SANTA CRUZ BIOTECHNOLOGY, INC.

CCT A (F-6): sc-376107

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Increase in fetal surfactant synthesis and lung maturity is caused by the glucocorticoidal induction of enzymes required for phosphatidylcholine synthesis towards the end of gestation. The regulation of gestational age-dependent induction of phosphatidylcholine synthesis by glucocorticoids is still unclear. The rate-controlling enzyme in the phosphatidylcholine biosynthetic pathway is CTP-phosphocholine cytidylyltransferase A (CCT A). In cultured eukaryotic cells, this enzyme is essential for survival. The α isoform is located in the nucleus and is regulated by reversible phosphorylation and membrane association. There is significant identity between the α-helical membrane-binding domains of CCT A and soybean oleosin. Expressed CCT A has lipid-dependent cytidylyltransferase activity. The gene which encodes CCT A maps to human chromosome 3q29.

REFERENCES

1. Rutherford, M.S., et al. 1993. The gene for murine CTP:phosphocholine cytidylyltransferase (Ctpct) is located on mouse chromosome 16. Genomics 18: 698-701.
2. Hundertmark, S., et al. 1994. Gestational age dependence of 11 β-hydroxysteroid dehydrogenase and its relationship to the enzymes of phosphatidylcholine synthesis in lung and liver of fetal rat. Biochim. Biophys. Acta 1210: 348-354.
3. Kalmar, G.B., et al. 1994. Primary structure and expression of a human CTP:phosphocholine cytidylyltransferase. Biochim. Biophys. Acta 1219: 328-334.

CHROMOSOMAL LOCATION

Genetic locus: PCYT1A (human) mapping to 3q29; Pcyt1a (mouse) mapping to 16 B3.

SOURCE

CCT A (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 38-67 at the N-terminus of CCT A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CCT A (F-6) is available conjugated to agarose (sc-376107 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376107 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376107 PE), fluorescein (sc-376107 FITC), Alexa Fluor® 488 (sc-376107 AF488), Alexa Fluor® 546 (sc-376107 AF546), Alexa Fluor® 594 (sc-376107 AF594) or Alexa Fluor® 647 (sc-376107 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376107 AF680) or Alexa Fluor® 790 (sc-376107 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376107 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

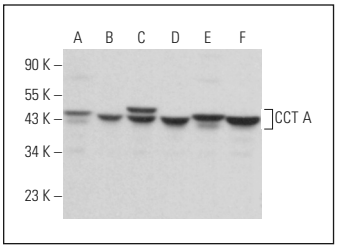
CCT A (F-6) is recommended for detection of CCT A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for CCT A siRNA (h): sc-40394, CCT A siRNA (m): sc-40395, CCT A shRNA Plasmid (h): sc-40394-SH, CCT A shRNA Plasmid (m): sc-40395-SH, CCT A shRNA (h) Lentiviral Particles: sc-40394-V and CCT A shRNA (m) Lentiviral Particles: sc-40395-V.

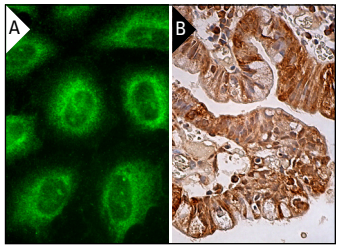
Molecular Weight of CCT A: 42 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, L6 whole cell lysate: sc-364196 or WEHI-231 whole cell lysate: sc-2213.

DATA



CCT A (F-6): sc-376107. Western blot analysis of CCT A expression in HEL 92.1.7 (**A**), Sol8 (**B**), RAW 264.7 (**C**), L6 (**D**), NTERA-2 cl.D1 (**E**) and WEHI-231 (**F**) whole cell lysates.



CCT A (F-6): sc-376107. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lee, C., et al. 2020. Antenatal PPARγ agonist pioglitazone stimulates fetal lung maturation equally in males and females. Am. J. Physiol. Lung Cell. Mol. Physiol. 319: L435-L443.
2. Gelfand, C.A., et al. 2020. Inhaled vitamin A is more effective than intramuscular dosing in mitigating hyperoxia-induced lung injury in a neonatal rat model of bronchopulmonary dysplasia. Am. J. Physiol. Lung Cell. Mol. Physiol. 319: L576-L584.
3. Kurihara, C., et al. 2023. Combination of pioglitazone, a PPARγ agonist, and synthetic surfactant B-YL prevents hyperoxia-induced lung injury in adult mice lung explants. Pulm. Pharmacol. Ther. 80: 102209.

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.