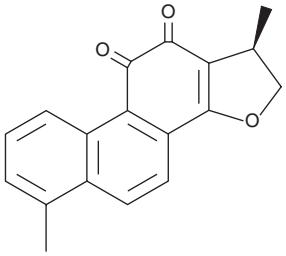
PRODUCT INFORMATION

15,16-Dihydrotanshinone I

Item No. 25051

CAS Registry No.:	87205-99-0
Formal Name:	(1R)-1,2-dihydro-1,6-dimethyl-phenanthro[1,2-b]furan-10,11-dione
Synonyms:	DHTS, Dihydrotanshinone I
MF:	$C_{18}H_{14}O_3$
FW:	278.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 215, 241, 290 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

15,16-Dihydrotanshinone I (DHTS) is supplied as a crystalline solid. A stock solution may be made by dissolving the DHTS in the solvent of choice, which should be purged with an inert gas. DHTS is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of DHTS in these solvents is approximately 0.2 mg/ml.

Description

DHTS is a diterpene tanshinone that has been found in the roots of *S. miltiorrhiza* with diverse biological activities.[1] DHTS inhibits RHL-2H3 mast cell degranulation with an IC_{50} value of 14.3 µM and reduces the tyrosine phosphorylation of phospholipase Cγ2 (PLCγ2) and ERK.[2] It prevents HuR binding to RNA in a cell-free assay (K_i = 3.74 nM) and inhibits the production of TNF mRNA and protein in MCF-7 cells.[1] DHTS reduces the viability of MCF-7, MDA-MB-231, and SK-BR-3 breast cancer cells with IC_{50} values of 0.84, 0.92, and 1.2 µM, respectively. It also reduces collagen-induced aggregation of washed rabbit platelets (IC_{50} = 8.7 µM).[3] *In vivo*, DHTS (25 mg/kg per day) reduces tumor growth in an HL-60 leukemia mouse xenograft model by 68% relative to control without decreasing body weight.[4] In mice with scopolamine-induced learning and memory impairment, DHTS (2-4 mg/kg, p.o.) increases latency to step-through in a passive avoidance test by approximately 3- to 4-fold, and it inhibits acetylcholinesterase in brain homogenate (IC_{50} = 25 µM).[5]

References

1. D'Agostino, V.G., Lal, P., Mantelli, B., *et al.* Dihydrotanshinone-I interferes with the RNA-binding activity of HuR affecting its post-transcriptional function. *Sci. Rep.* **5:16478** (2015).
2. Choi, H.S. and Kim, K.M. Tanshinones inhibit mast cell degranulation by interfering with IgE receptor-mediated tyrosine phosphorylation of PLCγ2 and MAPK. *Planta Med.* **70(2)**, 178-180 (2004).
3. Park, J.W., Lee, S.H., Yang, M.K., *et al.* 15,16-Dihydrotanshinone I, a major component from *Salvia miltiorrhiza* Bunge (Dansham), inhibits rabbit platelet aggregation by suppressing intracellular calcium mobilization. *Arch. Pharm. Res.* **31(1)**, 47-53 (2008).
4. Liu, J.J., Wu, H.H., Chen, T.H., *et al.* 15,16-Dihydrotanshinone I from the functional food *Salvia miltiorrhiza* exhibits anticancer activity in human HL-60 leukemia cells: *In vitro* and *in vivo* studies. *Int. J. Mol. Sci.* **16(8)**, 19387-19400 (2015).
5. Kim, D.H., Jeon, S.J., Jung, J.W., *et al.* Tanshinone congeners improve memory impairments induced by scopolamine on passive avoidance tasks in mice. *Eur. J. Pharmacol.* **574(2-3)**, 140-147 (2007).

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