	-35657.18 ± 0.01	0.02 ± 0.02	0.01 ± 0.01	0.00 ± 0.02	0.02 ± 0.02
$CH_3CO_2^-$		-143235.31 ± 0.07	0.12 ± 0.17	-0.03 ± 0.18	0.44 ± 0.49	0.46 ± 0.32
	b	-143222.40 ± 0.05	0.30 ± 0.12	0.17 ± 0.11	-0.13 ± 0.20	0.22 ± 0.18
	ba	-143272.32 ± 0.04	0.04 ± 0.11	0.04 ± 0.10	-0.21 ± 0.16	0.17 ± 0.16
	bad	-143277.15 ± 0.04	-0.07 ± 0.10	-0.12 ± 0.11	-0.35 ± 0.20	0.20 ± 0.16
	badq	-143305.89 ± 0.06	0.11 ± 0.13	0.09 ± 0.15	-0.35 ± 0.29	0.62 ± 0.32
H_3O^+		-48062.72 ± 0.05	0.10 ± 0.13	0.01 ± 0.12	0.30 ± 0.36	-0.58 ± 0.23
	b	-48067.54 ± 0.04	-0.03 ± 0.10	-0.03 ± 0.10	0.10 ± 0.20	0.08 ± 0.16
	ba	-48070.58 ± 0.01	0.06 ± 0.03	0.05 ± 0.02	0.09 ± 0.04	0.02 ± 0.03

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Table 14 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-48070.58 ± 0.01	0.06 ± 0.03	0.05 ± 0.02	0.09 ± 0.04	0.02 ± 0.03
	badq	-48070.60 ± 0.01	0.04 ± 0.02	0.04 ± 0.02	0.04 ± 0.03	0.06 ± 0.03
C_6H_5Cl		-433851.87 ± 0.03	0.11 ± 0.08	0.14 ± 0.07	0.19 ± 0.10	-0.03 ± 0.11
	b	-433850.81 ± 0.04	-0.02 ± 0.09	0.01 ± 0.08	-0.07 ± 0.10	0.14 ± 0.11
	ba	-433854.43 ± 0.03	-0.04 ± 0.09	-0.01 ± 0.08	0.07 ± 0.10	-0.26 ± 0.17
	bad	-433856.05 ± 0.03	0.08 ± 0.09	0.07 ± 0.07	0.13 ± 0.11	0.09 ± 0.11
	badq	-433860.24 ± 0.04	-0.03 ± 0.09	-0.01 ± 0.08	0.13 ± 0.15	-0.07 ± 0.11
C_6H_{14}		-148579.99 ± 0.03	-0.07 ± 0.07	-0.07 ± 0.06	-0.07 ± 0.09	-0.03 ± 0.09
	b	-148580.59 ± 0.03	-0.05 ± 0.07	-0.05 ± 0.06	-0.06 ± 0.09	-0.03 ± 0.10
	ba	-148579.49 ± 0.03	-0.08 ± 0.07	-0.07 ± 0.06	-0.07 ± 0.10	-0.14 ± 0.14
	bad	-148579.45 ± 0.03	-0.11 ± 0.07	-0.11 ± 0.06	-0.10 ± 0.09	-0.11 ± 0.08
	badq	-148576.82 ± 0.03	0.10 ± 0.08	0.06 ± 0.07	0.13 ± 0.10	0.00 ± 0.10
CH_3OH		-72530.37 ± 0.03	-0.10 ± 0.09	-0.08 ± 0.08	-0.05 ± 0.14	-0.04 ± 0.11
	b	-72530.81 ± 0.03	0.05 ± 0.08	0.03 ± 0.09	-0.01 ± 0.14	-0.01 ± 0.13
	ba	-72530.76 ± 0.03	-0.04 ± 0.09	-0.02 ± 0.10	-0.12 ± 0.14	-0.07 ± 0.22
	bad	-72530.78 ± 0.03	-0.15 ± 0.08	-0.14 ± 0.08	-0.20 ± 0.14	-0.07 ± 0.12
	badq	-72530.61 ± 0.03	0.15 ± 0.09	0.10 ± 0.09	0.15 ± 0.16	-0.09 ± 0.16
C_2H_6		-50024.16 ± 0.02	0.02 ± 0.04	0.03 ± 0.04	-0.01 ± 0.07	0.02 ± 0.04
	b	-50024.32 ± 0.01	-0.03 ± 0.03	-0.03 ± 0.03	-0.04 ± 0.04	0.00 ± 0.04
	ba	-50024.08 ± 0.01	0.03 ± 0.03	0.01 ± 0.02	0.01 ± 0.03	0.04 ± 0.03
	bad	-50024.17 ± 0.01	0.08 ± 0.03	0.07 ± 0.02	0.05 ± 0.04	0.10 ± 0.03
	badq	-50024.33 ± 0.01	-0.02 ± 0.03	-0.02 ± 0.02	0.00 ± 0.03	-0.04 ± 0.03
$(CH_2)_4O$		-145701.53 ± 0.05	0.10 ± 0.11	0.06 ± 0.12	0.06 ± 0.28	-0.04 ± 0.29
	b	-145701.13 ± 0.05	-0.03 ± 0.11	-0.06 ± 0.12	-0.21 ± 0.24	0.16 ± 0.21

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Table 14 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	ba	-145699.24 ± 0.03	0.10 ± 0.09	0.10 ± 0.08	0.21 ± 0.16	0.07 ± 0.15
	bad	-145700.24 ± 0.03	-0.11 ± 0.08	-0.13 ± 0.09	-0.14 ± 0.13	-0.14 ± 0.14
	badq	-145684.45 ± 0.03	0.11 ± 0.08	0.10 ± 0.07	0.21 ± 0.12	-0.03 ± 0.10
$C(NH_2)_3^+$		-128902.19 ± 0.05	0.16 ± 0.12	-0.08 ± 0.11	-0.66 ± 0.15	0.00 ± 0.30
	b	-128907.35 ± 0.05	0.23 ± 0.12	-0.01 ± 0.09	0.22 ± 0.20	-0.04 ± 0.16
	ba	-128933.28 ± 0.04	0.06 ± 0.09	-0.09 ± 0.08	-0.26 ± 0.23	-0.09 ± 0.13
	bad	-128936.23 ± 0.04	0.22 ± 0.09	0.07 ± 0.07	-0.07 ± 0.15	0.07 ± 0.11
	badq	-128918.95 ± 0.04	0.02 ± 0.10	-0.03 ± 0.09	-0.10 ± 0.14	-0.22 ± 0.21
$C_6H_5NH_2$		-180230.53 ± 0.04	-0.02 ± 0.11	0.00 ± 0.12	0.13 ± 0.18	-0.13 ± 0.18
	b	-180230.55 ± 0.04	-0.06 ± 0.10	-0.02 ± 0.11	-0.14 ± 0.18	0.19 ± 0.16
	ba	-180233.99 ± 0.04	0.04 ± 0.10	0.03 ± 0.09	0.04 ± 0.16	-0.15 ± 0.15
	bad	-180233.04 ± 0.04	0.13 ± 0.09	0.10 ± 0.08	0.08 ± 0.16	0.13 ± 0.10
	badq	-180262.07 ± 0.07	0.34 ± 0.16	0.24 ± 0.17	0.10 ± 0.31	0.74 ± 0.38
CH_3CONH_2		-131079.14 ± 0.05	0.04 ± 0.11	0.08 ± 0.12	0.39 ± 0.16	0.14 ± 0.21
	b	-131078.83 ± 0.04	-0.16 ± 0.11	-0.09 ± 0.12	0.07 ± 0.30	-0.28 ± 0.24
	ba	-131083.77 ± 0.04	0.06 ± 0.10	0.04 ± 0.10	0.20 ± 0.15	0.17 ± 0.15
	bad	-131084.84 ± 0.04	0.30 ± 0.09	0.30 ± 0.10	0.18 ± 0.18	0.28 ± 0.24
	badq	-131071.30 ± 0.03	0.04 ± 0.08	0.04 ± 0.08	-0.06 ± 0.11	0.17 ± 0.09
H_2O		-47896.99 ± 0.03	-0.09 ± 0.08	-0.08 ± 0.09	-0.25 ± 0.11	0.06 ± 0.11
	b	-47897.87 ± 0.03	-0.01 ± 0.08	0.01 ± 0.09	-0.20 ± 0.12	0.01 ± 0.23
	ba	-47898.10 ± 0.03	0.07 ± 0.08	0.10 ± 0.09	-0.12 ± 0.16	0.26 ± 0.11
	bad	-47898.10 ± 0.03	0.07 ± 0.08	0.10 ± 0.09	-0.12 ± 0.16	0.26 ± 0.11
	badq	-47897.84 ± 0.03	0.22 ± 0.08	0.18 ± 0.09	0.06 ± 0.14	0.25 ± 0.11
C_2H_5OH		-97165.69 ± 0.04	0.14 ± 0.09	0.15 ± 0.09	0.17 ± 0.15	0.13 ± 0.16

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Table 14 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97165.97 ± 0.04	0.06 ± 0.09	0.07 ± 0.11	0.04 ± 0.20	0.07 ± 0.15
	ba	-97166.30 ± 0.04	0.04 ± 0.09	0.00 ± 0.09	0.02 ± 0.15	0.09 ± 0.12
	bad	-97166.59 ± 0.04	0.03 ± 0.09	-0.01 ± 0.08	0.08 ± 0.16	0.03 ± 0.11
	badq	-97165.26 ± 0.03	-0.06 ± 0.08	-0.04 ± 0.09	-0.11 ± 0.13	-0.12 ± 0.11
C_6H_6		-145560.94 ± 0.02	0.00 ± 0.05	0.02 ± 0.05	-0.09 ± 0.08	0.02 ± 0.09
	b	-145561.20 ± 0.02	-0.03 ± 0.05	-0.05 ± 0.04	-0.01 ± 0.08	-0.17 ± 0.09
	ba	-145564.93 ± 0.02	-0.03 ± 0.04	-0.03 ± 0.04	-0.09 ± 0.06	0.00 ± 0.06
	bad	-145563.51 ± 0.02	0.01 ± 0.04	-0.01 ± 0.05	-0.01 ± 0.07	-0.02 ± 0.08
	badq	-145563.88 ± 0.02	0.01 ± 0.04	0.00 ± 0.04	-0.02 ± 0.09	0.01 ± 0.14
C_6H_5OH		-192696.13 ± 0.03	-0.02 ± 0.09	-0.03 ± 0.08	-0.02 ± 0.17	0.05 ± 0.12
	b	-192696.41 ± 0.04	0.06 ± 0.09	0.05 ± 0.08	0.03 ± 0.16	0.02 ± 0.15
	ba	-192700.83 ± 0.03	-0.04 ± 0.08	-0.02 ± 0.08	-0.03 ± 0.13	0.00 ± 0.16
	bad	-192699.26 ± 0.03	0.04 ± 0.08	0.06 ± 0.07	-0.05 ± 0.12	0.19 ± 0.12
	badq	-192711.46 ± 0.06	-0.08 ± 0.13	0.01 ± 0.15	-0.17 ± 0.33	0.63 ± 0.25

Table 15: MM-to-QM aqueous-phase solvation free energy correction values from 6-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-165240.53 ± 0.11	0.29 ± 0.20	0.19 ± 0.18	0.61 ± 0.37	-0.03 ± 0.35
	b	-165222.41 ± 0.06	0.03 ± 0.10	0.02 ± 0.09	-0.11 ± 0.13	0.21 ± 0.12
	ba	-165287.40 ± 0.05	-0.02 ± 0.09	-0.03 ± 0.08	-0.07 ± 0.12	0.12 ± 0.10
	bad	-165339.45 ± 0.05	-0.21 ± 0.09	-0.20 ± 0.09	-0.20 ± 0.12	-0.14 ± 0.11
	badq	-165328.69 ± 0.05	0.05 ± 0.09	0.06 ± 0.08	0.12 ± 0.13	0.02 ± 0.11
$CH_3NH_3^+$		-60348.42 ± 0.04	-0.07 ± 0.07	-0.08 ± 0.06	-0.01 ± 0.09	-0.10 ± 0.07
	b	-60352.99 ± 0.02	0.01 ± 0.04	0.01 ± 0.03	0.00 ± 0.04	0.01 ± 0.04
	ba	-60355.28 ± 0.01	0.03 ± 0.02	0.03 ± 0.02	0.03 ± 0.02	0.03 ± 0.02
	bad	-60355.56 ± 0.02	0.02 ± 0.03	0.02 ± 0.03	0.03 ± 0.04	0.01 ± 0.04
	badq	-60351.61 ± 0.01	0.02 ± 0.02	0.01 ± 0.02	0.02 ± 0.02	0.00 ± 0.03
NH_4^+		-35650.57 ± 0.04	0.01 ± 0.06	0.01 ± 0.06	0.02 ± 0.08	0.01 ± 0.07
	b	-35656.79 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.01	0.01 ± 0.01
	ba	-35657.95 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01
	bad	-35657.95 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01
	badq	-35657.18 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01
$CH_3CO_2^-$		-143235.31 ± 0.07	0.11 ± 0.12	0.06 ± 0.11	0.08 ± 0.20	0.13 ± 0.17
	b	-143222.40 ± 0.05	0.00 ± 0.09	-0.02 ± 0.08	-0.02 ± 0.13	-0.01 ± 0.10
	ba	-143272.32 ± 0.04	-0.11 ± 0.07	-0.09 ± 0.07	-0.16 ± 0.10	-0.02 ± 0.10
	bad	-143277.15 ± 0.04	0.01 ± 0.07	-0.01 ± 0.06	0.00 ± 0.09	0.00 ± 0.09
	badq	-143305.89 ± 0.06	0.22 ± 0.10	0.21 ± 0.12	0.11 ± 0.17	0.29 ± 0.17
H_3O^+		-48062.72 ± 0.05	0.03 ± 0.09	0.02 ± 0.08	0.02 ± 0.11	0.02 ± 0.10
	b	-48067.54 ± 0.04	-0.02 ± 0.07	-0.02 ± 0.06	-0.01 ± 0.09	0.03 ± 0.09
	ba	-48070.58 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.01	-0.01 ± 0.02	-0.02 ± 0.02

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Table 15 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.01	-0.01 ± 0.02	-0.02 ± 0.02
	badq	-48070.60 ± 0.01	0.01 ± 0.02	0.01 ± 0.01	0.01 ± 0.02	0.02 ± 0.02
C_6H_5Cl		-433851.87 ± 0.03	0.02 ± 0.05	0.03 ± 0.05	0.05 ± 0.07	0.00 ± 0.07
	b	-433850.81 ± 0.04	0.03 ± 0.06	0.03 ± 0.06	0.02 ± 0.08	0.05 ± 0.08
	ba	-433854.43 ± 0.03	0.04 ± 0.06	0.04 ± 0.06	0.05 ± 0.07	0.02 ± 0.08
	bad	-433856.05 ± 0.03	0.00 ± 0.06	0.00 ± 0.05	-0.01 ± 0.07	0.02 ± 0.07
	badq	-433860.24 ± 0.04	0.02 ± 0.06	0.03 ± 0.06	0.05 ± 0.07	0.01 ± 0.07
C_6H_{14}		-148579.99 ± 0.03	0.09 ± 0.05	0.08 ± 0.04	0.09 ± 0.06	0.07 ± 0.06
	b	-148580.59 ± 0.03	0.02 ± 0.05	0.02 ± 0.04	0.00 ± 0.06	0.03 ± 0.06
	ba	-148579.49 ± 0.03	0.03 ± 0.05	0.03 ± 0.05	0.04 ± 0.07	0.02 ± 0.06
	bad	-148579.45 ± 0.03	-0.10 ± 0.05	-0.11 ± 0.05	-0.06 ± 0.08	-0.17 ± 0.09
	badq	-148576.82 ± 0.03	-0.07 ± 0.05	-0.07 ± 0.04	-0.05 ± 0.06	-0.09 ± 0.06
CH_3OH		-72530.37 ± 0.03	0.00 ± 0.06	0.01 ± 0.06	0.01 ± 0.09	0.01 ± 0.08
	b	-72530.81 ± 0.03	0.05 ± 0.06	0.03 ± 0.06	0.01 ± 0.09	0.05 ± 0.08
	ba	-72530.76 ± 0.03	-0.08 ± 0.06	-0.08 ± 0.06	-0.09 ± 0.08	-0.07 ± 0.09
	bad	-72530.78 ± 0.03	0.00 ± 0.05	0.00 ± 0.05	-0.03 ± 0.09	0.04 ± 0.08
	badq	-72530.61 ± 0.03	-0.02 ± 0.06	-0.03 ± 0.06	-0.03 ± 0.08	-0.07 ± 0.08
C_2H_6		-50024.16 ± 0.02	0.01 ± 0.03	0.01 ± 0.03	0.00 ± 0.04	0.01 ± 0.04
	b	-50024.32 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.02 ± 0.02	-0.01 ± 0.02
	ba	-50024.08 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.01	-0.02 ± 0.02	-0.01 ± 0.02
	bad	-50024.17 ± 0.01	0.02 ± 0.02	0.02 ± 0.01	0.00 ± 0.02	0.03 ± 0.02
	badq	-50024.33 ± 0.01	0.02 ± 0.02	0.02 ± 0.01	0.01 ± 0.02	0.02 ± 0.02
$(CH_2)_4O$		-145701.53 ± 0.05	-0.03 ± 0.08	-0.03 ± 0.07	-0.02 ± 0.10	-0.07 ± 0.11
	b	-145701.13 ± 0.05	0.00 ± 0.09	0.01 ± 0.08	-0.09 ± 0.10	0.07 ± 0.10

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Table 15 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-145699.24 ± 0.03	0.02 ± 0.06	0.02 ± 0.06	0.00 ± 0.08	0.06 ± 0.08
	bad	-145700.24 ± 0.03	-0.10 ± 0.06	-0.11 ± 0.06	-0.10 ± 0.08	-0.12 ± 0.09
	badq	-145684.45 ± 0.03	-0.02 ± 0.06	-0.02 ± 0.05	0.01 ± 0.07	-0.04 ± 0.07
$C(NH_2)_3^+$		-128902.19 ± 0.05	-0.04 ± 0.09	-0.08 ± 0.08	-0.10 ± 0.13	-0.06 ± 0.10
	b	-128907.35 ± 0.05	0.12 ± 0.09	0.06 ± 0.07	0.05 ± 0.10	0.06 ± 0.09
	ba	-128933.28 ± 0.04	-0.03 ± 0.07	-0.06 ± 0.06	-0.03 ± 0.10	-0.09 ± 0.08
	bad	-128936.23 ± 0.04	-0.02 ± 0.06	-0.04 ± 0.06	-0.10 ± 0.07	-0.03 ± 0.07
	badq	-128918.95 ± 0.04	0.02 ± 0.07	0.01 ± 0.06	0.05 ± 0.09	-0.04 ± 0.09
$C_6H_5NH_2$		-180230.53 ± 0.04	0.10 ± 0.07	0.11 ± 0.07	0.08 ± 0.11	0.08 ± 0.10
	b	-180230.55 ± 0.04	-0.02 ± 0.07	0.00 ± 0.06	-0.01 ± 0.09	0.02 ± 0.09
	ba	-180233.99 ± 0.04	0.02 ± 0.06	0.01 ± 0.06	0.03 ± 0.10	-0.02 ± 0.08
	bad	-180233.04 ± 0.04	-0.02 ± 0.06	-0.03 ± 0.06	-0.02 ± 0.09	-0.04 ± 0.08
	badq	-180262.07 ± 0.07	-0.16 ± 0.11	-0.16 ± 0.11	-0.12 ± 0.16	-0.10 ± 0.15
CH_3CONH_2		-131079.14 ± 0.05	-0.01 ± 0.09	0.00 ± 0.08	0.04 ± 0.10	-0.04 ± 0.11
	b	-131078.83 ± 0.04	0.04 ± 0.07	0.05 ± 0.07	0.05 ± 0.11	0.10 ± 0.10
	ba	-131083.77 ± 0.04	-0.01 ± 0.06	-0.01 ± 0.06	-0.02 ± 0.08	0.01 ± 0.08
	bad	-131084.84 ± 0.04	-0.01 ± 0.07	0.00 ± 0.07	0.03 ± 0.09	-0.07 ± 0.12
	badq	-131071.30 ± 0.03	-0.11 ± 0.06	-0.10 ± 0.06	-0.07 ± 0.09	-0.12 ± 0.08
H_2O		-47896.99 ± 0.03	-0.07 ± 0.06	-0.05 ± 0.06	-0.07 ± 0.09	-0.04 ± 0.08
	b	-47897.87 ± 0.03	0.02 ± 0.06	0.02 ± 0.06	0.01 ± 0.09	0.02 ± 0.08
	ba	-47898.10 ± 0.03	0.04 ± 0.06	0.05 ± 0.07	-0.01 ± 0.09	0.10 ± 0.09
	bad	-47898.10 ± 0.03	0.04 ± 0.06	0.05 ± 0.07	-0.01 ± 0.09	0.10 ± 0.09
	badq	-47897.84 ± 0.03	-0.03 ± 0.06	-0.02 ± 0.07	-0.02 ± 0.09	-0.04 ± 0.12
C_2H_5OH		-97165.69 ± 0.04	-0.01 ± 0.06	0.01 ± 0.06	0.02 ± 0.08	-0.01 ± 0.10

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Table 15 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97165.97 ± 0.04	-0.04 ± 0.06	-0.03 ± 0.06	-0.02 ± 0.09	-0.03 ± 0.09
	ba	-97166.30 ± 0.04	-0.02 ± 0.06	-0.03 ± 0.06	0.00 ± 0.10	-0.03 ± 0.09
	bad	-97166.59 ± 0.04	-0.04 ± 0.06	-0.05 ± 0.07	-0.05 ± 0.10	-0.04 ± 0.09
	badq	-97165.26 ± 0.03	0.03 ± 0.06	0.03 ± 0.06	0.02 ± 0.09	0.00 ± 0.09
C_6H_6		-145560.94 ± 0.02	0.06 ± 0.04	0.05 ± 0.04	0.02 ± 0.04	0.08 ± 0.04
	b	-145561.20 ± 0.02	-0.03 ± 0.04	-0.04 ± 0.04	-0.04 ± 0.04	-0.05 ± 0.04
	ba	-145564.93 ± 0.02	0.03 ± 0.04	0.03 ± 0.04	0.02 ± 0.04	0.04 ± 0.04
	bad	-145563.51 ± 0.02	-0.04 ± 0.04	-0.04 ± 0.03	-0.06 ± 0.04	-0.03 ± 0.04
	badq	-145563.88 ± 0.02	-0.01 ± 0.04	-0.02 ± 0.03	-0.02 ± 0.04	-0.01 ± 0.04
C_6H_5OH		-192696.13 ± 0.03	0.08 ± 0.06	0.06 ± 0.06	0.04 ± 0.09	0.09 ± 0.08
	b	-192696.41 ± 0.04	0.00 ± 0.06	0.00 ± 0.06	0.05 ± 0.08	-0.06 ± 0.08
	ba	-192700.83 ± 0.03	-0.02 ± 0.06	-0.01 ± 0.05	0.00 ± 0.07	0.00 ± 0.07
	bad	-192699.26 ± 0.03	-0.02 ± 0.06	-0.02 ± 0.05	-0.04 ± 0.07	0.01 ± 0.07
	badq	-192711.46 ± 0.06	-0.05 ± 0.11	-0.05 ± 0.11	0.01 ± 0.15	-0.01 ± 0.14

Table 16: MM-to-QM aqueous-phase solvation free energy correction values from 2-λ states simulated for 100 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
CO_3^{2-}		-165240.53 ± 0.11	5.06 ± 0.53	-1.62 ± 0.69	-9.97 ± 0.38	6.74 ± 0.58
	b	-165222.41 ± 0.06	1.62 ± 0.25	0.61 ± 0.47	-1.28 ± 0.45	2.17 ± 0.46
	ba	-165287.40 ± 0.05	0.49 ± 0.20	0.04 ± 0.38	-1.00 ± 0.31	1.04 ± 0.44
	bad	-165339.45 ± 0.05	0.62 ± 0.20	-0.27 ± 0.32	-0.91 ± 0.46	1.01 ± 0.26
	badq	-165328.69 ± 0.05	0.41 ± 0.19	-0.20 ± 0.25	-0.81 ± 0.47	0.97 ± 0.26
$CH_3NH_3^+$		-60348.42 ± 0.04	0.54 ± 0.15	-0.04 ± 0.20	-0.59 ± 0.27	0.28 ± 0.25
	b	-60352.99 ± 0.02	0.05 ± 0.07	-0.03 ± 0.09	-0.02 ± 0.22	0.06 ± 0.11
	ba	-60355.28 ± 0.01	0.04 ± 0.05	0.03 ± 0.07	0.11 ± 0.12	0.14 ± 0.08
	bad	-60355.56 ± 0.02	0.05 ± 0.05	0.04 ± 0.07	0.11 ± 0.11	0.14 ± 0.09
	badq	-60351.61 ± 0.01	0.04 ± 0.05	0.03 ± 0.06	0.07 ± 0.18	-0.05 ± 0.10
NH_4^+		-35650.57 ± 0.04	0.07 ± 0.14	-0.35 ± 0.22	-0.32 ± 0.32	-1.55 ± 0.58
	b	-35656.79 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.02	-0.05 ± 0.04	-0.02 ± 0.04
	ba	-35657.95 ± 0.01	0.00 ± 0.02	-0.01 ± 0.02	-0.05 ± 0.04	0.05 ± 0.03
	bad	-35657.95 ± 0.01	0.00 ± 0.02	-0.01 ± 0.02	-0.05 ± 0.04	0.05 ± 0.03
	badq	-35657.18 ± 0.01	0.02 ± 0.02	0.02 ± 0.03	-0.06 ± 0.04	0.09 ± 0.04
$CH_3CO_2^-$		-143235.31 ± 0.07	0.88 ± 0.32	0.88 ± 0.64	-0.71 ± 0.57	2.99 ± 0.50
	b	-143222.40 ± 0.05	0.74 ± 0.19	0.19 ± 0.34	-0.92 ± 0.40	1.44 ± 0.29
	ba	-143272.32 ± 0.04	0.17 ± 0.16	0.01 ± 0.26	-1.04 ± 0.24	0.68 ± 0.23
	bad	-143277.15 ± 0.04	0.18 ± 0.16	-0.07 ± 0.30	-1.23 ± 0.37	-0.39 ± 0.57
	badq	-143305.89 ± 0.06	-0.65 ± 0.21	-0.39 ± 0.40	-1.69 ± 0.36	-0.30 ± 0.38
H_3O^+		-48062.72 ± 0.05	-0.02 ± 0.19	-0.78 ± 0.37	-3.03 ± 0.20	1.41 ± 0.34
	b	-48067.54 ± 0.04	-0.12 ± 0.16	-0.56 ± 0.24	-1.71 ± 0.25	-0.13 ± 0.36
	ba	-48070.58 ± 0.01	-0.09 ± 0.04	-0.09 ± 0.04	-0.10 ± 0.07	-0.10 ± 0.06

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Table 16 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	-0.09 ± 0.04	-0.09 ± 0.04	-0.10 ± 0.07	-0.10 ± 0.06
	badq	-48070.60 ± 0.01	-0.05 ± 0.04	-0.06 ± 0.04	-0.11 ± 0.06	-0.07 ± 0.06
C_6H_5Cl		-433851.87 ± 0.03	-0.03 ± 0.10	0.04 ± 0.12	0.19 ± 0.26	0.32 ± 0.14
	b	-433850.81 ± 0.04	0.15 ± 0.10	0.21 ± 0.11	-0.02 ± 0.14	0.51 ± 0.17
	ba	-433854.43 ± 0.03	0.05 ± 0.09	0.05 ± 0.11	-0.10 ± 0.12	-0.39 ± 0.34
	bad	-433856.05 ± 0.03	0.09 ± 0.09	0.11 ± 0.09	-0.11 ± 0.13	0.20 ± 0.22
	badq	-433860.24 ± 0.04	0.07 ± 0.09	0.11 ± 0.10	0.31 ± 0.35	0.01 ± 0.15
C_6H_{14}		-148579.99 ± 0.03	-0.28 ± 0.10	-0.17 ± 0.10	-0.20 ± 0.27	0.02 ± 0.19
	b	-148580.59 ± 0.03	0.01 ± 0.09	0.04 ± 0.12	0.02 ± 0.14	0.30 ± 0.14
	ba	-148579.49 ± 0.03	-0.20 ± 0.09	-0.23 ± 0.12	-0.33 ± 0.17	-0.04 ± 0.17
	bad	-148579.45 ± 0.03	-0.18 ± 0.09	-0.14 ± 0.10	-0.26 ± 0.16	0.15 ± 0.11
	badq	-148576.82 ± 0.03	0.09 ± 0.10	0.15 ± 0.12	-0.29 ± 0.16	0.55 ± 0.16
CH_3OH		-72530.37 ± 0.03	-0.12 ± 0.12	-0.08 ± 0.30	-0.11 ± 0.26	0.07 ± 0.38
	b	-72530.81 ± 0.03	-0.16 ± 0.12	-0.05 ± 0.18	-0.06 ± 0.24	-0.60 ± 0.30
	ba	-72530.76 ± 0.03	0.05 ± 0.11	0.18 ± 0.23	-0.14 ± 0.24	0.67 ± 0.23
	bad	-72530.78 ± 0.03	0.09 ± 0.11	0.21 ± 0.22	-0.14 ± 0.30	0.22 ± 0.32
	badq	-72530.61 ± 0.03	-0.02 ± 0.11	0.00 ± 0.18	0.20 ± 0.36	-0.12 ± 0.24
C_2H_6		-50024.16 ± 0.02	0.05 ± 0.09	0.09 ± 0.07	-0.03 ± 0.12	0.12 ± 0.11
	b	-50024.32 ± 0.01	-0.07 ± 0.05	-0.05 ± 0.06	-0.15 ± 0.08	-0.11 ± 0.23
	ba	-50024.08 ± 0.01	-0.03 ± 0.05	-0.02 ± 0.05	-0.06 ± 0.09	0.07 ± 0.06
	bad	-50024.17 ± 0.01	-0.12 ± 0.05	-0.09 ± 0.05	-0.05 ± 0.11	-0.25 ± 0.14
	badq	-50024.33 ± 0.01	-0.05 ± 0.05	-0.04 ± 0.04	-0.05 ± 0.11	0.02 ± 0.07
$(CH_2)_4O$		-145701.53 ± 0.05	0.01 ± 0.17	-0.38 ± 0.25	-1.20 ± 0.31	0.67 ± 0.20
	b	-145701.13 ± 0.05	0.31 ± 0.16	0.12 ± 0.33	-1.45 ± 0.26	1.16 ± 0.32

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Table 16 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	ba	-145699.24 ± 0.03	0.16 ± 0.11	0.37 ± 0.23	0.43 ± 0.45	-0.01 ± 0.54
	bad	-145700.24 ± 0.03	-0.05 ± 0.12	-0.05 ± 0.19	0.42 ± 0.36	0.19 ± 0.35
	badq	-145684.45 ± 0.03	0.07 ± 0.13	0.04 ± 0.15	0.06 ± 0.35	0.03 ± 0.20
$C(NH_2)_3^+$		-128902.19 ± 0.05	1.61 ± 0.26	-0.37 ± 0.25	-0.86 ± 0.49	0.38 ± 0.27
	b	-128907.35 ± 0.05	0.60 ± 0.21	-0.10 ± 0.21	-0.17 ± 0.21	0.20 ± 0.26
	ba	-128933.28 ± 0.04	0.63 ± 0.19	0.08 ± 0.17	0.03 ± 0.27	0.69 ± 0.16
	bad	-128936.23 ± 0.04	0.57 ± 0.18	0.05 ± 0.16	0.19 ± 0.33	0.60 ± 0.15
	badq	-128918.95 ± 0.04	0.11 ± 0.17	0.03 ± 0.19	-0.07 ± 0.27	-1.05 ± 0.55
$C_6H_5NH_2$		-180230.53 ± 0.04	0.25 ± 0.15	0.05 ± 0.21	-0.87 ± 0.34	0.57 ± 0.25
	b	-180230.55 ± 0.04	0.18 ± 0.15	-0.11 ± 0.18	-0.67 ± 0.29	-1.12 ± 0.49
	ba	-180233.99 ± 0.04	0.10 ± 0.12	-0.13 ± 0.18	-0.46 ± 0.22	-0.61 ± 0.33
	bad	-180233.04 ± 0.04	0.44 ± 0.14	0.01 ± 0.16	-0.32 ± 0.16	-0.16 ± 0.29
	badq	-180262.07 ± 0.07	-0.12 ± 0.24	-0.08 ± 0.62	-2.65 ± 0.52	2.34 ± 0.44
CH_3CONH_2		-131079.14 ± 0.05	-0.43 ± 0.16	-0.24 ± 0.27	-0.26 ± 0.40	-0.33 ± 0.44
	b	-131078.83 ± 0.04	-0.31 ± 0.15	-0.41 ± 0.20	-0.40 ± 0.45	0.16 ± 0.28
	ba	-131083.77 ± 0.04	0.09 ± 0.13	0.19 ± 0.23	-0.67 ± 0.26	1.28 ± 0.21
	bad	-131084.84 ± 0.04	-0.10 ± 0.13	-0.07 ± 0.22	-0.65 ± 0.26	0.87 ± 0.21
	badq	-131071.30 ± 0.03	0.22 ± 0.10	0.26 ± 0.17	-0.49 ± 0.16	0.97 ± 0.28
H_2O		-47896.99 ± 0.03	-0.02 ± 0.11	-0.15 ± 0.19	-0.11 ± 0.37	0.42 ± 0.18
	b	-47897.87 ± 0.03	-0.01 ± 0.10	-0.08 ± 0.18	-0.30 ± 0.31	0.13 ± 0.29
	ba	-47898.10 ± 0.03	0.15 ± 0.11	0.01 ± 0.19	-0.36 ± 0.30	0.51 ± 0.22
	bad	-47898.10 ± 0.03	0.15 ± 0.11	0.01 ± 0.19	-0.36 ± 0.30	0.51 ± 0.22
	badq	-47897.84 ± 0.03	0.12 ± 0.10	0.07 ± 0.20	-0.40 ± 0.28	0.68 ± 0.23
C_2H_5OH		-97165.69 ± 0.04	-0.03 ± 0.13	-0.09 ± 0.21	-0.59 ± 0.32	0.70 ± 0.19

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Table 16 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97165.97 ± 0.04	-0.12 ± 0.13	-0.15 ± 0.20	-0.39 ± 0.54	0.36 ± 0.21
	ba	-97166.30 ± 0.04	0.42 ± 0.12	0.35 ± 0.23	-0.45 ± 0.16	0.90 ± 0.39
	bad	-97166.59 ± 0.04	0.09 ± 0.13	-0.07 ± 0.21	-0.46 ± 0.50	0.37 ± 0.26
	badq	-97165.26 ± 0.03	0.20 ± 0.11	0.20 ± 0.23	-0.38 ± 0.44	0.49 ± 0.22
C_6H_6		-145560.94 ± 0.02	0.12 ± 0.09	0.11 ± 0.10	0.28 ± 0.14	-0.21 ± 0.24
	b	-145561.20 ± 0.02	0.19 ± 0.07	0.18 ± 0.08	0.29 ± 0.14	0.25 ± 0.11
	ba	-145564.93 ± 0.02	0.03 ± 0.07	-0.01 ± 0.07	0.31 ± 0.13	-0.03 ± 0.10
	bad	-145563.51 ± 0.02	0.17 ± 0.08	0.07 ± 0.09	0.25 ± 0.13	0.02 ± 0.14
	badq	-145563.88 ± 0.02	0.05 ± 0.07	0.05 ± 0.08	0.25 ± 0.12	-0.13 ± 0.14
C_6H_5OH		-192696.13 ± 0.03	-0.11 ± 0.13	-0.17 ± 0.21	0.12 ± 0.53	-0.06 ± 0.24
	b	-192696.41 ± 0.04	-0.14 ± 0.12	-0.07 ± 0.20	-0.08 ± 0.44	0.56 ± 0.28
	ba	-192700.83 ± 0.03	-0.07 ± 0.11	-0.01 ± 0.18	-0.22 ± 0.38	0.96 ± 0.16
	bad	-192699.26 ± 0.03	-0.38 ± 0.11	-0.40 ± 0.20	-0.20 ± 0.20	-0.96 ± 0.53
	badq	-192711.46 ± 0.06	-0.50 ± 0.22	-0.43 ± 0.43	-2.42 ± 0.36	1.42 ± 0.33

Table 17: MM-to-QM aqueous-phase solvation free energy correction values from 3-λ states simulated for 100 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
CO_3^{2-}		-165240.53 ± 0.11	1.25 ± 0.38	0.40 ± 0.62	-3.02 ± 0.47	1.69 ± 0.56
	b	-165222.41 ± 0.06	0.06 ± 0.21	0.02 ± 0.18	-0.30 ± 0.35	0.39 ± 0.30
	ba	-165287.40 ± 0.05	-0.02 ± 0.17	-0.06 ± 0.16	-0.31 ± 0.26	0.08 ± 0.33
	bad	-165339.45 ± 0.05	-0.03 ± 0.17	-0.08 ± 0.18	-0.67 ± 0.27	-0.27 ± 0.33
	badq	-165328.69 ± 0.05	-0.45 ± 0.19	-0.43 ± 0.14	-0.30 ± 0.25	-0.97 ± 0.40
$CH_3NH_3^+$		-60348.42 ± 0.04	0.17 ± 0.13	0.12 ± 0.12	0.22 ± 0.35	0.11 ± 0.20
	b	-60352.99 ± 0.02	-0.11 ± 0.07	-0.10 ± 0.06	-0.07 ± 0.09	-0.07 ± 0.09
	ba	-60355.28 ± 0.01	0.05 ± 0.05	0.05 ± 0.04	0.06 ± 0.06	0.06 ± 0.06
	bad	-60355.56 ± 0.02	-0.04 ± 0.04	-0.02 ± 0.06	-0.05 ± 0.09	0.03 ± 0.07
	badq	-60351.61 ± 0.01	-0.05 ± 0.04	-0.03 ± 0.03	-0.06 ± 0.07	-0.02 ± 0.05
NH_4^+		-35650.57 ± 0.04	0.07 ± 0.12	-0.04 ± 0.12	-0.08 ± 0.30	-0.25 ± 0.45
	b	-35656.79 ± 0.01	0.00 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.03	0.00 ± 0.02
	ba	-35657.95 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.02 ± 0.03	0.02 ± 0.02
	bad	-35657.95 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.02 ± 0.03	0.02 ± 0.02
	badq	-35657.18 ± 0.01	-0.01 ± 0.02	0.00 ± 0.02	-0.04 ± 0.03	0.03 ± 0.03
$CH_3CO_2^-$		-143235.31 ± 0.07	0.37 ± 0.23	0.24 ± 0.25	0.07 ± 0.53	1.02 ± 0.36
	b	-143222.40 ± 0.05	0.44 ± 0.17	0.35 ± 0.18	0.33 ± 0.46	0.55 ± 0.30
	ba	-143272.32 ± 0.04	0.34 ± 0.15	0.27 ± 0.15	0.02 ± 0.29	0.27 ± 0.18
	bad	-143277.15 ± 0.04	0.05 ± 0.15	0.00 ± 0.16	-0.11 ± 0.28	-0.02 ± 0.36
	badq	-143305.89 ± 0.06	-0.08 ± 0.17	-0.10 ± 0.18	-0.23 ± 0.38	-0.16 ± 0.35
H_3O^+		-48062.72 ± 0.05	-0.22 ± 0.17	-0.33 ± 0.17	-1.00 ± 0.21	-0.16 ± 0.35
	b	-48067.54 ± 0.04	-0.26 ± 0.17	-0.30 ± 0.14	-0.37 ± 0.20	-0.58 ± 0.26
	ba	-48070.58 ± 0.01	-0.06 ± 0.04	-0.07 ± 0.03	-0.06 ± 0.05	-0.07 ± 0.04

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Table 17 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-48070.58 ± 0.01	-0.06 ± 0.04	-0.07 ± 0.03	-0.06 ± 0.05	-0.07 ± 0.04
	badq	-48070.60 ± 0.01	-0.04 ± 0.03	-0.05 ± 0.03	-0.07 ± 0.05	-0.04 ± 0.05
C_6H_5Cl		-433851.87 ± 0.03	0.20 ± 0.10	0.17 ± 0.09	0.23 ± 0.15	0.01 ± 0.27
	b	-433850.81 ± 0.04	-0.02 ± 0.09	0.01 ± 0.08	-0.07 ± 0.10	0.14 ± 0.11
	ba	-433854.43 ± 0.03	-0.04 ± 0.09	-0.01 ± 0.08	0.07 ± 0.10	-0.26 ± 0.17
	bad	-433856.05 ± 0.03	0.08 ± 0.09	0.07 ± 0.07	0.13 ± 0.11	0.09 ± 0.11
	badq	-433860.24 ± 0.04	-0.03 ± 0.09	-0.01 ± 0.08	0.13 ± 0.15	-0.07 ± 0.11
C_6H_{14}		-148579.99 ± 0.03	-0.16 ± 0.09	-0.15 ± 0.08	-0.20 ± 0.11	-0.05 ± 0.11
	b	-148580.59 ± 0.03	-0.19 ± 0.09	-0.15 ± 0.08	-0.15 ± 0.11	-0.08 ± 0.11
	ba	-148579.49 ± 0.03	-0.11 ± 0.09	-0.14 ± 0.09	-0.14 ± 0.13	-0.09 ± 0.12
	bad	-148579.45 ± 0.03	-0.19 ± 0.09	-0.19 ± 0.07	-0.21 ± 0.10	-0.09 ± 0.09
	badq	-148576.82 ± 0.03	0.09 ± 0.09	0.11 ± 0.09	-0.11 ± 0.09	0.22 ± 0.17
CH_3OH		-72530.37 ± 0.03	-0.15 ± 0.11	-0.17 ± 0.14	-0.04 ± 0.22	-0.15 ± 0.22
	b	-72530.81 ± 0.03	-0.14 ± 0.11	-0.15 ± 0.11	0.05 ± 0.20	-0.32 ± 0.20
	ba	-72530.76 ± 0.03	-0.02 ± 0.11	-0.03 ± 0.12	-0.02 ± 0.20	0.16 ± 0.16
	bad	-72530.78 ± 0.03	0.08 ± 0.10	0.09 ± 0.11	0.02 ± 0.20	0.23 ± 0.17
	badq	-72530.61 ± 0.03	0.33 ± 0.10	0.26 ± 0.10	0.35 ± 0.23	0.19 ± 0.17
C_2H_6		-50024.16 ± 0.02	0.00 ± 0.05	0.01 ± 0.04	-0.03 ± 0.07	0.05 ± 0.06
	b	-50024.32 ± 0.01	-0.05 ± 0.05	-0.05 ± 0.04	-0.07 ± 0.05	-0.06 ± 0.08
	ba	-50024.08 ± 0.01	-0.03 ± 0.04	-0.03 ± 0.04	-0.07 ± 0.05	0.02 ± 0.05
	bad	-50024.17 ± 0.01	-0.03 ± 0.04	-0.04 ± 0.03	-0.04 ± 0.05	-0.05 ± 0.05
	badq	-50024.33 ± 0.01	-0.02 ± 0.04	-0.02 ± 0.03	-0.04 ± 0.05	0.01 ± 0.04
$(CH_2)_4O$		-145701.53 ± 0.05	0.00 ± 0.17	-0.06 ± 0.14	0.14 ± 0.33	-0.33 ± 0.29
	b	-145701.13 ± 0.05	-0.21 ± 0.17	-0.14 ± 0.16	-0.28 ± 0.35	-0.27 ± 0.36

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Table 17 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	ba	-145699.24 ± 0.03	0.07 ± 0.11	0.11 ± 0.10	0.10 ± 0.31	0.19 ± 0.24
	bad	-145700.24 ± 0.03	-0.01 ± 0.12	-0.02 ± 0.13	0.11 ± 0.21	-0.07 ± 0.21
	badq	-145684.45 ± 0.03	0.08 ± 0.11	0.05 ± 0.09	0.14 ± 0.18	0.00 ± 0.13
$C(NH_2)_3^+$		-128902.19 ± 0.05	0.04 ± 0.18	-0.24 ± 0.18	-0.12 ± 0.44	-0.43 ± 0.29
	b	-128907.35 ± 0.05	0.10 ± 0.15	-0.06 ± 0.13	-0.02 ± 0.24	-0.12 ± 0.24
	ba	-128933.28 ± 0.04	0.08 ± 0.14	-0.04 ± 0.13	-0.01 ± 0.18	0.05 ± 0.16
	bad	-128936.23 ± 0.04	0.15 ± 0.13	0.02 ± 0.10	0.00 ± 0.18	0.15 ± 0.12
	badq	-128918.95 ± 0.04	-0.05 ± 0.14	-0.09 ± 0.12	0.00 ± 0.21	-0.41 ± 0.32
$C_6H_5NH_2$		-180230.53 ± 0.04	0.09 ± 0.14	0.13 ± 0.12	-0.15 ± 0.16	0.07 ± 0.20
	b	-180230.55 ± 0.04	0.15 ± 0.14	0.14 ± 0.13	0.01 ± 0.21	-0.33 ± 0.28
	ba	-180233.99 ± 0.04	-0.22 ± 0.12	-0.21 ± 0.11	-0.10 ± 0.21	-0.41 ± 0.16
	bad	-180233.04 ± 0.04	0.20 ± 0.13	0.18 ± 0.12	0.15 ± 0.16	-0.10 ± 0.17
	badq	-180262.07 ± 0.07	0.94 ± 0.21	0.91 ± 0.24	0.06 ± 0.39	1.30 ± 0.31
CH_3CONH_2		-131079.14 ± 0.05	-0.10 ± 0.16	-0.12 ± 0.14	0.09 ± 0.26	-0.15 ± 0.23
	b	-131078.83 ± 0.04	-0.04 ± 0.13	-0.10 ± 0.12	-0.21 ± 0.22	0.03 ± 0.17
	ba	-131083.77 ± 0.04	0.24 ± 0.13	0.23 ± 0.13	-0.07 ± 0.18	0.47 ± 0.17
	bad	-131084.84 ± 0.04	-0.08 ± 0.13	-0.06 ± 0.13	-0.23 ± 0.22	-0.06 ± 0.33
	badq	-131071.30 ± 0.03	-0.11 ± 0.12	0.02 ± 0.10	-0.19 ± 0.13	-0.22 ± 0.27
H_2O		-47896.99 ± 0.03	-0.29 ± 0.12	-0.27 ± 0.14	-0.14 ± 0.24	-0.28 ± 0.19
	b	-47897.87 ± 0.03	0.23 ± 0.10	0.17 ± 0.10	0.11 ± 0.17	0.32 ± 0.15
	ba	-47898.10 ± 0.03	0.33 ± 0.10	0.27 ± 0.10	0.21 ± 0.19	0.38 ± 0.15
	bad	-47898.10 ± 0.03	0.33 ± 0.10	0.27 ± 0.10	0.21 ± 0.19	0.38 ± 0.15
	badq	-47897.84 ± 0.03	-0.02 ± 0.10	0.00 ± 0.12	-0.08 ± 0.21	0.17 ± 0.25
C_2H_5OH		-97165.69 ± 0.04	0.16 ± 0.12	0.11 ± 0.13	-0.09 ± 0.19	0.32 ± 0.16

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Table 17 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97165.97 ± 0.04	-0.11 ± 0.12	-0.11 ± 0.12	-0.23 ± 0.31	0.03 ± 0.17
	ba	-97166.30 ± 0.04	0.10 ± 0.12	0.14 ± 0.12	-0.18 ± 0.15	0.46 ± 0.16
	bad	-97166.59 ± 0.04	0.01 ± 0.13	-0.03 ± 0.13	-0.04 ± 0.24	-0.01 ± 0.16
	badq	-97165.26 ± 0.03	-0.04 ± 0.11	-0.02 ± 0.12	-0.11 ± 0.23	0.10 ± 0.14
C_6H_6		-145560.94 ± 0.02	0.00 ± 0.07	0.01 ± 0.07	0.15 ± 0.10	-0.04 ± 0.11
	b	-145561.20 ± 0.02	0.05 ± 0.06	0.08 ± 0.05	0.10 ± 0.08	0.10 ± 0.07
	ba	-145564.93 ± 0.02	0.12 ± 0.06	0.09 ± 0.05	0.18 ± 0.07	0.06 ± 0.07
	bad	-145563.51 ± 0.02	0.01 ± 0.07	0.02 ± 0.07	0.10 ± 0.13	-0.02 ± 0.09
	badq	-145563.88 ± 0.02	-0.05 ± 0.06	-0.03 ± 0.06	0.03 ± 0.08	-0.10 ± 0.09
C_6H_5OH		-192696.13 ± 0.03	-0.23 ± 0.13	-0.23 ± 0.12	-0.05 ± 0.37	-0.22 ± 0.15
	b	-192696.41 ± 0.04	-0.10 ± 0.12	-0.10 ± 0.12	-0.20 ± 0.26	0.19 ± 0.16
	ba	-192700.83 ± 0.03	0.29 ± 0.10	0.19 ± 0.10	0.10 ± 0.23	0.51 ± 0.11
	bad	-192699.26 ± 0.03	-0.11 ± 0.10	-0.17 ± 0.10	-0.23 ± 0.14	-0.21 ± 0.27
	badq	-192711.46 ± 0.06	0.58 ± 0.20	0.44 ± 0.23	0.55 ± 0.54	0.62 ± 0.38

Table 18: MM-to-QM aqueous-phase solvation free energy correction values from 6-λ states simulated for 100 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
CO_3^{2-}		-165240.53 ± 0.11	-0.15 ± 0.25	-0.27 ± 0.23	-0.61 ± 0.35	-0.25 ± 0.38
	b	-165222.41 ± 0.06	0.37 ± 0.13	0.33 ± 0.12	0.35 ± 0.24	0.40 ± 0.17
	ba	-165287.40 ± 0.05	-0.06 ± 0.12	-0.07 ± 0.11	-0.11 ± 0.16	-0.04 ± 0.16
	bad	-165339.45 ± 0.05	-0.13 ± 0.13	-0.14 ± 0.12	-0.07 ± 0.19	-0.23 ± 0.18
	badq	-165328.69 ± 0.05	-0.13 ± 0.11	-0.13 ± 0.09	-0.16 ± 0.13	-0.16 ± 0.13
$CH_3NH_3^+$		-60348.42 ± 0.04	-0.01 ± 0.09	-0.01 ± 0.08	-0.04 ± 0.12	0.04 ± 0.11
	b	-60352.99 ± 0.02	-0.04 ± 0.04	-0.04 ± 0.04	-0.04 ± 0.05	-0.04 ± 0.05
	ba	-60355.28 ± 0.01	0.04 ± 0.03	0.04 ± 0.02	0.03 ± 0.03	0.05 ± 0.03
	bad	-60355.56 ± 0.02	0.03 ± 0.04	0.03 ± 0.03	0.02 ± 0.04	0.05 ± 0.04
	badq	-60351.61 ± 0.01	0.05 ± 0.03	0.05 ± 0.02	0.04 ± 0.03	0.05 ± 0.03
NH_4^+		-35650.57 ± 0.04	0.05 ± 0.08	0.02 ± 0.07	0.06 ± 0.13	0.00 ± 0.14
	b	-35656.79 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02
	ba	-35657.95 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.01 ± 0.01	0.01 ± 0.01
	bad	-35657.95 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.01 ± 0.01	0.01 ± 0.01
	badq	-35657.18 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.02	0.03 ± 0.02
$CH_3CO_2^-$		-143235.31 ± 0.07	0.04 ± 0.17	0.03 ± 0.15	0.05 ± 0.26	-0.02 ± 0.25
	b	-143222.40 ± 0.05	0.08 ± 0.11	0.08 ± 0.10	-0.01 ± 0.16	0.18 ± 0.14
	ba	-143272.32 ± 0.04	-0.10 ± 0.10	-0.11 ± 0.10	-0.12 ± 0.14	-0.10 ± 0.15
	bad	-143277.15 ± 0.04	0.04 ± 0.09	0.04 ± 0.09	-0.11 ± 0.13	0.15 ± 0.13
	badq	-143305.89 ± 0.06	-0.27 ± 0.13	-0.26 ± 0.12	-0.28 ± 0.18	-0.22 ± 0.17
H_3O^+		-48062.72 ± 0.05	-0.08 ± 0.12	-0.08 ± 0.12	-0.21 ± 0.16	-0.15 ± 0.19
	b	-48067.54 ± 0.04	-0.13 ± 0.10	-0.14 ± 0.08	-0.26 ± 0.12	-0.05 ± 0.12
	ba	-48070.58 ± 0.01	0.01 ± 0.02	0.01 ± 0.02	0.01 ± 0.03	0.00 ± 0.03

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Table 18 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	0.01 ± 0.02	0.01 ± 0.02	0.01 ± 0.03	0.00 ± 0.03
	badq	-48070.60 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.02	-0.03 ± 0.03	-0.02 ± 0.02
C_6H_5Cl		-433851.87 ± 0.03	0.13 ± 0.07	0.13 ± 0.06	0.18 ± 0.09	0.10 ± 0.09
	b	-433850.81 ± 0.04	0.03 ± 0.06	0.03 ± 0.06	0.02 ± 0.08	0.05 ± 0.08
	ba	-433854.43 ± 0.03	0.04 ± 0.06	0.04 ± 0.06	0.05 ± 0.07	0.02 ± 0.08
	bad	-433856.05 ± 0.03	0.00 ± 0.06	0.00 ± 0.05	-0.01 ± 0.07	0.02 ± 0.07
	badq	-433860.24 ± 0.04	0.02 ± 0.06	0.03 ± 0.06	0.05 ± 0.07	0.01 ± 0.07
C_6H_{14}		-148579.99 ± 0.03	-0.01 ± 0.07	-0.02 ± 0.05	-0.01 ± 0.07	-0.03 ± 0.08
	b	-148580.59 ± 0.03	-0.02 ± 0.07	-0.02 ± 0.06	0.00 ± 0.09	-0.03 ± 0.08
	ba	-148579.49 ± 0.03	-0.08 ± 0.06	-0.08 ± 0.05	-0.11 ± 0.07	-0.09 ± 0.09
	bad	-148579.45 ± 0.03	-0.09 ± 0.07	-0.09 ± 0.05	-0.08 ± 0.07	-0.13 ± 0.08
	badq	-148576.82 ± 0.03	-0.14 ± 0.07	-0.12 ± 0.05	-0.17 ± 0.07	-0.05 ± 0.07
CH_3OH		-72530.37 ± 0.03	0.09 ± 0.08	0.08 ± 0.08	0.10 ± 0.11	0.05 ± 0.11
	b	-72530.81 ± 0.03	0.03 ± 0.08	0.03 ± 0.07	0.04 ± 0.10	0.01 ± 0.10
	ba	-72530.76 ± 0.03	-0.17 ± 0.09	-0.16 ± 0.08	-0.11 ± 0.13	-0.17 ± 0.11
	bad	-72530.78 ± 0.03	0.07 ± 0.08	0.08 ± 0.07	0.06 ± 0.10	0.11 ± 0.09
	badq	-72530.61 ± 0.03	-0.06 ± 0.08	-0.06 ± 0.07	0.00 ± 0.11	-0.07 ± 0.09
C_2H_6		-50024.16 ± 0.02	0.02 ± 0.04	0.03 ± 0.04	0.01 ± 0.04	0.05 ± 0.04
	b	-50024.32 ± 0.01	-0.01 ± 0.03	-0.01 ± 0.03	-0.02 ± 0.04	0.00 ± 0.04
	ba	-50024.08 ± 0.01	-0.04 ± 0.03	-0.04 ± 0.02	-0.05 ± 0.04	-0.02 ± 0.03
	bad	-50024.17 ± 0.01	-0.03 ± 0.03	-0.03 ± 0.02	-0.02 ± 0.03	-0.04 ± 0.03
	badq	-50024.33 ± 0.01	-0.03 ± 0.02	-0.03 ± 0.02	-0.04 ± 0.03	-0.01 ± 0.02
$(CH_2)_4O$		-145701.53 ± 0.05	0.06 ± 0.10	0.05 ± 0.09	0.02 ± 0.12	0.07 ± 0.12
	b	-145701.13 ± 0.05	-0.04 ± 0.11	-0.05 ± 0.09	-0.01 ± 0.16	-0.06 ± 0.13

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Table 18 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-145699.24 ± 0.03	0.12 ± 0.08	0.14 ± 0.08	0.08 ± 0.12	0.22 ± 0.10
	bad	-145700.24 ± 0.03	0.18 ± 0.09	0.17 ± 0.08	0.25 ± 0.12	0.13 ± 0.10
	badq	-145684.45 ± 0.03	0.01 ± 0.08	0.01 ± 0.07	0.08 ± 0.10	-0.02 ± 0.10
$C(NH_2)_3^+$		-128902.19 ± 0.05	-0.01 ± 0.12	-0.02 ± 0.10	-0.12 ± 0.17	-0.10 ± 0.16
	b	-128907.35 ± 0.05	-0.24 ± 0.10	-0.25 ± 0.09	-0.19 ± 0.15	-0.28 ± 0.11
	ba	-128933.28 ± 0.04	-0.11 ± 0.09	-0.14 ± 0.08	-0.07 ± 0.16	-0.13 ± 0.09
	bad	-128936.23 ± 0.04	-0.05 ± 0.08	-0.07 ± 0.07	-0.17 ± 0.10	0.00 ± 0.10
	badq	-128918.95 ± 0.04	-0.25 ± 0.09	-0.27 ± 0.08	-0.28 ± 0.11	-0.26 ± 0.11
$C_6H_5NH_2$		-180230.53 ± 0.04	0.14 ± 0.10	0.13 ± 0.09	0.14 ± 0.13	0.10 ± 0.14
	b	-180230.55 ± 0.04	-0.05 ± 0.09	-0.04 ± 0.08	-0.01 ± 0.12	-0.13 ± 0.12
	ba	-180233.99 ± 0.04	0.00 ± 0.09	0.01 ± 0.07	0.10 ± 0.12	-0.13 ± 0.11
	bad	-180233.04 ± 0.04	0.11 ± 0.08	0.12 ± 0.08	0.13 ± 0.11	0.03 ± 0.12
	badq	-180262.07 ± 0.07	0.32 ± 0.16	0.33 ± 0.17	0.39 ± 0.26	0.17 ± 0.29
CH_3CONH_2		-131079.14 ± 0.05	0.10 ± 0.11	0.08 ± 0.09	0.18 ± 0.17	-0.03 ± 0.16
	b	-131078.83 ± 0.04	0.02 ± 0.10	0.00 ± 0.09	0.02 ± 0.13	-0.06 ± 0.13
	ba	-131083.77 ± 0.04	0.08 ± 0.09	0.09 ± 0.08	-0.04 ± 0.11	0.19 ± 0.13
	bad	-131084.84 ± 0.04	-0.06 ± 0.09	-0.05 ± 0.09	-0.08 ± 0.13	-0.03 ± 0.14
	badq	-131071.30 ± 0.03	0.02 ± 0.07	0.03 ± 0.07	-0.05 ± 0.10	0.13 ± 0.09
H_2O		-47896.99 ± 0.03	0.09 ± 0.08	0.07 ± 0.08	0.09 ± 0.12	0.05 ± 0.12
	b	-47897.87 ± 0.03	-0.02 ± 0.08	-0.01 ± 0.07	0.00 ± 0.09	-0.02 ± 0.09
	ba	-47898.10 ± 0.03	0.08 ± 0.08	0.08 ± 0.09	0.05 ± 0.11	0.11 ± 0.11
	bad	-47898.10 ± 0.03	0.08 ± 0.08	0.08 ± 0.09	0.05 ± 0.11	0.11 ± 0.11
	badq	-47897.84 ± 0.03	-0.17 ± 0.08	-0.15 ± 0.08	-0.18 ± 0.11	-0.14 ± 0.11
C_2H_5OH		-97165.69 ± 0.04	-0.18 ± 0.08	-0.17 ± 0.08	-0.25 ± 0.12	-0.10 ± 0.11

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Table 18 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97165.97 ± 0.04	0.04 ± 0.08	0.04 ± 0.09	-0.01 ± 0.14	0.09 ± 0.12
	ba	-97166.30 ± 0.04	-0.03 ± 0.09	0.00 ± 0.08	-0.02 ± 0.16	0.05 ± 0.12
	bad	-97166.59 ± 0.04	-0.10 ± 0.08	-0.10 ± 0.08	-0.10 ± 0.16	-0.07 ± 0.11
	badq	-97165.26 ± 0.03	0.27 ± 0.08	0.25 ± 0.07	0.23 ± 0.10	0.26 ± 0.10
C_6H_6		-145560.94 ± 0.02	0.05 ± 0.05	0.05 ± 0.04	0.09 ± 0.06	0.01 ± 0.07
	b	-145561.20 ± 0.02	-0.01 ± 0.04	0.01 ± 0.04	0.04 ± 0.05	-0.02 ± 0.05
	ba	-145564.93 ± 0.02	0.00 ± 0.04	0.00 ± 0.04	0.05 ± 0.06	-0.05 ± 0.06
	bad	-145563.51 ± 0.02	-0.06 ± 0.04	-0.05 ± 0.04	-0.05 ± 0.05	-0.06 ± 0.05
	badq	-145563.88 ± 0.02	-0.05 ± 0.04	-0.05 ± 0.04	-0.02 ± 0.05	-0.08 ± 0.05
C_6H_5OH		-192696.13 ± 0.03	0.09 ± 0.08	0.07 ± 0.08	0.05 ± 0.11	0.10 ± 0.09
	b	-192696.41 ± 0.04	0.02 ± 0.08	0.01 ± 0.08	-0.03 ± 0.13	0.09 ± 0.11
	ba	-192700.83 ± 0.03	0.16 ± 0.08	0.14 ± 0.07	0.10 ± 0.10	0.21 ± 0.09
	bad	-192699.26 ± 0.03	-0.04 ± 0.08	-0.06 ± 0.07	-0.08 ± 0.09	-0.02 ± 0.09
	badq	-192711.46 ± 0.06	-0.30 ± 0.14	-0.25 ± 0.14	-0.28 ± 0.23	-0.36 ± 0.22

