SANTA CRUZ BIOTECHNOLOGY, INC.

CBS (H-300): sc-67154

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.

REFERENCES

1. Wu, J.M., et al. 2004. Genetic mutations of homocysteine metabolism related enzymes in patients with ischemic stroke. Yi Chuan 26: 298-302.
2. Persa, C., et al. 2004. The presence of a transsulfuration pathway in the lens: a new oxidative stress defense system. Exp. Eye Res. 79: 875-886.

CHROMOSOMAL LOCATION

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

SOURCE

CBS (H-300) is a rabbit polyclonal antibody raised against amino acids 101-400 mapping within an internal region of CBS of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CBS (H-300) is recommended for detection of CBS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

CBS (H-300) is also recommended for detection of CBS in additional species, including equine, canine, bovine and avian.

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

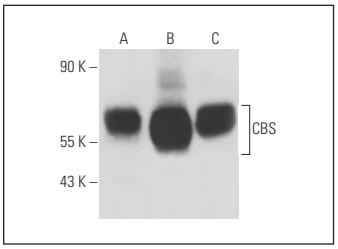
Molecular Weight of CBS: 63 kDa.

Positive Controls: rat pancreas extract: sc-364806, mouse pancreas extract: sc-364244 or rat liver extract: sc-2395.

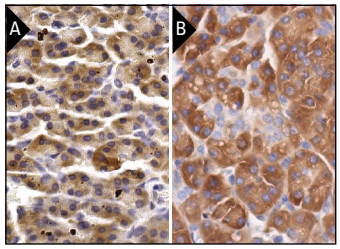
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



CBS (H-300): sc-67154. Western blot analysis of CBS expression in rat pancreas (**A**), rat liver (**B**) and mouse pancreas (**C**) tissue extracts.



CBS (H-300): sc-67154. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells (**A,B**).

SELECT PRODUCT CITATIONS

1. Bearden, S.E., et al. 2010. Extracellular transsulfuration generates hydrogen sulfide from homocysteine and protects endothelium from redox stress. Am. J. Physiol. Heart Circ. Physiol. 299: H1568-H1576.
2. Williams, K.T. and Schalinske, K.L. 2012. Tissue-specific alterations of methyl group metabolism with DNA hypermethylation in the Zucker (type 2) diabetic fatty rat. Diabetes Metab. Res. Rev. 28: 123-131.
3. Aminzadeh, M.A. and Vaziri, N.D. 2012. Downregulation of the renal and hepatic hydrogen sulfide (H2S)-producing enzymes and capacity in chronic kidney disease. Nephrol. Dial. Transplant. 27: 498-504.
4. 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.
5. Veeranki, S. and Tyagi, S.C. 2015. Mechanisms of hyperhomocysteinemia induced skeletal muscle myopathy after ischemia in the CBS$^{-/+}$ mouse model. Int. J. Mol. Sci. 16: 1252-1265.

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.