

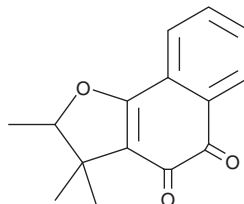
PRODUCT INFORMATION



(±)-Dunnione

Item No. 21943

CAS Registry No.: 521-49-3
Formal Name: 2,3-dihydro-2,3,3-trimethyl-naphtho[1,2-b]furan-4,5-dione
Synonym: NSC 95403
MF: $C_{15}H_{14}O_3$
FW: 242.3
Purity: $\geq 98\%$
UV/Vis.: λ_{max} : 212, 261, 445 nm
Supplied as: A crystalline solid
Storage: $-20^{\circ}C$
Stability: ≥ 4 years



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

Laboratory Procedures

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

Description

(±)-Dunnione is a naturally occurring naphthoquinone with diverse biological activities.¹⁻⁴ It exhibits fungicidal activity against ten agriculturally relevant plant fungi *in vitro* (MICs = 5-20 mg/L) and in infected wheat and barley plants (EC₅₀s = 2-20 mg/L).¹ (±)-Dunnione also reduces the growth of *T. cruzi* epimastigotes (IC₅₀ = 4.01 μ M).² It is a substrate for NAD(P)H:quinone oxidoreductase 1 (NQO1) that increases production of reactive oxygen species (ROS) and induces cell death of A549 lung carcinoma cells (IC₅₀ = 6.1 μ M).³ (±)-Dunnione (20 mg/kg per day for 4 days) increases intracellular NAD⁺ (Item No. 16077) and prevents inflammatory cytokine production and small intestinal damage induced by cisplatin (Item No. 13119) in mice.⁴

References

1. Khambay, B.P.S., Batty, D., Jewess, P.J., *et al.* Mode of action and pesticidal activity of the natural product dunnione and of some analogues. *Pest. Manag. Sci.* **59**(2), 174-182 (2003).
2. Salas, C.O., Faúndez, M., Morello, A., *et al.* Natural and synthetic naphthoquinones active against *Trypanosoma cruzi*: An initial step towards new drugs for Chagas disease. *Curr. Med. Chem.* **18**(1), 144-161 (2011).
3. Bian, J., Xu, L., Deng, B., *et al.* Synthesis and evaluation of (±)-dunnione and its *ortho*-quinone analogues as substrates for NAD(P)H:quinone oxidoreductase 1 (NQO1). *Bioorg. Med. Chem. Lett.* **25**(6), 1244-1248 (2015).
4. Pandit, A., Kim, H.-J., Oh, G.-S., *et al.* Dunnione ameliorates cisplatin-induced small intestinal damage by modulating NAD⁺ metabolism. *Biochem. Bioph. Res. Commun.* **467**(4), 697-703 (2015).

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.

WARRANTY AND LIMITATION OF REMEDY

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