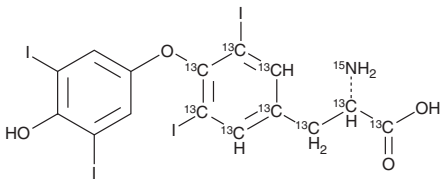
PRODUCT INFORMATION

L-Thyroxine-$^{13}C_9$,^{15}N

Item No. 25039

CAS Registry No.: 1431868-11-9
Formal Name: O-(4-hydroxy-3,5-diiodophenyl)-3,5-diiodo-L-tyrosine-carboxy,α,β,1,2,3,4,5,6-$^{13}C_9$-^{15}N
Synonyms: L-T4-$^{13}C_9$,^{15}N, Levothyroxine-$^{13}C_9$,^{15}N
MF: $C_6[^{13}C]_9H_{11}I_4[^{15}N]O_4$
FW: 786.8
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

L-Thyroxine-$^{13}C_9$,^{15}N is supplied as a solid. A stock solution may be made by dissolving the L-thyroxine-$^{13}C_9$,^{15}N in the solvent of choice. L-Thyroxine-$^{13}C_9$,^{15}N is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of L-thyroxine-$^{13}C_9$,^{15}N in these solvents is approximately 2.5 and 0.14 mg/ml, respectively.

L-Thyroxine-$^{13}C_9$,^{15}N is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, L-thyroxine-$^{13}C_9$,^{15}N should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. L-Thyroxine-$^{13}C_9$,^{15}N has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

L-Thyroxine-$^{13}C_9$,^{15}N is intended for use as an internal standard for the quantification of L-thyroxine (Item No. 14116) by GC- or LC-MS. L-Thyroxine is a synthetic form of the thyroid hormone thyroxine.[1-3] *In vivo*, L-thyroxine (0.9 and 2.7 µg) inhibits synthesis and release of thyrotropin induced by thyrotropin-releasing hormone (Item No. 22917) from the anterior pituitary in mice.[1] It also reverses decreases in levels of circulating thymic serum factor (FTS) and the number of T rosette-forming cells in an old age-induced mouse model of hypothyroidism.[2,3] Formulations containing L-thyroxine have been used in the treatment of hypothyroidism.

References

1. Bowers, C.Y., Schally, A.V., Reynolds, G.A., *et al.* Interactions of L-thyroxine or L-triiodothyronine and thyrotropin-releasing factor on the release and synthesis of thyrotropin from the anterior pituitary gland of mice. *Endocrinology* **81(4)**, 741-747 (1967).
2. Fabris, N., Muzzioli, M., and Mocchegiani, E. Recovery of age-dependent immunological deterioration in Balb/c mice by short-term treatment with L-thyroxine. *Mech. Ageing Dev.* **18(4)**, 327-338 (1982).
3. Fabris, N. and Mocchegiani, E. Endocrine control of thymic serum factor production in young-adult and old mice. *Cell Immunol.* **91(2)**, 325-335 (1985).

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