

CURRICULUM VITAE

IVAN MARTIN

Personal Data: Born in Santa Margherita Ligure (GE), Italy, on January 13th, 1969

Education: University of Basel, School of Medicine, Switzerland
“Venia docendi” in Biomedical Engineering, 2004
University of Genova, School of Engineering, Italy.
Ph.D. in Biomedical Engineering, 1996
University of Genova, School of Engineering, Italy.
Masters Degree in Electrical Engineering, 1992

Positions and Employment:

2021 – present Department of Biomedicine, University of Basel, Switzerland.
Director of the Department of Biomedicine

2007 - present Faculty of Medicine, University of Basel, Switzerland
Professor for Tissue Engineering

1999 - present Department of Biomedicine, University Hospital of Basel, Switzerland.
Research Group Leader, Tissue Engineering

1996 - 1999 Harvard/MIT Division of Health Sciences and Technology, Cambridge, MA.
Post-doctoral associate in the groups directed by R. Langer, L. Freed and G. Vunjak-Novakovic.

1993 - 1996 Advanced Biotechnology Center, University of Genova, Italy.
PhD fellow in Biomedical Engineering in the groups directed by R. Cancedda and F. Beltrame.

1992 - 1993 Department of Informatic, Systemistic and Telematic, University of Genova, Italy.
Research contract for modelling and computer simulation of ultrasound arrays (Esaote Biomedica)

Other Activities and Professional Memberships

2020 – present Chair of the Mesenchymal Stromal Cell Committee of the *International Society for Cell & Gene Therapy*

2018 – present Member of the Musculoskeletal Therapy Committee *International Society for Cell & Gene Therapy*
Elected member of the Swiss Academy of Medical Sciences (SAMW)

2016 – present Member of the *Novartis* Musculoskeletal Disease R&D Review / Scientific Advisory Board

2015 – present Member of the Executive Board of the Department of Biomedicine, University Hospital Basel

2013 – present Member of the Editorial Board, *International Journal of Artificial Organs*; Member of the Editorial Board, *Journal of Experimental Orthopaedics*; Elected as Founding Fellow of the Tissue Engineering Regenerative Medicine International Society (TERMIS)

2011 – present Founder and Member of the Board of Directors, Cellec Biotek AG;

2011 – 2020 Member of the Mesenchymal Stromal Cell Committee of the *International Society for Cell & Gene Therapy*

2010 – present Member of the Editorial Board, *Journal of Osteology and Biomaterials*, Member of the Editorial Board, *Biomaterials*

2010 – 2016 Member of the Research Review Commission, AO Foundation

2010 – 2011 Panel member for the European Research Council (ERC)

2009 – present Board member, Swiss Stem Cell Network; Member of the Editorial Board *Journal of Tissue Engineering*

2009 – 2011 Member of the Scientific Advisory Board, Biosafe AG

2008 – 2011 Member of the Executive Editorial Board, *Tissue Engineering*

2008 – present Coordination of the European Cellular and Engineered Tissue Therapy Survey Program on behalf of 5 international societies

2005 – present Member of the Board for Rheumatology and Clinical Immunology, Faculty of 1000 Medicine; Member of the Governing Board of TERMIS

2006 – present Member of the Editorial Board *Journal of Tissue Engineering and Regenerative Medicine*; Member of *International Cartilage Repair Society*

Teaching Activities:

- 2001 – present University of Basel, Switzerland
Lecturer in various courses (e.g., *Tissue Engineering, Basic Principles of Biomechanics, Molecular Medicine, Stem Cells*) and Mentor for the theses of undergraduate and graduate students
- 2011 - present École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
Lecturer in the course *Tissue Engineering*
- 2005 - 2007 School of Biotechnology, University of Genova, Italy
Adjunct Professor for the course of *Cell therapy and Tissue Engineering*

Successful Public Fundraising

- 2019 – 2024 PI in a ERC Synergy grant by the EU: “From Epigenetics of Cranial Neural Crest Plasticity to Intervertebral Disc Regeneration” (No.: 810111)
- 2019 – 2023 Co-PI Marie Curie grant by the European Community “Advanced technologies for drug discovery and precision medicine: in vitro modelling human physiology and disease“ (No.: 860715)
- 2019 – 2022 PI in a grant by the AO research foundation: “Bio-ECM (Bone graft material based on Extracellular matrix from a cell line enriched in growth factors”
- 2019 – 2023 PI in a Swiss National Science Foundation grant (Indo-Swiss): Direct 3D “Bioprinting strategies to study articular cartilage development and regenerative therapy for osteoarthritis“ (IZLIZ2_183068/1)
- 2018 – 2022 PI in a Swiss National Science Foundation grant (Div. 3): “Engineering of cell-free Extracellular Matrices enriched with osteoinductive and immunomodulatory factors to enhance bone healing” (No. 31003A_179259/1)
- 2017 – 2020 Partner of a National Center of Competence in Research (NCCR), granted by the Swiss National Science Foundation: “NCCR_Molecular Systems Engineering” (51NF40-141825)
- 2017 – 2021 Co-PI in a Swiss National Science Foundation Grant (Div. 3) Sinergia: ”The underestimated role of the human omentum in metastatic spread” (CRSII5_171037)
- 2016 – 2019 Co-PI in a grant of the European community, Interreg: “NANOTRANSMED: Innovationen in der Nanomedizin – von der Diagnose zur Implantologie”
- 2016 – 2020 Co-PI in a grant by the ETH: “Personalized medicine for patients with diabetes: a synthetic biology framework for engineering 3D-islet microtissues from patients-own somatic cells” (No.: PMB-03-16)
- 2016 – 2017 Co-PI in a grant from the Pro Patient Stiftung: “Reconstruction of a large maxillary defect using a custom-shaped, engineered and prevascularized bone substitute material: a case study.” (PP-16-24)
- 2015 – 2019 PI and coordinator in a grant by the European Community, within the Horizon 2020: “Bioengineered grafts for cartilage healing in patients (BIO-CHIP)” (No.: 681103)
- 2015 – 2017 Co-PI in a grant by the Swiss Systems Biology Initiative (SystemsX): “A systems medicine approach to hematopoietic stem cell diseases” (StemSysMed, 2014/266)
- 2015 – 2017 PI in a Swiss National Science Foundation grant (Div. 3): “Developmental Engineering of Cartilage from Adult MSCs – Mimicking Differentiation of Limb Mesenchymal Progenitors” (31003A_156430)
- 2013 – 2015 Co-PI in a grant by the AO research foundation: “Instructing mesenchymal stromal cells for osteochondral regeneration by differential functionalization of smart scaffolds” (S-13-173C)
- 2013 – 2016 PI in a grant by the European Community, Eurostars: “Manufacturing of an engineered endochondral extracellular matrix for bone regeneration” (E!7865 ENDOMATRIX)
- 2012 – 2016 Co-PI in a grant by the Deutsche Arthrose-Hilfe: “Klinische Phase I Studie zur Regeneration von Gelenkknorpel mit gezüchtetem Nasenknorpel nach Knieverletzung”
- 2011 – 2013 Co-PI in a grant by the AO research foundation: “Engineered bone substitutes triggering endochondral ossification” (No.: S-11-13P)
- 2011 – 2015 PI and coordinator in a grant by the European Community, within the 7th Framework Program: “Bioreactor-based, clinically oriented manufacturing of engineered tissues” (No.: 278807)
- 2011 - 2014 PI in a Swiss National Science Foundation grant (Div. 3) Sinergia: "Developmental engineering of endochondral ossification from mesenchymal stem cells" (CRSII3_136179 / 1)
- 2011 - 2014 Co-PI in a Swiss National Science Foundation grant (Div. 3): "Generation of a mesenchymal niche - Importance of CD34" (310030_138519 / 1)
- 2011 – 2013 PI in a grant by the European Community, Eurostars: “ IsoCart: High yield cartilage cell isolation for commercially viable, single surgery knee cartilage repair.” (E!6065 IsoCart, BBT: INT.2011.0021)
- 2010 - 2014 PI in a grant by the European Community, within the 7th Framework program: “Composite phenotypic triggers for bone and cartilage repair” (NMP-2009-2.3-1)
- 2010 – 2013 PI in a Swiss National Science Foundation grant (Div. 3): “Engineering of large sized grafts capable to generate bone tissue by endochondral ossification” (No. 310030_133110/1)

