**Product name**
Anti-ATPase Inhibitory Factor 1/IF1 antibody [5E2D7] ab110277

**Description**
Mouse monoclonal [5E2D7] to ATPase Inhibitory Factor 1/IF1

**Host species**
Mouse

**Tested applications**
Suitable for: ICC/IF, Flow Cyt, WB

**Species reactivity**
Reacts with: Mouse, Rat, Cow, Human

**Immunogen**
Recombinant full length protein. This information is proprietary to Abcam and/or its suppliers.

**Positive control**
Isolated mitochondria from Human heart, Bovine heart, Rat heart and Mouse heart IF/ICC: HepG2 cell line.

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

The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.

If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Product was previously marketed under the MitoSciences sub-brand.

**Properties**

**Form**
Liquid

**Storage instructions**
Shipped at 4°C. Store at +4°C. Do Not Freeze.

**Storage buffer**
pH: 7.5
Preservative: 0.02% Sodium azide
Constituent: HEPES buffered saline

**Purification notes**
The purity of ab110277 is near homogeneity, as judged by SDS-PAGE. ab110277 was produced...
in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.

**Clonality**
- Monoclonal

**Clone number**
- 5E2D7

**Isotype**
- IgG1

**Light chain type**
- kappa

**Applications**

**The Abpromise guarantee**
Our Abpromise guarantee covers the use of ab110277 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tbody>
<tr>
<td>ICC/IF</td>
<td>🌟🌟🌟🌟🌟 (1)</td>
<td>Use a concentration of 10 µg/ml.</td>
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<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use 1µg for 10^6 cells. ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.</td>
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<tr>
<td>WB</td>
<td>🌟🌟🌟🌟🌟 (1)</td>
<td>Use a concentration of 1 µg/ml. Detects a band of approximately 10,18 kDa (predicted molecular weight: 12 kDa).</td>
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**Target**

**Function**
- Endogenous F(1)F(o)-ATPase inhibitor limiting ATP depletion when the mitochondrial membrane potential falls below a threshold and the F(1)F(o)-ATP synthase starts hydrolyzing ATP to pump protons out of the mitochondrial matrix.

**Sequence similarities**
- Belongs to the ATPase inhibitor family.

**Post-translational modifications**
- Exhibits variability in chain length, mitochondria have distinct pools of protein cleaved after the 24th, 25th, and 26th amino acid.

**Cellular localization**
- Mitochondrion.
Western blot - Anti-ATPase Inhibitory Factor 1/IF1 antibody [5E2D7] (ab110277)

All lanes: Anti-ATPase Inhibitory Factor 1/IF1 antibody [5E2D7] (ab110277) at 1 µg/ml

Lane 1: Wild-type HAP1 whole cell lysate
Lane 2: ATPase Inhibitory Factor 1 / IF1 knockout HAP1 whole cell lysate
Lane 3: HeLa whole cell lysate

Lysates/proteins at 20 µg per lane.

Predicted band size: 12 kDa

Lanes 1 - 3: Merged signal (red and green). Green - ab110277 observed at 12 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab110277 was shown to recognize ATPase Inhibitory Factor 1 / IF1 in wild-type HAP1 cells as signal was lost at the expected MW in ATPase Inhibitory Factor 1 / IF1 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and ATPase Inhibitory Factor 1 / IF1 knockout samples were subjected to SDS-PAGE. Ab110277 and ab181602 (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at 1 µg/ml and 1/20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed ab216772 and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed ab216777 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.
Immunocytochemistry/ Immunofluorescence - Anti-ATPase Inhibitory Factor 1/IF1 antibody [5E2D7] (ab110277)

ICC/IF image of ab110277 stained HepG2 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab110277, 10µg/ml) overnight at +4°C. The secondary antibody (green) was ab96879, DyLight® 488 goat anti-mouse IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

Western blot - Anti-ATPase Inhibitory Factor 1/IF1 antibody [5E2D7] (ab110277)

All lanes: Anti-ATPase Inhibitory Factor 1/IF1 antibody [5E2D7] (ab110277) at 1 µg/ml

Lane 1: Human heart mitochondria at 10 µg
Lane 2: Bovine heart mitochondria at 4 µg
Lane 3: Rat heart mitochondria at 10 µg
Lane 4: Mouse heart mitochondria at 10 µg

Predicted band size: 12 kDa
Overlay histogram showing HepG2 cells stained with ab110277 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab110277, 1µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab91353) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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