

CBS (B-4): sc-133154

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 transsulfuration. 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 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 (B-4) 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 IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CBS (B-4) is available conjugated to agarose (sc-133154 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133154 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133154 PE), fluorescein (sc-133154 FITC), Alexa Fluor[®] 488 (sc-133154 AF488), Alexa Fluor[®] 546 (sc-133154 AF546), Alexa Fluor[®] 594 (sc-133154 AF594) or Alexa Fluor[®] 647 (sc-133154 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-133154 AF680) or Alexa Fluor[®] 790 (sc-133154 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CBS (B-4) 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.

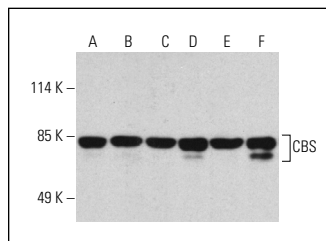
Molecular Weight of CBS: 63 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, HeLa whole cell lysate: sc-2200 or C6 whole cell lysate: sc-364373.

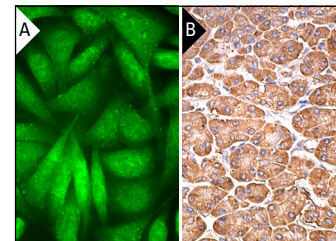
STORAGE

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

DATA



CBS (B-4) HRP: sc-133154 HRP. Direct western blot analysis of CBS expression in HeLa (A), MOLT-4 (B), C6 (C), MCF7 (D), SW480 (E) and 293T (F) whole cell lysates.



CBS (B-4) Alexa Fluor[®] 488: sc-133154 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic and nuclear localization. Blocked with UltraCruz[®] Blocking Reagent: sc-516214 (A). CBS (B-4): sc-133154. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Zhang, L., et al. 2013. Enhanced expression of cystathionine β -synthase and cystathionine γ -lyase during acute cholecystitis-induced gallbladder inflammation. *PLoS ONE* 8: e82711.
- Eberhardt, M., et al. 2014. H₂S and NO cooperatively regulate vascular tone by activating a neuroendocrine HNO-TRPA1-CGRP signalling pathway. *Nat. Commun.* 5: 4381.
- Mard, S.A., et al. 2015. Gastric acid induces mucosal H₂S release in rats by upregulating mRNA and protein expression of cystathionine γ lyase. *J. Physiol. Sci.* 65: 545-554.
- Mard, S.A., et al. 2016. Mucosal acidification increases hydrogen sulfide release through up-regulating gene and protein expressions of cystathionine γ -lyase in the rat gastric mucosa. *Iran. J. Basic Med. Sci.* 19: 172-177.
- Saande, C.J., et al. 2019. Dietary egg protein prevents hyperhomocysteinemia via upregulation of hepatic betaine-homocysteine S-methyltransferase activity in folate-restricted rats. *J. Nutr.* 149: 1369-1376.
- Xu, Q., et al. 2020. HNF4 α regulates sulfur amino acid metabolism and confers sensitivity to methionine restriction in liver cancer. *Nat. Commun.* 11: 3978.
- Comas, F., et al. 2020. Permanent cystathionine- β -synthase gene knock-down promotes inflammation and oxidative stress in immortalized human adipose-derived mesenchymal stem cells, enhancing their adipogenic capacity. *Redox Biol.* E-published.

RESEARCH USE

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

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA