SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH8A1 (E-2): sc-515006

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the $NADP^+$-dependent oxidation of aldehydes into acids and play an important role in the detoxification of alcohol-derived acetaldehyde, as well as in lipid peroxidation and in the metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH8A1 (aldehyde dehydrogenase 8 family, member A1), also known as ALDH12, is a 487 amino acid protein that localizes to the cytoplasm and belongs to the aldehyde dehydrogenase family. Expressed in kidney and liver, ALDH8A1 converts 9-*cis*-retinal to 9-*cis*-retinoic acid. 9-*cis*-retinoic acid activates retinoid X receptors, a family of nuclear receptors which are involved in regulating multiple signaling pathways. Three isoforms exist due to alternative splicing events.

REFERENCES

1. Heyman, R.A., et al. 1992. 9-*cis* retinoic acid is a high affinity ligand for the retinoid X receptor. Cell 68: 397-406.
2. Lin, M. and Napoli, J.L. 2000. cDNA cloning and expression of a human aldehyde dehydrogenase (ALDH) active with 9-*cis*-retinal and identification of a rat ortholog, ALDH12. J. Biol. Chem. 275: 40106-40112.
3. Vasiliou, V. and Pappa, A. 2000. Polymorphisms of human aldehyde dehydrogenases. Consequences for drug metabolism and disease. Pharmacology 61: 192-198.
4. Zhuang, R., et al. 2002. *cis*-Retinol/androgen dehydrogenase, isozyme 3 (CRAD3): a short-chain dehydrogenase active in a reconstituted path of 9-*cis*-retinoic acid biosynthesis in intact cells. Biochemistry 41: 3477-3483.
5. Ahuja, H.S., et al. 2003. The retinoid X receptor and its ligands: versatile regulators of metabolic function, cell differentiation and cell death. J. Biol. Regul. Homeost. Agents 17: 29-45.

CHROMOSOMAL LOCATION

Genetic locus: ALDH8A1 (human) mapping to 6q23.3; Aldh8a1 (mouse) mapping to 10 A3.

SOURCE

ALDH8A1 (E-2) is a mouse monoclonal antibody raised against amino acids 16-70 mapping near the N-terminus of ALDH8A1 of human origin.

PRODUCT

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

ALDH8A1 (E-2) is available conjugated to agarose (sc-515006 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515006 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515006 PE), fluorescein (sc-515006 FITC), Alexa Fluor® 488 (sc-515006 AF488), Alexa Fluor® 546 (sc-515006 AF546), Alexa Fluor® 594 (sc-515006 AF594) or Alexa Fluor® 647 (sc-515006 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515006 AF680) or Alexa Fluor® 790 (sc-515006 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ALDH8A1 (E-2) is recommended for detection of ALDH8A1 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 ALDH8A1 siRNA (h): sc-95150, ALDH8A1 siRNA (m): sc-141005, ALDH8A1 shRNA Plasmid (h): sc-95150-SH, ALDH8A1 shRNA Plasmid (m): sc-141005-SH, ALDH8A1 shRNA (h) Lentiviral Particles: sc-95150-V and ALDH8A1 shRNA (m) Lentiviral Particles: sc-141005-V.

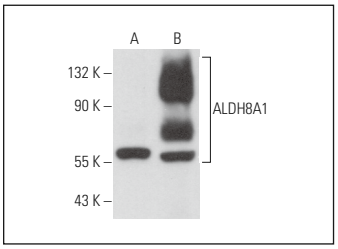
Molecular Weight of ALDH8A1: 53 kDa.

Positive Controls: rat liver extract: sc-2395, mouse liver extract: sc-2256 or ALDH8A1 (m): 293T Lysate: sc-118346.

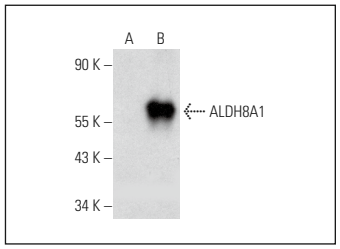
RECOMMENDED SUPPORT REAGENTS

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



ALDH8A1 (E-2): sc-515006. Western blot analysis of ALDH8A1 expression in rat liver (**A**) and mouse liver (**B**) tissue extracts.



ALDH8A1 (E-2): sc-515006. Western blot analysis of ALDH8A1 expression in non-transfected: sc-117752 (**A**) and mouse ALDH8A1 transfected: sc-118346 (**B**) 293T whole cell lysates.

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.