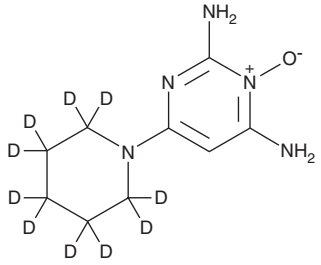
PRODUCT INFORMATION

Minoxidil-d_{10}

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: $C_9H_5D_{10}N_5O$
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-d_{10} 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-d_{10} is supplied as a crystalline solid. A stock solution may be made by dissolving the minoxidil-d_{10} in the solvent of choice, which should be purged with an inert gas. Minoxidil-d_{10} is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of minoxidil-d_{10} 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 (AC_{50} = 80 µM), which is expressed in the dermal papilla of hair follicles, increasing prostaglandin E_2 (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).

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