abcam

ab110327

# Anti-AIF antibody [7F7AB10] - Mitochondrial Marker

## Key facts

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|---|---|
| **Isotype** | IgG1 |
| **Host species** | Mouse |
| **Storage buffer** | pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | 7F7AB10 |
| **Purity** | IgG fraction |
| **Light chain type** | kappa |
| **Concentration** | 1 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |
| **Purification notes** | ab110327 was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation. |

## Reactivity data

## IHC-P

**Tested**

| | |
|---|---|
| **Species** | Human |

| | |
|---|---|
| **Dilution info** | 10 µg/mL |
| **Notes** | Perform heat-mediated antigen retrieval before commencing with IHC staining protocol. |

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1 µg/mL |
| **Notes** | ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 2-5 µg/mL |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 5-10 µg/mL |
| **Notes** | For 2 hours.Paraformaldehyde fixed (4%, 20 minutes) and Triton X-100 permeabilized (0.1%, 15 minutes). |

# Target data

See full target information AIFM1

| | |
|---|---|
| **Function** | Functions both as NADH oxidoreductase and as regulator of apoptosis (PubMed:17094969, PubMed:20362274, PubMed:23217327, PubMed:33168626). In response to apoptotic stimuli, it is released from the mitochondrion intermembrane space into the cytosol and to the nucleus, where it functions as a proapoptotic factor in a caspase-independent pathway (PubMed:20362274). Release into the cytoplasm is mediated upon binding to poly-ADP-ribose chains (By similarity). The soluble form (AIFsol) found in the nucleus induces 'parthanatos' i.e. |

caspase-independent fragmentation of chromosomal DNA (PubMed:20362274). Binds to DNA in a sequence-independent manner (PubMed:27178839). Interacts with EIF3G, and thereby inhibits the EIF3 machinery and protein synthesis, and activates caspase-7 to amplify apoptosis (PubMed:17094969). Plays a critical role in caspase-independent, pyknotic cell death in hydrogen peroxide-exposed cells (PubMed:19418225). In contrast, participates in normal mitochondrial metabolism. Plays an important role in the regulation of respiratory chain biogenesis by interacting with CHCHD4 and controlling CHCHD4 mitochondrial import (PubMed:26004228). Isoform 4. Has NADH oxidoreductase activity. Does not induce nuclear apoptosis. Isoform 5. Pro-apoptotic isoform.

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |
| **Storage information** | Do Not Freeze |

## Notes

**Want a custom formulation?**
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | AIF short for Apoptosis-Inducing Factor is a flavoprotein characterized by its mass of approximately 57 kDa. It resides in the mitochondria of cells where it plays a decisive role in apoptosis. Under normal conditions AIF remains in the mitochondrial intermembrane space but when cells receive apoptotic signals AIF translocates to the nucleus leading to chromatin condensation and large-scale DNA fragmentation. The protein is also known as AIFM1 and performs functions beyond apoptosis including regulation of reactive oxygen species. Often analyzed using tools like a mitochondrial AB marker researchers use AIF as an important part of understanding cell death mechanisms. |
| **Biological function summary** | AIF functions as an important element in mitochondrial-mediated apoptosis. Once released from mitochondria AIF triggers a caspase-independent pathway of apoptosis making it distinct from other pathways where caspases are central. While not part of a larger protein complex AIF interacts closely with several mitochondrial and nuclear elements to execute its functions. Researchers often |

| | |
|---|---|
| | monitor AIF activity using apoptosis ELISA kits which help in precise detection and quantification of this protein within cellular systems. |
| **Pathways** | The presence and activity of AIF align with the broader apoptotic pathway and mitochondrial respiration. AIF links significantly with other molecules like cytochrome c released during apoptosis although cytochrome c follows a caspase-dependent pathway. It also shows involvement in various cellular injury and stress response pathways reinforcing its role as a major player in cellular fate decisions and intrinsic apoptotic mechanisms. |
| **Associated diseases and disorders** | AIF holds relevance in neurodegenerative disorders such as Parkinson's disease and certain forms of cancer. Misregulation or mutations in AIF can lead to increased susceptibility to these conditions highlighting its importance in maintaining normal cellular and mitochondrial function. AIF also interacts with other proteins implicated in these disorders such as E2F1 in cancer which shares similar apoptotic regulatory roles. These interactions highlight the biological significance of AIF beyond its fundamental apoptosis function making it a potential target for therapeutic interventions. |

## 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**

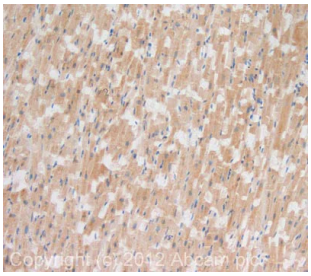
We do not recommend this combination. It is not covered by our product promise.

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.

## 4 product images

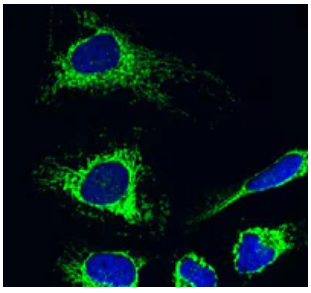


## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AIF antibody [7F7AB10] - Mitochondrial Marker (ab110327)

AIF Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-AIF antibody

IHC image of AIF staining in human heart formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab110327, 10µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

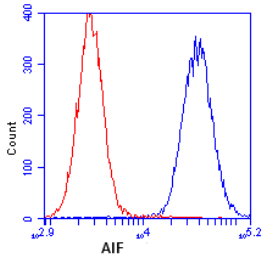
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



## Immunocytochemistry/ Immunofluorescence - Anti-AIF antibody [7F7AB10] - Mitochondrial Marker (ab110327)

AIF Immunocytochemistry/ Immunofluorescence staining using mouse Anti-AIF antibody

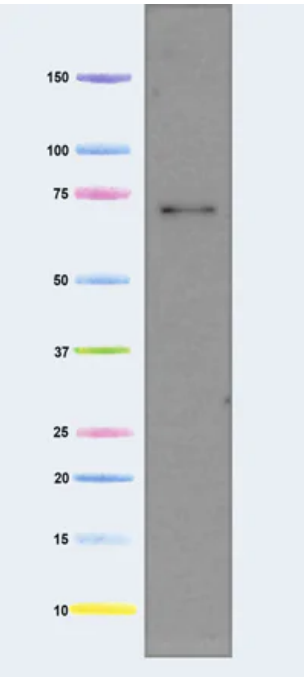
Immunocytochemistry analysis using ab110327 at 5µg/ml staining AIF in HeLa cells (4% paraformaldehyde fixed and Triton X-100 permeabilized). The secondary antibody was (green) Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1 hour. DAPI was used to stain the cell nuclei (blue). Target protein locates mainly in mitochondria.




## Flow Cytometry - Anti-AIF antibody [7F7AB10] - Mitochondrial Marker (ab110327)

AIF Flow Cytometry staining using mouse Anti-AIF antibody

Flow cytometric analysis using ab110327 at 1µg/ml staining AIF in HL60 cells (blue). Isotype control antibody (red).




# Western blot - Anti-AIF antibody [7F7AB10] - Mitochondrial Marker (ab110327)

AIF Western blot staining of Isolated mitochondria from Human heart using mouse Anti-AIF antibody

All lanes:
Western blot - Anti-AIF antibody [7F7AB10] - Mitochondrial Marker (ab110327) at 5 µg/mL

All lanes:
Isolated mitochondria from Human heart at 5 µg

Predicted band size: 67 kDa

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