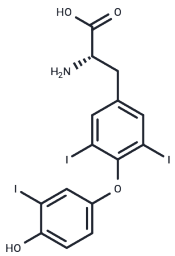
Data Sheet (Cat.No.T1653)

TargetMol

Liothyronine

Chemical Properties



CAS No. : 6893-02-3

Formula: C15H12I3NO4

Molecular Weight: 650.97

Appearance: no data available

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

Biological Description

Description	Liothyronine (Tresitope) is an active form of thyroid hormone, binding to β1 thyroid hormone receptor (TRβ1), and activates its activity.
Targets(IC50)	Endogenous Metabolite,Thyroid hormone receptor(THR)
In vitro	**METHODS**: Mouse colon adenocarcinoma cells MC38 were treated with Liothyronine (12.5-100 μM) for 24-72 h. Cell viability was measured using MTT Assay. **RESULTS**: Liothyronine did not affect the cell viability of MC38 cells at the concentrations tested. [1] **METHODS**: Jurkat hTIGIT cells were stimulated with anti-CD3 and anti-CD28 stimulatory antibodies and treated with anti-TIGIT (1 μg/mL) and Liothyronine (100 μM) for 48 h. The frequency of IL-2 secreting Jurkat hTIGIT was detected using Flow cytometry. **RESULTS**: TIGIT/PVR interaction significantly inhibited IL-2 secretion from Jurkat hTIGIT cells, and the inhibition was significantly reversed by a functional anti-TIGIT antibody and Liothyronine, which has the typical characteristics of an immune checkpoint blocker. [1]
In vivo	**METHODS**: To detect anti-tumor activity in vivo, Liothyronine (1.5-5 mg/kg, normal saline with 3% DMSO and 0.5% Tween-80) was injected intraperitoneally every two days for two weeks into C57BL/6 mice bearing MC38 tumors. **RESULTS**: Both low and high doses of Liothyronine significantly inhibited the growth of MC38 tumors. Liothyronine significantly increased the frequency of tumor-infiltrating CD8+ T cells and significantly enhanced the secretion of IFN-γ by tumor-infiltrating CD4+ T cells treated with high doses of Liothyronine. [1]

Solubility Information

Solubility	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4.95 mg/mL (7.6 mM),Solution. DMSO: 3.25 mg/mL (4.99 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5362 mL	7.6808 mL	15.3617 mL
5 mM	0.3072 mL	1.5362 mL	3.0723 mL
10 mM	0.1536 mL	0.7681 mL	1.5362 mL
50 mM	0.0307 mL	0.1536 mL	0.3072 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

Zhou X, et al. Repositioning liothyronine for cancer immunotherapy by blocking the interaction of immune checkpoint TIGIT/PVR. Cell Commun Signal. 2020 Sep 7;18(1):142.
Wang Q, Jin F, Zhang J, et al. Lipoxin A4 promotes adipogenic differentiation and browning of mouse embryonic fibroblasts. In Vitro Cellular & Developmental Biology-Animal. 2021: 1-9.
Dou X, Huo T, Liu Y, et al.Discovery of novel and selective farnesoid X receptor antagonists through structure-based virtual screening, preliminary structure-activity relationship study, and biological evaluation.European Journal of Medicinal Chemistry.2024: 116323.