

CLK3 (E-14): sc-79905

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. CLK3 (Cdc-like kinase 3), also known as PHCLK3, is a 638 amino acid nuclear and cytoplasmic protein that belongs to the Ser/Thr protein kinase family. Functioning as a dual-specificity kinase, CLK3 catalyzes the ATP-dependent phosphorylation of arginine- and serine-rich (SR) splicing factor proteins, thereby regulating both their function and their intranuclear distribution. Via its enzymatic activity, CLK3 is thought to be one of several members of a network of regulatory proteins that control RNA splicing events. Four isoforms of CLK3 exist due to alternative splicing.

REFERENCES

1. Becker, W., et al. 1996. cDNA cloning and characterization of rat Clk3, a LAMMER kinase predominately expressed in testis. *Biochim. Biophys. Acta* 1312: 63-67.
2. Duncan, P.I., et al. 1998. The CLK2 and CLK3 dual-specificity protein kinases regulate the intranuclear distribution of SR proteins and influence pre-mRNA splicing. *Exp. Cell Res.* 241: 300-308.
3. Menegay, H., et al. 1999. The dual specificity protein kinase CLK3 is abundantly expressed in mature mouse spermatozoa. *Exp. Cell Res.* 253: 463-473.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602990. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. García-Sacristán, A., et al. 2005. Protein kinase CLK/STY is differentially regulated during erythroleukemia cell differentiation: a bias toward the skipped splice variant characterizes postcommitment stages. *Cell Res.* 15: 495-503.
6. Olsen, J.V., et al. 2006. Global, *in vivo*, and site-specific phosphorylation dynamics in signaling networks. *Cell* 127: 635-648.
7. Wissing, J., et al. 2007. Proteomics analysis of protein kinases by target class-selective prefractionation and tandem mass spectrometry. *Mol. Cell Proteomics* 6: 537-547.

CHROMOSOMAL LOCATION

Genetic locus: CLK3 (human) mapping to 15q24.1; Clk3 (mouse) mapping to 9 B.

SOURCE

CLK3 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CLK3 of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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-79905 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CLK3 (E-14) is recommended for detection of CLK3 of mouse, rat 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)], 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 CLK3 siRNA (h): sc-72925, CLK3 siRNA (m): sc-72926, CLK3 shRNA Plasmid (h): sc-72925-SH, CLK3 shRNA Plasmid (m): sc-72926-SH, CLK3 shRNA (h) Lentiviral Particles: sc-72925-V and CLK3 shRNA (m) Lentiviral Particles: sc-72926-V.

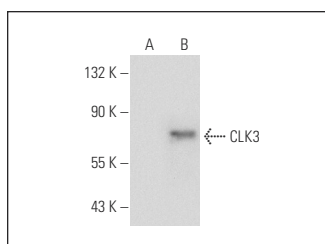
Molecular Weight of CLK3: 74 kDa.

Positive Controls: CLK3 (h2): 293T Lysate: sc-158385, Jurkat whole cell lysate: sc-2204 or HeLa nuclear extract: sc-2120.

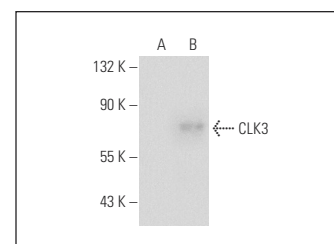
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CLK3 (E-14): sc-79905. Western blot analysis of CLK3 expression in non-transfected: sc-117752 (A) and human CLK3 transfected: sc-158385 (B) 293T whole cell lysates.



CLK3 (E-14): sc-79905. Western blot analysis of CLK3 expression in non-transfected: sc-117752 (A) and human CLK3 transfected: sc-158386 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.