

# CBS (A-3): sc-515180

## BACKGROUND

Strongly expressed in human liver and pancreas, with weaker expression in heart and brain, the cytoplasmic protein cystathionine  $\beta$ -synthase (CBS) operates in the first step of homocysteine transsulfuration. 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.

## REFERENCES

1. 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.
2. Wu, J.M., et al. 2004. Genetic mutations of homocysteine metabolism related enzymes in patients with ischemic stroke. *Yi Chuan* 26: 298-302.
3. Yang, F., et al. 2005. Hyperhomocysteinemia and atherosclerosis. *Sheng Li Xue Bao* 57: 103-114.
4. Pusch, M. and Jentsch, T.J. 2005. Unique structure and function of chloride transporting CLC proteins. *IEEE Trans. Nanobioscience* 4: 49-57.
5. Bar-Or, D., et al. 2005. Inhibitory effect of copper on cystathionine  $\beta$ -synthase activity: protective effect of an analog of the human albumin N-terminus. *Protein Pept. Lett.* 12: 271-273.
6. Bhatia, M., et al. 2005. Role of hydrogen sulfide in acute pancreatitis and associated lung injury. *FASEB J.* 19: 623-625.

## CHROMOSOMAL LOCATION

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

## SOURCE

CBS (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 137-154 near the N-terminus of CBS of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>3</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-515180 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.

## RESEARCH USE

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

## APPLICATIONS

CBS (A-3) 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), 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.

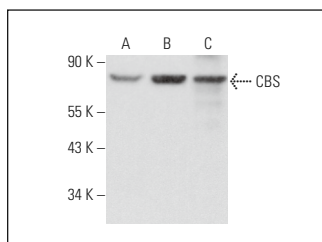
Molecular Weight of CBS: 63 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, MCF7 whole cell lysate: sc-2206 or mouse pancreas extract: sc-364244.

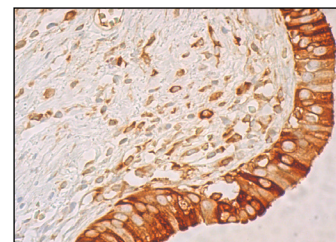
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



CBS (A-3): sc-515180. Western blot analysis of CBS expression in Hep G2 (A) and MCF7 (B) whole cell lysates and mouse pancreas tissue extract (C).



CBS (A-3): sc-515180. 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-IgG $\kappa$  BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.



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.