10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-ALOX5 Antibody

Catalog # ABO12716

Product Information

Application	WB, IHC-P
Primary Accession	P09917
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.

Additional Information

Gene ID	240
Other Names	Arachidonate 5-lipoxygenase, 5-LO, 5-lipoxygenase, 1.13.11.34, ALOX5, LOG5
Calculated MW	77983
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, Mouse, Rat, By Heat Western blot, 0.1-0.5 □g/ml, Human
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.
Source	Eukaryota
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.

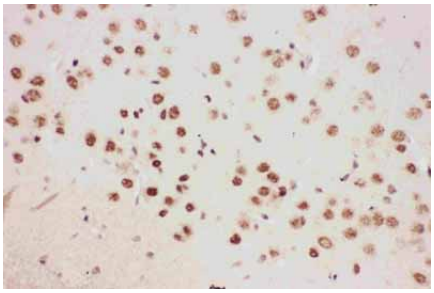
Protein Information

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: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).
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).

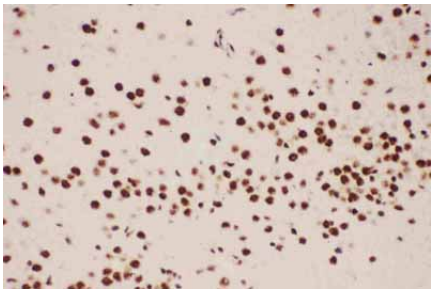
Background

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.

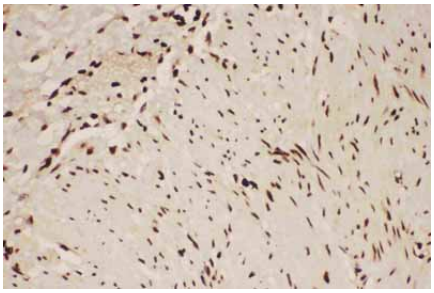
Images



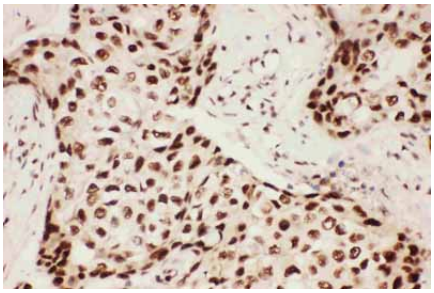
Anti-ALOX5 Picoband antibody, ABO12716-1.JPGIHC(P): Mouse Brain Tissue



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



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