

Product Information

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Anti-Profilin 2 (C-terminal)

produced in rabbit, IgG fraction of antiserum

Catalog Number **P0101**

Product Description

Anti-Profilin 2 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 128-140 of human profilin 2 (Gene ID: 5217) conjugated to KLH. The corresponding sequence is identical in mouse and rat. Whole serum is fractionated and further purified by anion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Profilin 2 (C-terminal) recognizes human, mouse, and rat profilin 2 by immunoblotting, ~14 kDa. The profilin 2 band is specifically inhibited by the immunizing peptide.

Profilins are actin-monomer-binding proteins, abundantly expressed in all eukaryotic cells from yeast to mammals. Four profilin genes have been identified: Profilin 1, 2, 3 and 4. Profilin 1 is the most ubiquitous and abundant, and is highly expressed throughout development and adulthood in most tissues including brain. Profilin 2 is the neuronal specific isoforms, whereas profilin 3 and 4 are testis specific isoforms.¹⁻⁴ Profilins of eukaryotic cells are small (12-15 kDa) cytoplasmic proteins that bind to actin monomers, polyphosphoinositides and polymers of L-proline.⁵ Profilins are key regulators of actin dynamics. They were shown to be important for normal cell proliferation, differentiation and motility.⁶⁻⁸ Profilin 2 associates with a number of proteins involved in membrane trafficking and endocytosis, such as synapsin and dynamin 1. It associates with dynamin 1 through the C-terminal prolin-rich domain of dynamin 1 and thereby competes with the binding of SH3 ligands, such as endophilin and amphiphysin, thus interfering with the assembly of the endocytic machinery. Overexpression of profilin 2 inhibits endocytosis, whereas lack of profilin 2 in neurons increases endocytosis and membrane recycling. Both the profilin 2-actin interaction and the profilin 2-dynamin 1 binding are regulated by PtdInsP₂.⁹ Profilin 2 is required for stimulated actin polymerization in the synapse, and is involved in the regulation of synaptic vesicle exocytosis, neuronal excitability, and complex behavior.¹⁰

Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1:500-1:1,000 is recommended using whole extracts of human SH-SY5Y cells, mouse brain, and rat brain.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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