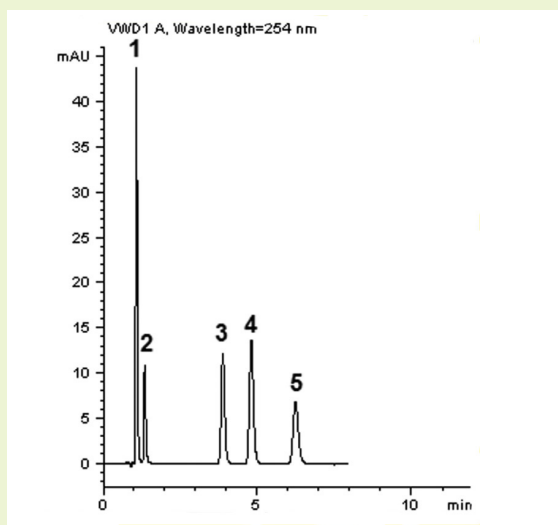
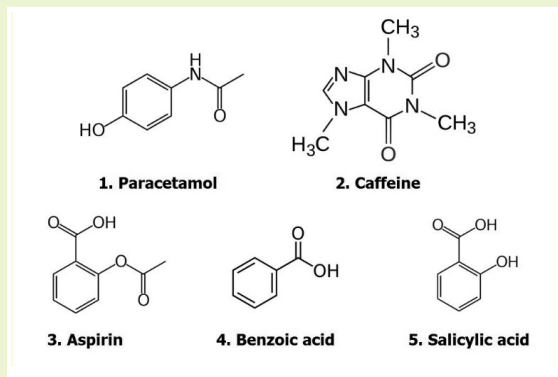


# Analgesic Drugs

## Excellent Peak Shapes



**Notes:** Acetaminophen (paracetamol) is analgesic and antipyretic and with Aspirin (non-steroidal anti-inflammatory agent) they are frequently associated in pharmaceutical formulations against the common cold. Aspirin is used in prophylactic “aspirin therapy” to reduce the risk of stroke or death in patients with myocardial infarction. The American College of Cardiology (ACC), American Heart Association (AHA), and many clinicians currently recommend low-dose “aspirin therapy”.

### Method Conditions

**Column:** Cogent Bidentate C18™, 4µm, 100Å

**Catalog No.:** 40018-75P

**Dimensions:** 4.6 x 75 mm

**Mobile Phase:** A: DI H<sub>2</sub>O/ 0.1% formic acid  
B: Acetonitrile/ 0.1% formic acid  
Isocratic composition: 78%A/ 22%B

**Injection vol.:** 2µL

**Flow rate:** 1.0 mL/min

**Detection:** UV 254 nm

**Sample:** 0.02 mg of acetaminophen, caffeine and 0.2 mg of aspirin, benzoic acid and salicylic acid were dissolved in 1 mL of 50%A/ 50%B solution.

**Peaks:** 1. Acetaminophen  
2. Caffeine  
3. Acetylsalicylic acid (Aspirin)  
4. Benzoic acid (internal standard)  
5. Salicylic acid (degradation product of Aspirin)

### Discussion

A robust and rapid method was developed for the accurate simultaneous determination of 2 analgesics (Paracetamol, Aspirin), caffeine, internal standard (benzoic acid), and salicylic acid (hydrolysis product of aspirin). This method is rapid and sensitive and therefore suitable for routine quality control of these drugs in dosage forms and for assay methods in biological fluids. The mobile phase is compatible with MS detection. The major challenge in HPLC has been poor peak shape of these small molecules and short column life. This method has the advantage of very good peak shapes, excellent sensitivity, robust and long column life.