

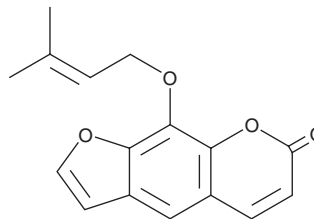
PRODUCT INFORMATION



Imperatorin

Item No. 26070

CAS Registry No.: 482-44-0
Formal Name: 9-[(3-methyl-2-buten-1-yl)oxy]-7H-furo[3,2-g][1]benzopyran-7-one
Synonyms: Marmelosin, NSC 402949
MF: C₁₆H₁₄O₄
FW: 270.3
Purity: ≥98%
UV/Vis.: λ_{max}: 219, 249, 302 nm
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

Imperatorin is supplied as a crystalline solid. A stock solution may be made by dissolving the imperatorin in the solvent of choice, which should be purged with an inert gas. Imperatorin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of imperatorin in these solvents is approximately 10, 20, and 30 mg/ml, respectively.

Imperatorin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, imperatorin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Imperatorin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Imperatorin is a furanocoumarin that has been found in *A. dahurica* and has diverse biological activities, including anticancer, anti-inflammatory, and antioxidant properties.¹⁻³ It decreases MCL-1 protein levels and increases mitochondrial membrane depolarization and apoptosis in doxorubicin-resistant HepG2 (R-HepG2) cells, an effect that can be reversed by overexpression of MCL-1.¹ Imperatorin inhibits the growth of doxorubicin-resistant and -sensitive HepG2 cells *in vitro* (IC₅₀s = 28.1 and 43.3 μM, respectively) and reduces tumor growth in an R-HepG2 mouse xenograft model when administered at a dose of 50 mg/kg. Imperatorin inhibits LPS-induced increases in p38 MAPK, JNK, and IκBα phosphorylation, TNF-α, IL-6, and IL-1β protein levels, and nuclear localization of NF-κB p65 in RAW 264.7 macrophages.² It scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) and ABTS radicals (EC₅₀s = 19.48 and 10.93 μM, respectively).³ Imperatorin also has antibacterial, antiviral, and anticonvulsant activities.^{1,2}

References

1. Li, X., Zeng, X., Sun, J., et al. *Cancer Lett.* **348**(1-2), 146-155 (2014).
2. Guo, W., Sun, J., Jiang, L., et al. *Inflammation* **35**(6), 1764-1772 (2012).
3. Bai, Y., Li, D., Zhou, T., et al. *J. Funct. Foods* **20**, 453-462 (2016).

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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