

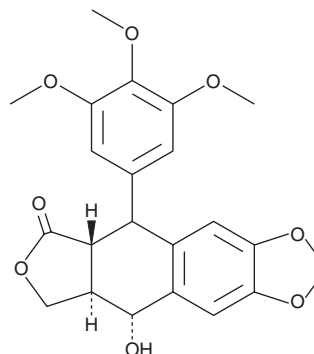
# PRODUCT INFORMATION



## Podophyllotoxin

Item No. 19575

**CAS Registry No.:** 518-28-5  
**Formal Name:** (5R,5aR,8aR,9R)-5,8,8a,9-tetrahydro-9-hydroxy-5-(3,4,5-trimethoxyphenyl)-furo[3',4':6,7]naphtho[2,3-d]-1,3-dioxol-6(5aH)-one  
**Synonyms:** NSC 24818, (-)-Podophyllotoxin, PPT  
**MF:** C<sub>22</sub>H<sub>22</sub>O<sub>8</sub>  
**FW:** 414.4  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 294 nm  
**Supplied as:** A powder  
**Storage:** -20°C  
**Stability:** ≥4 years



**Special Conditions:** Hygroscopic. Keep under inert gas. Protect from moisture.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Podophyllotoxin is supplied as a powder. A stock solution may be made by dissolving the podophyllotoxin in the solvent of choice. Podophyllotoxin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of podophyllotoxin in ethanol is approximately 0.14 mg/ml and approximately 15 mg/ml in DMSO and DMF.

Podophyllotoxin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, podophyllotoxin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Podophyllotoxin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Podophyllotoxin is a lignan that has been found in *Podophyllum* and has diverse biological activities.<sup>1-5</sup> It inhibits polymerization of isolated chicken brain tubulin (IC<sub>50</sub> = 0.6 μM) and induces mitotic arrest at the G<sub>2</sub>/M phase in CCRF CEM lymphoblastic leukemia cells when used at concentrations ranging from 0.01 to 5 μg/ml.<sup>2,3</sup> Podophyllotoxin (5 μM) is protective against herpes simplex virus 1 (HSV-1) infection in Vero cells.<sup>4</sup> It inhibits the proliferation of several diffuse large B cell lymphoma (DLBCL) cell lines (IC<sub>50</sub>s = 0.0098-0.017 μM).<sup>5</sup> Podophyllotoxin is a starting material in the semisynthesis of the anticancer compounds etoposide (Item No. 12092) and teniposide (Item No. 14425).<sup>6</sup> Formulations containing podophyllotoxin have been used in the treatment of external genital warts.

### References

1. Imbert, T.F. *Biochimie* **80**(3), 207-222 (1998).
2. Loike, J.D., Brewer, C.F., Sternlicht, H., et al. *Cancer Res.* **38**(9), 2688-2693 (1978).
3. Krishan, A., Paika, K., and Frei, E., III *J. Cell Biol.* **66**(3), 521-530 (1975).
4. Hammonds, T.R., Denyer, S.P., Jackson, D.E., et al. *J. Med. Microbiol.* **45**(3), 167-172 (1996).
5. Strömberg, T., Feng, X., Delforouh, M., et al. *Med. Oncol.* **32**(7), 188 (2015).
6. Xu, H., Lv, M., and Tian, X. *Curr. Med. Chem.* **16**(3), 327-349 (2009).

#### 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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