Supporting Table S4: Phosphomotif enrichment analysis. Phosphomotifs were analyzed by the *De Novo* Motif Finder of the PHOSIDA database using a minimum score of 15 and a minimum proportion of matching sites of 5%. For the ERLIC and HILIC workflows only phosphoserine motifs were found as enriched . Motifs consisting of one and two amino acids are separated by a line.

SCX Fractionation - Serin Motifs				
Motifs	Occurrence	Occurrence %	Putative Kinase	Score
pS-P	395	35.43		78.09
pS-D	298	26.73		73.6
pS-X-X-E	358	32.11	CK2	68.63
D-pS	226	20.27		50.26
pS-X-D	202	18.12		45.67
pS-X-E	242	21.7		45.1
pS-X-X-X-X-E	219	19.64		38.59
pS-X-X-X-E	208	18.65		36.01
pS-X-X-D	164	14.71		32.64
pS-E	178	15.96		29.34
D-X-X-X-pS	144	12.91		29.23
pS-X-X-X-D	142	12.74		27.88
E-X-X-pS	173	15.52		27.39
E-X-pS	164	14.71		25.92
pS-X-X-X-X-D	138	12.38		25.67
D-X-X-pS	133	11.93		25.51
E-X-X-X-X-pS	163	14.62		24.26
D-X-X-X-X-pS	124	11.12		23.08
E-pS	128	11.48		21.91
D-X-pS	122	10.94		21.91
pS-X-X-X-X-X-E	157	14.08		21.81
E-X-X-X-pS	159	14.26		21.11
P-X-pS	152	13.63		19.4
D-X-X-X-X-X-pS	111	9.96		18.49
S-X-pS	208	18.65		17.93
E-X-X-X-X-X-pS	137	12.29		16.25
pS-X-X-X-X-X-D	104	9.33		16.07
pS-D-X-E	167	14.98	CK2	144.18
D-pS-D	97	8.7		104.16
pS-X-D-E	98	8.79	CK2	97.5
pS-D-D	73	6.55		91.12
pS-D-X-X-X-E	81	7.26		85.14
D-pS-X-X-E	86	7.71	CK2	81.94
D-X-X-X-pS-D	59	5.29		72.03
pS-X-X-E-X-E	100	8.97	CK2	71.99
pS-E-X-E	94	8.43	CK2	70.63
pS-D-X-D	68	6.1		70.35
P-X-pS-P	107	9.6	ERK	69.64
pS-D-E	65	5.83		68.2
pS-X-X-E-E	94	8.43	CK2	66.26
D-X-X-X-pS-X-X-E	65	5.83	CK2	64.95
pS-X-E-E	97	8.7	CK2	64.29
D-pS-X-X-D	58	5.2		64.21
pS-X-X-E-X-D	66	5.92	CK2	62.87

pS-X-X-E-D	70	6.28	CK2	60.02
D-pS-X-D	56	5.02		59.56
E-X-pS-X-X-E	72	6.46	CK2	58.71
E-X-X-pS-X-X-E	76	6.82	CK2	58.11
pS-X-D-X-E	59	5.29		57.57
E-X-X-X-X-pS-X-X-E	71	6.37	CK2	56.22
E-pS-X-X-E	62	5.56	CK2	52.42
pS-P-E	63	5.65		50.94
E-X-X-X-pS-X-X-E	63	5.65	CK2	46.92
S-X-pS-X-X-E	67	6.01	CK2	45.48
S-D-pS	58	5.2		45.21
pS-X-E-X-E	56	5.02		43.27
E-X-X-X-X-X-pS-X-X-E	56	5.02	CK2	42.13
pS-X-X-E-X-X-E	57	5.11	CK2	40.79
pS-E-E	58	5.2		39
S-X-pS-E	56	5.02		36.23
S-X-pS-P	63	5.65		36.1

