abcam

ab150423

Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker

Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) is a rabbit monoclonal antibody detecting Hexokinase 1 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF, mIHC**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Multiplex IHC validated on the Leica BOND® MAX using Opal reagents
- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Lab Essentials | Recombinant | RabMAb | Advanced Validation | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	EPR10134(B)
Purification technique	Affinity purification Protein A
Concentration	0.248 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Human
Dilution info	1/250
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/50 - 1/100
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/50 - 1/100
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/50 - 1/100
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Human
Dilution info	1/50

Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
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	-

Target data

See full target information HK1

Function	Catalyzes the phosphorylation of various hexoses, such as D-glucose, D-glucosamine, D-fructose, D-mannose and 2-deoxy-D-glucose, to hexose 6-phosphate (D-glucose 6-phosphate, D-glucosamine 6-phosphate, D-fructose 6-phosphate, D-mannose 6-phosphate and 2-deoxy-D-glucose 6-phosphate, respectively) (PubMed:1637300, PubMed:25316723, PubMed:27374331). Does not phosphorylate N-acetyl-D-glucosamine (PubMed:27374331). Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate (By similarity). Involved in innate immunity and inflammation by acting as a pattern recognition receptor for bacterial peptidoglycan (PubMed:27374331). When released in the cytosol, N-acetyl-D-glucosamine component of bacterial peptidoglycan inhibits the hexokinase activity of HK1 and causes its dissociation from mitochondrial outer membrane, thereby activating the NLRP3 inflammasome (PubMed:27374331).

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-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), Multiplex IHC (mIHC) in Human, Mouse, Rat samples.

What is the molecular weight of Hexokinase 1?
Anti-Hexokinase 1 [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) specifically detects a band for

Hexokinase 1 (UniProt: P19367) at a molecular weight of 102kDa.

Trusted by the scientific community
Anti-Hexokinase 1 [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) was first used in a scientific publication in 2012 and has been cited over 10 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) has been confirmed by Western blot testing in HK1 Knockout HEK293T cell line, ab267279.

Other related products
We have a range of other formats of antibody clone [EPR10134(B)] also available for your convenience: ab150423, Alexa Fluor® 488 - ab184818, Alexa Fluor® 647 - ab197864, Carrier free - ab233837, PE - ab303119, APC - ab303120, HRP - ab303121, Alkaline Phosphatase - ab308989, Alexa Fluor® 594 - ab310762, Alexa Fluor® 555 - ab312289, Alexa Fluor® 568 - ab312784, ab317788, Carrier free - ab317798, Alexa Fluor® 750 - ab321126

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.

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

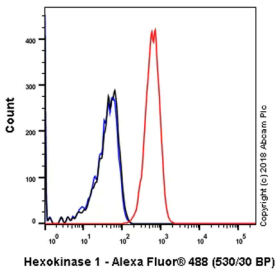
We do not recommend this combination. It is not covered by our product promise.

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.

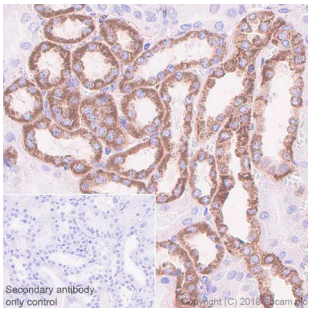
12 product images



Flow Cytometry (Intracellular) - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Hexokinase 1 antibody

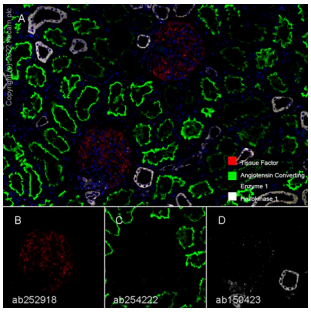
Intracellular Flow Cytometry analysis of K-562 (Human chronic myelogenous leukemia lymphoblast) cells labeling Hexokinase 1 with Purified ab150423 at 1/20 dilution (10 µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488 ,ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hexokinase 1 antibody

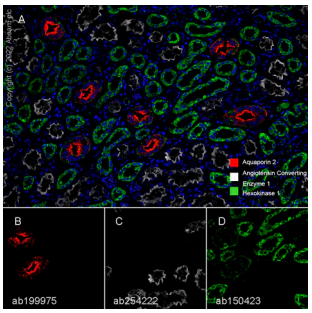
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human kidney tissue sections labeling Hexokinase 1 with purified ab150423 at 1/50 dilution (4.14 µg/mL). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Multiplex immunohistochemistry - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

