

Figure S1: Fraction of genetic interconnectivity signs inferred correctly from synthetic data. The fraction of genetic interconnectivity coefficients for which the sign was inferred correctly  $(\operatorname{sgn}(\tilde{T}_{gf}) = \operatorname{sgn}(T_{gf}))$  is shown.  $\tilde{T}_{gf}$  and  $T_{gf}$  are inferred and theoretical genetic interconnectivity coefficients. N=100 and  $N_t=21$ . SA was not run for G=50 since it was impractical.