abcam

ab169755

Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)]

Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755) is a rabbit monoclonal antibody detecting 5 Lipoxygenase/5-LO in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Rat**.

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

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	EP6072(2)
Purification technique	Affinity purification Protein A
Concentration	1.314 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Rat

Dilution info	1/1000 - 1/2000
Notes	-

Species	Human
Dilution info	1/1000 - 1/2000
Notes	-

Predicted

Species	Dog
Dilution info	-
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Not recommended

Species	Mouse, Dog

Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

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

Expected

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

Predicted

Species	Dog
Dilution info	-
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	**For unpurified use at 1/100 - 1/250.**

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

Expected

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

Predicted

Species	Dog
Dilution info	-
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information ALOX5

Function

Catalyzes the oxygenation of arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) to 5-hydroperoxyeicosatetraenoate (5-HPETE) followed by the dehydration to 5,6-epoxyeicosatetraenoate (Leukotriene A4/LTA4), the first two steps in the biosynthesis of leukotrienes, which are potent mediators of inflammation (PubMed:19022417, PubMed:21233389, PubMed:22516296, PubMed:23246375, PubMed:24282679, PubMed:24893149, PubMed:31664810, PubMed:8615788, PubMed:8631361). Also catalyzes the oxygenation of arachidonate into 8-hydroperoxyicosatetraenoate (8-HPETE) and 12-hydroperoxyicosatetraenoate (12-HPETE) (PubMed:23246375). Displays lipoxin synthase activity being able to convert (15S)-HETE into a conjugate tetraene (PubMed:31664810). Although arachidonate is the preferred substrate, this enzyme can also metabolize oxidized fatty acids derived from arachidonate such as (15S)-HETE, eicosapentaenoate (EPA) such as (18R)- and (18S)-HEPE or docosahexaenoate (DHA) which lead to the formation of specialized pro-resolving mediators (SPM) lipoxin and resolvins E and D respectively, therefore it participates in anti-inflammatory responses (PubMed:17114001, PubMed:21206090, PubMed:31664810, PubMed:32404334, PubMed:32841762, PubMed:8615788). Oxidation of DHA directly inhibits

endothelial cell proliferation and sprouting angiogenesis via peroxisome proliferator-activated receptor gamma (PPARgamma) (By similarity). It does not catalyze the oxygenation of linoleic acid and does not convert (5S)-HETE to lipoxin isomers (PubMed:31664810). In addition to inflammatory processes, it participates in dendritic cell migration, wound healing through an antioxidant mechanism based on heme oxygenase-1 (HO-1) regulation expression, monocyte adhesion to the endothelium via ITGAM expression on monocytes (By similarity). Moreover, it helps establish an adaptive humoral immunity by regulating primary resting B cells and follicular helper T cells and participates in the CD40-induced production of reactive oxygen species (ROS) after CD40 ligation in B cells through interaction with PIK3R1 that bridges ALOX5 with CD40 (PubMed:21200133). May also play a role in glucose homeostasis, regulation of insulin secretion and palmitic acid-induced insulin resistance via AMPK (By similarity). Can regulate bone mineralization and fat cell differentiation increases in induced pluripotent stem cells (By similarity).

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

Notes

What is this antibody validated in?
Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755) 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) in Human, Rat samples.

What is the molecular weight of 5 Lipoxygenase/5-LO?
Anti-5 Lipoxygenase/5-LO [EP6072(2)] (ab169755) specifically detects a band for 5 Lipoxygenase/5-LO (UniProt: P09917) at a molecular weight of 78kDa.

