

UCK1 (F-12): sc-107318



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 cerevisiae* 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 Pt 8: 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 antitumor 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.
8. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609328. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
9. Aldenhoven, J., et al. 2006. Assignment of UCK2, ATF3 and RGS18 from human chromosome 1 to porcine chromosomes 4, 9 and 10 with somatic and radiation hybrid panels. *Cytogenet. Genome Res.* 112: 341F.

CHROMOSOMAL LOCATION

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

SOURCE

UCK1 (F-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of UCK1 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-107318 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UCK1 (F-12) is recommended for detection of UCK1 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 members UCKL1 or UCK2.

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.

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.

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 **UCK1 (E-9): sc-373940**, our highly recommended monoclonal alternative to UCK1 (F-12).