

Anti-β-Amyloid, 1-16 Antibody (Previously Covance catalog# SIG-39300)

Catalog# / Size	803014 / 50 μL 803015 / 200 μL 803016 / 500 μL 803017 / 1 mL
Clone	6E10
Regulatory Status	RUO
Other Names	AAA, ABETA, ABPP, AD1, APPI, CTFgamma, CVAP, PN-II, PN2, Amyloid beta A4 protein, preA4, protease, peptidase nexin-II, beta-amyloid peptide, alzheimer disease amyloid protein, cerebral vascular amyloid peptide, APP, Amyloid Precursor Protein
Previously	Signet Catalog# 9300-02 Signet Catalog# 9300-05 Signet Catalog# 9300-10 Covance Catalog# SIG-39300
Isotype	Mouse IgG1, κ
Description	Alzheimer's disease is characterized by the accumulation of aggregated Aβ peptides in senile plaques and vascular deposits. Aβ peptides are derived from amyloid precursor proteins (APP) through sequential proteolytic cleavage of APP by β-secretases and γ-secretases generating diverse Aβ species. Aβ can aggregate to form soluble oligomeric species and insoluble fibrillar or amorphous assemblies. Some forms of the aggregated peptides are toxic to neurons.

Product Details

Verified Reactivity	Human
Antibody Type	Monoclonal
Host Species	Mouse
Preparation	Ascites
Concentration	The concentration is not quantified as this product is sold as undiluted crude mouse ascites fluid. The concentration might vary from lot-to-lot and an estimated concentration would be 1-3 mg/ml.
Storage & Handling	Store at -20°C or below. Upon initial thawing, apportion into working aliquots and store at -20°C or below. Avoid repeated freeze-thaw cycles to prevent denaturing the antibody. Do not store in frost-free freezers.
Application	WB - Quality tested Direct ELISA, IHC-P - Verified IHC-F, EM - Reported in the literature, not verified in house
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting . For Western blotting, the suggested dilution of this reagent is 1:1,000 to 1:20,000. For Direct ELISA, the suggested dilution of this reagent is 1:10,000 to 1:100,000. For immunohistochemistry on formalin-fixed paraffin-embedded tissue sections, the suggested dilution of this reagent is 1:1,000 to 1:20,000. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	This antibody is reactive to amino acid residue 1-16 of beta amyloid. The epitope lies within amino acids 3-8 of beta amyloid (EFRHDS). This antibody clone has been reported for use in immunohistochemistry of free-floating sections ^{2,13} .
Application References	<ol style="list-style-type: none"> Thakker DR, <i>et al.</i> 2009. <i>Proc. Natl. Acad. Sci. USA.</i> 106(11):4501-6. (IHC) PubMed Oddo S, <i>et al.</i> 2005. <i>Proc. Natl. Acad. Sci. USA.</i> 102(8):3046-51. (IHC-other) PubMed Herzig M, <i>et al.</i> 2004. <i>Nat. Neuro.</i> 7(9):954-959. (WB) PubMed Zheng Y, <i>et al.</i> 2012. <i>PLoS One</i> 6:39035. (IHC-F) PubMed Abramowksi D, <i>et al.</i> <i>J Neurosci.</i> 32:1273. (WB) PubMed Fornly-Germano L, <i>et al.</i> 2014. <i>J. Neurosci.</i> 34:13629. (WB, IHC) PubMed
(PubMed link indicates BioLegend citation)	

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RRID AB_2728527 (BioLegend Cat. No. 803014)
AB_2565328 (BioLegend Cat. No. 803015)
AB_2565329 (BioLegend Cat. No. 803016)
AB_2565327 (BioLegend Cat. No. 803017)

Antigen Details

Structure	Amyloid precursor protein is a 770 amino acid protein with a molecular mass of ~100 kD. According to the UniProtKB database, APP (ID# P05067) has 11 isoforms (34 to ~90 kD) and the 770 form has been designated as the canonical form. Isoform APP695 is the predominant form expressed in neuronal tissue. Isoforms APP751 and APP770 are widely expressed in non-neuronal cells. Isoform APP751 is the most abundant form in T-lymphocytes. A β denotes peptides of 36-43 amino acids generated from cleavage of APP by secretases. A β has an apparent molecular mass of about 4 kD.
Distribution	Tissue distribution: Primarily nervous system, but also adipose tissue, intestine, muscle. Cellular distribution: Cytosol, endosomes, nucleus, plasma membrane, extracellular, and golgi apparatus.
Function	The normal function of A β is not well understood. Several potential physiological roles have been proposed, including: activation of kinase enzymes; protection against oxidative stress; regulation of cholesterol transport; transcription factor, and as an anti-microbial agent.
Biology Area	Cell Biology, Neurodegeneration, Neuroscience, Protein Misfolding and Aggregation
Molecular Family	APP/ β -Amyloid
Antigen References	<ol style="list-style-type: none">1. Kumar A, <i>et al.</i> 2015. <i>Pharmacol. Rep.</i> 67(2):195.2. Sadigh-Eteghad S, <i>et al.</i> 2015. <i>Med. Princ. Pract.</i> 24(1):13. Hampel H, <i>et al.</i> 2015. <i>Expert Rev. Neurother.</i> 15(1):83.4. Puig KL, <i>et al.</i> 2012. <i>Exp. Gerontol.</i> 48(7): 608.5. Selkoe DJ, <i>et al.</i> 2016. <i>EMBO Mol. Med.</i> 8(6):595.6. Walsh DM, <i>et al.</i> 2007. <i>J. Neurochem.</i> 101(5):1172.
Gene ID	351

