

Details

Freiburg iPS Core (FiPS)

Advances in stem cell research provide novel in vitro models of human disease and avenues for cell therapeutic approaches. The Freiburg iPS Core (FiPS) represents the centralized facility for the generation and provision of human induced pluripotent stem (iPS) cells at the University of Freiburg. In addition to derivation, maintenance, expansion and cryopreservation of human iPS cell lines, the iPS core facility offers support to researchers and physicians in the pursuit of projects involving iPS cells, including differentiation paradigms and 3D organoid culture. Differentiation protocols are established for a range of cellular phenotypes (e.g. hematopoietic, neural, renal, mesenchymal). Aimed at clinical translation, the routines applied use GMP-compatible protocols and non-genome integrating reprogramming technologies. Moreover, hands-on training and student internships are offered to convey the fundamentals of stem cell research methodology. In close exchange with the complementary units within the Institute for Cell and Gene Therapy, experimental gene and cell therapeutic paradigms exploiting iPS cells are being developed.

Address: Hugstetter Straße 55
79106 Freiburg
Baden-Württemberg
Deutschland
[To website](#)

Host Institution

Albert-Ludwigs-Universität Freiburg, Medizinische Fakultät
Breisacher Straße 153
79110 Freiburg
Baden-Württemberg
Deutschland
<https://www.med.uni-freiburg.de/>

Scientific Domain

Primary Subjects:

- Biology
- Medicine

Secondary Subjects:

- Chemistry
- Physics
- Materials Science and Engineering

Category

Clinical Research Centers

Scientific Services

The Freiburg iPS Core (FiPS) offers: Generation of iPS cells and epigenetic reprogramming: - reprogramming using non-integrating technologies (Sendai virus, modified RNA, episomal vectors) - phenotypic characterization of pluripotent stem cells - maintenance of pluripotency & expansion of human iPS cell lines - advanced flow cytometric profiling of pluripotency and lineage differentiation - assessment of pluripotency by live stain (alkaline phosphatase)
Generation of iPS cell derivatives via established protocols: - differentiation towards hematopoietic progenitors and myeloid lineage - differentiation towards CNS type neurons - differentiation towards neural crest derivatives - mesenchymal differentiation, incl. adipocytes and osteogenesis - renal phenotypes, incl. 3D/organoid culture
Assistance and Training: - training of investigators in methods to maintain and differentiate pluripotent stem cells - assisting and consulting investigators in developing additional differentiation protocols - student internships in stem cell biology (e.g. Stem Cell Summer Camp)

Scientific Equipment

- Cell culture hoods (S1/S2 level)
- Phase contrast & fluorescence microscopes
- Electroporation/nucleofection device
- Flow cytometer
- Computer for data analysis
- liquid nitrogen tanks (cell bank)
- CO2 incubators

Keywords

- generation of iPS cell lines
- epigenetic reprogramming
- phenotype conversion (direct conversion)
- characterization of pluripotency
- expansion of pluripotent cell lines
- hematopoietic differentiation
- neural differentiation
- mesenchymal differentiation
- phenotypic analysis
- consulting on protocol development
- hands-on training in iPS cell culture
- 3D/organoid culture

Networks

Pluricore, German Stem Cell Network

<http://www.gscn.org/de/RESSOURCEN/DeutscheStammzell-CoreEinheiten.aspx>

Users per annum

Internal Users: 7

External Users in total: 6

External Users: 2

External Users in the EU: 0

External Users outside of EU: 4