Trusted by the scientific community
Anti-5 Lipoxygenase/5-LO [EP6072(2)] (ab169755) was first used in a scientific publication in 2013 and has been cited over 40 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EP6072(2)] also available for your convenience: ab169755, Carrier free - ab227991, APC - ab310831, PE - ab310907, Alexa Fluor® 594 - ab311696, Alexa Fluor® 568 - ab312971,

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	5-Lipoxygenase also known as 5-LO or 5-LOX is an enzyme that catalyzes the oxidation of arachidonic acid to produce leukotrienes which are signaling molecules in the body. 5-LOX has a molecular weight of approximately 78 kDa. It is mainly expressed in leukocytes like macrophages neutrophils and mast cells. This enzyme plays an important role in the inflammatory response and the regulation of immune functions in these cells.
Biological function summary	The activity of 5-Lipoxygenase contributes to the production of leukotrienes which are pivotal in mediating inflammatory and allergic responses. This enzyme operates alone but it often interacts with 5-LOX-activating protein (FLAP) to facilitate the synthesis of leukotrienes efficiently. These interactions suggest that 5-LOX has a significant role in cellular processes related to inflammation and immune reactions.
Pathways	5-Lipoxygenase is integral to the arachidonic acid metabolic pathway initiating the biosynthesis of leukotrienes from arachidonic acid. This pathway also involves other enzymes like phospholipase A2 which releases arachidonic acid from membrane phospholipids and cyclooxygenase enzymes (COX) which convert arachidonic acid into prostaglandins. The end products of this pathway including leukotrienes manage and resolve inflammation and immune responses illustrating the collaborative effort between these enzymes.
Associated diseases and disorders	5-Lipoxygenase is significantly linked to inflammatory diseases such as asthma and atherosclerosis. In asthma the overproduction of leukotrienes due to enhanced 5-LOX activity results in bronchoconstriction and inflammation of the airways. In atherosclerosis leukotrienes contribute to the development and progression of plaques driving chronic inflammation in the vascular system. Additionally through its pathway its activity relates closely to cyclooxygenase

enzymes showing its importance in disease mechanisms targeted by anti-inflammatory therapies.

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

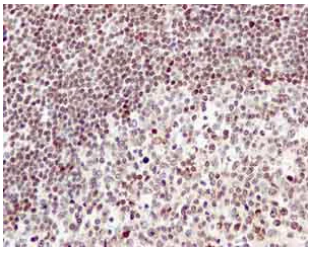
We do not recommend this combination. It is not covered by our product promise.

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.

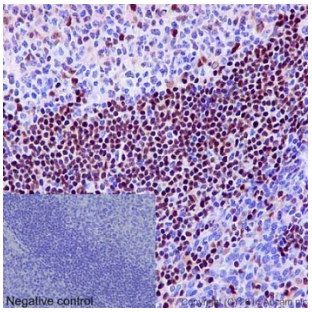
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-5 Lipoxygenase/5-LO antibody

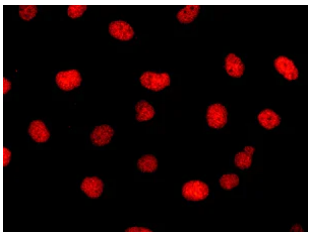
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling 5 Lipoxygenase/5-LO with ab169755, unpurified, at 1/100 dilution.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-5 Lipoxygenase/5-LO antibody

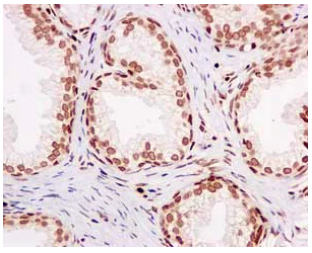
ab169755 staining 5 Lipoxygenase/5-LO in Human tonsil tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed and paraffin-embedded, antigen retrieval was by heat mediation in Tris/EDTA buffer pH9. Samples were incubated with primary antibody (1/100). An undiluted HRP-conjugated mouse anti-rabbit IgG was used as the secondary antibody. Tissue counterstained with Hematoxylin. PBS was used in the negative control rather than the Primary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-5 Lipoxygenase/5-LO antibody

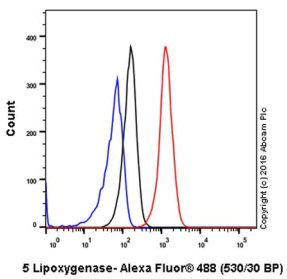
Immunofluorescent analysis of HUVEC cells labeling 5 Lipoxygenase/5-LO with ab169755, unpurified, at 1/100 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-5 Lipoxygenase/5-LO antibody

