# Beta Amyloid (APP) Antibody – Rabbit Polyclonal

## PRODUCT OVERVIEW

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| **Product Name** | beta Amyloid (APP), Polyclonal Antibody |
| **Full Product Name** | beta Amyloid 1-42 Antibody FITC Conjugated |
| **Product Gene Name** | anti-APP antibody |
| **Product Synonym Names** | AAA; AD1; PN2; ABPP; APPI; CVAP; ABETA; PN-II; CTFgamma; Amyloid beta A4 protein; APP; Alzheimer's disease amyloid protein; Cerebral vascular amyloid peptide; PreA4; Protease nexin-II; A4; beta Amyloid 1-42 |
| **Clonality** | Polyclonal |
| **Isotype** | IgG |
| **Host** | Rabbit |
| **Species Reactivity** | Human, Mouse, Rat |
| **Form/Format** | 10mM Tris Buffered Saline containing 1% BSA, 50% glycerol and 0.09% sodium azide. |
| **Purity/Purification** | Purified by Protein A |
| **Concentration** | 1mgml (lot specific) |
| **Preparation and Storage** | Store at 4 degree C for 12 months. |
| **Molecular Weight** | 86,943 Da |
| **Chromosome Location** | Chromosome: 21; NC_000021.8 (27252861..27543446, complement). Location: 21q21.3 |
| **OMIM** | 104300 |
| **3D Structure** | ModBase 3D Structure for P05067 |
| **Conjugation** | FITC |
| **Excitation Emission** | 494nm 518nm |
| **Immunogen** | KLH conjugated synthetic peptide aa 672-713 770 of human beta-Amyloid(1-42) |
| **Product Categories/Family for anti-APP antibody** | Conjugated Primary Antibodies |
| **Applications Tested/Suitable for anti-APP antibody** | Immunofluorescence (IF) |
| **Application Notes for anti-APP antibody** | IF: 1:50-200 |
| **Related Product Information for anti-APP antibody** | The cerebral and vascular plaques associated with Alzheimer's disease are mainly composed of Amyloid beta peptides. beta Amyloid is derived from cleavage of the Amyloid precursor protein and varies in length from 39 to 43 amino acids. beta Amyloid [1-40], beta Amyloid [1-42], and beta Amyloid [1-43] peptides result from cleavage of Amyloid precursor protein after residues 40, 42, and 43, respectively. The cleavage takes place by gamma-secretase during the last Amyloid precursor protein processing step. beta Amyloid [1-40], beta Amyloid [1-42], and beta Amyloid [1-43] peptides are major constituents of the plaques and tangles that occur in Alzheimer's disease. beta Amyloid and peptides have been developed as tools for elucidating the biology of Alzheimer's disease. |
| **Other Notes** | Small volumes of anti-APP antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply. |

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| **Searchable Terms for APP purchase** | MBS9459757 is an antibody targeting APP. Also known as beta Amyloid 1-42 Antibody FITC Conjugated. Reactive in Human, Mouse, Rat. Host: Rabbit. |

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for APP. It may not necessarily be applicable to this product.

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| **NCBI GI #** | 4502167 |
| **NCBI GeneID** | 351 |
| **NCBI Accession #** | NP_000475.1 |
| **UniProt Primary Accession #** | P05067 |
| **UniProt Secondary Accession #** | P09000; P78438; Q13764; Q13778; Q13793; Q16011; B2R5V1; B4DII8; D3DSD1; D3DSD2; D3DSD3 |
| **UniProt Related Accession #** | P05067 |
| **GenBank Nucleotide #** | NM_000484.3 |
| **NCBI Official Full Name** | amyloid beta A4 protein isoform a |
| **NCBI Official Synonym Full Names** | amyloid beta (A4) precursor protein |
| **NCBI Official Symbol** | APP |
| **NCBI Official Synonym Symbols** | AAA; AD1; PN2; ABPP; APPI; CVAP; ABETA; PN-II; CTFgamma |
| **UniProt Protein Name** | Amyloid beta A4 protein |
| **UniProt Synonym Protein Names** | ABPP; APPI; APP; Alzheimer disease amyloid protein; Cerebral vascular amyloid peptide; CVAP; PreA4; Protease nexin-II; PN-IICleaved into the following 14 chains:N-APPSoluble APP-alpha; S-APP-alphaSoluble APP-beta; S-APP-betaC99Beta-amyloid protein 42; Alternative name(s):; Beta-APP42Beta-amyloid protein 40; Alternative name(s):; Beta-APP40C83P3(42)P3(40)C80Gamma-secretase C-terminal fragment 59; Alternative name(s):; Amyloid intracellular domain 59; AICD-59; AID(59); Gamma-CTF(59)Gamma-secretase C-terminal fragment 57; Alternative name(s):; Amyloid intracellular domain 57; AICD-57; AID(57); Gamma-CTF(57)Gamma-secretase C-terminal fragment 50; Alternative name(s):; Amyloid intracellular domain 50; AICD-50; AID(50); Gamma-CTF(50) |
| **Protein Family** | Amyloid beta A4 protein |
| **UniProt Gene Name** | APP |
| **UniProt Synonym Gene Names** | A4; AD1; APP; CVAP; PN-II; S-APP-alpha; S-APP-beta; AICD-59; AID(59); AICD-57; AID(57); AICD-50; AID(50) |
| **UniProt Entry Name** | A4_HUMAN |
| **NCBI Protein Information** | amyloid beta A4 protein; preA4; protease nexin-II; peptidase nexin-II; beta-amyloid peptide; alzheimer disease amyloid protein; cerebral vascular amyloid peptide |
| **NCBI Summary for APP** | This gene encodes a cell surface receptor and transmembrane precursor protein that is cleaved by secretases to form a number of peptides. Some of these peptides are secreted and can bind to the acetyltransferase complex APBB1/TIP60 to promote transcriptional activation, while others form the protein basis of the amyloid plaques found in the brains of patients with Alzheimer disease. Mutations in this gene have been implicated in autosomal dominant Alzheimer disease and cerebroarterial amyloidosis (cerebral amyloid angiopathy). Multiple transcript variants encoding several different isoforms have been found for this gene. [provided by RefSeq, Jul 2008] |

