



**Supplementary information, Fig. S1 FBP1 dephosphorylates IkBa as a protein phosphatase. Related to Fig. 1.**

**a** The binding modes and binding free energies of phosphorylated serine (pSer), phosphorylated threonine (pThr), and phosphorylated tyrosine (pTyr) models with INPP5E and ENOPH1 were shown (all energies are in units of kcal/mol).

**b** The significantly enriched phosphopeptide sequence motif from FBP1-dephosphorylated proteins.

**c** Mass spectrometry analyses of phospho- and non-phospho-IkBa peptides.

**d** The total binding free energies of the I $\kappa$ B $\alpha$  pS32/36 peptide with FBP1 were shown (all energies are in units of kcal/mol).