Table 19: MM-to-QM aqueous-phase solvation free energy correction values from 2-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
CO_3^{2-}		-165240.53 ± 0.11	3.59 ± 0.66	0.03 ± 0.53	-10.12 ± 0.43	10.17 ± 0.34
	b	-165222.41 ± 0.06	1.87 ± 0.36	0.35 ± 0.44	-1.99 ± 0.26	2.57 ± 0.39
	ba	-165287.40 ± 0.05	1.53 ± 0.25	1.07 ± 0.43	-1.80 ± 0.25	3.89 ± 0.37
	bad	-165339.45 ± 0.05	1.11 ± 0.26	0.58 ± 0.40	-1.74 ± 0.25	2.83 ± 0.34
	badq	-165328.69 ± 0.05	0.38 ± 0.30	-0.38 ± 0.37	-1.45 ± 0.23	-0.19 ± 0.47
$CH_3NH_3^+$		-60348.42 ± 0.04	0.18 ± 0.19	-0.11 ± 0.24	-0.51 ± 0.28	0.16 ± 0.40
	b	-60352.99 ± 0.02	-0.01 ± 0.10	-0.06 ± 0.10	0.51 ± 0.39	-0.07 ± 0.16
	ba	-60355.28 ± 0.01	0.05 ± 0.08	0.00 ± 0.07	0.19 ± 0.17	-0.04 ± 0.09
	bad	-60355.56 ± 0.02	-0.04 ± 0.08	-0.07 ± 0.07	0.19 ± 0.18	-0.26 ± 0.15
	badq	-60351.61 ± 0.01	0.06 ± 0.06	0.04 ± 0.07	0.15 ± 0.18	0.08 ± 0.09
NH_4^+		-35650.57 ± 0.04	0.56 ± 0.20	0.12 ± 0.25	-0.49 ± 0.34	-0.01 ± 0.36
	b	-35656.79 ± 0.01	0.01 ± 0.03	0.00 ± 0.04	-0.04 ± 0.04	0.04 ± 0.06
	ba	-35657.95 ± 0.01	-0.06 ± 0.03	-0.06 ± 0.04	-0.04 ± 0.04	-0.07 ± 0.05
	bad	-35657.95 ± 0.01	-0.06 ± 0.03	-0.06 ± 0.04	-0.04 ± 0.04	-0.07 ± 0.05
	badq	-35657.18 ± 0.01	-0.05 ± 0.03	-0.05 ± 0.04	-0.07 ± 0.06	-0.04 ± 0.05
$CH_3CO_2^-$		-143235.31 ± 0.07	0.29 ± 0.46	0.52 ± 0.59	-1.36 ± 0.53	2.67 ± 0.41
	b	-143222.40 ± 0.05	1.13 ± 0.31	-0.07 ± 0.50	-0.73 ± 0.47	0.81 ± 0.54
	ba	-143272.32 ± 0.04	0.44 ± 0.19	0.39 ± 0.27	-0.82 ± 0.22	1.76 ± 0.19
	bad	-143277.15 ± 0.04	0.15 ± 0.19	0.00 ± 0.38	-0.98 ± 0.41	0.49 ± 0.46
	badq	-143305.89 ± 0.06	0.53 ± 0.24	0.66 ± 0.45	-2.05 ± 0.37	3.37 ± 0.31
H_3O^+		-48062.72 ± 0.05	0.38 ± 0.29	0.20 ± 0.51	-0.99 ± 0.56	2.06 ± 0.25
	b	-48067.54 ± 0.04	0.28 ± 0.20	0.19 ± 0.43	-0.89 ± 0.40	1.25 ± 0.31
	ba	-48070.58 ± 0.01	0.02 ± 0.05	0.01 ± 0.06	-0.07 ± 0.08	0.01 ± 0.08

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Table 19 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	0.02 ± 0.05	0.01 ± 0.06	-0.07 ± 0.08	0.01 ± 0.08
	badq	-48070.60 ± 0.01	0.05 ± 0.05	0.05 ± 0.06	-0.07 ± 0.07	0.11 ± 0.07
C_6H_5Cl		-433851.87 ± 0.03	0.20 ± 0.16	0.24 ± 0.20	-0.11 ± 0.24	0.39 ± 0.25
	b	-433850.81 ± 0.04	0.21 ± 0.15	0.10 ± 0.16	0.32 ± 0.38	0.29 ± 0.16
	ba	-433854.43 ± 0.03	0.10 ± 0.12	0.09 ± 0.11	0.38 ± 0.32	0.02 ± 0.24
	bad	-433856.05 ± 0.03	-0.01 ± 0.12	-0.03 ± 0.11	0.37 ± 0.32	-0.19 ± 0.23
	badq	-433860.24 ± 0.04	0.03 ± 0.13	0.06 ± 0.12	0.30 ± 0.19	-0.06 ± 0.28
C_6H_{14}		-148579.99 ± 0.03	-0.02 ± 0.13	0.00 ± 0.14	-0.39 ± 0.18	-0.49 ± 0.52
	b	-148580.59 ± 0.03	0.29 ± 0.14	0.20 ± 0.13	-0.08 ± 0.15	-0.22 ± 0.33
	ba	-148579.49 ± 0.03	0.10 ± 0.13	0.06 ± 0.14	-0.12 ± 0.17	0.22 ± 0.16
	bad	-148579.45 ± 0.03	0.03 ± 0.12	0.06 ± 0.13	-0.02 ± 0.16	0.09 ± 0.22
	badq	-148576.82 ± 0.03	-0.10 ± 0.13	-0.10 ± 0.16	-0.28 ± 0.28	0.03 ± 0.23
CH_3OH		-72530.37 ± 0.03	0.02 ± 0.17	-0.18 ± 0.21	-0.47 ± 0.39	-0.40 ± 0.48
	b	-72530.81 ± 0.03	-0.17 ± 0.15	-0.23 ± 0.19	-0.65 ± 0.28	0.07 ± 0.32
	ba	-72530.76 ± 0.03	-0.09 ± 0.15	-0.22 ± 0.20	-0.66 ± 0.28	0.47 ± 0.24
	bad	-72530.78 ± 0.03	0.14 ± 0.14	0.09 ± 0.21	-0.71 ± 0.25	0.67 ± 0.33
	badq	-72530.61 ± 0.03	-0.08 ± 0.16	-0.05 ± 0.18	-0.48 ± 0.22	-0.81 ± 0.43
C_2H_6		-50024.16 ± 0.02	-0.06 ± 0.09	-0.02 ± 0.08	-0.03 ± 0.12	0.03 ± 0.10
	b	-50024.32 ± 0.01	-0.14 ± 0.07	-0.16 ± 0.08	-0.29 ± 0.12	-0.14 ± 0.15
	ba	-50024.08 ± 0.01	-0.06 ± 0.07	-0.07 ± 0.07	-0.10 ± 0.09	-0.06 ± 0.10
	bad	-50024.17 ± 0.01	-0.08 ± 0.07	-0.08 ± 0.07	-0.09 ± 0.10	-0.07 ± 0.09
	badq	-50024.33 ± 0.01	-0.06 ± 0.07	-0.06 ± 0.07	-0.09 ± 0.10	-0.16 ± 0.17
$(CH_2)_4O$		-145701.53 ± 0.05	-0.10 ± 0.25	0.10 ± 0.36	-0.41 ± 0.44	1.11 ± 0.31
	b	-145701.13 ± 0.05	0.22 ± 0.26	0.07 ± 0.38	-1.34 ± 0.33	1.15 ± 0.27

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Table 19 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-145699.24 ± 0.03	-0.03 ± 0.17	0.12 ± 0.30	-0.49 ± 0.38	0.95 ± 0.32
	bad	-145700.24 ± 0.03	-0.54 ± 0.19	-0.61 ± 0.30	-0.46 ± 0.45	-0.73 ± 0.25
	badq	-145684.45 ± 0.03	-0.03 ± 0.16	0.00 ± 0.21	-0.22 ± 0.30	0.14 ± 0.25
$C(NH_2)_3^+$		-128902.19 ± 0.05	2.23 ± 0.57	0.36 ± 0.44	-1.08 ± 0.45	1.60 ± 0.28
	b	-128907.35 ± 0.05	1.27 ± 0.29	0.16 ± 0.30	-0.40 ± 0.32	0.79 ± 0.36
	ba	-128933.28 ± 0.04	0.71 ± 0.29	-0.07 ± 0.21	-0.86 ± 0.15	0.33 ± 0.33
	bad	-128936.23 ± 0.04	0.28 ± 0.19	-0.10 ± 0.17	-0.70 ± 0.14	0.13 ± 0.23
	badq	-128918.95 ± 0.04	0.55 ± 0.20	0.12 ± 0.22	-0.87 ± 0.18	0.97 ± 0.21
$C_6H_5NH_2$		-180230.53 ± 0.04	0.26 ± 0.21	0.41 ± 0.36	0.66 ± 0.52	1.05 ± 0.38
	b	-180230.55 ± 0.04	0.19 ± 0.20	0.25 ± 0.32	-0.06 ± 0.47	0.89 ± 0.26
	ba	-180233.99 ± 0.04	0.11 ± 0.19	-0.08 ± 0.23	-0.43 ± 0.37	0.39 ± 0.33
	bad	-180233.04 ± 0.04	0.14 ± 0.19	-0.05 ± 0.24	-0.29 ± 0.38	0.07 ± 0.28
	badq	-180262.07 ± 0.07	-0.83 ± 0.35	-0.64 ± 0.49	-3.96 ± 0.35	2.65 ± 0.37
CH_3CONH_2		-131079.14 ± 0.05	-0.10 ± 0.25	-0.11 ± 0.54	0.02 ± 0.52	1.01 ± 0.40
	b	-131078.83 ± 0.04	-0.22 ± 0.23	0.01 ± 0.37	1.06 ± 0.35	1.32 ± 0.25
	ba	-131083.77 ± 0.04	0.06 ± 0.23	0.34 ± 0.48	0.57 ± 0.56	-0.39 ± 0.57
	bad	-131084.84 ± 0.04	-0.40 ± 0.24	-0.39 ± 0.46	0.57 ± 0.56	-0.48 ± 0.38
	badq	-131071.30 ± 0.03	0.30 ± 0.17	0.54 ± 0.31	0.24 ± 0.21	1.60 ± 0.31
H_2O		-47896.99 ± 0.03	-0.13 ± 0.17	-0.34 ± 0.30	-0.72 ± 0.24	-0.07 ± 0.36
	b	-47897.87 ± 0.03	0.32 ± 0.14	0.16 ± 0.31	-0.76 ± 0.24	0.97 ± 0.36
	ba	-47898.10 ± 0.03	0.40 ± 0.13	0.20 ± 0.29	-0.78 ± 0.32	0.98 ± 0.28
	bad	-47898.10 ± 0.03	0.40 ± 0.13	0.20 ± 0.29	-0.78 ± 0.32	0.98 ± 0.28
	badq	-47897.84 ± 0.03	0.03 ± 0.13	-0.06 ± 0.34	-0.80 ± 0.30	0.31 ± 0.45
C_2H_5OH		-97165.69 ± 0.04	-0.03 ± 0.18	-0.05 ± 0.26	-0.68 ± 0.26	-1.20 ± 0.39

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Table 19 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97165.97 ± 0.04	-0.28 ± 0.16	-0.19 ± 0.17	-0.90 ± 0.22	0.53 ± 0.25
	ba	-97166.30 ± 0.04	0.20 ± 0.18	-0.08 ± 0.26	-0.92 ± 0.15	-0.36 ± 0.49
	bad	-97166.59 ± 0.04	0.21 ± 0.17	0.03 ± 0.25	-0.93 ± 0.15	0.36 ± 0.43
	badq	-97165.26 ± 0.03	0.37 ± 0.16	0.47 ± 0.21	-0.31 ± 0.18	0.52 ± 0.39
C_6H_6		-145560.94 ± 0.02	0.07 ± 0.11	0.04 ± 0.12	0.19 ± 0.30	0.20 ± 0.12
	b	-145561.20 ± 0.02	0.13 ± 0.09	0.12 ± 0.10	0.01 ± 0.12	0.25 ± 0.12
	ba	-145564.93 ± 0.02	0.25 ± 0.11	0.18 ± 0.11	0.15 ± 0.14	-0.24 ± 0.37
	bad	-145563.51 ± 0.02	0.16 ± 0.10	0.12 ± 0.09	0.09 ± 0.14	-0.13 ± 0.21
	badq	-145563.88 ± 0.02	0.00 ± 0.08	0.00 ± 0.08	0.00 ± 0.12	0.08 ± 0.11
C_6H_5OH		-192696.13 ± 0.03	0.20 ± 0.19	0.23 ± 0.29	-0.36 ± 0.36	0.75 ± 0.33
	b	-192696.41 ± 0.04	-0.41 ± 0.19	-0.35 ± 0.24	-0.52 ± 0.27	-0.25 ± 0.27
	ba	-192700.83 ± 0.03	0.19 ± 0.18	0.15 ± 0.24	-0.61 ± 0.24	0.46 ± 0.32
	bad	-192699.26 ± 0.03	0.06 ± 0.18	-0.06 ± 0.33	-0.64 ± 0.35	0.43 ± 0.28
	badq	-192711.46 ± 0.06	-1.21 ± 0.36	0.17 ± 0.75	-1.51 ± 0.50	1.68 ± 0.56

Table 20: MM-to-QM aqueous-phase solvation free energy correction values from 3-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
CO_3^{2-}		-165240.53 ± 0.11	0.48 ± 0.56	-0.70 ± 0.68	-3.41 ± 0.53	1.41 ± 0.52
	b	-165222.41 ± 0.06	0.46 ± 0.33	0.33 ± 0.25	0.32 ± 0.28	0.49 ± 0.35
	ba	-165287.40 ± 0.05	0.03 ± 0.28	0.27 ± 0.23	-0.57 ± 0.24	0.78 ± 0.34
	bad	-165339.45 ± 0.05	0.97 ± 0.25	0.87 ± 0.24	0.32 ± 0.46	1.29 ± 0.40
	badq	-165328.69 ± 0.05	-0.39 ± 0.30	-0.50 ± 0.23	0.79 ± 0.40	-0.79 ± 0.31
$CH_3NH_3^+$		-60348.42 ± 0.04	-0.26 ± 0.19	-0.25 ± 0.15	-0.21 ± 0.26	-0.34 ± 0.26
	b	-60352.99 ± 0.02	-0.10 ± 0.09	-0.09 ± 0.07	-0.01 ± 0.15	-0.16 ± 0.13
	ba	-60355.28 ± 0.01	0.09 ± 0.07	0.08 ± 0.06	0.11 ± 0.09	0.05 ± 0.07
	bad	-60355.56 ± 0.02	-0.06 ± 0.07	-0.06 ± 0.06	0.01 ± 0.09	-0.13 ± 0.09
	badq	-60351.61 ± 0.01	-0.02 ± 0.07	0.00 ± 0.05	0.01 ± 0.08	-0.02 ± 0.09
NH_4^+		-35650.57 ± 0.04	0.27 ± 0.17	0.25 ± 0.16	0.10 ± 0.26	0.07 ± 0.29
	b	-35656.79 ± 0.01	0.00 ± 0.03	0.00 ± 0.03	-0.02 ± 0.03	0.02 ± 0.04
	ba	-35657.95 ± 0.01	-0.03 ± 0.02	-0.04 ± 0.02	-0.03 ± 0.03	-0.04 ± 0.03
	bad	-35657.95 ± 0.01	-0.03 ± 0.02	-0.04 ± 0.02	-0.03 ± 0.03	-0.04 ± 0.03
	badq	-35657.18 ± 0.01	-0.04 ± 0.03	-0.05 ± 0.02	-0.06 ± 0.04	-0.04 ± 0.03
$CH_3CO_2^-$		-143235.31 ± 0.07	0.96 ± 0.35	0.54 ± 0.34	0.59 ± 0.54	1.25 ± 0.31
	b	-143222.40 ± 0.05	-0.03 ± 0.25	-0.08 ± 0.26	-0.35 ± 0.37	-0.16 ± 0.41
	ba	-143272.32 ± 0.04	-0.09 ± 0.21	-0.01 ± 0.18	-0.23 ± 0.26	0.14 ± 0.27
	bad	-143277.15 ± 0.04	-0.02 ± 0.19	-0.03 ± 0.18	-0.27 ± 0.28	0.06 ± 0.28
	badq	-143305.89 ± 0.06	0.10 ± 0.21	0.17 ± 0.26	-0.91 ± 0.34	1.32 ± 0.30
H_3O^+		-48062.72 ± 0.05	0.47 ± 0.29	0.21 ± 0.29	0.98 ± 0.63	0.67 ± 0.40
	b	-48067.54 ± 0.04	0.11 ± 0.20	0.12 ± 0.24	-0.17 ± 0.32	0.32 ± 0.39
	ba	-48070.58 ± 0.01	-0.06 ± 0.06	-0.04 ± 0.05	-0.05 ± 0.06	-0.07 ± 0.07

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Table 20 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	-0.06 ± 0.06	-0.04 ± 0.05	-0.05 ± 0.06	-0.07 ± 0.07
	badq	-48070.60 ± 0.01	0.03 ± 0.05	0.04 ± 0.05	0.01 ± 0.06	0.05 ± 0.07
C_6H_5Cl		-433851.87 ± 0.03	0.20 ± 0.17	0.25 ± 0.13	0.19 ± 0.17	-0.08 ± 0.22
	b	-433850.81 ± 0.04	-0.02 ± 0.15	0.02 ± 0.11	0.08 ± 0.16	-0.13 ± 0.16
	ba	-433854.43 ± 0.03	0.00 ± 0.12	0.00 ± 0.09	0.27 ± 0.16	-0.06 ± 0.11
	bad	-433856.05 ± 0.03	-0.17 ± 0.09	-0.16 ± 0.09	-0.03 ± 0.21	-0.13 ± 0.12
	badq	-433860.24 ± 0.04	0.01 ± 0.11	0.02 ± 0.09	0.08 ± 0.13	-0.02 ± 0.15
C_6H_{14}		-148579.99 ± 0.03	0.06 ± 0.17	0.07 ± 0.11	0.17 ± 0.14	-0.30 ± 0.28
	b	-148580.59 ± 0.03	0.15 ± 0.14	0.16 ± 0.09	0.23 ± 0.17	-0.08 ± 0.20
	ba	-148579.49 ± 0.03	-0.15 ± 0.10	-0.12 ± 0.09	-0.20 ± 0.12	0.00 ± 0.11
	bad	-148579.45 ± 0.03	-0.12 ± 0.10	-0.09 ± 0.09	-0.06 ± 0.18	-0.02 ± 0.13
	badq	-148576.82 ± 0.03	-0.07 ± 0.12	-0.08 ± 0.10	-0.13 ± 0.15	-0.07 ± 0.16
CH_3OH		-72530.37 ± 0.03	-0.12 ± 0.15	-0.13 ± 0.13	-0.25 ± 0.26	-0.11 ± 0.24
	b	-72530.81 ± 0.03	-0.09 ± 0.16	-0.13 ± 0.12	-0.07 ± 0.18	-0.07 ± 0.17
	ba	-72530.76 ± 0.03	-0.01 ± 0.14	-0.05 ± 0.13	-0.26 ± 0.17	0.11 ± 0.18
	bad	-72530.78 ± 0.03	0.15 ± 0.15	0.16 ± 0.13	-0.22 ± 0.15	0.29 ± 0.21
	badq	-72530.61 ± 0.03	-0.12 ± 0.19	-0.11 ± 0.14	0.09 ± 0.27	-0.55 ± 0.27
C_2H_6		-50024.16 ± 0.02	-0.02 ± 0.07	-0.01 ± 0.07	-0.02 ± 0.11	0.01 ± 0.09
	b	-50024.32 ± 0.01	-0.16 ± 0.07	-0.16 ± 0.05	-0.22 ± 0.07	-0.14 ± 0.09
	ba	-50024.08 ± 0.01	-0.02 ± 0.07	-0.03 ± 0.06	-0.01 ± 0.07	-0.04 ± 0.07
	bad	-50024.17 ± 0.01	-0.06 ± 0.06	-0.06 ± 0.05	-0.07 ± 0.06	-0.06 ± 0.06
	badq	-50024.33 ± 0.01	0.04 ± 0.06	0.02 ± 0.05	0.01 ± 0.07	0.01 ± 0.08
$(CH_2)_4O$		-145701.53 ± 0.05	-0.06 ± 0.21	-0.08 ± 0.19	-0.27 ± 0.29	0.22 ± 0.36
	b	-145701.13 ± 0.05	-0.32 ± 0.26	-0.32 ± 0.22	-0.31 ± 0.32	-0.13 ± 0.26

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Table 20 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	ba	-145699.24 ± 0.03	-0.01 ± 0.17	0.02 ± 0.19	-0.11 ± 0.39	0.15 ± 0.23
	bad	-145700.24 ± 0.03	-0.13 ± 0.16	-0.22 ± 0.15	-0.14 ± 0.28	-0.30 ± 0.21
	badq	-145684.45 ± 0.03	-0.19 ± 0.17	-0.18 ± 0.17	-0.02 ± 0.25	-0.16 ± 0.21
$C(NH_2)_3^+$		-128902.19 ± 0.05	0.64 ± 0.27	0.26 ± 0.22	-0.54 ± 0.29	0.70 ± 0.25
	b	-128907.35 ± 0.05	0.30 ± 0.21	0.11 ± 0.19	-0.09 ± 0.34	0.27 ± 0.23
	ba	-128933.28 ± 0.04	0.01 ± 0.18	-0.10 ± 0.16	-0.38 ± 0.16	-0.12 ± 0.24
	bad	-128936.23 ± 0.04	0.11 ± 0.16	0.06 ± 0.14	-0.06 ± 0.14	-0.04 ± 0.23
	badq	-128918.95 ± 0.04	-0.04 ± 0.17	-0.03 ± 0.15	-0.35 ± 0.16	0.17 ± 0.19
$C_6H_5NH_2$		-180230.53 ± 0.04	0.07 ± 0.21	0.11 ± 0.18	0.42 ± 0.45	0.24 ± 0.29
	b	-180230.55 ± 0.04	0.06 ± 0.16	0.12 ± 0.15	-0.18 ± 0.25	0.39 ± 0.22
	ba	-180233.99 ± 0.04	0.21 ± 0.19	0.13 ± 0.15	0.17 ± 0.20	0.15 ± 0.21
	bad	-180233.04 ± 0.04	0.56 ± 0.17	0.45 ± 0.16	0.36 ± 0.25	0.43 ± 0.22
	badq	-180262.07 ± 0.07	-1.09 ± 0.25	-0.91 ± 0.28	-2.27 ± 0.35	0.34 ± 0.35
CH_3CONH_2		-131079.14 ± 0.05	-0.05 ± 0.25	0.01 ± 0.25	0.16 ± 0.40	-0.09 ± 0.41
	b	-131078.83 ± 0.04	-0.30 ± 0.22	-0.20 ± 0.20	0.06 ± 0.26	-0.02 ± 0.29
	ba	-131083.77 ± 0.04	0.28 ± 0.22	0.33 ± 0.23	0.43 ± 0.48	-0.13 ± 0.53
	bad	-131084.84 ± 0.04	-0.25 ± 0.21	-0.20 ± 0.20	0.12 ± 0.46	-0.80 ± 0.43
	badq	-131071.30 ± 0.03	0.17 ± 0.18	0.23 ± 0.18	0.15 ± 0.20	0.29 ± 0.48
H_2O		-47896.99 ± 0.03	-0.20 ± 0.16	-0.20 ± 0.15	-0.35 ± 0.16	-0.35 ± 0.29
	b	-47897.87 ± 0.03	0.13 ± 0.13	0.15 ± 0.15	-0.31 ± 0.16	0.48 ± 0.25
	ba	-47898.10 ± 0.03	0.40 ± 0.13	0.39 ± 0.12	-0.11 ± 0.16	0.72 ± 0.19
	bad	-47898.10 ± 0.03	0.40 ± 0.13	0.39 ± 0.12	-0.11 ± 0.16	0.72 ± 0.19
	badq	-47897.84 ± 0.03	0.11 ± 0.15	0.07 ± 0.18	0.01 ± 0.19	0.18 ± 0.35
C_2H_5OH		-97165.69 ± 0.04	-0.13 ± 0.16	-0.09 ± 0.16	-0.32 ± 0.18	-0.39 ± 0.23

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Table 20 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97165.97 ± 0.04	0.02 ± 0.17	-0.05 ± 0.15	0.12 ± 0.40	0.08 ± 0.19
	ba	-97166.30 ± 0.04	0.37 ± 0.18	0.36 ± 0.16	0.06 ± 0.18	-0.02 ± 0.37
	bad	-97166.59 ± 0.04	-0.12 ± 0.15	-0.08 ± 0.16	-0.54 ± 0.15	0.06 ± 0.32
	badq	-97165.26 ± 0.03	-0.23 ± 0.14	-0.13 ± 0.15	-0.20 ± 0.24	0.12 ± 0.21
C_6H_6		-145560.94 ± 0.02	0.05 ± 0.11	0.05 ± 0.08	0.10 ± 0.14	0.00 ± 0.10
	b	-145561.20 ± 0.02	-0.11 ± 0.09	-0.05 ± 0.08	-0.07 ± 0.09	-0.09 ± 0.12
	ba	-145564.93 ± 0.02	0.12 ± 0.09	0.13 ± 0.07	0.13 ± 0.10	0.00 ± 0.17
	bad	-145563.51 ± 0.02	-0.03 ± 0.09	0.01 ± 0.07	0.01 ± 0.10	-0.12 ± 0.12
	badq	-145563.88 ± 0.02	-0.01 ± 0.09	-0.01 ± 0.07	0.05 ± 0.11	-0.06 ± 0.16
C_6H_5OH		-192696.13 ± 0.03	0.32 ± 0.16	0.32 ± 0.20	0.06 ± 0.28	0.47 ± 0.26
	b	-192696.41 ± 0.04	-0.29 ± 0.18	-0.29 ± 0.18	-0.21 ± 0.35	-0.53 ± 0.33
	ba	-192700.83 ± 0.03	-0.05 ± 0.17	-0.01 ± 0.18	-0.14 ± 0.27	0.07 ± 0.23
	bad	-192699.26 ± 0.03	-0.30 ± 0.15	-0.27 ± 0.18	-0.32 ± 0.27	-0.10 ± 0.22
	badq	-192711.46 ± 0.06	-0.25 ± 0.29	-0.26 ± 0.41	-0.32 ± 0.43	0.88 ± 0.47

Table 21: MM-to-QM aqueous-phase solvation free energy correction values from 6-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
CO_3^{2-}		-165240.53 ± 0.11	-0.32 ± 0.37	-0.37 ± 0.31	-0.92 ± 0.45	-0.38 ± 0.41
	b	-165222.41 ± 0.06	0.17 ± 0.20	0.16 ± 0.17	0.42 ± 0.42	0.13 ± 0.28
	ba	-165287.40 ± 0.05	0.27 ± 0.18	0.29 ± 0.16	0.12 ± 0.23	0.40 ± 0.23
	bad	-165339.45 ± 0.05	0.34 ± 0.18	0.36 ± 0.14	0.36 ± 0.23	0.42 ± 0.22
	badq	-165328.69 ± 0.05	-0.26 ± 0.17	-0.24 ± 0.15	-0.14 ± 0.21	-0.47 ± 0.21
$CH_3NH_3^+$		-60348.42 ± 0.04	-0.20 ± 0.14	-0.21 ± 0.11	0.07 ± 0.16	-0.25 ± 0.16
	b	-60352.99 ± 0.02	-0.02 ± 0.06	-0.02 ± 0.05	0.00 ± 0.07	-0.03 ± 0.07
	ba	-60355.28 ± 0.01	0.10 ± 0.05	0.09 ± 0.04	0.10 ± 0.05	0.07 ± 0.05
	bad	-60355.56 ± 0.02	-0.05 ± 0.05	-0.06 ± 0.04	-0.02 ± 0.06	-0.10 ± 0.06
	badq	-60351.61 ± 0.01	-0.11 ± 0.04	-0.10 ± 0.03	-0.09 ± 0.05	-0.11 ± 0.05
NH_4^+		-35650.57 ± 0.04	0.27 ± 0.13	0.24 ± 0.10	0.37 ± 0.16	0.19 ± 0.13
	b	-35656.79 ± 0.01	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.02	0.01 ± 0.02
	ba	-35657.95 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.01	-0.02 ± 0.02	-0.03 ± 0.02
	bad	-35657.95 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.01	-0.02 ± 0.02	-0.03 ± 0.02
	badq	-35657.18 ± 0.01	-0.04 ± 0.02	-0.04 ± 0.02	-0.04 ± 0.02	-0.03 ± 0.02
$CH_3CO_2^-$		-143235.31 ± 0.07	0.43 ± 0.24	0.28 ± 0.19	0.88 ± 0.47	0.25 ± 0.26
	b	-143222.40 ± 0.05	0.47 ± 0.15	0.43 ± 0.14	0.32 ± 0.19	0.48 ± 0.22
	ba	-143272.32 ± 0.04	0.09 ± 0.15	0.07 ± 0.12	0.25 ± 0.19	0.05 ± 0.16
	bad	-143277.15 ± 0.04	0.10 ± 0.12	0.07 ± 0.11	-0.02 ± 0.15	0.13 ± 0.16
	badq	-143305.89 ± 0.06	-0.26 ± 0.18	-0.26 ± 0.16	-0.27 ± 0.29	-0.15 ± 0.20
H_3O^+		-48062.72 ± 0.05	0.05 ± 0.18	0.00 ± 0.15	0.22 ± 0.27	-0.02 ± 0.20
	b	-48067.54 ± 0.04	-0.25 ± 0.14	-0.24 ± 0.11	-0.28 ± 0.16	-0.21 ± 0.16
	ba	-48070.58 ± 0.01	0.06 ± 0.03	0.06 ± 0.03	0.06 ± 0.04	0.06 ± 0.04

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Table 21 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-48070.58 ± 0.01	0.06 ± 0.03	0.06 ± 0.03	0.06 ± 0.04	0.06 ± 0.04
	badq	-48070.60 ± 0.01	-0.03 ± 0.03	-0.03 ± 0.03	-0.04 ± 0.03	-0.02 ± 0.04
C_6H_5Cl		-433851.87 ± 0.03	0.18 ± 0.09	0.20 ± 0.08	0.20 ± 0.10	0.16 ± 0.11
	b	-433850.81 ± 0.04	0.07 ± 0.08	0.07 ± 0.07	0.06 ± 0.10	0.08 ± 0.09
	ba	-433854.43 ± 0.03	0.03 ± 0.08	0.03 ± 0.07	0.08 ± 0.09	-0.01 ± 0.09
	bad	-433856.05 ± 0.03	0.01 ± 0.08	0.02 ± 0.07	0.05 ± 0.09	-0.02 ± 0.09
	badq	-433860.24 ± 0.04	0.16 ± 0.08	0.15 ± 0.07	0.20 ± 0.09	0.10 ± 0.10
C_6H_{14}		-148579.99 ± 0.03	-0.16 ± 0.09	-0.15 ± 0.08	-0.12 ± 0.10	-0.21 ± 0.12
	b	-148580.59 ± 0.03	-0.05 ± 0.09	-0.02 ± 0.08	0.00 ± 0.09	-0.13 ± 0.12
	ba	-148579.49 ± 0.03	-0.23 ± 0.08	-0.20 ± 0.06	-0.22 ± 0.09	-0.19 ± 0.09
	bad	-148579.45 ± 0.03	-0.10 ± 0.09	-0.10 ± 0.07	-0.05 ± 0.09	-0.15 ± 0.09
	badq	-148576.82 ± 0.03	-0.28 ± 0.09	-0.27 ± 0.08	-0.22 ± 0.10	-0.32 ± 0.11
CH_3OH		-72530.37 ± 0.03	0.21 ± 0.10	0.20 ± 0.10	0.15 ± 0.15	0.19 ± 0.14
	b	-72530.81 ± 0.03	0.31 ± 0.10	0.28 ± 0.08	0.26 ± 0.10	0.27 ± 0.12
	ba	-72530.76 ± 0.03	0.01 ± 0.11	0.01 ± 0.10	0.06 ± 0.16	-0.03 ± 0.16
	bad	-72530.78 ± 0.03	-0.21 ± 0.10	-0.21 ± 0.08	-0.26 ± 0.11	-0.20 ± 0.11
	badq	-72530.61 ± 0.03	-0.38 ± 0.09	-0.38 ± 0.08	-0.42 ± 0.11	-0.33 ± 0.11
C_2H_6		-50024.16 ± 0.02	-0.08 ± 0.05	-0.08 ± 0.04	-0.08 ± 0.06	-0.08 ± 0.06
	b	-50024.32 ± 0.01	-0.03 ± 0.04	-0.04 ± 0.03	-0.05 ± 0.05	-0.03 ± 0.05
	ba	-50024.08 ± 0.01	-0.02 ± 0.04	-0.03 ± 0.03	-0.04 ± 0.04	-0.01 ± 0.04
	bad	-50024.17 ± 0.01	-0.01 ± 0.04	-0.02 ± 0.03	-0.03 ± 0.04	-0.01 ± 0.04
	badq	-50024.33 ± 0.01	0.03 ± 0.04	0.02 ± 0.03	0.02 ± 0.04	0.03 ± 0.04
$(CH_2)_4O$		-145701.53 ± 0.05	-0.11 ± 0.14	-0.15 ± 0.12	-0.18 ± 0.18	-0.06 ± 0.16
	b	-145701.13 ± 0.05	-0.14 ± 0.16	-0.15 ± 0.14	-0.19 ± 0.21	-0.07 ± 0.20

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Table 21 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	ba	-145699.24 ± 0.03	0.18 ± 0.11	0.17 ± 0.10	0.12 ± 0.15	0.26 ± 0.16
	bad	-145700.24 ± 0.03	-0.05 ± 0.11	-0.09 ± 0.12	-0.07 ± 0.18	-0.12 ± 0.17
	badq	-145684.45 ± 0.03	-0.16 ± 0.10	-0.16 ± 0.09	-0.12 ± 0.13	-0.18 ± 0.12
$C(NH_2)_3^+$		-128902.19 ± 0.05	0.20 ± 0.20	0.15 ± 0.15	0.15 ± 0.22	-0.02 ± 0.21
	b	-128907.35 ± 0.05	0.04 ± 0.13	0.05 ± 0.11	-0.17 ± 0.15	0.10 ± 0.17
	ba	-128933.28 ± 0.04	-0.01 ± 0.12	-0.04 ± 0.11	0.00 ± 0.17	-0.09 ± 0.16
	bad	-128936.23 ± 0.04	-0.12 ± 0.12	-0.13 ± 0.10	0.00 ± 0.17	-0.20 ± 0.13
	badq	-128918.95 ± 0.04	0.13 ± 0.13	0.13 ± 0.10	0.10 ± 0.15	0.14 ± 0.14
$C_6H_5NH_2$		-180230.53 ± 0.04	0.18 ± 0.15	0.19 ± 0.13	0.30 ± 0.17	0.13 ± 0.18
	b	-180230.55 ± 0.04	-0.02 ± 0.13	-0.03 ± 0.12	-0.04 ± 0.18	0.04 ± 0.16
	ba	-180233.99 ± 0.04	0.01 ± 0.13	0.00 ± 0.11	0.13 ± 0.17	-0.05 ± 0.15
	bad	-180233.04 ± 0.04	0.11 ± 0.12	0.09 ± 0.10	0.07 ± 0.14	0.06 ± 0.16
	badq	-180262.07 ± 0.07	0.10 ± 0.21	0.16 ± 0.17	0.03 ± 0.23	0.07 ± 0.29
CH_3CONH_2		-131079.14 ± 0.05	0.05 ± 0.16	0.08 ± 0.17	0.12 ± 0.23	0.02 ± 0.26
	b	-131078.83 ± 0.04	0.28 ± 0.15	0.26 ± 0.13	0.29 ± 0.17	0.30 ± 0.16
	ba	-131083.77 ± 0.04	-0.04 ± 0.14	-0.02 ± 0.14	-0.02 ± 0.22	-0.04 ± 0.24
	bad	-131084.84 ± 0.04	0.18 ± 0.13	0.15 ± 0.14	0.19 ± 0.23	0.12 ± 0.23
	badq	-131071.30 ± 0.03	-0.01 ± 0.11	0.00 ± 0.10	-0.04 ± 0.14	0.05 ± 0.15
H_2O		-47896.99 ± 0.03	0.10 ± 0.11	0.10 ± 0.11	0.15 ± 0.14	0.00 ± 0.21
	b	-47897.87 ± 0.03	-0.07 ± 0.10	-0.05 ± 0.11	-0.09 ± 0.17	0.02 ± 0.17
	ba	-47898.10 ± 0.03	0.01 ± 0.10	0.03 ± 0.09	-0.07 ± 0.12	0.10 ± 0.14
	bad	-47898.10 ± 0.03	0.01 ± 0.10	0.03 ± 0.09	-0.07 ± 0.12	0.10 ± 0.14
	badq	-47897.84 ± 0.03	0.08 ± 0.10	0.09 ± 0.10	0.11 ± 0.17	0.05 ± 0.16
C_2H_5OH		-97165.69 ± 0.04	0.15 ± 0.13	0.15 ± 0.10	0.17 ± 0.15	0.04 ± 0.17

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Table 21 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97165.97 ± 0.04	-0.26 ± 0.12	-0.26 ± 0.10	-0.21 ± 0.16	-0.28 ± 0.16
	ba	-97166.30 ± 0.04	-0.08 ± 0.12	-0.07 ± 0.11	-0.08 ± 0.15	-0.07 ± 0.16
	bad	-97166.59 ± 0.04	-0.12 ± 0.12	-0.14 ± 0.11	-0.14 ± 0.18	-0.06 ± 0.16
	badq	-97165.26 ± 0.03	0.13 ± 0.10	0.15 ± 0.10	0.10 ± 0.14	0.16 ± 0.18
C_6H_6		-145560.94 ± 0.02	0.12 ± 0.06	0.12 ± 0.05	0.12 ± 0.08	0.11 ± 0.07
	b	-145561.20 ± 0.02	-0.03 ± 0.07	-0.02 ± 0.05	0.02 ± 0.09	-0.05 ± 0.08
	ba	-145564.93 ± 0.02	0.00 ± 0.06	0.01 ± 0.05	0.01 ± 0.07	-0.02 ± 0.08
	bad	-145563.51 ± 0.02	-0.04 ± 0.05	-0.03 ± 0.05	-0.03 ± 0.07	-0.04 ± 0.07
	badq	-145563.88 ± 0.02	0.04 ± 0.05	0.03 ± 0.04	0.04 ± 0.05	0.03 ± 0.06
C_6H_5OH		-192696.13 ± 0.03	0.04 ± 0.11	0.06 ± 0.10	-0.03 ± 0.14	0.09 ± 0.15
	b	-192696.41 ± 0.04	-0.08 ± 0.10	-0.10 ± 0.09	-0.13 ± 0.13	-0.09 ± 0.12
	ba	-192700.83 ± 0.03	0.04 ± 0.09	0.04 ± 0.09	-0.04 ± 0.12	0.10 ± 0.12
	bad	-192699.26 ± 0.03	-0.19 ± 0.09	-0.18 ± 0.09	-0.29 ± 0.12	-0.10 ± 0.13
	badq	-192711.46 ± 0.06	-0.03 ± 0.19	-0.02 ± 0.16	-0.33 ± 0.21	0.22 ± 0.28

Table 22: MM-to-QM aqueous-phase solvation free energy correction values from 2-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
CO_3^{2-}		-165240.53 ± 0.11	5.54 ± 1.28	4.20 ± 0.77	-10.81 ± 0.54	19.20 ± 0.55
	b	-165222.41 ± 0.06	1.92 ± 0.68	0.15 ± 0.58	-3.17 ± 0.38	3.47 ± 0.44
	ba	-165287.40 ± 0.05	1.09 ± 0.62	-0.73 ± 0.56	-3.03 ± 0.37	1.53 ± 0.44
	bad	-165339.45 ± 0.05	1.71 ± 0.65	0.73 ± 0.47	-3.02 ± 0.37	4.47 ± 0.30
	badq	-165328.69 ± 0.05	1.51 ± 0.45	-0.17 ± 0.65	-2.41 ± 0.35	1.98 ± 0.56
$CH_3NH_3^+$		-60348.42 ± 0.04	0.40 ± 0.43	0.12 ± 0.42	0.24 ± 0.51	0.71 ± 0.33
	b	-60352.99 ± 0.02	-0.11 ± 0.21	-0.22 ± 0.19	-0.28 ± 0.28	-0.16 ± 0.24
	ba	-60355.28 ± 0.01	0.03 ± 0.18	0.02 ± 0.18	-0.08 ± 0.20	-0.13 ± 0.26
	bad	-60355.56 ± 0.02	0.02 ± 0.13	0.05 ± 0.14	-0.08 ± 0.19	0.31 ± 0.12
	badq	-60351.61 ± 0.01	0.02 ± 0.16	0.00 ± 0.15	-0.03 ± 0.22	0.11 ± 0.16
NH_4^+		-35650.57 ± 0.04	0.49 ± 0.25	0.20 ± 0.36	-1.37 ± 0.18	1.67 ± 0.37
	b	-35656.79 ± 0.01	0.00 ± 0.08	-0.01 ± 0.07	0.01 ± 0.10	-0.05 ± 0.08
	ba	-35657.95 ± 0.01	-0.06 ± 0.07	-0.06 ± 0.06	-0.03 ± 0.10	-0.08 ± 0.09
	bad	-35657.95 ± 0.01	-0.06 ± 0.07	-0.06 ± 0.06	-0.03 ± 0.10	-0.08 ± 0.09
	badq	-35657.18 ± 0.01	0.04 ± 0.06	0.03 ± 0.06	-0.01 ± 0.09	0.09 ± 0.07
$CH_3CO_2^-$		-143235.31 ± 0.07	-0.80 ± 0.70	-1.43 ± 0.70	-7.82 ± 0.42	4.95 ± 0.56
	b	-143222.40 ± 0.05	0.57 ± 0.63	-0.33 ± 0.62	-2.03 ± 0.47	1.36 ± 0.47
	ba	-143272.32 ± 0.04	-0.79 ± 0.35	-0.93 ± 0.50	-1.87 ± 0.40	0.13 ± 0.39
	bad	-143277.15 ± 0.04	-0.37 ± 0.37	-0.29 ± 0.45	-2.01 ± 0.41	1.53 ± 0.23
	badq	-143305.89 ± 0.06	-0.17 ± 0.60	-1.68 ± 0.74	-3.27 ± 0.51	-0.18 ± 0.56
H_3O^+		-48062.72 ± 0.05	1.05 ± 0.68	-0.44 ± 0.53	-1.50 ± 0.31	-0.48 ± 0.55
	b	-48067.54 ± 0.04	0.31 ± 0.46	0.31 ± 0.39	0.09 ± 0.40	0.20 ± 0.46
	ba	-48070.58 ± 0.01	0.08 ± 0.12	0.08 ± 0.11	0.17 ± 0.15	0.10 ± 0.11

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Table 22 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	0.08 ± 0.12	0.08 ± 0.11	0.17 ± 0.15	0.10 ± 0.11
	badq	-48070.60 ± 0.01	-0.09 ± 0.13	-0.09 ± 0.10	0.17 ± 0.15	-0.36 ± 0.20
C_6H_5Cl		-433851.87 ± 0.03	0.04 ± 0.31	0.52 ± 0.39	0.31 ± 0.36	1.17 ± 0.32
	b	-433850.81 ± 0.04	0.08 ± 0.31	0.14 ± 0.31	-0.01 ± 0.34	0.05 ± 0.47
	ba	-433854.43 ± 0.03	-0.07 ± 0.25	-0.09 ± 0.24	-0.14 ± 0.23	0.06 ± 0.22
	bad	-433856.05 ± 0.03	0.32 ± 0.26	0.32 ± 0.32	-0.24 ± 0.33	0.63 ± 0.40
	badq	-433860.24 ± 0.04	0.05 ± 0.31	0.08 ± 0.30	-0.40 ± 0.26	0.52 ± 0.24
C_6H_{14}		-148579.99 ± 0.03	-0.25 ± 0.24	-0.53 ± 0.36	-1.45 ± 0.20	-0.21 ± 0.42
	b	-148580.59 ± 0.03	-0.29 ± 0.25	-0.50 ± 0.27	-0.69 ± 0.36	-0.48 ± 0.37
	ba	-148579.49 ± 0.03	0.05 ± 0.26	-0.22 ± 0.27	-1.00 ± 0.30	0.61 ± 0.23
	bad	-148579.45 ± 0.03	-0.38 ± 0.21	-0.47 ± 0.25	-0.89 ± 0.30	-0.34 ± 0.39
	badq	-148576.82 ± 0.03	-0.35 ± 0.24	-0.43 ± 0.33	-1.16 ± 0.37	0.39 ± 0.29
CH_3OH		-72530.37 ± 0.03	0.33 ± 0.26	0.28 ± 0.52	-1.15 ± 0.50	1.89 ± 0.25
	b	-72530.81 ± 0.03	-0.15 ± 0.21	-0.03 ± 0.27	-1.51 ± 0.17	1.57 ± 0.22
	ba	-72530.76 ± 0.03	0.03 ± 0.26	-0.28 ± 0.51	-1.55 ± 0.43	0.94 ± 0.37
	bad	-72530.78 ± 0.03	-0.27 ± 0.22	-0.17 ± 0.39	-1.52 ± 0.41	1.31 ± 0.19
	badq	-72530.61 ± 0.03	-0.33 ± 0.29	-0.63 ± 0.38	-1.50 ± 0.22	-0.60 ± 0.49
C_2H_6		-50024.16 ± 0.02	-0.05 ± 0.14	-0.06 ± 0.13	-0.09 ± 0.16	-0.45 ± 0.31
	b	-50024.32 ± 0.01	0.16 ± 0.15	0.08 ± 0.17	-0.30 ± 0.11	0.14 ± 0.24
	ba	-50024.08 ± 0.01	0.00 ± 0.09	-0.02 ± 0.11	-0.28 ± 0.06	0.08 ± 0.18
	bad	-50024.17 ± 0.01	0.00 ± 0.10	-0.02 ± 0.10	-0.27 ± 0.05	-0.01 ± 0.23
	badq	-50024.33 ± 0.01	0.06 ± 0.14	-0.01 ± 0.09	-0.26 ± 0.06	0.10 ± 0.11
$(CH_2)_4O$		-145701.53 ± 0.05	0.22 ± 0.60	0.40 ± 0.74	0.15 ± 0.56	0.92 ± 0.55
	b	-145701.13 ± 0.05	-0.50 ± 0.63	-0.31 ± 0.70	-0.45 ± 0.56	0.73 ± 0.52

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Table 22 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	ba	-145699.24 ± 0.03	-0.29 ± 0.30	0.20 ± 0.54	-0.64 ± 0.53	1.49 ± 0.35
	bad	-145700.24 ± 0.03	-0.68 ± 0.35	-0.62 ± 0.49	-0.91 ± 0.52	0.17 ± 0.41
	badq	-145684.45 ± 0.03	0.62 ± 0.35	0.06 ± 0.31	-1.08 ± 0.18	1.06 ± 0.29
$C(NH_2)_3^+$		-128902.19 ± 0.05	2.59 ± 0.68	0.25 ± 0.62	-2.88 ± 0.26	3.35 ± 0.56
	b	-128907.35 ± 0.05	1.30 ± 0.71	-0.15 ± 0.50	-1.20 ± 0.27	-1.44 ± 0.56
	ba	-128933.28 ± 0.04	1.23 ± 0.60	0.23 ± 0.39	-0.74 ± 0.35	1.16 ± 0.36
	bad	-128936.23 ± 0.04	0.39 ± 0.37	-0.12 ± 0.33	-0.58 ± 0.34	0.13 ± 0.39
	badq	-128918.95 ± 0.04	0.19 ± 0.38	0.14 ± 0.45	-0.46 ± 0.41	0.36 ± 0.51
$C_6H_5NH_2$		-180230.53 ± 0.04	-0.08 ± 0.40	0.27 ± 0.72	-1.51 ± 0.55	2.12 ± 0.50
	b	-180230.55 ± 0.04	-0.21 ± 0.41	0.02 ± 0.62	-0.63 ± 0.56	0.93 ± 0.28
	ba	-180233.99 ± 0.04	-1.02 ± 0.34	-0.56 ± 0.46	-1.73 ± 0.49	0.94 ± 0.19
	bad	-180233.04 ± 0.04	-0.38 ± 0.41	-0.22 ± 0.55	-1.64 ± 0.47	1.32 ± 0.38
	badq	-180262.07 ± 0.07	-0.42 ± 0.84	0.58 ± 0.54	-1.79 ± 0.41	2.96 ± 0.38
CH_3CONH_2		-131079.14 ± 0.05	0.56 ± 0.35	0.37 ± 0.63	-1.86 ± 0.35	2.51 ± 0.54
	b	-131078.83 ± 0.04	0.42 ± 0.34	0.65 ± 0.41	-1.70 ± 0.35	3.02 ± 0.23
	ba	-131083.77 ± 0.04	-0.40 ± 0.24	-0.60 ± 0.33	-1.76 ± 0.19	0.40 ± 0.31
	bad	-131084.84 ± 0.04	-0.22 ± 0.23	-0.32 ± 0.29	-1.73 ± 0.19	1.06 ± 0.25
	badq	-131071.30 ± 0.03	0.45 ± 0.28	0.09 ± 0.29	-0.89 ± 0.17	0.86 ± 0.29
H_2O		-47896.99 ± 0.03	0.48 ± 0.27	0.61 ± 0.26	-0.40 ± 0.23	1.70 ± 0.16
	b	-47897.87 ± 0.03	0.44 ± 0.33	0.27 ± 0.36	0.11 ± 0.41	0.77 ± 0.36
	ba	-47898.10 ± 0.03	0.10 ± 0.27	0.21 ± 0.31	0.30 ± 0.43	0.51 ± 0.39
	bad	-47898.10 ± 0.03	0.10 ± 0.27	0.21 ± 0.31	0.30 ± 0.43	0.51 ± 0.39
	badq	-47897.84 ± 0.03	0.24 ± 0.27	0.34 ± 0.32	0.29 ± 0.42	0.89 ± 0.27
C_2H_5OH		-97165.69 ± 0.04	-0.32 ± 0.35	-0.18 ± 0.59	-1.20 ± 0.42	0.33 ± 0.51

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Table 22 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97165.97 ± 0.04	-0.09 ± 0.31	0.17 ± 0.60	-1.21 ± 0.51	1.53 ± 0.39
	ba	-97166.30 ± 0.04	0.16 ± 0.34	-0.14 ± 0.44	-1.08 ± 0.34	0.66 ± 0.40
	bad	-97166.59 ± 0.04	-0.08 ± 0.33	-0.26 ± 0.47	-1.11 ± 0.33	-0.05 ± 0.50
	badq	-97165.26 ± 0.03	-0.02 ± 0.34	-0.14 ± 0.32	-1.12 ± 0.31	0.89 ± 0.23
C_6H_6		-145560.94 ± 0.02	-0.16 ± 0.22	-0.16 ± 0.26	-0.69 ± 0.28	0.34 ± 0.27
	b	-145561.20 ± 0.02	-0.05 ± 0.18	0.05 ± 0.21	-0.39 ± 0.24	0.63 ± 0.19
	ba	-145564.93 ± 0.02	-0.19 ± 0.18	-0.17 ± 0.18	-0.41 ± 0.20	0.10 ± 0.19
	bad	-145563.51 ± 0.02	-0.41 ± 0.19	-0.36 ± 0.19	-0.44 ± 0.19	-0.55 ± 0.28
	badq	-145563.88 ± 0.02	-0.17 ± 0.18	-0.10 ± 0.20	-0.38 ± 0.18	0.01 ± 0.30
C_6H_5OH		-192696.13 ± 0.03	0.59 ± 0.34	0.52 ± 0.34	-0.56 ± 0.36	1.76 ± 0.20
	b	-192696.41 ± 0.04	0.08 ± 0.28	0.29 ± 0.31	0.53 ± 0.51	1.02 ± 0.24
	ba	-192700.83 ± 0.03	0.35 ± 0.42	0.26 ± 0.35	1.45 ± 0.55	-0.72 ± 0.55
	bad	-192699.26 ± 0.03	0.70 ± 0.32	0.80 ± 0.42	1.39 ± 0.55	1.39 ± 0.42
	badq	-192711.46 ± 0.06	0.57 ± 0.52	2.79 ± 0.66	-0.07 ± 0.53	5.68 ± 0.39

Table 23: MM-to-QM aqueous-phase solvation free energy correction values from 3-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
CO_3^{2-}		-165240.53 ± 0.11	1.78 ± 1.21	1.83 ± 0.75	-3.19 ± 0.54	6.83 ± 0.59
	b	-165222.41 ± 0.06	0.65 ± 0.38	0.19 ± 0.40	-1.62 ± 0.28	1.69 ± 0.42
	ba	-165287.40 ± 0.05	-0.60 ± 0.46	-0.78 ± 0.39	-1.66 ± 0.34	-0.26 ± 0.48
	bad	-165339.45 ± 0.05	-0.17 ± 0.43	-0.22 ± 0.35	-1.89 ± 0.30	1.24 ± 0.36
	badq	-165328.69 ± 0.05	-0.17 ± 0.38	-0.08 ± 0.48	-1.51 ± 0.31	0.40 ± 0.62
$CH_3NH_3^+$		-60348.42 ± 0.04	-0.24 ± 0.29	-0.25 ± 0.25	-0.32 ± 0.38	0.04 ± 0.29
	b	-60352.99 ± 0.02	0.23 ± 0.18	0.15 ± 0.13	0.11 ± 0.19	0.16 ± 0.17
	ba	-60355.28 ± 0.01	0.32 ± 0.17	0.26 ± 0.13	0.25 ± 0.16	0.19 ± 0.18
	bad	-60355.56 ± 0.02	0.01 ± 0.10	0.02 ± 0.09	-0.07 ± 0.13	0.15 ± 0.09
	badq	-60351.61 ± 0.01	-0.01 ± 0.11	-0.01 ± 0.09	-0.07 ± 0.13	0.06 ± 0.11
NH_4^+		-35650.57 ± 0.04	-0.29 ± 0.35	-0.11 ± 0.25	-0.58 ± 0.29	0.14 ± 0.30
	b	-35656.79 ± 0.01	0.03 ± 0.04	0.02 ± 0.04	0.01 ± 0.05	0.02 ± 0.06
	ba	-35657.95 ± 0.01	-0.06 ± 0.06	-0.06 ± 0.05	-0.04 ± 0.08	-0.07 ± 0.07
	bad	-35657.95 ± 0.01	-0.06 ± 0.06	-0.06 ± 0.05	-0.04 ± 0.08	-0.07 ± 0.07
	badq	-35657.18 ± 0.01	-0.02 ± 0.08	-0.01 ± 0.05	-0.02 ± 0.08	0.00 ± 0.08
$CH_3CO_2^-$		-143235.31 ± 0.07	0.45 ± 0.62	0.28 ± 0.57	-2.14 ± 0.51	2.67 ± 0.53
	b	-143222.40 ± 0.05	-0.10 ± 0.51	-0.35 ± 0.37	-0.37 ± 0.56	0.04 ± 0.42
	ba	-143272.32 ± 0.04	-0.54 ± 0.27	-0.60 ± 0.28	-1.18 ± 0.31	-0.11 ± 0.35
	bad	-143277.15 ± 0.04	0.39 ± 0.35	0.17 ± 0.31	-0.41 ± 0.34	0.93 ± 0.27
	badq	-143305.89 ± 0.06	-0.42 ± 0.49	-0.35 ± 0.60	-0.61 ± 0.63	-0.15 ± 0.60
H_3O^+		-48062.72 ± 0.05	0.65 ± 0.52	0.53 ± 0.36	-0.19 ± 0.28	-0.88 ± 0.67
	b	-48067.54 ± 0.04	-0.66 ± 0.38	-0.44 ± 0.28	-0.53 ± 0.29	-0.95 ± 0.51
	ba	-48070.58 ± 0.01	0.05 ± 0.11	0.06 ± 0.08	0.10 ± 0.11	0.05 ± 0.09

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Table 23 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-48070.58 ± 0.01	0.05 ± 0.11	0.06 ± 0.08	0.10 ± 0.11	0.05 ± 0.09
	badq	-48070.60 ± 0.01	-0.10 ± 0.11	-0.10 ± 0.09	0.03 ± 0.12	-0.22 ± 0.12
C_6H_5Cl		-433851.87 ± 0.03	0.13 ± 0.21	0.16 ± 0.22	0.02 ± 0.32	0.64 ± 0.23
	b	-433850.81 ± 0.04	-0.14 ± 0.23	-0.09 ± 0.22	-0.20 ± 0.24	-0.09 ± 0.34
	ba	-433854.43 ± 0.03	0.13 ± 0.18	0.09 ± 0.15	0.02 ± 0.18	0.19 ± 0.17
	bad	-433856.05 ± 0.03	0.09 ± 0.22	0.11 ± 0.19	-0.05 ± 0.30	0.33 ± 0.27
	badq	-433860.24 ± 0.04	0.29 ± 0.24	0.28 ± 0.24	0.04 ± 0.25	0.34 ± 0.33
C_6H_{14}		-148579.99 ± 0.03	-0.34 ± 0.23	-0.32 ± 0.19	-0.76 ± 0.23	-0.21 ± 0.32
	b	-148580.59 ± 0.03	-0.21 ± 0.22	-0.24 ± 0.17	-0.42 ± 0.22	-0.27 ± 0.26
	ba	-148579.49 ± 0.03	-0.11 ± 0.20	-0.13 ± 0.17	-0.58 ± 0.17	0.19 ± 0.21
	bad	-148579.45 ± 0.03	-0.38 ± 0.27	-0.41 ± 0.16	-0.42 ± 0.18	-0.43 ± 0.25
	badq	-148576.82 ± 0.03	-0.46 ± 0.30	-0.41 ± 0.22	-0.71 ± 0.27	-0.36 ± 0.33
CH_3OH		-72530.37 ± 0.03	0.04 ± 0.29	0.05 ± 0.25	-0.45 ± 0.40	0.75 ± 0.22
	b	-72530.81 ± 0.03	-0.01 ± 0.38	-0.07 ± 0.25	-0.13 ± 0.38	0.40 ± 0.25
	ba	-72530.76 ± 0.03	0.51 ± 0.45	0.44 ± 0.33	0.09 ± 0.35	-0.01 ± 0.52
	bad	-72530.78 ± 0.03	0.36 ± 0.27	0.25 ± 0.25	-0.36 ± 0.28	0.61 ± 0.37
	badq	-72530.61 ± 0.03	-0.33 ± 0.29	-0.38 ± 0.21	-0.65 ± 0.26	-0.42 ± 0.36
C_2H_6		-50024.16 ± 0.02	-0.08 ± 0.21	-0.07 ± 0.13	0.07 ± 0.15	-0.34 ± 0.23
	b	-50024.32 ± 0.01	0.33 ± 0.14	0.28 ± 0.10	0.14 ± 0.13	0.35 ± 0.15
	ba	-50024.08 ± 0.01	0.11 ± 0.14	0.07 ± 0.09	0.06 ± 0.15	0.10 ± 0.13
	bad	-50024.17 ± 0.01	0.10 ± 0.12	0.08 ± 0.08	-0.01 ± 0.08	0.08 ± 0.14
	badq	-50024.33 ± 0.01	0.10 ± 0.11	0.08 ± 0.08	-0.02 ± 0.09	0.12 ± 0.10
$(CH_2)_4O$		-145701.53 ± 0.05	1.06 ± 0.46	0.88 ± 0.42	1.70 ± 0.73	1.42 ± 0.46
	b	-145701.13 ± 0.05	0.11 ± 0.45	-0.14 ± 0.39	0.20 ± 0.62	0.37 ± 0.43

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Table 23 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	ba	-145699.24 ± 0.03	0.12 ± 0.24	0.08 ± 0.24	-0.39 ± 0.37	0.89 ± 0.22
	bad	-145700.24 ± 0.03	-0.43 ± 0.26	-0.48 ± 0.23	-0.78 ± 0.37	-0.03 ± 0.29
	badq	-145684.45 ± 0.03	-0.18 ± 0.27	-0.17 ± 0.24	-0.54 ± 0.33	0.25 ± 0.24
$C(NH_2)_3^+$		-128902.19 ± 0.05	0.87 ± 0.57	0.92 ± 0.51	-0.19 ± 0.44	1.53 ± 0.56
	b	-128907.35 ± 0.05	0.44 ± 0.55	0.40 ± 0.30	-0.15 ± 0.28	-1.96 ± 0.74
	ba	-128933.28 ± 0.04	0.38 ± 0.45	0.18 ± 0.26	0.30 ± 0.44	0.17 ± 0.36
	bad	-128936.23 ± 0.04	-0.35 ± 0.25	-0.35 ± 0.27	-0.61 ± 0.40	-0.20 ± 0.30
	badq	-128918.95 ± 0.04	0.30 ± 0.32	0.21 ± 0.26	0.16 ± 0.28	0.44 ± 0.35
$C_6H_5NH_2$		-180230.53 ± 0.04	-0.21 ± 0.25	-0.21 ± 0.33	-1.26 ± 0.41	1.01 ± 0.40
	b	-180230.55 ± 0.04	-0.47 ± 0.39	-0.49 ± 0.33	-0.56 ± 0.56	0.09 ± 0.28
	ba	-180233.99 ± 0.04	0.07 ± 0.42	-0.21 ± 0.29	-0.23 ± 0.38	0.26 ± 0.26
	bad	-180233.04 ± 0.04	-0.86 ± 0.29	-0.80 ± 0.25	-1.51 ± 0.32	-0.08 ± 0.35
	badq	-180262.07 ± 0.07	-0.16 ± 0.46	0.11 ± 0.44	-0.79 ± 0.45	1.46 ± 0.35
CH_3CONH_2		-131079.14 ± 0.05	1.12 ± 0.31	1.07 ± 0.32	-0.21 ± 0.25	1.84 ± 0.49
	b	-131078.83 ± 0.04	-0.49 ± 0.39	-0.30 ± 0.30	-0.90 ± 0.38	0.65 ± 0.22
	ba	-131083.77 ± 0.04	0.15 ± 0.31	0.00 ± 0.21	-0.31 ± 0.25	0.28 ± 0.27
	bad	-131084.84 ± 0.04	-0.10 ± 0.21	-0.15 ± 0.18	-0.74 ± 0.26	0.52 ± 0.19
	badq	-131071.30 ± 0.03	-0.38 ± 0.30	-0.23 ± 0.21	-0.61 ± 0.21	-0.30 ± 0.37
H_2O		-47896.99 ± 0.03	0.32 ± 0.31	0.33 ± 0.21	0.27 ± 0.31	0.73 ± 0.19
	b	-47897.87 ± 0.03	0.52 ± 0.28	0.41 ± 0.21	0.47 ± 0.36	0.67 ± 0.24
	ba	-47898.10 ± 0.03	-0.33 ± 0.21	-0.26 ± 0.18	-0.28 ± 0.29	-0.01 ± 0.22
	bad	-47898.10 ± 0.03	-0.33 ± 0.21	-0.26 ± 0.18	-0.28 ± 0.29	-0.01 ± 0.22
	badq	-47897.84 ± 0.03	-0.16 ± 0.23	-0.09 ± 0.18	-0.15 ± 0.29	0.18 ± 0.21
C_2H_5OH		-97165.69 ± 0.04	0.08 ± 0.29	0.03 ± 0.28	-0.30 ± 0.29	0.43 ± 0.32

