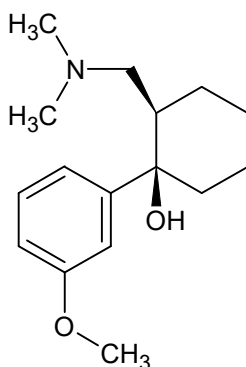




Tramadol

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_{max}(nm): Not determined

2. CHEMICAL AND PHYSICAL DATA

2.1 CHEMICAL DATA

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



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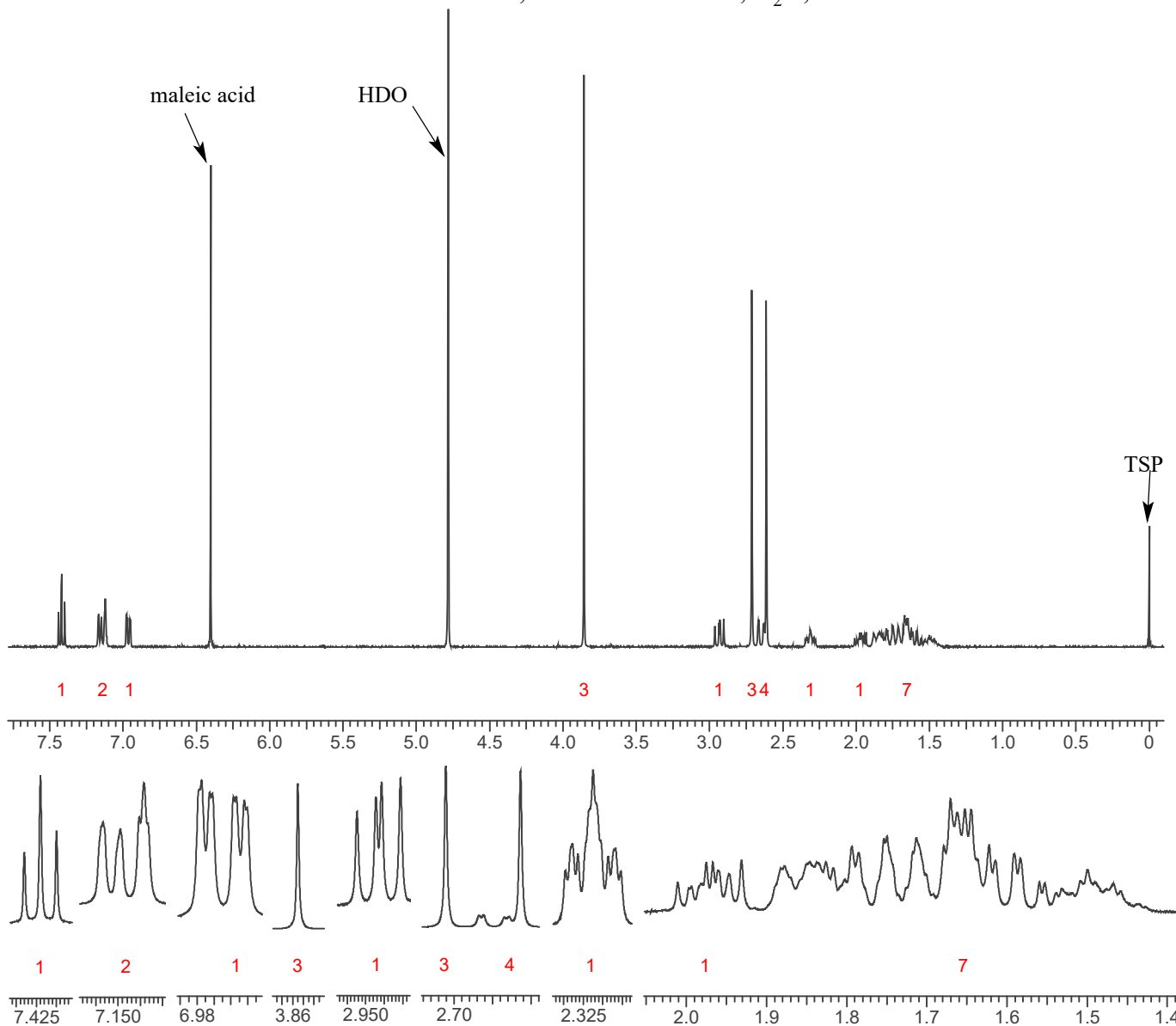
3. QUALITATIVE DATA

3.1 NUCLEAR MAGNETIC RESONANCE

Sample Preparation: Dilute analyte to ~11 mg/mL in D₂O 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

