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ALOX15 (19A1) Rabbit Monoclonal Antibody

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Catalog # AP93717

Product Information

Application	WB, IHC, IF, ICC
Primary Accession	P16050, P39654, Q02759
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Calculated MW	74804

Additional Information

Gene ID	246
Dilution	WB~~1:1000 IHC~~1:100~500 IF~~1:50~200 ICC~~N/A
Storage Conditions	-20℃

Protein Information

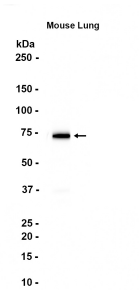
Name	ALOX15 (HGNC:433)
Synonyms	LOG15
Function	Non-heme iron-containing dioxygenase that catalyzes the stereo-specific peroxidation of free and esterified polyunsaturated fatty acids generating a spectrum of bioactive lipid mediators (PubMed:17052953, PubMed:1944593, PubMed:24282679, PubMed:25293588, PubMed:32404334, PubMed:8334154). It inserts peroxyl groups at C12 or C15 of arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) producing both 12-hydroperoxyeicosatetraenoate/12-HPETE and 15-hydroperoxyeicosatetraenoate/15-HPETE (PubMed:17052953, PubMed:1944593, PubMed:24282679, PubMed:8334154). It may then act on 12-HPETE to produce hepoxilins, which may show pro-inflammatory properties (By similarity). Can also peroxidize linoleate ((9Z,12Z)-octadecadienoate) to 13-hydroperoxyoctadecadienoate/13-HPODE (PubMed:8334154). 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). Can convert epoxy fatty acids to hydroperoxy-epoxides derivatives followed by an intramolecular nucleophilic substitution leading to the formation of monocyclic endoperoxides (PubMed:25293588). Plays an important role during the maintenance of self-tolerance by peroxidizing membrane-bound phosphatidylethanolamine which can then signal the sorting process for

	clearance of apoptotic cells during inflammation and prevent an autoimmune response. In addition to its role in the immune and inflammatory responses, this enzyme may play a role in epithelial wound healing in the cornea through production of lipoxin A4 (LXA(4)) and docosahexaenoic acid-derived neuroprotectin D1 (NPD1; 10R,17S-HDHA), both lipid autacoids exhibit anti-inflammatory and neuroprotective properties. Furthermore, it may regulate actin polymerization which is crucial for several biological processes such as the phagocytosis of apoptotic cells. It is also implicated in the generation of endogenous ligands for peroxisome proliferator activated receptor (PPAR-gamma), hence modulating macrophage development and function. It may also exert a negative effect on skeletal development by regulating bone mass through this pathway. As well as participates in ER stress and downstream inflammation in adipocytes, pancreatic islets, and liver (By similarity). Finally, it is also involved in the cellular response to IL13/interleukin-13 (PubMed:21831839).
Cellular Location	Cytoplasm, cytosol. Cell membrane; Peripheral membrane protein. Lipid droplet. Note=Predominantly cytosolic; becomes enriched at membranes upon calcium binding (By similarity) Translocates from the cytosol to the plasma membrane when stimulated by IL13/interleukin-13 and in macrophages binding apoptotic cells (By similarity). {ECO:0000250|UniProtKB:P39654}
Tissue Location	Detected in monocytes and eosinophils (at protein level). Expressed in airway epithelial cells

Background

This gene encodes a member of the lipoxygenase family of proteins. The encoded enzyme acts on various polyunsaturated fatty acid substrates to generate various bioactive lipid mediators such as eicosanoids, hepoxilins, lipoxins, and other molecules. The encoded enzyme and its reaction products have been shown to regulate inflammation and immunity. Multiple pseudogenes of this gene have been identified in the human genome. [provided by RefSeq, Aug 2017]

Images



Western blot analysis of extracts from Mouse lung tissue using AP93717 at 1:1000.