

Certificate of Analysis

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Product Name: Dexmedetomidine hydrochloride

Catalog No.: 2749

Batch No.: 3

CAS Number: 145108-58-3

IUPAC Name: 4-[(1*S*)-1-(2,3-Dimethylphenyl)ethyl]-1*H*-imidazole hydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₃H₁₆N₂.HCl

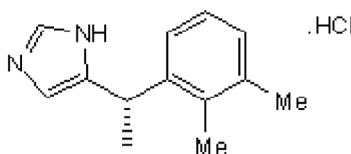
Batch Molecular Weight: 236.74

Physical Appearance: White solid

Solubility: water to 100 mM
DMSO to 100 mM

Storage: Desiccate at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.8% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: [α]_D = +51.4 (Concentration = 1, Solvent = Water)

Microanalysis:

Carbon Hydrogen Nitrogen

	Carbon	Hydrogen	Nitrogen
Theoretical	65.95	7.24	11.83
Found	65.14	7.26	11.76

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

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Description:

Dexmedetomidine hydrochloride is an active isomer of medetomidine, a potent, highly selective α_2 -adrenoceptor agonist (K_i values are 1.08 and 1750 nM for α_2 - and α_1 -adrenoceptors respectively). Displays greater selectivity over α_1 -adrenoceptors than Clonidine (Cat. No. 0690) and UK 14,304 (1620-, 220- and 300-fold respectively). Active in vivo; displays hypotensive, bradycardic, sedative, anxiolytic, hypothermic and analgesic effects. Racemate also available. Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

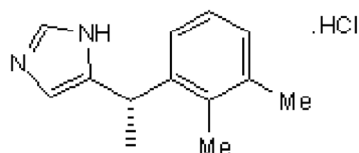
Batch Molecular Formula: $C_{13}H_{16}N_2.HCl$

Batch Molecular Weight: 236.74

Physical Appearance: White solid

Minimum Purity: $\geq 98\%$

Batch Molecular Structure:



References:

Fisher *et al* (1991) Antinociceptive properties of intrathecal dexmedetomidine in rats. *Eur.J.Pharmacol.* **192** 221. PMID: 1674472.

Scheinin *et al* (1989) Medetomidine - a novel α_2 -adrenoceptor agonist: a review of its pharmacodynamic effects. *Prog.Neuro-Psychopharm.Biol.Psychiat.* **13** 635. PMID: 2571177.

Virtanen *et al* (1988) Characterization of the selectivity, specificity and potency of medetomidine as an α_2 -adrenoceptor agonist. *Eur.J.Pharmacol.* **150** 9. PMID: 2900154.

Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM

DMSO to 100 mM

CAUTION - This product is hygroscopic and we recommend that it is desiccated upon arrival.

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. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

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.

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