

COX6c (h3): 293T Lysate: sc-177085

BACKGROUND

Cytochrome c oxidase subunit VIc (COX6c), also designated oxidative phosphorylation (OxPhos) complex IV, subunit VIc, is one of the structural subunits of the mitochondrial respiratory chain encoded by nuclear genes. Cytochrome c oxidase is a hetero-oligomeric enzyme composed of 13 subunits localized to the mitochondrial inner membrane and is the terminal enzyme complex of the electron transport chain. Complex IV catalyzes the reduction of molecular oxygen to water. The energy released is used to transport protons across the mitochondrial inner membrane. The resulting electrochemical gradient is necessary for the synthesis of ATP. Complex IV contains 13 polypeptides; COX1, COX2 and COX3 (MTCO1-3) make up the catalytic core and are encoded by mtDNA while subunits IV, Va, Vb, VIa, VIb, VIc, VIIa, VIIb, VIIc and VIII are nuclear-encoded. The nuclear-encoded subunits function in the regulation and assembly of the complex. The human COX6c protein shares 77% sequence identity with mouse COX6c. Studies indicate that the COX6c gene is upregulated in prostate cancer cells. The human COX6c gene maps to chromosome 8q22.2; a pseudogene, COX6CP1 has been found on chromosome 16p12.

REFERENCES

1. Kadenbach, B., Jarausch, J., Hartmann, R. and Merle, P. 1983. Separation of mammalian cytochrome c oxidase into 13 polypeptides by a sodium dodecyl sulfate-gel electrophoretic procedure. *Anal. Biochem.* 129: 517-521.
2. Capaldi, R.A., Malatesta, F. and Darley-Usmar, V.M. 1983. Structure of cytochrome c oxidase. *Biochim. Biophys. Acta* 726: 135-148.
3. Shoffner, J.M. and Wallace, D.C. 1995. Oxidative phosphorylation diseases. In Scriver, C.R., Beaudet, A.L., Sly, W.S. and Valle, D., eds., *The Metabolic and Molecular Basis of Inherited Disease*. New York: McGraw-Hill, 1535-1609.
4. Hofmann, S., Lichtner, P., Schuffenhauer, S., Gerbitz, K.D. and Meitinger, T. 1999. Assignment of the human genes coding for cytochrome c oxidase subunits Va (COX5a), VIc (COX6c) and VIIc (COX7c) to chromosome bands 15q25, 8q22 → q23 and 5q14 and of three pseudogenes (COX5AP1, COX6CP1, COX7CP1) to 14q22, 16p12 and 13q14 → q21 by FISH and radiation hybrid mapping. *Cytogenet. Cell Genet.* 83: 226-227.
5. Kurose, K., Mine, N., Doi, D., Ota, Y., Yoneyama, K., Konishi, H., Araki, T. and Emi, M. 2000. Novel gene fusion of COX6c at 8q22-23 to HMGIC at 12q15 in a uterine leiomyoma. *Genes Chromosomes Cancer* 27: 303-307.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 516030. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Barrientos, A., Barros, M. H., Valnot, I., Rötig, A., Rustin, P. and Tzagoloff, A. 2002. Cytochrome oxidase in health and disease. *Gene* 286: 53-63.
8. Sirchia, R. and Luparello, C. 2007. Mid-region parathyroid hormone-related protein (PTHrP) and gene expression of MDA-MB231 breast cancer cells. *Biol. Chem.* 388: 457-465.

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.

CHROMOSOMAL LOCATION

Genetic locus: COX6C (human) mapping to 8q22.2.

PRODUCT

COX6c (h3): 293T Lysate represents a lysate of human COX6c transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

COX6c (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive COX6c 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.

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.