

Product datasheet

Anti-Frataxin antibody [EPR21840] **ab219414**

Recombinant **RabMAb**

2 References [13 Images](#)

Overview

Product name	Anti-Frataxin antibody [EPR21840]
Description	Rabbit monoclonal [EPR21840] to Frataxin
Host species	Rabbit
Specificity	We suggest optimizing experimental protocols (increasing lysate amount, using lower dilution or higher sensitivity ECL substrate) to improve results.
Tested applications	Suitable for: WB, IHC-P, IP, ICC/IF, Flow Cyt (Intra)
Species reactivity	Reacts with: Mouse, Rat, Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HCT 116, Neuro-2a, C6, PC-12, human liver and human hippocampus tissue lysates, HCT116, Huh7 and SH-SY5Y whole cell lysates. IHC-P: Human testis and liver tissue; Mouse and rat kidney tissue. ICC/IF: HCT 116 and Neuro-2a cells. Flow Cyt (intra): HCT 116 cells. IP: HCT 116 and Neuro-2a cells.
General notes	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production <p>For more information see here.</p> <p>Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	<p>pH: 7.2</p> <p>Preservative: 0.01% Sodium azide</p> <p>Constituents: PBS, 0.05% BSA, 40% Glycerol (glycerin, glycerine)</p>
Purity	Protein A purified

Clonality	Monoclonal
Clone number	EPR21840
Isotype	IgG

Applications

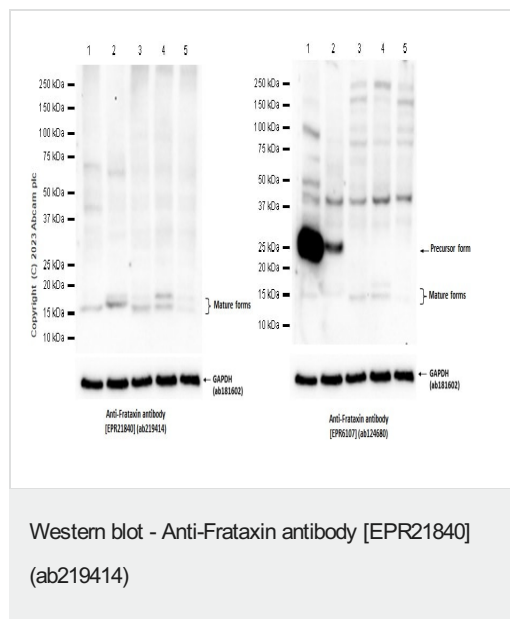
The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab219414 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 14 kDa (predicted molecular weight: 23 kDa).
IHC-P		1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
IP		1/30.
ICC/IF		1/50.
Flow Cyt (Intra)		1/60.

Target

Function	Promotes the biosynthesis of heme and assembly and repair of iron-sulfur clusters by delivering Fe(2+) to proteins involved in these pathways. May play a role in the protection against iron-catalyzed oxidative stress through its ability to catalyze the oxidation of Fe(2+) to Fe(3+); the oligomeric form but not the monomeric form has in vitro ferroxidase activity. May be able to store large amounts of iron in the form of a ferrihydrite mineral by oligomerization; however, the physiological relevance is unsure as reports are conflicting and the function has only been shown using heterologous overexpression systems. Modulates the RNA-binding activity of ACO1.
Tissue specificity	Expressed in the heart, peripheral blood lymphocytes and dermal fibroblasts.
Involvement in disease	Defects in FXN are the cause of Friedreich ataxia (FRDA) [MIM:229300]. FRDA is an autosomal recessive, progressive degenerative disease characterized by neurodegeneration and cardiomyopathy it is the most common inherited ataxia. The disorder is usually manifest before adolescence and is generally characterized by incoordination of limb movements, dysarthria, nystagmus, diminished or absent tendon reflexes, Babinski sign, impairment of position and vibratory senses, scoliosis, pes cavus, and hammer toe. In most patients, FRDA is due to GAA triplet repeat expansions in the first intron of the frataxin gene. But in some cases the disease is due to mutations in the coding region.
Sequence similarities	Belongs to the frataxin family.
Post-translational modifications	Processed in two steps by mitochondrial processing peptidase (MPP). MPP first cleaves the precursor to intermediate form and subsequently converts the intermediate to yield frataxin mature form (frataxin(81-210)) which is the predominant form. The additional forms, frataxin(56-210) and frataxin(78-210), seem to be produced when the normal maturation process is impaired; their physiological relevance is unsure.

