SANTA CRUZ BIOTECHNOLOGY, INC.

CBS (G-1): sc-271886

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Strongly expressed in human liver and pancreas, as well as some expression in the 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 adenosyl-methionine 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 homocytinuria 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 (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 179-199 within an internal region of CBS of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-271886 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CBS (G-1) 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 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 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: Hep G2 cell lysate: sc-2227, SH-SY5Y cell lysate: sc-3812 or AN3 CA cell lysate: sc-24662.

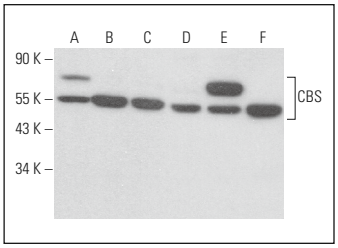
STORAGE

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

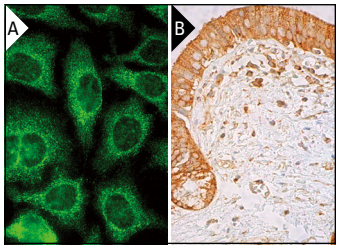
RESEARCH USE

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

DATA



CBS (G-1): sc-271886. Western blot analysis of CBS expression in Hep G2 (**A**), c4 (**B**), Neuro-2A (**C**), K-562 (**D**), AN3 CA (**E**) and SH-SY5Y (**F**) whole cell lysates.



CBS (G-1): sc-271886. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216 (**B**).

SELECT PRODUCT CITATIONS

1. Zhang, H., et al. 2014. Alleviation of plasma homocysteine level by phytoestrogen α-zearalanol might be related to the reduction of cystathionine β-synthase nitration. Biomed. Res. Int. 2014: 143192.
2. Bruintjes, J.J., et al. 2014. Hippocampal cystathionine β synthase in young and aged mice. Neurosci. Lett. 563: 135-139.
3. Han, B., et al. 2016. The novel compound Sul-121 inhibits airway inflammation and hyperresponsiveness in experimental models of chronic obstructive pulmonary disease. Sci. Rep. 6: 26928.
4. Damba, T., et al. 2019. Hydrogen sulfide stimulates activation of hepatic stellate cells through increased cellular bio-energetics. Nitric Oxide 92: 26-33.
5. Yakovleva, O., et al. 2020. Hydrogen sulfide alleviates anxiety, motor, and cognitive dysfunctions in rats with maternal hyperhomocysteinemia via mitigation of oxidative stress. Biomolecules 10: 995.
6. Guerra, D.D., et al. 2021. Estrogen regulates local cysteine metabolism in mouse myometrium. Reprod. Sci. 28: 79-90.
7. Meinert, M., et al. 2024. Thiol starvation triggers melanoma state switching in an ATF4 and NRF2-dependent manner. Redox Biol. 70: 103011.

PROTOCOLS

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

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.