

CLK1 (C-14): sc-47956

BACKGROUND

The CDC-like kinase 1 (CLK1) dually phosphorylates serine and arginine rich proteins of the spliceosomal complex, which constitutes a network of regulatory mechanisms that enable SR proteins to control RNA splicing. Specifically, CLK1 may mediate the release of specific proteins from nuclear storage sites. Expression of CLK1 may be very low due to a premature stop codon in the mRNA, which leads to nonsense-mediated mRNA decay. CLK1 activity is positively regulated by phosphorylation on either tyrosine residues or serine/threonine residues, and is negatively regulated by steric constraints mediated by the N-terminal domain, and also by phosphorylation on a subset of serine/threonine residues within the catalytic domain.

REFERENCES

1. Duncan, P.L., Stojdl, D.F., Marius, R.M. and Bell, J.C. 1997. *In vivo* regulation of alternative pre-mRNA splicing by the CLK1 protein kinase. *Mol. Cell. Biol.* 17: 5996-6001.
2. Duncan, P.L., 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. Moeslein, F.M., Myers, M.P. and Landreth, G.E. 1999. The CLK family kinases, CLK1 and CLK2, phosphorylate and activate the tyrosine phosphatase, PTP-1B. *J. Biol. Chem.* 274: 26697-26704.
4. Menegay, H.J., Myers, M.P., Moeslein, F.M. and Landreth, G.E. 2000. Biochemical characterization and localization of the dual specificity kinase CLK1. *J. Cell Sci.* 113: 3241-3253.
5. Hartmann, A.M., Rujescu, D., Giannakourou, T., Nikolakaki, E., Goedert, M., Mandelkow, E.M., Gao, Q.S., Andreadis, A. and Stamm, S. 2001. Regulation of alternative splicing of human τ exon 10 by phosphorylation of splicing factors. *Mol. Cell. Neurosci.* 18: 80-90.
6. Verheyen, G.R., Nuijten, J.M., Van Hummelen, P. and Schoeters, G.R. 2004. Microarray analysis of the effect of diesel exhaust particles on *in vitro* cultured macrophages. *Toxicology In Vitro* 18: 377-391.
7. Murata, S., Yoshiara, T., Lim, C.R., Sugino, M., Kogure, M., Ohnuki, T., Komurasaki, T. and Matsubara, K. 2005. Psychophysiological stress-regulated gene expression in mice. *FEBS Lett.* 579: 2137-2142.

CHROMOSOMAL LOCATION

Genetic locus: CLK1 (human) mapping to 2q33; Clk1 (mouse) mapping to 1 C1.3.

SOURCE

CLK1 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CLK1 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-47956 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CLK1 (C-14) is recommended for detection of CLK1 isoform Long only of mouse 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).

Suitable for use as control antibody for CLK1 siRNA (h): sc-60404, CLK1 siRNA (m): sc-60405, CLK1 shRNA Plasmid (h): sc-60404-SH, CLK1 shRNA Plasmid (m): sc-60405-SH, CLK1 shRNA (h) Lentiviral Particles: sc-60404-V and CLK1 shRNA (m) Lentiviral Particles: sc-60405-V.

Molecular Weight of CLK1: 57 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

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.

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.

MONOS
Satisfaction
Guaranteed

Try **CLK1/4 (A-4): sc-515307**, our highly recommended monoclonal alternative to CLK1 (C-14).