

# Glutathione reductase (C-10): sc-133245

## BACKGROUND

Glutathione reductase, also designated Glutathione reductase mitochondrial precursor, GRase, GSR or GR, 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 transforms oxidized Glutathione to the 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Glutathione reductase (C-10) is a mouse monoclonal antibody raised against amino acids 391-510 mapping near the C-terminus of Glutathione reductase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Glutathione reductase (C-10) is available conjugated to agarose (sc-133245 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133245 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133245 PE), fluorescein (sc-133245 FITC), Alexa Fluor® 488 (sc-133245 AF488), Alexa Fluor® 546 (sc-133245 AF546), Alexa Fluor® 594 (sc-133245 AF594) or Alexa Fluor® 647 (sc-133245 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133245 AF680) or Alexa Fluor® 790 (sc-133245 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Glutathione reductase (C-10) is recommended for detection of Glutathione reductase of mouse, rat and 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 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.

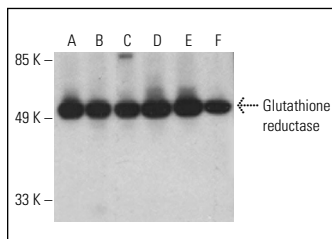
Molecular Weight of Glutathione reductase: 50-65 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, JEG-3 whole cell lysate: sc-364255 or C6 whole cell lysate: sc-364373.

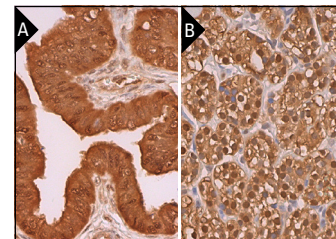
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



Glutathione reductase (C-10) HRP: sc-133245 HRP. Direct western blot analysis of Glutathione reductase expression in IMR-32 (A), JEG-3 (B), C6 (C), EOC 20 (D), H4 (E) and SH-SY5Y (F) whole cell lysates.



Glutathione reductase (C-10): sc-133245. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue (A) and human parathyroid gland tissue (B) showing nuclear and cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Martín, M.A., et al. 2010. Hydroxytyrosol induces antioxidant/detoxifying enzymes and Nrf2 translocation via extracellular regulated kinases and phosphatidylinositol-3-kinase/protein kinase B pathways in Hep G2 cells. *Mol. Nutr. Food Res.* 54: 956-966.
- Pons D.G., et al. 2012. Initial activation status of the antioxidant response determines sensitivity to carboplatin/paclitaxel treatment of ovarian cancer. *Anticancer Res.* 32: 4723-4728.
- Sastre-Serra J., et al. 2013. The oxidative stress in breast tumors of postmenopausal women is ER $\alpha$ /ER $\beta$  ratio dependent. *Free Radic. Biol. Med.* 61: 11-17.
- Sobczak, M., et al. 2014. Downregulation of microsomal glutathione-S-transferase 1 modulates protective mechanisms in differentiated PC12 cells. *J. Physiol. Biochem.* 70: 375-383.
- Pimenta, M., et al. 2015. High-intensity interval training beneficial effects on body mass, blood pressure, and oxidative stress in diet-induced obesity in ovariectomized mice. *Life Sci.* 139: 75-82.
- Wu, L., et al. 2017. Lack of  $\beta$ ,  $\beta$ -carotene-9', 10'-oxygenase 2 leads to hepatic mitochondrial dysfunction and cellular oxidative stress in mice. *Mol. Nutr. Food Res.* 61: 10.1002/mnfr.201600576.
- Murphy, K.E., et al. 2018. Mini-GAGR, an intranasally applied polysaccharide, activates the neuronal Nrf2-mediated antioxidant defense system. *J. Biol. Chem.* 293: 18242-18269.
- Liu, X., et al. 2019. N-acetylcysteine alleviates H<sub>2</sub>O<sub>2</sub>-induced damage via regulating the redox status of intracellular antioxidants in H9c2 cells. *Int. J. Mol. Med.* 43: 199-208.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.