

## PhosphoSens-Kinetic

### Sensor Peptides Substrates for Continuous Fluorescent Intensity Phosphatase Assays

A Powerful Approach for Understanding Kinase and Kinase Inhibitor Activity

Search Below to Match Your Kinase With Our Sensor Peptide Substrate

**Bulk Sensor Peptide Substrate (PN: CSPA-AQTxxxB):** Designed for higher throughput applications. 1 mg is sufficient for ~2,500 assays in a Low Volume 384-well White Flat Bottom Polystyrene NBS Microplate (10 µM Sensor Peptide Substrate with 25 µL final reaction volume). Available from 1mg to +200mg aliquots. We offer optimized buffers and reagents to pair with each mg of Bulk Sensor Peptide Substrate. These are available as Reagent Packs (include all assay components, excluding enzyme) or as individual reagents. Refer to Table 3 below

**Discovery Kits (PN: CSPA-AQTxxxK):** Designed for streamlined technology assessment. Each kit enables 96 reactions in a 96-well Half Area White Flat Bottom Polystyrene NBS Microplate (10 µM Sensor Peptide Substrate with 50 µL final reaction volume). Includes all assay components (excluding your enzyme). For additional information, refer to Table 4 below.

HGNC (Common) Name	HGNC Approved Full Name	Ser (S) Thr (T) Tyr (Y)	Sensor Peptide Substrate	Bulk Product Number	Discovery Kit Product Number	Sensor Peptide MW (g/mol)	Enzyme Used in Sensor Peptide Development	Continuous Assay Strength*
*See Table 2 Below for Assay Strength Definition and Tables 5-6 for Recommended Reaction Conditions								
CDC25A	cell division cycle 25A	Dual (Y)	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K	1189.2	SignalChem (C04-20G)	W
CDC25B	cell division cycle 25B	Dual (Y)	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K	1189.2	SignalChem (C04-20BG)	W
CDC25C	cell division cycle 25C	Dual (Y)	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K	1189.2	SignalChem (C04-20CG)	W
DUSP22 (JSP-1, LMW-DSP2, MKPX)	dual specificity phosphatase 22	Dual	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	SignalChem (D22-20G)	S
DUSP3 (VHR)	dual specificity phosphatase 3	Dual (Y)	AQT0264	CSPA-AQT0264B	CSPA-AQT0264K	2004.1	R&D Systems (1654-VH-050)	M
PHLPP1 (PHLPP, SCOP)	PH domain and leucine rich repeat protein phosphatase 1	S/T	AQT0481	CSPA-AQT0481B	CSPA-AQT0481K	2110.2	Academic Lab	M
PHLPP2 (PHLPL)	PH domain and leucine rich repeat protein phosphatase 2	S/T	AQT0481	CSPA-AQT0481B	CSPA-AQT0481K	2110.2	Academic Lab	M
PPM1A (PP2Ca, PP2CA)	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent 1A	S/T	AQT0267	CSPA-AQT0267B	CSPA-AQT0267K	1219.3	SignalChem (P02-20G)	VS
PPM1D (WIP1, PP2C-delta)	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent 1D	S/T	AQT0525	CSPA-AQT0525B	CSPA-AQT0525K	2479.5	SignalChem (P04-20G)	S
PPM1G (PP2Cg)	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent 1G	S/T	AQT0267	CSPA-AQT0267B	CSPA-AQT0267K	1219.3	SignalChem (P07-20G)	S
PPM1F (CamKpase)	protein phosphatase, Mg <sup>2+</sup> /Mn <sup>2+</sup> dependent 1F	S/T	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K-1	1189.2	SignalChem (P06-34G)	M <sup>1</sup>
PPP1CA (PPIA/PPP1A)	protein phosphatase 1 catalytic subunit alpha	S/T	AQT0480	CSPA-AQT0480B	CSPA-AQT0480K	2212.3	BPS (41106)	M
PPP1CB (PPIB, PPP1B)	protein phosphatase 1 catalytic subunit beta	S/T	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K	1189.2	SignalChem (P14-20G)	VS
