Waters
Lab Highlights
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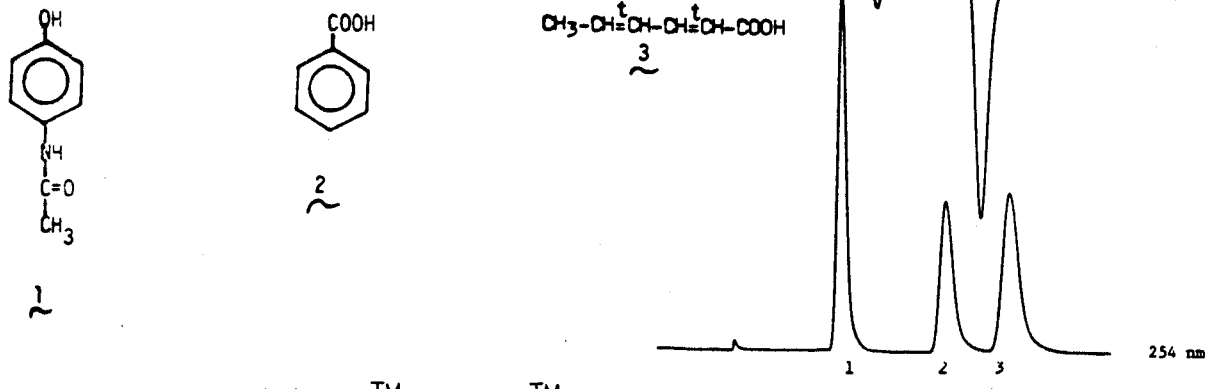
ANALYSIS OF ACETAMINOPHEN IN LIQUID DOSAGE FORMS USING RADIAL COMPRESSION WITH REAGENT D4

Acetaminophen (1) is a widely used analgesic and antipyretic agent that is formulated into a variety of dosage forms. One of the more popular dosage forms is the liquid formulations of acetaminophen for children. One of these formulations contains, along with acetaminophen, benzoic acid (2) and sorbic acid (3) as preservatives. A method for the simultaneous analysis of these three compounds was developed utilizing a Radial-PAK™ RESOLVE™ C_8 cartridge in an RCM-100® Radial Compression Module and is shown in Chromatogram A.

CHROMATOGRAM A



Column:	Radial-PAK™ RESOLVE™ C_8
Holder:	RCM-100®
Mobile Phase:	Acetonitrile: D4 + 0.01 M diammonium phosphate buffer (8:92)
Flow Rate:	4 ml/min @ 1000 psi
Injection Vol.:	8 µl
Detection:	M440 - 254 nm @ 0.2 AUFS M441 - 214 nm @ 1.0 AUFS

	Concentration	Retention Time
Acetaminophen	67.5 µg/ml	3.25
Benzoic Acid	250.0 µg/ml	5.09
Sorbic Acid	1.49 mg/ml	6.20

The aqueous portion of the mobile phase is prepared as follows:

The contents from one vial of RCSS Reagent D4 and 1.32 grams of diammonium phosphate are added to a one liter volumetric flask, brought to volume with HPLC grade water, and the pH adjusted to 6.0 with phosphoric acid. A mixture consisting of 920 mls of buffer and 80 mls of acetonitrile is prepared and filtered prior to use.

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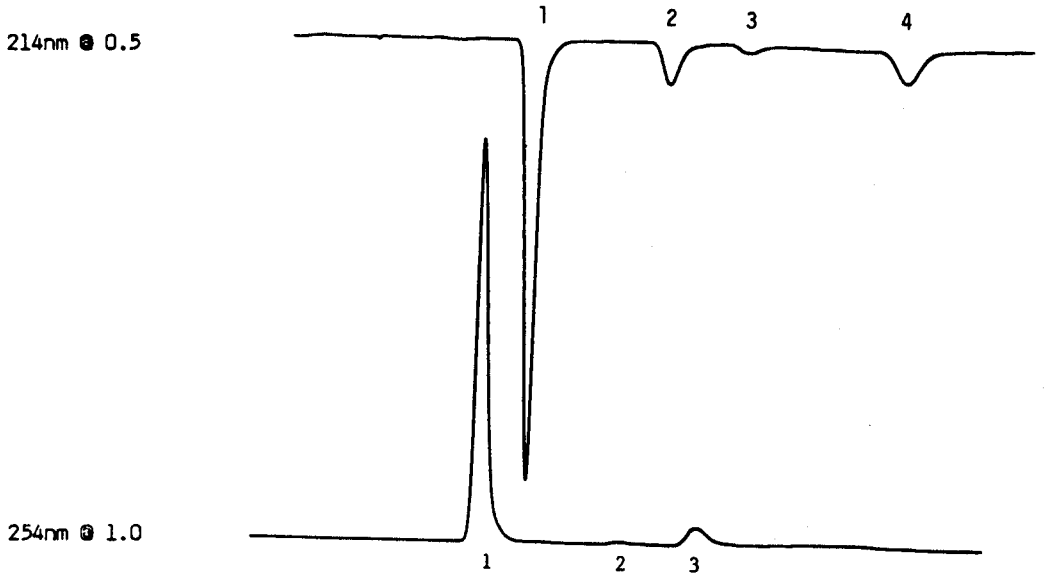
The results for the analysis of two commercial products are shown in Chromatograms B and C. The injected sample was prepared by diluting 100 µl of the product with 3.9 ml of the mobile phase. Injected volumes for Chromatograms B and C were 10 and 8 µl, respectively. The fourth peak in both chromatograms (8.31 minutes) corresponds to saccharine.

CHROMATOGRAM B



CHROMATOGRAM C