

## BIH RESEARCH PLATFORM

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# HUMANIZED MODEL SYSTEM AND CELL ENGINEERING

**Stem cell technologies and genome editing are two of the most promising developments in biomedical research. This platform delivers human and humanized model systems for preclinical testing and for cell engineering.**

The model systems include induced pluripotent stem cells (iPSCs), primary human stem cells, tissue, organoids, and humanized animal models. Cell engineering includes advanced therapy medicinal products (ATMPs), enabling therapies with somatic or gene modified cells, *in vivo* gene therapy and tissue engineering, as well as genetic engineering of stem cells. With a strategic focus on human model systems and cell engineering, it envisions enabling and accelerating precision medicine approaches across medical disciplines.

“Humanized Model Systems and Cell Engineering” is the basis for the development of regenerative therapies, for personalized treatment of malignancies, and is critical for clinical translation of novel approaches. Accordingly, there is strong interconnection of many of its activities with other platforms and focus areas of the BIH. Together with the Digital Medicine Platform, it is planned to develop a data infrastructure to track the entire analysis workflow of the samples starting from the patients including patient history, biobanked tissue samples, generated stem cells or specialized cells and omics data from different disease models potentially leading to new treatment options.

## Steering Committee

*Speaker:*

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Out-patient Clinic for muscle disorders & Muscle Research Unit,  
Charité & MDC

*Deputy Speakers:*

**Dr. Sebastian Diecke**

Pluripotent Stem Cells, MDC

**Dr. Harald Stachelscheid**

Core Facility Stem Cells, BIH & Charité

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Neuromuscular and Cardiovascular Cell Biology, MDC

**Dr. Mina Gouti**

Stem Cell Modeling of Development and Disease, MDC

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Molecular Infectiology and Pneumology, Charité

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iPS Cell Based Disease Modeling, BIH & MDC

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