

# Product Information

## Anti-APP

produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200535**

### Product Description

Anti-APP is produced in rabbit using as immunogen a synthetic peptide corresponding to an internal sequence of human A $\beta$ 4/amyloid precursor protein (APP) (GeneID: 351), conjugated to KLH. The corresponding sequence is highly conserved (82% identity) in rat and mouse APP/A $\beta$ 4. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-APP specifically recognizes human APP. The antibody may be used in several immunochemical techniques including immunoprecipitation of APP (~120-130 kDa), and immunofluorescence. Antibody may also be suitable for immunohistochemistry.

Amyloid precursor protein (APP) is a transmembrane glycoprotein widely distributed in many tissues. APP exists as multiple isoforms (100-140 kDa) including APP695, APP751 and APP770, that are derived from alternative mRNA splicing.<sup>1</sup> Alzheimer's disease pathology is characterized by formation of senile plaques (SPs) and neurofibrillary tangles (NTs). Senile plaques consist of extracellular deposits of A $\beta$ 4, a 4kDa peptide derived from proteolytic cleavage of APP by  $\beta$ -site APP cleavage enzyme 1 (BACE1) and the presenilin (PS)-containing  $\gamma$ -secretase complex.<sup>2-3</sup> APP undergoes extensive post-translational modifications including phosphorylation, glycosylation, tyrosine-sulfation and nitration. APP has been reported to be phosphorylated at several sites that may affect its processing and secretion. Phosphorylation of APP at Thr<sup>688</sup> by cdk5 has been shown to play a critical role in the proteolytic cleavage of APP.<sup>4,5</sup> The APP Thr<sup>688</sup> phosphorylated form is found in the adult brain and correlates with neuronal differentiation.<sup>5</sup> Mutations in the APP gene are linked with rare forms of autosomal dominant familial AD (FAD). These mutations result in increased production of A $\beta$  indicating a central role of A $\beta$  peptide in the neuropathology of AD.

### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~1.0 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

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

Immunoprecipitation: a working concentration of 5-10  $\mu$ g/mL is recommended using extracts of HEK-293T cells over-expressing human APP.

Immunofluorescence: a working concentration of 1-2  $\mu$ g/mL is recommended using SH-SY5Y cells.

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

### References

1. Selkoe, D.J., et al., *Physiol. Rev.*, **81**, 741-766 (2001).
2. Thinakaran, G., and Koo, E.H., *J. Biol. Chem.*, **283**, 29615-29619 (2008).
3. Huang, Y., and Mucke, L., *Cell*, **148**, 1204-1222 (2012).
4. Liu, F., et al., *FEBS Lett.*, **547**, 193-196 (2003).
5. Iijima, K.I., et al., *J. Neurochem.*, **75**, 1085-1091 (2000).

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