

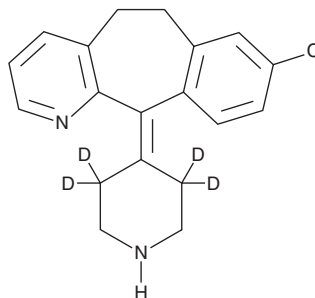
PRODUCT INFORMATION



Desloratadine-d₄

Item No. 26776

CAS Registry No.: 2713301-38-1
Formal Name: 8-chloro-6,11-dihydro-11-(4-piperidinylidene-3,3,5,5-d₄)-5H-benzo[5,6]cyclohepta[1,2-b]pyridine
Synonym: Descarboethoxyloratadine-d₄
MF: C₁₉H₁₅ClD₄N₂
FW: 314.9
Chemical Purity: ≥98% (Desloratadine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤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

Desloratadine-d₄ is intended for use as an internal standard for the quantification of desloratadine (Item No. 16931) 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).

Desloratadine-d₄ is supplied as a solid. A stock solution may be made by dissolving the desloratadine-d₄ in the solvent of choice, which should be purged with an inert gas. Desloratadine-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of Desloratadine-d₄ in ethanol and DMF is approximately 30 mg/ml and approximately 10 mg/ml in DMSO.

Description

Desloratadine is a histamine H₁ receptor antagonist (K_i = 0.97 nM) and an active metabolite of loratadine (Item No. 15625).^{1,2} It is formed from loratadine primarily by the cytochrome P450 (CYP) isoforms CYP3A4, CYP2D6, and CYP2C19.³ It also inhibits calcium flow in neurons and glia *in vitro* (IC₅₀s = 9.177 and 0.3185 μM, respectively), an effect that can be blocked by knockdown of the 5-HT receptor subtype 5-HT_{2A}.⁴ Desloratadine (10 mg/kg) reduces ovalbumin-induced sneezing, nose rubbing, eye watering, and congestion in ovalbumin-sensitized guinea pigs.⁵ It also increases the clearance of amyloid-β by microglia and reverses learning and memory deficits in the Morris water maze in the transgenic APP/PS1 mouse model of Alzheimer's disease when administered at a dose of 20 mg/kg per day.⁴ Formulations containing desloratadine have been used in the treatment of seasonal and perennial allergic rhinitis and chronic idiopathic urticaria.

References

1. Lewis, T.A., Young, M.A., Arrington, M.P., *et al. Bioorg. Med. Chem. Lett.* **14(22)**, 5591-5594 (2004).
2. Ramanathan, R., Alvarez, N., Su, A.-D., *et al. Xenobiotica* **35(2)**, 155-189 (2005).
3. Aratyn-Schaus, Y. and Ramanathan, R. *Bioanalysis* **8(16)**, 1645-1662 (2016).
4. Lu, J., Zhang, C., Lv, J., *et al. Aging Cell* **20(1)**, e13286 (2021).
5. Bahekar, P.C., Shah, J.H., Ayer, U.B., *et al. Int. Immunopharmacol.* **8(11)**, 1540-1551 (2008).

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.

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