SANTA CRUZ BIOTECHNOLOGY, INC.

TTK (N1): sc-56968

BACKGROUND

Progression of cells through the cell cycle is regulated by variations in the levels and activities of a series of protein kinases as well as by oscillation in the levels of their regulatory subunits (i.e., cyclins). The full length sequence for a unique protein kinase of human origin, designated TTK, was cloned by screening a T cell expression library with anti-phosphotyrosine antibodies. Similarly, the mouse homolog of TTK was isolated from an embryonal carcinoma (EC) cell line by expression cloning. TTK/Esk are novel members of the serine-threonine/tyrosine family of protein kinases and are expressed in a broad range of proliferating human cells and tissues. TTK-Esk expression is reduced or absent in resting cells and in cells with a low proliferative index. When cells are induced to enter the cell cycle, levels of TTK mRNA, protein and kinase activity increase at the G_1 to S phase of the cell cycle and peak in the G_2 to M phase, suggesting that TTK/Esk may function as cell cycle regulatory components.

CHROMOSOMAL LOCATION

Genetic locus: TTK (human) mapping to 6q14.1.

SOURCE

TTK (N1) is a mouse monoclonal antibody raised against amino acids 3-856 of TTK of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TTK (N1) is available conjugated to agarose (sc-56968 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56968 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56968 PE), fluorescein (sc-56968 FITC), Alexa Fluor® 488 (sc-56968 AF488), Alexa Fluor® 546 (sc-56968 AF546), Alexa Fluor® 594 (sc-56968 AF594) or Alexa Fluor® 647 (sc-56968 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56968 AF680) or Alexa Fluor® 790 (sc-56968 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

RESEARCH USE

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

APPLICATIONS

TTK (N1) is recommended for detection of TTK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for TTK siRNA (h): sc-36758, TTK shRNA Plasmid (h): sc-36758-SH and TTK shRNA (h) Lentiviral Particles: sc-36758-V.

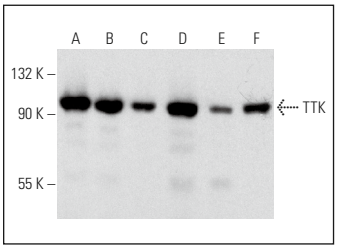
Molecular Weight of TTK: 97 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, C32 whole cell lysate: sc-2205 or Ramos cell lysate: sc-2216.

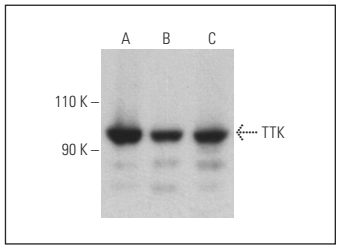
RECOMMENDED SUPPORT REAGENTS

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



TTK (N1): sc-56968. Western blot analysis of TTK expression in Ramos (**A**), HeLa (**B**), HISM (**C**), K-562 (**D**), MCF7 (**E**) and C32 (**F**) whole cell lysates.



TTK (N1): sc-56968. Western blot analysis of TTK expression in BJAB (**A**), C32 (**B**) and Jurkat (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Wang, Y.C., et al. 2010. Arecoline arrests cells at prometaphase by deregulating mitotic spindle assembly and spindle assembly checkpoint: implication for carcinogenesis. Oral Oncol. 46: 255-262.
2. Tovar, C., et al. 2010. Small-molecule inducer of cancer cell polyploidy promotes apoptosis or senescence: implications for therapy. Cell Cycle 9: 3364-3375.
3. Maire, V., et al. 2013. TTK/hMPS1 is an attractive therapeutic target for triple-negative breast cancer. PLoS ONE 8: e63712.
4. Alfaro-Mora, Y., et al. 2021. MPS1 is involved in the HPV16-E7-mediated centrosomes amplification. Cell Div. 16: 6.
5. Pinto, B., et al. 2023. Maximizing anticancer response with MPS1 and CENPE inhibition alongside apoptosis induction. Pharmaceutics 16: 56.
6. Du, H., et al. 2024. Upregulation of TTK expression is associated with poor prognosis and immune infiltration in endometrial cancer patients. Cancer Cell Int. 24: 20.
7. Calheiros-Lobo, M., et al. 2024. Targeting the EGFR and spindle assembly checkpoint pathways in oral cancer: a plausible alliance to enhance cell death. Cancers 16: 3732.

STORAGE

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