

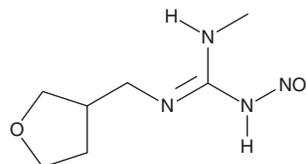
PRODUCT INFORMATION



Dinotefuran

Item No. 33802

CAS Registry No.: 165252-70-0
Formal Name: N''-methyl-N-nitro-N'-[(tetrahydro-3-furanyl)methyl]-guanidine
Synonyms: 1-Methyl-2-nitro-3-((tetrahydrofuran-3-yl)methyl)guanidine, MTI-446, Nidinetefuran
MF: C₇H₁₄N₄O₃
FW: 202.2
Purity: ≥98%
UV/Vis.: λ_{max}: 270 nm
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

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

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of dinotefuran can be prepared by directly dissolving the solid in aqueous buffers. The solubility of dinotefuran in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dinotefuran is a neonicotinoid insecticide.¹ It is an agonist of nicotinic acetylcholine receptors (nAChRs), inducing inward currents in isolated American cockroach (*P. americana*) neurons with an EC₅₀ value of 7.6 μM. Dinotefuran, alone or in combination with the metabolic inhibitors piperonyl butoxide (PB; Item No. 25820) or propargyl propyl benzenephosphonate (NIA), induces mortality in adult *P. americana*.² It is lethal to insecticide-sensitive or -resistant strains of *A. gambiae*, *C. quinquefasciatus*, and *A. aegypti* in larval (LC₅₀s = 0.14-0.44 mg/L) and adult (LD₅₀s = 0.18-31.16 ng/mg) bioassays.³ Dinotefuran has been found in a variety of commercial foodstuffs, including rice, cucumber, milk, egg, and pork samples, as well as in water samples from freshwater streams.^{5,6} Formulations containing dinotefuran have been used in the agricultural and veterinary control of insect infestations.

References

1. Tan, J., Galligan, J.J., and Hollingworth, R.M. *Neurotoxicology* **28**(4), 829-842 (2007).
2. Kiriya, K. and Nishimura, K. *Pest Manag. Sci.* **58**(7), 669-676 (2002).
3. Corbel, V., Duchon, S., Zaim, M., et al. *J. Med. Entomol.* **41**(4), 712-717 (2004).
4. Zhang, Y., Wu, X., Duan, T., et al. *J. Sep. Sci.* **41**(14), 2913-2923 (2018).
5. Hladik, M.L. and Kolpin, D.W. *Environ. Chem.* **13**, 12-20 (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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