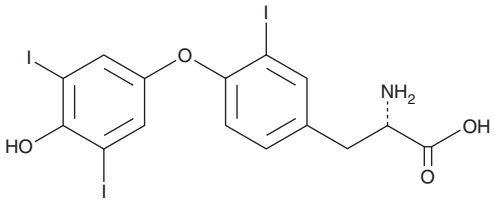
PRODUCT INFORMATION

3,3',5'-Triiodo-L-thyronine

Item No. 17598

CAS Registry No.:	5817-39-0
Formal Name:	O-(4-hydroxy-3,5-diiodophenyl)-3-iodo-L-tyrosine
Synonyms:	Reverse T3, rT3, 3,3',5'-T3
MF:	$C_{15}H_{12}I_3NO_4$
FW:	651.0
Purity:	≥95%
UV/Vis.:	λ_{max}: 211, 290 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

3,3',5'-Triiodo-L-thyronine is supplied as a crystalline solid. A stock solution may be made by dissolving the 3,3',5'-triiodo-L-thyronine in the solvent of choice, which should be purged with an inert gas. 3,3',5'-triiodo-L-thyronine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 3,3',5'-triiodo-L-thyronine in these solvents is approximately 30 mg/ml.

Description

3,3',5'-Triiodo-L-thyronine, also known as reverse T3 (rT3), is a thyroid hormone generated by deiodination of the prohormone thyroxine. It is about 1,000-fold less active at the thyroid hormone receptors TRα and TRβ than 3,3',5-triiodo-L-thyronine (Item No. 16028) and commonly described as inactive.[1,2] However, high serum levels of rT3 are found in neonates and in certain conditions.[3-6] It reportedly activates TRΔα1, a native form of TRα that lacks a nuclear localization signal and functions in the cytoplasm.[7] Through this action, rT3 initiates actin polymerization, particularly in astrocytes and neurons.[7]

References

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2. Koury, E.J., Pawlyk, A.C., Berrodin, T.J., *et al.* Characterization of ligands for thyroid receptor subtypes and their interactions with co-regulators. *Steroids* **74(2)**, 270-276 (2009).
3. Tien, E.S., Matsui, K., Moore, R., *et al.* The nuclear receptor constitutively active/androstane receptor regulates type 1 deiodinase and thyroid hormone activity in the regenerating mouse liver. *J. Pharmacol. Exp. Ther.* **320(1)**, 307-313 (2007).
4. Ohguchi, H., Tanaka, T., Uchida, A., *et al.* Hepatocyte nuclear factor 4α contributes to thyroid hormone homeostasis by cooperatively regulating the type 1 iodothyronine deiodinase gene with GATA4 and Krüppel-like transcription factor 9. *Mol. Cell. Biol.* **28(12)**, 3917-3931 (2008).
5. Economidou, F., Douka, E., Tzanela, M., *et al.* Thyroid function during critical illness. *Hormones* ***10(2)***, 117-124 (2011).
6. Novitzky, D. and Cooper, D.K.C. Thyroid hormone and the stunned myocardium. *J. Endocrinol.* **223(1)**, R1-R8 (2014).
7. Senese, R., Cioffi, F., de Lange, P., *et al.* Thyroid: Biological actions of 'nonclassical' thyroid hormones. *J. Endocrinol.* **221(2)**, R1-R12 (2014).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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