

PDK1 (h3): 293T Lysate: sc-171642

BACKGROUND

Mitochondrial pyruvate dehydrogenase (PDH) catalyzes the oxidative decarboxylation of pyruvate and plays a central role in the regulation of homeostasis of carbohydrate fuels in mammals. PDH activity is controlled by a phosphorylation/dephosphorylation cycle, phosphorylation leading to inactivation and dephosphorylation leading to reactivation of PDH. The phosphorylation of PDH is catalyzed by pyruvate dehydrogenase kinase (PDK), the activity of which is stimulated by the products of PDH catalysis. PDK1 consists of α and β subunits; the kinase activity resides in the α subunit. Three PDK isoenzymes have been identified in humans (PDK1, 2 and 3) and two have been identified in rodent (PDK1 and 2).

REFERENCES

1. Linn, T.C., et al. 1969. α -ketoacid dehydrogenase complexes. X. Regulation of the activity of the pyruvate dehydrogenase complex from beef kidney mitochondria by phosphorylation and dephosphorylation. *Proc. Natl. Acad. Sci. USA* 62: 234-241.
2. Hucho, F., et al. 1972. α -ketoacid dehydrogenase complexes. XVII. Kinetic and regulatory properties of pyruvate dehydrogenase kinase and pyruvate dehydrogenase phosphatase from bovine kidney and heart. *Arch. Biochem. Biophys.* 151: 328-340.
3. Cate, R.L., et al. 1978. A unifying mechanism for stimulation of mammalian pyruvate dehydrogenase(a) kinase by reduced nicotinamide adenine dinucleotide, dihydrolipamide, acetyl coenzyme A, or pyruvate. *J. Biol. Chem.* 253: 496-503.
4. Stepp, L.R., et al. 1983. Purification and properties of pyruvate dehydrogenase kinase from bovine kidney. *J. Biol. Chem.* 258: 9454-9458.
5. Popov, K.M., et al. 1991. Purification and comparative study of the kinases specific for branched chain α -ketoacid dehydrogenase and pyruvate dehydrogenase. *Protein Expr. Purif.* 2: 278-286.
6. Behal, R.H., et al. 1993. Regulation of the pyruvate dehydrogenase multi-enzyme complex. *Ann. Rev. Nutr.* 13: 497-520.
7. Gudi, R., et al. 1995. Diversity of the pyruvate dehydrogenase kinase gene family in humans. *J. Biol. Chem.* 270: 28989-28994.

CHROMOSOMAL LOCATION

Genetic locus: PDK1 (human) mapping to 2q31.1.

PRODUCT

PDK1 (h3): 293T Lysate represents a lysate of human PDK1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

PDK1 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive PDK1 antibodies.

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

RESEARCH USE

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