

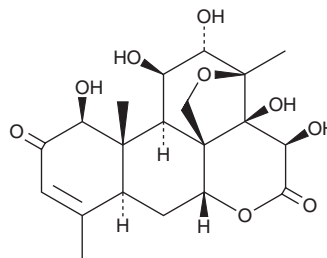
# PRODUCT INFORMATION



## Bruceine D

Item No. 40140

**CAS Registry No.:** 21499-66-1  
**Formal Name:** 13,20-epoxy-1 $\beta$ ,11 $\beta$ ,12 $\alpha$ ,14,15 $\beta$ -pentahydroxy-pircas-3-ene-2,16-dione  
**Synonyms:** Brucein D, NSC 318801  
**MF:** C<sub>20</sub>H<sub>26</sub>O<sub>9</sub>  
**FW:** 410.4  
**Purity:**  $\geq$ 98%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years  
**Item Origin:** Plant/*Brucea javanica* (L.) Merr.



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

### Laboratory Procedures

Bruceine D is supplied as a solid. A stock solution may be made by dissolving the bruceine D in the solvent of choice, which should be purged with an inert gas. Bruceine D is soluble in methanol and chloroform.

### Description

Bruceine D is a quassinoid that has been found in *B. javanica* and has diverse biological activities.<sup>1-4</sup> It is active against chloroquine-resistant *P. falciparum* (IC<sub>50</sub> = 0.015  $\mu$ g/ml).<sup>1</sup> Bruceine D selectively inhibits the proliferation of PANC-1, SW 1990, and Capan-1 pancreatic cancer cells over Hs68 fibroblasts (IC<sub>50</sub>s = 2.53, 5.21, 1.35, and  $>$ 30  $\mu$ M, respectively).<sup>2</sup> It also induces apoptosis in PANC-1 cells. Bruceine D (20 and 40 mg/kg) protects against MPTP-induced motor impairments and dopaminergic neurodegeneration in a mouse model of Parkinson's disease.<sup>3</sup> It decreases carrageenan-induced paw inflammation in rats when administered at doses of 0.25 or 1 mg/kg.<sup>4</sup>

### References

- O'Neill, M.J., Bray, D.H., Boardman, P., *et al.* Plants as sources of antimalarial drugs, Part 4: Activity of *Brucea javanica* fruits against chloroquine-resistant *Plasmodium falciparum* in vitro and against *Plasmodium berghei* in vivo. *J. Nat. Prod.* **50**(1), 41-48 (1987).
- Lau, S.T., Lin, Z.-X., Liao, Y., *et al.* Bruceine D induces apoptosis in pancreatic adenocarcinoma cell line PANC-1 through the activation of p38-mitogen activated protein kinase. *Cancer Lett.* **281**(1), 42-52 (2009).
- Yang, Y., Kong, F., Ding, Q., *et al.* Bruceine D elevates Nrf2 activation to restrain Parkinson's disease in mice through suppressing oxidative stress and inflammatory response. *Biochem. Biophys. Res. Commun.* **526**(4), 1013-1020 (2020).
- Hall, I.H., Lee, K.H., Imakura, Y., *et al.* Anti-inflammatory agents III: Structure-activity relationships of brusatol and related quassinoids. *J. Pharm. Sci.* **72**(11), 1282-1284 (1983).

#### 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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM