



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

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human CD9 Extracellular Domain  
**Catalog Number:** hRP-1843  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human CD9 protein is a member of the transmembrane 4 superfamily, also known as the tetraspanin family. Most of these members are cell-surface proteins with *two extracellular domains* that are characterized by the presence of four hydrophobic domains. CD9 protein functions in many cellular processes including differentiation, adhesion, and signal transduction, and expression of this gene plays a critical role in the suppression of cancer cell motility and metastasis. Recent data indicated that CD9 was enriched in exosome vesicles, could be used for identification or purification of exosome.

Two extracellular domains of human CD9 cDNA (34 – 55aa & 112 - 195aa fusion) 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:** CD9 (BTCC-1; DRAP-27; MIC3; MRP-1; TSPAN-29)  
**Accession Number:** NP\_001760  
**Species:** Human  
**Size:** 50µg / Vial  
**Composition:** 0.5 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

Franz J, et al., *Nanoscale Image Reveals a Tetraspanin-CD9 Coordinated Elevation of Endothelial ICAM-1 Clusters*. PLoS One. Jan 5; 11(1) e0126598 (2016)



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Podergajs N, et al., *Transmembrane protein CD9 is glioblastoma biomarker, relevant for maintenance of glioblastoma stem cell*. *Oncotarget*. Nov 11. Doi: 10.18632/oncotarget.5477 (2015)

Kristine R, et al., *Exosomal proteins as potential diagnostic markers in advanced non-small cell lung carcinoma*. *Journal of Extracellular Vesicles*. 4: 26659. (2015)

Herr MJ, et al., *Pro-MMP-9 upregulation in HT1080 cells expressing CD9 is regulated by epidermal growth factor receptor*. *Biochem. Biophys. Res. Commun.* 442 (1-2), 99-104 (2013)

Nankivell P, et al., *Tetraspanins CD9 and CD151, epidermal growth factor receptor and cyclooxygenase-2 expression predict malignant progression in oral epithelial dysplasia*. *Br. J. Cancer* 109 (11), 2864-2874 (2013)

## Applications

1. May be used for in vitro CD9 mediated tumor cell differentiation, adhesion, and signal transduction 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 protein for monitoring blood/tumor cell derived exosome vesicles.
4. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGRHHHHHENLYFQGGEFWLRFDSQTKSIFEQETNNNNSSGGSHKDEVIKEVQ  
EFYKDTYNKLKTKDEPQRETLKAIHYALNCCGLAGGVEQFISDICPKKDVLETFTVKSCPDAIK  
EVFDNKFHI