Related Protocols

[Western Blotting Protocol](#)

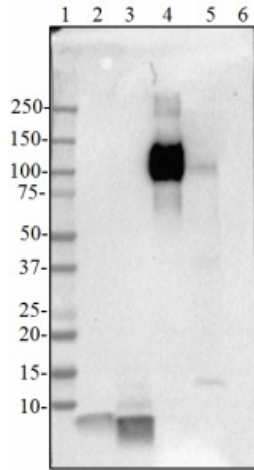
[Sandwich ELISA Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

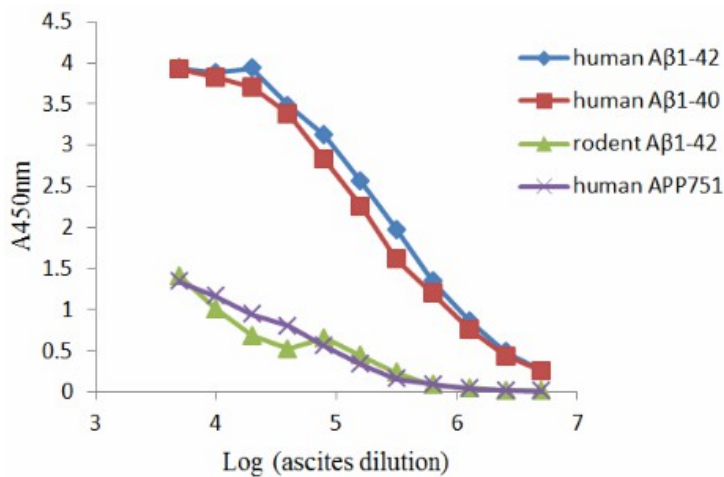
Other Formats

Alexa Fluor® 488 anti- β -Amyloid, 1-16, Anti- β -Amyloid, 1-16, Biotin anti- β -Amyloid, 1-16, Purified anti- β -Amyloid, 1-16, HRP anti- β -Amyloid, 1-16, Alexa Fluor® 594 anti- β -Amyloid, 1-16, Alexa Fluor® 647 anti- β -Amyloid, 1-16, Ultra-LEAF™ Purified anti- β -Amyloid, 1-16, Spark YG™ 570 anti- β -Amyloid, 1-16

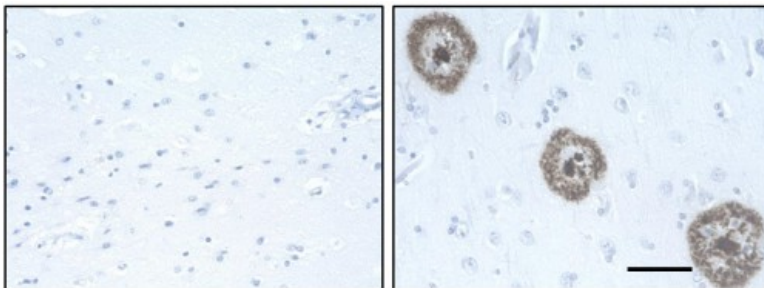
Product Data



Western blot of anti- β -amyloid, 1-16 antibody (clone 6E10). Lane 1: Molecular weight marker; Lane 2: 50 ng of the human A β 1-40 peptide; Lane 3: 50 ng of the A β 1-42 peptide; Lane 4: 50 ng of the recombinant human APP751 protein; Lane 5: 20 μ g of the human brain lysate; Lane 6: 50 ng of the rodent A β 1-42 peptide. The blot was incubated with 1:10,000 dilution of the primary antibody overnight at 4°C, followed by incubation with the HRP-labeled goat anti-mouse IgG (Cat. No. 405306). Enhanced chemiluminescence was used as the detection system.



Direct ELISA of anti- β -amyloid, 1-16 (clone 6E10) antibody binding to the plate-immobilized human A β 1-40, human A β 1-42, rodent A β 1-42 peptides, and recombinant human APP751 protein. ELISA was performed by coating the wells with 100 ng of peptide or recombinant protein. The wells were then incubated with the primary antibody at 37°C for 45 minutes, followed by incubation with HRP labeled goat anti-mouse IgG secondary antibody. TMB (3, 3', 5, 5' tetramethylbenzidine, Cat. No. 421501) was used as the detection system.



IHC staining of anti- β -Amyloid, 1-16 antibody (clone 6E10) on formalin-fixed paraffin-embedded normal human (left panel) and Alzheimer's disease (right panel) brain tissues. Following antigen retrieval using 70% formic acid for 20 minutes, the tissues were incubated with 1:5,000 dilution of the primary antibody for 1 hour at room temperature. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining and bluing solution counterstaining, according to the protocol provided. The images were captured with a 40X objective. Scale bar: 50 μ m

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