

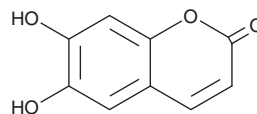
PRODUCT INFORMATION



Esculetin

Item No. 19286

CAS Registry No.: 305-01-1
Formal Name: 6,7-dihydroxy-2H-1-benzopyran-2-one
Synonyms: Aesculetin, Cichorigenin, 6,7-Dihydroxycoumarin, NSC 26427
MF: C₉H₆O₄
FW: 178.1
Purity: ≥98%
UV/Vis.: λ_{max}: 229, 258, 300, 351 nm
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥4 years
Item Origin: Synthetic



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

Laboratory Procedures

Esculetin is supplied as a crystalline solid. A stock solution may be made by dissolving the esculetin in the solvent of choice, which should be purged with an inert gas. Esculetin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of esculetin in these solvents is approximately 2, 30, and 50 mg/ml, respectively.

Esculetin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, esculetin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Esculetin has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Esculetin is a coumarin that has been found in *Euphorbia* and has diverse biological activities.¹⁻⁵ It inhibits 5-lipoxygenase (5-LO) and 12-LO (IC₅₀s = 4 and 2.5 μM, respectively), as well as the histone demethylase jumonji AT-rich interactive domain 1B (JARID1B; IC₅₀ = 4.6 μM).^{1,2} Esculetin is active against *B. cereus*, *S. lutea*, *S. aureus*, *S. lactis*, *A. faecalis*, and *E. coli*.³ It reduces production of hydrogen peroxide induced by the leucin-rich repeat kinase 2 (LRRK2) mutant LRRK2^{G2019S}, which is linked to neurotoxicity and Parkinson's disease, in *Drosophila* brain lysates and decreases cell death in LRRK2^{G2019S}-expressing primary human cortical neurons.⁴ Esculetin (1.68 μmol/ear) reduces croton oil-induced ear edema in mice.⁵ It also inhibits acetylcholine-induced writhing in mice (ED₅₀ = 69 mg/kg).

References

1. Neichi, T., Koshihara, Y., and Murota, S.-I. *Biochim. Biophys. Acta* **753**, 130-132 (1983).
2. Sayegh, J., Cao, J., Zou, M.R., et al. *J. Biol. Chem.* **288**(13), 9408-9417 (2013).
3. Jurd, L., Corse, J., King, A.D., Jr., et al. *Phytochem.* **10**(12), 2971-2974 (1971).
4. Angeles, D. C., Ho, P., Dymock, B. W. et al. *Ann. Clin. Transl. Neurol.* **3**(4), 288-294 (2016).
5. Tubaro, A., Del Negro, P., Ragazzi, E., et al. *Pharmacol. Res. Commun.* **20**(5), 83-85 (1988).

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