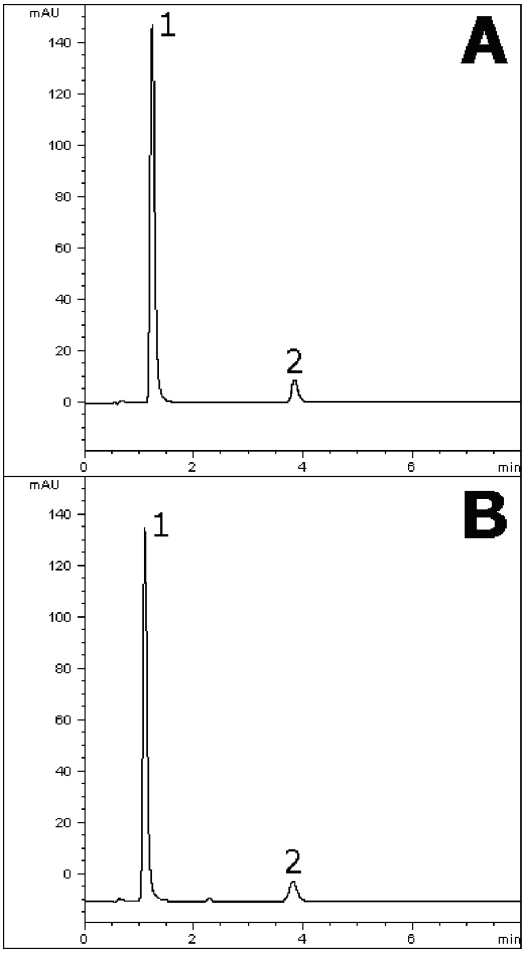
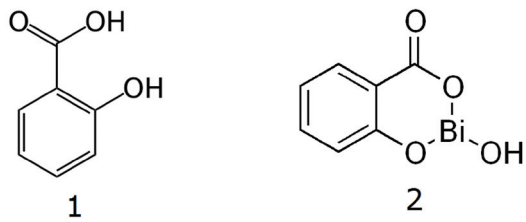
Method Transfer: Pepto-Bismol® Tablet

4µm to 2.2µm: Increased efficiency and comparable retention





Note: Pepto-Bismol® is primarily used as an antacid and to alleviate upset stomach. Originally called "Mixture Cholera Infantum" by the doctor who first invented it, the formulation was later modified, re-branded, and manufactured as Pepto-Bismol® by the Norwich Pharmacal Company, located in the small upstate New York city of Norwich.

Method Conditions

Column: **Cogent Bidentate C18 2.ō™**, 2.2µm, 120Å

Catalog No.: 40218-05P-2

Dimensions: 2.1 x 50 mm

Mobile Phase: 65% DI water / 35% Acetonitrile / 0.1% formic acid (v/v)

Injection vol.: 1.0 microL

Flow rate: 0.3mL/min

Detection: UV 302 nm

Peaks: 1. Salicylic acid
2. Bismuth subsalicylate

Sample: Pepto-Bismol® tablet (containing 262 mg bismuth subsalicylate and 102 mg salicylate) was ground and added to a 100 mL volumetric flask containing a portion of 1:1 acetonitrile: DI water. Then it was sonicated 10 min and diluted to mark. After mixing the flask, a portion was filtered (0.45 µm, nylon, MicroSolv Tech. Corp.) and used for HPLC injections. The salicylic acid peak was identified with a reference standard.

Discussion

Using the Cogent Bidentate C18 2.ō column, a simple assay method for the widely used Pepto-Bismol® formulation is performed. Here, excellent separation of bismuth subsalicylate and salicylic acid is achieved. The method can be readily transferred to a near-UHPLC 2.ō phase (Fig. A) from a standard 4µm column (Fig. B). The same column dimensions are used in both cases, with the only difference being the particle size. The analyte retention times of both peaks are highly consistent between the two columns, allowing for easy method transfer. In terms of theoretical plates, the smaller particle size resulted in a measured 50% increase in efficiency.

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