

**Anti-ALOX5 Antibody**  
**Catalog # ABO12716****Specification**

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**Anti-ALOX5 Antibody - Product Information**

|                   |                        |
|-------------------|------------------------|
| Application       | IHC, WB                |
| Primary Accession | <a href="#">P09917</a> |
| Host              | Rabbit                 |
| Reactivity        | Human, Mouse, Rat      |
| Clonality         | Polyclonal             |
| Format            | Lyophilized            |

**Description**

Rabbit IgG polyclonal antibody for Arachidonate 5-lipoxygenase(ALOX5) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-ALOX5 Antibody - Additional Information**

**Gene ID** 240

**Other Names**

Arachidonate 5-lipoxygenase, 5-LO, 5-lipoxygenase, 1.13.11.34, ALOX5, LOG5

**Calculated MW**

77983 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat<br>Western blot, 0.1-0.5 µg/ml, Human<br>

**Subcellular Localization**

Cytoplasm. Nucleus matrix. Nucleus membrane; Peripheral membrane protein. Shuttles between cytoplasm and nucleus. Found exclusively in the nucleus, when phosphorylated on Ser-272. Calcium binding promotes translocation from the cytosol and the nuclear matrix to the nuclear envelope and membrane association.

**Protein Name**

Arachidonate 5-lipoxygenase

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

**Immunogen**

E.coli-derived human ALOX5 recombinant protein (Position: A120-R483). Human ALOX5 shares 94% amino acid (aa) sequence identity with both mouse and rat ALOX5.

**Purification**

Immunogen affinity purified.

#### Cross Reactivity

No cross reactivity with other proteins

#### Storage

At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.

#### Sequence Similarities

Belongs to the lipoxygenase family.

### Anti-ALOX5 Antibody - Protein Information

Name ALOX5 ([HGNC:435](#))

Synonyms LOG5

#### 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:<a href="http://www.uniprot.org/citations/19022417" target="\_blank">19022417</a>, PubMed:<a href="http://www.uniprot.org/citations/21233389" target="\_blank">21233389</a>, PubMed:<a href="http://www.uniprot.org/citations/22516296" target="\_blank">22516296</a>, PubMed:<a href="http://www.uniprot.org/citations/23246375" target="\_blank">23246375</a>, PubMed:<a href="http://www.uniprot.org/citations/24282679" target="\_blank">24282679</a>, PubMed:<a href="http://www.uniprot.org/citations/24893149" target="\_blank">24893149</a>, PubMed:<a href="http://www.uniprot.org/citations/31664810" target="\_blank">31664810</a>, PubMed:<a href="http://www.uniprot.org/citations/8615788" target="\_blank">8615788</a>, PubMed:<a href="http://www.uniprot.org/citations/8631361" target="\_blank">8631361</a>). Also catalyzes the oxygenation of arachidonate into 8- hydroperoxyicosatetraenoate (8-HPETE) and 12- hydroperoxyicosatetraenoate (12-HPETE) (PubMed:<a href="http://www.uniprot.org/citations/23246375" target="\_blank">23246375</a>). Displays lipoxin synthase activity being able to convert (15S)-HETE into a conjugate tetraene (PubMed:<a href="http://www.uniprot.org/citations/31664810" target="\_blank">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:<a href="http://www.uniprot.org/citations/17114001" target="\_blank">17114001</a>, PubMed:<a href="http://www.uniprot.org/citations/21206090" target="\_blank">21206090</a>, PubMed:<a href="http://www.uniprot.org/citations/31664810" target="\_blank">31664810</a>, PubMed:<a href="http://www.uniprot.org/citations/32404334" target="\_blank">32404334</a>, PubMed:<a href="http://www.uniprot.org/citations/8615788" target="\_blank">8615788</a>). 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:<a href="http://www.uniprot.org/citations/31664810" target="\_blank">31664810</a>). 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:<a href="http://www.uniprot.org/citations/21200133" target="\_blank">21200133</a>). 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

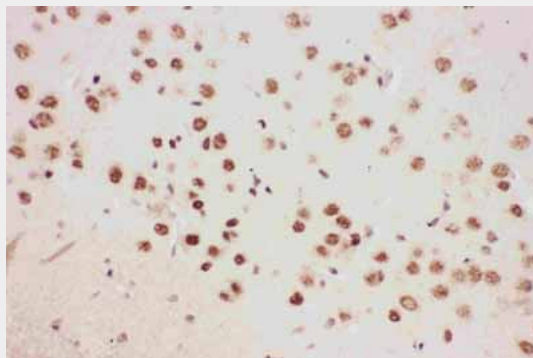
Cytoplasm {ECO:0000250|UniProtKB:P48999, ECO:0000269|PubMed:18978352}. Nucleus matrix. Nucleus membrane; Peripheral membrane protein. Cytoplasm, perinuclear region. Cytoplasm, cytosol. Nucleus envelope. Nucleus intermembrane space. Note=Shuttles between cytoplasm and nucleus (PubMed:19233132). Found 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).

