

TLK2 (Y-17): sc-100346

BACKGROUND

The Tousled-like kinases (TLK1 and TLK2, also designated PKU- β and PKU- α , respectively) are the human homologs of the Tousled gene from *Arabidopsis thaliana*, which encodes a Serine/Threonine kinase that is necessary for proper organ morphogenesis. Both TLKs contain a nuclear localization signal and a predicted coiled-coil region in the N-terminal domain. TLK is ubiquitously expressed, and is prevalent in mouse testis, especially in pachytene spermatocytes and round spermatids. It displays a propensity to dimerize through an interaction between its coiled-coil structure and is able to auto-phosphorylate, as well as phosphorylate exogenous substrates. TLK1 and TLK2 are regulated by the cell cycle, showing maximum activity during S phase. Subsequently, they are thought to regulate the development of multicellular organisms, including playing a key role in spermatogenesis, through a series of phosphorylations.

REFERENCES

- Sillje, H.H., Takahashi, K., Tanaka, K., Van Houwe, G. and Nigg, E.A. 1999. Mammalian homologues of the plant Tousled gene code for cell-cycle-regulated kinases with maximal activities linked to ongoing DNA replication. *EMBO J.* 18: 5691-5702.
- Yamakawa, A., Kameoka, Y., Hashimoto, K., Yoshitake, Y., Nishikawa, K., Tanihara, K. and Date, T. 1997. cDNA cloning and chromosomal mapping of genes encoding novel protein kinases termed PKU- α and PKU- β , which have nuclear localization signal. *Gene* 202: 193-201.
- Roe, J.L., Durfee, T., Zupan, J.R., Repetti, P.P., McLean, B.G. and Zambryski, P.C. 1997. Tousled is a nuclear serine/threonine protein kinase that requires a coiled-coil region for oligomerization and catalytic activity. *J. Biol. Chem.* 171: 5838-5845.
- Roe, J.L., Rivin, C.J., Sessions, R.A., Feldmann, K.A. and Zambryski, P.C. 1993. The Tousled gene in *A. thaliana* encodes a protein kinase homolog that is required for leaf and flower development. *Cell* 75: 939-950.
- Roe, J.L., Nemhauser, J.L. and Zambryski, P.C. 1997. Tousled participates in apical tissue formation during gynoecium development in *Arabidopsis*. *Plant Cell* 9: 335-353.

CHROMOSOMAL LOCATION

Genetic locus: TLK2 (human) mapping to 17q23.2.

SOURCE

TLK2 (Y-17) is a mouse monoclonal antibody raised against recombinant TLK2 of human origin.

PRODUCT

Each vial contains 100 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

TLK2 (Y-17) is recommended for detection of TLK2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 TLK2 siRNA (h): sc-106801, TLK2 shRNA Plasmid (h): sc-106801-SH and TLK2 shRNA (h) Lentiviral Particles: sc-106801-V.

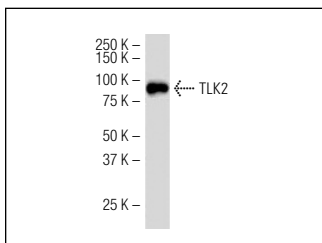
Molecular Weight of TLK2: 88 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

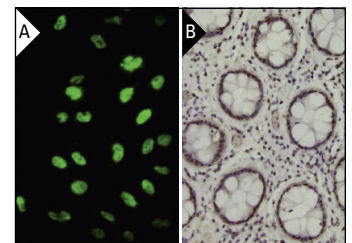
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TLK2 (Y-17): sc-100346. Western blot analysis of TLK2 expression in HeLa nuclear extract.



TLK2 (Y-17): sc-100346. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (A) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing nuclear localization (B).

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.