3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Presenilin-2, N-terminal
produced in rabbit, affinity isolated antibody

Catalog Number **P0070**

Product Description

Anti-Presenilin-2, N-Terminal is produced in rabbit using as immunogen a synthetic peptide corresponding to the N-terminus of human presenilin-2, conjugated to KLH. The antibody is purified through a protein G column, eluted with high and low pH buffers and neutralized immediately, followed by dialysis against PBS.

Anti-Presenilin-2, N-terminal reacts specifically with human presenilin-2 by immunoblotting (~50 kDa).

The majority of early onset familial Alzheimer's disease cases are associated with mutations in two genes, presenilin-1 (PS-1) located on chromosome 14[1] and presenilin-2 (PS-2) on chromosome 1.[2, 3] Mutations in the presenilins have shown to alter the processing of β-amyloid precursor protein (βAPP), resulting in increased extracellular concentrations of the longer neurotoxic β-amyloid peptide Aβ 1-42 relative to Aβ 1-40.[4-6]

The presenilin-1 and presnilin-2 proteins are integral transmembrane proteins which share an overall 67% homology and are localized to the endoplasmic reticulum and early golgi.[7, 8] Presenilin-1 and presenilin-2 also display significant homology to the C. elegans gene products sel-12 and spe-4, respectively. Several reports suggest that the presenilin proteins may play roles in the Notch and Wingless signaling pathways, in part based upon this homology.[9-12]

Presenilin-1 has a predicted molecular weight of 53 kDa, while presenilin-2, a 448 amino acid protein, has a predicted molecular weight of 50 kDa. The majority of native protein, however, undergoes endoproteolytic processing and subsequent oligomerization.[8] It has been suggested that mutations in the presenilin proteins may also lead to the generation of an alternatively cleaved form of the protein.[13] Using a domain of presenilin-2 in a two-hybrid screen, a calcium-binding protein designated calsenilin was demonstrated to interact with the presenilin proteins and regulate levels of a proteolytic product of presenilin-2.[14] Calsenilin and other interacting proteins may serve to mediate the effects of wild type and mutant presenilin proteins on β-amyloid formation and apoptosis.

Reagent

Supplied in a solution of phosphate buffered saline containing 0.09% sodium azide.

Antibody concentration: ~0.25 mg/mL.

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

Store at –20 °C for long term usage. The product may be stored at 2-8 °C for up to 6 months. For extended storage, aliquot and store at –20 °C. 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

Immunoblotting: a working dilution of 1:100-1:500 is recommended.

Indirect ELISA: a working dilution of ~1:1,000 is recommended.

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

References

1. Sherrington, R., et al., *Nature*, **375,** 754-760 (1995).
2. Levy-Lahad, E., et al., *Science*, **269,** 973-977 (1995).
3. Rogaev, E., et al., *Nature*, **376,** 775-778 (1995).

4. Borchelt, D.R., et al., *Neuron,* **17,** 1005-1013 (1996).
5. Duff, K., et al., *Nature*, **383,** 710-713 (1996).
6. Citron, M., et al., *Nature Med*., **3,** 67-72 (1997).
7. Kim, T-W. and Tanzt, R. E., *Curr. Opin. Neurobiol*., **7,** 683-688 (1997).
8. Haass, C., *Neuron*, **18,** 687-690 (1997).
9. Levitan, D., et al., *Proc. Natl. Acad. Sci. USA*, **93,** 14940-14944 (1996).
10. Baumeister, R., et al., *Genes Function*, **1,** 149-159 (1997).
11. Wong, P., et al., Nature, **387,** 288-292 (1997).
12. Shen, J., et al., Cell, **89,** 629-639 (1997).
13. Kim, T-W., et al., *Science*, **277,** 373-376 (1997).
14. Buxbaum, J.D., et al., *Nature Med*., **4,** 1177-1184 (1998).

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