SANTA CRUZ BIOTECHNOLOGY, INC.

TLK1 (G-8): sc-393515

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 autophosphorylate, 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

1. Roe, J.L., et al. 1993. The Tousled gene in *A. thaliana* encodes a protein kinase homolog that is required for leaf and flower development. Cell 75: 939-950.
2. Yamakawa, A., et al. 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.
3. Roe, J.L., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: TLK1 (human) mapping to 2q31.1; Tlk1 (mouse) mapping to 2 C2.

SOURCE

TLK1 (G-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 126-161 within an internal region of TLK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TLK1 (G-8) is available conjugated to agarose (sc-393515 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393515 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393515 PE), fluorescein (sc-393515 FITC), Alexa Fluor® 488 (sc-393515 AF488), Alexa Fluor® 546 (sc-393515 AF546), Alexa Fluor® 594 (sc-393515 AF594) or Alexa Fluor® 647 (sc-393515 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393515 AF680) or Alexa Fluor® 790 (sc-393515 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393515 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

TLK1 (G-8) is recommended for detection of TLK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

TLK1 (G-8) is also recommended for detection of TLK1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for TLK1 siRNA (h): sc-45973, TLK1 siRNA (m): sc-45974, TLK1 shRNA Plasmid (h): sc-45973-SH, TLK1 shRNA Plasmid (m): sc-45974-SH, TLK1 shRNA (h) Lentiviral Particles: sc-45973-V and TLK1 shRNA (m) Lentiviral Particles: sc-45974-V.

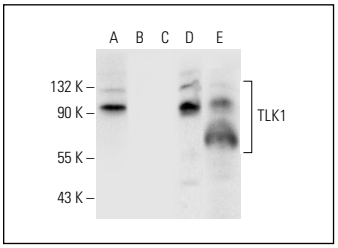
Molecular Weight of TLK1: 90 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa nuclear extract: sc-2120 or human testis extract: sc-363781.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



TLK1 (G-8): sc-393515. Western blot analysis of TLK1 expression in HeLa (**A**), C6 (**B**) and RAW 264.7 (**C**) whole cell lysates, HeLa nuclear extract (**D**) and human testis tissue extract (**E**). Note lack of reactivity with mouse and rat TLK1 in lanes **B** and **C**.

STORAGE

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