

## By Workgroup

### AG 1 - JRG Reprogramming

Sorg U, Kleff V, Fanaei S, Schumann A, Moellmann M, Opalka B, Thomale J, Moritz T. O6-methylguanine-DNA-methyltransferase (MGMT) gene therapy targeting haematopoietic stem cells: Studies addressing safety issues. *DNA Repair*. 2007; 6: 1197-1209.

Iqbal K, Kues WA, Niemann H. Parent-of-origin dependent gene-specific knock down in mouse embryos. *Biochem Biophys Res Commun*. 2007; 358, 727-32.

Kleff V, Sorg UR, Bury C, Bury C, Suzuki T, Rattmann I, Jerabek-Willemsen M, Poremba C, Flasshove M, Opalka B, Trapnell B, Dirksen U, Moritz T. Gene therapy of  $\beta$ c-deficient pulmonary alveolar proteinosis ( $\beta$ c-PAPf): Studies in a murine in vivo model. *Mol Ther* 2008. 16: 757-64.

Kues WA, Sudheer S, Herrmann D, Carnwath JW, Havlicek V, Besenfelder U, Lehrach H, Adjaye J, Niemann H. Genome-wide expression profiling reveals distinct clusters of transcriptional regulation during bovine preimplantation development in vivo. *Proc Natl Acad Sci USA*. 2008. 105, 19768-73.

Nowak-Imialek M, Wrenzycki C, Herrmann D, Lucas-Hahn A, Lagutina I, Lemme E, Lazzari G, Galli C, Niemann H. Messenger RNA expression patterns of histone associated genes in bovine preimplantation embryos de-rived from different origins. *Mol. Reprod. Dev*. 2008. 75, 731-43.

Funke S, Schneider IC, Glaser S, Mühlebach MD, Moritz T, Cattaneo R, Cichutek K. Pseudotyping lentiviral vectors with the wild-type measles virus glycoproteins improves titer and selectivity. *Gene Ther.*, 2009, in press.

### AG 2 - JRG Stem Cell Biologie

Loya K, Eggenschwiler R, Ko K, Sgodda M, André F, Bleidißel M, Schöler HR, Cantz T. Hepatic differentiation of pluripotent stem cells, *Biol Chem*. 2009; published online: 30-July-2009, DOI: 10.1515/BC.2009.120.

Eggenschwiler R, Cantz T.: Induced pluripotent stem cells generated without viral integration. *Hepatology*. 2009;49(3):1048-9 [Comment in "Hepatology Elsewhere"].

Sancho-Bru P, Najimi M, Caruso M, Pawelyn K, Cantz T, Forbes SJ, Roskams T, Ott M, Gehling U, Sokal E, Verfaillie C, Muraca M. Stem and progenitor cells for liver repopulation: can we standardize the process from bench to bedside? *Gut*. 2009; 58(4):594-603.

Cantz T, Bleidißel M, Stehling M, Schöler HR. In vitro differentiation of reprogrammed murine somatic cells into hepatic precursor cells. *Biol Chem*. 2008; 389:889-96.

Cantz T, Key G, Bleidißel M, Brenne A, Schöler HR. Absence of Oct4 expression in somatic tumor cell lines. *Stem Cells*. 2008; 26:692-7.

Sharma AD, Cantz T, Vogel A, Schambach A, Haridass D, Iken M, Bleidißel M, Manns MP, Schöler HR, Ott M. Murine Embryonic Stem Cell-Derived Hepatic Progenitor Cells Engraft in Recipient Livers with Limited Capacity of Liver Tissue

Formation. *Cell Transplantation*, 2008; 17:313–323.

Cantz T, Manns MP, Ott M. Stem Cells in Liver Regeneration and Therapy. (Review) *Cell & Tissue Research*, 2007; 331(1): 271-282.

### AG 3 - JRG Differentiation

Naujok O, Francini F, Jörns A, Lenzen S. An efficient experimental strategy for mouse ES cell differentiation and separation of a cytokeratin 19 positive population of insulin-producing cells. *Cell Proliferation*. 2008; 41, 607-24.

Naujok O, et al. A new experimental protocol for preferential differentiation of mouse embryonic stem cells into insulin-producing cells. *Cell Transplantation*. 2008; 17, 1231-42.

Milsom MD, Schiedlmeier B, Bailey J, Kim MO, Li D, Jansen M, Ali AM, Kirby M, Baum C, Fairbairn LJ, Williams DA. Ectopic HOXB4 overcomes the inhibitory effect of tumor necrosis factor- $\alpha$  on Fanconi anemia hematopoietic stem and progenitor cells. *Blood*. 2009; Mar 6. [Epub ahead of print] PMID: 19270262.

Chan KM, Bonde S, Klump H, Zavazava N. Hematopoiesis and immunity of HOXB4-transduced embryonic stem cell-derived hematopoietic progenitor cells. *Blood*. 2008; 111, 2953-61.

Schiedlmeier B, Santos AC, Ribeiro A, Moncaut N, Lesinski D, Auer H, Kornacker K, Ostertag W, Baum C, Mallo M, Klump H. HOXB4's road map to stem cell expansion. *Proc Natl Acad Sci USA*. 2007; 104, 16952-7.

### AG 4 - JRG Stem Cell Glycans

Bakker H, Oka T, Ashikov A, Yadav A, Berger M, Rana NA, Bai X, Jigami Y, Haltiwanger RS, Esko JD, Gerardy-Schahn R. Functional UDP-Xylose Transport across the ER/Golgi Membrane in a Chinese Hamster Ovary Cell Mutant Defective in UDP-Xylose Synthase. *J Biol Chem*. 2009; 284(4):2576-83.

Johswich A, Kraft B, Wuhrer M, Berger M, Deelder AM, Hokke CH, Gerardy-Schahn R, Bakker H. Golgi targeting of *Drosophila* beta4GalNAcTB requires a DHHC-protein family related protein as a pilot. *J Cell Biol*. 2009; 184(1):173-83.

Boztug K, Appaswamy G, Ashikov A, Schäffer AA, Salzer U, Diestelhorst J, Germeshausen M, Brandes G, Lee-Gossler J, Noyan F, Gatzke AK, Minkov M, Greil J, Kratz C, Petropoulou T, Pellier I, Bellanné-Chantelot C, Rezaei N, Mönkemöller K, Irani-Hakimeh N, Bakker H, Gerardy-Schahn R, Zeidler C, Grimbacher B, Welte K, Klein C. A Syndrome with Congenital Neutropenia and Mutations in G6PC3. *N Engl J Med*. 2009; 360:32-43.

Oltmann-Norden I, Galuska SP, Hildebrandt H, Geyer R, Gerardy-Schahn R, Geyer H, Mühlenhoff M. Impact of the polysialyltransferases ST8Siall and ST8SialV on polysialic acid synthesis during postnatal mouse brain development. *J Biol Chem*. 2008; 283(3):1463-71.

Galuska SP, Geyer R, Gerardy-Schahn R, Mühlenhoff M, Geyer H. Enzyme-dependent Variations in the Polysialylation of the Neural Cell Adhesion Molecule NCAM in Vivo. *J Biol Chem*. 2008; 283(1):17-28.

Schwarzer, D, Stummeyer K, Haselhorst T, Freiburger, F., Rode, B., Scheper, T., von Itzstein, M., Mühlenhoff M, Gerardy-

Schahn R. Proteolytic Release of the Intramolecular Chaperone Domain Confers Processivity to Endosialidase. Epub Feb 3 2009.

Stolz A, Haines N, Pich A, Irvine KD, Hokke CH, Deelder AM, Gerardy-Schahn R, Wuhler M, Bakker H. Distinct contributions of beta 4GalNAcTA and beta 4GalNAcTB to Drosophila glycosphingolipid biosynthesis. *Glycoconj. J.* 2008; 25, 167-175.

Krylov V, Ustyuzhanina N, Grachev A., Bakker H, Nifantiev N. Stereoselective synthesis of the 3-aminopropyl glycosides of  $\alpha$ -D-Xyl-(1  $\rightarrow$  3)- $\beta$ -D-Glc and  $\alpha$ -D-Xyl-(1  $\rightarrow$  3)- $\alpha$ -D-Xyl-(1  $\rightarrow$  3)- $\beta$ -D-Glc and of their corresponding N-octanoyl derivatives. *Synthesis* 2007; 20: 3147-3154.

Galuska SP, Geyer R, Mühlenhoff M, Geyer H. Characterization of Oligo- and Polysialic Acids by MALDI-TOF-MS. *Anal. Chem.* 2007; 79, 7161-7169.

Curreli S, Arany Z, Gerardy-Schahn R, Mann D, Stamatou NM. Polysialylated neuropilin-2 is expressed on the surface of human dendritic cells and modulates dendritic cell-T lymphocyte interactions. *J. Biol. Chem.* 2007; 282, 30346-56.

#### AG 5 - RG Cell Surgery

J. Baumgart, W. Bintig, A. Ngezahayo, H. Lubatschowski, and A. Heisterkamp, Fs-laser-induced Ca<sup>2+</sup> concentration change during membrane perforation for cell transfection, *Optics Express*, 18, 3, 2219, 2010

K. Kuetemeyer, J. Baumgart, H. Lubatschowski, A. Heisterkamp, Repetition rate dependency of lowdensity plasma effects during femtosecond-laser-based surgery of biological tissue, *Appl. Phys. B*, 97, 3, 695, 2009

J. Baumgart, K. Küttemeyer, W. Bintig, A. Ngezahayo, W. Ertmer, H. Lubatschowski, and A. Heisterkamp, Repetition rate dependency of reactive oxygen species formation during femtosecond laser based cell surgery, *J. of Biomedical Optics*, Vol. 14, 054040, 2009

A. Ngezahayo, J. Baumgart, S. Przemek, K. Kuetemeyer, L. Kruppe, F. Witte, W. Bintig, H. Lubatschowski, A. Heisterkamp, Intracellular manipulation of single cells using ultrashort laser pulses: mitochondria and cytoskeleton, *European Journal of Cell Biology*, 88, 76-76, Suppl. 59, 2009

K. Kuetemeyer, A. Lucas-Hahn, B. Petersen, P. Hassel, E. Lemme, H. Niemann, A. Heisterkamp, Femtosecond laser based enucleation of porcine oocytes for somatic cell nuclear transfer, *Proc. SPIE*, 7373, 2009

M. Schomaker, J. Baumgart, A. Ngezahayo, J. Bullerdiel, I. Nolte, H. Escobar, H. Lubatschowski, A. Heisterkamp, Nanoparticle mediated laser cell perforation, *Proc. SPIE* 7373, 2009

M. Schomaker, J. Baumgart, A. Ngezahayo, J. Bullerdiel, I. Nolte, H. Escobar, H. Lubatschowski, A. Heisterkamp, Plasmonic perforation of living cells using ultrashort laser pulses and gold nanoparticles, *Proc. SPIE* 7192, 2009

Baumgart J, Bintig W, Willenbrock S, Escobar H, Ngezahayo A, Ertmer W, Lubatschowski H, Heisterkamp A. Quantified femtosecond laser based opto-perforation of living GFSHR-17 and MTH53a cells, *Opt. Express*. 2008; 16, 5, 3021-31.

Baumgart J, Kuetemeyer K, Bintig W, Ngezahayo A, Ertmer W, Lubatschowski H, Heisterkamp A. Reactive oxygen species formation due to fs laser based intracellular cell surgery, *Proceedings of the EOS Meeting 2008, Paris*.

Heisterkamp A, et al. Fs-Laser Scissors for Photobleaching, Ablation in Fixed Samples and Living Cells and Studies of Cell Mechanics, *Methods in Cell Biology*, 82 Laser Manipulation of Cells and Tissue. 2007; 293-302. (invited).

Baumgart J, Küttemeyer K, Bintig W, Ngezahayo A, Ertmer W, Lubatschowski H, Heisterkamp A, Investigation of reactive oxygen species in living cells during femtosecond laser based cell surgery, *Proc. SPIE Optical Interactions with Tissue and Cells XIX*, 2008; Vol. 6854.

Arnold CL, Heisterkamp A, Ertmer W, Lubatschowski H. Computational model for nonlinear plasma formation in high NA micromachining of transparent materials and biological cells, *Opt. Express*, 2007; 15, 16, 10303-10317.

Baumgart J, Bintig W, Ngezahayo A, Ertmer W, Lubatschowski H, Heisterkamp A. Live cell opto-injection by femtosecond laser pulses, *Proc. SPIE. Optical Interactions with Tissue and Cells XVIII*, 2007; Vol 6435, p. 512ff.

Arnold CL, Heisterkamp A, Ertmer W, Lubatschowski H, Modeling of ultrashort pulse propagation and nonlinear plasma formation in transparent Kerr media using realistic initial conditions, *Proc. SPIE*, 2007; Commercial and Biomedical Applications of Ultrafast Lasers VIII.

Heisterkamp A, Baumgart J, Martin U, Ngezahayo A, Murua Escobar H, Nolte I, Lubatschowski H, Laser nanosurgery for stem cell research, *Proceedings of LIM*, 2007.

#### AG 6 - SU Embryonic Stem Cells

Müller T., Hupfeld T., Roessler J., Simoni M., Gromoll J., Behr R. Molecular cloning and functional characterization of endogenous recombinant common marmoset monkey (*Callithrix jacchus*) follicle stimulating hormone. *Int J Primatol*, 2010 (submitted)

SieroD L, Immenschuh S, Reese B, Lamm H, Blasczyk R, Müller T. Oxidative stress response in embryonic stem cells via hyperbaric oxygen treatment. *Cassion*, 2010 (submitted)

Diekmann U, Wolkers WF, Spindler R, Glasmacher B, Müller T. Effects of cryoconservation on  $\gamma$ -irradiated mouse embryonic feeder cells. *Cryoletters*, 2010; 31:2, 174-175.

Wurm M, Schambach A, Lindemann D, Hanenberg H, Ständker L, Forssmann WG, Blasczyk R, Horn PA. The influence of semen-derived enhancer of virus infection on the efficiency of retroviral gene transfer. *J Gene Med*. 2010; 12: 137-146.

Müller T, Fleischmann G, Eildermann K, Mätz-Rensing K, Horn PA, Sasaki E, Behr R. A novel Embryonic Stem Cell line derived from common marmoset monkey (*Callithrix jacchus*) exhibiting germ cell-like characteristics. *Human Reproduction* 2009; 24: 1359-1372.

Fleischmann G, Müller T, Blasczyk R, Sasaki E, Horn PA. Growth characteristics of the nonhuman primate embryonic stem cell line cjes001 depending on feeder cell treatment. *Cloning Stem Cells*. 2009; 11: 225-233.

#### AG 7 - RG Liver Regeneration

Schaetzlein S, Kodandaramireddy NR, Ju Z, Lechel A, Stepczynska A, Lilli DR, Clark AB, Rudolph C, Kuhnel F, Wei K, Schlegelberger B, Schirmacher P, Kunkel TA, Greenberg RA, Edelman W, Rudolph KL. Exonuclease-1 deletion impairs DNA damage signaling and prolongs lifespan of telomere-dysfunctional mice. *Cell*. 2007; Sep 7;130(5):863-77.

