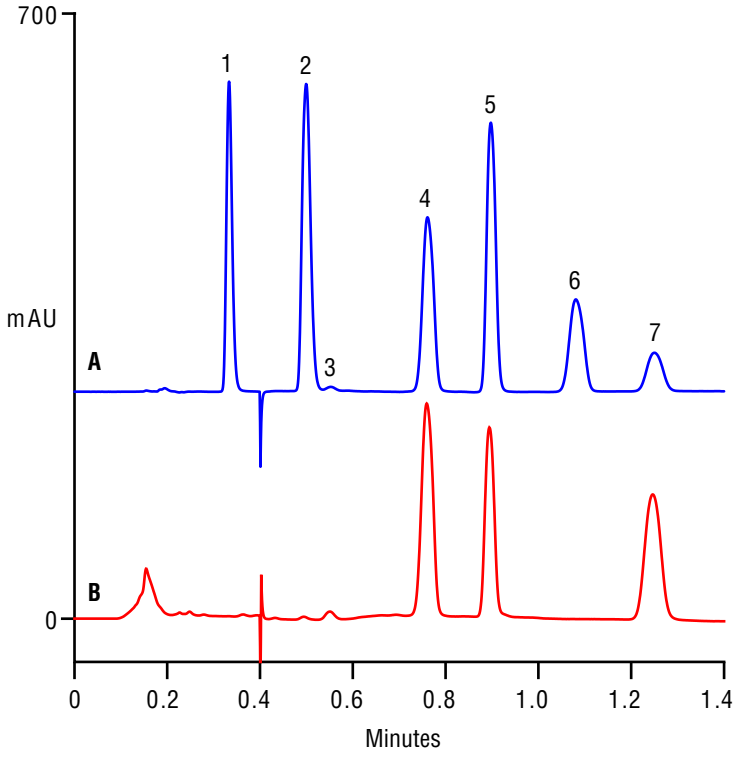
DIONEX

"Green" and Ultrafast Method for Determination of Soft Drink Ingredients on the Acclaim C18 RSLC Column



A. Standards
B. Diet Pepsi® (PepsiCo, Inc.)

Column:	Acclaim® RSLC C18, 2.2 µm
Dimensions:	3.0 × 50 mm
LC system:	UltiMate® 3000
Mobile Phase:	(A) 10 mM ammonium acetate, pH 5 (B) 50% Ethanol (v/v) + 10 mM ammonium acetate

Gradient Time (min):	–1.2	0.0	0.2	0.9	1.0	1.4
%A	93	93	70	70	93	93
%B	7	7	30	30	7	7

Flow Rate:	1.5 mL/min
Temperature:	50 °C
Injection:	2.0 µL; bypass sample loop at 0.20 min
Detection:	UV 230 nm; switch to 214 nm at 0.40 min; baseline subtraction with water blank
Sample Prep.:	Sonicate to remove CO_2
Peaks:	1. Acesulfame-K 2. Sodium saccharin 3. Aspartylphenylalanine (contaminant) 4. Benzoic acid 5. Caffeine 6. Sorbate potassium 7. Aspartame (150 µg/mL in water)

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Soft drinks are beverages consumed widely throughout the world. For quality control, the additive levels in soft drinks must be assayed frequently. This method uses an Acclaim RSLC rapid separation column to improve the throughput to about 20 samples/h (or 2.6 min/sample). To avoid the use of toxic solvents, acetonitrile has been replaced by ethanol. To reduce the solvent viscosity and column pressure, the column is heated to 50 °C. Wavelength switching suppresses interferences near acesulfame-K.