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Anti-12 Lipoxygenase Picoband Antibody

Catalog # ABO10239

Product Information

Application	WB
Primary Accession	P18054
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Arachidonate 12-lipoxygenase, 12S-type(ALOX12) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	239
Other Names	Arachidonate 12-lipoxygenase, 12S-type, 12S-LOX, 12S-lipoxygenase, 1.13.11.31, Lipoxin synthase 12-LO, 3.3.2.-, Platelet-type lipoxygenase 12, ALOX12, 12LO, LOG12
Calculated MW	75694
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Mouse, Rat
Subcellular Localization	Cytoplasm, cytosol. Membrane. Membrane association is stimulated by EGF.
Tissue Specificity	Expressed in vascular smooth muscle cells. .
Source	Eukaryota
Protein Name	Arachidonate 12-lipoxygenase, 12S-type
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of human 12 Lipoxygenase (186-231aa ALKRVYTLLSSWNCLEDFDQIFWGQKSALAEKVRQCWQDDELFSYQ), different from the related mouse sequence by six amino acids, and from the related rat sequence by seven
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.

Protein Information

Name	ALOX12 (HGNC:429)
Synonyms	12LO, LOG12
Function	Catalyzes the regio and stereo-specific incorporation of molecular oxygen into free and esterified polyunsaturated fatty acids generating lipid hydroperoxides that can be further reduced to the corresponding hydroxy species (PubMed:17493578, PubMed:18311922, PubMed:1851637, PubMed:32404334, PubMed:8319693, PubMed:8500694). Mainly converts arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) to the specific bioactive lipid (12S)-hydroperoxyeicosatetraenoate/(12S)-HPETE (PubMed:17493578, PubMed:22984144, PubMed:24282679, PubMed:8319693, PubMed:8500694). Through the production of bioactive lipids like (12S)- HPETE it regulates different biological processes including platelet activation (PubMed:8319693, PubMed:8500694). It can also catalyze the epoxidation of double bonds of polyunsaturated fatty acids such as (14S)-hydroperoxy-docosahexaenoate/(14S)-HPDHA resulting in the formation of (13S,14S)-epoxy-DHA (PubMed:23504711). Furthermore, it may participate in the sequential oxidations of DHA ((4Z,7Z,10Z,13Z,16Z,19Z)-docosahexaenoate) to generate specialized pro-resolving mediators (SPMs) like resolvin D5 ((7S,17S)-diHPDHA) and (7S,14S)-diHPDHA, that actively down-regulate the immune response and have anti-aggregation properties with platelets (PubMed:32404334). An additional function involves a multistep process by which it transforms leukotriene A4/LTA4 into the bioactive lipids lipoxin A4/LXA4 and lipoxin B4/LXB4, both are vasoactive and LXA4 may regulate neutrophil function via occupancy of specific recognition sites (PubMed:8250832). Can also peroxidize linoleate ((9Z,12Z)-octadecadienoate) to (13S)-hydroperoxyoctadecadienoate/ (13S-HPODE) (By similarity). Due to its role in regulating both the expression of the vascular endothelial growth factor (VEGF, an angiogenic factor involved in the survival and metastasis of solid tumors) and the expression of integrin beta-1 (known to affect tumor cell migration and proliferation), it can be regarded as protumorigenic (PubMed:16638750, PubMed:22237009, PubMed:9751607). Important for cell survival, as it may play a role not only in proliferation but also in the prevention of apoptosis in vascular smooth muscle cells (PubMed:23578768).
Cellular Location	Cytoplasm, cytosol. Membrane. Note=Membrane association is stimulated by EGF
Tissue Location	Expressed in vascular smooth muscle cells.

Background

ALOX12, Arachidonate 12-lipoxygenase, is an enzyme that in humans is encoded by the ALOX12 gene. By fluorescence in situ hybridization, the ALOX12 gene is located in band 17p13.1. The gene consists of 14 exons with 13 introns and spans approximately 15 kb of DNA Arachidonate 12-lipoxygenase introduces a molecular oxygen into the C-12 position of arachidonic acid to produce 12(S)-hydroperoxy-5,8,10,14-eicosatetraenoic acid. The major pathway of arachidonic acid metabolism in human platelets proceeds via a 12-lipoxygenase enzyme. Expression of the LOG12 gene was detected in human erythroleukemia cells, platelets, and human umbilical vein endothelial cells by reverse transcription-PCR analysis.

Images

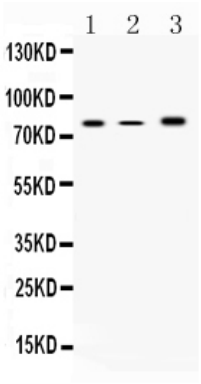

Figure 1. Western blot analysis of 12 Lipoxygenase using anti-12 Lipoxygenase antibody (ABO10239). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. lane 1: rat spleen tissue lysates,lane 2: mouse spleen tissue lysates,lane 3: COLO320 whole cell lysates. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-12 Lipoxygenase antigen affinity purified polyclonal antibody (Catalog # ABO10239) at 0.5 □¼g/mL overnight at 4 □°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for 12 Lipoxygenase at approximately 80KD. The expected band size for 12 Lipoxygenase is at 75KD.

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