Iowa Cancer Registry Residual and Virtual Tissue Repositories

Facilities and Resources

The Iowa Cancer Registry (ICR) is Iowa's statewide population-based cancer registry, collecting cancer incidence data on all Iowa residents. The ICR is one of 21 registries in the United States funded by, and providing data to, the Surveillance Epidemiology and End Results (SEER) Program of the National Cancer Institute (NCI). Mary Charlton, PhD (University of Iowa Professor of Epidemiology) is the Director and Principal Investigator of the ICR; the ICR is administratively within the Department of Epidemiology of the University of Iowa College of Public Health.

The ICR is one of only three SEER registries that systematically collects and archives diagnostic tissue for IRB approved research. This "Residual" Tissue Repository (RTR) has a collection of >500,000 FFPE archived tissue blocks from the mid-1990s to present, almost all of which are >10 years old. These tissue blocks are transferred from many pathology laboratories in Iowa following completion of the College of American Pathologists (CAP) mandated 10 years on-site storage. Further, the ICR has a "Virtual" Tissue Repository (VTR) that coordinates access to additional FFPE tissue that is <10 years since cancer diagnosis (>400,000 cancer cases) and remain in the possession of individual pathology laboratories in Iowa. The Repositories are jointly directed by Michael O'Rorke, PhD (University of Iowa Assistant Professor of Epidemiology) and Marcus Nashelsky, MD (University of Iowa Clinical Professor of Pathology and ICR Medical Director).

All cases in the RTR and VTR are under the umbrella of the ICR. Fundamentally, this provides powerful capability to identify potential study cases and attach individual case data. The RTR and VTR work product consists of providing FFPE tissue, corresponding de-identified pathology reports, and customized data elements as specified by investigators via IRB approved research protocols. Tissue may be in the form of unstained slides, tissue scrolls, and tissue cores suitable for tissue microarrays. Most investigators use tissue for immunohistochemistry or molecular studies. The ICR requires reimbursement for labor and direct costs related to fulfilling requests for specific case types, case/control identification and selection, histology services, organization of de-identified pathology reports and specified data elements, and secure delivery.

The RTR and VTR have a longstanding working relationship with the Comparative Pathology Laboratory (CPL) of the University of Iowa Department of Pathology, directed by David Meyerholz, DVM PhD. The CPL is fully equipped with microtomes, cryostats, and full-service capability for custom tissue microarray assembly and immunohistochemistry. The clinical Immunohistochemistry (IHC) Laboratory of the Department of Pathology provides additional histology services as requested by the CPL. The IHC Laboratory has Leica Bond III and Ventana Benchmark instruments for automated immunohistochemistry and RNAscope *in situ* hybridization. The department also has multiple 3DHISTEC PANNORAMIC digital slide scanners and slide image visualization software as needed.