**Supplemental Table S2A** . PI5P4K2 bait peptides observed in parallel purifications in replicate and reciprocal labelling experiments

Peptide Peptide	FLAG	TALON	reciprocals
AAPGTVASVMASK	1,2,3,4	3	✓
AAPGTVASVMASKTK	, , ,	2	
AAPGTVASVMASKTKTK	2		
ASDPLLSVLMWGVNHSINELSH			
VQIPVMLMPDDFK	4		
DNDFINDGQK	3, 4	2, 3	
ELPTFKDNDFINDGQK	3	, -	
ENMPSHFKFK	1		
EVYFMAIIDILTHYDAK	3		
FGIDDQDFQNSLTR	2, 3, 4	2, 3	✓
FLDFIANILT	2, 3, 4	2, 3	✓
IHIDENNKR	3	, -	
KEVYFMAIIDILTHYDAK	3, 4	3	
KEVYFMAIIDILTHYDAKK	1, 2, 3	2	
KYDLKGSTVAR	3, 4	3	
LMDYSLLVGIHDVER	4	3	✓
LTVDGVEIYMIVTR	3		
RMFLEKLK	2		
SAPLANDSQARSGAR		4	
TITSEDVAEMHNILK	3, 4	1, 3	✓
YDLKGSTVAREASDK	1	3	
AEQEEMEVEDR	2, 3, 4		✓
AVSSEDVAEMHNILK	4		
DNDFLNEGQK	3, 4	2	✓
EVYFMAIIDILTPYDAKK	4		✓
EYCPLVFR	4		
FFGPGEFDPSVDVYAMK	4		✓
FGIDDQDYQNSVTR	2, 3, 4		✓
FKEYCPLVFR	4		
FLTTYDR	2, 3, 4		✓
FLTTYDRR	3		✓
GSTVSREASDK		3	
IMDYSLLVGIHDVDR	4		✓
LTVDGVETYMVVTR	2, 4		✓
NVFSHRLTVHR	4		
SAPVNSDSQGR	4		✓
YDLKGSTVSREASDK	3		
DVEFLAQLK	1, 2, 3, 4	3, 4	✓
EASDKEK		3	
EASDKEKAK	4		
HGAGAEISTVNPEQYSK	2, 3, 4	3, 4	✓
IKVDNHLFNK	2, 3, 4	4	✓
NVFSHR	3		✓
VDNHLFNK	2	1	✓
Key: a pentides (amher) B pentides (blue) pentides found in both (grey)			

Key:  $\alpha$  peptides (amber),  $\beta$  peptides (blue), peptides found in both (grey). numbers indicate the experiment number in which the peptide was identified. **Bold** indicated peptides used for **quantitation**