

Molecular Diagnostics Rotation - Objectives

Patient Care

1. **Procedural skills.**
 - A. **Objective:**
 - a. The resident will understand the advantages and disadvantages of various molecular diagnostic procedures including target and signal amplifications methods.
 - B. **Plan:**
 - a. The various procedures are outlined and discussed by the Director of the Laboratory and the technical aspects are demonstrated by the laboratory personnel. The chief technologist will oversee the scheduling of the residents to observe various methods.
 - b. The minimal number of procedures that that resident must observe include the follow 7 procedures:
 1. nucleic acid extraction,
 2. real time PCR,
 3. endpoint PCR using the Cobas for either HCV or HIV,
 4. bone marrow engraftment analysis,
 5. gene rearrangement assays,
 6. quantitative BCR-ABL RT-PCR, and thrombophilia assays,
 7. fragment analysis using the microfluidic chip.
 - c. The resident is to observe these procedures that are performed by the technologists but will not perform any procedures. Documentation of the observation of these methods will be maintained by Pei Irwin and Dr. Payne.
 - C. **Supervision/Assessment:**
 - a. Written assessment by Molecular Pathology faculty and staff.
2. **Interpretive skills.**
 - A. **Objective:**
 - a. The resident will be required to interpret real time PCR results for quantitative and qualitative assays, invader assays, bone marrow engraftment analysis, B and T cell gene rearrangements, translocation assays, sequencing results, identify when inhibition on PCR reaction has occurred and determine the melting temperature of primers.
 - B. **Plan:**
 - a. Molecular Diagnostic faculty and staff has prepared numerous powerpoint presentations that will be reviewed during the rotation. In addition, online resources, animation, and other teaching material will be reviewed by the resident. In addition, the resident will sit with Dr. Payne as she signs out reports.
 - b. The resident is to participate in discussions with Dr. Payne and is expected to review the powerpoint material prior to the scheduled discussion times.
 - C. **Supervision/Assessment:**
 - a. The accuracy of interpretation will be assessed by the Molecular Diagnostic faculty.