

Supplementary Table 1: Spearman's rank correlation coefficient (in absolute value) between the different test statistics for all SNPs, for the top 50 ranking SNPs and for the remaining bottom ranking SNPs averaged over 1000 replicates simulated under five different scenarios. Results from the ODP are with all weights in the denominator set to 1. rS, ODP estimated using the retrospective likelihood; pS, ODP estimated using the prospective likelihood; rTS, true ODP calculated using the retrospective likelihood; pTS, true ODP calculated using the prospective likelihood.

MAF:	$U[0.01, 0.5]$			$U[0.01, 0.5]$			0.15			$U[0.01, 0.5]$			$U[0.01, 0.5]$		
logOR(Aa):	$N(0, 0.2^2)$			$E(1/\log(1.2))$			$\log(1.2)$			$\log(1.2)$			$\propto$ MAF		
SNPs:	all	top50	rest	all	top50	rest	all	top50	rest	all	top50	rest	all	top50	rest
PV-BF	0.81	0.99	0.78	0.81	0.99	0.78	0.99	0.99	0.99	0.82	0.99	0.79	0.78	0.95	0.74
PV-pS	0.86	0.97	0.83	0.86	0.97	0.83	0.99	0.99	0.99	0.82	0.99	0.84	0.84	0.91	0.81
PV-pTS	0.88	0.97	0.85	0.12	0.99	0.02	0.13	0.99	0.01	0.19	0.98	0.07	0.71	0.84	0.67
PV-rS	0.75	0.93	0.45	0.75	0.94	0.45	0.86	0.89	0.69	0.76	0.97	0.61	0.74	0.81	0.37
PV-rTS	0.06	0.84	0.03	0.03	0.85	0.02	0.18	0.83	0.09	0.09	0.95	0.08	0.02	0.29	0.01
BF-pS	0.97	0.97	0.97	0.97	0.97	0.96	0.99	0.98	0.99	0.97	0.99	0.97	0.97	0.91	0.96
BF-pTS	0.95	0.96	0.95	0.20	0.97	0.08	0.14	0.99	0.01	0.46	0.99	0.37	0.98	0.90	0.97
BF-rS	0.68	0.93	0.46	0.67	0.94	0.46	0.87	0.91	0.76	0.70	0.97	0.62	0.63	0.79	0.39
BF-rTS	0.05	0.79	0.05	0.02	0.79	0.03	0.18	0.77	0.18	0.09	0.92	0.17	0.03	0.21	0.02
pS-pTS	0.99	0.98	0.98	0.19	0.83	0.15	0.16	0.95	0.05	0.41	0.97	0.34	0.95	0.82	0.95
rS-rTS	0.39	0.78	0.04	0.37	0.79	0.01	0.39	0.91	0.18	0.42	0.93	0.15	0.32	0.24	0.01
pS-rS	0.71	0.89	0.37	0.71	0.91	0.37	0.87	0.92	0.69	0.73	0.96	0.49	0.67	0.69	0.31
pTS-rTS	0.07	0.84	0.04	0.14	0.85	0.03	0.19	0.83	0.11	0.16	0.96	0.11	0.03	0.57	0.03

Supplementary Table 2: Spearman's rank correlation coefficient (in absolute value) between the different test statistics for all SNPs, for the top 50 ranking SNPs and for the remaining bottom ranking SNPs averaged over 100 replicates of sequence data simulated with ten causal variants, 1000 cases/controls and varying OR and MAF. rS, ODP estimated using the retrospective likelihood and denominator weights based on the 0.5% top ranking SNPs by Fisher's exact test.

MAF:	$U[0.01, 0.05]$			$U[0.01, 0.05]$			$U[0.01, 0.05]$			$U[0.01, 0.5]$		
logOR(Aa):	$N(0, 0.2^2)$			$\log(U[1.3, 1.7])$			$\log(U[2.2, 2.5])$			$N(0, 0.2^2)$		
SNPs:	all	top50	rest	all	top50	rest	all	top50	rest	all	top50	rest
PV-BF	0.67	0.53	0.67	0.68	0.63	0.67	0.70	0.76	0.70	0.68	0.89	0.68
PV-rS	0.34	0.56	0.34	0.36	0.67	0.36	0.41	0.85	0.41	0.37	0.69	0.37
BF-rS	0.16	0.55	0.17	0.13	0.63	0.13	0.02	0.76	0.03	0.11	0.79	0.11