

# Affinity Purified Rabbit Anti-Amyloid Precursor Protein Certificate of Analysis

## ORDERING INFORMATION

**Catalog Number:** PPS044

**Lot Number:** 1742448

**Size:** 100  $\mu$ L (sufficient for 10 mini-blot)

**Storage:**  $\leq -20^{\circ}$  C

**Specificity:** Canine, human, mouse, non-human primate, and rat ~120 kDa APP

**Immunogen:** Peptide corresponding to amino acid residues from the C-terminal region of rat APP

**Ig Type:** rabbit IgG

**Applications:** Western blot

## Description

APP, or amyloid precursor protein, is a heparin-binding, 120 kDa type I transmembrane glycoprotein that belongs to the APP family of proteins. It is highly conserved across species, showing at least 97% amino acid (aa) identity between human, monkey, rat, mouse and dog. There are almost a dozen potential alternate splice forms for human APP. The neuronal (or standard) form is referred to as APP695. The 695 includes a 17 aa signal peptide and 678 aa mature region. This form contains a multidomain, 610 aa extracellular region (ECD), a 24 aa transmembrane segment (aa 625 - 648), and a short 47 aa cytoplasmic tail. Longer forms of APP, APP751 and APP770 are characterized by the presence of a 57 aa KPI, or Kunitz protease inhibitor domain in the ECD. This has protease-inhibition activity and may be involved in memory. Membrane-bound APP695 undergoes two-stage proteolytic processing. There is an initial cleavage by either an  $\alpha$ - or  $\beta$ -secretase, followed by cleavage by a  $\gamma$ -secretase. The choice of  $\alpha$ - or  $\beta$ -secretase may depend upon the APP glycosylation pattern or phosphorylation events.  $\alpha$ -Secretase cleavage occurs between K612 and L613. This releases a soluble APP $\alpha$  piece that shows proliferative activity with EGF family members on neural progenitor cells and keratinocytes.  $\beta$ -secretase cleaves between M596 and D597. When followed by  $\gamma$ -secretase cleavage following position V637, or A639, small 40 or 42 aa A $\beta$  peptides are released that may contribute to the formation of amyloid plaques.

## Preparation

Prepared from rabbit serum by affinity purification using a column to which the peptide immunogen was coupled.

## Formulation

100  $\mu$ L in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/mL BSA and 50% glycerol.

## Storage

For long-term storage,  $\leq -20^{\circ}$  C is recommended. Product is stable at  $\leq -20^{\circ}$  C for at least 1 year.

## Specificity

This antibody is specific for the ~120 kDa APP in Western blots of rat brain.

## Applications

**Western blot** - 1:1000

**Optimal dilutions should be determined by each laboratory for each application.**

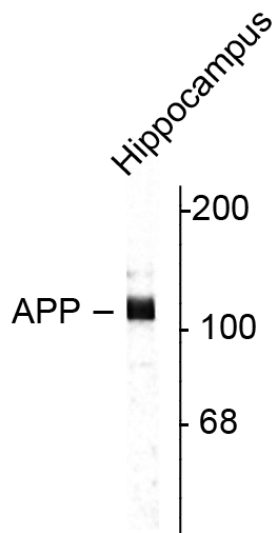
## References

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2. Chen, Y. and B.L. Tang (2006) Biochem. Biophys. Res. Commun. **341**:1.
3. Reinhard, C. *et al.* (2005) EMBO J. **24**:3996.
4. Mendendez-Gonzales, M. *et al.* (2005) Neurodegenerative Dis. **2**:227.
5. Nakagawa, K. *et al.* (2006) J. Neurochem. **96**:924.
6. Kang, J. *et al.* (1987) Nature **325**:733.

H. Helen Zhang



Director, Quality Assurance



Western blot of rat hippocampal lysate showing specific immunolabeling of the approximately 120 kDa APP protein.