

**APP Antibody**  
**Rabbit Polyclonal Antibody**  
**Catalog # ABV11098****Specification**

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**APP Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P05067</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	86943

**APP Antibody - Additional Information****Gene ID** 351

Application & Usage	Western blot analysis (1-4 µg/ml) and Immunohistochemistry (2-10 µg/ml). However, the optimal conditions should be determined individually. Murine and rat brain tissues can be used as positive controls.
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**Other Names**

amyloid-b-peptide, amyloid beta peptide, Amyloid beta A4 protein, Alzheimer disease amyloid protein, ABPP, APPI, Cerebral vascular amyloid peptide,

**Target/Specificity**

APP

**Antibody Form**

Liquid

**Appearance**

Colorless liquid

**Formulation**

100 µg (0.5 mg/ml) immunoaffinity purified rabbit anti-APP polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 50% glycerol, 1% BSA, 0.02% thimerosal.

**Handling**

The antibody solution should be gently mixed before use.

**Reconstitution & Storage**

-20 °C

**Background Descriptions**

## Precautions

APP Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## APP Antibody - Protein Information

**Name** APP ([HGNC:620](#))

### Function

Functions as a cell surface receptor and performs physiological functions on the surface of neurons relevant to neurite growth, neuronal adhesion and axonogenesis. Interaction between APP molecules on neighboring cells promotes synaptogenesis (PubMed:<a href="http://www.uniprot.org/citations/25122912" target="\_blank">25122912</a>). Involved in cell mobility and transcription regulation through protein-protein interactions. Can promote transcription activation through binding to APBB1-KAT5 and inhibits Notch signaling through interaction with Numb. Couples to apoptosis- inducing pathways such as those mediated by G(o) and JIP. Inhibits G(o) alpha ATPase activity (By similarity). Acts as a kinesin I membrane receptor, mediating the axonal transport of beta-secretase and presenilin 1 (By similarity). By acting as a kinesin I membrane receptor, plays a role in axonal anterograde transport of cargo towards synapses in axons (PubMed:<a href="http://www.uniprot.org/citations/17062754" target="\_blank">17062754</a>, PubMed:<a href="http://www.uniprot.org/citations/23011729" target="\_blank">23011729</a>). Involved in copper homeostasis/oxidative stress through copper ion reduction. In vitro, copper-metallated APP induces neuronal death directly or is potentiated through Cu(2+)-mediated low-density lipoprotein oxidation. Can regulate neurite outgrowth through binding to components of the extracellular matrix such as heparin and collagen I and IV. The splice isoforms that contain the BPTI domain possess protease inhibitor activity. Induces a AGER-dependent pathway that involves activation of p38 MAPK, resulting in internalization of amyloid-beta peptide and leading to mitochondrial dysfunction in cultured cortical neurons. Provides Cu(2+) ions for GPC1 which are required for release of nitric oxide (NO) and subsequent degradation of the heparan sulfate chains on GPC1. N-APP binds TNFRSF21 triggering caspase activation and degeneration of both neuronal cell bodies (via caspase-3) and axons (via caspase-6).

### Cellular Location

Cell membrane; Single-pass type I membrane protein. Membrane; Single-pass type I membrane protein. Perikaryon Cell projection, growth cone. Membrane, clathrin-coated pit. Early endosome. Cytoplasmic vesicle. Note=Cell surface protein that rapidly becomes internalized via clathrin-coated pits. Only a minor proportion is present at the cell membrane; most of the protein is present in intracellular vesicles (PubMed:20580937) During maturation, the immature APP (N-glycosylated in the endoplasmic reticulum) moves to the Golgi complex where complete maturation occurs (O-glycosylated and sulfated). After alpha-secretase cleavage, soluble APP is released into the extracellular space and the C-terminal is internalized to endosomes and lysosomes. Some APP accumulates in secretory transport vesicles leaving the late Golgi compartment and returns to the cell surface. APP sorts to the basolateral surface in epithelial cells. During neuronal differentiation, the Thr-743 phosphorylated form is located mainly in growth cones, moderately in neurites and sparingly in the cell body (PubMed:10341243). Casein kinase phosphorylation can occur either at the cell surface or within a post-Golgi compartment. Associates with GPC1 in perinuclear compartments. Colocalizes with SORL1 in a vesicular pattern in cytoplasm and perinuclear regions. [C99]: Early endosome [Amyloid-beta protein 40]: Cell surface [Gamma-secretase C-terminal fragment 59]: Nucleus. Cytoplasm Note=Located to both the cytoplasm and nuclei of neurons. It can be translocated to the nucleus through association with APBB1 (Fe65) (PubMed:11544248). In dopaminergic neurons, the phosphorylated Thr-743 form is localized to the nucleus (By similarity) {ECO:0000250|UniProtKB:P12023, ECO:0000269|PubMed:11544248}

### Tissue Location

Expressed in the brain and in cerebrospinal fluid (at protein level) (PubMed:2649245). Expressed in all fetal tissues examined with highest levels in brain, kidney, heart and spleen. Weak expression in liver. In adult brain, highest expression found in the frontal lobe of the cortex and in the anterior perisylvian cortex- opercular gyri. Moderate expression in the cerebellar cortex, the posterior perisylvian cortex-opercular gyri and the temporal associated cortex. Weak expression found in the striate, extra-striate and motor cortices. Expressed in cerebrospinal fluid, and plasma. Isoform APP695 is the predominant form in neuronal tissue, isoform APP751 and isoform APP770 are widely expressed in non-neuronal cells. Isoform APP751 is the most abundant form in T-lymphocytes. Appican is expressed in astrocytes.

### **APP Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### **APP Antibody - Images**

### **APP Antibody - Background**

Accumulation of the amyloid- $\beta$  peptide ( $A\beta$ ) in the cerebral cortex is a critical event in the pathogenesis of Alzheimer's disease. The  $\beta$ -amyloid protein precursor (APP) is cleaved by  $\beta$ -secretase, producing a soluble derivative of the protein and a membrane anchored 99-amino acid carboxy-terminal fragment (C99). The C99 fragment serves as substrate for  $\gamma$ -secretase to generate the 4 kDa amyloid- $\beta$  peptide, which is deposited in the brains of all sufferers of Alzheimer's disease.