ALBERTA PRECISION LABORATORIES
Leaders in Laboratory Medicine

Laboratory Bulletin

DATE:	8 December 2025
TO:	All Zones
FROM:	Molecular Genetics Laboratory South, Genetics and Genomics, APL
RE:	**REVISED - Availability of Dihydropyrimidine Dehydrogenase Genotyping (*DPYD*) Testing**

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Key Message

- This bulletin replaces previous communication sent out on November 10, 2025; it fixes a typographical error for one of the variants being tested and amends the effective date from Nov 24th to Nov 25th.
- Effective November 25, 2025, Dihydropyrimidine Dehydrogenase Genotyping (*DPYD*) will be orderable through the Molecular Genetics Laboratory (MGL) South.
- The screening assay will include genotyping of seven clinically relevant *DPYD* variants that influence fluoropyrimidine dosing recommendations.

Background

- Dihydropyrimidine dehydrogenase (DPD) is a key enzyme involved in the metabolism of fluoropyrimidines (including 5-fluorouracil (5-FU) and capecitabine), which are widely used in cancer therapy.
- DPD deficiency results from inactivating variants in the *DPYD* gene and can lead to severe and potentially life-threatening toxicities in patients receiving fluoropyrimidine-based therapy.
- Screening for DPD deficiency allows for identification of patients at risk of adverse drug reactions, allowing personalized dose adjustments or selection of alternative therapies.

How this will impact you

- Patients with planned fluoropyrimidine-based therapies should be informed about the possibility of DPD deficiency and offered *DPYD* genotyping prior to initiating treatment.
- The *DPYD* genotyping assay will detect the following clinically relevant variants: c.557A>G, c.868A>G, c.1129-5923C>G, c.1679T>G, c.1905+1G>A, c.2279C>T, c.2846A>T.
- This test will look at these seven common variants but will not detect any other DNA sequence changes in *DPYD*. A normal result significantly reduces, but does not eliminate, the residual risk for DPD deficiency.
- Initial dosing for fluoropyrimidine treatments should be made according to the *DPYD* genotype identified (refer to the "Fluoropyrimidine Treatment in Patients with Dihydropyrimidine Dehydrogenase (DPD) Deficiency" guideline).

Action Required

- Oncology-specialists should offer *DPYD* genotyping to patients prior to undergoing fluoropyrimidine-based therapies.
- Testing will be orderable as "Dihydropyrimidine Dehydrogenase Genotyping (DPYD)" in ConnectCare. The preferred specimen type is whole blood in lavender top EDTA. Alternative sample types may be accepted following consultation with MGL South. The turnaround time for results will be two weeks.

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Effective **November 25, 2025**

Questions/Concerns

- G&G South MGL Genetic Counsellors, 403-955-3097

Approved by

- Dr. Dennis Bulman, Medical/Scientific Director, Genetics & Genomics, APL
- Dr. Carolyn O'Hara, Chief Medical Laboratory Officer (Interim), Alberta Precision Laboratories