10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10)

Mouse Monoclonal Antibody
Catalog # ABV10773

Specification

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) - Product Information

Application	**IHC**
Primary Accession	P05067
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**Mouse IgG1**
Calculated MW	**86943**

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) - Additional Information

Gene ID 351

Positive Control	**Alzheimer disease brain tissue, frontal lobe**
Application & Usage	**Immunohistochemistry: 40 – 150 µg. However, optimal conditions must be determoned by the user.**

Other Names
Amyloid beta A4 protein, ABPP, APPI, APP, Alzheimer disease amyloid protein, Cerebral vascular amyloid peptide (CVAP

Target/Specificity
Human Amyloid Beta 1-17

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µg (0.5 mg/ml) in 1X PBS, pH 7.4 with 50% Glycerol.

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) is for research use only and not for use in diagnostic or therapeutic procedures.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) - 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:25122912). 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:17062754, PubMed:23011729). 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

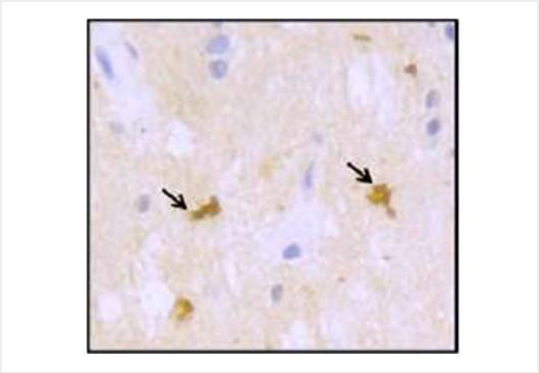
the anterior perisylvian cortex- opercular gyri. Moderate expression in the cerebellar cortex, the posterior perisylvian cortex-opercular gyri and the temporal associated cortex. Weak expression found in the striate, extra-striate and motor cortices. Expressed in cerebrospinal fluid, and plasma. Isoform 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.

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) - Images



IHC Analysis of Alzheimer disease brain tissue, frontal lobe (BioChain) with 100 µg of antibody from clone C4D10 (after antigen retrieval with Tris-EDTA, pH 9.0 in pressure cooker). The antibody displays specific staining of extracellularplaques and neurofibrillary tangles formed by the Amyloid Beta plaque.

Anti-Human Amyloid Beta 1-17 Antibody (Clone C4D10) - Background

Amyloid Beta (Aβ or Abeta) is a multi-functional peptide of 36-43 amino acids, processed from the Amyloid Precursor Protein (APP). It is most commonly known to be associated with Alzheimer's disease since it is the main component of amyloid plaques found in the brains of the diseased subjects. However, it also plays a role in multiple non-disease activities including protection against metal-induced reactive oxidizing species (ROS), modification of cholesterol transport, and potential activity as a transcription factor. It is secreted by platelets into the blood serum and its levels elevate with age.