

Recombinant Mouse PA2G3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51749

Size: 10ug, 100ug

Protein Name: Group 3 secretory phospholipase A2 (EC 3.1.1.4) (Group III secretory phospholipase A2) (GIII sPLA2) (sPLA2-III) (Phosphatidylcholine 2-acylhydrolase 3)

Synonym: Pla2g3

UniProt ID: Q8BZT7

UniProt Link: www.uniprot.org/uniprotkb/Q8BZT7/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 504 AA

Molecular Weight: 57 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGVLGVLLGVLAFLGSHTRHWDSTSCHLVQPIPGNPLGSLGKDAQGLALFQAFWDTHHRLQV
CIRQDESELITAFRALCAHEPLQHSFIQTPGPALQRALATLQSQWEACQRSQDSPTGAREKRAIEQS
GAPDREHRRRRRGWTIPGTLWCGVGNSEANSELGVFHGPDLCREHDQCPQTISPLQYNYGIRN
FRFHTISHCDCDARFQQCLRSQGDSISDIMGVAFFNVLEIPCFVLKEQEACVAWNWWGGCRAYGST
PLAHLRPRYYNASWKAEATSYTPSPQSPAPSKHPQKRGPPQQTQARRHSTTTTTTPFQTPAISSRPD
MIPRGQPGVPHLGFQDGPKHQSAHRVCRSLRHLDQCEHQIKPQETKFHLLNSAQMPLFHCDCTRR
LARFLRLHSPAGTDKVDLLGTTCKFLAPQLDCAEGKGCSRDRHRAIKVSARHLQRLHKSRLHFRD
KGTGGALAQPVEPPGSTMSFYSQLQVTQAIWRRRGQKKFWSS

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 3 secretory phospholipase A2 (EC 3.1.1.4) (Group III secretory phospholipase A2) (GIII sPLA2) (sPLA2-III) (Phosphatidylcholine 2-acylhydrolase 3) 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 without apparent head group selectivity (PubMed:20424323). Contributes to phospholipid remodeling of low-density lipoprotein (LDL) and high-density lipoprotein (HDL) particles. Hydrolyzes LDL phospholipids releasing unsaturated fatty acids that regulate macrophage differentiation toward foam cells (By similarity). May act in an autocrine and paracrine manner (PubMed:23624557). Secreted by immature mast cells, acts on nearby fibroblasts upstream to PTDGS to synthesize prostaglandin D2 (PGD2), which in turn promotes mast cell maturation and degranulation via PTGDR (PubMed:23624557). Secreted by epididymal epithelium, acts on immature sperm cells within the duct, modulating the degree of unsaturation of the fatty acyl components of phosphatidylcholines required for acrosome assembly and sperm cell motility (PubMed:20424323). Facilitates the replacement of fatty acyl chains in phosphatidylcholines in sperm membranes from omega-6 and omega-9 to omega-3 polyunsaturated fatty acids (PUFAs) (PubMed:20424323). Coupled to lipoxygenase pathway, may process omega-6 PUFAs to generate oxygenated lipid mediators in the male reproductive tract (PubMed:20424323). At pericentrosomal preciliary compartment, negatively regulates ciliogenesis likely by regulating endocytotic recycling of ciliary membrane protein (By similarity). Coupled to cyclooxygenase pathway provides arachidonate to generate prostaglandin E2 (PGE2), a potent immunomodulatory lipid in inflammation and tumorigenesis (By similarity). At colonic epithelial barrier, preferentially hydrolyzes phospholipids having arachidonate and docosahexaenoate at sn-2 position, contributing to the generation of oxygenated metabolites involved in colonic stem cell homeostasis (PubMed:28947740). Releases C16:0 and C18:0 lysophosphatidylcholine subclasses from neuron plasma membranes and promotes neurite outgrowth and neuron survival (PubMed:17868035).

Subcellular Localization: Secreted . Cell membrane . Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole . Recycling endosome . Note=Localized at pericentrosomal preciliary compartment.

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.