

# catalase (S-20): sc-34282

## 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- $\gamma$ -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 $\gamma$ 2 gene missense mutation is associated with obesity and insulin resistance in Swedish middle-aged men. *Diabetes Metab. Res. Rev.* 19: 159-163.
- El-Sohemy, A., et al. 2005. Catalase and PPAR $\gamma$ 2 genotype and risk of rheumatoid arthritis in Koreans. *Rheumatol. Int.* 1-5.
- Eny, K.M., et al. 2005. Catalase and PPAR $\gamma$ 2 genotype and risk of systemic lupus erythematosus in Koreans. *Lupus* 14: 351-355.

## CHROMOSOMAL LOCATION

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

## SOURCE

catalase (S-20) 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  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-34282 P, (100  $\mu$ 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.

## PROTOCOLS

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

## APPLICATIONS

catalase (S-20) is recommended for detection of catalase of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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.

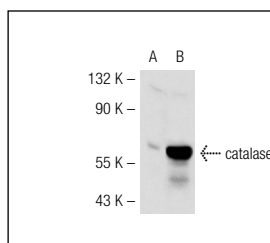
Molecular Weight of catalase: 64 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HEL 92.1.7 cell lysate: sc-2270 or catalase (h): 293T Lysate: sc-112459.

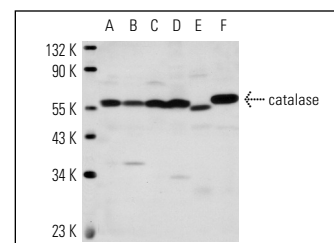
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



catalase (S-20): sc-34282. Western blot analysis of catalase expression in non-transfected: sc-117752 (A) and human catalase transfected: sc-112459 (B) 293T whole cell lysates



catalase (S-20): sc-34282. Western blot analysis of catalase expression in TF-1 (A), HeLa (B), HEL 92.1.7 (C) and Hep G2 (D) whole cell lysates and mouse kidney (E) and rat liver (F) tissue extracts.

## SELECT PRODUCT CITATIONS

- Michard, Q., et al. 2008. TRP-2 expression protects HEK cells from dopamine- and hydroquinone-induced toxicity. *Free Radic. Biol. Med.* 45: 1002-1010.
- Klingelhoeffer, C., et al. 2012. Natural resistance to ascorbic acid induced oxidative stress is mainly mediated by catalase activity in human cancer cells and catalase-silencing sensitizes to oxidative stress. *BMC Complement. Altern. Med.* 12: 61.