SANTA CRUZ BIOTECHNOLOGY, INC.

CPS1 (E-20): sc-10516

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The multicomplex protein, carbamoyl-phosphate synthetase-aspartate carbamoyl transferase-dihydro-orotase (CAD), consists of three distinct proteins, carbamoyl phosphate synthetase 2 (CPS2), aspartate transcarbamylase and dihydro-orotase, which catalyze the second and third steps of pyrimidine biosynthesis. CAD is allosterically regulated by the phosphorylation of CPS2 by cyclic AMP-dependent protein kinase, and this activation enables CPS2 to catalyze the rate-limiting step of pyrimidine synthesis. CAD is expressed in brain and skeletal muscle. A related protein, carbamoyl phosphate synthetase 1 (CPS1) is expressed in liver. CPS1 catalyzes the rate-limiting step in the urea cycle, and deficiency of CPS1 is an autosomal recessive disorder that causes hyperammonemia.

CHROMOSOMAL LOCATION

Genetic locus: CPS1 (human) mapping to 2q34; Cps1 (mouse) mapping to 1 C3.

SOURCE

CPS1 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CPS1 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.

Blocking peptide available for competition studies, sc-10516 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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

CPS1 (E-20) is recommended for detection of CPS1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CPS1 (E-20) is also recommended for detection of CPS1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CPS1 siRNA (h): sc-35099, CPS1 siRNA (m): sc-35100, CPS1 shRNA Plasmid (h): sc-35099-SH, CPS1 shRNA Plasmid (m): sc-35100-SH, CPS1 shRNA (h) Lentiviral Particles: sc-35099-V and CPS1 shRNA (m) Lentiviral Particles: sc-35100-V.

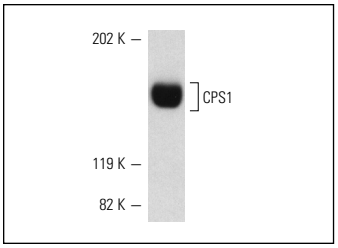
Molecular Weight of CPS1: 165 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse liver extract: sc-2256 or rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CPS1 (E-20): sc-10516. Western blot analysis of CPS1 expression in mouse liver tissue extract.

SELECT PRODUCT CITATIONS

1. Tan, E.H., et al. 2007. C/EBP α knock-in hepatocytes exhibit increased albumin secretion and urea production. Cell Tissue Res. 330: 427-435.
2. Eeds, A.M., et al. 2007. Assessing the functional characteristics of synonymous and nonsynonymous mutation candidates by use of large DNA constructs. Am. J. Hum. Genet. 80: 740-750.
3. Kretz, R., et al. 2012. Phytohemagglutinin stimulation of lymphocytes improves mutation analysis of carbamoylphosphate synthetase 1. Mol. Genet. Metab. 106: 375-378.
4. Pan, Y.H., et al. 2013. Adaptation of phenylalanine and tyrosine catabolic pathway to hibernation in bats. PLoS ONE 8: e62039.
5. Unuma, K., et al. 2013. Elimination and active extrusion of liver mitochondrial proteins during lipopolysaccharide administration in rat. Hepatol. Res. 43: 526-534.
6. Fernando, H., et al. 2013. Liver proteomics in progressive alcoholic steatosis. Toxicol. Appl. Pharmacol. 266: 470-480.