Revision 1

Store at -20C

#13578

SSH1 (E1K3W) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	140	Rabbit IgG	#Q8WYL5	54434

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

SSH1 (E1K3W) Rabbit mAb recognizes endogenous levels of total SSH1 protein. Based on the absence of sequence homology, this antibody is not expected to recognize SSH2 or SSH3.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro1018 of human SSH1 protein.

Background

Cofilin is an evolutionarily conserved, actin-binding protein that severs actin filaments during processes that rely on actin filament dynamics, including cytokinesis, cell migration, invasion, and neuronal development. Actin severing and filament depolymerization are regulated through the controlled cycling of cofilin between the phosphorylated and dephosphorylated forms (1). The kinases LIMK and TESK inactivate cofilin by phosphorylating it at Ser3 (2,3). The slingshot homologs (SSH1, SSH2 and SSH3) and chronophin/PDXP phosphatases remove phosphate from cofilin at Ser3, enabling cofilin binding to actin and filament depolymerization (3). LIMK and SSH1 regulate cofilin activity downstream of neuregulin signaling in Schwann cells (4).

Slingshot homolog 1 (SSH1) can also dephosphorylate LIMK kinases, suppressing LIMK phosphorylation of cofilin (5). In addition, SSH1 modulates actin dynamics by stabilizing F-actin and promoting actin bundling independent of its cofilin phosphatase activity (6). SSH1 activity is regulated by phosphorylation and protein-protein interaction through various signaling pathways (1). Binding of SSH1 to F-actin stimulates its cofilin phosphatase activity (7).

Background References

1. Mizuno, K. (2013) *Cell Signal* 25, 457-69.
2. Toshima, J. et al. (2001) *J Biol Chem* 276, 31449-58.
3. Huang, T.Y. et al. (2006) *Curr Opin Cell Biol* 18, 26-31.
4. Sparrow, N. et al. (2012) *J Neurosci* 32, 5284-97.
5. Soosairajah, J. et al. (2005) *EMBO J* 24, 473-86.
6. Kurita, S. et al. (2007) *Genes Cells* 12, 663-76.
7. Kurita, S. et al. (2008) *J Biol Chem* 283, 32542-52.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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Limited Uses

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