Images



All lanes : ab219414 and **ab124680** at 1/1000 dilution

Lane 1 : Human liver tissue lysate

Lane 2 : Human hippocampus tissue lysate

Lane 3 : HCT116 (human colorectal carcinoma epithelial cell) whole cell lysate

Lane 4 : Huh7 (human hepatocellular carcinoma epithelial cell) whole cell lysate

Lane 5 : SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

Predicted band size: 23 kDa

Observed band size: 14,17 kDa

Exposure time: 60 seconds

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM/TBST.

This blot was developed using a high sensitivity ECL substrate.

ab219414 is not suitable for testing precursor form, we recommend **ab124680** as an alternative for precursor form testing.

For different forms of frataxin, you can refer to PMID: 17468497, PMID: 31279523, PMID: 17468497 etc.

ab181602 was used as a loading control.



Western blot - Anti-Frataxin antibody [EPR21840]
(ab219414)

Anti-Frataxin antibody [EPR21840] (ab219414) at 1/1000 dilution +
His tagged Human FXN recombinant protein (aa 82-210), 10ng

Secondary

Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

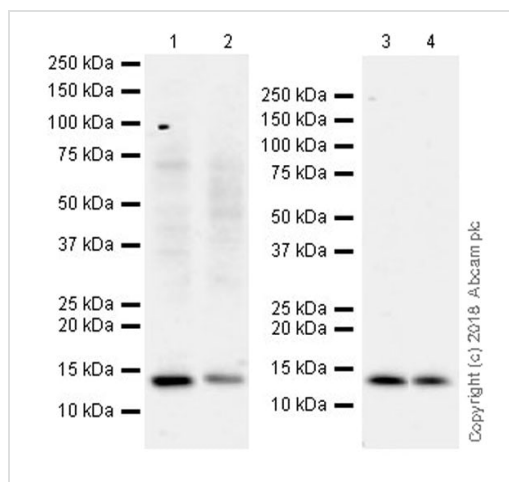
Predicted band size: 23 kDa

Observed band size: 16 kDa

Exposure time: 3 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

[ab213204](#) was used as loading control.



Western blot - Anti-Frataxin antibody [EPR21840]
(ab219414)

All lanes : Anti-Frataxin antibody [EPR21840] (ab219414) at
1/1000 dilution

Lane 1 : HCT 116 (human colorectal carcinoma cell line) whole cell
lysate

Lane 2 : Neuro-2a (mouse neuroblastoma cell line) whole cell
lysate

Lane 3 : C6 (rat glial tumor glial cell) whole cell lysate

Lane 4 : PC-12 (rat adrenal gland pheochromocytoma cell line)
whole cell lysate

Lysates/proteins at 10 µg per lane.

Secondary

Lanes 1-2 : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at
1/10000 dilution

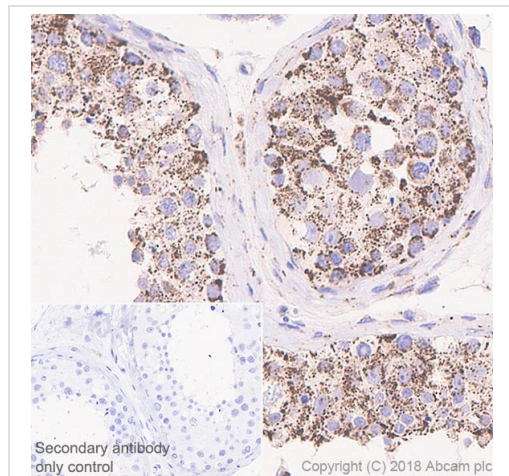
Lanes 3-4 : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at
1/20000 dilution

Predicted band size: 23 kDa

Observed band size: 14 kDa

Exposure time: 3 minutes

Blocking and dilution buffer: 5% NFDM/TBST .

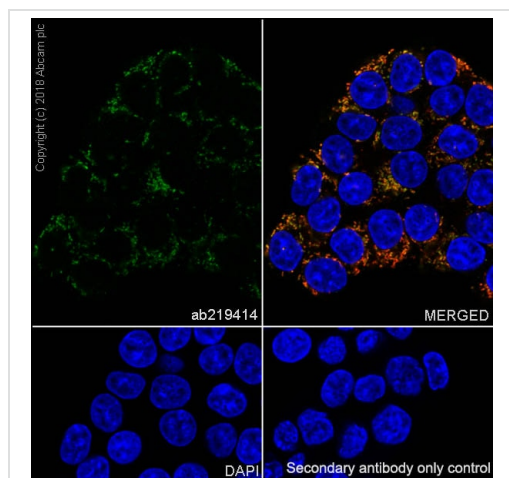


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Frataxin antibody [EPR21840] (ab219414)

Immunohistochemical analysis of paraffin-embedded human testis tissue labeling Frataxin with ab219414 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Granular cytoplasmic staining in human testis (PMID: 18725397; PMID: 26035392) is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Perform heat-mediated antigen retrieval using [ab93684](#) (Tris/EDTA buffer pH 9.0).



