SANTA CRUZ BIOTECHNOLOGY, INC.

CLK1 (h): 293T Lysate: sc-113676

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. CLK1 activity 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.I., et al. 1997. *In vivo* regulation of alternative pre-mRNA splicing by the CLK1 protein kinase. Mol. Cell. Biol. 17: 5996-6001.
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. Moeslein, F.M., et al. 1999. The CLK family kinases, CLK1 and CLK2, phosphorylate and activate the tyrosine phosphatase, PTP1B. J. Biol. Chem. 274: 26697-26704.
4. Menegay, H.J., et al. 2000. Biochemical characterization and localization of the dual specificity kinase CLK1. J. Cell Sci. 113: 3241-3253.
5. Hartmann, A.M., et al. 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., et al. 2004. Microarray analysis of the effect of diesel exhaust particles on *in vitro* cultured macrophages. Toxicol. In Vitro 18: 377-391.
7. Murata, S., et al. 2005. Psychophysiological stress-regulated gene expression in mice. FEBS Lett. 579: 2137-2142.

CHROMOSOMAL LOCATION

Genetic locus: CLK1 (human) mapping to 2q33.1.

PRODUCT

CLK1 (h): 293T Lysate represents a lysate of human CLK1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

CLK1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CLK1 antibodies. Recommended use: 10-20 µl per lane.

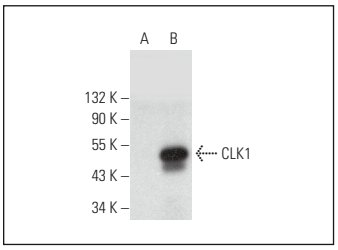
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-tranfected 293T cells.

CLK1 (F-12): sc-515897 is recommended as a positive control antibody for Western Blot analysis of enhanced human CLK1 expression in CLK1 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



CLK1 (F-12): sc-515897. Western blot analysis of CLK1 expression in non-transfected: sc-117752 (**A**) and human CLK1 transfected: sc-113676 (**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.

RESEARCH USE

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

PROTOCOLS

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