SANTA CRUZ BIOTECHNOLOGY, INC.

cytochrome c1 (D-10): sc-514443

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cytochrome c1 is a component of the ubiquinol-cytochrome c reductase complex, which is a respiratory chain that generates an electrochemical potential, coupled to ATP synthesis. Specifically, cytochrome c transfers electrons from the cytochrome bc1 complex to cytochrome c oxidase by transiently binding to the complex. The bc1 complex contains 11 subunits: 3 respiratory subunits (cytochrome b, cytochrome c1 and Rieske/UQCRFS1), 2 core proteins (UQCRC1/QCR1 and UQCRC2/QCR2) and 6 low-molecular weight proteins (UQCRH/QCR6, UQCRB/QCR7, UQCRQ/QCR8, UQCR10/QCR9, UQCR11/QCR10 and a cleavage product of Rieske/UQCRFS1). Cytochrome c1 binds one heme per subunit as a result of a mutation-induced collapse of the diheme cytochrome structure. The cytochrome c1 gene is thought to be regulated by E2F and Sp1 transcription factors.

REFERENCES

1. Nishikimi, M., et al. 1987. Isolation of a cDNA clone for human cytochrome c1 from a λ gt11 expression library. Biochem. Biophys. Res. Commun. 145: 34-39.
2. Suzuki, H., et al. 1990. Common protein-binding sites in the 5'-flanking regions of human genes for cytochrome c1 and ubiquinone-binding protein. J. Biol. Chem. 265: 8159-8163.
3. Duncan, A.M., et al. 1994. Assignment of the gene for the cytochrome c1 subunit of the mitochondrial cytochrome bc1 complex (CYC1) to human chromosome 8q24.3. Genomics 19: 400-401.
4. Li, R., et al. 1996. Expression of the human cytochrome c1 gene is controlled through multiple Sp1-binding sites and an initiator region. Eur. J. Biochem. 241: 649-656.
5. Zhang, Z., et al. 1998. Electron transfer by domain movement in cytochrome bc1. Nature 392: 677-684.
6. Luciakova, K., et al. 2000. Activity of the human cytochrome c1 promoter is modulated by E2F. Biochem. J. 351: 251-256.
7. Baymann, F., et al. 2004. Mitochondrial cytochrome c1 is a collapsed di-heme cytochrome. Proc. Natl. Acad. Sci. USA 101: 17737-17740.
8. Nyola, A. and Hunte, C. 2008. A structural analysis of the transient interaction between the cytochrome bc1 complex and its substrate cytochrome c. Biochem. Soc. Trans. 36: 981-985.

CHROMOSOMAL LOCATION

Genetic locus: CYC1 (human) mapping to 8q24.3; Cyc1 (mouse) mapping to 15 D3.

SOURCE

cytochrome c1 (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 145-173 within an internal region of cytochrome c1 of human origin.

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 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514443 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

cytochrome c1 (D-10) is recommended for detection of cytochrome c1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for cytochrome c1 siRNA (h): sc-77573, cytochrome c1 siRNA (m): sc-142761, cytochrome c1 shRNA Plasmid (h): sc-77573-SH, cytochrome c1 shRNA Plasmid (m): sc-142761-SH, cytochrome c1 shRNA (h) Lentiviral Particles: sc-77573-V and cytochrome c1 shRNA (m) Lentiviral Particles: sc-142761-V.

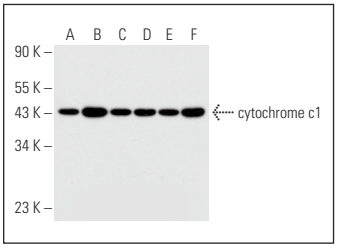
Molecular Weight of cytochrome c1: 35 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, A-431 whole cell lysate: sc-2201 or HUV-EC-C whole cell lysate: sc-364180.

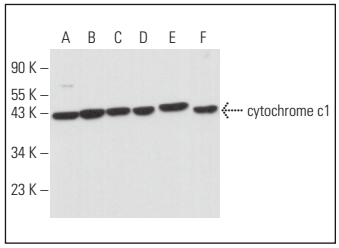
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



cytochrome c1 (D-10): sc-514443. Western blot analysis of cytochrome c1 expression in A-431 (**A**), HUV-EC-C (**B**), Jurkat (**C**), MCF7 (**D**), HeLa (**E**) and U-251-MG (**F**) whole cell lysates.



cytochrome c1 (D-10): sc-514443. Western blot analysis of cytochrome c1 expression in A-431 (**A**), RT-4 (**B**), NCI-H1299 (**C**), Neuro-2A (**D**) and L6 (**E**) whole cell lysates and mouse brain tissue extract (**F**).

RESEARCH USE

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