

# β-Amyloid (20.1): sc-53822

## 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.

## SOURCE

β-Amyloid (20.1) is a mouse monoclonal antibody raised against amino acids 1-40 of β-Amyloid of human origin.

## PRODUCT

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

β-Amyloid (20.1) is available conjugated to agarose (sc-53822 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53822 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53822 PE), fluorescein (sc-53822 FITC), Alexa Fluor® 488 (sc-53822 AF488), Alexa Fluor® 546 (sc-53822 AF546), Alexa Fluor® 594 (sc-53822 AF594) or Alexa Fluor® 647 (sc-53822 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53822 AF680) or Alexa Fluor® 790 (sc-53822 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

β-Amyloid (20.1) is recommended for detection of APP and β-Amyloid of human origin by Western Blotting (starting dilution 1:200, 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).

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 β-Amyloid: 4-46 kDa.

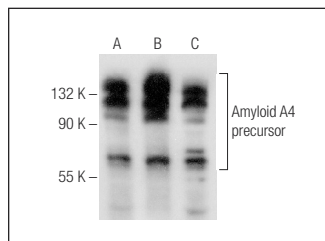
Molecular Weight of Amyloid A4: 100-125 kDa.

Positive Controls: H4 cell lysate: sc-2408, U-87 MG cell lysate: sc-2411 or PC-3 cell lysate: sc-2220.

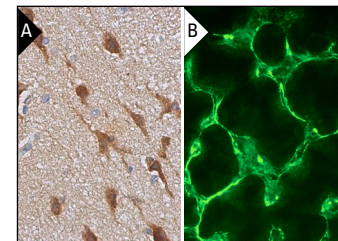
## STORAGE

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

## DATA



β-Amyloid (20.1): sc-53822. Western blot analysis of β-Amyloid expression in H4 (A), PC-3 (B) and U-87 MG (C) whole cell lysates.



β-Amyloid (20.1): sc-53822. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic and nuclear staining of neuronal cells and neuropil staining (A). Immunofluorescence staining of methanol-fixed HeLa cells showing cell-surface localization (B).

## SELECT PRODUCT CITATIONS

- Lu, X., et al. 2009. Linear epitope mapping by native mass spectrometry. *Anal. Biochem.* 395: 100-107.
- Yang, C.C., et al. 2011. Biofunctionalized magnetic nanoparticles for specifically detecting biomarkers of Alzheimer's disease *in vitro*. *ACS Chem. Neurosci.* 2: 500-505.
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- Fan, W., et al. 2019. Mouse induced pluripotent stem cells-derived Alzheimer's disease cerebral organoid culture and neural differentiation disorders. *Neurosci. Lett.* 711: 134433.
- Price, D., et al. 2020. Humanin blocks aggregation of Amyloid β induced by acetylcholinesterase, an effect abolished in the presence of IGF1R-3. *Biochemistry* 59: 1981-2002.
- Dorandish, S., et al. 2021. Regulation of Amyloid-β levels by matrix metalloproteinase-2/9 (MMP2/9) in the media of lung cancer cells. *Sci. Rep.* 11: 9708.
- Li, J., et al. 2022. β-Amyloid protein induces mitophagy-dependent ferroptosis through the CD36/PINK/PARKIN pathway leading to blood-brain barrier destruction in Alzheimer's disease. *Cell Biosci.* 12: 69.

## RESEARCH USE

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