Press release

Database project for improved leukemia diagnostics

Münchner Leukämielabor GmbH founds affiliate company MLLi

Munich, December 11, 2018. The affiliate company MLLi founded by Münchner Leukämielabor (MLL) started on its MLLi:db database project in December. The project aims to provide scientists, researchers and doctors with web-based tools for the interpretation of molecular, cytogenetic and immunophenotype data. The overall goal is to improve hematological diagnostics and thus ultimately enable targeted therapy for patients.

MLL Münchner Leukämielabor receives more than 78,000 blood and bone marrow samples annually which are analyzed via routine diagnostics. For 40% percent of submissions, the patient has also submitted a declaration of consent permitting us to preserve the material and utilize it for research purposes in the future. "In addition to routine diagnostics, the patient material is also examined retroactively, which can yield scientific findings about new molecular markers," explains Dr. Manja Meggendorfer, head of the Molecular Genetics department at Münchner Leukämielabor. This biobank, which consists of 1.2 million preserved samples, is the basis for the founding of the company MLLi (i = innovation).

MLLi had already been added to the commercial register on August 31, 2017. After an extensive test phase with its database project, MLLi went live for the first time at the end of November 2018 (www.mlli.com). Manually curated sequence variants and their interpretation are published anonymously in the database project MLLi:db (db = database). This data has been collected using next generation sequencing (NGS) over the last twelve years in an ISO 15189-accredited environment at MLL.

Just like in traditional routine diagnostics, each variant contained in the database has a classification in a 3-step evaluation system: mutated, variant or polymorphism. This classification of sequence variants lays the foundation for a clinical interpretation and its significance for the illness. Niroshan Nadarajah, Bioinformatics department head at MLL, explains why this is the added value of this application compared to other already existing databases: "The current problem with variant classification is that there is a great deal of heterogeneity due to the large number of databases. The same variant can be described in one database as polymorphism while in another as a somatic change. Sometimes there are even discrepancies within the same database, for example, when two submitters to this database have a different opinion. We eliminate these discrepancies with MLLi:db and present an unambiguous result. We ourselves have observed each result for at least five patients and this was evaluated at the same time by at least two molecular genetics scientists independent of each other together with our own and external data sources."

Press contact
MLL Münchner Leukämielabor GmbH, Press Office, Kristina Kneis, Max-Lebsche-Platz 31, 81377 Munich
Phone +49 (0)89 99017 506, Email: presse@mll.com; www.mll.com

Using the "MLL Predictor," an in-house machine learning algorithm which has been uploaded with variant data from routine diagnostics, a consensus classification is calculated from 14 data sources. The result can be compared with the level of knowledge of an employee with approx. ten years of experience in diagnostics. One of the best parts: the data are immediately available via the web application and prepared in a comprehensible manner. MLLi also offers a service that sends users a message notifying them when subsequent changes have been made to a classification.

Prof. Torsten Haferlach, one of the three managing directors at MLL, wants to advance diagnostics in hematology with MLLi:db: "We hope that we will be able to increase acceptance for next generation sequencing (NGS) and its use in diagnostics with this project and possibly promote its use in labs which have been hesitant to utilize it up until now. Data interpretation is effort-intensive and not to be scaled trivially. MLLi:db is the first of additional future software options to support this effort."

MLL Münchner Leukämielabor GmbH

MLL Münchner Leukämielabor GmbH is a nationally as well as internationally active lab working to diagnose leukemias and lymphomas. The expertise embedded within our company, as well as excellent quality assurance and turnaround times guarantee optimal test procedures for suspected diagnoses of leukemia or lymphoma. In addition, the modern equipment fleet and the state-of-the-art analysis methods used ensure optimal diagnostics for patients. Münchner Leukämielabor is one of the world's leading companies when it comes to its wide-ranging diagnostic portfolio. The combination of interconnected methods of cytomorphology, cytochemistry, traditional chromosome analysis, FISH, immunophenotyping and a number of molecular genetic test procedures enables us to get a comprehensive picture of the existing illness and, subsequently, to ensure optimal, customized medical treatment for patients.

MLLi

MLLi (i = innovation) is specialized in the digital processing of data from leukemia diagnostics. Among other things, MLLi offers web-based tools to provide interpretations of molecular, cytogenetic and immunophenotype data for the diagnosis of hematological neoplasias.

Press contact
MLL Münchner Leukämielabor GmbH, Press Office, Kristina Kneis, Max-Lebsche-Platz 31, 81377 Munich
Phone +49 (0)89 99017 506, Email: presse@mll.com; www.mll.com