Zender L, Xue W, Zuber J, Semighini CP, Krasnitz A, Ma B, Zender P, Kubicka S, Luk JM, Schirmacher P, McCombie RW, Wigler M, Hicks J, Hannon GJ, Powers S, Lowe SW. An oncogenomics-based in vivo RNAi screen identifies new tumor suppressors in liver cancer. *Cell*, 2008; Nov.

Krizhanovsky V, Yon M, Dickins RA, Hearn S, Simon J, Miething C, Yee H, Zender L, Lowe SW. Senescence of activated stellate cells limits liver fibrosis. *Cell*. 2008; Aug 22;134(4):657-67.

Xue W, Krasnitz A, Lucito R, Sordella R, Vanaelst L, Cordon-Cardo C, Singer S, Kuehnel F, Wigler M, Powers S, Zender L, Lowe SW. DLC1 is a chromosome 8p tumor suppressor whose loss promotes hepatocellular carcinoma. *Genes Dev*. 2008; Jun 1;22(11):1439-44.

#### AG 8 - W2 Proliferation Control

Malek NP, Sundberg H, McGrew S, Nakayama K, Kyriakides TR, Roberts JM. A mouse knock-in model exposes sequential proteolytic pathways that regulate p27Kip1 in G1 and S phase. *Nature*. 2001; 413:323-7.

Kossatz U, Dietrich N, Zender L, Buer J, Manns MP, Malek NP. Skp2-dependent degradation of p27kip1 is essential for cell cycle progression. *Genes Dev*. 2004; 18, 2602-7.

Kossatz U, Vervoorts J, Nicleleit I, Sundberg HA, Arthur JS, Manns MP, Malek NP. C-terminal phosphorylation controls the stability and function of p27kip1. *Embo J*. 2006, 25, 5159-70.

Timmerbeul I, Garrett-Engle CM, Kossatz U, Chen X, Firpo E, Grunwald V, Kamino K, Wilkens L, Lehmann U, Buer J, Geffers R, Kubicka S, Manns MP, Porter PL, Roberts JM, Malek NP. Testing the importance of p27 degradation by the SCFskp2 pathway in murine models of lung and colon cancer. *Proc Natl Acad Sci U S A*. 2006; 103, 14009-14.

Nicleleit I, Zender S, Sasse F, Geffers R, Brandes G, Sørensen I, Steinmetz H, Kubicka S, Carlomagno T, Menche D, Buer J, Gossler A, Manns MP, Kalesse M, Frank R, Malek NP. Argyrin A reveals a critical role for the tumor suppressor protein p27kip1 in mediating anti-tumor activities in response to proteasome inhibition *Cancer Cell*. 2008; 14:23-35.

Chauhan S, Bousset K, Pich A, Manns MP, Malek NP. Phosphorylation of Cdc20 by CaMKII regulates the activation of the anaphase promoting complex. submitted *Nature Cell Biology*.

Kossatz U, Breuhahn K, Wolf B, Steinemann D, Singer S, Brass F, Kubicka S, Schlegelberger B, Schirmacher P, Manns MP, Singer JD, Malek NP. Differentiation induced stem cell senescence is a tumor suppressor mechanism. submitted *CancerCell*.

McEvoy JD, Kossatz U, Malek NP, Singer JD. Constitutive turnover of cyclin E by Cul3 maintains quiescence. *Mol.Cell.Biol*. 2007; May;27(10):3651-66.

#### AG 9 - RG Cardiac Organogenesis

Mommersteeg, M.T.M., Dominguez, J.N., Wiese, C., de Gier-de Vries, C., Burch, J.B.E., Kispert, A., Brown, N.A., Moorman, A.F.M., Christoffels, V.M. (2010). The sinus venosus progenitors separate and diversify from the first and second heart fields early in development. *Cardiovasc. Res.*, in press.

Norden, J., Grieskamp, T., Lausch, E., van Wijk, B., van den Hoff, M.J.B., Englert, E., Petry, M., Mommersteeg, M.T.M., Christoffels, V.M., Niederreither, K., Kispert, A. (2010). *Wt1* and retinoic acid signaling in the subcoelomic mesenchyme control the development of the pleuropericardial membranes and the sinus horns. *Circ. Res.*, 106, 1212-1220.

Christoffels, V.M., Smits, G.J., Kispert, A., Moorman, A.F.M. (2010). Development of the pacemaker tissues of the heart. *Circ. Res* 106, 240-254.

Kobayashi K, Luo M, Zhang Y, Wilkes DC, Ge G, Grieskamp T, Yamada C, Liu TC, Huang G, Basson CT, Kispert A, Greenspan DS, Sato TN. Secreted Frizzled Related Protein 2: a novel procollagen C-proteinase enhancer with a key role in myocardial infarction-associated fibrosis. *Nature Cell Biol.* 2009; 11, 46-55.

Singh R, Horsthuis T, Farin HF, Grieskamp T, Norden J, Petry M, Wakker V, Moorman AF, Christoffels VM, Kispert A. *Tbx20* interacts with Smads to confine *Tbx2* expression to the atrioventricular canal. *Circ.* 2009; Res., in press.

Christoffels VM, Grieskamp T, Norden J, Mommersteeg MTM, Rudat C, Kispert A. *Tbx18* and the fate of epicardial Progenitors. *Nature.* 2009; 458, E8-E9.

Lüdtke T, Christoffels VM, Petry M, Kispert A. *Tbx3* Promotes Liver Bud Expansion During Mouse Development by Suppression of Cholangiocyte Differentiation. *Hepatology.* 2009; 49, 969-78.

Wiese C\*, Grieskamp T\*, Airik R, Mommersteeg MT, Gardiwal A, de Gier-de Vries C, Schuster-Gossler K, Moorman AF, Kispert A\*, Christoffels VM.\* Formation of the Sinus Node Head and Differentiation of Sinus Node Myocardium Are Independently Regulated by *Tbx18* and *Tbx3*. *Circ. Res.* 2009; 104, 388-97. \*equal contribution.

Lausch E, Hermanns P, Farin HF, Alanay Y, Unger S, Nikkel S, Steinwender C, Scherer G, Spranger J, Zabel B, Kispert A., Superti-Furga A. *TBX15* mutations cause craniofacial dysmorphism, hypoplasia of scapula and pelvis, and short stature in Cousin syndrome. *Am. J. Hum. Genet.* 2008; 83, 649-655.

Farin HF, Mansouri A, Petry M, Kispert A. T-box Protein *Tbx18* Interacts with the Paired Box Protein *Pax3* in the Development of the Paraxial Mesoderm. *J. Biol. Chem.* 2008; 283, 25372-25380.

Winkler ME, Mauritz C, Groos S, Kispert A, Menke S, Hoffmann A, Gruh I, Schwanke K, Haverich A, Martin U. Serum-free differentiation of murine embryonic stem cells into alveolar type II epithelial cells. *Cloning Stem Cells*; 2008; 10, 49-64.

Farin HF, Bussen M, Schmidt MK, Singh MK, Schuster-Gossler K, Kispert A. Transcriptional repression by the T-box proteins *Tbx18* and *Tbx15* depends on Groucho corepressors. *J. Biol. Chem.* 2007; 282, 25748-59.

#### AG 10 - RG Organogenesis / Notch Signalling

Sörensen I, Adams R, Gossler A. *DLL1* mediated Notch activation regulates endothelial identity in mouse fetal arteries. *Blood.* 2009; 113, 5680-88.

Schuster-Gossler K, Harris B, Johnson KR, Serth J, Gossler A. Notch signalling in the paraxial mesoderm is most sensitive to reduced Pofut1 levels during early mouse development. *BMC Dev Biol.* 2009; Jan 22;9:6.

Benedito R, Roca C, Sørensen I, Adams S, Gossler A, Fruttiger M, Adams RH. The Notch ligands Dll4 and Jagged1 have opposing effects on angiogenesis. *Cell.* 2009; 137, 1124-35.

Beckers A, Alten L, Viebahn C, Andre P, Gossler A. The mouse homeobox gene Noto regulates node morphogenesis, notochordal ciliogenesis, and left-right patterning. *PNAS.* 2007; 104, 15765-70.

Feller J, Schneider A, Schuster-Gossler K, Gossler A. Non-cyclic Notch activity in the presomitic mesoderm demonstrates uncoupling of somite compartmentalization and boundary formation. *Genes & Development.* 2009; 22, 2166-71

Feyerabend TB, Terszowski G, Tietz A, Blum C, Luche H, Gossler A, Gale NW, Radtke F, Fehling HJ, Rodewald HR.. Deletion of Notch1 Converts Pro-T Cells to Dendritic Cells and Promotes Thymic B Cells by Cell-Extrinsic and Cell-Intrinsic Mechanisms. *Immunity,* 2009; 30, 67-79.

Estrach S, Cordes R, Hozumi K, Gossler A., Watt FM. Role of the Notch ligand Delta1 in embryonic and adult mouse epidermis. *The Journal of Investigative Dermatology,* 2008; 128, 825-832.

Geffers I, Serth K, Chapman G, Jaekel R, Schuster-Gossler K, Cordes R, Sparrow DB, Kremmer E, Dunwoodie SL, Klein T, Gossler A.. Divergent functions and distinct localization of the Notch ligands DLL1 and DLL3 in vivo. *The Journal of Cell Biology,* 2007; 178, 465-476.

Cheng HT, Kim M, Valerius MT, Surendran K, Schuster-Gossler K, Gossler A, McMahon AP, Kopan R. Notch2, but not Notch1, is required for proximal fate acquisition in the mammalian nephron. *Development,* 2007; 134, 801-811.

Limbourg A, Ploom M, Elligsen D, Sørensen I, Ziegelhoeffer T, Gossler A., Drexler H, Limbourg FP. The Notch Ligand Delta-like 1 (Dll1) is Essential for Postnatal Arteriogenesis. *Circ. Res,* 2007; 100, 363-371.

Schuster-Gossler K, Cordes R, Gossler A.. Premature myogenic differentiation and depletion of progenitor cells cause severe muscle hypotrophy in Delta1 mutants. *PNAS,* 2007; 104, 537-542.

#### AG 11 - JRG Regenerative Agents

Limbourg FP, Drexler H. Quo vadis, progenitor? Progenitor cell homing in chronic ischemic heart disease. *J Cardiovasc Pharmacol.* 2009; 53:438-9.

Limbourg A, Korff T, Napp LC, Schaper W, Drexler H, Limbourg FP. Evaluation of Postnatal Arteriogenesis and Angiogenesis in a Mouse Model of Hindlimb Ischemia. *Nature Protocols.* 2009; (in press).

Limbourg FP, Takeshita K, Radtke F, Bronson RT, Chin MT, Liao JK. Essential role of endothelial Notch1 in angiogenesis. *Circulation.* 2005.

Limbourg A, Ploom M, Elligsen D, Sorensen I, Ziegelhoeffer T, Gossler A, Drexler H, Limbourg FP. Notch ligand Delta-like 1 is essential for postnatal arteriogenesis. *Circ Res.* 2007.

Templin C, Kotlarz D, Faulhaber J, Schnabel S, Grote K, Salguero G, Luchtefeld M, Hiller KH, Jakob P, Naim HY, Schieffer B, Hilfiker-Kleiner D, Landmesser U, Limbourg FP, Drexler H. Ex vivo expanded hematopoietic progenitor cells improve cardiac function after myocardial infarction: role of beta-catenin transduction and cell dose. *J Mol Cell Cardiol.* 2008.

Tongers J, Knapp JM, Korf M, Kempf T, Limbourg A, Limbourg FP, Li Z, Fraccarollo D, Bauersachs J, Han X, Drexler H, Fiedler B, Wollert KC. Haeme oxygenase promotes progenitor cell mobilization, neovascularization, and functional recovery after critical hind-limb ischaemia in mice. *Cardiovasc Res.* 2008.

#### AG 12 - JRG Cardiovascular Cell Therapy

Heineke J\*, Auger-Messier M\*, Xu J, Sargent M, York A, Welle S, Molkentin JD. Genetic deletion of myostatin from the heart prevents skeletal muscle atrophy in heart failure. *Circulation.* Jan 26 2010; 121(3): 419-25

Heineke J, Wollert KC, Osinska H, Sargent MA, York AJ, Robbins J, Molkentin JD. Calcineurin protects the heart in a murine model of dilated cardiomyopathy. *J Mol Cell Cardiol.* 2009 Oct 22.

Gunkel S\*, Knoll R, Heineke J\*, Hilfiker-Kleiner D. MLP: a stress sensor goes nuclear. *J Mol Cell Cardiol.* 2009 Oct; 47(4): 423-5.

Heineke J, Auger-Messier M, Xu J, Oka T, Sargent MA, York A, Klevitsky R, Vaikunth S, Duncan SA, Aronow BJ, Robbins J, Cromblehol TM, Molkentin JD. Cardiomyocyte GATA4 functions as a stress-responsive regulator of angiogenesis in the murine heart. *J Clin Invest.* Nov 2007; 117(11):3198-3210.

Heineke J, Molkentin JD. Regulation of cardiac hypertrophy by intracellular signalling pathways. *Nat Rev Mol Cell Biol.* Aug 2006; 7(8):589-600.

Heineke J, Rütten H, Willenbockel C, Grobetsky SC, Naguib M, Schäfer A, Kempf T, Hilfiker-Kleiner D, Caroni P, Kraft T, Kaiser RA, Molkentin JD, Drexler H, Wollert KC. Attenuation of cardiac remodeling after myocardial infarction by muscle LIM protein-calcineurin signaling at the sarcomeric Z-disc. *Proc Natl Acad Sci U S A.* Feb 1 2005; 102(5):1655-60.

Heineke J, Kempf T, Kraft T, Hilfiker A, Morawietz H, Scheubel RJ, Caroni P, Lohmann SM, Drexler H, Wollert KC. Downregulation of Cytoskeletal Muscle LIM Protein by Nitric Oxide: Impact on Cardiac Myocyte Hypertrophy. *Circulation.* 2003; 3107:1424-32.

#### AG 13 - JRG Hematopoietic Cell Therapy

Thornhill SI, Schambach A, Howe SJ, Ulaganathan M, Grassman E, Williams D, Schiedlmeier B, Sebire NJ, Gaspar HB, Kinnon C, Baum C, Thrasher AJ. Self-inactivating gammaretroviral vectors for gene therapy of X-linked severe combined immunodeficiency. *Mol Ther.* 2008 Mar;16(3):590-8.

Schambach A, Galla M, Maetzig T, Loew R, Baum C. Improving transcriptional termination of self-inactivating gamma-retroviral and lentiviral vectors. *Mol Ther.* 2007 Jun;15(6):1167-73.

Schambach A, Schiedlmeier B, Kühlcke K, Verstegen M, Margison GP, Li Z, Kamino K, Bohne J, Alexandrov A, Hermann FG, von Laer D, Baum C. Towards hematopoietic stem cell-mediated protection against infection with human immunodeficiency virus.

