Supplementary Table 2 – Full report of the simulation results with simulated batch effects

100 simulation runs with n=48 samples

	balanced				**random**				**unbalanced**			
	mean-*p*	λ[+]	FDR*	BF**	mean-*p*	λ[+]	FDR*	BF**	mean-*p*	λ[+]	FDR*	BF**
ComBat (SVA) without *mod*[++]	*M*=0.4718 *SD*=0.0066	*M*=1.6830 *SD*=0.1044	*M*=8.9 *SD*=12.37 min=0 max=90	*M*=1.2100 *SD*=0.1044 min=0 max=6	*M*=0.5182 *SD*=0.0010	*M*=0.9638 *SD*=0.2505	*M*=0 *SD*=0 min=0 max=0	*M*=0 *SD*=0 min=0 max=0	*M*=0.5932 *SD*=0.0234	*M*=0.4462 *SD*=0.1916	*M*=0 *SD*=0 min=0 max=0	*M*=0 *SD*=0 min=0 max=0
ComBat (SVA) with *mod*[++]	*M*=0.4156 *SD*=0.0058	*M*=2.3471 *SD*=0.1385	*M*=3486.40 *SD*=1115.10 min=211.30 max=8339	*M*=18.11 *SD*=5.33 min=7 max=34	*M*=0.3775 *SD*=0.0281	*M*=2.2440 *SD*=0.2505	*M*=23004.12 *SD*=22965.91 min=6661 max=164515	*M*=91.75 *SD*=158.56 min=25 max=1185	*M*=0.3084 *SD*=0.0183	*M*=2.744 *SD*=1.1052	*M*=116301,55 *SD*=33699,57652 min=73945 max=281912	*M*=1555.86 *SD*=1555.22 min=615 max=14930
ComBat (ChAMP)	*M*=0.4440 *SD*=0.019	*M*=2.0752 *SD*=0.1373	*M*=1204.11 *SD*=990.59 min=246 max=6156	*M*=10.03 *SD*=4.17 min=3 max=26	*M*=0.3966 *SD*=0.0178	*M*=0.3966 *SD*=0.0178	*M*=11542.92 *SD*=7007.60 min=2434 max=52349	*M*=51.2 *SD*=24.54 min=18 max=185	*M*=0.3199 *SD*=0.0219	*M*=2.8676 *SD*=1.3157	*M*=113820.47 *SD*=33810.66 min=53877 max=220904	*M*=2155.95 *SD*=1740.92 min=526 max=9531
Without ComBat	*M*=0.5879 *SD*=0.0187		*M*=0.01 *SD*=0.1 min=0 max=1	*M*=0.01 *SD*=0.1 min=0 max=1	*M*=0.4840 *SD*=0.1011		*M*=2949.66 *SD*=29494.88 min=0 max=294949	*M*=0.10 *SD*=0.36 min=2 max=2	*M*=0.4057 *SD*=0.1341		*M*=41912.5 *SD*=111629.70 min=0 max=547084	*M*=6.26 *SD*=47.29 min=0 max=470

[++] Model matrix for outcome of interest

[+] Genomic Inflation Factor λ

[*] Significant CpG sites with False Discovery Rate 5%

[**] Significant CpG sites with Bonferroni correction 5%