SANTA CRUZ BIOTECHNOLOGY, INC.

β-Amyloid (B-4): sc-28365

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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_{2a} 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® 488 (sc-28365 AF488), Alexa Fluor® 546 (sc-28365 AF546), Alexa Fluor® 594 (sc-28365 AF594) or Alexa Fluor® 647 (sc-28365 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28365 AF680) or Alexa Fluor® 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.

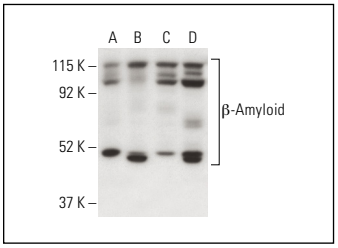
Molecular Weight of β-Amyloid: 4-46 kDa.

Molecular Weight of Amyloid A4: 100-125 kDa.

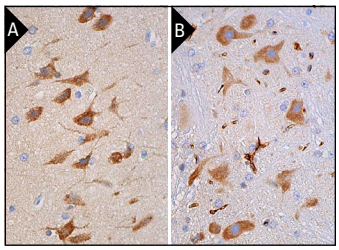
STORAGE

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): sc-28365. Western blot analysis of β-Amyloid expression in HeLa (**A**), A-431 (**B**), NIH/3T3 (**C**) and C3H/10T1/2 (**D**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



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

1. Ng, K.M., et al. 2010. Melatonin reduces hippocampal β-Amyloid generation in rats exposed to chronic intermittent hypoxia. Brain Res. 1354: 163-171.
2. Hong, X.Y., et al. 2024. Differential involvement of central and peripheral catecholamines between Alzheimer's disease and vascular dementia. Heliyon 10: e38843.
3. Jan, A., et al. 2024. Melatonin rescues pregnant female mice and their juvenile offspring from high fat diet-induced alzheimer disease neuropathy. Heliyon 10: e36921.
4. Nie, K., et al. 2024. Jiao-tai-wan and its effective component-coptisine alleviate cognitive impairment in db/db mice through the JAK2/STAT3 signaling pathway. Phytomedicine 134: 155954.
5. Sillapachaiyaporn, C., et al. 2024. Ergosterol promotes neurite outgrowth, inhibits amyloid-beta synthesis, and extends longevity: In vitro neuroblastoma and *in vivo Caenorhabditis elegans* evidence. Life Sci. 345: 122606.
6. Özdemir, A.Y., et al. 2024. Different amyloid β42 preparations induce different cell death pathways in the model of SH-SY5Y neuroblastoma cells. Cell. Mol. Biol. Lett. 29: 143.
7. Sun, S., et al. 2024. Amyloid-β oligomer-induced electrophysiological mechanisms and electrical impedance changes in neurons. Sensors 24: 1211.
8. Ko, Y.S., et al. 2024. Hearing modulation affects Alzheimer's disease progression linked to brain inflammation: a study in mouse models. Mol. Med. 30: 276.

RESEARCH USE

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