

γ-GCSc (m): 293T Lysate: sc-120458

BACKGROUND

The GCLC gene consists of 16 exons and encodes the 636 amino acid protein γ-GCSc (γ-glutamylcysteine synthetase heavy subunit), also designated γ-L-glutamate-L-cysteine ligase catalytic subunit (GLCLC). γ-GCSc is expressed in hemocytes, brain, liver and kidney. γ-GCSc associates with a regulatory or modifier subunit, γ-GCSm (γ-glutamylcysteine synthetase light subunit), to form a heterodimer, γ-GCS. γ-GCS is the first enzyme involved and the rate determining step in glutathione biosynthesis. Oxidants, cadmium and methyl mercury upregulate the transcription of γ-GCS. H₂O₂ regulation depends on the Yap1 protein and the presence of glutamate, glutamine and lysine. Cadmium regulates transcription through proteins Met-4, Met-31 and Met-32. Cbf1, a DNA binding protein, inhibits transcription of γ-GCS. Chemopreventive compounds cause increased levels of γ-GCSc in kidney tissues, which may protect against chemically-induced carcinogenesis. A His 370-Leu amino acid change in γ-GCSc causes deficiencies in activity, which are responsible for hemolytic anemia and low red blood cell glutathione levels.

REFERENCES

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6. Beutler, E., et al. 1999. The molecular basis of a case of γ-glutamylcysteine synthetase deficiency. *Blood* 94: 2890-2894.
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CHROMOSOMAL LOCATION

Genetic locus: Gclc (mouse) mapping to 9 E1.

PRODUCT

γ-GCSc (m): 293T Lysate represents a lysate of mouse γ-GCSc transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

γ-GCSc (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive γ-GCSc antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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