

Thematic overview on key achievements

Field

Topic

Scientists

Reprogramming and Development

Identification of transcription

H. Schöler

Generation of oocytes from ES cells

H. Schöler

Reprogramming by ES cell fusion

H. Schöler

Nuclear transfer derived cloned mice

H. Schöler; M. Boiani
Niemann

Telomere maintenance in reproductive cloning and mammalian development

Nuclear transfer derived transgenic cattle and pigs

H. Niemann

Isolation of foetal and adult stem cells

H. Niemann

Expression of a Tetracycline sensitive system in transgenic pigs

H. Niemann; W. Kues

Mesodermal differentiation of rhesus monkey ES cells

K. Welte; U. Martin

Response of embryonic and adult haematopoietic stem cells to genetic programming

C. Baum

Signal transducers in development

M. Gaestel

Proteolytic pathways in cell cycle regulation

N. Malek

Analysis of transcriptional control and cell communication during organogenesis

A. Kispert; A. Gossler

Genetic causes of organ malformation

- A. Kispert Cellular dedifferentiation of endothelium, is linked to activation and silencing factors: Implications for endothelial dysfunction and vascular biology
- J. Borlak Neotendon formation in mesenchymal stem cells by manipulation of the Smad8 signalling pathway
- G. Gross; A. Hoffmann Haemato-lymphopoiesis and endothelium
- K. Welte; C. Klein Cloning of and clinical long-term treatment with recombinant G-CSF
- K. Welte Role of EPO in endothelial regeneration
- H. Haller Identification of "stemness" genes by insertional mutagenesis
- C. Baum Telomere shortening limits haematopoiesis during ageing
- K.L. Rudolph Preclinical testing of telomerase therapies for liver regeneration
- K.L. Rudolph Cancer risk factors during regenerative failure in end stage disease (cirrhosis)
- K.L. Rudolph Identification of genes regulating dendritic cell differentiation
- C. Klein Role of chemokine receptors in lymphocyte homing and migration
- R. Förster Mechanisms of immune tolerance
- G. Behrens; E. Jaeckel The nature of diversity and diversification of the human MHC
- R. Blasczyk

Regulating MHC expression

R. Blasczyk; A. Seltsam

Efficient gene transfer to hematopoietic stem cells in primate

P. A. Horn

In vivo selection of stem cells

P. A. Horn

First use of proteomics in clinical allogeneic hematopoietic stem cell transplantation

transplantation

E. Weissinger; A. Ganser

Circulating endothelial cells as markers of endothelial dama

H. Haller; A. Ganser

Heart

First controlled clinical study of cell therapy in myocardia

infarction

H. Drexler; A. Ganser; K. Wollert

First report on stem cell imaging after intracoronary

regeneration

H. Drexler; K. Wollert

Understanding of potential contribution of adult and embryonic

T. Kofidis; U. Martin

Generation and characterisation of functional cardiomyocytes from rhesus monkey ES

U. Martin

Investigation of immunological aspects of allogeneic intramyocardial ES-cell transplantation

T. Kofidis

In vivo application of engineered heart tissue based on ES-cell-derived cardiomyocytes

T. Kofidis

First clinical transplantation of tissue engineered heart valves

A. Haverich

Development an clinical application of biodegradable cardiovascular stents based on magnesi

A. Haverich

Gene expression in distinct regions of the heart

J. Borlak

Regulation of proangiogenic factor CCN1 in cardiac muscle: impact of ischemia, pressure overload, and neurohumoral activation
 matrix deposition, and protection of the heart from ischemic injury

A. Hilfiker; D. Hilfiker-Kleiner; H. Drexler

STAT3 is re

H. Drexler; D. Hilfiker-Kleiner

Pivotal role of nitric oxide and oxidant stress for progenitor cell

U. Land-messer; H. Drexler

Worldwide largest clinical programme for lung transplantation

A. Haverich

Worldwide first successful clinical use of an artificial lung (Novalung) as bridge to lung transplantation

Haverich

Pivotal role of proteases in lung fibrosis

T. Welte Demonstration of bone marrow-derived precursor cells in lung regeneration and fibrosis

H. Kreipe First report on essential function of vascular Notch Signaling in angiogenesis F. P. Lim
essential function of Notch Signaling in postnatal arteriogenesis F. P. Limbourg Liver/pancreas
hepatocytes, novel cell application strategies for the treatment of metabolic liver disease

M. Ott; M. Manns

Regeneration in chronic hepatitis

M. Manns

Preclinical testing of telomerase therapies for liver regeneration

K.L. Rudolph

Cancer risk factors during regenerative failure in end stage disease (cirrhosis)

K.L. Rudolph

Role of oxidative stress and cytokines in beta cell death

S. Lenzen

Glucokinase glucose sensor function in insulin secretion

S. Lenzen

Development of large scale mouse mutagenesis

R. Balling

Human ES-cells: Assessment of culture related infection risks and contaminations

U. Martin Experimental models and tools

In vivo microscopy of cell migration and

M. Gunzer; D.J. Manstein

Quantitative and cell-specific assay to measure incorporation of donor cells into solid organs

H. Kreipe Innovative integrating and episomal vectors for permanent and reversible cell modification, including
siRNA

cancer

J. Bode; D. Wirth; H. Hauser; M. Scherr; M. Eder; C. Baum

Genetic instability in gene-

S. Schlegel berger

Protein engineering, structure & design

D.J. Manstein

Epigenetic analysis in differentiation and cancer

H. Kreipe

Imaging, structure & functional analysis of individual molecules/molecular complexes

B. Brenner

Scaffold production and functionalization, nanoengineering, laser technology
bioidentical, induced degradable biomatrices

A. Kirschning; P. Behrens; C. Grothe; T. Scheper

Bioidentical scaffolds made from polysialic acid
for the fabrication of arbitrary 3D structures
patterning
structuring with fs-lasers

B.N. Chichkov
U. Morgner

R. Gerardy-Schahn
B.N. Chichkov
New mask
Surface nanostructuring using femtos
Sub- μm ultrahigh resolution Optical Coherence

U. Morgner

Application of lasers and ultrafast optics in laser medicine and biomedical engineering

W. Ertmer

Application of ultrashort laser systems in clinical applications of medicine and cell

H. Lubatschowski

Development of optical tools for subcellular manipulation and imaging of submicron structures in living cells.

A. Heisterkamp

Generation of few-cycle-pulses

U. Morgner

Generation of intense high rep rate laser pulses

U. Morgner