abcam

ab109798

Anti-Complex I Immunocapture antibody [18G12BC2]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: 99% HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Clone number	18G12BC2
Purity	IgG fraction
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Near homogeneity as judged by SDS-PAGE. The antibody was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.

Reactivity data

IP

Tested

Species	Mouse
Dilution info	0.1-1 mg/mL

Notes	100 µg mAb can capture at least 25 µg complex I from 1 mg solubilized bovine heart mitochondria.

Species	Human
Dilution info	0.1-1 mg/mL
Notes	100 µg mAb can capture at least 25 µg complex I from 1 mg solubilized bovine heart mitochondria.

Species	Cow
Dilution info	0.1-1 mg/mL
Notes	100 µg mAb can capture at least 25 µg complex I from 1 mg solubilized bovine heart mitochondria.

Expected

Species	Rat
Dilution info	0.1-1 mg/mL
Notes	100 µg mAb can capture at least 25 µg complex I from 1 mg solubilized bovine heart mitochondria.

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Cow, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information Complex I

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	Complex I also known as NADH:ubiquinone oxidoreductase is a large enzyme complex in the mitochondrial inner membrane. It weighs approximately 980 kDa and plays an important role in the electron transport chain. Complex I is responsible for transferring electrons from NADH to ubiquinone initiating the

	production of ATP. This complex contains multiple subunits and constitutes the largest component of the mitochondrial respiratory chain. Researchers distinguish it with names like Complex I or mitochondrial Complex 1. It is ubiquitously expressed in the mitochondria of eukaryotic cells.
Biological function summary	Complex I plays an integral role in cellular energy production. It forms the first part of the oxidative phosphorylation system and is essential for ATP synthesis. Complex I is part of a larger structure called the mitochondrial complex which includes several other enzyme complexes working in concert. The electrons move through the complexes generating a proton gradient that the ATP synthase uses to produce ATP. Disruption in Complex I's function can lead to disturbed energy balance within the cell.
Pathways	Complex I contributes significantly to the oxidative phosphorylation pathway. This pathway is fundamental for aerobic respiration and the production of cellular ATP. Complex I interacts with other components such as cytochrome c and Complex III. Electron flow through these complexes facilitates the conversion of energy stored in NADH into a usable form driving metabolic processes. Dysfunction in this pathway can affect energy extraction from nutrients and overall cellular performance.
Associated diseases and disorders	Defective Complex I has links to neurodegenerative diseases such as Parkinson's disease and mitochondrial disorders like Leigh syndrome. Mutations in the components of Complex I can disrupt electron transport leading to decreased ATP production and increased reactive oxygen species. This damage affects tissues with high energy demands especially neurons. For example Complex I abnormalities may compromise the scavenging activity of related proteins like superoxide dismutase which exacerbates oxidative stress and neuronal damage.

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

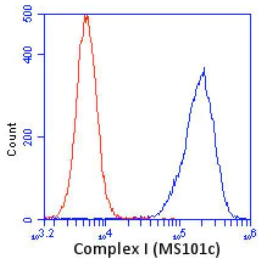
We do not recommend this combination. It is not covered by our product promise.

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.

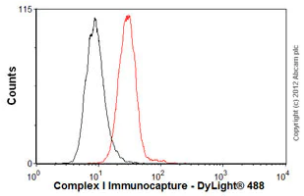
4 product images



Flow Cytometry - Anti-Complex I Immunocapture antibody [18G12BC2] (ab109798)

Complex I Immunocapture Flow Cytometry staining using mouse Anti-Complex I Immunocapture antibody

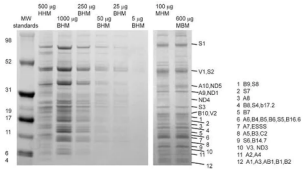
HL-60 cells were stained with 1 µg/mL Complex I antibody ab109798 (blue) or an equal amount of an isotype control antibody (red) and analyzed by flow cytometry.



Flow Cytometry - Anti-Complex I Immunocapture antibody [18G12BC2] (ab109798)

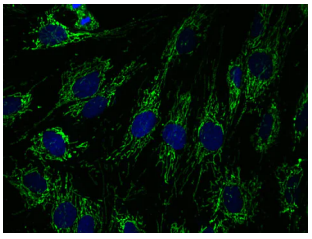
Complex I Immunocapture Flow Cytometry staining using mouse Anti-Complex I Immunocapture antibody

Overlay histogram showing HepG2 cells stained with ab109798 (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. The cells were then incubated with the antibody (ab109798, 2µg/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 IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Immunoprecipitation - Anti-Complex I Immunocapture antibody [18G12BC2] (ab109798)

Complex I was immunopurified from mitochondria isolated from human heart (HHM), cow/bovine heart (BHM), mouse heart (MHM) and mouse brain (MBM). The lanes were stained with Coomassie Brilliant Blue R. Bands were excised from the gel and proteolytically digested for mass spectrometry analysis. For the immuno-isolation, 50 µg of mAb (18G12BC2 ab109798) was bound to 5 µl of swollen protein G agarose beads according to protocol described here.
All lanes:
Immunoprecipitation - Anti-Complex I Immunocapture antibody [18G12BC2] (ab109798)



Immunocytochemistry/ Immunofluorescence - Anti-Complex I Immunocapture antibody [18G12BC2] (ab109798)

Immunocytochemistry image of ab109798 stained fibroblasts cells. The cells were paraformaldehyde fixed (4%, 20 minutes) and Triton X-100 permeabilized (0.1%, 15 minutes). The cells were incubated with the antibody (ab109798, 1 µg/mL) for 2 hours at room temperature or over night at 4°C. The secondary antibody was (green) Alexa Fluor® 4884 goat anti-mouse IgG

(H+L) at a 1/1000 dilution for 1 hour. 10% Goat serum was used as the blocking agent for all blocking steps. The target protein locates to the mitochondria.

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