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Product Information

Anti-Neurabin II, C-terminal

Developed in Rabbit, Affinity Isolated Antibody

Catalog Number **N 5037**

Product Description

Anti-Neurabin II, C-terminal, is developed in rabbit using a synthetic peptide corresponding to amino acids 800-817 located at the C-terminus of rat neurabin II, conjugated to KLH, as immunogen. This sequence is identical in human and mouse neurabin II and not found in neurabin I. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Neurabin II, C-terminal, specifically recognizes neurabin II (140 kDa). Applications include immunoblotting and immunoprecipitation. Staining of the neurabin II band in immunoblotting is specifically inhibited with neurabin II immunizing peptide (rat, amino acids 800-817).

Neurabin II (Neural-tissue specific F-actin binding protein II, spinophilin, p130, also termed protein phosphatase 1 regulatory subunit 9B, PP1bp134, 140 kDa), belongs to a family of F-actin-binding proteins, including neurabin I, highly enriched in dendritic spines and involved in neurite formation.^{1,2} It is highly localized at postsynaptic density in rat brain and at cadherin-based cell-cell adherens junctions.³ 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 II binds to several proteins including F-actin, protein phosphatase 1 (PP1) and at least two subfamilies of G-protein coupled receptors (GPCRs), the $\alpha 2$ adrenergic receptor ($\alpha 2AR$) subtypes and the D2 dopamine receptor.^{4,5} Neurabin II/spinophilin has been shown to block arrestin function *in vitro* and *in vivo* at GPCRs⁶, and has been also shown to modulate, *in vitro* and *in vivo*, both glutaminergic synaptic transmission and the formation and function of dendritic spines.⁷ Neurabin/PP1 complex has been suggested to play a role in actin cytoskeleton dynamics to control cell morphology in mammalian neurons. Neurabin II and neurabin I target PP1

subunits that are highly concentrated in dendritic spines and post-synaptic densities.^{8,9} They interact with and recruit specific PP1 catalytic subunits PP1 α and PP1 $\gamma 1$ but not PP1 β .^{9,10} Phosphorylation of neurabin II/spinophilin modulates its interaction with actin filaments, via the anchoring of the neurabin II/spinophilin-PP1 complex within dendritic spines, thereby contributing to the efficacy and plasticity of synaptic transmission.¹¹

Reagent

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

Antibody concentration: approx. 1.5 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 1-2 $\mu\text{g/ml}$ is determined by immunoblotting, using mouse brain and rat brain extracts (S1 fraction).

10-20 μg of the antibody can immunoprecipitate neurabin II protein from a rat brain extract (S1 fraction).

A working concentration of 10-20 $\mu\text{g/ml}$ is determined by immunofluorescence staining of Madin-Darby kidney (MDCK) cells.

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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