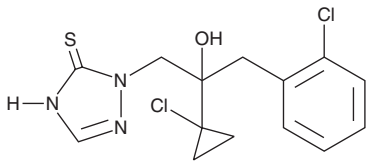
PRODUCT INFORMATION

Prothioconazole

Item No. 46060

CAS Registry No.:	178928-70-6
Formal Name:	2-[2-(1-chlorocyclopropyl)-3-(2-chlorophenyl)-2-hydroxypropyl]-1,2-dihydro-3H-1,2,4-triazole-3-thione
Synonyms:	JAU-6476, PTCZ
MF:	$C_{14}H_{15}Cl_2N_3OS$
FW:	344.3
Purity:	≥95%
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

Prothioconazole (PTCZ) is supplied as a solid. A stock solution may be made by dissolving the PTCZ in the solvent of choice, which should be purged with an inert gas. PTCZ is soluble (≥10 mg/ml) in DMSO. PTCZ is slightly soluble (0.1-1 mg/ml) in ethanol.

Description

PTCZ is a triazole fungicide.[1] It is an inhibitor of the cytochrome P450 (CYP) isoform CYP51, also known as sterol 14α-demethylase. PTCZ (10 mg/kg of media) inhibits ergosterol biosynthesis and reduces deoxynivalenol biosynthesis in *F. graminearum*, the causative agent of *Fusarium* head blight, with a greater effect for (R)-PTCZ compared with (S)-PTCZ. It reduces mycelial growth of 252 strains of *F. graminearum* (EC_{50}s = 0.4742-3.4403 µg/ml). PTCZ reduces the survival rate and induces malformations in zebrafish larvae at 0.35 µg/L, but does so to a lesser extent than (S)-(+)-PTCZ.[2] It also reduces egg production in zebrafish. PTCZ (30 mg/kg per day) reduces hepatic glutathione (GSH) and superoxide dismutase (SOD) levels and increases hepatic TNF-α and IL-1β levels in mice.[3] Formulations containing PTCZ have been used as fungicides in agriculture.

References

1. Zhang, Z., Gao, B., He, Z., *et al.* Stereoselective bioactivity of the chiral triazole fungicide prothioconazole and its metabolite. *Pestic. Biochem. Physiol.* **160**, 112-118 (2019).
2. Bian, J., Zhao, H., Xu, W., *et al.* Stereoselective reproductive and intergenerational toxicity of prothioconazole in female zebrafish: Concurrent ovarian cytotoxicity and endocrine disruption. *J. Agric. Food Chem.* **74(29)**, 22708-22722 (2026).
3. Hu, L., Xu, T., Wang, X., *et al.* Exposure to the fungicide prothioconazole and its metabolite prothioconazole-desthio induced hepatic metabolism disorder and oxidative stress in mice. *Pestic. Biochem. Physiol.* **193:105452**, (2023).

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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