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| **UniProt Comments for APP** | APP: a cell surface receptor that influences neurite growth, neuronal adhesion and axonogenesis. Cleaved by secretases to form a number of peptides, some of which bind to the acetyltransferase complex Fe65/TIP60 to promote transcriptional activation. The Abeta peptide is released from the cell, its extracellular deposition and accumulation form the main components of amyloid plaques in Alzheimer's disease. Mutations in this gene have been implicated in autosomal dominant Alzheimer disease and cerebroarterial amyloidosis. Can promote transcription activation through binding to Fe65-Tip60 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. Acts as a kinesin I membrane receptor, mediating the axonal transport of beta-secretase and presenilin 1. 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. Induces a RAGE-dependent pathway that activates 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. Binds, via its C-terminus, to the PID domain of several cytoplasmic proteins, including APBB family members, the APBA family, JIP1, SHC1 and, NUMB and DAB1. Binding to DAB1 inhibits its serine phosphorylation. Associates with microtubules in the presence of ATP and in a kinesin-dependent manner. Amyloid beta-42 binds nAChRA7 in hippocampal neurons. Beta-amyloid associates with HADH2. Soluble APP binds, via its N-terminal head, to FBLN1. 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. 10 isoforms of the human protein are produced by alternative splicing. 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. The splice isoforms that contain the BPTI domain possess protease inhibitor activity. Belongs to the APP family.<br><br>Protein type: Cell surface; Receptor, misc.; Transcription factor; Membrane protein, integral; Apoptosis<br><br>Chromosomal Location of Human Ortholog: 21q21.3<br><br>Cellular Component: Golgi apparatus; extracellular space; cell surface; intracellular membrane-bound organelle; integral to plasma membrane; extracellular region; integral to membrane; dendritic spine; coated pit; intercellular junction; cytosol; ER to Golgi transport vesicle; lipid raft; ciliary rootlet; nuclear envelope lumen; perinuclear region of cytoplasm; axon; apical part of cell; cytoplasm; plasma membrane; synapse; spindle midzone; dendritic shaft; neuromuscular junction; endosome; receptor complex<br><br>Molecular Function: serine-type endopeptidase inhibitor activity; heparin binding; identical protein binding; protein binding; protease activator activity; enzyme binding; DNA binding; transition metal ion binding; PTB domain binding; acetylcholine receptor binding; receptor binding<br><br>Biological Process: extracellular matrix organization and biogenesis; adult locomotory behavior; locomotory behavior; mRNA polyadenylation; positive regulation of mitotic cell cycle; protein amino acid phosphorylation; regulation of translation; platelet degranulation; synaptic growth at neuromuscular junction; forebrain development; dendrite development; visual learning; collateral sprouting in the absence of injury; neuromuscular process controlling balance; cell adhesion; neurite development; cholesterol metabolic process; platelet activation; Notch signaling pathway; cellular copper ion homeostasis; regulation of epidermal growth factor receptor activity; axon cargo transport; mating behavior; regulation of multicellular organism growth; endocytosis; axon midline choice point recognition; smooth endoplasmic reticulum calcium ion homeostasis; neuron apoptosis; negative regulation of neuron differentiation; axonogenesis; suckling behavior; ionotropic glutamate receptor signaling pathway; regulation of synapse structure and activity; regulation of protein binding; innate immune response; positive regulation of transcription from RNA polymerase II promoter; response to oxidative stress; blood coagulation; neuron remodeling<br><br>Disease: Alzheimer Disease |
| **Research Articles on APP** | **1.** Both numbers of synapses per volume and synaptic morphology are affected in plaque-free regions of APP/presenilin-1 transgenic mice. |
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