



**LD Biopharma, Inc.**  
9924 Mesa Rim Road, Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human CD312 Protein  
**Catalog Number:** hRP-1827  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human Adhesion G protein-coupled receptor E2 ( ADGRE2, also named as CD312 ) gene encodes a member of the class B seven-span transmembrane (TM7) subfamily of G-protein coupled receptors. These proteins are characterized by an *extended extracellular region* with a variable number of N-terminal epidermal growth factor-like domains coupled to a TM7 domain via a mucin-like spacer domain. The encoded protein is expressed mainly in myeloid cells where it promotes cell-cell adhesion through interaction with chondroitin sulfate chains. CD312 promotes granulocyte chemotaxis, degranulation and adhesion. In macrophages, this protein promotes the release of inflammatory cytokines, including IL8 and TNF through G-proteins signaling. Recent data indicated that CD312 undergoes autocatalytic cleavage, which producing an extracellular subunit, and sensitizing mast cell to IgE-independent vibration-induced degranulation.

Extracellular domain of human CD312 cDNA (24 – 540aa) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein was expressed in E. coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

**Gene Symbol:** CD312 (EMR2; ADGRE2)  
**Accession Number:** NP\_038475  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

### Key References



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Boyden SE, *Vibratory Urticaria Associated with a Missense Variant in ADGRE2*. N Engl Med. Feb 3, DOI:10.1056/NEJMoa1500611 (2016)

Huang YS, et al., *Activation of myeloid cell-specific adhesion class Gprotein-coupled receptor EMR2 via ligation-induced translocation and interaction of receptor subunits in lipid raft microdomains*. Mol. Cell. Biol. 32 (8), 1408-1420 (2012)

Chen TY, et al., *EMR2 receptor ligation modulates cytokine secretion profiles and cell survival of lipopolysaccharide-treated neutrophils* Chang Gung Med J 34 (5), 468-477 (2011)

Bjarnadottir TK, *Identification of novel splice variants of Adhesion Gprotein-coupled receptors*. Gene 387 (1-2), 38-48 (2007)

## Applications

1. May be used for in vitro CD312 mediated various cell chemotaxis, degranulation and adhesion regulation study with this protein either as soluble factor or as coating matrix protein.
2. May be used for protein-protein interaction mapping.
3. Potential biomarker/therapeutic protein for various cancer treatment by targeting CD312 with specific antibody.
4. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGRHHHHHENLYFQGGFQDSRGCARWCPQDSSCVNATAACRCNPGFSSFSEII  
TTPMETCDDINECATLSKVSCGKFSDCWNTEGSYDCVCSPGYEPVSGAKTFKNESENTCQDVDE  
CQQNPRLCKSYGTCVNTLGSYTCQCLPGFKLKPEDPKLCTDVNECTSGQNPCHSSTHCLNNVGS  
YQCRCRPGWQPIPGSPNGPNNTVCEDEVDECSSGQHQCDSSTVCFNTVGSYSCRCRPGWKPRHGI  
PNNQKDTVCEDMTFSTWTPPPGVHSQTLRFFDKVQDLGRDYKPLANNTIQSILQALDELLEA  
PGDLETLPRLQQHCVASHLLDGLEVDLRLGLSKNLSNGLLNFSYPAGTELSLEVQKQVDRSVTLR  
QNQAVMQLDWNQAQKSGDPGPSVVLVSI PGMGKLLAEAPLVLEPEKQMLLHETHQGLLQDGSP  
ILLSDVISAFLSNNDTQNLSSPVTFTFSHRSVIPRQKVLVCFWEHGQNGCGHWATTGCSTIGTR  
DTSTICRCTHLSFAVLMAHYDVQEEDPVLTVIT



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