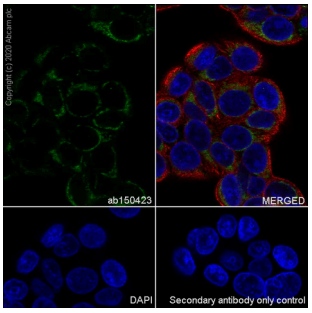
Fluorescence multiplex immunohistochemical analysis of paraffin-embedded Human kidney tissue. Panel A: Merged staining of anti-Hexokinase 1 (gray; Opal™690), anti-Angiotensin Converting Enzyme 1 (green; Opal™520) and anti-Tissue Factor (red; Opal™570) on human kidney. Panel B: Anti-Tissue Factor stained on renal glomeruli. Panel C: Anti-Angiotensin Converting Enzyme 1 stained on proximal tubules. Panel D: Anti-Hexokinase 1 stained on distal tubules. The section was incubated in three rounds of staining: in the order of ab150423, ab254222, and ab252918 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8

confocal microscope. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins. Counterstained with DAPI.



Multiplex immunohistochemistry - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

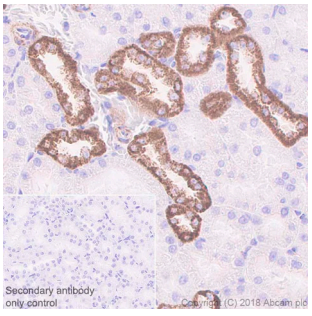
Fluorescence multiplex immunohistochemical analysis of the human kidney (Formalin/PFA-fixed paraffin-embedded sections). Panel A: merged staining of anti-Hexokinase 1 (ab150423, green; Opal™690), anti-Angiotensin Converting Enzyme 1 (ab254222, gray; Opal™520) and anti-Aquaporin 2 (ab199975, red; Opal™570) on human kidney. Panel B: anti-Aquaporin 2 stained on collecting tubules. Panel C: anti-Angiotensin Converting Enzyme 1 stained on proximal tubules. Panel D: anti-Hexokinase 1 stained on distal tubules and collecting tubules. Opal Polymer HRP Ms + Rb was used as a secondary antibody. The section was incubated in three rounds of staining: in the order of ab150423 at 1/250 dilution (4.224 µg/ml), ab254222 at 1/4000 dilution (0.141 µg/ml) and ab199975 at 1/4000 dilution (0.152 µg/ml) for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. DAPI (blue) was used as a nuclear counter stain.



Immunocytochemistry/ Immunofluorescence - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Hexokinase 1 antibody

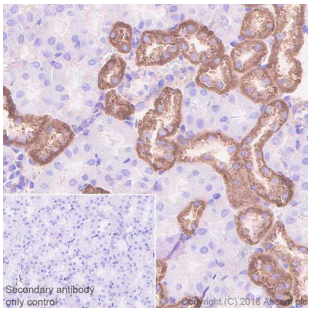
Immunocytochemistry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling Hexokinase 1 with Purified ab150423 at 1:50 dilution (4.1 µg/ml). Cells were fixed in 100% Methanol and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488,ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hexokinase 1 antibody

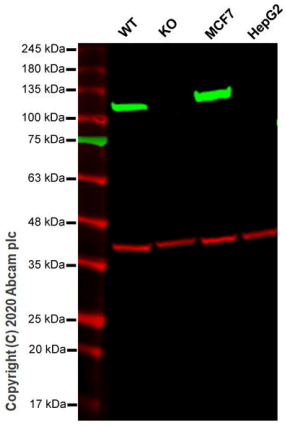
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat kidney tissue sections labeling Hexokinase 1 with purified ab150423 at 1/50 dilution (4.14 µg/mL). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hexokinase 1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse kidney tissue sections labeling Hexokinase 1 with purified ab150423 at 1/50 dilution (4.14 µg/mL). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Western blot staining using rabbit Anti-Hexokinase 1 antibody

Lanes 1-4: Merged signal (red and green). Green - ab150423 observed at 102 kDa. Red - loading control, ab8245 observed at 37 kDa.
ab150423 Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial was shown to specifically react with Hexokinase 1 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab267279 (knockout cell lysate ab257161) was used. Wild-type and Hexokinase 1 knockout samples were subjected to SDS-PAGE. ab150423 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
HK1 knockout HeLa cell lysate at 20 µg

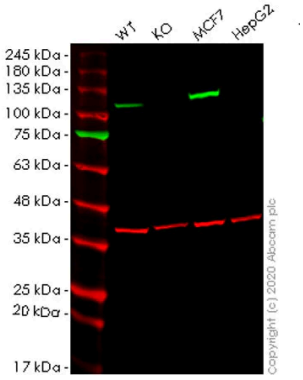
Lane 3:
MCF7 cell lysate at 20 µg

Lane 4:
HEPG2 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 102 kDa

Observed band size: 102 kDa



Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Western blot staining using rabbit Anti-Hexokinase 1 antibody

