

# β-Amyloid (D-11): sc-374527

## 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 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.

## REFERENCE

- Kosik, K.S. 1992 Alzheimer's disease: a cell perspective. *Science* 256: 780-783.
- Hirai, S. and Okamoto, K. 1993. Amyloid β/A4 peptide associated with Alzheimer's disease and cerebral Amyloid angiopathy. *Intern. Med.* 32: 923-925.

## CHROMOSOMAL LOCATION

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

## SOURCE

β-Amyloid (D-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 663-687 at the C-terminus of β-Amyloid of human origin.

## PRODUCT

Each vial contains 200 μg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β-Amyloid (D-11) is available conjugated to agarose (sc-374527 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374527 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374527 PE), fluorescein (sc-374527 FITC), Alexa Fluor<sup>®</sup> 488 (sc-374527 AF488), Alexa Fluor<sup>®</sup> 546 (sc-374527 AF546), Alexa Fluor<sup>®</sup> 594 (sc-374527 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-374527 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-374527 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-374527 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374527 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

β-Amyloid (D-11) is recommended for detection of 4 kDa 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 (D-11) is also recommended for detection of 4 kDa β-Amyloid and Amyloid A4 in additional species, including equine, canine, bovine, porcine and avian.

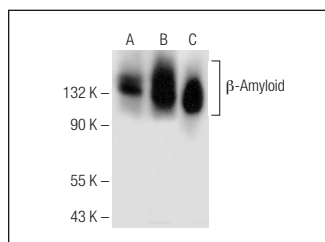
Suitable for use as control antibody for APP siRNA (h): sc-29677, APP siRNA (m): sc-29678, APP shRNA Plasmid (h): sc-29677-SH, APP shRNA Plasmid (m): sc-29678-SH, APP shRNA (h) Lentiviral Particles: sc-29677-V and APP shRNA (m) Lentiviral Particles: sc-29678-V.

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

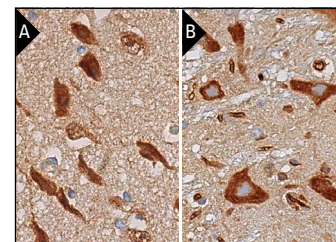
Molecular Weight of Amyloid A4: 100-125 kDa.

Positive Controls: H4 cell lysate: sc-2408, PC-3 cell lysate: sc-2220 or human brain extract: sc-364375.

## DATA



β-Amyloid (D-11): sc-374527. Western blot analysis of β-Amyloid expression in H4 (A) and PC-3 (B) whole cell lysates and human brain tissue extract (C).



β-Amyloid (D-11): sc-374527. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic and nuclear staining of neuronal cells and neuropil staining (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

- Ali, T., et al. 2015. Osmotin attenuates Amyloid β-induced memory impairment, Tau phosphorylation and neurodegeneration in the mouse hippocampus. *Sci. Rep.* 5: 11708.
- Sohn, E., et al. 2021. *Ficus erecta Thunb.* leaves ameliorate cognitive deficit and neuronal damage in a mouse model of Amyloid-β-induced Alzheimer's disease. *Front. Pharmacol.* 12: 607403.
- Kim, J.Y., et al. 2022. Mitigating effect of estrogen in Alzheimer's disease-mimicking cerebral organoid. *Front. Neurosci.* 16: 816174.

## RESEARCH USE

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