SCX Fractionation - Threonin Motifs				
Motifs	Occurrence	Occurrence %	Putative Kinase	Score
pT-P	48	37.5		86.19
pT-X-P	41	32.03		71.85
pT-D	29	22.66		62.34
D-pT	28	21.88		57.67
pT-X-X-X-E	26	20.31		38.3
E-X-X-X-X-pT	24	18.75		35.99
P-pT	22	17.19		33.88
S-X-pT	28	21.88		32.73
pT-X-X-E	24	18.75	CK2	32.55
P-X-pT	23	17.97		32.12
pT-X-X-X-X-P	22	17.19		31.9
P-X-X-X-X-pT	22	17.19		29.95
S-X-X-X-pT	27	21.09		29.14
E-X-pT	20	15.62		26.37
P-X-X-pT	20	15.62		26.3
pT-X-X-X-X-X-E	21	16.41		25.76
E-X-X-X-pT	20	15.62		25.25
pT-X-X-P	20	15.62		24.32
S-X-X-X-X-X-pT	23	17.97		22.28
pT-X-X-X-S	21	16.41		20.44
S-X-X-X-X-pT	21	16.41		18.28
pT-P-P	28	21.88		189.78

ERLIC Fractionation - Serin Motifs				
Motifs	Occurrence	Occurrence %	Putative Kinase	Score
pS-D	212	27.46		76.03
pS-X-X-E	260	33.68	CK2	72.93
D-pS	163	21.11		53.02
pS-P	192	24.87		48.66
pS-X-D	145	18.78		47.95
pS-X-E	161	20.85		42.57
pS-X-X-X-X-E	153	19.82		39.11
pS-X-X-X-E	152	19.69		39.09
pS-E	148	19.17		38.82

pS-X-X-D	115	14.9		33.26
pS-X-X-X-D	106	13.73		31.29
S-X-pS	182	23.58		29.35
D-X-pS	101	13.08		29.33
D-X-X-X-pS	98	12.69		28.46
D-X-X-pS	98	12.69		28.18
pS-X-X-X-X-D	98	12.69		26.72
E-X-X-pS	116	15.03		25.95
pS-X-S	160	20.73		23.46
S-X-X-X-pS	163	21.11	CK1	23.05
S-X-X-pS	160	20.73	CK1	22.59
E-pS	90	11.66		22.52
D-X-X-X-X-pS	83	10.75		21.81
pS-X-X-X-X-X-E	107	13.86		21.18
E-X-pS	100	12.95		20.7
pS-X-X-X-S	149	19.3	GSK3	19.22
pS-X-X-X-X-X-D	78	10.1		18.68
D-X-X-X-X-X-pS	74	9.59		17.22
pS-D-X-E	103	13.34	CK2	127.93
D-pS-D	67	8.68		103.9
pS-X-D-E	61	7.9	CK2	87.22
D-pS-X-X-E	59	7.64	CK2	81.15
pS-E-X-E	74	9.59	CK2	81.08
pS-X-X-E-X-E	76	9.84	CK2	79.6
pS-D-D	44	5.7		78.85
S-D-pS	66	8.55		77.59
pS-D-X-X-X-E	50	6.48		75.43
pS-X-X-E-E	72	9.33	CK2	73.99
pS-D-X-X-D	43	5.57		73.4
pS-D-X-D	48	6.22		71.8
D-X-X-pS-D	41	5.31		70.37
D-pS-X-X-D	42	5.44		67.33
S-X-pS-X-X-E	65	8.42	CK2	66.23
pS-X-E-E	69	8.94	CK2	66.23
pS-D-X-X-E	45	5.83		65.72
pS-D-X-X-X-D	39	5.05		65.43
D-pS-E	47	6.09		64.06
pS-D-S	56	7.25		63.94
S-X-pS-E	64	8.29		63.64
pS-X-D-X-E	44	5.7		62.36
pS-D-E	41	5.31		61.78
E-pS-X-X-E	49	6.35	CK2	60.55
pS-X-X-E-X-D	44	5.7	CK2	60.37
D-X-X-X-pS-X-X-E	42	5.44	CK2	60.33
pS-P-X-X-S	67	8.68	GSK3	57.89
D-pS-X-X-X-E	40	5.18		55.6
pS-X-X-E-D	43	5.57	CK2	52.72
E-X-X-pS-X-X-E	47	6.09	CK2	51.34
E-X-pS-X-X-E	44	5.7	CK2	51.19
S-X-X-pS-D	44	5.7	CK1	50.62
S-X-X-X-pS-D	42	5.44	CK1	50.35
pS-E-D	39	5.05		50.16

