

Background

Members of the ADF/cofilin (AC) family are actin-severing proteins that regulate actin remodeling during cell motility. Regulation of cofilin activity can occur through serine phosphorylation and dephosphorylation. Activation of cofilin kinases, LIMK1 or LIMK2, leads to phosphorylation of cofilin at serine 3. This phosphorylation disrupts cofilin binding to actin in vitro and in vivo. Multiple phosphatases, Slingshot, PP1, PP2A, PP2B, and chronophin can dephosphorylate Ser-3 and activate actin binding. In mammals, the Slingshot family includes SSH1L, SSH2L, and SSH3L. SSH1L and SSH2L mRNAs are widely expressed, while SSH3L has high expression in epithelial tissues. SSH1L can associate with F-actin and may be the major phosphatase regulating cofilin activity. Disruption of SSH1L expression using RNA interference impairs directional cell migration. Phosphorylation of SSH1L at Ser-937 and Ser-978 by PKD leads to association with 14-3-3, sequestration of the phosphatase to the cytoplasm, and reduces cell migration. Thus, Slingshot phosphatases may be critical for regulating cytoskeletal protein activity and cell motility.

Background References

- Niwa, R. et al. (2002) Cell 108:233.
Endo, M. et al. (2003) J Neurosci. 23(7):2527.
Nagata-Ohashi, K. et al. (2004) J Cell Biol. 165(4):465.

Applications

Blocking 1:1000
ELISA 50 ng/well

End user should determine optimal dilution for their particular applications and experiments.
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

Specificity

The peptide is specifically recognized by anti-SSH1L (Ser-978) antibody (SP3901) in ELISA, and has been shown to block the reactivity of SP3901 during Western blot. In addition, the peptide is recommended for use in blocking SP3901 reactivity in immunocytochemistry.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

Peptide Sequence

Slingshot-1L (Ser-978) phospho-peptide corresponds to amino acids surrounding serine 978 in human SSH1L. This sequence has high homology to the conserved site in rat, mouse, chicken, and zebrafish SSH1L. The sequence also has high homology to the conserved site in SSH2L (Ser-1259).

Buffer and Storage

Blocking peptide is supplied in 50µl phosphate-buffered saline and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Related Products

- CP1151 Cofilin 1 (Ser-3), phospho-specific Rabbit Polyclonal
CK6040 Cofilin Phospho-Regulation Antibody Sampler Kit
LK6380 LIMK Phospho-Regulation Antibody Sampler Kit
SP1711 Slingshot-1L (C-terminal region) Rabbit Polyclonal
SP3901 Slingshot-1L (Ser-978), phospho-specific Rabbit Polyclonal

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