(a) Protein complexes

Odd-score cutoff	#Cross-talks	SRCC (p-value)
1.5	910	0.4145 (0)
2	727	0.4081 (0)
3	428	0.3805 (7e-15)
4	245	0.3139 (2e-10)
5	154	0.2794 (2e-08)

(b) Filtered biological processes

Odd-score cutoff	#Cross-talks	SRCC (p-value)
1.5	4545	0.3974 (3e-16)
2	2306	0.3606 (2e-13)
3	470	0.2753 (3e-08)
4	116	0.1055 (4e-02)
5	45	0.1074 (3e-02)

Table S 8. The significant correlation between cross-talk degree and binary module essentiality persists for a range of odd-scores in the *Full* network for (a) protein complexes and (b) filtered biological processes. Odd-score cutoff gives the minimum odd-score for a module pair to be considered a cross-talk. **# Cross-talks** gives the number of cross-talks at each cutoff. **SRCC (p-value)** gives the Spearman's rho rank correlation coefficient between cross-talk degree and binary module essentiality. For larger odd-score cutoffs, there are fewer cross-talks and this results in somewhat lower SRCC values.