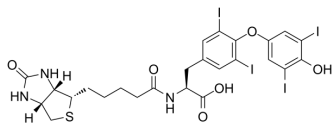
Biotin-(L-Thyroxine)

Cat. No.:	HY-18341F
CAS No.:	149734-00-9
Molecular Formula:	$C_{25}H_{25}I_4N_3O_6S$
Molecular Weight:	1003.17
Target:	Thyroid Hormone Receptor; Endogenous Metabolite
Pathway:	Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Biotin-(L-Thyroxine) is the biotinylated L-Thyroxine (HY-18341). L-Thyroxine is a synthetic hormone for the research of hypothyroidism. DIO enzymes convert biologically active thyroid hormone (Triiodothyronine,T3) from Biotin-(L-Thyroxine) (T4)[1].
IC_{50} & Target	Thyroid Hormone Receptor
In Vivo	Deiodinases (DIOs), which catalyse the conversion of thyroxine (pro-hormone) to the active thyroid hormone, are associated with thyroid stimulating hormone (TSH) levels. DIO1 and DIO2 catalyze activation of thyroid hormone secretion in contrast to DIO3 playing role inactivation of the secretion. Activities of DIO1 and DIO2 play pivotal role in the negative feedback regulation of pituitary TSH secretion[1]. Biotin-(L-Thyroxine) (T4) and Triiodothyronine (T3) hormones are known to modulate the expression of ionic channels, pumps and regulatory contractile proteins. Moreover, thyroid hormones have been shown to influence calcium homeostasis and flux responsible for excitation and contractility, with Biotin-(L-Thyroxine) and Triiodothyronine modulating its pharmacological control and secretion. In rats fed 12 weeks with the iodine-free diet, a significant decrease in the levels of both Triiodothyronine and Biotin-(L-Thyroxine) is observed when compared to the control group fed with standard diet ($p<0.001$). In the group treated with low doses of Biotin-(L-Thyroxine), an increase in Biotin-(L-Thyroxine) levels is observed ($p=0.02$) while Triiodothyronine levels remain virtually similar to the control group ($p=0.19$). Rats treated with high doses of Biotin-(L-Thyroxine) display a significant increase in both Triiodothyronine and Biotin-(L-Thyroxine) circulating concentrations compared to the non-treated hypothyroid group ($p<0.001$ and $p=0.004$, respectively) and a significant increase in Biotin-(L-Thyroxine) levels when compared to the control values ($p=0.03$)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Arici M, et al. Association between genetic polymorphism and levothyroxine bioavailability in hypothyroid patients. Endocr J. 2018 Mar 28;65(3):317-323.

[2]. Corriveau S, et al. Levothyroxine treatment generates an abnormal uterine contractility patterns in an in vitro animalmodel. J Clin Transl Endocrinol. 2015 Sep 9;2(4):144-149.

Caution: Product has not been fully validated for medical applications. For research use only.

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