

Certificate of Analysis

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Product Name: (S)-(+)-Ketamine hydrochloride

Catalog No.: 4379

Batch No.: 4

CAS Number: 33643-47-9

EC Number: 687-681-3

IUPAC Name: (S)-(+)-2-(2-Chlorophenyl)-2-(methylamino)cyclohexanone hydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₃H₁₆ClNO.HCl

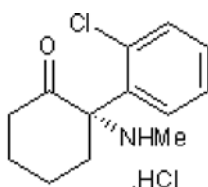
Batch Molecular Weight: 274.19

Physical Appearance: White solid

Solubility: water to 100 mM
DMSO to 100 mM
ethanol to 50 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 100% purity

Chiral HPLC: Shows 100% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: [α]_D = +90.5 (Concentration = 2, Solvent = Water)

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: (S)-(+)-2-(2-Chlorophenyl)-2-(methylamino)cyclohexanone hydrochloride

Description:

(S)-(+)-Ketamine hydrochloride is a NMDA receptor antagonist. Displays neuroprotective efficacy *in vitro*. Racemate also available.

Physical and Chemical Properties:

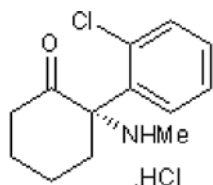
Batch Molecular Formula: C₁₃H₁₆ClNO.HCl

Batch Molecular Weight: 274.19

Physical Appearance: White solid

Minimum Purity: ≥99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 100 mM

DMSO to 100 mM

ethanol to 50 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

Other Information:

INFORMATION FOR CUSTOMERS IN THE UK ONLY

This product is a Schedule 2 Home Office controlled substance and customers in the UK are required to hold the relevant licence or be exempt from restrictions in order to purchase and possess this material.

References:

Benrath *et al* (2005) Low dose of S(+)-KA prevents long-term potentiation in pain pathways under strong opioid analgesia in the rat spinal cord *in vivo*. *Br.J.Anaesth.* **95** 518. PMID: 16113037.

Proescholdt *et al* (2001) Neuroprotection of S(+)-KA isomer in global forebrain ischemia. *Brain Res.* **904** 245. PMID: 11406122.

Ryder *et al* (1978) Comparative pharmacology of the optical isomers of KA in mice. *Eur.J.Pharmacol.* **49** 15. PMID: 658124.

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