



**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 **LGALS1** Protein  
**Catalog Number:** HRP-3533  
**Manufacturer:** LD Biopharma, Inc. USA

### Introduction

Human Galectin-1 (LGALS1) gene encodes a Lectin that binds  $\beta$ -galactoside and a wide array of complex carbohydrates. It plays a role in regulating apoptosis, cell proliferation and cell differentiation. LGALS1 inhibits CD45 protein phosphatase activity and therefore the dephosphorylation of Lyn kinase. It is a strong inducer of T-cell apoptosis. Recent data indicated that LGALS1 forms a complex with HOXA5 which regulating brain tumor stem cell proliferation and promote glioblastoma.

Full-length, secreted form of human LGALS1 cDNA (2 – 135aa) was constructed with codon optimization gene synthesis and expressed with a human alpha Fetal Protein N-terminal (AFPn) -His-TEV cleavage site Tag (217aa) fusion at its N-terminal 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:** LGALS1 (HLBP14; Gal-1)  
**Accession Number:** NP\_002296  
**Species:** Human  
**Size:** 50 $\mu$ g / 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, DTT and others.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

### Key References

Ahmad Sharanek, et al., *Transcriptional control of brain tumor stem cells by a carbohydrate binding protein*. Cell Rep. Aug 31; 36(9): 109647. (2021).



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

Schedlbauer A, et al., *Characterizing ligand-induced conformational changes in clinically relevant galectin-1 by H(N)/H<sub>2</sub>O (D<sub>2</sub>O) exchange* Biochimie 187, 48-56 (2021)

Shah D, et al., *A novel miR1983-TLR7-IFNbeta circuit licenses NK cells to kill glioma cells, and is under the control of galectin-1.* Oncoimmunology 10 (1), 1939601 (2021)

Pfeifer L, et al., *Degraded Arabinogalactans and Their Binding Properties to Cancer-Associated Human Galectins.* Int J Mol Sci 22 (8), 4058 (2021)

## Applications

1. May be used for in vitro LGALS1 mediated signaling regulation study in vitro for T or NK cells with this recombinant LGALS1 protein either as soluble factor or as coating matrix protein.
2. May be used for LGALS1 protein-protein interaction assay.
3. Potential Therapeutic / diagnostic protein, which may be used as immune-response modulating strategy (such as inhibitor of LGALS1 drug) for various diseases, such as targeting brain tumor stem cell for glioblastoma treatment.
4. As native human LGALS1 antigen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Human **AFPn**- LGALS1 Fusion Protein Sequence (39.6 kD)

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ  
SSGCLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT  
SCEAYEEDRETFMNKFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT  
KELRESSGGSHHHHHS**ENLYFQGEFEL**ACGLVASNLNLKPGECLRVRGEVAPDAKSFVLNLG  
KDSNNLCLHFNPRFNAHG DANTIVCNSKDGGAWGTEQREAVFPFQPGSVAEVCITFDQANLTVK  
LPDGYEFKFPNRLNLEAINYMAADGDFKIKCVAFD