Print Date: May 4th 2022

Certificate of Analysis

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Product Name: **Norketamine hydrochloride** **Catalog No.: 1970** **Batch No.: 4**

CAS Number: 79499-59-5

IUPAC Name: 2-Amino-2-(2-chlorophenyl)cyclohexanone hydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{12}H_{14}ClNO.HCl.H_2O$

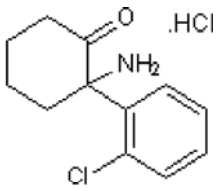
Batch Molecular Weight: 278.18

Physical Appearance: White solid

Solubility: water to 100 mM
phosphate buffered saline to 100 mM

Storage: Desiccate at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.3 (DCM / MeOH/NH4OH (19:0.9.0.1))

HPLC: Shows 99.8% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	51.81	6.16	5.04
Found	51.76	6.49	5.34

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Product Information

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IUPAC Name: 2-Amino-2-(2-chlorophenyl)cyclohexanone hydrochloride

Description:

Norketamine hydrochloride is a major metabolite of ketamine that is a potent non-competitive NMDA receptor antagonist (K_i = 3.6 µM for displacement of [^{3}H]-MK 801 in rat brain). Antinociceptive and anesthetic in vivo. R-enantiomer and S-enantiomer also available.

Physical and Chemical Properties:

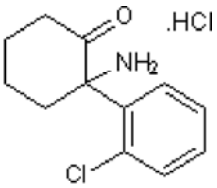
Batch Molecular Formula: $C_{12}H_{14}ClNO.HCl.H_2O$

Batch Molecular Weight: 278.18

Physical Appearance: White solid

Minimum Purity: ≥99%

Batch Molecular Structure:



Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM

phosphate buffered saline to 100 mM

CAUTION - This product is hygroscopic and we recommend that it is desiccated upon arrival. Solutions should be made up as soon as the vial is opened.

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.

Licensing Information:

Sold for research purposes under agreement from Pfizer Inc.

References:

Shimoyama *et al* (1999) Oral KA is antinociceptive in the rat formalin test: role of the metabolite, norKA. Pain ***81*** 85. PMID: 10353496.

Ebert *et al* (1997) NorKA, the main metabolite of KA, is a non-competitive NMDA receptor antagonist in the rat cortex and spinal cord. Eur.J.Pharmacol. ***333*** 99. PMID: 9311667.

Leung *et al* (1986) Comparative pharmacology in the rat of KA and its two principal metabolites, norKA and (Z)-6-hydroxynorKA. J.Med.Chem. ***29*** 2396. PMID: 3783598.