SANTA CRUZ BIOTECHNOLOGY, INC.

ACYP2 (B-3): sc-398298

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The formation of stable highly organized protein aggegrates, known as amyloid fibrils, is associated with several debilitating human diseases, including Alzheimer's disease, Parkinson's disease, and Creutzfeldt-Jakob disease. In each of these conditions, a peptide or protein that is normally soluble accumulates into insoluble fibrils. Muscle acylphosphatase (AcP) has emerged as a significant model system to study protein misfolding and aggregation. It is particularly suitable for these studies because muscle AcP is a small, simple protein of only 98 amino acids consisting of a five-stranded antiparallel β-sheet and two parallel α-helices. Mutations in the muscle AcP between residues 16-31 and 87-98, which includes its phosphate binding site at Arg-23, significantly increases the rate of aggregation. These mutations correlate with changes in the hydrophobicity of AcP and a conversion of the α-helical structures to β-sheets. Therefore, a reduction in the net charge of a protein may be a key determinant in some forms of protein deposition diseases.

REFERENCES

1. Serpell, L.C., et al. 1997. The molecular basis of amyloidosis. Cell. Mol. Life Sci. 53: 871-887.
2. Chiti, F., et al. 2000. Mutational analysis of the propensity for amyloid formation by a globular protein. EMBO J. 19: 1441-1449.
3. Chiti, F., et al. 2001. Reduction of the amyloidogenicity of a protein by specific binding of ligands to the native conformation. Protein Sci. 10: 879-886.
4. Taddei, N., et al. 2001. Folding and aggregation are selectively influenced by the conformational preferences of the α-helices of muscle acylphosphatase. J. Biol. Chem. 276: 37149-37154.
5. Chiti, F., et al. 2002. Studies of the aggregation of mutant proteins *in vitro* provide insights into the genetics of amyloid diseases. Proc. Natl. Acad. Sci. USA 99: 16419-16426.

CHROMOSOMAL LOCATION

Genetic locus: ACYP2 (human) mapping to 2p16.2; Acyp2 (mouse) mapping to 11 A4.

SOURCE

ACYP2 (B-3) is a mouse monoclonal antibody raised against amino acids 1-99 representing full length ACYP2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACYP2 (B-3) is available conjugated to agarose (sc-398298 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398298 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398298 PE), fluorescein (sc-398298 FITC), Alexa Fluor® 488 (sc-398298 AF488), Alexa Fluor® 546 (sc-398298 AF546), Alexa Fluor® 594 (sc-398298 AF594) or Alexa Fluor® 647 (sc-398298 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398298 AF680) or Alexa Fluor® 790 (sc-398298 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ACYP2 (B-3) is recommended for detection of muscle ACYP2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ACYP2 siRNA (h): sc-38900, ACYP2 siRNA (m): sc-38901, ACYP2 shRNA Plasmid (h): sc-38900-SH, ACYP2 shRNA Plasmid (m): sc-38901-SH, ACYP2 shRNA (h) Lentiviral Particles: sc-38900-V and ACYP2 shRNA (m) Lentiviral Particles: sc-38901-V.

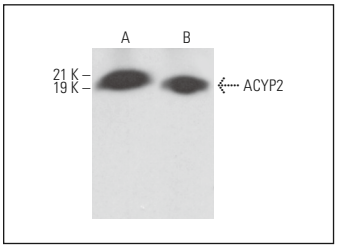
Molecular Weight of ACYP2: 11 kDa.

Positive Controls: human skeletal muscle extract: sc-363776 or rat skeletal muscle extract: sc-364810.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ACYP2 (B-3): sc-398298. Western blot analysis of ACYP2 expression in human skeletal muscle (**A**) and rat skeletal muscle (**B**) tissue extracts.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.