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Table 23 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97165.97 ± 0.04	0.89 ± 0.23	0.77 ± 0.33	0.05 ± 0.43	1.58 ± 0.23
	ba	-97166.30 ± 0.04	0.07 ± 0.26	0.04 ± 0.26	-0.47 ± 0.31	0.45 ± 0.29
	bad	-97166.59 ± 0.04	0.31 ± 0.41	0.16 ± 0.27	0.40 ± 0.44	0.13 ± 0.37
	badq	-97165.26 ± 0.03	0.58 ± 0.32	0.42 ± 0.27	0.09 ± 0.26	0.58 ± 0.39
C_6H_6		-145560.94 ± 0.02	-0.17 ± 0.21	-0.17 ± 0.16	-0.33 ± 0.24	0.07 ± 0.19
	b	-145561.20 ± 0.02	0.12 ± 0.17	0.09 ± 0.13	-0.06 ± 0.19	0.37 ± 0.13
	ba	-145564.93 ± 0.02	0.14 ± 0.21	0.06 ± 0.15	0.09 ± 0.21	0.14 ± 0.16
	bad	-145563.51 ± 0.02	0.19 ± 0.16	0.09 ± 0.12	0.05 ± 0.15	0.05 ± 0.19
	badq	-145563.88 ± 0.02	0.12 ± 0.16	0.08 ± 0.12	-0.03 ± 0.16	0.18 ± 0.17
C_6H_5OH		-192696.13 ± 0.03	0.94 ± 0.37	0.85 ± 0.28	0.50 ± 0.31	0.81 ± 0.46
	b	-192696.41 ± 0.04	0.25 ± 0.31	0.18 ± 0.21	0.51 ± 0.39	0.48 ± 0.18
	ba	-192700.83 ± 0.03	0.50 ± 0.28	0.39 ± 0.20	0.82 ± 0.48	0.17 ± 0.41
	bad	-192699.26 ± 0.03	0.46 ± 0.19	0.48 ± 0.19	0.46 ± 0.42	0.99 ± 0.23
	badq	-192711.46 ± 0.06	-0.04 ± 0.44	0.33 ± 0.43	-0.23 ± 0.47	2.22 ± 0.35

Table 24: MM-to-QM aqueous-phase solvation free energy correction values from 6-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
CO_3^{2-}		-165240.53 ± 0.11	0.60 ± 0.67	0.65 ± 0.49	-0.63 ± 0.54	1.66 ± 0.54
	b	-165222.41 ± 0.06	0.65 ± 0.33	0.63 ± 0.26	0.18 ± 0.32	0.88 ± 0.34
	ba	-165287.40 ± 0.05	0.05 ± 0.31	0.12 ± 0.25	-0.23 ± 0.31	0.15 ± 0.36
	bad	-165339.45 ± 0.05	-0.69 ± 0.29	-0.64 ± 0.23	-1.12 ± 0.29	-0.27 ± 0.32
	badq	-165328.69 ± 0.05	0.13 ± 0.27	0.15 ± 0.21	-0.23 ± 0.28	0.50 ± 0.30
$CH_3NH_3^+$		-60348.42 ± 0.04	0.04 ± 0.22	0.03 ± 0.16	0.05 ± 0.24	0.06 ± 0.21
	b	-60352.99 ± 0.02	0.05 ± 0.13	0.03 ± 0.09	0.05 ± 0.14	0.01 ± 0.13
	ba	-60355.28 ± 0.01	0.07 ± 0.11	0.06 ± 0.08	0.06 ± 0.12	0.04 ± 0.12
	bad	-60355.56 ± 0.02	0.02 ± 0.10	0.04 ± 0.07	0.03 ± 0.10	0.04 ± 0.09
	badq	-60351.61 ± 0.01	-0.09 ± 0.08	-0.09 ± 0.06	-0.11 ± 0.09	-0.06 ± 0.08
NH_4^+		-35650.57 ± 0.04	0.27 ± 0.23	0.22 ± 0.16	0.31 ± 0.29	0.35 ± 0.18
	b	-35656.79 ± 0.01	-0.03 ± 0.04	-0.03 ± 0.03	-0.03 ± 0.03	-0.03 ± 0.04
	ba	-35657.95 ± 0.01	-0.02 ± 0.04	-0.02 ± 0.03	-0.02 ± 0.04	-0.03 ± 0.04
	bad	-35657.95 ± 0.01	-0.02 ± 0.04	-0.02 ± 0.03	-0.02 ± 0.04	-0.03 ± 0.04
	badq	-35657.18 ± 0.01	-0.01 ± 0.05	-0.01 ± 0.03	-0.01 ± 0.05	0.00 ± 0.05
$CH_3CO_2^-$		-143235.31 ± 0.07	1.05 ± 0.44	0.92 ± 0.33	0.46 ± 0.44	1.62 ± 0.40
	b	-143222.40 ± 0.05	0.15 ± 0.27	0.14 ± 0.21	-0.14 ± 0.26	0.33 ± 0.26
	ba	-143272.32 ± 0.04	-0.12 ± 0.21	-0.18 ± 0.19	-0.32 ± 0.26	0.02 ± 0.25
	bad	-143277.15 ± 0.04	0.37 ± 0.26	0.35 ± 0.18	0.23 ± 0.24	0.49 ± 0.24
	badq	-143305.89 ± 0.06	-0.39 ± 0.27	-0.37 ± 0.23	-0.93 ± 0.31	-0.01 ± 0.39
H_3O^+		-48062.72 ± 0.05	0.36 ± 0.34	0.32 ± 0.25	0.57 ± 0.36	0.01 ± 0.35
	b	-48067.54 ± 0.04	0.43 ± 0.25	0.42 ± 0.18	0.54 ± 0.25	0.30 ± 0.24
	ba	-48070.58 ± 0.01	0.04 ± 0.08	0.04 ± 0.05	0.06 ± 0.08	0.03 ± 0.07

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Table 24 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-48070.58 ± 0.01	0.04 ± 0.08	0.04 ± 0.05	0.06 ± 0.08	0.03 ± 0.07
	badq	-48070.60 ± 0.01	-0.07 ± 0.07	-0.07 ± 0.05	-0.02 ± 0.08	-0.13 ± 0.08
C_6H_5Cl		-433851.87 ± 0.03	0.20 ± 0.13	0.22 ± 0.10	0.08 ± 0.18	0.43 ± 0.13
	b	-433850.81 ± 0.04	-0.22 ± 0.16	-0.17 ± 0.14	-0.21 ± 0.16	-0.26 ± 0.26
	ba	-433854.43 ± 0.03	0.16 ± 0.14	0.14 ± 0.10	0.14 ± 0.14	0.16 ± 0.13
	bad	-433856.05 ± 0.03	0.04 ± 0.16	0.04 ± 0.12	-0.04 ± 0.16	0.06 ± 0.20
	badq	-433860.24 ± 0.04	0.20 ± 0.15	0.20 ± 0.12	0.11 ± 0.16	0.25 ± 0.18
C_6H_{14}		-148579.99 ± 0.03	0.28 ± 0.21	0.27 ± 0.14	0.26 ± 0.18	0.22 ± 0.20
	b	-148580.59 ± 0.03	-0.13 ± 0.19	-0.15 ± 0.13	-0.04 ± 0.21	-0.21 ± 0.17
	ba	-148579.49 ± 0.03	0.07 ± 0.16	0.06 ± 0.12	-0.04 ± 0.16	0.12 ± 0.16
	bad	-148579.45 ± 0.03	-0.16 ± 0.16	-0.16 ± 0.10	-0.20 ± 0.13	-0.19 ± 0.17
	badq	-148576.82 ± 0.03	-0.04 ± 0.18	-0.05 ± 0.14	-0.10 ± 0.20	0.01 ± 0.21
CH_3OH		-72530.37 ± 0.03	0.19 ± 0.22	0.17 ± 0.15	0.07 ± 0.25	0.32 ± 0.20
	b	-72530.81 ± 0.03	-0.25 ± 0.17	-0.25 ± 0.12	-0.47 ± 0.16	-0.05 ± 0.17
	ba	-72530.76 ± 0.03	0.20 ± 0.17	0.22 ± 0.14	-0.06 ± 0.18	0.41 ± 0.20
	bad	-72530.78 ± 0.03	-0.11 ± 0.21	-0.13 ± 0.15	-0.17 ± 0.23	-0.02 ± 0.18
	badq	-72530.61 ± 0.03	-0.24 ± 0.20	-0.28 ± 0.13	-0.33 ± 0.17	-0.30 ± 0.19
C_2H_6		-50024.16 ± 0.02	-0.23 ± 0.10	-0.22 ± 0.07	-0.18 ± 0.09	-0.27 ± 0.10
	b	-50024.32 ± 0.01	0.15 ± 0.08	0.15 ± 0.06	0.09 ± 0.07	0.18 ± 0.09
	ba	-50024.08 ± 0.01	0.01 ± 0.07	0.01 ± 0.06	-0.02 ± 0.07	0.03 ± 0.08
	bad	-50024.17 ± 0.01	-0.09 ± 0.08	-0.09 ± 0.06	-0.10 ± 0.07	-0.09 ± 0.08
	badq	-50024.33 ± 0.01	0.05 ± 0.08	0.04 ± 0.06	0.01 ± 0.08	0.05 ± 0.08
$(CH_2)_4O$		-145701.53 ± 0.05	0.00 ± 0.27	-0.01 ± 0.24	-0.19 ± 0.35	0.18 ± 0.33
	b	-145701.13 ± 0.05	-0.19 ± 0.28	-0.26 ± 0.23	-0.29 ± 0.35	-0.07 ± 0.27

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Table 24 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	ba	-145699.24 ± 0.03	0.16 ± 0.15	0.13 ± 0.11	-0.13 ± 0.17	0.45 ± 0.15
	bad	-145700.24 ± 0.03	-0.72 ± 0.21	-0.71 ± 0.15	-0.75 ± 0.24	-0.62 ± 0.22
	badq	-145684.45 ± 0.03	0.21 ± 0.19	0.22 ± 0.14	0.08 ± 0.18	0.31 ± 0.19
$C(NH_2)_3^+$		-128902.19 ± 0.05	0.34 ± 0.36	0.35 ± 0.25	0.17 ± 0.44	0.47 ± 0.41
	b	-128907.35 ± 0.05	0.25 ± 0.27	0.22 ± 0.21	0.11 ± 0.25	0.00 ± 0.35
	ba	-128933.28 ± 0.04	0.12 ± 0.20	0.13 ± 0.16	-0.08 ± 0.19	0.22 ± 0.20
	bad	-128936.23 ± 0.04	-0.22 ± 0.21	-0.17 ± 0.15	-0.22 ± 0.17	-0.29 ± 0.24
	badq	-128918.95 ± 0.04	0.16 ± 0.22	0.13 ± 0.16	0.19 ± 0.25	0.19 ± 0.20
$C_6H_5NH_2$		-180230.53 ± 0.04	0.10 ± 0.27	0.06 ± 0.21	-0.16 ± 0.27	0.25 ± 0.30
	b	-180230.55 ± 0.04	0.01 ± 0.27	-0.03 ± 0.19	-0.07 ± 0.31	0.09 ± 0.29
	ba	-180233.99 ± 0.04	0.10 ± 0.20	0.04 ± 0.15	-0.12 ± 0.21	0.29 ± 0.17
	bad	-180233.04 ± 0.04	-0.12 ± 0.23	-0.18 ± 0.18	-0.26 ± 0.32	0.04 ± 0.22
	badq	-180262.07 ± 0.07	0.32 ± 0.37	0.36 ± 0.30	0.28 ± 0.41	0.61 ± 0.35
CH_3CONH_2		-131079.14 ± 0.05	0.17 ± 0.25	0.22 ± 0.22	-0.06 ± 0.28	0.53 ± 0.28
	b	-131078.83 ± 0.04	0.28 ± 0.21	0.28 ± 0.17	-0.04 ± 0.23	0.58 ± 0.23
	ba	-131083.77 ± 0.04	-0.31 ± 0.24	-0.32 ± 0.16	-0.23 ± 0.24	-0.37 ± 0.21
	bad	-131084.84 ± 0.04	0.15 ± 0.20	0.16 ± 0.13	0.07 ± 0.16	0.27 ± 0.18
	badq	-131071.30 ± 0.03	-0.02 ± 0.19	0.04 ± 0.12	-0.10 ± 0.15	-0.01 ± 0.17
H_2O		-47896.99 ± 0.03	0.13 ± 0.21	0.15 ± 0.14	0.14 ± 0.18	0.15 ± 0.22
	b	-47897.87 ± 0.03	-0.34 ± 0.21	-0.30 ± 0.14	-0.21 ± 0.26	-0.35 ± 0.20
	ba	-47898.10 ± 0.03	0.66 ± 0.17	0.64 ± 0.11	0.62 ± 0.18	0.66 ± 0.15
	bad	-47898.10 ± 0.03	0.66 ± 0.17	0.64 ± 0.11	0.62 ± 0.18	0.66 ± 0.15
	badq	-47897.84 ± 0.03	0.30 ± 0.21	0.33 ± 0.16	0.45 ± 0.22	0.24 ± 0.26
C_2H_5OH		-97165.69 ± 0.04	0.10 ± 0.23	0.09 ± 0.18	0.04 ± 0.28	0.16 ± 0.23

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Table 24 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97165.97 ± 0.04	-0.03 ± 0.20	-0.01 ± 0.16	-0.20 ± 0.24	0.17 ± 0.21
	ba	-97166.30 ± 0.04	-0.55 ± 0.20	-0.51 ± 0.17	-0.67 ± 0.25	-0.40 ± 0.23
	bad	-97166.59 ± 0.04	-0.29 ± 0.20	-0.29 ± 0.15	-0.38 ± 0.20	-0.22 ± 0.21
	badq	-97165.26 ± 0.03	-0.03 ± 0.20	-0.05 ± 0.14	-0.18 ± 0.17	-0.03 ± 0.22
C_6H_6		-145560.94 ± 0.02	0.14 ± 0.14	0.14 ± 0.10	0.07 ± 0.13	0.21 ± 0.14
	b	-145561.20 ± 0.02	0.25 ± 0.11	0.24 ± 0.08	0.16 ± 0.10	0.33 ± 0.10
	ba	-145564.93 ± 0.02	0.07 ± 0.13	0.06 ± 0.10	0.09 ± 0.15	0.07 ± 0.13
	bad	-145563.51 ± 0.02	-0.12 ± 0.12	-0.13 ± 0.09	-0.12 ± 0.15	-0.14 ± 0.12
	badq	-145563.88 ± 0.02	0.08 ± 0.10	0.06 ± 0.08	0.03 ± 0.13	0.11 ± 0.12
C_6H_5OH		-192696.13 ± 0.03	0.31 ± 0.19	0.32 ± 0.14	0.21 ± 0.21	0.48 ± 0.17
	b	-192696.41 ± 0.04	-0.07 ± 0.16	-0.06 ± 0.12	-0.11 ± 0.17	0.02 ± 0.16
	ba	-192700.83 ± 0.03	0.20 ± 0.20	0.17 ± 0.14	0.27 ± 0.22	0.10 ± 0.20
	bad	-192699.26 ± 0.03	0.02 ± 0.20	0.03 ± 0.14	0.05 ± 0.22	0.09 ± 0.22
	badq	-192711.46 ± 0.06	0.81 ± 0.36	0.84 ± 0.27	0.88 ± 0.36	1.20 ± 0.32

Table 25: MM-to-QM gas-phase solvation free energy correction values from 2-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	3.11 ± 0.12	2.66 ± 0.25	-13.95 ± 0.13	19.26 ± 0.23
	b	-165233.97 ± 0.00	-0.04 ± 0.01	-0.05 ± 0.01	-0.26 ± 0.01	0.12 ± 0.02
	ba	-165298.74 ± 0.00	-0.05 ± 0.01	-0.05 ± 0.01	-0.20 ± 0.01	0.06 ± 0.09
	bad	-165350.72 ± 0.00	-0.04 ± 0.01	-0.04 ± 0.01	-0.11 ± 0.01	-0.01 ± 0.02
	badq	-165337.39 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.04 ± 0.01	-0.01 ± 0.02
$CH_3NH_3^+$		-60350.21 ± 0.02	0.13 ± 0.06	-0.08 ± 0.06	-0.29 ± 0.08	-0.04 ± 0.08
	b	-60350.95 ± 0.01	-0.02 ± 0.04	-0.05 ± 0.06	-0.02 ± 0.07	-0.01 ± 0.10
	ba	-60353.33 ± 0.01	0.10 ± 0.02	0.10 ± 0.02	0.12 ± 0.03	0.04 ± 0.03
	bad	-60353.51 ± 0.01	-0.09 ± 0.02	-0.10 ± 0.02	-0.24 ± 0.03	0.04 ± 0.03
	badq	-60350.03 ± 0.01	0.02 ± 0.02	0.02 ± 0.02	-0.08 ± 0.03	0.05 ± 0.03
NH_4^+		-35656.21 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.00 ± 0.01	0.03 ± 0.01
	b	-35656.29 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.03 ± 0.01	0.05 ± 0.02
	ba	-35657.44 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.02 ± 0.01	0.01 ± 0.01
	bad	-35657.44 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.02 ± 0.01	0.01 ± 0.01
	badq	-35656.32 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.02 ± 0.01	0.02 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	0.71 ± 0.10	-0.26 ± 0.22	-2.27 ± 0.12	0.97 ± 0.29
	b	-143225.39 ± 0.02	0.57 ± 0.08	-0.02 ± 0.15	-1.08 ± 0.10	0.75 ± 0.18
	ba	-143274.83 ± 0.02	0.04 ± 0.05	0.08 ± 0.06	-0.26 ± 0.09	0.44 ± 0.08
	bad	-143279.87 ± 0.02	-0.16 ± 0.04	-0.16 ± 0.06	-0.82 ± 0.07	0.50 ± 0.06
	badq	-143295.75 ± 0.02	0.00 ± 0.04	-0.05 ± 0.06	-0.45 ± 0.07	0.09 ± 0.09
H_3O^+		-48069.23 ± 0.01	0.22 ± 0.03	0.12 ± 0.06	-1.15 ± 0.04	1.35 ± 0.07
	b	-48069.30 ± 0.01	0.06 ± 0.03	-0.02 ± 0.07	-1.07 ± 0.03	0.96 ± 0.08
	ba	-48069.33 ± 0.00	0.06 ± 0.01	0.06 ± 0.01	-0.06 ± 0.01	0.18 ± 0.01

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Table 25 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-48069.33 ± 0.00	0.06 ± 0.01	0.06 ± 0.01	-0.06 ± 0.01	0.18 ± 0.01
	badq	-48069.38 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	-0.05 ± 0.01	0.08 ± 0.01
C_6H_5Cl		-433852.25 ± 0.02	0.14 ± 0.05	0.07 ± 0.06	0.01 ± 0.09	-0.08 ± 0.13
	b	-433850.13 ± 0.01	0.14 ± 0.03	0.13 ± 0.03	0.27 ± 0.06	0.01 ± 0.06
	ba	-433853.89 ± 0.01	0.06 ± 0.03	0.06 ± 0.03	0.07 ± 0.06	0.01 ± 0.04
	bad	-433855.52 ± 0.01	0.04 ± 0.03	0.02 ± 0.03	-0.25 ± 0.04	0.15 ± 0.05
	badq	-433858.60 ± 0.01	-0.02 ± 0.03	-0.04 ± 0.04	-0.18 ± 0.04	0.02 ± 0.07
C_6H_{14}		-148579.56 ± 0.01	-0.17 ± 0.03	-0.14 ± 0.04	-0.69 ± 0.05	0.45 ± 0.05
	b	-148580.35 ± 0.01	-0.10 ± 0.02	-0.10 ± 0.03	-0.50 ± 0.07	0.31 ± 0.03
	ba	-148579.69 ± 0.01	-0.02 ± 0.02	-0.01 ± 0.03	-0.38 ± 0.05	0.45 ± 0.03
	bad	-148579.55 ± 0.01	-0.07 ± 0.02	-0.06 ± 0.03	-0.36 ± 0.05	0.35 ± 0.03
	badq	-148577.13 ± 0.01	-0.07 ± 0.02	-0.07 ± 0.03	-0.40 ± 0.05	0.32 ± 0.03
CH_3OH		-72528.21 ± 0.01	0.07 ± 0.02	0.05 ± 0.02	-0.48 ± 0.01	0.52 ± 0.03
	b	-72528.26 ± 0.01	0.06 ± 0.02	0.04 ± 0.02	-0.41 ± 0.02	0.44 ± 0.03
	ba	-72528.29 ± 0.01	0.10 ± 0.02	0.08 ± 0.02	-0.40 ± 0.02	0.51 ± 0.03
	bad	-72528.28 ± 0.01	0.13 ± 0.02	0.11 ± 0.02	-0.38 ± 0.02	0.54 ± 0.03
	badq	-72528.80 ± 0.01	0.11 ± 0.02	0.09 ± 0.02	-0.40 ± 0.02	0.52 ± 0.03
C_2H_6		-50024.21 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.09 ± 0.02	0.11 ± 0.01
	b	-50024.36 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.04 ± 0.01	0.05 ± 0.02
	ba	-50024.20 ± 0.00	0.03 ± 0.00	0.03 ± 0.01	0.06 ± 0.01	0.01 ± 0.01
	bad	-50024.28 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.05 ± 0.01	0.00 ± 0.01
	badq	-50024.44 ± 0.00	0.02 ± 0.00	0.02 ± 0.01	0.05 ± 0.01	-0.01 ± 0.01
$(CH_2)_4O$		-145699.56 ± 0.02	0.50 ± 0.05	0.36 ± 0.10	-1.30 ± 0.08	2.01 ± 0.10
	b	-145699.47 ± 0.02	0.74 ± 0.06	0.50 ± 0.18	-1.49 ± 0.12	2.48 ± 0.18

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Table 25 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-145697.65 ± 0.01	0.11 ± 0.03	0.09 ± 0.04	-0.26 ± 0.04	0.42 ± 0.06
	bad	-145698.65 ± 0.01	0.12 ± 0.03	0.10 ± 0.04	-0.33 ± 0.04	0.48 ± 0.06
	badq	-145689.76 ± 0.01	0.10 ± 0.03	0.10 ± 0.04	-0.29 ± 0.05	0.52 ± 0.04
$C(NH_2)_3^+$		-128901.22 ± 0.03	1.52 ± 0.15	-0.20 ± 0.23	-1.46 ± 0.09	0.59 ± 0.30
	b	-128902.74 ± 0.03	0.77 ± 0.13	-0.27 ± 0.19	-1.23 ± 0.09	0.11 ± 0.27
	ba	-128929.38 ± 0.03	0.55 ± 0.10	-0.05 ± 0.13	-0.40 ± 0.31	0.04 ± 0.25
	bad	-128932.44 ± 0.02	0.51 ± 0.09	-0.06 ± 0.11	-0.67 ± 0.07	0.16 ± 0.18
	badq	-128914.70 ± 0.02	0.42 ± 0.07	0.07 ± 0.08	-0.51 ± 0.07	0.28 ± 0.11
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.14 ± 0.03	-0.08 ± 0.07	-1.16 ± 0.07	1.06 ± 0.05
	b	-180227.72 ± 0.01	0.02 ± 0.03	0.06 ± 0.05	-0.97 ± 0.06	1.14 ± 0.04
	ba	-180232.65 ± 0.01	0.02 ± 0.02	0.02 ± 0.02	-0.40 ± 0.03	0.46 ± 0.02
	bad	-180231.64 ± 0.01	0.04 ± 0.02	0.03 ± 0.03	-0.40 ± 0.03	0.46 ± 0.03
	badq	-180261.12 ± 0.01	0.26 ± 0.03	0.20 ± 0.04	-0.69 ± 0.04	1.05 ± 0.04
CH_3CONH_2		-131075.55 ± 0.01	-0.21 ± 0.02	-0.16 ± 0.04	-1.07 ± 0.06	0.78 ± 0.03
	b	-131075.53 ± 0.01	-0.22 ± 0.03	-0.21 ± 0.06	-1.40 ± 0.07	1.01 ± 0.04
	ba	-131080.95 ± 0.01	-0.14 ± 0.02	-0.12 ± 0.03	-0.82 ± 0.04	0.61 ± 0.03
	bad	-131081.99 ± 0.01	-0.12 ± 0.02	-0.10 ± 0.03	-0.80 ± 0.04	0.65 ± 0.02
	badq	-131071.90 ± 0.01	-0.17 ± 0.02	-0.16 ± 0.03	-0.85 ± 0.04	0.56 ± 0.03
H_2O		-47893.37 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	-0.14 ± 0.01	0.21 ± 0.01
	b	-47893.41 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.14 ± 0.01	0.15 ± 0.01
	ba	-47893.40 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.30 ± 0.01	0.27 ± 0.02
	bad	-47893.40 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.30 ± 0.01	0.27 ± 0.02
	badq	-47893.40 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.30 ± 0.01	0.27 ± 0.02
C_2H_5OH		-97162.98 ± 0.01	0.05 ± 0.02	0.04 ± 0.02	-0.40 ± 0.02	0.44 ± 0.03

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Table 25 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97163.06 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.23 ± 0.01	0.25 ± 0.02
	ba	-97163.47 ± 0.01	0.11 ± 0.03	0.06 ± 0.04	-0.76 ± 0.03	0.81 ± 0.04
	bad	-97163.66 ± 0.01	0.08 ± 0.02	0.05 ± 0.04	-0.78 ± 0.03	0.83 ± 0.04
	badq	-97163.34 ± 0.01	0.12 ± 0.02	0.08 ± 0.03	-0.71 ± 0.02	0.81 ± 0.04
C_6H_6		-145560.00 ± 0.01	0.06 ± 0.01	0.07 ± 0.02	-0.44 ± 0.02	0.60 ± 0.01
	b	-145560.43 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	-0.17 ± 0.01	0.21 ± 0.01
	ba	-145565.77 ± 0.00	-0.05 ± 0.01	-0.05 ± 0.01	-0.21 ± 0.01	0.12 ± 0.01
	bad	-145564.02 ± 0.00	-0.08 ± 0.01	-0.08 ± 0.01	-0.17 ± 0.01	0.01 ± 0.01
	badq	-145563.39 ± 0.00	-0.04 ± 0.01	-0.04 ± 0.01	-0.13 ± 0.01	0.05 ± 0.01
C_6H_5OH		-192693.96 ± 0.01	0.03 ± 0.02	-0.01 ± 0.03	-0.78 ± 0.02	0.69 ± 0.04
	b	-192694.26 ± 0.01	0.01 ± 0.02	0.00 ± 0.02	-0.46 ± 0.02	0.45 ± 0.03
	ba	-192699.45 ± 0.00	0.03 ± 0.01	0.02 ± 0.02	-0.36 ± 0.01	0.38 ± 0.02
	bad	-192698.00 ± 0.01	0.03 ± 0.01	0.02 ± 0.02	-0.36 ± 0.01	0.38 ± 0.02
	badq	-192712.32 ± 0.00	0.07 ± 0.01	0.06 ± 0.02	-0.44 ± 0.02	0.54 ± 0.02

Table 26: MM-to-QM gas-phase solvation free energy correction values from 3-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
CO_3^{2-}		-165234.08 ± 0.05	0.48 ± 0.12	0.89 ± 0.27	-6.93 ± 0.20	8.70 ± 0.21
	b	-165233.97 ± 0.00	0.15 ± 0.01	0.11 ± 0.01	0.01 ± 0.01	0.20 ± 0.01
	ba	-165298.74 ± 0.00	0.05 ± 0.01	0.03 ± 0.01	-0.04 ± 0.01	0.09 ± 0.05
	bad	-165350.72 ± 0.00	-0.01 ± 0.01	-0.02 ± 0.01	-0.05 ± 0.01	0.01 ± 0.01
	badq	-165337.39 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.01 ± 0.01	0.02 ± 0.01
$CH_3NH_3^+$		-60350.21 ± 0.02	-0.02 ± 0.05	-0.05 ± 0.04	-0.09 ± 0.07	-0.04 ± 0.05
	b	-60350.95 ± 0.01	-0.02 ± 0.03	-0.03 ± 0.04	-0.07 ± 0.04	0.02 ± 0.06
	ba	-60353.33 ± 0.01	0.06 ± 0.02	0.07 ± 0.02	0.08 ± 0.02	0.05 ± 0.02
	bad	-60353.51 ± 0.01	-0.01 ± 0.02	-0.03 ± 0.02	-0.11 ± 0.03	0.05 ± 0.02
	badq	-60350.03 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.05 ± 0.02	0.02 ± 0.03
NH_4^+		-35656.21 ± 0.00	-0.02 ± 0.01	-0.01 ± 0.01	-0.02 ± 0.01	0.00 ± 0.01
	b	-35656.29 ± 0.00	-0.01 ± 0.00	0.00 ± 0.00	-0.02 ± 0.01	0.02 ± 0.01
	ba	-35657.44 ± 0.00	0.00 ± 0.01	0.00 ± 0.00	-0.01 ± 0.01	0.00 ± 0.01
	bad	-35657.44 ± 0.00	0.00 ± 0.01	0.00 ± 0.00	-0.01 ± 0.01	0.00 ± 0.01
	badq	-35656.32 ± 0.00	0.00 ± 0.01	0.00 ± 0.00	-0.01 ± 0.01	0.01 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	-0.01 ± 0.08	-0.09 ± 0.09	-1.17 ± 0.09	0.64 ± 0.15
	b	-143225.39 ± 0.02	0.22 ± 0.05	0.17 ± 0.07	-0.44 ± 0.07	0.50 ± 0.11
	ba	-143274.83 ± 0.02	0.05 ± 0.04	0.06 ± 0.05	-0.09 ± 0.08	0.23 ± 0.07
	bad	-143279.87 ± 0.02	-0.01 ± 0.04	-0.04 ± 0.04	-0.39 ± 0.08	0.31 ± 0.06
	badq	-143295.75 ± 0.02	0.01 ± 0.04	0.01 ± 0.04	-0.20 ± 0.05	0.12 ± 0.05
H_3O^+		-48069.23 ± 0.01	-0.11 ± 0.03	-0.05 ± 0.03	-0.68 ± 0.03	0.53 ± 0.04
	b	-48069.30 ± 0.01	0.07 ± 0.03	0.05 ± 0.03	-0.49 ± 0.03	0.55 ± 0.05
	ba	-48069.33 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	-0.03 ± 0.01	0.09 ± 0.01

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Table 26 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-48069.33 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	-0.03 ± 0.01	0.09 ± 0.01
	badq	-48069.38 ± 0.00	0.04 ± 0.01	0.03 ± 0.01	0.00 ± 0.01	0.06 ± 0.01
C_6H_5Cl		-433852.25 ± 0.02	0.03 ± 0.05	0.04 ± 0.04	0.02 ± 0.06	0.00 ± 0.07
	b	-433850.13 ± 0.01	0.06 ± 0.03	0.08 ± 0.03	0.15 ± 0.04	-0.01 ± 0.05
	ba	-433853.89 ± 0.01	-0.02 ± 0.02	-0.01 ± 0.02	-0.01 ± 0.03	-0.02 ± 0.03
	bad	-433855.52 ± 0.01	0.04 ± 0.02	0.04 ± 0.02	-0.09 ± 0.03	0.12 ± 0.04
	badq	-433858.60 ± 0.01	-0.05 ± 0.02	-0.05 ± 0.02	-0.13 ± 0.03	0.00 ± 0.04
C_6H_{14}		-148579.56 ± 0.01	0.00 ± 0.03	-0.03 ± 0.03	-0.33 ± 0.04	0.29 ± 0.04
	b	-148580.35 ± 0.01	-0.06 ± 0.02	-0.06 ± 0.02	-0.25 ± 0.03	0.13 ± 0.02
	ba	-148579.69 ± 0.01	0.03 ± 0.02	0.02 ± 0.02	-0.18 ± 0.03	0.24 ± 0.02
	bad	-148579.55 ± 0.01	-0.08 ± 0.02	-0.08 ± 0.02	-0.24 ± 0.03	0.12 ± 0.02
	badq	-148577.13 ± 0.01	0.03 ± 0.02	0.01 ± 0.02	-0.17 ± 0.03	0.20 ± 0.02
CH_3OH		-72528.21 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	-0.26 ± 0.01	0.26 ± 0.02
	b	-72528.26 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	-0.22 ± 0.01	0.21 ± 0.02
	ba	-72528.29 ± 0.01	0.01 ± 0.01	0.03 ± 0.01	-0.22 ± 0.01	0.25 ± 0.02
	bad	-72528.28 ± 0.01	0.04 ± 0.01	0.06 ± 0.01	-0.19 ± 0.01	0.28 ± 0.02
	badq	-72528.80 ± 0.01	0.02 ± 0.01	0.04 ± 0.01	-0.20 ± 0.01	0.26 ± 0.02
C_2H_6		-50024.21 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.06 ± 0.01	0.05 ± 0.01
	b	-50024.36 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.01 ± 0.02	0.06 ± 0.02
	ba	-50024.20 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.02 ± 0.01	0.00 ± 0.01
	bad	-50024.28 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.01	-0.01 ± 0.01
	badq	-50024.44 ± 0.00	0.03 ± 0.01	0.03 ± 0.00	0.04 ± 0.01	0.01 ± 0.01
$(CH_2)_4O$		-145699.56 ± 0.02	0.16 ± 0.04	0.20 ± 0.04	-0.73 ± 0.04	1.10 ± 0.05
	b	-145699.47 ± 0.02	0.10 ± 0.05	0.17 ± 0.07	-0.90 ± 0.05	1.18 ± 0.10

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Table 26 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	ba	-145697.65 ± 0.01	0.00 ± 0.02	0.02 ± 0.03	-0.17 ± 0.04	0.20 ± 0.04
	bad	-145698.65 ± 0.01	-0.03 ± 0.03	0.00 ± 0.02	-0.22 ± 0.03	0.21 ± 0.03
	badq	-145689.76 ± 0.01	-0.03 ± 0.03	-0.01 ± 0.03	-0.20 ± 0.05	0.20 ± 0.04
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.40 ± 0.09	0.12 ± 0.17	-0.63 ± 0.09	0.39 ± 0.25
	b	-128902.74 ± 0.03	0.00 ± 0.08	-0.14 ± 0.09	-0.65 ± 0.09	-0.01 ± 0.18
	ba	-128929.38 ± 0.03	0.13 ± 0.06	0.03 ± 0.06	-0.28 ± 0.11	0.13 ± 0.11
	bad	-128932.44 ± 0.02	0.24 ± 0.05	0.14 ± 0.07	-0.21 ± 0.08	0.26 ± 0.12
	badq	-128914.70 ± 0.02	-0.07 ± 0.04	-0.07 ± 0.05	-0.44 ± 0.04	0.12 ± 0.07
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.06 ± 0.03	-0.07 ± 0.03	-0.64 ± 0.04	0.53 ± 0.03
	b	-180227.72 ± 0.01	-0.03 ± 0.02	-0.02 ± 0.02	-0.56 ± 0.03	0.55 ± 0.03
	ba	-180232.65 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.21 ± 0.02	0.22 ± 0.02
	bad	-180231.64 ± 0.01	0.00 ± 0.02	0.01 ± 0.02	-0.20 ± 0.02	0.22 ± 0.02
	badq	-180261.12 ± 0.01	0.07 ± 0.02	0.10 ± 0.02	-0.36 ± 0.02	0.53 ± 0.03
CH_3CONH_2		-131075.55 ± 0.01	0.03 ± 0.01	-0.01 ± 0.02	-0.49 ± 0.03	0.49 ± 0.02
	b	-131075.53 ± 0.01	0.00 ± 0.02	-0.04 ± 0.03	-0.68 ± 0.03	0.60 ± 0.03
	ba	-131080.95 ± 0.01	0.02 ± 0.01	-0.01 ± 0.01	-0.39 ± 0.02	0.38 ± 0.01
	bad	-131081.99 ± 0.01	0.04 ± 0.01	0.01 ± 0.01	-0.36 ± 0.02	0.41 ± 0.01
	badq	-131071.90 ± 0.01	-0.01 ± 0.01	-0.04 ± 0.01	-0.42 ± 0.02	0.35 ± 0.02
H_2O		-47893.37 ± 0.00	-0.01 ± 0.00	0.00 ± 0.00	-0.09 ± 0.01	0.09 ± 0.01
	b	-47893.41 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.08 ± 0.00	0.07 ± 0.01
	ba	-47893.40 ± 0.00	0.00 ± 0.01	-0.01 ± 0.01	-0.15 ± 0.01	0.14 ± 0.01
	bad	-47893.40 ± 0.00	0.00 ± 0.01	-0.01 ± 0.01	-0.15 ± 0.01	0.14 ± 0.01
	badq	-47893.40 ± 0.00	0.00 ± 0.01	-0.01 ± 0.01	-0.15 ± 0.01	0.14 ± 0.01
C_2H_5OH		-97162.98 ± 0.01	-0.01 ± 0.01	0.00 ± 0.01	-0.22 ± 0.01	0.22 ± 0.02

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Table 26 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97163.06 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.12 ± 0.01	0.12 ± 0.01
	ba	-97163.47 ± 0.01	0.01 ± 0.02	0.02 ± 0.02	-0.39 ± 0.02	0.40 ± 0.03
	bad	-97163.66 ± 0.01	0.02 ± 0.02	0.03 ± 0.02	-0.41 ± 0.02	0.45 ± 0.02
	badq	-97163.34 ± 0.01	0.02 ± 0.02	0.04 ± 0.02	-0.37 ± 0.02	0.41 ± 0.02
C_6H_6		-145560.00 ± 0.01	0.00 ± 0.01	0.02 ± 0.01	-0.24 ± 0.01	0.28 ± 0.01
	b	-145560.43 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	-0.07 ± 0.01	0.11 ± 0.01
	ba	-145565.77 ± 0.00	-0.03 ± 0.01	-0.03 ± 0.01	-0.12 ± 0.01	0.05 ± 0.01
	bad	-145564.02 ± 0.00	0.30 ± 0.02	0.22 ± 0.01	0.21 ± 0.07	0.23 ± 0.07
	badq	-145563.39 ± 0.00	0.01 ± 0.02	0.00 ± 0.01	-0.02 ± 0.01	0.02 ± 0.01
C_6H_5OH		-192693.96 ± 0.01	0.00 ± 0.02	0.01 ± 0.02	-0.40 ± 0.02	0.38 ± 0.02
	b	-192694.26 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.23 ± 0.01	0.24 ± 0.02
	ba	-192699.45 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	-0.17 ± 0.01	0.20 ± 0.01
	bad	-192698.00 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.18 ± 0.01	0.19 ± 0.01
	badq	-192712.32 ± 0.00	0.01 ± 0.01	0.02 ± 0.01	-0.22 ± 0.01	0.26 ± 0.01

Table 27: MM-to-QM gas-phase solvation free energy correction values from 6-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	0.03 ± 0.09	0.15 ± 0.10	-2.92 ± 0.15	3.20 ± 0.14
	b	-165233.97 ± 0.00	-0.04 ± 0.01	-0.03 ± 0.01	-0.07 ± 0.01	0.00 ± 0.01
	ba	-165298.74 ± 0.00	0.01 ± 0.01	0.01 ± 0.00	-0.02 ± 0.01	0.04 ± 0.02
	bad	-165350.72 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	-0.02 ± 0.01	0.00 ± 0.01
	badq	-165337.39 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	0.00 ± 0.01
$CH_3NH_3^+$		-60350.21 ± 0.02	0.05 ± 0.04	0.05 ± 0.04	0.01 ± 0.05	0.06 ± 0.05
	b	-60350.95 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	0.00 ± 0.02	0.00 ± 0.03
	ba	-60353.33 ± 0.01	0.06 ± 0.01	0.06 ± 0.01	0.07 ± 0.01	0.05 ± 0.01
	bad	-60353.51 ± 0.01	-0.01 ± 0.01	-0.02 ± 0.01	-0.05 ± 0.01	0.01 ± 0.01
	badq	-60350.03 ± 0.01	-0.04 ± 0.01	-0.04 ± 0.01	-0.05 ± 0.02	-0.03 ± 0.02
NH_4^+		-35656.21 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	b	-35656.29 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.01 ± 0.00	0.00 ± 0.01
	ba	-35657.44 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00
	bad	-35657.44 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00
	badq	-35656.32 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	0.00 ± 0.00
$CH_3CO_2^-$		-143225.98 ± 0.03	-0.05 ± 0.06	-0.05 ± 0.05	-0.48 ± 0.06	0.30 ± 0.07
	b	-143225.39 ± 0.02	-0.05 ± 0.04	-0.03 ± 0.04	-0.31 ± 0.04	0.18 ± 0.05
	ba	-143274.83 ± 0.02	-0.02 ± 0.03	-0.02 ± 0.03	-0.12 ± 0.03	0.08 ± 0.03
	bad	-143279.87 ± 0.02	-0.03 ± 0.03	-0.04 ± 0.03	-0.16 ± 0.04	0.08 ± 0.04
	badq	-143295.75 ± 0.02	0.00 ± 0.03	0.00 ± 0.03	-0.07 ± 0.04	0.05 ± 0.04
H_3O^+		-48069.23 ± 0.01	0.03 ± 0.02	0.03 ± 0.02	-0.23 ± 0.02	0.28 ± 0.02
	b	-48069.30 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.21 ± 0.02	0.18 ± 0.03
	ba	-48069.33 ± 0.00	0.02 ± 0.01	0.02 ± 0.00	0.00 ± 0.01	0.04 ± 0.01

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Table 27 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-48069.33 ± 0.00	0.02 ± 0.01	0.02 ± 0.00	0.00 ± 0.01	0.04 ± 0.01
	badq	-48069.38 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.00	-0.02 ± 0.01	0.00 ± 0.01
C_6H_5Cl		-433852.25 ± 0.02	-0.05 ± 0.04	-0.04 ± 0.03	-0.04 ± 0.04	-0.05 ± 0.04
	b	-433850.13 ± 0.01	-0.02 ± 0.02	-0.01 ± 0.02	0.01 ± 0.03	-0.03 ± 0.03
	ba	-433853.89 ± 0.01	-0.03 ± 0.02	-0.02 ± 0.01	-0.02 ± 0.02	-0.03 ± 0.02
	bad	-433855.52 ± 0.01	-0.05 ± 0.02	-0.05 ± 0.01	-0.09 ± 0.02	-0.01 ± 0.02
	badq	-433858.60 ± 0.01	0.03 ± 0.02	0.02 ± 0.01	0.00 ± 0.02	0.04 ± 0.02
C_6H_{14}		-148579.56 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.02	-0.13 ± 0.02	0.10 ± 0.02
	b	-148580.35 ± 0.01	-0.02 ± 0.01	-0.02 ± 0.01	-0.11 ± 0.02	0.06 ± 0.01
	ba	-148579.69 ± 0.01	0.02 ± 0.01	0.01 ± 0.01	-0.08 ± 0.01	0.11 ± 0.01
	bad	-148579.55 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.08 ± 0.02	0.07 ± 0.01
	badq	-148577.13 ± 0.01	-0.03 ± 0.01	-0.03 ± 0.01	-0.12 ± 0.01	0.06 ± 0.01
CH_3OH		-72528.21 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.09 ± 0.01	0.11 ± 0.01
	b	-72528.26 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.08 ± 0.01	0.09 ± 0.01
	ba	-72528.29 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	-0.08 ± 0.03	0.10 ± 0.03
	bad	-72528.28 ± 0.01	-0.05 ± 0.01	-0.04 ± 0.01	-0.13 ± 0.01	0.06 ± 0.01
	badq	-72528.80 ± 0.01	-0.02 ± 0.01	-0.01 ± 0.01	-0.11 ± 0.01	0.08 ± 0.01
C_2H_6		-50024.21 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.00 ± 0.01	0.04 ± 0.01
	b	-50024.36 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.01 ± 0.01	0.00 ± 0.01
	ba	-50024.20 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00	0.00 ± 0.00
	bad	-50024.28 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00	0.00 ± 0.00
	badq	-50024.44 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.01 ± 0.00
$(CH_2)_4O$		-145699.56 ± 0.02	-0.07 ± 0.04	-0.05 ± 0.04	-0.40 ± 0.04	0.29 ± 0.04
	b	-145699.47 ± 0.02	0.10 ± 0.04	0.12 ± 0.04	-0.30 ± 0.05	0.52 ± 0.06

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Table 27 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	ba	-145697.65 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	-0.07 ± 0.02	0.09 ± 0.02
	bad	-145698.65 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	-0.09 ± 0.02	0.08 ± 0.02
	badq	-145689.76 ± 0.01	-0.06 ± 0.02	-0.06 ± 0.01	-0.14 ± 0.02	0.03 ± 0.02
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.06 ± 0.06	0.04 ± 0.09	-0.24 ± 0.08	0.15 ± 0.17
	b	-128902.74 ± 0.03	-0.03 ± 0.06	-0.04 ± 0.06	-0.25 ± 0.07	0.03 ± 0.09
	ba	-128929.38 ± 0.03	0.04 ± 0.05	0.03 ± 0.05	-0.08 ± 0.07	0.07 ± 0.06
	bad	-128932.44 ± 0.02	0.06 ± 0.04	0.05 ± 0.05	-0.08 ± 0.06	0.11 ± 0.07
	badq	-128914.70 ± 0.02	0.06 ± 0.04	0.06 ± 0.04	-0.03 ± 0.08	0.12 ± 0.07
$C_6H_5NH_2$		-180227.49 ± 0.01	0.01 ± 0.02	0.01 ± 0.02	-0.23 ± 0.02	0.25 ± 0.02
	b	-180227.72 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	-0.22 ± 0.02	0.23 ± 0.02
	ba	-180232.65 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.09 ± 0.01	0.09 ± 0.01
	bad	-180231.64 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.08 ± 0.01	0.09 ± 0.01
	badq	-180261.12 ± 0.01	0.02 ± 0.01	0.03 ± 0.01	-0.15 ± 0.02	0.21 ± 0.02
CH_3CONH_2		-131075.55 ± 0.01	0.03 ± 0.01	0.02 ± 0.01	-0.18 ± 0.02	0.22 ± 0.01
	b	-131075.53 ± 0.01	-0.03 ± 0.01	-0.03 ± 0.01	-0.29 ± 0.02	0.23 ± 0.02
	ba	-131080.95 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.15 ± 0.01	0.16 ± 0.01
	bad	-131081.99 ± 0.01	-0.02 ± 0.01	-0.03 ± 0.01	-0.18 ± 0.01	0.13 ± 0.01
	badq	-131071.90 ± 0.01	0.01 ± 0.01	0.00 ± 0.01	-0.15 ± 0.01	0.16 ± 0.01
H_2O		-47893.37 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.04 ± 0.00	0.03 ± 0.00
	b	-47893.41 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.03 ± 0.00	0.03 ± 0.00
	ba	-47893.40 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	-0.06 ± 0.00	0.05 ± 0.00
	bad	-47893.40 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	-0.06 ± 0.00	0.05 ± 0.00
	badq	-47893.40 ± 0.00	-0.01 ± 0.00	-0.01 ± 0.00	-0.06 ± 0.00	0.05 ± 0.00
C_2H_5OH		-97162.98 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.09 ± 0.01	0.09 ± 0.01

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Table 27 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97163.06 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.05 ± 0.01	0.05 ± 0.01
	ba	-97163.47 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	-0.17 ± 0.01	0.17 ± 0.01
	bad	-97163.66 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.16 ± 0.01	0.16 ± 0.02
	badq	-97163.34 ± 0.01	-0.02 ± 0.01	-0.02 ± 0.01	-0.17 ± 0.01	0.14 ± 0.02
C_6H_6		-145560.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.10 ± 0.01	0.10 ± 0.01
	b	-145560.43 ± 0.00	-0.02 ± 0.01	-0.02 ± 0.01	-0.05 ± 0.01	0.01 ± 0.01
	ba	-145565.77 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.02 ± 0.02	0.04 ± 0.02
	bad	-145564.02 ± 0.00	-0.03 ± 0.00	-0.03 ± 0.00	-0.05 ± 0.02	-0.01 ± 0.02
	badq	-145563.39 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.00	-0.02 ± 0.01	0.01 ± 0.01
C_6H_5OH		-192693.96 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.14 ± 0.02	0.15 ± 0.02
	b	-192694.26 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.09 ± 0.01	0.08 ± 0.01
	ba	-192699.45 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.09 ± 0.01	0.07 ± 0.01
	bad	-192698.00 ± 0.01	0.02 ± 0.01	0.02 ± 0.01	-0.06 ± 0.01	0.09 ± 0.01
	badq	-192712.32 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.11 ± 0.01	0.09 ± 0.01

Table 28: MM-to-QM gas-phase solvation free energy correction values from 2-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	3.07 ± 0.26	2.24 ± 0.36	-12.30 ± 0.17	16.79 ± 0.32
	b	-165233.97 ± 0.00	0.06 ± 0.03	0.05 ± 0.03	-0.18 ± 0.03	0.19 ± 0.05
	ba	-165298.74 ± 0.00	-0.01 ± 0.02	-0.02 ± 0.03	-0.16 ± 0.02	0.05 ± 0.13
	bad	-165350.72 ± 0.00	-0.02 ± 0.02	-0.03 ± 0.02	-0.10 ± 0.02	-0.02 ± 0.03
	badq	-165337.39 ± 0.00	0.02 ± 0.02	0.02 ± 0.02	-0.03 ± 0.02	-0.01 ± 0.03
$CH_3NH_3^+$		-60350.21 ± 0.02	0.10 ± 0.09	-0.10 ± 0.08	-0.26 ± 0.13	0.00 ± 0.11
	b	-60350.95 ± 0.01	0.07 ± 0.06	-0.01 ± 0.10	0.05 ± 0.10	-0.08 ± 0.15
	ba	-60353.33 ± 0.01	0.18 ± 0.03	0.17 ± 0.03	0.10 ± 0.04	0.25 ± 0.04
	bad	-60353.51 ± 0.01	-0.12 ± 0.03	-0.11 ± 0.03	-0.18 ± 0.04	-0.07 ± 0.05
	badq	-60350.03 ± 0.01	-0.11 ± 0.03	-0.11 ± 0.03	-0.15 ± 0.03	-0.18 ± 0.06
NH_4^+		-35656.21 ± 0.00	0.05 ± 0.01	0.05 ± 0.01	0.04 ± 0.01	0.05 ± 0.02
	b	-35656.29 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	0.01 ± 0.01	0.04 ± 0.03
	ba	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.02
	bad	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.02
	badq	-35656.32 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.01 ± 0.01	0.02 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	0.78 ± 0.17	0.22 ± 0.26	-1.34 ± 0.25	1.69 ± 0.24
	b	-143225.39 ± 0.02	0.09 ± 0.10	-0.03 ± 0.17	-1.04 ± 0.18	0.75 ± 0.22
	ba	-143274.83 ± 0.02	0.19 ± 0.08	0.17 ± 0.10	0.13 ± 0.18	0.16 ± 0.12
	bad	-143279.87 ± 0.02	0.11 ± 0.08	0.17 ± 0.11	-0.21 ± 0.12	0.35 ± 0.16
	badq	-143295.75 ± 0.02	0.10 ± 0.08	0.11 ± 0.10	-0.14 ± 0.12	-0.03 ± 0.19
H_3O^+		-48069.23 ± 0.01	0.06 ± 0.07	-0.08 ± 0.13	-1.00 ± 0.09	0.74 ± 0.17
	b	-48069.30 ± 0.01	-0.01 ± 0.08	-0.21 ± 0.09	-0.94 ± 0.07	0.25 ± 0.12
	ba	-48069.33 ± 0.00	0.07 ± 0.02	0.07 ± 0.02	-0.05 ± 0.02	0.18 ± 0.03

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Table 28 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-48069.33 ± 0.00	0.07 ± 0.02	0.07 ± 0.02	-0.05 ± 0.02	0.18 ± 0.03
	badq	-48069.38 ± 0.00	0.06 ± 0.02	0.06 ± 0.02	-0.02 ± 0.03	0.11 ± 0.04
C_6H_5Cl		-433852.25 ± 0.02	0.17 ± 0.08	0.17 ± 0.08	0.50 ± 0.14	0.04 ± 0.13
	b	-433850.13 ± 0.01	-0.06 ± 0.05	-0.04 ± 0.05	0.12 ± 0.12	0.03 ± 0.07
	ba	-433853.89 ± 0.01	0.00 ± 0.04	-0.01 ± 0.05	-0.11 ± 0.07	0.01 ± 0.07
	bad	-433855.52 ± 0.01	0.18 ± 0.04	0.18 ± 0.04	0.02 ± 0.05	0.31 ± 0.06
	badq	-433858.60 ± 0.01	0.14 ± 0.04	0.12 ± 0.04	0.06 ± 0.06	0.13 ± 0.06
C_6H_{14}		-148579.56 ± 0.01	0.03 ± 0.05	0.10 ± 0.08	-0.48 ± 0.08	0.78 ± 0.09
	b	-148580.35 ± 0.01	0.03 ± 0.03	0.03 ± 0.06	-0.36 ± 0.10	0.45 ± 0.04
	ba	-148579.69 ± 0.01	-0.01 ± 0.03	0.00 ± 0.04	-0.25 ± 0.06	0.27 ± 0.05
	bad	-148579.55 ± 0.01	0.07 ± 0.03	0.08 ± 0.04	-0.22 ± 0.06	0.42 ± 0.05
	badq	-148577.13 ± 0.01	0.08 ± 0.04	0.07 ± 0.05	-0.27 ± 0.06	0.40 ± 0.05
CH_3OH		-72528.21 ± 0.01	0.07 ± 0.03	0.02 ± 0.04	-0.50 ± 0.02	0.41 ± 0.06
	b	-72528.26 ± 0.01	0.06 ± 0.03	0.02 ± 0.04	-0.43 ± 0.02	0.39 ± 0.05
	ba	-72528.29 ± 0.01	0.10 ± 0.03	0.07 ± 0.03	-0.43 ± 0.02	0.49 ± 0.05
	bad	-72528.28 ± 0.01	0.13 ± 0.03	0.10 ± 0.03	-0.40 ± 0.02	0.54 ± 0.04
	badq	-72528.80 ± 0.01	0.11 ± 0.03	0.08 ± 0.03	-0.42 ± 0.02	0.49 ± 0.05
C_2H_6		-50024.21 ± 0.00	0.01 ± 0.02	0.01 ± 0.02	-0.09 ± 0.03	0.10 ± 0.03
	b	-50024.36 ± 0.00	0.02 ± 0.01	0.02 ± 0.02	-0.04 ± 0.02	0.06 ± 0.04
	ba	-50024.20 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.04 ± 0.01	0.03 ± 0.01
	bad	-50024.28 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.04 ± 0.01	0.05 ± 0.01
	badq	-50024.44 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.04 ± 0.01	0.05 ± 0.02
$(CH_2)_4O$		-145699.56 ± 0.02	0.51 ± 0.07	0.29 ± 0.16	-1.38 ± 0.11	1.78 ± 0.21
	b	-145699.47 ± 0.02	0.55 ± 0.09	0.12 ± 0.23	-1.67 ± 0.10	1.82 ± 0.27

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Table 28 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	ba	-145697.65 ± 0.01	0.17 ± 0.04	0.15 ± 0.05	-0.30 ± 0.05	0.59 ± 0.06
	bad	-145698.65 ± 0.01	0.26 ± 0.04	0.24 ± 0.06	-0.36 ± 0.05	0.81 ± 0.07
	badq	-145689.76 ± 0.01	0.01 ± 0.04	0.00 ± 0.06	-0.36 ± 0.07	0.29 ± 0.08
$C(NH_2)_3^+$		-128901.22 ± 0.03	1.50 ± 0.32	-0.17 ± 0.20	-1.10 ± 0.11	0.37 ± 0.43
	b	-128902.74 ± 0.03	1.80 ± 0.30	-0.06 ± 0.24	-0.73 ± 0.19	-0.24 ± 0.42
	ba	-128929.38 ± 0.03	1.43 ± 0.23	0.11 ± 0.17	-0.53 ± 0.17	0.38 ± 0.27
	bad	-128932.44 ± 0.02	0.51 ± 0.11	0.14 ± 0.17	-0.43 ± 0.18	0.40 ± 0.25
	badq	-128914.70 ± 0.02	0.26 ± 0.10	0.02 ± 0.09	-0.38 ± 0.10	0.03 ± 0.14
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.13 ± 0.05	-0.08 ± 0.09	-1.31 ± 0.08	1.17 ± 0.06
	b	-180227.72 ± 0.01	0.02 ± 0.05	0.02 ± 0.07	-1.07 ± 0.06	1.08 ± 0.09
	ba	-180232.65 ± 0.01	0.09 ± 0.02	0.09 ± 0.03	-0.32 ± 0.03	0.48 ± 0.04
	bad	-180231.64 ± 0.01	0.09 ± 0.03	0.08 ± 0.04	-0.33 ± 0.03	0.45 ± 0.04
	badq	-180261.12 ± 0.01	0.25 ± 0.04	0.19 ± 0.06	-0.55 ± 0.06	0.83 ± 0.09
CH_3CONH_2		-131075.55 ± 0.01	-0.18 ± 0.04	-0.15 ± 0.06	-0.97 ± 0.06	0.73 ± 0.04
	b	-131075.53 ± 0.01	-0.19 ± 0.05	-0.24 ± 0.08	-1.36 ± 0.08	0.85 ± 0.07
	ba	-131080.95 ± 0.01	-0.12 ± 0.03	-0.12 ± 0.05	-0.78 ± 0.06	0.55 ± 0.04
	bad	-131081.99 ± 0.01	-0.08 ± 0.03	-0.08 ± 0.05	-0.76 ± 0.06	0.60 ± 0.04
	badq	-131071.90 ± 0.01	-0.13 ± 0.03	-0.14 ± 0.06	-0.81 ± 0.06	0.52 ± 0.05
H_2O		-47893.37 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	-0.17 ± 0.01	0.22 ± 0.01
	b	-47893.41 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.17 ± 0.01	0.16 ± 0.02
	ba	-47893.40 ± 0.00	-0.02 ± 0.01	-0.03 ± 0.02	-0.35 ± 0.02	0.27 ± 0.03
	bad	-47893.40 ± 0.00	-0.02 ± 0.01	-0.03 ± 0.02	-0.35 ± 0.02	0.27 ± 0.03
	badq	-47893.40 ± 0.00	-0.02 ± 0.01	-0.03 ± 0.02	-0.35 ± 0.02	0.27 ± 0.03
C_2H_5OH		-97162.98 ± 0.01	0.06 ± 0.03	0.05 ± 0.03	-0.39 ± 0.03	0.44 ± 0.05

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Table 28 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97163.06 ± 0.00	0.02 ± 0.02	0.02 ± 0.02	-0.22 ± 0.02	0.23 ± 0.03
	ba	-97163.47 ± 0.01	0.14 ± 0.05	0.04 ± 0.06	-0.74 ± 0.04	0.68 ± 0.07
	bad	-97163.66 ± 0.01	0.09 ± 0.04	0.01 ± 0.06	-0.76 ± 0.04	0.66 ± 0.07
	badq	-97163.34 ± 0.01	0.13 ± 0.05	0.02 ± 0.06	-0.69 ± 0.04	0.58 ± 0.08
C_6H_6		-145560.00 ± 0.01	0.04 ± 0.01	0.04 ± 0.02	-0.45 ± 0.02	0.55 ± 0.02
	b	-145560.43 ± 0.00	0.01 ± 0.01	0.01 ± 0.02	-0.16 ± 0.02	0.17 ± 0.02
	ba	-145565.77 ± 0.00	-0.04 ± 0.01	-0.04 ± 0.02	-0.22 ± 0.02	0.13 ± 0.02
	bad	-145564.02 ± 0.00	-0.08 ± 0.01	-0.08 ± 0.01	-0.17 ± 0.01	0.01 ± 0.02
	badq	-145563.39 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.13 ± 0.02	0.10 ± 0.02
C_6H_5OH		-192693.96 ± 0.01	0.02 ± 0.03	-0.01 ± 0.05	-0.78 ± 0.04	0.72 ± 0.06
	b	-192694.26 ± 0.01	0.01 ± 0.02	0.00 ± 0.03	-0.47 ± 0.03	0.45 ± 0.04
	ba	-192699.45 ± 0.00	0.05 ± 0.02	0.04 ± 0.03	-0.34 ± 0.02	0.39 ± 0.04
	bad	-192698.00 ± 0.01	0.04 ± 0.02	0.03 ± 0.02	-0.33 ± 0.02	0.37 ± 0.03
	badq	-192712.32 ± 0.00	0.09 ± 0.02	0.09 ± 0.03	-0.40 ± 0.03	0.56 ± 0.04

Table 29: MM-to-QM gas-phase solvation free energy correction values from 3-λ states simulated for 100 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
CO_3^{2-}		-165234.08 ± 0.05	0.35 ± 0.24	0.68 ± 0.43	-5.53 ± 0.34	6.88 ± 0.30
	b	-165233.97 ± 0.00	0.20 ± 0.03	0.17 ± 0.02	0.07 ± 0.03	0.25 ± 0.03
	ba	-165298.74 ± 0.00	0.02 ± 0.02	0.01 ± 0.02	-0.05 ± 0.02	0.06 ± 0.09
	bad	-165350.72 ± 0.00	0.01 ± 0.02	0.00 ± 0.01	-0.04 ± 0.01	0.02 ± 0.02
	badq	-165337.39 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	0.01 ± 0.01	0.03 ± 0.02
$CH_3NH_3^+$		-60350.21 ± 0.02	0.08 ± 0.08	0.04 ± 0.06	-0.02 ± 0.08	0.01 ± 0.08
	b	-60350.95 ± 0.01	-0.03 ± 0.05	-0.03 ± 0.07	-0.02 ± 0.07	-0.05 ± 0.11
	ba	-60353.33 ± 0.01	0.11 ± 0.03	0.12 ± 0.03	0.08 ± 0.03	0.17 ± 0.04
	bad	-60353.51 ± 0.01	-0.06 ± 0.02	-0.07 ± 0.02	-0.11 ± 0.03	-0.04 ± 0.03
	badq	-60350.03 ± 0.01	-0.09 ± 0.03	-0.09 ± 0.03	-0.11 ± 0.04	-0.11 ± 0.04
NH_4^+		-35656.21 ± 0.00	0.10 ± 0.01	0.09 ± 0.01	0.08 ± 0.02	0.09 ± 0.02
	b	-35656.29 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.01	0.02 ± 0.01
	ba	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.02 ± 0.01	0.01 ± 0.01
	bad	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.02 ± 0.01	0.01 ± 0.01
	badq	-35656.32 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.01 ± 0.01	0.00 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	0.14 ± 0.15	0.14 ± 0.12	-0.40 ± 0.18	0.55 ± 0.16
	b	-143225.39 ± 0.02	-0.09 ± 0.08	-0.09 ± 0.08	-0.45 ± 0.15	0.31 ± 0.09
	ba	-143274.83 ± 0.02	0.10 ± 0.08	0.12 ± 0.07	0.15 ± 0.12	0.03 ± 0.09
	bad	-143279.87 ± 0.02	0.51 ± 0.06	0.45 ± 0.09	0.24 ± 0.14	0.65 ± 0.12
	badq	-143295.75 ± 0.02	0.08 ± 0.06	0.09 ± 0.06	-0.03 ± 0.09	0.10 ± 0.09
H_3O^+		-48069.23 ± 0.01	-0.10 ± 0.07	-0.09 ± 0.09	-0.49 ± 0.08	0.26 ± 0.13
	b	-48069.30 ± 0.01	0.00 ± 0.06	-0.03 ± 0.05	-0.42 ± 0.05	0.22 ± 0.07
	ba	-48069.33 ± 0.00	0.03 ± 0.02	0.04 ± 0.01	-0.02 ± 0.02	0.09 ± 0.02

