abcam

# ab181021

# Anti-NDUFAB1 antibody [EPR6725]

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR6725 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.839 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 - 1/250 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

## IP

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/60 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/10000 - 1/50000 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/160 |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information NDUFAB1

| | |
|---|---|
| **Function** | Carrier of the growing fatty acid chain in fatty acid biosynthesis (By similarity) (PubMed:27626371). Accessory and non-catalytic subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase (Complex I), which functions in the transfer of electrons from NADH to the respiratory chain (PubMed:27626371). Accessory protein, of the core iron-sulfur cluster (ISC) assembly complex, that regulates, in association with LYRM4, the stability and the cysteine desulfurase activity of NFS1 and participates in the [2Fe-2S] clusters assembly on the scaffolding protein ISCU (PubMed:31664822). The core iron-sulfur cluster (ISC) assembly complex is involved in the de novo synthesis of a [2Fe-2S] cluster, the first step of the mitochondrial iron-sulfur protein biogenesis. This process is initiated by the cysteine desulfurase complex (NFS1:LYRM4:NDUFAB1) that produces persulfide which is delivered on the scaffold protein ISCU in a FXN-dependent manner. Then this complex is stabilized by FDX2 which provides reducing equivalents to accomplish the [2Fe-2S] cluster assembly. Finally, the [2Fe-2S] cluster is transferred from ISCU to chaperone proteins, including HSCB, HSPA9 and GLRX5 (By similarity). |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **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

**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.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | NDUFAB1 also known as mitochondrial acyl-carrier protein is a small protein with a mass of approximately 16 kDa. It plays a role in the mitochondrial fatty acid synthesis pathway and the assembly of the electron transport chain complexes. It is ubiquitously expressed in various tissues indicating a significant role in cellular metabolism. The protein anchors to the matrix side of the inner mitochondrial membrane where it performs its mechanical functions. |
| **Biological function summary** | NDUFAB1 is a component of the mitochondrial respiratory chain specifically part of complex I also known as NADH:ubiquinone oxidoreductase. The protein binds to acyl groups and facilitates their transfer within mitochondrial processes. This function is important for the maintenance and regulation of energy production in cells. Its involvement in the synthesis of lipoic acid an essential cofactor for several mitochondrial enzyme complexes further highlights its biological significance. |
| **Pathways** | The complex I of which NDUFAB1 is a part participates in the oxidative phosphorylation pathway. This pathway is major in adenosine triphosphate (ATP) production which is critical for energy metabolism. NDUFAB1 closely interacts with NADH and other subunits within the complex to relay electrons through the mitochondrial membrane. This interaction is related to other proteins such as NDUFS6 and NDUFS7 contextualizing NDUFAB1 within a network integral for cellular respiration. |
| **Associated diseases and disorders** | Research shows that mutations or dysregulation of NDUFAB1 can be associated with mitochondrial diseases such as Leigh syndrome a severe neurological disorder. The dysfunction of complex I in these diseases affects energy production which impacts high-energy demanding tissues. NDUFS1 is another protein within |

complex I that when mutated can also lead to similar disorders indicating that both proteins play roles in the development of mitochondrial dysfunctions.

## 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**

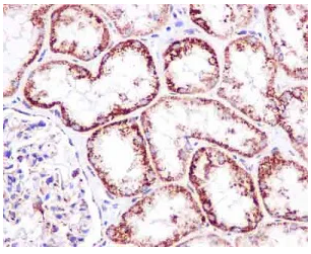
We do not recommend this combination. It is not covered by our product promise.

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.

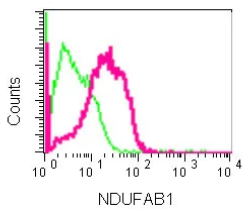
## 5 product images



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NDUFAB1 antibody [EPR6725] (ab181021)

NDUFAB1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NDUFAB1 antibody

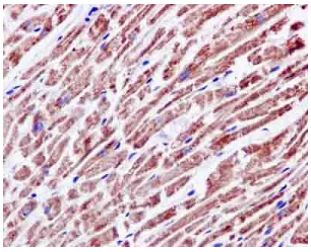
Immunohistochemical analysis of paraffin embedded Human kidney tissue sections labeling NDUFAB1 using ab181021 at a 1/250 dilution. A ready to use HRP Polymer for Rabbit IgG was used as the secondary. Hematoxylin counterstain.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




## Flow Cytometry (Intracellular) - Anti-NDUFAB1 antibody [EPR6725] (ab181021)

NDUFAB1 Flow Cytometry (Intracellular) staining using rabbit Anti-NDUFAB1 antibody

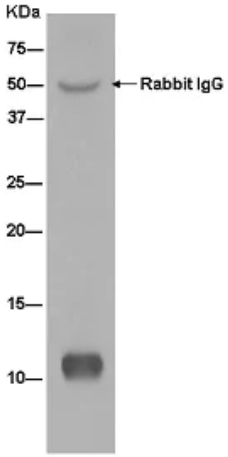
Intracellular Flow Cytometry analysis of HepG2 cells labeling NDUFAB1 using ab181021 at a 1/160 dilution (pink). Goat anti rabbit IgG (FITC) used as the secondary at a 1/150 dilution. Isotype control Rabbit monoclonal IgG (green). Cells were fixed in 2% paraformaldehyde.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NDUFAB1 antibody [EPR6725] (ab181021)

NDUFAB1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NDUFAB1 antibody

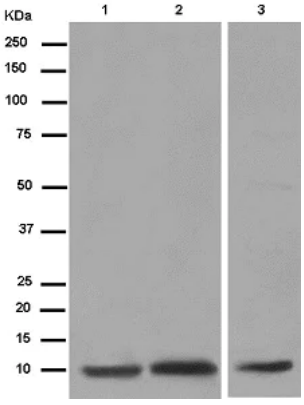
Immunohistochemical analysis of paraffin embedded Human heart tissue sections labeling NDUFAB1 using ab181021 at a 1/250 dilution. A ready to use HRP Polymer for Rabbit IgG was used as the secondary. Hematoxylin counterstain.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




## Immunoprecipitation - Anti-NDUFAB1 antibody [EPR6725] (ab181021)

Lysate from HepG2 cells was immunoprecipitated with ab181021 at a 1/60 dilution. A Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at a 1/1000 dilution for the secondary. Blocking/ Dilution buffer: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-NDUFAB1 antibody [EPR6725] (ab181021)

Predicted band size: 17 kDa




## Western blot - Anti-NDUFAB1 antibody [EPR6725] (ab181021)

NDUFAB1 Western blot staining using rabbit Anti-NDUFAB1 antibody

Blocking/ Dilution buffer: 5% NFDM /TBST.
All lanes:
Western blot - Anti-NDUFAB1 antibody [EPR6725] (ab181021) at 1/10000 dilution

Lane 1:
Molt-4 cell lysate at 20 µg

Lane 2:
A431 cell lysate at 20 µg

Lane 3:
HepG2 cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 17 kDa

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