

IGH Gene Rearrangement

Proliferation of B lymphoid cells characterized by clonal rearrangements of the *IGH* gene

Indications for Molecular Testing

- Suspected clonal B lymphoid proliferation or neoplasm

Testing Methodology

Identification of rearrangement(s) of the IGH gene by multiplexed Polymerase Chain Reaction (PCR).\

Interpretation of DNA analysis

Leukemia and lymphoma of B lymphoid lineage have clonal rearrangements of IGH gene derived from the original tumor cell, and reproduced in all cells descended from this. In contrast, normal functional cells of B lineage, demonstrate patterns of extreme diversity in both antigen specificity and DNA rearrangements. Specific DNA rearrangement identified at diagnosis constitutes a tumor-specific marker, which may be used to identify minimal residual disease post-treatment. IGH is the first rearranged gene in B-cell development with light chain genes for kappa and lambda chains occurring only after heavy chain gene rearrangement has occurred (allelic exclusion). Thus, IGH gene rearrangement is an early marker of clonal B lymphoid processes.

Two master mixes are used to target the framework 2 and 3 regions within the variable region, and the joining region of the Ig heavy chain locus. IGH PCR detects both normal, polyclonal rearranged fragments and abnormal, clonal rearrangements.

Specimen Requirements

Frozen Tissue--10 mm³ of fresh frozen tissue in sterile, plastic container. Forward frozen tissue on dry ice.

Separated Cell Pellets--1 x 10⁶ nucleated cells. Freeze cells in a sterile plastic container. Forward promptly on dry ice.

Peripheral Blood--1 lavender-top (EDTA) tube. Invert several times to mix blood.

Bone Marrow--Place 1-2 mL of anticoagulated bone marrow in a lavender-top (EDTA) tube. Invert several times to mix bone marrow.

Formalin-Fixed, Paraffin-Embedded (FFPE) Tissue--Twenty 10 micron sections of FFPE tissue in a sterile, microcentrifuge tube.

Do not freeze blood, bone marrow, or FFPE, forward promptly at ambient temperature to the following address:

Molecular Diagnostic Laboratory
Barnes-Jewish Hospital, Institute of Health
Mail Stop 90-28-344
425 South Euclid Avenue, Room 5970
St. Louis, MO 63110

Clinical information must be provided with specimen referral in order to correctly interpret test results.

Current Pricing

Contact Lab Customer Service for current pricing 314 362-1470.
CPT code: 81261

Miller, JE, Wilson, SS, Jaye, DL, and Kronenberg, M. Molecular Diagnostics, 1999, 4: 101-117.

InVivoScribe Technologies: IGH Gene Clonality Assay, 1101002Xv7.50