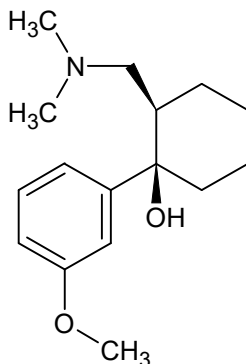




# Tramadol

The Drug Enforcement Administration's Special Testing and Research Laboratory generated this monograph using structurally confirmed reference material.



## 1. GENERAL INFORMATION

**IUPAC Name:** (1R,2R)-2-[(dimethylamino)methyl]-1-(3-methoxyphenyl)cyclohexan-1-ol

**CAS#:** 27203-92-5 and 22204-88-2

**Synonyms:** 2-[(dimethylamino)methyl]-1-(3-methoxyphenyl)cyclohexanol

**Source:** DEA Reference Material Collection

**Appearance:** White Powder

**UV<sub>max</sub>(nm):** Not determined

## 2. CHEMICAL AND PHYSICAL DATA

### 2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Melting Point (°C)
Base	C <sub>16</sub> H <sub>25</sub> NO <sub>2</sub>	263.38	Not Determined
HCl	C <sub>16</sub> H <sub>25</sub> NO <sub>2</sub> HCl	299.84	177.9



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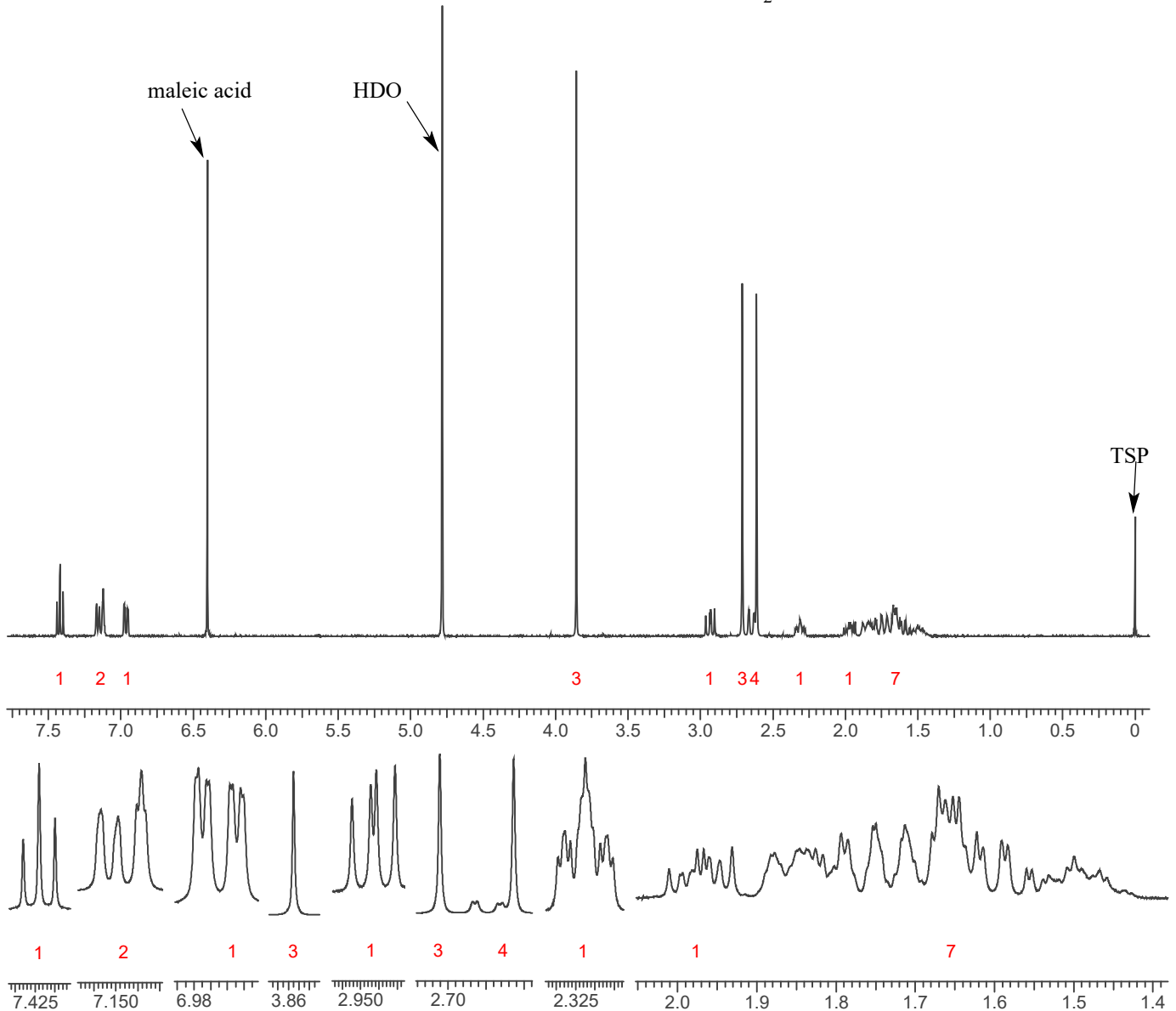
## 3. QUALITATIVE DATA

