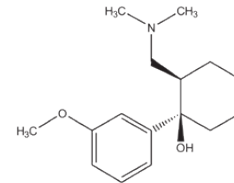


Tramadol is a synthetic, centrally acting analgesic used to treat moderate to severe pain. It appears to have actions at the  $\mu$ -opioid receptor as well as in the noradrenergic and serotonergic systems.<sup>1</sup>

**Administration:** Oral, intramuscular, and intravenous injections.

**Elimination:** Tramadol is extensively metabolized after oral administration. Approximately 30% of the dose is excreted as unchanged drug and 60% of the dose is excreted as metabolites.<sup>2</sup>

**Abuse Potential:** As a controlled substance in the U.S., tramadol has high potential for abuse. It is among the top 50 most prescribed drugs.<sup>3</sup> Tramadol is associated with typical drug-seeking behavior such as craving and tolerance development and is commonly diverted. Withdrawal symptoms may occur if tramadol is discontinued abruptly.



**Formula:** C<sub>16</sub>H<sub>25</sub>NO<sub>2</sub>

**Systematic Name:**  
(1R,2R)-2-(Dimethylaminomethyl)-1-(3-methoxyphenyl)cyclohexan-1-ol

**Brand Names:** Ultram®, Ryzolt®, Tramador®

- Accurate and trusted results
- Liquid stable and ready to use

### Assay Specifications

**Methodology:** Homogeneous enzyme immunoassay

**Cutoff:** 200 ng/mL

**Calibration Range:** 0-1000 ng/mL

### Accuracy:

		LC-MS Confirmation (200 ng/mL)	
		Positive	Negative
HEIA (200 ng/mL)	Positive	100	0
	Negative	0	50

### Semi-Quantitative Cross-Reactivity

Analyte	Analyte Concentration (ng/mL)	Cross-Reactivity (%)
Tramadol	200	100.0
N-desmethyl-Tramadol	450	44.4
O-desmethyl-Tramadol	25,000	0.8
Venlafaxine	100,000	ND
O-desmethyl-Venlafaxine	100,000	ND

ND = None Detected

### Semi-Quantitative Precision at 200 ng/mL

Interday Precision (N = 80)		
Concentration	Result	Total Result
100 ng/mL	NEG	80 Negative
150 ng/mL (control LOW)	NEG	80 Negative
200 ng/mL calibrator	n/a	47 Negative/ 33 Positive
250 ng/mL (control HIGH)	POS	80 Positive
300 ng/mL	POS	80 Positive

### Order - Tramadol (HEIA)

Catalog Number	Description
304UR-0025	25 mL kit
304UR-0060W	60 mL wedge kit
304UR-0100	100 mL kit
304UR-0500	500 mL kit
C304UR-10-1	200 ng/mL calibrator
C304UR-10-2	150 and 250 ng/mL controls
C304UR-10-5	0, 100, 200, 500 and 1000 ng/mL calibrators
Neg-10-1	10 mL negative calibrator

1. Grond S, Sablotzki A (2004). "Clinical Pharmacology of Tramadol". Clinical Pharmacokinetics 43 (13): 879-923.

2. PriCara, Division of Ortho-McNeil-Janssen Pharmaceuticals, Inc. Raritan, New Jersey 08869, Ultram product insert Revised September 2009 10179001.

3. The Centers for Disease Control; World Health Organization.

The charts and data provided above were generated in studies conducted by Immunalysis Corporation. This information is intended to be representative of the performance of the assay. Refer to the product insert for a full description of the performance characteristics for semi-quantitative and qualitative testing. For in vitro diagnostic use.