Determination of Galactosamine Containing Organic Impurities in Heparin Using a Compact Ion Chromatography System

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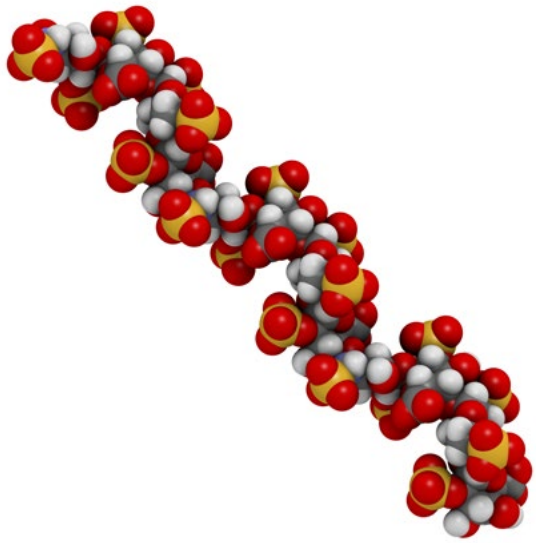
Key Words
HPIC, HPAE-PAD, Integrion, CarboPac PA20, Galactosamine, Chondroitin Sulfates

Introduction

This application proof note demonstrates a sensitive method for the determination of galactosamine in acid-hydrolyzed heparin samples, enabling the identification of heparin that has been contaminated with chondroitin sulfates. In this proof note, which is based on the method published in Application Note 233,[1] a Thermo Scientific™ Dionex™ Integrion™ HPIC™ system is used for the analysis.

Method

IC System:	Thermo Scientific Dionex Integrion HPIC system
Columns:	Thermo Scientific™ Dionex™ CarboPac™ PA20 Analytical (3 × 150 mm) Thermo Scientific Dionex CarboPac PA20 Guard (3 × 30 mm)
Eluent:	14 mM KOH
Gradient:	14.0 mM KOH (0.0–10.0 min), 14.0–100 mM KOH (10.00–10.05 min), 100 mM KOH (10.05–20.00 min), 100–14.0 mM KOH (20.00–20.05 min)
Flow Rate:	0.5 mL/min
Injection Volume:	10 µL
Temperature:	30 °C
Detection:	Pulsed amperometry, using Thermo Scientific Dionex Carbohydrate Disposable Au Working Electrodes



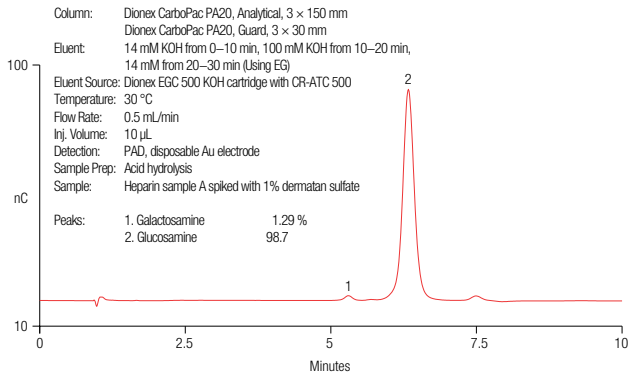


Figure 1. Separation of heparin sample spiked with 1% dermatan sulfate.

Reference

1. Thermo Scientific Application Note 233: Determination of Galactosamine Containing Organic Impurities in Heparin by HPAE-PAD Using the CarboPac PA20 Column, Sunnyvale, CA [Online] http://www.thermoscientific.com/content/dam/tfs/ATG/CMD/CMD%20Documents/Application%20&%20Technical%20Notes/Chromatography/Ion%20Chromatography/IC%20and%20RFIC%20Columns/77324-AN233-HPAE-IC-Heparin-29June09-LPN2286.pdf (accessed Dec. 28, 2015)

For application support, visit the AppsLab Library where you can find detailed method information, chromatograms and related compound information. All the information needed to run, process and report the analysis is available in ready-to-use eWorkflows, which can be executed directly in your chromatography data system. www.thermoscientific.com/appslab

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