

# Glutathione reductase (D-18): sc-32406

## BACKGROUND

Glutathione reductase, mitochondrial precursor (GR) can also be designated GRase or GSR. Glutathione reductase belongs to the class-I pyridine nucleotide-disulfide oxidoreductase family. The main function of the protein is to maintain high levels of reduced Glutathione in the cytosol. With the concomitant oxidation of NADPH, Glutathione reductase reduces oxidized glutathione to its reduced form. Glutathione reductase, which can localize to mitochondria or to the cytoplasm, can form a disulfide linked homodimer. The active site of the protein is a redox-active disulfide bond.

## REFERENCES

1. Staal, G.E., et al. 1969. Purification and properties of an abnormal glutathione reductase from human erythrocytes. *Biochim. Biophys. Acta* 185: 63-69.
2. Karplus, P.A., et al. 1987. Refined structure of glutathione reductase at 1.54 Å resolution. *J. Mol. Biol.* 195: 701-729.
3. Stoll, V.S., et al. 1997. Glutathione reductase turned into trypanothione reductase: structural analysis of an engineered change in substrate specificity. *Biochemistry* 36: 6437-6447.
4. Becker, K., et al. 1998. Enzyme inactivation through sulfhydryl oxidation by physiologic NO-carriers. *Nat. Struct. Biol.* 5: 267-271.
5. Duarte, A.I., et al. 2005. Insulin neuroprotection against oxidative stress in cortical neurons— involvement of uric acid and glutathione antioxidant defenses. *Free Radic. Biol. Med.* 39: 876-889.
6. Aydin, C., et al. 2007. Protective effects of long term dietary restriction on swimming exercise-induced oxidative stress in the liver, heart and kidney of rat. *Cell Biochem. Funct.* 25:129-137.

## CHROMOSOMAL LOCATION

Genetic locus: GSR (human) mapping to 8p12; Gsr (mouse) mapping to 8 A4.

## SOURCE

Glutathione reductase (D-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Glutathione reductase of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-32406 P, (100 µg 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

Glutathione reductase (D-18) is recommended for detection of Glutathione reductase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Glutathione reductase (D-18) is also recommended for detection of Glutathione reductase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Glutathione reductase siRNA (h): sc-44843, Glutathione reductase siRNA (m): sc-44844, Glutathione reductase shRNA Plasmid (h): sc-44843-SH, Glutathione reductase shRNA Plasmid (m): sc-44844-SH, Glutathione reductase shRNA (h) Lentiviral Particles: sc-44843-V and Glutathione reductase shRNA (m) Lentiviral Particles: sc-44844-V.

Molecular Weight of Glutathione reductase: 50-65 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

## 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) 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.

## PROTOCOLS

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



Try **Glutathione reductase (C-10): sc-133245** or **Glutathione reductase (B-12): sc-133159**, our highly recommended monoclonal alternatives to Glutathione reductase (D-18).