

# Certificate of analysis



## cis-Tramadol (hydrochloride)

CN1[C@H](OC(=O)C1)C2=CC=C(C=C2)C3=CC(OC)C=C3C4CCCCC4

Item number .....:15919

Molecular Formula .: C16H25NO2 • HCl

Formula Weight : 299.80

Batch number...:0457601

CAS Number .....: 36282-47-0

Expiry date .....: 5/5/2017

Purity Specification .....:>98%

Tests	Specifications	Results
HPLC	Column .....: C18, 5 $\mu$ , 4.6 X 250 mm Mob. Phase.....: Acetonitrile:Water:Trifluoroacetic acid (50:50:0.1) Flow Rate.....: 1.00 ml/min Detector UV .....: 210 nm	Retention Time Actual.: 5.30 min Purity .....: 100.0 %
IR	Conforms with standard	Conforms
Mass	Source Type.....: APCI M-HCl	Expected 264.1 Actual 264.1
Melting Point	180 - 187 °C	182 - 185 °C
TLC	Mob. Phase.....: Chloroform:Methanol:H2O (65:25:4) Stationary Phase: Silica Gel Visualized With ..: Sulfuric Acid	Rf.....: 0.57 Purity % .....: 100.00
UV	$\lambda$ max .....: 218, 272, 203 nm	$\lambda$ max .....: 218, 272, 203 nm

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