SCRIPPS LABORATORIES

Technical Brief

Recombinant Galectin-3

Galectin-3 is a carbohydrate-binding protein, a lectin, that binds glycoproteins containing ß-galactoside. It has multiple biological functions, but its relevance in cardiac diagnostics is its involvement in inflammation, fibrosis, and ventricular remodeling.

Myocardial injury triggers an inflammatory and wound healing response. As part of this process, macrophages release galectin-3, which then binds to and activates myofibroblasts, resulting in collagen synthesis. The collagen deposits lead to the development of myocardial scar tissue and ventricular remodeling, both of which significantly increase the likelihood of future myocardial dysfunction or heart failure.[1]

Galectin-3 is well-studied and is strongly linked to long-term outcomes in cardiac patients.[2,3,4] Several studies confirm galectin-3's role in predicting future cardiac events, including the decades long, multi-generational Framingham Heart Study.[5]

Elevated blood levels of galectin-3 can help establish a diagnosis of heart failure and are strongly associated with higher mortality rates in both acute and chronic heart failure patients. Over time, galectin-3 levels correlate strongly with patient outcomes. Lower levels are associated with an event-free future, while higher levels correspond with increasing severity of heart disease. In addition, elevated levels identify increased risk for heart failure in healthy, middle-aged adults.

In addition, galectin-3 assay data are complementary with those from natriuretic peptides, such as N-terminal pro-B-type natriuretic peptide (NT-proBNP). In short, NT-proBNP levels are elevated when the heart is undergoing myocardial stretch, an indication that the

SDS-PAGE

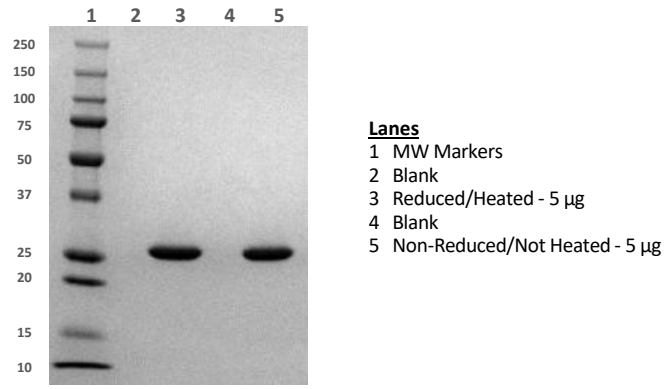

Figure 1. SDS-PAGE of Recombinant Galectin-3 under reduced/heated (lane 3) and non-reduced/not heated (lane 5) conditions.

HPLC

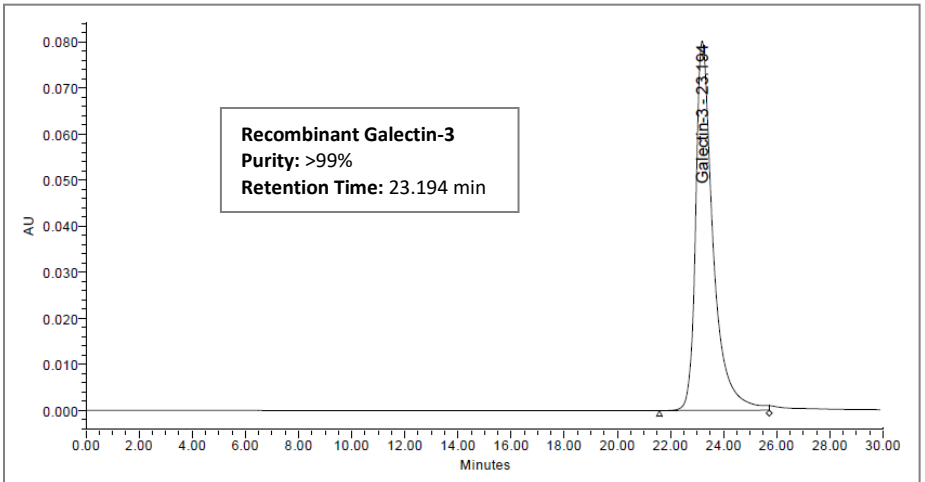

Figure 2. HPLC analysis of highly purified Recombinant Galectin-3. Analysis was performed using a Biozen 3 µm dSEC-2, 200 Å, 300 x 7.8 mm column.

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heart is straining and working harder than it normally would. This can occur in conditions like hypertension, cardiac ischemia, or heart failure. Therefore, NT-proBNP provides a snapshot of what is currently happening in the heart, while galectin-3 is an indicator of what may happen in the future. Together, they guide treatment decisions made by a cardiac care team.

SDS-PAGE

Figure 1 presents an SDS-PAGE image of purified recombinant galectin-3 from Scripps Laboratories. The purified protein runs close to its predicted MW of 26 kDa.[6] As can be seen in the gel, no visible contaminants are present.

HPLC

The HPLC elution profile for recombinant galectin-3, is shown in Figure 2. The chromatogram reveals a clean, single peak, indicative of a highly purified protein. Recombinant galectin-3 eluted at 23.194 minutes, with a purity >99%.

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Purified galectin-3 is suitable for use in a research setting or in the development of a clinical diagnostic assay. Material is in stock and available now. Use the link above right to learn more.

References

1. BaniHani, Khaled, Al Sharaa, et al. Cureus, 2025; 17(3): e81264.
2. Zaborska, Sikora-Frac, Smarz, et al. Int. J. Mol. Sci. 2023; 24: 13111.
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4. Netala, Hou,, Wang, et al. Int. J. Mol. Sci. 2025; 26: 3218.
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6. UniProt ID P17931

Ordering Information

Product Description	Cat. No.	Part No.	
Galectin-3, Recombinant	G1214	90712	*View G1214-90712*

Expressed Without Affinity Tags

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