



## Maximum safety for biological samples

You can literally feel the history in the historic buildings of Ludwig-Maximilians-Universität München (LMU). As one of the oldest universities in Germany, founded in 1472 by Louis the Rich in Ingolstadt, LMU has 18 universities today with approx. 48,000 students. Relocated to Munich in the early 18th century, the university offers a wide range of faculties from humanities and cultural sciences to law, economics and social sciences to natural sciences and medicine. Prof. Dr. Michael Kiebler is counted among the approx. 700 professors at LMU. At LMU, the doctor of biochemistry deals with internationally competitive research within the framework of the newly established Biomedical Center. Students learn everything about microscopic anatomy and cell biology in

his lectures. Before devoting himself to the professorship in Anatomy III for Cell Biology in Munich in 2012, the scientist was already busy at international institutes and universities in New York, Heidelberg, Tübingen and Vienna.

### Safe storage of DNA samples

The team around Prof. Dr. Kiebler primarily deals with the cell biology of neurons. The seven colleagues are currently focused on the "Transport of mRNAs in dendrites of polarized neurons" project. Different samples such as glycerine stocks from plasmids, but most of all DNA samples, which are not commercially available, as well as RNA isolated from neurons and protein samples must be preserved over longer periods of time. For safe storage,

### Requirements

- ▶ Preservation and safe storage of DNA, RNA and protein samples
- ▶ Different storing times, up to a few years
- ▶ Reliable cooling system
- ▶ Maximum sample safety
- ▶ High safety standards
- ▶ Data collection according to GLP guidelines
- ▶ Traceable temperature profile
- ▶ Convenient operation

### BINDER Solutions

- ▶ -86 °C Ultra low temperature freezer UF V 700
- ▶ GUARD.CONTROL™: Personalized access control via RFID technology
- ▶ Integrated log memory for reliable documentation of every opening
- ▶ Easy opening and closing with little effort
- ▶ Vacuum insulation panels (VIP) for high energy efficiency and space-saving
- ▶ Battery buffered alarm system in the event of power failure
- ▶ SERVICE.PRO™: Reliable back-up service in case of emergencies



▲ Freezer racks and cryo boxes for sample storage

the scientists use a UF V 700 ULT freezer from BINDER. At -86 °C, the samples remain in the freezer for a few weeks up to a few years. "We have to rely on the ULT freezer 100%. Any failure would cost us several months of work," emphasizes Prof. Dr. Kiebler. "Should there be a malfunction in the cooling system, essential reagents that we have already published (plasmids, proteins, etc.) would be lost and would have to be generated again."

*"We particularly appreciate the BINDER-specific functions of the water cooling in storing our samples and the resulting very low energy consumption."*

*Prof. Dr. Kiebler, LMU*

#### In accordance with GLP guidelines through RFID technology

"Because we operate in accordance with 'Good Laboratory Practice' (GLP) guidelines, the collection of all data is an important criterion for us", reasons Prof. Kiebler. The GLP quality assurance system encompasses all organizational structures and the sequence of analyses and tests for authorization of medical products. Several scandals in the pharmaceutical industry led to these GLP guidelines being established some years ago, which have improved protection against manipulation of raw data to pre-

vent tampering during approval. For this reason, sample safety is of greatest importance for the team. Therefore, the scientific colleagues appreciate the high safety standards of the UF V 700 ultra-low temperature freezer. With RFID technology for personalized access control, the samples are protected against unauthorized access by third parties. The electromechanical door closure can only be opened by authorized personnel with a valid RFID card. In addition, a user log continuously documents every time the specimens are accessed. An RFID reader is used to read and transfer the data in text format to a PC.

#### Water cooling increases performance

To reliably maintain the extreme temperature of -86 °C, a very high cooling capacity is required of the unit. In addition, attention is increasing on good energy efficiency for new units. Optional water-cooling offered by BINDER takes both requirements into full account. By connecting the unit to the building's cooling system, waste heat is dissipated more effectively, the cooling capacity of the freezer is increased and space heating and related energy consumption of the air conditioning system are reduced. "We particularly appreciate the BINDER-specific water cooling function in storing our samples and the resulting very low energy consumption", explains Prof. Kiebler about the advantages of BINDER ULT freezers. This sustainable, ecological be-



▲ Prof. Dr. Michael Kiebler

nefit is also welcomed by the LMU administration for reduction of their energy consumption in the labs.

#### Unique door opening

The scientist also views the BINDER-specific door opener at the push of a button as another advantage. You can even use your elbow to operate the door switch after which the door swings open smoothly. Prof. Dr. Kiebler and his team appreciate the reliability and high safety standard of the UF V 700 ultra-low temperature freezer from BINDER.

#### Customer benefits

- ▶ Excellent energy efficiency and lower operating costs
- ▶ Low noise emission
- ▶ GUARD.CONTROL™: convenient and secure operation
- ▶ Made in Germany

#### Areas of application

- ▶ Biobanks
- ▶ Hospitals and universities
- ▶ Blood banks
- ▶ Pharma Industry



▲ Ultra low temperature freezer UF V 700

#### Contact Data

Lehrstuhl Anatomie III - Zellbiologie LMU  
Schillerstr. 42  
80336 München  
Germany

#### Contact Person

Prof. Dr. Michael Kiebler  
michael.kiebler@med.uni-muenchen.de

