SANTA CRUZ BIOTECHNOLOGY, INC.

ACYP2 (T-16): sc-26851

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., Sunde, M. and Blake, C.C. 1997. The molecular basis of amyloidosis. Cell. Mol. Life Sci. 53: 871-887.
2. Chiti, F., Taddei, N., Bucciantini, M., White, P., Ramponi, G. and Dobson, C.M. 2000. Mutational analysis of the propensity for Amyloid formation by a globular protein. EMBO J. 19: 1441-1449.
3. Chiti, F., Taddei, N., Stefani, M., Dobson, C.M. and Ramponi, G. 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., Capanni, C., Chiti, F., Stefani, M., Dobson, C.M. and Ramponi, G. 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., Taddei, N., Baroni, F., Capanni, C., Stefani, M., Ramponi, G. and Dobson, C.M. 2002. Kinetic partitioning of protein folding and aggregation. Nat. Struct. Biol. 9: 137-143.
6. Chiti, F., Calamai, M., Taddei, N., Stefani, M., Ramponi, G. and Dobson, C.M. 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 (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ACYP2 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26851 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ACYP2 (T-16) is recommended for detection of muscle acylphosphatase of mouse, rat and 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ACYP2 (T-16) is also recommended for detection of muscle acylphosphatase in additional species, including equine, canine, bovine, porcine and avian.

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.

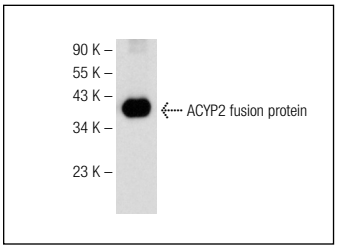
Molecular Weight of ACYP2: 11 kDa.

Positive Controls: Sol8 cell lysate: sc-2249.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ACYP2 (T-16): sc-26851. Western blot analysis of human recombinant ACYP2 fusion protein.

RESEARCH USE

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