

Galectin-1 Protein, Human, Recombinant

General Information

Synonyms:	GBP;Galectin-1;lectin, galactoside-binding, soluble, 1;GAL1
Protein Construction:	A DNA sequence encoding the human Galectin 1 (NP_002296.1) (Met 1-Asp135) was expressed. Predicted N terminal: Ala 2
Species:	Human
Expression Host:	E. coli
Accession:	P09382
Molecular Weight:	15 kDa (predicted); 15 kDa (reducing conditions)

QC Testing

Biological Activity:	1.Measured by its ability to agglutinate human red blood cells. The ED50 for this effect is typically 3-30µg/mL. 2.Loaded Recombinant Human Thy1/CD90 Protein, His Tag on NTA Biosensor, can bind Recombinant Human Galectin-1 Protein with an affinity constant of 46.9 nM as determined in BLI assay (Routinely tested).
Purity:	> 98 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
Reconstituted with sterile deionized water to 0.15 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Galectin-1 (Gal-1, GAL1), is a member of the galectins, a family of animal lectins ranging from *Caenorhabditis elegans* to humans, which is defined by their affinity for beta-galactosides and by significant sequence similarity

in the carbohydrate-binding site. It is a homodimer with a subunit molecular mass of 14.5 kDa, which contains six cysteine residues per subunit. The cysteine residues should be in a free state to maintain a molecular structure that is capable of showing lectin activity. This endogenous lectin widely expressed at sites of inflammation and tumor growth has been postulated as an attractive immunosuppressive agent to restore immune cell tolerance and homeostasis in autoimmune and inflammatory settings. On the other hand, galectin-1 contributes to different steps of tumor progression including cell adhesion, migration, and tumor-immune escape, suggesting that blockade of galectin-1 might result in therapeutic benefits in cancer. Several potential glycoprotein ligands for galectin-1 have been identified, including lysosome-associated membrane glycoproteins and fibronectin, laminin, as well as T-cell glycoproteins CD43 and CD45. Evidence points to Gal-1 and its ligands as one of the master regulators of such immune responses as T-cell homeostasis and survival, T-cell immune disorders, inflammation, and allergies as well as host-pathogen interactions.

Reference

- Gaudet AD, et al. (2005) Expression and functions of galectin-1 in sensory and motoneurons. *Curr Drug Targets*. 6 (4): 419-25.
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- Camby I, et al. (2006) Galectin-1: a small protein with major functions. *Glycobiology*. 16(11): 137R-157R.
- Salatino M, et al. (2008) Galectin-1 as a potential therapeutic target in autoimmune disorders and cancer. *Expert Opin Biol Ther*. 8(1): 45-57.

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