

Alexa Fluor® 647 anti- β -Amyloid, 1-42 Antibody

Catalog# / Size	805511 / 25 μ g 805512 / 100 μ g
Clone	12F4
Regulatory Status	RUO
Other Names	AAA, ABETA, ABPP, AD1, APPI, CTFgamma, CVAP, PN-II, PN2, Amyloid beta A4 protein, preA4, protease nexin-II, peptidase nexin-II, beta-amyloid peptide, alzheimer disease amyloid protein, cerebral vascular amyloid peptide, APP, Amyloid Precursor Protein
Isotype	Mouse IgG1, κ
Description	Amyloid beta ($A\beta$ or Amyloid beta) denotes peptides of 36-43 amino acids in length that are crucially involved in Alzheimer's disease as the main component of the amyloid plaques found in the brains of Alzheimer patients. The peptides result from the amyloid precursor protein (APP), which is cut by certain enzymes to yield $A\beta$. $A\beta$ molecules can aggregate to form oligomers (known as "seeds") which are believed to be able to induce other $A\beta$ molecules to also take the misfolded oligomeric form, leading to a chain reaction akin to a prion infection. The seeds or the resulting amyloid plaques are toxic to nerve cells. The other protein implicated in Alzheimer's disease, tau protein, also forms such prion-like misfolded oligomers, and there is some evidence that misfolded $A\beta$ can induce tau to misfold.

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	IHC-P - Quality tested
Recommended Usage	<p>Each lot of this antibody is quality control tested by formalin-fixed paraffin-embedded immunohistochemical staining. For immunohistochemistry, a concentration range of 1.0 - 10.0 μg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>* Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633 nm / 635 nm.</p> <p>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.</p> <p>View full statement regarding label licenses</p>
Excitation Laser	Red Laser (633 nm)
Application Notes	This antibody is reactive to the C-terminus of beta amyloid and is specific for the isoform ending at the 42nd amino acid.
Additional Product Notes	For use in immunohistochemistry on formalin-fixed paraffin-embedded tissue (IHC-P), it is recommended to perform antigen retrieval using either Citrate Buffer, 10X (Cat. No. 420902) or Tris-EDTA pH 9.0 Antigen Retrieval Buffer (10X) (Cat. No. 422704).

This product is not recommended for use in immunocytochemistry (ICC).

Application References

(PubMed link indicates
BioLegend citation)

1. Helwig M, *et al.* 2013. *J. Biol. Chem.* 288:1114. **(IHC-P)**
2. Takami M, *et al.* 2009. *J. Neurosci.*; 29: 13042. **(IHC-P)**
3. Cenini G, *et al.* 2012. *Biochim Biophys Acta.* 1822(2):130. **(ELISA)** [PubMed](#)
4. Sundaram RK, *et al.* 2012. *Int. J. Pept. Res. Ther.* 18(2):99. **(ELISA)** [PubMed](#)
5. Savage MJ, *et al.* 2014. *J. Neurosci.* 8:2884. **(ELISA)** [PubMed](#)
6. Mastrangelo MA, Bowers WJ. 2008. *BMC Neurosci.* 9:81. **(IHC-F)** [PubMed](#)

RRID

AB_3699099 (BioLegend Cat. No. 805511)
AB_3699099 (BioLegend Cat. No. 805512)

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 sources: Primarily nervous system, but also adipose tissue, intestine, muscle.
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

1. Kumar A, *et al.* 2015. *Pharmacol. Rep.* 67(2):195.
2. Sadigh-Eteghad S, *et al.* 2015. *Med. Princ. Pract.* 24(1):1
3. Hampel H, *et al.* 2015. *Expert Rev. Neurother.* 15(1):83.
4. Puig KL, *et al.* 2012. *Exp. Gerontol.* 48(7): 608.
5. Selkoe DJ, *et al.* 2016. *EMBO Mol. Med.* 8(6):595.
6. Walsh DM, *et al.* 2007. *J. Neurochem.* 101(5):1172.

Gene ID

[351](#)

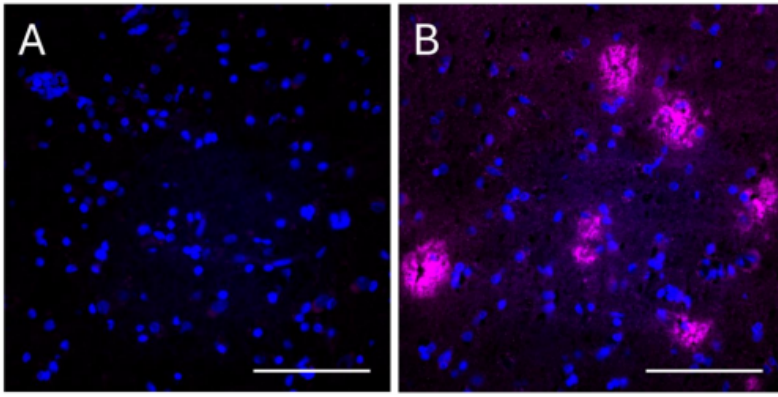
Related Protocols

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

Other Formats

Biotin anti- β -Amyloid, 1-42 , HRP anti- β -Amyloid, 1-42, Purified anti- β -Amyloid, 1-42 , Alexa Fluor® 647 anti- β -Amyloid, 1-42

Product Data



IHC staining with Alexa Fluor® 647 anti-Beta-Amyloid 1-42 (clone 12F4) on formalin-fixed paraffin-embedded human Alzheimer's disease brain tissue. Following antigen retrieval using 1X Tris-EDTA pH 9.0 Antigen Retrieval Buffer (Cat. No. 422704), the tissue was incubated without (panel A) and with (panel B) Alexa Fluor® 647 anti-Beta-Amyloid 1-42 (clone 12F4) overnight at 4°C. Nuclei were counterstained with DAPI (Cat. No. 422801). Images were captured with a 40X objective. Scale bar: 50 µm

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