SANTA CRUZ BIOTECHNOLOGY, INC.

catalase (A-7): sc-271242

SANTA CRUZ BIOTECHNOLOGY

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.

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-Esparragón, F.J., et al. 2003. Peroxisome proliferator-activated receptor-γ2-Pro12Ala and endothelial nitric oxide synthase-4a/bgene polymorphisms are associated with essential hypertension. J. Hypertens. 21: 1649-1655.

CHROMOSOMAL LOCATION

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

SOURCE

catalase (A-7) 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_{2b} 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-271242 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

catalase (A-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.

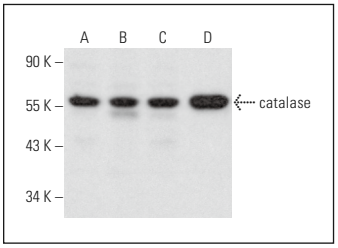
Molecular Weight of catalase: 64 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or HT-29 whole cell lysate: sc-364232.

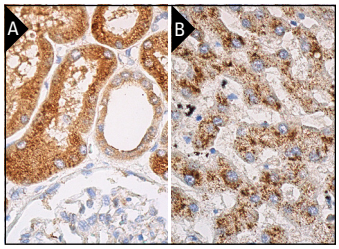
RECOMMENDED SUPPORT REAGENTS

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



catalase (A-7): sc-271242. Western blot analysis of catalase expression in HEL 92.1.7 (**A**), HeLa (**B**), K-562 (**C**) and HT-29 (**D**) whole cell lysates.



catalase (A-7): sc-271242. 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

1. Wages, P.A., et al. 2015. Protein sulfenylation: a novel readout of environmental oxidant stress. Chem. Res. Toxicol. 28: 2411-2418.
2. Mendonça, M.C., et al. 2016. Reduced graphene oxide: nanotoxicological profile in rats. J. Nanobiotechnology 14: 53.
3. Mendonça, M.C., et al. 2016. PEGylation of reduced graphene oxide induces toxicity in cells of the blood-brain barrier: an *in vitro* and *in vivo* study. Mol. Pharm. 13: 3913-3924.
4. Krümmel, B., et al. 2022. Differential effects of saturated and unsaturated free fatty acids on ferroptosis in rat β-cells. J. Nutr. Biochem. 106: 109013.

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.

CONJUGATES

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.