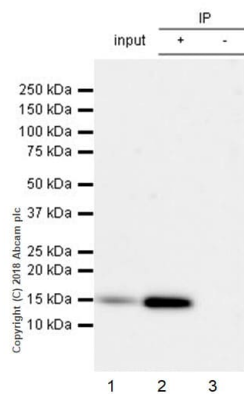
Immunocytochemistry/ Immunofluorescence - Anti-Frataxin antibody [EPR21840] (ab219414)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HCT 116 (human colorectal carcinoma epithelial cell) cells labeling Frataxin with ab219414 at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) ([ab150077](#)) secondary antibody at 1/1000 dilution (green).

Confocal image showing mitochondrial staining in HCT 116 cell line.

Counterstained with [ab33985](#) Anti-COX IV antibody - Mitochondrial Marker at a 1/1000 dilution followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) ([ab150120](#)) (orange). The nuclear counter stain is DAPI (blue).

The negative control is the secondary antibody only.



Immunoprecipitation - Anti-Frataxin antibody
[EPR21840] (ab219414)

Frataxin was immunoprecipitated from 0.35 mg Neuro-2a (mouse neuroblastoma cell line) whole cell lysate with ab219414 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab219414 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) ([ab131366](#)), was used for detection at 1/1000 dilution.

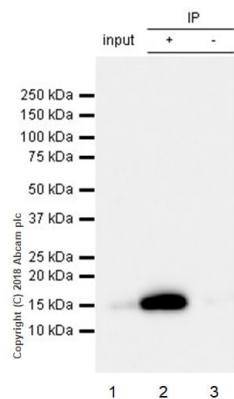
Lane 1: Neuro-2a whole cell lysate 10 µg (Input).

Lane 2: ab219414 IP in Neuro-2a whole cell lysate (+).

Lane 3: Rabbit monoclonal IgG ([ab172730](#)) instead of ab219414 in Neuro-2a whole cell lysate (-).

Blocking/Dilution buffer and concentration: 5% NFDm/TBST.

Exposure time: 30 seconds.



Immunoprecipitation - Anti-Frataxin antibody
[EPR21840] (ab219414)

Frataxin was immunoprecipitated from 0.35 mg HCT 116 (human colorectal carcinoma epithelial cell) whole cell lysate with ab219414 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab219414 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) ([ab131366](#)), was used for detection at 1/1000 dilution.

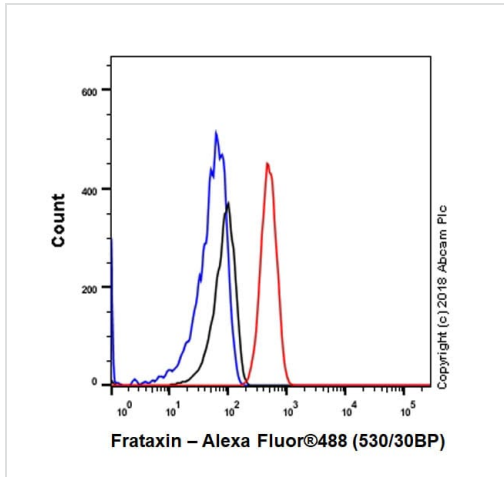
Lane 1: HCT 116 whole cell lysate 10 µg (Input).

Lane 2: ab219414 IP in HCT 116 whole cell lysate (+).

Lane 3: Rabbit monoclonal IgG ([ab172730](#)) instead of ab219414 in HCT 116 whole cell lysate (-).

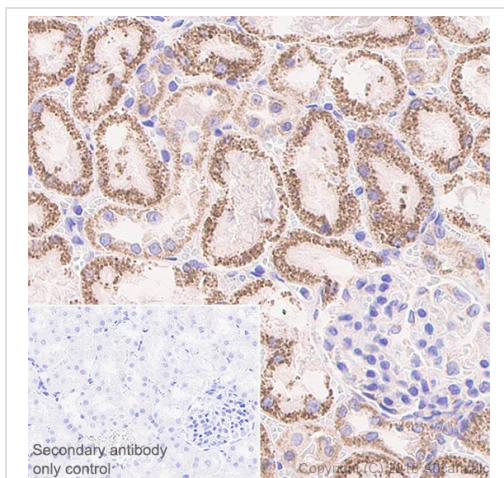
Blocking/Dilution buffer and concentration: 5% NFDm/TBST.

Exposure time: 5 seconds.



