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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

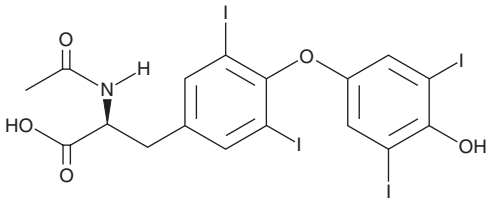
linkedin.com/company/szaboscandic

PRODUCT INFORMATION

N-Acetyl-L-thyroxine

Item No. 35197

CAS Registry No.:	26041-51-0
Formal Name:	N-acetyl-O-(4-hydroxy-3,5-diiodophenyl)-3,5-diiodo-L-tyrosine
Synonyms:	N-acetyl-L-T4, N-Acetylthyroxine, N-acyl-L-T4
MF:	$C_{17}H_{13}I_4NO_5$
FW:	818.9
Purity:	≥98%
UV/Vis.:	λ_{max}: 225 nm
Supplied as:	A 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

N-Acetyl-L-thyroxine is supplied as a solid. A stock solution may be made by dissolving the N-acetyl-L-thyroxine in the solvent of choice, which should be purged with an inert gas. N-Acetyl-L-thyroxine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of N-acetyl-L-thyroxine in these solvents is approximately 20, 25, and 14 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of N-acetyl-L-thyroxine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of N-acetyl-L-thyroxine in PBS (pH 7.2) is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

N-Acetyl-L-thyroxine is an acetylated derivative of L-thyroxine (Item No. 14116).[1] It only weakly binds to thyroxine-binding globulin (TBG) in isolated human serum with a relative binding affinity of 25 compared with L-thyroxine. N-Acetyl-L-thyroxine is also a potential impurity in commercial preparations of L-thyroxine.[2]

References

1. Snyder, S.M., Cavalieri, R.R., Goldfine, I.D., *et al.* Binding of thyroid hormones and their analogues to thyroxine-binding globulin in human serum. *J. Biol. Chem.* **251(21)**, 6489-6494 (1976).
2. Panmanad, D., Joshi, M.S., Patil, R., *et al.* Synthesis and characterization of potential impurities in levothyroxine. *Chem. Sci. Trans.* **5(4)**, 1082-1089 (2016).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM