SANTA CRUZ BIOTECHNOLOGY, INC.

Xanthine Oxidase (A-3): sc-398548

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The process of metabolizing purines to a common molecule known as xanthine is an essential process for the proper shuttling of uric acid. Xanthine Oxidase is a flavoprotein enzyme that coordinates molybdenum and utilizes NAD^+ as an electron acceptor to catalyze the oxidation of hypoxanthine to xanthine and then to uric acid. The predominant form of this enzyme is xanthine dehydrogenase, which is a homodimer that can be converted to Xanthine Oxidase by sulfhydryl oxidation or proteolytic modification. Xanthine Oxidase is present in species ranging from bacteria to human and is ubiquitously expressed in mammalian tissues. In the oxidase form, this enzyme is coupled to the generation of free radicals. Individuals showing marked elevation of serum Xanthine Oxidase is suggestive of chronic liver disease and cholestasis, which is a condition defined by hepatic obstruction. Hepatic obstruction causes bile salts, the bile pigment bilirubin, and fats to accumulate in the blood stream instead of being eliminated normally. The clinical consequences of defects in Xanthine Oxidase range from mild to severe and even contribute to fatal disorders.

REFERENCES

1. Rytkonen, E.M., et al. 1995. The human gene for xanthine dehydrogenase (XDH) is localized on chromosome band 2q22. Cytogenet. Cell Genet. 68: 61-63.
2. Many, A., et al. 1996. Xanthine Oxidase/dehydrogenase is present in human placenta. Placenta 17: 361-365.

CHROMOSOMAL LOCATION

Genetic locus: XDH (human) mapping to 2p23.1; Xdh (mouse) mapping to 17 E2.

SOURCE

Xanthine Oxidase (A-3) is a mouse monoclonal antibody raised against amino acids 251-360 of Xanthine Oxidase 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.

Xanthine Oxidase (A-3) is available conjugated to agarose (sc-398548 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398548 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398548 PE), fluorescein (sc-398548 FITC), Alexa Fluor® 488 (sc-398548 AF488), Alexa Fluor® 546 (sc-398548 AF546), Alexa Fluor® 594 (sc-398548 AF594) or Alexa Fluor® 647 (sc-398548 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398548 AF680) or Alexa Fluor® 790 (sc-398548 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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.

APPLICATIONS

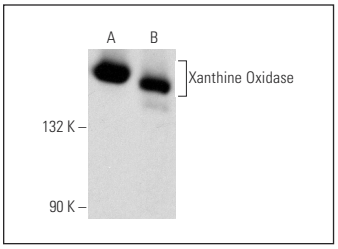
Xanthine Oxidase (A-3) is recommended for detection of Xanthine Oxidase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 Xanthine Oxidase siRNA (h): sc-41691, Xanthine Oxidase siRNA (m): sc-41692, Xanthine Oxidase siRNA (r): sc-270202, Xanthine Oxidase shRNA Plasmid (h): sc-41691-SH, Xanthine Oxidase shRNA Plasmid (m): sc-41692-SH, Xanthine Oxidase shRNA Plasmid (r): sc-270202-SH, Xanthine Oxidase shRNA (h) Lentiviral Particles: sc-41691-V, Xanthine Oxidase shRNA (m) Lentiviral Particles: sc-41692-V and Xanthine Oxidase shRNA (r) Lentiviral Particles: sc-270202-V.

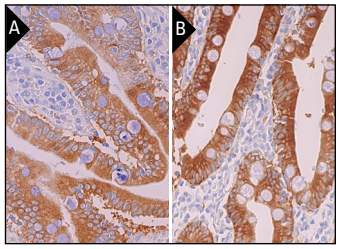
Molecular Weight of Xanthine Oxidase: 150 kDa.

Positive Controls: c4 whole cell lysate: sc-364186 or Sol8 cell lysate: sc-2249.

DATA



Xanthine Oxidase (A-3): sc-398548. Western blot analysis of Xanthine Oxidase expression in c4 (**A**) and Sol8 (**B**) whole cell lysates.



Xanthine Oxidase (A-3): sc-398548. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine (**A**) and human duodenum (**B**) tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Chen, G.L., et al. 2017. Xanthine dehydrogenase downregulation promotes TGFβ signaling and cancer stem cell-related gene expression in hepatocellular carcinoma. Oncogenesis 6: e382.
2. Pichavaram, P., et al. 2019. Cholesterol crystals promote endothelial cell and monocyte interactions via H_2O_2-mediated PP2A inhibition, NFκB activation and ICAM1 and VCAM1 expression. Redox Biol. 24: 101180.
3. Xavier, A., et al. 2020. hGBP1 coordinates *Chlamydia* restriction and inflammasome activation through sequential GTP hydrolysis. Cell Rep. 31: 107667.
4. Pearson, J., et al. 2021. β-blockade prevents coronary macro and microvascular dysfunction induced by a high salt diet and Insulin resistance in the Goto-Kakizaki rat. Clin. Sci. 135: 327-346.
5. García-Arroyo, F.E., et al. 2021. Osthol ameliorates kidney damage and metabolic syndrome induced by a high-fat/high-sugar diet. Int. J. Mol. Sci. 22: 2431.

RESEARCH USE

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