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SHOT1 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP4725b

Specification

SHOT1 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession A0MZ66

SHOT1 Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 57698

Other Names
Shootin-1, KIAA1598

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

SHOT1 Antibody (C-term) Blocking Peptide - Protein Information

Name SHTN1 (HGNC:29319)

Synonyms KIAA1598

Function
Involved in the generation of internal asymmetric signals required for neuronal polarization and neurite outgrowth. Mediates netrin-1-induced F-actin-substrate coupling or 'clutch engagement' within the axon growth cone through activation of CDC42, RAC1 and PAK1- dependent signaling pathway, thereby converting the F-actin retrograde flow into traction forces, concomitantly with filopodium extension and axon outgrowth. Plays a role in cytoskeletal organization by regulating the subcellular localization of phosphoinositide 3-kinase (PI3K) activity at the axonal growth cone. Also plays a role in regenerative neurite outgrowth. In the developing cortex, cooperates with KIF20B to promote both the transition from the multipolar to the bipolar stage and the radial migration of cortical neurons from the ventricular zone toward the superficial layer of the neocortex. Involved in the accumulation of phosphatidylinositol 3,4,5-trisphosphate (PIP3) in the growth cone of primary hippocampal neurons.

Cellular Location
Perikaryon {ECO:0000250|UniProtKB:Q8K2Q9}. Cell projection, axon {ECO:0000250|UniProtKB:Q8K2Q9}. Cell projection, growth cone {ECO:0000250|UniProtKB:Q8K2Q9}. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:Q8K2Q9}.

Cell projection, filopodium {ECO:0000250|UniProtKB:A0MZ67}. Cell projection, lamellipodium {ECO:0000250|UniProtKB:A0MZ67}. Note=Localizes in multiple growth cones at neurite tips before the neuronal symmetry-breaking step. Accumulates in growth cones of a single nascent axon in a neurite length-dependent manner during the neuronal symmetry-breaking step; when absent from the nascent axon's siblings, probably due to competitive transport, prevents the formation of surplus axons. Transported anterogradely from the soma to the axon growth cone in an actin and myosin-dependent manner and passively diffuses back to the cell bodies. Colocalized with L1CAM in close apposition with actin filaments in filopodia and lamellipodia of axonal growth cones in hippocampal neurons. Exhibits retrograde movements in filopodia and lamellopodia of axonal growth cones. Colocalized with KIF20B along microtubules to the tip of the growing cone in primary hippocampal neurons. Recruited to the growth cone of developing axon in a KIF20B- and microtubule-dependent manner {ECO:0000250|UniProtKB:A0MZ67, ECO:0000250|UniProtKB:Q8K2Q9}

SHOT1 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

SHOT1 Antibody (C-term) Blocking Peptide - Images

SHOT1 Antibody (C-term) Blocking Peptide - Background

SHOT1 involved in the generation of internal asymmetric signals required for neuronal polarization. SHOT1 acts upstream of PI3K (phosphoinositide 3-kinase), by being required for spatially localized PI3K activity. SHOT1 accumulates asymmetrically in a single neurite before polarization, leading to axon induction for polarization, its absence from the nascent axon's siblings by competition preventing the formation of surplus axons.

SHOT1 Antibody (C-term) Blocking Peptide - References

Mangold, E., et al. Nat. Genet. 42(1):24-26(2010)Shimada, T., et al. J. Cell Biol. 181(5):817-829(2008)Larson, M.G., et al. BMC Med. Genet. 8 SUPPL 1, S5 (2007)