

COX6c (3G5): sc-65240

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

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- Capaldi, R.A., Malatesta, F. and Darley-Usmar, V.M. 1983. Structure of cytochrome c oxidase. *Biochim. Biophys. Acta* 726: 135-148.
- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

COX6c (3G5) is a mouse monoclonal antibody raised against cytochrome-c oxidase purified from cow heart.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

COX6c (3G5) is recommended for detection of COX6c of human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for COX6c siRNA (h): sc-72172, COX6c shRNA Plasmid (h): sc-72172-SH and COX6c shRNA (h) Lentiviral Particles: sc-72172-V.

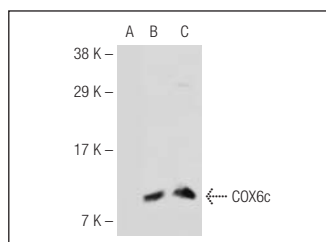
Molecular Weight of COX6c: 9 kDa.

Positive Controls: COX6c (h3): 293T Lysate: sc-177085, IMR-32 cell lysate: sc-2409 or human heart tissue extract.

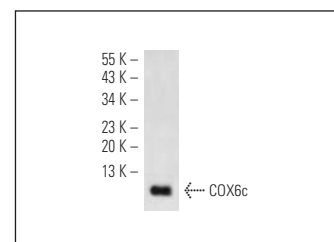
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



COX6c (3G5): sc-65240. Western blot analysis of COX6c expression in non-transfected 293T: sc-117752 (A), human COX6c transfected 293T: sc-177085 (B) and IMR-32 (C) whole cell lysates.



COX6c (3G5): sc-65240. Western blot analysis of COX6c expression in human heart tissue extract.

RESEARCH USE

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