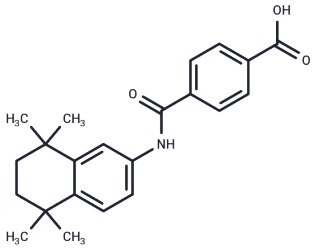
Data Sheet (Cat.No.T6694)

TargetMol

Tamibarotene

Chemical Properties



CAS No. : 94497-51-5

Formula: C22H25NO3

Molecular Weight: 351.44

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Tamibarotene (Amnolake) is an orally active, synthetic retinoid, developed to overcome all-trans retinoic acid (ATRA) resistance, with potential antineoplastic activity.
Targets(IC50)	Apoptosis,Retinoid Receptor,Autophagy
In vitro	Tamibarotene treatment significantly reduces the levels of insoluble amyloid beta (Aβ) in the mice's brain, particularly Aβ(42), without notably affecting the levels of soluble Aβ.
In vivo	Tamibarotene induced HL-60 cell adhesion to endothelial cells was 38% lower compared to all-trans retinoic acid (ATRA). However, its ability to induce NB4 cell adhesion to endothelial cells was comparable to ATRA. In HL-60 cells, tamibarotene uniquely promoted early-phase induction of CD38 gene transcription through DR-RARE with intron 1 and late-phase induction through RARE lacking a 5' flanking region, resulting in lower CD38 induction than ATRA. Tamibarotene's growth inhibition on peripheral blood mononuclear cells was negligible, but it significantly inhibited growth in HTLV-I infected T-cell lines and ATL cell markers. It induced G1 phase cell cycle arrest and apoptosis in HTLV-I infected T-cell lines, inhibited phosphorylation of IkappaBalpha and NF-κB-DNA binding, reduced expression of proteins involved in G1/S phase cell cycle transition and apoptosis, and suppressed JunD expression, inhibiting AP-1 DNA binding. Tamibarotene slightly inhibited the growth of myeloma cells and HUVECs, and significantly inhibited VEGF-stimulated HUVEC growth. While having minimal growth inhibition on bone marrow stromal cells (BMSC), tamibarotene significantly inhibited HUVEC migration when co-cultured with myeloma cells and inhibited VEGF-induced phosphorylation of the VEGF receptor. Tamibarotene markedly suppressed the formation of in vitro tubular structures and neovascularization induced by VEGF in mouse cornea.
Cell Research	The CellTiter Aqueous Non-Radioactive Cell Proliferation Assay Kit is used to assess cell growth. Briefly, 10,000 cells per well are seeded in a 96-well plate and cultured in RPMI containing 2% charcoal-stripped FBS and indicated retinoid concentrations for 72 hours. At the end of the treatment period, the MTS reagent is added, cells are incubated an additional 2-4 hours, and absorbance is measured at 490 nanometers.

Solubility Information

Solubility	DMSO: 60 mg/mL (170.73 mM),Sonication is recommended. 1.1eq. NaOH: 35.1 mg/mL (99.87 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8454 mL	14.2272 mL	28.4544 mL
5 mM	0.5691 mL	2.8454 mL	5.6909 mL
10 mM	0.2845 mL	1.4227 mL	2.8454 mL
50 mM	0.0569 mL	0.2845 mL	0.5691 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.

Reference

Sanda T, et al. Leukemia, 2005, 19(6), 901-909.
Li X, Jiang S, Wang B, et al.Integrated multi-omics analysis and machine learning developed diagnostic markers and prognostic model based on Efferocytosis-associated signatures for septic cardiomyopathy.Clinical Immunology.2024: 110301.
Uruno A, et al. J Leukoc Biol, 2011, 90(2), 235-247.
Nakazato T, et al. Cancer Sci, 2008, 99(11), 2286-2294.
Kawahara K, et al. Biol Pharm Bull, 2009, 32(7), 1307-1309.
Wang X, et al. Retinoic acid receptor alpha drives cell cycle progression and is associated with increased sensitivity to retinoids in T-cell lymphoma. Oncotarget. 2017 Apr 18;8(16):26245-26255.