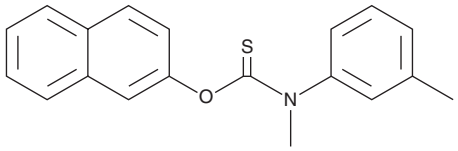
PRODUCT INFORMATION

Tolnaftate

Item No. 21446

CAS Registry No.: 2398-96-1
Formal Name: N-methyl-N-(3-methylphenyl)-carbamothioic acid, O-2-naphthalenyl ester
Synonyms: NSC 233648, SCH 10144
MF: $C_{19}H_{17}NOS$
FW: 307.4
Purity: ≥98%
UV/Vis.: λ_{max}: 223, 258 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

Tolnaftate is supplied as a crystalline solid. A stock solution may be made by dissolving the tolnaftate in the solvent of choice. Tolnaftate is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of tolnaftate in these solvents is approximately 15 and 30 mg/ml, respectively. Tolnaftate is also slightly soluble in ethanol.

Tolnaftate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tolnaftate should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Tolnaftate has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Tolnaftate is a thiocarbamate antifungal agent.[1] It is active against clinical isolates of the dermatophytes *T. rubrum*, *T. mentagraphytes*, *T. verrucosum*, *E. floccosum*, and *M. canis* (MIC_{50}s = 50, 100, 6, 50, and 50 ng/ml, respectively), as well as 18 additional yeast and filamentous fungi species (MIC = 0.003-0.8 µg/ml).[2,3] Tolnaftate also reduces aflatoxin production in *A. parasiticus* in a concentration-dependent manner.[4] It inhibits squalene epoxidase with an IC_{50} value of 12.5 µg/ml in a cell-free assay.[1]

References

1. Ryder, N.S., Frank, I., and Dupont, M.C. Ergosterol biosynthesis inhibition by the thiocarbamate antifungal agents tolnaftate and tolciclate. *Antimicrob. Agents Chemother.* **29(5),** 858-860 (1986).
2. Petranyi, G., Meingassner, J.G., and Mieth, H. Antifungal activity of the allylamine derivative terbinafine in vitro. *Antimicrob. Agents Chemother.* **31(9),** 1365-1368 (1987).
3. Waitz, J.A., Moss, E.L., and Weinstein, M.J. Chemotherapeutic evaluation of clotrimazole [Bay b 5097, 1 (o-chloro-α-α-diphenylbenzyl) imidazole]. *Appl. Microbiol.* **22(5),** 891-898 (1971).
4. Khan, S.N., Maggon, K.K., and Venkitasubramanian, T.A. Inhibition of aflatoxin biosynthesis by tolnaftate. *Appl. Environ. Microbiol.* **36(2),** 270-273 (1978).

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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