

Date: May 30, 2016

To: All Zones
Physicians, Nurses, Laboratory Directors & Managers, Oncologists and Pathologists

From: Genetic Laboratory Services (GLS)

Re: Quantitative Assays for Leukemia

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Key Messages:

The GLS Molecular Pathology Laboratory, located at the University of Alberta Hospital, offers the following three quantitative assays:

- t(15;17) *PML/RARA*
- t(8;21) *RUNX1/RUNX1T1*
- t(9;22) *BCR/ABL1*

As of May 12, 2016 these tests are now located in the hematology folder in NetCare and there is an option to call cumulative results. The cumulative functionality in NetCare enhances monitoring for optimal therapeutic response and the detection of relapse or resistance to therapy.

Why this is important:

For t(15;17) *PML/RARA*, recent studies demonstrate the increased sensitivity of real-time quantitative PCR in minimal residual disease (MRD) monitoring to determine patients with a high risk for relapse. RT-qPCR allows *PML/RARA* kinetics to be monitored and indicate if transcript levels are rising or falling, rather than simply detecting the presence or absence of disease. In addition, it affords assessment of sample quality and assay sensitivity. The high sensitivity of the assay (5 log reduction from baseline) permits monitoring with a blood sample.

For t(8;21) *RUNX1/RUNX1T1*, new findings demonstrate that in CBF-AML, MRD response is the major and unique predictor of relapse in multivariate analysis, validating its use in treatment stratification. Three-log MRD reduction and the absolute 0.1% MRD levels can be used to differentiate high risk from low risk patients in CBF-AML.

For t(9;22) *BCR/ABL1*, results are reported on the International Scale (IS) which is calibrated against the first NIBSC WHO IS standard.

Action Required:

Please refer to the AHS Central and Edmonton Zone Test Directory for additional test information at: <http://www.albertahealthservices.ca/3217.asp>

Inquiries and feedback may be directed to:

Dr. Iyare Izevbaye, Lab Head, Molecular Pathology Laboratory, GLS Phone: (780) 407-8025

This bulletin has been reviewed and approved by:

Dr. Martin Somerville, Medical/Scientific Director, GLS

Dr. Carolyn O'Hara, Interim Provincial Medical Director, AHS Laboratory Services