

Product Information

Anti- δ -Catenin/NPRAP (YV-19)

Developed in Rabbit
IgG Fraction of Antiserum

Product Number **C 4989**

Product Description

Anti- δ -Catenin/NPRAP (YV-19) is developed in rabbit using a synthetic peptide corresponding to the C-terminal of mouse δ -catenin/NPRAP (amino acids 1229-1247) conjugated to KLH as immunogen. This sequence is identical in human δ -Catenin/NPRAP. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti- δ -Catenin/NPRAP (YV-19) recognizes δ -catenin/NPRAP by immunoblotting (150 kDa). Staining of the δ -catenin/NPRAP band in immunoblotting is specifically inhibited with the δ -catenin/NPRAP immunizing peptide (mouse, amino acids 1229-1247).

δ -Catenin, also termed neural plakophilin-related armadillo-repeat protein (NPRAP) and neurojungin (150, 160 kDa), is a member of the p120 catenin (p120^{ctn}) subfamily of catenins that includes B6P/plakophilin 1, plakophilin 2, armadillo-repeat gene deleted in velo-cardiofacial syndrome, ARVCF, and p0071.¹ Members of this subfamily are defined as proteins containing 10 armadillo (Arm) repeats, typically 42 to 45 amino acid imperfect repeat units, in characteristic spacing and often with diverse N- and C-terminal sequences that flank the repeats.²

δ -Catenin/NPRAP was identified as a protein homologous to plakophilin 1 and as a protein interacting with the loop region of presenilin 1 (PS1), the gene most commonly mutated in Alzheimer's disease.^{3,4}

δ -Catenin/NPRAP is almost exclusively expressed in the central nervous system mainly during early brain development. δ -Catenin/NPRAP has been shown to co-localize and interact with N-cadherin in the mouse brain and to undergo dynamic relocalization during brain development.⁵ In transfected MDCK cells and mouse brain, it colocalizes and interacts with adhesive junction proteins, including E-cadherin, p120^{ctn} and β -catenin.⁶ In addition, the ectopic expression of

δ -Catenin/NPRAP in MDCK cells alters their morphology, induces the elaboration of lamellipodia, interferes with monolayer formation, and increases scattering in response to hepatocyte growth factor. δ -Catenin/NPRAP has been reported to bind to the Psd-95/Dlg-A/ZO-1 (PDZ) domains of synaptic scaffolding molecule S-SCAM, PAPIIN and densin-180.⁷⁻⁹ These observations suggest that δ -catenin/NPRAP may play an important role in the organization of synaptic cell-cell adhesion and in neuronal migration during brain development.

Hemizyosity of the δ -catenin gene CTNND2 is strongly associated with severe mental retardation in Cri-du-Chat syndrome.

Reagent

Anti- δ -Catenin/NPRAP (YV-19) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

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 hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also 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

By immunoblotting, a minimum working antibody dilution of 1:2,000 is recommended using a cytosolic fraction S1 of rat brain.

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

References

1. Anastasiadis, P.Z., and Reynolds, A.B., *J. Cell Sci.*, **113**, 1319-1334 (2000).
2. Peifer, M., et al., *Cell*, **76**, 789-791 (1994).
3. Paffenholz, R., and Franke, W.W., *Differentiation*, **61**, 293-304 (1997).
4. Zhou, J., et al., *Neuroreport*, **8**, 2085-2090 (1997).
5. Ho, C., et al., *J. Comp. Neurol.*, **420**, 261-276 (2000).
6. Lu, Q., et al., *J. Cell Biol.*, **144**, 519-532 (1999).
7. Ide, N., et al., *Biochem. Biophys. Res. Commun.*, **256**, 456-461 (1999).
8. Deguchi, M., et al., *J. Biol. Chem.*, **275**, 29875-29880 (2000).
9. Izawa, I., et al., *J. Biol. Chem.*, **277**, 5345-5350 (2002).
10. Medina, M., et al., *Genomics*, **63**, 157-164 (2000).

KAA/ER 10/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.