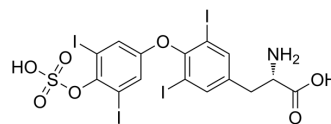


Thyroxine sulfate

| | |
|---------------------------|--|
| Cat. No.: | HY-101406 |
| CAS No.: | 77074-49-8 |
| Molecular Formula: | C ₁₅ H ₁₁ I ₄ NO ₇ S |
| Molecular Weight: | 856.93 |
| Target: | Thyroid Hormone Receptor; Drug Metabolite; Endogenous Metabolite |
| Pathway: | Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease |
| Storage: | -20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture) |



SOLVENT & SOLUBILITY

| | | | | | | |
|---|---|----------------------|-------------|-------------|-------------|--------------|
| In Vitro | DMSO : 140 mg/mL (163.37 mM; Need ultrasonic) | | | | | |
| | Preparing Stock Solutions | Solvent | Mass | 1 mg | 5 mg | 10 mg |
| | | Concentration | | | | |
| | | 1 mM | | 1.1670 mL | 5.8348 mL | 11.6696 mL |
| | | 5 mM | | 0.2334 mL | 1.1670 mL | 2.3339 mL |
| | 10 mM | | 0.1167 mL | 0.5835 mL | 1.1670 mL | |
| Please refer to the solubility information to select the appropriate solvent. | | | | | | |
| In Vivo | 1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 5.75 mg/mL (6.71 mM); Clear solution | | | | | |
| | 2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: 5.75 mg/mL (6.71 mM); Suspended solution; Need ultrasonic | | | | | |
| | 3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.58 mg/mL (3.01 mM); Clear solution | | | | | |

BIOLOGICAL ACTIVITY

| | |
|-------------------------------------|--|
| Description | Thyroxine sulfate is a thyroid hormone metabolite. |
| IC₅₀ & Target | Human Endogenous Metabolite |
| In Vitro | Thyroxine sulfate (T4S) is a normal component of human serum and amniotic fluid, and it is mostly derived from thyroxine peripherally and accumulates when type I 5-monodeiodinating activity is low in fetuses or inhibited by drugs, such as ipodate ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

In Vivo

Significant amounts of thyroxine sulfate (T4S) in fetal sheep serum, meconium, bile, and amniotic and allantoic fluids are observed. T4S concentration in amniotic fluid from women at 18-19 weeks of gestation (25.5 ng/dL) is higher than that at 14-15 weeks of gestation (14.3 ng/dL). A significant rise in serum T4S is detected in hyperthyroid patients 1 day after ingestion of 1 g of ipodate^[1]. Thyroxine undergoes significant sulfation in rats, and biliary excretion of T4S is enhanced if its type I deiodination is inhibited^[2]. Serum T4S levels are clearly elevated compared with healthy references, and the decreased deiodination by liver D1 during critical illness appears to play a role in this increase in serum T4S levels^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Toxicology. 2022 Dec 23;153411.

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REFERENCES

- [1]. Wu SY, et al. Identification of thyroxine-sulfate (T4S) in human serum and amniotic fluid by a novel T4S radioimmunoassay. *Thyroid*. 1992 Summer;2(2):101-5.
- [2]. Rutgers M, et al. Effects of propylthiouracil on the biliary clearance of thyroxine (T4) in rats: decreased excretion of 3,5,3'-triiodothyronine glucuronide and increased excretion of 3,3',5'-triiodothyronine glucuronide and T4 sulfate. *Endocrinology*. 1989 Oct;125(4):2175-86.
- [3]. Peeters RP, et al. Increased thyroxine sulfate levels in critically ill patients as a result of a decreased hepatic type I deiodinase activity. *J Clin Endocrinol Metab*. 2005 Dec;90(12):6460-5.

Caution: Product has not been fully validated for medical applications. For research use only.

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