- 2010 - 2013 Co-PI in a Swiss National Science Foundation grant (NRP63): “Porous shape-memory-scaffolds as mechanically active bone implants” (No. 406240_126123)
- 2010 - 2013 Co-PI in a Swiss National Science Foundation grant (Div. 3): “Cellular and molecular characterisation of human nasal chondrocyte plasticity, towards their exploration for articular cartilage repair” (No. 310030_126965)
- 2010 - 2012 Co-PI in a grant by the AO research foundation: “Osteogenicity of freshly harvested human adipose tissue-derived stromal cells at an orthotopic site”
- 2009 - 2012 PI in the Indo-Swiss joint research Program granted by the SBF (Staatssekretariat für Bildung und Forschung): “Scaffold-based control of chondrocytes phenotype: towards engineering of intervertebral disc tissue.”
- 2009 – 2012 PI in a Marie Curie grant by the European Community, within the 7th Framework program: “Training Multidisciplinary scientists for Tissue Engineering and Regenerative Medicine” (no. 238551)
- 2008 - 2012 PI in a large scale integrating project (17 partners) granted by the European Community, within the 7th Framework program: “Novel biofunctional highly porous polymer scaffolds and techniques controlling angiogenesis for the regeneration and repair of the degenerated intervertebral disc” (NMP3-LA-2008-213904)
- 2008 - 2011 Co-PI in a Swiss National Science Foundation grant (Div. 3): “Vascularization of tissue engineered grafts” (No. 310000-120432)
- 2008 - 2010 Consultant in a United States National Institutes of Health (NIH) R21 Research Grant: “Controlled gene delivery for in vivo vascularization of an engineered cardiac patch” (HL089913)
- 2007 - 2009 PI in a grant by the European Space Agency: “3D Multicell models mimicking bone marrow environment” (No. AO-99-091)
- 2007 - 2009 PI in a Eureka program: “Hyaline cartilage inducing biomaterial implants” (No. 3848)
- 2007 - 2009 PI in a Marie Curie/ToK grant, within the 6th EC Framework Program: “Cellular cartilage instruction” (MTKI-CT-2006 - 042418)
- 2006 - 2009 PI in a Swiss National Science Foundation grant (Div. 3): “Engineering of osteochondral composites using human articular chondrocytes and biomimetic materials” (No. 3200B0-110054)
- 2005 - 2008 PI in a grant by the Swiss National Science Foundation (Program SCOPES): “Development, validation and modelling of a novel bioreactor system for cartilage tissue engineering” (No. IB73B0-111016)
- 2005 - 2009 PI in a grant by the Swiss Commission for Technology and Innovation (CTI): “Development of a bioreactor for 3D cell culture and tissue engineering” (No. 7445.2 LSPP-LS)
- 2005 - 2009 PI in an Integrated Project (22 partners) granted by the European Community, within the 6th Framework program: “A systems approach to tissue engineering processes and products” (NMP3-CT-2005-500465)
- 2004 - 2008 PI in a grant by the European Community, within the 6th Framework program: “Production unit for the decentralised engineering of autologous cell-based osteoinductive bone substitutes” (“Nanomat” program, NMP3-CT-2003-505711)
- 2004 - 2005 PI in a grant by the Swiss National Science Foundation (NRP46 ‘Implants and Transplants’ program): “Selection of specific human articular chondrocyte populations for reproducible and enhanced engineering of cartilage grafts” (No. 4046 – 058623)
- 2002 - 2007 PI in a grant by the European Community, within the 5th Framework program: “Innovative materials and technologies for a bioengineered meniscus substitute” (G5RD-CT-2002-00703)
- 2001 - 2005 Partner of a National Center of Competence in Research (NCCR), granted by the Swiss National Science Foundation: “Nanoscale science”
- 2001 - 2003 PI in a grant by the Swiss National Science Foundation (NRP46 ‘Implants and Transplants’ program): “Engineering human cartilaginous implants in bioreactors using mature chondrocytes and mesenchymal progenitor cells” (No. 4046 – 058623)
- 2000 - 2005 PI in a grant by the European Community, within the 5th Framework program: “Novel bioresorbable scaffolds and culture methods for cartilage tissue engineering” (G5RD-CT-1999-00050)

Publications in Peer-reviewed Scientific Journals

H-Index (March 2023): 99

1. Kasamkattil Jesil, Gryadunova Anna, Schmid Raphael, Gay-Dujak Max Hans Peter, Dasen Boris, Hilpert Morgane, Pelttari Karolina, Martin Ivan, Schären Stefan, Barbero Andrea, Krupkova Olga, Mehrkens Arne. Human 3D nucleus pulposus microtissue model to evaluate the potential of pre-conditioned nasal chondrocytes for the repair of degenerated intervertebral disc. *Front Bioeng Biotechnol*, 11:1119009 (2023).
2. Dasen Boris, Pigeot Sébastien, Born Gordian Manfred, Verrier Sophie, Rivero Olga, Dittrich Petra S, Martin Ivan, Filippova. T-cadherin is a novel regulator of pericyte function during angiogenesis. *Am J Physiol Cell Physiol*, Feb 20, Online ahead of print (2023).
3. Garcia-Garcia Andrés, Pigeot Sébastien and Martin Ivan. Engineering of immunoinstructive extracellular matrices for enhanced osteoinductivity. *Bioactive Materials*, 24: 174-184 (2023).
4. Gu Yawei, Pigeot Sébastien, Ahrens Lucas, Tribukait-Riemenschneider Fabian, Sarem Melika, Wolf Francine, Garcia-Garcia Andrés, Barbero Andrea, Martin Ivan, Shastri V Prasad. Towards 3D-bioprinting of osseous tissue of pre-defined shape using single-matrix cell-bioink constructs. *Adv Healthc Mater*, Dec 16:e2202550, Online ahead of print (2022).

5. Born Gordian, Plantier Evelia, Nannini Guido, Caimi Alessandro, Mazzoleni Andrea, Asnaghi M Adelaide, Muraro Manuele M, Scherberich Arnaud, [Martin Ivan](#), Garcia-Garcia Andrés. Mini- and macro-scale direct perfusion bioreactors with optimized flow for engineering 3D tissues. *Biotechnol J*, Nov 25:e2200405, Online ahead of print (2022).
6. Kouba Loraine, Bürgin Joël, Born Gordian, Perale Giuseppe, Schaefer Dirk J, Scherberich Arnaud, Pigeot Sébastien, [Martin Ivan](#). A composite, off-the-shelf osteoinductive material for large, vascularized bone flap prefabrication. *Acta Biomater*, 154: 641-649 (2022).
7. Weiss Daniel J, Filiano Anthony, Galipeau Jacques, Khoury Maroun, Krampera Mauro, Lalu Manoj, Le Blanc Katarina, Nolte Jan, Phinney Donald G, Rocco Patricia RM, Shi Yufang, Tarte Karin, Viswanathan Sowmya, [Martin Ivan](#). An International Society for Cell and Gene Therapy Mesenchymal Stromal Cells Committee editorial on overcoming limitations in clinical trials of mesenchymal stromal cell therapy for coronavirus disease-19: time for a global registry. *Cytotherapy*, S1465-3249(22)00742-3 (2022).
8. Lehoczký Gyözé, Trofin Raluca Elena, Vallmajo-Martin Gueralt, Chawla Shikha, Pelttari Karolina, Mumme Marcus, Haug Martin, Egloff Christian, Jakob Marcel, Ehrbar Martin, [Martin Ivan](#), Barbero Andrea. In Vitro and Ectopic In Vivo Studies toward the Utilization of *Rapidly* Isolated Human Nasal Chondrocytes for Single-Stage Arthroscopic Cartilage Regeneration Therapy. *Int J Mol Sci*, 23: 6900 (2022).
9. Garcia-Garcia Andrés and [Martin Ivan](#). Biomimetic Human Bone Marrow Tissues: Models to Study Hematopoiesis and Platforms for Drug Testing. *Mol Cell Oncol*, 8(6): e2007030 (2022).
10. Cheng Chen, Chaaban Mansoor, Born Gordian, [Martin Ivan](#), Li Qingfeng, Schaefer Dirk J, Jaquier Claude, Scherberich Arnaud. Repair of a Rat Mandibular Bone Defect by Hypertrophic Cartilage Grafts Engineered From Human Fractionated Adipose Tissue. *Front Bioeng Biotechnol*, 10:841690 (2022).
11. Scialla S, Gullotta F, Izzo D, Palazzo B, Scalera F, [Martin I](#), Sannino A, Gervaso F. Genipin-crosslinked collagen scaffolds inducing chondrogenesis: a mechanical and biological characterization. *J Biomed Mater Res*: 1-14 (2022).
12. Guerrero J, Dasen B, Frismantiene A, Pigeot S, Ismail T, Schaefer D, Filippova M, Resink TJ, [Martin I](#), Scherberich A. T-cadherin Expressing Cells in the Stromal Vascular Fraction of Human Adipose Tissue: Role in Osteogenesis and Angiogenesis. *Stem Cells Transl Med*, 11(2): 213-229 (2022).
13. Huo Z, Bilang R, Supuran CT, von der Weid N, Bruder E, Holland-Cunz S, [Martin I](#), Muraro MG, Gros SJ. Perfusion-Based Bioreactor Culture and Isothermal Microcalorimetry for Preclinical Drug Testing with the Carbonic Anhydrase Inhibitor SLC-0111 in Patient-Derived Neuroblastoma. *Int J Mol Sci*, 23: 3128 (2022).
14. Kasamkattil J, Gryadunova A, [Martin I](#), Barbero A, Schären S, Krupkova O, Mehrkens A. Spheroid-Based Tissue Engineering Strategies for Regeneration of the Intervertebral Disc. *Int J Mol Sci*, 23(5): 2530 (2022).
15. Ding M, Koroma KE, Wendt D, [Martin I](#), Martinetti R, Jespersen S, Schröder HD, Overgaard S. Efficacy of bioreactor-activated bone substitute with bone marrow nuclear cells on fusion rate and fusion mass microarchitecture in sheep. *J Biomed Mater Res*, 110 (8)1-14: 1862-1875 (2022).
16. Baranovskii D, Demner J, Nürnberger S, Lyundup A, Redl H, Hilpert M, Pigeot S, Krashennikov M, Krasilnikova O, Klabukov I, Parshin V, [Martin I](#), Lardinois D, Barbero A. Engineering of Tracheal Grafts Based on Recellularization of Laser-Engraved Human Airway Cartilage Substrates. *Cartilage*: 1-12 (2022).
17. Mainardi A, Cambria E, Occhetta P, [Martin I](#), Barbero A, Schären S, Mehrkens A, Krupkova, O. Invertebral Disc-on-a-Chip as Advanced *In Vitro* Model for Mechanobiology Research and Drug Testing: A Review and Perspective. *Front Bioeng Biotechnol*, 9:826867 (2022).
18. Ismail T, Haumer A, Lunger A, Osinga R, Kaempfen A, Saxer F, Wixmerten A, Miot S, Thieringer F, Beinemann J, Kunz C, Jaquier C, Weikert T, Kaul F, Scherberich A, Schaefer DJ, [Martin I](#). Case Report: Reconstruction of a Large Maxillary Defect With an Engineered, Vascularized, Prefabricated Bone Graft. *Front Oncol*, 11: 775136 (2021).
19. Born G, Nikolova M, Scherberich A, Treutlein B, García-García A, [Martin I](#). Engineering of fully humanized and vascularized 3D bone marrow niches sustaining undifferentiated human cord blood hematopoietic stem and progenitor cells. *J Tissue Eng*, 12: 1-11 (2021).

