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Human Galectin 3 Protein (N-His)

Catalog Number:	604301, 604302
Size:	25 ug, 100 ug
Target Name:	Galectin-3, LGALS3, MAC2, Gal-3, Mac-2 antigen
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	ELISA, BLI
Format:	Liquid, Purified
Expression Host:	HEK293
Species:	Human
Accession Number:	P17931
Sources:	Recombinant Human Galectin 3 (Ala2-Ile250) with N-His tag is expressed in 293 cells.
Molecular Weight:	This protein has a predicted molecular weight of 28.2 kDa. Under DTT-reducing conditions, the protein migrates at approximately 35-40 kDa on SDS-PAGE.
Affinity Tag:	N-His
Purity:	>95% based on SDS-PAGE under reducing condition
Formulation:	1xPBS buffer, pH7.4, 0.22 μm filtered
Endotoxin level:	Less than 0.1 EU/μg protein as determined by the LAL method
Protein Concentration:	25μg size is bottled at 0.2mg/mL concentration. 100 μg size is supplied at a lot-specific concentration.
Storage and Handling:	Briefly centrifuge the vial upon receipt. An unopened vial can be stored at 4°C for up to 2 weeks, or at -20°C or below for up to six months. The protein may be further diluted to 0.1 mg/mL using 0.22 μm-filtered PBS buffer (pH 7.4). For long-term storage, the diluted stock solution should be aliquoted and stored at ≤ –70°C to minimize freeze-thaw cycles. If additional dilution is required, carrier proteins such as FBS or BSA should be added to maintain protein stability.

BACKGROUND INFORMATION

Galectin-3 is a multifunctional β-galactoside–binding lectin encoded by the LGALS3 gene and expressed in a wide range of cell types, including macrophages, epithelial cells, fibroblasts, and certain tumor cells. It plays diverse roles in cell adhesion, immune regulation, apoptosis, fibrosis, and inflammation. Galectin-3 can localize to the cytoplasm, nucleus, cell surface, and extracellular space, enabling it to influence both intracellular signaling pathways and cell–cell or cell–matrix interactions. It is particularly recognized for modulating immune responses and promoting fibrotic tissue remodeling.

Structurally, Galectin-3 is unique among galectins in that it is a chimera-type lectin. It contains a C-terminal carbohydrate recognition domain (CRD) responsible for binding β-galactoside–containing glycoconjugates, and an N-terminal domain rich in

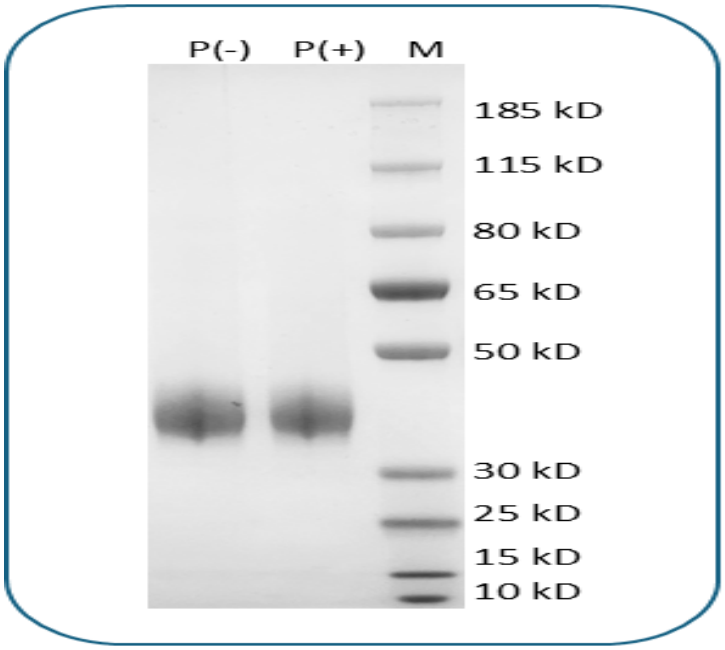
proline and glycine residues that mediates oligomerization. Upon ligand binding, Galectin-3 can form pentamers or higher-order multimers, allowing it to crosslink glycosylated receptors on cell surfaces and organize signaling lattices. This multivalency is critical for its ability to regulate receptor clustering and downstream signaling events.

Its primary ligands are glycoproteins and glycolipids bearing N-acetyllactosamine or related β-galactoside structures. Notable binding partners include integrins, laminin, fibronectin, CD45, and various growth factor receptors. Through these interactions, Galectin-3 modulates cell migration, survival, and cytokine production. Intracellularly, it can also interact with anti-apoptotic proteins such as Bcl-2, contributing to cell survival signaling.

Dysregulation of Galectin-3 is implicated in multiple diseases. In cancer, it often promotes tumor progression, angiogenesis, immune evasion, and metastasis. In cardiovascular disease, elevated circulating Galectin-3 is associated with heart failure and adverse remodeling, and it is used clinically as a prognostic biomarker in some settings. Galectin-3 also plays a central role in fibrotic disorders affecting the liver, lung, and kidney, where it drives fibroblast activation and extracellular matrix deposition.

Therapeutically, Galectin-3 is an active target of drug development. Small-molecule inhibitors, modified citrus pectin derivatives, and monoclonal antibodies designed to block its carbohydrate recognition domain are under investigation for cancer and fibrotic diseases. By disrupting Galectin-3–mediated crosslinking and signaling, these approaches aim to reduce inflammation, fibrosis, and tumor-promoting immune suppression, positioning Galectin-3 as a promising target in precision medicine.

PRODUCT DATA



Purified Human Galectin 3 Protein (N-His) on SDS-PAGE under reducing (P+) and non-reducing (P-) conditions. The purity of the purified protein appears to be greater than 90% based on reducing condition.

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