

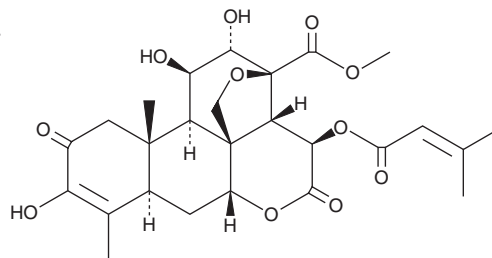
PRODUCT INFORMATION



Brusatol

Item No. 30883

CAS Registry No.: 14907-98-3
Formal Name: 13,20-epoxy-3,11 β ,12 α -trihydroxy-15 β -[(3-methyl-1-oxo-2-buten-1-yl)oxy]-2,16-dioxo-picras-3-en-21-oic acid, methyl ester
Synonyms: (+)-Brusatol, NSC 172924
MF: C₂₆H₃₂O₁₁
FW: 520.5
Purity: $\geq$ 98%
UV/Vis.: λ_{max} : 219, 280 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: $\geq$ 4 years
Item Origin: Plant/*Brucea javanica*



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

Laboratory Procedures

Brusatol is supplied as a crystalline solid. A stock solution may be made by dissolving the brusatol in the solvent of choice, which should be purged with an inert gas. Brusatol is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of brusatol in these solvents is approximately 1 mg/ml.

Brusatol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, brusatol should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Brusatol has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Brusatol is a quassinoid that has been found in *B. javanica* and has diverse biological activities, including antimalarial, lipolytic, antioxidative, anticancer, and anti-inflammatory properties.¹⁻⁴ It is active against chloroquine-resistant isolates of *P. falciparum* (EC₅₀ = 7.58 ng/ml) and induces lipolysis in 3T3-L1 adipocytes when used at a concentration of 160 nM.^{1,2} Brusatol (40 nM) reduces nuclear erythroid 2-related factor 2 (Nrf2) ubiquitination and degradation and Nrf2 target gene expression in A549 lung cancer cells.³ It enhances cytotoxicity induced by cisplatin (Item No. 13119) in A549 cells when used at a concentration of 40 nM *in vitro* and in an A549 mouse xenograft model when administered at a dose of 2 mg/kg. Brusatol also inhibits LPS-induced production of TNF- α , pro-IL-1 β , prostaglandin E₂ (Item No. 14010), and nitric oxide (NO) in RAW 264.7 macrophages. It reduces diarrhea and the severity of histopathological injury, as well as increases colonic levels of catalase (CAT), glutathione (GSH), and superoxide dismutase (SOD), in a mouse model of ulcerative colitis when administered at doses of 0.5 and 1 mg/kg.⁴

References

1. Lee, K.-H., Tani, S., and Imakura, Y. Antimalarial agents, 4. Synthesis of a brusatol analog and biological activity of brusatol-related compounds. *J. Nat. Prod.* **50**(5), 847-851 (1987).
2. Lahrita, L., Moriai, K., Iwata, R., et al. Quassinoids in *Brucea javanica* are potent stimulators of lipolysis in adipocytes. *Fitoterapia* **137**, 104250 (2019).
3. Ren, D., Villeneuve, N.F., Jiang, T., et al. Brusatol enhances the efficacy of chemotherapy by inhibiting the Nrf2-mediated defense mechanism. *Proc. Natl. Acad. Sci. USA* **108**(4), 1433-1438 (2011).
4. Zhou, J., Wang, T., Dou, Y., et al. Brusatol ameliorates 2, 4, 6-trinitrobenzenesulfonic acid-induced experimental colitis in rats: Involvement of NF- κ B pathway and NLRP3 inflammasome. *Int. Immunopharmacol.* **64**, 264-274 (2018).

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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