20. García-García A, Klein T, Born G, Hilpert M, Scherberich A, Lengerke C, Skoda RC, Bourguine PE, Martin I. Culturing patient-derived malignant hematopoietic stem cells in engineered and fully humanized 3D niches. *Proc Nat Acad Sci USA*, 118(40), e2114227118: 1-10 (2021).
21. Acevedo Rúa L, Mumme M, Manfredini C, Darwiche S, Khalil A, Hilpert M, Buchner DA, Lisignoli G, Occhetta P, von Rechenberg B, Haug M, Schaefer DJ, Jakob M, Caplan A, Martin I, Barbero A, Pelttari K. Engineered nasal cartilage for the repair of osteoarthritic knee cartilage defects. *Sci Transl Med*, 13(609), eaaz4499:1-14 (2021).
22. Piroso A, Tankus EB, Mainardi A, Occhetta P, Dönges L, Baum C, Rasponi M, Martin I, Barbero A. Modeling In Vitro Osteoarthritis Phenotypes in a Vascularized Bone Model Based on a Bone-Marrow Derived Mesenchymal Cell Line and Endothelial Cells. *Int J Mol Sci*, 22(17), 9581:1-16 (2021).
23. Pigeot S, Klein T, Gullotta F, Dupard SJ, Garcia Garcia A, García-García A, Prithiviraj S, Lorenzo P, Filippi M, Jaquiere C, Kouba L, Asnagli MA, Raina DB, Dasen B, Isaksson H, Önerfjord P, Tägil M, Bondanza A, Martin I, Bourguine PE. Manufacturing of Human Tissues as off-the-Shelf Grafts Programmed to Induce Regeneration. *Adv Mater*, 33, 2103737: 1-13 (2021).
24. Haeusener S, Herbst L, Bittorf P, Schwarz T, Henze C, Mauermann M, Ochs J, Schmitt R, Blache U, Wixmerten A, Miot S, Martin I, Pullig O. From Single Batch to Mass Production-Automated Platform Design Concept for a Phase II Clinical Trial Tissue Engineered Cartilage Product. *Front Med*, 8, 712917: 1-8 (2021).
25. Hirsiger JR, Tamborrini G, Harder D, Bantug GR, Hoenger G, Recher M, Marx C, Li Q-Z, Martin I, Hess C, Scherberich A, Daikeler T, Berger CT. Chronic inflammation and extracellular matrix-specific autoimmunity following inadvertent periarticular influenza vaccination. *J Autoimmun*, 124: 102714 (2021).
26. Gryadunova A, Kasamkattil J, Gay MHP, Dasen B, Pelttari K, Mironov V, Martin I, Schären S, Barbero A, Krupkova O, Mehrkens A. Nose to Spine: spheroids generated by human nasal chondrocytes for scaffold-free nucleus pulposus augmentation. *Acta Biomater*, 134: 240-251 (2021)
27. Šećerović A, Pušić M, Kostešić P, Vučković M, Vukojević R, Škokić S, Sasi B, Vukasović Barišić A, Hudetz D, Vnuk D, Maticić D, Urlić I, Mumme M, Martin I, Ivković A. Nasal Chondrocyte-Based Engineered Grafts for the Repair of Articular Cartilage "Kissing" Lesions: A Pilot Large-Animal Study. *Am J Sports Med*, 49(8):2187-2198 (2021)
28. Viswanathan S, Ciccocioppo R, Galipeau J, Krampera M, Le Blanc K, Martin I, Moniz K, Nolte JA, Phinney DG, Shi Y, Szczepiorkowski ZM, Tarte K, Weiss DJ, Ashford P. Consensus International Council for Commonality in Blood Banking Automation- International Society for Cell & Gene Therapy statement on standard nomenclature abbreviations for the tissue of origin of mesenchymal stromal cells. *Cytotherapy* 23:1060-1063 (2021)
29. Asnagli MA, Barthlott T, Gullotta F, Strusi V, Amovilli A, Hafen K, Srivastava G, Oertle P, Toni R, Wendt D, Holländer GA, Martin I. Thymus extracellular matrix-derived scaffolds support graft-resident thymopoiesis and long-term in vitro culture of adult thymic epithelial cells. *Adv. Funct. Mater* 31(20):2010747 (1-15) (2021)
30. Galipeau J, Krampera M, Leblanc K, Nolte JA, Phinney DG, Shi Y, Tarte K, Viswanathan S, Martin I. Mesenchymal stromal cell variables influencing clinical potency: the impact of viability, fitness, route of administration and host predisposition. *Cytotherapy* 23(5), 368-372 (2021)
31. Gay MHP, Baldomero H, Farge-Bancel D, Robey PG, Rodeo S, Passweg J, Müller-Gerbl M, Martin I. The survey on cellular and tissue-engineered therapies in Europe in 2016 and 2017. *Tissue Eng Part A* 27:336-350 (2021)
32. Power L, Acevedo L, Yamashita R, Rubin D, Martin I, Barbero A. Deep learning enables the automation of grading histological tissue engineered cartilage images for quality control standardization. *Osteoarthritis Cartilage* 29:433-443 (2021)
33. Ziadlou R, Rotman S, Andreas Teuschl A, Salzer E, Barbero A, Martin I, Alini M, Eglin D, Grad S. Optimization of hyaluronic acid-tyramine/silk-fibroin composite hydrogels for cartilage tissue engineering and delivery of anti-inflammatory and anabolic drugs. *Mater Sci Eng C Mater Biol Appl* 120:111701 (2021)
34. Gay MHP, Baldomero H, Farge-Bancel D, Robey PG, Rodeo S, Passweg J, Müller-Gerbl M, Martin I. The Survey on Cellular and Tissue-Engineered Therapies in Europe in 2016 and 2017. *Tissue Eng Part A* 27(5-6):336-350 (2021)
35. Acevedo L, Iselin L, Berkelaar MH, Salzmann GM, Wolf F, Feliciano S, Vogel N, Pagenstert G, Martin I, Pelttari K, Barbero A, Arnold MP. Comparison of human articular cartilage tissue and chondrocytes isolated from peripheral versus central regions of traumatic lesions. *Cartilage*, 13(2_suppl): 68S-81S (2020).
36. Chawla S, Berkelaar MH, Dasen B, Halleux C, Guth-Gundel S, Kramer I, Ghosh S, Martin I, Barbero A, Occhetta P. Blockage of bone morphogenetic protein signalling counteracts hypertrophy in a human osteoarthritic micro-cartilage model. *J Cell Sci* 133(23): 1-11. (2020)
37. Martin I, Bayon Y, Yu TLT, Vertès AA. Editorial: Clinical translation and commercialisation of advanced therapy medicinal products. *Front Bioeng Biotechnol* 8:619698 (2020)
38. Ismail T, Lunger A, Haumer A, Todorov A, Menzi N, Schweizer T, Bieback K, Bürgin J, Schaefer DJ, Martin I, Scherberich A. Platelet-rich plasma and stromal vascular fraction cells for the engineering of axially vascularized osteogenic grafts. *J Tissue Eng Regen Med* 12:1908-1917 (2020)
39. Gu Y, Schwarz B, Forget A, Barbero A, Martin I, Shastri VP. Advanced bioink for 3D bioprinting of complex free-standing structures with high stiffness. *Bioengineering* 7:1-15 (2020)
40. Mumme M, Wixmerten A, Steinwachs M, Martin I. Expandierte Zellen, Knochenmark, Fettgewebe: Was ist in der Schweiz (nicht) erlaubt? *Arthroskopie*, 33: 89-93 (2020).
41. Khoury M, Rocco Patricia, Phinney D, Krampera M, Martin I, Viswanathan S, Nolte J, Leblanc K, Galipeau J, Weiss D. Cell based therapies for coronavirus disease 2019: proper clinical investigations are essential. *Cytotherapy* 22:602-605 (2020)

42. Pigeot S, Bourguine PE, Jaquier C, Scotti C, Papadimitropoulos A, Todorov T, Epple C, Peretti GM, Martin I. Orthotopic bone formation by streamlined engineering and devitalization of human hypertrophic cartilage. *Int. J. Mol. Sci.* 21:7233 (2020).
43. Power LJ, Fasolato C, Barbero A, Wendt D, Wixmerten A, Martin I, Asnaghi MA. Sensing tissue engineered cartilage quality with Raman spectroscopy and statistical learning for the development of advanced characterization assays. *Biosens Bioelectron* 166:112467 (2020)
44. Ziadlou R, Barbero A, Martin I, Wang X, Qin L, Alini M, Grad, S. Anti-inflammatory and Chondroprotective Effects of Vanillic Acid and Epimedin C in Human Osteoarthritic Chondrocytes. *biomolecules*, 10: 932 (2020)
45. Mumme M, Wixmerten A, Martin I. Reply to comment on: Mumme M, et al. Tissue engineering for paediatric patients. *Swiss Med Wkly*, 2019, 149, w20032. *Swiss Med Wkly*, 150, w20240
46. Asnaghi MA, Power L, Barbero A, Haug M, Köppl, Wendt D, Martin I. Biomarker signatures of quality for engineering nasal chondrocyte-derived cartilage. *Front Bioeng Biotechnol* 8(283):1-13 (2020)
47. Pagella P, Miran S, Neto E, Martin I, Lamghari M, Mitsiadis T. Human dental pulp stem cells exhibit enhanced properties in comparison to human bone marrow stem cells on neurites outgrowth. *FASEB J* 34:5499-5511(2020)
48. Horton ER, Vallmajo-Martin Q, Martin I, Snedeker JG, Ehrbar M, Blache U. Extracellular matrix production by mesenchymal stromal cells in hydrogels facilitates cell spreading and is inhibited by FGF-2. *Adv Healthc Mater* 9(7), e1901669 (2020)
49. Huang RL, Guerrero J, Senn AS, Kappos EA, Liu K, Li Q, Dufrane D, Schaefer DJ, Martin I, Scherberich A. Dispersion of ceramic granules within human fractionated adipose tissue to enhance endochondral bone formation. *Acta Biomater* 102:458–467 (2020)
50. Lehoczy G, Wolf F, Mumme M, Gehmert S, Miot S, Haug M, Jakob M, Martin I, Barbero A. Intra-individual comparison of human nasal chondrocytes and debrided knee chondrocytes: Relevance for engineering autologous cartilage grafts. *Clin Hemorheol Microcirc* 74:67–78 (2020)
51. Ziadlou R, Barbero A, Stoddart MJ, Wirth M, Li Z, Martin I, Wang XL, Qin L, Alini M, Grad S. Regulation of inflammatory response in human osteoarthritic chondrocytes by novel herbal small molecules. *Int J Mol Sci* 20:5745 (2019)
52. Martin I, Malda J, Rivron NC. Organs by design: can bioprinting meet self-organization? *Curr Opin Organ Transplant* 24:562-567 (2019)
53. Bourguine PE, Fritsch K, Pigeot S, Takizawa H, Kunz L, Kokkalis KD, Coutu DL, Manz MG, Martin I, Schroeder T. Fate Distribution and Regulatory Role of Human Mesenchymal Stromal Cells in Engineered Hematopoietic Bone Organs. *iScience* 19:504-513 (2019)
54. Vukasovic A, Asnaghi MA, Kostesic P, Quasnicka H4, Cozzolino C, Pusic M, Hails L, Trainor N, Krause C, Figallo E, Filardo G, Kon E, Wixmerten A, Maticic D, Pellegrini G, Kafienah W, Hudetz D, Smith T, Martin I, Ivkovic A, Wendt D. Bioreactor manufactured cartilage grafts repair acute and chronic osteochondral defects in large animal studies. *Cell Prolif* 52:e12653 (2019)
55. Filippi M, Dasen B, Guerrero J, Garello F, Isua G, Born G, Ehrbar M, Martin I, Scherberich A. Magnetic nanocomposite hydrogels and static magnetic field stimulate the osteoblastic and vasculogenic profile of adipose-derived cells. *Biomaterials* 223:119468 (2019)
56. Viswanathan S, Shi Y, Galipeau J, Krampera M, Leblanc K, Martin I, Nolte J, Phinney DG, Sensebe L. Mesenchymal stem versus stromal cells: International society for cellular therapy mesenchymal stromal cell committee position statement on nomenclature. *Cytotherapy* 21:1019-1024 (2019)
57. García-García A, Martin I. Extracellular matrices to modulate the innate immune response and enhance bone healing. *Front Immunol* 10:2256 (2019)
58. Occhetta P, Mainardi A, Votta E, Vallmajo-Martin Q, Ehrbar M, Martin I, Barbero A, Rasponi M. Hyperphysiological compression of articular cartilage induces an osteoarthritic phenotype in a cartilage-on-a-chip model. *Nat Biomed Eng* 3:545-557 (2019)
59. Blache U, Horton E, Xia T, Schoof E, Blicher L, Schönenberger A, Snedeker J, Martin I, Erler J, Ehrbar M. Mesenchymal stromal cell activation by breast cancer secretomes in synthetic 3D hydrogels. *Life Sci Alliance* 2:e201900304 (2019)
60. Mumme M, Wixmerten A, Martin I. Reply to comment on: Mumme M, et al. Tissue Engineering for paediatric patients. *Swiss Med Wkly*. 2019.149.w20032. *Swiss Med Wkly* 150: w20240 (2019).
61. Mumme M, Wixmerten A, Miot S, Barbero A, Kaempfen A, Saxer F, Gehmert S, Krieg A, Schaefer DJ, Jakob M, Martin I. Tissue engineering for paediatric patients. *Swiss Med Wkly* 149:w20032 (2019)
62. Lunger A, Ismail T, Todorov A, Buegin J, Lunger F, Oberhauser I, Haug M, Kalbermatten D, Largo RD, Martin I, Scherberich A, Schaefer DJ. Improved adipocyte viability in autologous fat grafting with ascorbic acid supplemented tumescent solution. *Ann Plast Surg* 83:464-467 (2019)
63. Gay MHP, Mehrkens A, Rittmann M, Haug M, Barbero A, Martin I, Schaeren S. Nose to back: compatibility of nasal chondrocytes with environmental conditions mimicking a degenerated intervertebral disc. *Eur Cell Mater* 37:214-232 (2019)
64. Manfredonia C, Muraro MG, Hirt C, Mele V, Governa V, Papadimitropoulos A, Däster S, Soysal SD, Drosier RA, Mechera R, Oertli D, Rosso R, Bolli M, Zettl A, Terracciano LM, Spagnoli GC, Martin I, Iezzi G. Maintenance of primary human colorectal cancer microenvironment using a perfusion bioreactor-based 3D culture system. *Adv Biosyst* 3:e1800300 (2019)

65. [Martin I](#), Galipeau J, Kessler C, Le Blanc K, Dazzi F. Challenges for mesenchymal stromal cell therapies. *Sci Transl Med* 11:eaat2189 (2019)
66. Fritsch K, Pigeot S, Feng X, Bourguine PE, Schroeder T, [Martin I](#), Manz MG, Takizawa H. Engineered humanized bone organs maintain human hematopoiesis in vivo. Erratum *Exp Hematol* 72:72 (2019)
67. Stüdle C, Occhetta P, Geier F, Mehrkens A, Barbero A, [Martin I](#). Challenges toward the identification of predictive markers for human mesenchymal stromal cells chondrogenic potential. *Stem Cells Transl Med* 8:194–204 (2019)
68. Epple C, Haumer A, Ismail T, Lunger A, Scherberich A, Schaefer DJ, [Martin I](#). Prefabrication of a large pedicled bone graft by engineering the germ for de novo vascularization and osteoinduction. *Biomaterials* 192:118-127 (2019)
69. Sarem M, Heizmann M, Barbero A, [Martin I](#), Shastri VP. Hyperstimulation of CaSR in human MSCs by biomimetic apatite inhibits endochondral ossification via temporal down-regulation of PTH1R. *Proc Natl Acad Sci USA* 115:E6135-E6144 (2018)
70. Gullotta F, Izzo D, Scalera F, Palazzo B, [Martin I](#), Sannino A, Gervaso F. Biomechanical evaluation of hMSCs-based engineered cartilage for chondral tissue regeneration. *J Mech Behav Biomed Mater* 86:294-304 (2018)
71. Blache U, Vallmajó-Martin Q, Horton ER, Guerrero J, Djonov V, Scherberich A, Erler JT, [Martin I](#), Snedeker JG, Milleret V, Ehrbar M. Notch-inducing hydrogels reveal a perivascular switch of mesenchymal stem cell fate. *EMBO Rep* 19:e45964 (2018)
72. Piuze NS, Dominici M, Long M, Pascual-Garrido C, Rodeo S, Huard J, Guicheux J, McFarland R, Goodrich LR, Maddens S, Robey PG, Bauer TW, Barrett J, Barry F, Karli D, Chu CR, Weiss DJ, [Martin I](#), Jorgensen C, Muschler GF. Proceedings of the signature series symposium “cellular therapies for orthopaedics and musculoskeletal disease proven and proven therapies – promise, facts and phantasy”, international society for cellular therapies, montreal, canada, may 2, 2018. *Cytotherapy* 20:1381-1400 (2018)
73. Loeffler D, Wang W, Hopf A, Hilsenbeck O, Bourguine PE, Rudolf F, [Martin I](#), Schroeder T. Mouse and human HSPC immobilization in liquid culture by CD43- or CD44-antibody coating. *Blood* 131:1425-1429 (2018)
74. Lee JY, Matthias N, Pothiwala A, Ang BK, Lee M, Li J, Sun D, Pigeot S, [Martin I](#), Huard J, Huang Y, Nakayama N. Pre-transplantational control of the post-transplantational fate of human pluripotent stem cell-derived cartilage. *Stem Cell Reports* 11:440-453 (2018)
75. Fritsch K, Pigeot S, Feng X, Bourguine PE, Schroeder T, [Martin I](#), Manz MG, Takizawa H. Engineered humanized bone organs maintain human hematopoiesis in vivo. *Exp Hematol* 61:45-51 (2018)
76. Guerrero J, Pigeot S, Müller J, Schaefer DJ, [Martin I](#), Scherberich A. Fractionated human adipose tissue as a native biomaterial for the generation of a bone organ by endochondral ossification. *Acta Biomater* 77:142-154 (2018)
77. Bourguine PE, Klein T, Paczulla A, Shimizu T, Kunz L, Kokkaliaris K, Coutu D, Lengerke C, Skoda R, Schroeder T, [Martin I](#). In vitro biomimetic engineering of a human hematopoietic niche with functional properties. *Proc Natl Acad Sci USA* 115:E5688-E5695 (2018)
78. Devaud YR, Avilla-Royo E, Trachsel C, Grossmann J, [Martin I](#), Lutolf MP, Ehrbar M. Label-Free quantification proteomics for the identification of mesenchymal stromal cell matrisome inside 3D poly(ethylene glycol) hydrogels. *Adv Healthc Mater* 27:e1800534 (2018)
79. Asnaghi MA, Duhr R, Quasnichka H, Hollander AP, Kafienah W, [Martin I](#), Wendt D. Chondrogenic differentiation of human chondrocytes cultured in the absence of ascorbic acid. *J Tissue Eng Regen Med* 12:1402-1411 (2018)
80. Rossi E, Mracsko E, Papadimitropoulos A, Allafi N, Reinhardt D, Mehrkens A, [Martin I](#), Knuesel I, Scherberich A. An in vitro bone model to investigate the role of triggering receptor expressed on myeloid cells-2 (TREM-2) in bone homeostasis. *Tissue Eng Part C Methods* 24:391-398 (2018)
81. Haumer A, Bourguine PE, Occhetta P, Tasso R, Born G, [Martin I](#). Delivery of cellular factors to regulate bone healing. *Adv Drug Deliv Rev* 129:285-294 (2018)
82. Majewski M, Heisterbach P, Jaquiéry C, Dürselen L, Todorov A, [Martin I](#), Evans CH, Müller SA. Improved tendon healing using bFGF, BMP-12 and TGFβ1 in a rat model. *Eur Cell Mater* 35:318-334 (2018)
83. Rossi E, Guerrero J, Aprile P, Tocchio A, Kappos EA, Gerges I, Lenardi C, [Martin I](#), Scherberich A. Decoration of RGD-mimetic porous scaffolds with engineered and devitalized extracellular matrix for adipose tissue regeneration. *Acta Biomater* 73:154-166 (2018)
84. Occhetta P, Pigeot S, Rasponi M, Dasen B, Mehrkens A, Ullrich T, Kramer I, Guth-Gundel S, Barbero A, [Martin I](#). Developmentally inspired programming of adult human mesenchymal stromal cells toward stable chondrogenesis. *PNAS* 115:4625-4630 (2018)
85. Stüdle C, Vallmajó-Martin Q, Haumer A, Guerrero J, Centola M, Mehrkens A, Schaefer DJ, Ehrbar M, Barbero A, [Martin I](#). Spatially confined induction of endochondral ossification by functionalized hydrogels for ectopic engineering of osteochondral tissues. *Biomaterials* 171:219-229 (2018)
86. Menzi N, Osinga R, Todorov A, Schaefer DJ, [Martin I](#), Scherberich A. Wet milling of large quantities of human excision adipose tissue for the isolation of stromal vascular fraction cells. *Cytotechnology* 70:807-817 (2018)
87. Bourguine PE, [Martin I](#), Schroeder T. Engineering bone marrow proxies. *Cell Stem Cell* 22:298-301 (2018)
88. Sarem M, Arya N, Heizmann M, Neffe AT, Barbero A, Gebauer TP, [Martin I](#), Lendlein A, Shastri VP. Interplay between stiffness and degradation of architected gelatin hydrogels leads to differential modulation of chondrogenesis in vitro and in vivo. *Acta Biomater* 69:83-94 (2018)
89. [Martin I](#), Jakob M, Schaefer DJ. From tissue engineering to regenerative surgery. *EBioMed* 28:11-12 (2018)
90. Fennema EM, Tchang LAH, Yuan H, van Blitterswijk CA, [Martin I](#), Scherberich A, de Boer J. Ectopic bone formation by aggregated mesenchymal stem cells from bone marrow and adipose tissue: a comparative study. *J Tissue Eng Regen Med* 12:150–158 (2018)