Boztug K, Appaswamy G, Ashikov A, Schäffer AA, Salzer U, Diestelhorst J, Germeshausen M, Brandes G, Lee-Gossler J, Noyan F, Gatzke AK, Minkov M, Greil J, Kratz C, Petropoulou T, Pellier I, Bellanné-Chantelot C, Rezaei N, Mönkemöller K, Irani-Hakimeh N, Bakker H, Gerardy-Schahn R, Zeidler C, Grimbacher B, Welte K, Klein C. A syndrome with congenital neutropenia and mutations in G6PC3. *N Engl J Med*. 2009 Jan 1;360(1):32-43.

Boztug K, Dewey RA, Klein C. Development of hematopoietic stem cell gene therapy for Wiskott-Aldrich syndrome. *Curr Opin Mol Ther*. 2006 Oct;8(5):390-5.

Maruggi G, Porcellini S, Facchini G, Perna SK, Cattoglio C, Sartori D, Ambrosi A, Schambach A, Baum C, Bonini C, Bovolenta C, Mavilio F, Recchia A. 2009. Transcriptional enhancers induce insertional gene deregulation independently from the vector type and design. *Mol Ther*. Epub ahead of print.

Skokowa J, Lan D, Thakur BK, Wang F, Gupta K, Cario G, Brechlin AM, Schambach A, Hinrichsen L, Meyer G, Gaestel M, Stanulla M, Tong Q, Welte K. 2009. NAMPT is essential for the G-CSF-induced myeloid differentiation via a NAD-sirtuin-1-dependent pathway. *Nat Med*, 15(2): 151-8.

Schambach A, Swaney WP, van der Loo JC. 2009. Design and production of retro- and lentiviral vectors for gene expression in hematopoietic cells. *Methods Mol Biol*, 506: 191-205.

Modlich U, Schambach A, Li Z, Schiedlmeier B. 2009. Murine hematopoietic stem cell transduction using retroviral vectors. *Methods Mol Biol*, 506:23-31.

Cornils K, Lange C, Schambach A, Brugman MH, Nowak R, Lioznov M, Baum C, Fehse B. Stem cell marking with promotor-deprived self-inactivating retroviral vectors does not lead to induced clonal imbalance. *Mol Ther*. 2009, 17(1): 131-43.

Moreno-Carranza B, Gentsch M, Stein S, Schambach A, Santilli G, Rudolf E, Ryser MF, Haria S, Thrasher AJ, Baum C, Brenner S, Grez M. Transgene optimization significantly improves SIN vector titers, gp91(phox) expression and reconstitution of superoxide production in X-CGD cells. *Gene Ther*. 2008 Sep 11.

Boztug K, Appaswamy G, Ashikov A, Schäffer AA, Salzer U, Diestelhorst J, Germeshausen M, Brandes G, Lee-Gossler J, Noyan F, Gatzke AK, Minkov M, Greil J, Kratz C, Petropoulou T, Pellier I, Bellanné-Chantelot C, Rezaei M, Mönkemöller K, Irani-Hakimeh N, Bakker H, Gerardy-Schahn R, Zeidler C, Grimbacher B, Welte K, Klein C. (2008) A novel syndrome with severe congenital neutropenia is caused by mutations in G6PC3. *New Engl J Med* (in press).

Milsom MD, Jerabek-Willemsen M, Harris CE, Schambach A, Broun E, Bailey J, Jansen M, Schleimer D, Nattamai K, Wilhelm J, Watson A, Geiger H, Margison GP, Moritz T, Baum C, Thomale J, Williams DA. Reciprocal relationship between O6-methylguanine-DNA methyltransferase P140K expression level and chemoprotection of hematopoietic stem cells. *Cancer Res*. 2008 Aug 1;68(15):6171-80.

Sharma AD, Cantz T, Vogel A, Schambach A, Haridass D, Iken M, Bleidissel M, Manns MP, Schöler HR, Ott M. Murine embryonic stem cell-derived hepatic progenitor cells engraft in recipient livers with limited capacity of liver tissue formation. *Cell Transplant*. 2008;17(3):313-23.

Modlich U, Schambach A, Brugman MH, Wicke DC, Knoess S, Li Z, Maetzig T, Rudolph C, Schlegelberger B, Baum C. Leukemia induction after a single retroviral vector insertion in Evi1 or Prdm16. *Leukemia*. 2008 Aug;22(8):1519-28. Epub 2008 May 22.

Müller LU, Milsom MD, Kim MO, Schambach A, Schuesler T, Williams DA. Rapid lentiviral transduction preserves the engraftment potential of Fanca(-/-) hematopoietic stem cells. *Mol Ther*. 2008 Jun;16(6):1154-60. Epub 2008 Apr 8.

Zychlinski D, Schambach A, Modlich U, Maetzig T, Meyer J, Grassman E, Mishra A, Baum C. Physiological Promoters Reduce the Genotoxic Risk of Integrating Gene Vectors. *Mol Ther*. 2008 Feb 19.

Galla M, Schambach A, Towers GJ, Baum C. Cellular restriction of retrovirus particle-mediated mRNA transfer. *J Virol*. 2008; 82(6):3069-77.

Baum C, Schambach A, Modlich U, Thrasher A. [Gene therapy of SCID-X1] *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz*. 2007 Dec;50(12):1507-17.

Heuser M, Argiropoulos B, Kuchenbauer F, Yung E, Piper J, Fung S, Schlenk RF, Dohner K, Hinrichsen T, Rudolph C, Schambach A, Baum C, Schlegelberger B, Dohner H, Ganser A, Humphries RK. MN1 overexpression induces acute myeloid leukemia in mice and predicts ATRA resistance in patients with AML. *Blood*. 2007 Sep 1;110(5):1639-47. Epub 2007 May 9.

Schambach A, Baum C. Vector design for expression of O6-methylguanine-DNA methyl-transferase in hematopoietic cells. *DNA Repair (Amst)*. 2007 Aug 1;6(8):1187-96.

Zhang F, Thornhill SI, Howe SJ, Ulaganathan M, Schambach A, Sinclair J, Kinnon C, Gaspar HB, Antoniou M, Thrasher AJ. Lentiviral vectors containing an enhancer-less ubiquitously acting chromatin opening element (UCOE) provide highly reproducible and stable transgene expression in hematopoietic cells. *Blood*. 2007 Sep 1;110(5):1448-57.

Bohne J, Schambach A, Zychlinski D. New way of regulating alternative splicing in retroviruses: the promoter makes a difference. *J Virol*. 2007 Apr;81(7):3652-6.

Skokowa J, Cario G, Uenal M, Schambach A, Germeshausen M, Battmer K, Zeidler C, Lehmann U, Eder M, Baum C, Grosschedl R, Stanulla M, Scherr M, Welte K. LEF-1 is crucial for neutrophil granulocytopoiesis and its expression is severely reduced in congenital neutropenia. *Nat Med*. 2006 Oct;12(10):1191-7.

Thrasher AJ, Gaspar HB, Baum C, Modlich U, Schambach A, Candotti F, Otsu M, Sorrentino B, Scobie L, Cameron E, Blyth K, Neil J, Abina SH, Cavazzana-Calvo M, Fischer A. Gene therapy: X-SCID transgene leukaemogenicity. *Nature*. 2006 Sep 21;443(7109):E5-6; discussion E6-7.

Modlich U, Bohne J, Schmidt M, von Kalle C, Knöss S, Schambach A, Baum C. Cell-culture assays reveal the importance of retroviral vector design for insertional genotoxicity. *Blood*. 2006 Oct 15;108(8):2545-53.

Schambach A, Mueller D, Galla M, Versteegen MM, Wagemaker G, Loew R, Baum C, Bohne J. Overcoming promoter competition in packaging cells improves production of self-inactivating retroviral vectors. *Gene Ther*. 2006 Nov;13(21):1524-33.

Schambach A, Galla M, Modlich U, Will E, Chandra S, Reeves L, Colbert M, Williams DA, von Kalle C, Baum C. Lentiviral vectors pseudotyped with murine ecotropic envelope: increased biosafety and convenience in preclinical research. *Exp Hematol*. 2006 May;34(5):588-92.

Baum C, Schambach A, Bohne J, Galla M. Retrovirus vectors: toward the plentivirus? *Mol Ther*. 2006 Jun;13(6):1050-63.

Schambach A, Bohne J, Baum C, Hermann FG, Egerer L, von Laer D, Giroglou T. Woodchuck hepatitis virus post-transcriptional regulatory element deleted from X protein and promoter sequences enhances retroviral vector titer and

expression. *Gene Ther.* 2006 Apr;13(7):641-5.

Schambach A, Bohne J, Chandra S, Will E, Margison GP, Williams DA, Baum C. Equal potency of gammaretroviral and lentiviral SIN vectors for expression of O6-methylguanine-DNA methyltransferase in hematopoietic cells. *Mol Ther.* 2006 Feb;13(2):391-400.

#### AG 14 - RG Lymphatic Cell Therapy

Koya RC, Weber JS, Kasahara N, Lau R, Levine AM, Stripecke R. Making Dendritic Cells from Inside-Out: lentiviral vector-mediated gene delivery of GM-CSF and IL-4 into CD14+ monocytes generates DCs in vitro. *Human Gene Therapy.* 2004; 15:733-48.

Koya R, Kimura T, Ribas A, Rozengurt N, Lawson GW, Faure-Kumar E, Wang H-J, Herschmann H, Kasahara K, Stripecke R. Lentiviral vector-mediated autonomous differentiation of mouse bone marrow cells into immunologically potent dendritic cell vaccines. *Mol Ther.* 2007; 15(5):971-80.

Kimura T, Koya RC, Anselmi L, Sternini C, Wang H, Comin-Anduix B, Prins R, Faure-Kumar E, Cui Y, Rozengurt N, Kasahara N, Stripecke R. Lentiviral Vectors with CMV or MHCII Promoters administered in vivo: Immune reactivity versus persistence of expression. *Mol Ther.* 2007; 15(7):1390-9.

Köchling J, Prada J, Bahrami M, Stripecke R, Seeger K, Henze G, Wittig B, Schmidt M. Anti-tumor effect of DNA-based vaccination and dSLIM immunomodulatory molecules in mice with Ph(+) acute lymphoblastic leukaemia. *Vaccine.* 2008; 26;26(36):4669-75.

Stripecke R. Lentiviral vector-mediated genetic programming of mouse and human dendritic cells. *Methods Mol. Biol.* 2009; 506:139-58.

Sarafian T, Montes C, Harui A, Beedanagari SR, Kiertscher S, Stripecke R, Hossepien D, Kitchen C, Kern R, Belperio J, Roth MD (2008). Clarifying CB2 receptor-dependent and independent effects of THC on human lung epithelial cells. *Toxicol Appl Pharmacol.* 15;231(3):282-90.

Cheng JC, Kinjo K, Judelson DR, Chang J, Wu WS, Schmid I, Shankar DB, Kasahara N, Stripecke R, Bhatia R, Landaw EM, Sakamoto KM (2008). CREB is a critical regulator of normal hematopoiesis and leukemogenesis. *Blood* 111(3):1182-92.

#### AG 15 - JRG Lymphocyte Biology

Krueger A\*, Willenzon S, Ayszkiewicz M, Kremmer E, Förster R. CC chemokine receptor (CCR) 7 and 9 double-deficient hematopoietic progenitors are severely impaired in seeding the adult thymus. *Blood.* 2010; 115: 1906-12 \*  
Corresponding author.

Saran N, Ayszkiewicz M, Pommerencke J, Witzlau K, Vakilzadeh R, Ballmaier, M, von Boehmer H, Krueger A. Multiple extra-thymic precursors contribute to T cell development with different kinetics. *Blood.* 2010; 115: 1137-44.

Weber C\*, Krueger A\*, Münk A, Bode C, Van Veldhoven PP, Gräler MH. Discontinued Postnatal Thymocyte Development in Sphingosine 1-Phosphate-Lyase-Deficient Mice. *J Immunol.* 2009; 183: 4292-301. \* Equal contribution.

Garbe AI\*, Krueger A\*, Gounari F, Zuniga-Pflucker JC, von Boehmer H. (2006) Differential synergy of Notch and T cell receptor signaling determines lineage fate in lymphocyte development. *J Exp Med* 203, 1579-90. (\* Equal contribution).

Krueger A, von Boehmer H. Identification of a T lineage committed progenitor in adult blood. *Immunity*. 2007; 26, 105-116.

Junt T, Schulze H, Chen Z, Massberg S, Goerge T, Krueger A, Wagner D, Graf T, Italiano Jr, JE, Shivdasani RA, von Andrian UH. Dynamic visualization of thrombopoiesis within bone marrow. *Science*. 2007; 317, 1767-70.

Kreslavsky T, Garbe AI, Krueger A, von Boehmer H. T-cell receptor instructed  $\alpha$ ; $\beta$  versus  $\gamma$ ; $\delta$ ; lineage commitment. *J Exp Med*. 2008; 205, 1173-86.

Krueger A\*, Garbe AI, von Boehmer H. Phenotypic plasticity of T cell progenitors upon exposure to Notch ligands. *J Exp Med*. 2006; 203: 1977-84. \* Corresponding author.

#### AG 16 - JRG Hepatic Cell Therapy

Haridass D, Yuan Q, Becker PD, Cantz T, Iken M, Narain N, Bock M, Nörder M, Legrand N, Wedemeyer H, Weijer K, Spits H, Manns MP, Cai J, Deng H, Di Santo JP, Guzman CA, Ott M. Adult hepatocytes repopulate the liver more efficiently than fetal liver progenitors and embryonic stem cell hepatic precursors in immunodeficient Alb-uPA transgenic mice. Submitted to *Am J Pathol*; 2009.

Meyburg J, Das AM, Hoerster F, Lindner M, Kriegbaum H, Engelmann G, Schmidt J, Ott M, Pettenazzo A, Luecke T, Bertram H, Hoffmann G, Burlina A. One liver for four children: First clinical series of liver cell transplantation for severe neonatal urea cycle defects. *Transplantation*. 2009; in press.

Sancho-Bru P, Najimi M, Caruso M, Pawelyn K, Cantz T, Forbes SJ, Roskams T, Ott M, Gehling U, Sokal E, Verfaillie C, Muraca M. Stem and progenitor cells for liver repopulation: can we standardize the process from bench to bedside? *Gut*. 2008; Dec 17. [Epub ahead of print].

Sharma AD, Cantz T, Vogel A, Schambach A, Haridass D, Iken M, Bleidissel M, Manns MP, Schöler HR, Ott M. Murine embryonic stem cell-derived hepatic progenitor cells engraft in recipient livers with limited capacity of liver tissue formation. *Cell Transplant*. 2008;17(3):313-23.

Jochheim-Richter A, Rüdric U, Koczan D, Hillemann T, Tewes S, Petry M, Kispert A, Sharma AD, Attaran F, Manns MP, Ott M. Gene expression analysis identifies novel genes participating in early murine liver development and adult liver regeneration. *Differentiation*. 2006; Apr;74(4):167-73.

