

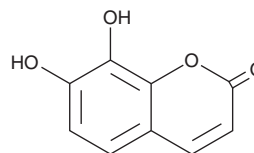
PRODUCT INFORMATION



Daphnetin

Item No. 20826

CAS Registry No.: 486-35-1
Formal Name: 7,8-dihydroxy-2H-1-benzopyran-2-one
Synonyms: 7,8-Dihydroxycoumarin,
NSC 633563
MF: C₉H₆O₄
FW: 178.1
Purity: ≥90%
UV/Vis.: λ_{max}: 262, 329 nm
Supplied as: A 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

Daphnetin is supplied as a solid. A stock solution may be made by dissolving the daphnetin in the solvent of choice. Daphnetin is soluble in the organic solvent ethanol, which should be purged with an inert gas, at a concentration of approximately 5 mg/ml.

Description

Daphnetin is a coumarin derivative that has been isolated from plants of the genus *Daphne* and has diverse biological activities, including kinase inhibitory, anti-proliferative, and antioxidative properties.¹⁻³ It inhibits the EGF receptor (EGFR), PKA, and PKC (IC₅₀s = 7.67, 9.33, and 25.01 μM, respectively, in kinase assays) and inhibits cell proliferation (IC₅₀ = 73 μM) and reduces cyclin D1 levels in MCF-7 breast carcinoma cells.^{1,2} Daphnetin (5 and 10 μg/ml) decreases the generation of reactive oxygen species (ROS) and production of malondialdehyde (MDA) and increases superoxide dismutase (SOD) activity and the glutathione (GSH) to oxidized GSH (GSSG) ratio in RAW 264.7 cells.³ It also prevents cytotoxicity and ROS overproduction induced by *t*-butyl hydroperoxide (*t*-BHP) in wild-type, but not *Nrf2*^{-/-}, RAW 264.7 cells and increases the expression of proteins downstream of *Nrf2*, including HO-1, GCLM, GCLC, and NQO1.

References

1. Yang, E.B., Zhao, Y.N., Zhang, K., *et al.* Daphnetin, one of coumarin derivatives, is a protein kinase inhibitor. *Biochem. Biophys. Res. Commun.* **260**(3), 682-685 (1999).
2. Jiménez-Orozco, F.A., Rosales, A.A., Vega-López, A., *et al.* Differential effects of esculetin and daphnetin on in vitro cell proliferation and in vivo estrogenicity. *Eur. J. Pharmacol.* **668**(1-2), 35-41 (2011).
3. Lv, H., Liu, Q., Zhou, J., *et al.* Daphnetin-mediated *Nrf2* antioxidant signaling pathways ameliorate tert-butyl hydroperoxide (*t*-BHP)-induced mitochondrial dysfunction and cell death. *Free Radic. Biol. Med.* **106**, 38-52 (2017).

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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