91. Ireland H, Gay MHP, Baldomero H, De Angelis B, Baharvand H, Lowdell MW, Passweg J, Martin I, International Society for Cellular Therapy (ISCT), Tissue Engineering and Regenerative Medicine International Society—Europe (TERMIS-EU), International Cartilage Repair Society (ICRS), International Federation for Adipose Therapeutics (IFAT), European Group for Blood and Marrow Transplantation. The survey on cellular and tissue-engineered therapies in Europe and neighboring Eurasian countries in 2014 and 2015. *Cytotherapy* 20:1-20 (2018)
92. Cerino G, Gaudiello E, Muraro MG, Eckstein F, Martin I, Scherberich A, Marsano A. Engineering of an angiogenic niche by perfusion culture of adipose-derived stromal vascular fraction cells. *Sci Rep* 7:14252 (2017)
93. Sutter S, Todorov A, Ismail T, Haumer A, Fulco I, Schulz G, Scherberich A, Kaempfen A, Martin I, Schaefer DJ. Contrast-enhanced microtomographic characterisation of vessels in native bone and engineered vascularised grafts using ink-gelatin perfusion and phosphotungstic acid. *Contrast Media Mol Imaging* doi: 10.1155/2017/4035160 (2017)
94. Gaudiello E, Melly L, Cerino G, Boccardo S, Jalili-Firoozinezhad S, Xu L, Eckstein F, Martin I, Kaufmann BA, Banfi A, Marsano A. Scaffold composition determines the angiogenic outcome of cell-based vascular endothelial growth factor expression by modulating its microenvironmental distribution. *Adv Healthc Mater* 6:1-13 (2017)
95. Da Cunha CM, Perugini V, Bernegger P, Centola M, Barbero A, Guildford AL, Santin M, Banfi A, Martin I, Marsano A. VEGF sequestration enhances in vivo cartilage formation. *Int J Mol Sci* 18:2478 (2017)
96. Nava M, Di Maggio N, Zandrini T, Cerullo G, Osellame R, Martin I, Raimondi MT. Synthetic niche substrates engineered via two-photon laser polymerization for the expansion of human mesenchymal stromal cells. *J Tissue Eng Regen Med* 11:2836-2845 (2017)
97. Burger MG, Steinitz A, Geurts J, Pippenger BE, Schaefer DJ, Martin I, Barbero A, Pelttari K. Ascorbic acid attenuates senescence of human osteoarthritic osteoblasts. *Int J Mol Sci* 18:2517 (2017)
98. Ismail T, Osinga R, Todorov Jr. A, Haumer A, Tchang L, Epple C, Allafi N, Menzi N, Largo R, Kaempfen A, Martin I, Schaefer D, Scherberich A. Engineered, axially-vascularized osteogenic grafts from human adipose-derived cells to treat avascular necrosis of bone in a rat model. *Acta Biomater* 63:236-245 (2017)
99. Pelttari K, Mumme M, Barbero A, Martin I. Nasal chondrocytes as a neural crest-derived cell source for regenerative medicine. *Curr Opin Biotechnol* 47:1-6 (2017)
100. Todorov A, Scotti C, Barbero A, Scherberich A, Papadimitropoulos A, Martin I. Monocytes seeded on engineered hypertrophic cartilage do not enhance endochondral ossification capacity. *Tissue Eng Part A* 23:708-715 (2017)
101. Tchang LA, Pippenger BE, Todorov A, Wolf F, Burger MG, Jaquiere C, Bieback K, Martin I, Schaefer DJ, Scherberich A. Pooled thrombin-activated platelet-rich plasma: a substitute to fetal bovine serum for the engineering of osteogenic/vasculogenic grafts. *J Tissue Eng Regen Med* 11:1542-1552 (2017)
102. Ismail T, Bürgin J, Todorov A, Osinga R, Menzi N, Largo RD, Haug M, Martin I, Scherberich A, Schaefer DJ. Low osmolality and shear stress during liposuction impair cell viability in autologous fat grafting. *J Plast Recon Aesth Surg* 70:596-605 (2017)
103. Nusspaumer G, Jaiswal S, Barbero A, Reinhardt R, Ishay Ronen D, Haumer A, Lufkin T, Martin I, Zeller R. Ontogenic identification and analysis of mesenchymal stromal cell populations during mouse limb and long bone development. *Stem Cell Reports* 9:1124-1138 (2017)
104. Jalili-Firoozinezhad S, Mohamadzadeh Moghadam M, Hossein Ghanian M, Kazemi Ashtiani M, Alimadadi H, Baharvand H, Martin I, Scherberich A. Polycaprolactone-templated reduced-graphene oxide liquid crystal nanofibers towards biomedical applications. *RSC Adv* 7:39628-39634 (2017)
105. Petrenko YA, Martin I, Wendt DJ. Perfusion bioreactor-based cryopreservation of 3D human mesenchymal stromal cell tissue grafts. *Cryobiology* 76:150-153 (2017)
106. Di Maggio N, Martella E, Frismantiene A, J. Resink T, Schreiner S, Lucarelli E, Jaquiere C, Schaefer D, Martin I, Scherberich A. Extracellular matrix and $\alpha 5\beta 1$ integrin signaling control the maintenance of bone formation capacity by human adipose-derived stromal cells. *Sci Rep* 7:44398 (2017)
107. Jalili-Firoozinezhad S, Martin I, Scherberich A. Bimodal morphological analyses of native and engineered tissues. *Mater Sci Eng C Mater Biol Appl* 76:543-550 (2017)
108. Bourguine P, Gaudiello E, Pippenger B, Claude J, Klein T, Pigeot S, Todorov A, Feliciano S, Banfi A, Martin I. Engineered extracellular matrices as biomaterials of tunable composition and function. *Adv Funct Mater* 27, 1605486 (2017)
109. Todorov A, Kreutz M, Haumer A, Scotti C, Barbero A, Bourguine PE, Scherberich A, Jaquiere C, Martin I. Fat-derived stromal vascular fraction cells enhance the bone-forming capacity of devitalized engineered hypertrophic cartilage matrix. *Stem Cells Transl Med* 5:1684-1694 (2016)
110. Boccardo S, Gaudiello E, Melly L, Cerino G, Ricci D, Martin I, Eckstein F, Banfi A, Marsano A. Engineered mesenchymal cell-based patches as controlled VEGF delivery systems to induce extrinsic angiogenesis. *Acta Biomater* 42:127-135 (2016)
111. Marsano A, Medeiros da Cunha CM, Ghanaati S, Gueven S, Centola M, Tsaryk R, Barbero M, Stuedle C, Barbero A, Helmrich U, Schaeren S, Kirkpatrick CJ, Banfi A, Martin I. Spontaneous in vivo chondrogenesis of bone marrow-derived mesenchymal progenitor cells by blocking VEGF signaling. *Stem Cells Transl Med* 5:1730-1738 (2016)
112. Saxer F, Scherberich A, Todorov A, Studer P, Miot S, Schreiner S, Gueven S, Tchang L, Haug M, Heberer M, Schaefer DJ, Rikli D, Martin I, Jakob M. Implantation of stromal vascular fraction progenitors at bone fracture sites: from a rat model to a first-in-man study. *Stem Cells* 34:2956-2966 (2016)
113. Occhetta P, Stuedle C, Barbero A, Martin I. Learn, simplify and implement: developmental re-engineering strategies for cartilage repair. *Swiss Med Wkly* 146:w14346 (2016)

