

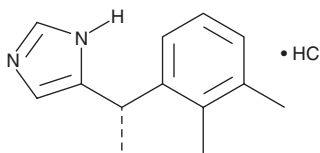
# PRODUCT INFORMATION



## Dexmedetomidine (hydrochloride)

Item No. 15581

**CAS Registry No.:** 145108-58-3  
**Formal Name:** 5-[(1S)-1-(2,3-dimethylphenyl)ethyl]-1H-imidazole, monohydrochloride  
**Synonyms:** Dex, Precedex  
**MF:** C<sub>13</sub>H<sub>16</sub>N<sub>2</sub> • HCl  
**FW:** 236.7  
**Purity:** ≥99%  
**UV/Vis.:** λ<sub>max</sub>: 214 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Dexmedetomidine (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the dexmedetomidine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Dexmedetomidine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of dexmedetomidine (hydrochloride) in ethanol is approximately 30 mg/ml and approximately 25 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of dexmedetomidine (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of dexmedetomidine (hydrochloride) in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Dexmedetomidine is the (S)-enantiomer of medetomidine, an imidazole compound that binds to  $\alpha_2$ -adrenoceptors ( $K_i = 1.08$  nM) with high affinity and selectivity compared to that of  $\alpha_1$ -adrenoceptors ( $K_i = 1.8$   $\mu$ M).<sup>1</sup> Dexmedetomidine produces analgesic, sedative, and anxiolytic effects through both presynaptic activation of  $\alpha_2$ -adrenoceptors, which inhibits norepinephrine release, and postsynaptic activation of  $\alpha_2$ -adrenoceptors, which inhibits sympathetic activity and decreases blood pressure and heart rate.<sup>2,3</sup>

### References

1. Virtanen, R., Savola, J.M., Saano, V., *et al.* Characterization of the selectivity, specificity and potency of medetomidine as an  $\alpha_2$ -adrenoceptor agonist. *Eur. J. Pharmacol.* **150(1-2)**, 9-14 (1988).
2. Gertler, R., Brown, H.C., Mitchell, C.H., *et al.* Dexmedetomidine: A novel sedative-analgesic agent. *Proc. (Bayl. Univ. Med. Cent.)* **14(1)**, 13-21 (2001).
3. Bajwa, S. and Kulshrestha, A. Dexmedetomidine: An adjuvant making large inroads into clinical practice. *Ann. Med. Health Sci. Res.* **3(4)**, 475-483 (2013).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/14/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM