

Product Information

Galectin-1, human recombinant, expressed in *E. coli*

Catalog Number **G7420**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Product Description

Galectin-1 is a member of the family of animal lectins which selectively binds β -galactoside residues. Galectins possess one or two highly conserved carbohydrate recognition domains (CRDs). Galectins commonly serve to crosslink structures containing *N*-acetyl-lactosamine located at the cell surface and within the extracellular matrix. They also possess hemagglutination activity, which is attributable to their bivalent carbohydrate binding properties, and have variable affinity for more complex oligosaccharides.

Galectin-1 is a homodimer that possesses a single carbohydrate recognition domain preceded by a short N-terminal sequence. It can polymerize when bound to carbohydrates, and can therefore crosslink surfaces expressing homologous carbohydrate ligands.

Galectin-1 has been implicated in metastasis and aggregation of cancer cells based on its association with the glycoprotein 90K.^{1,2} It has been shown to induce apoptosis of activated T cells,³ T-leukemia cell lines,⁴ breast,⁵ colon,⁶ and prostate⁷ cancer cells. However, resting T-cells do not undergo apoptosis upon binding with galectin-1.⁸

Other activities of galectin-1 include cell differentiation and inhibition of CD45 protein phosphatase activity. Galectin-1 binds CD45, CD3, and CD4 in addition to β -galactoside. Galectin-1 bound in the extracellular matrix can induce cell death of adherent T cells at a ten-fold lower concentration than soluble galectin-1.⁹ Galectin-1 may play a significant role in cancer through apoptosis, cell adhesion and migration, regulation of the cell cycle, and tumor evasion of immune responses.¹⁰

Recombinant human galectin-1 contains 135 amino acid residues and has a predicted molecular mass of ~ 14 kDa. This galectin-1 product is lyophilized from a 5 mg/ml solution of galectin-1 in PBS containing 8 mM DTT and 150 mM lactose.

Purity: $\geq 95\%$ (SDS-PAGE)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Stock solutions may be prepared in sterile water containing 8 mM DTT, at $37\text{ }^{\circ}\text{C}$. Stock solutions may be stored at $2-8\text{ }^{\circ}\text{C}$ for up to 1 week, or at $-20\text{ }^{\circ}\text{C}$ in aliquots. Freeze/thaw cycles should be avoided. For use in carbohydrate binding assays, the solution should be dialyzed to remove the lactose stabilizer.

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$. The lyophilized product is stable for up to 12 months at $-20\text{ }^{\circ}\text{C}$.

References

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