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Table 29 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-48069.33 ± 0.00	0.03 ± 0.02	0.04 ± 0.01	-0.02 ± 0.02	0.09 ± 0.02
	badq	-48069.38 ± 0.00	0.05 ± 0.02	0.05 ± 0.01	0.01 ± 0.02	0.09 ± 0.02
C_6H_5Cl		-433852.25 ± 0.02	-0.06 ± 0.07	-0.02 ± 0.05	0.12 ± 0.09	-0.10 ± 0.08
	b	-433850.13 ± 0.01	-0.02 ± 0.05	-0.02 ± 0.04	0.04 ± 0.06	-0.02 ± 0.05
	ba	-433853.89 ± 0.01	-0.06 ± 0.04	-0.05 ± 0.03	-0.10 ± 0.04	-0.02 ± 0.04
	bad	-433855.52 ± 0.01	0.03 ± 0.04	0.06 ± 0.03	-0.02 ± 0.04	0.14 ± 0.04
	badq	-433858.60 ± 0.01	0.09 ± 0.04	0.10 ± 0.03	0.08 ± 0.04	0.09 ± 0.05
C_6H_{14}		-148579.56 ± 0.01	0.03 ± 0.04	0.04 ± 0.04	-0.28 ± 0.05	0.40 ± 0.06
	b	-148580.35 ± 0.01	0.00 ± 0.03	0.00 ± 0.03	-0.20 ± 0.05	0.21 ± 0.03
	ba	-148579.69 ± 0.01	-0.02 ± 0.03	-0.02 ± 0.03	-0.14 ± 0.04	0.11 ± 0.03
	bad	-148579.55 ± 0.01	-0.01 ± 0.03	0.01 ± 0.03	-0.14 ± 0.04	0.16 ± 0.04
	badq	-148577.13 ± 0.01	0.02 ± 0.03	0.03 ± 0.03	-0.14 ± 0.04	0.20 ± 0.04
CH_3OH		-72528.21 ± 0.01	0.00 ± 0.02	0.01 ± 0.02	-0.26 ± 0.02	0.22 ± 0.04
	b	-72528.26 ± 0.01	0.00 ± 0.02	0.01 ± 0.02	-0.22 ± 0.02	0.20 ± 0.03
	ba	-72528.29 ± 0.01	0.02 ± 0.02	0.03 ± 0.02	-0.21 ± 0.02	0.25 ± 0.03
	bad	-72528.28 ± 0.01	0.04 ± 0.02	0.06 ± 0.02	-0.19 ± 0.02	0.28 ± 0.03
	badq	-72528.80 ± 0.01	0.03 ± 0.03	0.04 ± 0.02	-0.20 ± 0.02	0.26 ± 0.03
C_2H_6		-50024.21 ± 0.00	0.02 ± 0.01	0.01 ± 0.02	-0.04 ± 0.02	0.07 ± 0.02
	b	-50024.36 ± 0.00	0.04 ± 0.01	0.04 ± 0.02	0.01 ± 0.02	0.06 ± 0.03
	ba	-50024.20 ± 0.00	-0.03 ± 0.01	-0.02 ± 0.01	-0.01 ± 0.02	-0.02 ± 0.02
	bad	-50024.28 ± 0.00	0.00 ± 0.01	0.01 ± 0.01	0.00 ± 0.01	0.01 ± 0.01
	badq	-50024.44 ± 0.00	0.05 ± 0.01	0.05 ± 0.01	0.04 ± 0.01	0.05 ± 0.01
$(CH_2)_4O$		-145699.56 ± 0.02	-0.03 ± 0.06	0.05 ± 0.07	-0.82 ± 0.07	0.85 ± 0.09
	b	-145699.47 ± 0.02	0.10 ± 0.09	0.13 ± 0.10	-0.72 ± 0.09	0.78 ± 0.16

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Table 29 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	ba	-145697.65 ± 0.01	0.11 ± 0.04	0.12 ± 0.03	-0.10 ± 0.04	0.34 ± 0.04
	bad	-145698.65 ± 0.01	0.08 ± 0.04	0.11 ± 0.04	-0.19 ± 0.05	0.40 ± 0.05
	badq	-145689.76 ± 0.01	-0.01 ± 0.04	-0.01 ± 0.03	-0.17 ± 0.05	0.13 ± 0.05
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.27 ± 0.16	-0.15 ± 0.17	-0.16 ± 0.41	-0.05 ± 0.27
	b	-128902.74 ± 0.03	0.14 ± 0.14	-0.23 ± 0.15	-0.72 ± 0.17	-0.28 ± 0.29
	ba	-128929.38 ± 0.03	0.31 ± 0.10	0.09 ± 0.12	-0.44 ± 0.09	0.25 ± 0.17
	bad	-128932.44 ± 0.02	0.19 ± 0.07	0.15 ± 0.09	-0.18 ± 0.11	0.31 ± 0.14
	badq	-128914.70 ± 0.02	0.20 ± 0.07	0.15 ± 0.06	0.01 ± 0.09	0.17 ± 0.09
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.07 ± 0.04	-0.08 ± 0.04	-0.68 ± 0.06	0.55 ± 0.04
	b	-180227.72 ± 0.01	0.01 ± 0.04	0.01 ± 0.04	-0.54 ± 0.05	0.57 ± 0.05
	ba	-180232.65 ± 0.01	0.06 ± 0.02	0.07 ± 0.02	-0.14 ± 0.02	0.27 ± 0.02
	bad	-180231.64 ± 0.01	0.04 ± 0.02	0.05 ± 0.02	-0.16 ± 0.02	0.24 ± 0.03
	badq	-180261.12 ± 0.01	0.09 ± 0.04	0.11 ± 0.03	-0.25 ± 0.04	0.44 ± 0.05
CH_3CONH_2		-131075.55 ± 0.01	-0.02 ± 0.02	-0.04 ± 0.02	-0.50 ± 0.03	0.42 ± 0.02
	b	-131075.53 ± 0.01	-0.05 ± 0.03	-0.08 ± 0.04	-0.70 ± 0.04	0.51 ± 0.04
	ba	-131080.95 ± 0.01	0.04 ± 0.02	0.01 ± 0.02	-0.35 ± 0.03	0.37 ± 0.02
	bad	-131081.99 ± 0.01	0.02 ± 0.02	0.00 ± 0.02	-0.36 ± 0.03	0.36 ± 0.02
	badq	-131071.90 ± 0.01	0.03 ± 0.02	0.00 ± 0.02	-0.36 ± 0.03	0.36 ± 0.03
H_2O		-47893.37 ± 0.00	0.00 ± 0.01	0.01 ± 0.01	-0.09 ± 0.01	0.10 ± 0.01
	b	-47893.41 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.09 ± 0.01	0.08 ± 0.01
	ba	-47893.40 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.17 ± 0.01	0.14 ± 0.02
	bad	-47893.40 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.17 ± 0.01	0.14 ± 0.02
	badq	-47893.40 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.17 ± 0.01	0.14 ± 0.02
C_2H_5OH		-97162.98 ± 0.01	0.01 ± 0.03	0.02 ± 0.02	-0.18 ± 0.03	0.20 ± 0.03

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Table 29 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97163.06 ± 0.00	0.02 ± 0.02	0.02 ± 0.01	-0.09 ± 0.02	0.13 ± 0.02
	ba	-97163.47 ± 0.01	0.02 ± 0.04	0.03 ± 0.04	-0.35 ± 0.04	0.34 ± 0.05
	bad	-97163.66 ± 0.01	0.00 ± 0.03	0.01 ± 0.03	-0.40 ± 0.03	0.37 ± 0.04
	badq	-97163.34 ± 0.01	0.03 ± 0.04	0.04 ± 0.03	-0.32 ± 0.03	0.32 ± 0.05
C_6H_6		-145560.00 ± 0.01	-0.02 ± 0.02	-0.01 ± 0.01	-0.25 ± 0.02	0.24 ± 0.02
	b	-145560.43 ± 0.00	0.02 ± 0.01	0.01 ± 0.01	-0.07 ± 0.01	0.09 ± 0.01
	ba	-145565.77 ± 0.00	-0.01 ± 0.01	-0.02 ± 0.01	-0.11 ± 0.01	0.07 ± 0.01
	bad	-145564.02 ± 0.00	0.44 ± 0.02	0.34 ± 0.01	0.30 ± 0.02	0.38 ± 0.01
	badq	-145563.39 ± 0.00	0.05 ± 0.03	0.03 ± 0.02	0.01 ± 0.02	0.06 ± 0.02
C_6H_5OH		-192693.96 ± 0.01	0.01 ± 0.03	0.01 ± 0.03	-0.39 ± 0.03	0.38 ± 0.03
	b	-192694.26 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.24 ± 0.02	0.24 ± 0.02
	ba	-192699.45 ± 0.00	0.02 ± 0.02	0.02 ± 0.01	-0.17 ± 0.02	0.21 ± 0.02
	bad	-192698.00 ± 0.01	0.01 ± 0.02	0.01 ± 0.01	-0.17 ± 0.02	0.19 ± 0.02
	badq	-192712.32 ± 0.00	0.01 ± 0.02	0.03 ± 0.02	-0.21 ± 0.02	0.26 ± 0.02

Table 30: MM-to-QM gas-phase solvation free energy correction values from 6-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	0.02 ± 0.15	0.08 ± 0.18	-2.33 ± 0.24	2.43 ± 0.25
	b	-165233.97 ± 0.00	0.12 ± 0.02	0.12 ± 0.01	0.08 ± 0.02	0.15 ± 0.02
	ba	-165298.74 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.01 ± 0.01	0.06 ± 0.04
	bad	-165350.72 ± 0.00	0.03 ± 0.01	0.02 ± 0.01	0.01 ± 0.01	0.03 ± 0.02
	badq	-165337.39 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.01	0.02 ± 0.01
$CH_3NH_3^+$		-60350.21 ± 0.02	-0.03 ± 0.05	-0.04 ± 0.04	-0.04 ± 0.08	-0.05 ± 0.08
	b	-60350.95 ± 0.01	-0.01 ± 0.03	-0.01 ± 0.03	-0.01 ± 0.04	-0.02 ± 0.05
	ba	-60353.33 ± 0.01	0.06 ± 0.02	0.07 ± 0.01	0.05 ± 0.02	0.09 ± 0.02
	bad	-60353.51 ± 0.01	0.02 ± 0.02	0.01 ± 0.01	0.00 ± 0.03	0.03 ± 0.03
	badq	-60350.03 ± 0.01	-0.04 ± 0.02	-0.04 ± 0.02	-0.03 ± 0.03	-0.04 ± 0.03
NH_4^+		-35656.21 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.04 ± 0.01	0.04 ± 0.01
	b	-35656.29 ± 0.00	0.02 ± 0.01	0.02 ± 0.00	0.02 ± 0.01	0.03 ± 0.01
	ba	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.01	0.01 ± 0.01
	bad	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.01	0.01 ± 0.01
	badq	-35656.32 ± 0.00	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.01	0.01 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	0.01 ± 0.09	0.02 ± 0.08	-0.18 ± 0.10	0.20 ± 0.09
	b	-143225.39 ± 0.02	0.10 ± 0.06	0.09 ± 0.04	-0.05 ± 0.07	0.21 ± 0.06
	ba	-143274.83 ± 0.02	0.11 ± 0.04	0.12 ± 0.04	0.11 ± 0.05	0.12 ± 0.05
	bad	-143279.87 ± 0.02	0.14 ± 0.05	0.14 ± 0.04	0.10 ± 0.05	0.17 ± 0.06
	badq	-143295.75 ± 0.02	0.11 ± 0.04	0.11 ± 0.04	0.07 ± 0.05	0.13 ± 0.06
H_3O^+		-48069.23 ± 0.01	-0.07 ± 0.04	-0.07 ± 0.03	-0.24 ± 0.04	0.09 ± 0.06
	b	-48069.30 ± 0.01	-0.08 ± 0.05	-0.08 ± 0.03	-0.19 ± 0.04	0.00 ± 0.05
	ba	-48069.33 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	0.01 ± 0.01	0.05 ± 0.01

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Table 30 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-48069.33 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	0.01 ± 0.01	0.05 ± 0.01
	badq	-48069.38 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.01	0.04 ± 0.01
C_6H_5Cl		-433852.25 ± 0.02	-0.05 ± 0.05	-0.04 ± 0.04	0.03 ± 0.05	-0.09 ± 0.06
	b	-433850.13 ± 0.01	-0.10 ± 0.03	-0.09 ± 0.03	-0.07 ± 0.04	-0.10 ± 0.04
	ba	-433853.89 ± 0.01	0.07 ± 0.03	0.06 ± 0.02	0.05 ± 0.03	0.07 ± 0.03
	bad	-433855.52 ± 0.01	0.00 ± 0.02	0.01 ± 0.02	-0.03 ± 0.03	0.04 ± 0.03
	badq	-433858.60 ± 0.01	0.05 ± 0.02	0.04 ± 0.02	0.04 ± 0.03	0.05 ± 0.03
C_6H_{14}		-148579.56 ± 0.01	-0.01 ± 0.02	0.00 ± 0.02	-0.14 ± 0.03	0.14 ± 0.03
	b	-148580.35 ± 0.01	0.04 ± 0.02	0.04 ± 0.02	-0.04 ± 0.03	0.12 ± 0.02
	ba	-148579.69 ± 0.01	0.02 ± 0.02	0.02 ± 0.01	-0.03 ± 0.02	0.08 ± 0.02
	bad	-148579.55 ± 0.01	0.10 ± 0.02	0.10 ± 0.01	0.03 ± 0.02	0.16 ± 0.02
	badq	-148577.13 ± 0.01	0.02 ± 0.02	0.03 ± 0.01	-0.05 ± 0.02	0.10 ± 0.02
CH_3OH		-72528.21 ± 0.01	0.01 ± 0.02	0.01 ± 0.01	-0.09 ± 0.02	0.10 ± 0.02
	b	-72528.26 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	-0.08 ± 0.02	0.08 ± 0.02
	ba	-72528.29 ± 0.01	0.03 ± 0.02	0.03 ± 0.01	-0.06 ± 0.06	0.12 ± 0.06
	bad	-72528.28 ± 0.01	-0.06 ± 0.01	-0.05 ± 0.01	-0.15 ± 0.02	0.04 ± 0.02
	badq	-72528.80 ± 0.01	0.12 ± 0.01	0.11 ± 0.01	0.02 ± 0.02	0.21 ± 0.02
C_2H_6		-50024.21 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.00 ± 0.01	0.04 ± 0.01
	b	-50024.36 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.01	0.02 ± 0.01
	ba	-50024.20 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.03 ± 0.01	0.02 ± 0.01
	bad	-50024.28 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.01	0.03 ± 0.01
	badq	-50024.44 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.01	0.02 ± 0.01
$(CH_2)_4O$		-145699.56 ± 0.02	-0.07 ± 0.04	-0.04 ± 0.04	-0.41 ± 0.05	0.30 ± 0.05
	b	-145699.47 ± 0.02	0.11 ± 0.06	0.11 ± 0.05	-0.20 ± 0.07	0.41 ± 0.08

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Table 30 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	ba	-145697.65 ± 0.01	0.08 ± 0.03	0.08 ± 0.02	0.00 ± 0.03	0.16 ± 0.03
	bad	-145698.65 ± 0.01	0.06 ± 0.02	0.07 ± 0.02	-0.05 ± 0.03	0.18 ± 0.03
	badq	-145689.76 ± 0.01	-0.09 ± 0.03	-0.09 ± 0.02	-0.15 ± 0.03	-0.02 ± 0.03
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.17 ± 0.09	0.08 ± 0.09	-0.11 ± 0.09	0.10 ± 0.13
	b	-128902.74 ± 0.03	0.15 ± 0.09	0.08 ± 0.09	-0.18 ± 0.11	0.12 ± 0.15
	ba	-128929.38 ± 0.03	0.06 ± 0.07	0.03 ± 0.09	-0.17 ± 0.10	0.12 ± 0.11
	bad	-128932.44 ± 0.02	0.01 ± 0.04	0.03 ± 0.07	-0.08 ± 0.09	0.10 ± 0.10
	badq	-128914.70 ± 0.02	0.11 ± 0.04	0.11 ± 0.04	0.04 ± 0.06	0.14 ± 0.06
$C_6H_5NH_2$		-180227.49 ± 0.01	0.04 ± 0.03	0.03 ± 0.02	-0.21 ± 0.03	0.28 ± 0.03
	b	-180227.72 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.23 ± 0.03	0.22 ± 0.03
	ba	-180232.65 ± 0.01	0.03 ± 0.02	0.03 ± 0.01	-0.05 ± 0.02	0.11 ± 0.02
	bad	-180231.64 ± 0.01	0.05 ± 0.01	0.05 ± 0.01	-0.03 ± 0.02	0.13 ± 0.02
	badq	-180261.12 ± 0.01	0.05 ± 0.02	0.06 ± 0.02	-0.09 ± 0.02	0.21 ± 0.03
CH_3CONH_2		-131075.55 ± 0.01	-0.05 ± 0.02	-0.05 ± 0.02	-0.23 ± 0.02	0.13 ± 0.02
	b	-131075.53 ± 0.01	-0.09 ± 0.02	-0.09 ± 0.02	-0.34 ± 0.03	0.15 ± 0.03
	ba	-131080.95 ± 0.01	-0.05 ± 0.01	-0.05 ± 0.01	-0.19 ± 0.02	0.09 ± 0.02
	bad	-131081.99 ± 0.01	-0.03 ± 0.02	-0.03 ± 0.01	-0.17 ± 0.02	0.11 ± 0.02
	badq	-131071.90 ± 0.01	0.01 ± 0.01	0.00 ± 0.01	-0.15 ± 0.02	0.15 ± 0.02
H_2O		-47893.37 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.04 ± 0.00	0.04 ± 0.00
	b	-47893.41 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-0.03 ± 0.01	0.03 ± 0.01
	ba	-47893.40 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.07 ± 0.01	0.06 ± 0.01
	bad	-47893.40 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.07 ± 0.01	0.06 ± 0.01
	badq	-47893.40 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.07 ± 0.01	0.06 ± 0.01
C_2H_5OH		-97162.98 ± 0.01	0.02 ± 0.01	0.02 ± 0.01	-0.07 ± 0.01	0.10 ± 0.02

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Table 30 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97163.06 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.04 ± 0.01	0.05 ± 0.01
	ba	-97163.47 ± 0.01	0.02 ± 0.03	0.03 ± 0.02	-0.12 ± 0.03	0.16 ± 0.03
	bad	-97163.66 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.15 ± 0.02	0.14 ± 0.03
	badq	-97163.34 ± 0.01	-0.02 ± 0.02	-0.01 ± 0.02	-0.16 ± 0.02	0.12 ± 0.03
C_6H_6		-145560.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	-0.09 ± 0.01	0.10 ± 0.01
	b	-145560.43 ± 0.00	-0.02 ± 0.01	-0.02 ± 0.01	-0.05 ± 0.01	0.01 ± 0.01
	ba	-145565.77 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.03 ± 0.02	0.04 ± 0.02
	bad	-145564.02 ± 0.00	-0.05 ± 0.01	-0.05 ± 0.01	-0.07 ± 0.01	-0.03 ± 0.01
	badq	-145563.39 ± 0.00	0.03 ± 0.01	0.03 ± 0.01	0.01 ± 0.01	0.06 ± 0.01
C_6H_5OH		-192693.96 ± 0.01	-0.01 ± 0.02	-0.01 ± 0.01	-0.16 ± 0.02	0.13 ± 0.02
	b	-192694.26 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.08 ± 0.01	0.11 ± 0.02
	ba	-192699.45 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.08 ± 0.01	0.08 ± 0.01
	bad	-192698.00 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	-0.06 ± 0.02	0.08 ± 0.02
	badq	-192712.32 ± 0.00	0.01 ± 0.01	0.02 ± 0.01	-0.08 ± 0.01	0.11 ± 0.01

Table 31: MM-to-QM gas-phase solvation free energy correction values from 2-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	3.47 ± 0.56	1.69 ± 0.53	-11.03 ± 0.21	14.41 ± 0.49
	b	-165233.97 ± 0.00	0.36 ± 0.07	0.30 ± 0.07	0.02 ± 0.06	0.44 ± 0.09
	ba	-165298.74 ± 0.00	-0.18 ± 0.02	-0.18 ± 0.04	-0.03 ± 0.05	-0.27 ± 0.06
	bad	-165350.72 ± 0.00	0.06 ± 0.05	0.04 ± 0.04	-0.04 ± 0.04	0.01 ± 0.06
	badq	-165337.39 ± 0.00	0.11 ± 0.04	0.09 ± 0.04	0.04 ± 0.04	0.05 ± 0.06
$CH_3NH_3^+$		-60350.21 ± 0.02	0.16 ± 0.12	-0.02 ± 0.12	-0.34 ± 0.17	0.42 ± 0.11
	b	-60350.95 ± 0.01	0.10 ± 0.09	0.02 ± 0.13	0.08 ± 0.12	-0.06 ± 0.29
	ba	-60353.33 ± 0.01	0.15 ± 0.05	0.13 ± 0.06	0.01 ± 0.06	0.20 ± 0.08
	bad	-60353.51 ± 0.01	-0.11 ± 0.05	-0.11 ± 0.05	-0.18 ± 0.06	-0.06 ± 0.07
	badq	-60350.03 ± 0.01	-0.14 ± 0.05	-0.15 ± 0.05	-0.16 ± 0.09	-0.12 ± 0.06
NH_4^+		-35656.21 ± 0.00	0.06 ± 0.02	0.06 ± 0.02	0.03 ± 0.02	0.08 ± 0.02
	b	-35656.29 ± 0.00	0.04 ± 0.01	0.04 ± 0.02	0.03 ± 0.02	0.06 ± 0.05
	ba	-35657.44 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.02	0.01 ± 0.02	-0.03 ± 0.03
	bad	-35657.44 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.02	0.01 ± 0.02	-0.03 ± 0.03
	badq	-35656.32 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.02	0.00 ± 0.02
$CH_3CO_2^-$		-143225.98 ± 0.03	0.96 ± 0.30	0.14 ± 0.38	-1.06 ± 0.25	0.80 ± 0.43
	b	-143225.39 ± 0.02	0.23 ± 0.19	0.30 ± 0.21	-0.07 ± 0.25	0.65 ± 0.27
	ba	-143274.83 ± 0.02	0.28 ± 0.10	0.18 ± 0.16	-0.41 ± 0.16	0.37 ± 0.22
	bad	-143279.87 ± 0.02	0.25 ± 0.12	0.32 ± 0.13	0.04 ± 0.14	0.43 ± 0.23
	badq	-143295.75 ± 0.02	0.24 ± 0.12	0.29 ± 0.12	0.46 ± 0.21	-0.03 ± 0.27
H_3O^+		-48069.23 ± 0.01	0.08 ± 0.16	-0.04 ± 0.23	-0.07 ± 0.51	0.22 ± 0.20
	b	-48069.30 ± 0.01	-0.12 ± 0.14	-0.29 ± 0.15	-0.67 ± 0.14	-0.04 ± 0.16
	ba	-48069.33 ± 0.00	0.07 ± 0.04	0.07 ± 0.04	0.02 ± 0.05	0.11 ± 0.05

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Table 31 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-48069.33 ± 0.00	0.07 ± 0.04	0.07 ± 0.04	0.02 ± 0.05	0.11 ± 0.05
	badq	-48069.38 ± 0.00	0.02 ± 0.04	0.02 ± 0.04	0.03 ± 0.06	0.00 ± 0.06
C_6H_5Cl		-433852.25 ± 0.02	0.00 ± 0.13	-0.08 ± 0.11	0.04 ± 0.18	-0.19 ± 0.18
	b	-433850.13 ± 0.01	0.02 ± 0.07	0.03 ± 0.10	-0.13 ± 0.10	0.18 ± 0.21
	ba	-433853.89 ± 0.01	0.17 ± 0.06	0.16 ± 0.07	-0.04 ± 0.08	0.32 ± 0.10
	bad	-433855.52 ± 0.01	0.08 ± 0.05	0.06 ± 0.07	-0.25 ± 0.06	0.20 ± 0.13
	badq	-433858.60 ± 0.01	-0.10 ± 0.06	-0.10 ± 0.08	-0.14 ± 0.12	-0.08 ± 0.08
C_6H_{14}		-148579.56 ± 0.01	-0.08 ± 0.07	0.00 ± 0.11	-0.48 ± 0.16	0.66 ± 0.11
	b	-148580.35 ± 0.01	-0.12 ± 0.05	-0.12 ± 0.07	-0.54 ± 0.08	0.33 ± 0.07
	ba	-148579.69 ± 0.01	-0.03 ± 0.07	-0.06 ± 0.08	-0.35 ± 0.09	0.16 ± 0.10
	bad	-148579.55 ± 0.01	0.00 ± 0.07	-0.02 ± 0.08	-0.35 ± 0.09	0.26 ± 0.09
	badq	-148577.13 ± 0.01	0.01 ± 0.06	0.01 ± 0.07	-0.39 ± 0.08	0.44 ± 0.07
CH_3OH		-72528.21 ± 0.01	0.08 ± 0.06	0.02 ± 0.07	-0.45 ± 0.04	0.35 ± 0.09
	b	-72528.26 ± 0.01	0.08 ± 0.05	0.04 ± 0.06	-0.39 ± 0.04	0.35 ± 0.09
	ba	-72528.29 ± 0.01	0.13 ± 0.05	0.09 ± 0.06	-0.39 ± 0.04	0.46 ± 0.08
	bad	-72528.28 ± 0.01	0.15 ± 0.05	0.11 ± 0.06	-0.36 ± 0.04	0.49 ± 0.07
	badq	-72528.80 ± 0.01	0.13 ± 0.04	0.10 ± 0.06	-0.38 ± 0.03	0.48 ± 0.07
C_2H_6		-50024.21 ± 0.00	-0.02 ± 0.04	-0.02 ± 0.04	-0.11 ± 0.04	0.01 ± 0.06
	b	-50024.36 ± 0.00	0.01 ± 0.03	0.01 ± 0.03	-0.04 ± 0.04	0.06 ± 0.04
	ba	-50024.20 ± 0.00	0.06 ± 0.01	0.06 ± 0.01	0.03 ± 0.02	0.09 ± 0.02
	bad	-50024.28 ± 0.00	0.06 ± 0.01	0.06 ± 0.01	0.02 ± 0.02	0.10 ± 0.02
	badq	-50024.44 ± 0.00	0.06 ± 0.01	0.06 ± 0.02	0.02 ± 0.02	0.11 ± 0.02
$(CH_2)_4O$		-145699.56 ± 0.02	0.40 ± 0.11	0.12 ± 0.29	-1.55 ± 0.24	1.63 ± 0.33
	b	-145699.47 ± 0.02	0.82 ± 0.17	0.19 ± 0.36	-1.75 ± 0.21	2.02 ± 0.39

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Table 31 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	ba	-145697.65 ± 0.01	0.23 ± 0.06	0.20 ± 0.10	-0.46 ± 0.08	0.81 ± 0.12
	bad	-145698.65 ± 0.01	0.27 ± 0.07	0.19 ± 0.10	-0.50 ± 0.08	0.78 ± 0.12
	badq	-145689.76 ± 0.01	0.08 ± 0.08	0.01 ± 0.09	-0.44 ± 0.08	0.35 ± 0.12
$C(NH_2)_3^+$		-128901.22 ± 0.03	3.35 ± 0.55	0.69 ± 0.43	0.01 ± 0.30	1.06 ± 0.38
	b	-128902.74 ± 0.03	2.78 ± 0.41	0.80 ± 0.39	-0.06 ± 0.49	1.74 ± 0.34
	ba	-128929.38 ± 0.03	1.87 ± 0.32	0.70 ± 0.26	-0.07 ± 0.16	0.62 ± 0.41
	bad	-128932.44 ± 0.02	0.92 ± 0.20	0.38 ± 0.17	-0.26 ± 0.09	-0.24 ± 0.44
	badq	-128914.70 ± 0.02	0.39 ± 0.14	0.09 ± 0.14	-0.44 ± 0.13	0.31 ± 0.18
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.24 ± 0.08	-0.29 ± 0.17	-1.62 ± 0.15	0.96 ± 0.15
	b	-180227.72 ± 0.01	-0.07 ± 0.07	-0.08 ± 0.13	-1.22 ± 0.11	1.03 ± 0.11
	ba	-180232.65 ± 0.01	0.13 ± 0.04	0.11 ± 0.05	-0.44 ± 0.04	0.64 ± 0.07
	bad	-180231.64 ± 0.01	0.04 ± 0.04	0.01 ± 0.06	-0.45 ± 0.05	0.41 ± 0.09
	badq	-180261.12 ± 0.01	0.24 ± 0.06	0.17 ± 0.10	-0.60 ± 0.07	0.81 ± 0.12
CH_3CONH_2		-131075.55 ± 0.01	-0.17 ± 0.05	-0.11 ± 0.08	-0.98 ± 0.09	0.80 ± 0.06
	b	-131075.53 ± 0.01	-0.19 ± 0.08	-0.28 ± 0.14	-1.40 ± 0.10	0.71 ± 0.15
	ba	-131080.95 ± 0.01	-0.14 ± 0.04	-0.15 ± 0.07	-0.83 ± 0.07	0.51 ± 0.07
	bad	-131081.99 ± 0.01	-0.11 ± 0.04	-0.11 ± 0.07	-0.81 ± 0.07	0.57 ± 0.06
	badq	-131071.90 ± 0.01	-0.18 ± 0.05	-0.22 ± 0.08	-0.85 ± 0.07	0.34 ± 0.09
H_2O		-47893.37 ± 0.00	0.05 ± 0.01	0.05 ± 0.02	-0.12 ± 0.02	0.21 ± 0.02
	b	-47893.41 ± 0.00	0.02 ± 0.01	0.02 ± 0.02	-0.12 ± 0.01	0.16 ± 0.03
	ba	-47893.40 ± 0.00	0.03 ± 0.02	0.02 ± 0.05	-0.26 ± 0.04	0.27 ± 0.06
	bad	-47893.40 ± 0.00	0.03 ± 0.02	0.02 ± 0.05	-0.26 ± 0.04	0.27 ± 0.06
	badq	-47893.40 ± 0.00	0.03 ± 0.02	0.02 ± 0.05	-0.26 ± 0.04	0.27 ± 0.06
C_2H_5OH		-97162.98 ± 0.01	0.09 ± 0.04	0.06 ± 0.05	-0.40 ± 0.04	0.44 ± 0.07

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Table 31 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97163.06 ± 0.00	0.07 ± 0.04	0.06 ± 0.04	-0.21 ± 0.03	0.27 ± 0.06
	ba	-97163.47 ± 0.01	0.13 ± 0.09	-0.09 ± 0.10	-0.82 ± 0.04	0.40 ± 0.13
	bad	-97163.66 ± 0.01	0.11 ± 0.07	-0.05 ± 0.10	-0.85 ± 0.05	0.54 ± 0.14
	badq	-97163.34 ± 0.01	0.04 ± 0.07	-0.10 ± 0.09	-0.77 ± 0.04	0.37 ± 0.11
C_6H_6		-145560.00 ± 0.01	0.01 ± 0.03	0.01 ± 0.04	-0.48 ± 0.04	0.50 ± 0.04
	b	-145560.43 ± 0.00	-0.01 ± 0.02	-0.01 ± 0.02	-0.19 ± 0.02	0.18 ± 0.03
	ba	-145565.77 ± 0.00	-0.04 ± 0.02	-0.04 ± 0.02	-0.27 ± 0.02	0.17 ± 0.03
	bad	-145564.02 ± 0.00	-0.07 ± 0.02	-0.07 ± 0.02	-0.21 ± 0.02	0.07 ± 0.02
	badq	-145563.39 ± 0.00	-0.05 ± 0.02	-0.05 ± 0.02	-0.16 ± 0.02	0.04 ± 0.03
C_6H_5OH		-192693.96 ± 0.01	0.03 ± 0.05	0.01 ± 0.07	-0.70 ± 0.06	0.70 ± 0.07
	b	-192694.26 ± 0.01	0.02 ± 0.04	0.02 ± 0.06	-0.41 ± 0.06	0.44 ± 0.07
	ba	-192699.45 ± 0.00	0.05 ± 0.04	0.04 ± 0.04	-0.29 ± 0.04	0.34 ± 0.05
	bad	-192698.00 ± 0.01	0.04 ± 0.03	0.04 ± 0.04	-0.28 ± 0.04	0.33 ± 0.05
	badq	-192712.32 ± 0.00	0.12 ± 0.02	0.12 ± 0.04	-0.36 ± 0.05	0.59 ± 0.05

Table 32: MM-to-QM gas-phase solvation free energy correction values from 3-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	0.62 ± 0.47	0.56 ± 0.48	-4.19 ± 0.31	5.16 ± 0.38
	b	-165233.97 ± 0.00	0.36 ± 0.05	0.35 ± 0.04	0.21 ± 0.05	0.43 ± 0.06
	ba	-165298.74 ± 0.00	-0.07 ± 0.04	-0.10 ± 0.04	0.00 ± 0.04	-0.17 ± 0.04
	bad	-165350.72 ± 0.00	0.05 ± 0.03	0.05 ± 0.03	0.02 ± 0.03	0.05 ± 0.04
	badq	-165337.39 ± 0.00	0.10 ± 0.03	0.10 ± 0.03	0.07 ± 0.03	0.09 ± 0.04
$CH_3NH_3^+$		-60350.21 ± 0.02	0.06 ± 0.12	0.04 ± 0.09	-0.05 ± 0.12	0.12 ± 0.11
	b	-60350.95 ± 0.01	-0.07 ± 0.06	-0.05 ± 0.10	-0.08 ± 0.11	-0.06 ± 0.17
	ba	-60353.33 ± 0.01	0.09 ± 0.05	0.10 ± 0.04	0.04 ± 0.06	0.14 ± 0.06
	bad	-60353.51 ± 0.01	-0.07 ± 0.03	-0.08 ± 0.03	-0.13 ± 0.04	-0.03 ± 0.04
	badq	-60350.03 ± 0.01	-0.12 ± 0.05	-0.12 ± 0.04	-0.13 ± 0.06	-0.11 ± 0.08
NH_4^+		-35656.21 ± 0.00	0.10 ± 0.02	0.10 ± 0.01	0.08 ± 0.01	0.10 ± 0.02
	b	-35656.29 ± 0.00	0.04 ± 0.02	0.04 ± 0.02	0.03 ± 0.02	0.05 ± 0.03
	ba	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.02 ± 0.01	0.00 ± 0.02
	bad	-35657.44 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.02 ± 0.01	0.00 ± 0.02
	badq	-35656.32 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	0.24 ± 0.23	0.19 ± 0.19	-0.26 ± 0.19	0.18 ± 0.30
	b	-143225.39 ± 0.02	0.17 ± 0.18	0.19 ± 0.13	0.23 ± 0.19	0.14 ± 0.22
	ba	-143274.83 ± 0.02	0.29 ± 0.13	0.29 ± 0.11	0.15 ± 0.16	0.24 ± 0.18
	bad	-143279.87 ± 0.02	-0.05 ± 0.13	0.04 ± 0.10	0.02 ± 0.15	-0.03 ± 0.17
	badq	-143295.75 ± 0.02	0.25 ± 0.09	0.26 ± 0.09	0.29 ± 0.14	0.21 ± 0.13
H_3O^+		-48069.23 ± 0.01	0.30 ± 0.14	0.23 ± 0.20	0.22 ± 0.31	0.19 ± 0.29
	b	-48069.30 ± 0.01	0.02 ± 0.09	-0.04 ± 0.12	-0.32 ± 0.18	0.15 ± 0.16
	ba	-48069.33 ± 0.00	0.05 ± 0.03	0.05 ± 0.03	0.03 ± 0.04	0.07 ± 0.04

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Table 32 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-48069.33 ± 0.00	0.05 ± 0.03	0.05 ± 0.03	0.03 ± 0.04	0.07 ± 0.04
	badq	-48069.38 ± 0.00	0.03 ± 0.04	0.03 ± 0.03	0.03 ± 0.04	0.03 ± 0.04
C_6H_5Cl		-433852.25 ± 0.02	0.07 ± 0.11	0.04 ± 0.09	0.13 ± 0.13	-0.09 ± 0.13
	b	-433850.13 ± 0.01	0.04 ± 0.08	0.03 ± 0.06	0.02 ± 0.10	0.09 ± 0.11
	ba	-433853.89 ± 0.01	0.00 ± 0.05	0.03 ± 0.05	-0.08 ± 0.07	0.13 ± 0.06
	bad	-433855.52 ± 0.01	-0.02 ± 0.06	0.00 ± 0.05	-0.12 ± 0.06	0.07 ± 0.08
	badq	-433858.60 ± 0.01	-0.16 ± 0.06	-0.15 ± 0.05	-0.15 ± 0.09	-0.15 ± 0.06
C_6H_{14}		-148579.56 ± 0.01	0.03 ± 0.07	0.01 ± 0.07	-0.23 ± 0.11	0.33 ± 0.10
	b	-148580.35 ± 0.01	-0.06 ± 0.06	-0.08 ± 0.04	-0.26 ± 0.06	0.13 ± 0.05
	ba	-148579.69 ± 0.01	0.03 ± 0.05	0.02 ± 0.05	-0.15 ± 0.07	0.16 ± 0.07
	bad	-148579.55 ± 0.01	0.00 ± 0.05	-0.01 ± 0.05	-0.18 ± 0.06	0.15 ± 0.06
	badq	-148577.13 ± 0.01	0.07 ± 0.06	0.05 ± 0.05	-0.11 ± 0.07	0.25 ± 0.05
CH_3OH		-72528.21 ± 0.01	0.00 ± 0.05	0.01 ± 0.04	-0.22 ± 0.04	0.18 ± 0.06
	b	-72528.26 ± 0.01	0.02 ± 0.04	0.03 ± 0.04	-0.19 ± 0.03	0.20 ± 0.05
	ba	-72528.29 ± 0.01	0.05 ± 0.04	0.06 ± 0.03	-0.17 ± 0.04	0.25 ± 0.05
	bad	-72528.28 ± 0.01	0.05 ± 0.04	0.06 ± 0.03	-0.18 ± 0.03	0.27 ± 0.05
	badq	-72528.80 ± 0.01	0.04 ± 0.04	0.06 ± 0.03	-0.18 ± 0.03	0.26 ± 0.05
C_2H_6		-50024.21 ± 0.00	0.03 ± 0.02	0.03 ± 0.03	-0.03 ± 0.03	0.06 ± 0.04
	b	-50024.36 ± 0.00	0.02 ± 0.02	0.02 ± 0.02	-0.01 ± 0.03	0.05 ± 0.03
	ba	-50024.20 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.01	0.04 ± 0.01
	bad	-50024.28 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.02 ± 0.02	0.06 ± 0.02
	badq	-50024.44 ± 0.00	0.03 ± 0.01	0.04 ± 0.01	0.01 ± 0.02	0.06 ± 0.02
$(CH_2)_4O$		-145699.56 ± 0.02	-0.11 ± 0.07	-0.05 ± 0.09	-1.06 ± 0.10	0.87 ± 0.14
	b	-145699.47 ± 0.02	0.18 ± 0.14	0.17 ± 0.15	-0.72 ± 0.20	0.98 ± 0.22

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Table 32 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	ba	-145697.65 ± 0.01	0.15 ± 0.06	0.16 ± 0.05	-0.15 ± 0.06	0.45 ± 0.08
	bad	-145698.65 ± 0.01	0.03 ± 0.06	0.06 ± 0.06	-0.30 ± 0.06	0.38 ± 0.07
	badq	-145689.76 ± 0.01	-0.02 ± 0.05	-0.01 ± 0.05	-0.27 ± 0.06	0.19 ± 0.07
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.77 ± 0.24	0.25 ± 0.27	-0.37 ± 0.18	0.37 ± 0.35
	b	-128902.74 ± 0.03	0.77 ± 0.19	0.43 ± 0.21	-0.36 ± 0.26	0.90 ± 0.26
	ba	-128929.38 ± 0.03	0.97 ± 0.19	0.70 ± 0.16	0.96 ± 0.40	0.69 ± 0.21
	bad	-128932.44 ± 0.02	0.60 ± 0.12	0.52 ± 0.10	0.18 ± 0.10	0.40 ± 0.24
	badq	-128914.70 ± 0.02	0.12 ± 0.10	0.12 ± 0.10	-0.21 ± 0.09	0.23 ± 0.14
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.09 ± 0.07	-0.12 ± 0.08	-0.80 ± 0.09	0.54 ± 0.09
	b	-180227.72 ± 0.01	-0.09 ± 0.06	-0.09 ± 0.08	-0.67 ± 0.10	0.47 ± 0.09
	ba	-180232.65 ± 0.01	0.04 ± 0.03	0.06 ± 0.03	-0.22 ± 0.03	0.33 ± 0.04
	bad	-180231.64 ± 0.01	0.00 ± 0.03	0.01 ± 0.03	-0.23 ± 0.03	0.22 ± 0.05
	badq	-180261.12 ± 0.01	0.09 ± 0.08	0.12 ± 0.06	-0.21 ± 0.07	0.38 ± 0.08
CH_3CONH_2		-131075.55 ± 0.01	-0.09 ± 0.04	-0.10 ± 0.04	-0.55 ± 0.05	0.38 ± 0.04
	b	-131075.53 ± 0.01	-0.10 ± 0.05	-0.12 ± 0.06	-0.74 ± 0.07	0.44 ± 0.08
	ba	-131080.95 ± 0.01	-0.05 ± 0.03	-0.07 ± 0.04	-0.42 ± 0.04	0.29 ± 0.04
	bad	-131081.99 ± 0.01	-0.05 ± 0.03	-0.06 ± 0.03	-0.42 ± 0.04	0.29 ± 0.04
	badq	-131071.90 ± 0.01	-0.07 ± 0.03	-0.10 ± 0.04	-0.44 ± 0.04	0.21 ± 0.05
H_2O		-47893.37 ± 0.00	0.01 ± 0.01	0.02 ± 0.01	-0.07 ± 0.01	0.10 ± 0.01
	b	-47893.41 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	-0.05 ± 0.01	0.09 ± 0.01
	ba	-47893.40 ± 0.00	0.01 ± 0.02	0.01 ± 0.02	-0.13 ± 0.03	0.14 ± 0.03
	bad	-47893.40 ± 0.00	0.01 ± 0.02	0.01 ± 0.02	-0.13 ± 0.03	0.14 ± 0.03
	badq	-47893.40 ± 0.00	0.01 ± 0.02	0.01 ± 0.02	-0.13 ± 0.03	0.14 ± 0.03
C_2H_5OH		-97162.98 ± 0.01	0.02 ± 0.05	0.03 ± 0.04	-0.17 ± 0.04	0.20 ± 0.05

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Table 32 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97163.06 ± 0.00	0.03 ± 0.03	0.04 ± 0.03	-0.09 ± 0.03	0.15 ± 0.04
	ba	-97163.47 ± 0.01	-0.03 ± 0.07	-0.02 ± 0.06	-0.39 ± 0.06	0.20 ± 0.09
	bad	-97163.66 ± 0.01	0.04 ± 0.06	0.04 ± 0.05	-0.39 ± 0.05	0.36 ± 0.08
	badq	-97163.34 ± 0.01	-0.01 ± 0.07	-0.01 ± 0.06	-0.32 ± 0.06	0.19 ± 0.08
C_6H_6		-145560.00 ± 0.01	-0.02 ± 0.03	-0.01 ± 0.02	-0.25 ± 0.03	0.23 ± 0.03
	b	-145560.43 ± 0.00	0.00 ± 0.02	0.00 ± 0.01	-0.09 ± 0.02	0.09 ± 0.02
	ba	-145565.77 ± 0.00	-0.03 ± 0.02	-0.03 ± 0.01	-0.14 ± 0.02	0.08 ± 0.02
	bad	-145564.02 ± 0.00	0.47 ± 0.02	0.36 ± 0.01	0.29 ± 0.02	0.42 ± 0.02
	badq	-145563.39 ± 0.00	0.30 ± 0.03	0.23 ± 0.02	0.19 ± 0.03	0.26 ± 0.03
C_6H_5OH		-192693.96 ± 0.01	-0.02 ± 0.04	-0.02 ± 0.04	-0.39 ± 0.04	0.34 ± 0.05
	b	-192694.26 ± 0.01	-0.02 ± 0.03	-0.01 ± 0.03	-0.23 ± 0.04	0.21 ± 0.04
	ba	-192699.45 ± 0.00	0.01 ± 0.02	0.02 ± 0.02	-0.16 ± 0.02	0.19 ± 0.03
	bad	-192698.00 ± 0.01	0.02 ± 0.02	0.03 ± 0.02	-0.14 ± 0.03	0.19 ± 0.03
	badq	-192712.32 ± 0.00	0.05 ± 0.02	0.06 ± 0.02	-0.18 ± 0.03	0.30 ± 0.03

Table 33: MM-to-QM gas-phase solvation free energy correction values from 6-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	0.42 ± 0.30	0.43 ± 0.30	-0.78 ± 0.34	1.49 ± 0.47
	b	-165233.97 ± 0.00	0.26 ± 0.03	0.26 ± 0.03	0.21 ± 0.04	0.31 ± 0.04
	ba	-165298.74 ± 0.00	0.05 ± 0.02	0.04 ± 0.02	0.08 ± 0.02	0.01 ± 0.03
	bad	-165350.72 ± 0.00	0.07 ± 0.02	0.07 ± 0.02	0.06 ± 0.03	0.07 ± 0.03
	badq	-165337.39 ± 0.00	0.07 ± 0.02	0.07 ± 0.02	0.06 ± 0.03	0.07 ± 0.03
$CH_3NH_3^+$		-60350.21 ± 0.02	-0.01 ± 0.07	-0.01 ± 0.06	-0.03 ± 0.09	0.01 ± 0.08
	b	-60350.95 ± 0.01	0.03 ± 0.05	0.03 ± 0.04	0.03 ± 0.05	0.03 ± 0.08
	ba	-60353.33 ± 0.01	0.10 ± 0.03	0.10 ± 0.03	0.08 ± 0.04	0.13 ± 0.04
	bad	-60353.51 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.02 ± 0.03	0.02 ± 0.03
	badq	-60350.03 ± 0.01	-0.07 ± 0.03	-0.07 ± 0.02	-0.08 ± 0.03	-0.07 ± 0.03
NH_4^+		-35656.21 ± 0.00	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	0.09 ± 0.01
	b	-35656.29 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.03 ± 0.01	0.04 ± 0.02
	ba	-35657.44 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01
	bad	-35657.44 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01	-0.01 ± 0.01
	badq	-35656.32 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.01
$CH_3CO_2^-$		-143225.98 ± 0.03	0.11 ± 0.15	0.12 ± 0.12	0.10 ± 0.17	0.11 ± 0.16
	b	-143225.39 ± 0.02	-0.04 ± 0.08	-0.04 ± 0.06	-0.18 ± 0.09	0.11 ± 0.09
	ba	-143274.83 ± 0.02	0.23 ± 0.07	0.23 ± 0.05	0.14 ± 0.07	0.29 ± 0.07
	bad	-143279.87 ± 0.02	0.14 ± 0.08	0.15 ± 0.05	0.15 ± 0.08	0.16 ± 0.08
	badq	-143295.75 ± 0.02	0.05 ± 0.07	0.07 ± 0.06	0.11 ± 0.08	0.02 ± 0.08
H_3O^+		-48069.23 ± 0.01	-0.10 ± 0.09	-0.10 ± 0.07	-0.09 ± 0.12	-0.11 ± 0.11
	b	-48069.30 ± 0.01	-0.12 ± 0.08	-0.13 ± 0.06	-0.16 ± 0.08	-0.12 ± 0.08
	ba	-48069.33 ± 0.00	-0.01 ± 0.02	-0.01 ± 0.02	-0.02 ± 0.04	0.00 ± 0.04

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Table 33 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-48069.33 ± 0.00	-0.01 ± 0.02	-0.01 ± 0.02	-0.02 ± 0.04	0.00 ± 0.04
	badq	-48069.38 ± 0.00	0.05 ± 0.02	0.04 ± 0.02	0.04 ± 0.03	0.04 ± 0.04
C_6H_5Cl		-433852.25 ± 0.02	-0.23 ± 0.07	-0.22 ± 0.06	-0.20 ± 0.08	-0.24 ± 0.08
	b	-433850.13 ± 0.01	-0.08 ± 0.05	-0.07 ± 0.04	-0.10 ± 0.06	-0.04 ± 0.07
	ba	-433853.89 ± 0.01	0.08 ± 0.04	0.08 ± 0.03	0.05 ± 0.04	0.11 ± 0.04
	bad	-433855.52 ± 0.01	-0.04 ± 0.03	-0.03 ± 0.03	-0.09 ± 0.03	0.01 ± 0.04
	badq	-433858.60 ± 0.01	-0.08 ± 0.03	-0.08 ± 0.03	-0.09 ± 0.04	-0.07 ± 0.03
C_6H_{14}		-148579.56 ± 0.01	-0.03 ± 0.04	-0.02 ± 0.03	-0.14 ± 0.04	0.11 ± 0.04
	b	-148580.35 ± 0.01	-0.04 ± 0.03	-0.04 ± 0.02	-0.13 ± 0.03	0.05 ± 0.03
	ba	-148579.69 ± 0.01	-0.01 ± 0.04	-0.01 ± 0.03	-0.07 ± 0.04	0.05 ± 0.04
	bad	-148579.55 ± 0.01	0.01 ± 0.04	0.01 ± 0.03	-0.05 ± 0.04	0.07 ± 0.04
	badq	-148577.13 ± 0.01	-0.03 ± 0.03	-0.02 ± 0.02	-0.11 ± 0.04	0.06 ± 0.03
CH_3OH		-72528.21 ± 0.01	0.00 ± 0.03	0.00 ± 0.02	-0.09 ± 0.03	0.09 ± 0.03
	b	-72528.26 ± 0.01	0.01 ± 0.03	0.01 ± 0.02	-0.07 ± 0.03	0.09 ± 0.03
	ba	-72528.29 ± 0.01	0.09 ± 0.03	0.08 ± 0.02	-0.01 ± 0.06	0.17 ± 0.06
	bad	-72528.28 ± 0.01	-0.07 ± 0.02	-0.05 ± 0.02	-0.14 ± 0.02	0.03 ± 0.03
	badq	-72528.80 ± 0.01	0.02 ± 0.02	0.03 ± 0.02	-0.07 ± 0.02	0.12 ± 0.03
C_2H_6		-50024.21 ± 0.00	0.02 ± 0.02	0.02 ± 0.02	0.00 ± 0.02	0.03 ± 0.02
	b	-50024.36 ± 0.00	0.03 ± 0.02	0.03 ± 0.02	0.02 ± 0.03	0.04 ± 0.03
	ba	-50024.20 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.03 ± 0.01	0.04 ± 0.01
	bad	-50024.28 ± 0.00	0.05 ± 0.01	0.05 ± 0.01	0.04 ± 0.01	0.06 ± 0.01
	badq	-50024.44 ± 0.00	0.04 ± 0.01	0.04 ± 0.01	0.03 ± 0.01	0.05 ± 0.01
$(CH_2)_4O$		-145699.56 ± 0.02	0.10 ± 0.07	0.10 ± 0.05	-0.25 ± 0.08	0.44 ± 0.08
	b	-145699.47 ± 0.02	0.16 ± 0.08	0.19 ± 0.07	-0.23 ± 0.09	0.54 ± 0.10

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Table 33 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	ba	-145697.65 ± 0.01	0.14 ± 0.04	0.15 ± 0.03	0.03 ± 0.04	0.26 ± 0.05
	bad	-145698.65 ± 0.01	0.15 ± 0.04	0.15 ± 0.03	0.01 ± 0.04	0.29 ± 0.04
	badq	-145689.76 ± 0.01	0.00 ± 0.04	0.00 ± 0.04	-0.10 ± 0.05	0.08 ± 0.05
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.14 ± 0.13	0.07 ± 0.15	-0.27 ± 0.16	0.17 ± 0.25
	b	-128902.74 ± 0.03	0.07 ± 0.11	0.06 ± 0.12	-0.32 ± 0.15	0.31 ± 0.16
	ba	-128929.38 ± 0.03	0.29 ± 0.10	0.28 ± 0.12	0.14 ± 0.19	0.35 ± 0.14
	bad	-128932.44 ± 0.02	0.18 ± 0.06	0.19 ± 0.07	0.03 ± 0.07	0.26 ± 0.10
	badq	-128914.70 ± 0.02	0.12 ± 0.07	0.10 ± 0.06	0.01 ± 0.08	0.16 ± 0.08
$C_6H_5NH_2$		-180227.49 ± 0.01	0.02 ± 0.04	0.01 ± 0.04	-0.28 ± 0.05	0.29 ± 0.05
	b	-180227.72 ± 0.01	0.00 ± 0.04	0.00 ± 0.04	-0.23 ± 0.06	0.23 ± 0.06
	ba	-180232.65 ± 0.01	0.04 ± 0.02	0.04 ± 0.02	-0.07 ± 0.02	0.15 ± 0.02
	bad	-180231.64 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.02	-0.11 ± 0.03	0.06 ± 0.03
	badq	-180261.12 ± 0.01	0.03 ± 0.03	0.03 ± 0.03	-0.12 ± 0.04	0.18 ± 0.04
CH_3CONH_2		-131075.55 ± 0.01	-0.09 ± 0.03	-0.09 ± 0.03	-0.28 ± 0.04	0.10 ± 0.04
	b	-131075.53 ± 0.01	-0.12 ± 0.04	-0.12 ± 0.03	-0.37 ± 0.04	0.12 ± 0.04
	ba	-131080.95 ± 0.01	-0.12 ± 0.02	-0.12 ± 0.02	-0.26 ± 0.03	0.02 ± 0.03
	bad	-131081.99 ± 0.01	-0.08 ± 0.02	-0.08 ± 0.02	-0.22 ± 0.03	0.06 ± 0.03
	badq	-131071.90 ± 0.01	-0.09 ± 0.02	-0.10 ± 0.02	-0.24 ± 0.02	0.04 ± 0.03
H_2O		-47893.37 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.03 ± 0.01	0.04 ± 0.01
	b	-47893.41 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.02 ± 0.01	0.04 ± 0.01
	ba	-47893.40 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.05 ± 0.01	0.06 ± 0.01
	bad	-47893.40 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.05 ± 0.01	0.06 ± 0.01
	badq	-47893.40 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.05 ± 0.01	0.06 ± 0.01
C_2H_5OH		-97162.98 ± 0.01	0.02 ± 0.03	0.03 ± 0.02	-0.06 ± 0.02	0.10 ± 0.03

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Table 33 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97163.06 ± 0.00	0.01 ± 0.02	0.02 ± 0.02	-0.03 ± 0.02	0.06 ± 0.02
	ba	-97163.47 ± 0.01	0.01 ± 0.05	0.02 ± 0.04	-0.12 ± 0.04	0.12 ± 0.05
	bad	-97163.66 ± 0.01	0.01 ± 0.05	0.01 ± 0.04	-0.12 ± 0.05	0.12 ± 0.05
	badq	-97163.34 ± 0.01	-0.01 ± 0.04	-0.01 ± 0.03	-0.14 ± 0.04	0.09 ± 0.05
C_6H_6		-145560.00 ± 0.01	-0.08 ± 0.02	-0.08 ± 0.02	-0.17 ± 0.02	0.02 ± 0.02
	b	-145560.43 ± 0.00	-0.02 ± 0.01	-0.02 ± 0.01	-0.06 ± 0.01	0.01 ± 0.01
	ba	-145565.77 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.03 ± 0.02	0.06 ± 0.02
	bad	-145564.02 ± 0.00	-0.02 ± 0.01	-0.02 ± 0.01	-0.05 ± 0.02	0.00 ± 0.02
	badq	-145563.39 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.02 ± 0.01	0.02 ± 0.01
C_6H_5OH		-192693.96 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.15 ± 0.03	0.15 ± 0.03
	b	-192694.26 ± 0.01	0.02 ± 0.02	0.02 ± 0.02	-0.08 ± 0.02	0.11 ± 0.02
	ba	-192699.45 ± 0.00	0.02 ± 0.01	0.02 ± 0.01	-0.05 ± 0.02	0.09 ± 0.02
	bad	-192698.00 ± 0.01	0.00 ± 0.02	0.00 ± 0.02	-0.06 ± 0.03	0.06 ± 0.03
	badq	-192712.32 ± 0.00	-0.01 ± 0.01	-0.01 ± 0.01	-0.10 ± 0.02	0.09 ± 0.02

Table 34: MM-to-QM gas-phase solvation free energy correction values from 2-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	2.55 ± 1.45	3.06 ± 0.60	-9.21 ± 0.47	15.33 ± 0.37
	b	-165233.97 ± 0.00	0.46 ± 0.17	0.40 ± 0.18	0.37 ± 0.17	0.23 ± 0.21
	ba	-165298.74 ± 0.00	0.78 ± 0.07	0.80 ± 0.12	0.14 ± 0.12	1.51 ± 0.08
	bad	-165350.72 ± 0.00	0.17 ± 0.13	0.13 ± 0.11	0.10 ± 0.13	0.06 ± 0.14
	badq	-165337.39 ± 0.00	0.18 ± 0.11	0.15 ± 0.09	0.11 ± 0.09	0.09 ± 0.12
$CH_3NH_3^+$		-60350.21 ± 0.02	0.14 ± 0.21	0.14 ± 0.24	0.05 ± 0.29	0.29 ± 0.31
	b	-60350.95 ± 0.01	0.08 ± 0.11	0.10 ± 0.18	-0.45 ± 0.17	0.69 ± 0.16
	ba	-60353.33 ± 0.01	0.13 ± 0.09	0.14 ± 0.10	-0.03 ± 0.16	0.37 ± 0.11
	bad	-60353.51 ± 0.01	0.03 ± 0.09	0.04 ± 0.08	0.05 ± 0.09	0.02 ± 0.11
	badq	-60350.03 ± 0.01	0.04 ± 0.09	0.05 ± 0.09	0.09 ± 0.13	0.05 ± 0.15
NH_4^+		-35656.21 ± 0.00	0.06 ± 0.03	0.06 ± 0.03	0.05 ± 0.04	0.07 ± 0.05
	b	-35656.29 ± 0.00	0.01 ± 0.03	0.01 ± 0.03	0.00 ± 0.04	0.01 ± 0.04
	ba	-35657.44 ± 0.00	-0.03 ± 0.03	-0.03 ± 0.03	0.03 ± 0.05	-0.09 ± 0.04
	bad	-35657.44 ± 0.00	-0.03 ± 0.03	-0.03 ± 0.03	0.03 ± 0.05	-0.09 ± 0.04
	badq	-35656.32 ± 0.00	0.01 ± 0.03	0.01 ± 0.03	-0.03 ± 0.03	0.05 ± 0.04
$CH_3CO_2^-$		-143225.98 ± 0.03	0.63 ± 0.70	-0.88 ± 0.42	-1.60 ± 0.33	-0.88 ± 0.50
	b	-143225.39 ± 0.02	0.19 ± 0.35	-0.44 ± 0.34	-1.93 ± 0.17	0.94 ± 0.32
	ba	-143274.83 ± 0.02	-0.19 ± 0.29	-0.10 ± 0.33	-0.03 ± 0.40	0.35 ± 0.27
	bad	-143279.87 ± 0.02	-0.26 ± 0.42	0.02 ± 0.28	0.06 ± 0.30	-0.48 ± 0.33
	badq	-143295.75 ± 0.02	0.14 ± 0.22	0.16 ± 0.21	-0.11 ± 0.18	0.20 ± 0.27
H_3O^+		-48069.23 ± 0.01	0.14 ± 0.38	-0.09 ± 0.32	-0.64 ± 0.29	0.36 ± 0.33
	b	-48069.30 ± 0.01	-0.02 ± 0.30	-0.07 ± 0.38	-0.12 ± 0.48	-0.22 ± 0.31
	ba	-48069.33 ± 0.00	0.17 ± 0.10	0.19 ± 0.10	0.06 ± 0.11	0.28 ± 0.17

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Table 34 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-48069.33 ± 0.00	0.17 ± 0.10	0.19 ± 0.10	0.06 ± 0.11	0.28 ± 0.17
	badq	-48069.38 ± 0.00	0.29 ± 0.10	0.29 ± 0.11	0.17 ± 0.19	0.44 ± 0.10
C_6H_5Cl		-433852.25 ± 0.02	-0.01 ± 0.28	-0.21 ± 0.21	0.04 ± 0.40	-0.87 ± 0.43
	b	-433850.13 ± 0.01	-0.08 ± 0.16	-0.04 ± 0.14	0.11 ± 0.24	0.06 ± 0.18
	ba	-433853.89 ± 0.01	-0.04 ± 0.13	-0.07 ± 0.15	-0.31 ± 0.11	0.03 ± 0.28
	bad	-433855.52 ± 0.01	0.17 ± 0.09	0.17 ± 0.10	-0.04 ± 0.16	0.41 ± 0.11
	badq	-433858.60 ± 0.01	0.17 ± 0.10	0.15 ± 0.11	-0.03 ± 0.11	0.20 ± 0.15
C_6H_{14}		-148579.56 ± 0.01	-0.29 ± 0.13	-0.21 ± 0.17	-0.72 ± 0.19	0.43 ± 0.11
	b	-148580.35 ± 0.01	-0.10 ± 0.07	-0.10 ± 0.09	-0.52 ± 0.10	0.29 ± 0.10
	ba	-148579.69 ± 0.01	0.02 ± 0.18	-0.05 ± 0.17	-0.13 ± 0.20	-0.17 ± 0.24
	bad	-148579.55 ± 0.01	0.08 ± 0.13	0.07 ± 0.15	-0.10 ± 0.19	0.32 ± 0.15
	badq	-148577.13 ± 0.01	-0.02 ± 0.10	0.01 ± 0.12	-0.16 ± 0.19	0.34 ± 0.09
CH_3OH		-72528.21 ± 0.01	0.06 ± 0.13	-0.02 ± 0.14	-0.53 ± 0.10	0.30 ± 0.22
	b	-72528.26 ± 0.01	0.06 ± 0.11	0.00 ± 0.14	-0.46 ± 0.09	0.31 ± 0.16
	ba	-72528.29 ± 0.01	0.10 ± 0.08	0.06 ± 0.10	-0.45 ± 0.08	0.52 ± 0.11
	bad	-72528.28 ± 0.01	0.14 ± 0.10	0.09 ± 0.11	-0.42 ± 0.08	0.51 ± 0.15
	badq	-72528.80 ± 0.01	0.13 ± 0.09	0.08 ± 0.12	-0.44 ± 0.07	0.51 ± 0.14
C_2H_6		-50024.21 ± 0.00	-0.06 ± 0.08	-0.05 ± 0.08	-0.11 ± 0.09	0.04 ± 0.09
	b	-50024.36 ± 0.00	0.08 ± 0.06	0.07 ± 0.09	-0.11 ± 0.05	0.22 ± 0.16
	ba	-50024.20 ± 0.00	0.03 ± 0.02	0.03 ± 0.02	-0.01 ± 0.04	0.07 ± 0.03
	bad	-50024.28 ± 0.00	0.05 ± 0.03	0.05 ± 0.03	-0.01 ± 0.04	0.12 ± 0.04
	badq	-50024.44 ± 0.00	0.05 ± 0.02	0.05 ± 0.02	-0.01 ± 0.04	0.12 ± 0.03
$(CH_2)_4O$		-145699.56 ± 0.02	0.40 ± 0.24	0.23 ± 0.30	-1.08 ± 0.21	1.49 ± 0.25
	b	-145699.47 ± 0.02	0.84 ± 0.29	0.51 ± 0.38	-1.52 ± 0.22	2.50 ± 0.32

