

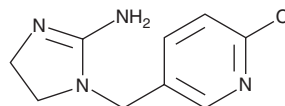
PRODUCT INFORMATION



Desnitro-imidacloprid

Item No. 46092

CAS Registry No.: 115970-17-7
Formal Name: 1-[(6-chloro-3-pyridinyl)methyl]-4,5-dihydro-1H-imidazol-2-amine
Synonyms: DNIMI
MF: C₉H₁₁ClN₄
FW: 210.7
Purity: ≥98%
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

Desnitro-imidacloprid is supplied as a solid. A stock solution may be made by dissolving the desnitro-imidacloprid in the solvent of choice, which should be purged with an inert gas. Desnitro-imidacloprid is sparingly soluble (1-10 mg/ml) in a 1:1 solution of acetonitrile:water.

Description

Desnitro-imidacloprid (DNIMI) is an active metabolite of the neonicotinoid insecticide imidacloprid (Item No. 24130).¹ It selectively binds to mammalian $\alpha 1 \gamma \alpha 1 \delta \beta 1$ -, $\alpha 3 \beta 2 \beta 4 \alpha 5$ -, $\alpha 4 \beta 2$ -, and $\alpha 7$ nicotinic acetylcholine receptors (nAChRs; IC₅₀s = 11, 9.9, 14, and 8.2 nM, respectively) over *D. melanogaster* nAChRs (IC₅₀ = 1,530 nM). Unlike imidacloprid, DNIMI is not toxic to *D. melanogaster* (LD₅₀ = >5 μ g/g) but is toxic to mice (LD₅₀ = 6-9 mg/kg). DNIMI (200 μ g/ml) decreases the growth of, induces rupture of, and reduces progesterone, testosterone, and estradiol levels in, isolated mouse antral follicles.² It has been found in human urine and drinking water.^{3,4}

References

1. Tomizawa, M., Lee, D.L., and Casida, J.E. Neonicotinoid insecticides: Molecular features conferring selectivity for insect versus mammalian nicotinic receptors. *J. Agric. Food Chem.* **48**(12), 6016-6024 (2000).
2. Mourikes, V.E., Santacruz Márquez, R., Deviney, A., et al. Imidacloprid and its bioactive metabolite, desnitro-imidacloprid, differentially affect ovarian antral follicle growth, morphology, and hormone synthesis in vitro. *Toxics* **11**(4), 349 (2023).
3. Wang, A., Mahai, G., Wan, Y., et al. Assessment of imidacloprid related exposure using imidacloprid-olefin and desnitro-imidacloprid: Neonicotinoid insecticides in human urine in Wuhan, China. *Environ. Int.* **141**, 105785 (2020).
4. Wan, Y., Han, Q., Wang, Y., et al. Five degradates of imidacloprid in source water, treated water, and tap water in Wuhan, central China. *Sci. Total Environ.* **741**, 140227 (2020).

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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