

Rabbit Polyclonal Anti-Phospho Slingshot homolog 1 antibody

Catalog Number: PSISHT-140AP

General Information

Product	Phospho Slingshot homolog 1 Antibody
Description	Phosphorylated Protein phosphatase Slingshot homolog 1 Antibody
Accession #	Uniprot: Q8WYL5 NCBI: NP_061857.3
Verified Applications	ELISA, WB
Species Cross Reactivity	Human, Monkey, Mouse, Rat
Host	Rabbit
Immunogen	Phosphorylated synthetic peptide corresponding to unique amino acid sequence on Slingshot homolog 1 protein.
Alternative Nomenclature	AW551225 antibody, Coro1c antibody, Gm1394 antibody, Gm1395 antibody, hSSH-1L antibody, mSSH 1L antibody, OTTMUSP00000031415 antibody, Slingshot1 antibody, SSH1 antibody

Physical Properties

Quantity	100 µg
Volume	200 µl
Form	Affinity Purified Immunoglobulins
Immunoglobulin & Concentration	0.64-0.72 mg/ml IgG in antibody stabilization buffer
Storage	Store at -20°C for long term storage.

Recommended Dilutions

DOT Blot	1:10,000
ELISA	1:10,000
Western Blot	1:500

Related Products

Catalog

Non-Phospho Slingshot	SISHT-101AP
FITC-Conjugated	PSISHT-FITC
BIOTIN-Conjugated	PSISHT-BIOTIN
Antigenic Blocking Peptide	P-PSISHT
Western Blot Positive Control	PC-PSISHT

Overview:

Slingshot 1 is a member of Slingshot (SSH) family of protein phosphatases. It is located at human chromosome 12q24.11. Slingshot is one of the primary dedicated Cofilin phosphatases. It plays an important role in cell migration by dephosphorylating Cofilin at Ser3 and activating it in a variety of cell types such as keratinocytes and aortic smooth muscle cells (1). Slingshot (SSH) activity can be modulated by F-actin binding, calcium acting via Calcineurin and by its association in inhibitory complexes with 14-3-3 regulatory proteins (2). 14-3-3 zeta/tau heterodimers are key regulators of slingshot 1 isoform 1 (SSH1) activity in keratinocytes (3). SSH1 is involved in H₂O₂ induced Cofilin dephosphorylation and activation. Such activation of SSH1-cofilin pathway stimulates the SSH1 dependent formation of Cofilin-actin rods in HeLa cells (4). By dephosphorylating and activating Cofilin, SSH1 plays a critical role in insulin-induced membrane protrusion and cytokinesis.

SSH1 has the SSH family-specific, N-terminal, non-catalytic (SSH-N) domain. This domain has been shown to play critical roles in P-Cofilin recognition, F-actin-mediated activation, and subcellular localization of SSH1 (5). Recently it was shown that expression of phosphatase-dead versions of SSH proteins resulted in phosphorylation/inactivation of Cofilin, changes in cytoskeleton organization, loss of cell polarity, and assembly of aberrant arrays of laminin-332 in human keratinocytes (6). SSH1 mutations were seen in patients with disseminated superficial actinic porokeratosis. SSH1 is expressed in a various cell types including keratinocytes, HeLa cells and smooth muscle cells. It is approximately a 126kDa protein (1049 amino acids). The Slingshot 1 protein is phosphorylated at Serine and phosphorylation causes activation in the phosphatase activity.

The Phospho-Slingshot 1-selective antibodies were generated against phosphorylated serine containing peptide taken from the C-terminus amino acid region 950-1000. Phospho-Slingshot 1 antibodies were affinity purified over immobilized antigen based chromatography. The pan and non-phospho antibodies were then removed and Phospho-Slingshot 1 antibodies were purified and stabilized in antibody stabilization. Antigenic blocking peptides (P-PSISHT) and western blot positive controls (PC-PSISHT) are available. PSISHT-140AP will label a ~126 kDa protein in PC-PSISHT samples, but not in non phospho Slingshot positive control samples (PC-SISHT). FabGennix will conjugate antibodies to secondary enzymes or fluorescent probes upon request at nominal cost. For a complete listing of all FabGennix antibodies please visit <http://fabgennix.com>.

References:

1. Wang Y, Shibasaki F, Mizuno K. Calcium signal-induced cofilin dephosphorylation is mediated by slingshot via calcineurin. *J Biol Chem.* 2005; 280:12683-12689.
2. Huang TY, DerMardirossian C, Bokoch GM. Cofilin phosphatases and regulation of actin dynamics. *Curr Opin Cell Biol.* February 2006; 18(1):26-31.
3. Kligys K, Yao J, Yu D, Jones JC. 14-3-3zeta/tau heterodimers regulate slingshot activity in migrating keratinocytes. *Biochem Biophys Res Commun.* 12 June 2009; 383(4): 450-454.
4. Kim J-S, Huang TY, Bokoch GM. Reactive oxygen species regulate a slingshot-cofilin activation pathway. *Mol Biol Cell.* 1 June 2009; 20(11):2650-2660.
5. Kurita S, Watanabe Y, Gunji E, Ohashi K, Mizuno K. Molecular dissection of the mechanisms of substrate recognition and F-actin-mediated activation of cofilin-phosphatase slingshot-1. *J Biol Chem.* 21 November 2008; 283(47):32542-32552.
6. Kligys K, et, al. The slingshot family of phosphatases mediates Rac1 regulation of cofilin phosphorylation, laminin-332 organization, and motility behavior of keratinocytes. *J Biol Chem.* 2 November 2007; 282(44):32520-32528.

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