

Recombinant Rat LX15B Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52552

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: Q8K4F2

UniProt Link: www.uniprot.org/uniprotkb/Q8K4F2/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 677 AA

Molecular Weight: 76 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAKFRVRVSTGEACGAGTWDKVSIVGTHGESPLVPLDHLGKEFSAGAEEDFEVTLTPQDVGTVLM
LRIHKAPPEAPLPLLSFPPDAWYCRWFELEWLPGAALRFPCYQWLEGAGELVLREGAAKVSQWDH
HRTLQDQRQKELESRKDMYSWKTYIEGWPHCLDHETVKDLDLNIKYSAMKNAKFFFAQSAFTLKL
FKGLLDRTGLWRSLREMCRMNFHNTPAAEYVFAHWQEDAFFASQFLNGLNPVLIRRCRRLPENFP
VTDEMVAAPVLGPGTSLQAELEKGSFLVDHGILSGVQTNVINGKPKQFSAAPMTLLYQSPGSGPLLPIA
IQLKQTPGPDNPIFLPSDDKWDWLLAKTWVRNAEFSIHEALTHLLHAHLIPEVFALATLRQLPHCHPLF
KLLIPHTRYTLHINTLARELLIAPGKVVDKSTGLGIGGFSDLIKRNMESYSVLCLPEDIRARDVGDLP
GYYYRDDGMQIWSAIRSFVSEIVDIYPSDASVRDDQELQAWVGEIFSEGFLSQESSGMPSSLDTQE
ALVQYVTMVIFTCSAKHAAVSASQFDSCVWMPNLPSPMQLPPPTSKGQASPEGFIATLPAVNATCD
VIALWLLSKEPGDRRPLGHYPDEHFTTEEVPRRSIAAFQRKLIQISSGIRKRNQSLALPYTYLDPPLIEN
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: 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 (PubMed:23382512). Inserts a peroxy group at C15 of arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate) producing (15S)-hydroperoxyeicosatetraenoate/(15S)-HPETE (PubMed:23382512). Also peroxidizes linoleate ((9Z,12Z)-octadecadienoate) to 13-hydroperoxyoctadecadienoate/13-HPODE (PubMed:23382512). 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. Has the ability to efficiently class-switch ALOX5 pro-inflammatory mediators into anti-inflammatory intermediates. Participates in the sequential oxidations of DHA ((4Z,7Z,10Z,13Z,16Z,19Z)-docosahexaenoate) to generate specialized pro-resolving mediators (SPMs) resolvin D5 ((7S,17S)-diHPDHA), which can actively down-regulate the immune response and have anti-aggregation properties with platelets. In addition to free PUFAs hydrolyzed from phospholipids, it directly oxidizes PUFAs esterified to membrane-bound phospholipids. Has no detectable 8S-lipoxygenase activity on arachidonate but reacts with (8S)-HPETE to produce (8S,15S)-diHPETE. May regulate progression through the cell cycle and cell proliferation. May also regulate cytokine secretion by macrophages and therefore play a role in the immune response. May also regulate macrophage differentiation into proatherogenic foam cells (By similarity).

Subcellular Localization: Cytoplasm, cytosol . Cell membrane . Cytoplasm, cytoskeleton . Membrane ; Peripheral membrane protein . Cell junction, adherens junction . Cell junction, focal adhesion . Nucleus . 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.