abcam

ab237966

Anti-Cytochrome C antibody [7H8.2C12] - BSA and Azide free

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Carrier free	Yes
Clone number	7H8.2C12
Purity	IgG fraction
Epitope	The antibody recognizes an epitope within amino acids 93-104 of pigeon Cytochrome C, based on competitive ELISA results.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat, Horse, Pigeon, Drosophila melanogaster
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat, Horse, Pigeon, Drosophila melanogaster
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat, Horse, Pigeon, Drosophila melanogaster
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat, Horse, Pigeon, Drosophila melanogaster
Dilution info	-
Notes	-

Target data

See full target information CYCS

Function Electron carrier protein. The oxidized form of the cytochrome c heme group can accept an electron from the heme group of the cytochrome c1 subunit of cytochrome reductase. Cytochrome c then transfers this electron to the cytochrome oxidase complex, the final protein carrier in the mitochondrial electron-transport chain. Plays a role in apoptosis. Suppression of the anti-apoptotic members or activation of the pro-apoptotic members of the Bcl-2 family leads to altered mitochondrial membrane permeability resulting in release of cytochrome c into the cytosol. Binding of cytochrome c to Apaf-1 triggers the activation of caspase-9, which then accelerates apoptosis by activating other caspases.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab237966 is the carrier-free version of ab13575.

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

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Cytochrome C also referred to as "cytochrome c" or "Cyt C" is a small protein with a molecular weight of approximately 12 kDa. It is a component of the electron transport chain playing an essential mechanical role in cellular respiration. Cytochrome C is expressed in the mitochondria of eukaryotic cells where it functions as a heme protein. The mass of this protein allows efficient electron transfer between Complex III (cytochrome bc1 complex) and Complex IV (cytochrome c oxidase) contributing to ATP synthesis.
Biological function summary	Cytochrome c contributes to the process of oxidative phosphorylation within mitochondria. It is not only an important electron carrier but it also plays a significant role in apoptosis. In the event of cellular stress cytochrome c releases into the cytosol and forms part of the apoptosome complex. This apoptosome activation leads to the caspase cascade driving programmed cell death. Therefore cytochrome C serves as both a mediator of energy production and a regulator of apoptosis.
Pathways	Cytochrome c is integral to the mitochondrial electron transport chain and apoptotic pathways. It interacts with proteins in these pathways such as cytochrome c oxidase in oxidative phosphorylation and Apaf-1 during apoptosis. The electron transport chain's function is dependent on the efficient transfer of electrons facilitated by cytochrome c ensuring ATP production in cellular respiration.
Associated diseases and disorders	Cytochrome c links to conditions like cancer and neurodegenerative diseases. In cancer its role in the apoptotic pathway often emerges as cancer cells can develop mechanisms to evade apoptosis impacting cytochrome c release. For

neurodegenerative diseases disruptions in mitochondrial function and cytochrome c's release can facilitate cell death implicating its role in conditions like Parkinson's disease. The interaction of cytochrome c with proteins such as p53 in response to cellular stress further highlights its involvement in disease pathogenesis.

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

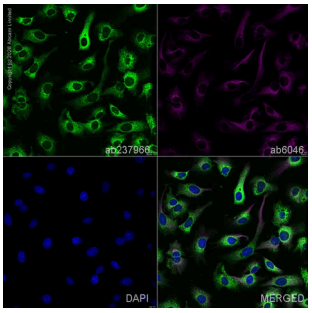
We do not recommend this combination. It is not covered by our product promise.

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

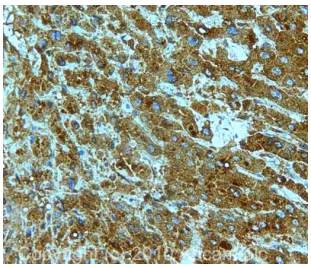


Immunocytochemistry/ Immunofluorescence - Anti-Cytochrome C antibody [7H8.2C12] - BSA and Azide free (ab237966)

Cytochrome C Immunocytochemistry/ Immunofluorescence staining of HepG2 cells using mouse Anti-Cytochrome C antibody

ab237966 staining Cytochrome C in HepG2 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1 h. The cells were then incubated overnight at 4°C with ab237966 at 5µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with ab150117, Goat polyclonal Secondary Antibody to Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150080, Goat polyclonal Secondary Antibody to Rabbit IgG H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolour magenta). Nuclear DNA was labelled with DAPI (shown in blue).

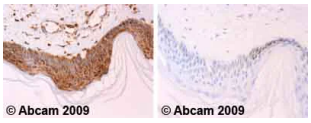
Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytochrome C antibody [7H8.2C12] - BSA and Azide free (ab237966)

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

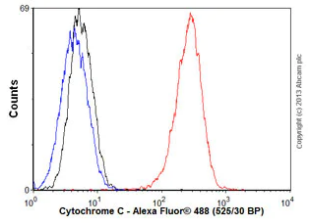
IHC image of Cytochrome C staining in human normal liver formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab13575, 1µg/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.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-arginine and sodium azide (ab13575).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytochrome C antibody [7H8.2C12] - BSA and Azide free (ab237966)

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

ab13575 staining human normal skin tissue. Staining is localised to mitochondria.
Left panel: with primary antibody at 4 ug/ml. Right panel: isotype control.
Sections were stained using an automated system DAKO Autostainer Plus , at room temperature. Sections were rehydrated and antigen retrieved with the Dako 3-in-1 antigen retrieval buffer EDTA pH 9.0 in a DAKO PT Link. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 minutes. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 minutes and detected with Dako Envision Flex amplification kit for 30 minutes. Colorimetric detection was completed with diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-arginine and sodium azide (ab13575).

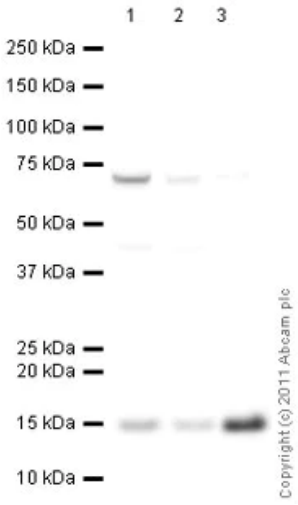


Flow Cytometry (Intracellular) - Anti-Cytochrome C antibody [7H8.2C12] - BSA and Azide free (ab237966)

Cytochrome C Flow Cytometry (Intracellular) staining using mouse Anti-Cytochrome C antibody

Overlay histogram showing HepG2 cells stained with ab13575 (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 (ab13575, 0.1µg/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]/mouse IgG2b

[PLPV219] (ab91353/ab91366, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-arginine and sodium azide (ab13575).



Western blot - Anti-Cytochrome C antibody [7H8.2C12] - BSA and Azide free (ab237966)

Cytochrome C Western blot staining using mouse Anti-Cytochrome C antibody

Abcam recommends using milk (5%) as the blocking agent. Abcam welcomes customer feedback and would appreciate any comments regarding this product and the data presented above.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-arginine and sodium azide (ab13575).

All lanes:
Western blot - Anti-Cytochrome C antibody [7H8.2C12] (ab13575) at 1 µg/mL

Lane 1:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 10 µg

Lane 2:
Jurkat (Human T cell lymphoblast-like cell line) Whole Cell Lysate at 10 µg

Lane 3:
Human heart tissue lysate - total protein (ab29431) at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 11 kDa

Observed band size: 14 kDa

Exposure time: 3min

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