#### AG 17 - JRG Tolerance

Jirno AC, Nagel CH, Bohnen C, Sodeik B, Behrens GMN. Contribution of direct and cross presentation to CTL immunity against herpes simplex virus 1. *J Immunol*. 2009;182:283-92.

Constable H, Stankov M, Hartwig C, Tschernig T, Behrens GMN. Impaired lung dendritic cell migration and T cell

stimulation induced by immunostimulatory oligonucleotides contribute to reduced allergic airway inflammation. *J Immunol.* 2009;183:3443-53.

Figueiredo C, Seltsam A, Blasczyk R. Permanent NKG2A silencing to improve cell-based therapeutics. *J Mol Med.* 2009 Feb;87(2):199-210.

Figueiredo C, Horn PA, Blasczyk R, Seltsam A. Regulating MHC expression for cellular therapeutics. *Transfusion.* 2007 Jan;47(1):18-27.

Jaeckel E, Mpofu N, Saal N, Manns MP. Role of regulatory T cells for the treatment of type 1 diabetes mellitus. *Horm Metab Res.* 2008; 40:126-36.

Figueiredo C, Wittmann M, Dressel R, Seltsam A, Blasczyk R, Eiz-Vesper B. Heat Shock Protein 70 (HSP70) induces cytotoxicity of T helper cells. *Blood.* 2008 Nov 18. [Epub ahead of print]

Stankov M, Schmidt RE, Behrens GMN. Zidovudine impairs adipogenic differentiation through inhibition of clonal expansion. *Antimicrob AGents Chemother* 2008; 52:2882-9.

Mpofu N, Hardtke-Wolenski M, Saal N, Manns MP, Jaeckel E. Antigen-specific Tregs prevent T1D by long lasting persistence and infectious tolerance. (submitted)

Prajeeth CK, Ebensen T, Guzman CA, Weiss S, Schmidt RE, Constabel H, Behrens GMN. Distinct effects of the synthetic TLR2/6 agonist BPPcysMPEG on cross-priming and antigen presentation by dendritic cells. (submitted)

Baru AM, Rathinasamy A, Jirmo AC, Scherr M, Eder M, Behrens GMN. Dendritic cells derived from HOXB4-immortalized hematopoietic bone marrow cells. (submitted)

#### AG 18 - W3 Cardiorespiratory Tissue Engineering

Cantz T and Martin U. Induced Pluripotent Stem (iPS) Cells: Characteristics and Perspectives. *Adv Biochem Eng Biotechnol*, 2010; in press.

Tomala M, Lavrentieva A, Moretti P, Rinas U, Stahl F, Wahrlich E, Martin U, Cantz T, and Scheper T. 2010. Preparation of Bioactive Soluble Human Leukemia Inhibitory Factor from recombinant *Escherichia coli* using Thioredoxin as Fusion Partner. *Protein Expression and Purification*, 2010; in press.

Olmer R, Haase A, Merkert S, Cui W, Palecek J, Kirschning A, Glage S, Miller K, Martin U. Long term expansion of undifferentiated human iPS cells in suspension culture using a defined medium. *Stem Cell Research*, 2010; in press.

Mauritz C and Martin U. 2010. Embryonic Stem Cells: Differentiation into Respiratory Cell Derivatives. In *Stem cells: organogenesis and cancer*, 2010; in press. S.R. Singh, editor. Research Signpost

Hata A, Bär A., Dorfman SE, Vukadinovic Z, Sawa Y, Haverich A and Hilfiker A. Engineering a novel three-dimensional contractile myocardial patch with cell sheets and decellularised matrix. *Eur J Cardiothorac Surg.* 2010; in press.

Xaymardan M, Cimini M, Fazel S, Weisel RD, Lu WY, Martin U, Harvey RP, and Li RK. 2009. c-Kit Function Is Necessary for In Vitro Myogenic Differentiation of Bone Marrow Hematopoietic Cells. *Stem Cells* 27, no. 8:1911.

Haase A, Olmer R, Schwanke K, Wunderlich S, Merkert S, Hess C, Zweigerdt R, Gruh I, Meyer J, Wagner S, Maier LS, Han DW, Glage S, Miller K, Fischer P, Schöler HR, Martin U. Generation of induced pluripotent stem (iPS) cells from human cord blood. *Cell Stem Cell*. 2009; in press.

Winkler ME, Mauritz C, Groos S, Kispert A, Menke S, Hoffmann A, Gruh I, Schwanke K, Haverich A, Martin U. Serum-Free Differentiation of Murine Embryonic Stem Cells into Alveolar Type II Epithelial Cells. *Cloning Stem Cells*. 2008;10, 1-49.

Mauritz C, Schwanke K, Reppel M, Neef S, Katsirntaki K, Maier LS, Nguemo F, Menke S, Haustein M, Hescheler J, Hasenfuss G, Martin U. Generation of functional murine cardiac myocytes from induced pluripotent stem cells. *Circulation*. 2008;118, 5-507.

Gruh I, Wunderlich S, Winkler M, Schwanke K, Heinke J, Blomer U, Ruhparwar A, Rohde B, Li RK, Haverich A, Martin U. Human CMV immediate-early enhancer: a useful tool to enhance cell-type-specific expression from lentiviral vectors. *J Gene Med*. 2008; 10, 1-21.

Wunderlich S, Gruh I, Winkler ME, Beier J, Radtke K, Schmiedl A, Groos S, Haverich A, Martin U. Type II pneumocyte-restricted green fluorescent protein expression after lentiviral transduction of lung epithelial cells. *Hum Gene Ther*. 2008; 19, 1-39.

Gruh I, Martin U. Transdifferentiation of stem cells: A critical view *Adv Biochem Eng Biotechnol*, in press.

Cebotari S, Tudorache I, Jaekel T, Hilfiker A, Ternes W, Haverich A, Lichtenberg A. Detergent Decellularization of Heart Valves for Tissue Engineering: Toxicological Effects of Residual Detergents on Human Endothelial Cells. *Artificial Organs*, accepted.

Cebotari S, Tudorache I, Kostin S, Meyer T, Teebken O, Bara C, Hilfiker A, Haverich A. Viable Vascularized Autologous Patch for Transmural Myocardial Reconstruction. *EJCTS*, accepted.

Martin U. 2008. Methods for studying stem cells: Adult stem cells for lung repair. *Methods* 45, no. 2:121.

Ghodsizad A, Niehaus M, Kogler G, Martin U, Wernet P, Bara C, Khaladj N, Loos A., Makoui M, Thiele J, Mengel M, Karck M, Klein HM, Haverich A, Ruhparwar A. 2008. Transplanted human cord blood derived unrestricted somatic stem cells improve left-ventricular function and prevent left-ventricular dilation and scar formation after acute myocardial infarction. *Heart*.

Tudorache I, Cebotari S, Sturz G, Kirsch L, Hurschler C, Hilfiker A., Haverich A, Lichtenberg A. 2007. Tissue engineering of heart valves: biomechanical and morphological properties of decellularized heart valves. *J Heart Valve Dis* 16, no. 5:567.

Ruhparwar A, Er F, Martin U, Radke K, Gruh I, Niehaus M, Karck M, Haverich A, Hoppe UC. 2007. Enrichment of cardiac pacemaker-like cells: neuregulin-1 and cyclic AMP increase I(f)-current density and connexin 40 mRNA levels in fetal cardiomyocytes. *Med Biol Eng Comput* 45, no. 2:221.

Lichtenberg A, Cebotari S, Tudorache I, Hilfiker A, Haverich A. 2007. Biological scaffolds for heart valve tissue engineering. *Methods Mol Med* 140:309.

Hilfiker-Kleiner D, Kaminski K, Podewski E, Bonda T, Schaefer A, Sliwa K, Forster O, Quint A, Landmesser U, Doerries C, Luchtefeld M, Poli V, Schneider MD, Balligand JL, Desjardins F, Ansari A, Struman I, Nguyen NQ, Zschemisch NH, Klein G, Heusch G, Schulz R, Hilfiker A, Drexler H. 2007. A cathepsin D-cleaved 16 kDa form of prolactin mediates

postpartum cardiomyopathy. *Cell* 128, no. 3:589.

Bar A, Haverich A, Hilfiker A. 2007. Cardiac tissue engineering: "reconstructing the motor of life". *Scand J Surg* 96, no. 2:154.

Aper T, Schmidt A, Duchrow M, Bruch HP. 2007. Autologous blood vessels engineered from peripheral blood sample. *Eur J Vasc Endovasc Surg* 33, no. 1:33.

#### AG 19 - JRG Myocardial Tissue Engineering

Gruh, I., and U. Martin. 2009. Transdifferentiation of stem cells: a critical view. *Adv Biochem Eng Biotechnol* 114:73-106.

Haase, A., R. Olmer, K. Schwanke, S. Wunderlich, S. Merkert, C. Hess, R. Zweigerdt, I. Gruh, J. Meyer, S. Wagner, L.S. Maier, D.W. Han, S. Glage, K. Miller, P. Fischer, H.R. Scholer, and U. Martin. 2009. Generation of induced pluripotent stem cells from human cord blood. *Cell Stem Cell* 5:434-441.

Gruh I, Wunderlich S, Winkler M, Schwanke K, Heinke J, Blomer U, Ruhparwar A, Rohde B, Li RK, Haverich A, Martin U. Human CMV immediate-early enhancer: a useful tool to enhance cell-type-specific expression from lentiviral vectors. *J Gene Med.* (2008); 10, 21-32.

Wunderlich S, Gruh I, Winkler ME, Beier J, Radtke K, Schmiedl A, Groos S, Haverich A, Martin U. Type II pneumocyte-restricted green fluorescent protein expression after lentiviral transduction of lung epithelial cells. *Hum Gene Ther.* 2008; 19, 39-52.

Winkler ME, Mauritz C, Groos S, Kispert A, Menke S, Hoffmann A, Gruh I, Schwanke K, Haverich A, Martin U. Serum-free differentiation of murine embryonic stem cells into alveolar type II epithelial cells. *Cloning Stem Cells.* (2008); 10, 49-64.

Gruh I, Beilner J, Blomer U, Schmiedl A, Schmidt-Richter I, Kruse ML, Haverich A, Martin U. No evidence of transdifferentiation of human endothelial progenitor cells into cardiomyocytes after coculture with neonatal rat cardiomyocytes. *Circulation.* (2006); 113, 1326-34.

Gruh I, Schwanke K, Wunderlich S, Blomer U, Scherr M, Ganser A, Haverich A, Martin U. Shuttle system allowing simplified cloning of expression cassettes into advanced generation lentiviral vectors, *Biotechniques.* 2005; 38, 530, 532, 534.

Gruh I, Martin U. Transdifferentiation of Stem Cells: A Critical View, in *Engineering of Stem Cells*, edited by U. Martin, Springer-Verlag GmbH, 2009.

Ruhparwar A, Er F, Martin U, Radke K, Gruh I, Niehaus M, Karck M, Haverich A, Hoppe UC. Enrichment of cardiac pacemaker-like cells: neuregulin-1 and cyclic AMP increase I(f)-current density and connexin 40 mRNA levels in fetal cardiomyocytes. *Med Biol Eng Comput.* 2007; Feb;45(2):221-7.

#### AG 20 - W2 Bioartificial Lung

Fischer S, Simon AR, Welte T, Hoepfer MM, Meyer A, Tessmann R, Gohrbandt B, Gottlieb J, Haverich A, Strueber M. Bridge to lung transplantation using the novel pumpless Interventional lung assist device NovaLung®. *Journal of Thoracic and Cardiovascular Surgery* 2006; 131(3):719-23.

Fischer S, Bohn D, Rycus P, Pierre AF, dePerrot M, Waddell TK, Keshavjee S. Extracorporeal membrane oxygenation for primary graft dysfunction after lung transplantation: analysis of the Extracorporeal Life Support Organization (ELSO) registry. *Journal of Heart and Lung Transplantation*. 2007; May;26(5):472-7.

Fischer S, Hoepfer M, Tomaszek S, Simon A, Gottlieb J, Welte T, Haverich A, Strueber M. Bridge to lung transplantation with the extracorporeal membrane ventilator Novalung in the veno-venous mode: the initial Hannover experience. *ASAIO Journal*. 2007; Mar-Apr;53(2):168-70

Fischer S, Hoepfer M, Bein T, Simon A, Gottlieb J, Wisser W, Frey L, van Raemdonck D, Welte T, Haverich A, Strüber M. Interventional lung assist: a new concept of protective ventilation in bridge to lung transplantation. *ASAIO J*. 2008; Jan-Feb; 54:-3-10.

Meyer A, Strueber M, Fischer S. Advances in Extracorporeal Ventilation. *Anesthesiology Clin* 2008; Vol 26(2): 381&ndash;391

#### AG 21 - W2 Biomaterials

Bullerdiek J, Helmke BM. Comment on 'HMGA2, MicroRNAs, and Stem Cell Aging'. *Cell Online Comment*. 2009.

Fehr A, Meyer A, Heidorn K, Röser K, Löning T, Bullerdiek J. A link between the expression of the stem cell marker HMGA2, grading, and the fusion CRTC1-MAML2 in mucoepidermoid carcinoma. *Genes Chromosomes Cancer*. 2009; 48:777-85.

Klemke M, Meyer A, Hashemi Nezhad M, Bartnitzke S, Drieschner N, Frantzen C, Schmidt E-H, Belge G, Bullerdiek J. Overexpression of HMGA2 in uterine leiomyomas points to its general role for the pathogenesis of the disease. *Genes Chromosomes Cancer*. 2009 (online 2008); 48:171-8.

Belge G, Meyer A, Klemke M, Burchardt K, Stern C, Wosniok W, Loeschke S, Bullerdiek J. Upregulation of HMGA2 in thyroid carcinomas: A novel molecular marker to distinguish between benign and malignant follicular neoplasias. *Genes Chromosomes Cancer*. 2008; 7:56-63.

Von Ahsen I, Nimzyk R, Klemke M, Bullerdiek J. A microRNA encoded in a highly conserved part of the mammalian HMGA2 gene. *Cancer Genet Cytogenet*. 2008; 187:43-44.

Beuing C, Soller JT, Muth M, Waner S, Dolf G, Schelling C, Richter A, Willenbrock S, Reimann-Berg N, Winkler S, Nolte I, Bullerdiek J, Murua Escobar H. Genomic characterisation, chromosomal assignment and in vivo localisation of the canine high mobility group A1 (HMGA1) gene. *BMC Genet* 2008; 9:49.

Winter N, Neumann A, Bullerdiek J. Cell-free DNA in Amniotic Fluid Remains to be Attached to HMGA2 - Implications for Non-invasive Prenatal Diagnosis. *Prenatal Diagnosis* 2009; 28:1126-1130.

Richter A, Hauschild G, Escobar HM, Nolte I, Bullerdiek J. Application of High-Mobility-Group-A Proteins Increases the Proliferative Activity of Chondrocytes In Vitro. *Tissue Eng Part A* 2008; 14:1-5.

