Recombinant SHOT1 protein (His tag)

Catalog Number	541668
Synonyms	Shootin1
Species	Human
Expression System	E. coli
Accession	A0MZ66
Molecular Weight	Predictes a molecular mass of 42.46 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 52 kDa band.

Product Information

Sequence Region	1-347
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-347 aa (A0MZ66) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Shootin-1 (SHTN1) Fragment (aa 1-347) is a high-purity protein designed for structural and biochemical studies. This soluble, stable fragment captures key functional regions of Shootin-1, a critical regulator of neuronal polarization and axon outgrowth, providing an ideal tool for investigating cytoskeletal dynamics and neural development mechanisms. Shootin-1 is essential for generating internal asymmetric signals during neuronal polarization and neurite outgrowth. It mediates netrin-1-induced F-actin-substrate coupling in axon growth cones via CDC42, RAC1, and PAK1 signaling, converting retrograde F-actin flow into traction forces to drive filopodium extension and axon elongation. The protein also regulates phosphoinositide 3-kinase (PI3K) localization and phosphatidylinositol 3,4,5-trisphosphate (PIP3) accumulation in growth cones, influencing cytoskeletal organization. In cortical development, Shootin-1 collaborates with KIF20B to facilitate the multipolar-to-bipolar transition and radial migration of neurons. Subcellularly, it localizes to perikarya, axons, growth cones, filopodia, lamellipodia, and the cytoskeleton, with anterograde transport to growth cones and retrograde diffusion back to cell bodies, where it competitively accumulates in nascent axons to prevent surplus axon formation.