# SANTA CRUZ BIOTECHNOLOGY, INC.

# Aspartoacylase (D-11): sc-377308



The Tower to Quest

## BACKGROUND

Aspartoacylase, also known as ASPA, ACY2 or ASP, is a 313 amino acid protein that is expressed in liver, lung and kidney tissue, as well as in skeletal muscle and in cerebral white matter. Existing as a homodimer, Aspartoacylase functions to catalyze the deacetylation of N-acetylaspartic acid (NAA) (a protein whose hydrolysis is crucial to maintenance of intact white matter) to produce acetate and L-aspartate. Defects in the gene encoding Aspartoacylase are the cause of Canavan disease (CAND), which is a rare neurodegenerative condition that is characterized by white matter vacuolization and demeylination, resulting in a spongy deterioration of brain tissue. CAND is generally characterized by atonia of neck muscles, hypotonia, hyperextension of legs and flexion of arms, blindness, severe mental retardation, megalocephaly and death.

## REFERENCES

- Kaul, R., et al. 1993. Cloning of the human Aspartoacylase cDNA and a common missense mutation in Canavan disease. Nat. Genet. 5: 118-123.
- 2. Kaul, R., et al. 1994. Canavan disease: mutations among Jewish and non-Jewish patients. Am. J. Hum. Genet. 55: 34-41.
- Olsen, T.R., et al. 2002. Two novel Aspartoacylase gene (ASPA) missense mutations specific to Norwegian and Swedish patients with Canavan disease. J. Med. Genet. 39: e55.
- 4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608034. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
- 5. Le Coq, J., et al. 2006. Characterization of human Aspartoacylase: the brain enzyme responsible for Canavan disease. Biochemistry 45: 5878-5884.
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#### **CHROMOSOMAL LOCATION**

Genetic locus: ASPA (human) mapping to 17p13.2; Aspa (mouse) mapping to 11 B4.

#### SOURCE

Aspartoacylase (D-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 241-270 within an internal region of Aspartoacylase of human origin.

## PRODUCT

Each vial contains 200  $\mu g$  IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377308 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## **STORAGE**

Store at 4° C, \*\*D0 NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## **APPLICATIONS**

Aspartoacylase (D-11) is recommended for detection of Aspartoacylase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 Aspartoacylase siRNA (h): sc-93596, Aspartoacylase siRNA (m): sc-141303, Aspartoacylase shRNA Plasmid (h): sc-93596-SH, Aspartoacylase shRNA Plasmid (m): sc-141303-SH, Aspartoacylase shRNA (h) Lentiviral Particles: sc-93596-V and Aspartoacylase shRNA (m) Lentiviral Particles: sc-141303-V.

Molecular Weight of Aspartoacylase monomer: 38 kDa.

Molecular Weight of Aspartoacylase dimer: 84 kDa.

Positive Controls: mouse adipose tissue extract: sc-395042 or rat adipose tissue extract.

## **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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

#### DATA





Aspartoacylase (D-11): sc-377308. Western blot analysis of Aspartoacylase expression in rat adipose (A) and mouse adipose (B) tissue extracts. Aspartoacylase (D-11): sc-377308. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing nuclear and cytoplasmic staining of glial cells and neuropil staining (**A**) and human kidney tissue showing cytoplasmic and nuclear staining of cells in tubules (**B**). Blocked with 0.25X UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagents used: m-IgGik BP-B: sc-516142 and ImmunoCruz<sup>®</sup> ABC Kit: sc-516216.

#### **RESEARCH USE**

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