

## Product Information

Product ID I4961  
CAS No. 482-44-0  
Chemical Name

Synonym

Formula  $C_{16}H_{14}O_4$   
Formula Wt. 270.28

Melting Point

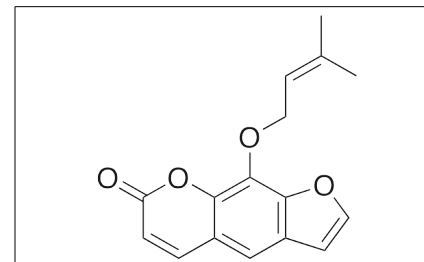
Purity  $\geq 98\%$

Solubility DMSO 10 mM. <0.3 mg/mL  
hot H<sub>2</sub>O.

Store Temp Ambient

Ship Temp Ambient

**Description** Imperatorin is a furocoumarin that displays a wide variety of beneficial properties, including antihypertensive, vasodilatory, antioxidative, antibacterial, anti-parasitic, cognition enhancing, and neuroprotective activities. Imperatorin increases levels of catalase, xanthine oxidase, glutathione, NO, and NOS and decreases levels of angiotensin II in hypertensive rats. In vitro, imperatorin induces NO-regulated vasodilation in mouse thoracic aortic tissue. This compound is active against both gram positive and gram negative bacteria and also shows toxicity against *Culex* and *Aedes* mosquito larvae, indicating insecticide potential as well. In vitro, imperatorin inhibits caspase-3 and Bax expression and upregulates Bcl-2 and BDNF expression. In animal models of cerebral ischemia, imperatorin decreases infarct volume. Additionally, this compound inhibits voltage-gated Na<sup>+</sup> channels in rat hippocampal neurons and displays inhibitory activity against both butyrylcholinesterase (BChE) and acetylcholinesterase (AChE). In animal models of Alzheimer's disease, imperatorin improves memory acquisition and consolidation processes.



**Bulk quantities available upon request**

Product ID	Size
I4961	5 mg
I4961	25 mg
I4961	100 mg

**References** Granica S, Kiss AK, Jarończyk M, et al. Synthesis of Imperatorin Analogs and Their Evaluation as Acetylcholinesterase and Butyrylcholinesterase Inhibitors. *Arch Pharm (Weinheim)*. 2013 Oct 14. [Epub ahead of print]. PMID: 24123207.

Wu KC, Chen YH, Cheng KS, et al. Suppression of voltage-gated Na<sup>(+)</sup> channels and neuronal excitability by imperatorin. *Eur J Pharmacol*. 2013 Dec 5;721(1-3):49-55. PMID: 24113522.

Budzynska B, Boguszewska-Czubara A, Kruk-Slomka M, et al. Effects of imperatorin on nicotine-induced anxiety- and memory-related responses and oxidative stress in mice. *Physiol Behav*. 2013 Oct 2;122:46-55. PMID: 23999469.

Wang N, Wu L, Cao Y, et al. The protective activity of imperatorin in cultured neural cells exposed to hypoxia re-oxygenation injury via anti-apoptosis. *Fitoterapia*. 2013 Oct;90:38-43. PMID: 23856091.

Kimura Y, Sumiyoshi M, Sakanaka M, et al. In vitro and in vivo antiproliferative effect of a combination of ultraviolet-A and alkoxy furocoumarins isolated from Umbelliferae medicinal plants, in melanoma cells. *Photochem Photobiol*. 2013 Sep-Oct;89(5):1216-25. PMID: 23802687.

Cao YJ, He X, Wang N, et al. Effects of imperatorin, the active component from *Radix Angelicae* (Baizhi), on the blood pressure and oxidative stress in 2K,1C hypertensive rats. *Phytomedicine*. 2013 Sep 15;20(12):1048-54. PMID: 23746952.

Wang Z, Kim JR, Wang M, et al. Larvicidal activity of *Cnidium monnieri* fruit coumarins and structurally related compounds

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.