Core Facilities – Technologies, equipment and expertise for ambitious research goals

The Interdisciplinary Center for Clinical Research (IZKF) provides valuable resources for a cost-effective, high-quality research environment.

A wide range of technologies and state-of-the-art equipment are available for all RWTH Aachen University researchers. Experienced technology experts provide services at every stage of the research process, including experimental design, method development, sample work-up, and data interpretation, on a partial cost recovery basis.

- Paralabs sperm analyzer for assessment of sperm motility
- NEPAGENE NEPA21 super electroporator for zygote electroporation
- Haake GLACIER AC 200 – G50 low temperature freezing thermostat for cryopreservation of mouse embryos
- 2 N2(g) storage tanks and 2 refill units for storage of cryopreserved mouse sperms and embryos

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Why use the Transgenic Facility, and how can you use it to your advantage?

Ever-increasing knowledge in disease-related genetics and basic research necessitates an ever-growing number of well-suited genetic model systems. Due to their easy maintenance and the accessibility of their genome for targeted genetic manipulation, mice are among the most widely used research animals in the world. Our aim at the Transgenic Facility (TF) is to provide all scientists in the Faculty of Medicine and other faculties at RWTH Aachen University, and external partners with the specific genetic mouse model systems needed for their research. Therefore, we offer a genetic counseling service and the generation of novel model systems according to your needs using state-of-the-art technology, such as the CRISPR/Cas9 system.

Further we support the exchange of knowledge by organizing the import and export of mice between our animal facility and other facilities around the world. In line with this we also offer different types of cryopreservation of mouse lines to facilitate this exchange, but also to improve breeding management within our facility in respect to the 3R principle (Reduce, Refine, Replace). In addition, the TF supports scientists with their breeding management, the usage of our “Tick@Lab” and “Tierbase” animal databases, and questions regarding the 3R principle. To ensure the satisfactorily quality of our service and meet the demands of external users, the Transgenic Facility is certified according to DIN: ISO 9001:2015.

What services do we offer?

- Advice on the generation of genetically modified mouse embryonic stem (ES) cells and mice
- Genetic modification, culture and cryopreservation of murine ES cells
- Generation of genetically modified mice
- Rederivation of imported mouse lines (spf and non-spf)
- Cryopreservation of mouse embryos, mouse sperm, and mouse oocytes (planned)
- Revitalization from mouse sperm and embryos
- In vitro fertilization (IVF)
- Import and export management
- Advice on breeding management, genetics, and the 3R principle (Refinement, Replacement, Reduction)
- Organization of the „Tick@lab“ and „Tierbase“ animal databases
- Organization of the animal capacity in our animal facility

What does it cost?

<table>
<thead>
<tr>
<th>Service</th>
<th>Price internal</th>
<th>Price Vollkosten (F&amp;E-Vertrag)</th>
<th>Price Vollkosten (extern/RWTH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rederivation by IVF</td>
<td>€ 250</td>
<td>€ 1,300</td>
<td>€ 1,560</td>
</tr>
<tr>
<td>Rederivation by breeding</td>
<td>€ 350</td>
<td>€ 1,500</td>
<td>€ 1,800</td>
</tr>
<tr>
<td>Revitalization</td>
<td>€ 215</td>
<td>€ 450</td>
<td>€ 540</td>
</tr>
<tr>
<td>Cryopreservation of embryos</td>
<td>€ 425</td>
<td>€ 2,250</td>
<td>€ 2,700</td>
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<tr>
<td>Cryopreservation of sperms</td>
<td>€ 200</td>
<td>€ 1,150</td>
<td>€ 1,380</td>
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<tr>
<td>Generation of mice by ES cell injection</td>
<td>€ 3,000</td>
<td>€ 7,000</td>
<td>€ 8,400</td>
</tr>
<tr>
<td>Generation of mice by DNA injection</td>
<td>€ 2,000</td>
<td>€ 5,000</td>
<td>€ 6,000</td>
</tr>
<tr>
<td>Generation of customized ES cells</td>
<td>Price upon request</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Equipment

- Two Zeiss injection microscopes with Xyclone laser system and Eppendorf PiezoXpert