abcam

ab179484

Anti-alpha Tubulin (acetyl K40) antibody [EPR16772]

Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484) is a rabbit monoclonal antibody detecting alpha Tubulin in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 40 publications

Lab Essentials | Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR16772
Purification technique	Affinity purification Protein A
Concentration	1.333 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/70
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500

Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/240
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human

Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information TUBA4A acK40

Function	Tubulin is the major constituent of microtubules, a cylinder consisting of laterally associated linear protofilaments composed of alpha- and beta-tubulin heterodimers. Microtubules grow by the addition of GTP-tubulin dimers to the microtubule end, where a stabilizing cap forms. Below the cap, tubulin dimers are in GDP-bound state, owing to GTPase activity of alpha-tubulin.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of alpha Tubulin?
Anti-alpha Tubulin (acetyl K40) [EPR16772] (ab179484) specifically detects a band for alpha Tubulin (UniProt: P68363) at a molecular weight of 50kDa.

Trusted by the scientific community
Anti-alpha Tubulin (acetyl K40) [EPR16772] (ab179484) was first used in a scientific publication in 2014 and has been cited over 40 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR16772] also available for your convenience: ab179484, Carrier free - ab209348, ab289863, PE - ab305662, APC - ab305663, HRP - ab305664, Alkaline Phosphatase - ab308705, Alexa Fluor® 488 - ab309677, Alexa Fluor® 594 - ab310424, Alexa Fluor® 555 - ab311950, Alexa Fluor® 568 - ab312423, Alexa Fluor® 750 - ab321222

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	Alpha tubulin also known as DM1A is an important component of the structural unit called microtubules. This protein weighs approximately 50 kDa and acts as a building block in the cytoskeleton. Alpha tubulin is expressed in various cell types across many organisms playing a fundamental role in maintaining cell shape and enabling intracellular transport. Researchers often acetylate alpha tubulin to study post-translational modifications and its effects on microtubule dynamics.
Biological function summary	Alpha tubulin combines with beta tubulin to form the tubulin dimer which is the basic unit of microtubule polymerization. These dimers assemble into microtubule filaments integral in numerous cellular processes. As part of the cytoskeleton network alpha tubulin facilitates roles in mitosis and meiosis providing spindle structures necessary for chromosome separation. Its participation in cell signaling pathways is noteworthy as it interacts with motor proteins like kinesins and dyneins to aid cellular activities.
Pathways	Alpha tubulin holds critical roles in microtubule-associated processes within the cytoskeleton and intracellular transport pathways. It interacts with the MAP (microtubule-associated protein) family which modulates microtubule stability and impacts cell division and trafficking. Moreover the microtubule pathway involves proteins like tau which bind to stabilize microtubules and are implicated in cellular dynamics and signaling.
Associated diseases and disorders	Alpha tubulin is relevant in neurodegenerative diseases such as Alzheimer's disease and cancer. Aberrant modifications or mutations in alpha tubulin or

associated proteins like tau can disrupt microtubule stability contributing to pathological conditions. In cancer altered expression of alpha tubulin affects cell division leading to tumor progression and chemoresistance. Researchers study alpha tubulin using techniques such as immunofluorescence with Alexa fluor 555 to understand its role in disease better.

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

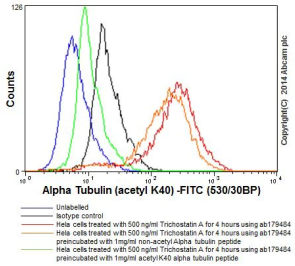
We do not recommend this combination. It is not covered by our product promise.

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.

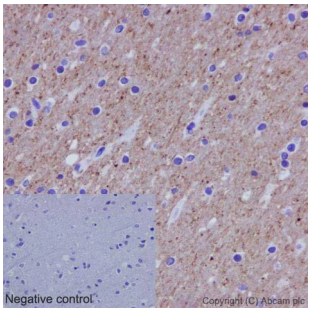
14 product images



Flow Cytometry (Intracellular) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Flow Cytometry (Intracellular) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells treated with 500 ng/ml Trichostatin A for 4 hourslabeling alpha Tubulin (acetyl K40)with ab179484 at 1/240 dilution (red line). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody. ab179484 preincubated with 1mg/ml acetyl Alpha tubulin (acetyl K40) peptide (green) or non-acetyl Alpha tubulin (acetyl K40) peptide (orange). The isotype control wasRabbit monoclonal IgG (black) and the unlabelled contol was cells without incubation with primary antibody and secondary antibody (blue).