### 3.1 NUCLEAR MAGNETIC RESONANCE

**Sample Preparation:** Dilute analyte to ~11 mg/mL in D<sub>2</sub>O containing TSP for 0 ppm reference and maleic acid as quantitative internal standard.

**Instrument:** 400 MHz NMR spectrometer  
**Parameters:** Spectral width: at least containing -3 ppm through 13 ppm  
Pulse angle: 90°  
Delay between pulses: 45 seconds

<sup>1</sup>HNMR: Tramadol HCl; Lot# BCBK9246V; D<sub>2</sub>O; 400MHz







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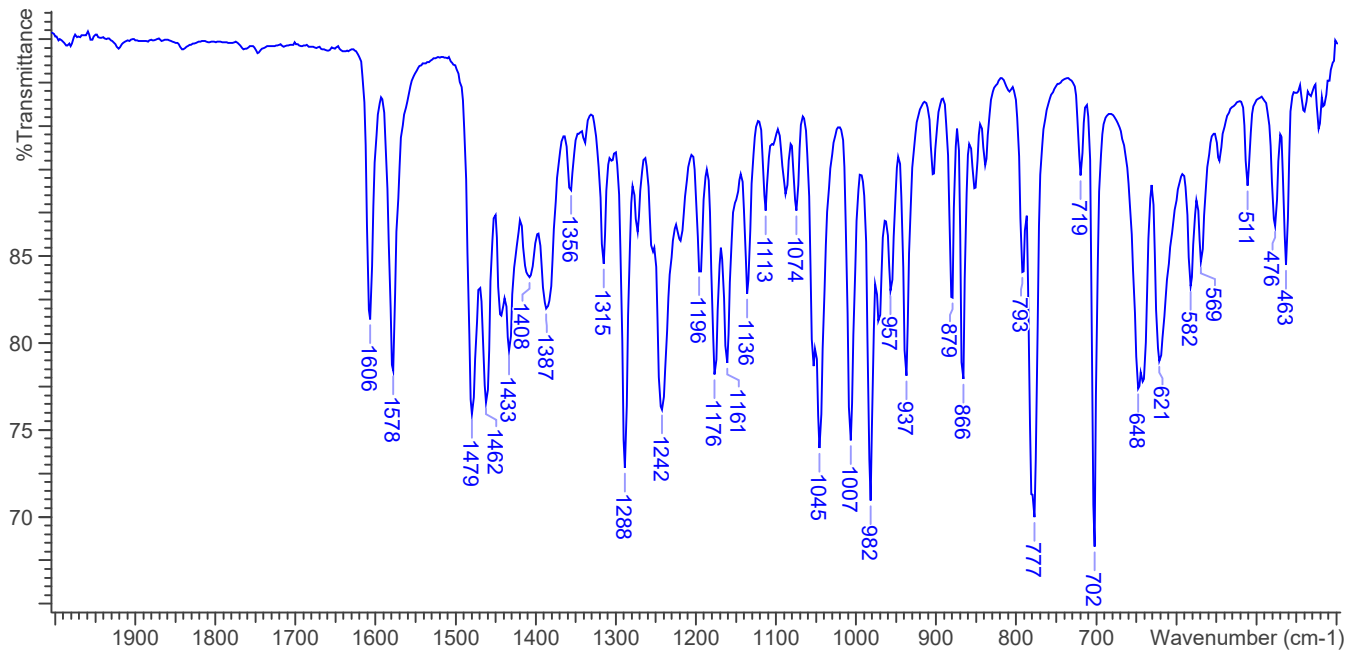
