

ACMSD (K-14): sc-107373

BACKGROUND

α -amino- β -carboxymuconate- ϵ -semialdehyde (ACMS) can be non-enzymatically converted to quinolinate, a neuronal excitotoxin that is an intermediate in the synthesis pathway of NAD from tryptophan, has been suspected in the pathogenesis of several neurodegenerative disorders. ACMSD (2-amino-3-carboxymuconate-6-semialdehyde decarboxylase) is a 336 amino acid protein that converts ACMS to α -aminomuconate semialdehyde (AMS), a benign catabolite. The presence of ACMSD thus prevents accumulation of quinolinate from ACMS. ACMSD belongs to the ACMSD protein family and exists as two isoforms produced by alternative splicing events. ACMSD is localized to the cytoplasm and is expressed in the liver and kidney, with lower levels found in brain.

REFERENCES

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- Fukuoka, S., et al. 2002. Identification and expression of a cDNA encoding human α -amino- β -carboxymuconate- ϵ -semialdehyde decarboxylase (ACMSD). A key enzyme for the tryptophan-niacin pathway and "quinolinate hypothesis". *J. Biol. Chem.* 277: 35162-35167.
- Egashira, Y., et al. 2006. Differential effects of pyrazinamide and clofibrate on gene expression of rat hepatic α -amino- β -carboxymuconate- ϵ -semialdehyde decarboxylase, a key enzyme of the tryptophan-NAD pathway. *Int. J. Vitam. Nutr. Res.* 76: 138-146.
- Li, T., et al. 2007. Detection of transient intermediates in the metal-dependent nonoxidative decarboxylation catalyzed by α -amino- β -carboxymuconate- ϵ -semialdehyde decarboxylase. *J. Am. Chem. Soc.* 129: 9278-9279.
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CHROMOSOMAL LOCATION

Genetic locus: ACMSD (human) mapping to 2q21.3; *Acmsd* (mouse) mapping to 1 E3.

SOURCE

ACMSD (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ACMSD of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-107373 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ACMSD (K-14) is recommended for detection of ACMSD of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

ACMSD (K-14) is also recommended for detection of ACMSD in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ACMSD siRNA (h): sc-94727, ACMSD siRNA (m): sc-140809, ACMSD shRNA Plasmid (h): sc-94727-SH, ACMSD shRNA Plasmid (m): sc-140809-SH, ACMSD shRNA (h) Lentiviral Particles: sc-94727-V and ACMSD shRNA (m) Lentiviral Particles: sc-140809-V.

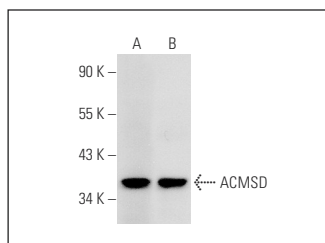
Molecular Weight of ACMSD: 38 kDa.

Positive Controls: human liver extract: sc-363766 or mouse kidney extract: sc-2255.

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



ACMSD (K-14): sc-107373. Western blot analysis of ACMSD expression in mouse kidney (A) and human liver (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.