

## Figure S1

Interaction maps are probed for protein interaction sets (A): partners of proteins with multiple interactions are clustered together where there are no known sequence feature present (B). Domains and homologous regions are then identified (B) and removed prior to running exhaustive pattern discovery (C) to produce list of motifs ranked by their probabilities P (D). Hypothetical motifs are shown as coloured squares in C & D. 'Proteins' in D gives the set of proteins containing at least one copy of the motif.

**I.** Shows two separate cases of protein sets containing interactions partners for proteins X and Y that are pooled owing to the presence of a common domain to give a domain set shown in (**II**).