¹HNMR: Tramadol HCl; Lot# BCBK9246V; D₂O; 400MHz





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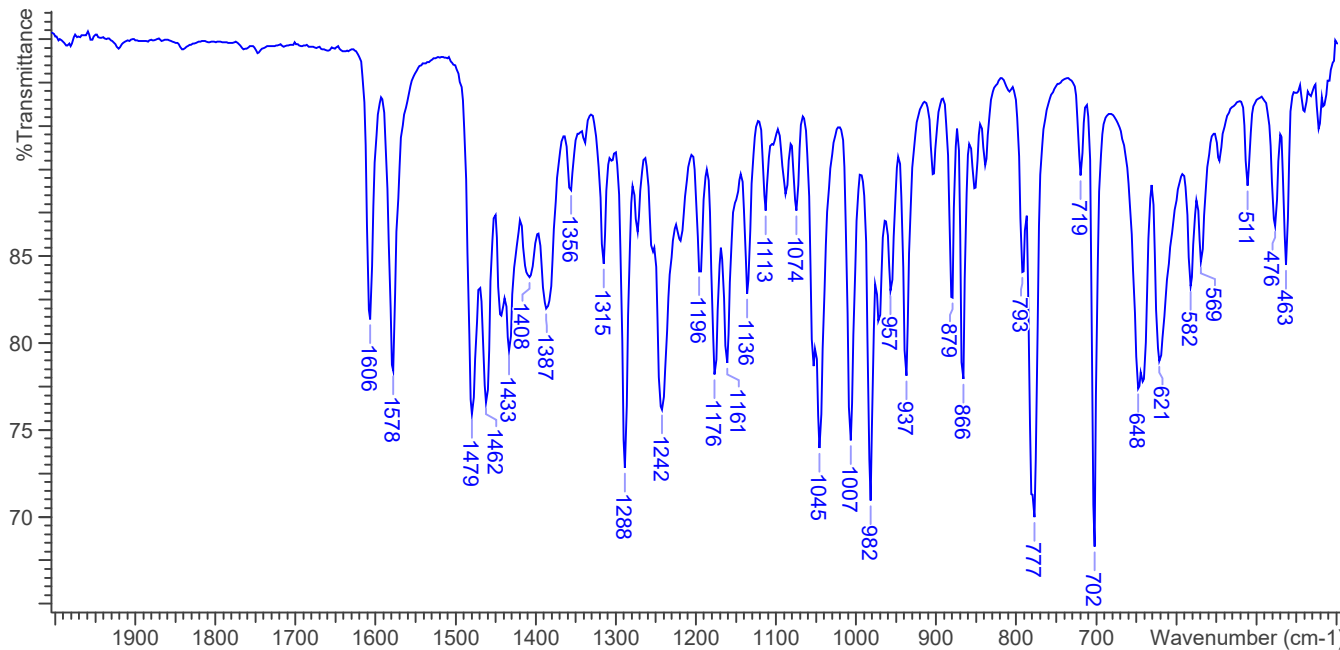
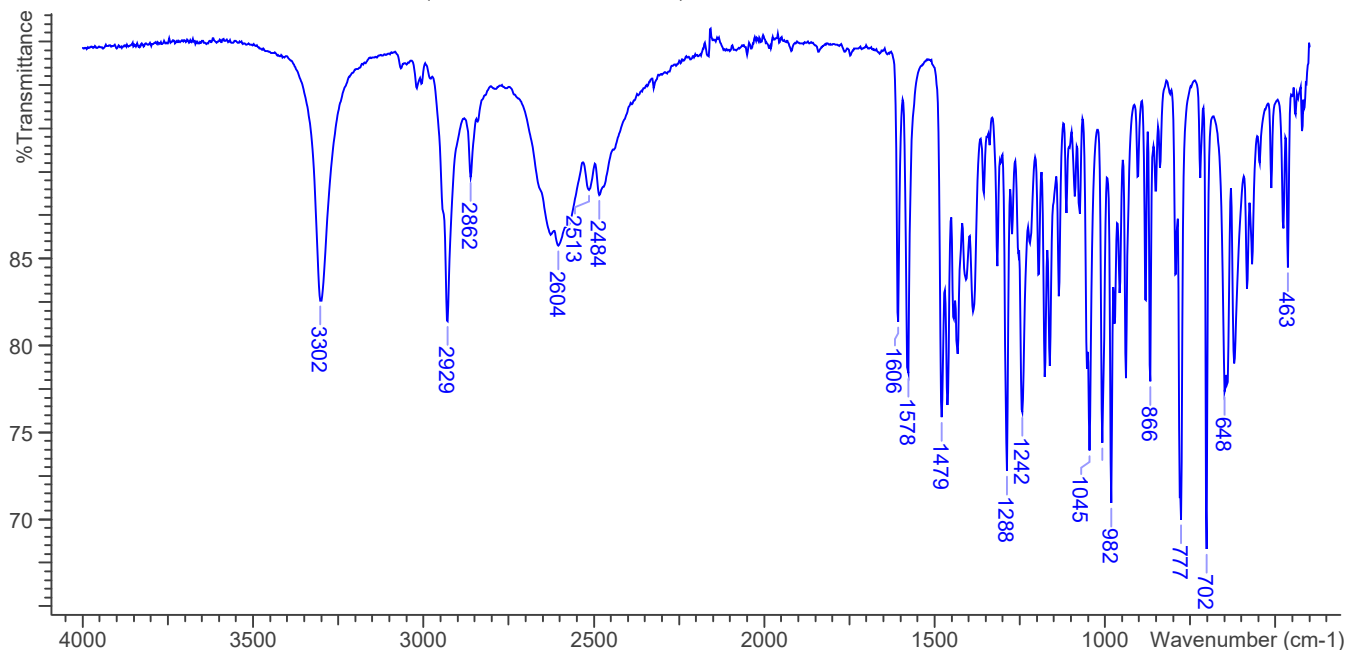


3.3 INFRARED SPECTROSCOPY (FTIR)

Instrument: FTIR with diamond ATR attachment (1 bounce)

Scan Parameters:
Number of scans: 32
Number of background scans: 32
Resolution: 4 cm⁻¹
Sample gain: 8
Aperture: 150

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





Tramadol

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4. ADDITIONAL RESOURCES

[*Wikipedia*](#)