

catalase (G-16): sc-34281

BACKGROUND

Catalase is a peroxisome specific marker protein belonging to the catalase family. Defects in the gene encoding for the catalase protein, CAT, 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

- Rodriguez-Esparragon, F.J., et al. 2003. Peroxisome proliferator-activated receptor- γ -2-Pro12Ala and endothelial nitric oxide synthase-4a/b gene polymorphisms are associated with essential hypertension. *J. Hypertens.* 21: 1649-1655.
- Rosmond, R., et al. 2003. The Pro12Ala PPAR γ 2 gene missense mutation is associated with obesity and Insulin resistance in Swedish middle-aged men. *Diabetes Metab. Res. Rev.* 19: 159-163.
- El-Sohehy, A., et al. 2005. Catalase and PPAR γ 2 genotype and risk of rheumatoid arthritis in Koreans. *Rheumatol. Int.* 1-5.
- Eny, K.M., et al. 2005. Catalase and PPAR γ 2 genotype and risk of systemic lupus erythematosus in Koreans. *Lupus* 14: 351-355.
- Zhao, X., et al. 2006. 15d-Prostaglandin J₂ activates peroxisome proliferator-activated receptor- γ , promotes expression of catalase, and reduces inflammation, behavioral dysfunction, and neuronal loss after intracerebral hemorrhage. *J. Cereb. Blood Flow Metab.* 26: 811-820.
- SWISS-PROT/TrEMBL (P04040). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

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

SOURCE

catalase (G-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of catalase of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-34281 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

catalase (G-16) is recommended for detection of catalase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

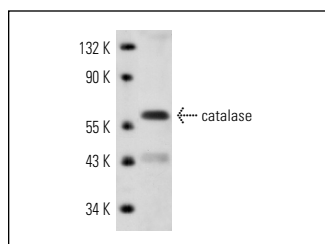
catalase (G-16) is also recommended for detection of catalase in additional species, including equine, canine, bovine, porcine and avian.

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.

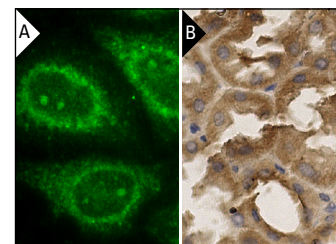
Molecular Weight of catalase: 64 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or rat liver extract: sc-2395.

DATA



catalase (G-16): sc-34281. Western blot analysis of catalase expression in rat liver tissue extract.



catalase (G-16): sc-34281. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

- Kavazis, A.N., et al. 2010. Short-term exercise training protects against doxorubicin-induced cardiac mitochondrial damage independent of HSP72. *Am. J. Physiol. Heart Circ. Physiol.* 299: H1515-H1524.
- Kheterpal, I., et al. 2011. Proteome of human subcutaneous adipose tissue stromal vascular fraction cells versus mature adipocytes based on DIGE. *J. Proteome Res.* 10: 1519-1527.
- Foth, B.J., et al. 2011. Quantitative time-course profiling of parasite and host cell proteins in the human malaria parasite *Plasmodium falciparum*. *Mol. Cell. Proteomics* 10: M110.

PROTOCOLS

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