

S3 Table: Power of ‘composite’ groups of gene-based association methods.

AR, VE%, D/M	Starting test	Margin	Tests (in order of inclusion)	Composite Sensitivity	Power (adj. p-value)	Mean power of single best test
AR1, 1%, D	KBAC	100	KBAC,CALPHA,UNIQ,VT	0.431	0.348	0.359 (MiST)
AR1, 1%, D	KBAC	10	KBAC,MiST,VT,UNIQ,CALPHA,FRQWGT	0.465	0.360	0.359
AR1, 1%, D	KBAC	1	KBAC,MiST,VT,FRQWGT,CALPHA,UNIQ,BURDEN,SKATO	0.468	0.365	0.359
AR1, 1%, D	SKATO	100	SKATO, VT,UNIQ,MiST	0.420	0.356	0.359
AR1, 1%, D	SKATO	10	SKATO,VT,UNIQ,MiST,KBAC,FRQWGT	0.459	0.373	0.359
AR1, 1%, D	SKATO	1	SKATO,KBAC,MiST,VT,FRQWGT,UNIQ,CALPHA,BURDEN	0.468	0.365	0.359
AR1, 1%, D	MiST	100	MiST,CALPHA,UNIQ,VT	0.423	0.346	0.359
AR1, 1%, D	MiST	10	MiST,VT,UNIQ,CALPHA,UNIQ,KBAC,FRQWGT	0.465	0.360	0.359
AR1, 1%, D	MiST	1	MiST,KBAC,VT,FRQWGT,CALPHA,UNIQ,BURDEN,SKATO	0.468	0.365	0.359
AR2, 1%, D	KBAC	100	KBAC,CALPHA,UNIQ,FRQWGT	0.297	0.229	0.231 (MiST)
AR2, 1%, D	KBAC	10	KBAC,CALPHA,UNIQ,FRQWGT,MiST	0.315	0.245	0.231
AR2, 1%, D	KBAC	1	KBAC,MiST,FRQWGT,CALPHA,UNIQ,BURDEN,VT,SKATO,WILCOX-WSS	0.327	0.243	0.231
AR2, 1%, D	SKATO	100	SKATO,UNIQ,MiST	0.258	0.245	0.231
AR2, 1%, D	SKATO	10	SKATO,VT,KBAC,UNIQ,FRQWGT,MiST	0.310	0.245	0.231
AR2, 1%, D	SKATO	1	SKATO,KBAC,MiST,FRQWGT,CALPHA,UNIQ,BURDEN,VT,WILCOX-WSS	0.327	0.243	0.231
AR2, 1%, D	MiST	100	MiST,CALPHA,UNIQ	0.257	0.208	0.231
AR2, 1%, D	MiST	10	MiST,VT,KBAC,UNIQ,FRQWGT	0.308	0.244	0.231
AR2, 1%, D	MiST	1	MiST,KBAC,FRQWGT,CALPHA,UNIQ,BURDEN,VT,SKATO,WILCOX-WSS	0.327	0.243	0.231
AR3, 1%, D	KBAC	100	KBAC, UNIQ, CALPHA	0.120	0.091	0.095 (MiST)
AR3, 1%, D	KBAC	10	KBAC,CALPHA,UNIQ,VT, WILCOX-WSS	0.128	0.097	0.095
AR3, 1%, D	KBAC	1	KBAC,MiST,FRQWGT,UNIQ,VT,CALPHA,BURDEN,SKAT,WILCOX-WSS,CMC	0.142	0.103	0.095
AR3, 1%, D	SKATO	100	SKATO,VT,UNIQ,CALPHA	0.115	0.090	0.095
AR3, 1%, D	SKATO	10	SKATO,UNIQ,VT,CALPHA,KBAC	0.130	0.097	0.095
AR3, 1%, D	SKATO	1	SKATO,KBAC,MiST,FRQWGT,UNIQ,VT,CALPHA,BURDEN,WILCOX-WSS,CMC	0.143	0.103	0.095
AR3, 1%, D	MiST	100	MiST,UNIQ,BURDEN	0.123	0.110	0.095
AR3, 1%, D	MiST	10	MiST,UNIQ,BURDEN,VT	0.126	0.102	0.095
AR3, 1%, D	MiST	1	MiST,KBAC,FRQWGT,UNIQ,VT,CALPHA,BURDEN,SKAT,WILCOX-WSS,CMC	0.142	0.103	0.095
AR5, 1%, D	KBAC	100	KBAC,UNIQ,CALPHA,VT	0.593	0.484	0.500 (MiST)
AR5, 1%, D	KBAC	10	KBAC,MiST,UNIQ,VT,FRQWGT,CALPHA	0.635	0.499	0.5
