

UCK2 (C-15): sc-104731

BACKGROUND

UCK2 (uridine-cytidine kinase 2), also known as UK or UMPK, is a 261 amino acid protein that is expressed in testis and placenta and belongs to the uridine kinase family. Existing as a homotetramer, UCK2 uses ATP (and, to a lesser extent, GTP) to catalyze the phosphorylation of uridine and cytidine to uridine monophosphate and cytidine monophosphate, respectively. Via its catalytic activity, UCK2 plays a crucial role in the production of pyrimidine nucleoside triphosphates required for RNA and DNA synthesis. Human UCK2 shares 98% amino acid identity with its mouse counterpart, suggesting a conserved role between species. UCK2 exists as two alternatively spliced isoforms which are encoded by a gene that maps to human chromosome 1.

REFERENCES

- Ruddle, F.H., et al. 1975. Paraxial approaches to the genetics of man. *Annu. Rev. Genet.* 9: 407-486.
- Ozaki, K., et al. 1996. Isolation of three testis-specific genes (TSA303, TSA806, TSA903) by a differential mRNA display method. *Genomics* 36: 316-319.
- 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.
- 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.
- Suzuki, N.N., et al. 2004. Structural basis for the specificity, catalysis, and regulation of human uridine-cytidine kinase. *Structure* 12: 751-764.
- Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609329. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- 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.
- Cheung, C.L., et al. 2009. Pre-B-cell leukemia homeobox 1 (PBX1) shows functional and possible genetic association with bone mineral density variation. *Hum. Mol. Genet.* 18: 679-687.

CHROMOSOMAL LOCATION

Genetic locus: UCK2 (human) mapping to 1q24.1; Uck2 (mouse) mapping to 1 H2.3.

SOURCE

UCK2 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of UCK2 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-104731 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UCK2 (C-15) is recommended for detection of UCK2 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 UCK1.

UCK2 (C-15) is also recommended for detection of UCK2 in additional species, including equine and bovine.

Suitable for use as control antibody for UCK2 siRNA (h): sc-88781, UCK2 siRNA (m): sc-106664, UCK2 shRNA Plasmid (h): sc-88781-SH, UCK2 shRNA Plasmid (m): sc-106664-SH, UCK2 shRNA (h) Lentiviral Particles: sc-88781-V and UCK2 shRNA (m) Lentiviral Particles: sc-106664-V.

Molecular Weight of UCK2: 29 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.