PPP2CA (PP2A-α, RP-C)	protein phosphatase 2 catalytic subunit alpha	S/T	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K	1189.2	BPS (30056)	VS
PPP2CB (PP2Abeta)	protein phosphatase 2 catalytic subunit beta	S/T	AQT0523	CSPA-AQT0523B	CSPA-AQT0523K	1189.2	SignalChem (P17-34G)	W
PPP3CA/B (Calcineurin A/B, CNA alpha/beta, CALNA/B)	protein phosphatase 3 catalytic subunit alpha/beta	S/T	AQT0670	CSPA-AQT0670B	CSPA-AQT0670K-1	2529.8	R&D Systems (3160-CA20)	S <sup>1</sup>
PTPN1 (PTP1B, PTP1B)	protein tyrosine phosphatase non-receptor type 1	Y	AQT0266	CSPA-AQT0266B	CSPA-AQT0266K	2151.8	BPS (30010)	VS
PTPN2 (TCPTP, PTP2)	protein tyrosine phosphatase non-receptor type 2	Y	AQT0264	CSPA-AQT0264B	CSPA-AQT0264K	2004.1	BPS (30013)	VS
PTPN4 (MEG1)	protein tyrosine phosphatase non-receptor type 4	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	BPS (30015)	VS
PTPN5 (STEP)	protein tyrosine phosphatase non-receptor type 5	Y	AQT0664	CSPA-AQT0664B	CSPA-AQT0664K	1621.6	Academic Lab	M
PTPN6 (SHP-1, PTP-1C)	protein tyrosine phosphatase non-receptor type 6	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	BPS (100342)	VS
PTPN7 (HEPTP, LC-PTP)	protein tyrosine phosphatase non-receptor type 7	Y	AQT0772	CSPA-AQT0772B	CSPA-AQT0772K	1511.5	SignalChem (P34-20G)	VS
PTPN9 (MEG2)	protein tyrosine phosphatase non-receptor type 9	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	BPS (30020)	VS
PTPN11 (SHP-2, PTP2C, PTP1D)	protein tyrosine phosphatase non-receptor type 11	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	BPS (30022)	VS
PTPN12 (PTP-PEST, PTPG1)	protein tyrosine phosphatase non-receptor type 12	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	BPS (30023)	VS
PTPN13 (FAP-1, PTP-BAS, PTP-E1, PNP1)	protein tyrosine phosphatase non-receptor type 13	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	SignalChem (P40-21G)	VS
PTPN22 (PTPN8, Lyp)	protein tyrosine phosphatase non-receptor type 22	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	Creative Biomart (PTPN22-01H)	S
PTPRA (R-PTP-alpha, PTPA, LRP)	protein tyrosine phosphatase receptor type A	Y	AQT0667	CSPA-AQT0667B	CSPA-AQT0667K	2465.4	SignalChem (P48-21G)	VS
PTPRB (R-PTP-beta, VE-PTP)	protein tyrosine phosphatase receptor type B	Y	AQT0667	CSPA-AQT0667B	CSPA-AQT0667K	2465.4	SignalChem (P49-21G)	M
PTPRC (L-CA, CD45, T200)	protein tyrosine phosphatase receptor type C	Y	AQT0630	CSPA-AQT0630B	CSPA-AQT0630K	1280.3	BPS (30044)	VS
PTPRE (R-PTP-epsilon)	protein tyrosine phosphatase receptor type E	Y	AQT0667	CSPA-AQT0667B	CSPA-AQT0667K	2465.4	SignalChem (P52-21G)	S
PTPRF (LAR)	protein tyrosine phosphatase receptor type F	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	SignalChem (P53-21G)	VS
PTPRG (R-PTP-gamma)	protein tyrosine phosphatase receptor type G	Y	AQT0667	CSPA-AQT0667B	CSPA-AQT0667K	2465.4	BPS (30047)	VS
PTPRJ (R-PTP-eta, DEPI, CD148)	protein tyrosine phosphatase receptor type J	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	SignalChem (P56-21G)	VS
PTPRM (PTPμ, PTPRL1, R-PTP-mu)	protein tyrosine phosphatase receptor type M	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	BPS (30053)	VS
PTPRS (R-PTP-sigma)	protein tyrosine phosphatase receptor type S	Y	AQT0737	CSPA-AQT0737B	CSPA-AQT0737K	1557.8	SignalChem (P64-21G)	VS