## AG 22 - JRG Basic Mechanisms of Tissue Formation

Knoth T, Warburg K, Katzka C, Rai A, Wolf A, Brockmeyer A, Janning P, Reubold TF, Eschenburg S, Manstein DJ, Hübel K, Kaiser M, Waldmann H. The Ras Pathway Modulator Melophlin A Targets Dynamins. *Angew Chem Int Ed Engl.* 2009; in press.

Martin R, Jäger A, Böhl M, Richter S, Fedorov R, Manstein DJ, Gutzeit HO, Knölker H-J. Silver-Catalyzed Total Synthesis of Pentabromopseudilin, Pentachloropseudilin and Synthetic Analogues &ndash; New Allosteric Inhibitors of Myosin ATPase Confirmed by an X-Ray Crystal Structure Determination of the Inhibitor&ndash;Protein Complex. *Angew Chem Int Ed Engl.* 2009; in press.

Stolboushkina E, Nikonov S, Nikulin A, Blasi U, Manstein DJ, Fedorov R, Garber M, Nikonov O. Crystal structure of the intact archaeal translation initiation factor 2 demonstrates very high conformational flexibility in the alpha- and beta-subunits. *J Mol Biol.* 2008; 382:680-91.

Taft MH, Hartmann FK, Rump A, Keller H, Chizhov I, Manstein DJ, Tsiavaliaris G. Dictyostelium Myosin-5b is a conditional processive motor. *J Biol Chem.* 2008; 283:26902-10.

Tsiavaliaris G, Fujita-Becker S, Dürrwang U, Diensthuber RP, Geeves MA, Manstein DJ. Mechanism, Regulation, and Functional Properties of Dictyostelium Myosin-1B. *J. Biol. Chem.* 2008; 283:4520-27.

Fedorov R, Böhl M, Tsiavaliaris G, Hartmann FK, Taft MH, Baruch P, Brenner B, Martin R, Knölker HJ, Gutzeit HO, Manstein DJ. The mechanism of pentabromopseudilin inhibition of myosin motor activity. *Nat. Struct. Mol. Biol.* 2009; 16:80-88.

## AG 23 - JRG Polymer Design

Berski S, van Bergeijk J, Schwarzer D, Stark Y, Kasper C, Scheper T, Grothe C, Gerardy-Schahn R, Kirschning A, Dräger G. Synthesis and Biological Evaluation of a Polysialic Acid-Based Hydrogel as Enzymatically Degradable Scaffold Material for Tissue Engineering. *Biomacromolecules.* 2008; 9: 2353-59.

Haile Y, Berski S, Dräger G, Nobre A, Stummeyer K, Gerardy-Schahn R, Grothe C. The effect of modified polysialic acid based hydrogels on the adhesion and viability of primary neurons and glial cells. *Biomaterials.* 2008; 29: 1880-91.

Hartlieb S, Günzel A, Gerardy-Schahn R, Münster-Kühnel AK, Kirschning A, Dräger G. Chemoenzymatic synthesis of CMP-N-acetyl-7-fluoro-7-deoxy-neuraminic acid. *Carbohydr. Res.* 2008; 343: 2075-82.

Haile Y, Berski S, Dräger G, Nobre A, Stummeyer K, Gerardy-Schahn R, Grothe C. The effect of modified polysialic acid based hydrogels on the adhesion and viability of primary neurons and glial cells. *Biomaterials.* 2008; 29: 1880-91.

Dräger G, Kiss C, Kunz U, Kirschning A. Enzyme-purification and catalytic transformations in a microstructured PASSflow reactor using a new tyrosine-based Ni-NTA linker system attached to a polyvinylpyrrolidone-based matrix. *Org. Biomol. Chem.* 2007; 5: 3657-64.

Bruns S, Stark Y, Röker S, Wieland M, Dräger G, Kirschning A, Stahl F, Kasper C, Scheper T. Collagen biomaterial doped with colominic acid for cell culture applications with regard to peripheral nerve repair. *Journal of Biotechnology;* 2007;

131: 335-345.

Namdjou DJ, Sauerzapfe B, Schmiedel J, Dräger G, Bernatchez S, Wakarchuk WW, Elling L. Combination of UDP-Glc(NAc) 4'-epimerase and galactose oxidase in a one-pot synthesis of biotinylated nucleotide sugars. *Advanced Synthesis and Catalysis*; 2007; 349: 314-318.

#### AG 24 - W3 Biomedical Process Technology

Wolkers WF, Walker NJ, Tablin F, Crowe JH. Human platelets loaded with trehalose survive freeze-drying. *Cryobiology*. 2001; 42, 79-87.

Wolkers WF, Crowe LM, Tsvetkova NM, Tablin F, Crowe JH. In situ assessment of erythrocyte membrane properties during cold storage. *Molecular Membrane Biology*. 2002; 19, 59-65.

Wolkers WF, Balasubramanian SK, Ongstad EL, Zec H, Bischof JC. Effects of freezing on membranes and proteins in LNCaP prostate tumor cells. *Biochimica et Biophysica Acta* 1768. 2007; 728-36.

Balasubramanian SK, Wolkers WF, Bischof JC. Membrane Hydration Correlates to Cellular Biophysics During Freezing in Mammalian Cells. *Biochimica et Biophysica Acta*: 2009. (in press).

Shah NB, Wolkers WF, Morrissey M, Sun WQ, Bischof JC: FT-IR-Investigation of Native Tissue Matrix Modifications Using a Gamma Irradiation Process. *Tissue Engineering Part A*: 2009. (in press).

#### AG 25 - JRG Biothermodynamics

Bernemann I, Manuchehrabadi N, Spindler R, Choi J, Wolkers W, Bischof J, Glasmacher B: Diffusion of dimethyl sulfoxide in tissue-engineered collagen scaffolds visualized by computer tomography. *CryoLetters* (submitted, 04/2010).

Spindler R, Glasmacher B: Kryomikroskopie: Eine Methode zur Visualisierung von Gefrierprozessen, *KI Kälte-Luft-Klimatechnik* 4: 28-31, 2009.

Spindler R, Wolkers W F, Glasmacher B: Effect of Me2SO on membrane phase behavior and protein denaturation of human pulmonary endothelial cells studied by in situ FTIR spectroscopy, *ASME, Journal of Biomechanical Engineering* 131(7):074517-19, 2009.

Bernemann I, Hofmann N, Szentivanyi A, Kuberka M, Glasmacher B: Optimierung von Kryokonservierungsprotokollen: Systematische Parameteranalyse. *KI Kälte-Luft-Klimatechnik* KI-01-02/2008: 24-27, 2008.

Hofmann N, Bernemann I, Glasmacher B. *Kryokonservierung von Gewebe*. DKV-Jahresbericht 34, Band 1-13, ISBN-3-932715-41-1, 2007.

Sun H, Hofmann N, Glasmacher B: Application of compatible solute within cryopreservation of human endothelial cells. *CryoLetters* 31(2), 2010

Bernemann I, Spindler R, Manuchehrabadi N, Choi J, Wolkers W, Bischof J, Glasmacher B: Dimethyl sulfoxide diffusion in tissue-engineered collagen scaffolds visualized by computer tomography. *CryoLetters* 31(2), 2010.

Wolkers W F, Diekmann U, Müller T, Spindler R, Glasmacher B: Cryomicroscopy and FTIR studies on gamma treated mouse embryonic fibroblast feeder cells during freezing, *CryoLetters* 31(2), 2010

Spindler R, Glasmacher B: Cryopreservation of human pulmonary endothelial cells: Determination of osmotic parameters, *CryoLetters* 31(2), 2010

Bernemann I, Sun H, Hofmann N, Glasmacher B. Increase of cell survival of native tissues and tissue engineered products by optimisation of the cryopreservation process. *CryoLetters* 30(1): 82, 2009.

Sun H, Hofmann N, Glasmacher B: Proline improves the cryopreservation of human endothelial cells for TE . *Int. J. Artif.Organs*: 32(7) 412, 2009,

Bernemann I, Deiwick A, Hofmann N, Grüne M, Koch L, Chichkov B, Glasmacher B: Laser-induced cell seeding of collagen scaffolds. *Int. J. Artif.Organs* 32(7): 416, 2009.

Hofmann N, Stoll C, Bernemann I, Glasmacher B.: Improvement of human pulmonary endothelial cells (HPMEC). *CryoLetters* 30(2): 156, 2009.

Sun H, Hofmann N, Glasmacher B: Biomolecules for improvement of cryopreservation of human endothelial cells. *Cryobiology* 59(3): 397, 2009.

Evertz F, Blume H, Glasmacher B:  $\mu$ -Cryopreservation. *Int. J. Artif.Organs* 32(7): 412, 2009

Bernemann I, Hofmann N, Glasmacher B. Optimisation of thawing parameters to improve cryopreservation of cells and tissue engineered products. *Int. J. Artif. Organs* 31(7): 637, 2008.

Bernemann I, Hofmann N, Spindler R, Szentivanyi A, Glasmacher B. Strategy to improve cryopreservation protocols. *CryoLetters* 29(1) Abstracts, 73-88, 2008.

Bernemann I, Hofmann N, Glasmacher B. Optimisation of the thawing process improves the cryopreservation of cell suspension and tissue engineered products. *Cryobiology* 57, 337, 2008.

Evertz F, Szentivanyi A, Bernemann I, Hofmann N, Glasmacher B. Development of a new controlled rate freezing device for systematic parameter optimization in cryopreservation. *Cryobiology* 57(3): 337, 2008.

Hofmann N, Sun H, Bernemann I, Glasmacher B. Influence of Temperature Profile and CPA Distribution on Cryopreservation of Native Tissue. *Cryobiology* 57, 330, 2008.

Hofmann N, Bernemann I, Glasmacher B. Cryopreservation of tissue and tissue engineered products. *Int. J. Artif. Organs*. 31(7): 583, 2008.

Spindler R, Hofmann N, Glasmacher B: Controlled ice nucleation during cryopreservation, *Cryobiology* 57(3): 337, 2008.

Stoll C, Bernemann I, Hofmann N, Glasmacher B. Systematic Optimisation of Parameters for Cryopreservation of Human Pulmonary Endothelial Cells (HPMEC): Difference in Cell Survival Rates Analyzed by Recultivation vs. Trypanblue Staining. *Cryobiology* 57: 337-338, 2008.

Bernemann I, Hofmann N, Szentivanyi A, Glasmacher B. A systematic parametric analysis to improve cryopreservation of cells in suspension. *Int. J. Artif.Organs.* 30(8): 712, 2007.

Bernemann I, Hofmann N, Szentivanyi A, Glasmacher B. Strategy to improve cryopreservation protocols: A systematic parametric analysis for suspended cells. *Cryobiology* 55, (3): 338, 2007.

#### AG 26 - RG Biofluid Mechanics

Besdo S, Thorey F, Windhagen H, Meyer-Lindenberg A. Ermittlung von Materialkennwerten für Kallus durch den Vergleich von in-vivo Experimenten mit Finite-Elemente Simulationen. *Biomaterialien* 9 (3/4). 2008; 92.

Wienecke S, Runtemund A, Haasper C, Jagodzinski M, Glasmacher B. Specific mechanical stimulation of 3-dimensional constructs depending on their material properties. *Biomaterials NRW 2008*, March 12 -14, Essen, 21.

Wadouh T, Besdo S, Klose Ch, Glasmacher B. Zerstörungsfreie Untersuchungen an explantierten Herzklappenprothesen. *Biomaterials NRW 2008*, March 12 -14, Essen, 87.

Besdo D, Besdo S, Behrens B-A, Bougoucha A. Problems with ultrasonic measurements of shear modules of structured media. *Acta Biomater* 3(5). 2007; 723-33.

Besdo S, Doniga-Crivat L, Brandes G, Besdo D, Lenarz T, Stieve M. Generating of a 3D-Model of the Middle-Ear on the Basis of Micro-CT and Histological Images. *Biomaterialien* 8 (3), 2007; 191.

Wienecke S, Besdo S, Rasche-Schürmann B, Hurschler C, Jagodzinski M, Glasmacher B: Stimulation of porous 3D bone-tissue constructs by cyclic strain, *BIOMaterialien* 9 (3/4), 2008, p. 168

Thorey F, Richter A, Besdo S, Hackenbroich Ch, Meyer-Lindenberg A, Hurschler Ch, Windhagen H: A new bending stiffness measurement device to monitor the influence of different intramedullar implants during healing period. *Technology and Health Care* 2 (16), 2008, pp. 129-140

#### AG 27 - W2 Biophotonics (see AG 5)

#### AG 28 - W3 Nanoengineering

Schlie S, Ngezahayo A, Ovsianikov A, Fabian T, Kolb H-A, Haferkamp H, Chichkov BN. Three-dimensional cell growth on structures fabricated from ORMOCER by two-photon polymerization technique. *J Biomater Appl.* 2007; 22, 275-87.

Ovsianikov A, Ostendorf A, Chichkov BN. Three-dimensional photofabrication with femtosecond lasers for applications in photonics and biomedicine., *Applied Surface Science.* 2007; 253, 6599-602.

Barcikowski S, Hahn A, Kabashin AV, Chichkov BN. Properties of nanoparticles generated during femtosecond laser machining in air and water. *Appl. Phys.* 2007; A 87, 47-55.

Ovsianikov A, Schlie S, Ngezahayo A, Haverich A, Chichkov BN. Two-photon polymerization technique for microfabrication of CAD designed three-dimensional scaffolds from commercially available photosensitive materials. *J Tissue Eng Regen Med.* 2007; 1, 443-9.

Dinca V, Kasotakis E, Catherine J, Mourka A, Ranella A, Ovsianikov A, Chichkov BN, Farsari M, Mittraki A, Fotakis C. Directed Three-Dimensional, Patterning of Self-Assembled Peptide Fibrils. *Nano Lett.* 2008; 8, 538-43.

Gittard SD, Ovsianikov A, Monteiro-Riviere NA, Lusk J, Morel P, Minghetti P, Lenardi C, Chichkov BN, Narayan RJ, Fabrication of polymer microneedles using a two-photon polymerization and micromolding process, *J. Diabetes. Sci. Technol.* 2009; 3, 305.

Heinroth F, Bremer I, Muenzer S, Behrens P, Reinhardt C, Passinger S, Ohrt C, Chichkov BN, Microstructured templates produced using femtosecond laser pulses for the deposition of mesoporous silicas, *Microporous and Mesoporous Materials.* 2009; 119, 104.

Kuznetsov AI, Koch J, Chichkov BN, Nanostructuring of thin gold films by femtosecond lasers, *Appl. Phys. A.* 2009; 94, 221.

Hartmann N, Franzka S, Koch J, Ostendorf A, Chichkov BN, Subwavelength patterning of alkylsiloxane monolayers via nonlinear processing with single femtosecond laser pulses, *Appl. Phys. Lett.* 2008; 92, 223111.

#### AG 30 - JRG Nanoparticles

S. Petersen, A. Barchanski, U. Taylor, S. Klein, D. Rath, S. Barcikowski: Penetratin-Conjugated Gold Nanoparticles &ndash; Design of Cell Penetrating Nanomarker by Femtosecond Laser Ablation, submitted (2010).

