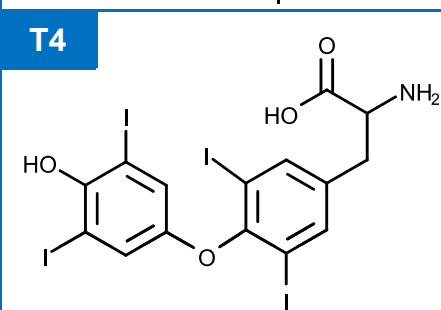
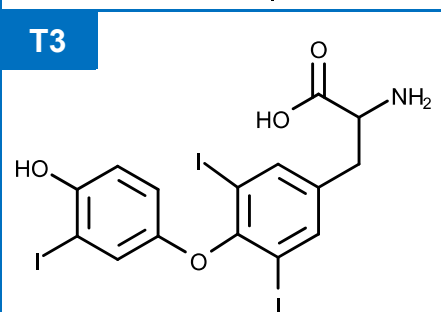
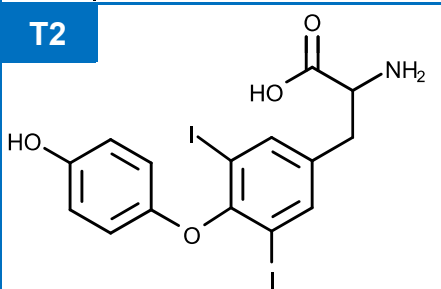
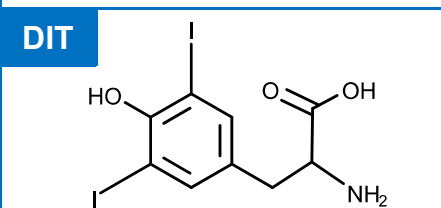
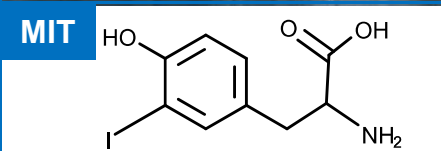


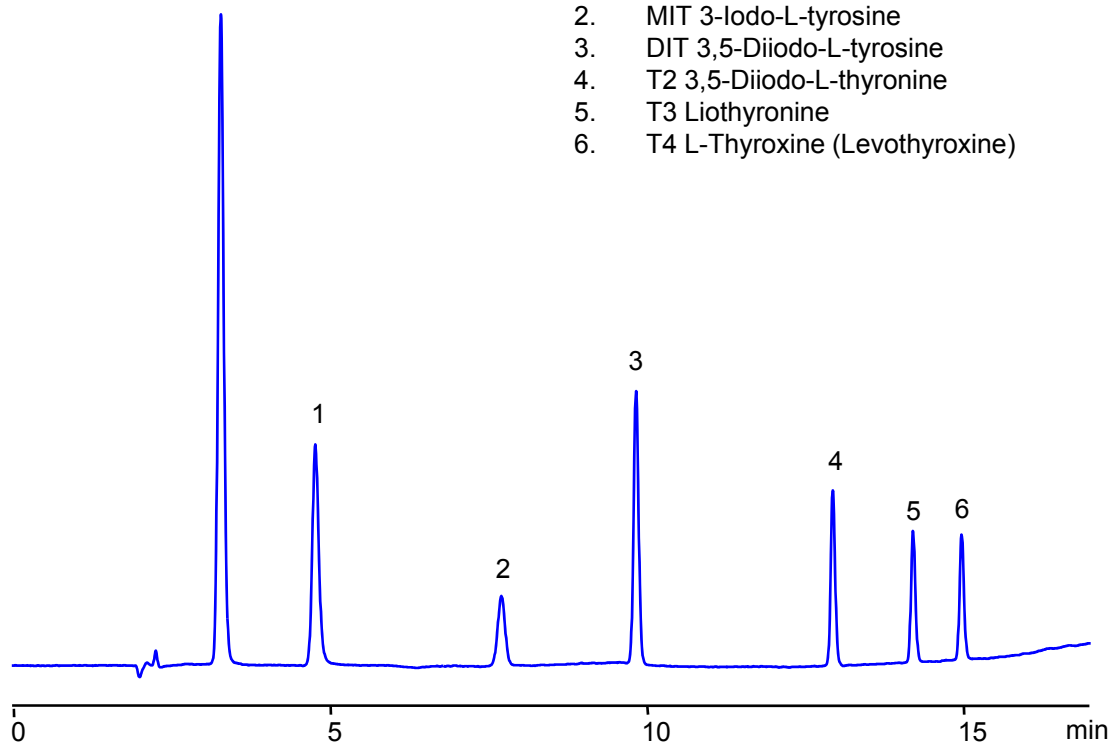
# Cool Applications

"Making Tough LC Applications Look Cool"



## HPLC SEPARATION OF IODIDE AND THYROID HORMONES

1. Iodide
2. MIT 3-Iodo-L-tyrosine
3. DIT 3,5-Diiodo-L-tyrosine
4. T2 3,5-Diiodo-L-thyronine
5. T3 Liothyronine
6. T4 L-Thyroxine (Levothyroxine)



**Column:** Primesep D  
**Column size:** 4.6 × 150 mm, 5 μm  
**Mobile phase:** MeCN/H<sub>2</sub>O/TFA  
**Flow rate:** 1 ml/min  
**UV detection:** 230 nm

Time, min	% MeCN	% H <sub>2</sub> O	% TFA
0.00	2	98	0.4
3.00	2	98	0.4
15.00	55	45	0.2
17.00	55	45	0.2

### Application Comments

Iodine is an important element in production of thyroid hormones, T3 and T4, which are essential regulators of organism's metabolism. The glands' concentration of Iodide, hormones T3 and T4, along with their precursors: 3,5-Diiodo-L-thyronine (T2), 3,5-Diiodo-L-tyrosine (DIT), and 3-Iodo-L-tyrosine (MIT) can now be studied simultaneously with this HPLC method. In order to analyze the hydrophobic hormones along with iodide (a very polar inorganic ion) a special mixed-mode column, Primesep D, was used. This column provides both strong hydrophobic and anion exchange properties. The Primesep D silica-bonded ligand is comprised of a long alkyl chain and an embedded amino functional group. The TFA was used as an ionic modifier to provide stable acidic pH and sufficient ion strength for the mobile phase. The mobile phase composition is suitable for UV, MS, ELSD and CAD detection.