



# Galectin-3

## Disease states that may lead to increased galectin-3 release:

- Hypertension
- Subclinical myocardial injury
- Cardiovascular disease

## Increased galectin-3 release results in:

- Cardiac fibrosis
- Adverse cardiac remodeling

## Description

Galectin-3 is one of the most widely studied galectins, a family of soluble B-galactoside-binding lectins that play a regulatory role in inflammation.<sup>1</sup> Galectin-3 affects the synthesis of matrix compounds, such as type I collagen.<sup>2</sup> When cardiac tissue is injured, macrophages infiltrate the tissue and secrete galectin-3, which promotes collagen synthesis and ultimately leads to cardiac fibrosis and adverse cardiac remodeling.<sup>3</sup>

Galectin-3 is independent of, and complementary to, natriuretic peptides as they identify separate and distinct biological processes. Galectin-3 is a mediator of cardiac fibrosis and adverse cardiac remodeling, whereas natriuretic peptides such as NT-proBNP or BNP identify myocardial stretch.

CPT Code **82777\***

Test Code **906902**

Sample Type **EDTA Plasma or Serum**

Tube Type **Lavender-Top or SST**

## Clinical Use

The galectin-3 test may be used to help identify individuals at risk of future chronic heart failure due to hypertension.

## Clinical Significance

- Elevated levels of galectin-3 in hypertensive individuals may suggest increased inflammation, collagen deposition and fibrosis that can lead to adverse cardiac remodeling.<sup>3</sup>
- Galectin-3 levels may be used to guide the selection of medications in hypertensive individuals, as ACE inhibitors and ARBs have been shown to more effectively reduce left ventricular mass.<sup>4</sup>

## Sample Type

The galectin-3 test can be performed on either an EDTA plasma or serum sample.

## Commercial Insurance or Medicare Coverage

Coverage guidelines, also known as NCD (National Coverage Determination) or LCD (Local Coverage Determination), have not been established or posted by CMS (Medicare & Medicaid). We have reviewed the larger Carriers (Aetna, UnitedHealthcare, Cigna, Blues) and information has not been posted or is limited. Medical necessity and specificity of diagnosis should be provided when ordering this test.

## RELATIVE RISK

### Understanding Medical Necessity

The following ICD-10 codes for galectin-3 are listed as a convenience for the ordering physician. The ordering physician should report the diagnosis code that best describes the reason for performing the test.

Diagnosis	Diagnosis Code
Type 2 Diabetes Mellitus with Hyperglycemia	E11.65
Type 2 Diabetes Mellitus without Complications	E11.9
Other Specified Diabetes Mellitus without Complications	E13.9
Pure Hypercholesterolemia, Unspecified	E78.00
Familial Hypercholesterolemia	E78.01
Mixed Hyperlipidemia	E78.2
Other Hyperlipidemia	E78.4
Hyperlipidemia, Unspecified	E78.5
Essential (primary) Hypertension	I10
Atherosclerotic Heart Disease of Native Coronary Artery without Angina Pectoris	I25.10

Galectin-3  
(ng/mL)



### Treatment Considerations\*

These treatment considerations are for educational purposes only. Specific treatment plans should be provided and reviewed by the treating practitioner.

✓ **Assess blood pressure**

- If abnormal, consider switching current hypertensive medication to an ACE inhibitor or ARB to prevent/reduce adverse cardiac remodeling<sup>5</sup> or titrate dose if currently taking either drug.

✓ **Assess the presence of conditions associated with organ fibrosis, cancer, human anti-mouse antibodies or rheumatoid factor, or high levels of gamma globulins (>2.5 g/dL) as these may contribute to abnormal galectin-3 results.**

\* The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.

<sup>f</sup> The treatment considerations are provided for informational purposes only and are not intended as medical advice. A physician's test selection and interpretation, diagnosis, and patient management decisions should be based on his/her education, clinical expertise, and assessment of the patient.

### References

1. Rubinstein N et al. The role of galectins in the initiation, amplification and resolution of the inflammatory response. *Tissue Antigens*. 2004; 64: 1-12.
2. Sharma UC et al. Galectin-3 marks activated macrophages in failure-prone hypertrophied hearts and contributes to cardiac dysfunction. *Circulation*. 2004; 110: 3121-3128.
3. de Boer RA et al. Galectin-3 in cardiac remodeling and heart failure. *Curr Heart Fail Rep*. 2010; 7: 1-8.
4. Meredith PA et al. From hypertension to heart failure – are there better primary prevention strategies? *J Renin Angiotensin Aldosterone Syst*. 2006; 7: 64-73.
5. Dahlof B et al. Cardiovascular morbidity and mortality in the Losartan Intervention For Endpoint reduction in hypertension study (LIFE): A randomized trial against atenolol. *Lancet*. 2002; 359: 1004-1010.

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