

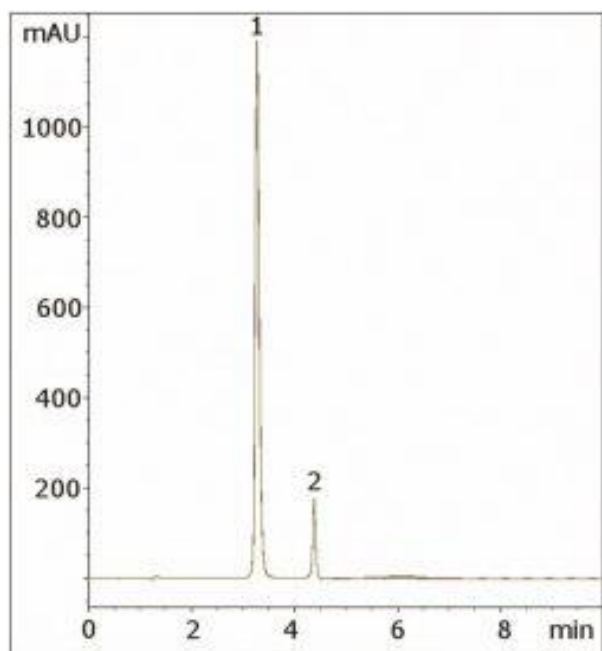
## Hydrocodone with Acetaminophen Analyzed by HPLC - AppNote

### Simple, Robust Assay Method

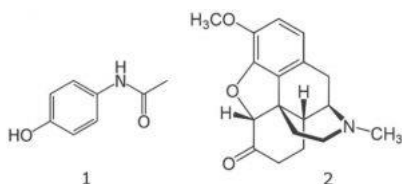
Click [HERE](#) for Column Ordering Information.

Hydrocodone can yield poor Peak shapes in many conventional Reversed Phase C18 Methods due to its tertiary amine group. The USP Assay Method for Hydrocodone in combination with Acetaminophen uses Triethylamine as a Mobile Phase additive to improve the Peak shape.

In this Method however, only Trifluoroacetic Acid is needed in the Mobile Phase for a Symmetrical Hydrocodone Peak. In addition, the Repeatability of the analysis is excellent as the five-run overlay in the Figure shows. Retention time %RSDs of < 0.1% were obtained for both Peaks.



Overlay of 5 runs



**Peaks:**

1. Acetaminophen
2. Hydrocodone

### Method Conditions

**Column:** Cogent Phenyl Hydride™, 4μm, 100Å

**Catalog No.:** 69020-7.5P

**Dimensions:** 4.6 x 75mm

**Mobile Phase:**

A: DI Water / 0.1% Trifluoroacetic Acid (TFA)  
B: Acetonitrile / 0.1% Trifluoroacetic Acid (TFA)

**Gradient:**

Time (minutes)	%B
0	5
1	5
5	60
6	5

**Temperature:** 35°C

**Injection vol.:** 5µL

**Flow rate:** 1.0mL / minute

**Detection:**

0–4 minutes: UV @ 295nm

4–10 minutes: UV @ 210nm

**Sample Preparation:** One tablet containing 5mg Hydrocodone / 500mg Acetaminophen was ground and diluted to 100mL with 50:50 Solvent A / Solvent B mixture. The solution was then sonicated 10 minutes and filtered with a 0.45µm Nylon Syringe Filter (MICROSOLV Tech Corp.).

**t<sub>0</sub>:** 0.9 minutes

**Note:** Hydrocodone is a semi-synthetic opioid used as a narcotic analgesic to relieve moderate to severe pain. The formulation which includes Acetaminophen is marketed under several trade names, including Vicodin® and Lortab®.



**Attachment**

**No 145 Hydrocodone with Acetaminophen Analyzed by HPLC pdf** 0.5 Mb [Download File](#)

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