SANTA CRUZ BIOTECHNOLOGY, INC.

catalase (E-7): sc-365738

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 nearly all aerobically respiring organisms and functions in protecting cells from the toxic effects of hydrogen peroxide.

REFERENCES

1. Aubourg, P., et al. 1993. Pseudo infantile Refsum's disease: catalase deficient peroxisomal particles with partial deficiency of plasmalogen synthesis and oxidation of fatty acids. Pediatr. Res. 34: 270-276.
2. Rodriguez-Esparragon, F.J., et al. 2003. Peroxisome proliferator-activated receptor-γ2-Pro12Ala and endothelial nitric oxide synthase-4a/b gene polymorphisms are associated with essential hypertension. J. Hypertens. 21: 1649-1655.

CHROMOSOMAL LOCATION

Genetic locus: CAT (human) mapping to 11p13.

SOURCE

catalase (E-7) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of catalase 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.

APPLICATIONS

catalase (E-7) is recommended for detection of catalase 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 catalase siRNA (h): sc-45330, catalase shRNA Plasmid (h): sc-45330-SH and catalase shRNA (h) Lentiviral Particles: sc-45330-V.

Molecular Weight of catalase: 64 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

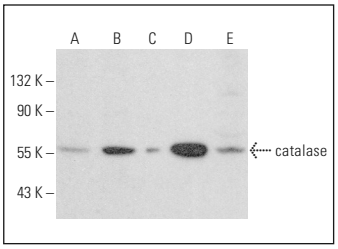
STORAGE

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

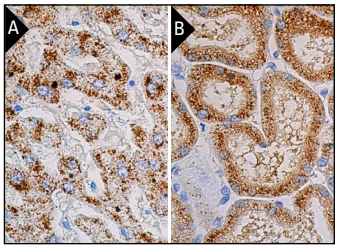
RESEARCH USE

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

DATA



catalase (E-7): sc-365738. Western blot analysis of catalase expression in Jurkat (**A**), HEL 92.1.7 (**B**), K-562 (**C**), HT-29 (**D**) and MCF7 (**E**) whole cell lysates.



catalase (E-7): sc-365738. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (**A**) and human kidney tissue showing cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Drabikowski, K., et al. 2018. Comprehensive list of SUMO targets in *Caenorhabditis elegans* and its implication for evolutionary conservation of SUMO signaling. Sci. Rep. 8: 1139.
2. Wiernicki, I., et al. 2019. Relationship between aortic wall oxidative stress/proteolytic enzyme expression and intraluminal thrombus thickness indicates a novel pathomechanism in the progression of human abdominal aortic aneurysm. FASEB J. 33: 885-895.
3. Haque, S., et al. 2020. Differential packaging of inflammatory cytokines/chemokines and oxidative stress modulators in U937 and U1 macrophages-derived extracellular vesicles upon exposure to tobacco constituents. PLoS ONE 15: e0233054.
4. Kodidela, S., et al. 2021. Anti-HIV activity of cucurbitacin-D against cigarette smoke condensate-induced HIV replication in the U1 macrophages. Viruses 13: 1004.
5. Kumar, A., et al. 2021. Nicotine self-administration with menthol and audiovisual cue facilitates differential packaging of CYP2A6 and cytokines/chemokines in rat plasma extracellular vesicles. Sci. Rep. 11: 17393.
6. di Masi, A., et al. 2022. Unraveling the effects of carotenoids accumulation in human papillary thyroid carcinoma. Antioxidants 11: 1463.
7. Kumar, A., et al. 2022. Effect of benzo(a)pyrene on oxidative stress and inflammatory mediators in astrocytes and HIV-infected macrophages. PLoS ONE 17: e0275874.

PROTOCOLS

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

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.