AR5, 1%, D	KBAC	1	KBAC,MiST,VT,UNIQ,BURDEN,FRQWGT,CALPHA,SKATO	0.639	0.508	0.5
AR5, 1%, D	SKATO	100	SKATO,UNIQ,VT	0.550	0.470	0.5
AR5, 1%, D	SKATO	10	SKATO,VT,UNIQ,KBAC,MiST,FRQWGT	0.630	0.520	0.5
AR5, 1%, D	SKATO	1	SKATO,VT,MiST,KBAC,UNIQ,BURDEN,FRQWGT,CALPHA	0.639	0.508	0.5
AR5, 1%, D	MiST	100	MiST,CALPHA,UNIQ,VT	0.586	0.492	0.5
AR5, 1%, D	MiST	10	MiST,UNIQ,KBAC,VT,FRQWGT,CALPHA	0.635	0.499	0.5
AR5, 1%, D	MiST	1	MiST,VT,KBAC,UNIQ,BURDEN,FRQWGT,CALPHA,SKATO	0.639	0.508	0.5
AR6, 1%, D	KBAC	100	KBAC,CALPHA,UNIQ	0.546	0.465	0.498 (MiST)
AR6, 1%, D	KBAC	10	KBAC,MiST,UNIQ,FRQWGT,CALPHA,VT	0.627	0.510	0.498
AR6, 1%, D	KBAC	1	KBAC,MiST,FRQWGT,VT,UNIQ,CALPHA,BURDEN,SKATO	0.635	0.515	0.498
AR6, 1%, D	SKATO	100	SKATO,UNIQ,VT	0.530	0.455	0.498
AR6, 1%, D	SKATO	10	SKATO,VT,UNIQ,KBAC,MiST	0.615	0.518	0.498
AR6, 1%, D	SKATO	1	SKATO,KBAC,VT,MiST,FRQWGT,UNIQ,CALPHA,BURDEN	0.635	0.515	0.498
AR6, 1%, D	MiST	100	MiST,CALPHA,UNIQ	0.525	0.451	0.498
AR6, 1%, D	MiST	10	MiST,VT,UNIQ,KBAC,CALPHA	0.615	0.516	0.498
AR6, 1%, D	MiST	1	MiST,KBAC,FRQWGT,VT,UNIQ,CALPHA,BURDEN,SKATO	0.635	0.515	0.498
AR2, 1%, M	KBAC	100	KBAC,CALPHA,UNIQ	0.113	0.088	0.093 (CALPHA)
AR2, 1%, M	KBAC	10	KBAC,CALPHA,UNIQ,MiST	0.118	0.094	0.093
AR2, 1%, M	KBAC	1	KBAC,CALPHA,MiST,UNIQ,BURDEN,VT,SKAT	0.121	0.089	0.093
AR2, 1%, M	SKATO	100	SKATO,UNIQ,MiST	0.097	0.094	0.093 (CALPHA)
AR2, 1%, M	SKATO	10	SKATO,UNIQ,MiST,FRQWGT	0.098	0.083	0.093
AR2, 1%, M	SKATO	1	SKATO,CALPHA,KBAC,MiST,UNIQ,BURDEN,VT,SKAT	0.121	0.089	0.093
AR2, 1%, M	MiST	100	MiST,CALPHA,UNIQ	0.109	0.086	0.093
AR2, 1%, M	MiST	10	MiST,UNIQ,KBAC,CALPHA	0.118	0.094	0.093
AR2, 1%, M	MiST	1	MiST,CALPHA,KBAC,UNIQ,BURDEN,VT,SKAT	0.121	0.089	0.093
AR2, 0.5%, D	KBAC	100	KBAC,UNIQ,CALPHA,VT	0.065	0.040	0.041 (MiST)
AR2, 0.5%, D	KBAC	10	KBAC,CALPHA,UNIQ,VT,MiST	0.071	0.042	0.041
AR2, 0.5%, D	KBAC	1	KBAC,MiST,CALPHA,VT,BURDEN,UNIQ,FRQWGT,SKATO	0.075	0.039	0.041
AR2, 0.5%, D	SKATO	100	SKATO,UNIQ,VT	0.050	0.034	0.041
AR2, 0.5%, D	SKATO	10	SKATO,VT,UNIQ,MiST,KBAC	0.065	0.040	0.041
AR2, 0.5%, D	SKATO	1	SKATO,MiST,KBAC,VT,CALPHA,BURDEN,UNIQ,FRQWGT	0.075	0.039	0.041
AR2, 0.5%, D	MiST	100	MiST,UNIQ,BURDEN	0.057	0.047	0.041
AR2, 0.5%, D	MiST	10	MiST,UNIQ,KBAC,VT	0.064	0.038	0.041
AR2, 0.5%, D	MiST	1	MiST,KBAC,CALPHA,VT,BURDEN,UNIQ,FRQWGT,SKATO	0.075	0.039	0.041