SANTA CRUZ BIOTECHNOLOGY, INC.

β-Amyloid (NAB228): sc-32277

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.

REFERENCES

1. Kosik, K.S. 1992 Alzheimer's disease: a cell perspective. Science 256: 780-783.
2. Dyrks, T., et al. 1993. Generation of βA4 from the Amyloid protein precursor and fragments thereof. FEBS Lett. 335: 89-93.

CHROMOSOMAL LOCATION

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

SOURCE

β-Amyloid (NAB228) is a mouse monoclonal antibody raised against a synthetic β-Amyloid peptide 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.

APPLICATIONS

β-Amyloid (NAB228) 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) 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 β-Amyloid: 4-46kDa.

Molecular Weight of Amyloid A4: 100-125 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HeLa whole cell lysate: sc-2200 or PC-3 cell lysate: sc-2220.

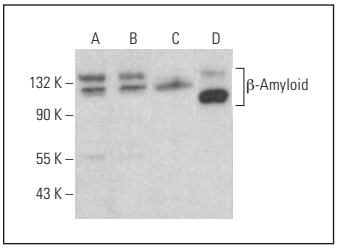
STORAGE

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

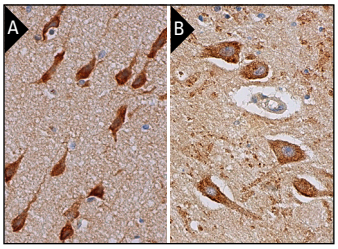
RESEARCH USE

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

DATA



β-Amyloid (NAB228): sc-32277. Western blot analysis of β-Amyloid expression in HeLa (**A**), MCF7 (**B**) and PC-3 (**C**) whole cell lysates and human fetal brain tissue extract (**D**).



β-Amyloid (NAB228): sc-32277. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells and neuropil staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells (**B**).

SELECT PRODUCT CITATIONS

1. Sepulveda, F.J., et al. 2010. Synaptotoxicity of Alzheimer β-Amyloid can be explained by its membrane perforating property. PLoS ONE 5: e11820.
2. Peters, F., et al. 2019. Tau deletion reduces plaque-associated BACE1 accumulation and decelerates plaque formation in a mouse model of Alzheimer's disease. EMBO J. 38: e102345.
3. Sebastian Monasor, L., et al. 2020. Fibrillar Aβ triggers microglial proteome alterations and dysfunction in Alzheimer mouse models. Elife 9: e54083.
4. Cordaro, M., et al. 2021. Hidrox® roles in neuroprotection: biochemical links between traumatic brain injury and Alzheimer's disease. Antioxidants 10: 818.
5. Bettegazzi, B., et al. 2021. Casein kinase 2 dependent phosphorylation of eIF4B regulates BACE1 expression in Alzheimer's disease. Cell Death Dis. 12: 769.
6. Blume, T., et al. 2022. β-secretase inhibition prevents structural spine plasticity deficits in App^{NL-G-F} mice. Front. Aging Neurosci. 14: 909586.
7. Rudan Njavro, J., et al. 2022. Beneficial effect of ACI-24 vaccination on Aβ plaque pathology and microglial phenotypes in an amyloidosis mouse model. Cells 12: 79.
8. Ballweg, A., et al. 2023. [18F]F-DED PET imaging of reactive astrogliosis in neurodegenerative diseases: preclinical proof of concept and first-in-human data. J. Neuroinflammation 20: 68.

CONJUGATES

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