

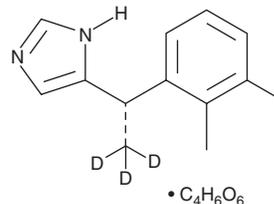
PRODUCT INFORMATION



Dexmedetomidine-d₃ (tartrate)

Item No. 43801

Formal Name: 5-[(1S)-1-(2,3-dimethylphenyl)ethyl-2,2,2-d₃]-1H-imidazole, 2R,3R-dihydroxybutanedioate
Synonym: MPV 1440-d₃
MF: C₁₃H₁₃D₃N₂ • C₄H₆O₆
FW: 353.4
Chemical Purity: ≥98% (Dexmedetomidine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
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-d₃ is intended for use as an internal standard for the quantification of dexmedetomidine (Item No. 39544) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Dexmedetomidine-d₃ (tartrate) is supplied as a solid. A stock solution may be made by dissolving the dexmedetomidine-d₃ (tartrate) in the solvent of choice, which should be purged with an inert gas. Dexmedetomidine-d₃ (tartrate) is soluble in DMSO. Dexmedetomidine-d₃ (tartrate) is slightly soluble in acetonitrile.

Description

Dexmedetomidine is an agonist of α₂-adrenergic receptors (α₂-ARs).¹ It selectively binds to α₂-ARs over α₁-ARs (K_is = 0.015 and 5 nM, respectively). *In vivo*, dexmedetomidine (50 μg/kg) prevents increases in cardiac troponin I (CTnI), a marker of myocardial injury, as well as reduces myocardial apoptosis, pyroptosis, and ferroptosis in a mouse model of sepsis induced by cecal ligation and puncture (CLP), effects that can be reversed by the α₂-AR antagonist yohimbine (Item No. 19869).² Dexmedetomidine (40 μg/kg) induces sedation and decreases mechanical nociception in cats.³ Formulations containing dexmedetomidine have been used as sedatives.

References

1. Ross, T.M., Jetter, M.C., McDonnell, M.E., *et al.* α₂ Adrenoceptor agonists as potential analgesic agents. 2. Discovery of 4-(4-imidazo)-1,3-dimethyl-6,7-dihydro-thianaphthene as a high-affinity ligand for the α_{2D} adrenergic receptor. *J. Med. Chem.* **43(7)**, 1423-1426 (2000).
2. Wang, C., Yuan, W., Hu, A., *et al.* Dexmedetomidine alleviated sepsis-induced myocardial ferroptosis and septic heart injury. *Mol. Med. Rep.* **22(1)**, 175-184 (2020).
3. Nagore, L., Soler, C., Gil, L., *et al.* Sedative effects of dexmedetomidine, dexmedetomidine-pethidine and dexmedetomidine-butorphanol in cats. *J. Vet. Pharmacol. Ther.* **6(3)**, 222-228 (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, 06/06/2025

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