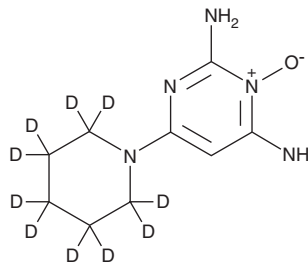


PRODUCT INFORMATION



Minoxidil-d₁₀ Item No. 17563

CAS Registry No.:	1020718-66-4
Formal Name:	6-(1-piperidinyl-d ₁₀)-2,4-pyrimidinediamine 3-oxide
Synonyms:	Loniten-d ₁₀ , U-10858-d ₁₀
MF:	C ₉ H ₅ D ₁₀ N ₅ O
FW:	219.3
Chemical Purity:	≥98% (Minoxidil)
Deuterium Incorporation:	≥99% deuterated forms (d ₁ -d ₁₀); ≤1% d ₀
UV/Vis.:	λ _{max} : 230, 262, 284 nm
Supplied as:	A crystalline 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

Minoxidil-d₁₀ is intended for use as an internal standard for the quantification of minoxidil (Item No. 15302) 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).

Minoxidil-d₁₀ is supplied as a crystalline solid. A stock solution may be made by dissolving the minoxidil-d₁₀ in the solvent of choice, which should be purged with an inert gas. Minoxidil-d₁₀ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of minoxidil-d₁₀ in ethanol is approximately 5 mg/ml and approximately 2 mg/ml in DMSO and DMF.

Description

Minoxidil is a pyrimidine derivative that was originally developed as an anti-hypertensive agent and unexpectedly found to stimulate hair growth. Minoxidil directly affects arteriolar smooth muscle to decrease vascular resistance in part by opening ATP-sensitive potassium channels.^{1,2} It can activate cyclooxygenase 1 (AC₅₀ = 80 μM), which is expressed in the dermal papilla of hair follicles, increasing prostaglandin E₂ (Item No. 14010) production in BALB/c 3T3 fibroblasts and human dermal papilla fibroblasts.³

References

1. Limas, C.J. and Cohn, J.N. Stimulation of vascular smooth muscle sodium, potassium-adenosinetriphosphatase by vasodilators. *Circ. Res.* **35(4)**, 601-607 (1974).
2. Imenshahidi, M., Hadizadeh, F., Firoozeh-Moghadam, A., et al. Synthesis and vasorelaxant effect of 9-aryl-1,8-acridinediones as potassium channel openers in isolated rat aorta. *Iran. J. Pharm. Res.* **11(1)**, 229-233 (2012).
3. Michelet, J.-F., Commo, S., Billoni, N., et al. Activation of cytoprotective prostaglandin synthase-1 by minoxidil as a possible explanation for its hair growth-stimulating effect. *J. Invest. Dermatol.* **108**, 205-209 (1997).

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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