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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Liothyronine

Cat. No.: HY-A0070A

CAS No.: 6893-02-3

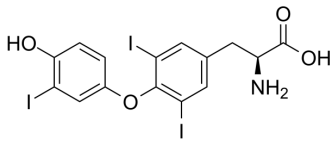
Molecular Formula: $C_{15}H_{12}I_3NO_4$

Molecular Weight: 650.97

Target: Thyroid Hormone Receptor; Endogenous Metabolite

Pathway: Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (76.81 mM; Need ultrasonic)
1M NaOH : 50 mg/mL (76.81 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	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

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Liothyronine is an active form of thyroid hormone. Liothyronine binds to thyroid hormone receptors TRα and TRβ with K_is of 2.33 and 2.29 nM for hTRα and hTRβ, respectively. Liothyronine also binds to PVR and blocks the interaction of TIGIT/PVR[1][2][3].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

hepatocarcinomaLiothyronine (T3, 100 nM) stimulates the proliferation of hepatocarcinema cells in which TRβ1 is overexpressed[1]. Liothyronine binds to the human β1 thyroid hormone receptor (hTRβ1), and changes its conformation. Liothyronine promotes growth, induces differentiation and regualtes metabolic effects[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Thyroid hormone depleted (Td) serum is prepared. The growth of hepatocarcinoma cells in methylcellulose is performed. To determine the effect of Liothyronine (T3) on the growth of cells, cells are plated at a density of $3 \times l0^4$ cells/60 mm dish on day 0, and incubated in medium containing 5% regular serum, 5% Td or 5% Td and 100 nM T3. The colony formation in methylcellulose is scored 3 weeks after initial plating[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Metab. 2023 Sep 7;S1550-4131(23)00304-2.
- Nat Commun. 2023 Jun 2;14(1):3208.
- Sci Adv. 2024 Feb 9;10(6):eadk3931.
- Cell Rep. 2024 Mar 18;43(3):113930.
- Acta Pharmacol Sin. 2024 May 24.

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REFERENCES

[1]. 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.

[2]. Lin KH, et al. Stimulation of proliferation by 3,3',5-triiodo-L-thyronine in poorly differentiated human hepatocarcinoma cells overexpressing beta 1 thyroid hormone receptor. Cancer Lett. 1994 Oct 14;85(2):189-94.

[3]. Bhat MK, et al. Conformational changes of human beta 1 thyroid hormone receptor induced by binding of 3,3',5-triiodo-L-thyronine. Biochem Biophys Res Commun. 1993 Aug 31;195(1):385-92.

[4]. Hiroaki Shiohara, et al. Discovery of novel indane derivatives as liver-selective thyroid hormone receptor β (TRβ) agonists for the treatment of dyslipidemia. Bioorg Med Chem. 2012 Jun 1;20(11):3622-34.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA