

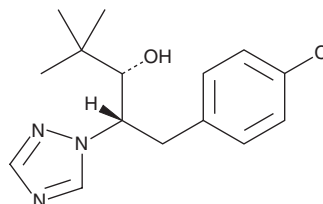
# PRODUCT INFORMATION



## Paclobutrazol

Item No. 18864

**CAS Registry No.:** 76738-62-0  
**Formal Name:** ( $\alpha$ R, $\beta$ R)-*rel*- $\beta$ -[(4-chlorophenyl)methyl]- $\alpha$ -(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol  
**Synonym:** PBZ  
**MF:** C<sub>15</sub>H<sub>20</sub>ClN<sub>3</sub>O  
**FW:** 293.8  
**Purity:**  $\geq$ 95%  
**Stability:**  $\geq$ 2 years at -20°C  
**Supplied as:** A crystalline solid  
**UV/Vis.:**  $\lambda_{\max}$ : 221 nm



### Laboratory Procedures

For long term storage, we suggest that paclobutrazol (PBZ) be stored as supplied at -20°C. It should be stable for at least two years.

PBZ is supplied as a crystalline solid. A stock solution may be made by dissolving the PBZ in the solvent of choice. PBZ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of PBZ in these solvents is approximately 10 mg/ml.

PBZ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, PBZ should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. PBZ has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

PBZ is a triazole-containing plant growth retardant that is known to inhibit the biosynthesis of gibberellins.<sup>1,2</sup> It also has antifungal activities.<sup>3</sup> PBZ, which is transported acropetally in plants, can also suppress the synthesis of abscisic acid and induce chilling tolerance in plants.<sup>1,4,5</sup> PBZ is typically used to support research on the role of gibberellins in plant biology.<sup>6,7</sup>

### References

1. Wang, S.Y., Sun, T., and Faust, M. Translocation of paclobutrazol, a gibberellin biosynthesis inhibitor, in apple seedlings. *Plant Physiol.* **82(1)**, 11-14 (1986).
2. Rademacher, W. Growth retardants: Effects on gibberellin biosynthesis and other metabolic pathways. *Annu. Rev. Plant Physiol. Plant Mol. Biol.* **51**, 501-531 (2000).
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4. Norman, S.M., Bennett, R.D., Poling, S.M., et al. Paclobutrazol inhibits abscisic acid biosynthesis in *Cercospora rosicola*. *Plant Physiol.* **80(1)**, 122-125 (1986).
5. Pinhero, R.G., Rao, M.V., Paliyath, G., et al. Changes in activities of antioxidant enzymes and their relationship to genetic and paclobutrazol-induced chilling tolerance of maize seedlings. *Plant Physiol.* **114(2)**, 695-704 (2016).
6. Wang, G.L., Que, F., Xu, Z.-S., et al. Exogenous gibberellin altered morphology, anatomic and transcriptional regulatory networks of hormones in carrot root and shoot. *BMC Plant Biol.* **15(1)**, (2015).
7. Cho, S.-H., Kang, K., Lee, S.-H., et al. OsWOX3A is involved in negative feedback regulation of the gibberellic acid biosynthetic pathway in rice (*Oryza sativa*). *J. Exp. Bot.* **erv559**, 1-11 (2016).

#### 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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