SANTA CRUZ BIOTECHNOLOGY, INC.

pyridoxal kinase (F-12): sc-390082

The Power to Question

BACKGROUND

Pyridoxal kinase belongs to the pyridoxine kinase family and phosphorylates vitamin B6, a step necessary for the conversion of vitamin B6 to pyridoxal 5' phosphate (PLP), the active form of vitamin B6. PLP acts as a coenzyme and functions to maintain homeostasis. Pyridoxal kinase is a 312-amino acid cytoplasmic protein that may act as a homodimer and is expressed ubiquitously. There are three known isoforms of pyridoxal kinase, and isoform 3 expression is observed in adult testis and spermatozoa. The optimum pH for pyridoxal kinase is between 5.5 and 6.0. PDXK, the gene that encodes the pyridoxal kinase protein, maps to chromosome 21q22.3 and may be a candidate gene for autoimmune polyglandular disease type 1, a genetic disorder that has been mapped to the same region on chromosome 21.

REFERENCES

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2. Lee, H.S., et al. 2000. Human pyridoxal kinase: overexpression and properties of the recombinant enzyme. Mol. Cells 10: 452-459.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 179020. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Fang, X., et al. 2004. Expression of a novel pyridoxal kinase mRNA splice variant, PKH-T, in human testis. Asian J. Androl. 6: 83-91.
5. Bach, S., et al. 2005. Roscovitine targets, protein kinases and pyridoxal kinase. J. Biol. Chem. 280: 31208-31219.
6. Tang, L., et al. 2005. Crystal structure of pyridoxal kinase in complex with roscovitine and derivatives. J. Biol. Chem. 280: 31220-31229.
7. Hwang, I.K., et al. 2005. Age-dependent changes of pyridoxal phosphate synthesizing enzymes immunoreactivities and activities in the gerbil hippocampal CA1 region. Mech. Ageing Dev. 126: 1322-1330.

CHROMOSOMAL LOCATION

Genetic locus: PDXK (human) mapping to 21q22.3; Pdxk (mouse) mapping to 10 C1.

SOURCE

pyridoxal kinase (F-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 277-304 at the C-terminus of pyridoxal kinase 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.

Blocking peptide available for competition studies, sc-390082 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

pyridoxal kinase (F-12) is recommended for detection of pyridoxal kinase 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 pyridoxal kinase siRNA (h): sc-61423, pyridoxal kinase siRNA (m): sc-61424, pyridoxal kinase shRNA Plasmid (h): sc-61423-SH, pyridoxal kinase shRNA Plasmid (m): sc-61424-SH, pyridoxal kinase shRNA (h) Lentiviral Particles: sc-61423-V and pyridoxal kinase shRNA (m) Lentiviral Particles: sc-61424-V.

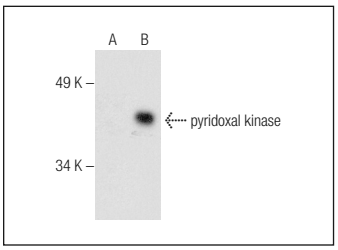
Molecular Weight of pyridoxal kinase: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, pyridoxal kinase (m): 293T Lysate: sc-122859 or mouse testis extract: sc-2405.

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



pyridoxal kinase (F-12): sc-390082. Western blot analysis of pyridoxal kinase expression in non-transfected: sc-117752 (**A**) and mouse pyridoxal kinase transfected: sc-122859 (**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.