

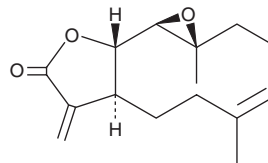
# PRODUCT INFORMATION



## Parthenolide

Item No. 70080

**CAS Registry No.:** 20554-84-1  
**Formal Name:** 2,3,6,7,7aS,8,10aS,10bR-octahydro-1aR,5-dimethyl-8-methylene-(4E)-oxireno[9,10]cyclodeca[1,2-b]furan-9(1aH)-one  
**MF:** C<sub>15</sub>H<sub>20</sub>O<sub>3</sub>  
**FW:** 248.3  
**Purity:** ≥98%  
**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

Parthenolide is supplied as a crystalline solid. A stock solution may be made by dissolving the parthenolide in the solvent of choice, which should be purged with an inert gas. Parthenolide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of parthenolide in these solvents is approximately 30 mg/ml in ethanol and approximately 20 mg/ml in DMSO and DMF.

Parthenolide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, parthenolide should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Parthenolide 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

Parthenolide is a sesquiterpene lactone from the plant feverfew (*T. parthenium*). It inhibits the growth of the promastigote form of *L. amazonensis* (IC<sub>50</sub> = 3.6 µg/ml).<sup>1</sup> Parthenolide also induces apoptosis in cancer cells, at least in part by inhibiting NF-κB- and STAT-mediated anti-apoptotic gene transcription.<sup>2,3</sup> This compound has also been shown to block inflammation by inhibiting signaling through NF-κB.<sup>4</sup> Inhibition of NF-κB by parthenolide can be achieved by direct binding of the pattern recognition receptor NOD2 by parthenolide.<sup>5</sup>

### References

1. Tiunan, T.S., Ueda-Nakamura, T., Cortez, D.A.G., *et al.* Antileishmanial activity of parthenolide, a sesquiterpene lactone isolated from *Tanacetum parthenium*. *Antimicrob. Agents Chemother.* **49(1)**, 176-182 (2005).
2. Guzman, M.L., Rossi, R.M., Karnischky, L., *et al.* The sesquiterpene lactone parthenolide induces apoptosis of human acute myelogenous leukemia stem and progenitor cells. *Blood* **105**, 4163-4169 (2005).
3. Pajak, B., Orzechowski, A., and Gajkowska, B. Molecular basis of parthenolide-dependent proapoptotic activity in cancer cells. *Folia Histochem. Cytobiol.* **46(2)**, 129-135 (2008).
4. Lopez-Franco, O., Hernandez-Vargas, P., Ortiz-Munoz, G., *et al.* Parthenolide modulates the NF-κB-mediated inflammatory responses in experimental atherosclerosis. *Arterioscler. Thromb. Vasc. Biol.* **26**, 1864-1870 (2006).
5. Zhao, L., Lee, J.Y., and Hwang, D.H. Inhibition of pattern recognition receptor-mediated inflammation by bioactive phytochemicals. *Nutr. Rev.* **69(6)**, 310-320 (2011).

#### 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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