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COQ3 Rabbit pAb

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Catalog # AP55368

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q9NZJ6
Predicted	Human, Mouse, Rat, Dog, Pig, Horse, Rabbit
Host	Rabbit
Clonality	Polyclonal
Calculated MW	41054
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human COQ3
Epitope Specificity	151-250/369
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Mitochondrion matrix.
SIMILARITY	Belongs to the methyltransferase superfamily. UbiG/COQ3 family.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Ubiquinone, also known as coenzyme Q, or Q, is a critical component of the electron transport pathways of both eukaryotes and prokaryotes (Jonassen and Clarke, 2000 [PubMed 10777520]). This lipid consists of a hydrophobic isoprenoid tail and a quinone head group. The tail varies in length depending on the organism, but its purpose is to anchor coenzyme Q to the membrane. The quinone head group is responsible for the activity of coenzyme Q in the respiratory chain. The S. cerevisiae COQ3 gene encodes an O-methyltransferase required for 2 steps in the biosynthetic pathway of coenzyme Q. This enzyme methylates an early coenzyme Q intermediate, 3,4-dihydroxy-5-polyprenylbenzoic acid, as well as the final intermediate in the pathway, converting demethyl-ubiquinone to coenzyme Q. The COQ3 gene product is also capable of methylating the distinct prokaryotic early intermediate 2-hydroxy-6-polyprenyl phenol.[supplied by OMIM, Mar 2008]

Additional Information

Gene ID	51805
Other Names	Ubiquinone biosynthesis O-methyltransferase, mitochondrial {ECO:0000255|HAMAP-Rule:MF_03190}, 3-demethylubiquinol 3-O-methyltransferase {ECO:0000255|HAMAP-Rule:MF_03190}, 2.1.1.64 {ECO:0000255|HAMAP-Rule:MF_03190}, 3-demethylubiquinone 3-O-methyltransferase {ECO:0000255|HAMAP-Rule:MF_03190}, 2.1.1.- {ECO:0000255|HAMAP-Rule:MF_03190, ECO:0000305|PubMed:38425362}, Polyprenyldihydroxybenzoate methyltransferase

	{ECO:0000255|HAMAP-Rule:MF_03190}, 2.1.1.114 {ECO:0000255|HAMAP-Rule:MF_03190, ECO:0000269|PubMed:10777520, ECO:0000305|PubMed:38425362}, COQ3 {ECO:0000255|HAMAP-Rule:MF_03190, ECO:0000303|PubMed:38425362}
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	COQ3 {ECO:0000255|HAMAP-Rule:MF_03190, ECO:0000303|PubMed:38425362}
Function	O-methyltransferase required for two non-consecutive steps during ubiquinone biosynthesis (By similarity) (PubMed:10777520, PubMed:38425362). Catalyzes the 2 O-methylation of 3,4-dihydroxy-5-(all-trans-decaprenyl)benzoic acid into 4-hydroxy-3-methoxy-5-(all-trans-decaprenyl)benzoic acid (By similarity) (PubMed:10777520, PubMed:38425362). Also catalyzes the last step of ubiquinone biosynthesis by mediating methylation of 3-demethylubiquinone into ubiquinone (By similarity) (PubMed:38425362). Also able to mediate the methylation of 3-demethylubiquinol-10 into ubiquinol-10 (By similarity) (PubMed:10777520).
Cellular Location	Mitochondrion inner membrane {ECO:0000255|HAMAP- Rule:MF_03190, ECO:0000269|PubMed:27499296}; Peripheral membrane protein {ECO:0000255|HAMAP-Rule:MF_03190}; Matrix side {ECO:0000255|HAMAP-Rule:MF_03190}

Background

Ubiquinone, also known as coenzyme Q, or Q, is a critical component of the electron transport pathways of both eukaryotes and prokaryotes (Jonassen and Clarke, 2000 [PubMed 10777520]). This lipid consists of a hydrophobic isoprenoid tail and a quinone head group. The tail varies in length depending on the organism, but its purpose is to anchor coenzyme Q to the membrane. The quinone head group is responsible for the activity of coenzyme Q in the respiratory chain. The S. cerevisiae COQ3 gene encodes an O-methyltransferase required for 2 steps in the biosynthetic pathway of coenzyme Q. This enzyme methylates an early coenzyme Q intermediate, 3,4-dihydroxy-5-polyprenylbenzoic acid, as well as the final intermediate in the pathway, converting demethyl-ubiquinone to coenzyme Q. The COQ3 gene product is also capable of methylating the distinct prokaryotic early intermediate 2-hydroxy-6-polyprenyl phenol.[supplied by OMIM, Mar 2008]