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# 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., Gnäd, 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., Jansch, 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.

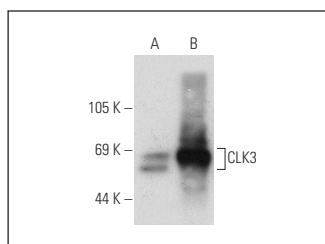
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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).

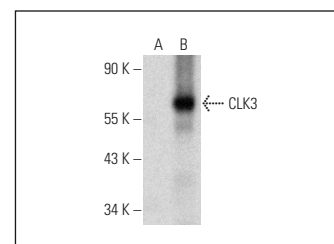
## RECOMMENDED SUPPORT REAGENTS

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](http://www.scbt.com) for detailed protocols and support products.