

Recombinant Human CL12A Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50194

Size: 10ug, 100ug

Protein Name: C-type lectin domain family 12 member A (C-type lectin-like molecule 1) (CLL-1) (Dendritic cell-associated lectin 2) (DCAL-2) (Killer cell C-type lectin-like receptor L1) (hKLRL1) (Myeloid inhibitory C-type lectin-like receptor) (MICL) (CD antigen CD371)

Synonym: CLEC12A, CLL1, DCAL2, KLRL1, MICL

UniProt ID: Q5QGZ9

UniProt Link: www.uniprot.org/uniprotkb/Q5QGZ9/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 265 AA

Molecular Weight: 31 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSEEVTYADLQFQNSSEMEKIPEIGKFGEKAPPAPSHVWRPAALFTLLCLLLIIGLGVLASMFHVTL
KIEMKKMNKLQNISEELQRNLSLQMSNMNINSNKIRNLSTTLQTIATKLCRELYSKEQEHKCKPCPRR
WIWHKDSCYFLSDDVQTWQESKMACAAQNASLLKINNKNLEFIKSQSRSDYWLGLSPEEDSTRG
MRVDNIINSSAWVIRNAPDLNNMYCGYINRLYVQYYHCTYKKRMICEKMANPVQLGSTYFREA

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 C-type lectin domain family 12 member A (C-type lectin-like molecule 1) (CLL-1) (Dendritic cell-associated lectin 2) (DCAL-2) (Killer cell C-type lectin-like receptor L1) (hKLRL1) (Myeloid inhibitory C-type lectin-like receptor) (MICL) (CD antigen CD371) 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: Myeloid inhibitory C-type lectin receptor that acts as a negative regulator of myeloid cell activation (PubMed:14739280, PubMed:15238421, PubMed:16239426, PubMed:34234773, PubMed:38367667, PubMed:38386511, PubMed:39143217). Myeloid cell inhibition is required to limit proinflammatory pathways and protect against excessive inflammation (By similarity). Specifically recognizes and binds various structures, such as neutrophil extracellular traps (NETs) or monosodium urate crystals (PubMed:38367667, PubMed:38386511, PubMed:39143217). Also acts as a pattern-recognition receptor for pathogen-associated molecules, such as plasmodium hemozoin or mycobacterial micolic acid (PubMed:31269448, PubMed:36542980). Ligand-binding induces phosphorylation of its ITIM motif, followed by recruitment of tyrosine-protein phosphatases PTPN6 and PTPN11, which counteract tyrosine-protein kinase SYK, thereby preventing myeloid cell activation (PubMed:14739280, PubMed:16239426, PubMed:34234773). Acts as a pattern-recognition receptor for NETs in neutrophils: specifically recognizes DNA in NETs, leading to inhibit neutrophil activation and limit further NET formation (PubMed:39143217). This regulation is essential for controlling key neutrophil responses and limit NET-mediated inflammatory conditions (By similarity). Also recognizes dead cells by acting as a receptor for monosodium urate crystals, leading to down-regulate neutrophil activation (PubMed:38367667, PubMed:38386511). Binding to monosodium urate crystals also promotes the type I interferon response (By similarity). Acts as an inhibitor of natural killer (NK) cell cytotoxicity (PubMed:15238421). Also acts as an inhibitor of dendritic cell maturation in an IL10-dependent manner (PubMed:16239426).

Subcellular Localization: Cell membrane ; Single-pass type II membrane protein . Note=Ligand binding leads to internalization (PubMed:16239426). Clusters at phagocytic vesicles upon monosodium urate crystal-binding (PubMed:38367667).

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.