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BACKGROUND: A biobank may be defined as the collection, processing and long-term storage of biological samples for research purposes. The availability of well annotated, high-quality human samples linked to accurate diagnostic and clinical information is essential in the research and development of new biomarkers and drugs in the overall goal of personalized medicine. We are currently engaged in establishing and developing an Institutional Biobank (BBIRE) whose essential function is to collect tissue (T) and body fluids (LB) samples in accordance with standardized criteria and cryoconserve them in order to provide biological material for approved cancer research projects.

METHODS & RESULTS: In order to meet the requirements of quality and traceability of biological samples, different protocols are utilized for the samples crioconservation, using tubes with 2D codes and dedicated IT infrastructure (software, barcode readers). In this way we are able to manage the transportation, handling and information storage of biological samples and to update follow-up and associated data. BBIRE includes a Steering Committee and an Operating Group. A broad Informed consent has been drawn up, submitted to the Ethics Committee, subsequently validated and added to the medical record. More than 24200 aliquotes of whole blood, serum, EDTA plasma and citrate plasma from 940 patients with lung and breast cancer, soft tissue sarcoma, bone tumors, head and neck cancers, brain tumors, thymoma and melanoma have been collected in the BBIRE-LB taken at first diagnosis and at different therapeutic stages. More than 400 Tumor tissue samples (Fresh frozen, OCT, FFPE and Cells) have been collected with procedures that guarantee both quality of the pathological diagnosis as well as the biological integrity of macromolecules (DNA, RNA and proteins).

CONCLUSIONS: An improvement of such relevant core facilities in term of the development of standardized methodologies for the acquisition of the most appropriate samples required for new approaches to research such as “liquid biopsy”, targeted therapy and biomarkers validation is going on due to the coordinated activity of the biobanking team.

