

TSSK 1 (A-12): sc-169720

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. TSSK 1B (testis-specific serine/threonine-protein kinase 1B) in human and designated TSSK 1 in mice, also known as STK22a or TSK-1, is a 367 amino acid protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Using magnesium as a cofactor, TSSK 1B catalyzes the ATP-dependent phosphorylation of target proteins and is thought to be involved in the late stages of spermatogenesis during the reconstruction of the cytoplasm. TSSK 1B is activated by phosphorylation on Thr 174, possibly by autophosphorylation, and binds to TSSK 2. Localized to the cytoplasm, TSSK 1B is only expressed in spermatids in the final stages of cytodifferentiation in the seminiferous tubules.

REFERENCES

- Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. *Science* 241: 42-52.
- Kueng, P., et al. 1997. A novel family of serine/threonine kinases participating in spermiogenesis. *J. Cell Biol.* 139: 1851-1859.
- Sutherland, H.F., et al. 1998. Cloning and comparative mapping of the DiGeorge syndrome critical region in the mouse. *Genomics* 52: 37-43.
- Lindsay, E.A., et al. 1998. ES2, a gene deleted in DiGeorge syndrome, encodes a nuclear protein and is expressed during early mouse development, where it shares an expression domain with a Goosecoid-like gene. *Hum. Mol. Genet.* 7: 629-635.
- Nayak, S., et al. 1998. Immunohistochemical analysis of the expression of two serine-threonine kinases in the maturing mouse testis. *Mech. Dev.* 74: 171-174.
- Zuercher, G., et al. 2000. A novel member of the testis specific serine kinase family, *tssk-3*, expressed in the Leydig cells of sexually mature mice. *Mech. Dev.* 93: 175-177.
- Hao, Z., et al. 2004. Expression analysis of the human testis-specific serine/threonine kinase (TSSK) homologues. A TSSK member is present in the equatorial segment of human sperm. *Mol. Hum. Reprod.* 10: 433-444.
- Xu, B., et al. 2008. TSKS concentrates in spermatid centrioles during flagellogenesis. *Dev. Biol.* 319: 201-210.

CHROMOSOMAL LOCATION

Genetic locus: *Tsk1* (mouse) mapping to 16 A3.

SOURCE

TSSK 1 (A-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of TSSK 1 of mouse origin.

STORAGE

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

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-169720 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TSSK 1 (A-12) is recommended for detection of TSSK 1 of mouse and rat 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)], 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); non cross-reactive with other TSSK family members.

TSSK 1 (A-12) is also recommended for detection of TSSK 1 in additional species, including canine.

Suitable for use as control antibody for TSSK 1 siRNA (m): sc-154740, TSSK 1 shRNA Plasmid (m): sc-154740-SH and TSSK 1 shRNA (m) Lentiviral Particles: sc-154740-V.

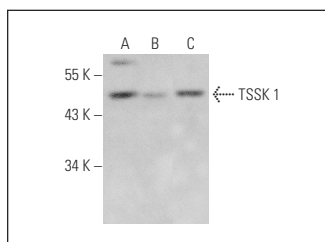
Molecular Weight of TSSK 1: 42 kDa.

Positive Controls: F9 cell lysate: sc-2245, AT3B-1 whole cell lysate: sc-364372 or NIH/3T3 whole cell lysate: sc-2210.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



TSSK 1 (A-12): sc-169720. Western blot analysis of TSSK 1 expression in F9 (A), AT3B-1 (B) and NIH/3T3 (C) whole cell lysates.

RESEARCH USE

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