114. Mumme M, Steinitz A, Nuss KM, Klein K, Feliciano S, Kronen P, Jakon M, von Rechenberg B, Martin I, Barbero A, Pelttari K. Regenerative potential of tissue engineered nasal chondrocytes in goat articular cartilage defects. *Tissue Eng Part A* 22:1286-1295 (2016)
115. Mumme M, Barbero A, Miot S, Wixmerten A, Feliciano S, Wolf F, Asnaghi MA, Baumhoer D, Bieri O, Kretzschmar M, Pagenstert G, Haug M, Schaefer DJ, Martin I, Jakob M. Nasal chondrocyte-based engineered autologous cartilage tissue for repair of articular cartilage defects: an observational first-in-human trial. *Lancet* 388:1985-1994 (2016)
116. Rossi E, Gerges I, Tocchio A, Tamplenizza M, Aprile P, Recordati C, Martello F, Martin I, Milani P, Lenardi C. Biologically and mechanically driven design of an RGD-mimetic macroporous foam for adipose tissue engineering applications. *Biomaterials* 104:65-77 (2016)
117. Bersini S, Arrigoni S, Lopa S, Bongio M, Martin I, Moretti M. Engineered miniaturized models of musculoskeletal diseases. *Drug Discov Today* 21:1429-1436 (2016)
118. Osinga R, Di Maggio N, Todorov A, Allafi N, Barbero A, Laurent F, Schaefer DJ, Martin I, Scherberich A. Generation of a bone organ by human adipose-derived stromal cells through endochondral ossification. *Stem Cells Transl Med* 5:1090-1097 (2016)
119. Müller S, Acevedo L, Wang X, Karim ZM, Matta A, Mehrkens A, Schaeren S, Feliciano S, Jakob M, Martin I, Barbero A, Erwin WM. Notochordal cell conditioned medium (NCCM) regenerates end-stage human osteoarthritic articular chondrocytes and promotes a healthy phenotype *Arthritis Res Ther* 18:125 (2016)
120. Martin I, De Boer J, Sensebe L. A relativity concept in mesenchymal stromal cell manufacturing. *Cytotherapy* 18:613-620 (2016)
121. Scotti C, Gobbi A, Karnatzikos G, Martin I, Shimomura K, Lane JG, Peretti GM, Nakamura N. Cartilage repair in the inflamed joint: considerations for biological augmentation towards tissue regeneration. *Tissue Eng Part B rev* 22:149-159 (2016)
122. Martin I, Centola M, Piccinini E. In Memoriam: Paolo Bianco. *Curr Stem Cell Rep* (2016)
123. Galipeau J, Kramper M, Barrett J, Dazzi F, Deans RJ, Debruijn J, Dominici M, Fibbe WE, Gee AP, Gimble JM, Hematti P, Koh MBC, Leblanc K, Martin I, McNiece I, Mendicino M, Oh S, Ortiz L, Phinney DG, Planat V, Shi Y, Stroncek DF, Viswanathan S, Weiss DJ, Sensebe L. International society for cellular therapy perspective on immune functional assays for mesenchymal stromal cells as potency release criterion for advanced phase clinical trials. *Cytotherapy* 18:151-159 (2016)
124. Blache U, Metzger S, Vallmajo-Martin Q, Martin I, Djonov V, Ehrbar M. Dual role of mesenchymal stem cells allows for microvascularized bone tissue-like environments in PEG hydrogels. *Adv Healthc Mater* 5:489-498 (2016)
125. Martin I, Duhr R. Future of cellular therapies in orthopaedics: different views, one common challenge. *J Orthop Res* 34:10-11 (2016)
126. Martin I, Ireland H, Baldomero H, Dominici M, Saris DB, Passweg J. The survey on cellular and engineered tissue therapies in Europe in 2013. *Tissue Eng Part A* 22:5-16 (2016)
127. Klar AS, Güven S, Zimoch J, Zapiórkowska NA, Biedermann T, Böttcher-Haberzeth S, Meuli-Simmen C, Martin I, Scherberich A, Reichmann E, Meuli M. Characterization of vasculogenic potential of human adipose-derived endothelial cells in a three-dimensional vascularized skin substitute. *Pediatr Surg Int* 32:17-27 (2016)
128. Cerino G, Gaudiello E, Grussenmeyer T, Melly L, Massai D, Banfi A, Martin I, Eckstein F, Grapow M, Marsano A. Three-dimensional multi-cellular muscle-like tissue engineering in perfusion-based bioreactors. *Biotechnol Bioeng* 113:226-236 (2016)
129. Sabatino MA, Santoro R, Gueven S, Jaquier C, Wendt DJ, Martin I, Moretti M, Barbero A. Cartilage graft engineering by co-culturing primary human articular chondrocytes with human bone marrow stromal cells. *J Tissue Eng Regen Med* 9:1394-1403 (2015)
130. Pelttari K, Barbero A, Martin I. A potential role of homeobox transcription factors in osteoarthritis. *Ann Transl Med* 3:254 (2015)
131. Jalili-Firoozinezhad S, Rajabi-Zeleti S, Mohammadi P, Gaudiello E, Bonakdar S, Solati-Hashjin M, Marsano A, Aghdami N, Scherberich A, Baharvand H, Martin I. Facile fabrication of egg white macroporous sponges for tissue regeneration. *Adv Healthc Mater* 4:2281-2290 (2015)
132. Hirt C, Papadimitropoulos A, Panopoulos E, Cremonesi E, Mele V, Muraro MG, Ivanek R, Schultz-Thater E, Drosier RA, Mengus C, Heberer M, Oertli D, Iezzi G, Zajac P, Eppenberger-Castori S, Tornillo L, Terracciano L, Martin I, Spagnoli GC. Bioreactor-engineered cancer tissue-like structures mimic phenotypes, gene expression profiles and drug resistance patterns observed "in vivo". *Biomaterials* 62:138-146 (2015)
133. Barandun M, Iselin LD, Santini F, Pansini M, Scotti C, Baumhoer D, Bieri O, Studler U, Wirz D, Haug M, Jakob M, Schaefer DJ, Martin I, Barbero A. Generation and characterization of osteochondral grafts with human nasal chondrocytes. *J Orthop Res* 33:1111-1119 (2015)
134. Müller SA, Todorov A, Heisterbach PE, Martin I, Majewski M. Tendon healing: an overview of physiology, biology, and pathology of tendon healing and systematic review of state of the art in tendon bioengineering. *Knee Surg Sports Traumatol Arthrosc* 23:2097-2105 (2015)
135. Sesia S, Duhr R, Medeiros da Cunha C, Todorov A, Schaeren S, Padovan E, Spagnoli G, Martin I, Barbero A. Anti-inflammatory/tissue repair macrophages enhance the cartilage-forming capacity of human bone marrow-derived mesenchymal stromal cells. *J Cell Physiol* 230:1258-1269 (2015)
136. Martin I, Ireland H, Baldomero H, Passweg J. The survey on cellular and engineered tissue therapies in Europe in 2012. *Tissue Eng-A* 21:1-13 (2015)

137. Kaempfen A, Todorov A, Gueven S, Largo RD, Jaquier C, Scherberich A, Martin I, Schaefer DJ. Engraftment of prevascularized, tissue engineered constructs in a novel rabbit segmental bone defect model. *Int J Mol Sci* 16:12616-12630 (2015)
138. Osinga R, Menzi NR, Tchang LA, Caviezel D, Kalbermatten DF, Martin I, Schaefer DJ, Scherberich A, Largo RD. Effects of intersyringe processing on adipose tissue and its cellular components: implications in autologous fat grafting. *Plast Reconstr Surg* 135:1618-1628 (2015)
139. Pippenger BE, Ventura M, Pelttari K, Feliciano S, Jacquiere C, Scherberich A, Walboomers XF, Barbero A, Martin I. Bone forming capacity of adult human nasal chondrocytes. *J Cell Mol Med* 19:1390-1399 (2015)
140. Occhetta P, Centola M, Tonnarelli B, Redaelli A, Martin I, Rasponi M. High-throughput microfluidic platform for 3D cultures of mesenchymal cells, towards engineering developmental processes. *Sci Rep* 5:10288 (2015)
141. Deponti D, Di Giancamillo A, Scotti C, Peretti GM, Martin I. Animal models for meniscus repair and regeneration. *J Tissue Eng Regen Med* 9:512-527 (2015)
142. Bhattacharjee M, Coburn J, Centola M, Murab S, Barbero A, Kaplan DL, Martin I, Ghosh S. Tissue engineering strategies to study cartilage development, degeneration and regeneration. *Adv Drug Deliv Rev* 84:107-122 (2015)
143. Centola M, Tonnarelli B, Hendriks J, van den Doel M, Feliciano S, Papadimitropoulos A, Piccinini E, Geurts J, Martin I, Barbero A. An improved cartilage digestion method for research and clinical application. *Tissue Eng Part C Methods* 21:394-403 (2015)
144. Metzger S, Lienemann PS, Ghayor C, Weber W, Martin I, Weber FE, Ehrbar M. Modular poly(ethylene glycol) matrices for the controlled 3D-localized osteogenic differentiation of mesenchymal stem cells. *Adv Healthc Mater* 4:550-558 (2015)
145. Hoffmann W, Feliciano S, Martin I, de Wild M, Wendt DJ. Novel perfused compression bioreactor system as an in vitro model to investigate fracture healing. *Front Bioeng Biotechnol* 3:10 (2015)
146. Papadimitropoulos A, Scotti C, Bourguine P, Scherberich A, Martin I. Engineered decellularized matrices to instruct bone regeneration processes. *Bone* 70:66-72 (2015)
147. Bourguine PE, Scotti C, Pigeot S, Tchang LA, Todorov A, Martin I. Osteoinductivity of engineered cartilaginous templates devitalized by inducible apoptosis. *Proc Natl Acad Sci USA* 111:17426-17431 (2014)
148. Hirt C, Papadimitropoulos A, Mele V, Muraro MG, Mengus C, Iezzi G, Terracciano L, Martin I, Spagnoli GC. "In vitro" 3D models of tumor-immune system interaction. *Adv Drug Deliv Rev* 79-80:145-154 (2014)
149. Tonnarelli B, Centola M, Barbero A, Zeller R, Martin I. Re-engineering development to instruct tissue regeneration. *Curr Top Dev Biol* 108:319-338 (2014)
150. Pelttari K, Pippenger B, Mumme M, Feliciano S, Scotti C, Mainil-Varlet P, Procino A, von Rechenberg B, Schwamborn T, Jakob M, Cillo C, Barbero A, Martin I. Adult human neural crest-derived cells for articular cartilage repair. *Sci Transl Med* 6:251ra119 (2014)
151. Fulco I, Miot S, Haug MD, Barbero A, Wixmerten A, Feliciano S, Wolf F, Jundt G, Marsano A, Farhadi J, Heberer M, Jakob M, Schaefer DJ, Martin I. Engineered autologous cartilage tissue for nasal reconstruction after tumour resection: an observational first-in-human trial. *Lancet* 384:337-346 (2014)
152. Papadimitropoulos A, Piccinini E, Brachat S, Braccini A, Wendt D, Barbero A, Jacobi C, Martin I. Expansion of human mesenchymal stromal cells from fresh bone marrow in a 3D scaffold-based system under direct perfusion. *PLOS One* 9:e102359 (2014)
153. Mueller AA, Forraz N, Gueven S, Atzeni G, Degoul O, Pagnon-Minot A, Hartmann D, Martin I, Scherberich A, McGuckin C. Osteoblastic differentiation of Wharton's jelly biopsies and its mesenchymal stromal cells after xeno-free culture. *Plast Reconstr Surg* 134:59e-69e (2014)
154. Hoffmann W, Bormann T, Rossi A, Müller B, Schumacher R, Martin I, de Wild M, Wendt D. Rapid prototyped porous nickel-titanium scaffolds as bone substitutes. *J Tissue Eng* 5:1-14 (2014)
155. Mele V, Muraro MG, Calabrese D, Pfaff D, Amatruda N, Amicarella F, Kvinlaug B, Bocelli-Tyndall C, Martin I, Resink TJ, Heberer M, Oertli D, Terracciano L, Spagnoli GC, Iezzi G. Mesenchymal stromal cells induce epithelial-to-mesenchymal transition in human colorectal cancer cells through the expression of surface-bound TGF- β . *Int J Cancer* 134:2583-2594 (2014)
156. Peñuela L, Wolf F, Raiteria R, Wendt D, Martin I, Barbero A. Atomic force microscopy to investigate spatial patterns of response to interleukin-1beta in engineered cartilage tissue elasticity. *J Biomech* 47:2157-2164 (2014)
157. Klar AS, Gueven S, Biedemann T, Luginbühl J, Böttcher-Haberzeth S, Meuli-Simmen C, Meuli M, Martin I, Scherberich A, Reichmann E. Tissue-engineered dermo-epidermal skin grafts prevascularized with adipose-derived cells. *Biomaterials* 35:5065-5078 (2014)
158. Stegemann JP, Verrier S, Gebhard F, Laschke MW, Martin I, Simpson H, Miclau T. Cell therapy for bone repair: narrowing the gap between vision and practice. *Eur Cell Mater* 27:1-4 (2014)
159. Martin I. Engineered tissues as customized organ germs. *Tissue Eng Part A* 20:1132-1133 (2014)
160. Martin I, Simmons PJ, Williams DF. Manufacturing challenges in regenerative medicine. *Sci Transl Med* 6:232fs16 (2014)
161. Bourguine P, Le Magnen C, Pigeot S, Geurts J, Scherberich A, Martin I. Combination of immortalization and inducible death strategies to generate a human mesenchymal stromal cell line with controlled survival. *Stem Cell Res* 12:584-598 (2014)
162. Mehrkens A, Di Maggio N, Gueven S, Schaefer D, Scherberich A, Banfi A, Martin I. Non-adherent mesenchymal progenitors from adipose tissue stromal vascular fraction. *Tissue Eng Part A* 20:1081-1088 (2014)

