

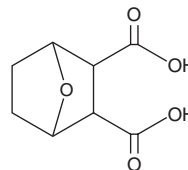
# PRODUCT INFORMATION



## Endothall

Item No. 17404

**CAS Registry No.:** 145-73-3  
**Formal Name:** 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid  
**Synonyms:** Endothal Acid, NSC 112771  
**MF:** C<sub>8</sub>H<sub>10</sub>O<sub>5</sub>  
**FW:** 186.2  
**Purity:** ≥95%  
**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

Endothall is supplied as a crystalline solid. A stock solution may be made by dissolving the endothall in the solvent of choice, which should be purged with an inert gas. Endothall is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of endothall in these solvents is approximately 15 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 endothall can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of endothall in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Endothall is an aquatic plant growth regulator.<sup>1</sup> It reduces curly leaf pondweed appearance frequency and dry biomass in lakes when applied annually at a concentration of 1 mg/L. Endothall reduces leaf chlorophyll content in *A. thaliana* plants and root length in *A. thaliana* seedlings (IC<sub>50</sub>s = 1.36 mM and 13.9 μM, respectively) and decreases duckweed growth rate (IC<sub>50</sub> = 10 μM).<sup>2</sup> It induces production of ethylene in bean leaves when applied at a concentration of 1 μM.<sup>3</sup> Endothall is also an inhibitor of protein phosphatase 2A (PP2A; IC<sub>50</sub> = 19-50 nM).<sup>4</sup> It is toxic to mice (LD<sub>50</sub> = 5-50 mg/kg). Formulations containing endothall have been used in the control of plants in aquatic environments.

### References

1. Johnson, J.A., Jones, A.R., and Newman, R.M. Evaluation of lakewide, early season herbicide treatments for controlling invasive curlyleaf pondweed (*Potamogeton crispus*) in Minnesota lakes. *Lake Reserv. Manag.* **28(4)**, 346-363 (2012).
2. Bajsa, J., Pan, Z., Dayan, F.E., et al. Validation of serine/threonine protein phosphatase as the herbicide target site of endothall. *Pestic. Biochem. Physiol.* **102(1)**, 38-44 (2012).
3. Abeles, A.L. and Abeles, F.B. Biochemical pathway of stress-induced ethylene. *Plant Physiol.* **50(4)**, 496-498 (1972).
4. Li, Y.-M. and Casida, J.E. Cantharidin-binding protein: Identification as protein phosphatase 2A. *Proc. Natl. Acad. Sci. USA* **89(24)**, 11867-11870 (1992).

#### 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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