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-T₄, NSC 36397
MF: C₁₅H₁₁I₄NO₄
FW: 776.9
Purity: ≥98%
UV/Vis.: λ_max: 212, 225, 292 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

L-Thyroxine is supplied as a crystalline solid. A stock solution may be made by dissolveing the L-thyroxine in the solvent of choice, which should be purged with an inert gas. L-Thyroxine is soluble in organic solvents such as DMSO and dimethyl formamide. 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.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.³ 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