

UCK1 (m): 293T Lysate: sc-127740

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 (mouse) mapping to 2 B.

PRODUCT

UCK1 (m): 293T Lysate represents a lysate of mouse UCK1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

UCK1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive UCK1 antibodies. Recommended use: 10-20 µl per lane.

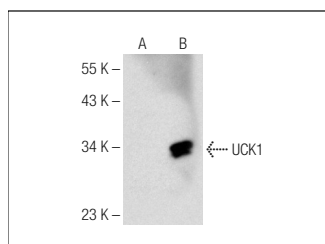
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

UCK1 (E-9): sc-373940 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse UCK1 expression in UCK1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



UCK1 (E-9): sc-373940. Western blot analysis of UCK1 expression in non-transfected: sc-117752 (A) and mouse UCK1 transfected: sc-127740 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.