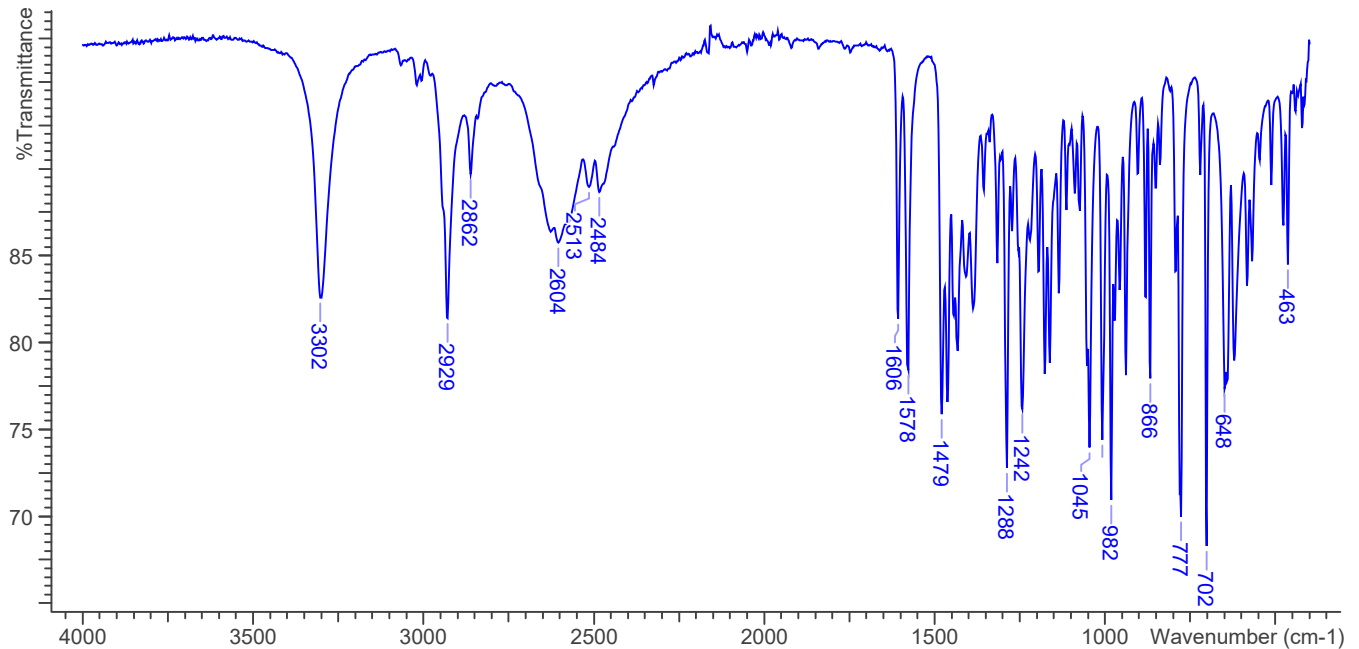


## 3.3 INFRARED SPECTROSCOPY (FTIR)

**Instrument:** FTIR with diamond ATR attachment (1 bounce)

**Scan Parameters:**  
Number of scans: 32  
Number of background scans: 32  
Resolution: 4 cm<sup>-1</sup>  
Sample gain: 8  
Aperture: 150

FTIR ATR (Diamond 1 Bounce): Tramadol HCl; Lot# BCBK9246V





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### 4. ADDITIONAL RESOURCES

[\*Wikipedia\*](#)