2,4-Dichlorophenoxyacetic acid
PRODUCT DATA SHEET

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Product Name:	2,4-Dichlorophenoxyacetic acid
Product Number:	D069
CAS Number:	94-75-7
Molecular Formula:	$C_8H_6Cl_2O_3$
Molecular Weight:	221.04
Form:	powder
Appearance:	light yellow or white powder
Solubility:	Practically insoluble in water. Soluble in organic solvents.
Description:	2,4-Dichlorophenoxyacetic acid (2,4-D) is plant growth regulator and synthetic auxin. It is a synthetic analog of the naturally occurring auxin indole-3-acetic acid (IAA). As an agricultural phenoxy herbicide, it has been commercially available since 1945 and is an active ingredient in over 1,500 herbicide products used to control dicots. In plant research, it is used as a supplement in plant culture media to induce callus. 2,4-D is soluble in organic solvents, but practically insoluble in water. This product is considered a dangerous good. Quantities above 1 g may be subject to additional shipping fees. Please contact us for details.
Mechanism of Action:	2,4-Dichlorophenoxyacetic acid mimicks the action of the plant growth regulator auxin, and when used as a herbicide, results in uncontrolled growth and eventually death in susceptible plants. It is commonly used in plant tissue culture as a plant growth regulator.
Plant Biology Applications	2,4-D is the most commonly used plant growth regulator in tissue culture of cereals. In mature wheat (*Triticum aestivum L*), 2,4-D was used to induce callus from seeds at an optimal concentration of 3.5 mg/L (Malik et al, 2004). 2,4-D was used in switchgrass (*Panicum virgatum L.)* tissue culture to induce callus initiation and regeneration of plantlets from mature caryopses and young seedlings. Best results from mature caryopses were obtained with 11.3-45 µM 2,4-D in combination with 15 or 45 µM benzyladenine (Denchev and Conger, 1995).

References:

Denchev PD and Conger BV (19950 *In vitro* culture of switchgrass: Influence of 2,4-D and picloram in combination with benzyladenine on callus initiation and regeneration. Plant Cell, Tissue and Organ Cult. 40(1):43-48

Hamner, C. L., & Tukey, H. B. (1944). The herbicidal action Of 2,4 Dichlorophenoxyacetic and 2,4,5 Trichlorophenoxyacetic acid on Bindweed. *Science*, 100(2590), 154-155. doi:10.1126/science.100.2590.154

Malik SI, Rashid H, Yasmin Y and Minhas NM (2004) Effect of 2,4-dichlorophenoxyacetic acid on callus induction from mature wheat (*Triticum aestivum L*.) seeds. Int. J. Agric. Biol. 6(1):156-159