

CLK4 (N-23): sc-130129

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. CLK4 (CDC-like kinase 4) is a 481 amino acid nuclear protein that contains one protein kinase domain and is a member of the Ser/Thr protein kinase family. Expressed in brain, liver, kidney, heart and muscle, CLK4 catalyzes the ATP-dependent phosphorylation of serine- and arginine-rich (SR) proteins within the spliceosomal complex and is thought to regulate the ability of SR proteins to control RNA splicing. CLK4 shares 97% sequence homology with its mouse counterpart, suggesting a highly conserved function between species.

REFERENCES

- Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. *Science* 241: 42-52.
- Hanks, S.K. and Quinn, A.M. 1991. Protein kinase catalytic domain sequence database: identification of conserved features of primary structure and classification of family members. *Meth. Enzymol.* 200: 38-62.
- Schultz, J., et al. 2001. Molecular characterization of a cDNA encoding functional human CLK4 kinase and localization to chromosome 5q35 [correction of 4q35]. *Genomics* 71: 368-370.
- Katsu, R., et al. 2002. Novel SR-rich-related protein clasp specifically interacts with inactivated CLK4 and induces the exon EB inclusion of CLK. *J. Biol. Chem.* 277: 44220-44228.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607969. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Kantham, L., et al. 2003. Beacon interacts with Cdc2/Cdc28-like kinases. *Biochem. Biophys. Res. Commun.* 304: 125-129.
- McNally, T., et al. 2003. Structural analysis of UBL5, a novel ubiquitin-like modifier. *Protein Sci.* 12: 1562-1566.
- Olsen, J.V., et al. 2006. Global, *in vivo*, and site-specific phosphorylation dynamics in signaling networks. *Cell* 127: 635-648.

CHROMOSOMAL LOCATION

Genetic locus: CLK4 (human) mapping to 5q35.3; Clk4 (mouse) mapping to 11 B1.3.

SOURCE

CLK4 (N-23) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of CLK4 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CLK4 (N-23) is recommended for detection of CLK4 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CLK4 siRNA (h): sc-105214, CLK4 siRNA (m): sc-142394, CLK4 shRNA Plasmid (h): sc-105214-SH, CLK4 shRNA Plasmid (m): sc-142394-SH, CLK4 shRNA (h) Lentiviral Particles: sc-105214-V and CLK4 shRNA (m) Lentiviral Particles: sc-142394-V.

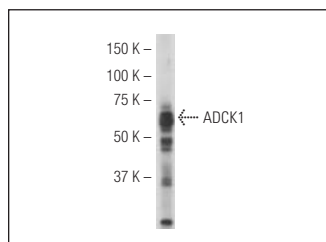
Molecular Weight of CLK4: 54 kDa.

Positive Controls: CLK4 (m): 293T Lysate: sc-125143, CLK4 (m2): 293T Lysate: sc-125144 or mouse liver extract: sc-2256.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



ADCK1 (N-17): sc-130129. Western blot analysis of ADCK1 expression in mouse liver tissue extract.

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.