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Health Care integrated biobanking, an important resource for precision medicine

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B Biobanks are essential for biomedical research and, more specifically, for the discovery and development of novel diagnostic biomarkers in the context of personalized medicine. They represent a reservoir for future clinical studies, and thus, accelerate the development and validation of new biomarkers and therapies, while reducing the costs of clinical research. Despite recent methodological advances in “omics” technologies, the discovery of new biomarkers has been largely prevented by uncontrolled variability in the quality among and within existing Biospecimen collections. Therefore, state of the art technological Biobank infrastructure that enables researchers to meet the quality requirements of liquid samples is an indispensable precondition for the use of future analytical technologies, such as mass spectrometry. The Inselspital (University Hospital Bern) has implemented for its Liquid Biobank Bern an infrastructure, whose major focus is on sample quality. All pre-analytical processes are fully standardized and integrated into the clinical routine. Samples are being frozen only one hour after the blood draw with every step in the pre-analytical process being electronically monitored and documented. Such modern health-care integrated and automated biobanks provide an important resource of high quality samples for the application of modern omics-technologies in clinical research. In particular, the ability to document the quality of samples is an important precondition to identify and to account for potential sources of bias that have led to irreproducible published results during the “omics”-hype.

Biography

Carlo R. Largiadèr is a molecular population geneticist. He is currently vice director of the University Institute of Clinical Chemistry (UKC) at the Inselspital and the academic head of the Liquid Biobank Bern (LBB). He also heads a research group in Pharmacogenomics and drug metabolism at the UK. His current research focuses on genetic and non-genetic factors or mechanisms underlying inter-individual variation in drug response with a strong interest in translational aspects.

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