

Recombinant Rat PA2GX Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52598

Size: 10ug, 100ug

Protein Name: Group 10 secretory phospholipase A2 (EC 3.1.1.4) (Group X secretory phospholipase A2) (GX sPLA2) (sPLA2-X) (Phosphatidylcholine 2-acylhydrolase 10)

Synonym: Pla2g10

UniProt ID: Q9QZT3

UniProt Link: www.uniprot.org/uniprotkb/Q9QZT3/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 151 AA

Molecular Weight: 17 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MLLLLLLLLLLGPGLSEATRRSHVYKRGLLELAGTLDCVGLPRSPMAYMNYGCYGLGGHGEPRDA
IDWCCYYHDCCYSQAQDAGCSPKLYRYPWKCMDHRILCGPAENKCQELLCRCDETLAYCLADTEY
HLKYLFFPSVLCEKDSPKCN

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 Group 10 secretory phospholipase A2 (EC 3.1.1.4) (Group X secretory phospholipase A2) (GX sPLA2) (sPLA2-X) (Phosphatidylcholine 2-acylhydrolase 10) 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: Secretory calcium-dependent phospholipase A2 that primarily targets extracellular phospholipids. Hydrolyzes the ester bond of the fatty acyl group attached at sn-2 position of phospholipids with preference for phosphatidylcholines and phosphatidylglycerols over phosphatidylethanolamines. Preferentially releases sn-2 omega-6 and omega-3 polyunsaturated fatty acyl (PUFA) chains over saturated fatty acyls. Contributes to phospholipid remodeling of very low-density lipoprotein (VLDL), low-density lipoprotein (LDL) and high-density lipoprotein (HDL) particles. Hydrolyzes LDL phospholipids releasing unsaturated fatty acids that regulate macrophage differentiation toward foam cells. Efficiently hydrolyzes and inactivates platelet activating factor (PAF), a potent lipid mediator present in oxidized LDL (By similarity). May act in an autocrine and paracrine manner. Secreted by lung epithelium, targets membrane phospholipids of infiltrating eosinophils, releasing arachidonate and boosting eicosanoid and cysteinyl leukotriene synthesis involved in airway inflammatory response. Secreted by gut epithelium, hydrolyzes dietary and biliary phosphatidylcholines in the gastrointestinal lumen. Plays a stem cell regulator role in colon epithelium. Within intracellular compartment, mediates Paneth-like cell differentiation and its stem cell supporting functions by inhibiting the Wnt signaling pathway in intestinal stem cell (ISC). Secreted in the intestinal lumen upon inflammation, acts in an autocrine way and promotes prostaglandin E2 synthesis that stimulates Wnt signaling pathway in ISCs and tissue regeneration. May participate in hair follicle morphogenesis by regulating phosphatidylethanolamines metabolism at the outermost epithelial layer and facilitating melanin synthesis. By releasing lysophosphatidylcholines (LPCs) at sperm acrosome, controls sperm cell capacitation, acrosome reaction and overall fertility. May promote neurite outgrowth in neuron fibers involved in nociception (By similarity). Contributes to lipid remodeling of cellular membranes and generation of lipid mediators involved in pathogen clearance. Cleaves sn-2 fatty acyl chains of phosphatidylglycerols and phosphatidylethanolamines, which are major components of membrane phospholipids in bacteria. Displays bactericidal activity against Gram-positive bacteria by directly hydrolyzing phospholipids of the bacterial membrane. In pulmonary epithelium, may contribute to host defense response against adenoviral infection. Prevents adenovirus entry into host cells by hydrolyzing host cell plasma membrane, releasing C16:0 LPCs that inhibit virus-mediated membrane fusion and viral infection. Likely prevents adenoviral entry into the endosomes of host cells (By similarity). May play a role in maturation and activation of innate immune cells including macrophages, group 2 innate lymphoid cells and mast cells (By similarity).

Subcellular Localization: Secreted . Lysosome . Cytoplasmic vesicle, secretory vesicle, acrosome .

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.