U.Taylor, S.Klein, S.Petersen, S.Barcikowski, D.Rath: Non-endosomal uptake of cellular uptake of ligand-free, positively charged gold nanoparticles, accepted for publication in *Cytometry* (2010).

S. Klein, S. Petersen, U. Taylor, D. Rath, S. Barcikowski: Quantitative visualisation of colloidal and intracellular gold nanoparticles by confocal microscopy, submitted for publication in *JBO* (2010).

S.Barcikowski, J.Walter, A.Hahn, J.Koch, H.Haloui, T.Herrmann, A.Gatti: Picosecond and femtosecond laser machining may cause health risks related to nanoparticle emission, *JLMN*, 4, 3, 159-164 (2009).

S.Barcikowski, F.Devesa, K.Moldenhauer: Impact and structure of literature on nanoparticle generation by laser ablation in liquids, *Journal of Nanoparticle Research*, 11, 8, 1883-1893 (2009).

N.Bärsch, J.Jakobi, S.Weiler, S.Barcikowski: Pure colloidal metal and ceramic nanoparticles from high-power picosecond laser ablation in water and acetone, *Nanotechnology*, 20, 445603 (9pp) (2009).

A. Menéndez-Manjón, J.Jakobi, K.Schwabe, J.K.Krauss, S.Barcikowski: Mobility of nanoparticles generated by femtosecond laser ablation in liquids and its application to surface coatings, *JLMN*, 4, 2, 95-99 (2009).

N.Bärsch, A.Gatti, R.Sattari, S.Barcikowski: Improving Laser Ablation of Zirconia by Liquid Films: Multiple Influences of Liquids on Surface Machining and Nanoparticle Generation, JLMN, 4, 1, 66-70 (2009).

Petersen S, Barcikowski S. In-situ Bioconjugation - Single Step Approach to Tailored Nanoparticle-Bioconjugates by Ultrashort Pulsed Laser Ablation. Adv. Funct. Mater, 19, 1167-72 (2009).

Hahn A, Barcikowski S. Production of Bioactive Nanomaterial using Laser Generated Nanoparticles. JLMN-Journal of Laser Micro/Nanoengineering, 4, 1, 51-4 (2009).

S.Petersen, J.Jakobi, A.Hörtinger, S.Barcikowski: In-Situ Conjugation - Tailored Nanoparticle-Conjugates by Laser Ablation in Liquids, JLMN, 4, 71-74 (2009).

Petersen S, Jakobi J, Barcikowski S. In-situ bioconjugation of nanoparticles &ndash; Novel laser based approach to pure nanoparticle-conjugates. Applied Surface Science, 255, 5435-8 (2009).

S.Petersen & S.Barcikowski: Nanoparticle bioconjugates by laser ablation - a novel method aiming at pure drug and gene delivery, 7th International Nanotechnology Symposium - New Ideas for Industry (2009).

Petersen & S.Barcikowski: Conjugation Efficiency of the Laser-based Bioconjugation of Gold Nanoparticles with Nucleic Acids, J. Phys. Chem. C, 113, 19830-19835 (2009).

S.Petersen, J.T.Soller, S.Wagener, A.Richter, J.Bullerdiek, I.Nolte, S.Barcikowski, H.M.Escobar: Co-transfection of Plasmid DNA and Laser-generated Gold Nanoparticles Does Not Disturb the Bioactivity of GFP-HMGB I Fusion Protein, J. Nanobiotech. 7, 6 (2009).

J.Walter, S.Petersen, U.Taylor, D.Rath, S.Barcikowski: Laser Ablation-Based Generation of Bio-Targeting Gold Nanoparticles Conjugated with Aptamers, submitted for publication in Analytical Chemistry (2009).

Hahn A, Barcikowski S, Chichkov BN. Influences on nanoparticle production during pulsed laser ablation. JLMN-Journal of Laser Micro/Nanoengineering, 3, 2, 73-7 (2008).

N.Bärsch, S.Barcikowski, K.Baier: Ultrafast-laser-processed zirconia and its adhesion to dental cement, JLMN, 3, 2, 78-83 (2008).

Barcikowski S, Hustedt M, Chichkov BN. Nanocomposite Manufacturing using Ultrashort-Pulsed laser Ablation in Solvents and Monomers. Polimery, 53, 9, 657-662 (2008).

R.Sattari, C.Dieling, S.Barcikowski, B.Chichkov: Laser-based fragmentation of microparticles for nanoparticle generation, JLMN, 3, 2, 100-105 (2008).

Barcikowski S, Jakobi J, Petersen S, Hahn A, Bärsch N, Chichkov BN. Adding functionality to metal nanoparticles during femtosecond laser ablation in liquids. Proceedings of 24nd International Conference on Applications of Lasers and Electro-Optics ICALEO, 10/29/2007 to 11/01/2007, Orlando, FL, USA. 108-113 (2007).

Barcikowski S, Hahn A, Kabashin AV, Chichkov BN. Properties of nanoparticles generated during femtosecond laser machining in air and water. Appl. Phys. A, 87, 47&ndash;55 (2007).

Barcikowski S, Menéndez-Manjón A, Chichkov BN, Brikas M, Ra iukaitis G. Generation of nanoparticle colloids by picosecond and femtosecond laser ablation in liquid flow. Appl. Phys. Lett, 91, 083113, 1-3 (2007).

A.Hahn, S.Barcikowski, A.Ostendorf: The nanoparticle risk during pulsed laser ablation, *The Laser User*, 47, 32-33 (2007).

Barcikowski S, Hahn A, Chichkov BN. Nanoparticles as Potential Risk during Femtosecond Laser Ablation, *J. Laser Appl.*, 19, 2, 65-73 (2007).

L.L.Sartinska, S.Barcikowski, N.Wardenga, B.M.Rud, I.I.Timofeeva: Laser induced modification of surface structures, *Applied Surface Science*, 253, 9, 4295-4299 (2007).

S.Barcikowski, A.Menéndez-Manjón, B.Chichkov, M.Brikas, G.Raciūkaitis: Generation of nanoparticle colloids by picosecond and femtosecond laser ablation in liquid flow, *Appl.Phys.Lett.*, 91, 083113, 1-3 (2007).

M.Brikas, S.Barcikowski, B.Chichkov, G.Raciūkaitis: Production of Nanoparticles with High Repetition Rate Picosecond Laser, *JLMN*, 2, 3, 230-233 (2007).

N.Bärsch, K.Werelius, S.Barcikowski, F.Liebana, U.Stute, A.Ostendorf: Femtosecond laser microstructuring of hot-isostatically pressed zirconia ceramic, *J.Laser Appl.*, 19, 2, 107-115 (2007).

S.Barcikowski, A.Hahn, B.Chichkov: Nanoparticles as Potential Risk during Femtosecond Laser Ablation, *J. Laser Appl.*, 19, 2, 65-73 (2007).

#### AG 31 - RG Nanosurfaces

Schlie S, Ngezahayo A, Ovsianikov A, Fabian T, Kolb HA, Haferkamp H, Chichkov BN. Three-dimensional cell growth on structures fabricated from ORMOCER® by two-photon polymerization technique. *J Biomater Appl.* 2007; 22, 275-87.

Ovsianikov A, Ostendorf A, Chichkov BN. Three-dimensional photofabrication with femtosecond lasers for applications in photonics and biomedicine. *Applied Surface Science.* 2007; 253: 15, 6599.

Ovsianikov A, Schlie S, Ngezahayo A, Haverich A, Chichkov BN. Two-photon polymerization technique for microfabrication of CAD designed three-dimensional scaffolds from commercially available photosensitive materials. *J Tissue Eng Regen Med.* 2007;1, 443-9.

Dinca V, Kasotakis E, Catherine J, Mourka A, Ranella A, Ovsianikov A, Chichkov BN, Farsari M, Mitraki A, Fotakis C. Directed Three-Dimensional Patterning of Self-Assembled Peptide Fibrils, *Nanoletters*, ASAP Article 10.1021/nl072798r, *Nano Lett.* 2008; 8, 2, 538-543.

Ovsianikov A, Chichkov BN. Three-dimensional Microfabrication by Two-photon Polymerization Technique, in: *Computer-Aided Tissue Engineering*, Liebschner, Michael; Sun, Wei (Eds.), Springer (in production).

Ovsianikov A, Viertl J, Oubaha M, MacCraith B, Sakellari I, Giakoumaki A, Gray D, Vamvakaki M, Farsari M, Fotakis C, Chichkov BN. Ultra-Low Shrinkage Hybrid Photosensitive Material for Two-Photon Polymerization Microfabrication, *ASC Nano*, 2, 2257-2262; 2008.

Claeysens F, Hasan EA, Gaidukeviciute A, Achilleos DS, Ranella A, Reinhardt C, Ovsianikov A, Shizhou X, Fotakis C, Vamvakaki M, Chichkov BN, Farsari M. Three-Dimensional Biodegradable Structures Fabricated by Two-Photon Polymerization, *Langmuir*, 25, 5, 3219-3223; 2009.

Ovsianikov A, Shizhou X, Farsari M, Vamvakaki M, Fotakis C, Chichkov BN. Shrinkage of microstructures produced by two-photon polymerization of Zr-based hybrid photosensitive materials, *Optics Express*, 17, 4, 2143-2148; 2009.

#### AG 32 - JRG Genetic & Epigenetic Integrity

Nowak-Imialek M, Kues WA, Rudolph C, Schlegelberger B, Taylor U, Carnwath JW, Niemann H. Preferential loss of porcine chromosomes in reprogrammed inter-species cell hybrids. *Cloning Stem Cells*. 2009; accepted.

Rudolph C, Schlegelberger B. Spectral karyotyping and fluorescence in situ hybridization of murine cells. *Methods Mol Biol*. 2009; 506:453-66.

Koenigsmann J, Rudolph C, Sander S, Kershaw O, Gruber AD, Bullinger L, Schlegelberger B, Carstanjen D. NF1 haploinsufficiency and ICSBP-deficiency synergize in the development of leukemias. *Blood*. 2009;113:4690-701.

Christgen M, Bruchhardt H, Hadamitzky C, Rudolph C, Steinemann D, Gadzicki D, Hasemeier B, Römermann D, Focken T, Krech T, Ballmaier M, Schlegelberger B, Kreipe H, Lehmann U. Comprehensive genetic and functional characterization of IPH-926: a novel CDH1-null tumour cell line from human lobular breast cancer. *J Pathol*. 2008; *J Pathol*;217:620-32.

Modlich U, Schambach A, Brugman MH, Wicke DC, Knoess S, Li Z, Maetzig T, Rudolph C, Schlegelberger B, Baum C. Leukemia induction after a single retroviral vector insertion in Evi1 or Prdm16. *Leukemia*. 2008; 22:1519-28.

Templin C, Kotlarz D, Rathinam C, Rudolph C, Schätzlein S, Ramireddy K, Rudolph KL, Schlegelberger B, Klein C, Drexler H (2008). Establishment of immortalized multipotent hematopoietic progenitor cell lines by retroviral-mediated gene transfer of beta-catenin. *Exp Hematol*. 36:204-215.

Schaetzlein S, Kodandaramireddy NR, Ju Z, Lechel A, Stepczynska A, Lilli DR, Clark AB, Rudolph C, Wei K, Schlegelberger B, Schirmacher P, Kunkel TA, Greenberg RA, Edelmann W, Rudolph KL (2007): Exonuclease-1 deletion impairs DNA damage signaling and prolongs lifespan of telomere-dysfunctional mice. *Cell*. 130:863-877.

Meyer J, Rhein M, Schiedlmeier B, Kustikova O, Rudolph C, Kamino K, Neumann T, Yang M, Wahlers A, Fehse B, Reuther GW, Schlegelberger B, Ganser A, Baum C, Li Z (2007): Remarkable leukemogenic potency and quality of a constitutively active neurotrophin receptor, DeltaTrkA. *Leukemia*. 21:2171-2180.

Reimann M, Loddenkemper C, Rudolph C, Schildhauer I, Teichmann B, Stein H, Schlegelberger B, Dörken B, Schmitt CA (2007): The Myc-evoked DNA damage response accounts for treatment resistance in primary lymphomas in vivo. *Blood*. 110:2996-3004.

Heuser M, Argiropoulos B, Kuchenbauer F, Yung E, Piper J, Fung S, Schlenk RF, Dohner K, Hinrichsen T, Rudolph C, Schambach A, Baum C, Schlegelberger B, Dohner H, Ganser A, Humphries RK (2007): MN1 overexpression induces acute myeloid leukemia in mice and predicts ATRA resistance in AML patients. *Blood*. 110:1639-1647.

Ripperger T, von Neuhoff N, Kamphues K, Emura M, Lehmann U, Tauscher M, Schraders M, Groenen M, Skawran B, Rudolph C, Callet-Bauchu E, van Krieken JHJM, Schlegelberger B, Steinemann D (2007): Promoter methylation of PARG1, a novel candidate tumor suppressor gene in mantle cell lymphomas. *Haematologica*. 92:460-468.

Will E, Bailey J, Schuesler T, Modlich M, Balcik B, Burzynski B, Witte D, Layh-Schmitt G, Rudolph C, Schlegelberger B, von Kalle C, Baum C, Sorrentino BP, Wagner LM, Kelly, Lilith Reeves P, Williams DA (2007): Importance of murine study design for testing toxicity of retroviral vectors in support of Phase I trials. *Mol Ther.*15:782-791.

#### AG 33 - SU Pathology of experimental animal models

Singh AK, Riederer B, Krabbenhöft A, Rausch B, Bonhagen J, Lehmann U, de Jonge HR, Donowitz M, Yun C, Weinman EJ, Kocher O, Hogema BM, Seidler U. Differential roles of NHERF1, NHERF2, and PDZK1 in regulating CFTR-mediated intestinal anion secretion in mice. *J Clin Invest.* 2009 Mar;119(3):540-50.

Haase A, Olmer R, Schwanke K, Wunderlich S, Merkert S, Hess C, Zweigerdt R, Gruh I, Meyer J, Wagner S, Maier LS, Han DW, Glage S, Miller K, Fischer P, Schöler HR, Martin U. Generation of induced pluripotent stem cells from human cord blood. *Cell Stem Cell.* 2009 Oct 2;5(4):434-41.

Fischer K, Wolenski M, Manns MP, Jaeckel E. A new animal model of chronic autoimmune hepatitis mediated by the adaptive immune system. Paper presented at: 2008 EASL Monothematic Conference: Immune Mediated Liver Injury; Hamburg, Dec. 4-6, 2008

Warnecke G, Hutchinson JA, Riquelme P, Kruse B, Thissen S, Avsar M, Zehle G, Steinkamp T, Peters C, Baumann R, Gövert F, Ungefroren H, Länger F, Simon AR, Karstens JH, Kaefer V, Haverich A, Fändrich F, Strüber M. Postoperative intravenous infusion of donor-derived transplant acceptance-inducing cells as an adjunct immunosuppressive therapy in a porcine pulmonary allograft model. *Transpl Int.* 2009 Mar;22(3):332-41. Epub 2008 Oct 21

Kruse B, Thissen S, Warnecke G, Avsar M, Gottlieb J, Hohlfeld JM, Karstens JH, Kaefer V, Länger F, Pabst B, Ungefroren H, Haverich A, Strüber M. Correlation of donor leukocyte chimerism with pulmonary allograft survival after immunosuppressive drug withdrawal in a porcine model. *Transplantation.* 2009 May 27;87(10):1468-77.

