

# catalase (A-4): sc-271358

## 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 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 (A-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 415-453 within an internal region of catalase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271358 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

catalase (A-4) 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: HeLa whole cell lysate: sc-2200, c4 whole cell lysate: sc-364186 or PC-12 cell lysate: sc-2250.

## STORAGE

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

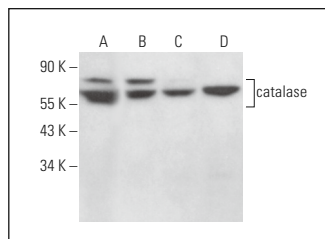
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

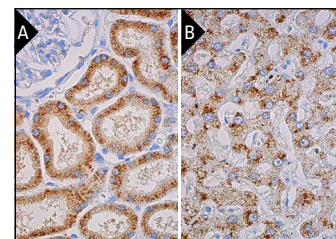
## RESEARCH USE

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

## DATA



catalase (A-4): sc-271358. Western blot analysis of catalase expression in HeLa (A), PC-12 (B), c4 (C) and TK-1 (D) whole cell lysates.



catalase (A-4): sc-271358. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (B).

## SELECT PRODUCT CITATIONS

- Shi, X., et al. 2016. Tert-butylhydroquinone attenuates the ethanol-induced apoptosis of and activates the Nrf2 antioxidant defense pathway in H9c2 cardiomyocytes. *Int. J. Mol. Med.* 38: 123-130.
- Bak, D.H., et al. 2018. Anti-apoptotic effects of human placental hydrolysate against hepatocyte toxicity *in vivo* and *in vitro*. *Int. J. Mol. Med.* 42: 2569-2583.
- Cheleschi, S., et al. 2019. MicroRNA-34a and microRNA-181a mediate visfatin-induced apoptosis and oxidative stress via NFκB pathway in human osteoarthritic chondrocytes. *Cells* 8: 874.
- García-Arroyo, F.E., et al. 2020. Fluid intake restriction concomitant to sweetened beverages hydration induce kidney damage. *Oxid. Med. Cell. Longev.* 2020: 8850266.
- 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.
- Chen, C.H., et al. 2022. Protective effects of jujubosides on 6-OHDA-induced neurotoxicity in SH-SY5Y and SK-N-SH cells. *Molecules* 27: 4106.
- Sevilla-Montero, J., et al. 2022. Cigarette smoke induces pulmonary arterial dysfunction through an imbalance in the redox status of the soluble guanylyl cyclase. *Free Radic. Biol. Med.* 193: 9-22.
- Chen, Y., et al. 2024. Fibroblast growth factor 20 ameliorates cardiac hypertrophy via activation ErbB2. *Heliyon* 10: e37085.



See **catalase (H-9): sc-271803** for catalase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.