

γ -GCSm (FL-274): sc-22754

BACKGROUND

γ -glutamylcysteine synthetase (γ -GCS) is the rate limiting enzyme for glutathione (L- γ -glutamyl-L-cysteinylglycine, GSH) synthesis. GSH is ubiquitous in mammalian cells as a vital intra- and extracellular protective antioxidant. γ -GCS is a heterodimer of a heavy catalytic subunit and a light regulatory subunit that is responsive to inflammation, phenolic antioxidants, heat shock, oxidants and cytokines. The human γ -GCS gene encoding the 367 amino acid catalytic subunit maps to chromosome 6p12. The human γ -GCS gene encoding the regulatory subunit maps to chromosome 1p22.1. The two subunits of γ -GCS form a heterodimeric zinc metalloprotein that gains activity through formation of a reversible disulfide bond.

CHROMOSOMAL LOCATION

Genetic locus: GCLM (human) mapping to 1p22.1; Gclm (mouse) mapping to 3 G1.

SOURCE

γ -GCSm (FL-274) is a rabbit polyclonal antibody raised against amino acids 1-274 representing full length γ -GCSm of human origin.

PRODUCT

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

APPLICATIONS

γ -GCSm (FL-274) is recommended for detection of γ -GCSm of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

γ -GCSm (FL-274) is also recommended for detection of γ -GCSm in additional species, including bovine and porcine.

Suitable for use as control antibody for γ -GCSm siRNA (h): sc-40602, γ -GCSm siRNA (m): sc-40603, γ -GCSm shRNA Plasmid (h): sc-40602-SH, γ -GCSm shRNA Plasmid (m): sc-40603-SH, γ -GCSm shRNA (h) Lentiviral Particles: sc-40602-V and γ -GCSm shRNA (m) Lentiviral Particles: sc-40603-V.

Molecular Weight of γ -GCSm: 31 kDa.

Positive Controls: A549 cell lysate: sc-2413, MOLT-4 cell lysate: sc-2233 or K-562 whole cell lysate: sc-2203.

STORAGE

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

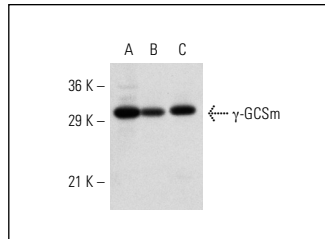
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

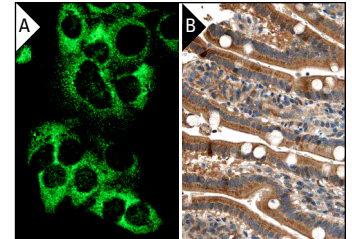
RESEARCH USE

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

DATA



γ -GCSm (FL-274): sc-22754. Western blot analysis of γ -GCSm regulatory subunit expression in A549 (A), MOLT-4 (B) and K-562 (C) whole cell lysates.



γ -GCSm (FL-274): sc-22754. Immunofluorescence staining of methanol-fixed A549 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

- Biolo, G., et al. 2008. Positive energy balance is associated with accelerated muscle atrophy and increased erythrocyte glutathione turnover during 5 wk of bed rest. *Am. J. Clin. Nutr.* 88: 950-958.
- Liang, Q.N., et al. 2011. The difference of glutathione antioxidant system in newly weaned and young mice liver and its involvement in isoleucine-induced hepatotoxicity. *Arch. Toxicol.* 85: 1267-1279.
- Aminzadeh, M.A. and Vaziri, N.D. 2012. Downregulation of the renal and hepatic hydrogen sulfide (H₂S)-producing enzymes and capacity in chronic kidney disease. *Nephrol. Dial. Transplant.* 27: 498-504.
- Martínez, A.E., et al. 2012. 15-Deoxy- Δ (12,14)-prostaglandin J₂ exerts pro- and anti-inflammatory effects in mesangial cells in a concentration-dependent manner. *InflammAllergy Drug Targets* 11: 58-65.
- Omata, Y., et al. 2013. Decreased zinc availability affects glutathione metabolism in neuronal cells and in the developing brain. *Toxicol. Sci.* 133: 90-100.
- Ehren, J.L. and Maher, P. 2013. Concurrent regulation of the transcription factors Nrf2 and ATF4 mediates the enhancement of glutathione levels by the flavonoid fisetin. *Biochem. Pharmacol.* 85: 1816-1826.
- Shinkai, Y., et al. 2014. Ambient vapor samples activate the Nrf2-ARE pathway in human bronchial epithelial BEAS-2B cells. *Environ. Toxicol.* 29: 1292-1300.


 MONOS
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Try γ -GCSm (E-4): sc-55586 or γ -GCSm (F-8): sc-166603, our highly recommended monoclonal alternatives to γ -GCSm (FL-274).