SANTA CRUZ BIOTECHNOLOGY, INC.

CLK2 (Y-15): sc-74915

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. CLK2 (CDC-like kinase 2) is a 499 amino acid nuclear protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Using ATP, CLK2 phosphorylates serine- and arginine-rich (SR) components of the spliceosomal complex, possibly playing a role in the control of RNA splicing. CLK2 exists as two alternatively spliced isoforms, designated short and long, and is encoded by a gene which maps to human chromosome 1.

REFERENCES

1. Hanes, J., von der Kammer, H., Klaudiny, J. and Scheit, K.H. 1994. Characterization by cDNA cloning of two new human protein kinases. Evidence by sequence comparison of a new family of mammalian protein kinases. J. Mol. Biol. 244: 665-672.
2. Tsujikawa, M., Kurahashi, H., Tanaka, T., Okada, M., Yamamoto, S., Maeda, N., Watanabe, H., Inoue, Y., Kiridoshi, A., Matsumoto, K., Ohashi, Y., Kinoshita, S., Shimomura, Y., Nakamura, Y. and Tano, Y. 1998. Homozygosity mapping of a gene responsible for gelatinous drop-like corneal dystrophy to chromosome 1p. Am. J. Hum. Genet. 63: 1073-1077.
3. 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.
4. Nayler, O., Schnorrer, F., Stamm, S. and Ullrich, A. 1998. The cellular localization of the murine serine/arginine-rich protein kinase CLK2 is regulated by Serine 141 autophosphorylation. J. Biol. Chem. 273: 34341-34348.
5. 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.
6. Nothwang, H.G., Kim, H.G., Aoki, J., Geisterfer, M., Kübart, S., Wegner, R.D., van Moers, A., Ashworth, L.K., Haaf, T., Bell, J., Arai, H., Tommerup, N., Ropers, H.H. and Wirth, J. 2001. Functional hemizygosity of PAFAH1B3 due to a PAFAH1B3-CLK2 fusion gene in a female with mental retardation, ataxia and atrophy of the brain. Hum. Mol. Genet. 10: 797-806.
7. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 602989. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: CLK2 (human) mapping to 1q22; Clk2 (mouse) mapping to 3 F1.

SOURCE

CLK2 (Y-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CLK2 of human origin.

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-74915 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CLK2 (Y-15) is recommended for detection of CLK2 of mouse, rat 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 CLK2 siRNA (h): sc-72923, CLK2 siRNA (m): sc-72924, CLK2 shRNA Plasmid (h): sc-72923-SH, CLK2 shRNA Plasmid (m): sc-72924-SH, CLK2 shRNA (h) Lentiviral Particles: sc-72923-V and CLK2 shRNA (m) Lentiviral Particles: sc-72924-V.

Molecular Weight of CLK2 long isoform: 60 kDa.

Molecular Weight of CLK2 short isoform: 8 kDa.

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.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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 or our catalog for detailed protocols and support products.