

BINDER chambers are used in cancer research



A renowned scientific institute in Munich is studying the genetic form of leukemia. When someone is diagnosed with leukemia, they have a blood test carried out straight away. They also undergo a detailed genetic analysis. If, once the patient's DNA code has been established, a particular gene is missing, tests are performed on mice to see whether this defect also causes the mice to develop the disease in five to seven

years' time. A defective human gene can also be injected into a mouse. The results provide insights into the origins of the genetic form of leukemia and enable new medication to be developed.

In order to work with mouse models, an egg cell first needs to be fertilized with sperm in vitro. This produces a zygote, which is then incubated in petri dishes at 37 °C in BINDER incubators at the institute in Munich. After several days, an undifferentiated cell clump has developed, providing the scientists with several identical cells. They can now begin to deactivate the gene of interest.

The modified cell is once again incubated in a BINDER incubator at 37 °C for several days. This again produces several cells of the



> You can rely on BINDER chambers:
That's why the research institute in Munich has chosen to use them.

Tasks

- Incubating cells
- Lots of space required
- Incubator should be easy to open
- Must be no contamination
- Reliable sterilization
- Units must provide maximum performance in continuous operation

BINDER solutions

- Temperature range: Ambient temperature plus 4 °C to 60 °C
- Humidity range: up to 90..95 % RH
- Alternative O₂ control ranges: 0.2-20 vol. % O₂ or 10-95 vol. % O₂
- Auto-sterilization with hot air at 180 °C
- Double-pan humidification system with condensation protection
- CO₂ gas mixing jet with Venturi effect
- Hot air sterilizable CO₂ sensor with infrared technology

same type. These cells are removed from the simulation chamber and injected into a mouse. The cells that have not been modified can also be injected. This enables the scientists to make comparisons.

This is, however, also when the period of waiting and observing begins. The laboratory staff need to keep an eye on developments. If a mouse with the same genetic defect as the human with leukemia also develops the disease, this may indicate what is causing it and enable the scientists to make great strides in their research.

BINDER simulation chambers are crucial to the institute's work in this area. 13 CB 160 incubators are currently in use in the new premises in Munich and more will be added in the future with the aim of enabling new insights in the field of cancer research. During our visit, the scientists at the institute explained why they work



› The researchers are attempting to gain new insights in the field of cancer research using cells grown in the BINDER chamber.

BINDER products provide lots of space so we can cultivate lots of cells. The quality is excellent, as are the service and sterilization

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says Ms. Prause



› The BINDER incubators provide a lot of space, which is exactly what the researchers need for their work.

with BINDER chambers: “BINDER products provide lots of space so we can cultivate lots of cells. The quality is excellent, as are the service and sterilization.”

Advantages of CO₂ incubators with hot air sterilization and heat sterilizable CO₂ sensor:

Advantages:

- Maximum usable space with minimal footprint and excellent ease of use
- Minimum risk of contamination thanks to uncompromising hot air sterilization
- Fanless, easy-to-clean hygienic interior
- Stable pH values thanks to drift-free CO₂ IR sensor technology
- Low evaporation of the medium due to high levels of humidity and quick recovery time



› CB 170 CO₂ incubator

**Klinikum rechts der Isar
(Rechts der Isar Hospital)
Technical University of Munich**

Ismaninger Straße 22
81675 Munich
Phone +49 89 4140-0

BINDER

Best conditions for your success

BINDER GmbH
Im Mittleren Ösch 5
78532 Tuttlingen, Germany
Phone +49 7462 2005-0 | www.binder-world.com

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