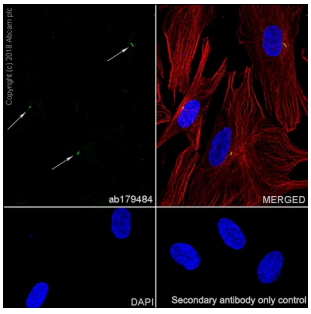


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Immunohistochemical analysis of paraffin-embedded Human cerebral cortex tissue labeling alpha Tubulin (acetyl K40) with ab179484 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasmic staining is observed on neuron cells of Human brain tissue. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

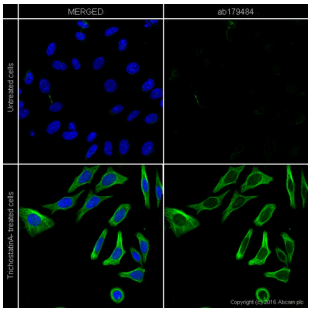
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

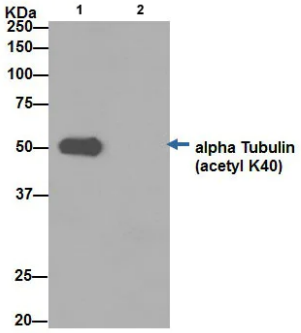
ab179484 staining alpha Tubulin in HFF-1 (Human skin fibroblast) cell line by ICC/IF (Immunocytochemistry/Immunofluorescence). The cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Samples were incubated with primary antibody at 1:20000 dilution. An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution. An Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594), ab195889 was used as a counterstain at 1:200 dilution. DAPI was used as a nuclear counterstain. Confocal image showing cilia (arrows) staining in HFF-1 cells treated with starvation for 48 hours.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

ab179484 stained in Hela cells. Untreated and Trichostatin A treated (50ug/ml, 4 hours) cells were fixed with 4% paraformaldehyde (10min) at room temperature and incubated with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% triton for 1h at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab179484 at 1/500 dilution overnight at +4°C. The secondary antibody was ab150177 used at 1 ug/ml for 1hour at room temperature (colored green). DAPI was used to stain the cell nuclei (colored blue) at a concentration of 1.43µM for 1hour at room temperature.

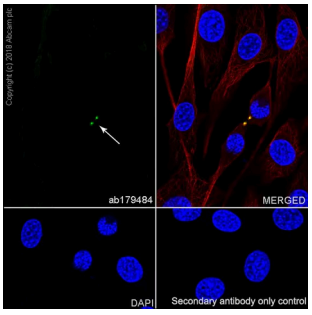


Immunoprecipitation - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin was immunoprecipitated from 1mg of HeLa cells (Human epithelial cells from cervix adenocarcinoma) treated with 500 ng/ml Trichostatin A for 4 hours with ab179484 at 1/70 dilution. Western blot was performed from 10 µg of the immunoprecipitate using ab179484 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution. Left lane: Hela whole cell extract. Right lane: PBS instead of Hela whole cell extract.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

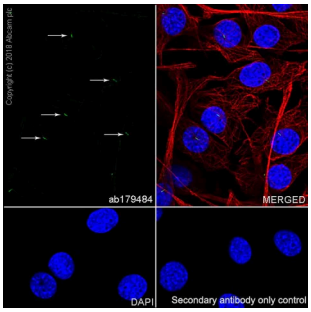
Predicted band size: 50 kDa



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

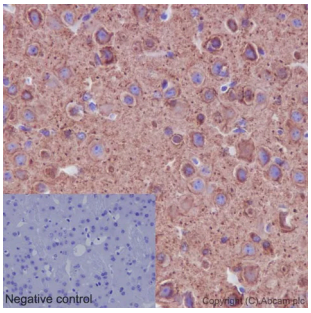
ab179484 staining alpha Tubulin in NIH/3T3 (mouse embryonic fibroblast) cell line by ICC/IF (Immunocytochemistry/Immunofluorescence). The cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Samples were incubated with primary antibody at 1:20000 dilution. An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution. An Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594), ab195889 was used as a counterstain at 1:200 dilution. DAPI was used as a nuclear counterstain. Confocal image showing midbody (arrows) staining in NIH/3T3 cells treated with starvation for 48 hours.



Immunocytochemistry/ Immunofluorescence - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

ab179484 staining alpha Tubulin in NIH/3T3 (mouse embryonic fibroblast) cell line by ICC/IF (Immunocytochemistry/Immunofluorescence).The cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Samples were incubated with primary antibody at 1:20000 dilution. An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1:1000 dilution. An Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594), ab195889 was used as a counterstain at 1:200 dilution. DAPI was used as a nuclear counterstain. Confocal image showing cilia (arrows) staining in NIH/3T3 cells treated with starvation for 48 hours.

