Product Data Sheet

Product Name: (±)-Dunnione
Cat. No.: GC18787

Chemical Properties

Cas. No.	521-49-3		
Chemical Name	2,3-dihydro-2,3,3-trimethyl-naphtho[1,2-b]furan-4,5-dione		
SMILES	O=C(C1=CC=CC=C1C2=C3C(C)(C)C(C)O2)C3=O		
Formula	$C_{15}H_{14}O_3$	M.Wt	242.3
Solubility	DMF: 30 mg/ml,DMSO: 30 mg/ml,Ethanol: 30 mg/ml	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	(±)-Dunnione		

Background

(±)-Dunnione is a naturally occurring naphthoquinone with diverse biological activities.[1][2][3][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 µM)[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 µM).[3] (±)-Dunnione (20 mg/kg per day for 4 days) increases intracellular NAD+ and prevents inflammatory cytokine production and small intestinal damage induced by cisplatin in mice.[4]

Reference:

[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).

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[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. Biophys. Res. Commun. 467(4), 697-703 (2015).

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