

CLK3 (h2): 293T Lysate: sc-158385

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., Kentrup, H., Heukelbach, J. and Joost, H.G. 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., Stojdl, D.F., Marius, R.M., Scheit, K.H. and Bell, J.C. 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., Moeslein, F. and Landreth, G. 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., Fernández-Nestosa, M.J., Hernández, P., Schwartzman, J.B. and Krimer, D.B. 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., Blagoev, B., Gnad, F., Macek, B., Kumar, C., Mortensen, P. and Mann, M. 2006. Global, *in vivo*, and site-specific phosphorylation dynamics in signaling networks. *Cell* 127: 635-648.
7. Wissing, J., Jänsch, L., Nimtz, M., Dieterich, G., Hornberger, R., Kéri, G., Wehland, J. and Daub, H. 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

PRODUCT

CLK3 (h2): 293T Lysate represents a lysate of human CLK3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

CLK3 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive CLK3 antibodies. Recommended use: 10-20 µl per lane.

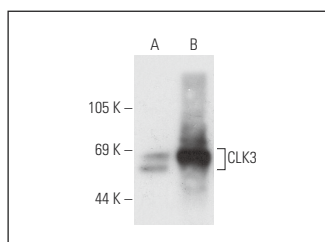
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

CLK3 (4F12): sc-134301 is recommended as a positive control antibody for Western Blot analysis of enhanced human CLK3 expression in CLK3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

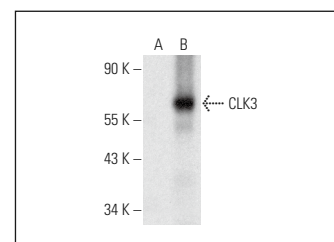
RECOMMENDED SUPPORT REAGENTS

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



CLK3 (4F12): sc-134301. Western blot analysis of CLK3 expression in non-transfected: sc-117752 (A) and human CLK3 transfected: sc-158385 (B) 293T whole cell lysates.



CLK3 (D-10): sc-365225. Western blot analysis of CLK3 expression in non-transfected: sc-117752 (A) and human CLK3 transfected: sc-158385 (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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.