Modules	Num Annotated Interactions	Num Intramodular Interactions	Num Intermodular Interactions	Intermodular Percentage
Protein complexes	549	283	266	48.45%
BPs, 50	1497	397	1100	73.48%
Filtered BPs	528	102	426	80.68%

Table S 10. A substantial fraction of physical interactions are intermodular in the *Y2H-union* network. Modules gives the set of functional modules considered. These are: 1) protein complexes, 2) a subset of specific GO BP terms, each of which annotates at most 50, 100, 300, or 500 proteins in the yeast genome, or 3) a subset of filtered biological processes (as decribed in **Materials and Methods**). **Num Annotated Interactions** gives the number of interactions in the subnetwork generated from the *Direct* network where nodes represent proteins in the considered modules and edges represent interactions amongst them. **Num Intramodular Interactions** gives the number of interactions in the subnetwork where the two interacting proteins belong to the same module. **Num Intermodular Interactions** gives the number of interactions in the subnetwork where the two interacting proteins belong to different modules. **Intermodular Percentage** gives the percentage of intermodular interactions amongst the annotated interactions.