Case study: Implementation of SLims in a Belgian Biobank supporting translational research

Background

The UZA tumor bank (tumorbank@UZA) was founded in 2009 at the University Hospital of Antwerp as a part of the Belgian National Cancer Plan (NCP), initiative 27. The aims of this cutting edge repository, embedded in the department of pathology, are to build a collection of high-quality bio-specimen and associated clinical data.

The Belgian Virtual Tumourbank (BVT) is project-financed by the Belgian Ministry of Health as part of the Belgian Cancer Plan. For more information: [www.virtualtumourbank.be](http://www.virtualtumourbank.be).

### Client Need

The Biobank consists of a large collection of human based sample material: residual and study-specific material, collected with informed consent. Residual material consists of both benign and malignant tumor tissue, as well as macroscopically tumor-free reference material. Samples from blood, which are both residual serum samples and extra blood samples, are also collected. All the bio-specimens are processed and stored according to best practice guidelines (ISBER, OECD, NCI and WHO) at different controlled temperatures, ranging from room temperature to -150°C. The sample-associated data are based on the minimal data set of the Belgian Cancer Registry hosted Belgian Virtual Tumourbank (BVT), with additional quality parameters such as SPREC codes.

Tumorbank@UZA also contributes to the virtual inter-institutional Belgian Virtual Tumourbank (BVT)*, with the goal to promote translational research and to create a network for future academic, medical and/or industrial collaborations.

### SLims Added Values

- **SLims guarantees an easy and quick overview for all samples**
  Whenever a sample leaves the biobank, SLims’ tracing capabilities record every event and support compliance with regulatory demands from the client. The SLims content and derivation tree structure generates a complete overview of patient to final derived sample, including results and shipping procedures.

- **SLims’ ELN protocols support and streamline the Biobank’s workflows**
  From generating derivatives, such as DNA or blood products, to recording methods and protocols used in sample processing, customer-specific ELN workflows streamline, track and standardize the numerous tasks of the Biobank. Even sample shipping is rationalized using such a specific ELN protocol: it combines samples for shipping by a simple sample barcode scanning procedure and records the removal of the samples from the collection.

- **SLims saves a lot of time annotating bio-specimens**
  SLims was configured to communicate with the hospital software, retrieving coded information such as specimen collection time, diagnosis and patient demographics. This information is added directly into the SLims database upon registration of a sample without the need for manual data entry. SLims is set up to update the specimen annotation automatically, each night it syncs with existing hospital records for new information available about relevant. In this way, the quality data of the specimens and the derived samples increases over time without the touch of a button.
SLims Solution

Genohm has developed SLims, a laboratory information software that integrates LIMS + ELN features. SLims was selected as the data management system for the tumorbank@UZA, based on criteria such as efficiency, flexibility, user friendliness, customer support, connectivity, and cost. It has been set up to deliver a sample management system enabling efficient data import and transfer, such as:

- Migration of historical data
- Real-time data integration from different data sources
- Data exports to the Belgian Cancer Registry
- Streamlining of sample management and processing
- Complete sample tracing and tracking

Using an integrated system has been instrumental to resolve data inconsistencies between the different historical sources resulting in an overall quality increase of the clinical data associated with the stored bio-specimens. Thanks to the interconnectivity between data sources and devices, the import of valuable qualitative parameters is facilitated. Today the Biobank stores large numbers of bio-specimen and their derivatives, as well as a tremendous amount of sample-associated, high-quality data. SLims supports the Biobank in every step of its tasks rendering its operations simpler, faster, more tightly controlled, and easier to manage.

About Genohm

Genohm is a Swiss company with offices in Lausanne (Switzerland), Ghent (Belgium) and in Durham, NC (USA). The company has developed SLims, a laboratory software automation suite. SLims provides laboratories with one integrated LIMS + ELN environment that tracks data and samples from the original sample shipment down to the result from lab machines and in-silico analysis pipelines. It fully accommodates the needs of any research lab, NGS lab, service facility, Biobank or QC lab.

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