

# 5 Lipoxygenase Antibody

Rabbit mAb

Catalog # AP91682

## Product Information

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<b>Application</b>	WB, IHC, IF, FC, ICC, IHF
<b>Primary Accession</b>	<a href="#">P09917</a>
<b>Reactivity</b>	Rat, Human, Mouse
<b>Clonality</b>	Monoclonal
<b>Other Names</b>	ALOX5; 5-LO; 5-LOX; 5LPG; LOG5; MGC163204; LOX5; 5-lipoxygenase ; 5 Lipoxygenase; 5 LOX; ALOX 5;
<b>Isotype</b>	Rabbit IgG
<b>Host</b>	Rabbit
<b>Calculated MW</b>	77983

## Additional Information

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<b>Dilution</b>	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 FC 1:50
<b>Purification</b>	Affinity-chromatography
<b>Immunogen</b>	A synthesized peptide derived from human 5 Lipoxygenase
<b>Description</b>	Catalyzes the first step in leukotriene biosynthesis, and thereby plays a role in inflammatory processes.
<b>Storage Condition and Buffer</b>	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

## Protein Information

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<b>Name</b>	ALOX5 ( <a href="#">HGNC:435</a> )
<b>Synonyms</b>	LOG5
<b>Function</b>	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: <a href="#">19022417</a> , PubMed: <a href="#">21233389</a> , PubMed: <a href="#">22516296</a> , PubMed: <a href="#">23246375</a> , PubMed: <a href="#">24282679</a> , PubMed: <a href="#">24893149</a> , PubMed: <a href="#">31664810</a> , PubMed: <a href="#">8615788</a> , PubMed: <a href="#">8631361</a> ). Also catalyzes the oxygenation of arachidonate into 8- hydroperoxyicosatetraenoate (8-HPETE) and 12- hydroperoxyicosatetraenoate (12-HPETE) (PubMed: <a href="#">23246375</a> ). Displays lipoxin synthase activity being able to convert (15S)-HETE into a conjugate tetraene (PubMed: <a href="#">31664810</a> ). 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

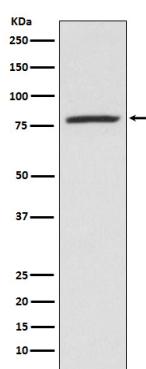
formation of specialized pro-resolving mediators (SPM) lipoxin and resolvins E and D respectively, therefore it participates in anti-inflammatory responses (PubMed:[17114001](#), PubMed:[21206090](#), PubMed:[31664810](#), PubMed:[32404334](#), PubMed:[32841762](#), PubMed:[8615788](#)). Oxidation of 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).

## Cellular Location

Cytoplasm {ECO:0000250 | UniProtKB:P48999, ECO:0000269 | PubMed:18978352}. Nucleus matrix. Nucleus membrane; Peripheral membrane protein. Cytoplasm, perinuclear region. Cytoplasm, cytosol. Nucleus envelope. Nucleus intermembrane space. Note=Shuttles between cytoplasm and nucleus (PubMed:19233132). Found exclusively in the nucleus, when phosphorylated on Ser-272 (PubMed:18978352). Calcium binding promotes translocation from the cytosol and the nuclear matrix to the nuclear envelope and membrane association (PubMed:16275640, PubMed:19233132, PubMed:3118366, PubMed:8245774).

## Images

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Western blot analysis of 5 Lipoxygenase expression in K562 cell lysate.

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