

CBS (A-2): sc-133208

BACKGROUND

Strongly expressed in human liver and pancreas, with weaker expression in heart and brain, the cytoplasmic protein cystathionine β -synthase (CBS) operates in the first step of homocysteine transulfuration. CBS, which belongs to the cysteine synthase/cystathionine β -synthase family of proteins, catalyzes the formation of cystathionine from the thrombogenic amino acid homocysteine using pyridoxal phosphate cofactor. Allosteric activation by adenosylmethionine regulates CBS activity. Deficiencies in CBS are associated with homocystinuria, a recessively inherited error in sulfur amino acid metabolism that affects many organs and tissues. Symptoms of homocystinuria include arteriosclerosis, thrombosis, dislocated optic lenses, mental retardation and skeletal abnormalities.

CHROMOSOMAL LOCATION

Genetic locus: CBS (human) mapping to 21q22.3; Cbs (mouse) mapping to 17 B1.

SOURCE

CBS (A-2) is a mouse monoclonal antibody raised against amino acids 101-400 mapping within an internal region of CBS of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CBS (A-2) is recommended for detection of CBS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for CBS siRNA (h): sc-60335, CBS siRNA (m): sc-60336, CBS siRNA (r): sc-270531, CBS shRNA Plasmid (h): sc-60335-SH, CBS shRNA Plasmid (m): sc-60336-SH, CBS shRNA Plasmid (r): sc-270531-SH, CBS shRNA (h) Lentiviral Particles: sc-60335-V, CBS shRNA (m) Lentiviral Particles: sc-60336-V and CBS shRNA (r) Lentiviral Particles: sc-270531-V.

Molecular Weight of CBS: 63 kDa.

Positive Controls: CBS (h2): 293 Lysate: sc-112304, HeLa whole cell lysate: sc-2200 or rat liver extract: sc-2395.

STORAGE

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

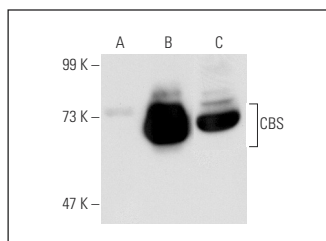
PROTOCOLS

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

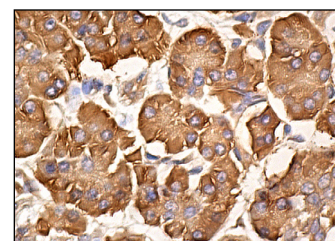
RESEARCH USE

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

DATA



CBS (A-2): sc-133208. Western blot analysis of CBS expression in non-transfected: sc-110760 (A) and human CBS transfected: sc-112304 (B) 293 whole cell lysates and rat liver tissue extract (C).



CBS (A-2): sc-133208. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Austgen, J.R., et al. 2011. Hydrogen sulfide augments synaptic neurotransmission in the nucleus of the solitary tract. *J. Neurophysiol.* 106: 1822-1832.
- Zhong, W.X., et al. 2012. Lanthionine synthetase C-like protein 1 interacts with and inhibits cystathionine β -synthase: a target for neuronal antioxidant defense. *J. Biol. Chem.* 287: 34189-34201.
- Sanokawa-Akakura, R., et al. 2014. A H₂S-Nampt dependent energetic circuit is critical to survival and cytoprotection from damage in cancer cells. *PLoS ONE* 9: e108537.
- Lechuga, T.J., et al. 2015. Estrogen replacement therapy in ovariectomized nonpregnant ewes stimulates uterine artery hydrogen sulfide biosynthesis by selectively up-regulating cystathionine β -synthase expression. *Endocrinology* 156: 2288-2298.
- Sen, S., et al. 2016. Cystathionine: a novel oncometabolite in human breast cancer. *Arch. Biochem. Biophys.* 604: 95-102.
- Ma, Y., et al. 2018. Anticancer effect of exogenous hydrogen sulfide in cisplatin-resistant A549/DDP cells. *Oncol. Rep.* 39: 2969-2977.
- Kawahara, B., et al. 2019. Carbon monoxide sensitizes cisplatin-resistant ovarian cancer cell lines toward cisplatin via attenuation of levels of glutathione and nuclear metallothionein. *J. Inorg. Biochem.* 191: 29-39.
- Kim, M., et al. 2021. MiR-154-5p-MCP1 axis regulates allergic inflammation by mediating cellular interactions. *Front. Immunol.* 12: 663726.
- Zhu, C., et al. 2022. Metallopolysaccharide-based smart nanotheranostic for imaging-guided precise phototherapy and sequential enzyme-activated ferroptosis. *Biomacromolecules* 23: 2007-2018.

CONJUGATES

See **CBS (B-4): sc-133154** for CBS antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.