Note: Substrate concentrations range from 10-15µM

Table 1.

**Total Number of PhosphoSens-Kinetic FI Phosphatase Assays: 36 (and counting)**

\*Please inquire if your target is not listed in the table above.

Table 2.

**Definition of Continuous Assay Strength**

Continuous Assay strength is defined by Initial Reaction Rate (RFU/pmole/min)*	Very Strong (VS) = >1,000	Strong (S) = 300-999	Medium (M) = 100-299	Weak (W) = <100
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Table 3.

**PhosphoSens-Kinetic Reagent Pack Components (and individual reagents)**

Reagent Pack Product Number	Individual Reagent Product Numbers	Component	Description	Volume	Storage
AQT-CONTRP	AQT1000XDTT	DTT Solution, 1 M	1 M DTT in nuclease-free water	0.15mL	-20°C or below. Minimize repeated freeze/thaw cycles
	AQT10XERB	Enzyme Reaction Buffer, 10X	500 mM HEPES, pH 7.5, 0.1% Brij-35, 100 mM MgCl <sub>2</sub>	15mL	-20°C or below
	AQT5XEDB	Enzyme Dilution Buffer, 5X	20 mM HEPES, pH 7.5, 0.01% Brij-35, 5% Glycerol, 1 mg/mL BSA	35mL	-20°C or below. Minimize repeated freeze/thaw cycles
	AQT1000XEGTA	EGTA Solution, 550 mM	550 mM EGTA in 2 M NaOH	0.15mL	-20°C or below

Table 4.

**PhosphoSens-Kinetic Phosphatase Discovery Kit Components**

Product Number	Component	Description	Volume	Storage
CSPS-AQTxxxx*	PhosphoSens Substrate, 1 mM	PhosphoSens Sensor Peptide Substrate, 1 mM	35 µL	-20°C or below
	DTT Solution, 1M	1 M DTT in nuclease-free water	150 µL	-20°C or below. Minimize repeated freeze/thaw cycles
	Enzyme Reaction Buffer, 10X	500 mM HEPES, pH 7.5, 0.1% Brij-35, 100 mM MgCl <sub>2</sub>	1,650 µL	-20°C or below
	Enzyme Dilution Buffer, 5X	20 mM HEPES, pH 7.5, 0.01% Brij-35, 5% Glycerol, 1 mg/mL BSA	1,650 µL	-20°C or below. Minimize repeated freeze/thaw cycles
	EGTA Solution, 550 mM	550 mM EGTA in 2 M NaOH	150 µL	-20°C or below

\*PLEASE NOTE: Any kits with a number designation after 'K-' come with the necessary additives.

Table 5.

**General Phosphatase Assay Reaction Conditions\***

10-15 µM PhosphoSens Sensor Peptide
54 mM HEPES, pH 7.5
1.2 mM DTT
0.012% Brij-35
0.5% glycerol
0.22 mg/ml BSA
0.55 mM EGTA
10 mM MgCl <sub>2</sub>
Any additional co-factors or additives (as indicated in Table 6.)

\*Does not account for Enzyme Storage Buffer contributions

Table 6.

**Co-factors or Additives\***

<b>1, (-) EGTA</b> (+) 5 ng/µl CaM, 0.4 mM CaCl <sub>2</sub>
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\*The number designations after the Sensor Peptides Product Numbers denote the co-factors or additives captured above.