

# $\beta$ -Amyloid (DE2B4): sc-58508

## BACKGROUND

Proteolytic cleavage of the Amyloid protein precursor (APP) gives rise to the  $\beta$ -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  $\beta$ -Amyloid/A4 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.

## REFERENCES

1. Kosik, K.S. 1992. Alzheimer's disease: a cell perspective. *Science* 256: 780-783.
2. Hirai, S. and Okamoto, K. 1993. Amyloid  $\beta$ /A4 peptide associated with Alzheimer's disease and cerebral Amyloid angiopathy. *Intern. Med.* 32: 923-925.
3. Dyrks, T., et al. 1993. Generation of b/A4 from the Amyloid protein precursor and fragments thereof. *FEBS Lett.* 335: 89-93.

## CHROMOSOMAL LOCATION

Genetic locus: APP (human) mapping to 21q21.3.

## SOURCE

$\beta$ -Amyloid (DE2B4) is a mouse monoclonal antibody raised against amino acids 1-17 of  $\beta$ -Amyloid of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$\beta$ -Amyloid (DE2B4) is recommended for detection of APP and  $\beta$ -Amyloid of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

Molecular Weight of  $\beta$ -Amyloid: 4-46 kDa.

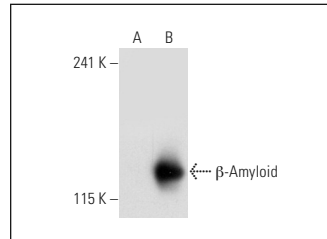
Molecular Weight of Amyloid A4: 100-125 kDa.

Positive Controls: APP (h): 293T Lysate: sc-117075, PC-3 cell lysate: sc-2220 or H4 cell lysate: sc-2408.

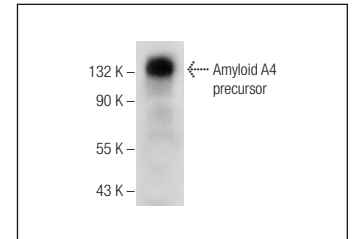
## STORAGE

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

## DATA



$\beta$ -Amyloid (DE2B4): sc-58508. Western blot analysis of  $\beta$ -Amyloid expression in non-transfected: sc-117752 (A) and human APP transfected: sc-117075 (B) 293T whole cell lysates.




$\beta$ -Amyloid (DE2B4): sc-58508. Western blot analysis of  $\beta$ -Amyloid expression in PC-3 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Calamai, M. and Pavone, F.S. 2011. Single molecule tracking analysis reveals that the surface mobility of Amyloid oligomers is driven by their conformational structure. *J. Am. Chem. Soc.* 133: 12001-12008.
2. Roesli, C., et al. 2011. The accessible cerebral vascular proteome in a mouse model of cerebral  $\beta$ -Amyloidosis. *J. Proteomics* 74: 539-546.
3. Calamai, M. and Pavone, F.S. 2013. Partitioning and confinement of GM1 ganglioside induced by Amyloid aggregates. *FEBS Lett.* 587: 1385-1391.
4. Panmanee, J., et al. 2015. Melatonin regulates the transcription of  $\beta$ APP-cleaving secretases mediated through melatonin receptors in human neuroblastoma SH-SY5Y cells. *J. Pineal Res.* 59: 308-320.
5. Liang, C.J., et al. 2015. Endothelial progenitor cells derived from Wharton's jelly of human umbilical cord attenuate ischemic acute kidney injury by increasing vascularization and decreasing apoptosis, inflammation, and fibrosis. *Cell Transplant.* 24: 1363-1377.
6. Lee, S., et al. 2016. The calcineurin inhibitor Sarah (Nebula) exacerbates A $\beta$ 42 phenotypes in a *Drosophila* model of Alzheimer's disease. *Dis. Model. Mech.* 9: 295-306.
7. Kim, S., et al. 2018. Neuroprotective effects of the methanol extract of kimchi, a Korean fermented vegetable food, mediated via suppression of endoplasmic reticulum stress and caspase cascade pathways in high-cholesterol diet-fed mice. *J. Med. Food.* E-published.

## RESEARCH USE

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



See  **$\beta$ -Amyloid (B-4): sc-28365** for  $\beta$ -Amyloid antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.