

# Glutathione reductase (A-5): sc-133136

## 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.

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Glutathione reductase (A-5) 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.

## RESEARCH USE

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

## APPLICATIONS

Glutathione reductase (A-5) 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.

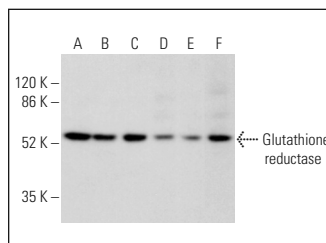
Molecular Weight of Glutathione reductase: 50-65 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, mouse brain extract: sc-2253 or rat placenta extract: sc-364808.

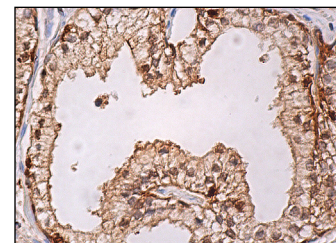
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Glutathione reductase (A-5): sc-133136. Western blot analysis of Glutathione reductase expression in IMR-32 (A), C6 (B) and EOC 20 (C) whole cell lysates and rat placenta (D), rat brain (E) and mouse brain (F) tissue extracts.



Glutathione reductase (A-5): sc-133136. Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing nuclear, cytoplasmic and membrane staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Alenazi, F.S., et al. 2015. Estradiol regulates dorsal vagal complex signal transduction pathway transcriptional reactivity to the AMPK activator 5-aminoimidazole-4-carboxamide-riboside (AICAR). *J. Mol. Neurosci.* 56: 907-916.
2. Puga Molina, L.C., et al. 2018. Early response of glutathione- and thioredoxin-dependent antioxidant defense systems to TI(I)- and TI(III)-mediated oxidative stress in adherent pheochromocytoma (PC12adh) cells. *Arch. Toxicol.* 92: 195-211.
3. Kolasa-Wolosiuk, A., et al. 2019. Antioxidant enzyme expression of mRNA and protein in the epididymis of finasteride-treated male rat offspring during postnatal development. *Arch. Med. Sci.* 15: 797-810.
4. Monserrat-Mesquida, M., et al. 2021. Peripheral blood mononuclear cells oxidative stress and plasma inflammatory biomarkers in adults with normal weight, overweight and obesity. *Antioxidants* 10: 813.
5. Weitzenböck, H.P., et al. 2021. Proteome analysis of NRF2 inhibition in melanoma reveals CD44 up-regulation and increased apoptosis resistance upon vemurafenib treatment. *Cancer Med.* E-published.

## STORAGE

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