

# CBS (G-1): sc-271886

## BACKGROUND

Strongly expressed in human liver and pancreas, as well as some expression in the heart and brain, the cytoplasmic protein cystathionine  $\beta$ -synthase (CBS), operates in the first step of homocysteine transulfuration. CBS, which belongs to the cysteine synthase/cystathionine  $\beta$ -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 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 (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  $\mu$ g IgG<sub>2a</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-271886 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## 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  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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.

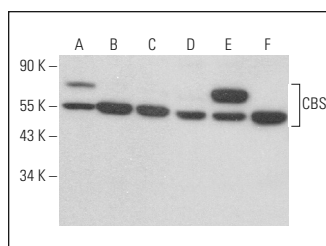
Molecular Weight of CBS: 63 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, SH-SY5Y cell lysate: sc-3812 or AN3 CA cell lysate: sc-24662.

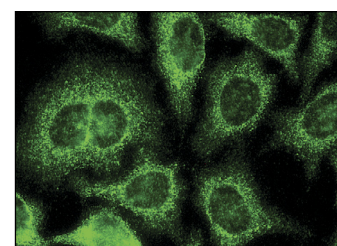
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## 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.

## SELECT PRODUCT CITATIONS

- Zhang, H., et al. 2014. Alleviation of plasma homocysteine level by phytoestrogen  $\alpha$ -zearalanol might be related to the reduction of cystathionine  $\beta$ -synthase nitration. *Biomed Res. Int.* 2014: 143192.
- Bruintjes, J.J., et al. 2014. Hippocampal cystathionine  $\beta$  synthase in young and aged mice. *Neurosci. Lett.* 563: 135-139.
- 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.
- Damba, T., et al. 2019. Hydrogen sulfide stimulates activation of hepatic stellate cells through increased cellular bio-energetics. *Nitric Oxide* 92: 26-33.
- 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.
- Guerra, D.D., et al. 2021. Estrogen regulates local cysteine metabolism in mouse myometrium. *Reprod. Sci.* 28: 79-90.

## RESEARCH USE

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



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.