

Recombinant Human LX15B Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50645

Size: 10ug, 100ug

Protein Name: Polyunsaturated fatty acid lipoyxygenase ALOX15B (15-lipoyxygenase 2) (15-LOX-2) (Arachidonate 15-lipoyxygenase B) (15-LOX-B) (EC 1.13.11.33) (Arachidonate 15-lipoyxygenase type II) (Linoleate 13-lipoyxygenase 15-LOb) (EC 1.13.11.-)

Synonym: ALOX15B

UniProt ID: O15296

UniProt Link: www.uniprot.org/uniprotkb/O15296/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 676 AA

Molecular Weight: 76 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAEFRVRVSTGEAFGAGTWDKVSIVGTRGESPLPLDNLGKEFTAGAEEDFQVTLPEDVGRVLL
LRVHKAPPVLP LLGPLAPDAWFCRWFQLTPPRGGHLLFPCYQWLEGAGTLVLQEGTAKVSWADHH
PVLQQQRQEELQARQEMYQWKAYNPGWPHCLDEKTVEDLELNIKYSTAKNANFY LQAGSAFAEMK
IKGLLDRKGLWRS LNEMKRIFNFRRTPAAEHAFEHWQEDAFFASQFLNGLNPVLIRRCHYLPKNFPV
TDAMVASVLGPGTSLQAELEKGSFLVDHGILSGIQTNVINGKPKQFSAAPMTLLYQSPGCGPLLPLAI
QLSQTPGPNSPIFLPTDDKWDWLLAKTWVRNAEFSFHEALTHLLSHLLPEVFTLATLRQLPHCHPL
FKLLIPHTRYTLHINTLARELLIVPGQVDRSTGIGIEGFSELIQRNMKQLNYSLLCLPEDIRTRGVEDIP
GYYRDDGMQIWGAVERFVSEIIGIYYPSDESVDRELQAWVREIFSKGFLNQESSGIPSSLETRE
ALVQYVTMVIFTCSAKHAAVSAGQFDSCAWMPNLPPSMQLPPPTSKGLATCEGFIATLPPVNATCDV
ILALWLLSKEPGDQRPLGTYPDEHFTEEAPRRSIATFQSRLAQISRGIQERNQGLVLPYTYLDPPLIEN
SVSI

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Polyunsaturated fatty acid lipoxygenase ALOX15B (15-lipoxygenase 2) (15-LOX-2) (Arachidonate 15-lipoxygenase B) (15-LOX-B) (EC 1.13.11.33) (Arachidonate 15-lipoxygenase type II) (Linoleate 13-lipoxygenase 15-LOB) (EC 1.13.11.-) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: [Isoform A]: Non-heme iron-containing dioxygenase that catalyzes the stereo-specific peroxidation of free and esterified polyunsaturated fatty acids (PUFAs) generating a spectrum of bioactive lipid mediators (Probable) (PubMed:10542053, PubMed:10625675, PubMed:12704195, PubMed:17493578, PubMed:18311922, PubMed:24282679, PubMed:24497644, PubMed:32404334, PubMed:9177185). It inserts peroxy groups at C15 of arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) producing (15S)-hydroperoxyeicosatetraenoate/(15S)-HPETE (Probable) (PubMed:10625675, PubMed:11956198, PubMed:12704195, PubMed:17493578, PubMed:24282679, PubMed:24497644, PubMed:9177185). Also peroxidizes linoleate ((9Z,12Z)-octadecadienoate) to 13-hydroperoxyoctadecadienoate/13-HPODE (Probable) (PubMed:10542053, PubMed:27435673). Oxygenates arachidonyl derivatives such as 2-arachidonoylglycerol (2-AG) leading to the production and extracellular release of 15-hydroxyeicosatetraenoyl glycerol (15-HETE-G) that acts as a peroxisome proliferator-activated receptor alpha agonist (PubMed:11956198, PubMed:17493578, PubMed:18311922). Has the ability to efficiently class-switch ALOX5 pro-inflammatory mediators into anti-inflammatory intermediates (PubMed:27145229). Participates in the sequential oxidations of DHA ((4Z,7Z,10Z,13Z,16Z,19Z)-docosahexaenoate) to generate specialized pro-resolving mediators (SPMs) resolvins D5 ((7S,17S)-diHDPDHA), which can actively down-regulate the immune response and have anti-aggregation properties with platelets (PubMed:32404334). In addition to free PUFAs hydrolyzed from phospholipids, it directly oxidizes PUFAs esterified to membrane-bound phospholipids (PubMed:27435673). Has no detectable 8S-lipoxygenase activity on arachidonate but reacts with (8S)-HPETE to produce (8S,15S)-diHPETE (Probable). May regulate progression through the cell cycle and cell proliferation (PubMed:11839751, PubMed:12704195). May also regulate cytokine secretion by macrophages and therefore play a role in the immune response (PubMed:18067895). May also regulate macrophage differentiation into proatherogenic foam cells (PubMed:22912809).; [Isoform B]: Does not convert arachidonic acid to 15S-hydroperoxyeicosatetraenoic acid/(15S)-HPETE.

Subcellular Localization: [Isoform A]: Nucleus . Note=Other isoforms are excluded from the nucleus.; Cytoplasm, cytosol . Cell membrane . Cytoplasm, cytoskeleton . Membrane ; Peripheral membrane protein . Cell junction, adherens junction . Cell junction, focal adhesion . Note=Predominantly cytosolic; becomes enriched at membranes upon calcium binding.

6. Notes



- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.