Flow Cytometry (Intracellular) - Anti-Frataxin antibody [EPR21840] (ab219414)

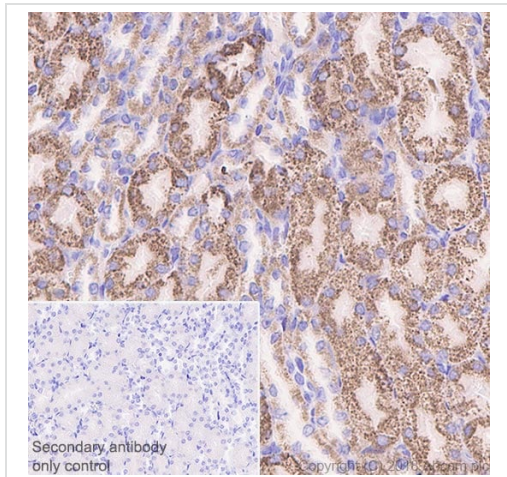
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HCT 116 (human colorectal carcinoma epithelial cell) cell line labeling Frataxin with ab219414 at 1/60 (red) compared with a rabbit monoclonal IgG ([ab172730](#)) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, [ab150077](#)), at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Frataxin antibody [EPR21840] (ab219414)

Immunohistochemical analysis of paraffin-embedded rat kidney tissue labeling Frataxin with ab219414 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Granular cytoplasmic staining in rat kidney (PMID: 18725397; PMID: 26035392) is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

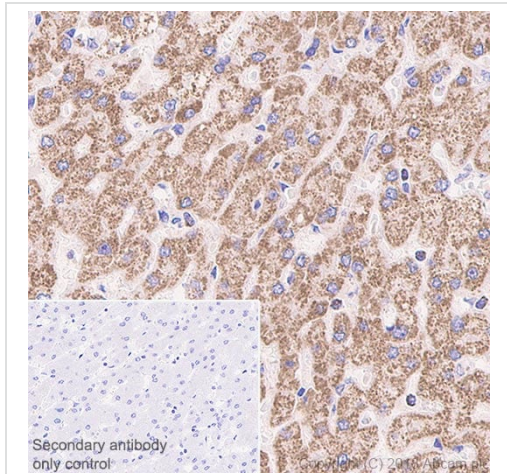
Perform heat-mediated antigen retrieval using [ab93684](#) (Tris/EDTA buffer pH 9.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Frataxin antibody [EPR21840] (ab219414)

Immunohistochemical analysis of paraffin-embedded mouse kidney tissue labeling Frataxin with ab219414 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Granular cytoplasmic staining in mouse kidney (PMID: 18725397; PMID: 26035392) is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

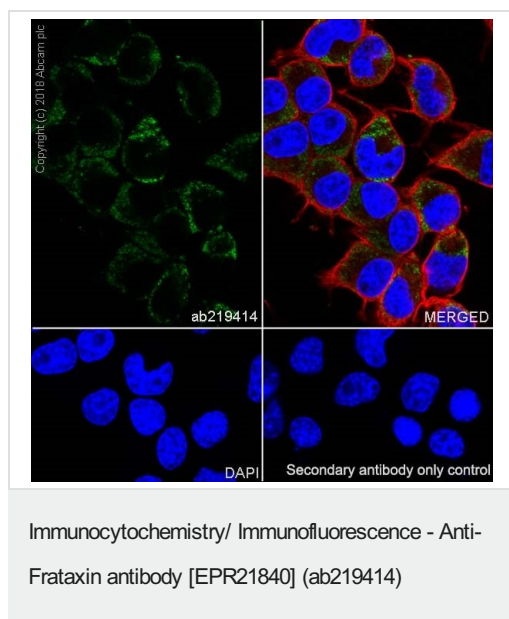
Perform heat-mediated antigen retrieval using [ab93684](#) (Tris/EDTA buffer pH 9.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Frataxin antibody [EPR21840] (ab219414)

Immunohistochemical analysis of paraffin-embedded human liver tissue labeling Frataxin with ab219414 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Granular cytoplasmic staining in human liver (PMID: 18725397; PMID: 26035392) is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).

Perform heat-mediated antigen retrieval using [ab93684](#) (Tris/EDTA buffer pH 9.0).



Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Neuro-2a (mouse neuroblastoma cell line) cells labeling Frataxin with ab219414 at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) ([ab150077](#)) secondary antibody at 1/1000 dilution (green).

Confocal image showing cytoplasmic staining in the Neuro-2a cell line.

Counterstained with [ab195889](#) Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at a 1/200 dilution (red).

The nuclear counter stain is DAPI (blue).

The negative control is the secondary antibody only.

Why choose a recombinant antibody?

<p>Research with confidence Consistent and reproducible results</p>	<p>Long-term and scalable supply Recombinant technology</p>
<p>Success from the first experiment Confirmed specificity</p>	<p>Ethical standards compliant Animal-free production</p>

Anti-Frataxin antibody [EPR21840] (ab219414)

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