BCR-ABL P190 Quantitation by Real-Time PCR

Clinical Indication and Relevance
- Can confirm the initial diagnosis of p190 BCR-ABL positive acute lymphoblastic leukemia (ALL) or chronic myelogenous leukemia (CML).
- Recommended for monitoring minimal residual disease in follow-up samples.

Methodology
RNA is isolated, reverse transcribed and amplified by real-time PCR using specific primers targeting the p190 BCR-ABL and ABL genes. Quantitative results are obtained by comparing relative levels of p190 BCR-ABL and ABL transcripts to standard curves. Results are reported as a p190 BCR-ABL to ABL ratio after calibration with a p190 BCR-ABL positive tumor cell line.

Sensitivity
This assay can detect p190 BCR-ABL transcripts to a sensitivity of 1 tumor cell in 1000 normal cells.

Turn-around Time
Five to seven working days

Sample Requirements
Collect
- Peripheral blood (PB): 3-5 mL, in purple top (sodium EDTA) tube; yellow top tube (ACD) acceptable.
- Bone marrow (BM): 1-3 mL, drawn into a syringe containing anticoagulant and then delivered in a purple top tube.

Transport
Deliver immediately at 2-8°C (wet ice or cold packs). Do not freeze.

Stability
Ambient - 1 hour; refrigerated – 48 hours.
Note: for RNA based assays, samples should be transported to the laboratory within 8 hours of collection (optimal), or up to a maximum of 48 hours after collection to avoid RNA degradation. RNA integrity is critical, especially for samples used for monitoring minimal residual disease.

Unacceptable Conditions
Serum or plasma; frozen PB or BM; clotted blood; severely hemolyzed samples.

CPT Code(s)
81207: BCR/ABL1 (t(9;22)) translocation analysis; minor breakpoint, qualitative or quantitative
G0452-26: Molecular pathology procedure; physician interpretation and report

References