



## Product Information Sheet

### Polyclonal Anti- Cytochrome c oxidase subunit I, **CO1**

**Catalogue No.** PA1317

**Lot No.** 09G01

**Ig type** rabbit IgG

**Size** 100µg/vial

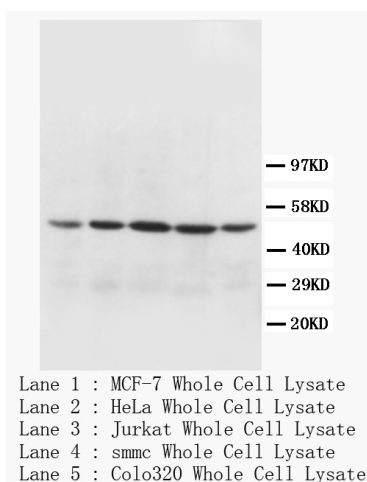
**Specificity**

Human.

No cross reactivity with other proteins.

**Recommended application**

Western blot



**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminal of human CO1, identical to the related rat and mouse sequence.

**Purity**

Immunogen affinity purified.

**Application**

	Concen- tration	Tested Species	Concluded Species	Antigen Retrieval
WB	1µg/ml	Hu	-	-
IHC-P	-	-	-	-
IHC-F	-	-	-	-
ICC	-	-	-	-

*Other applications have not been tested.*

*Optimal dilutions should be determined by end user.*

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Thimerosal, 0.05mg NaN<sub>3</sub>.

**Reconstitution**

0.2ml of distilled water will yield a concentration of 500µg/ml.

**Storage**

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for longer time.

To reorder contact us at:

**Antagene, Inc.**

**Toll Free: 1(866)964-2589**

**email: Info@antageneinc.com**

**FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC AND CLINICAL USE.**

## BACKGROUND

Cytochrome c oxidase subunit I (CO1 or MTCO1) is 1 of 3 mitochondrial DNA (mtDNA) encoded subunits (MTCO1, MTCO2, MTCO3) of respiratory Complex IV. Complex IV is located within the mitochondrial inner membrane and is the third and final enzyme of the electron transport chain of mitochondrial oxidative phosphorylation. It is composed of 13 polypeptides. Subunits I, II, and III (MTCO1, MTCO2, MTCO3) are encoded by mtDNA while subunits IV, Va, Vb, VIa, VIb, VIc, VIIa, VIIb, VIIc, and VIII are nuclear encoded.<sup>1,2</sup> The cytochrome c oxidase family of enzymes have 4 redox centers, 2 hemes and 2 copper centers. In mitochondrial Complex IV, the 2 hemes are a and a<sub>3</sub> and the 2 coppers are CuA and CuB. The 2 hemes and CuB are bound to subunit I.<sup>3</sup> Acin-Perez et al. (2003) identified a cell line containing single and double missense mutations in the cytochrome c oxidase (COX) subunit I gene of mouse mitochondrial DNA. And they hypothesized that deleterious mutations can arise and become predominant; cultured cells can maintain several mtDNA haplotypes at stable frequencies; the respiratory chain has little spare COX capacity; and that the size of a cavity in the vicinity of val421 in MTCO1I of animal COX may affect the function of the enzyme.<sup>4</sup>

## REFERENCE

1. Kadenbach, B.; Jarausch, J.; Hartmann, R.; Merle, P. : Separation of mammalian cytochrome c oxidase into 13 polypeptides by a sodium dodecyl sulfate-gel electrophoretic procedure. *Anal. Biochem.* 129: 517-521, 1983.
2. Shoffner, J. M.; Wallace, D. C. : Oxidative phosphorylation diseases. In: Scriver, C. R.; Beaudet, A. L.; Sly, W. S.; Valle, D. (eds.) : *The Metabolic and Molecular Bases of Inherited Disease*. Vol. 1. New York: McGraw-Hill (7th ed.) 1995. Pp. 1535-1609.
3. Hosler, J. P.; Ferguson-Miller, S.; Calhoun, M. W.; Thomas, J. W.; Hill, J.; Lemieux, L.; Ma, J.; Georgiou, C.; Fetter, J.; Shapleigh, J.; Tecklenburg, M. M. J.; Babcock, G. T.; Gennis, R. B. : Insight into the active-site structure and function of cytochrome oxidase by analysis of site-directed mutants of bacterial cytochrome aa<sub>3</sub> and cytochrome bo. *J. Bioenerg. Biomembr.* 25: 121-136, 1993.
4. Acin-Perez, R.; Bayona-Bafaluy, M. P.; Bueno, M.; Machicado, C.; Fernandez-Silva, P.; Perez-Martos, A.; Montoya, J.; Lopez-Perez, M. J.; Sancho, J.; Enriquez, J. A. : An intragenic suppressor in the cytochrome c oxidase I gene of mouse mitochondrial DNA. *Hum. Molec. Genet.* 12: 329-339, 2003.