

## Recombinant Human Galectin-9 (carrier-free)

<b>Catalog# / Size</b>	557302 / 10 µg 557304 / 25 µg 557306 / 100 µg
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	HUAT, Lectin, galactoside-binding, soluble, 9 (LGALS9), LGALS9A
<b>Description</b>	<p>Galectin-9 is a member of the lectin family, which includes 15 mammalian lectin members. Like all galectins, Galectin-9 contains a carbohydrate recognition binding domain that enables specific binding of β-galactosides. Most galectins are either bivalent or multivalent in regards to their carbohydrate binding capacity, which enables the recognition of distinct signalling pathways. Galectin-9 may be retained intracellularly or transported to the cell surface where it can be cleaved to generate a soluble form. Galectin-9 functions in effector and regulatory phases of the immune response. During inflammation, the production of Galectin-9 <i>in vivo</i> generates a microenvironment that limits effector T cell responses. Galectin-9 can negatively regulate the Th1 immune response by engaging TIM-3 on T cells, which leads to induction of intracellular Ca<sup>2+</sup> influx and activation of apoptosis pathways. In addition, Galectin-9 has been shown to function as a urate transporter in the kidney. Galectin-9 has been identified as a possible prognostic marker in breast cancer, melanoma, and oral squamous cell carcinomas.</p>

### Product Details

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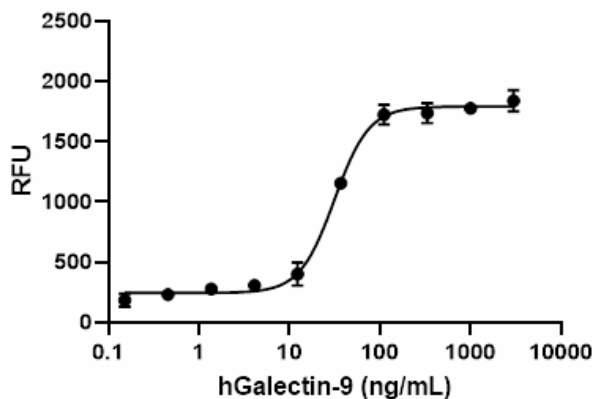
<b>Source</b>	Human Galectin-9, amino acids (Ala2-Thr323) (Accession# NP_002299), was expressed in 293E cells with a N-terminal His tag.
<b>Molecular Mass</b>	The 343 amino acid recombinant protein with an N-terminal His tag has a predicted molecular mass of approximately 37.9 kD. The DTT-reduced and non-reduced protein migrate approximately above 60 kD by SDS-PAGE. The predicted N-terminal amino acid is His.
<b>Purity</b>	>95%, as determined by Coomassie stained SDS-PAGE.
<b>Formulation</b>	0.22 µm filtered protein solution in 20 mM MOPS, 300 mM NaCl, 1 mM EDTA, and in 2 mM DTT.
<b>Endotoxin Level</b>	Less than 1.0 EU per µg of protein as determined by the LAL method.
<b>Concentration</b>	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate of Analysis</a> online tools.
<b>Storage &amp; Handling</b>	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. <b>Avoid repeated freeze/thaw cycles.</b>
<b>Activity</b>	<p>Recombinant human Galectin-9 is able to agglutinate human red blood cells with an ED<sub>50</sub> of 0.5 - 2.0 µg/ml.</p> <p>Immobilized recombinant human Galectin-9 supports the adhesion of Jurkat human acute T cell leukemia cells in a dose-dependent manner. ED<sub>50</sub> for this effect is 15 - 75 ng/mL.</p>
<b>Application</b>	<a href="#">Bioassay</a>
<b>Application Notes</b>	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our <a href="#">100% satisfaction guarantee</a> . If you have any concerns, contact us at <a href="mailto:tech@biolegend.com">tech@biolegend.com</a> .

## Antigen Details

<b>Structure</b>	Homodimer.
<b>Distribution</b>	Galectin-9 is expressed by lymphocytes, dendritic cells, neutrophils, eosinophils, astrocytes, endothelial cells, fibroblasts, thymus stromal cells, and epithelial cells.
<b>Function</b>	Cell aggregation, adhesion, chemotaxis, apoptosis, suppression of Th1 and Th17 responses, and induction of regulatory T cells. IFN- $\gamma$ induces galectin-9 expression in fibroblasts, endothelial, and Kupffer cells. IL-1 $\beta$ and IL-5 induces it in astrocytes and eosinophils, respectively.
<b>Interaction</b>	Extracellular matrix
<b>Ligand/Receptor</b>	Galectin-9 binds to glycans featuring galactose and its derivatives, CD444, TIM-3
<b>Bioactivity</b>	Human Galectin-9 is able to agglutinate human red blood cells.
<b>Biology Area</b>	Apoptosis/Tumor Suppressors/Cell Death, Cell Adhesion, Cell Biology, Cell Motility/Cytoskeleton/Structure, Immunology, Stem Cells
<b>Molecular Family</b>	Adhesion Molecules, Immune Checkpoint Receptors
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Toscano MA, <i>et al.</i> 2009. <i>Nat. Immunol. Rev.</i> 9:338.</li><li>2. Hadari YR, <i>et al.</i> 2000. <i>J. Cell Sci.</i> 113:2385.</li><li>3. Tsuboi Y, <i>et al.</i> 2007. <i>Clin. Immunol.</i> 124:221.</li><li>4. Zhu C, <i>et al.</i> 2005. <i>Nat. Immunol.</i> 6:1245.</li><li>5. Wu C, <i>et al.</i> 2014. <i>Immunity</i> 41:270.</li><li>6. Graessler J, <i>et al.</i> 2000. <i>Adv. Exp. Med. Biol.</i> 486:179.</li><li>7. Bacigalupo ML, <i>et al.</i> 2013. <i>World J. Gastroenterol.</i> 47:8831.</li></ol>

**Gene ID** [3965](#)

## Product Data



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