**Product datasheet**

**Anti-COX IV antibody [20E8C12] ab14744**

★★★★★ 27 Abreviews  174 References  6 Images

### Overview

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Anti-COX IV antibody [20E8C12]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Mouse monoclonal [20E8C12] to COX IV</td>
</tr>
<tr>
<td><strong>Host species</strong></td>
<td>Mouse</td>
</tr>
<tr>
<td><strong>Tested applications</strong></td>
<td>Suitable for: Flow Cyt, IHC-FoFr, WB, ICC/IF, IHC-Fr, IHC-P, IP</td>
</tr>
<tr>
<td><strong>Species reactivity</strong></td>
<td>Reacts with: Mouse, Rat, Hamster, Cow, Human, Pig, Drosophila melanogaster, Zebrafish</td>
</tr>
<tr>
<td><strong>Immunogen</strong></td>
<td>Tissue, cells or virus corresponding to Cow COX IV</td>
</tr>
<tr>
<td><strong>Positive control</strong></td>
<td>Human, bovine, murine and rat heart mitochondria.</td>
</tr>
<tr>
<td><strong>General notes</strong></td>
<td>This antibody clone is manufactured by Abcam. This antibody makes an effective loading control for mitochondria. COXIV is generally expressed at a consistent high level. However, be aware that many proteins run at the same 16kD size as COXIV - our VDAC1 / Porin antibody makes a good alternative mitochondrial loading control for proteins of this size. Some caution is required when using this antibody as a loading control as COXIV expression can vary under some manipulations. An alternative mitochondrial loading control is Rabbit polyclonal to COX IV antibody (ab16056). If you require this antibody in a particular buffer formulation or a particular conjugate for your experiments, please contact <a href="mailto:orders@abcam.com">orders@abcam.com</a> or you can find further information here.</td>
</tr>
</tbody>
</table>

### Properties

<table>
<thead>
<tr>
<th><strong>Form</strong></th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage instructions</strong></td>
<td>Shipped at 4°C. Store at +4°C.</td>
</tr>
<tr>
<td><strong>Storage buffer</strong></td>
<td>Preservative: 0.02% Sodium azide Constituent: HEPES buffered saline</td>
</tr>
<tr>
<td><strong>Purity</strong></td>
<td>IgG fraction</td>
</tr>
<tr>
<td><strong>Primary antibody notes</strong></td>
<td>This antibody makes an effective loading control for mitochondria. COXIV is generally expressed at a consistent high level. However, be aware that many proteins run at the same 16kD size as COXIV - our VDAC1 / Porin antibody makes a good alternative mitochondrial loading control for proteins of this size. Some caution is required when using this antibody as a loading control as COXIV expression can vary under some manipulations. An alternative mitochondrial loading control is Rabbit polyclonal to COX IV antibody (ab16056).</td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
<td>Monoclonal</td>
</tr>
</tbody>
</table>

Clonality Monoclonal
Clone number: 20E8C12  
Isotype: IgG2a  
Light chain type: kappa  

Applications

Our Abpromise guarantee covers the use of ab14744 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>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use 0.5µg for $10^6$ cells. ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>IHC-FoFr</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 18698340</td>
</tr>
<tr>
<td>WB</td>
<td></td>
<td>Use a concentration of 1 µg/ml. Detects a band of approximately 17 kDa.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IHC-P</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IP</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
</tbody>
</table>

Target

Function: This protein is one of the nuclear-coded polypeptide chains of cytochrome c oxidase, the terminal oxidase in mitochondrial electron transport.

Tissue specificity: Ubiquitous.

Sequence similarities: Belongs to the cytochrome c oxidase IV family.

Cellular localization: Mitochondrion inner membrane.

Images
ab14744 at 1/100 staining MCF-10A cells (human mammary epithelial cell line) by ICC/IF. The cells were methanol/acetone fixed at -20°C for 5 minutes, blocked with BSA and then incubated with the antibody for 16 hours. The positive tissue was colocalised with a mitotracker (mitotrackers are a series of patented mt-selective stains that are concentrated by active mt and well retained during cell fixation). An Alexa-Fluor® 488 conjugated goat anti-mouse antibody was used as the secondary. The image shows COXIV staining in green and DAPI staining in blue.

Anti-COX IV antibody [20E8C12] (ab14744) at 1/1000 dilution + Fruit fly (Drosophila melanogaster) heart tube tissue lysate at 10 µg

**Secondary**

HRP-conjugate Goat anti-mouse IgG polyclonal at 1/4000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Exposure time:** 1 minute
Overlay histogram showing HeLa cells stained with ab14744 (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 (ab14744, 0.5µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. 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.

**Western blot**

All lanes: Anti-COX IV antibody [20E8C12] (ab14744) at 1/5000 dilution

Lane 1: Cytoplasmic fraction mouse NIH/3T3 cell lysate

Lane 2: Nuclear fraction mouse NIH/3T3 cell lysate

Secondary

All lanes: HRP conjugated goat anti-mouse antibody

Developed using the ECL technique.

Performed under reducing conditions.

**Observed band size:** 16 kDa

**Exposure time:** 3 minutes

This image is courtesy of an Abreview submitted by Camilla Skjerpen on 4 July 2005.
Immunohistochemistry (PFA perfusion fixed frozen sections) - Anti-COX IV antibody [20E8C12]

(ab14744)

Image from Hashimoto T. et. al., PLoS ONE. 2008; 3(8): e2915 (Fig. 1B)

ab14744 staining COX IV in rat brain tissue sections by Immunohistochemistry (PFA perfusion fixed frozen sections). Rats were anesthetized and intracardially perfused with 500 ml of normal saline at room temperature, followed by 500 ml of ice-cold, freshly made 4% paraformaldehyde in phosphate buffer (PB, 0.1 M, pH 7.4). A Cy3 conjugated anti mouse antibody was used as secondary.

Western blot - Anti-COX IV antibody [20E8C12]

All lanes : Anti-COX IV antibody [20E8C12]

(ab14744) at 1 µg/ml

Lane 1 : Isolated mitochondria from human heart at 5 µg
Lane 2 : Isolated mitochondria from bovine heart at 1 µg
Lane 3 : Isolated mitochondria from rat heart at 10 µg
Lane 4 : Isolated mitochondria from murine heart at 10 µg

Observed band size: 16 kDa

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