

## Bryonolic acid

## Chemical Properties

CAS No. : 24480-45-3

Formula: C<sub>30</sub>H<sub>48</sub>O<sub>3</sub>

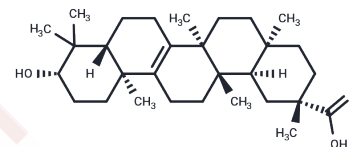
Molecular Weight: 456.7

Keep away from direct sunlight, Store at low temperature

Storage:

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Bryonolic acid (20-epi-Bryonolic acid), a triterpenoid extracted from Sandoricum indicum, possesses immunomodulatory, anti-inflammatory, antioxidant and anticancer activities and protects PC12 cells from NMDA-induced apoptosis by inhibiting Ca <sup>2+</sup> influx and modulating gene expression in the Ca <sup>2+</sup> -CaMKII-CREB signalling pathway.
Targets(IC50)	Apoptosis, Antioxidant, Calcium Channel, NO Synthase
In vitro	In the presence of three elicitors (methyl jasmonate, yeast extract, and chitosan), cell suspensions treated with 1 mg/mL of chitosan for eight days led to higher bryonolic acid contents (23.56 ± 1.68 mg/g dry weight), cell culture and root extracts with high bryonolic acid contents resulted in significantly higher percent cell viabilities than those observed under control (1% v/v DMSO) treatment in Saos-2 and MCF-7 cells[1]. Bryonolic acid inhibits ACAT in intact cancer cells with an IC <sub>50</sub> of 12.6 ± 2.4 μM. Bryonolic acid inhibited both clonogenicity and invasiveness of several cancer cell lines[2].
In vivo	Treatment with 500 mg/kg Bryonolic acid or vehicle by intraperitoneal injection in Nrf2 wild-type or Nrf2 knockout mice revealed that Bryonolic acid effectively induced HO-1 in a manner dependent on the Nrf2-Keap1 pathway[3].

## Solubility Information

Solubility	DMSO: 1 mg/mL (2.19 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1896 mL	10.9481 mL	21.8962 mL
5 mM	0.4379 mL	2.1896 mL	4.3792 mL
10 mM	0.219 mL	1.0948 mL	2.1896 mL
50 mM	0.0438 mL	0.219 mL	0.4379 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

- Pornpatsorn Lertphadungkit, et al. Enhanced Production of Bryonolic Acid in *Trichosanthes cucumerina* L. (Thai Cultivar) Cell Cultures by Elicitors and Their Biological Activities. *Plants (Basel)*. 2020 Jun 2;9(6):709.
- Farid Khallouki, et al. Bryonolic Acid Blocks Cancer Cell Clonogenicity and Invasiveness through the Inhibition of Fatty Acid: Cholesteryl Ester Formation. *Biomedicines*. 2018 Feb 12;6(1):21.
- Tonibelle N Gatbonton-Schwager , et al. Bryonolic acid transcriptional control of anti-inflammatory and antioxidant genes in macrophages in vitro and in vivo. *J Nat Prod*. 2012 Apr 27;75(4):591-8.
- Barker EC, Gatbonton-Schwager TN, Han Y, Clay JE, Letterio JJ, Tochtrop GP. Bryonolic acid: a large-scale isolation and evaluation of heme oxygenase 1 expression in activated macrophages. *J Nat Prod*. 2010 Jun 25;73(6):1064-8. doi: 10.1021/np1000076. PubMed PMID: 20481554; PubMed Central PMCID: PMC2905313.

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