

# Glyoxalase I (H-3): sc-271556

## BACKGROUND

The glyoxal pathway plays a role in the detoxification of glucose degradation products (GDP). Glyoxalase I (GLO1), a member of the glyoxalase family, is effective in eliminating GDP. Overexpression or silencing of Glyoxalase I in mouse brain suggests an association between Glyoxalase I and anxiety. Glyoxalase I has three isoforms generated from two alleles in the genome which forms two homodimers and one heterodimer, each subunit binding one zinc ion. Research demonstrates that GLO1 gene expression is induced in colon carcinoma. Both an Insulin response element (IRE) and a zinc metal response element (MRE) in the promoter region of the GLO1 gene have been identified.

## REFERENCES

- Himo, F. and Siegbahn, P.E. 2001. Catalytic mechanism of Glyoxalase I: a theoretical study. *J. Am. Chem. Soc.* 123: 10280-10289.
- Rulli, A., et al. 2001. Expression of Glyoxalase I and II in normal and breast cancer tissues. *Breast Cancer Res. Treat.* 66: 67-72.
- Junaid, M.A., et al. 2004. Proteomic studies identified a single nucleotide polymorphism in Glyoxalase I as autism susceptibility factor. *Am. J. Med. Genet. A* 131: 11-17.
- Kromer, S.A., et al. 2005. Identification of Glyoxalase I as a protein marker in a mouse model of extremes in trait anxiety. *J. Neurosci.* 25: 4375-4384.
- Yadav, S.K., et al. 2005. Methylglyoxal levels in plants under salinity stress are dependent on Glyoxalase I and Glutathione. *Biochem. Biophys. Res. Commun.* 337: 61-67.
- Ariza, A., et al. 2006. Crystallization and preliminary X-ray analysis of *Leishmania major* Glyoxalase I. *Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun.* 61: 769-772.
- Ariza, A., et al. 2006. Specificity of the trypanothione-dependent Leish and biochemical comparison with the human enzyme. *Mol. Microbiol.* 59: 1239-1248.

## CHROMOSOMAL LOCATION

Genetic locus: GLO1 (human) mapping to 6p21.2; Glo1 (mouse) mapping to 17 A3.3.

## SOURCE

Glyoxalase I (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 101-136 within an internal region of Glyoxalase I of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271556 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

Glyoxalase I (H-3) is recommended for detection of Glyoxalase I 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 Glyoxalase I siRNA (h): sc-60703, Glyoxalase I siRNA (m): sc-60704, Glyoxalase I shRNA Plasmid (h): sc-60703-SH, Glyoxalase I shRNA Plasmid (m): sc-60704-SH, Glyoxalase I shRNA (h) Lentiviral Particles: sc-60703-V and Glyoxalase I shRNA (m) Lentiviral Particles: sc-60704-V.

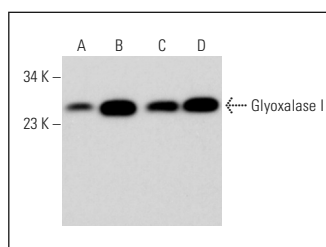
Molecular Weight of Glyoxalase I monomer: 24 kDa.

Positive Controls: HCT-116 whole cell lysate: sc-364175, TF-1 cell lysate: sc-2412 or KNRK whole cell lysate: sc-2214.

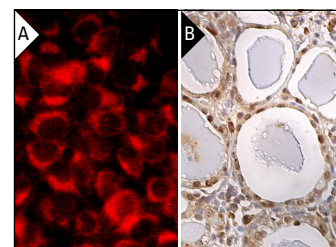
## RECOMMENDED SUPPORT REAGENTS

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



Glyoxalase I (H-3): sc-271556. Western blot analysis of Glyoxalase I expression in KNRK (A), HCT-116 (B), SUP-T1 (C) and TF-1 (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Glyoxalase I (H-3): sc-271556. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic and nuclear staining of glandular cells (B).

## 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.