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Table 34 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	ba	-145697.65 ± 0.01	0.15 ± 0.12	0.10 ± 0.14	-0.37 ± 0.14	0.49 ± 0.19
	bad	-145698.65 ± 0.01	0.27 ± 0.14	0.17 ± 0.16	-0.47 ± 0.12	0.63 ± 0.25
	badq	-145689.76 ± 0.01	0.18 ± 0.11	0.14 ± 0.12	-0.40 ± 0.10	0.61 ± 0.15
$C(NH_2)_3^+$		-128901.22 ± 0.03	1.79 ± 0.48	0.85 ± 0.51	-0.25 ± 0.24	-0.51 ± 0.56
	b	-128902.74 ± 0.03	5.18 ± 1.03	1.48 ± 0.52	-1.41 ± 0.30	4.36 ± 0.44
	ba	-128929.38 ± 0.03	0.67 ± 0.28	0.25 ± 0.25	-0.58 ± 0.19	0.99 ± 0.24
	bad	-128932.44 ± 0.02	0.25 ± 0.28	0.00 ± 0.28	-0.03 ± 0.30	0.07 ± 0.31
	badq	-128914.70 ± 0.02	0.47 ± 0.25	0.28 ± 0.16	-0.09 ± 0.13	0.56 ± 0.17
$C_6H_5NH_2$		-180227.49 ± 0.01	0.15 ± 0.13	0.10 ± 0.20	-0.99 ± 0.13	1.14 ± 0.20
	b	-180227.72 ± 0.01	-0.01 ± 0.12	-0.04 ± 0.20	-0.93 ± 0.16	0.79 ± 0.21
	ba	-180232.65 ± 0.01	0.09 ± 0.08	0.06 ± 0.08	-0.21 ± 0.05	0.28 ± 0.10
	bad	-180231.64 ± 0.01	0.18 ± 0.08	0.15 ± 0.10	-0.22 ± 0.05	0.40 ± 0.18
	badq	-180261.12 ± 0.01	0.31 ± 0.13	0.21 ± 0.20	-0.58 ± 0.09	0.64 ± 0.35
CH_3CONH_2		-131075.55 ± 0.01	-0.30 ± 0.11	-0.27 ± 0.14	-1.03 ± 0.13	0.47 ± 0.16
	b	-131075.53 ± 0.01	-0.24 ± 0.16	-0.32 ± 0.23	-1.43 ± 0.13	0.69 ± 0.25
	ba	-131080.95 ± 0.01	-0.11 ± 0.09	-0.09 ± 0.11	-0.84 ± 0.10	0.67 ± 0.10
	bad	-131081.99 ± 0.01	-0.12 ± 0.11	-0.13 ± 0.12	-0.82 ± 0.11	0.57 ± 0.10
	badq	-131071.90 ± 0.01	-0.28 ± 0.08	-0.27 ± 0.11	-0.88 ± 0.10	0.35 ± 0.09
H_2O		-47893.37 ± 0.00	0.04 ± 0.02	0.04 ± 0.03	-0.18 ± 0.01	0.24 ± 0.04
	b	-47893.41 ± 0.00	0.00 ± 0.03	0.00 ± 0.04	-0.18 ± 0.01	0.16 ± 0.06
	ba	-47893.40 ± 0.00	-0.04 ± 0.04	-0.05 ± 0.06	-0.37 ± 0.02	0.23 ± 0.10
	bad	-47893.40 ± 0.00	-0.04 ± 0.04	-0.05 ± 0.06	-0.37 ± 0.02	0.23 ± 0.10
	badq	-47893.40 ± 0.00	-0.04 ± 0.04	-0.05 ± 0.06	-0.37 ± 0.02	0.23 ± 0.10
C_2H_5OH		-97162.98 ± 0.01	0.07 ± 0.09	0.06 ± 0.11	-0.40 ± 0.07	0.37 ± 0.18

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Table 34 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	b	-97163.06 ± 0.00	0.06 ± 0.07	0.06 ± 0.08	-0.14 ± 0.09	0.26 ± 0.09
	ba	-97163.47 ± 0.01	0.31 ± 0.20	0.11 ± 0.23	-0.65 ± 0.10	0.38 ± 0.38
	bad	-97163.66 ± 0.01	0.11 ± 0.21	-0.11 ± 0.19	-0.67 ± 0.10	0.22 ± 0.21
	badq	-97163.34 ± 0.01	0.20 ± 0.16	0.07 ± 0.18	-0.61 ± 0.10	0.59 ± 0.20
C_6H_6		-145560.00 ± 0.01	-0.03 ± 0.06	-0.04 ± 0.08	-0.60 ± 0.08	0.51 ± 0.09
	b	-145560.43 ± 0.00	-0.05 ± 0.05	-0.05 ± 0.05	-0.27 ± 0.06	0.15 ± 0.08
	ba	-145565.77 ± 0.00	-0.09 ± 0.04	-0.09 ± 0.05	-0.28 ± 0.07	0.12 ± 0.04
	bad	-145564.02 ± 0.00	-0.06 ± 0.04	-0.06 ± 0.04	-0.22 ± 0.06	0.12 ± 0.04
	badq	-145563.39 ± 0.00	-0.05 ± 0.03	-0.05 ± 0.04	-0.18 ± 0.07	0.11 ± 0.03
C_6H_5OH		-192693.96 ± 0.01	0.04 ± 0.11	-0.04 ± 0.16	-0.78 ± 0.08	0.56 ± 0.19
	b	-192694.26 ± 0.01	0.02 ± 0.08	-0.01 ± 0.10	-0.48 ± 0.06	0.38 ± 0.12
	ba	-192699.45 ± 0.00	0.02 ± 0.04	0.01 ± 0.05	-0.36 ± 0.04	0.37 ± 0.07
	bad	-192698.00 ± 0.01	0.06 ± 0.04	0.05 ± 0.05	-0.34 ± 0.04	0.42 ± 0.07
	badq	-192712.32 ± 0.00	0.04 ± 0.05	0.03 ± 0.06	-0.41 ± 0.04	0.45 ± 0.07

Table 35: MM-to-QM gas-phase solvation free energy correction values from 3-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	0.49 ± 1.26	1.41 ± 0.62	-1.85 ± 0.52	4.77 ± 0.39
	b	-165233.97 ± 0.00	0.46 ± 0.15	0.45 ± 0.12	0.47 ± 0.14	0.36 ± 0.17
	ba	-165298.74 ± 0.00	0.37 ± 0.10	0.46 ± 0.08	0.16 ± 0.11	0.78 ± 0.07
	bad	-165350.72 ± 0.00	0.14 ± 0.10	0.14 ± 0.08	0.13 ± 0.10	0.12 ± 0.10
	badq	-165337.39 ± 0.00	0.20 ± 0.09	0.19 ± 0.07	0.18 ± 0.08	0.17 ± 0.09
$CH_3NH_3^+$		-60350.21 ± 0.02	-0.53 ± 0.18	-0.41 ± 0.15	-0.48 ± 0.21	-0.28 ± 0.19
	b	-60350.95 ± 0.01	-0.07 ± 0.11	-0.04 ± 0.09	-0.31 ± 0.12	0.26 ± 0.11
	ba	-60353.33 ± 0.01	0.02 ± 0.07	0.04 ± 0.06	-0.07 ± 0.09	0.17 ± 0.07
	bad	-60353.51 ± 0.01	0.03 ± 0.06	0.03 ± 0.05	0.03 ± 0.07	0.04 ± 0.07
	badq	-60350.03 ± 0.01	0.00 ± 0.08	0.01 ± 0.06	0.02 ± 0.09	0.01 ± 0.09
NH_4^+		-35656.21 ± 0.00	0.07 ± 0.02	0.07 ± 0.02	0.06 ± 0.03	0.07 ± 0.03
	b	-35656.29 ± 0.00	0.05 ± 0.03	0.05 ± 0.02	0.04 ± 0.03	0.05 ± 0.03
	ba	-35657.44 ± 0.00	0.03 ± 0.04	0.02 ± 0.03	0.06 ± 0.04	-0.01 ± 0.04
	bad	-35657.44 ± 0.00	0.03 ± 0.04	0.02 ± 0.03	0.06 ± 0.04	-0.01 ± 0.04
	badq	-35656.32 ± 0.00	0.01 ± 0.03	0.01 ± 0.02	-0.01 ± 0.03	0.03 ± 0.03
$CH_3CO_2^-$		-143225.98 ± 0.03	0.31 ± 0.43	0.06 ± 0.35	-0.38 ± 0.32	-0.36 ± 0.43
	b	-143225.39 ± 0.02	-0.32 ± 0.30	-0.31 ± 0.27	-1.01 ± 0.24	0.06 ± 0.35
	ba	-143274.83 ± 0.02	0.73 ± 0.18	0.61 ± 0.19	0.41 ± 0.27	0.90 ± 0.19
	bad	-143279.87 ± 0.02	-0.10 ± 0.29	-0.03 ± 0.22	0.17 ± 0.29	-0.29 ± 0.28
	badq	-143295.75 ± 0.02	0.08 ± 0.25	0.10 ± 0.18	0.14 ± 0.24	0.02 ± 0.27
H_3O^+		-48069.23 ± 0.01	0.02 ± 0.34	-0.06 ± 0.25	0.06 ± 0.28	0.00 ± 0.39
	b	-48069.30 ± 0.01	0.04 ± 0.27	0.03 ± 0.32	0.06 ± 0.38	-0.11 ± 0.35
	ba	-48069.33 ± 0.00	0.03 ± 0.08	0.06 ± 0.06	-0.01 ± 0.08	0.13 ± 0.09

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Table 35 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-48069.33 ± 0.00	0.03 ± 0.08	0.06 ± 0.06	-0.01 ± 0.08	0.13 ± 0.09
	badq	-48069.38 ± 0.00	0.10 ± 0.09	0.14 ± 0.07	0.08 ± 0.12	0.20 ± 0.09
C_6H_5Cl		-433852.25 ± 0.02	0.08 ± 0.21	0.02 ± 0.15	0.09 ± 0.24	-0.23 ± 0.27
	b	-433850.13 ± 0.01	0.04 ± 0.13	0.02 ± 0.10	0.07 ± 0.17	0.08 ± 0.10
	ba	-433853.89 ± 0.01	-0.03 ± 0.13	-0.04 ± 0.10	-0.11 ± 0.13	0.02 ± 0.16
	bad	-433855.52 ± 0.01	-0.21 ± 0.09	-0.13 ± 0.06	-0.24 ± 0.09	-0.01 ± 0.08
	badq	-433858.60 ± 0.01	-0.06 ± 0.09	-0.02 ± 0.07	-0.10 ± 0.09	0.03 ± 0.10
C_6H_{14}		-148579.56 ± 0.01	-0.06 ± 0.17	-0.10 ± 0.13	-0.28 ± 0.18	0.15 ± 0.18
	b	-148580.35 ± 0.01	-0.01 ± 0.10	-0.03 ± 0.07	-0.21 ± 0.10	0.15 ± 0.08
	ba	-148579.69 ± 0.01	-0.09 ± 0.14	-0.08 ± 0.11	-0.14 ± 0.14	-0.10 ± 0.16
	bad	-148579.55 ± 0.01	0.03 ± 0.11	0.04 ± 0.09	-0.08 ± 0.12	0.16 ± 0.11
	badq	-148577.13 ± 0.01	0.06 ± 0.11	0.05 ± 0.08	-0.03 ± 0.12	0.18 ± 0.09
CH_3OH		-72528.21 ± 0.01	0.03 ± 0.09	0.03 ± 0.08	-0.24 ± 0.08	0.22 ± 0.12
	b	-72528.26 ± 0.01	0.01 ± 0.08	0.02 ± 0.07	-0.23 ± 0.07	0.19 ± 0.11
	ba	-72528.29 ± 0.01	0.02 ± 0.07	0.03 ± 0.06	-0.23 ± 0.06	0.26 ± 0.08
	bad	-72528.28 ± 0.01	0.09 ± 0.08	0.09 ± 0.07	-0.16 ± 0.07	0.30 ± 0.10
	badq	-72528.80 ± 0.01	0.06 ± 0.08	0.07 ± 0.07	-0.19 ± 0.07	0.29 ± 0.10
C_2H_6		-50024.21 ± 0.00	-0.08 ± 0.06	-0.07 ± 0.05	-0.11 ± 0.07	-0.02 ± 0.06
	b	-50024.36 ± 0.00	0.03 ± 0.05	0.04 ± 0.04	-0.05 ± 0.04	0.12 ± 0.10
	ba	-50024.20 ± 0.00	0.03 ± 0.03	0.03 ± 0.03	0.01 ± 0.05	0.05 ± 0.05
	bad	-50024.28 ± 0.00	0.00 ± 0.02	0.01 ± 0.02	-0.03 ± 0.02	0.04 ± 0.03
	badq	-50024.44 ± 0.00	0.06 ± 0.02	0.06 ± 0.02	0.03 ± 0.02	0.10 ± 0.02
$(CH_2)_4O$		-145699.56 ± 0.02	-0.18 ± 0.20	-0.10 ± 0.18	-0.71 ± 0.20	0.51 ± 0.20
	b	-145699.47 ± 0.02	0.48 ± 0.35	0.50 ± 0.26	-0.11 ± 0.36	1.15 ± 0.28

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Table 35 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	ba	-145697.65 ± 0.01	0.00 ± 0.09	0.02 ± 0.08	-0.23 ± 0.09	0.23 ± 0.11
	bad	-145698.65 ± 0.01	0.11 ± 0.13	0.13 ± 0.10	-0.18 ± 0.11	0.36 ± 0.15
	badq	-145689.76 ± 0.01	-0.15 ± 0.11	-0.09 ± 0.08	-0.35 ± 0.09	0.12 ± 0.12
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.62 ± 0.38	0.67 ± 0.30	0.33 ± 0.32	-0.14 ± 0.56
	b	-128902.74 ± 0.03	1.72 ± 0.43	0.83 ± 0.43	-0.87 ± 0.24	2.30 ± 0.44
	ba	-128929.38 ± 0.03	0.39 ± 0.19	0.36 ± 0.18	-0.13 ± 0.16	0.66 ± 0.21
	bad	-128932.44 ± 0.02	0.20 ± 0.18	0.17 ± 0.17	0.01 ± 0.18	0.18 ± 0.25
	badq	-128914.70 ± 0.02	-0.21 ± 0.17	-0.13 ± 0.13	-0.29 ± 0.14	-0.04 ± 0.16
$C_6H_5NH_2$		-180227.49 ± 0.01	-0.19 ± 0.14	-0.12 ± 0.12	-0.65 ± 0.11	0.34 ± 0.16
	b	-180227.72 ± 0.01	0.11 ± 0.09	0.09 ± 0.09	-0.38 ± 0.10	0.53 ± 0.12
	ba	-180232.65 ± 0.01	-0.01 ± 0.06	0.01 ± 0.05	-0.13 ± 0.05	0.12 ± 0.07
	bad	-180231.64 ± 0.01	0.06 ± 0.08	0.08 ± 0.06	-0.09 ± 0.06	0.21 ± 0.11
	badq	-180261.12 ± 0.01	0.09 ± 0.11	0.13 ± 0.10	-0.28 ± 0.10	0.43 ± 0.17
CH_3CONH_2		-131075.55 ± 0.01	-0.12 ± 0.09	-0.15 ± 0.08	-0.53 ± 0.10	0.24 ± 0.09
	b	-131075.53 ± 0.01	-0.37 ± 0.09	-0.35 ± 0.11	-0.96 ± 0.10	0.21 ± 0.14
	ba	-131080.95 ± 0.01	-0.09 ± 0.07	-0.09 ± 0.06	-0.48 ± 0.07	0.30 ± 0.07
	bad	-131081.99 ± 0.01	-0.18 ± 0.07	-0.17 ± 0.07	-0.53 ± 0.07	0.19 ± 0.07
	badq	-131071.90 ± 0.01	-0.11 ± 0.05	-0.14 ± 0.05	-0.46 ± 0.07	0.18 ± 0.06
H_2O		-47893.37 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	-0.10 ± 0.01	0.12 ± 0.02
	b	-47893.41 ± 0.00	0.00 ± 0.02	0.00 ± 0.02	-0.09 ± 0.01	0.09 ± 0.03
	ba	-47893.40 ± 0.00	-0.01 ± 0.03	-0.02 ± 0.04	-0.18 ± 0.04	0.13 ± 0.06
	bad	-47893.40 ± 0.00	-0.01 ± 0.03	-0.02 ± 0.04	-0.18 ± 0.04	0.13 ± 0.06
	badq	-47893.40 ± 0.00	-0.01 ± 0.03	-0.02 ± 0.04	-0.18 ± 0.04	0.13 ± 0.06
C_2H_5OH		-97162.98 ± 0.01	-0.02 ± 0.13	-0.01 ± 0.08	-0.17 ± 0.11	0.13 ± 0.12

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Table 35 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	b	-97163.06 ± 0.00	0.05 ± 0.06	0.05 ± 0.05	-0.05 ± 0.07	0.15 ± 0.07
	ba	-97163.47 ± 0.01	0.12 ± 0.19	0.14 ± 0.15	-0.18 ± 0.16	0.27 ± 0.23
	bad	-97163.66 ± 0.01	0.11 ± 0.18	0.09 ± 0.14	-0.18 ± 0.12	0.17 ± 0.19
	badq	-97163.34 ± 0.01	0.09 ± 0.19	0.10 ± 0.13	-0.15 ± 0.15	0.26 ± 0.17
C_6H_6		-145560.00 ± 0.01	0.01 ± 0.08	0.00 ± 0.06	-0.25 ± 0.07	0.26 ± 0.07
	b	-145560.43 ± 0.00	-0.02 ± 0.04	-0.02 ± 0.03	-0.13 ± 0.04	0.08 ± 0.05
	ba	-145565.77 ± 0.00	-0.04 ± 0.03	-0.05 ± 0.03	-0.15 ± 0.04	0.05 ± 0.03
	bad	-145564.02 ± 0.00	0.40 ± 0.03	0.31 ± 0.02	0.22 ± 0.04	0.40 ± 0.03
	badq	-145563.39 ± 0.00	0.01 ± 0.03	0.00 ± 0.02	-0.07 ± 0.04	0.07 ± 0.03
C_6H_5OH		-192693.96 ± 0.01	0.07 ± 0.08	0.05 ± 0.07	-0.33 ± 0.07	0.38 ± 0.11
	b	-192694.26 ± 0.01	0.01 ± 0.08	0.01 ± 0.06	-0.22 ± 0.06	0.20 ± 0.08
	ba	-192699.45 ± 0.00	0.02 ± 0.05	0.02 ± 0.04	-0.16 ± 0.04	0.20 ± 0.05
	bad	-192698.00 ± 0.01	-0.01 ± 0.05	0.00 ± 0.04	-0.19 ± 0.06	0.19 ± 0.06
	badq	-192712.32 ± 0.00	0.01 ± 0.05	0.02 ± 0.04	-0.20 ± 0.04	0.23 ± 0.05

Table 36: MM-to-QM gas-phase solvation free energy correction values from 6-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
CO_3^{2-}		-165234.08 ± 0.05	-0.63 ± 0.73	-0.77 ± 0.62	-0.27 ± 0.74	-0.05 ± 0.56
	b	-165233.97 ± 0.00	0.48 ± 0.10	0.47 ± 0.07	0.48 ± 0.09	0.45 ± 0.11
	ba	-165298.74 ± 0.00	0.27 ± 0.07	0.30 ± 0.05	0.18 ± 0.07	0.42 ± 0.06
	bad	-165350.72 ± 0.00	0.10 ± 0.07	0.10 ± 0.05	0.09 ± 0.07	0.09 ± 0.07
	badq	-165337.39 ± 0.00	0.21 ± 0.07	0.20 ± 0.05	0.21 ± 0.08	0.19 ± 0.07
$CH_3NH_3^+$		-60350.21 ± 0.02	0.02 ± 0.14	0.03 ± 0.10	0.04 ± 0.14	0.05 ± 0.13
	b	-60350.95 ± 0.01	-0.12 ± 0.10	-0.11 ± 0.07	-0.19 ± 0.11	-0.03 ± 0.10
	ba	-60353.33 ± 0.01	0.15 ± 0.05	0.14 ± 0.04	0.10 ± 0.06	0.19 ± 0.05
	bad	-60353.51 ± 0.01	-0.05 ± 0.05	-0.05 ± 0.04	-0.04 ± 0.05	-0.05 ± 0.05
	badq	-60350.03 ± 0.01	0.04 ± 0.07	0.04 ± 0.04	0.05 ± 0.07	0.03 ± 0.06
NH_4^+		-35656.21 ± 0.00	0.09 ± 0.02	0.09 ± 0.01	0.09 ± 0.02	0.09 ± 0.02
	b	-35656.29 ± 0.00	0.04 ± 0.02	0.04 ± 0.01	0.04 ± 0.02	0.04 ± 0.02
	ba	-35657.44 ± 0.00	-0.03 ± 0.02	-0.03 ± 0.01	-0.01 ± 0.02	-0.04 ± 0.02
	bad	-35657.44 ± 0.00	-0.03 ± 0.02	-0.03 ± 0.01	-0.01 ± 0.02	-0.04 ± 0.02
	badq	-35656.32 ± 0.00	0.00 ± 0.02	0.00 ± 0.01	-0.01 ± 0.01	0.01 ± 0.02
$CH_3CO_2^-$		-143225.98 ± 0.03	0.17 ± 0.25	0.17 ± 0.23	-0.14 ± 0.24	0.08 ± 0.34
	b	-143225.39 ± 0.02	0.04 ± 0.15	0.04 ± 0.11	-0.31 ± 0.14	0.31 ± 0.16
	ba	-143274.83 ± 0.02	0.24 ± 0.19	0.24 ± 0.13	0.25 ± 0.17	0.16 ± 0.21
	bad	-143279.87 ± 0.02	-0.10 ± 0.18	-0.09 ± 0.14	-0.01 ± 0.19	-0.15 ± 0.19
	badq	-143295.75 ± 0.02	0.05 ± 0.17	0.06 ± 0.12	0.14 ± 0.15	-0.06 ± 0.18
H_3O^+		-48069.23 ± 0.01	-0.25 ± 0.22	-0.24 ± 0.16	-0.19 ± 0.20	-0.31 ± 0.20
	b	-48069.30 ± 0.01	-0.21 ± 0.17	-0.19 ± 0.14	-0.14 ± 0.22	-0.24 ± 0.18
	ba	-48069.33 ± 0.00	0.05 ± 0.06	0.05 ± 0.04	0.03 ± 0.06	0.07 ± 0.06

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Table 36 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-48069.33 ± 0.00	0.05 ± 0.06	0.05 ± 0.04	0.03 ± 0.06	0.07 ± 0.06
	badq	-48069.38 ± 0.00	0.18 ± 0.07	0.19 ± 0.05	0.17 ± 0.07	0.21 ± 0.06
C_6H_5Cl		-433852.25 ± 0.02	0.08 ± 0.15	0.07 ± 0.10	0.13 ± 0.15	-0.01 ± 0.15
	b	-433850.13 ± 0.01	-0.03 ± 0.09	-0.02 ± 0.06	-0.02 ± 0.10	-0.01 ± 0.09
	ba	-433853.89 ± 0.01	0.14 ± 0.07	0.13 ± 0.05	0.08 ± 0.06	0.17 ± 0.08
	bad	-433855.52 ± 0.01	-0.08 ± 0.08	-0.07 ± 0.05	-0.09 ± 0.08	-0.04 ± 0.07
	badq	-433858.60 ± 0.01	0.04 ± 0.07	0.05 ± 0.05	0.03 ± 0.07	0.06 ± 0.07
C_6H_{14}		-148579.56 ± 0.01	-0.19 ± 0.09	-0.20 ± 0.07	-0.29 ± 0.11	-0.09 ± 0.09
	b	-148580.35 ± 0.01	0.09 ± 0.06	0.08 ± 0.04	0.01 ± 0.06	0.15 ± 0.05
	ba	-148579.69 ± 0.01	-0.11 ± 0.07	-0.10 ± 0.06	-0.14 ± 0.08	-0.07 ± 0.08
	bad	-148579.55 ± 0.01	-0.02 ± 0.08	-0.02 ± 0.06	-0.06 ± 0.08	0.03 ± 0.08
	badq	-148577.13 ± 0.01	-0.15 ± 0.09	-0.14 ± 0.06	-0.16 ± 0.08	-0.11 ± 0.08
CH_3OH		-72528.21 ± 0.01	0.01 ± 0.06	0.00 ± 0.05	-0.10 ± 0.06	0.09 ± 0.07
	b	-72528.26 ± 0.01	0.01 ± 0.05	0.01 ± 0.04	-0.09 ± 0.05	0.09 ± 0.06
	ba	-72528.29 ± 0.01	-0.03 ± 0.04	-0.03 ± 0.03	-0.13 ± 0.04	0.08 ± 0.05
	bad	-72528.28 ± 0.01	-0.07 ± 0.04	-0.06 ± 0.04	-0.16 ± 0.04	0.04 ± 0.05
	badq	-72528.80 ± 0.01	-0.05 ± 0.05	-0.03 ± 0.04	-0.14 ± 0.05	0.06 ± 0.05
C_2H_6		-50024.21 ± 0.00	-0.02 ± 0.03	-0.02 ± 0.02	-0.04 ± 0.04	0.00 ± 0.03
	b	-50024.36 ± 0.00	0.06 ± 0.03	0.06 ± 0.03	0.03 ± 0.03	0.10 ± 0.05
	ba	-50024.20 ± 0.00	0.05 ± 0.02	0.04 ± 0.01	0.04 ± 0.02	0.05 ± 0.02
	bad	-50024.28 ± 0.00	0.06 ± 0.02	0.06 ± 0.01	0.04 ± 0.02	0.07 ± 0.02
	badq	-50024.44 ± 0.00	0.08 ± 0.02	0.08 ± 0.01	0.06 ± 0.02	0.09 ± 0.02
$(CH_2)_4O$		-145699.56 ± 0.02	0.07 ± 0.11	0.08 ± 0.10	-0.22 ± 0.13	0.34 ± 0.14
	b	-145699.47 ± 0.02	0.22 ± 0.16	0.25 ± 0.13	-0.11 ± 0.16	0.59 ± 0.17

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Table 36 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	ba	-145697.65 ± 0.01	0.13 ± 0.06	0.13 ± 0.04	0.03 ± 0.05	0.22 ± 0.06
	bad	-145698.65 ± 0.01	0.06 ± 0.07	0.08 ± 0.05	-0.05 ± 0.07	0.20 ± 0.08
	badq	-145689.76 ± 0.01	0.01 ± 0.06	0.01 ± 0.04	-0.09 ± 0.06	0.11 ± 0.06
$C(NH_2)_3^+$		-128901.22 ± 0.03	0.31 ± 0.22	0.36 ± 0.18	0.25 ± 0.22	0.26 ± 0.29
	b	-128902.74 ± 0.03	0.58 ± 0.24	0.49 ± 0.25	-0.34 ± 0.21	1.11 ± 0.31
	ba	-128929.38 ± 0.03	0.17 ± 0.14	0.18 ± 0.11	0.05 ± 0.18	0.32 ± 0.13
	bad	-128932.44 ± 0.02	-0.08 ± 0.11	-0.09 ± 0.09	-0.16 ± 0.11	-0.05 ± 0.14
	badq	-128914.70 ± 0.02	0.40 ± 0.13	0.39 ± 0.09	0.38 ± 0.14	0.38 ± 0.13
$C_6H_5NH_2$		-180227.49 ± 0.01	0.06 ± 0.07	0.06 ± 0.06	-0.16 ± 0.08	0.27 ± 0.08
	b	-180227.72 ± 0.01	0.04 ± 0.08	0.04 ± 0.06	-0.13 ± 0.08	0.21 ± 0.09
	ba	-180232.65 ± 0.01	-0.03 ± 0.04	-0.03 ± 0.03	-0.08 ± 0.04	0.02 ± 0.05
	bad	-180231.64 ± 0.01	0.02 ± 0.05	0.02 ± 0.03	-0.05 ± 0.04	0.08 ± 0.05
	badq	-180261.12 ± 0.01	0.11 ± 0.08	0.12 ± 0.06	-0.03 ± 0.07	0.25 ± 0.09
CH_3CONH_2		-131075.55 ± 0.01	-0.17 ± 0.06	-0.18 ± 0.05	-0.33 ± 0.06	-0.03 ± 0.06
	b	-131075.53 ± 0.01	-0.14 ± 0.08	-0.15 ± 0.06	-0.38 ± 0.08	0.08 ± 0.08
	ba	-131080.95 ± 0.01	-0.22 ± 0.05	-0.21 ± 0.04	-0.36 ± 0.05	-0.05 ± 0.05
	bad	-131081.99 ± 0.01	-0.11 ± 0.05	-0.11 ± 0.04	-0.26 ± 0.05	0.03 ± 0.05
	badq	-131071.90 ± 0.01	-0.17 ± 0.04	-0.17 ± 0.03	-0.30 ± 0.04	-0.05 ± 0.04
H_2O		-47893.37 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.04 ± 0.01	0.05 ± 0.01
	b	-47893.41 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	-0.04 ± 0.02	0.03 ± 0.02
	ba	-47893.40 ± 0.00	0.00 ± 0.02	0.00 ± 0.02	-0.07 ± 0.02	0.06 ± 0.03
	bad	-47893.40 ± 0.00	0.00 ± 0.02	0.00 ± 0.02	-0.07 ± 0.02	0.06 ± 0.03
	badq	-47893.40 ± 0.00	0.00 ± 0.02	0.00 ± 0.02	-0.07 ± 0.02	0.06 ± 0.03
C_2H_5OH		-97162.98 ± 0.01	-0.03 ± 0.06	-0.03 ± 0.04	-0.10 ± 0.06	0.04 ± 0.06

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Table 36 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	b	-97163.06 ± 0.00	0.00 ± 0.05	0.00 ± 0.03	-0.03 ± 0.05	0.04 ± 0.05
	ba	-97163.47 ± 0.01	-0.02 ± 0.11	-0.01 ± 0.08	-0.14 ± 0.10	0.09 ± 0.12
	bad	-97163.66 ± 0.01	0.00 ± 0.12	0.00 ± 0.08	-0.08 ± 0.10	0.04 ± 0.12
	badq	-97163.34 ± 0.01	0.00 ± 0.09	0.00 ± 0.07	-0.11 ± 0.09	0.10 ± 0.10
C_6H_6		-145560.00 ± 0.01	-0.14 ± 0.05	-0.14 ± 0.03	-0.24 ± 0.04	-0.03 ± 0.05
	b	-145560.43 ± 0.00	-0.06 ± 0.03	-0.05 ± 0.02	-0.10 ± 0.03	-0.01 ± 0.03
	ba	-145565.77 ± 0.00	-0.04 ± 0.02	-0.04 ± 0.02	-0.08 ± 0.03	0.00 ± 0.03
	bad	-145564.02 ± 0.00	-0.03 ± 0.02	-0.03 ± 0.02	-0.07 ± 0.03	0.00 ± 0.03
	badq	-145563.39 ± 0.00	0.00 ± 0.02	0.00 ± 0.02	-0.03 ± 0.03	0.03 ± 0.03
C_6H_5OH		-192693.96 ± 0.01	-0.02 ± 0.05	-0.02 ± 0.04	-0.17 ± 0.06	0.12 ± 0.06
	b	-192694.26 ± 0.01	0.03 ± 0.04	0.03 ± 0.03	-0.07 ± 0.04	0.11 ± 0.04
	ba	-192699.45 ± 0.00	0.00 ± 0.03	-0.01 ± 0.02	-0.08 ± 0.03	0.06 ± 0.03
	bad	-192698.00 ± 0.01	0.00 ± 0.03	0.01 ± 0.02	-0.07 ± 0.03	0.08 ± 0.03
	badq	-192712.32 ± 0.00	-0.02 ± 0.03	-0.02 ± 0.02	-0.11 ± 0.02	0.07 ± 0.03

Table 37: MM-to-QM net ligand binding free energy correction values 2-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
BNZ		0.05 ± 0.03	0.10 ± 0.07	0.09 ± 0.08	-0.03 ± 0.13	0.05 ± 0.18
	b	0.10 ± 0.02	0.07 ± 0.06	0.05 ± 0.07	0.02 ± 0.12	0.15 ± 0.16
	ba	0.09 ± 0.02	-0.10 ± 0.05	-0.10 ± 0.06	0.02 ± 0.09	-0.21 ± 0.12
	bad	0.14 ± 0.02	-0.10 ± 0.06	-0.07 ± 0.08	-0.04 ± 0.10	-0.22 ± 0.12
	badq	0.06 ± 0.02	0.08 ± 0.06	0.00 ± 0.08	0.00 ± 0.15	0.05 ± 0.21
PXY		0.46 ± 0.04	0.03 ± 0.09	-0.03 ± 0.11	0.90 ± 0.45	0.47 ± 0.35
	b	0.43 ± 0.04	0.00 ± 0.09	-0.10 ± 0.12	0.78 ± 0.54	-0.12 ± 0.28
	ba	0.36 ± 0.03	0.02 ± 0.08	-0.03 ± 0.09	0.08 ± 0.22	-0.06 ± 0.12
	bad	0.46 ± 0.04	0.05 ± 0.08	0.00 ± 0.09	-0.02 ± 0.23	-0.06 ± 0.11
	badq	0.38 ± 0.06	0.16 ± 0.14	-0.26 ± 0.30	1.05 ± 0.47	-1.54 ± 0.36
I4B		0.06 ± 0.04	-0.03 ± 0.13	0.11 ± 0.15	0.34 ± 0.34	-0.02 ± 0.40
	b	0.00 ± 0.04	0.11 ± 0.12	0.19 ± 0.12	0.62 ± 0.27	0.27 ± 0.24
	ba	0.12 ± 0.04	0.12 ± 0.11	0.13 ± 0.11	0.48 ± 0.18	0.29 ± 0.36
	bad	-0.01 ± 0.04	0.02 ± 0.11	0.08 ± 0.11	0.38 ± 0.17	-0.55 ± 0.30
	badq	0.11 ± 0.06	0.26 ± 0.15	0.17 ± 0.21	1.11 ± 0.47	-0.86 ± 0.20
BZF		-0.69 ± 0.07	-0.26 ± 0.18	-0.59 ± 0.29	-1.60 ± 0.67	-2.18 ± 0.51
	b	-0.70 ± 0.08	-0.23 ± 0.18	0.03 ± 0.28	0.09 ± 0.43	-0.43 ± 0.32
	ba	-0.46 ± 0.05	-0.15 ± 0.10	-0.17 ± 0.13	0.29 ± 0.29	0.36 ± 0.22
	bad	-0.53 ± 0.05	0.07 ± 0.10	0.03 ± 0.13	0.40 ± 0.21	0.11 ± 0.32
	badq	-0.42 ± 0.05	0.53 ± 0.13	0.04 ± 0.19	-0.17 ± 0.31	-0.62 ± 0.45
DEN		-0.21 ± 0.06	0.17 ± 0.13	0.24 ± 0.22	0.12 ± 0.37	0.82 ± 0.51
	b	-0.18 ± 0.06	-0.14 ± 0.15	-0.41 ± 0.18	-1.28 ± 0.43	-1.35 ± 0.26
	ba	-0.25 ± 0.04	0.32 ± 0.09	0.27 ± 0.14	0.02 ± 0.20	0.70 ± 0.23

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Table 37 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-0.26 ± 0.04	0.26 ± 0.09	0.12 ± 0.11	0.11 ± 0.18	0.02 ± 0.32
	badq	-0.11 ± 0.04	0.24 ± 0.10	0.01 ± 0.13	-0.18 ± 0.24	0.57 ± 0.58
IND		0.64 ± 0.08	1.60 ± 0.21	0.00 ± 0.55	2.00 ± 0.65	-2.18 ± 0.59
	b	0.04 ± 0.08	0.18 ± 0.21	-0.07 ± 0.42	0.91 ± 0.37	0.83 ± 0.61
	ba	0.24 ± 0.07	0.09 ± 0.19	-0.06 ± 0.26	0.62 ± 0.31	-1.06 ± 0.29
	bad	0.11 ± 0.05	0.29 ± 0.14	-0.00 ± 0.19	0.76 ± 0.25	-0.70 ± 0.30
	badq	-0.33 ± 0.12	2.92 ± 0.29	0.79 ± 0.74	7.93 ± 0.62	-7.10 ± 0.68
OXE		0.47 ± 0.04	0.18 ± 0.11	0.05 ± 0.13	-0.34 ± 0.41	-0.12 ± 0.21
	b	0.59 ± 0.04	0.08 ± 0.09	0.01 ± 0.12	0.19 ± 0.18	-0.20 ± 0.31
	ba	0.49 ± 0.04	-0.01 ± 0.09	0.05 ± 0.12	-0.19 ± 0.37	-0.03 ± 0.26
	bad	0.64 ± 0.04	-0.02 ± 0.09	-0.04 ± 0.10	-0.32 ± 0.38	-0.20 ± 0.20
	badq	0.88 ± 0.05	0.55 ± 0.12	0.12 ± 0.17	-0.91 ± 0.40	-0.86 ± 0.23
N4B		0.11 ± 0.06	-0.23 ± 0.14	-0.11 ± 0.19	-0.21 ± 0.29	-0.13 ± 0.43
	b	0.03 ± 0.04	0.31 ± 0.10	0.22 ± 0.16	0.45 ± 0.22	0.37 ± 0.33
	ba	0.15 ± 0.04	0.03 ± 0.09	0.05 ± 0.13	0.16 ± 0.23	0.09 ± 0.35
	bad	0.20 ± 0.04	0.00 ± 0.10	0.03 ± 0.14	0.12 ± 0.44	-0.36 ± 0.22
	badq	-0.07 ± 0.05	0.53 ± 0.12	0.31 ± 0.23	1.70 ± 0.31	-1.36 ± 0.21

Table 38: MM-to-QM net ligand binding free energy correction values 3-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		0.05 ± 0.03	0.05 ± 0.06	0.05 ± 0.06	0.01 ± 0.10	0.06 ± 0.09
	b	0.10 ± 0.02	0.04 ± 0.06	0.05 ± 0.05	-0.02 ± 0.09	0.11 ± 0.08
	ba	0.09 ± 0.02	-0.12 ± 0.04	-0.12 ± 0.04	-0.05 ± 0.06	-0.19 ± 0.07
	bad	0.14 ± 0.02	-0.02 ± 0.05	-0.03 ± 0.05	0.01 ± 0.07	-0.09 ± 0.07
	badq	0.06 ± 0.02	0.00 ± 0.05	-0.01 ± 0.05	0.02 ± 0.09	-0.02 ± 0.09
PXY		0.46 ± 0.04	0.08 ± 0.09	0.05 ± 0.06	0.11 ± 0.15	0.14 ± 0.14
	b	0.43 ± 0.04	0.03 ± 0.09	0.01 ± 0.08	0.06 ± 0.20	0.05 ± 0.14
	ba	0.36 ± 0.03	-0.03 ± 0.07	-0.04 ± 0.06	0.10 ± 0.10	-0.10 ± 0.10
	bad	0.46 ± 0.04	-0.05 ± 0.07	-0.05 ± 0.07	-0.02 ± 0.11	-0.09 ± 0.09
	badq	0.38 ± 0.06	-0.03 ± 0.12	-0.11 ± 0.13	0.16 ± 0.26	-0.26 ± 0.30
I4B		0.06 ± 0.04	0.03 ± 0.11	0.08 ± 0.09	0.07 ± 0.19	0.13 ± 0.16
	b	0.00 ± 0.04	0.19 ± 0.10	0.21 ± 0.08	0.42 ± 0.12	0.11 ± 0.11
	ba	0.12 ± 0.04	0.07 ± 0.10	0.11 ± 0.09	0.04 ± 0.16	0.01 ± 0.18
	bad	-0.01 ± 0.04	0.15 ± 0.09	0.16 ± 0.07	0.23 ± 0.11	0.02 ± 0.12
	badq	0.11 ± 0.06	0.02 ± 0.12	0.06 ± 0.11	0.46 ± 0.22	-0.42 ± 0.22
BZF		-0.69 ± 0.07	0.19 ± 0.15	0.03 ± 0.13	-0.25 ± 0.47	-0.56 ± 0.37
	b	-0.70 ± 0.08	0.20 ± 0.16	0.16 ± 0.16	0.08 ± 0.29	0.44 ± 0.38
	ba	-0.46 ± 0.05	-0.10 ± 0.10	-0.12 ± 0.10	-0.19 ± 0.18	0.00 ± 0.16
	bad	-0.53 ± 0.05	-0.09 ± 0.10	-0.07 ± 0.08	-0.11 ± 0.15	-0.10 ± 0.16
	badq	-0.42 ± 0.05	-0.01 ± 0.11	-0.05 ± 0.09	-0.24 ± 0.22	0.13 ± 0.27
DEN		-0.21 ± 0.06	-0.03 ± 0.12	0.03 ± 0.10	0.02 ± 0.21	0.01 ± 0.27
	b	-0.18 ± 0.06	0.00 ± 0.13	-0.02 ± 0.10	-0.70 ± 0.34	-0.38 ± 0.16
	ba	-0.25 ± 0.04	0.18 ± 0.08	0.17 ± 0.09	0.16 ± 0.11	0.37 ± 0.18

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Table 38 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-0.26 ± 0.04	0.02 ± 0.08	0.06 ± 0.08	-0.00 ± 0.13	-0.05 ± 0.14
	badq	-0.11 ± 0.04	-0.04 ± 0.08	-0.04 ± 0.08	-0.14 ± 0.14	0.13 ± 0.27
IND		0.64 ± 0.08	0.57 ± 0.18	0.47 ± 0.20	0.65 ± 0.40	-0.94 ± 0.30
	b	0.04 ± 0.08	0.26 ± 0.18	0.19 ± 0.18	0.44 ± 0.27	0.52 ± 0.44
	ba	0.24 ± 0.07	-0.12 ± 0.13	-0.12 ± 0.12	-0.42 ± 0.20	-0.06 ± 0.23
	bad	0.11 ± 0.05	0.01 ± 0.11	0.01 ± 0.10	-0.34 ± 0.19	-0.23 ± 0.15
	badq	-0.33 ± 0.12	0.36 ± 0.26	0.03 ± 0.43	0.85 ± 0.78	-0.75 ± 0.65
OXE		0.47 ± 0.04	0.02 ± 0.10	0.04 ± 0.08	0.00 ± 0.17	-0.13 ± 0.13
	b	0.59 ± 0.04	-0.06 ± 0.08	-0.04 ± 0.07	0.01 ± 0.10	-0.09 ± 0.13
	ba	0.49 ± 0.04	-0.02 ± 0.08	0.01 ± 0.07	0.03 ± 0.13	-0.11 ± 0.11
	bad	0.64 ± 0.04	-0.03 ± 0.09	-0.02 ± 0.07	-0.17 ± 0.13	0.06 ± 0.13
	badq	0.88 ± 0.05	-0.14 ± 0.10	-0.11 ± 0.10	-0.45 ± 0.27	-0.25 ± 0.21
N4B		0.11 ± 0.06	-0.14 ± 0.12	-0.14 ± 0.11	-0.01 ± 0.16	-0.13 ± 0.20
	b	0.03 ± 0.04	-0.00 ± 0.09	0.05 ± 0.09	-0.02 ± 0.15	0.08 ± 0.16
	ba	0.15 ± 0.04	-0.10 ± 0.08	-0.08 ± 0.07	-0.04 ± 0.12	-0.12 ± 0.13
	bad	0.20 ± 0.04	0.04 ± 0.08	0.04 ± 0.08	0.14 ± 0.16	-0.09 ± 0.13
	badq	-0.07 ± 0.05	0.41 ± 0.11	0.38 ± 0.12	0.93 ± 0.21	-0.07 ± 0.30

Table 39: MM-to-QM net ligand binding free energy correction values 6-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		0.05 ± 0.03	0.05 ± 0.04	0.05 ± 0.04	0.03 ± 0.05	0.07 ± 0.05
	b	0.10 ± 0.02	0.01 ± 0.04	0.01 ± 0.03	-0.01 ± 0.04	0.05 ± 0.04
	ba	0.09 ± 0.02	0.00 ± 0.04	0.00 ± 0.02	0.02 ± 0.04	-0.02 ± 0.04
	bad	0.14 ± 0.02	-0.06 ± 0.04	-0.05 ± 0.02	-0.05 ± 0.04	-0.07 ± 0.04
	badq	0.06 ± 0.02	-0.01 ± 0.04	0.00 ± 0.03	-0.01 ± 0.05	0.00 ± 0.05
PXY		0.46 ± 0.04	-0.01 ± 0.06	-0.01 ± 0.04	-0.05 ± 0.06	0.05 ± 0.07
	b	0.43 ± 0.04	-0.08 ± 0.06	-0.08 ± 0.05	-0.07 ± 0.08	-0.10 ± 0.08
	ba	0.36 ± 0.03	0.02 ± 0.04	0.01 ± 0.04	0.05 ± 0.07	-0.02 ± 0.05
	bad	0.46 ± 0.04	0.04 ± 0.05	0.04 ± 0.04	0.03 ± 0.06	0.04 ± 0.05
	badq	0.38 ± 0.06	0.09 ± 0.08	0.06 ± 0.08	0.18 ± 0.11	-0.05 ± 0.12
I4B		0.06 ± 0.04	-0.11 ± 0.07	-0.10 ± 0.06	-0.06 ± 0.08	-0.11 ± 0.09
	b	0.00 ± 0.04	-0.00 ± 0.07	0.01 ± 0.06	0.06 ± 0.09	-0.02 ± 0.09
	ba	0.12 ± 0.04	-0.03 ± 0.06	-0.01 ± 0.05	0.02 ± 0.08	-0.06 ± 0.08
	bad	-0.01 ± 0.04	-0.05 ± 0.06	-0.02 ± 0.04	0.01 ± 0.07	-0.08 ± 0.07
	badq	0.11 ± 0.06	0.01 ± 0.08	0.04 ± 0.07	0.12 ± 0.10	-0.01 ± 0.12
BZF		-0.69 ± 0.07	-0.07 ± 0.11	-0.06 ± 0.09	-0.22 ± 0.16	-0.15 ± 0.14
	b	-0.70 ± 0.08	-0.07 ± 0.11	-0.07 ± 0.08	-0.08 ± 0.16	-0.02 ± 0.13
	ba	-0.46 ± 0.05	0.00 ± 0.06	-0.02 ± 0.06	0.00 ± 0.08	0.01 ± 0.08
	bad	-0.53 ± 0.05	-0.03 ± 0.06	-0.02 ± 0.05	-0.03 ± 0.08	0.00 ± 0.08
	badq	-0.42 ± 0.05	0.08 ± 0.08	0.05 ± 0.07	0.01 ± 0.10	0.03 ± 0.11
DEN		-0.21 ± 0.06	0.04 ± 0.08	0.04 ± 0.07	0.06 ± 0.10	0.04 ± 0.12
	b	-0.18 ± 0.06	-0.04 ± 0.08	-0.03 ± 0.07	-0.06 ± 0.11	-0.06 ± 0.10
	ba	-0.25 ± 0.04	0.13 ± 0.05	0.14 ± 0.05	0.12 ± 0.07	0.16 ± 0.07

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Table 39 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-0.26 ± 0.04	-0.03 ± 0.05	-0.03 ± 0.05	-0.02 ± 0.07	-0.05 ± 0.07
	badq	-0.11 ± 0.04	-0.07 ± 0.06	-0.08 ± 0.06	-0.11 ± 0.08	-0.02 ± 0.10
IND		0.64 ± 0.08	0.15 ± 0.11	0.17 ± 0.10	0.40 ± 0.17	-0.22 ± 0.18
	b	0.04 ± 0.08	-0.08 ± 0.11	-0.08 ± 0.09	0.07 ± 0.15	-0.25 ± 0.15
	ba	0.24 ± 0.07	-0.01 ± 0.09	-0.03 ± 0.08	0.08 ± 0.14	0.01 ± 0.11
	bad	0.11 ± 0.05	0.08 ± 0.07	0.09 ± 0.07	0.12 ± 0.10	-0.00 ± 0.08
	badq	-0.33 ± 0.12	0.27 ± 0.17	0.21 ± 0.18	0.34 ± 0.41	0.98 ± 0.33
OXE		0.47 ± 0.04	0.01 ± 0.06	0.03 ± 0.05	0.01 ± 0.07	-0.02 ± 0.08
	b	0.59 ± 0.04	-0.05 ± 0.05	-0.05 ± 0.05	-0.06 ± 0.07	-0.02 ± 0.07
	ba	0.49 ± 0.04	0.00 ± 0.05	0.00 ± 0.04	0.05 ± 0.07	-0.04 ± 0.07
	bad	0.64 ± 0.04	0.06 ± 0.05	0.06 ± 0.05	0.04 ± 0.07	0.05 ± 0.07
	badq	0.88 ± 0.05	0.10 ± 0.07	0.11 ± 0.07	0.14 ± 0.10	0.02 ± 0.10
N4B		0.11 ± 0.06	-0.15 ± 0.08	-0.15 ± 0.07	-0.12 ± 0.10	-0.19 ± 0.10
	b	0.03 ± 0.04	0.19 ± 0.07	0.18 ± 0.05	0.15 ± 0.10	0.19 ± 0.08
	ba	0.15 ± 0.04	-0.04 ± 0.05	-0.02 ± 0.05	-0.02 ± 0.07	-0.07 ± 0.07
	bad	0.20 ± 0.04	-0.04 ± 0.07	-0.03 ± 0.05	-0.01 ± 0.09	-0.02 ± 0.13
	badq	-0.07 ± 0.05	-0.18 ± 0.08	-0.18 ± 0.07	-0.04 ± 0.13	-0.27 ± 0.13

Table 40: MM-to-QM net ligand binding free energy correction values 2-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
BNZ		0.05 ± 0.03	-0.03 ± 0.09	0.08 ± 0.11	0.15 ± 0.16	-0.00 ± 0.16
	b	0.10 ± 0.02	-0.23 ± 0.08	-0.15 ± 0.09	0.13 ± 0.12	-0.36 ± 0.17
	ba	0.09 ± 0.02	-0.09 ± 0.07	-0.07 ± 0.08	0.04 ± 0.13	0.26 ± 0.35
	bad	0.14 ± 0.02	-0.15 ± 0.07	-0.09 ± 0.08	-0.05 ± 0.14	-0.15 ± 0.13
	badq	0.06 ± 0.02	0.10 ± 0.09	0.06 ± 0.14	-0.08 ± 0.21	0.05 ± 0.18
PXY		0.46 ± 0.04	0.19 ± 0.14	0.22 ± 0.17	0.03 ± 0.33	1.10 ± 0.42
	b	0.43 ± 0.04	0.02 ± 0.13	0.07 ± 0.18	-0.01 ± 0.34	-0.04 ± 0.21
	ba	0.36 ± 0.03	0.05 ± 0.11	-0.03 ± 0.13	0.35 ± 0.22	-0.15 ± 0.33
	bad	0.46 ± 0.04	0.15 ± 0.11	0.07 ± 0.14	0.22 ± 0.24	-0.02 ± 0.26
	badq	0.38 ± 0.06	0.01 ± 0.21	-0.51 ± 0.44	-0.41 ± 0.55	-0.30 ± 0.56
I4B		0.06 ± 0.04	0.03 ± 0.17	0.09 ± 0.19	-0.01 ± 0.53	-0.21 ± 0.22
	b	0.00 ± 0.04	0.18 ± 0.17	0.19 ± 0.19	0.02 ± 0.21	0.02 ± 0.50
	ba	0.12 ± 0.04	-0.15 ± 0.16	-0.20 ± 0.17	0.08 ± 0.19	0.40 ± 0.40
	bad	-0.01 ± 0.04	-0.05 ± 0.16	-0.09 ± 0.15	0.04 ± 0.18	0.42 ± 0.25
	badq	0.11 ± 0.06	0.27 ± 0.21	0.07 ± 0.28	0.80 ± 0.39	-1.09 ± 0.45
BZF		-0.69 ± 0.07	-0.28 ± 0.24	-0.23 ± 0.44	0.98 ± 0.61	-1.66 ± 0.57
	b	-0.70 ± 0.08	-0.53 ± 0.26	-0.61 ± 0.40	-0.16 ± 0.59	-1.37 ± 0.46
	ba	-0.46 ± 0.05	-0.19 ± 0.15	-0.16 ± 0.19	-0.33 ± 0.39	-0.31 ± 0.28
	bad	-0.53 ± 0.05	-0.37 ± 0.14	-0.38 ± 0.21	-0.16 ± 0.30	-0.78 ± 0.32
	badq	-0.42 ± 0.05	0.73 ± 0.18	0.60 ± 0.29	1.70 ± 0.35	0.67 ± 0.38
DEN		-0.21 ± 0.06	0.10 ± 0.19	-0.05 ± 0.27	1.00 ± 0.47	-1.69 ± 0.41
	b	-0.18 ± 0.06	0.14 ± 0.21	-0.02 ± 0.37	-0.72 ± 0.54	-1.90 ± 0.66
	ba	-0.25 ± 0.04	0.27 ± 0.13	0.14 ± 0.23	-0.37 ± 0.54	0.15 ± 0.20

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Table 40 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-0.26 ± 0.04	0.32 ± 0.13	0.09 ± 0.21	-0.28 ± 0.55	-0.13 ± 0.30
	badq	-0.11 ± 0.04	0.45 ± 0.14	0.12 ± 0.16	0.25 ± 0.37	-0.05 ± 0.19
IND		0.64 ± 0.08	0.20 ± 0.27	-0.01 ± 0.55	2.51 ± 0.55	-2.96 ± 0.52
	b	0.04 ± 0.08	0.89 ± 0.30	-0.03 ± 0.60	1.31 ± 0.51	-1.54 ± 0.44
	ba	0.24 ± 0.07	0.09 ± 0.25	-0.21 ± 0.39	1.09 ± 0.38	-1.44 ± 0.30
	bad	0.11 ± 0.05	0.64 ± 0.20	0.27 ± 0.35	1.16 ± 0.41	2.15 ± 0.62
	badq	-0.33 ± 0.12	4.12 ± 0.40	1.02 ± 0.72	10.57 ± 0.63	-8.24 ± 0.58
OXE		0.47 ± 0.04	-0.02 ± 0.15	-0.02 ± 0.19	-0.05 ± 0.30	0.46 ± 0.34
	b	0.59 ± 0.04	-0.29 ± 0.14	-0.34 ± 0.14	-0.01 ± 0.21	-0.61 ± 0.31
	ba	0.49 ± 0.04	0.05 ± 0.13	0.02 ± 0.14	-0.40 ± 0.25	0.05 ± 0.26
	bad	0.64 ± 0.04	-0.23 ± 0.14	-0.30 ± 0.16	-0.50 ± 0.25	-0.05 ± 0.20
	badq	0.88 ± 0.05	0.16 ± 0.18	-0.11 ± 0.20	0.47 ± 0.45	-0.78 ± 0.49
N4B		0.11 ± 0.06	-0.26 ± 0.16	-0.11 ± 0.21	-0.70 ± 0.30	0.31 ± 0.43
	b	0.03 ± 0.04	-0.27 ± 0.14	-0.28 ± 0.19	-0.26 ± 0.31	-0.20 ± 0.20
	ba	0.15 ± 0.04	-0.44 ± 0.14	-0.40 ± 0.17	-0.30 ± 0.29	-0.46 ± 0.30
	bad	0.20 ± 0.04	-0.14 ± 0.14	-0.02 ± 0.14	-0.32 ± 0.27	0.02 ± 0.42
	badq	-0.07 ± 0.05	0.23 ± 0.19	-0.24 ± 0.28	-0.14 ± 0.37	-1.53 ± 0.34

Table 41: MM-to-QM net ligand binding free energy correction values 3-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		0.05 ± 0.03	0.04 ± 0.09	0.04 ± 0.07	0.07 ± 0.12	0.12 ± 0.12
	b	0.10 ± 0.02	-0.05 ± 0.07	-0.07 ± 0.07	0.04 ± 0.10	-0.13 ± 0.11
	ba	0.09 ± 0.02	0.06 ± 0.07	0.03 ± 0.06	0.04 ± 0.08	0.13 ± 0.13
	bad	0.14 ± 0.02	-0.20 ± 0.07	-0.18 ± 0.06	-0.15 ± 0.09	-0.19 ± 0.09
	badq	0.06 ± 0.02	0.06 ± 0.08	0.06 ± 0.08	-0.02 ± 0.14	0.12 ± 0.12
PXY		0.46 ± 0.04	0.06 ± 0.11	0.05 ± 0.11	-0.03 ± 0.17	0.35 ± 0.17
	b	0.43 ± 0.04	-0.22 ± 0.14	-0.16 ± 0.12	-0.21 ± 0.23	-0.09 ± 0.25
	ba	0.36 ± 0.03	-0.18 ± 0.10	-0.15 ± 0.10	-0.00 ± 0.14	-0.26 ± 0.15
	bad	0.46 ± 0.04	0.01 ± 0.10	0.02 ± 0.09	0.06 ± 0.16	-0.05 ± 0.15
	badq	0.38 ± 0.06	-0.47 ± 0.18	-0.50 ± 0.29	-0.97 ± 0.45	-0.53 ± 0.40
I4B		0.06 ± 0.04	0.04 ± 0.15	0.11 ± 0.12	0.18 ± 0.26	-0.39 ± 0.21
	b	0.00 ± 0.04	0.01 ± 0.15	0.08 ± 0.11	-0.09 ± 0.17	0.13 ± 0.26
	ba	0.12 ± 0.04	-0.09 ± 0.13	-0.10 ± 0.11	-0.00 ± 0.15	-0.04 ± 0.20
	bad	-0.01 ± 0.04	0.09 ± 0.14	0.06 ± 0.10	0.15 ± 0.14	-0.01 ± 0.18
	badq	0.11 ± 0.06	0.06 ± 0.18	0.09 ± 0.18	0.05 ± 0.27	-0.26 ± 0.29
BZF		-0.69 ± 0.07	-0.01 ± 0.21	-0.01 ± 0.18	0.02 ± 0.50	-0.66 ± 0.38
	b	-0.70 ± 0.08	-0.08 ± 0.22	-0.13 ± 0.19	0.19 ± 0.41	-0.53 ± 0.28
	ba	-0.46 ± 0.05	-0.20 ± 0.13	-0.18 ± 0.12	-0.22 ± 0.22	-0.19 ± 0.19
	bad	-0.53 ± 0.05	-0.12 ± 0.13	-0.15 ± 0.12	-0.10 ± 0.18	-0.28 ± 0.17
	badq	-0.42 ± 0.05	0.23 ± 0.16	0.24 ± 0.14	0.23 ± 0.35	0.53 ± 0.27
DEN		-0.21 ± 0.06	-0.01 ± 0.17	-0.03 ± 0.15	0.46 ± 0.32	-0.42 ± 0.22
	b	-0.18 ± 0.06	0.05 ± 0.18	0.05 ± 0.16	0.09 ± 0.28	-0.51 ± 0.39
	ba	-0.25 ± 0.04	0.26 ± 0.13	0.22 ± 0.13	0.08 ± 0.36	0.39 ± 0.17

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Table 41 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-0.26 ± 0.04	-0.14 ± 0.11	-0.11 ± 0.12	-0.07 ± 0.35	-0.17 ± 0.26
	badq	-0.11 ± 0.04	-0.26 ± 0.11	-0.20 ± 0.10	-0.46 ± 0.29	-0.34 ± 0.11
IND		0.64 ± 0.08	-0.29 ± 0.26	-0.18 ± 0.26	0.09 ± 0.37	-1.03 ± 0.57
	b	0.04 ± 0.08	0.00 ± 0.24	-0.04 ± 0.26	0.42 ± 0.48	-0.78 ± 0.54
	ba	0.24 ± 0.07	0.09 ± 0.18	-0.03 ± 0.18	0.40 ± 0.37	-0.39 ± 0.25
	bad	0.11 ± 0.05	0.38 ± 0.17	0.37 ± 0.18	0.49 ± 0.27	0.63 ± 0.47
	badq	-0.33 ± 0.12	0.60 ± 0.34	0.28 ± 0.48	3.33 ± 0.57	-3.10 ± 0.42
OXE		0.47 ± 0.04	0.15 ± 0.13	0.12 ± 0.11	0.00 ± 0.19	0.18 ± 0.18
	b	0.59 ± 0.04	-0.35 ± 0.12	-0.32 ± 0.10	-0.28 ± 0.16	-0.55 ± 0.16
	ba	0.49 ± 0.04	-0.28 ± 0.12	-0.22 ± 0.09	-0.31 ± 0.16	-0.24 ± 0.14
	bad	0.64 ± 0.04	-0.23 ± 0.13	-0.23 ± 0.11	-0.36 ± 0.15	-0.20 ± 0.18
	badq	0.88 ± 0.05	-0.13 ± 0.15	-0.14 ± 0.14	0.08 ± 0.25	-0.36 ± 0.29
N4B		0.11 ± 0.06	-0.14 ± 0.13	-0.15 ± 0.13	-0.15 ± 0.21	0.06 ± 0.22
	b	0.03 ± 0.04	-0.27 ± 0.13	-0.27 ± 0.12	-0.51 ± 0.23	-0.04 ± 0.29
	ba	0.15 ± 0.04	-0.46 ± 0.12	-0.42 ± 0.11	-0.40 ± 0.18	-0.49 ± 0.21
	bad	0.20 ± 0.04	0.00 ± 0.13	-0.01 ± 0.11	-0.13 ± 0.18	0.31 ± 0.19
	badq	-0.07 ± 0.05	0.44 ± 0.17	0.31 ± 0.19	0.37 ± 0.29	-0.02 ± 0.34

