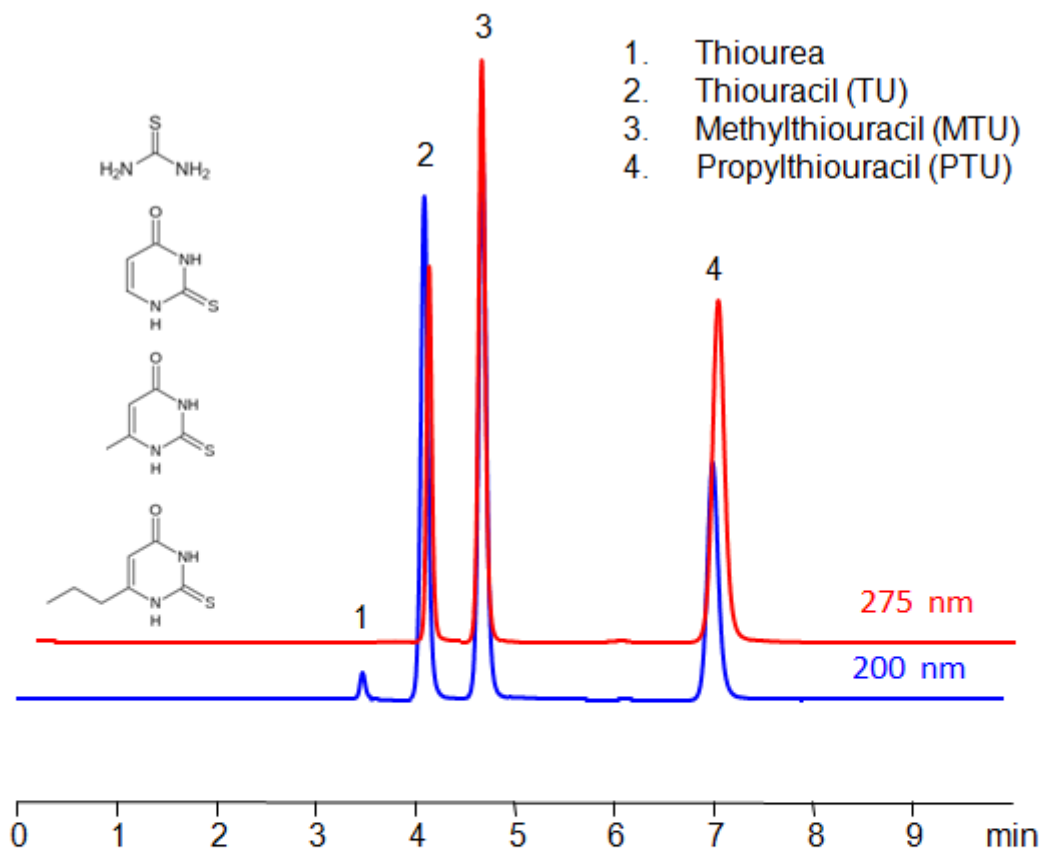


HPLC Method for Separation of Thiourea, Thiouracil (TU), Methylthiouracil (MTU) and Propylthiouracil (PTU) on Primesep P

<https://sielc.com/hplc-method-for-thioureas>

Chromatogram



Column:	Primesep P
Column size:	4.6 × 250 mm, 5 μm
Column part number:	P-46.250.0510
Mobile phase:	MeCN/H ₂ O – 10/90%
Buffer:	H ₃ PO ₄ – 0.1%
Flow rate:	1.0 mL/min
Detection:	UV 200 nm, 275 nm

Description

· Separation type: Liquid Chromatography Mixed-mode

Thiourea, Thiouracil (TU), Methylthiouracil (MTU), and Propylthiouracil (PTU) are organic compounds that belong to the class of thioureas, which are characterized by the presence of a thiocarbonyl functional group (C=S).

Each of these compounds has different properties and uses due to the different structures and substitution patterns on the thiourea core. They are all important molecules in both the field of chemistry and medicine.

Propylthiouracil (PTU) is a medication primarily used to treat hyperthyroidism, a condition where the thyroid gland produces too much thyroid hormone. It belongs to a class of drugs called thioureas and specifically to a subgroup known as thioamides.

PTU works by reducing the amount of thyroid hormone produced by the thyroid gland. It inhibits the enzyme thyroid peroxidase, preventing the iodination of tyrosine residues in thyroglobulin and the coupling of these iodotyrosine residues, which are key steps in the synthesis of thyroid hormones.

Additionally, PTU has a unique property among thioamides – it also inhibits the peripheral conversion of thyroxine (T4) to triiodothyronine (T3), the more potent form of thyroid hormone.

The drug is usually taken orally and it's often used for Graves' disease, an autoimmune disorder that is the most common cause of hyperthyroidism. However, like all medications, PTU has potential side effects. The most serious one is liver damage, which can be fatal. Because of this, PTU is typically used when other treatments cannot be used, either because of allergies, during early pregnancy, or in preparation for thyroidectomy.

Method Parameters

Mobile Phase	MeCN -10%
Buffer	H3PO4 – 0.1%
Flow Rate	1.0 ml/min
Detection	UV 200, 275 nm
Class of Compounds	Amide, Urea
Analyzing Compounds	Thiourea,Thiouracil,Methylthiouracil,Propylthiouracil

HPLC Column Used

Primesep P, 4.6 x 250 mm, 5 µm, 100 Å, dual ended

[Order this column at hplc-shop.de →](http://hplc-shop.de)