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COX7A2L Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP12338c

Product Information

Application	WB, IHC-P, E
Primary Accession	O14548
Other Accession	NP_004709.2
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB32254
Calculated MW	12615
Antigen Region	37-65

Additional Information

Gene ID	9167
Other Names	Cytochrome c oxidase subunit 7A-related protein, mitochondrial, COX7a-related protein, Cytochrome c oxidase subunit VIIa-related protein, EB1, COX7A2L, COX7AR, COX7RP
Target/Specificity	This COX7A2L antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 37-65 amino acids from the Central region of human COX7A2L.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	COX7A2L Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	COX7A2L {ECO:0000303|PubMed:27545886, ECO:0000312|HGNC:HGNC:2289}
Function	Assembly factor that mediates the formation of some mitochondrial

respiratory supercomplexes (respirasomes), thereby promoting oxidative phosphorylation and energy metabolism (PubMed:27545886, PubMed:30428348, PubMed:33727070, PubMed:36198313). Acts as a molecular adapter that associates with both mitochondrial respiratory complexes III (CIII) and IV (CIV), promoting their association (PubMed:27545886, PubMed:36198313). Mediates the formation of various mitochondrial respiratory supercomplexes, such as MCIII(2)IV(2), composed of two CIII and two CIV, and the CS-respirasome (MCI(1)III(2)IV(2)), composed of one CI, two CIII and two CIV (PubMed:27545886, PubMed:30428348). Not involved in the formation of the canonical respirasome (MCI(1)III(2)IV(1)), composed of one CI, two CIII and one CIV (By similarity). The formation of different respirasomes is important for cell adaptation to oxygen conditions and prevent metabolic exhaustion: supercomplexes mediated by COX7A2L/SCAF1 are required to maintain oxidative phosphorylation upon low oxygen conditions and promote metabolic rewiring toward glycolysis (PubMed:36198313).

Cellular Location Mitochondrion inner membrane; Single-pass membrane protein {ECO:0000250|UniProtKB:Q99KD6}

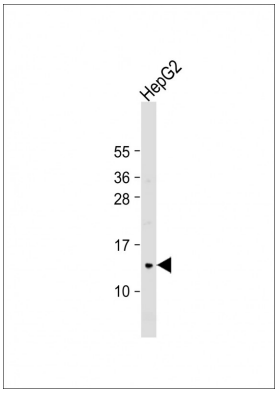
Background

Cytochrome c oxidase (COX), the terminal component of the mitochondrial respiratory chain, catalyzes the electron transfer from reduced cytochrome c to oxygen. This component is a heteromeric complex consisting of 3 catalytic subunits encoded by mitochondrial genes and multiple structural subunits encoded by nuclear genes. The mitochondrially-encoded subunits function in electron transfer, and the nuclear-encoded subunits may function in the regulation and assembly of the complex. This nuclear gene encodes a protein similar to polypeptides 1 and 2 of subunit VIIa in the C-terminal region, and also highly similar to the mouse Sig81 protein sequence. This gene is expressed in all tissues, and upregulated in a breast cancer cell line after estrogen treatment. It is possible that this gene represents a regulatory subunit of COX and mediates the higher level of energy production in target cells by estrogen.

References

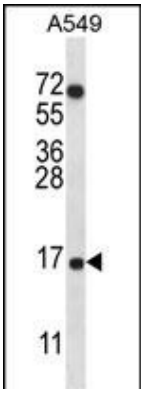
Fornuskova, D., et al. Biochem. J. 428(3):363-374(2010)
Wheeler, H.E., et al. PLoS Genet. 5 (10), E1000685 (2009) :
Wang, L., et al. Cancer Epidemiol. Biomarkers Prev. 17(12):3558-3566(2008)
Schmidt, T.R., et al. J. Mol. Evol. 57(2):222-228(2003)
Lee, N., et al. Am. J. Hum. Genet. 68(2):397-409(2001)

Images

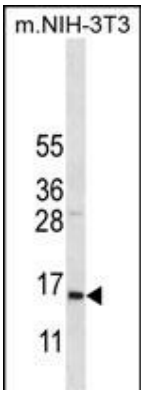


Anti-COX7A2L Antibody (Center) at 1:1000 dilution + HepG2 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 13 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

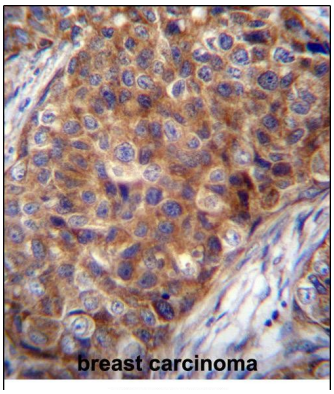
COX7A2L Antibody (Center) (Cat. #AP12338c) western



blot analysis in A549 cell line lysates (35ug/lane).This demonstrates the COX7A2L antibody detected the COX7A2L protein (arrow).



COX7A2L Antibody (Center) (Cat. #AP12338c) western blot analysis in mouse NIH-3T3 cell line lysates (35ug/lane).This demonstrates the COX7A2L antibody detected the COX7A2L protein (arrow).



COX7A2L Antibody (Center) (Cat. #AP12338c)immunohistochemistry analysis in formalin fixed and paraffin embedded human breast carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of COX7A2L Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.