#### Anti-ALOX5 Antibody - Protocols

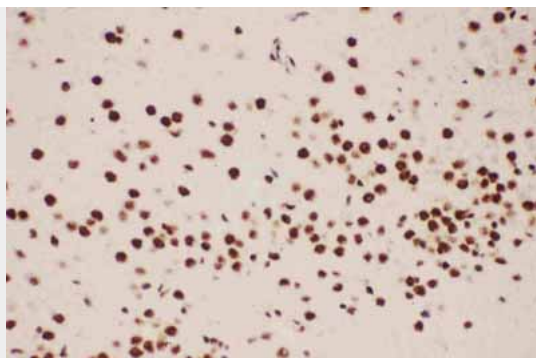
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

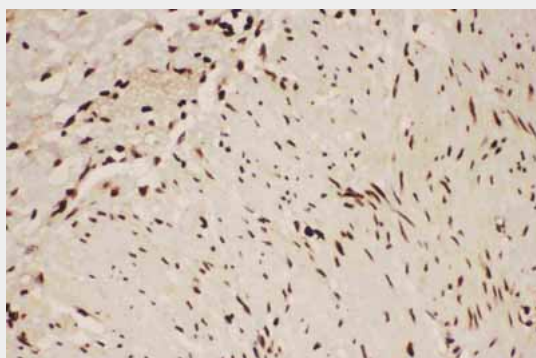
#### Anti-ALOX5 Antibody - Images



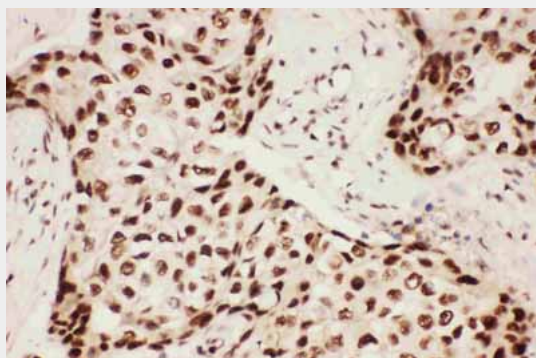
Anti-ALOX5 Picoband antibody, ABO12716-1.JPGIHC(P): Mouse Brain Tissue



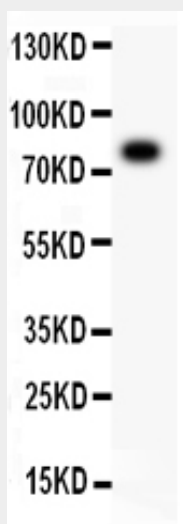
Anti-ALOX5 Picoband antibody, ABO12716-2.JPGIHC(P): Rat Brain Tissue



Anti-ALOX5 Picoband antibody, ABO12716-3.JPGIHC(P): Human Intestinal Cancer Tissue



Anti-ALOX5 Picoband antibody, ABO12716-4.JPGIHC(P): Human Mammary Cancer Tissue



Anti-ALOX5 Picoband antibody, ABO12716-5.jpgAll lanes: Anti-ALOX5 (ABO12716) at 0.5ug/mlWB:  
SGC Whole Cell Lysate at 40ugPredicted bind size: 78KDObserved bind size: 78KD

#### **Anti-ALOX5 Antibody - Background**

Arachidonate 5-lipoxygenase, also known as 5-LOX or 5-LO, is an enzyme that in humans is encoded by the ALOX5 gene. ALOX5 is a member of the lipoxygenase family of enzymes. It is mapped to 10q11.21. ALOX5 plays a dual role in the synthesis of leukotrienes from arachidonic acid. The position of ALOX5 within the nucleus of resting cells determines the capacity to generate LTB4 upon subsequent activation. It is involved in lung vascular tone regulation and in the development of chronic pulmonary hypertension in hypoxic rodent models. ALOX5 also transforms EFAs into leukotrienes and is a current target for pharmaceutical intervention in a number of diseases.