Immunohistochemical analysis of paraffin-embedded Human prostate tissue labeling 5 Lipoxygenase/5-LO with ab169755, unpurified, at 1/100 dilution.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

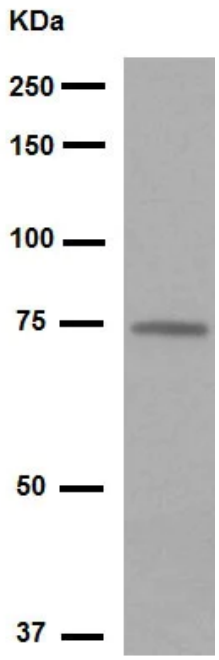


Flow Cytometry (Intracellular) - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Flow Cytometry (Intracellular) staining using rabbit Anti-5 Lipoxygenase/5-LO antibody

ab169755 staining 5 Lipoxygenase/5-LO in HUVEC (human umbilical vein/vascular endothelium) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde, permabilised with 90% methanol and the sample was incubated with the primary antibody at a dilution of 1/130. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody. Isoytype control: Rabbit monoclonal IgG (black).

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (blue).



Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Western blot staining of Human fetal thymus using rabbit Anti-5 Lipoxygenase/5-LO antibody

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

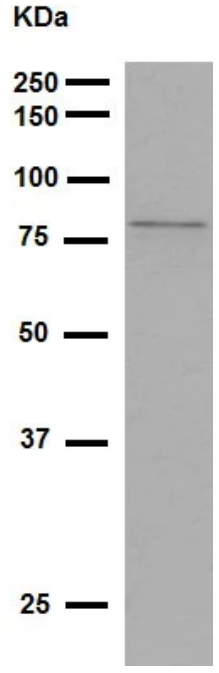
All lanes:
Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755) at 1/1000 dilution

All lanes:
Human fetal thymus at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 78 kDa



Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Western blot staining of K562 cell Lysate using rabbit Anti-5 Lipoxygenase/5-LO antibody

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

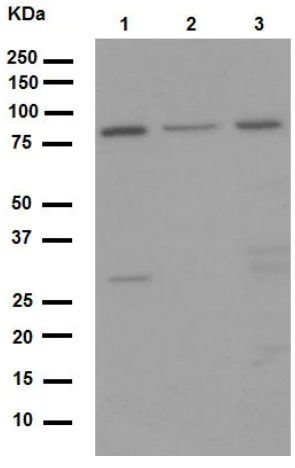
All lanes:
Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755) at 1/1000 dilution

All lanes:
K562 cell Lysate at 10 µg

Secondary

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

Predicted band size: 78 kDa



Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

5 Lipoxygenase/5-LO Western blot staining using rabbit Anti-5 Lipoxygenase/5-LO antibody

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

All lanes:
Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755) at 1/1000 dilution

Lane 1:
Rat heart lysate at 20 µg

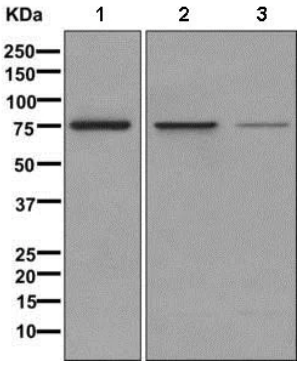
Lane 2:
Rat kidney lysate at 20 µg

Lane 3:
Rat spleen lysate at 20 µg

Secondary

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

Predicted band size: 78 kDa



Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755)

All lanes:
Western blot - Anti-5 Lipoxygenase/5-LO antibody [EP6072(2)] (ab169755) at 1/1000 dilution

Lane 1:
Fetal thymus lysate at 10 µg

Lane 2:
K562 lysate at 10 µg

Lane 3:
HUVEC lysate at 10 µg

Predicted band size: 78 kDa

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