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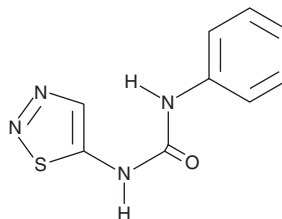
PRODUCT INFORMATION



Thidiazuron

Item No. 17272

CAS Registry No.: 51707-55-2
Formal Name: N-phenyl-N'-1,2,3-thiadiazol-5-yl-urea
Synonyms: CCG-24904, SN 49537, TDZ
MF: C₉H₈N₄OS
FW: 220.2
Purity: ≥98%
UV/Vis.: λ_{max}: 231, 287 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

Thidiazuron is supplied as a crystalline solid. A stock solution may be made by dissolving the thidiazuron in the solvent of choice, which should be purged with an inert gas. Thidiazuron is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of thidiazuron in these solvents is approximately 1, 15, and 30 mg/ml, respectively.

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

Description

Thidiazuron is a plant growth regulator.¹ It increases soybean callus and radish cotyledon growth when used at concentrations of 5 nM and 50 μM, respectively.¹ Thidiazuron (400 nM for seven weeks) induces the dedifferentiation of, and increases seedling number from, cultured geranium hypocotyls.² It induces defoliation in cotton in greenhouse studies when applied at a concentration of 56 g/ha.³ Thidiazuron also reduces the viability of MDA-MB-231 and MCF-7 breast cancer cell lines in a concentration-dependent manner, as well as increases DNA fragmentation and apoptosis in MDA-MB-231 cells when used at a concentration of 50 μM.⁴ It increases E-cadherin and decreases vimentin levels in, as well as reduces the number of mammospheres formed by, MDA-MB-231 cells when used at a concentration of 50 μM. Formulations containing thidiazuron have been used in the control of plant growth and foliage in agriculture.

References

1. Thomas, J.C. and Katterman, F.R. Cytokinin activity induced by thidiazuron. *Plant Physiol.* **81(2)**, 681-683 (1986).
2. Visser, C., Qureshi, J.A., Gill, R., *et al.* Morphoregulatory role of thidiazuron: Substitution of auxin and cytokinin requirement for the induction of somatic embryogenesis in geranium hypocotyl cultures. *Plant Physiol.* **99(4)**, 1704-1707 (1992).
3. Snipes, C.E. and Wills, G.D. Influence of temperature and adjuvants on thidiazuron activity in cotton leaves. *Weed Sci.* **42(1)**, 13-17 (1994).
4. Rajendran, P., Ammar, R.B., Al-Saeedi, F.J., *et al.* Thidiazuron decreases epithelial-mesenchymal transition activity through the NF-κB and PI3K/AKT signalling pathways in breast cancer. *J. Cell. Mol. Med.* **24(24)**, 14525-14538 (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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