3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Anti-Neurabin I
Developed in Rabbit, Affinity Isolated Antibody

Product Number **N 4412**

Product Description

Anti-Neurabin I is developed in rabbit using a synthetic peptide located near the N-terminus of rat neurabin I, amino acids 341-361, conjugated to KLH, as immunogen. This sequence is highly conserved (80%) in mouse neurabin I and not found in neurabin II/spinophilin. Anti-Neurabin I is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Neurabin I specifically recognizes neurabin I (180 kDa). Two additional bands at ~140 kDa may be observed that have been reported as proteolytic products of neurabin I.[1] Applications include immunoblotting and immunoprecipitation. Staining of the neurabin I band in immunoblotting is specifically inhibited with the neurabin I immunizing peptide (rat, amino acids 341-361).

Neurabin I (Neural-tissue specific F-actin binding protein I, PP1BP175, p180, also termed Protein phosphatase 1 regulatory subunit 9A, PPP1R9A, 180 kDa), belongs to a family of F-actin-binding proteins, including neurabin II/spinophilin, which are highly enriched in dendritic spines and involved in neurite formation.[1,2] Both neurabin I and neurabin II have a similar domain structure, consisting of an F-actin binding domain at the N-terminus, a single PDZ-interacting-domain and a C-terminal coiled-coil domain. Neurabins appear to function as bridging proteins by targeting other proteins to the synapse or by linking plasma membrane proteins to the actin cytoskeleton. Neurabin I binds to several proteins including F-actin, protein phosphatase 1 (PP1), p70 S6 kinase (p70S6K) and TGN38. Neurabin I/PP1 complex has been suggested to play a role in actin cytoskeleton dynamics to control cell morphology in mammalian neurons. Neurabin I and neurabin II target PP1 subunits that are highly concentrated in dendritic spines and post-synaptic densities.[3,4] Neurabin I and neurabin II/spinophilin interact with PP1 subunit isoforms PP1α and PP1γ1 but not PP1β.[4,5] Neurabin I has been found to be localized in the synapse of mature neurons and in the lamellipodia of the growth cone during neuronal development and is concentrated in dendritic spines.[1,6] Neurabin I has been proposed to link cadherin-based cell-cell adhesion sites with the growth regulatory kinase p70S6K.[2] Neurabin I interacts with p70S6K in HEK293 transfected cells. Neurabin I and p70S6K mRNAs colocalize in the brain. It has been suggested that neurabin I may function to target p70S6K to nerve terminals. The trans-Golgi network membrane protein TGN38 interacts with neurabin I both *in vitro* and *in vivo*, suggesting that neurabin I provides a direct physical link between TGN38-containing membranes and the actin cytoskeleton.[7] Neurabin I/PP1R9A expression is not limited to the brain, but it is found in other fetal tissues, where it may have an important role in early development, through regulation of actin cytoskeleton dynamics in the differentiation of skeletal muscle cells.[8]

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: approx. 1.0 mg/ml

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous 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 is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working concentration of 0.5-1.0 µg/ml is determined by immunoblotting using a rat brain extract (S1 fraction).

A working concentration of 1.0-2.0 µg/ml is determined by immunoblotting using a mouse brain extract (S1 fraction).

10-15 µg of the antibody can immunoprecipitate neurabin I protein from a rat brain extract (S1 fraction).

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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