SANTA CRUZ BIOTECHNOLOGY, INC.

UCK1 (E-9): sc-373940

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Uridine-cytidine kinases (UCK) have important roles for the phosphorylation of nucleoside analogs that may be important in chemotherapy of cancer. The UCK family consists of two members, UCK1 and UCK2, which are both expressed in many tumor cells. UCK1 (uridine-cytidine kinase 1), also known as URK1, uridine monophosphokinase 1 or cytidine monophosphokinase 1, is a 277 amino acid protein that is expressed in skeletal muscle, heart, liver and kidney. UCK1 uses ATP or GTP to catalyze the phosphorylation of uridine and cytidine to uridine monophosphate and cytidine monophosphate, respectively. Human UCK1 shares 92% amino acid identity with its mouse counterpart, suggesting a conserved role between species. UCK1 exists as two alternatively spliced isoforms which are encoded by a gene that maps to human chromosome 9.

REFERENCES

1. Kaneko, S., et al. 1998. Cloning, sequence analysis and expression of the basidiomycete *Lentinus edodes* gene UCK1, encoding UMP-CMP kinase, the homologue of *Saccharomyces cerevisae* URA6 gene. Gene 211: 259-266.
2. Van Rompay, A.R., et al. 2001. Phosphorylation of uridine and cytidine nucleoside analogs by two human uridine-cytidine kinases. Mol. Pharmacol. 59: 1181-1186.
3. Shimamoto, Y., et al. 2002. Sensitivity of human cancer cells to the new anticancer ribo-nucleoside TAS-106 is correlated with expression of uridine-cytidine kinase 2. Jpn. J. Cancer Res. 93: 825-833.
4. Suzuki, N.N., et al. 2003. Crystallization and preliminary X-ray analysis of human uridine-cytidine kinase 2. Acta Crystallogr. D Biol. Crystallogr. 59: 1477-1478.
5. Miyazaki, Y., et al. 2004. Target genes of the developmental regulator PRIB of the mushroom *Lentinula edodes*. Biosci. Biotechnol. Biochem. 68: 1898-1905.
6. Murata, D., et al. 2004. A crucial role of uridine/cytidine kinase 2 in anti-tumor activity of 3'-ethynyl nucleosides. Drug Metab. Dispos. 32: 1178-1182.
7. Suzuki, N.N., et al. 2004. Structural basis for the specificity, catalysis, and regulation of human uridine-cytidine kinase. Structure 12: 751-764.

CHROMOSOMAL LOCATION

Genetic locus: UCK1 (human) mapping to 9q34.13; Uck1 (mouse) mapping to 2 B.

SOURCE

UCK1 (E-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-27 near the N-terminus of UCK1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgM 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-373940 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

UCK1 (E-9) is recommended for detection of UCK1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for UCK1 siRNA (h): sc-92649, UCK1 siRNA (m): sc-154885, UCK1 shRNA Plasmid (h): sc-92649-SH, UCK1 shRNA Plasmid (m): sc-154885-SH, UCK1 shRNA (h) Lentiviral Particles: sc-92649-V and UCK1 shRNA (m) Lentiviral Particles: sc-154885-V.

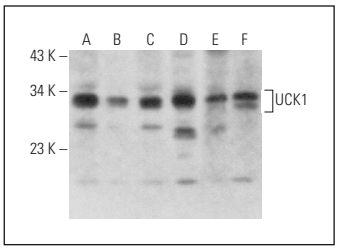
Molecular Weight of UCK1: 31 kDa.

Positive Controls: A549 cell lysate: sc-2413, Jurkat whole cell lysate: sc-2204 or 3T3-L1 cell lysate: sc-2243.

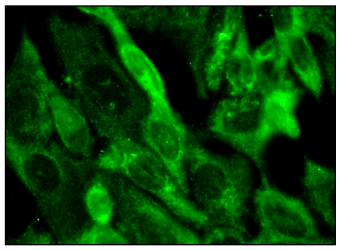
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



UCK1 (E-9): sc-373940. Western blot analysis of UCK1 expression in Jurkat (**A**), Hep G2 (**B**), A549 (**C**) and 3T3-L1 (**D**) whole cell lysates and mouse cerebellum (**E**) and rat brain (**F**) tissue extracts.



UCK1 (E-9): sc-373940. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

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 for detailed protocols and support products.