

pyridoxal kinase (m): 293T Lysate: sc-122859

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

1. Hanna, M.C., Turner, A.J. and Kirkness, E.F. 1997. Human pyridoxal kinase. cDNA cloning, expression, and modulation by ligands of the benzodiazepine receptor. *J. Biol. Chem.* 272: 10756-10760.
2. Lee, H.S., Moon, B.J., Choi, S.Y. and Kwon, O.S. 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., Zhou, Z.M., Lu, L., Yin, L.L., Li, J.M., Zhen, Y., Wang, H. and Sha, J.H. 2004. Expression of a novel pyridoxal kinase mRNA splice variant, PKH-T, in human testis. *Asian J. Androl.* 6: 83-91.
5. Bach, S., Knockaert, M., Reinhardt, J., Lozach, O., Schmitt, S., Baratte, B., Koken, M., Coburn, S.P., Tang, L., Jiang, T., Liang, D.C., Galons, H., Dierick, J.F., Pinna, L.A., Meggio, F., Totzke, F., Schächtele, C., Lerman, A.S., Carnero, A., Wan, Y., Gray, N. and Meijer, L. 2005. Roscovitine targets, protein kinases and pyridoxal kinase. *J. Biol. Chem.* 280: 31208-31219.
6. Tang, L., Li, M.H., Cao, P., Wang, F., Chang, W.R., Bach, S., Reinhardt, J., Ferandin, Y., Galons, H., Wan, Y., Gray, N., Meijer, L., Jiang, T. and Liang, D.C. 2005. Crystal structure of pyridoxal kinase in complex with roscovitine and derivatives. *J. Biol. Chem.* 280: 31220-31229.
7. Hwang, I.K., Kim, D.W., Jung, J.Y., Yoo, K.Y., Cho, J.H., Kwon, O.S., Kang, T.C., Choi, S.Y., Kim, Y.S. and Won, M.H. 2005. Age-dependent changes of pyridoxal phosphate synthesizing enzymes immunoreactivities and activities in the gerbil hippocampal CA1 region. *Mech. Ageing Dev.* 126: 1322-1330.
8. Klugmann, M., Leichtlein, C.B., Symes, C.W., Klausner, B.C., Brooks, A.I., Young, D. and During, M.J. 2006. A novel role of circadian transcription factor DBP in hippocampal plasticity. *Mol. Cell. Neurosci.* 31: 303-314.

CHROMOSOMAL LOCATION

Genetic locus: Pdxk (mouse) mapping to 10 C1.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PRODUCT

pyridoxal kinase (m): 293T Lysate represents a lysate of mouse pyridoxal kinase transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

pyridoxal kinase (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive pyridoxal kinase antibodies. Recommended use: 10-20 µl per lane.

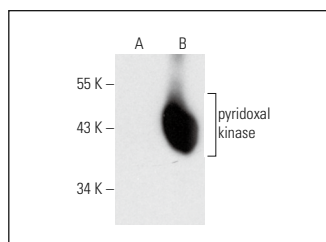
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

pyridoxal kinase (E-2): sc-365173 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse pyridoxal kinase expression in pyridoxal kinase transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

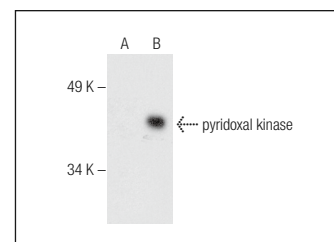
RECOMMENDED SUPPORT REAGENTS

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.

DATA



pyridoxal kinase (E-2): sc-365173. 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.



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.

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.