

Recombinant Human PLS1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50803

Size: 10ug, 100ug

Protein Name: Phospholipid scramblase 1 (PL scramblase 1) (Ca(2+)-dependent phospholipid scramblase 1) (Erythrocyte phospholipid scramblase) (Mg(2+)-dependent nuclease) (EC 3.1.-.-) (MmTRA1b)

Synonym: PLSCR1

UniProt ID: O15162

UniProt Link: www.uniprot.org/uniprotkb/O15162/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 318 AA

Molecular Weight: 35 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDKQNSQMNASHPETNLPVGYPPQYPPTAFQGPPGYSGYPGPQVSYPPPPAGHSGPGPAGFPVP
NQPVYNQPVYNQPVGAAGVPWMPAPQPPLNCPPGLEYSQIDQILIHQQIELLEVLTGFETNNKYEIK
NSFGQRVYFAAEDTDCCTRNC CGPSRPFTLR IIDNMGQEVITLERPLRCSSCCCPCLQEIEIQAPPG
VPIGYVIQTWHPCLPKFTIQNEKREDVLKISGPCVVCSCCGDVDFEIKSLDEQCVVGKISKHWTGILR
EAFTDADNFGIQFPLDLVDKMKAVMIGACFLIDFMFFESTGSQEQKSGVW

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 Phospholipid scramblase 1 (PL scramblase 1) (Ca²⁺-dependent phospholipid scramblase 1) (Erythrocyte phospholipid scramblase) (Mg²⁺-dependent nuclease) (EC 3.1.-.-) (MmTRA1b) 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: Catalyzes calcium-induced ATP-independent rapid bidirectional and non-specific movement of phospholipids (lipid scrambling or lipid flip-flop) between the inner and outer leaflet of the plasma membrane resulting in collapse of the phospholipid asymmetry which leads to phosphatidylserine externalization on the cell surface (PubMed:10770950, PubMed:18629440, PubMed:23590222, PubMed:23659204, PubMed:24343571, PubMed:24648509, PubMed:29748552, PubMed:32110987, PubMed:8663431, PubMed:9218461, PubMed:9485382, PubMed:9572851). Mediates calcium-dependent phosphatidylserine externalization and apoptosis in neurons via its association with TRPC5 (By similarity). Also exhibits magnesium-dependent nuclease activity against double-stranded DNA and RNA but not single-stranded DNA and can enhance DNA decatenation mediated by TOP2A (PubMed:17567603, PubMed:27206388). Negatively regulates FcR-mediated phagocytosis in differentiated macrophages (PubMed:26745724). May contribute to cytokine-regulated cell proliferation and differentiation (By similarity). May play a role in the antiviral response of interferon (IFN) by amplifying and enhancing the IFN response through increased expression of select subset of potent antiviral genes (PubMed:15308695). Inhibits the functions of viral transactivators, including human T-cell leukemia virus (HTLV)-1 protein Tax, human immunodeficiency virus (HIV)-1 Tat, human hepatitis B virus (HBV) HBx, Epstein-Barr virus (EBV) BZLF1 and human cytomegalovirus IE1 and IE2 proteins through direct interactions (PubMed:22789739, PubMed:23501106, PubMed:25365352, PubMed:31434743, PubMed:35138119). Also mediates the inhibition of influenza virus infection by preventing nuclear import of the viral nucleoprotein/NP (PubMed:29352288, PubMed:35595813). Plays a crucial role as a defense factor against SARS-CoV-2 independently of its scramblase activity by directly targeting nascent viral vesicles to prevent virus-membrane fusion and the release of viral RNA into the host-cell cytosol (PubMed:37438530).; (Microbial infection) Acts as an attachment receptor for HCV.

Subcellular Localization: Cell membrane ; Single-pass type II membrane protein . Cell membrane ; Lipid-anchor ; Cytoplasmic side. Nucleus . Cytoplasm . Cytoplasm, perinuclear region . Note=Localizes to the perinuclear region in the presence of RELT (PubMed:22052202). Palmitoylation regulates its localization to the cell membrane or the nucleus; trafficking to the cell membrane is dependent upon palmitoylation whereas in the absence of palmitoylation, localizes to the nucleus (PubMed:12564925).

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.