

# Grx1 (FL-106): sc-32943

## BACKGROUND

Glutaredoxin (Grx) and a relative, thioredoxin, catalyze general thiol-disulfide oxidoreductions and act as hydrogen donors for ribonucleotide reductase, an enzyme essential for DNA synthesis. Proteins which catalyze thiol-disulfide exchange reactions are required for electron and proton transport to essential enzymes like ribonucleotide reductase, for the formation of disulfide bonds during protein folding, and for general regulation of protein function by thiol redox control. These proteins also play a role in cellular defense against oxidative stress. The thioredoxin superfamily includes a number of proteins with the same basic folding and structure as thioredoxin and glutaredoxin, with the active site at the C-terminal end of a  $\beta$ -strand followed by an  $\alpha$ -helix. Glutaredoxin (Grx) operates in thiol-disulfide reactions via two vicinal (CX)Y active site cysteine residues, which either form a disulfide (oxidized form) or a dithiol (reduced form). Mammalian cells contain at least two dithiol glutaredoxins: Grx1, the cytoplasmic form; and Grx2, which has mitochondrial and nuclear isoforms. Nuclear Grx2, unlike Grx1, is a substrate for thioredoxin reductase and has a higher affinity for S-glutathionylated proteins.

## CHROMOSOMAL LOCATION

Genetic locus: GLRX (human) mapping to 5q14; Glrx (mouse) mapping to 13 C1.

## SOURCE

Grx1 (FL-106) is a rabbit polyclonal antibody raised against amino acids 1-106 representing full length Grx1 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.

## 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

Grx1 (FL-106) is recommended for detection of Grx1 of mouse, rat and human 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); non cross-reactive with Grx2.

Suitable for use as control antibody for Grx1 siRNA (h): sc-72089, Grx1 siRNA (m): sc-145430, Grx1 shRNA Plasmid (h): sc-72089-SH, Grx1 shRNA Plasmid (m): sc-145430-SH, Grx1 shRNA (h) Lentiviral Particles: sc-72089-V and Grx1 shRNA (m) Lentiviral Particles: sc-145430-V.

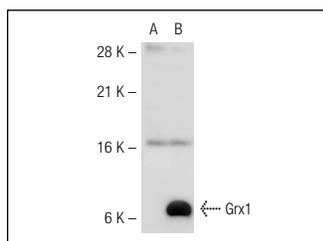
Molecular Weight of Grx1: 12 kDa.

Positive Controls: Grx1 (m): 293T Lysate: sc-120505 or Grx1 (h): 293T Lysate: sc-111653.

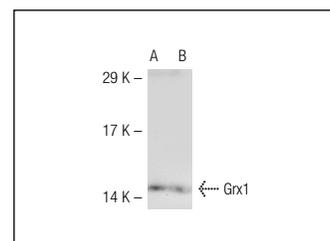
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Grx1 (FL-106): sc-32943. Western blot analysis of Grx1 expression in non-transfected: sc-117752 (A) and human Grx1 transfected: sc-111653 (B) 293T whole cell lysates.



Grx1 (FL-106): sc-32943. Western blot analysis of Grx1 expression in non-transfected: sc-117752 (A) and mouse Grx1 transfected: sc-120505 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Chung, S., et al. 2010. Glutaredoxin 1 regulates cigarette smoke-mediated lung inflammation through differential modulation of I $\kappa$ B kinases in mice: impact on histone acetylation. *Am. J. Physiol. Lung Cell Mol. Physiol.* 299: L192-L203.
- Vázquez-Medina, J.P., et al. 2011. Antioxidant capacity develops with maturation in the deep-diving hooded seal. *J. Exp. Biol.* 214: 2903-2910.

## PROTOCOLS

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Try **Grx1 (3C11): sc-293250**, our highly recommended monoclonal alternative to Grx1 (FL-106).