

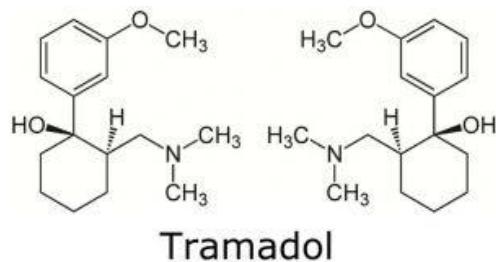
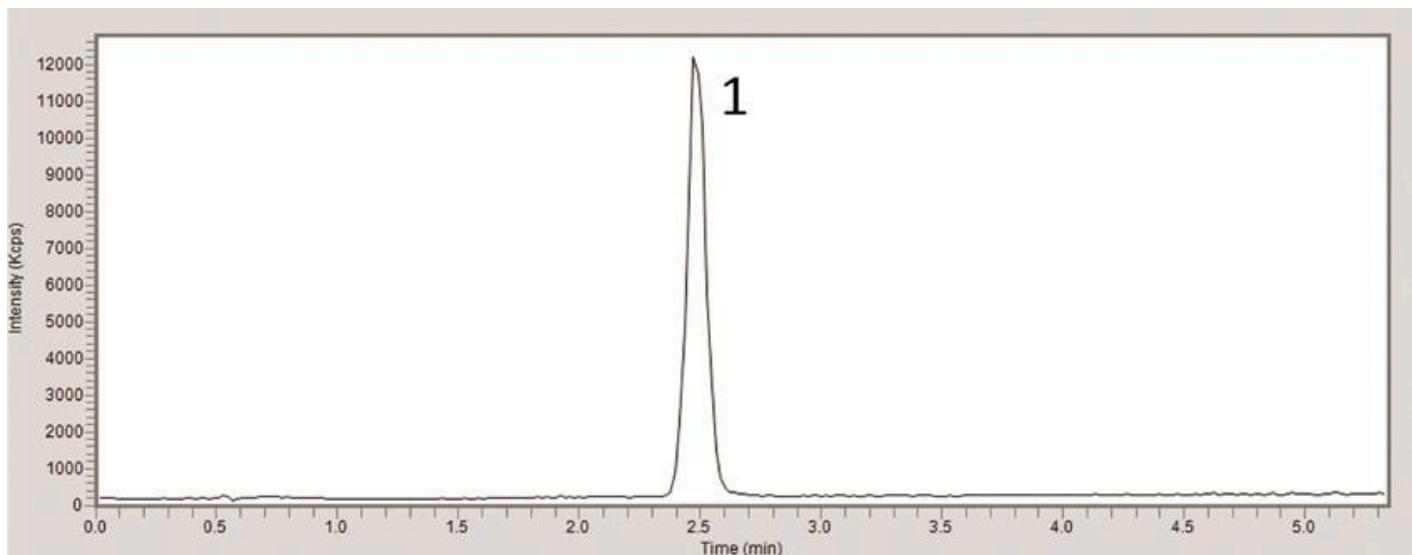


## Tramadol Analyzed with LCMS - AppNote

### LC-MS Compatible HPLC Method for Tramadol

Tramadol can be retained by Reversed Phase HPLC but some reported methods require Phosphate buffer additives in the Mobile Phase, which means incompatibility with LC-MS. In contrast, this Method uses Formic Acid as the Mobile Phase additive.

An advantage this method has is that it produces enhanced signal-to-noise compared to Reversed Phase thereby producing better results. High Water content in the Reversed Phase Mobile Phase is often required for retention. Since Water is less volatile than Acetonitrile, it is more difficult to remove in LC-MS, hence also leading to lower sensitivity than this Method.



Tramadol

#### PEAK:

Tramadol, m/z 264.2 (M+H)<sup>+</sup>

### Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å

**Catalog No.: [70000-10P-2](#)**

**Dimensions:** 2.1 x 100mm

**Mobile Phase:**

A: DI Water/ 0.1% Formic Acid

B: Acetonitrile/ 0.1% Formic Acid

**Gradient:**

| Time (Minutes) | %B |
|----------------|----|
| 0              | 90 |
| 5              | 90 |
| 7              | 30 |
| 8              | 30 |
| 10             | 90 |

**Injection vol.:** 1 $\mu$ L

**Flow rate:** 0.4 mL/minute

**Detection:** ESI – POS - Agilent 6210 MSD TOF Mass Spectrometer

**Sample Preparation:** Tramadol HCl (50 mg) pill was ground with mortar and pestle into fine powder and was used to prepare 1 mg/mL stock solution in Milli-Q DI Water diluent. Then, the sample was sonicated for approximately 5 minutes prior to 0.45 um syringe filtration.

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***Note:** Tramadol is an analgesic used to treat moderate to moderately severe pain. It can be used in both human and veterinary applications. It is sold under various formulation types and brand names, including Ryzolt®, Ultracet®, and Ultram®.*

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