

catalase (H-9): sc-271803



The Power to Question

BACKGROUND

Catalase is a peroxisome specific marker protein belonging to the catalase family. Defects in the gene encoding for the catalase protein can cause acatalasia, a disease characterized by the absence of catalase activity in red cells and associated with ulcerating oral lesions. Catalase is also an important regulator of oxidative stress and inflammation, and may contribute to the development of rheumatoid arthritis. Catalase, which can form a homotetramer, is found in all nearly all aerobically respiring organisms and functions in protecting cells from the toxic effects of hydrogen peroxide.

CHROMOSOMAL LOCATION

Genetic locus: CAT (human) mapping to 11p13; Cat (mouse) mapping to 2 E2.

SOURCE

catalase (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 471-503 near the C-terminus of catalase of mouse 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.

catalase (H-9) is available conjugated to agarose (sc-271803 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271803 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271803 PE), fluorescein (sc-271803 FITC), Alexa Fluor® 488 (sc-271803 AF488), Alexa Fluor® 546 (sc-271803 AF546), Alexa Fluor® 594 (sc-271803 AF594) or Alexa Fluor® 647 (sc-271803 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271803 AF680) or Alexa Fluor® 790 (sc-271803 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271803 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

catalase (H-9) is recommended for detection of catalase 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 catalase siRNA (h): sc-45330, catalase siRNA (m): sc-45331, catalase shRNA Plasmid (h): sc-45330-SH, catalase shRNA Plasmid (m): sc-45331-SH, catalase shRNA (h) Lentiviral Particles: sc-45330-V and catalase shRNA (m) Lentiviral Particles: sc-45331-V.

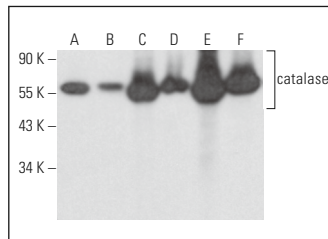
Molecular Weight of catalase: 64 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243, PC-12 cell lysate: sc-2250 or rat liver extract: sc-2395.

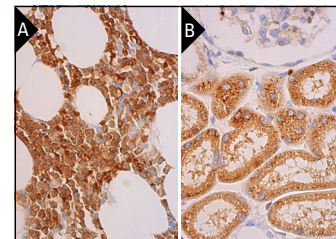
STORAGE

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

DATA



catalase (H-9): sc-271803. Western blot analysis of catalase expression in 3T3-L1 (A) and PC-12 (B) whole cell lysates and mouse kidney (C), rat kidney (D), mouse liver (E) and rat liver (F) tissue extracts.



catalase (H-9): sc-271803. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic staining of hematopoietic cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

- Shiraki, A., et al. 2012. The glucagon-like peptide 1 analog liraglutide reduces TNF- α -induced oxidative stress and inflammation in endothelial cells. *Atherosclerosis* 221: 375-382.
- Garvin, A.M., et al. 2017. Evidence of altered mitochondrial protein expression after chronic ethanol consumption in the aged estrogen-deficient female rat heart. *Alcohol. Clin. Exp. Res.* 41: 1288-1297.
- Dibas, A., et al. 2018. Neuroprotective effects of psalmotoxin-1, an acid-sensing ion channel (ASIC) inhibitor, in ischemia reperfusion in mouse eyes. *Curr. Eye Res.* 43: 921-933.
- Ali, A.A.H., et al. 2019. Deficiency of the clock gene Bmal1 affects neural progenitor cell migration. *Brain Struct. Funct.* 224: 373-386.
- Podmolíková, L., et al. 2020. Radiation of the urinary bladder attenuates the development of lipopolysaccharide-induced cystitis. *Int. Immunopharmacol.* 83: 106334.
- Li, Z., et al. 2021. Neuroprotective effect of emodin against Alzheimer's disease via Nrf2 signaling in U251 cells and APP/PS1 mice. *Mol. Med. Rep.* 23: 108.
- Di Luca, A., et al. 2022. Label-free quantitative proteomics and stress responses in pigs—the case of short or long road transportation. *PLoS ONE* 17: e0277950.
- Berner, J., et al. 2023. Chronic oxidative stress adaptation in head and neck cancer cells generates slow-cyclers with decreased tumour growth *in vivo*. *Br. J. Cancer* 129: 869-883.
- Niella, R.V., et al. 2024. Post-treatment with maropitant reduces oxidative stress, endoplasmic reticulum stress and neuroinflammation on peripheral nerve injury in rats. *PLoS ONE* 19: e0287390.

RESEARCH USE

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