Table 42: MM-to-QM net ligand binding free energy correction values 6-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
BNZ		0.05 ± 0.03	-0.04 ± 0.06	-0.04 ± 0.05	-0.07 ± 0.07	0.00 ± 0.07
	b	0.10 ± 0.02	-0.09 ± 0.05	-0.10 ± 0.04	-0.09 ± 0.06	-0.10 ± 0.06
	ba	0.09 ± 0.02	-0.02 ± 0.04	-0.02 ± 0.04	-0.03 ± 0.05	-0.02 ± 0.05
	bad	0.14 ± 0.02	-0.06 ± 0.04	-0.06 ± 0.04	-0.06 ± 0.05	-0.05 ± 0.06
	badq	0.06 ± 0.02	0.07 ± 0.05	0.07 ± 0.05	0.06 ± 0.08	0.08 ± 0.07
PXY		0.46 ± 0.04	0.06 ± 0.08	0.05 ± 0.06	0.03 ± 0.09	0.11 ± 0.09
	b	0.43 ± 0.04	-0.20 ± 0.08	-0.18 ± 0.07	-0.17 ± 0.10	-0.19 ± 0.09
	ba	0.36 ± 0.03	0.04 ± 0.07	0.03 ± 0.05	0.08 ± 0.07	-0.02 ± 0.07
	bad	0.46 ± 0.04	0.05 ± 0.07	0.05 ± 0.05	0.07 ± 0.08	0.05 ± 0.09
	badq	0.38 ± 0.06	0.12 ± 0.12	0.12 ± 0.14	-0.01 ± 0.25	0.16 ± 0.23
I4B		0.06 ± 0.04	-0.10 ± 0.10	-0.09 ± 0.07	-0.02 ± 0.12	-0.23 ± 0.11
	b	0.00 ± 0.04	0.17 ± 0.09	0.17 ± 0.07	0.15 ± 0.11	0.16 ± 0.11
	ba	0.12 ± 0.04	-0.14 ± 0.09	-0.12 ± 0.08	-0.09 ± 0.11	-0.19 ± 0.12
	bad	-0.01 ± 0.04	-0.09 ± 0.08	-0.07 ± 0.07	-0.07 ± 0.10	-0.05 ± 0.10
	badq	0.11 ± 0.06	-0.03 ± 0.11	-0.01 ± 0.10	0.01 ± 0.16	-0.06 ± 0.16
BZF		-0.69 ± 0.07	0.00 ± 0.13	0.00 ± 0.11	0.02 ± 0.16	-0.11 ± 0.18
	b	-0.70 ± 0.08	-0.18 ± 0.15	-0.17 ± 0.12	-0.25 ± 0.21	-0.16 ± 0.20
	ba	-0.46 ± 0.05	-0.09 ± 0.09	-0.10 ± 0.08	-0.16 ± 0.12	-0.07 ± 0.10
	bad	-0.53 ± 0.05	0.07 ± 0.09	0.04 ± 0.07	0.12 ± 0.10	-0.02 ± 0.10
	badq	-0.42 ± 0.05	0.01 ± 0.11	0.01 ± 0.08	0.10 ± 0.13	-0.02 ± 0.13
DEN		-0.21 ± 0.06	-0.03 ± 0.12	-0.03 ± 0.09	0.06 ± 0.15	-0.09 ± 0.15
	b	-0.18 ± 0.06	-0.13 ± 0.11	-0.10 ± 0.11	-0.05 ± 0.16	-0.24 ± 0.15
	ba	-0.25 ± 0.04	0.09 ± 0.08	0.09 ± 0.10	0.06 ± 0.17	0.16 ± 0.18

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Table 42 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-0.26 ± 0.04	-0.05 ± 0.07	-0.03 ± 0.07	-0.02 ± 0.13	-0.05 ± 0.10
	badq	-0.11 ± 0.04	-0.08 ± 0.07	-0.07 ± 0.06	-0.06 ± 0.10	-0.10 ± 0.08
IND		0.64 ± 0.08	-0.10 ± 0.16	-0.08 ± 0.14	-0.06 ± 0.29	-0.23 ± 0.25
	b	0.04 ± 0.08	0.21 ± 0.17	0.22 ± 0.13	0.17 ± 0.23	0.00 ± 0.20
	ba	0.24 ± 0.07	-0.19 ± 0.13	-0.19 ± 0.11	-0.15 ± 0.19	-0.29 ± 0.16
	bad	0.11 ± 0.05	0.14 ± 0.11	0.15 ± 0.10	0.22 ± 0.16	0.10 ± 0.13
	badq	-0.33 ± 0.12	-0.20 ± 0.23	-0.12 ± 0.23	0.43 ± 0.38	-0.90 ± 0.35
OXE		0.47 ± 0.04	0.00 ± 0.09	-0.02 ± 0.07	-0.04 ± 0.10	0.02 ± 0.11
	b	0.59 ± 0.04	-0.10 ± 0.07	-0.12 ± 0.06	-0.09 ± 0.08	-0.14 ± 0.08
	ba	0.49 ± 0.04	-0.01 ± 0.08	-0.01 ± 0.07	-0.05 ± 0.10	0.04 ± 0.11
	bad	0.64 ± 0.04	-0.16 ± 0.08	-0.18 ± 0.07	-0.18 ± 0.09	-0.17 ± 0.10
	badq	0.88 ± 0.05	-0.20 ± 0.10	-0.21 ± 0.09	-0.11 ± 0.14	-0.33 ± 0.14
N4B		0.11 ± 0.06	-0.16 ± 0.09	-0.15 ± 0.08	-0.18 ± 0.12	-0.10 ± 0.12
	b	0.03 ± 0.04	0.07 ± 0.09	0.05 ± 0.07	0.07 ± 0.11	0.03 ± 0.12
	ba	0.15 ± 0.04	-0.25 ± 0.08	-0.24 ± 0.07	-0.25 ± 0.10	-0.20 ± 0.10
	bad	0.20 ± 0.04	0.25 ± 0.09	0.23 ± 0.07	0.14 ± 0.11	0.35 ± 0.18
	badq	-0.07 ± 0.05	-0.04 ± 0.10	-0.05 ± 0.09	-0.01 ± 0.13	-0.21 ± 0.12

Table 43: MM-to-QM net ligand binding free energy correction values 2-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
BNZ		0.05 ± 0.03	0.14 ± 0.16	0.19 ± 0.16	0.37 ± 0.40	0.29 ± 0.28
	b	0.10 ± 0.02	-0.29 ± 0.12	-0.24 ± 0.13	0.33 ± 0.21	-0.57 ± 0.19
	ba	0.09 ± 0.02	-0.08 ± 0.09	-0.08 ± 0.13	0.23 ± 0.19	-0.33 ± 0.22
	bad	0.14 ± 0.02	-0.17 ± 0.11	-0.12 ± 0.11	0.15 ± 0.16	-0.16 ± 0.19
	badq	0.06 ± 0.02	0.11 ± 0.10	0.08 ± 0.13	0.43 ± 0.20	-0.37 ± 0.16
PXY		0.46 ± 0.04	-0.09 ± 0.20	0.03 ± 0.23	-0.34 ± 0.41	1.25 ± 0.48
	b	0.43 ± 0.04	-0.21 ± 0.22	-0.30 ± 0.25	0.12 ± 0.49	-0.92 ± 0.32
	ba	0.36 ± 0.03	-0.30 ± 0.16	-0.24 ± 0.15	-0.48 ± 0.33	-0.29 ± 0.20
	bad	0.46 ± 0.04	-0.54 ± 0.16	-0.45 ± 0.16	-0.58 ± 0.34	-0.43 ± 0.19
	badq	0.38 ± 0.06	0.05 ± 0.29	0.01 ± 0.52	1.32 ± 0.51	-1.13 ± 0.45
I4B		0.06 ± 0.04	0.29 ± 0.25	0.28 ± 0.25	-0.02 ± 0.41	-0.77 ± 0.40
	b	0.00 ± 0.04	0.19 ± 0.23	0.27 ± 0.29	0.59 ± 0.41	-1.31 ± 0.62
	ba	0.12 ± 0.04	0.29 ± 0.20	0.44 ± 0.21	0.37 ± 0.39	0.19 ± 0.24
	bad	-0.01 ± 0.04	0.21 ± 0.19	0.23 ± 0.24	0.30 ± 0.35	-0.19 ± 0.30
	badq	0.11 ± 0.06	0.11 ± 0.26	-0.52 ± 0.53	0.81 ± 0.52	-2.36 ± 0.50
BZF		-0.69 ± 0.07	-0.26 ± 0.39	-0.51 ± 0.55	-0.93 ± 0.69	-0.75 ± 0.66
	b	-0.70 ± 0.08	0.09 ± 0.41	0.24 ± 0.54	0.09 ± 0.62	0.30 ± 0.46
	ba	-0.46 ± 0.05	0.07 ± 0.20	-0.03 ± 0.26	0.81 ± 0.30	-0.67 ± 0.40
	bad	-0.53 ± 0.05	0.18 ± 0.22	0.20 ± 0.23	0.99 ± 0.27	-0.64 ± 0.28
	badq	-0.42 ± 0.05	0.65 ± 0.32	0.18 ± 0.41	1.29 ± 0.39	-0.91 ± 0.42
DEN		-0.21 ± 0.06	-0.26 ± 0.29	-0.12 ± 0.43	0.44 ± 0.43	0.36 ± 0.35
	b	-0.18 ± 0.06	-0.57 ± 0.30	-0.35 ± 0.38	0.66 ± 0.37	-1.41 ± 0.50
	ba	-0.25 ± 0.04	0.17 ± 0.18	0.22 ± 0.22	0.44 ± 0.41	-0.10 ± 0.28

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Table 43 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-0.26 ± 0.04	-0.04 ± 0.17	-0.09 ± 0.26	0.56 ± 0.41	-0.71 ± 0.30
	badq	-0.11 ± 0.04	0.33 ± 0.18	0.11 ± 0.20	0.02 ± 0.29	0.03 ± 0.28
IND		0.64 ± 0.08	-0.37 ± 0.40	-0.88 ± 0.55	1.01 ± 0.37	-3.21 ± 0.57
	b	0.04 ± 0.08	0.75 ± 0.42	-0.05 ± 0.62	3.31 ± 0.70	-2.88 ± 0.41
	ba	0.24 ± 0.07	1.05 ± 0.44	-0.08 ± 0.43	0.35 ± 0.60	-1.49 ± 0.46
	bad	0.11 ± 0.05	0.60 ± 0.34	0.36 ± 0.35	0.42 ± 0.50	2.04 ± 0.39
	badq	-0.33 ± 0.12	3.28 ± 0.59	1.60 ± 0.92	10.20 ± 0.67	-7.01 ± 0.64
OXE		0.47 ± 0.04	0.27 ± 0.22	0.25 ± 0.25	1.31 ± 0.53	-0.57 ± 0.58
	b	0.59 ± 0.04	0.31 ± 0.20	0.25 ± 0.26	-0.24 ± 0.56	-0.06 ± 0.23
	ba	0.49 ± 0.04	0.19 ± 0.19	0.14 ± 0.23	0.23 ± 0.28	-0.20 ± 0.28
	bad	0.64 ± 0.04	0.22 ± 0.18	-0.02 ± 0.21	0.11 ± 0.46	-0.69 ± 0.26
	badq	0.88 ± 0.05	0.87 ± 0.28	0.15 ± 0.49	0.84 ± 0.66	-0.87 ± 0.53
N4B		0.11 ± 0.06	-0.73 ± 0.28	-0.77 ± 0.40	-1.33 ± 0.58	0.83 ± 0.54
	b	0.03 ± 0.04	-0.70 ± 0.27	-0.46 ± 0.35	-1.26 ± 0.54	0.87 ± 0.39
	ba	0.15 ± 0.04	-1.24 ± 0.24	-1.12 ± 0.30	-0.72 ± 0.38	-1.22 ± 0.37
	bad	0.20 ± 0.04	-0.55 ± 0.23	-0.58 ± 0.28	-0.68 ± 0.29	0.56 ± 0.59
	badq	-0.07 ± 0.05	-0.18 ± 0.31	0.04 ± 0.46	1.58 ± 0.33	-1.98 ± 0.62

Table 44: MM-to-QM net ligand binding free energy correction values 3-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
BNZ		0.05 ± 0.03	0.05 ± 0.14	0.08 ± 0.11	0.10 ± 0.17	0.11 ± 0.18
	b	0.10 ± 0.02	0.04 ± 0.12	0.00 ± 0.10	0.03 ± 0.21	-0.13 ± 0.14
	ba	0.09 ± 0.02	-0.03 ± 0.11	-0.05 ± 0.10	0.02 ± 0.13	-0.07 ± 0.16
	bad	0.14 ± 0.02	-0.10 ± 0.09	-0.10 ± 0.07	0.07 ± 0.10	-0.23 ± 0.11
	badq	0.06 ± 0.02	-0.02 ± 0.11	-0.01 ± 0.11	0.14 ± 0.15	-0.15 ± 0.17
PXY		0.46 ± 0.04	0.15 ± 0.21	0.08 ± 0.20	-0.14 ± 0.30	0.66 ± 0.39
	b	0.43 ± 0.04	-0.28 ± 0.18	-0.32 ± 0.18	-0.15 ± 0.28	-0.36 ± 0.29
	ba	0.36 ± 0.03	-0.06 ± 0.16	-0.10 ± 0.11	-0.25 ± 0.25	0.05 ± 0.17
	bad	0.46 ± 0.04	0.01 ± 0.16	-0.09 ± 0.12	0.10 ± 0.33	-0.07 ± 0.20
	badq	0.38 ± 0.06	0.08 ± 0.28	-0.07 ± 0.26	0.37 ± 0.39	0.18 ± 0.42
I4B		0.06 ± 0.04	0.06 ± 0.26	0.15 ± 0.17	-0.04 ± 0.27	-0.01 ± 0.30
	b	0.00 ± 0.04	0.18 ± 0.23	0.21 ± 0.18	0.45 ± 0.28	-0.28 ± 0.37
	ba	0.12 ± 0.04	-0.13 ± 0.18	-0.02 ± 0.15	0.06 ± 0.32	-0.16 ± 0.19
	bad	-0.01 ± 0.04	-0.07 ± 0.18	0.01 ± 0.17	-0.02 ± 0.25	-0.15 ± 0.22
	badq	0.11 ± 0.06	-0.40 ± 0.24	-0.37 ± 0.24	0.30 ± 0.35	-1.04 ± 0.47
BZF		-0.69 ± 0.07	0.26 ± 0.32	0.09 ± 0.26	-0.34 ± 0.53	0.53 ± 0.41
	b	-0.70 ± 0.08	-0.44 ± 0.33	-0.25 ± 0.28	-0.89 ± 0.49	-0.10 ± 0.39
	ba	-0.46 ± 0.05	-0.03 ± 0.20	-0.03 ± 0.17	0.16 ± 0.22	-0.27 ± 0.27
	bad	-0.53 ± 0.05	0.19 ± 0.18	0.22 ± 0.15	0.52 ± 0.21	-0.08 ± 0.21
	badq	-0.42 ± 0.05	0.48 ± 0.22	0.35 ± 0.23	0.78 ± 0.28	0.00 ± 0.36
DEN		-0.21 ± 0.06	-0.62 ± 0.30	-0.55 ± 0.26	-0.66 ± 0.36	-0.12 ± 0.30
	b	-0.18 ± 0.06	-0.07 ± 0.28	-0.15 ± 0.23	-0.10 ± 0.40	-0.03 ± 0.45
	ba	-0.25 ± 0.04	0.18 ± 0.19	0.18 ± 0.15	0.20 ± 0.23	0.25 ± 0.19

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Table 44 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-0.26 ± 0.04	-0.17 ± 0.15	-0.18 ± 0.15	0.04 ± 0.22	-0.24 ± 0.19
	badq	-0.11 ± 0.04	-0.16 ± 0.20	-0.16 ± 0.14	-0.36 ± 0.20	1.20 ± 0.54
IND		0.64 ± 0.08	0.01 ± 0.35	-0.15 ± 0.31	0.10 ± 0.40	-1.32 ± 0.43
	b	0.04 ± 0.08	-0.30 ± 0.35	-0.28 ± 0.31	0.38 ± 0.60	-1.41 ± 0.35
	ba	0.24 ± 0.07	-0.09 ± 0.29	-0.18 ± 0.23	0.26 ± 0.38	-0.85 ± 0.40
	bad	0.11 ± 0.05	0.12 ± 0.26	0.12 ± 0.23	0.13 ± 0.37	1.01 ± 0.32
	badq	-0.33 ± 0.12	0.80 ± 0.48	-0.05 ± 0.82	3.39 ± 0.79	-3.23 ± 0.52
OXE		0.47 ± 0.04	-0.08 ± 0.19	-0.02 ± 0.17	0.00 ± 0.28	-0.06 ± 0.28
	b	0.59 ± 0.04	-0.25 ± 0.19	-0.14 ± 0.17	-0.25 ± 0.37	-0.26 ± 0.22
	ba	0.49 ± 0.04	0.17 ± 0.19	0.15 ± 0.15	0.12 ± 0.21	0.18 ± 0.21
	bad	0.64 ± 0.04	-0.05 ± 0.19	-0.05 ± 0.14	-0.06 ± 0.23	-0.17 ± 0.18
	badq	0.88 ± 0.05	0.01 ± 0.24	0.06 ± 0.23	0.10 ± 0.43	-0.57 ± 0.33
N4B		0.11 ± 0.06	-0.88 ± 0.23	-0.86 ± 0.19	-0.89 ± 0.45	-0.32 ± 0.39
	b	0.03 ± 0.04	-0.31 ± 0.24	-0.35 ± 0.19	-0.97 ± 0.34	0.45 ± 0.31
	ba	0.15 ± 0.04	-0.75 ± 0.18	-0.79 ± 0.15	-0.69 ± 0.23	-0.78 ± 0.25
	bad	0.20 ± 0.04	-0.35 ± 0.18	-0.35 ± 0.16	-0.45 ± 0.24	-0.17 ± 0.30
	badq	-0.07 ± 0.05	0.12 ± 0.24	0.08 ± 0.26	0.37 ± 0.39	-0.51 ± 0.39

Table 45: MM-to-QM net ligand binding free energy correction values 6-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		0.05 ± 0.03	0.04 ± 0.09	0.04 ± 0.08	0.03 ± 0.11	0.06 ± 0.10
	b	0.10 ± 0.02	0.01 ± 0.08	-0.01 ± 0.07	0.04 ± 0.10	-0.06 ± 0.09
	ba	0.09 ± 0.02	0.02 ± 0.07	0.02 ± 0.06	0.06 ± 0.09	0.01 ± 0.08
	bad	0.14 ± 0.02	-0.12 ± 0.06	-0.12 ± 0.05	-0.06 ± 0.07	-0.17 ± 0.08
	badq	0.06 ± 0.02	0.13 ± 0.08	0.14 ± 0.08	0.18 ± 0.10	0.09 ± 0.10
PXY		0.46 ± 0.04	0.03 ± 0.12	0.04 ± 0.09	0.01 ± 0.13	0.10 ± 0.15
	b	0.43 ± 0.04	0.13 ± 0.12	0.08 ± 0.09	0.09 ± 0.16	0.07 ± 0.14
	ba	0.36 ± 0.03	0.03 ± 0.10	0.02 ± 0.07	-0.05 ± 0.12	0.09 ± 0.12
	bad	0.46 ± 0.04	-0.16 ± 0.10	-0.19 ± 0.07	-0.19 ± 0.11	-0.15 ± 0.11
	badq	0.38 ± 0.06	0.23 ± 0.16	0.18 ± 0.14	0.27 ± 0.19	0.14 ± 0.21
I4B		0.06 ± 0.04	-0.10 ± 0.14	-0.09 ± 0.10	0.00 ± 0.14	-0.21 ± 0.16
	b	0.00 ± 0.04	0.27 ± 0.14	0.27 ± 0.11	0.30 ± 0.17	0.16 ± 0.18
	ba	0.12 ± 0.04	0.00 ± 0.12	0.01 ± 0.09	0.08 ± 0.13	-0.09 ± 0.14
	bad	-0.01 ± 0.04	-0.14 ± 0.12	-0.13 ± 0.09	-0.09 ± 0.14	-0.18 ± 0.15
	badq	0.11 ± 0.06	-0.18 ± 0.17	-0.18 ± 0.14	0.01 ± 0.19	-0.38 ± 0.23
BZF		-0.69 ± 0.07	0.08 ± 0.19	0.05 ± 0.16	-0.10 ± 0.26	0.27 ± 0.22
	b	-0.70 ± 0.08	-0.20 ± 0.20	-0.16 ± 0.16	-0.22 ± 0.25	-0.10 ± 0.24
	ba	-0.46 ± 0.05	-0.06 ± 0.12	-0.03 ± 0.10	0.03 ± 0.17	-0.12 ± 0.14
	bad	-0.53 ± 0.05	0.07 ± 0.13	0.10 ± 0.11	0.12 ± 0.18	0.10 ± 0.18
	badq	-0.42 ± 0.05	0.23 ± 0.15	0.22 ± 0.14	0.28 ± 0.18	0.12 ± 0.20
DEN		-0.21 ± 0.06	-0.13 ± 0.19	-0.17 ± 0.14	-0.19 ± 0.21	0.20 ± 0.20
	b	-0.18 ± 0.06	-0.05 ± 0.17	-0.05 ± 0.14	-0.02 ± 0.20	-0.17 ± 0.21
	ba	-0.25 ± 0.04	0.35 ± 0.11	0.34 ± 0.08	0.32 ± 0.13	0.35 ± 0.12

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Table 45 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-0.26 ± 0.04	0.41 ± 0.11	0.39 ± 0.10	0.43 ± 0.15	0.36 ± 0.13
	badq	-0.11 ± 0.04	-0.19 ± 0.10	-0.17 ± 0.09	-0.22 ± 0.13	-0.18 ± 0.12
IND		0.64 ± 0.08	-0.02 ± 0.24	-0.03 ± 0.19	-0.11 ± 0.28	-0.30 ± 0.28
	b	0.04 ± 0.08	0.69 ± 0.23	0.65 ± 0.18	0.87 ± 0.28	0.18 ± 0.24
	ba	0.24 ± 0.07	-0.17 ± 0.19	-0.22 ± 0.14	-0.28 ± 0.27	-0.20 ± 0.22
	bad	0.11 ± 0.05	0.09 ± 0.17	0.11 ± 0.13	0.10 ± 0.22	0.22 ± 0.18
	badq	-0.33 ± 0.12	-0.19 ± 0.31	-0.29 ± 0.32	0.87 ± 0.47	-1.04 ± 0.49
OXE		0.47 ± 0.04	-0.21 ± 0.11	-0.20 ± 0.10	-0.18 ± 0.14	-0.21 ± 0.13
	b	0.59 ± 0.04	-0.04 ± 0.11	-0.01 ± 0.10	-0.01 ± 0.17	-0.03 ± 0.13
	ba	0.49 ± 0.04	-0.07 ± 0.11	-0.05 ± 0.09	0.02 ± 0.13	-0.14 ± 0.14
	bad	0.64 ± 0.04	-0.11 ± 0.11	-0.10 ± 0.09	-0.05 ± 0.12	-0.17 ± 0.15
	badq	0.88 ± 0.05	-0.01 ± 0.18	0.01 ± 0.15	-0.05 ± 0.25	-0.09 ± 0.23
N4B		0.11 ± 0.06	-0.43 ± 0.13	-0.42 ± 0.11	-0.59 ± 0.17	-0.21 ± 0.17
	b	0.03 ± 0.04	0.04 ± 0.14	0.03 ± 0.12	-0.12 ± 0.20	0.16 ± 0.17
	ba	0.15 ± 0.04	-0.41 ± 0.12	-0.46 ± 0.10	-0.47 ± 0.15	-0.43 ± 0.14
	bad	0.20 ± 0.04	-0.13 ± 0.12	-0.14 ± 0.10	-0.20 ± 0.14	-0.07 ± 0.15
	badq	-0.07 ± 0.05	-0.02 ± 0.14	-0.04 ± 0.14	0.17 ± 0.19	-0.25 ± 0.19

Table 46: MM-to-QM net ligand binding free energy correction values 2-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		0.05 ± 0.03	0.28 ± 0.34	0.46 ± 0.30	0.93 ± 0.43	0.92 ± 0.39
	b	0.10 ± 0.02	0.06 ± 0.22	0.19 ± 0.21	0.67 ± 0.23	-0.26 ± 0.31
	ba	0.09 ± 0.02	0.07 ± 0.22	0.26 ± 0.19	0.55 ± 0.19	0.19 ± 0.21
	bad	0.14 ± 0.02	-0.03 ± 0.19	0.07 ± 0.20	0.46 ± 0.19	0.22 ± 0.38
	badq	0.06 ± 0.02	0.59 ± 0.21	0.65 ± 0.23	0.66 ± 0.30	0.54 ± 0.24
PXY		0.46 ± 0.04	0.52 ± 0.49	0.45 ± 0.56	0.22 ± 0.65	-0.62 ± 0.60
	b	0.43 ± 0.04	0.12 ± 0.40	-0.03 ± 0.33	0.40 ± 0.25	-0.66 ± 0.29
	ba	0.36 ± 0.03	0.92 ± 0.30	0.95 ± 0.35	2.29 ± 0.60	1.76 ± 0.54
	bad	0.46 ± 0.04	0.86 ± 0.26	0.78 ± 0.30	2.18 ± 0.60	0.23 ± 0.34
	badq	0.38 ± 0.06	0.59 ± 0.62	-0.78 ± 0.57	0.89 ± 0.64	-2.17 ± 0.38
I4B		0.06 ± 0.04	-0.66 ± 0.47	-0.87 ± 0.51	-0.09 ± 0.67	-0.54 ± 0.52
	b	0.00 ± 0.04	0.13 ± 0.49	0.44 ± 0.54	0.33 ± 0.50	-0.27 ± 0.47
	ba	0.12 ± 0.04	0.12 ± 0.35	0.06 ± 0.47	0.21 ± 0.43	-0.02 ± 0.51
	bad	-0.01 ± 0.04	-0.11 ± 0.36	-0.22 ± 0.40	0.33 ± 0.33	-0.99 ± 0.37
	badq	0.11 ± 0.06	-0.01 ± 0.65	-1.13 ± 0.49	-0.64 ± 0.41	-1.99 ± 0.35
BZF		-0.69 ± 0.07	0.26 ± 0.59	1.28 ± 0.69	0.79 ± 0.59	2.44 ± 0.54
	b	-0.70 ± 0.08	-1.02 ± 0.75	-1.50 ± 0.84	-0.16 ± 0.57	-2.98 ± 0.71
	ba	-0.46 ± 0.05	0.59 ± 0.40	0.55 ± 0.41	-0.07 ± 0.41	2.00 ± 0.50
	bad	-0.53 ± 0.05	0.35 ± 0.41	0.45 ± 0.40	0.19 ± 0.41	0.61 ± 0.37
	badq	-0.42 ± 0.05	1.69 ± 0.56	1.45 ± 0.69	1.82 ± 0.60	0.35 ± 0.49
DEN		-0.21 ± 0.06	-0.27 ± 0.48	-0.94 ± 0.52	0.05 ± 0.60	-1.89 ± 0.41
	b	-0.18 ± 0.06	0.32 ± 0.60	0.45 ± 0.59	-0.01 ± 0.50	0.50 ± 0.49
	ba	-0.25 ± 0.04	-0.55 ± 0.30	-0.55 ± 0.35	-0.17 ± 0.33	-0.41 ± 0.46

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Table 46 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-0.26 ± 0.04	0.07 ± 0.29	-0.02 ± 0.25	-0.20 ± 0.26	0.02 ± 0.28
	badq	-0.11 ± 0.04	0.18 ± 0.40	-0.30 ± 0.34	0.80 ± 0.30	-1.40 ± 0.28
IND		0.64 ± 0.08	0.58 ± 0.84	0.38 ± 0.89	2.74 ± 0.62	-2.28 ± 0.70
	b	0.04 ± 0.08	-0.20 ± 0.89	0.26 ± 0.95	1.87 ± 0.64	-1.37 ± 0.74
	ba	0.24 ± 0.07	-0.24 ± 0.57	-0.63 ± 0.51	4.53 ± 0.60	-3.97 ± 0.51
	bad	0.11 ± 0.05	0.10 ± 0.49	0.62 ± 0.51	4.69 ± 0.62	-1.45 ± 0.35
	badq	-0.33 ± 0.12	4.93 ± 1.27	1.58 ± 1.04	11.33 ± 0.77	-8.15 ± 0.75
OXE		0.47 ± 0.04	0.22 ± 0.44	0.41 ± 0.50	0.17 ± 0.42	0.67 ± 0.41
	b	0.59 ± 0.04	0.03 ± 0.39	-0.02 ± 0.39	0.11 ± 0.30	-0.09 ± 0.38
	ba	0.49 ± 0.04	-0.13 ± 0.38	-0.01 ± 0.38	0.07 ± 0.29	-0.11 ± 0.35
	bad	0.64 ± 0.04	0.13 ± 0.37	0.33 ± 0.33	-0.03 ± 0.29	0.68 ± 0.29
	badq	0.88 ± 0.05	0.92 ± 0.49	0.34 ± 0.48	1.63 ± 0.41	-1.24 ± 0.38
N4B		0.11 ± 0.06	-0.20 ± 0.37	-0.27 ± 0.50	-1.40 ± 0.53	0.20 ± 0.49
	b	0.03 ± 0.04	-0.54 ± 0.40	-0.59 ± 0.48	-1.62 ± 0.59	-0.19 ± 0.41
	ba	0.15 ± 0.04	-0.56 ± 0.43	-0.74 ± 0.40	-1.50 ± 0.50	0.42 ± 0.55
	bad	0.20 ± 0.04	-0.68 ± 0.38	-0.93 ± 0.35	-1.47 ± 0.48	-0.93 ± 0.30
	badq	-0.07 ± 0.05	0.05 ± 0.54	-0.68 ± 0.57	-0.40 ± 0.47	-1.04 ± 0.52

Table 47: MM-to-QM net ligand binding free energy correction values 3-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
BNZ		0.05 ± 0.03	0.54 ± 0.26	0.52 ± 0.20	0.68 ± 0.25	0.75 ± 0.31
	b	0.10 ± 0.02	-0.12 ± 0.20	-0.06 ± 0.15	0.07 ± 0.19	-0.13 ± 0.21
	ba	0.09 ± 0.02	-0.21 ± 0.26	-0.09 ± 0.16	-0.27 ± 0.29	0.01 ± 0.20
	bad	0.14 ± 0.02	-0.51 ± 0.13	-0.41 ± 0.11	-0.14 ± 0.14	-0.49 ± 0.19
	badq	0.06 ± 0.02	0.01 ± 0.24	0.11 ± 0.18	0.15 ± 0.20	0.34 ± 0.34
PXY		0.46 ± 0.04	0.26 ± 0.44	0.24 ± 0.34	0.19 ± 0.48	0.30 ± 0.48
	b	0.43 ± 0.04	-0.08 ± 0.32	-0.09 ± 0.25	0.18 ± 0.29	-0.36 ± 0.32
	ba	0.36 ± 0.03	0.14 ± 0.21	0.25 ± 0.18	0.80 ± 0.33	0.37 ± 0.37
	bad	0.46 ± 0.04	0.19 ± 0.25	0.30 ± 0.18	0.78 ± 0.37	0.03 ± 0.23
	badq	0.38 ± 0.06	0.49 ± 0.40	0.47 ± 0.43	0.70 ± 0.44	-0.57 ± 0.42
I4B		0.06 ± 0.04	-0.71 ± 0.43	-0.81 ± 0.32	-0.10 ± 0.58	-1.21 ± 0.34
	b	0.00 ± 0.04	-0.17 ± 0.31	-0.10 ± 0.31	-0.12 ± 0.43	-0.17 ± 0.35
	ba	0.12 ± 0.04	-0.54 ± 0.34	-0.40 ± 0.33	-0.52 ± 0.44	-0.38 ± 0.38
	bad	-0.01 ± 0.04	0.02 ± 0.26	-0.04 ± 0.26	0.15 ± 0.28	-0.32 ± 0.26
	badq	0.11 ± 0.06	0.40 ± 0.62	0.06 ± 0.45	-1.08 ± 0.59	0.20 ± 0.45
BZF		-0.69 ± 0.07	-0.25 ± 0.53	-0.18 ± 0.44	0.11 ± 0.54	0.43 ± 0.59
	b	-0.70 ± 0.08	0.05 ± 0.64	-0.07 ± 0.62	0.15 ± 0.72	-0.76 ± 0.67
	ba	-0.46 ± 0.05	0.66 ± 0.27	0.63 ± 0.22	0.36 ± 0.32	1.13 ± 0.38
	bad	-0.53 ± 0.05	-0.12 ± 0.45	-0.07 ± 0.33	-0.25 ± 0.40	0.55 ± 0.42
	badq	-0.42 ± 0.05	0.28 ± 0.45	0.46 ± 0.41	0.43 ± 0.61	0.13 ± 0.39
DEN		-0.21 ± 0.06	0.21 ± 0.47	0.01 ± 0.35	0.63 ± 0.50	-0.76 ± 0.47
	b	-0.18 ± 0.06	-0.17 ± 0.50	0.01 ± 0.40	-0.02 ± 0.48	-0.03 ± 0.50
	ba	-0.25 ± 0.04	-0.35 ± 0.29	-0.38 ± 0.23	-0.31 ± 0.30	-0.44 ± 0.28

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Table 47 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-0.26 ± 0.04	0.12 ± 0.35	0.15 ± 0.21	-0.39 ± 0.40	0.27 ± 0.23
	badq	-0.11 ± 0.04	0.45 ± 0.35	0.25 ± 0.30	0.49 ± 0.34	-0.18 ± 0.32
IND		0.64 ± 0.08	0.89 ± 0.64	0.94 ± 0.63	1.40 ± 0.60	0.49 ± 0.79
	b	0.04 ± 0.08	-0.72 ± 0.68	-0.48 ± 0.65	-0.56 ± 0.67	-0.05 ± 0.75
	ba	0.24 ± 0.07	-0.90 ± 0.45	-0.89 ± 0.42	1.23 ± 0.60	-2.18 ± 0.49
	bad	0.11 ± 0.05	0.59 ± 0.31	0.68 ± 0.31	2.39 ± 0.52	-0.42 ± 0.31
	badq	-0.33 ± 0.12	1.56 ± 1.12	0.85 ± 0.96	4.29 ± 0.97	-1.57 ± 0.73
OXE		0.47 ± 0.04	0.15 ± 0.43	0.21 ± 0.34	0.09 ± 0.45	0.56 ± 0.46
	b	0.59 ± 0.04	0.07 ± 0.36	0.10 ± 0.28	-0.05 ± 0.36	0.06 ± 0.32
	ba	0.49 ± 0.04	-0.41 ± 0.33	-0.30 ± 0.29	-0.35 ± 0.31	-0.25 ± 0.31
	bad	0.64 ± 0.04	0.62 ± 0.32	0.52 ± 0.23	0.35 ± 0.25	1.12 ± 0.39
	badq	0.88 ± 0.05	0.39 ± 0.37	0.45 ± 0.31	1.03 ± 0.39	-0.79 ± 0.39
N4B		0.11 ± 0.06	0.27 ± 0.35	0.18 ± 0.28	-0.12 ± 0.37	0.33 ± 0.42
	b	0.03 ± 0.04	0.43 ± 0.38	0.26 ± 0.28	-0.46 ± 0.43	0.59 ± 0.47
	ba	0.15 ± 0.04	-1.11 ± 0.38	-0.99 ± 0.28	-1.45 ± 0.46	-0.74 ± 0.40
	bad	0.20 ± 0.04	-0.16 ± 0.37	-0.32 ± 0.29	-0.60 ± 0.39	-0.19 ± 0.39
	badq	-0.07 ± 0.05	-0.07 ± 0.51	-0.18 ± 0.37	-0.69 ± 0.51	-0.11 ± 0.47

Table 48: MM-to-QM net ligand binding free energy correction values 6-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		0.05 ± 0.03	0.13 ± 0.21	0.14 ± 0.15	0.19 ± 0.21	0.17 ± 0.23
	b	0.10 ± 0.02	-0.14 ± 0.14	-0.14 ± 0.11	-0.13 ± 0.15	-0.14 ± 0.15
	ba	0.09 ± 0.02	0.30 ± 0.10	0.29 ± 0.09	0.35 ± 0.11	0.27 ± 0.11
	bad	0.14 ± 0.02	0.07 ± 0.14	0.06 ± 0.09	0.07 ± 0.14	0.06 ± 0.14
	badq	0.06 ± 0.02	0.63 ± 0.13	0.63 ± 0.10	0.59 ± 0.16	0.66 ± 0.14
PXY		0.46 ± 0.04	0.17 ± 0.26	0.15 ± 0.19	0.19 ± 0.26	0.09 ± 0.30
	b	0.43 ± 0.04	0.16 ± 0.22	0.16 ± 0.17	0.16 ± 0.23	0.13 ± 0.22
	ba	0.36 ± 0.03	0.34 ± 0.18	0.37 ± 0.14	0.43 ± 0.21	0.38 ± 0.22
	bad	0.46 ± 0.04	0.00 ± 0.18	0.08 ± 0.12	0.10 ± 0.19	0.03 ± 0.17
	badq	0.38 ± 0.06	0.20 ± 0.32	0.25 ± 0.24	0.16 ± 0.33	0.02 ± 0.34
I4B		0.06 ± 0.04	0.00 ± 0.32	-0.05 ± 0.21	-0.22 ± 0.37	0.03 ± 0.29
	b	0.00 ± 0.04	0.25 ± 0.22	0.21 ± 0.20	0.32 ± 0.27	0.15 ± 0.25
	ba	0.12 ± 0.04	0.25 ± 0.24	0.27 ± 0.18	0.22 ± 0.27	0.31 ± 0.23
	bad	-0.01 ± 0.04	-0.16 ± 0.21	-0.16 ± 0.16	-0.13 ± 0.21	-0.20 ± 0.21
	badq	0.11 ± 0.06	0.01 ± 0.28	0.00 ± 0.23	-0.05 ± 0.33	-0.27 ± 0.29
BZF		-0.69 ± 0.07	-0.12 ± 0.39	-0.13 ± 0.26	-0.52 ± 0.41	0.11 ± 0.36
	b	-0.70 ± 0.08	0.43 ± 0.48	0.40 ± 0.35	0.22 ± 0.53	0.46 ± 0.49
	ba	-0.46 ± 0.05	0.62 ± 0.25	0.59 ± 0.16	0.31 ± 0.19	0.91 ± 0.27
	bad	-0.53 ± 0.05	-0.21 ± 0.23	-0.17 ± 0.17	-0.25 ± 0.23	-0.11 ± 0.23
	badq	-0.42 ± 0.05	0.13 ± 0.32	0.19 ± 0.23	0.23 ± 0.34	0.06 ± 0.30
DEN		-0.21 ± 0.06	0.20 ± 0.32	0.19 ± 0.23	0.56 ± 0.34	-0.13 ± 0.33
	b	-0.18 ± 0.06	0.30 ± 0.31	0.34 ± 0.23	0.27 ± 0.33	0.46 ± 0.31
	ba	-0.25 ± 0.04	-0.63 ± 0.18	-0.59 ± 0.13	-0.55 ± 0.18	-0.61 ± 0.19

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Table 48 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-0.26 ± 0.04	-0.48 ± 0.21	-0.49 ± 0.14	-0.61 ± 0.20	-0.35 ± 0.21
	badq	-0.11 ± 0.04	-0.39 ± 0.21	-0.38 ± 0.16	-0.24 ± 0.24	-0.61 ± 0.19
IND		0.64 ± 0.08	0.46 ± 0.43	0.52 ± 0.35	0.71 ± 0.45	0.17 ± 0.49
	b	0.04 ± 0.08	0.63 ± 0.43	0.65 ± 0.38	0.48 ± 0.44	0.83 ± 0.51
	ba	0.24 ± 0.07	-0.29 ± 0.31	-0.30 ± 0.24	0.19 ± 0.35	-0.79 ± 0.31
	bad	0.11 ± 0.05	0.44 ± 0.32	0.51 ± 0.23	0.74 ± 0.39	0.28 ± 0.29
	badq	-0.33 ± 0.12	1.09 ± 0.58	0.96 ± 0.52	2.02 ± 0.60	-0.04 ± 0.63
OXE		0.47 ± 0.04	0.50 ± 0.23	0.49 ± 0.19	0.47 ± 0.26	0.56 ± 0.27
	b	0.59 ± 0.04	0.25 ± 0.23	0.22 ± 0.16	0.24 ± 0.20	0.17 ± 0.30
	ba	0.49 ± 0.04	0.53 ± 0.23	0.51 ± 0.17	0.47 ± 0.23	0.56 ± 0.26
	bad	0.64 ± 0.04	0.25 ± 0.20	0.27 ± 0.14	0.26 ± 0.19	0.33 ± 0.19
	badq	0.88 ± 0.05	0.44 ± 0.29	0.46 ± 0.22	0.42 ± 0.29	0.44 ± 0.31
N4B		0.11 ± 0.06	0.18 ± 0.25	0.16 ± 0.18	0.08 ± 0.25	0.17 ± 0.26
	b	0.03 ± 0.04	0.24 ± 0.24	0.19 ± 0.17	-0.03 ± 0.26	0.39 ± 0.24
	ba	0.15 ± 0.04	-0.52 ± 0.23	-0.53 ± 0.17	-0.69 ± 0.26	-0.41 ± 0.25
	bad	0.20 ± 0.04	-0.80 ± 0.22	-0.82 ± 0.16	-0.86 ± 0.21	-0.86 ± 0.22
	badq	-0.07 ± 0.05	0.82 ± 0.28	0.75 ± 0.24	0.71 ± 0.30	0.73 ± 0.32

Table 49: MM-to-QM bound-state ligand binding free energy correction values 2-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		-145560.83 ± 0.02	0.02 ± 0.04	0.00 ± 0.04	-0.13 ± 0.07	0.01 ± 0.13
	b	-145561.25 ± 0.01	0.02 ± 0.03	0.02 ± 0.03	-0.03 ± 0.04	0.03 ± 0.05
	ba	-145565.40 ± 0.01	0.00 ± 0.02	-0.01 ± 0.02	-0.03 ± 0.03	-0.01 ± 0.04
	bad	-145565.73 ± 0.01	-0.01 ± 0.03	-0.01 ± 0.03	-0.03 ± 0.03	-0.13 ± 0.08
	badq	-145566.51 ± 0.01	0.05 ± 0.03	0.04 ± 0.03	0.00 ± 0.04	0.06 ± 0.04
PXY		-194835.81 ± 0.03	-0.09 ± 0.07	-0.04 ± 0.08	0.58 ± 0.43	0.26 ± 0.12
	b	-194836.45 ± 0.03	0.00 ± 0.07	-0.07 ± 0.08	0.84 ± 0.50	-0.04 ± 0.18
	ba	-194843.36 ± 0.02	-0.02 ± 0.05	-0.01 ± 0.05	0.12 ± 0.12	0.08 ± 0.06
	bad	-194843.43 ± 0.02	-0.01 ± 0.05	-0.01 ± 0.05	0.02 ± 0.12	0.09 ± 0.07
	badq	-194848.27 ± 0.02	-0.04 ± 0.05	-0.04 ± 0.05	0.14 ± 0.10	-0.27 ± 0.10
I4B		-244115.72 ± 0.03	-0.15 ± 0.10	0.01 ± 0.10	0.21 ± 0.20	0.01 ± 0.35
	b	-244116.40 ± 0.03	-0.06 ± 0.09	0.11 ± 0.09	0.12 ± 0.25	0.52 ± 0.14
	ba	-244120.30 ± 0.03	-0.06 ± 0.09	0.04 ± 0.08	-0.15 ± 0.14	0.31 ± 0.11
	bad	-244120.62 ± 0.03	-0.13 ± 0.09	-0.02 ± 0.08	-0.18 ± 0.12	-0.27 ± 0.27
	badq	-244120.29 ± 0.03	-0.18 ± 0.09	-0.09 ± 0.08	-0.23 ± 0.13	0.00 ± 0.14
BZF		-240489.62 ± 0.05	-0.25 ± 0.13	0.01 ± 0.19	-0.07 ± 0.31	0.03 ± 0.47
	b	-240489.38 ± 0.05	0.04 ± 0.13	-0.19 ± 0.17	-1.01 ± 0.22	0.62 ± 0.20
	ba	-240530.92 ± 0.02	-0.06 ± 0.06	-0.14 ± 0.06	-0.14 ± 0.09	-0.33 ± 0.10
	bad	-240530.51 ± 0.02	0.03 ± 0.06	-0.05 ± 0.06	-0.05 ± 0.08	-0.07 ± 0.11
	badq	-240531.52 ± 0.03	0.44 ± 0.08	0.36 ± 0.08	0.15 ± 0.11	0.09 ± 0.36
DEN		-217978.77 ± 0.04	-0.04 ± 0.09	0.03 ± 0.11	-0.59 ± 0.13	0.66 ± 0.12
	b	-217978.52 ± 0.04	-0.01 ± 0.11	-0.31 ± 0.11	-0.57 ± 0.17	-0.33 ± 0.21
	ba	-218030.92 ± 0.02	0.06 ± 0.05	0.06 ± 0.04	-0.10 ± 0.05	0.09 ± 0.08

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Table 49 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	0.15 ± 0.05	0.11 ± 0.05	-0.05 ± 0.05	0.05 ± 0.10
	badq	-218028.61 ± 0.02	0.10 ± 0.05	0.06 ± 0.05	-0.23 ± 0.06	0.04 ± 0.21
IND		-228035.12 ± 0.05	-0.12 ± 0.14	-0.03 ± 0.20	-0.27 ± 0.42	0.07 ± 0.42
	b	-228035.94 ± 0.05	0.56 ± 0.15	-0.08 ± 0.18	-1.16 ± 0.23	1.00 ± 0.19
	ba	-228074.91 ± 0.04	0.72 ± 0.13	0.14 ± 0.10	-0.39 ± 0.13	0.21 ± 0.18
	bad	-228077.33 ± 0.03	0.48 ± 0.09	0.14 ± 0.08	-0.23 ± 0.10	0.43 ± 0.10
	badq	-228072.52 ± 0.05	0.61 ± 0.13	0.48 ± 0.25	-0.71 ± 0.24	0.92 ± 0.54
OXE		-194837.98 ± 0.03	-0.06 ± 0.08	0.01 ± 0.09	-0.14 ± 0.19	0.23 ± 0.14
	b	-194838.48 ± 0.02	-0.10 ± 0.06	-0.04 ± 0.06	-0.05 ± 0.12	-0.14 ± 0.16
	ba	-194846.17 ± 0.02	-0.06 ± 0.06	0.05 ± 0.06	0.03 ± 0.11	0.12 ± 0.11
	bad	-194846.38 ± 0.02	-0.12 ± 0.06	-0.02 ± 0.06	-0.05 ± 0.11	0.19 ± 0.09
	badq	-194844.03 ± 0.03	-0.15 ± 0.07	-0.08 ± 0.07	-0.15 ± 0.10	-0.17 ± 0.13
N4B		-244115.50 ± 0.03	-0.29 ± 0.09	-0.23 ± 0.10	-0.01 ± 0.24	-0.13 ± 0.21
	b	-244116.16 ± 0.03	0.03 ± 0.08	0.04 ± 0.11	-0.39 ± 0.18	0.49 ± 0.16
	ba	-244122.56 ± 0.02	-0.07 ± 0.06	-0.02 ± 0.06	-0.13 ± 0.16	0.19 ± 0.14
	bad	-244123.06 ± 0.02	0.06 ± 0.06	0.09 ± 0.07	0.01 ± 0.17	0.12 ± 0.16
	badq	-244116.03 ± 0.03	-0.08 ± 0.08	0.02 ± 0.09	0.31 ± 0.22	-0.21 ± 0.14

Table 50: MM-to-QM bound-state ligand binding free energy correction values 3-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.83 ± 0.02	0.02 ± 0.04	0.01 ± 0.04	-0.03 ± 0.06	0.05 ± 0.05
	b	-145561.25 ± 0.01	0.05 ± 0.03	0.05 ± 0.02	0.03 ± 0.03	0.06 ± 0.03
	ba	-145565.40 ± 0.01	-0.02 ± 0.02	-0.02 ± 0.02	-0.02 ± 0.02	-0.03 ± 0.03
	bad	-145565.73 ± 0.01	0.00 ± 0.03	0.00 ± 0.02	0.00 ± 0.02	-0.04 ± 0.04
	badq	-145566.51 ± 0.01	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.03	0.03 ± 0.02
PXY		-194835.81 ± 0.03	0.06 ± 0.07	0.04 ± 0.05	0.10 ± 0.12	0.10 ± 0.08
	b	-194836.45 ± 0.03	-0.01 ± 0.07	-0.02 ± 0.06	0.08 ± 0.17	-0.01 ± 0.09
	ba	-194843.36 ± 0.02	-0.08 ± 0.05	-0.07 ± 0.04	0.03 ± 0.07	-0.10 ± 0.06
	bad	-194843.43 ± 0.02	0.00 ± 0.04	-0.01 ± 0.04	0.01 ± 0.07	-0.01 ± 0.06
	badq	-194848.27 ± 0.02	-0.18 ± 0.04	-0.15 ± 0.04	-0.06 ± 0.06	-0.24 ± 0.07
I4B		-244115.72 ± 0.03	-0.02 ± 0.08	0.02 ± 0.07	0.07 ± 0.11	0.05 ± 0.12
	b	-244116.40 ± 0.03	0.15 ± 0.08	0.17 ± 0.06	0.18 ± 0.09	0.28 ± 0.08
	ba	-244120.30 ± 0.03	0.06 ± 0.08	0.08 ± 0.06	0.12 ± 0.13	0.10 ± 0.09
	bad	-244120.62 ± 0.03	0.15 ± 0.07	0.15 ± 0.06	0.12 ± 0.08	0.12 ± 0.09
	badq	-244120.29 ± 0.03	-0.12 ± 0.08	-0.07 ± 0.06	0.04 ± 0.12	-0.39 ± 0.18
BZF		-240489.62 ± 0.05	-0.03 ± 0.11	-0.05 ± 0.10	-0.05 ± 0.18	-0.20 ± 0.28
	b	-240489.38 ± 0.05	0.11 ± 0.11	0.05 ± 0.11	-0.16 ± 0.18	0.23 ± 0.15
	ba	-240530.92 ± 0.02	-0.01 ± 0.05	-0.05 ± 0.04	-0.01 ± 0.07	-0.14 ± 0.06
	bad	-240530.51 ± 0.02	-0.04 ± 0.05	-0.05 ± 0.04	0.03 ± 0.09	-0.08 ± 0.06
	badq	-240531.52 ± 0.03	0.19 ± 0.06	0.21 ± 0.05	0.12 ± 0.07	0.18 ± 0.10
DEN		-217978.77 ± 0.04	-0.14 ± 0.09	-0.09 ± 0.07	-0.17 ± 0.09	-0.11 ± 0.12
	b	-217978.52 ± 0.04	0.00 ± 0.09	-0.06 ± 0.07	-0.10 ± 0.11	-0.17 ± 0.12
	ba	-218030.92 ± 0.02	0.07 ± 0.04	0.06 ± 0.04	0.05 ± 0.05	0.09 ± 0.04

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Table 50 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	0.08 ± 0.04	0.09 ± 0.04	0.08 ± 0.05	0.05 ± 0.06
	badq	-218028.61 ± 0.02	-0.01 ± 0.04	0.00 ± 0.04	-0.06 ± 0.08	0.02 ± 0.07
IND		-228035.12 ± 0.05	0.07 ± 0.12	0.07 ± 0.11	0.10 ± 0.19	-0.12 ± 0.23
	b	-228035.94 ± 0.05	0.06 ± 0.12	0.01 ± 0.10	-0.27 ± 0.14	0.12 ± 0.15
	ba	-228074.91 ± 0.04	0.13 ± 0.08	0.04 ± 0.07	-0.24 ± 0.09	0.16 ± 0.10
	bad	-228077.33 ± 0.03	0.14 ± 0.07	0.09 ± 0.06	-0.02 ± 0.09	0.21 ± 0.08
	badq	-228072.52 ± 0.05	0.11 ± 0.12	0.09 ± 0.12	-0.11 ± 0.32	0.37 ± 0.28
OXE		-194837.98 ± 0.03	0.01 ± 0.08	0.01 ± 0.06	0.07 ± 0.10	0.01 ± 0.09
	b	-194838.48 ± 0.02	-0.06 ± 0.05	-0.05 ± 0.04	-0.03 ± 0.06	-0.07 ± 0.07
	ba	-194846.17 ± 0.02	0.03 ± 0.05	0.04 ± 0.04	0.05 ± 0.06	0.06 ± 0.06
	bad	-194846.38 ± 0.02	-0.08 ± 0.05	-0.06 ± 0.04	-0.06 ± 0.06	-0.02 ± 0.07
	badq	-194844.03 ± 0.03	-0.12 ± 0.06	-0.11 ± 0.06	-0.08 ± 0.09	-0.12 ± 0.08
N4B		-244115.50 ± 0.03	-0.16 ± 0.07	-0.16 ± 0.07	-0.18 ± 0.10	-0.11 ± 0.10
	b	-244116.16 ± 0.03	-0.04 ± 0.07	-0.02 ± 0.07	-0.18 ± 0.09	0.13 ± 0.09
	ba	-244122.56 ± 0.02	-0.13 ± 0.05	-0.11 ± 0.04	-0.21 ± 0.06	0.03 ± 0.06
	bad	-244123.06 ± 0.02	0.03 ± 0.05	0.04 ± 0.05	-0.01 ± 0.09	0.12 ± 0.09
	badq	-244116.03 ± 0.03	0.07 ± 0.07	0.07 ± 0.08	0.25 ± 0.13	-0.12 ± 0.11

Table 51: MM-to-QM bound-state ligand binding free energy correction values 6-λ states simulated for 200 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		-145560.83 ± 0.02	-0.01 ± 0.04	-0.01 ± 0.03	-0.01 ± 0.04	0.00 ± 0.04
	b	-145561.25 ± 0.01	0.01 ± 0.02	0.01 ± 0.01	0.01 ± 0.02	0.02 ± 0.02
	ba	-145565.40 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	0.01 ± 0.02	0.00 ± 0.02
	bad	-145565.73 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	0.00 ± 0.02	-0.01 ± 0.02
	badq	-145566.51 ± 0.01	0.02 ± 0.02	0.03 ± 0.01	0.02 ± 0.02	0.03 ± 0.02
PXY		-194835.81 ± 0.03	-0.03 ± 0.05	-0.03 ± 0.04	-0.05 ± 0.05	0.01 ± 0.05
	b	-194836.45 ± 0.03	-0.02 ± 0.05	-0.02 ± 0.04	0.00 ± 0.06	-0.05 ± 0.06
	ba	-194843.36 ± 0.02	0.00 ± 0.04	-0.01 ± 0.03	0.01 ± 0.04	-0.02 ± 0.04
	bad	-194843.43 ± 0.02	-0.01 ± 0.04	-0.01 ± 0.03	-0.02 ± 0.04	0.00 ± 0.04
	badq	-194848.27 ± 0.02	0.13 ± 0.04	0.12 ± 0.04	0.18 ± 0.05	0.06 ± 0.04
I4B		-244115.72 ± 0.03	-0.10 ± 0.06	-0.09 ± 0.05	-0.05 ± 0.07	-0.12 ± 0.08
	b	-244116.40 ± 0.03	0.02 ± 0.05	0.03 ± 0.05	0.05 ± 0.07	0.03 ± 0.07
	ba	-244120.30 ± 0.03	-0.08 ± 0.05	-0.06 ± 0.04	-0.06 ± 0.06	-0.07 ± 0.06
	bad	-244120.62 ± 0.03	-0.02 ± 0.05	0.00 ± 0.04	0.00 ± 0.05	-0.02 ± 0.06
	badq	-244120.29 ± 0.03	-0.05 ± 0.05	-0.04 ± 0.04	-0.01 ± 0.06	-0.07 ± 0.08
BZF		-240489.62 ± 0.05	-0.06 ± 0.09	-0.06 ± 0.07	-0.07 ± 0.09	-0.10 ± 0.11
	b	-240489.38 ± 0.05	-0.06 ± 0.09	-0.06 ± 0.07	-0.05 ± 0.11	-0.06 ± 0.09
	ba	-240530.92 ± 0.02	-0.02 ± 0.04	-0.03 ± 0.03	-0.01 ± 0.04	-0.06 ± 0.04
	bad	-240530.51 ± 0.02	-0.01 ± 0.04	-0.01 ± 0.03	0.01 ± 0.04	-0.02 ± 0.04
	badq	-240531.52 ± 0.03	0.00 ± 0.05	0.01 ± 0.04	0.01 ± 0.05	-0.01 ± 0.06
DEN		-217978.77 ± 0.04	-0.03 ± 0.06	-0.03 ± 0.06	-0.03 ± 0.06	-0.04 ± 0.07
	b	-217978.52 ± 0.04	-0.09 ± 0.06	-0.09 ± 0.06	-0.10 ± 0.07	-0.12 ± 0.07
	ba	-218030.92 ± 0.02	0.01 ± 0.04	0.02 ± 0.03	0.02 ± 0.04	0.02 ± 0.04

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Table 51 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	0.00 ± 0.04	0.01 ± 0.03	0.01 ± 0.04	0.00 ± 0.04
	badq	-218028.61 ± 0.02	-0.06 ± 0.04	-0.06 ± 0.03	-0.07 ± 0.04	-0.04 ± 0.04
IND		-228035.12 ± 0.05	-0.05 ± 0.09	-0.05 ± 0.08	0.09 ± 0.10	-0.18 ± 0.11
	b	-228035.94 ± 0.05	-0.01 ± 0.09	-0.01 ± 0.08	-0.02 ± 0.10	-0.08 ± 0.10
	ba	-228074.91 ± 0.04	-0.02 ± 0.06	-0.04 ± 0.06	0.03 ± 0.11	-0.03 ± 0.06
	bad	-228077.33 ± 0.03	0.04 ± 0.05	0.04 ± 0.04	0.00 ± 0.06	0.07 ± 0.05
	badq	-228072.52 ± 0.05	0.06 ± 0.09	0.04 ± 0.09	-0.04 ± 0.13	0.12 ± 0.12
OXE		-194837.98 ± 0.03	-0.04 ± 0.05	-0.03 ± 0.04	-0.05 ± 0.05	-0.04 ± 0.06
	b	-194838.48 ± 0.02	-0.07 ± 0.04	-0.07 ± 0.04	-0.07 ± 0.04	-0.07 ± 0.04
	ba	-194846.17 ± 0.02	-0.03 ± 0.04	-0.03 ± 0.04	-0.01 ± 0.04	-0.04 ± 0.04
	bad	-194846.38 ± 0.02	0.03 ± 0.04	0.03 ± 0.04	0.03 ± 0.04	0.03 ± 0.04
	badq	-194844.03 ± 0.03	0.01 ± 0.05	0.01 ± 0.04	0.04 ± 0.06	-0.03 ± 0.06
N4B		-244115.50 ± 0.03	0.02 ± 0.05	0.01 ± 0.04	0.00 ± 0.06	0.01 ± 0.06
	b	-244116.16 ± 0.03	0.12 ± 0.05	0.11 ± 0.04	0.06 ± 0.06	0.16 ± 0.06
	ba	-244122.56 ± 0.02	0.01 ± 0.04	0.02 ± 0.04	-0.02 ± 0.04	0.03 ± 0.04
	bad	-244123.06 ± 0.02	0.02 ± 0.04	0.03 ± 0.04	0.01 ± 0.04	0.03 ± 0.05
	badq	-244116.03 ± 0.03	-0.07 ± 0.05	-0.06 ± 0.05	0.03 ± 0.09	-0.15 ± 0.09

Table 52: MM-to-QM bound-state ligand binding free energy correction values 2-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
BNZ		-145560.83 ± 0.02	0.04 ± 0.06	0.06 ± 0.06	-0.02 ± 0.10	0.16 ± 0.11
	b	-145561.25 ± 0.01	-0.06 ± 0.05	-0.04 ± 0.04	0.08 ± 0.06	-0.11 ± 0.06
	ba	-145565.40 ± 0.01	-0.02 ± 0.04	-0.02 ± 0.04	0.05 ± 0.05	-0.11 ± 0.08
	bad	-145565.73 ± 0.01	-0.01 ± 0.04	0.00 ± 0.04	0.03 ± 0.05	-0.06 ± 0.07
	badq	-145566.51 ± 0.01	0.05 ± 0.04	0.05 ± 0.04	0.05 ± 0.05	0.05 ± 0.05
PXY		-194835.81 ± 0.03	-0.08 ± 0.09	0.05 ± 0.11	-0.18 ± 0.21	0.46 ± 0.16
	b	-194836.45 ± 0.03	0.01 ± 0.09	0.02 ± 0.10	-0.08 ± 0.23	0.34 ± 0.14
	ba	-194843.36 ± 0.02	-0.10 ± 0.06	-0.11 ± 0.06	0.03 ± 0.12	-0.25 ± 0.21
	bad	-194843.43 ± 0.02	0.00 ± 0.07	-0.03 ± 0.07	-0.09 ± 0.12	0.13 ± 0.10
	badq	-194848.27 ± 0.02	-0.12 ± 0.07	-0.11 ± 0.09	-0.29 ± 0.15	0.10 ± 0.10
I4B		-244115.72 ± 0.03	0.05 ± 0.13	0.16 ± 0.11	0.03 ± 0.21	0.53 ± 0.15
	b	-244116.40 ± 0.03	0.18 ± 0.12	0.27 ± 0.11	-0.20 ± 0.13	0.05 ± 0.40
	ba	-244120.30 ± 0.03	-0.08 ± 0.11	-0.01 ± 0.11	-0.19 ± 0.13	0.25 ± 0.15
	bad	-244120.62 ± 0.03	0.04 ± 0.11	0.10 ± 0.09	-0.20 ± 0.13	0.51 ± 0.10
	badq	-244120.29 ± 0.03	-0.14 ± 0.13	-0.09 ± 0.10	-0.25 ± 0.15	-0.27 ± 0.37
BZF		-240489.62 ± 0.05	-0.27 ± 0.17	0.05 ± 0.28	0.05 ± 0.46	0.35 ± 0.53
	b	-240489.38 ± 0.05	0.10 ± 0.19	-0.37 ± 0.24	-1.05 ± 0.30	0.46 ± 0.23
	ba	-240530.92 ± 0.02	-0.02 ± 0.09	-0.10 ± 0.08	-0.08 ± 0.13	-0.20 ± 0.12
	bad	-240530.51 ± 0.02	0.07 ± 0.08	0.01 ± 0.08	0.02 ± 0.14	0.09 ± 0.11
	badq	-240531.52 ± 0.03	0.14 ± 0.09	0.08 ± 0.10	0.08 ± 0.15	0.22 ± 0.17
DEN		-217978.77 ± 0.04	-0.27 ± 0.14	-0.18 ± 0.14	0.14 ± 0.33	-0.49 ± 0.32
	b	-217978.52 ± 0.04	0.17 ± 0.15	0.01 ± 0.16	-0.27 ± 0.28	-1.32 ± 0.57
	ba	-218030.92 ± 0.02	0.07 ± 0.07	0.08 ± 0.06	0.00 ± 0.11	0.23 ± 0.08

