

2,4-Dichlorophenoxyacetic acid Plant Cell Culture Tested

Product Number **EE0001**
Store at Room Temperature

Product Description

Molecular Formula: $C_8H_6Cl_2O_3$
Molecular Weight: 221.0
CAS Number: 94-75-7
Melting point: 140.5 °C¹
Synonym: 2,4-D

This product is plant cell culture tested at a concentration of 2 mg/L.

2,4-Dichlorophenoxyacetic acid is a synthetic auxin. It is the auxin most commonly used for inducing callus in culture; it is also used for maintaining cells in the dedifferentiated state. A typical working concentration is in the 1–50 μ M range.²

2,4-D is the metabolite of 2,4-Dichlorophenoxybutyric acid in higher plants.^{3,4}

2,4-D has been used at a concentration of 3 mg/L in the culture of *Lilium speciosum* Thunb. Var. *gloriosoides* Baker, a perennial that is a lily variety.⁵

The IR spectrum (Nujol mull) has been published.⁶

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in 95% ethanol (100 mg/ml) yielding a clear to slightly hazy, faint yellow solution. Heat may be required to get the product to dissolve at this concentration.

Storage/Stability

Dilute aqueous solutions of this compound may be sterilized by autoclaving.

References

1. The Pesticide Manual, 9th ed., Worthing, C.R. and Hance, R.J. (The British Crop Protection Council, Surrey, UK, 1991) pp. 218-219.
2. Plant Cell Culture: A Practical Approach, 2nd ed., Dixon R.A and Gonzales, R.A, Eds. (IRL Press, Oxford, 1994) p. 10.
3. Hayashi, M. et al., 2,4-Dichlorodphenoxybutyric Acid-Resistant Mutants of Arabidopsis Have Defects in Glyoxysomal Fatty Acid β -Oxidation, *The Plant Cell*, 10, 183-195 (1998).
4. Wain, R.L., and Wightman, F., The growth-regulating activity of certain ω -substituted alkyl carboxylic acids in relation to their β -oxidation within the plant. *Proc. R. Soc. Lond. Biol. Sci.* 142, 525-536 (1954).
5. Chang, C. et al., A tissue culture protocol for propagation of a rare plant, *Lilium speciosum* Thunb. var. *gloriosoides* Baker, *Bot. Bull. Acad. Sin.* 41, 139-142 (2000).
6. Sigma Library of FT-IR Spectra, **Ed. 1, Vol. 2**, p. 450A.