

# PRODUCT INFORMATION



## Efinaconazole-d<sub>4</sub>

Item No. 33638

**Formal Name:** (2R,3R)-2-(2,4-difluorophenyl)-3-(4-methylenepiperidin-1-yl)-2,2,6,6-d<sub>4</sub>)-1-(1H-1,2,4-triazol-1-yl)butan-2-ol

**MF:** C<sub>18</sub>H<sub>18</sub>D<sub>4</sub>F<sub>2</sub>N<sub>4</sub>O

**FW:** 352.4

**Chemical Purity:** ≥98% (Efinaconazole)

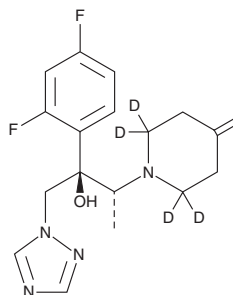
**Deuterium**

**Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>

**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

Efinaconazole-d<sub>4</sub> is intended for use as an internal standard for the quantification of efinaconazole (Item No. 23839) 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).

Efinaconazole-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the efinaconazole-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Efinaconazole-d<sub>4</sub> is soluble in acetonitrile and methanol.

### Description

Efinaconazole is a broad-spectrum triazole antifungal agent with activity against *Acremonium*, *Aspergillus*, *Candida*, *Cryptococcus*, *Epidermophyton*, *Fusarium*, *Microsporium*, *Paecilomyces*, *Pseudallescheria*, *Scopulariopsis*, *Trichophyton*, and *Trichosporon*.<sup>1</sup> It inhibits the growth of *T. rubrum* and *T. mentagrophytes* clinical isolates with MIC values ranging from ≤2.0 to 60 ng/ml and of *C. albicans* isolates with MIC values ranging from ≤0.5 to >250 ng/ml. Efinaconazole inhibits sterol 14α-demethylase, which arrests ergosterol (Item No. 19850) biosynthesis at the fungal membrane.<sup>2</sup> It inhibits ergosterol biosynthesis in *T. mentagrophytes* and *C. albicans* with IC<sub>50</sub> values of 7.0 and 0.40 ng/ml, respectfully. Topical formulations containing efinaconazole have been used for the treatment of onychomycosis.

### References

1. Jo Siu, W.J., Tatsumi, Y., Senda, H., *et al.* Comparison of *in vitro* antifungal activities of efinaconazole and currently available antifungal agents against a variety of pathogenic fungi associated with onychomycosis. *Antimicrob. Agents Chemother.* **57(4)**, 1610-1616 (2013).
2. Tatsumi, Y., Nagashima, M., Shibayoshi, T., *et al.* Mechanism of action of efinaconazole, a novel triazole antifungal agent. *Antimicrob. Agents Chemother.* **57(5)**, 2405-2409 (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

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