SANTA CRUZ BIOTECHNOLOGY, INC.

PDK3 (h2): 293 Lysate: sc-158838

BACKGROUND

Pyruvate dehydrogenase kinase family members (PDK1, 2, 3, 4) are serine kinases that catalyze phosphorylation of the E1α subunit of the pyruvate dehydrogenase complex (PDC). PDC activity is controlled through phosphorylation and dephosphorylation of the E1α subunit, which leads to inactivation and reactivation, respectively. PDK3 binding to a free lipoyl domain (L2) in dihydrolypoyl acetyltransferase (E2), which comprises the core of PDC, leads to a large increase in E1α phosphorylation. Upregulation of PDK isoenzymes occurs during starvation conditions, where acetyl-CoA is alternatively generated through fatty acid oxidation. PDKs contain five conserved regions and are mechanistically similar to bacterial His-kinases in that both require histidine residues for activity. In mammals, transcripts for PDK3 are most abundant in testis and moderately expressed in heart and skeletal muscle.

REFERENCES

1. Gudi, R., Bowker-Kinley, M.M., Kedishvili, N.Y., Zhao, Y. and Popov, K.M. 1995. Diversity of the pyruvate dehydrogenase kinase gene family in humans. J. Biol. Chem. 270: 28989-28994.
2. Bowker-Kinley, M.M., Davis, W.I., Wu, P., Harris, R.A. and Popov, K.M. 1998. Evidence for existence of tissue-specific regulation of the mammalian pyruvate dehydrogenase complex. Biochem. J. 329: 191-196.
3. Sugden, M.C., Lall, H.S., Harris, R.A. and Holness, M.J. 2000. Selective modification of the pyruvate dehydrogenase kinase isoform profile in skeletal muscle in hyperthyroidism: implications for the regulatory impact of glucose on fatty acid oxidation. J. Endocrinol. 167: 339-345.
4. Mooney, B.P., David, N.R., Thelen, J.J., Miernyk, J.A. and Randall, D.D. 2000. Histidine modifying agents abolish pyruvate dehydrogenase kinase activity. Biochem. Biophys. Res. Commun. 267: 500-503.

CHROMOSOMAL LOCATION

Genetic locus: PDK3 (human) mapping to Xp22.11.

PRODUCT

PDK3 (h2): 293 Lysate represents a lysate of human PDK3 transfected 293 cells and is provided as 100 µg protein in 200 µl 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.

APPLICATIONS

PDK3 (h2): 293 Lysate is suitable as a Western Blotting positive control for human reactive PDK3 antibodies. Recommended use: 10-20 µl per lane.

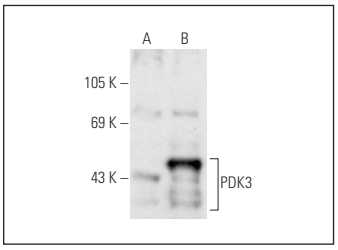
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

PDK3 (RR-2): sc-100535 is recommended as a positive control antibody for Western Blot analysis of enhanced human PDK3 expression in PDK3 transfected 293 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



PDK3 (RR-2): sc-100535. Western blot analysis of PDK3 expression in non-transfected: sc-110760 (**A**) and human PDK3 transfected: sc-158838 (**B**) 293 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.