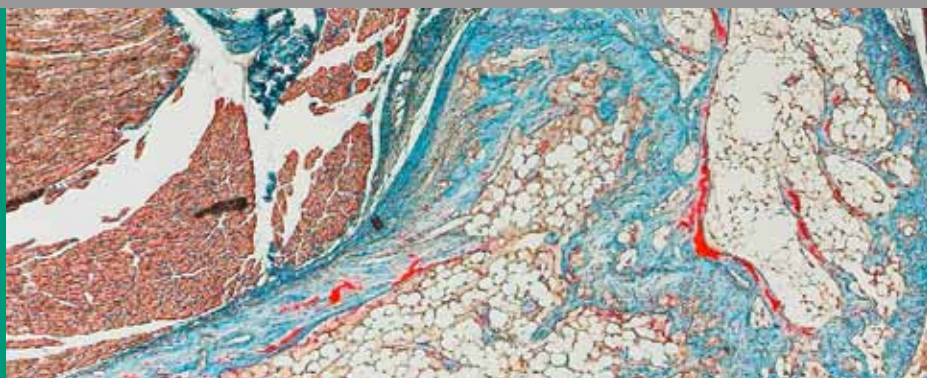




CONDITIONED HUMANIZED / NON HUMANIZED MOUSE MODEL

In order to assess the therapeutic efficiency of solid organ and cell suspension transplants as well as immunomodulatory agents, there is a need for suitable models. The model offered here is composed of either humanized or wild-type mice undergoing conditioning by chemotherapy and / or irradiation followed by transplantation of the stem cell- and organ fraction to be tested. The therapeutic follow-up is evaluated.

According to the scientific question posed, stem cell or organ fractions to be tested are transplanted into specialized humanized or wild type mice after chemotherapy and / or irradiation. Following application of the cells the therapeutic efficiency is assessed. This method resembles procedures of organ or haematopoietic stem cell transplantation (HSCT) in humans.

Unique Feature

The model of humanized mice allows unique analysis of chimerism and provides a clear distinction between transplant and host even although donor and host organism exhibit nearly identical antigenic properties.

Methods

Following chemotherapy and / or irradiation, cells are transplanted into conditioned mice. For diagnosis of therapeutic success clinical scores, peripheral blood parameters, flow cytometric analysis, histological / immunohistochemical and molecular biological methods can be used. In addition cells can be specifically marked to visualize them through immunofluorescence microscopy or bioluminescence imaging.

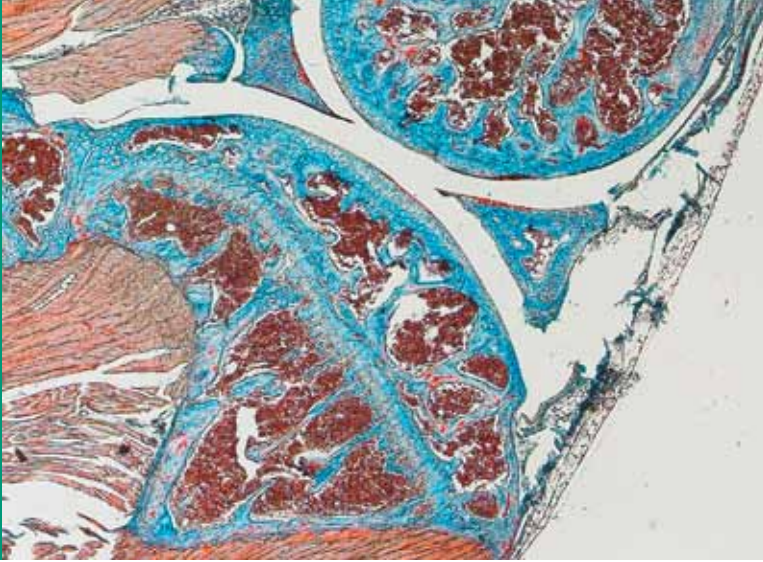
Fraunhofer Institute for Cell Therapy and Immunology IZI

Perlickstraße 1
04103 Leipzig
Germany

Contact

Dr. Stephan Fricke
Department of Immunology
Immune Tolerance Unit
Phone +49 341 35536-2205
stephan.fricke@izi.fraunhofer.de

www.izi.fraunhofer.de



Selected Applications

With the help of established procedures for conditioning, extensive stem cell- and organ transplantation experiments can be performed in humanized and wild type mice. Biologic activity of these transplants can be tested *in vivo*. In particular the impact of stem cells on hematopoiesis and their ability to repair tissue / organs can be depicted.

Reference Project

Using humanized mice, the therapeutic influence of novel stem cell fractions on the reconstitution of hematopoiesis and their reparative abilities in different tissues and organs could be investigated in detail. It could be shown that a subset of murine stem cells provide an advantage compared to conventional cell therapeutics. Based on our model, effects of conditioning and therapeutic activities of different stem cell fractions could be described using hematologic parameters.