

ALDH2 (3D12): sc-100496

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate NADP⁺-dependent oxidation of aldehydes into acids during detoxification of alcohol-derived acetaldehyde; lipid peroxidation; and metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH1A1, also designated retinal dehydrogenase 1 (RALDH1 or RALDH1); aldehyde dehydrogenase family 1 member A1; aldehyde dehydrogenase cytosolic; ALDHII; ALDH-E1 or ALDH E1, is a retinal dehydrogenase that participates in the biosynthesis of retinoic acid (RA). The major liver isoform ALDH1 localizes to cytosolic space, while ALDH2 localizes to the mitochondria. The ALDH1A2 (RALDH2, RALDH2-T) gene produces three different transcripts and also catalyzes the synthesis of RA from retinaldehyde. ALDH2 is present in most Caucasians, yet is absent in 50% of Asians. The absence of this enzyme has been linked to alcohol intolerance and thusly, a reduced risk for alcoholism-related liver disease.

CHROMOSOMAL LOCATION

Genetic locus: ALDH2 (human) mapping to 12q24.12; Aldh2 (mouse) mapping to 5 F.

SOURCE

ALDH2 (3D12) is a mouse monoclonal antibody raised against recombinant ALDH2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ALDH2 (3D12) is recommended for detection of ALDH2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ALDH2 siRNA (h): sc-60147, ALDH2 siRNA (m): sc-60148, ALDH2 shRNA Plasmid (h): sc-60147-SH, ALDH2 shRNA Plasmid (m): sc-60148-SH, ALDH2 shRNA (h) Lentiviral Particles: sc-60147-V and ALDH2 shRNA (m) Lentiviral Particles: sc-60148-V.

Molecular Weight of ALDH2: 53 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, c4 whole cell lysate: sc-364186 or mouse lung extract: sc-2390.

STORAGE

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

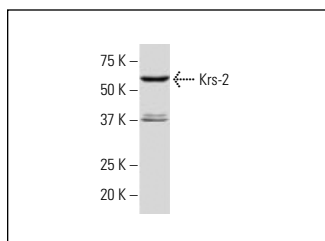
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

RESEARCH USE

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

DATA



Krs-2 (RJ-5): sc-100449. Western blot analysis of Krs-2 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

- Kararigas, G., et al. 2014. Comparative proteomic analysis reveals sex and estrogen receptor β effects in the pressure overloaded heart. *J. Proteome Res.* 13: 5829-5836.
- Wu, B., et al. 2016. Aldehyde dehydrogenase 2 activation in aged heart improves the autophagy by reducing the carbonyl modification on SIRT1. *Oncotarget* 7: 2175-2188.
- Hu, J.F., et al. 2017. Inhibition of ALDH2 expression aggravates renal injury in a rat sepsis syndrome model. *Exp. Ther. Med.* 14: 2249-2254.
- Li, H., et al. 2018. Alcohol metabolism in the progression of human nonalcoholic steatohepatitis. *Toxicol. Sci.* 164: 428-438.
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- Ferreira, J.C.B., et al. 2019. A selective inhibitor of mitofusin 1- β IIPKC association improves heart failure outcome in rats. *Nat. Commun.* 10: 329.
- Li, X., et al. 2019. Acetaldehyde dehydrogenase 2 deficiency exacerbates cardiac fibrosis by promoting mobilization and homing of bone marrow fibroblast progenitor cells. *J. Mol. Cell. Cardiol.* 137: 107-118.
- Abuyassin, B., et al. 2019. The antioxidant α lipoic acid attenuates intermittent hypoxia-related renal injury in a mouse model of sleep apnea. *Sleep* 42: zsz066.
- Zilocchi, M., et al. 2020. Exploring the impact of PARK2 mutations on the total and mitochondrial proteome of human skin fibroblasts. *Front. Cell Dev. Biol.* 8: 423.
- Egawa, T., et al. 2022. Methylglyoxal reduces molecular responsiveness to 4 weeks of endurance exercise in mouse plantaris muscle. *J. Appl. Physiol.* 132: 477-488.

CONJUGATES

See **ALDH1/2 (H-8): sc-166362** for ALDH1/2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.