

Supporting information

The Wip1 Phosphatase, PPM1D, Dephosphorylates SQ/TQ Motifs in Checkpoint Substrates Phosphorylated by PI3K-like Kinases

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TABLE S1: Kinetic Parameters for the Dephosphorylation of Phosphopeptides by rWip1(K238D)
at pH 7.5, 30°C.

substrate	K_m (μM)	k_{cat} (s^{-1})	k_{cat}/K_m ($\times 10^3 \text{ M}^{-1} \text{ s}^{-1}$)
ATM(1981pS)	25 ± 2	3.5 ± 0.1	140
ATM(S1983E)	24 ± 4	2.0 ± 0.1	83
ATM(S1983K)	22 ± 1	3.6 ± 0.1	163
p53(15pS)	16 ± 1	1.9 ± 0.1	119
H2A.X(139pS)	25 ± 7	1.2 ± 0.1	48
Chk1(345pS)	20 ± 2	1.9 ± 0.1	95
Nbs1(343pS)	24 ± 3	1.9 ± 0.1	79

Values represent averages from triplicate experiments.

TABLE S2: Kinetic Parameters for the Dephosphorylation of Phosphopeptides by rWip1(R110E) at pH 7.5, 30°C.

substrate	K_m (μM)	k_{cat} (s^{-1})	k_{cat}/K_m ($\times 10^3 \text{ M}^{-1} \text{ s}^{-1}$)
ATM(1981pS)	65 ± 5	11.5 ± 0.4	177
ATM(S1983E)	65 ± 2	10.3 ± 0.2	158
ATM(S1983K)	118 ± 16	5.8 ± 0.5	49
p53(15pS)	28 ± 2	5.6 ± 0.2	200
H2A.X(139pS)	67 ± 1	8.4 ± 0.1	125
Chk1(345pS)	69 ± 3	4.7 ± 0.1	68
Nbs1(343pS)	87 ± 16	2.7 ± 0.3	31

Values represent averages from triplicate experiments.

TABLE S3: Kinetic Parameters for the Dephosphorylation of Phosphopeptides by rWip1(D264A) at pH 7.5, 30°C.

substrate	K_m (μM)	k_{cat} (s^{-1})	k_{cat}/K_m ($\times 10^3 \text{ M}^{-1} \text{ s}^{-1}$)
p38 (180pT 182pY)	23 ± 2	0.36 ± 0.18	15.5
ATM(1981pS)	134 ± 32	2.06 ± 0.33	15.4

Values represent averages from triplicate experiments.
