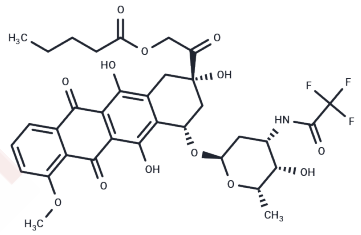
Data Sheet (Cat.No.T7604)

TargetMol

Valrubicin

Chemical Properties



CAS No. : 56124-62-0

Formula: C34H36F3NO13

Molecular Weight: 723.64

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Valrubicin (AD-32) (AD 32) inhibits TPA- and PDBu-induced PKC activation (IC50s: 0.85 and 1.25 μM) and has antitumor and anti-inflammatory activity.
Targets(IC50)	Antibiotic,PKC
In vitro	Valrubicin inhibits the binding of [3H]PDBu to PKC. Therefore, Valrubicin competes with the tumor promoter for the PKC binding site and prevents the latter from both interacting with the phospholipid and binding to PKC [1]. Valrubicin shows cytotoxic activity against squamous cell carcinoma (SCC) cell line colony formation, with IC50s and IC90s of 8.24 μM and 14.81 μM for UMSCC5 cells, 15.90 μM, 29.84 μM for UMSCC5/CDDP? cells, and 10.50 μM, 19.00 μM for UMSCC10b cells, respectively [2].
In vivo	Valrubicin, administered at doses of 3, 6, or 9 mg, effectively reduces tumor growth through intratumoral injections in hamsters by the third week. When 6 mg of Valrubicin is used in conjunction with minimally cytotoxic irradiation (ranging from 150, 250, or 350 cGy), it induces significant tumor shrinkage in the hamster model [2]. Additionally, at a concentration of 0.1 μg/μL, Valrubicin markedly decreases the infiltration of neutrophils in TPA-challenged biopsies at 24 hours and mitigates chronic inflammation in mice. Furthermore, Valrubicin reduces the expression of inflammatory cytokines in the acute experimental setup [3].
Cell Research	UMSCC5 cells exposed to Valrubicin (2 μM for 3 h), a single dose of radiation (400 cGy), or the combined treatment are cultured for a further 12, 24, or 48 hours. At these times, the cells are collected by trypsinization (0.25%), washed in PBS, and fixed at 5 × 10^6 cells/mL with 95% ethanol. Cells are incubated with ribonuclease (50 μg; 70-90 Kunitz units/mg for 30 min), and the resulting pellet resuspended in and incubated with propidium iodide (0.05 mg/mL for 10 min). The DNA content of the samples is determined by flow cytometry according to standard technique [2].
Animal Research	Hamsters with cheek pouch tumors of 100 mm2 are randomly assigned to one of five treatment groups. Momentarily anesthetized animals each receives once a week × 3 injections (27 g × 0.5-inch needle: 0.1 mL administered slowly to the base of the lesion) of Valrubicin (3, 6, or 9 mg) or drug vehicle (Cremophor: alcohol;1:1 by volume; NaCl diluent 12). A further group of animals receives anesthesia but no direct tumor treatment (control). Individual tumor sizes are measured with calipers at weekly intervals for 4 weeks, at which time the animals are sacrificed [2].

Solubility Information

Solubility	DMSO: 122.5 mg/mL (169.28 mM),Sonication is recommended. H2O: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (5.53 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3819 mL	6.9095 mL	13.819 mL
5 mM	0.2764 mL	1.3819 mL	2.7638 mL
10 mM	0.1382 mL	0.691 mL	1.3819 mL
50 mM	0.0276 mL	0.1382 mL	0.2764 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Chuang LF, et al. Activation of human leukemia protein kinase C by tumor promoters and its inhibition by N-trifluoroacetyladriamycin-14-valerate (AD 32). Biochem Pharmacol. 1992 Feb 18;43(4):865-72.
Wani MK, et al. Rationale for intralesional valrubicin in chemoradiation of squamous cell carcinoma of the head and neck. Laryngoscope. 2000 Dec;110(12):2026-32.
Hauge E, et al. Topical valrubicin application reduces skin inflammation in murine models. Br J Dermatol. 2012 Aug;167(2):288-95.