

Product name:	5 Lipoxygenase (15E11) Rabbit Monoclonal Antibody
Cat number:	MABN06334
Conjugate:	Unconjugated
Size:	100µL
Clone:	Monoclonal
Concentration:	1mg/ml
Host:	Rabbit
Isotype:	IgG
Immunogen:	A synthetic peptide of human 5 Lipoxygenase
Reactivity:	Human,Rat
Applications:	WB 1:500-1:2000,IHC 1:50-1:200,ICC/IF 1:100-1:200,FC 1:50-1:200
Molecular Weight:	78kDa
Purification:	Affinity purification
Form:	Liquid
Buffer:	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% New type preservative N and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage:	Store at 4°C short term. Aliquot and store at -20°C for 12 months. Avoid freeze/thaw cycles.

Background:

Catalyzes the first step in leukotriene biosynthesis, and thereby plays a role in inflammatory processes. 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:8631361, PubMed:21233389, PubMed:22516296, PubMed:24282679, PubMed:19022417, PubMed:23246375, PubMed:8615788, PubMed:24893149, PubMed:31664810). Also catalyzes the oxygenation of arachidonate into 8-hydroperoxyeicosatetraenoate (8-HPETE) and 12- hydroperoxyeicosatetraenoate (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:21206090, PubMed:31664810, PubMed:8615788, PubMed:17114001, PubMed:32404334). 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). Also may 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).