



LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CD31 Protein
Catalog Number: hRP-2401
Manufacturer: LD Biopharma, Inc.

Introduction

Human platelet endothelial cell adhesion molecular (PECAM1, also named as CD31) gene encode a cell adhesion molecule which is required for leukocyte transendothelial migration (TEM) under most inflammatory conditions. CD31 Tyr-690 plays a critical role in TEM and is required for efficient trafficking of CD31 to and from the lateral border recycling compartment (LBRC) and is also essential for the LBRC membrane to be targeted around migrating leukocytes. CD31 heterophilic interacts with CD177 plays a role in transendothelial migration of neutrophils. The Homophilic ligation of CD31 prevents macrophage-mediated phagocytosis of neighboring viable leukocytes by transmitting a detachment signal. It promotes macrophage-mediated phagocytosis of apoptotic leukocytes by tethering them to the phagocytic cells; CD31-mediated detachment signal appears to be disabled in apoptotic leukocytes. It also modulates bradykinin receptor BDKRB2 activation. CD31 regulates bradykinin- and hyperosmotic shock-induced ERK1/2 activation in endothelial cells. CD31 induces susceptibility to atherosclerosis.

Full-length extracellular domain of human CD31 cDNA (28 – 601aa) was constructed with codon optimization gene synthesis and was expressed with a human N-terminalT7-His-TEV cleavage site Tag (34aa) fusion 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: CD31 (PECAM1; GPIIA; PECA1; endoCAM)
Accession Number: NP_000433
Species: Human
Size: 20 µg / Vial
Composition: 0.20 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.



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Key References

Iovino F, et al., *pIgR and PECAM-1 bind to pneumococcal adhesins RrgA and PspC mediating bacterial brain invasion*. J. Exp. Med. 214 (6), 1619-1630 (2017)

Yu CH, et al., *High glucose induced endothelial to mesenchymal transition in human umbilical vein endothelial cell*. Exp. Mol. Pathol. 102 (3), 377-383 (2017)

Vlachadis N, et al., *Associations of combined polymorphisms of the platelet membrane glycoproteins Ia and IIIa and the platelet-endothelial cell adhesion molecule-1 and P-Selectin genes with IVF implantation failures*. J Obstet Gynaecol 37 (3), 363-369 (2017)

Douaisi M, et al., *CD31, a Valuable Marker to Identify Early and Late Stages of T Cell Differentiation in the Human Thymus*. J. Immunol. 198 (6), 2310-2319 (2017)

Applications

1. May be used for in vitro CD31 mediated leukocyte trans-endothelial migration (TEM) in inflammatory pathway regulation study with this protein either as soluble factor or as coating matrix protein.
2. May be used for protein-protein interaction assay.
3. Potential therapeutic/diagnostic protein, which may be used as endothelial cell function modulator (either CD31 protein or anti-CD31 antibody) for various diseases therapy.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEGSTSQENSFTINSVDMKSLPDWTVQNGKNLTLQCF
ADVSTTSHVKPQHQLMFLFYKDDVLFYNISSMKSTESYF IPEVRIYDSGTYKCTVIVNNKEKTTAE
YQLLVEGVPSRVTLTKKEAIQGGIVRVNCSVPEEKAPIHFTIEKLELNEKMKVCLKREKNSRDQ
NFVILEFPVEEQDRVLSFRCQARIISGIHMQTSESTKSELVTVTESFSTPKFHISPTGMIMEGA
QLHIKCTIQVTHLAQEFPEII IQDKAIVAHNRHGKAVYSVMAMVEHSGNYTCKVESSRISKV
SSIVVNITELFSKPELESSFTHLDQGERLNLSCSIPGAPPANFTIQKEDTIVSQTQDFTKIASK
SDSGTYICTAGIDKVVKKSNVTQIVVCEMLSQPRISYDAQFEVIKQTIIEVRCESISGTLPI SY



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QLLKTSKVLENSTKNSNDPAVFKDNPTEDVEYQCVADNCHSHAKMLSEVLRVKVIAPVDEVQIS
ILSSKVVEGEDIVLQCAVNEGSGPITYKFYREKEGKPFYQMTSNATQAFWTKQKASKEQEGEY
YCTAFNRANHASSVPRSKILTVRVILAPWKK