

# β-Amyloid (B-4): sc-28365

## BACKGROUND

Proteolytic cleavage of the Amyloid protein precursor (APP) gives rise to the β-Amyloid and Amyloid A4 proteins, which are present in human platelets. Amyloid deposition is associated with type II diabetes, Down syndrome and a variety of neurological disorders, including Alzheimer's disease. The Amyloid precursor protein (APP) undergoes alternative splicing, resulting in several isoforms. Proteolytic cleavage of APP leads to the formation of the 4 kDa Amyloid β/A4 Amyloid protein. This protein is involved in the formation of neurofibrillary tangles and plaques that characterize the senile plaques of Alzheimer's patients. APLP1 (Amyloid precursor-like protein 1) and APLP2 are structurally similar to APP. Human APLP2 is a membrane-bound sperm protein that contains a region highly homologous to the transmembrane-cytoplasmic domains of APP found in brain plaques of Alzheimer's disease patients.

## CHROMOSOMAL LOCATION

Genetic locus: APP (human) mapping to 21q21.3; App (mouse) mapping to 16 C3.3.

## SOURCE

β-Amyloid (B-4) is a mouse monoclonal antibody raised against amino acids 672-714 of Amyloid A4 representing full length β-Amyloid of human origin.

## PRODUCT

Each vial contains 200 μg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β-Amyloid (B-4) is available conjugated to agarose (sc-28365 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28365 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28365 PE), fluorescein (sc-28365 FITC), Alexa Fluor<sup>®</sup> 488 (sc-28365 AF488), Alexa Fluor<sup>®</sup> 546 (sc-28365 AF546), Alexa Fluor<sup>®</sup> 594 (sc-28365 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-28365 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-28365 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-28365 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

β-Amyloid (B-4) is recommended for detection of β-Amyloid and Amyloid A4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). β-Amyloid (B-4) is also recommended for detection of β-Amyloid and Amyloid A4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for APP siRNA (h): sc-29677, APP siRNA (m): sc-29678, APP shRNA Plasmid (h): sc-29677-SH, APP shRNA Plasmid (m): sc-29678-SH, APP shRNA (h) Lentiviral Particles: sc-29677-V and APP shRNA (m) Lentiviral Particles: sc-29678-V.

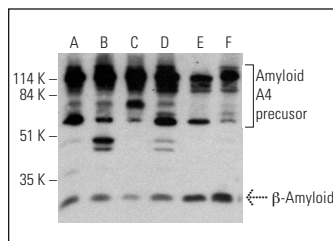
Molecular Weight of β-Amyloid: 4-46 kDa.

Molecular Weight of Amyloid A4: 100-125 kDa.

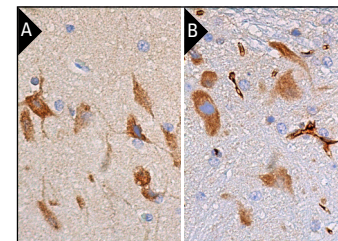
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



β-Amyloid (B-4) HRP: sc-28365 HRP. Direct western blot analysis of β-Amyloid expression in Hela (A), MCF7 (B), H4 (C), PC-3 (D), U-87 MG (E) and MDA-MB-231 (F) whole cell lysates.



β-Amyloid (B-4): sc-28365. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic staining of neuronal cells and cytoplasmic and membrane staining of endothelial cells (B).

## SELECT PRODUCT CITATIONS

- Ng, K.M., et al. 2010. Melatonin reduces hippocampal β-Amyloid generation in rats exposed to chronic intermittent hypoxia. *Brain Res.* 1354: 163-171.
- Huang, X., et al. 2010. Recombinant GST-I-Aβ 28-induced efficient serum antibody against Aβ42. *J. Neurosci. Methods* 186: 52-59.
- Cui, L., et al. 2010. Specific and efficient anti-Aβ 42 antibodies induced by sixteen tandem repeats of Aβ 9. *J. Neuroimmunol.* 227: 18-25.
- Liu, R.T., et al. 2010. Effects of liquiritigenin treatment on the learning and memory deficits induced by Amyloid β-peptide (25-35) in rats. *Behav. Brain Res.* 210: 24-31.
- Ahmad, A., et al. 2017. Neuroprotective effect of fisetin against Amyloid-β-induced cognitive/synaptic dysfunction, neuroinflammation, and neurodegeneration in adult mice. *Mol. Neurobiol.* 54: 2269-2285.
- Pascual, A.C., et al. 2017. 2-arachidonoylglycerol metabolism is differently modulated by oligomeric and fibrillar conformations of Amyloid β in synaptic terminals. *Neuroscience* 362: 168-180.
- Abid, N.B., et al. 2017. Molecular cloning and expression of osmotin in a baculovirus-insect system: purified osmotin mitigates Amyloid-β deposition in neuronal cells. *Sci. Rep.* 7: 8147.
- Kumfu, S., et al. 2018. Humanin exerts neuroprotection during cardiac ischemia-reperfusion injury. *J. Alzheimers Dis.* 61: 1343-1353.
- Zappa Villar, M.F., et al. 2018. Intracerebroventricular streptozotocin induces impaired Barnes maze spatial memory and reduces astrocyte branching in the CA1 and CA3 hippocampal regions. *J. Neural Transm.* E-published.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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