Wiegmann B, Zardo P, Dickgreber N, Länger F, Fegbeutel C, Haverich A, Fischer S. Biological materials in chest wall reconstruction: initial experience with the Peri-Guard Repair Patch((R)). *Eur J Cardiothorac Surg.* 2010 Mar;37(3):602-5.

Schmitt R, Jacobi C, Susnik N, Broecker V, Haller H, Melk A. Ageing mouse kidney--not always the SAME old story. *Nephrol Dial Transplant.* 2009 Oct;24(10):3002-5.

Huber TB, Hartleben B, Winkelmann K, Schneider L, Becker JU, Leitges M, Walz G, Haller H, Schiffer M. Loss of podocyte aPKC $\lambda$ /iota causes polarity defects and nephrotic syndrome. *J Am Soc Nephrol.* 2009 Apr;20(4):798-806. Epub 2009 Mar 11.

Ghosh A, Koestner W, Hapke M, Schlaphoff V, Langer F, Baumann R, Koenecke C, Cornberg M, Welte K, Blazar B, Sauer M. Donor T cells primed on leukemia lysate-pulsed recipient APCs mediate strong graft versus leukemia effects across MHC barriers in full chimeras. *Blood.* 2009 Apr 30;113(18):4440-8. Epub 2009 Jan 30.2009

Kocks JR, Adler H, Danzer H, Hoffmann K, Jonigk D, Lehmann U, Förster R. Chemokine receptor CCR7 contributes to a rapid and efficient clearance of lytic murine gamma-herpes virus 68 from the lung, whereas bronchus-associated lymphoid tissue harbors virus during latency. *J Immunol.* 2009 Jun 1;182(11):6861-9.

Nickel N, Kempf T, Tapken H, Tongers J, Laenger F, Lehmann U, Golpon H, Olsson K, Wilkins MR, Gibbs JS, Hoepfer MM, Wollert KC. Growth differentiation factor-15 in idiopathic pulmonary arterial hypertension. *Am J Respir Crit Care Med.* 2008 Sep 1;178(5):534-41. Epub 2008 Jun 19.

Ghosh A, Koestner W, Hapke M, Schlaphoff V, Langer F, Baumann R, Koenecke C, Cornberg M, Welte K, Blazar B, Sauer M. Donor T cells primed on leukemia lysate-pulsed recipient APCs mediate strong graft versus leukemia effects across MHC barriers in full chimeras. *Blood*. 2009 Apr 30;113(18):4440-8. Epub 2009 Jan 30.2009

Kocks JR, Adler H, Danzer H, Hoffmann K, Jonigk D, Lehmann U, Förster R. Chemokine receptor CCR7 contributes to a rapid and efficient clearance of lytic murine gamma-herpes virus 68 from the lung, whereas bronchus-associated lymphoid tissue harbors virus during latency. *J Immunol*. 2009 Jun 1;182(11):6861-9

Hesse E, Kluge G, Atfi A, Correa D, Haasper C, Berding G, Shin HO, Viering J, Länger F, Vogt PM, Krettek C, Jagodzinski M. Repair of a segmental long bone defect in human by implantation of a novel multiple disc graft. *Bone*. 2010 Feb 12. [Epub ahead of print]

Nickel N, Kempf T, Tapken H, Tongers J, Laenger F, Lehmann U, Golpon H, Olsson K, Wilkins MR, Gibbs JS, Hoepfer MM, Wollert KC. Growth differentiation factor-15 in idiopathic pulmonary arterial hypertension. *Am J Respir Crit Care Med*. 2008 Sep 1;178(5):534-41. Epub 2008 Jun 19.

Winter C, Taut K, Srivastava M, Länger F, Mack M, Briles DE, Paton JC, Maus R, Welte T, Gunn MD, Maus UA Lung-specific overexpression of CCL2 enhances the host defense to *Streptococcus pneumoniae* infection in mice: role of the CCL2-CCR2 axis. *J Immunol*, 2007 178: 5828-5838

Winter C, Taut K, Länger F, Mack M, Briles DE, Paton JC, Maus R, Srivastava M, Welte T, Maus UA FMS-like tyrosine kinase 3 ligand aggravates the lung inflammatory response to *Streptococcus pneumoniae* infection in mice: role of dendritic cells. *J Immunol*. 2007 179:3099-108

Mrigank Srivastava, Kathrin Steinwede, Riku Kiviranta, Jukka Morko, Heinz G Hoymann, Florian Laenger, Frank Buehling, Tobias Welte, Ulrich A Maus. Overexpression of cathepsin K in mice decreases collagen deposition and lung resistance in response to bleomycin-induced pulmonary fibrosis. *Respiratory Research* 2008, 9:54

Schreiber O, Steinwede K, Ding N, Srivastava M, Maus R, Länger F, Prokein J, Ehlers S, Welte T, Gunn MD, Maus UA. Mice that overexpress CC chemokine ligand 2 in their lungs show increased protective immunity to infection with *Mycobacterium bovis* bacille Calmette-Guérin. *J Infect Dis* 2008 198(7):1044-1054

Winter C, Herbold W, Maus R, Länger F, Briles DE, Paton JC, Welte T, Maus UA. Important role for CC chemokine ligand 2-dependent lung mononuclear phagocyte recruitment to inhibit sepsis in mice infected with *Streptococcus pneumoniae*. *J Immunol*. 2009 Apr 15;182(8):4931-7.

Nolff MC, Kokemueller H, Hauschild G, Fehr M, Bormann KH, Spalthoff S, Rohn K, Ruecker M, Gellrich NC. *J Craniomaxillofac Surg*. 2010 Jan;38(1):38-46. Epub 2009 Aug 22. Comparison of computed tomography and microradiography for graft evaluation after reconstruction of critical size bone defects using beta-tricalcium phosphate.

Kokemueller H, Spalthoff S, Nolff M, Tavassol F, Essig H, Stuehmer C, Bormann KH, Rucker M, Gellrich NC. Prefabrication of vascularized bioartificial bone grafts in vivo for segmental mandibular reconstruction: experimental pilot study in sheep and first clinical application. *Int J Oral Maxillofac Surg*. 2010 Feb 16. [Epub ahead of print]

Zhao F, Vermeer B, Lehmann U, Kreipe H, Manns MP, Korangy F, Gretten TF. Identification of a novel murine pancreatic tumour antigen, which elicits antibody responses in patients with pancreatic carcinoma. *Immunology*. 2009 Sep;128(1):134-40

Wicke DC, Heckl D, Wintterle S, Buesche G, Meyer J, Kreipe H, Welte KH, Ballmaier M, Baum C, Modlich U. Ectopic expression of the extracellular domain of Mpl is sufficient to induce a hematopoietic population crisis. Submitted

Heckl D, Wicke DC, Schambach A, Büsche G, Meyer J, Kreipe H, Ballmaier M, Baum C, Modlich U. Correction of Mpl deficiency by lentiviral vectors with lineage-specific expression. Submitted

Heckl D, Wicke DC, Meyer J, Büsche G, Meyer J, Kreipe H, Baum C, Modlich U. Jak/Stat signal transduction and Ras activation are both essential for Mpl induced leukemogenicity. Submitted

Lenarz M, Lim HH, Lenarz T, Reich U, Marquardt N, Klingberg MN, Paasche G, Reuter G, Stan AC. Auditory midbrain implant: histomorphologic effects of long-term implantation and electric stimulation of a new deep brain stimulation array. *Eur Arch Otorhinolaryngol*. 2007 May;264(5):569-71

Wicke DC, Meyer J, Buesche G, Kreipe H, Li Z, Welte KH, Ballmaier M, Baum C, Modlich U. Gene therapy of mpl deficiency: challenging balance between leukemia and pancytopenia; submitted.

Scherr M, Dogan Y, Beutel G, Battmer K, Venturini L, Rudolph C, Büsche G, Schäfer D, Wilkens L, Schlegelberger B, Kreipe HH, Ganser A, Eder M: Stepwise ex vivo transformation of primary bone marrow progenitor cells to malignant phenotypes; submitted.

Haile LA, von Wasielewski R, Gamrekelashvili J, Krüger C, Bachmann O, Westendorf AM, Buer J, Liblau R, Manns MP, Korangy F, Greten TF. Myeloid-derived suppressor cells in inflammatory bowel disease: a new immunoregulatory pathway. *Gastroenterology*. 2008 Sep;135(3):871-81.

Schubert S, Kamino K, Böhm D, Adham I, Engel W, von Wasielewski R, Moharreggh-Khiabani D, Mauceri G, Vaske B, Meinhardt A, Schöner A, Gonzalez-Fassrainer D, Schmidtke J. SPY expression is variably altered in transgenic mice with testicular feminization. *Biol Reprod*. 2008 Jul;79(1):125-33.

Lamlé J, Marhenke S, Borlak J, von Wasielewski R, Eriksson CJ, Geffers R, Manns MP, Yamamoto M, Vogel A. Nuclear factor-eythroid 2-related factor 2 prevents alcohol-induced fulminant liver injury. *Gastroenterology*. 2008 Apr;134(4):1159-68.

Metzelder M, Kuebler J, Shimotakahara A, Vieten G, von Wasielewski R, Ure BM. CO(2) pneumoperitoneum increases systemic but not local tumor spread after intraperitoneal murine neuroblastoma spillage in mice. *Surg Endosc*. 2008 Feb 13.

Ma B, Wang L, von Wasielewski R, Lindenmaier W, Dittmar KE. Serial sectioning and three-dimensional reconstruction of mouse Peyer's patch. *Micron*. 2008 Oct;39(7):967-75.

Bleich A, Sundberg JP, Smoczek A, von Wasielewski R, de Buhr MF, Janus LM, Julga G, Ukena SN, Hedrich HJ, Gunzer F. Sensitivity to *Escherichia coli* Nissle 1917 in mice is dependent on environment and genetic background. *Int J Exp Pathol*. 2008 Feb;89(1):45-54.

Ma B, von Wasielewski R, Lindenmaier W, Dittmar KE. Immunohistochemical study of the blood and lymphatic vasculature and the innervation of mouse gut and gut-associated lymphoid tissue. *Anat Histol Embryol*. 2007 Feb;36(1):62-74.

Gamrekelashvili J, Krüger C, von Wasielewski R, Hoffmann M, Huster KM, Busch DH, Manns MP, Korangy F, Greten TF. Necrotic tumor cell death in vivo impairs tumor-specific immune responses. *J Immunol*. 2007 Feb 1;178(3):1573-80.

Christgen M, Ballmaier M, Bruchhardt H, von Wasielewski R, Kreipe H, Lehmann U. Identification of a distinct side population of cancer cells in the Cal-51 human breast carcinoma cell line. *Mol Cell Biochem*. 2007 Dec;306(1-2):201-12.

Büsche G, Hussein K, Bock O, Kreipe H. Insights into JAK2-V617F mutation in CML. *Lancet Oncol.* 2007 Oct;8(10):863-4.

#### AG 34 - SU Molecular Toxicology

Rohrbeck, A. and Borlak, J. (2009) Cancer genomics identifies regulatory gene networks associated with the transition from dysplasia to advanced lung adenocarcinomas induced by c-Raf-1. *PLoS One.* 4:e7315.

Rohrbeck, A. Mueller V. and Borlak, J (2009) Molecular characterization of lung dysplasia induced by c-raf-. *PLoS ONE.* 4(5):e5637.

Falck, C. v., Rodt, T., Halter, R., Spanel, R., Galanski, M and Borlak, J (2009) Combined microPET/CT for imaging of hepatocellular carcinoma in mice. *Frontiers in Bioscience.* 14:2193-2202.

Rodt, T., Falck, C. v., Halter, R., Ringe, K., Shin, H.O., Galanski, M. and Borlak, J. (2009) In-vivo microCT quantification of lung tumor growth in SPC-raf transgenic mice. *Frontiers in Bioscience.* 14:1939-1944.

Rodt T, von Falck C, Halter R, Diensthuber M, Galanski M, Borlak J. (2009) Mikro-CT und 3D-Nachverarbeitung des Tracheobronchialsystems der Maus. 39. Kongress der Deutschen Gesellschaft für Endoskopie und Bildgebende Verfahren, München, Germany. *Endoskopie heute* 2009, 22: 65. (Lecture)

Rodt T, von Falck C, Halter R, Tillkorn C, Lotz J, Galanski M, Borlak J. (2009) Small animal imaging of lung cancer; comparison of different imaging modalities exemplified by SPC-myc and SPC-raf transgenic mouse models. *European Congress of Radiology, Wien, Austria. European Radiology* 2009, 19: Suppl. 1: S389

Falk, C. v., Rodt, T., Halter, R., Shin, H., Galanski, M. and Borlak, J. (2008) Die in-vivo microCT-Cholangiographie zur Evaluation des biliären Systems im murinen Tiermodell. 89. Deutscher Röntgenkongress. 5. Gemeinsamer Kongress der DRG und ÖRG, Berlin, Germany. *RöFo - Fortschritte auf dem Gebiet der Röntgenstrahlen und der bildgebenden Verfahren* 180, S1

Falk, C. v., Halter, R., Galanski, M. and Borlak, J. (2007) Morphologische und metabolische Phänotypisierung von transgenen Mausmodellen der Hepatokarzinogenese, 45. Jahrestagung der Deutschen Gesellschaft für Nuklearmedizin. *Nuklearmedizin - Molecular Imaging and Therapy*, 46: 49-64 (Abstract V184)

#### AG 35 - SU Molecular Imaging and Marking

Broll S, Oumard A, Hahn K, Schambach A & Bode J (2010) Minicircle Performance Depending on S/MAR-Nuclear Matrix Interactions. *J. Mol.Biol.* 395 (5), 950-965 <http://dx.doi.org/10.1016/j.jmb.2009.11.066>

Voelkel, C., Galla, M., Maetzig, T., Warlich, E., Kuehle, J., Zychlinski, D., Bode, J., Schambach, A., Baum, C. (2009) Retroviral polyprotein-mediated transduction of Flp recombinase. [www.pnas.org/cgi/doi/10.1073/pnas.0914517107](http://www.pnas.org/cgi/doi/10.1073/pnas.0914517107)

Iqbal K, Barg-Kues B, Broll S., Bode. J., Niemann H, Kues WA (2009) Cytoplasmic injection of circular plasmids allows targeted expression in mammalian embryos. *BioTechniques* 47, 959-968 <http://dx.doi.org/10.2144/000113270>

Qiao, J., Oumard, A., Wegloehner, W., Bode, J. (2009) Novel Tag-and-Exchange (RMCE) Strategies Generate Master

Cell Clones with Predictable and Stable Transgene Expression Properties. *J. Mol. Biol.* 390, 579–594.  
doi:10.1016/j.jmb.2009.05.012

Nagel CH, Döhner K, Fathollahy M, Strive T, Borst E, Messerle M, Sodeik B. Nuclear egress and envelopment of herpes simplex virus capsids analyzed with dual-color fluorescence HSV1(17+). *Journal of Virology.* 2008; 82:3109-24.