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Table 52 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-218028.84 ± 0.02	0.19 ± 0.07	0.14 ± 0.07	0.05 ± 0.11	0.24 ± 0.10
	badq	-218028.61 ± 0.02	0.18 ± 0.07	0.11 ± 0.07	0.04 ± 0.14	0.22 ± 0.11
IND		-228035.12 ± 0.05	-0.13 ± 0.20	-0.24 ± 0.26	-0.54 ± 0.42	-0.38 ± 0.30
	b	-228035.94 ± 0.05	0.63 ± 0.22	0.18 ± 0.25	-0.95 ± 0.22	1.13 ± 0.24
	ba	-228074.91 ± 0.04	0.42 ± 0.16	-0.14 ± 0.13	-0.44 ± 0.16	0.15 ± 0.16
	bad	-228077.33 ± 0.03	0.39 ± 0.11	0.14 ± 0.11	-0.30 ± 0.14	0.36 ± 0.18
	badq	-228072.52 ± 0.05	0.66 ± 0.19	0.02 ± 0.31	-0.41 ± 0.30	0.73 ± 0.47
OXE		-194837.98 ± 0.03	-0.14 ± 0.09	-0.04 ± 0.11	-0.20 ± 0.17	0.12 ± 0.18
	b	-194838.48 ± 0.02	-0.22 ± 0.09	-0.17 ± 0.09	-0.19 ± 0.14	-0.16 ± 0.21
	ba	-194846.17 ± 0.02	-0.05 ± 0.08	0.03 ± 0.08	-0.18 ± 0.11	0.22 ± 0.11
	bad	-194846.38 ± 0.02	-0.17 ± 0.09	-0.13 ± 0.09	-0.25 ± 0.11	0.05 ± 0.15
	badq	-194844.03 ± 0.03	-0.24 ± 0.09	-0.17 ± 0.09	-0.03 ± 0.21	-0.73 ± 0.31
N4B		-244115.50 ± 0.03	-0.32 ± 0.11	-0.23 ± 0.14	-0.50 ± 0.25	0.31 ± 0.22
	b	-244116.16 ± 0.03	-0.20 ± 0.10	-0.15 ± 0.14	-0.72 ± 0.20	0.62 ± 0.15
	ba	-244122.56 ± 0.02	-0.24 ± 0.10	-0.19 ± 0.11	-0.39 ± 0.16	0.00 ± 0.20
	bad	-244123.06 ± 0.02	-0.15 ± 0.10	-0.07 ± 0.10	-0.30 ± 0.15	-0.20 ± 0.28
	badq	-244116.03 ± 0.03	-0.13 ± 0.11	-0.04 ± 0.12	-0.10 ± 0.18	-0.08 ± 0.28

Table 53: MM-to-QM bound-state ligand binding free energy correction values 3-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.83 ± 0.02	-0.01 ± 0.06	0.00 ± 0.04	0.00 ± 0.08	0.05 ± 0.06
	b	-145561.25 ± 0.01	-0.05 ± 0.04	-0.05 ± 0.03	0.02 ± 0.05	-0.10 ± 0.05
	ba	-145565.40 ± 0.01	0.01 ± 0.04	0.00 ± 0.03	0.03 ± 0.04	-0.03 ± 0.05
	bad	-145565.73 ± 0.01	0.04 ± 0.03	0.03 ± 0.03	0.04 ± 0.04	0.01 ± 0.04
	badq	-145566.51 ± 0.01	0.05 ± 0.04	0.05 ± 0.03	0.05 ± 0.04	0.05 ± 0.04
PXY		-194835.81 ± 0.03	0.04 ± 0.08	0.03 ± 0.07	-0.09 ± 0.10	0.24 ± 0.09
	b	-194836.45 ± 0.03	-0.03 ± 0.09	-0.02 ± 0.08	-0.05 ± 0.12	0.01 ± 0.15
	ba	-194843.36 ± 0.02	-0.02 ± 0.06	-0.04 ± 0.05	0.02 ± 0.08	-0.08 ± 0.09
	bad	-194843.43 ± 0.02	-0.02 ± 0.06	-0.03 ± 0.06	-0.06 ± 0.11	0.02 ± 0.11
	badq	-194848.27 ± 0.02	-0.10 ± 0.07	-0.10 ± 0.06	-0.17 ± 0.10	-0.02 ± 0.09
I4B		-244115.72 ± 0.03	0.09 ± 0.11	0.15 ± 0.09	0.18 ± 0.13	-0.02 ± 0.17
	b	-244116.40 ± 0.03	0.09 ± 0.10	0.16 ± 0.08	0.06 ± 0.10	0.07 ± 0.16
	ba	-244120.30 ± 0.03	-0.03 ± 0.09	-0.01 ± 0.09	0.01 ± 0.10	-0.01 ± 0.11
	bad	-244120.62 ± 0.03	0.17 ± 0.10	0.18 ± 0.07	0.17 ± 0.09	0.10 ± 0.12
	badq	-244120.29 ± 0.03	-0.03 ± 0.10	-0.02 ± 0.08	0.04 ± 0.11	-0.13 ± 0.15
BZF		-240489.62 ± 0.05	-0.08 ± 0.15	-0.08 ± 0.13	-0.03 ± 0.28	-0.04 ± 0.34
	b	-240489.38 ± 0.05	-0.02 ± 0.16	-0.07 ± 0.14	-0.14 ± 0.28	0.10 ± 0.20
	ba	-240530.92 ± 0.02	0.01 ± 0.07	-0.01 ± 0.05	-0.01 ± 0.08	-0.10 ± 0.08
	bad	-240530.51 ± 0.02	0.01 ± 0.07	0.01 ± 0.05	0.01 ± 0.08	0.03 ± 0.07
	badq	-240531.52 ± 0.03	0.12 ± 0.08	0.11 ± 0.07	0.04 ± 0.09	0.16 ± 0.10
DEN		-217978.77 ± 0.04	-0.21 ± 0.13	-0.22 ± 0.10	0.10 ± 0.17	-0.36 ± 0.16
	b	-217978.52 ± 0.04	0.13 ± 0.13	0.10 ± 0.11	0.10 ± 0.16	-0.21 ± 0.34
	ba	-218030.92 ± 0.02	0.11 ± 0.06	0.10 ± 0.04	0.10 ± 0.07	0.15 ± 0.06

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Table 53 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	0.03 ± 0.06	0.05 ± 0.05	0.04 ± 0.08	0.06 ± 0.07
	badq	-218028.61 ± 0.02	0.01 ± 0.06	0.03 ± 0.05	-0.05 ± 0.07	0.09 ± 0.06
IND		-228035.12 ± 0.05	0.04 ± 0.17	0.07 ± 0.16	0.02 ± 0.26	-0.33 ± 0.28
	b	-228035.94 ± 0.05	0.03 ± 0.17	0.03 ± 0.18	-0.11 ± 0.32	-0.13 ± 0.32
	ba	-228074.91 ± 0.04	0.05 ± 0.11	-0.08 ± 0.09	-0.06 ± 0.19	0.03 ± 0.11
	bad	-228077.33 ± 0.03	0.17 ± 0.09	0.14 ± 0.09	0.04 ± 0.12	0.18 ± 0.11
	badq	-228072.52 ± 0.05	0.01 ± 0.17	-0.01 ± 0.15	-0.11 ± 0.25	0.06 ± 0.28
OXE		-194837.98 ± 0.03	-0.01 ± 0.09	-0.02 ± 0.08	-0.05 ± 0.10	0.03 ± 0.11
	b	-194838.48 ± 0.02	-0.20 ± 0.08	-0.18 ± 0.07	-0.17 ± 0.10	-0.25 ± 0.12
	ba	-194846.17 ± 0.02	-0.11 ± 0.08	-0.08 ± 0.06	-0.07 ± 0.09	-0.03 ± 0.08
	bad	-194846.38 ± 0.02	-0.15 ± 0.08	-0.12 ± 0.07	-0.16 ± 0.08	-0.21 ± 0.11
	badq	-194844.03 ± 0.03	-0.02 ± 0.09	-0.04 ± 0.08	0.06 ± 0.10	-0.23 ± 0.18
N4B		-244115.50 ± 0.03	-0.16 ± 0.09	-0.17 ± 0.09	-0.32 ± 0.17	0.08 ± 0.14
	b	-244116.16 ± 0.03	-0.13 ± 0.09	-0.12 ± 0.08	-0.49 ± 0.10	0.27 ± 0.10
	ba	-244122.56 ± 0.02	-0.04 ± 0.08	-0.04 ± 0.07	-0.18 ± 0.09	0.03 ± 0.12
	bad	-244123.06 ± 0.02	-0.08 ± 0.08	-0.08 ± 0.07	-0.06 ± 0.12	-0.03 ± 0.11
	badq	-244116.03 ± 0.03	0.18 ± 0.09	0.16 ± 0.09	0.22 ± 0.14	0.01 ± 0.19

Table 54: MM-to-QM bound-state ligand binding free energy correction values 6-λ states simulated for 100 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		-145560.83 ± 0.02	-0.02 ± 0.04	-0.02 ± 0.04	-0.03 ± 0.04	-0.01 ± 0.04
	b	-145561.25 ± 0.01	0.02 ± 0.03	0.01 ± 0.02	0.03 ± 0.03	0.00 ± 0.03
	ba	-145565.40 ± 0.01	0.01 ± 0.02	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.02
	bad	-145565.73 ± 0.01	0.03 ± 0.02	0.03 ± 0.02	0.03 ± 0.02	0.02 ± 0.03
	badq	-145566.51 ± 0.01	0.05 ± 0.02	0.05 ± 0.02	0.05 ± 0.02	0.05 ± 0.02
PXY		-194835.81 ± 0.03	0.00 ± 0.06	-0.01 ± 0.05	-0.04 ± 0.07	0.05 ± 0.07
	b	-194836.45 ± 0.03	-0.09 ± 0.06	-0.09 ± 0.05	-0.12 ± 0.07	-0.05 ± 0.07
	ba	-194843.36 ± 0.02	0.04 ± 0.04	0.03 ± 0.04	0.05 ± 0.04	0.02 ± 0.04
	bad	-194843.43 ± 0.02	-0.04 ± 0.04	-0.04 ± 0.04	-0.06 ± 0.05	-0.01 ± 0.05
	badq	-194848.27 ± 0.02	0.13 ± 0.05	0.12 ± 0.04	0.13 ± 0.06	0.13 ± 0.05
I4B		-244115.72 ± 0.03	-0.03 ± 0.08	-0.01 ± 0.06	0.03 ± 0.09	-0.08 ± 0.09
	b	-244116.40 ± 0.03	0.05 ± 0.07	0.07 ± 0.06	0.04 ± 0.08	0.08 ± 0.08
	ba	-244120.30 ± 0.03	-0.10 ± 0.07	-0.08 ± 0.06	-0.02 ± 0.07	-0.16 ± 0.09
	bad	-244120.62 ± 0.03	0.11 ± 0.06	0.12 ± 0.05	0.12 ± 0.07	0.14 ± 0.06
	badq	-244120.29 ± 0.03	-0.02 ± 0.07	-0.01 ± 0.06	0.02 ± 0.08	-0.04 ± 0.08
BZF		-240489.62 ± 0.05	-0.04 ± 0.10	-0.04 ± 0.09	-0.08 ± 0.11	-0.04 ± 0.14
	b	-240489.38 ± 0.05	-0.01 ± 0.11	-0.01 ± 0.09	-0.03 ± 0.14	-0.01 ± 0.14
	ba	-240530.92 ± 0.02	0.02 ± 0.05	0.01 ± 0.04	0.03 ± 0.05	-0.02 ± 0.05
	bad	-240530.51 ± 0.02	-0.01 ± 0.05	-0.01 ± 0.04	0.01 ± 0.05	-0.02 ± 0.05
	badq	-240531.52 ± 0.03	-0.04 ± 0.06	-0.04 ± 0.05	-0.05 ± 0.07	-0.03 ± 0.07
DEN		-217978.77 ± 0.04	-0.08 ± 0.09	-0.09 ± 0.06	0.02 ± 0.09	-0.19 ± 0.10
	b	-217978.52 ± 0.04	-0.12 ± 0.09	-0.10 ± 0.08	-0.11 ± 0.11	-0.14 ± 0.11
	ba	-218030.92 ± 0.02	-0.05 ± 0.04	-0.04 ± 0.04	-0.04 ± 0.05	-0.03 ± 0.05

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Table 54 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-218028.84 ± 0.02	0.01 ± 0.04	0.02 ± 0.04	0.02 ± 0.05	0.02 ± 0.05
	badq	-218028.61 ± 0.02	0.01 ± 0.04	0.02 ± 0.04	0.01 ± 0.05	0.03 ± 0.04
IND		-228035.12 ± 0.05	-0.06 ± 0.11	-0.05 ± 0.09	0.01 ± 0.14	-0.11 ± 0.14
	b	-228035.94 ± 0.05	0.02 ± 0.12	0.02 ± 0.09	0.06 ± 0.14	-0.03 ± 0.14
	ba	-228074.91 ± 0.04	-0.11 ± 0.08	-0.13 ± 0.07	-0.11 ± 0.11	-0.13 ± 0.08
	bad	-228077.33 ± 0.03	0.03 ± 0.07	0.03 ± 0.06	0.01 ± 0.09	0.08 ± 0.07
	badq	-228072.52 ± 0.05	0.04 ± 0.12	0.04 ± 0.10	0.09 ± 0.16	0.00 ± 0.16
OXE		-194837.98 ± 0.03	-0.06 ± 0.07	-0.06 ± 0.05	-0.08 ± 0.07	-0.05 ± 0.08
	b	-194838.48 ± 0.02	-0.10 ± 0.04	-0.11 ± 0.04	-0.13 ± 0.05	-0.08 ± 0.05
	ba	-194846.17 ± 0.02	0.04 ± 0.05	0.04 ± 0.04	0.03 ± 0.05	0.04 ± 0.06
	bad	-194846.38 ± 0.02	-0.04 ± 0.05	-0.05 ± 0.04	-0.05 ± 0.06	-0.05 ± 0.06
	badq	-194844.03 ± 0.03	-0.05 ± 0.06	-0.05 ± 0.05	-0.01 ± 0.07	-0.10 ± 0.08
N4B		-244115.50 ± 0.03	0.01 ± 0.07	0.01 ± 0.06	-0.06 ± 0.09	0.10 ± 0.09
	b	-244116.16 ± 0.03	0.07 ± 0.07	0.07 ± 0.06	0.00 ± 0.08	0.13 ± 0.08
	ba	-244122.56 ± 0.02	-0.03 ± 0.05	-0.03 ± 0.04	-0.08 ± 0.06	0.02 ± 0.06
	bad	-244123.06 ± 0.02	0.11 ± 0.05	0.11 ± 0.05	0.07 ± 0.07	0.12 ± 0.07
	badq	-244116.03 ± 0.03	0.06 ± 0.07	0.07 ± 0.06	0.07 ± 0.08	0.06 ± 0.08

Table 55: MM-to-QM bound-state ligand binding free energy correction values 2-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		-145560.83 ± 0.02	0.11 ± 0.10	0.11 ± 0.09	0.34 ± 0.26	0.00 ± 0.16
	b	-145561.25 ± 0.01	0.03 ± 0.06	0.03 ± 0.06	0.16 ± 0.14	-0.13 ± 0.15
	ba	-145565.40 ± 0.01	0.09 ± 0.04	0.09 ± 0.05	0.10 ± 0.11	0.13 ± 0.08
	bad	-145565.73 ± 0.01	0.01 ± 0.05	0.00 ± 0.05	0.09 ± 0.10	-0.12 ± 0.09
	badq	-145566.51 ± 0.01	0.03 ± 0.05	0.03 ± 0.05	0.08 ± 0.08	-0.07 ± 0.08
PXY		-194835.81 ± 0.03	-0.15 ± 0.13	-0.04 ± 0.15	-0.17 ± 0.20	0.54 ± 0.12
	b	-194836.45 ± 0.03	-0.07 ± 0.16	-0.12 ± 0.17	0.38 ± 0.38	-0.60 ± 0.18
	ba	-194843.36 ± 0.02	-0.03 ± 0.10	0.01 ± 0.09	-0.14 ± 0.13	0.17 ± 0.13
	bad	-194843.43 ± 0.02	-0.23 ± 0.10	-0.21 ± 0.09	-0.24 ± 0.13	-0.17 ± 0.12
	badq	-194848.27 ± 0.02	-0.05 ± 0.12	-0.05 ± 0.13	-0.25 ± 0.17	-0.05 ± 0.20
I4B		-244115.72 ± 0.03	0.05 ± 0.17	0.12 ± 0.15	-0.08 ± 0.16	-0.24 ± 0.35
	b	-244116.40 ± 0.03	0.04 ± 0.18	0.12 ± 0.18	0.35 ± 0.19	-1.28 ± 0.54
	ba	-244120.30 ± 0.03	0.00 ± 0.13	0.09 ± 0.12	0.06 ± 0.16	0.23 ± 0.16
	bad	-244120.62 ± 0.03	0.11 ± 0.13	0.17 ± 0.13	0.03 ± 0.15	0.32 ± 0.16
	badq	-244120.29 ± 0.03	0.02 ± 0.13	0.13 ± 0.16	0.11 ± 0.20	0.17 ± 0.38
BZF		-240489.62 ± 0.05	-0.35 ± 0.25	-0.03 ± 0.37	-0.29 ± 0.49	0.59 ± 0.47
	b	-240489.38 ± 0.05	-0.10 ± 0.25	-0.33 ± 0.38	-0.97 ± 0.41	0.61 ± 0.30
	ba	-240530.92 ± 0.02	-0.03 ± 0.12	-0.05 ± 0.11	0.11 ± 0.19	-0.43 ± 0.23
	bad	-240530.51 ± 0.02	0.18 ± 0.11	0.17 ± 0.11	0.22 ± 0.17	0.18 ± 0.17
	badq	-240531.52 ± 0.03	0.33 ± 0.13	0.35 ± 0.13	0.19 ± 0.20	0.54 ± 0.18
DEN		-217978.77 ± 0.04	-0.14 ± 0.21	-0.07 ± 0.20	-0.38 ± 0.22	0.15 ± 0.26
	b	-217978.52 ± 0.04	0.00 ± 0.20	-0.09 ± 0.22	-0.52 ± 0.28	0.07 ± 0.41
	ba	-218030.92 ± 0.02	0.12 ± 0.11	0.13 ± 0.10	0.02 ± 0.13	0.18 ± 0.18

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Table 55 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	0.25 ± 0.11	0.21 ± 0.11	0.14 ± 0.18	0.24 ± 0.14
	badq	-218028.61 ± 0.02	0.33 ± 0.11	0.28 ± 0.12	0.18 ± 0.18	0.47 ± 0.19
IND		-228035.12 ± 0.05	0.13 ± 0.26	0.02 ± 0.39	-1.13 ± 0.25	0.73 ± 0.49
	b	-228035.94 ± 0.05	0.81 ± 0.32	0.24 ± 0.33	0.27 ± 0.54	0.76 ± 0.28
	ba	-228074.91 ± 0.04	1.17 ± 0.36	0.25 ± 0.20	0.09 ± 0.25	0.07 ± 0.26
	bad	-228077.33 ± 0.03	0.62 ± 0.20	0.35 ± 0.17	0.24 ± 0.21	0.24 ± 0.30
	badq	-228072.52 ± 0.05	0.35 ± 0.22	0.40 ± 0.45	-1.92 ± 0.35	2.71 ± 0.33
OXE		-194837.98 ± 0.03	-0.23 ± 0.14	-0.18 ± 0.15	0.34 ± 0.49	-0.78 ± 0.49
	b	-194838.48 ± 0.02	-0.12 ± 0.12	-0.06 ± 0.11	-0.21 ± 0.22	0.12 ± 0.17
	ba	-194846.17 ± 0.02	-0.08 ± 0.11	-0.06 ± 0.14	-0.28 ± 0.18	0.16 ± 0.21
	bad	-194846.38 ± 0.02	-0.05 ± 0.12	-0.09 ± 0.12	-0.37 ± 0.18	0.04 ± 0.20
	badq	-194844.03 ± 0.03	-0.05 ± 0.14	-0.13 ± 0.12	-0.02 ± 0.38	-0.20 ± 0.19
N4B		-244115.50 ± 0.03	-0.46 ± 0.20	-0.41 ± 0.21	-0.84 ± 0.27	0.23 ± 0.20
	b	-244116.16 ± 0.03	-0.20 ± 0.20	0.02 ± 0.19	-0.53 ± 0.39	1.05 ± 0.19
	ba	-244122.56 ± 0.02	-0.41 ± 0.18	-0.31 ± 0.14	-0.61 ± 0.17	0.07 ± 0.17
	bad	-244123.06 ± 0.02	-0.31 ± 0.18	-0.25 ± 0.19	-0.49 ± 0.17	-0.06 ± 0.28
	badq	-244116.03 ± 0.03	-0.49 ± 0.20	-0.33 ± 0.14	-0.39 ± 0.22	-1.16 ± 0.48

Table 56: MM-to-QM bound-state ligand binding free energy correction values 3-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.83 ± 0.02	-0.03 ± 0.08	0.00 ± 0.06	0.03 ± 0.10	-0.05 ± 0.11
	b	-145561.25 ± 0.01	0.11 ± 0.05	0.10 ± 0.05	0.12 ± 0.07	0.04 ± 0.08
	ba	-145565.40 ± 0.01	0.09 ± 0.05	0.09 ± 0.04	0.09 ± 0.06	0.10 ± 0.06
	bad	-145565.73 ± 0.01	0.07 ± 0.05	0.06 ± 0.04	0.10 ± 0.06	0.00 ± 0.06
	badq	-145566.51 ± 0.01	0.08 ± 0.05	0.06 ± 0.04	0.11 ± 0.06	0.02 ± 0.06
PXY		-194835.81 ± 0.03	-0.06 ± 0.12	-0.06 ± 0.10	-0.12 ± 0.13	0.06 ± 0.12
	b	-194836.45 ± 0.03	-0.19 ± 0.12	-0.19 ± 0.09	-0.08 ± 0.19	-0.23 ± 0.12
	ba	-194843.36 ± 0.02	0.03 ± 0.09	0.01 ± 0.07	0.05 ± 0.12	0.11 ± 0.08
	bad	-194843.43 ± 0.02	0.00 ± 0.11	-0.05 ± 0.08	0.15 ± 0.30	-0.10 ± 0.13
	badq	-194848.27 ± 0.02	0.00 ± 0.12	0.00 ± 0.11	0.01 ± 0.19	-0.03 ± 0.14
I4B		-244115.72 ± 0.03	-0.12 ± 0.16	-0.03 ± 0.11	0.00 ± 0.15	-0.36 ± 0.21
	b	-244116.40 ± 0.03	0.07 ± 0.16	0.08 ± 0.13	0.40 ± 0.20	-0.37 ± 0.32
	ba	-244120.30 ± 0.03	-0.05 ± 0.12	-0.04 ± 0.09	0.08 ± 0.13	-0.01 ± 0.10
	bad	-244120.62 ± 0.03	-0.06 ± 0.11	-0.02 ± 0.10	-0.06 ± 0.15	0.06 ± 0.12
	badq	-244120.29 ± 0.03	-0.04 ± 0.14	-0.02 ± 0.10	0.13 ± 0.15	-0.03 ± 0.17
BZF		-240489.62 ± 0.05	-0.03 ± 0.19	-0.07 ± 0.18	-0.23 ± 0.34	0.39 ± 0.29
	b	-240489.38 ± 0.05	-0.27 ± 0.21	-0.24 ± 0.20	-0.72 ± 0.28	0.00 ± 0.26
	ba	-240530.92 ± 0.02	0.00 ± 0.11	-0.01 ± 0.08	0.11 ± 0.11	-0.21 ± 0.14
	bad	-240530.51 ± 0.02	0.14 ± 0.09	0.14 ± 0.07	0.13 ± 0.11	0.19 ± 0.10
	badq	-240531.52 ± 0.03	0.15 ± 0.10	0.18 ± 0.10	0.10 ± 0.17	0.33 ± 0.13
DEN		-217978.77 ± 0.04	-0.23 ± 0.18	-0.21 ± 0.14	-0.14 ± 0.18	-0.17 ± 0.17
	b	-217978.52 ± 0.04	0.03 ± 0.18	0.02 ± 0.15	-0.07 ± 0.20	-0.01 ± 0.23
	ba	-218030.92 ± 0.02	0.07 ± 0.10	0.08 ± 0.07	0.08 ± 0.10	0.07 ± 0.10

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Table 56 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-218028.84 ± 0.02	0.07 ± 0.08	0.09 ± 0.07	0.01 ± 0.10	0.16 ± 0.09
	badq	-218028.61 ± 0.02	0.06 ± 0.09	0.10 ± 0.08	0.00 ± 0.11	0.21 ± 0.11
IND		-228035.12 ± 0.05	0.09 ± 0.24	0.13 ± 0.20	-0.27 ± 0.21	0.05 ± 0.32
	b	-228035.94 ± 0.05	-0.03 ± 0.24	-0.06 ± 0.20	-0.03 ± 0.33	-0.01 ± 0.25
	ba	-228074.91 ± 0.04	0.19 ± 0.21	0.02 ± 0.16	0.34 ± 0.19	-0.27 ± 0.28
	bad	-228077.33 ± 0.03	0.11 ± 0.14	0.10 ± 0.12	0.07 ± 0.19	0.09 ± 0.20
	badq	-228072.52 ± 0.05	0.17 ± 0.21	0.15 ± 0.20	-0.65 ± 0.28	1.15 ± 0.21
OXE		-194837.98 ± 0.03	-0.22 ± 0.11	-0.20 ± 0.09	-0.21 ± 0.21	-0.21 ± 0.21
	b	-194838.48 ± 0.02	-0.11 ± 0.12	-0.08 ± 0.09	-0.07 ± 0.12	-0.15 ± 0.16
	ba	-194846.17 ± 0.02	0.04 ± 0.10	0.02 ± 0.09	-0.04 ± 0.12	0.11 ± 0.13
	bad	-194846.38 ± 0.02	-0.10 ± 0.11	-0.09 ± 0.08	-0.16 ± 0.12	-0.05 ± 0.12
	badq	-194844.03 ± 0.03	-0.01 ± 0.12	0.00 ± 0.10	-0.02 ± 0.16	-0.18 ± 0.17
N4B		-244115.50 ± 0.03	-0.51 ± 0.16	-0.47 ± 0.11	-0.38 ± 0.32	-0.27 ± 0.18
	b	-244116.16 ± 0.03	-0.07 ± 0.14	-0.06 ± 0.11	-0.24 ± 0.20	0.42 ± 0.11
	ba	-244122.56 ± 0.02	-0.24 ± 0.12	-0.22 ± 0.08	-0.35 ± 0.12	-0.09 ± 0.13
	bad	-244123.06 ± 0.02	-0.17 ± 0.13	-0.15 ± 0.11	-0.20 ± 0.14	-0.11 ± 0.18
	badq	-244116.03 ± 0.03	-0.13 ± 0.13	-0.13 ± 0.11	-0.14 ± 0.17	-0.31 ± 0.26

Table 57: MM-to-QM bound-state ligand binding free energy correction values 6-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		-145560.83 ± 0.02	0.02 ± 0.06	0.02 ± 0.05	0.04 ± 0.07	0.00 ± 0.06
	b	-145561.25 ± 0.01	0.03 ± 0.04	0.03 ± 0.03	0.04 ± 0.04	0.01 ± 0.04
	ba	-145565.40 ± 0.01	0.04 ± 0.04	0.04 ± 0.03	0.05 ± 0.04	0.04 ± 0.04
	bad	-145565.73 ± 0.01	0.01 ± 0.03	0.01 ± 0.02	0.03 ± 0.04	-0.02 ± 0.04
	badq	-145566.51 ± 0.01	0.14 ± 0.03	0.14 ± 0.03	0.16 ± 0.04	0.12 ± 0.04
PXY		-194835.81 ± 0.03	0.04 ± 0.09	0.04 ± 0.07	0.01 ± 0.09	0.07 ± 0.09
	b	-194836.45 ± 0.03	-0.02 ± 0.09	-0.04 ± 0.07	-0.05 ± 0.09	-0.02 ± 0.09
	ba	-194843.36 ± 0.02	0.08 ± 0.06	0.08 ± 0.04	0.06 ± 0.06	0.10 ± 0.06
	bad	-194843.43 ± 0.02	-0.04 ± 0.06	-0.05 ± 0.04	-0.03 ± 0.07	-0.06 ± 0.06
	badq	-194848.27 ± 0.02	0.04 ± 0.07	0.03 ± 0.06	0.02 ± 0.08	0.04 ± 0.08
I4B		-244115.72 ± 0.03	-0.09 ± 0.10	-0.08 ± 0.08	-0.01 ± 0.10	-0.16 ± 0.11
	b	-244116.40 ± 0.03	-0.02 ± 0.09	-0.01 ± 0.08	0.04 ± 0.10	-0.11 ± 0.12
	ba	-244120.30 ± 0.03	-0.06 ± 0.09	-0.05 ± 0.07	0.00 ± 0.09	-0.13 ± 0.10
	bad	-244120.62 ± 0.03	-0.05 ± 0.09	-0.05 ± 0.07	-0.03 ± 0.09	-0.07 ± 0.10
	badq	-244120.29 ± 0.03	-0.04 ± 0.09	-0.02 ± 0.08	0.03 ± 0.10	-0.07 ± 0.11
BZF		-240489.62 ± 0.05	-0.11 ± 0.13	-0.12 ± 0.11	-0.24 ± 0.17	0.11 ± 0.14
	b	-240489.38 ± 0.05	-0.28 ± 0.14	-0.27 ± 0.11	-0.41 ± 0.17	-0.17 ± 0.16
	ba	-240530.92 ± 0.02	0.05 ± 0.07	0.05 ± 0.05	0.08 ± 0.07	0.00 ± 0.07
	bad	-240530.51 ± 0.02	0.15 ± 0.07	0.15 ± 0.05	0.18 ± 0.07	0.14 ± 0.07
	badq	-240531.52 ± 0.03	0.28 ± 0.09	0.28 ± 0.07	0.29 ± 0.09	0.28 ± 0.09
DEN		-217978.77 ± 0.04	0.02 ± 0.13	0.02 ± 0.10	0.10 ± 0.13	-0.07 ± 0.13
	b	-217978.52 ± 0.04	-0.08 ± 0.12	-0.08 ± 0.09	-0.11 ± 0.12	-0.15 ± 0.15
	ba	-218030.92 ± 0.02	0.10 ± 0.06	0.10 ± 0.04	0.08 ± 0.06	0.11 ± 0.06

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Table 57 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	0.14 ± 0.06	0.14 ± 0.05	0.13 ± 0.07	0.16 ± 0.06
	badq	-218028.61 ± 0.02	0.11 ± 0.06	0.12 ± 0.05	0.09 ± 0.07	0.14 ± 0.07
IND		-228035.12 ± 0.05	0.10 ± 0.16	0.10 ± 0.13	0.16 ± 0.19	-0.04 ± 0.18
	b	-228035.94 ± 0.05	0.31 ± 0.17	0.30 ± 0.13	0.35 ± 0.18	0.16 ± 0.18
	ba	-228074.91 ± 0.04	-0.01 ± 0.13	-0.06 ± 0.10	0.01 ± 0.16	-0.10 ± 0.12
	bad	-228077.33 ± 0.03	0.17 ± 0.09	0.16 ± 0.08	0.22 ± 0.14	0.16 ± 0.10
	badq	-228072.52 ± 0.05	-0.07 ± 0.16	-0.06 ± 0.12	-0.16 ± 0.19	0.12 ± 0.16
OXE		-194837.98 ± 0.03	-0.15 ± 0.08	-0.16 ± 0.07	-0.19 ± 0.09	-0.12 ± 0.09
	b	-194838.48 ± 0.02	-0.16 ± 0.07	-0.16 ± 0.05	-0.16 ± 0.07	-0.15 ± 0.07
	ba	-194846.17 ± 0.02	0.03 ± 0.07	0.03 ± 0.05	0.02 ± 0.07	0.03 ± 0.08
	bad	-194846.38 ± 0.02	-0.04 ± 0.07	-0.04 ± 0.05	-0.07 ± 0.07	-0.02 ± 0.08
	badq	-194844.03 ± 0.03	-0.12 ± 0.09	-0.11 ± 0.08	-0.06 ± 0.12	-0.24 ± 0.12
N4B		-244115.50 ± 0.03	-0.19 ± 0.09	-0.19 ± 0.07	-0.34 ± 0.09	-0.03 ± 0.09
	b	-244116.16 ± 0.03	0.13 ± 0.10	0.14 ± 0.09	0.07 ± 0.11	0.21 ± 0.11
	ba	-244122.56 ± 0.02	-0.21 ± 0.07	-0.21 ± 0.05	-0.28 ± 0.07	-0.16 ± 0.08
	bad	-244123.06 ± 0.02	-0.01 ± 0.08	-0.01 ± 0.06	-0.03 ± 0.08	0.01 ± 0.10
	badq	-244116.03 ± 0.03	0.01 ± 0.09	0.01 ± 0.07	0.03 ± 0.09	0.00 ± 0.09

Table 58: MM-to-QM bound-state ligand binding free energy correction values 2-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		-145560.83 ± 0.02	-0.03 ± 0.21	-0.02 ± 0.18	0.17 ± 0.37	0.01 ± 0.25
	b	-145561.25 ± 0.01	-0.10 ± 0.17	-0.03 ± 0.13	0.10 ± 0.19	-0.25 ± 0.24
	ba	-145565.40 ± 0.01	0.01 ± 0.13	0.06 ± 0.11	0.00 ± 0.14	0.19 ± 0.10
	bad	-145565.73 ± 0.01	-0.02 ± 0.11	0.02 ± 0.10	-0.02 ± 0.13	0.18 ± 0.07
	badq	-145566.51 ± 0.01	0.10 ± 0.13	0.13 ± 0.12	0.04 ± 0.12	0.23 ± 0.14
PXY		-194835.81 ± 0.03	0.47 ± 0.27	0.58 ± 0.34	0.42 ± 0.36	0.11 ± 0.52
	b	-194836.45 ± 0.03	0.33 ± 0.23	0.43 ± 0.23	-0.07 ± 0.18	0.81 ± 0.24
	ba	-194843.36 ± 0.02	0.47 ± 0.18	0.43 ± 0.16	1.37 ± 0.51	0.67 ± 0.14
	bad	-194843.43 ± 0.02	0.29 ± 0.19	0.23 ± 0.16	1.25 ± 0.51	0.23 ± 0.23
	badq	-194848.27 ± 0.02	0.22 ± 0.23	0.14 ± 0.22	0.79 ± 0.46	0.27 ± 0.26
I4B		-244115.72 ± 0.03	-0.50 ± 0.32	-0.29 ± 0.34	0.45 ± 0.53	0.09 ± 0.28
	b	-244116.40 ± 0.03	-0.09 ± 0.32	0.10 ± 0.46	-0.35 ± 0.43	-0.58 ± 0.39
	ba	-244120.30 ± 0.03	-0.15 ± 0.24	-0.11 ± 0.31	-0.53 ± 0.33	0.08 ± 0.29
	bad	-244120.62 ± 0.03	0.06 ± 0.27	0.01 ± 0.28	-0.46 ± 0.24	0.29 ± 0.30
	badq	-244120.29 ± 0.03	0.20 ± 0.28	-0.03 ± 0.31	-0.70 ± 0.21	0.35 ± 0.27
BZF		-240489.62 ± 0.05	-0.46 ± 0.37	0.25 ± 0.48	-1.18 ± 0.47	1.90 ± 0.23
	b	-240489.38 ± 0.05	-0.07 ± 0.48	-0.89 ± 0.56	-1.86 ± 0.43	-0.13 ± 0.50
	ba	-240530.92 ± 0.02	-0.02 ± 0.20	-0.06 ± 0.24	-0.66 ± 0.20	0.46 ± 0.23
	bad	-240530.51 ± 0.02	0.13 ± 0.22	0.01 ± 0.24	-0.52 ± 0.22	0.48 ± 0.22
	badq	-240531.52 ± 0.03	0.37 ± 0.28	0.30 ± 0.33	-0.38 ± 0.26	0.58 ± 0.39
DEN		-217978.77 ± 0.04	-0.02 ± 0.32	0.04 ± 0.31	0.27 ± 0.44	0.19 ± 0.32
	b	-217978.52 ± 0.04	0.57 ± 0.39	0.37 ± 0.37	-0.67 ± 0.26	1.22 ± 0.34
	ba	-218030.92 ± 0.02	-0.18 ± 0.15	-0.12 ± 0.20	-0.30 ± 0.23	0.18 ± 0.19

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Table 58 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-218028.84 ± 0.02	-0.27 ± 0.18	-0.29 ± 0.17	-0.35 ± 0.17	-0.28 ± 0.21
	badq	-218028.61 ± 0.02	-0.28 ± 0.16	-0.28 ± 0.15	-0.27 ± 0.16	-0.31 ± 0.15
IND		-228035.12 ± 0.05	0.45 ± 0.58	0.54 ± 0.70	-0.51 ± 0.51	1.29 ± 0.55
	b	-228035.94 ± 0.05	0.52 ± 0.54	0.59 ± 0.68	-1.27 ± 0.50	2.43 ± 0.51
	ba	-228074.91 ± 0.04	0.44 ± 0.47	-0.23 ± 0.31	1.82 ± 0.54	-0.46 ± 0.39
	bad	-228077.33 ± 0.03	0.56 ± 0.29	0.41 ± 0.30	1.92 ± 0.54	0.90 ± 0.22
	badq	-228072.52 ± 0.05	0.40 ± 0.47	0.37 ± 0.71	-0.73 ± 0.54	1.48 ± 0.54
OXE		-194837.98 ± 0.03	-0.28 ± 0.28	-0.30 ± 0.37	-1.28 ± 0.29	0.61 ± 0.35
	b	-194838.48 ± 0.02	-0.23 ± 0.27	0.01 ± 0.23	-0.76 ± 0.20	0.73 ± 0.24
	ba	-194846.17 ± 0.02	-0.15 ± 0.25	0.05 ± 0.24	-0.89 ± 0.17	0.87 ± 0.27
	bad	-194846.38 ± 0.02	-0.22 ± 0.24	0.03 ± 0.20	-0.96 ± 0.17	1.03 ± 0.16
	badq	-194844.03 ± 0.03	-0.03 ± 0.32	0.05 ± 0.23	-0.83 ± 0.13	0.69 ± 0.32
N4B		-244115.50 ± 0.03	-0.28 ± 0.23	-0.48 ± 0.31	-1.49 ± 0.18	0.28 ± 0.32
	b	-244116.16 ± 0.03	-0.19 ± 0.24	-0.20 ± 0.35	-0.74 ± 0.43	0.57 ± 0.34
	ba	-244122.56 ± 0.02	-0.20 ± 0.21	-0.31 ± 0.22	-0.98 ± 0.19	0.33 ± 0.19
	bad	-244123.06 ± 0.02	-0.34 ± 0.20	-0.42 ± 0.19	-0.89 ± 0.19	0.06 ± 0.18
	badq	-244116.03 ± 0.03	-0.46 ± 0.26	-0.54 ± 0.26	-1.37 ± 0.19	0.19 ± 0.27

Table 59: MM-to-QM bound-state ligand binding free energy correction values 3-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.83 ± 0.02	0.17 ± 0.16	0.14 ± 0.13	0.15 ± 0.20	0.17 ± 0.17
	b	-145561.25 ± 0.01	-0.09 ± 0.10	-0.08 ± 0.09	-0.04 ± 0.12	-0.11 ± 0.13
	ba	-145565.40 ± 0.01	-0.02 ± 0.09	-0.01 ± 0.08	-0.04 ± 0.10	0.07 ± 0.08
	bad	-145565.73 ± 0.01	-0.08 ± 0.10	-0.06 ± 0.08	-0.06 ± 0.11	0.00 ± 0.08
	badq	-145566.51 ± 0.01	0.08 ± 0.12	0.09 ± 0.09	0.06 ± 0.11	0.13 ± 0.12
PXY		-194835.81 ± 0.03	0.28 ± 0.26	0.33 ± 0.19	0.32 ± 0.27	0.26 ± 0.34
	b	-194836.45 ± 0.03	0.13 ± 0.21	0.19 ± 0.15	0.05 ± 0.22	0.35 ± 0.25
	ba	-194843.36 ± 0.02	0.16 ± 0.14	0.21 ± 0.10	0.39 ± 0.28	0.29 ± 0.13
	bad	-194843.43 ± 0.02	-0.05 ± 0.17	-0.01 ± 0.12	0.28 ± 0.30	-0.02 ± 0.15
	badq	-194848.27 ± 0.02	-0.13 ± 0.15	-0.09 ± 0.13	-0.01 ± 0.26	0.01 ± 0.17
I4B		-244115.72 ± 0.03	-0.19 ± 0.37	-0.28 ± 0.25	0.37 ± 0.48	-0.34 ± 0.22
	b	-244116.40 ± 0.03	-0.07 ± 0.21	-0.02 ± 0.23	-0.24 ± 0.34	-0.09 ± 0.25
	ba	-244120.30 ± 0.03	-0.14 ± 0.19	-0.13 ± 0.19	-0.27 ± 0.27	0.01 ± 0.19
	bad	-244120.62 ± 0.03	-0.10 ± 0.17	-0.08 ± 0.17	-0.36 ± 0.19	0.13 ± 0.20
	badq	-244120.29 ± 0.03	0.09 ± 0.21	0.07 ± 0.19	-0.23 ± 0.20	0.23 ± 0.23
BZF		-240489.62 ± 0.05	-0.31 ± 0.38	-0.30 ± 0.31	-0.56 ± 0.44	0.26 ± 0.40
	b	-240489.38 ± 0.05	0.58 ± 0.41	0.45 ± 0.42	0.03 ± 0.56	0.45 ± 0.49
	ba	-240530.92 ± 0.02	0.11 ± 0.16	0.07 ± 0.13	-0.23 ± 0.16	0.36 ± 0.16
	bad	-240530.51 ± 0.02	0.21 ± 0.22	0.16 ± 0.16	0.02 ± 0.23	0.32 ± 0.19
	badq	-240531.52 ± 0.03	0.26 ± 0.22	0.27 ± 0.18	0.01 ± 0.23	0.47 ± 0.24
DEN		-217978.77 ± 0.04	0.16 ± 0.36	0.10 ± 0.23	0.53 ± 0.36	-0.10 ± 0.35
	b	-217978.52 ± 0.04	0.27 ± 0.35	0.31 ± 0.28	0.03 ± 0.31	0.41 ± 0.35
	ba	-218030.92 ± 0.02	-0.06 ± 0.16	-0.07 ± 0.13	-0.12 ± 0.18	0.03 ± 0.15

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Table 59 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-218028.84 ± 0.02	-0.22 ± 0.17	-0.24 ± 0.13	-0.20 ± 0.20	-0.24 ± 0.15
	badq	-218028.61 ± 0.02	-0.15 ± 0.14	-0.17 ± 0.11	-0.16 ± 0.14	-0.21 ± 0.14
IND		-228035.12 ± 0.05	0.40 ± 0.36	0.60 ± 0.46	-0.13 ± 0.45	0.91 ± 0.64
	b	-228035.94 ± 0.05	0.04 ± 0.33	0.12 ± 0.36	-0.87 ± 0.39	1.16 ± 0.43
	ba	-228074.91 ± 0.04	0.13 ± 0.30	-0.02 ± 0.23	0.70 ± 0.54	-0.20 ± 0.28
	bad	-228077.33 ± 0.03	0.28 ± 0.21	0.28 ± 0.17	0.65 ± 0.47	0.49 ± 0.19
	badq	-228072.52 ± 0.05	0.17 ± 0.46	0.15 ± 0.35	0.67 ± 0.64	0.72 ± 0.45
OXE		-194837.98 ± 0.03	-0.14 ± 0.28	-0.16 ± 0.23	-0.47 ± 0.31	0.16 ± 0.28
	b	-194838.48 ± 0.02	0.20 ± 0.22	0.18 ± 0.16	-0.08 ± 0.19	0.52 ± 0.18
	ba	-194846.17 ± 0.02	0.17 ± 0.19	0.16 ± 0.16	-0.21 ± 0.18	0.60 ± 0.20
	bad	-194846.38 ± 0.02	0.31 ± 0.15	0.27 ± 0.12	-0.17 ± 0.15	0.80 ± 0.11
	badq	-194844.03 ± 0.03	0.26 ± 0.27	0.30 ± 0.18	-0.04 ± 0.17	0.30 ± 0.35
N4B		-244115.50 ± 0.03	-0.14 ± 0.25	-0.16 ± 0.19	-0.61 ± 0.18	0.06 ± 0.27
	b	-244116.16 ± 0.03	0.27 ± 0.22	0.19 ± 0.19	-0.20 ± 0.24	0.43 ± 0.32
	ba	-244122.56 ± 0.02	-0.46 ± 0.23	-0.43 ± 0.18	-0.62 ± 0.26	-0.23 ± 0.19
	bad	-244123.06 ± 0.02	-0.22 ± 0.20	-0.25 ± 0.14	-0.44 ± 0.16	-0.17 ± 0.22
	badq	-244116.03 ± 0.03	-0.22 ± 0.23	-0.28 ± 0.18	-0.64 ± 0.17	-0.02 ± 0.23

Table 60: MM-to-QM bound-state ligand binding free energy correction values 6-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		-145560.83 ± 0.02	-0.05 ± 0.14	-0.05 ± 0.10	0.00 ± 0.15	-0.09 ± 0.15
	b	-145561.25 ± 0.01	-0.12 ± 0.08	-0.12 ± 0.06	-0.10 ± 0.08	-0.13 ± 0.08
	ba	-145565.40 ± 0.01	0.06 ± 0.06	0.05 ± 0.05	0.04 ± 0.08	0.08 ± 0.06
	bad	-145565.73 ± 0.01	0.00 ± 0.07	0.00 ± 0.05	0.00 ± 0.07	0.01 ± 0.07
	badq	-145566.51 ± 0.01	0.12 ± 0.06	0.11 ± 0.05	0.09 ± 0.07	0.14 ± 0.07
PXY		-194835.81 ± 0.03	0.24 ± 0.18	0.26 ± 0.12	0.26 ± 0.16	0.19 ± 0.20
	b	-194836.45 ± 0.03	0.19 ± 0.13	0.20 ± 0.09	0.13 ± 0.12	0.27 ± 0.13
	ba	-194843.36 ± 0.02	0.19 ± 0.09	0.19 ± 0.07	0.20 ± 0.11	0.19 ± 0.09
	bad	-194843.43 ± 0.02	-0.03 ± 0.09	-0.01 ± 0.07	0.02 ± 0.11	-0.02 ± 0.10
	badq	-194848.27 ± 0.02	-0.03 ± 0.11	-0.02 ± 0.08	-0.04 ± 0.12	0.00 ± 0.11
I4B		-244115.72 ± 0.03	-0.01 ± 0.19	-0.02 ± 0.13	0.09 ± 0.24	-0.08 ± 0.16
	b	-244116.40 ± 0.03	0.04 ± 0.17	0.02 ± 0.15	0.02 ± 0.23	0.02 ± 0.18
	ba	-244120.30 ± 0.03	-0.03 ± 0.15	-0.03 ± 0.12	-0.04 ± 0.18	-0.01 ± 0.15
	bad	-244120.62 ± 0.03	-0.05 ± 0.13	-0.05 ± 0.10	-0.14 ± 0.13	0.03 ± 0.13
	badq	-244120.29 ± 0.03	0.09 ± 0.16	0.11 ± 0.12	0.01 ± 0.14	0.12 ± 0.20
BZF		-240489.62 ± 0.05	-0.08 ± 0.24	-0.11 ± 0.17	-0.31 ± 0.23	0.07 ± 0.25
	b	-240489.38 ± 0.05	0.58 ± 0.30	0.54 ± 0.24	0.54 ± 0.35	0.57 ± 0.34
	ba	-240530.92 ± 0.02	0.00 ± 0.11	0.00 ± 0.08	-0.11 ± 0.11	0.11 ± 0.11
	bad	-240530.51 ± 0.02	-0.05 ± 0.13	-0.03 ± 0.09	-0.12 ± 0.13	0.03 ± 0.12
	badq	-240531.52 ± 0.03	0.25 ± 0.18	0.26 ± 0.12	0.22 ± 0.16	0.26 ± 0.17
DEN		-217978.77 ± 0.04	0.06 ± 0.24	0.06 ± 0.16	0.34 ± 0.25	-0.12 ± 0.22
	b	-217978.52 ± 0.04	0.04 ± 0.20	0.07 ± 0.16	-0.04 ± 0.22	0.21 ± 0.20
	ba	-218030.92 ± 0.02	-0.24 ± 0.10	-0.23 ± 0.07	-0.25 ± 0.11	-0.21 ± 0.10

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Table 60 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
	bad	-218028.84 ± 0.02	-0.20 ± 0.11	-0.20 ± 0.08	-0.18 ± 0.11	-0.22 ± 0.10
	badq	-218028.61 ± 0.02	-0.21 ± 0.11	-0.23 ± 0.08	-0.19 ± 0.12	-0.26 ± 0.10
IND		-228035.12 ± 0.05	0.32 ± 0.30	0.36 ± 0.27	0.28 ± 0.33	0.43 ± 0.41
	b	-228035.94 ± 0.05	0.10 ± 0.25	0.13 ± 0.21	-0.29 ± 0.25	0.53 ± 0.27
	ba	-228074.91 ± 0.04	-0.05 ± 0.19	-0.05 ± 0.16	0.05 ± 0.24	-0.14 ± 0.20
	bad	-228077.33 ± 0.03	0.24 ± 0.18	0.25 ± 0.13	0.36 ± 0.24	0.23 ± 0.17
	badq	-228072.52 ± 0.05	-0.19 ± 0.26	-0.20 ± 0.20	-0.30 ± 0.30	-0.04 ± 0.26
OXE		-194837.98 ± 0.03	0.35 ± 0.15	0.31 ± 0.11	0.15 ± 0.16	0.49 ± 0.15
	b	-194838.48 ± 0.02	0.24 ± 0.16	0.24 ± 0.11	0.14 ± 0.13	0.25 ± 0.22
	ba	-194846.17 ± 0.02	0.29 ± 0.15	0.28 ± 0.11	0.17 ± 0.15	0.40 ± 0.16
	bad	-194846.38 ± 0.02	0.22 ± 0.13	0.22 ± 0.09	0.10 ± 0.13	0.38 ± 0.12
	badq	-194844.03 ± 0.03	0.38 ± 0.13	0.38 ± 0.10	0.24 ± 0.12	0.53 ± 0.13
N4B		-244115.50 ± 0.03	-0.12 ± 0.18	-0.13 ± 0.13	-0.22 ± 0.17	-0.09 ± 0.19
	b	-244116.16 ± 0.03	0.22 ± 0.14	0.19 ± 0.10	0.07 ± 0.15	0.31 ± 0.14
	ba	-244122.56 ± 0.02	-0.22 ± 0.12	-0.23 ± 0.08	-0.35 ± 0.11	-0.13 ± 0.12
	bad	-244123.06 ± 0.02	-0.26 ± 0.14	-0.28 ± 0.10	-0.32 ± 0.13	-0.27 ± 0.15
	badq	-244116.03 ± 0.03	0.28 ± 0.14	0.25 ± 0.10	0.11 ± 0.14	0.36 ± 0.15

Table 61: MM-to-QM unbound-state ligand binding free energy correction values 2-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.08 ± 0.06	-0.09 ± 0.07	-0.10 ± 0.11	-0.04 ± 0.12
	b	-145561.34 ± 0.02	-0.05 ± 0.05	-0.03 ± 0.06	-0.05 ± 0.11	-0.12 ± 0.15
	ba	-145565.50 ± 0.02	0.10 ± 0.05	0.09 ± 0.06	-0.05 ± 0.09	0.20 ± 0.11
	bad	-145565.89 ± 0.02	0.09 ± 0.05	0.06 ± 0.07	0.01 ± 0.10	0.09 ± 0.09
	badq	-145567.87 ± 0.02	-0.03 ± 0.05	0.04 ± 0.07	0.00 ± 0.14	0.01 ± 0.21
PXY		-194836.27 ± 0.03	-0.12 ± 0.08	-0.01 ± 0.09	-0.32 ± 0.12	-0.21 ± 0.33
	b	-194836.91 ± 0.03	0.00 ± 0.08	0.03 ± 0.10	0.06 ± 0.19	0.08 ± 0.21
	ba	-194843.73 ± 0.02	-0.04 ± 0.06	0.02 ± 0.07	0.04 ± 0.18	0.14 ± 0.10
	bad	-194843.91 ± 0.03	-0.06 ± 0.07	-0.01 ± 0.08	0.04 ± 0.19	0.15 ± 0.09
	badq	-194849.04 ± 0.05	-0.20 ± 0.14	0.22 ± 0.29	-0.91 ± 0.46	1.27 ± 0.34
I4B		-244115.78 ± 0.03	-0.12 ± 0.09	-0.10 ± 0.11	-0.13 ± 0.27	0.03 ± 0.20
	b	-244116.51 ± 0.03	-0.17 ± 0.09	-0.08 ± 0.09	-0.50 ± 0.10	0.25 ± 0.20
	ba	-244120.47 ± 0.03	-0.18 ± 0.08	-0.09 ± 0.09	-0.63 ± 0.12	0.02 ± 0.34
	bad	-244120.69 ± 0.03	-0.15 ± 0.08	-0.10 ± 0.09	-0.56 ± 0.12	0.28 ± 0.13
	badq	-244118.97 ± 0.05	-0.44 ± 0.13	-0.26 ± 0.21	-1.34 ± 0.45	0.86 ± 0.15
BZF		-240488.93 ± 0.05	0.01 ± 0.14	0.60 ± 0.24	1.53 ± 0.59	2.21 ± 0.22
	b	-240488.68 ± 0.06	0.27 ± 0.14	-0.22 ± 0.24	-1.10 ± 0.38	1.05 ± 0.27
	ba	-240530.60 ± 0.04	0.09 ± 0.09	0.03 ± 0.13	-0.43 ± 0.28	-0.69 ± 0.19
	bad	-240530.12 ± 0.04	-0.04 ± 0.09	-0.08 ± 0.13	-0.45 ± 0.19	-0.18 ± 0.30
	badq	-240532.72 ± 0.04	-0.09 ± 0.12	0.32 ± 0.18	0.32 ± 0.29	0.71 ± 0.27
DEN		-217978.56 ± 0.04	-0.21 ± 0.11	-0.21 ± 0.20	-0.71 ± 0.35	-0.16 ± 0.50
	b	-217978.34 ± 0.04	0.13 ± 0.12	0.10 ± 0.16	0.71 ± 0.39	1.02 ± 0.16
	ba	-218030.69 ± 0.03	-0.26 ± 0.08	-0.21 ± 0.13	-0.12 ± 0.19	-0.61 ± 0.21

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Table 61 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	-0.11 ± 0.08	-0.01 ± 0.10	-0.16 ± 0.17	0.03 ± 0.30
	badq	-218029.62 ± 0.03	-0.14 ± 0.09	0.05 ± 0.12	-0.05 ± 0.23	-0.53 ± 0.54
IND		-228035.76 ± 0.06	-1.72 ± 0.18	-0.03 ± 0.52	-2.27 ± 0.49	2.25 ± 0.41
	b	-228035.97 ± 0.06	0.38 ± 0.16	-0.01 ± 0.38	-2.07 ± 0.31	0.17 ± 0.58
	ba	-228075.42 ± 0.05	0.63 ± 0.15	0.20 ± 0.25	-1.01 ± 0.28	1.27 ± 0.23
	bad	-228077.63 ± 0.04	0.19 ± 0.12	0.14 ± 0.18	-0.99 ± 0.23	1.13 ± 0.28
	badq	-228062.14 ± 0.10	-2.31 ± 0.28	-0.31 ± 0.71	-8.64 ± 0.58	8.02 ± 0.42
OXE		-194838.45 ± 0.03	-0.24 ± 0.09	-0.04 ± 0.10	0.20 ± 0.36	0.35 ± 0.15
	b	-194839.14 ± 0.03	-0.18 ± 0.08	-0.05 ± 0.10	-0.24 ± 0.13	0.06 ± 0.26
	ba	-194846.72 ± 0.03	-0.05 ± 0.08	0.00 ± 0.10	0.22 ± 0.35	0.15 ± 0.23
	bad	-194847.04 ± 0.03	-0.10 ± 0.08	0.02 ± 0.09	0.27 ± 0.36	0.39 ± 0.18
	badq	-194845.65 ± 0.04	-0.70 ± 0.11	-0.20 ± 0.16	0.76 ± 0.39	0.69 ± 0.19
N4B		-244115.61 ± 0.05	-0.06 ± 0.13	-0.12 ± 0.17	0.20 ± 0.18	0.00 ± 0.37
	b	-244116.29 ± 0.03	-0.28 ± 0.08	-0.18 ± 0.11	-0.84 ± 0.13	0.12 ± 0.29
	ba	-244122.82 ± 0.03	-0.10 ± 0.08	-0.07 ± 0.11	-0.29 ± 0.17	0.10 ± 0.32
	bad	-244123.36 ± 0.03	0.06 ± 0.09	0.06 ± 0.12	-0.11 ± 0.41	0.48 ± 0.15
	badq	-244115.45 ± 0.04	-0.61 ± 0.11	-0.29 ± 0.21	-1.39 ± 0.22	1.15 ± 0.16

Table 62: MM-to-QM unbound-state ligand binding free energy correction values 3-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.03 ± 0.05	-0.04 ± 0.05	-0.04 ± 0.08	-0.01 ± 0.08
	b	-145561.34 ± 0.02	0.01 ± 0.05	0.00 ± 0.05	0.05 ± 0.08	-0.05 ± 0.07
	ba	-145565.50 ± 0.02	0.10 ± 0.04	0.10 ± 0.04	0.03 ± 0.06	0.16 ± 0.06
	bad	-145565.89 ± 0.02	0.02 ± 0.04	0.03 ± 0.05	-0.01 ± 0.07	0.05 ± 0.06
	badq	-145567.87 ± 0.02	0.01 ± 0.05	0.02 ± 0.05	-0.02 ± 0.08	0.05 ± 0.09
PXY		-194836.27 ± 0.03	-0.02 ± 0.08	-0.01 ± 0.06	-0.01 ± 0.09	-0.04 ± 0.12
	b	-194836.91 ± 0.03	-0.04 ± 0.08	-0.03 ± 0.07	0.02 ± 0.11	-0.06 ± 0.11
	ba	-194843.73 ± 0.02	-0.05 ± 0.05	-0.03 ± 0.04	-0.07 ± 0.07	0.00 ± 0.08
	bad	-194843.91 ± 0.03	0.05 ± 0.06	0.04 ± 0.06	0.03 ± 0.09	0.08 ± 0.08
	badq	-194849.04 ± 0.05	-0.15 ± 0.12	-0.04 ± 0.13	-0.22 ± 0.25	0.02 ± 0.29
I4B		-244115.78 ± 0.03	-0.05 ± 0.09	-0.06 ± 0.08	0.00 ± 0.15	-0.08 ± 0.11
	b	-244116.51 ± 0.03	-0.04 ± 0.08	-0.04 ± 0.07	-0.24 ± 0.09	0.17 ± 0.09
	ba	-244120.47 ± 0.03	-0.01 ± 0.08	-0.03 ± 0.08	0.08 ± 0.10	0.09 ± 0.15
	bad	-244120.69 ± 0.03	0.00 ± 0.08	-0.01 ± 0.06	-0.11 ± 0.09	0.10 ± 0.09
	badq	-244118.97 ± 0.05	-0.14 ± 0.11	-0.13 ± 0.11	-0.42 ± 0.19	0.03 ± 0.14
BZF		-240488.93 ± 0.05	-0.22 ± 0.12	-0.08 ± 0.11	0.20 ± 0.44	0.36 ± 0.25
	b	-240488.68 ± 0.06	-0.09 ± 0.13	-0.11 ± 0.13	-0.24 ± 0.24	-0.21 ± 0.36
	ba	-240530.60 ± 0.04	0.09 ± 0.09	0.07 ± 0.10	0.18 ± 0.17	-0.14 ± 0.16
	bad	-240530.12 ± 0.04	0.05 ± 0.09	0.02 ± 0.08	0.14 ± 0.13	0.02 ± 0.16
	badq	-240532.72 ± 0.04	0.20 ± 0.11	0.26 ± 0.09	0.36 ± 0.21	0.05 ± 0.25
DEN		-217978.56 ± 0.04	-0.11 ± 0.10	-0.12 ± 0.09	-0.19 ± 0.19	-0.12 ± 0.25
	b	-217978.34 ± 0.04	0.00 ± 0.11	-0.04 ± 0.09	0.60 ± 0.32	0.21 ± 0.13
	ba	-218030.69 ± 0.03	-0.11 ± 0.08	-0.11 ± 0.09	-0.11 ± 0.10	-0.28 ± 0.18

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Table 62 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	0.06 ± 0.08	0.03 ± 0.08	0.08 ± 0.12	0.10 ± 0.13
	badq	-218029.62 ± 0.03	0.03 ± 0.08	0.04 ± 0.08	0.08 ± 0.12	-0.11 ± 0.26
IND		-228035.76 ± 0.06	-0.50 ± 0.15	-0.40 ± 0.18	-0.55 ± 0.36	0.82 ± 0.21
	b	-228035.97 ± 0.06	-0.20 ± 0.15	-0.18 ± 0.16	-0.71 ± 0.25	-0.40 ± 0.42
	ba	-228075.42 ± 0.05	0.25 ± 0.12	0.16 ± 0.11	0.18 ± 0.19	0.22 ± 0.22
	bad	-228077.63 ± 0.04	0.13 ± 0.10	0.08 ± 0.10	0.32 ± 0.17	0.44 ± 0.14
	badq	-228062.14 ± 0.10	-0.25 ± 0.25	0.06 ± 0.42	-0.96 ± 0.72	1.12 ± 0.59
OXE		-194838.45 ± 0.03	-0.01 ± 0.08	-0.03 ± 0.07	0.07 ± 0.14	0.14 ± 0.09
	b	-194839.14 ± 0.03	0.00 ± 0.07	-0.01 ± 0.07	-0.04 ± 0.09	0.02 ± 0.11
	ba	-194846.72 ± 0.03	0.05 ± 0.07	0.03 ± 0.06	0.02 ± 0.12	0.17 ± 0.09
	bad	-194847.04 ± 0.03	-0.05 ± 0.08	-0.04 ± 0.07	0.11 ± 0.12	-0.08 ± 0.11
	badq	-194845.65 ± 0.04	0.02 ± 0.10	0.00 ± 0.09	0.37 ± 0.26	0.13 ± 0.20
N4B		-244115.61 ± 0.05	-0.02 ± 0.11	-0.02 ± 0.10	-0.17 ± 0.13	0.02 ± 0.18
	b	-244116.29 ± 0.03	-0.04 ± 0.08	-0.07 ± 0.08	-0.16 ± 0.12	0.05 ± 0.13
	ba	-244122.82 ± 0.03	-0.03 ± 0.07	-0.03 ± 0.07	-0.17 ± 0.10	0.15 ± 0.12
	bad	-244123.36 ± 0.03	-0.01 ± 0.07	0.00 ± 0.07	-0.15 ± 0.13	0.21 ± 0.09
	badq	-244115.45 ± 0.04	-0.34 ± 0.10	-0.31 ± 0.11	-0.68 ± 0.16	-0.05 ± 0.28

