

# ALDH18A1 (QQ19): sc-100498

## BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate NADP<sup>+</sup>-dependent oxidation of aldehydes into acids during the detoxification of alcohol-derived acetaldehyde, lipid peroxidation, and metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH18A1 (aldehyde dehydrogenase 18 family member A1), also known as GSAS (glutamate  $\gamma$ -semialdehyde synthetase), P5CS ( $\delta$ 1-pyrroline-5-carboxylate synthetase) or PYCS, is the major enzyme involved in proline, arginine and ornithine biosynthesis. Localizing to the inner mitochondrial membrane, ALDH18A1 catalyzes the reduction of glutamate to  $\delta$ 1-pyrroline-5-carboxylate. Due to alternative splicing events, two isoforms exist for ALDH18A1, differing by only two amino acids. The longer isoform is widely expressed while the shorter isoform predominantly functions in the gut. A mutation in the gene encoding ALDH18A1 results in P5CS deficiency, a disease characterized by progressive joint laxity, neurodegeneration, bilateral subcapsular cataracts and skin hyperelasticity.

## REFERENCES

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4. Hu, C.A., Lin, W.W., Obie, C. and Valle, D. 1999. Molecular enzymology of mammalian  $\delta$ 1-pyrroline-5-carboxylate synthase. Alternative splice donor utilization generates isoforms with different sensitivity to ornithine inhibition. *J. Biol. Chem.* 274: 6754-6762.
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6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 138250. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
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## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## CHROMOSOMAL LOCATION

Genetic locus: ALDH18A1 (human) mapping to 10q24.1.

## SOURCE

ALDH18A1 (QQ19) is a mouse monoclonal antibody raised against recombinant ALDH18A1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

ALDH18A1 (QQ19) is recommended for detection of ALDH18A1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ALDH18A1 siRNA (h): sc-90408, ALDH18A1 shRNA Plasmid (h): sc-90408-SH and ALDH18A1 shRNA (h) Lentiviral Particles: sc-90408-V.

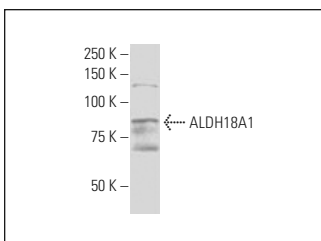
Molecular Weight of ALDH18A1: 87 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



ALDH18A1 (QQ19): sc-100498. Western blot analysis of ALDH18A1 expression in MCF7 whole cell lysate.

## RESEARCH USE

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