

# Determination of Sugars in Functional Drinks Using a Compact IC System

Hua Yang, Thermo Fisher Scientific, Sunnyvale, CA, USA

## Key Words

HPIC, HPAE-PAD, Integrion, CarboPac PA20, Sugar, Glucose, Fructose, Sucrose, Functional Drinks, Sports Drinks, Energy Drinks

## Introduction

Excess sugar consumption is tied to poor health outcomes. The Nutrition Labeling and Education Act requires that for a pre-packaged food or drink the amount of sugar be displayed on the Nutrition Facts label. This application proof note demonstrates a high-performance anion-exchange with pulsed amperometric detection (HPAE-PAD) method to accurately determine sugar concentrations. In this proof note, the method is performed using a Thermo Scientific™ Dionex™ Integrion™ HPIC™ system, which allows fast determination of sugars in functional drinks, such as sports and energy drinks, with no eluent preparation or sample derivatization.

## 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:	33 mM KOH
Flow Rate:	0.5 mL/min
Injection Volume:	10 µL
Temperature:	30 °C
Detection:	Pulsed amperometry, with four-potential carbohydrate waveform, using a Thermo Scientific Dionex Gold on PTFE Disposable Electrode

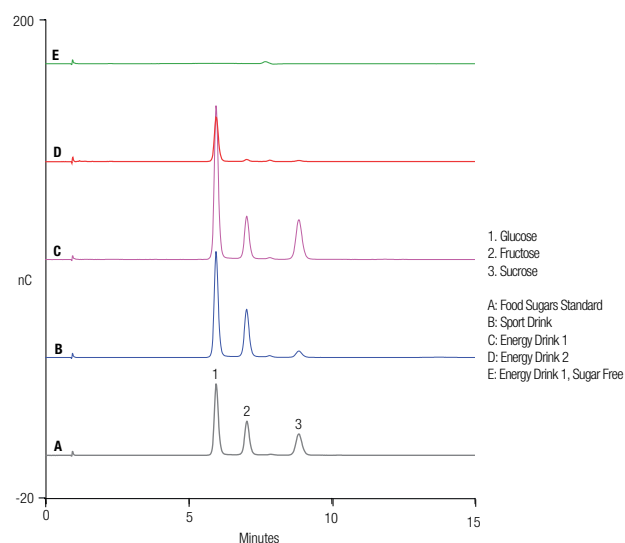


Figure 1. Separation of sugars in energy and sports drinks.

For application support, visit the [AppsLab Library](http://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/appslib](http://www.thermoscientific.com/appslib)



[www.thermoscientific.com/integrion](http://www.thermoscientific.com/integrion)

©2016 Thermo Fisher Scientific Inc. All rights reserved. ISO is a trademark of the International Standards Organization. All other trademarks are the property of Thermo Fisher Scientific and its subsidiaries. This information is presented as an example of the capabilities of Thermo Fisher Scientific products. It is not intended to encourage use of these products in any manners that might infringe the intellectual property rights of others. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

AB71905-EN 0116S



Thermo Fisher Scientific,  
Sunnyvale, CA USA is  
ISO 9001 Certified.

**Thermo**  
SCIENTIFIC

A Thermo Fisher Scientific Brand