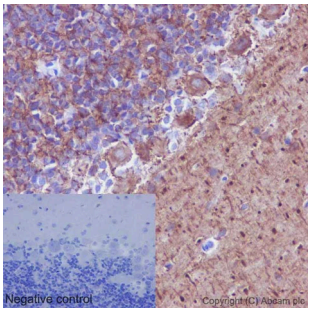


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebral cortex tissue labeling alpha Tubulin (acetyl K40) with ab179484 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasmic staining is observed on neuron cells of Mouse cerebral cortex tissue. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

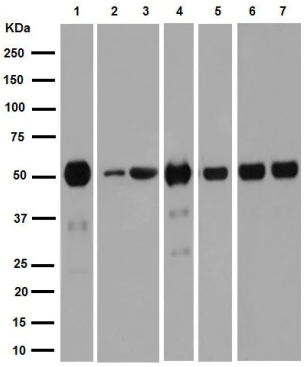


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebellum tissue labeling alpha Tubulin (acetyl K40) with ab179484 at 1/1000 dilution, followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Cytoplasmic staining is observed on Purkinje cells of cerebellum. Counter stained with Hematoxylin.
Negative control: Using PBS instead of primary ab, secondary ab is prediluted HRP Polymer for Rabbit/Mouse IgG.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484) at 1/2000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse kidney lysate at 10 µg

Lane 3:
Mouse spleen lysate at 10 µg

Lane 4:
Rat brain lysate at 10 µg

Lane 5:
Rat heart lysate at 10 µg

Lane 6:
Human fetal heart lysate at 10 µg

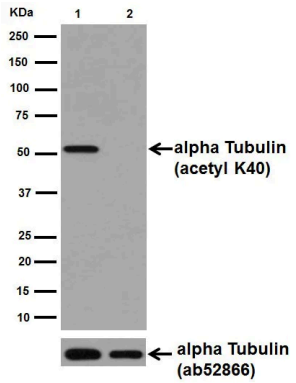
Lane 7:
Human fetal kidney lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 52 kDa



Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484) at 1/20000 dilution

Lane 1:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate treated with 500 ng/ml Trichostatin A for 4 hours at 10 µg

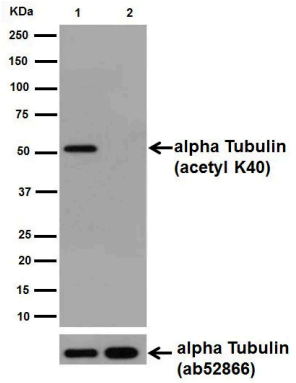
Lane 2:
Untreated HeLa whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 52 kDa



Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Western blot staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484) at 1/20000 dilution

Lane 1:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysate treated with 500 ng/ml Trichostatin A for 4 hours at 10 µg

Lane 2:
Untreated NIH/3T3 whole cell lysate at 10 µg

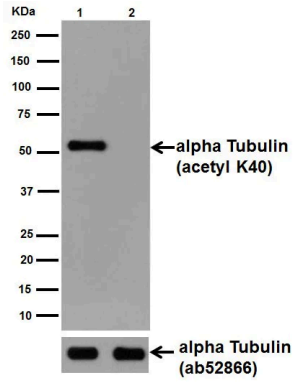
Secondary

Lane 1:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Lane 2:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 52 kDa



Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

Alpha Tubulin (acetyl K40) Western blot staining using rabbit Anti-alpha Tubulin (acetyl K40) antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484) at 1/20000 dilution

Lane 1:
C6 (Rat glial tumor cells) whole cell lysate treated with 500 ng/ml Trichostatin A for 4 hours at 10 µg

Lane 2:
Untreated C6 whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 52 kDa

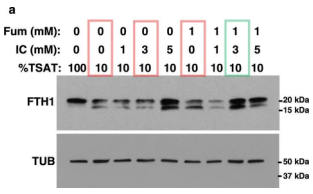


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Western blot - Anti-alpha Tubulin (acetyl K40) antibody [EPR16772] (ab179484)

alpha Tubulin (acetyl K40) western blot using anti-alpha Tubulin (acetyl K40) antibody [EPR16772] ab179484. Publication image and figure legend from Goldfarb, A. N., Freeman, K. C., et al., 2021, Nat Commun, PubMed 33712594.

ab179484 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab179484 please see the product overview.

Cooperative restoration of FTH1 by isocitrate and fumarate.a FTH1 levels by immunoblot on whole cell lysates from human CD34+ progenitors cultured 3 days in iron-replete (100% TSAT) or deficient (10% TSAT) erythroid medium ± 1–5 mM isocitrate (IC) and ±1 mM fumarate (Fum or F). Colored boxes highlight synergy of 3 mM IC with 1 mM Fum. Red: iron restriction with no or single metabolite treatment; green: iron restriction with combined metabolite treatment. Representative results from three independent experiments. b Graph: mean normalized FTH1 signal (±3 mM IC and ±1 mM Fum), relative to value with 100% TSAT. Error bars, SEM; n = 3 biologically independent experiments; *, **, ***P = 0.02, 0.009, 0.0009, one-way ANOVA with Tukey post hoc. NS not significant. See also Supplementary Fig. 9. Source data are provided as a Source data file.

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