



## SPECIMEN COLLECTION AND HANDLING PROCEDURE FOR PLASMA URACIL (DPD PHENOTYPING)

### General Information:

Dihydropyrimidine dehydrogenase (DPD) is the major catabolic enzyme for fluoropyrimidines, including **5-fluorouracil (5-FU) and its prodrugs (Capecitabine and Tegafur)**. An increased plasma uracil level, which suggests DPD deficiency, could be used as a predictor to severe fluoropyrimidine-associated toxicity. (<https://www.ema.europa.eu/en/news/ema-recommendations-dpd-testing-prior-treatment-fluorouracil-capecitabine-tegafur-and-flucytosine>)

Plasma Uracil (DPD phenotyping) is a send-out test to the Chemical Pathology Laboratory, Queen Mary Hospital (QMH). ([https://hkwc.home/webapps/Dept/CBIO/subpages/InformationForClinicalUsers\\_5FU.aspx](https://hkwc.home/webapps/Dept/CBIO/subpages/InformationForClinicalUsers_5FU.aspx))

### Test Indications

1. For new patients **BEFORE the INITIATION** of systemic fluoropyrimidine chemotherapy.
2. For patients already on systemic fluoropyrimidine with no prior uracil result but suspected adverse effects due to DPD deficiency, plasma uracil should be checked **AT LEAST ONE WEEK after DISCONTINUATION** of last course of fluoropyrimidine treatment.

### Patient Preparations and Precautions:

1. **Fasting morning samples before 11:00 am** are preferred since DPD activity is dependent on circadian rhythms.
2. Sampling during ongoing fluoropyrimidine treatment may result in elevated results.
3. False positive results may occur in patients with liver disease, renal impairment or tumor lysis syndrome.
4. False positive results may also occur due to poor pre-analytical conditions, including haemolysed specimens, delayed specimen transport or inadequate temperature control.

### Instructions for Clinicians (for NTEC Oncologists only):

1. Request **Plasma Uracil (DPD Phenotyping)** test via GCRS (CMS).



2. Collect 3 mL blood into **NON-GEL LITHIUM HEPARIN TUBE** (obtainable from PWH Medical Consumables Store).



VACUETTE® 4 ml Lithium Heparin green cap-black ring, PREMIUM  
(Reference no. 454084)



VACUETTE® 5 ml Lithium Heparin Separator green cap-yellow ring,  
transparent label, PREMIUM (Reference no. 476083)

[ATTENTION: The 5 mL Lithium Heparin Gel Tube for general biochemistry tests (e.g. RFT) is NOT acceptable for the plasma uracil test.]

3. After blood collection, place and send the sample in an **ICE-WATER BATH IMMEDIATELY** to the laboratory between **09:00 and 16:00 on normal working days (Monday to Friday)**.

[ATTENTION: Specimen will be **REJECTED** if it reaches the laboratory **after 4 hours of collection**.]