

Supplementary Table 1. Power for a dominant model, $N = 20$. $\mu_{AA} = \mu_{AB} = 1$, $\mu_{BB} = 2.1$, $\sigma = 1$.

$n_{AA} + n_{AB}$	n_{BB}	p	$\pi(\mathbf{n})$	$E_{\mathbf{n}}[\pi(\mathbf{n}) p]$	$\pi(\mathbf{n}) - E_{\mathbf{n}}[\pi(\mathbf{n}) p]$
0	20	0	0	0	0
1	19	0.03	0.174	0.1502	0.0238
2	18	0.05	0.2873	0.2664	0.0209
3	17	0.08	0.3834	0.3597	0.0237
4	16	0.11	0.4613	0.4351	0.0262
5	15	0.13	0.5224	0.4953	0.0270
6	14	0.16	0.5688	0.5422	0.0266
7	13	0.19	0.6026	0.5772	0.0255
8	12	0.23	0.6256	0.6013	0.0243
9	11	0.26	0.6389	0.6155	0.0234
10	10	0.29	0.6432	0.6201	0.0231
11	9	0.33	0.6389	0.6155	0.0234
12	8	0.37	0.6256	0.6013	0.0243
13	7	0.41	0.6026	0.5772	0.0255
14	6	0.45	0.5688	0.5422	0.0266
15	5	0.5	0.5224	0.4953	0.0270
16	4	0.55	0.4613	0.4351	0.0262
17	3	0.61	0.3834	0.3597	0.0237
18	2	0.68	0.2873	0.2664	0.0209
19	1	0.78	0.174	0.1502	0.0238
20	0	1	0	0	0

Supplementary Table 2. Power for a dominant model, $N = 100$. $\mu_{AA} = \mu_{AB} = 1$, $\mu_{BB} = 1.5$, $\sigma = 1$. Selected values of $\mathbf{n}$ are shown.

$n_{AA} + n_{AB}$	n_{BB}	p	$\pi(\mathbf{n})$	$E_{\mathbf{n}}[\pi(\mathbf{n}) p]$	$\pi(\mathbf{n}) - E_{\mathbf{n}}[\pi(\mathbf{n}) p]$
0	100	0	0	0	0
1	99	0.01	0.0782	0.06	0.0183
2	98	0.01	0.1066	0.0998	0.0068
3	97	0.02	0.1349	0.132	0.0028
4	96	0.02	0.1628	0.1611	0.0017
5	95	0.03	0.1904	0.1887	0.0017
10	90	0.05	0.3178	0.3139	0.0039
20	80	0.11	0.5082	0.502	0.0062
30	70	0.16	0.6213	0.6156	0.0057
40	60	0.23	0.6792	0.6744	0.0048
50	50	0.29	0.6969	0.6925	0.0044
60	40	0.37	0.6792	0.6744	0.0048
70	30	0.45	0.6213	0.6156	0.0057
80	20	0.55	0.5082	0.502	0.0062
90	10	0.68	0.3178	0.3139	0.0039
95	5	0.78	0.1904	0.1887	0.0017
96	4	0.8	0.1628	0.1611	0.0017
97	3	0.83	0.1349	0.132	0.0028
98	2	0.86	0.1066	0.0998	0.0068
99	1	0.9	0.0782	0.06	0.0183
100	0	1	0	0	0

Supplementary Table 3. Power for a dominant model, $N = 1000$. $\mu_{AA} = \mu_{AB} = 1$, $\mu_{BB} = 1.15$, $\sigma = 1$. Selected values of $\mathbf{n}$ are shown.

$n_{AA} + n_{AB}$	n_{BB}	p	$\pi(\mathbf{n})$	$E_{\mathbf{n}}[\pi(\mathbf{n}) p]$	$\pi(\mathbf{n}) - E_{\mathbf{n}}[\pi(\mathbf{n}) p]$
0	1000	0	0	0	0
1	999	0	0.0526	0.0342	0.0184
2	998	0	0.0552	0.0484	0.0068
3	997	0	0.0577	0.0553	0.0025
4	996	0	0.0603	0.0594	0.0009
5	995	0	0.0629	0.0626	0.0003
10	990	0.01	0.0758	0.0758	0.0000
100	900	0.05	0.2955	0.2952	0.0003
200	800	0.11	0.4744	0.4738	0.0006
300	700	0.16	0.5838	0.5833	0.0005
400	600	0.23	0.6412	0.6407	0.0005
500	500	0.29	0.6589	0.6585	0.0004
600	400	0.37	0.6412	0.6407	0.0005
700	300	0.45	0.5838	0.5833	0.0005
800	200	0.55	0.4744	0.4738	0.0006
900	100	0.68	0.2955	0.2952	0.0003
990	10	0.9	0.0758	0.0758	0.0000
995	5	0.93	0.0629	0.0626	0.0003
996	4	0.94	0.0603	0.0594	0.0009
997	3	0.95	0.0577	0.0553	0.0025
998	2	0.96	0.0552	0.0484	0.0068
999	1	0.97	0.0526	0.0342	0.0184
1000	0	1	0	0	0