

PSTK (B-5): sc-373991

BACKGROUND

The fidelity of protein synthesis requires efficient discrimination of amino acid substrates by aminoacyl-tRNA synthetases. Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. PSTK (phosphoserine-tRNA kinase), also known as L-seryl-tRNA(Sec) kinase, is a 348 amino acid enzyme belonging to the L-seryl-tRNA(Sec) kinase family. An essential RNA-dependent kinase, PSTK plays a role in aminoacyl-tRNA synthesis and the biosynthesis of selenocysteine, the 21st natural amino acid. Utilizing magnesium as a cofactor, PSTK converts seryl-tRNA(Sec) to O-phosphoserine-tRNA(Sec), the immediate precursor of selenocysteinyl-tRNA(Sec). PSTK exists as two alternatively spliced isoforms and is encoded by a gene mapping to human chromosome 10q26.13.

REFERENCES

- Carlson, B.A., et al. 2004. Identification and characterization of phosphoserine-tRNA(Ser)Sec kinase. *Proc. Natl. Acad. Sci. USA* 101: 12848-12853.
- Lux, R., et al. 2005. A novel bacterial signalling system with a combination of a Ser/Thr kinase cascade and a His/Asp two-component system. *Mol. Microbiol.* 58: 345-348.
- Yuan, J., et al. 2006. RNA-dependent conversion of phosphoserine forms selenocysteine in eukaryotes and archaea. *Proc. Natl. Acad. Sci. USA* 103: 18923-18927.
- Araiso, Y., et al. 2008. Structural insights into RNA-dependent eukaryal and archaeal selenocysteine formation. *Nucleic Acids Res.* 36: 1187-1199.
- Sherrer, R.L., et al. 2008. Characterization and evolutionary history of an archaeal kinase involved in selenocysteinyl-tRNA formation. *Nucleic Acids Res.* 36: 1247-1259.

CHROMOSOMAL LOCATION

Genetic locus: PSTK (human) mapping to 10q26.13; Pstk (mouse) mapping to 7 F3.

SOURCE

PSTK (B-5) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of PSTK of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PSTK (B-5) is available conjugated to agarose (sc-373991 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373991 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373991 PE), fluorescein (sc-373991 FITC), Alexa Fluor® 488 (sc-373991 AF488), Alexa Fluor® 594 (sc-373991 AF594) or Alexa Fluor® 647 (sc-373991 AF647), 200 µg/ml, for IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373991 AF680) or Alexa Fluor® 790 (sc-373991 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PSTK (B-5) is recommended for detection of PSTK 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).

Suitable for use as control antibody for PSTK siRNA (h): sc-90790, PSTK siRNA (m): sc-152568, PSTK shRNA Plasmid (h): sc-90790-SH, PSTK shRNA Plasmid (m): sc-152568-SH, PSTK shRNA (h) Lentiviral Particles: sc-90790-V and PSTK shRNA (m) Lentiviral Particles: sc-152568-V.

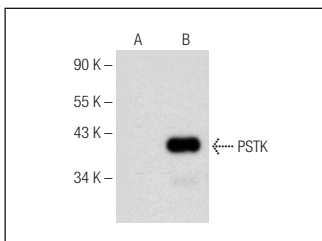
Molecular Weight of PSTK: 40 kDa.

Positive Controls: PSTK (m): 293T Lysate: sc-127415.

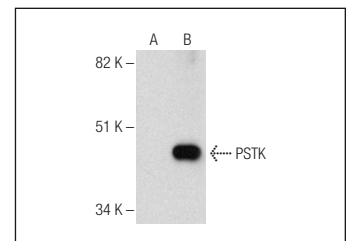
RECOMMENDED SUPPORT REAGENTS

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



PSTK (B-5): sc-373991. Western blot analysis of PSTK expression in non-transfected: sc-117752 (A) and mouse PSTK transfected: sc-127415 (B) 293T whole cell lysates.



PSTK (B-5): sc-373991. Western blot analysis of PSTK expression in non-transfected: sc-117752 (A) and mouse PSTK transfected: sc-127415 (B) 293T whole cell lysates.

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 for detailed protocols and support products.