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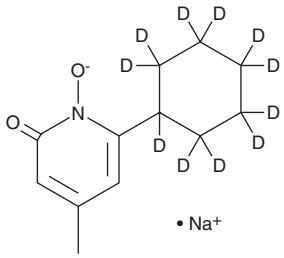
PRODUCT INFORMATION

Ciclopirox-d_{11} (sodium salt)

Item No. 28698

Formal Name:	6-(cyclohexyl-d_{11})-1-hydroxy-4-methyl-2(1H)-pyridinone, monosodium salt
MF:	$C_{12}H_5D_{11}NO_2 \bullet Na$
FW:	240.3
Chemical Purity:	≥95% (Ciclopirox)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{11}); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

Ciclopirox-d_{11} (sodium salt) is intended for use as an internal standard for the quantification of ciclopirox (Item No. 16021) 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).

Ciclopirox-d_{11} (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the ciclopirox-d_{11} (sodium salt) in the solvent of choice, which should be purged with an inert gas. Ciclopirox-d_{11} (sodium salt) is soluble in the organic solvent DMSO.

Description

Ciclopirox is an iron chelator, antifungal, and anticancer agent.[1-4] It inhibits the iron-dependent enzyme prolyl hydroxylase 2 (PHD2; IC_{50} = 1.58 µM), an effect that is reduced in the presence of iron.[1] It stabilizes hypoxia-inducible factor-α (HIF-1α) under normoxic conditions in rat glomus cells when used at a concentration of 5 µM.[5] Ciclopirox is active against clinical isolates of *T. rubrum*, *T. mentagrophytes*, and *C. albicans* (MICs = 0.03-0.5, 0.03-0.5, and 0.06-0.5 µg/ml, respectively) and inhibits growth of *T. mentagrophytes* on porcine skin *ex vivo* when applied topically.[2,3] It inhibits proliferation of Rh30, HT-29, and MDA-MB-231 cells in a concentration-dependent manner and halts the cell cycle at the G_1/G_0 phase and induces apoptosis in Rh30 cells.[4] Ciclopirox (25 mg/kg) reduces tumor growth in an MDA-MB-231 mouse xenograft model. Formulations containing ciclopirox have been used in the topical treatment of fungal infections.

References

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4. Zhou, H., Shen, T., Luo, Y., *et al.* The antitumor activity of the fungicide ciclopirox. *Int. J. Cancer* **127(10)**, 2467-2477 (2010).
5. Baby, S.M., Roy, A., Mokashi, A.M., *et al.* Effects of hypoxia and intracellular iron chelation on hypoxia-inducible factor-1α and -1β in the rat carotid body and glomus cells. *Histochem. Cell. Biol.* **120(5)**, 343-352 (2003).

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