Table 63: MM-to-QM unbound-state ligand binding free energy correction values 6-λ states simulated for 200 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.06 ± 0.04	-0.06 ± 0.04	-0.04 ± 0.04	-0.07 ± 0.04
	b	-145561.34 ± 0.02	0.00 ± 0.04	0.00 ± 0.04	0.02 ± 0.04	-0.03 ± 0.04
	ba	-145565.50 ± 0.02	0.00 ± 0.04	0.00 ± 0.03	-0.01 ± 0.04	0.02 ± 0.04
	bad	-145565.89 ± 0.02	0.06 ± 0.04	0.05 ± 0.03	0.05 ± 0.04	0.06 ± 0.04
	badq	-145567.87 ± 0.02	0.03 ± 0.04	0.03 ± 0.04	0.03 ± 0.05	0.03 ± 0.05
PXY		-194836.27 ± 0.03	-0.02 ± 0.05	-0.02 ± 0.04	0.00 ± 0.06	-0.04 ± 0.07
	b	-194836.91 ± 0.03	0.06 ± 0.05	0.06 ± 0.05	0.07 ± 0.07	0.05 ± 0.07
	ba	-194843.73 ± 0.02	-0.02 ± 0.04	-0.02 ± 0.04	-0.04 ± 0.05	0.00 ± 0.04
	bad	-194843.91 ± 0.03	-0.05 ± 0.05	-0.05 ± 0.04	-0.05 ± 0.05	-0.04 ± 0.05
	badq	-194849.04 ± 0.05	0.04 ± 0.09	0.06 ± 0.09	0.00 ± 0.11	0.11 ± 0.12
I4B		-244115.78 ± 0.03	0.01 ± 0.06	0.01 ± 0.05	0.01 ± 0.07	-0.01 ± 0.07
	b	-244116.51 ± 0.03	0.02 ± 0.06	0.02 ± 0.05	-0.01 ± 0.07	0.05 ± 0.07
	ba	-244120.47 ± 0.03	-0.05 ± 0.05	-0.05 ± 0.05	-0.08 ± 0.07	-0.01 ± 0.07
	bad	-244120.69 ± 0.03	0.03 ± 0.05	0.02 ± 0.04	-0.01 ± 0.06	0.06 ± 0.06
	badq	-244118.97 ± 0.05	-0.06 ± 0.09	-0.08 ± 0.08	-0.13 ± 0.09	-0.06 ± 0.11
BZF		-240488.93 ± 0.05	0.01 ± 0.09	0.00 ± 0.09	0.15 ± 0.15	0.05 ± 0.11
	b	-240488.68 ± 0.06	0.01 ± 0.10	0.01 ± 0.08	0.03 ± 0.13	-0.04 ± 0.12
	ba	-240530.60 ± 0.04	-0.02 ± 0.06	-0.01 ± 0.06	-0.01 ± 0.08	-0.07 ± 0.08
	bad	-240530.12 ± 0.04	0.02 ± 0.06	0.01 ± 0.06	0.04 ± 0.08	-0.02 ± 0.08
	badq	-240532.72 ± 0.04	-0.08 ± 0.07	-0.04 ± 0.07	0.00 ± 0.10	-0.04 ± 0.11
DEN		-217978.56 ± 0.04	-0.07 ± 0.07	-0.07 ± 0.07	-0.09 ± 0.10	-0.08 ± 0.11
	b	-217978.34 ± 0.04	-0.05 ± 0.07	-0.06 ± 0.06	-0.04 ± 0.10	-0.06 ± 0.09
	ba	-218030.69 ± 0.03	-0.12 ± 0.05	-0.12 ± 0.05	-0.10 ± 0.07	-0.14 ± 0.07

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Table 63 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	0.03 ± 0.05	0.04 ± 0.05	0.03 ± 0.07	0.05 ± 0.07
	badq	-218029.62 ± 0.03	0.01 ± 0.06	0.02 ± 0.06	0.04 ± 0.08	-0.02 ± 0.09
IND		-228035.76 ± 0.06	-0.20 ± 0.11	-0.22 ± 0.10	-0.31 ± 0.16	0.04 ± 0.16
	b	-228035.97 ± 0.06	0.07 ± 0.10	0.07 ± 0.09	-0.09 ± 0.13	0.17 ± 0.13
	ba	-228075.42 ± 0.05	-0.01 ± 0.09	-0.01 ± 0.08	-0.05 ± 0.11	-0.04 ± 0.10
	bad	-228077.63 ± 0.04	-0.04 ± 0.07	-0.05 ± 0.07	-0.12 ± 0.10	0.07 ± 0.08
	badq	-228062.14 ± 0.10	-0.21 ± 0.18	-0.17 ± 0.19	-0.38 ± 0.40	-0.86 ± 0.33
OXE		-194838.45 ± 0.03	-0.05 ± 0.06	-0.06 ± 0.05	-0.06 ± 0.07	-0.02 ± 0.07
	b	-194839.14 ± 0.03	-0.02 ± 0.05	-0.02 ± 0.05	-0.01 ± 0.06	-0.05 ± 0.07
	ba	-194846.72 ± 0.03	-0.03 ± 0.05	-0.03 ± 0.04	-0.06 ± 0.06	0.00 ± 0.06
	bad	-194847.04 ± 0.03	-0.03 ± 0.05	-0.03 ± 0.05	-0.01 ± 0.06	-0.02 ± 0.06
	badq	-194845.65 ± 0.04	-0.09 ± 0.07	-0.10 ± 0.07	-0.10 ± 0.10	-0.05 ± 0.10
N4B		-244115.61 ± 0.05	0.17 ± 0.09	0.16 ± 0.08	0.12 ± 0.10	0.20 ± 0.10
	b	-244116.29 ± 0.03	-0.07 ± 0.06	-0.07 ± 0.05	-0.09 ± 0.09	-0.03 ± 0.07
	ba	-244122.82 ± 0.03	0.05 ± 0.05	0.04 ± 0.05	0.00 ± 0.07	0.10 ± 0.07
	bad	-244123.36 ± 0.03	0.06 ± 0.06	0.06 ± 0.05	0.02 ± 0.09	0.05 ± 0.12
	badq	-244115.45 ± 0.04	0.11 ± 0.08	0.12 ± 0.07	0.07 ± 0.11	0.12 ± 0.11

Table 64: MM-to-QM unbound-state ligand binding free energy correction values 2-λ states simulated for 100 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		-145560.88 ± 0.02	0.07 ± 0.07	-0.02 ± 0.09	-0.17 ± 0.12	0.16 ± 0.11
	b	-145561.34 ± 0.02	0.17 ± 0.06	0.11 ± 0.08	-0.05 ± 0.10	0.25 ± 0.16
	ba	-145565.50 ± 0.02	0.07 ± 0.06	0.05 ± 0.07	0.01 ± 0.12	-0.37 ± 0.34
	bad	-145565.89 ± 0.02	0.14 ± 0.06	0.09 ± 0.07	0.08 ± 0.13	0.09 ± 0.11
	badq	-145567.87 ± 0.02	-0.05 ± 0.08	-0.01 ± 0.13	0.13 ± 0.20	0.00 ± 0.17
PXY		-194836.27 ± 0.03	-0.27 ± 0.12	-0.17 ± 0.13	-0.21 ± 0.25	-0.64 ± 0.39
	b	-194836.91 ± 0.03	-0.01 ± 0.10	-0.05 ± 0.15	-0.07 ± 0.25	0.38 ± 0.15
	ba	-194843.73 ± 0.02	-0.15 ± 0.09	-0.08 ± 0.11	-0.32 ± 0.18	-0.10 ± 0.26
	bad	-194843.91 ± 0.03	-0.15 ± 0.09	-0.10 ± 0.12	-0.31 ± 0.21	0.15 ± 0.24
	badq	-194849.04 ± 0.05	-0.13 ± 0.21	0.40 ± 0.43	0.12 ± 0.53	0.40 ± 0.55
I4B		-244115.78 ± 0.03	0.02 ± 0.11	0.07 ± 0.16	0.04 ± 0.49	0.74 ± 0.16
	b	-244116.51 ± 0.03	0.00 ± 0.12	0.08 ± 0.16	-0.22 ± 0.16	0.03 ± 0.30
	ba	-244120.47 ± 0.03	0.07 ± 0.11	0.19 ± 0.13	-0.27 ± 0.14	-0.15 ± 0.37
	bad	-244120.69 ± 0.03	0.09 ± 0.11	0.19 ± 0.13	-0.24 ± 0.13	0.09 ± 0.23
	badq	-244118.97 ± 0.05	-0.41 ± 0.18	-0.16 ± 0.26	-1.05 ± 0.36	0.82 ± 0.25
BZF		-240488.93 ± 0.05	0.01 ± 0.19	0.28 ± 0.34	-0.93 ± 0.40	2.01 ± 0.23
	b	-240488.68 ± 0.06	0.63 ± 0.20	0.24 ± 0.34	-0.89 ± 0.51	1.83 ± 0.40
	ba	-240530.60 ± 0.04	0.17 ± 0.13	0.06 ± 0.17	0.25 ± 0.37	0.11 ± 0.25
	bad	-240530.12 ± 0.04	0.44 ± 0.12	0.39 ± 0.19	0.18 ± 0.27	0.87 ± 0.30
	badq	-240532.72 ± 0.04	-0.59 ± 0.16	-0.52 ± 0.27	-1.62 ± 0.32	-0.45 ± 0.34
DEN		-217978.56 ± 0.04	-0.37 ± 0.15	-0.13 ± 0.24	-0.86 ± 0.34	1.20 ± 0.25
	b	-217978.34 ± 0.04	0.03 ± 0.16	0.03 ± 0.33	0.45 ± 0.46	0.58 ± 0.34
	ba	-218030.69 ± 0.03	-0.20 ± 0.11	-0.06 ± 0.22	0.37 ± 0.53	0.08 ± 0.18

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Table 64 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-218028.60 ± 0.03	-0.13 ± 0.11	0.05 ± 0.20	0.33 ± 0.54	0.37 ± 0.28
	badq	-218029.62 ± 0.03	-0.27 ± 0.12	-0.01 ± 0.14	-0.21 ± 0.34	0.27 ± 0.16
IND		-228035.76 ± 0.06	-0.33 ± 0.20	-0.23 ± 0.49	-3.05 ± 0.36	2.58 ± 0.42
	b	-228035.97 ± 0.06	-0.26 ± 0.23	0.21 ± 0.55	-2.26 ± 0.46	2.67 ± 0.38
	ba	-228075.42 ± 0.05	0.33 ± 0.20	0.07 ± 0.37	-1.53 ± 0.34	1.59 ± 0.25
	bad	-228077.63 ± 0.04	-0.25 ± 0.17	-0.13 ± 0.33	-1.46 ± 0.38	-1.79 ± 0.59
	badq	-228062.14 ± 0.10	-3.46 ± 0.36	-1.00 ± 0.66	-10.98 ± 0.56	8.97 ± 0.35
OXE		-194838.45 ± 0.03	-0.12 ± 0.12	-0.02 ± 0.15	-0.15 ± 0.25	-0.34 ± 0.29
	b	-194839.14 ± 0.03	0.07 ± 0.10	0.17 ± 0.11	-0.18 ± 0.15	0.45 ± 0.23
	ba	-194846.72 ± 0.03	-0.10 ± 0.10	0.01 ± 0.12	0.22 ± 0.22	0.17 ± 0.23
	bad	-194847.04 ± 0.03	0.06 ± 0.10	0.17 ± 0.13	0.25 ± 0.22	0.10 ± 0.13
	badq	-194845.65 ± 0.04	-0.40 ± 0.16	-0.06 ± 0.18	-0.50 ± 0.40	0.05 ± 0.38
N4B		-244115.61 ± 0.05	-0.06 ± 0.13	-0.12 ± 0.17	0.20 ± 0.18	0.00 ± 0.37
	b	-244116.29 ± 0.03	0.07 ± 0.10	0.13 ± 0.13	-0.46 ± 0.23	0.82 ± 0.13
	ba	-244122.82 ± 0.03	0.20 ± 0.10	0.21 ± 0.13	-0.09 ± 0.24	0.46 ± 0.22
	bad	-244123.36 ± 0.03	-0.01 ± 0.10	-0.05 ± 0.10	0.02 ± 0.22	-0.22 ± 0.31
	badq	-244115.45 ± 0.04	-0.36 ± 0.16	0.20 ± 0.25	0.04 ± 0.32	1.45 ± 0.19

Table 65: MM-to-QM unbound-state ligand binding free energy correction values 3-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.05 ± 0.07	-0.04 ± 0.06	-0.07 ± 0.09	-0.07 ± 0.10
	b	-145561.34 ± 0.02	0.00 ± 0.06	0.02 ± 0.06	-0.02 ± 0.09	0.03 ± 0.10
	ba	-145565.50 ± 0.02	-0.05 ± 0.06	-0.03 ± 0.05	-0.01 ± 0.07	-0.16 ± 0.12
	bad	-145565.89 ± 0.02	0.24 ± 0.06	0.21 ± 0.05	0.19 ± 0.08	0.20 ± 0.08
	badq	-145567.87 ± 0.02	-0.01 ± 0.07	-0.01 ± 0.07	0.07 ± 0.13	-0.07 ± 0.11
PXY		-194836.27 ± 0.03	-0.02 ± 0.09	-0.02 ± 0.09	-0.06 ± 0.14	-0.11 ± 0.15
	b	-194836.91 ± 0.03	0.19 ± 0.10	0.14 ± 0.10	0.16 ± 0.20	0.10 ± 0.20
	ba	-194843.73 ± 0.02	0.16 ± 0.08	0.11 ± 0.08	0.02 ± 0.11	0.18 ± 0.12
	bad	-194843.91 ± 0.03	-0.03 ± 0.09	-0.05 ± 0.08	-0.12 ± 0.11	0.07 ± 0.10
	badq	-194849.04 ± 0.05	0.37 ± 0.17	0.40 ± 0.28	0.80 ± 0.44	0.51 ± 0.39
I4B		-244115.78 ± 0.03	0.05 ± 0.10	0.04 ± 0.09	0.00 ± 0.23	0.37 ± 0.12
	b	-244116.51 ± 0.03	0.08 ± 0.11	0.08 ± 0.09	0.15 ± 0.14	-0.06 ± 0.21
	ba	-244120.47 ± 0.03	0.06 ± 0.09	0.09 ± 0.09	0.01 ± 0.11	0.03 ± 0.17
	bad	-244120.69 ± 0.03	0.08 ± 0.09	0.12 ± 0.09	0.02 ± 0.11	0.11 ± 0.14
	badq	-244118.97 ± 0.05	-0.09 ± 0.16	-0.11 ± 0.18	-0.01 ± 0.25	0.13 ± 0.25
BZF		-240488.93 ± 0.05	-0.07 ± 0.16	-0.07 ± 0.15	-0.05 ± 0.41	0.62 ± 0.17
	b	-240488.68 ± 0.06	0.06 ± 0.17	0.06 ± 0.15	-0.33 ± 0.31	0.63 ± 0.21
	ba	-240530.60 ± 0.04	0.21 ± 0.12	0.17 ± 0.12	0.21 ± 0.20	0.09 ± 0.17
	bad	-240530.12 ± 0.04	0.13 ± 0.12	0.16 ± 0.12	0.11 ± 0.16	0.31 ± 0.16
	badq	-240532.72 ± 0.04	-0.11 ± 0.15	-0.13 ± 0.14	-0.19 ± 0.34	-0.37 ± 0.25
DEN		-217978.56 ± 0.04	-0.20 ± 0.13	-0.19 ± 0.13	-0.36 ± 0.27	0.06 ± 0.16
	b	-217978.34 ± 0.04	0.08 ± 0.14	0.05 ± 0.14	0.01 ± 0.24	0.30 ± 0.19
	ba	-218030.69 ± 0.03	-0.15 ± 0.11	-0.12 ± 0.12	0.02 ± 0.35	-0.24 ± 0.16

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Table 65 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	0.17 ± 0.09	0.16 ± 0.11	0.11 ± 0.34	0.23 ± 0.25
	badq	-218029.62 ± 0.03	0.27 ± 0.09	0.23 ± 0.09	0.41 ± 0.28	0.43 ± 0.09
IND		-228035.76 ± 0.06	0.33 ± 0.21	0.25 ± 0.22	-0.07 ± 0.28	0.70 ± 0.50
	b	-228035.97 ± 0.06	0.03 ± 0.19	0.07 ± 0.21	-0.53 ± 0.36	0.65 ± 0.44
	ba	-228075.42 ± 0.05	-0.04 ± 0.16	-0.05 ± 0.17	-0.46 ± 0.32	0.42 ± 0.24
	bad	-228077.63 ± 0.04	-0.21 ± 0.15	-0.23 ± 0.16	-0.45 ± 0.24	-0.45 ± 0.46
	badq	-228062.14 ± 0.10	-0.59 ± 0.32	-0.29 ± 0.47	-3.44 ± 0.52	3.16 ± 0.33
OXE		-194838.45 ± 0.03	-0.16 ± 0.10	-0.14 ± 0.09	-0.05 ± 0.16	-0.15 ± 0.14
	b	-194839.14 ± 0.03	0.15 ± 0.09	0.14 ± 0.08	0.11 ± 0.12	0.30 ± 0.11
	ba	-194846.72 ± 0.03	0.17 ± 0.09	0.14 ± 0.08	0.24 ± 0.13	0.21 ± 0.12
	bad	-194847.04 ± 0.03	0.08 ± 0.10	0.11 ± 0.09	0.20 ± 0.13	-0.01 ± 0.14
	badq	-194845.65 ± 0.04	0.11 ± 0.14	0.10 ± 0.13	-0.02 ± 0.23	0.13 ± 0.23
N4B		-244115.61 ± 0.05	-0.02 ± 0.11	-0.02 ± 0.10	-0.17 ± 0.13	0.02 ± 0.18
	b	-244116.29 ± 0.03	0.14 ± 0.10	0.15 ± 0.10	0.02 ± 0.21	0.31 ± 0.27
	ba	-244122.82 ± 0.03	0.42 ± 0.09	0.38 ± 0.09	0.22 ± 0.15	0.52 ± 0.17
	bad	-244123.36 ± 0.03	-0.08 ± 0.10	-0.07 ± 0.09	0.07 ± 0.14	-0.34 ± 0.15
	badq	-244115.45 ± 0.04	-0.26 ± 0.15	-0.15 ± 0.17	-0.15 ± 0.25	0.03 ± 0.28

Table 66: MM-to-QM unbound-state ligand binding free energy correction values 6-λ states simulated for 100 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	0.02 ± 0.05	0.02 ± 0.04	0.04 ± 0.06	-0.01 ± 0.06
	b	-145561.34 ± 0.02	0.11 ± 0.04	0.11 ± 0.04	0.12 ± 0.05	0.10 ± 0.05
	ba	-145565.50 ± 0.02	0.03 ± 0.04	0.03 ± 0.04	0.04 ± 0.05	0.02 ± 0.05
	bad	-145565.89 ± 0.02	0.09 ± 0.04	0.09 ± 0.04	0.09 ± 0.05	0.07 ± 0.05
	badq	-145567.87 ± 0.02	-0.02 ± 0.04	-0.02 ± 0.05	-0.01 ± 0.08	-0.03 ± 0.07
PXY		-194836.27 ± 0.03	-0.06 ± 0.07	-0.06 ± 0.06	-0.07 ± 0.08	-0.06 ± 0.08
	b	-194836.91 ± 0.03	0.11 ± 0.07	0.09 ± 0.06	0.05 ± 0.09	0.14 ± 0.08
	ba	-194843.73 ± 0.02	0.00 ± 0.05	0.00 ± 0.04	-0.03 ± 0.06	0.04 ± 0.06
	bad	-194843.91 ± 0.03	-0.09 ± 0.06	-0.09 ± 0.05	-0.13 ± 0.07	-0.06 ± 0.08
	badq	-194849.04 ± 0.05	0.01 ± 0.12	0.00 ± 0.14	0.14 ± 0.25	-0.03 ± 0.23
I4B		-244115.78 ± 0.03	0.07 ± 0.08	0.08 ± 0.06	0.05 ± 0.09	0.15 ± 0.08
	b	-244116.51 ± 0.03	-0.12 ± 0.07	-0.10 ± 0.06	-0.11 ± 0.09	-0.08 ± 0.09
	ba	-244120.47 ± 0.03	0.04 ± 0.07	0.04 ± 0.07	0.07 ± 0.09	0.03 ± 0.09
	bad	-244120.69 ± 0.03	0.20 ± 0.07	0.19 ± 0.06	0.19 ± 0.09	0.19 ± 0.09
	badq	-244118.97 ± 0.05	0.01 ± 0.10	0.00 ± 0.10	0.01 ± 0.15	0.02 ± 0.15
BZF		-240488.93 ± 0.05	-0.04 ± 0.11	-0.04 ± 0.09	-0.10 ± 0.14	0.07 ± 0.13
	b	-240488.68 ± 0.06	0.17 ± 0.13	0.16 ± 0.11	0.22 ± 0.17	0.15 ± 0.16
	ba	-240530.60 ± 0.04	0.11 ± 0.08	0.11 ± 0.08	0.19 ± 0.12	0.05 ± 0.10
	bad	-240530.12 ± 0.04	-0.08 ± 0.08	-0.05 ± 0.07	-0.11 ± 0.10	0.00 ± 0.09
	badq	-240532.72 ± 0.04	-0.05 ± 0.10	-0.05 ± 0.08	-0.15 ± 0.12	-0.01 ± 0.12
DEN		-217978.56 ± 0.04	-0.05 ± 0.10	-0.06 ± 0.09	-0.04 ± 0.14	-0.10 ± 0.13
	b	-217978.34 ± 0.04	0.01 ± 0.09	0.00 ± 0.09	-0.06 ± 0.14	0.10 ± 0.12
	ba	-218030.69 ± 0.03	-0.14 ± 0.08	-0.13 ± 0.09	-0.10 ± 0.16	-0.19 ± 0.17

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Table 66 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	0.06 ± 0.07	0.05 ± 0.07	0.04 ± 0.12	0.07 ± 0.09
	badq	-218029.62 ± 0.03	0.09 ± 0.07	0.09 ± 0.06	0.07 ± 0.09	0.13 ± 0.08
IND		-228035.76 ± 0.06	0.04 ± 0.13	0.03 ± 0.13	0.07 ± 0.27	0.12 ± 0.22
	b	-228035.97 ± 0.06	-0.19 ± 0.14	-0.20 ± 0.12	-0.11 ± 0.20	-0.03 ± 0.16
	ba	-228075.42 ± 0.05	0.08 ± 0.11	0.06 ± 0.10	0.04 ± 0.17	0.16 ± 0.15
	bad	-228077.63 ± 0.04	-0.11 ± 0.10	-0.12 ± 0.09	-0.21 ± 0.14	-0.02 ± 0.13
	badq	-228062.14 ± 0.10	0.24 ± 0.22	0.16 ± 0.23	-0.34 ± 0.36	0.90 ± 0.33
OXE		-194838.45 ± 0.03	-0.06 ± 0.08	-0.04 ± 0.07	-0.04 ± 0.09	-0.07 ± 0.09
	b	-194839.14 ± 0.03	0.00 ± 0.07	0.01 ± 0.05	-0.04 ± 0.07	0.06 ± 0.07
	ba	-194846.72 ± 0.03	0.05 ± 0.07	0.05 ± 0.06	0.08 ± 0.09	0.00 ± 0.09
	bad	-194847.04 ± 0.03	0.12 ± 0.07	0.13 ± 0.06	0.13 ± 0.07	0.12 ± 0.09
	badq	-194845.65 ± 0.04	0.15 ± 0.09	0.16 ± 0.09	0.10 ± 0.14	0.23 ± 0.13
N4B		-244115.61 ± 0.05	0.17 ± 0.09	0.16 ± 0.08	0.12 ± 0.10	0.20 ± 0.10
	b	-244116.29 ± 0.03	0.00 ± 0.07	0.02 ± 0.06	-0.07 ± 0.09	0.10 ± 0.10
	ba	-244122.82 ± 0.03	0.22 ± 0.07	0.21 ± 0.06	0.17 ± 0.09	0.22 ± 0.09
	bad	-244123.36 ± 0.03	-0.14 ± 0.08	-0.12 ± 0.06	-0.07 ± 0.09	-0.23 ± 0.16
	badq	-244115.45 ± 0.04	0.10 ± 0.09	0.12 ± 0.08	0.08 ± 0.12	0.27 ± 0.11

Table 67: MM-to-QM unbound-state ligand binding free energy correction values 2-λ states simulated for 50 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		-145560.88 ± 0.02	-0.03 ± 0.12	-0.08 ± 0.13	-0.03 ± 0.31	-0.29 ± 0.23
	b	-145561.34 ± 0.02	0.32 ± 0.10	0.27 ± 0.12	-0.17 ± 0.16	0.44 ± 0.12
	ba	-145565.50 ± 0.02	0.17 ± 0.08	0.17 ± 0.12	-0.13 ± 0.16	0.46 ± 0.20
	bad	-145565.89 ± 0.02	0.18 ± 0.10	0.12 ± 0.10	-0.06 ± 0.13	0.04 ± 0.17
	badq	-145567.87 ± 0.02	-0.08 ± 0.09	-0.05 ± 0.12	-0.35 ± 0.18	0.30 ± 0.14
PXY		-194836.27 ± 0.03	-0.06 ± 0.15	-0.07 ± 0.18	0.17 ± 0.36	-0.71 ± 0.46
	b	-194836.91 ± 0.03	0.14 ± 0.15	0.18 ± 0.18	0.26 ± 0.31	0.32 ± 0.27
	ba	-194843.73 ± 0.02	0.27 ± 0.12	0.25 ± 0.12	0.34 ± 0.30	0.46 ± 0.15
	bad	-194843.91 ± 0.03	0.31 ± 0.13	0.24 ± 0.13	0.34 ± 0.31	0.26 ± 0.15
	badq	-194849.04 ± 0.05	-0.10 ± 0.26	-0.06 ± 0.50	-1.57 ± 0.48	1.08 ± 0.40
I4B		-244115.78 ± 0.03	-0.24 ± 0.18	-0.16 ± 0.20	-0.06 ± 0.38	0.53 ± 0.19
	b	-244116.51 ± 0.03	-0.15 ± 0.15	-0.15 ± 0.23	-0.24 ± 0.36	0.03 ± 0.31
	ba	-244120.47 ± 0.03	-0.29 ± 0.15	-0.35 ± 0.17	-0.31 ± 0.35	0.04 ± 0.18
	bad	-244120.69 ± 0.03	-0.10 ± 0.14	-0.06 ± 0.20	-0.27 ± 0.32	0.51 ± 0.25
	badq	-244118.97 ± 0.05	-0.09 ± 0.23	0.65 ± 0.50	-0.70 ± 0.48	2.53 ± 0.33
BZF		-240488.93 ± 0.05	-0.09 ± 0.31	0.48 ± 0.41	0.64 ± 0.49	1.34 ± 0.47
	b	-240488.68 ± 0.06	-0.19 ± 0.34	-0.57 ± 0.39	-1.06 ± 0.46	0.31 ± 0.36
	ba	-240530.60 ± 0.04	-0.10 ± 0.16	-0.02 ± 0.23	-0.70 ± 0.23	0.24 ± 0.33
	bad	-240530.12 ± 0.04	0.00 ± 0.19	-0.03 ± 0.20	-0.77 ± 0.21	0.82 ± 0.22
	badq	-240532.72 ± 0.04	-0.32 ± 0.29	0.17 ± 0.39	-1.10 ± 0.33	1.45 ± 0.38
DEN		-217978.56 ± 0.04	0.12 ± 0.20	0.05 ± 0.38	-0.82 ± 0.37	-0.21 ± 0.24
	b	-217978.34 ± 0.04	0.57 ± 0.22	0.26 ± 0.31	-1.18 ± 0.24	1.48 ± 0.28
	ba	-218030.69 ± 0.03	-0.05 ± 0.14	-0.09 ± 0.19	-0.42 ± 0.39	0.28 ± 0.21

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Table 67 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
	bad	-218028.60 ± 0.03	0.29 ± 0.13	0.30 ± 0.24	-0.42 ± 0.37	0.95 ± 0.26
	badq	-218029.62 ± 0.03	0.00 ± 0.14	0.17 ± 0.16	0.16 ± 0.23	0.44 ± 0.21
IND		-228035.76 ± 0.06	0.50 ± 0.31	0.90 ± 0.39	-2.14 ± 0.28	3.94 ± 0.30
	b	-228035.97 ± 0.06	0.06 ± 0.28	0.29 ± 0.53	-3.04 ± 0.45	3.64 ± 0.31
	ba	-228075.42 ± 0.05	0.12 ± 0.26	0.33 ± 0.38	-0.26 ± 0.54	1.56 ± 0.38
	bad	-228077.63 ± 0.04	0.02 ± 0.28	-0.01 ± 0.30	-0.18 ± 0.45	-1.80 ± 0.25
	badq	-228062.14 ± 0.10	-2.93 ± 0.56	-1.20 ± 0.81	-12.12 ± 0.58	9.72 ± 0.56
OXE		-194838.45 ± 0.03	-0.50 ± 0.17	-0.43 ± 0.20	-0.97 ± 0.19	-0.21 ± 0.31
	b	-194839.14 ± 0.03	-0.43 ± 0.16	-0.31 ± 0.23	0.03 ± 0.51	0.18 ± 0.16
	ba	-194846.72 ± 0.03	-0.27 ± 0.16	-0.20 ± 0.18	-0.51 ± 0.21	0.36 ± 0.19
	bad	-194847.04 ± 0.03	-0.27 ± 0.14	-0.07 ± 0.17	-0.48 ± 0.42	0.73 ± 0.16
	badq	-194845.65 ± 0.04	-0.92 ± 0.24	-0.28 ± 0.48	-0.86 ± 0.54	0.67 ± 0.49
N4B		-244115.61 ± 0.05	0.27 ± 0.20	0.36 ± 0.34	0.49 ± 0.51	-0.60 ± 0.50
	b	-244116.29 ± 0.03	0.50 ± 0.18	0.48 ± 0.29	0.73 ± 0.38	0.18 ± 0.34
	ba	-244122.82 ± 0.03	0.83 ± 0.16	0.81 ± 0.26	0.11 ± 0.34	1.29 ± 0.33
	bad	-244123.36 ± 0.03	0.24 ± 0.14	0.33 ± 0.20	0.19 ± 0.24	-0.62 ± 0.52
	badq	-244115.45 ± 0.04	-0.31 ± 0.23	-0.37 ± 0.44	-1.97 ± 0.24	0.82 ± 0.39

Table 68: MM-to-QM unbound-state ligand binding free energy correction values 3-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.08 ± 0.11	-0.08 ± 0.09	-0.07 ± 0.14	-0.16 ± 0.14
	b	-145561.34 ± 0.02	0.07 ± 0.11	0.10 ± 0.09	0.09 ± 0.20	0.17 ± 0.11
	ba	-145565.50 ± 0.02	0.12 ± 0.10	0.14 ± 0.09	0.07 ± 0.11	0.17 ± 0.15
	bad	-145565.89 ± 0.02	0.17 ± 0.07	0.16 ± 0.06	0.03 ± 0.08	0.23 ± 0.09
	badq	-145567.87 ± 0.02	0.10 ± 0.10	0.07 ± 0.10	-0.03 ± 0.14	0.17 ± 0.16
PXY		-194836.27 ± 0.03	-0.21 ± 0.17	-0.14 ± 0.17	0.02 ± 0.27	-0.60 ± 0.37
	b	-194836.91 ± 0.03	0.09 ± 0.14	0.13 ± 0.15	0.07 ± 0.20	0.13 ± 0.26
	ba	-194843.73 ± 0.02	0.09 ± 0.13	0.11 ± 0.09	0.30 ± 0.22	0.06 ± 0.15
	bad	-194843.91 ± 0.03	-0.01 ± 0.11	0.04 ± 0.09	0.05 ± 0.14	-0.03 ± 0.15
	badq	-194849.04 ± 0.05	-0.08 ± 0.25	0.07 ± 0.24	-0.36 ± 0.34	-0.21 ± 0.40
I4B		-244115.78 ± 0.03	-0.18 ± 0.20	-0.18 ± 0.13	0.04 ± 0.23	-0.35 ± 0.22
	b	-244116.51 ± 0.03	-0.11 ± 0.16	-0.13 ± 0.13	-0.05 ± 0.20	-0.09 ± 0.19
	ba	-244120.47 ± 0.03	0.08 ± 0.13	-0.02 ± 0.12	0.02 ± 0.29	0.15 ± 0.16
	bad	-244120.69 ± 0.03	0.01 ± 0.14	-0.03 ± 0.14	-0.04 ± 0.20	0.21 ± 0.18
	badq	-244118.97 ± 0.05	0.36 ± 0.20	0.35 ± 0.23	-0.17 ± 0.32	1.01 ± 0.44
BZF		-240488.93 ± 0.05	-0.29 ± 0.26	-0.16 ± 0.21	0.11 ± 0.41	-0.14 ± 0.29
	b	-240488.68 ± 0.06	0.17 ± 0.27	0.01 ± 0.22	0.17 ± 0.40	0.10 ± 0.30
	ba	-240530.60 ± 0.04	0.03 ± 0.17	0.02 ± 0.16	-0.05 ± 0.19	0.06 ± 0.23
	bad	-240530.12 ± 0.04	-0.05 ± 0.16	-0.08 ± 0.14	-0.39 ± 0.18	0.27 ± 0.18
	badq	-240532.72 ± 0.04	-0.33 ± 0.19	-0.17 ± 0.21	-0.68 ± 0.22	0.33 ± 0.33
DEN		-217978.56 ± 0.04	0.39 ± 0.24	0.34 ± 0.23	0.52 ± 0.31	-0.05 ± 0.25
	b	-217978.34 ± 0.04	0.10 ± 0.22	0.17 ± 0.18	0.03 ± 0.35	0.02 ± 0.39
	ba	-218030.69 ± 0.03	-0.11 ± 0.16	-0.10 ± 0.13	-0.12 ± 0.21	-0.18 ± 0.16

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Table 68 – *Continued from previous page*

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=3}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=2}$
	bad	-218028.60 ± 0.03	0.24 ± 0.13	0.27 ± 0.13	-0.03 ± 0.20	0.40 ± 0.17
	badq	-218029.62 ± 0.03	0.22 ± 0.18	0.26 ± 0.11	0.36 ± 0.17	-0.99 ± 0.53
IND		-228035.76 ± 0.06	0.08 ± 0.27	0.28 ± 0.26	-0.37 ± 0.36	1.37 ± 0.29
	b	-228035.97 ± 0.06	0.27 ± 0.27	0.22 ± 0.26	-0.41 ± 0.50	1.40 ± 0.26
	ba	-228075.42 ± 0.05	0.28 ± 0.21	0.20 ± 0.18	0.08 ± 0.33	0.58 ± 0.29
	bad	-228077.63 ± 0.04	-0.01 ± 0.22	-0.02 ± 0.20	-0.06 ± 0.32	-0.92 ± 0.25
	badq	-228062.14 ± 0.10	-0.63 ± 0.44	0.20 ± 0.81	-4.04 ± 0.75	4.38 ± 0.49
OXE		-194838.45 ± 0.03	-0.14 ± 0.16	-0.18 ± 0.15	-0.21 ± 0.19	-0.15 ± 0.19
	b	-194839.14 ± 0.03	0.14 ± 0.15	0.06 ± 0.14	0.18 ± 0.35	0.11 ± 0.15
	ba	-194846.72 ± 0.03	-0.13 ± 0.16	-0.13 ± 0.12	-0.16 ± 0.17	-0.07 ± 0.17
	bad	-194847.04 ± 0.03	-0.05 ± 0.15	-0.04 ± 0.12	-0.10 ± 0.20	0.12 ± 0.14
	badq	-194845.65 ± 0.04	-0.02 ± 0.21	-0.06 ± 0.21	-0.12 ± 0.40	0.39 ± 0.28
N4B		-244115.61 ± 0.05	0.37 ± 0.17	0.39 ± 0.16	0.51 ± 0.32	0.05 ± 0.35
	b	-244116.29 ± 0.03	0.24 ± 0.19	0.29 ± 0.16	0.73 ± 0.27	-0.03 ± 0.29
	ba	-244122.82 ± 0.03	0.51 ± 0.14	0.57 ± 0.13	0.34 ± 0.19	0.69 ± 0.21
	bad	-244123.36 ± 0.03	0.18 ± 0.13	0.20 ± 0.12	0.25 ± 0.19	0.06 ± 0.24
	badq	-244115.45 ± 0.04	-0.25 ± 0.20	-0.21 ± 0.23	-0.51 ± 0.35	0.20 ± 0.29

Table 69: MM-to-QM unbound-state ligand binding free energy correction values 6-λ states simulated for 50 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.02 ± 0.07	-0.02 ± 0.06	0.01 ± 0.08	-0.06 ± 0.08
	b	-145561.34 ± 0.02	0.02 ± 0.07	0.04 ± 0.06	0.00 ± 0.09	0.07 ± 0.08
	ba	-145565.50 ± 0.02	0.02 ± 0.06	0.02 ± 0.05	-0.01 ± 0.08	0.03 ± 0.07
	bad	-145565.89 ± 0.02	0.13 ± 0.05	0.13 ± 0.05	0.09 ± 0.06	0.15 ± 0.07
	badq	-145567.87 ± 0.02	0.01 ± 0.07	0.00 ± 0.07	-0.02 ± 0.09	0.03 ± 0.09
PXY		-194836.27 ± 0.03	0.01 ± 0.09	0.00 ± 0.08	0.00 ± 0.09	-0.03 ± 0.12
	b	-194836.91 ± 0.03	-0.15 ± 0.09	-0.12 ± 0.08	-0.14 ± 0.13	-0.09 ± 0.11
	ba	-194843.73 ± 0.02	0.05 ± 0.08	0.06 ± 0.06	0.11 ± 0.10	0.01 ± 0.10
	bad	-194843.91 ± 0.03	0.12 ± 0.09	0.14 ± 0.07	0.16 ± 0.09	0.09 ± 0.09
	badq	-194849.04 ± 0.05	-0.19 ± 0.15	-0.15 ± 0.13	-0.25 ± 0.18	-0.10 ± 0.20
I4B		-244115.78 ± 0.03	0.01 ± 0.10	0.01 ± 0.08	-0.01 ± 0.10	0.05 ± 0.11
	b	-244116.51 ± 0.03	-0.29 ± 0.10	-0.28 ± 0.09	-0.26 ± 0.14	-0.27 ± 0.13
	ba	-244120.47 ± 0.03	-0.06 ± 0.09	-0.06 ± 0.07	-0.08 ± 0.09	-0.04 ± 0.09
	bad	-244120.69 ± 0.03	0.09 ± 0.09	0.08 ± 0.08	0.06 ± 0.10	0.11 ± 0.11
	badq	-244118.97 ± 0.05	0.14 ± 0.15	0.16 ± 0.13	0.02 ± 0.17	0.31 ± 0.21
BZF		-240488.93 ± 0.05	-0.19 ± 0.16	-0.17 ± 0.13	-0.14 ± 0.21	-0.16 ± 0.19
	b	-240488.68 ± 0.06	-0.08 ± 0.16	-0.11 ± 0.14	-0.19 ± 0.20	-0.07 ± 0.20
	ba	-240530.60 ± 0.04	0.11 ± 0.11	0.08 ± 0.10	0.05 ± 0.16	0.12 ± 0.13
	bad	-240530.12 ± 0.04	0.08 ± 0.12	0.05 ± 0.11	0.06 ± 0.16	0.04 ± 0.17
	badq	-240532.72 ± 0.04	0.05 ± 0.14	0.06 ± 0.13	0.01 ± 0.16	0.16 ± 0.18
DEN		-217978.56 ± 0.04	0.15 ± 0.16	0.19 ± 0.12	0.29 ± 0.17	-0.27 ± 0.16
	b	-217978.34 ± 0.04	-0.03 ± 0.14	-0.03 ± 0.12	-0.09 ± 0.17	0.02 ± 0.16
	ba	-218030.69 ± 0.03	-0.25 ± 0.09	-0.24 ± 0.08	-0.24 ± 0.12	-0.24 ± 0.10

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Table 69 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	-0.27 ± 0.09	-0.25 ± 0.09	-0.30 ± 0.13	-0.20 ± 0.12
	badq	-218029.62 ± 0.03	0.30 ± 0.09	0.29 ± 0.08	0.31 ± 0.11	0.32 ± 0.10
IND		-228035.76 ± 0.06	0.12 ± 0.20	0.13 ± 0.16	0.27 ± 0.23	0.26 ± 0.23
	b	-228035.97 ± 0.06	-0.38 ± 0.18	-0.35 ± 0.14	-0.52 ± 0.23	-0.02 ± 0.18
	ba	-228075.42 ± 0.05	0.16 ± 0.16	0.16 ± 0.12	0.29 ± 0.22	0.10 ± 0.20
	bad	-228077.63 ± 0.04	0.08 ± 0.15	0.05 ± 0.12	0.12 ± 0.17	-0.06 ± 0.16
	badq	-228062.14 ± 0.10	0.12 ± 0.29	0.23 ± 0.32	-1.03 ± 0.44	1.16 ± 0.47
OXE		-194838.45 ± 0.03	0.06 ± 0.09	0.04 ± 0.09	-0.01 ± 0.11	0.09 ± 0.10
	b	-194839.14 ± 0.03	-0.12 ± 0.09	-0.15 ± 0.09	-0.15 ± 0.15	-0.12 ± 0.11
	ba	-194846.72 ± 0.03	0.10 ± 0.09	0.08 ± 0.08	0.00 ± 0.11	0.17 ± 0.11
	bad	-194847.04 ± 0.03	0.07 ± 0.09	0.06 ± 0.08	-0.02 ± 0.10	0.15 ± 0.13
	badq	-194845.65 ± 0.04	-0.11 ± 0.16	-0.12 ± 0.14	-0.01 ± 0.22	-0.15 ± 0.20
N4B		-244115.61 ± 0.05	0.24 ± 0.11	0.23 ± 0.10	0.25 ± 0.15	0.18 ± 0.16
	b	-244116.29 ± 0.03	0.09 ± 0.10	0.11 ± 0.09	0.19 ± 0.17	0.05 ± 0.13
	ba	-244122.82 ± 0.03	0.20 ± 0.10	0.25 ± 0.09	0.19 ± 0.13	0.27 ± 0.12
	bad	-244123.36 ± 0.03	0.12 ± 0.09	0.13 ± 0.09	0.17 ± 0.12	0.08 ± 0.11
	badq	-244115.45 ± 0.04	0.03 ± 0.13	0.05 ± 0.14	-0.14 ± 0.17	0.25 ± 0.17

Table 70: MM-to-QM unbound-state ligand binding free energy correction values 2-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=2}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=1}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=1}$
BNZ		-145560.88 ± 0.02	-0.31 ± 0.27	-0.48 ± 0.24	-0.76 ± 0.21	-0.91 ± 0.30
	b	-145561.34 ± 0.02	-0.16 ± 0.14	-0.22 ± 0.16	-0.57 ± 0.13	0.01 ± 0.19
	ba	-145565.50 ± 0.02	-0.06 ± 0.18	-0.20 ± 0.16	-0.55 ± 0.13	0.00 ± 0.18
	bad	-145565.89 ± 0.02	0.01 ± 0.16	-0.05 ± 0.17	-0.48 ± 0.14	-0.04 ± 0.37
	badq	-145567.87 ± 0.02	-0.49 ± 0.16	-0.52 ± 0.20	-0.62 ± 0.28	-0.31 ± 0.19
PXY		-194836.27 ± 0.03	-0.05 ± 0.41	0.13 ± 0.45	0.20 ± 0.54	0.73 ± 0.29
	b	-194836.91 ± 0.03	0.21 ± 0.33	0.46 ± 0.23	-0.47 ± 0.18	1.47 ± 0.16
	ba	-194843.73 ± 0.02	-0.45 ± 0.24	-0.52 ± 0.31	-0.92 ± 0.32	-1.09 ± 0.52
	bad	-194843.91 ± 0.03	-0.57 ± 0.18	-0.55 ± 0.25	-0.93 ± 0.32	0.00 ± 0.25
	badq	-194849.04 ± 0.05	-0.37 ± 0.58	0.92 ± 0.52	-0.10 ± 0.44	2.44 ± 0.28
I4B		-244115.78 ± 0.03	0.16 ± 0.34	0.58 ± 0.38	0.54 ± 0.41	0.63 ± 0.44
	b	-244116.51 ± 0.03	-0.22 ± 0.37	-0.34 ± 0.29	-0.68 ± 0.25	-0.31 ± 0.27
	ba	-244120.47 ± 0.03	-0.27 ± 0.25	-0.17 ± 0.35	-0.74 ± 0.27	0.10 ± 0.42
	bad	-244120.69 ± 0.03	0.17 ± 0.24	0.23 ± 0.29	-0.79 ± 0.23	1.28 ± 0.22
	badq	-244118.97 ± 0.05	0.21 ± 0.59	1.10 ± 0.38	-0.06 ± 0.35	2.34 ± 0.24
BZF		-240488.93 ± 0.05	-0.72 ± 0.46	-1.03 ± 0.49	-1.97 ± 0.36	-0.54 ± 0.49
	b	-240488.68 ± 0.06	0.95 ± 0.57	0.61 ± 0.62	-1.70 ± 0.37	2.85 ± 0.51
	ba	-240530.60 ± 0.04	-0.61 ± 0.35	-0.61 ± 0.33	-0.59 ± 0.36	-1.54 ± 0.44
	bad	-240530.12 ± 0.04	-0.22 ± 0.34	-0.44 ± 0.32	-0.71 ± 0.34	-0.13 ± 0.30
	badq	-240532.72 ± 0.04	-1.32 ± 0.49	-1.15 ± 0.60	-2.20 ± 0.54	0.23 ± 0.29
DEN		-217978.56 ± 0.04	0.25 ± 0.36	0.98 ± 0.42	0.22 ± 0.41	2.08 ± 0.26
	b	-217978.34 ± 0.04	0.25 ± 0.45	-0.08 ± 0.46	-0.66 ± 0.43	0.72 ± 0.35
	ba	-218030.69 ± 0.03	0.37 ± 0.26	0.43 ± 0.29	-0.13 ± 0.23	0.59 ± 0.42

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Table 70 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=1}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	-0.34 ± 0.23	-0.27 ± 0.18	-0.15 ± 0.20	-0.30 ± 0.19
	badq	-218029.62 ± 0.03	-0.46 ± 0.37	0.02 ± 0.30	-1.07 ± 0.25	1.09 ± 0.24
IND		-228035.76 ± 0.06	-0.13 ± 0.61	0.16 ± 0.55	-3.25 ± 0.36	3.57 ± 0.44
	b	-228035.97 ± 0.06	0.72 ± 0.71	0.33 ± 0.66	-3.14 ± 0.40	3.80 ± 0.53
	ba	-228075.42 ± 0.05	0.68 ± 0.32	0.40 ± 0.41	-2.71 ± 0.25	3.51 ± 0.32
	bad	-228077.63 ± 0.04	0.46 ± 0.40	-0.21 ± 0.41	-2.77 ± 0.31	2.35 ± 0.27
	badq	-228062.14 ± 0.10	-4.53 ± 1.18	-1.21 ± 0.77	-12.06 ± 0.56	9.63 ± 0.53
OXE		-194838.45 ± 0.03	-0.50 ± 0.34	-0.71 ± 0.33	-1.45 ± 0.30	-0.06 ± 0.22
	b	-194839.14 ± 0.03	-0.26 ± 0.28	0.03 ± 0.31	-0.87 ± 0.22	0.82 ± 0.29
	ba	-194846.72 ± 0.03	-0.02 ± 0.29	0.06 ± 0.30	-0.96 ± 0.23	0.98 ± 0.22
	bad	-194847.04 ± 0.03	-0.35 ± 0.28	-0.30 ± 0.26	-0.93 ± 0.23	0.35 ± 0.24
	badq	-194845.65 ± 0.04	-0.95 ± 0.37	-0.29 ± 0.42	-2.46 ± 0.39	1.93 ± 0.20
N4B		-244115.61 ± 0.05	-0.08 ± 0.29	-0.21 ± 0.39	-0.09 ± 0.50	0.08 ± 0.37
	b	-244116.29 ± 0.03	0.35 ± 0.32	0.39 ± 0.33	0.88 ± 0.41	0.76 ± 0.23
	ba	-244122.82 ± 0.03	0.36 ± 0.37	0.43 ± 0.33	0.52 ± 0.46	-0.09 ± 0.52
	bad	-244123.36 ± 0.03	0.34 ± 0.32	0.51 ± 0.29	0.58 ± 0.44	0.99 ± 0.24
	badq	-244115.45 ± 0.04	-0.51 ± 0.47	0.14 ± 0.51	-0.97 ± 0.43	1.23 ± 0.45

Table 71: MM-to-QM unbound-state ligand binding free energy correction values 3-λ states simulated for 20 ps

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
BNZ		-145560.88 ± 0.02	-0.37 ± 0.20	-0.38 ± 0.15	-0.53 ± 0.15	-0.58 ± 0.26
	b	-145561.34 ± 0.02	0.03 ± 0.17	-0.02 ± 0.12	-0.11 ± 0.15	0.02 ± 0.16
	ba	-145565.50 ± 0.02	0.19 ± 0.24	0.08 ± 0.14	0.23 ± 0.27	0.06 ± 0.18
	bad	-145565.89 ± 0.02	0.43 ± 0.08	0.35 ± 0.08	0.08 ± 0.08	0.49 ± 0.17
	badq	-145567.87 ± 0.02	0.07 ± 0.21	-0.02 ± 0.15	-0.09 ± 0.17	-0.21 ± 0.32
PXY		-194836.27 ± 0.03	0.02 ± 0.35	0.09 ± 0.28	0.13 ± 0.40	-0.04 ± 0.34
	b	-194836.91 ± 0.03	0.21 ± 0.24	0.28 ± 0.20	-0.13 ± 0.19	0.71 ± 0.20
	ba	-194843.73 ± 0.02	0.02 ± 0.16	-0.04 ± 0.15	-0.41 ± 0.18	-0.08 ± 0.35
	bad	-194843.91 ± 0.03	-0.24 ± 0.18	-0.31 ± 0.14	-0.50 ± 0.21	-0.05 ± 0.17
	badq	-194849.04 ± 0.05	-0.62 ± 0.37	-0.56 ± 0.41	-0.71 ± 0.35	0.58 ± 0.38
I4B		-244115.78 ± 0.03	0.52 ± 0.21	0.53 ± 0.20	0.47 ± 0.32	0.87 ± 0.26
	b	-244116.51 ± 0.03	0.10 ± 0.23	0.08 ± 0.20	-0.12 ± 0.26	0.08 ± 0.25
	ba	-244120.47 ± 0.03	0.40 ± 0.28	0.27 ± 0.27	0.25 ± 0.35	0.39 ± 0.33
	bad	-244120.69 ± 0.03	-0.12 ± 0.20	-0.04 ± 0.19	-0.51 ± 0.21	0.45 ± 0.17
	badq	-244118.97 ± 0.05	-0.31 ± 0.58	0.01 ± 0.41	0.85 ± 0.55	0.03 ± 0.39
BZF		-240488.93 ± 0.05	-0.06 ± 0.37	-0.12 ± 0.31	-0.67 ± 0.31	-0.17 ± 0.44
	b	-240488.68 ± 0.06	0.53 ± 0.49	0.52 ± 0.46	-0.12 ± 0.45	1.21 ± 0.46
	ba	-240530.60 ± 0.04	-0.55 ± 0.22	-0.56 ± 0.18	-0.59 ± 0.28	-0.77 ± 0.34
	bad	-240530.12 ± 0.04	0.33 ± 0.39	0.23 ± 0.29	0.27 ± 0.33	-0.23 ± 0.37
	badq	-240532.72 ± 0.04	-0.02 ± 0.39	-0.19 ± 0.37	-0.42 ± 0.56	0.34 ± 0.31
DEN		-217978.56 ± 0.04	-0.05 ± 0.30	0.09 ± 0.27	-0.10 ± 0.35	0.66 ± 0.31
	b	-217978.34 ± 0.04	0.44 ± 0.36	0.30 ± 0.29	0.05 ± 0.36	0.44 ± 0.36
	ba	-218030.69 ± 0.03	0.29 ± 0.24	0.31 ± 0.19	0.19 ± 0.24	0.47 ± 0.24

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Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=3}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=2}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	-0.34 ± 0.30	-0.39 ± 0.17	0.19 ± 0.35	-0.51 ± 0.18
	badq	-218029.62 ± 0.03	-0.60 ± 0.32	-0.42 ± 0.28	-0.65 ± 0.31	-0.03 ± 0.29
IND		-228035.76 ± 0.06	-0.49 ± 0.53	-0.34 ± 0.43	-1.53 ± 0.40	0.42 ± 0.47
	b	-228035.97 ± 0.06	0.76 ± 0.60	0.60 ± 0.54	-0.31 ± 0.54	1.21 ± 0.62
	ba	-228075.42 ± 0.05	1.03 ± 0.34	0.87 ± 0.35	-0.53 ± 0.26	1.98 ± 0.40
	bad	-228077.63 ± 0.04	-0.31 ± 0.23	-0.40 ± 0.26	-1.74 ± 0.23	0.91 ± 0.24
	badq	-228062.14 ± 0.10	-1.39 ± 1.02	-0.70 ± 0.90	-3.62 ± 0.74	2.29 ± 0.58
OXE		-194838.45 ± 0.03	-0.29 ± 0.33	-0.37 ± 0.25	-0.56 ± 0.32	-0.40 ± 0.36
	b	-194839.14 ± 0.03	0.13 ± 0.29	0.08 ± 0.23	-0.03 ± 0.30	0.46 ± 0.26
	ba	-194846.72 ± 0.03	0.58 ± 0.27	0.46 ± 0.24	0.14 ± 0.25	0.85 ± 0.24
	bad	-194847.04 ± 0.03	-0.31 ± 0.28	-0.25 ± 0.19	-0.52 ± 0.20	-0.32 ± 0.37
	badq	-194845.65 ± 0.04	-0.13 ± 0.25	-0.15 ± 0.25	-1.07 ± 0.35	1.09 ± 0.17
N4B		-244115.61 ± 0.05	-0.41 ± 0.25	-0.34 ± 0.22	-0.49 ± 0.32	-0.27 ± 0.32
	b	-244116.29 ± 0.03	-0.16 ± 0.31	-0.07 ± 0.21	0.26 ± 0.36	-0.16 ± 0.34
	ba	-244122.82 ± 0.03	0.65 ± 0.30	0.56 ± 0.22	0.83 ± 0.38	0.51 ± 0.35
	bad	-244123.36 ± 0.03	-0.06 ± 0.31	0.07 ± 0.25	0.16 ± 0.36	0.02 ± 0.32
	badq	-244115.45 ± 0.04	-0.15 ± 0.46	-0.10 ± 0.32	0.05 ± 0.48	0.09 ± 0.41

Table 72: MM-to-QM unbound-state ligand binding free energy correction values 6-λ states simulated for 20 ps

Molec.	MM'	$\Delta G_{\mathrm{TI3}}^{N_\lambda=11}$	$\Delta\Delta G_{\mathrm{TI}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{BAR}}^{N_\lambda=6}$	$\Delta\Delta G_{\mathrm{IEXP}}^{N_\lambda=5}$	$\Delta\Delta G_{\mathrm{DEXP}}^{N_\lambda=5}$
BNZ		-145560.88 ± 0.02	-0.18 ± 0.15	-0.19 ± 0.11	-0.19 ± 0.14	-0.26 ± 0.17
	b	-145561.34 ± 0.02	0.02 ± 0.12	0.02 ± 0.09	0.03 ± 0.13	0.01 ± 0.13
	ba	-145565.50 ± 0.02	-0.24 ± 0.08	-0.24 ± 0.07	-0.31 ± 0.08	-0.19 ± 0.09
	bad	-145565.89 ± 0.02	-0.07 ± 0.12	-0.06 ± 0.08	-0.07 ± 0.12	-0.05 ± 0.12
	badq	-145567.87 ± 0.02	-0.51 ± 0.12	-0.52 ± 0.09	-0.50 ± 0.14	-0.52 ± 0.12
PXY		-194836.27 ± 0.03	0.07 ± 0.19	0.11 ± 0.15	0.07 ± 0.20	0.10 ± 0.23
	b	-194836.91 ± 0.03	0.03 ± 0.18	0.04 ± 0.14	-0.03 ± 0.19	0.14 ± 0.18
	ba	-194843.73 ± 0.02	-0.15 ± 0.15	-0.18 ± 0.12	-0.23 ± 0.18	-0.19 ± 0.20
	bad	-194843.91 ± 0.03	-0.03 ± 0.16	-0.09 ± 0.10	-0.08 ± 0.16	-0.05 ± 0.14
	badq	-194849.04 ± 0.05	-0.23 ± 0.30	-0.27 ± 0.24	-0.20 ± 0.31	-0.02 ± 0.32
I4B		-244115.78 ± 0.03	-0.01 ± 0.26	0.03 ± 0.17	0.31 ± 0.28	-0.11 ± 0.24
	b	-244116.51 ± 0.03	-0.21 ± 0.14	-0.19 ± 0.13	-0.30 ± 0.15	-0.13 ± 0.18
	ba	-244120.47 ± 0.03	-0.28 ± 0.19	-0.30 ± 0.13	-0.26 ± 0.20	-0.32 ± 0.17
	bad	-244120.69 ± 0.03	0.11 ± 0.16	0.11 ± 0.13	-0.01 ± 0.17	0.23 ± 0.16
	badq	-244118.97 ± 0.05	0.08 ± 0.24	0.11 ± 0.20	0.06 ± 0.30	0.39 ± 0.22
BZF		-240488.93 ± 0.05	0.04 ± 0.31	0.02 ± 0.21	0.21 ± 0.35	-0.04 ± 0.27
	b	-240488.68 ± 0.06	0.15 ± 0.37	0.14 ± 0.28	0.32 ± 0.40	0.11 ± 0.36
	ba	-240530.60 ± 0.04	-0.62 ± 0.22	-0.59 ± 0.15	-0.42 ± 0.16	-0.80 ± 0.25
	bad	-240530.12 ± 0.04	0.16 ± 0.19	0.14 ± 0.15	0.13 ± 0.19	0.14 ± 0.19
	badq	-240532.72 ± 0.04	0.12 ± 0.26	0.07 ± 0.20	-0.01 ± 0.30	0.20 ± 0.25
DEN		-217978.56 ± 0.04	-0.14 ± 0.21	-0.13 ± 0.16	-0.22 ± 0.23	0.01 ± 0.24
	b	-217978.34 ± 0.04	-0.26 ± 0.24	-0.27 ± 0.17	-0.31 ± 0.25	-0.25 ± 0.24
	ba	-218030.69 ± 0.03	0.39 ± 0.15	0.36 ± 0.11	0.30 ± 0.14	0.40 ± 0.16

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Table 72 – *Continued from previous page*

Molec.	MM'	$\Delta G^{N_\lambda=11}_{\mathrm{TI3}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{TI}}$	$\Delta\Delta G^{N_\lambda=6}_{\mathrm{BAR}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{IEXP}}$	$\Delta\Delta G^{N_\lambda=5}_{\mathrm{DEXP}}$
	bad	-218028.60 ± 0.03	0.28 ± 0.18	0.29 ± 0.12	0.43 ± 0.17	0.13 ± 0.18
	badq	-218029.62 ± 0.03	0.18 ± 0.18	0.15 ± 0.14	0.05 ± 0.21	0.35 ± 0.16
IND		-228035.76 ± 0.06	-0.14 ± 0.32	-0.16 ± 0.24	-0.43 ± 0.31	0.26 ± 0.27
	b	-228035.97 ± 0.06	-0.53 ± 0.36	-0.52 ± 0.33	-0.77 ± 0.37	-0.30 ± 0.43
	ba	-228075.42 ± 0.05	0.24 ± 0.25	0.25 ± 0.19	-0.14 ± 0.26	0.65 ± 0.24
	bad	-228077.63 ± 0.04	-0.20 ± 0.27	-0.26 ± 0.19	-0.38 ± 0.31	-0.05 ± 0.24
	badq	-228062.14 ± 0.10	-1.28 ± 0.53	-1.16 ± 0.49	-2.32 ± 0.53	0.00 ± 0.58
OXE		-194838.45 ± 0.03	-0.15 ± 0.17	-0.18 ± 0.15	-0.32 ± 0.21	-0.07 ± 0.22
	b	-194839.14 ± 0.03	-0.01 ± 0.17	0.02 ± 0.12	-0.10 ± 0.15	0.08 ± 0.21
	ba	-194846.72 ± 0.03	-0.24 ± 0.18	-0.23 ± 0.13	-0.30 ± 0.18	-0.16 ± 0.20
	bad	-194847.04 ± 0.03	-0.03 ± 0.15	-0.05 ± 0.10	-0.16 ± 0.14	0.05 ± 0.15
	badq	-194845.65 ± 0.04	-0.06 ± 0.26	-0.08 ± 0.20	-0.18 ± 0.26	0.09 ± 0.28
N4B		-244115.61 ± 0.05	-0.30 ± 0.19	-0.29 ± 0.14	-0.30 ± 0.19	-0.26 ± 0.19
	b	-244116.29 ± 0.03	-0.02 ± 0.20	0.00 ± 0.14	0.10 ± 0.21	-0.08 ± 0.20
	ba	-244122.82 ± 0.03	0.30 ± 0.20	0.30 ± 0.15	0.34 ± 0.24	0.28 ± 0.22
	bad	-244123.36 ± 0.03	0.54 ± 0.17	0.54 ± 0.12	0.54 ± 0.17	0.59 ± 0.16
	badq	-244115.45 ± 0.04	-0.54 ± 0.24	-0.50 ± 0.22	-0.60 ± 0.27	-0.37 ± 0.28