Maurer U, Sodeik B, Grünewald K. Native 3D intermediates of membrane fusion in herpes simplex virus 1 entry. *Proceedings of the National Academy of Sciences USA.* 2008; 105:10559-64. (Editors' choice: *Science* 2008:321, page 892; Faculty of 1000 Biology <http://www.f1000biology.com/article/id/1119072/evaluation>).

Roos WH (joint first author), Radtke K (joint first author), Kniesmeijer E, Geertsema H, Sodeik B (corresponding author), Wuite G (corresponding author). Scaffold expulsion and genome packaging trigger stabilization of Herpes Simplex Virus capsids. *Proceedings of the National Academy of Sciences USA.* 2009; 106:9673-8.

Vidakovic M, Gluch A, Poznanovic G, Bode J. PARP-1 protein autoregulates its expression by binding to a recognition sequence and to an upstream S/MAR element in its own promoter. *J. Mol. Biol.* 2009; 388:730-50.

Qiao J, Oumard A, Wegloehner W, Bode J. Novel Tag-and-Exchange (RMCE) Strategies Generate Master Cell Clones with Predictable and Stable Transgene Expression Properties. *J. Mol. Biol.* 2009; 390:579-94.

Iqbal K, Barg-Kues B, Broll S, Bode J, Niemann H, Kues WA. Reprogramming events in early embryos are reflected by circular plasmid encoded marker genes. *BioTechniques.* 2009; in press.

Radtke K, Kieneke D, Wolfstein A, Michael K, Steffen W, Scholz T, Karger A, Sodeik B. Minus- and plus-end directed microtubule motors use different inner tegument components to bind simultaneously to Herpes Simplex Virus capsids. Submitted.

Zeitz MJ, Marella NRV, Malyavantham KS, Goetze S, Bode J, Raska I, Berezney R. (2009) Organization of the Amplified Type I Interferon Gene Cluster and Associated Chromosome Regions in the Interphase Nucleus of Human Osteosarcoma Cells., *Chromosome Res.* <http://dx.doi.org/10.1007/s10577-009-9023-4117>.

Vidakovic M, Gluch A, Poznanovic G, Bode J. (2009) PARP-1 protein autoregulates its expression by binding to a recognition sequence and to an upstream S/MAR element in its own promoter, in press.  
<http://dx.doi.org/10.1016/j.jmb.2009.03.032>.

Jung C, Ruthardt N, Lewis R, Michaelis J, Sodeik B, Nolde F, Peneva K, Müllen K, Bräuchle C. Photophysics of new water-soluble terrylenediimide derivatives and applications in biology. *ChemPhysChem*, 2009, 10:180-190.

Jirmo A, Nagel CH, Bohnen C, Sodeik B, Behrens GMN. Contribution of direct and cross-presentation to CTL immunity against herpes simplex virus 1. *Journal of Immunology*, 2009, 182:283-292.

Marella NRV, Zeitz MJ, Malyavantham KS, Pliss A, Matsui S, Goetze S, Bode J, Raska I & Berezney R. Organization of the Type I IFN Gene Cluster in the Human Osteosarcoma Cell Line MG63. *Chromosoma, Chromosome Res.* 2008, 16:1177–1192.

Borst E, Wagner K, Binz A, Sodeik B, Messerle M. The essential human cytomegalovirus gene UL25 is required for cleavage-packaging of the viral genome. *Journal of Virology* 2008, 82:2065-78.

Sodeik B. The cell entry of herpes simplex virus. *Zellbiologie aktuell* 2007, 33:10-13.

## AG 36 - SU MRT (Magnetic Resonance Tomography/Imaging)

Meier M, Artifacts or Art in Fact: Useful susceptibility effects in MRI" in Biomagnetism: Interdisciplinary Research and Exploration, Suppl. 2008; ISBN 978-4-8329-0355-5.

Dreher W, Meier M, Erhard P, Leibfritz D. On the use of spin echo and stimulated echo based functional MRI sequences. Herrmann, M. & Thiel, C. (Eds.)(2007). Topics in Advanced Imaging. Oldenburg: bis-Publishers, 51-4.

## AG 37 - JRG Large Scale Cultivation

Preparation of bioactive soluble human leukemia inhibitory factor from recombinant Escherichia coli using thioredoxin as fusion partner. Tomala M, Lavrentieva A, Moretti P, Rinas U, Kasper C, Stahl F, Schambach A, Wahrlich E, Martin U, Cantz T, Scheper T. Protein Expr Purif. 2010 Apr 8. [Epub ahead of print]

Adsorption and separation of proteins by a smectitic clay mineral. Ralla K, Sohling U, Riechers D, Kasper C, Ruf F, Scheper T. Bioprocess Biosyst Eng. 2010 Mar 26. [Epub ahead of print]

A rotating bed system bioreactor enables cultivation of primary osteoblasts on well-characterized sponceram(R) regarding structural and flow properties. Suck K, Roeker S, Diederichs S, Anton F, Sanz-Herrera JA, Ochoa I, Doblare M, Scheper T, van Griensven M, Kasper C. Biotechnol Prog. 2010 Jan 29. [Epub ahead of print]

Isolation, Characterization, Differentiation, and Application of Adipose-Derived Stem Cells. Kuhbier JW, Weyand B, Radtke C, Vogt PM, Kasper C, Reimers K. Adv Biochem Eng Biotechnol. 2010 Jan 21. [Epub ahead of print]

Mesenchymal Stromal Cells Derived from Human Umbilical Cord Tissues: Primitive Cells with Potential for Clinical and Tissue Engineering Applications. Moretti P, Hatlapatka T, Marten D, Lavrentieva A, Majore I, Hass R, Kasper C. Adv Biochem Eng Biotechnol. 2009 Dec 12. [Epub ahead of print]

Mechanical Strain Using 2D and 3D Bioreactors Induces Osteogenesis: Implications for Bone Tissue Engineering M. van Griensven , S. Diederichs , S. Roeker , S. Boehm , A. Peterbauer, S. Wolbank , D. Riechers , F. Stahl , and C. Kasper Adv Biochem Engin/Biotechnol (2009) 112: 95&ndash;123

Dynamic Cultivation of Human Mesenchymal Stem Cells in a Rotating Bed Bioreactor System Based on the ZRP Platform Solvig Diederichs, Stefanie Roeker, Dana Marten, Anja Peterbauer, Thomas Scheper, Martijn van Griensven, Cornelia Kasper Biotechnol. Prog., 2009, Vol. 25, No. 6

Majore I, Moretti P, Hass R, Kasper C. Identification of subpopulations in mesenchymal stem cell-like cultures from human umbilical cord. Cell Commun Signal. 2009;7:6.

Ralla K, Anton F, Scheper T, Kasper C. Application of conjoint liquid chromatography with monolithic disks for the simultaneous determination of immunoglobulin G and other proteins present in a cell culture medium. Journal of Chromatography A. 2009;1216(13):2671-75.

Rober M, Walter J, Vlakh E, Stahl F, Kasper C, Tennikova T. New 3 D microarray platform based on macroporous polymer monoliths. Analytica Chimica Acta. 2009;644, 95.

Roeker S, Diederichs S, Peterbauer A, Scheper T, van Griensven M, Kasper C. Dynamic cultivation of human mesenchymal stem cells in a rotating bed bioreactor system based on the ZRP platform. *Biotechnology Progress* (accepted for publication).

Roeker S, Boehm S, Diederichs S, Bode F, Quade A, Korzhikov V, van Griensven M, Tennikova TB, Kasper C. A study on the influence of biocompatible composites with bioactive ligands toward their effect on cell adhesion and growth for the application in bone tissue engineering. *J Biomed Mater Res B Appl Biomater.* 2009; 91B(1-2), 153.

Suck K, Behr L, Fischer M, Hofmeister H, van Griensven M, Stahl F, Scheper T, Kasper C. Cultivating preosteoblastic MC3T3-E1 cells on a newly developed material (Sponceram®) using a rotating bed system (RBS) bioreactor; *J. Biomed. Mat.. Res.* 80A, 2, 2006, 268.

Bruns S, Stark Y, Wieland M, Stahl F, Kasper C, Scheper T. Fast and efficient screening systems for new biomaterials in tissue engineering: a model for peripheral nerve regeneration; *J. Biomed. Mat.. Res. A*, 3, 2007, 736.

Stark Y, Bruns S, Stahl F, Kasper C, Grothe C, Wesemann M, Scheper T. Polysialic acid as material for cell cultivation; *J. Biomed. Mat. Res. A* 85A, 2008, 1.

Korzhikov V, Roeker S, Vlakh E, Kasper C, Tennikova T. Synthesis of multifunctional polyvinylsaccharide containing controllable amounts of biospecific ligands; *Bioconjugate Chem.* 19 (3), 2008, 617.

Rode B, Endres C, Ran C, Stahl F, Beutel S, Kasper C, Galuska S, Geyer R, Mühlenhoff M, Gerardy-Schahn R, Scheper T. Large-scale production and homogenous purification of long chain polysialic acids from *E. coli* K1; *J. Biotechnol.* 135 (2), 2008, 202.

#### AG 38 - SU Biocompatibility

Heublein B, Evagorou EG, Rohde R, Ohse S, Meliss RR, Barlach S, Haverich A. *Int J Artif Organs.* 2002; 25(12):1166-73.

Heublein B, Rohde R, Kaese V, Niemeyer M, Hartung W, Haverich A. *Heart.* 2003; 89(6):651-6.

Waksman R, Pakala R, Kuchulakanti PK, Baffour R, Hellinga D, Seabron R, Tio FO, Wittchow E, Hartwig S, Harder C, Rohde R, Heublein B, Andrae A, Waldmann KH, Haverich A. *Catheter Cardiovasc Interv.* 2006; 68(4):607-17; discussion 618-9.

Loos A., Rohde R, Haverich A, Barlach S. In Vitro and In Vivo Biocompatibility Testing of Absorbable Metal Stents. *Macromolecular Symposia*, 2007; 253 (1) 103-8.

Ghodsizad A, Niehaus M, Kögler G, Martin U, Wernet P, Bara C, Khaladj N, Loos A, Makoui M, Thiele J, Mengel M, Karck M, Klein HM, Haverich A, Ruhparwar A. Transplanted human cord blood-derived unrestricted somatic stem cells improve left-ventricular function and prevent left-ventricular dilation and scar formation after acute myocardial infarction. *Heart.* 2009 Jan;95(1):27-35.

#### AG 39 - SU GXP

Scherr M, Venturini L, Battmer K, Schaller-Schoenitz M, Schaefer D, Dallmann I, Ganser A, Eder M. Lentivirus-mediated antagomir expression for specific inhibition of miRNA function. *Nucleic Acids Res.* 2007;35(22):e149. Epub 2007 Nov 19.

Scherr M, Venturini L, Eder M. Knock-down of gene expression in hematopoietic cells. *Methods Mol Biol.* 2009;506:207-19.

May T, Hauser H, Wirth D. In vitro expansion of tissue cells by conditional proliferation. *Methods in Molecular Biology.* 2007;140:1-15.

Spanholtz T, Maichle A, Niedworok C, Stoeckelhuber BM, Kruger S, Wedel T, Aach T, Middeler G, Hellwig-Burgel T, Bader A, Krengel S, Muller OJ, Franz WM, Lindenmaier W, Machens HG. Timing and Targeting of Cell-based VEGF(165) Gene Expression in Ischemic Tissue. *J.Surg.Res.*, 2008.,epub.

Ma B, von Wasielewski R, Lindenmaier W, Dittmar K.E.J. Immunohistochemical study of the blood and lymphatic vasculature and the innervation of mouse gut and gut-associated lymphoid tissue. *Anat.Histol.Embryol.* 2007; 36: 62-74.1.

Ma B, Wang L, von Wasielewski R, Lindenmaier W, Dittmar KEJ. Serial sectioning and three-dimensional reconstruction of mouse Peyer's patch. *Micron.* 39 (7):967-975, 2008.

Klopper J, Lindenmaier W, Fiedler U, Mehlhorn A, Stark GB, Finkenzeller G. High efficient adenoviral-mediated VEGF and Ang-1 gene delivery into osteogenically differentiated human mesenchymal stem cells. *Microvasc.Res.* 2008; 75: 83-90.

Ma B, He F, Jablonska J, Winkelbach S, Lindenmaier W, Zeng AP, Dittmar K.E.J. Six-color segmentation of multicolor images in the infection studies of *Listeria monocytogenes*. *Microscopy Research and Technique* 2007; 70: 171-178.

Ma B, Jablonska J, Lindenmaier W, Dittmar K.E. Immunohistochemical study of the reticular and vascular network of mouse lymph node using vibratome sections. *Acta Histochem.* 2007; 109: 15-28.

Ma B, Zimmermann T, Rohde M, Winkelbach S, He F, Lindenmaier W, Dittmar KE. Use of Autostitch for automatic stitching of microscope images. *Micron.* 2007; 38: 492-499.

Ma B, Lin Z, Winkelbach S, Lindenmaier W, Dittmar KE. Automatic registration of serial sections of mouse lymph node by using Image-Reg. *Micron.* 39 (4):387-396, 2008.

May T, Eccleston L, Herrmann S, Hauser H, Goncalves J, Wirth D. (2008) Bimodal and hysteretic expression in mammalian cells from a synthetic gene circuit. ) *PlosOne* 3(6):e2372.

Wirth D, Gamma Norton L, Riemer P, Sandhu U, Schucht R, and Hauser H. (2007) Road to precision: recombinase based targeting technologies for genome engineering. *Curr. Opin. Biotech.* 18, 411-419.

Gama-Norton L, Riemer P, Sandhu U, Nehlsen K, Schucht R, Hauser H, Wirth D. Defeating Randomness & Targeted Integration as a Boost for Biotechnology. *Cell line development and engineering in Cell Engineering*, 6 ; in press.

Probst-Kepper M, Geffers R, Kroeger A, Viegas N, Erck C, Hecht HJ, Lünsdorf H, Roubin R, Moharregg-Khiabani D, Wagner K, Ocklenburg F, Jeron F, Garritsen H, Arstila P, Kekäläinen E, Balling R, Hauser H, Buer J, Weiss S. GARP, LGMN, LGALS3 establish a regulatory circuit safeguarding FOXP3 in human regulatory T cells, *Journal of Cellular and Molecular Medicine*, (2009) in press.

AG 40

Voelkel C, Lührmann A, Baum C, von der Leyen HE. Retrovirus mediated hematopoietic gene therapy: A European regulatory perspective with special focus on the situation in Germany. CTT Vol. 1 No. 4: 14 May 2009, <http://www.ctt-journal.com/1-4-en-voelkel-et-al-2009may14.html>.

von der Leyen HE, Voelkel C. Zentrale Schnittstelle für das Management innovativer klinischer Forschung. BIoSpektrum 7/2007.