163. Scharenberg MA, Pippenger BE, Sack R, Zingg D, Ferralli J, Schenk S, Martin I, Chiquet-Ehrismann R. TGF- β -induced differentiation into myofibroblasts involves specific regulation of two MKL1 isoforms. *J Cell Sci* 127:1079–1091 (2014)
164. Martin I, Baldomero H, Bocelli-Tyndall C, Emmert M, Hoerstrup SP, Ireland H, Passweg J, Tyndall A. The survey on cellular and engineered tissue therapies in 2011. *Tissue Eng Part A* 20:842-853 (2014)
165. Bhattacharjee M, Schultz-Thater E, Trella E, Miot S, Das S, Loparic M, Ray AR, Martin I, Spagnoli GC, Ghosh S. The role of 3D structure and protein conformation on the innate and adaptive immune responses to silk-based biomaterials. *Biomaterials* 34:8161-8171 (2013)
166. Phinney DG, Galipeau J, Krampera M, Martin I, Shi Y, Sensebe L. MSCs: science and trials. *Nat Med* 19:812 (2013)
167. Scotti C, Hirschmann MT, Antinolfi P, Martin I, Peretti GM. Meniscus repair and regeneration: review on current methods and research potential. *Eur Cell Mater* 26:150-170 (2013)
168. Centola M, Tonnarelli B, Schären S, Glaser N, Barbero A, Martin I. Priming 3D cultures of human mesenchymal stromal cells toward cartilage formation via developmental pathways. *Stem Cells Dev* 22:2849-2858 (2013)
169. Bourguine PE, Pippenger B, Todorov A, Tchang L, Martin I. Tissue decellularization by activation of programmed cell death. *Biomaterials* 34:6099-6108 (2013)
170. Centola M, Abbruzzese F, Scotti C, Barbero A, Vadalà G, Denaro V, Martin I, Trombetta M, Rainer A, Marsano A. Scaffold-based delivery of a clinically-relevant anti-angiogenic drug promotes the formation of in vivo stable cartilage. *Tissue Eng Part A* 19:1960-1971 (2013)
171. Fulco I, Largo RD, Miot S, Wixmerten A, Martin I, Schaefer DJ, Haug MD. Toward clinical application of tissue-engineered cartilage. *Facial Plast Surg* 29:99–105 (2013)
172. Helmrich U, Di Maggio N, Güven S, Groppa E, Melly L, Largo RD, Heberer M, Martin I, Scherberich A, Banfi A. Osteogenic graft vascularization and bone resorption by VEGF-expressing human mesenchymal progenitors. *Biomaterials* 34:5025-5035 (2013)
173. Scotti C, Piccinini E, Takizawa H, Todorov A, Bourguine P, Papadimitropoulos A, Barbero A, Manz MG, Martin I. Engineering of a functional bone organ through endochondral ossification. *Proc Natl Acad Sci USA* 110:3997-4002 (2013)
174. Papadimitropoulos A, Riboldi SA, Tonnarelli B, Piccinini E, Woodruff MA, Hutmacher DW, Martin I. A collagen network phase improves cell seeding of open pore structure scaffolds. *J Tissue Eng Regen Med* 7:183–191 (2013)
175. Kon E, Filardo G, Tschon M, Fini M, Giavaresi G, Marchesini Reggiani L, Chiari C, Nehrer S, Martin I, Salter DM, Ambrosio L, Marcacci M. Tissue engineering for total meniscal substitution: animal study in sheep model--results at 12 months. *Tissue Eng Part A* 18:1573-1582 (2012)
176. Sørensen JR, Koroma KE, Ding M, Wendt DJ, Jespersen S, Juhl MV, Theilgaard N, Martin I, Overgaard S. Effects of a perfusion bioreactor activated novel bone substitute in spine fusion in sheep. *Eur Spine J* 21:1740-1747 (2012)
177. Bhattacharjee M, Miot S, Gorecka A, Singha K, Loparic M, Dickinson S, Das A, Bhavesh NS, Ray AR, Martin I, Ghosh S. Oriented lamellar silk fibrous scaffolds to drive cartilage matrix orientation: towards annulus fibrosus tissue engineering. *Acta Biomater* 8:3313-3325 (2012)
178. Mehrkens A, Saxer F, Gueven S, Hoffmann W, Mueller AM, Jakob M, Weber FE, Martin I, Scherberich A. Intraoperative engineering of osteogenic grafts combining freshly harvested, human adipose-derived cells and physiological doses of bone morphogenetic protein-2. *Eur Cell Mater* 24:308-319 (2012)
179. Martin I, Baldomero H, Bocelli-Tyndall C, Passweg J, Saris D, Tyndall A. The survey on cellular and engineered tissue therapies in Europe in 2010. *Tissue Eng Part A* 18:2268-2279 (2012)
180. Di Maggio N, Mehrkens A, Papadimitropoulos A, Schären S, Heberer M, Banfi A, Martin I. FGF-2 maintains a niche-dependent population of self-renewing highly potent non-adherent mesenchymal progenitors through FGFR2c. *Stem Cells* 30:1455-1464 (2012)
181. Mumme M, Scotti C, Papadimitropoulos A, Todorov A, Hoffmann W, Bocelli-Tyndall C, Jakob M, Wendt D, Martin I, Barbero A. IL-1 β modulates endochondral ossification by human adult bone marrow stromal cells. *Eur Cell Mater* 24:224-236 (2012)
182. Gueven S, Karagianni M, Schwalbe M, Schreiner S, Farhadi J, Bula S, Bieback K, Martin I, Scherberich A. Validation of an automated procedure to isolate human adipose tissue-derived cells by using the Sepax[®] technology. *Tissue Eng Part C Methods* 18:575-582 (2012)
183. Jakob M, Saxer F, Scotti C, Schreiner S, Studer P, Scherberich A, Heberer M, Martin I. Perspective on the evolution of cell-based bone tissue engineering strategies. *Eur Surg Res* 49:1–7 (2012)
184. Miot S, Brehm W, Dickinson S, Sims T, Wixmerten A, Longinotti C, Hollander AP, Mainil-Varlet P, Martin I. Influence of in vitro maturation of engineered cartilage on the outcome of osteochondral repair in a goat model. *Eur Cell Mater* 23:222-236 (2012)
185. Sensebé L, Tarte K, Galipeau J, Krampera M, Martin I, Phinney DG, Shi Y. Limited acquisition of chromosomal aberrations in human adult mesenchymal stromal cells. *Cell Stem Cell* 10:9-10 (2012)
186. Sadr N, Pippenger BE, Scherberich A, Wendt D, Mantero S, Martin I, Papadimitropoulos A. Enhancing the biological performance of synthetic polymeric materials by decoration with engineered, decellularized extracellular matrix. *Biomaterials* 33:5085-5093 (2012)
187. Scotti C, Osmokrovic A, Wolf F, Miot S, Peretti GM, Barbero A, Martin I. Response of human engineered cartilage based on articular or nasal chondrocytes to interleukin-1 β and low oxygen. *Tissue Eng Part A* 18:362-372 (2012)
188. Vonwil D, Trüssel A, Haupt O, Gobaa S, Barbero A, Shatri PV, Martin I. Substrate elasticity modulates TGF β stimulated re-differentiation of expanded human articular chondrocyte. *Drug Deliv Transl Res* 2:351-362 (2012)

