abcam

ab317270

Anti-Total OXPHOS Antibody Cocktail antibody [RM1134]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1134
Purification technique	Affinity purification Protein A
Specificity	This antibody cocktail does cross-react with NDUFB8, SDHB, UQCRC2 and ATP5A from mouse and rat samples.
Concentration	0.492 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human

Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information NDUFB8

Function	Accessory subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase (Complex I), that is believed not to be involved in catalysis. Complex I functions in the transfer of electrons from NADH to the respiratory chain. The immediate electron acceptor for the enzyme is believed to be ubiquinone.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Total OXPHOS Antibody Cocktail targets key proteins involved in oxidative phosphorylation (OXPHOS) a critical process for ATP production in mitochondria. It includes antibodies against five complexes of the electron transport chain often known as complexes I-V. These complexes are expressed in mitochondria within almost all eukaryotic cells especially high-energy demanding tissues like muscle and brain. The molecular weight of these complex components varies but each plays an important role in transferring electrons during ATP synthesis.
Biological function summary	These complexes form the core of the electron transport chain an assembly of protein complexes embedded in the mitochondrial inner membrane. OXPHOS as part of this chain is important for cellular respiration and metabolic energy production. Proteins within these complexes work together to generate a proton gradient that drives ATP synthase activity. The efficient function of this system supports high demands of cellular energy and is essential for maintaining metabolic homeostasis.
Pathways	The Total OXPHOS Antibody Cocktail components integrate into the oxidative phosphorylation and citric acid cycle pathways. Energy transduction from NADH

	and FADH2 through the electron transport chain connects OXPHOS with these pathways. Cytochrome c an important protein acts as an electron shuttle between complex III and complex IV within this process highlighting its importance for proper function and energy production.
Associated diseases and disorders	Irregularities in OXPHOS function link to disorders such as mitochondrial myopathy and Leber's hereditary optic neuropathy. These conditions often result from mutations impacting the electron transport chain proteins disrupting ATP production and leading to energy deficits in cells. For instance mutations in NADH:ubiquinone oxidoreductase (complex I) contribute to disease development emphasizing the need for understanding these targets to develop potential therapeutic strategies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

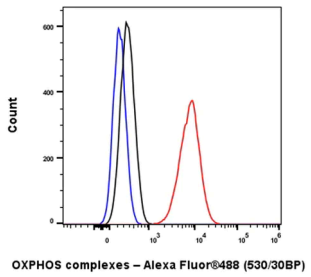
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

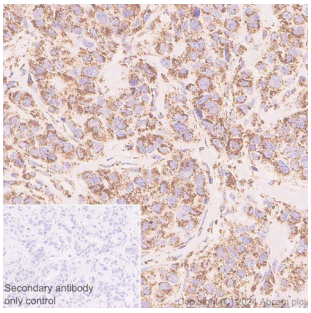
7 product images



Flow Cytometry (Intracellular) - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cells labelling Total OXPHOS Antibody Cocktail with ab317270 at 1/500 dilution (0.1ug)/Red (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

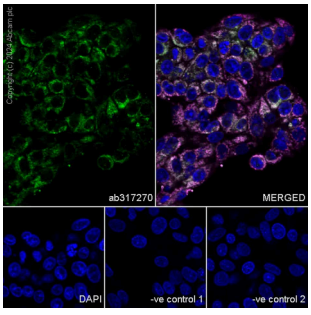
Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labeling Total OXPHOS Antibody Cocktail with ab317270 at 1/2000 (0.246 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human breast carcinoma. The section was incubated with ab317270 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



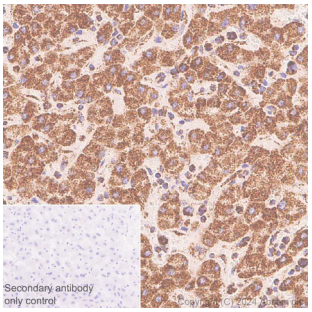
Immunocytochemistry/ Immunofluorescence - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cells labelling Total OXPHOS Antibody Cocktail with ab317270 at 1/500 (0.984 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/mL dilution (Green).

Confocal image showing mitochondrial staining in HepG2 cell line (shown in green). The counter stain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue).
Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

anti-COX IV mouse monoclonal antibody - Mitochondrial Marker was used to counterstain tubulin at 1/1000 1ug/ml dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

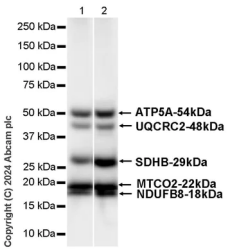
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Total OXPHOS Antibody Cocktail with ab317270 at 1/2000 (0.246 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human liver. The section was incubated with ab317270 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Western blot - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

Total OXPHOS Western blot staining using rabbit Anti-Total OXPHOS antibody

All lanes:
Western blot - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270) at 1/1000 dilution

Lane 1:
Human cerebellum tissue lysate at 20 µg

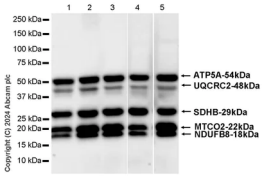
Lane 2:
Human kidney tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 18 kDa, 22 kDa, 29 kDa, 48 kDa, 54 kDa

Exposure time: 1s



Western blot - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

Total OXPHOS Western blot staining using rabbit Anti-Total OXPHOS antibody

Exposure time: Lanes 1-3: 15 seconds; Lanes 4-5: 37 seconds

All lanes:
Western blot - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270) at 1/1000 dilution

Lane 1:

HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HepG2 (human hepatocellar carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
HEK-293 (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

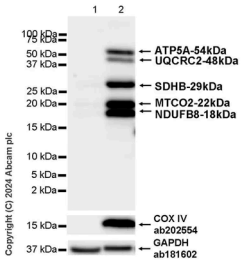
Lane 4:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 5:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 18 kDa, 22 kDa, 29 kDa, 48 kDa, 54 kDa



Western blot - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270)

Total OXPHOS Western blot staining using rabbit Anti-Total OXPHOS antibody

In Western blot, Anti-Alpha-synuclein antibody [EPR20535] (ab212184) staining at 1/1000 dilution.

All lanes:
Western blot - Anti-Total OXPHOS Antibody Cocktail antibody [RM1134] (ab317270) at 1/1000 dilution

Lane 1:
MCF7 non-mitochondrial fraction at 20 µg

Lane 2:
MCF7 mitochondria fraction at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 18 kDa, 22 kDa, 29 kDa, 48 kDa, 54 kDa, 36 kDa, 17 kDa

Exposure time: 8s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.