Table S2. G_s-mediated cAMP accumulation assay results of D1R.

Potency (pEC50) were extracted from a minimum of 3 independent assays in at least triplicate. pEC50 displayed values are mean ± SEM. Delta FOB for difference in either Fold of Basal (FOB) or Delta pEC50 when compared to wild-type receptor value. Average Emax and basal values were determined from "log(agonist) vs. response – Variable slope (four parameters) or log(inhibition) vs. response – Variable slope (four parameters)" function in Graphpad Prism 8.4 software (Graphpad Software Inc., San Diego, CA) and were divided by 10^3 for display, basal values are enclosed with parentheses in the table column. Color scheme is based on the effects of mutations on relative pEC50 and Fold of Basal (FOB) values with red for reduced potency/efficacy and blue for increased potency/efficacy when compared to wild-type values for each ligand. ND - not determined.

		D1R-Dopamine					D1R-Rotigotine				
BW		**Emax (Basal)**	**FOB**	**ΔFOB**	**pEC50**	**ΔpEC50**	**Emax (Basal)**	**FOB**	**ΔFOB**	**pEC50**	**ΔpEC50**
	WT	29.1 ± 10.7 (0.4 ± 0.1)	76.9 ± 26.6	0	8.86 ± 0.16	0	29.1 ± 10.7 (0.4 ± 0.1)	85.3 ± 37.5	0	8.49 ± 0.15	0.00
2.61	K81A	27.4 ± 5.1 (0.3 ± 0.1)	92.8 ± 2.9	15.9	8.58 ± 0.18	-0.28	28.8 ± 0 (0.2 ± 0.1)	138.8 ± 46.3	61.9	8.29 ± 0.08	-0.20
3.28	W99A	51.2 ± 18.6 (0.1 ± 0.1)	332.7 ± 21.5	255.8	6.06 ± 0.01	-2.8	33.5 ± 12.3 (0.1 ± 0.1)	279.4 ± 31.6	202.5	5.95 ± 0.04	-2.54
3.32	D103A	3.4 ± 0.6 (0.8 ± 0.2)	4.2 ± 0.1	-72.7	4.38 ± 0.02	-4.48	1.5 ± 0.2 (0.7 ± 0.1)	2.2 ± 0.2	-74.7	5.37 ± 0.42	-3.12
3.33	I104A	30.5 ± 8.0 (0.1 ± 0.1)	250.6 ± 24.7	173.7	4.44 ± 0.09	-4.42	22.5 ± 6.6 (0.1 ± 0.1)	187.9 ± 21.4	111.0	5.26 ± 0.10	-3.23
3.36	S107A	36.9 ± 10.4 (0.1 ± 0.1)	264.0 ± 49.0	187.1	6.67 ± 0.1	-2.19	30.1 ± 8.4 (0.1 ± 0.1)	257 ± 46.8	180.1	7.02 ± 0.26	-1.47
3.37	T108A	24.5 ± 9.0 (0.3 ± 0.1)	79.3 ± 18.3	2.4	5.33 ± 0.3	-3.53	31.4 ± 11.4 (0.3 ± 0.1)	102.7 ± 20.9	25.8	7.95 ± 0.12	-0.54
ECL2	S188A	27.1 ± 8.6 (0.3 ± 0.1)	88.7 ± 31.7	11.8	8.53 ± 0.02	-0.33	30.2 ± 10.6 (0.4 ± 0.1)	95.2 ± 43.0	18.3	8.39 ± 0.26	-0.10
ECL2	L190A	49.5 ± 18.3 (0.1 ± 0.1)	397.3 ± 98.6	320.4	5.58 ± 0.26	-3.28	41.3 ± 14.4 (0.1 ± 0.1)	404.0 ± 90.8	327.1	6.14 ± 0.22	-2.35
5.38	Y194L	33.5 ± 12.0 (0.2 ± 0.1)	128.2 ± 10.5	51.3	5.93 ± 0.25	-2.93	28.6 ± 9.6 (0.2 ± 0.1)	127.2 ± 1.3	50.3	5.86 ± 0.11	-2.63
5.39	A195L	50.1 ± 17.3 (0.2 ± 0.1)	236.1 ± 29.4	159.2	4.82 ± 0.26	-4.04	28.3 ± 7.1 (0.2 ± 0.1)	161.5 ± 10.8	84.6	6.14 ± 0.10	-2.35
5.42	S198A	44.6 ± 16.9 (0.2 ± 0.1)	186.6 ± 56.9	109.7	5.35 ± 0.28	-3.51	19 ± 4.4 (0.2 ± 0.1)	85.7 ± 8.1	8.8	5.25 ± 0.10	-3.24
5.43	S199A	33.3 ± 10.4 (0.3 ± 0.1)	123.2 ± 20.5	46.3	6.61 ± 0.08	-2.25	33.8 ± 10.6 (0.3 ± 0.1)	122.1 ± 13.2	45.2	6.75 ± 0.17	-1.74
5.46	S202A	31.2 ± 5.3 (0.4 ± 0.1)	84.3 ± 14.7	7.4	5.16 ± 0.03	-3.7	27.4 ± 7.5 (0.3 ± 0.1)	78.2 ± 15.7	1.3	8.93 ± 0.16	0.44
6.48	W285A	32.8 ± 6.4 (0.1 ± 0.1)	275.8 ± 11.4	198.9	4.59 ± 0.11	-4.27	6.4 ± 0.9 (0.1 ± 0.1)	51.0 ± 1.0	-25.9	5.58 ± 0.10	-2.91
6.51	F288A	43.6 ± 10.0 (0.2 ± 0.1)	217.1 ± 5.9	140.2	4.50 ± 0.06	-4.36	33.1 ± 9.9 (0.2 ± 0.1)	174.9 ± 33.2	98.0	5.89 ± 0.16	-2.60
6.52	F289A	36.8 ± 6.0 (0.2 ± 0.1)	236.9 ± 35.4	160	6.38 ± 0.1	-2.48	34 ± 6.4 (0.1 ± 0.1)	250.2 ± 42.6	173.3	6.48 ± 0.20	-2.01
6.55	N292A	41.0 ± 7.1 (0.2 ± 0.1)	215.1 ± 27.5	138.2	4.95 ± 0.13	-3.91	29.2 ± 4.9 (0.2 ± 0.1)	164.9 ± 16.0	88.0	5.92 ± 0.12	-2.57
7.35	F313A	24.3 ± 3.5 (0.3 ± 0.1)	88.4 ± 6.2	11.5	7.75 ± 0.05	-1.11	27.1 ± 3.6 (0.3 ± 0.1)	103.8 ± 11.2	26.9	8.65 ± 0.09	0.16
7.36	D314A	27.8 ± 5.5 (0.3 ± 0.1)	102.8 ± 37.7	25.9	8.23 ± 0.01	-0.63	29.5 ± 6 (0.3 ± 0.1)	106.2 ± 38.8	29.3	8.61 ± 0.19	0.12
7.39	V317A	22.8 ± 5.2 (0.4 ± 0.1)	53.8 ± 13.2	-23.1	7.89 ± 0.02	-0.97	24.1 ± 5.7 (0.4 ± 0.1)	58.1 ± 14.9	-18.8	8.09 ± 0.09	-0.40
7.43	W321L	34.8 ± 9.1 (0.4 ± 0.1)	95.3 ± 26.1	18.4	5.95 ± 0.18	-2.91	35.1 ± 8.2 (0.4 ± 0.1)	94.8 ± 24.5	17.9	5.6 ± 0.13	-2.89