

CTPS1 (C-13): sc-131474



The Power to Question

BACKGROUND

CTPS (cytidine-5-prime-triphosphate synthase) is a 591 amino acid protein that contains one glutamine amidotransferase type-1 domain and is involved in pyrimidine metabolism. CTPS catalyzes the ATP-dependent conversion of UTP to CTP, a rate-limiting reaction that requires either ammonia or L-glutamine as a nitrogen source. Via its catalytic activity, CTPS plays an important role in the synthesis of nucleic acids and is crucial for proper cell growth and development. The function of CTPS is regulated by a variety of mechanisms, including phosphorylation by protein kinase C (PKC), an event that can either stimulate or inhibit CTPS activity. The gene encoding CTPS is located in a region on chromosome 1 that is often associated with the progression of several tumor types, suggesting a possible role for CTPS in tumorigenesis.

REFERENCES

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- Endrizzi, J.A., et al. 2005. Mechanisms of product feedback regulation and drug resistance in cytidine triphosphate synthetases from the structure of a CTP-inhibited complex. *Biochemistry* 44: 13491-13499.
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- Kursula, P., et al. 2006. Structure of the synthetase domain of human CTP synthetase, a target for anticancer therapy. *Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun.* 62: 613-617.
- Chang, Y.F., et al. 2007. Phosphorylation of human CTP synthetase 1 by protein kinase C: identification of Ser(462) and Thr(455) as major sites of phosphorylation. *J. Biol. Chem.* 282: 17613-17622.

CHROMOSOMAL LOCATION

Genetic locus: CTPS1 (human) mapping to 1p34.2; Ctps (mouse) mapping to 4 D2.2.

SOURCE

CTPS1 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CTPS1 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-131474 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CTPS1 (C-13) is recommended for detection of CTPS1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with family member CTPS2.

CTPS1 (C-13) is also recommended for detection of CTPS1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CTPS1 siRNA (h): sc-78858, CTPS1 siRNA (m): sc-142624, CTPS1 shRNA Plasmid (h): sc-78858-SH, CTPS1 shRNA Plasmid (m): sc-142624-SH, CTPS1 shRNA (h) Lentiviral Particles: sc-78858-V and CTPS1 shRNA (m) Lentiviral Particles: sc-142624-V.

Molecular Weight of CTPS1: 66 kDa.

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) 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.

SELECT PRODUCT CITATIONS

- Chen, K., et al. 2011. Glutamine analogs promote cytoophidium assembly in human and *Drosophila* cells. *J. Genet. Genomics* 38: 391-402.
- Strochlic, T.I., et al. 2014. Ack kinase regulates CTP synthase filaments during *Drosophila* oogenesis. *EMBO Rep.* 15: 1184-1191.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **CTPS1 (2G7-1D10): sc-293266**, our highly recommended monoclonal alternative to CTPS1 (C-13).