Lanes 1-4: Merged signal (red and green). Green - ab150423 observed at 102 kDa. Red - loading control, ab8245 observed at 37 kDa.
ab150423 Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial was shown to specifically react with Hexokinase 1 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab267279 (knockout cell lysate ab257161) was used. Wild-type and Hexokinase 1 knockout samples were subjected to SDS-PAGE. ab150423 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
HK1 knockout HEK293T cell lysate at 20 µg

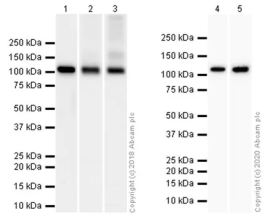
Lane 3:
MCF7 cell lysate at 20 µg

Lane 4:
HepG2 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 102 kDa

Observed band size: 102 kDa



Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Western blot staining using rabbit Anti-Hexokinase 1 antibody

All lanes:
Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423) at 1/1000 dilution

Lane 1:
Human brain lysate at 15 µg

Lane 2:
Mouse brain lysate at 15 µg

Lane 3:
Rat brain lysate at 15 µg

Lane 4:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate at 15 µg

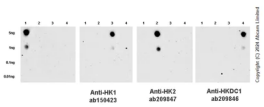
Lane 5:

MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 102 kDa



Dot Blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Dot Blot staining using rabbit Anti-Hexokinase 1 antibody

Dot blot analysis of Hexokinase Type III/HK3 using ab321996 at 1:1000 (0.525 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution.

Lane1: His-tagged human HK3 fragment
Lane2: His-tagged human HK2 fragment
Lane3: His-tagged human HK1 fragment
Lane4: His-tagged human HKDC1 fragment

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

This antibody does not cross-react with human HK1, HK2 and HKDC1.

All lanes:
Dot Blot - Anti-Hexokinase Type III/HK3 antibody [EPR29196-29] (ab321996) at 1/1000 dilution

Lane 1:
His-tagged human HK3 fragment at 5 ng

Lane 2:
His-tagged human HK2 fragment at 5 ng

Lane 3:
His-tagged human HK1 fragment at 5 ng

Lane 4:
His-tagged human HKDC1 fragment at 5 ng

Secondary

All lanes:
Dot Blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Exposure time: 180s

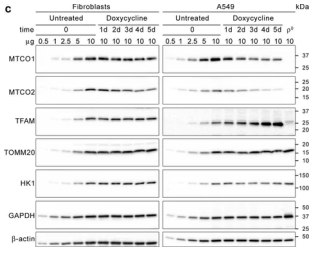


Image collected and cropped by CiteAb under a

Western blot - Anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker (ab150423)

Hexokinase 1 Western blot staining using rabbit Anti-Hexokinase 1 antibody

Hexokinase 1 western blot using anti-Hexokinase 1 antibody [EPR10134(B)] - Mitochondrial Outer Membrane Marker ab150423. Publication image and figure legend from Dijk, S. N., Protasoni, M., et al., 2020, Sci Rep, PubMed 32152409.

CC-BY license from the publication

ab150423 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 ab150423 please see the product overview.

Doxycycline inhibits mitochondrial translation. (a) De novo mitochondrial protein synthesis of fibroblasts (Fibs), A549 and A549 ρ° cells treated with vehicle (-) or doxycycline (+). After 5 days of treatment, cultures were pulse-labelled with [35S]-methionine in the presence of emetine. Protein samples were subjected to gel electrophoresis. The gel was stained with Coomassie brilliant blue followed by autoradiography to reveal the labelled mitochondrial translation products, indicated on the left. The migration of protein standards is indicated in the centre. (b) Mean MTCO2 + MTCO3 labelling signals in vehicle (Veh) and doxycycline (DC)-treated cells relative to the mean value of vehicle-treated A549 cells (n = 4). (c) Western blot images of samples from fibroblasts and A549 cells treated with doxycycline over a 5-day period and from untreated A549 ρ° cells. To facilitate quantification, serial dilutions of untreated cells, harvested at t = 0, were also applied. Blots were probed with antibodies against the indicated proteins. Migration of protein standards is indicated on the right. Full-size blots are presented in Supplementary Fig. S11. (d) Mean amounts of the indicated proteins in the treated cells over a 5-day period and of untreated A549 ρ° cells, relative to the amount in the cells at t = 0 (n = 3). Error bars indicate standard deviations. Asterisks denote statistically significant differences ($p < 0.05$).

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