



## The LabCorp Biorepository: Banking on the Future

The LabCorp Biorepository, adjacent to the North Carolina Research Campus, is a world-class, purpose-built dedicated biological specimen storage facility. Beyond simple storage capabilities, the biorepository initiative includes the acquisition of well annotated, consented specimens for biomarker discovery efforts. Redundant back-up systems, state-of-the-art validated informatics and capabilities for on-site nucleic acid extraction make the biorepository the facility of choice for pharmaceutical and academic research specimen storage.

### The Value of Biospecimens

Molecular analysis of characterized biological samples is transforming health care by identifying novel putative biomarkers that may be useful for medical decisions and future diagnostic tests. Biomarker discovery drives the development of personalized medicine and a new generation of targeted diagnostics and therapies to improve clinical outcomes for patients. Appropriately characterized, consented, and stored samples are pivotal to biomarker discovery efforts. Proper and secure banking of biological samples can have an enormous impact on future discoveries and the development of personalized medicine.



### Biorepository Concept

Biorepositories are “libraries” in which biospecimens are stored for clinical or research purposes. These biospecimens are frequently annotated with information such as patient demographic or clinical data, providing a snapshot in time from which hypotheses for future studies are developed.

Our biorepository also serves as a storage facility for pharmaceutical and biotech companies who wish to store clinical trial samples. In addition, we are working with patient safety registries to house collected consented samples for future research efforts.



Dedicated facilities for sample storage.

### Dedicated Facilities

A dedicated, purpose-built facility with trained personnel ensures a cost-effective combination of high quality sample storage and safety coupled with an auditable chain of custody and traceability using validated systems.

Features include the building space and security, numerous ultra-low temperature and LN2 freezers, controlled environment utilities, layers of redundant emergency back-up systems, sophisticated specimen tracking and traceability software, significant space for expansion, dedicated contamination-controlled DNA- and RNA-extraction laboratories and highly trained personnel. In addition, the biorepository can receive samples from our clinical trials network, commercial couriers, and LabCorp's own distribution channels, which include dedicated couriers and more than 1,600 patient service centers.

LabCorp understands the value of biomarker specimens and is committed to collaborating with groups that value their study samples and are interested in a long-term safe-house to maintain sample integrity.

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## LabCorp Biorepository

LabCorp has experience in providing uniform environments and managing and operating large-scale biorepositories nationally. The latest effort by LabCorp in this area of expertise is the building of a dedicated, large-scale, compliant biorepository as part of the North Carolina Research Campus (NCRC) located in Kannapolis, NC.

The LabCorp Biorepository employs extensive power back-up and redundancy systems, environmental conditioning, surplus storage capacity, and state-of-the-art freezer monitoring and alarm systems to ensure sample integrity.

### Power/Freezer Back-Up

The first line of defense includes “at temperature” back-up freezers. If an individual freezer goes down, samples are immediately transferred to an overflow freezer. In cases of a full power outage to the building, a long-term diesel-powered generator with the capacity to provide power to the entire facility will be utilized. A third line of defense includes the infusion of CO<sub>2</sub> into each individual freezer to maintain temperature in the event power is lost and the generator does not function. These systems are maintained with regular maintenance and functionality testing. In addition, any equipment malfunction triggers a remote monitoring service in addition to audible alarms. All systems are monitored continuously.

### Security and Fire Protection

Electronic records archival, redundant hard-drive data storage, and a redundant dual server system safeguard files within a highly secure location with alarmed building entry, limited and controlled access to the facility and storage areas, and video monitoring to protect samples. A system breach will automatically notify the appropriate emergency service to respond, including LabCorp personnel.

### Specimen Tracking Software

The LabCorp tracking software provides full chain-of-custody control and tracks specimens from package receipt through accessioning, location management, and final disposition of samples. The software is powerful enough to either store by accession data only or include demographics, protocol information, and parent sample tracking. In addition, it can provide secure limited access, allowing sponsors to view their own sample tracking.

## Scientific Excellence

LabCorp continues on the pathway of scientific excellence and has developed a collaboration with Duke University that focuses on applying modern-day technologies for biomarker distribution and discovery. This unique affiliation allows LabCorp to focus energy on areas of special expertise and strength, while collaborating with a research leader.

At the core of this collaboration is Duke University's M.U.R.D.O.C.K. study.

### M.U.R.D.O.C.K. Study

The Measurement to Understand Reclassification of Disease of Cabarrus and Kannapolis (M.U.R.D.O.C.K.) study is the first major initiative for Duke University. The primary goal of the study is for researchers to follow a group of people long-term to study the onset and progression of diseases, such as cancer, diabetes, osteoarthritis, heart disease and others, as well as identify causes in hopes of developing treatment options with a genetically personalized approach.

**The LabCorp Biorepository provides a solid combination of quality, safety, and traceability for the long-term storage of valuable samples.**