S-X-X-X-pS-P	59	7.64	CK1	49.51
pS-E-X-X-X-E	42	5.44		49.14
pS-X-S-E	49	6.35	CK2	47.04
S-X-pS-D	41	5.31		46.75
pS-E-X-X-E	39	5.05		45.6
pS-E-E	45	5.83		44.37
S-X-X-pS-X-X-E	46	5.96	CK1/CK2	43.85
pS-X-S-X-X-E	47	6.09		43.61
pS-X-X-E-X-X-E	41	5.31	CK2	42.6
S-X-X-X-pS-X-X-E	45	5.83	CK1/CK2	42.06
pS-X-X-X-E-E	40	5.18		38.07
S-X-S-X-pS	49	6.35	CK1	25.91
S-X-pS-X-S	43	5.57		21.05

HILIC Fractionation - Serin Motifs				
Motifs	Occurrence	Occurrence %	Putative Kinase	Score
pS-X-X-E	115	38.59	CK2	86.36
pS-D	82	27.52		76.21
pS-X-E	84	28.19		64.38
pS-P	90	30.2		63.52
pS-X-D	59	19.8		51.43
pS-X-X-X-E	67	22.48		47.4
D-pS	57	19.13		46.54
pS-X-X-X-X-E	66	22.15		45.93
pS-E	55	18.46		36.71
pS-X-X-D	45	15.1		33.93
E-X-X-pS	51	17.11		32.09
E-X-pS	50	16.78		32.07
pS-X-X-X-X-D	41	13.76		30.25
D-X-X-X-pS	39	13.09		29.83
D-X-X-pS	38	12.75		28.38
E-X-X-X-X-pS	47	15.77		27.6
E-pS	39	13.09		27.43
pS-X-X-X-D	37	12.42		26.79
S-X-pS	64	21.48		24.48
E-X-X-X-pS	42	14.09		20.66
pS-X-X-X-X-X-D	31	10.4		19.68
D-X-X-X-X-pS	30	10.07		19.46
E-X-X-X-X-X-pS	38	12.75		17.57
G-pS	39	13.09		16.45
P-X-pS	37	12.42		15.83
D-X-pS	27	9.06		15.39
pS-X-X-X-X-X-E	35	11.74		15.06
pS-D-X-E	49	16.44	CK2	158.74
pS-X-D-E	34	11.41	CK2	127.86
pS-X-E-E	40	13.42	CK2	102.77
pS-D-E	24	8.05		95.71
pS-X-X-E-X-E	34	11.41	CK2	93.19
D-pS-D	23	7.72		91.95
pS-E-X-E	32	10.74	CK2	91.51
pS-D-X-X-X-E	23	7.72		90.73
D-pS-X-X-E	25	8.39	CK2	89.53
pS-X-X-E-E	32	10.74	CK2	86.17

pS-X-X-E-X-D	23	7.72	CK2	83.25
pS-X-D-X-E	22	7.38		82.09
S-X-pS-X-X-E	30	10.07	CK2	80.42
S-D-pS	25	8.39		76.05
E-X-X-X-X-pS-X-X-E	25	8.39	CK2	75.84
D-X-X-X-pS-X-X-E	20	6.71	CK2	75.44
P-X-pS-P	30	10.07	ERK	73.38
E-pS-X-X-E	22	7.38	CK2	71.24
E-X-X-pS-X-X-E	24	8.05	CK2	69.63
S-X-pS-E	26	8.72		67.29
E-X-pS-X-X-E	21	7.05	CK2	64.56
pS-E-E	24	8.05		63.4
pS-E-X-X-E	20	6.71		62.3
pS-X-E-X-X-E	20	6.71		56.77