

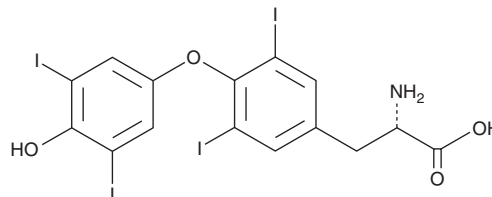
# PRODUCT INFORMATION



## L-Thyroxine

Item No. 14116

**CAS Registry No.:** 51-48-9  
**Formal Name:** O-(4-hydroxy-3,5-diiodophenyl)-3,5-diiodo-L-tyrosine  
**Synonyms:** Levothyroxine, L-T<sub>4</sub>, NSC 36397  
**MF:** C<sub>15</sub>H<sub>11</sub>I<sub>4</sub>NO<sub>4</sub>  
**FW:** 776.9  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 212, 225, 292 nm  
**Supplied as:** A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the L-thyroxine in the solvent of choice. L-Thyroxine is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of L-thyroxine in these solvents is approximately 2.5 and 0.14 mg/ml, respectively.

L-Thyroxine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, L-thyroxine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. L-Thyroxine has a solubility of approximately 0.5 mg/ml in a 1:5 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 is a synthetic form of the thyroid hormone thyroxine.<sup>1-3</sup> *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.<sup>1</sup> 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.<sup>2,3</sup> 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).

#### 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.

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