

Table S2. Essential and nonessential subsets of gene pairs both have significantly high fractions of same-operon pairs f . The analysis was performed only for cases showing higher than random same-operon membership.

Network module	Number of essential cases	$f_{\text{essential}}^*$	$f_{\text{essential}}^{\text{rand}}$	Number of nonessential cases	$f_{\text{nonessential}}^*$	$f_{\text{nonessential}}^{\text{rand}}$
A. Linear metabolic pathway	139	0.029**	0.0094	399	0.033**	0.0065
B. Covalent modification	0	ND	ND	9	0.67	ND
C. Physical interaction	157	0.19**	0.0070	398	0.29**	0.0053

* Essential and nonessential gene subsets as designated by Taniguchi *et al* (2010).

** $p < 10^{-6}$ compared to f^{rand} .

ND: insufficient data for analysis.