SANTA CRUZ BIOTECHNOLOGY, INC.

AOX1 (D-8): sc-365291

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The formation of free radicals is an adverse consequence of metabolism. Free radicals endanger cells by causing oxidative damage to membranes and can lead to interruption of DNA sequences, thereby potentially resulting in carcinogenesis. As a member of the molybdo-flavoenzymes family of proteins, AOX1 (aldehyde oxidase 1) is a 1,338 amino acid cytoplasmic protein that catalyzes the oxidation of a variety of aldehydes, leading to the production of hydrogen peroxide. Under certain conditions, AOX1 can catalyze the formation of the superoxide free radical. Defects in oxygen radical metabolism have been linked to the pathogenesis of amyotrophic lateral sclerosis (ALS), an autosomal dominant neurodegenerative disorder characterized by the death of motor neurons in the spinal cord, brain and brainstem. Significantly, AOX1 is highly expressed in the ventral horn of the spinal cord and the gene that encodes AOX1 is located in a chromosomal region that is frequently found to be implicated in ALS2. This evidence suggests that AOX1 is a candidate gene for ALS2.

REFERENCES

1. Wright, R.M., et al. 1993. cDNA cloning, characterization, and tissue-specific expression of human xanthine dehydrogenase/xanthine oxidase. Proc. Natl. Acad. Sci. USA 90: 10690-10694.
2. Berger, R., et al. 1995. Analysis of aldehyde oxidase and xanthine dehydrogenase/oxidase as possible candidate genes for autosomal recessive familial amyotrophic lateral sclerosis. Somat. Cell Mol. Genet. 21: 121-131.
3. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602841. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: AOX1 (human) mapping to 2q33.1.

SOURCE

AOX1 (D-8) is a mouse monoclonal antibody raised against amino acids 854-917 mapping within an internal region of AOX1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AOX1 (D-8) is available conjugated to agarose (sc-365291 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365291 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365291 PE), fluorescein (sc-365291 FITC), Alexa Fluor® 488 (sc-365291 AF488), Alexa Fluor® 546 (sc-365291 AF546), Alexa Fluor® 594 (sc-365291 AF594) or Alexa Fluor® 647 (sc-365291 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365291 AF680) or Alexa Fluor® 790 (sc-365291 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

AOX1 (D-8) is recommended for detection of AOX1 of 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), immunohistochemistry (including paraffin-embedded sections) (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 AOX1 siRNA (h): sc-94924, AOX1 shRNA Plasmid (h): sc-94924-SH and AOX1 shRNA (h) Lentiviral Particles: sc-94924-V.

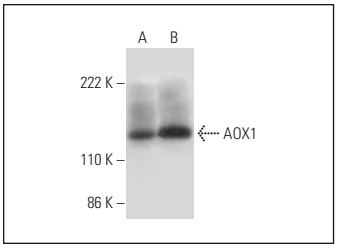
Molecular Weight of AOX1: 150 kDa.

Positive Controls: human liver extract: sc-363766, human pancreas extract: sc-363770 or Hep G2 cell lysate: sc-2227.

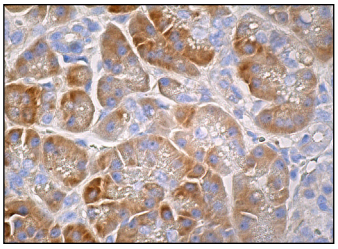
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



AOX1 (D-8): sc-365291. Western blot analysis of AOX1 expression in human liver (**A**) and human pancreas (**B**) tissue extracts.



AOX1 (D-8): sc-365291. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Wylie, L.J., et al. 2019. Human skeletal muscle nitrate store: influence of dietary nitrate supplementation and exercise. J. Physiol. 597: 5565-5576.
2. Srihirun, S., et al. 2020. Nitrate uptake and metabolism in human skeletal muscle cell cultures. Nitric Oxide 94: 1-8.

RESEARCH USE

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