189. Helmrich U, Marsano A, Melly L, Wolff T, Christ L, Heberer M, Scherberich A, Martin I, Banfi A. Generation of human MSC expressing defined VEGF levels by optimized transduction and flow cytometry purification. *Tissue Eng Part C Methods* 18:283-292 (2012)
190. Scotti C, Leumann A, Candrian C, Barbero A, Croci D, Schaefer DJ, Jakob M, Valderrabano V, Martin I. Autologous tissue-engineered osteochondral graft for talus osteochondral lesions: state of the art and future perspectives. *Techniques in Foot & Ankle Surgery* 10:163-168 (2011)
191. Toni R, Tampieri A, Zini N, Strusi V, Sandri M, Dallatana D, Spaletta G, Bassoli E, Gatto A, Ferrari A, Martin I. Ex situ bioengineering of bioartificial endocrine glands: a new frontier in regenerative medicine of soft tissue organs. *Ann Anat* 193:381-394 (2011)
192. Santoro R, Braissant O, Müller B, Wirz D, Daniels AU, Martin I, Wendt D. Real-Time measurements of human chondrocyte heat production during in vitro proliferation. *Biotechnol Bioeng* 108:3019-3024 (2011)
193. Santoro R, Krause C, Martin I, Wendt D. Online monitoring of oxygen as a non-destructive method to quantify cells in engineered 3D tissue constructs. *J Tissue Eng Regen Med* 6:696-701(2012)
194. Borzacchiello A, Gloria A, Mayol L, Dickinson S, Miot S, Martin I, Ambrosio L. Natural/synthetic porous scaffold designs and properties for fibro-cartilaginous tissue engineering. *J Bioact Compat Pol* 26:437-451 (2011)
195. Papadimitropoulos A, Scherberich A, Gueven S, Theilgaard N, Crooijmans HJ, Santini F, Scheffler K, Zallone A, Martin I. A 3D in vitro bone organ model using human progenitor cells. *Eur Cell Mater* 21:445-458 (2011)
196. Gueven S, Mehrkens A, Saxer F, Schaefer DJ, Martinetti R, Martin I, Scherberich A. Engineering of large osteogenic grafts with rapid engraftment capacity using mesenchymal and endothelial progenitors from human adipose tissue. *Biomaterials* 32:5801-5809 (2011)
197. Martin I, Baldomero H, Bocelli-Tyndall C, Slaper-Cortenbach I, Passweg J, Tyndall A. The survey on cellular and engineered tissue therapy in Europe in 2009: focus on autoimmune diseases. *Tissue Eng Part A* 17:2221-2230 (2011)
198. Acharya C, Adesida A, Zajac P, Mumme M, Riesle J, Martin I, Barbero A. Enhanced chondrocyte proliferation and mesenchymal stromal cells chondrogenesis in coculture pellets mediate improved cartilage formation. *J Cell Physiol* 227:88-97 (2011)
199. Di Maggio N, Piccinini E, Jaworski M, Trumpp A, Wendt DJ, Martin I. Toward modeling the bone marrow niche using scaffold-based 3D culture systems. *Biomaterials* 32:321-329 (2011)
200. Francioli S, Cavallo C, Grigolo B, Martin I, Barbero A. Engineered cartilage maturation regulates cytokine production and Interleukin-1beta response. *Clin Orthop Relat Res* 469:2773-2784 (2011)
201. Melchels FPW, Tonnarelli B, Olivares AL, Martin I, Lacroix D, Feijen J, Wendt DJ, Grijpma DW. The influence of the scaffold design on the distribution of adhering cells after perfusion seeding. *Biomaterials* 32:2878-2884 (2011)
202. Grote MJ, Palumberi V, Wagner B, Barbero A, Martin I. Dynamic formation of oriented patches in chondrocyte cell cultures. *J Math Biol* 63:757-777 (2011)
203. Rouwkema J, Gibbs S, Lutolf M, Martin I, Vunjak-Novakovic G, Malda J. In vitro platforms for tissue engineering: implications to basic research and clinical translation. *J Tissue Eng Regen Med* 5:164-167 (2011)
204. Vonwil D, Schuler M, Barbero A, Stroebel S, Wendt D, Textor M, Aebi U, Martin I. RGD-peptide restricted interactions with a protein resistant substrate are sufficient for human articular chondrocyte adhesion, growth and maintenance of cartilage forming capacity. *Eur Cell Mater* 20:316-328 (2010)
205. Kon E, Delcogliano M, Filardo G, Fini M, Giavaresi G, Francioli S, Martin I, Pressato D, Arcangeli E, Quarto R, Sandri M, Marcacci M. Orderly osteochondral regeneration in a sheep model using a novel nano-composite multi-layered biomaterial. *J Orthop Res* 28:116-124 (2010)
206. Kon E, Filardo G, Delcogliano M, Fini M, Salamanna F, Giavaresi G, Martin I, Marcacci M. Platelet autologous growth factors decrease the osteochondral regeneration capability of a collagen-hydroxyapatite scaffold in a sheep model. *BMC Musculoskelet Disord* 11:220 (2010)
207. Bocelli-Tyndall C, Zajac P, Di Maggio N, Trella E, Benvenuto F, Iezzi G, Scherberich A, Barbero A, Schaeren S, Pistoia V, Spagnoli G, Vukcevic M, Martin I, Tyndall A. FGF-2 and PDGF, but not platelet lysate (PL), induce proliferation dependent functional MHC-classII antigen in human mesenchymal stem cells (MSC). *Arthritis Rheum* 62:3815-3825 (2010)
208. Santoro R, Olivares AL, Brans G, Wirz D, Longinotti C, Lacroix D, Martin I, Wendt D. Bioreactor based engineering of large-scale human cartilage grafts for joint resurfacing. *Biomaterials* 31:8946-8952 (2010)
209. Scherberich A, Müller AM, Schaefer DJ, Banfi A, Martin I. Adipose tissue-derived progenitors for engineering osteogenic and vasculogenic grafts. *J Cell Physiol* 225:348-353 (2010)
210. Piccinini E, Sadr N, Martin I. Ceramic materials lead to underestimated DNA quantifications: a method for reliable measurements. *Eur Cell Mater* 20:38-44 (2010)
211. Francioli SE, Candrian C, Martin K, Heberer M, Martin I, Barbero A. Effect of three-dimensional expansion and cell seeding density on the cartilage-forming capacity of human articular chondrocytes in type II collagen sponges. *J Biomed Mater Res A* 95:924-931 (2010)
212. Candrian C, Miot S, Wolf F, Bonacina E, Dickinson S, Wirz D, Jakob M, Valderrabano V, Barbero A, Martin I. Are ankle chondrocytes from damaged fragments a suitable cell source for cartilage repair? *Osteoarthritis Cartilage* 18:1067-1076 (2010)
213. Stroebel S, Loparic M, Wendt D, Schenk AD, Candrian C, Lindberg RLP, Moldovan F, Barbero A, Martin I. Anabolic and catabolic responses of human articular chondrocytes to varying oxygen percentages. *Arthr Res Ther* 12:R34 (2010)

214. Martin I, Baldomero H, Tyndall A, Niederwieser D, Gratwohl A. A survey on cellular and engineered tissue therapies in Europe in 2008. *Tissue Eng Part A* 16:2419-2427 (2010)
215. Loparic M, Wirz D, Daniels AU, Raiteri R, van Ledingham MR, Guex G, Martin I, Aebi U, Stolz M. Micro- and nanomechanical analysis of articular cartilage by indentation-type atomic force microscopy: validation with a gel-microfiber composite. *Biophys J* 98:2731-2740 (2010)
216. Scotti C, Tonarelli B, Papadimitropoulos A, Scherberich A, Schaeren S, Schauerte A, Lopez-Rios J, Zeller R, Barbero A, Martin I. Recapitulation of endochondral bone formation using human adult mesenchymal stem cells as a paradigm for developmental engineering. *Proc Natl Acad Sci USA* 107:7251-7256 (2010)
217. Miot S, Gianni-Barrera R, Pelttari K, Acharya C, Mainil-Varlet P, Juelke H, Jaquiere C, Candrian C, Barbero A, Martin I. In vitro and in vivo validation of human and goat chondrocyte labeling by green fluorescent protein lentivirus transduction. *Tissue Eng Part C Methods* 16:11-21 (2010)
218. Schaeren S, Jaquiere C, Wolf F, Papadimitropoulos A, Barbero A, Schultz-Thater E, Heberer M, Martin I. Effect of bone sialoprotein coating of ceramic and synthetic polymer materials on in vitro osteogenic cell differentiation and in vivo bone formation. *J Biomed Mater Res-A* 92:1461-1467 (2010)
219. Mueller AM, Mehrkens A, Schaefer DJ, Jaquiere C, Gueven S, Lehmicke M, Martinetti R, Farhadi J, Jakob M, Scherberich A, Martin I. Towards an intraoperative engineering of osteogenic and vasculogenic grafts from the stromal vascular fraction of human adipose tissue. *Eur Cell Mater* 19:127-135 (2010)
220. Martin I, Riboldi SA, Jakob M, Wendt D. Bioreactor systems in tissue engineering (TE) and regenerative medicine (RM). *Biomaterials* 31:3114-3115 (2010)
221. Scotti C, Wirz D, Wolf F, Schaefer D.J, Bürgin V, Daniels A.U, Valderrabano V, Candrian C, Jakob M, Martin I, Barbero A. Engineering human cell-based, functionally integrated osteochondral grafts by biological bonding of engineered cartilage tissues to bony scaffolds. *Biomaterials* 31:2252-2259 (2010)
222. Wendt D, Riboldi SA, Cioffi M, Martin I. Potential and bottlenecks of bioreactors in 3D cell culture and tissue manufacturing. *Adv Mater* 21:3352-3367 (2009)
223. Candrian C, Barbero A, Bonacina E, Francioli S, Hirschmann MT, Milz S, Valderrabano V, Heberer M, Martin I, Jakob M. A novel implantation technique for tissue engineered osteochondral grafts. *Knee Surg Sports Traumatol Arthrosc* 17:1377-1383 (2009)
224. Pelttari K, Wixmerten A, Martin I. Do we really need cartilage tissue engineering? *Swiss Med Wkly* 139:602-609 (2009)
225. Martin I, Smith T, Wendt D. A roadmap for the bioreactor-based translation of tissue engineering strategies into clinical products. *Trends Biotechnol* 27:495-502 (2009)
226. Montjovent MO, Bocelli-Tyndall C, Scaletta C, Scherberich A, Mark S, Martin I, Applegate LA, Pioletti DP. In vitro characterization of immune-related properties of human fetal bone cells for potential tissue engineering applications. *Tissue Eng Part A* 15:1523-1532 (2009)
227. Leumann A, Wiewiorski M, Egelhof T, Rasch H, Magerkurth O, Candrian C, Schaefer DJ, Martin I, Jakob M, Valderrabano V. Radiographic evaluation of frontal talar edge configuration for osteochondral plug transplantation. *Clin Anat* 22:261-266 (2009)
228. Müller AM, Davenport M, Verrier S, Drosner R, Alini M, Bocelli-Tyndall C, Schäfer DJ, Martin I, Scherberich A. Platelet lysate as a serum substitute for 2D static and 3D perfusion culture of stromal vascular fraction cells from human adipose tissue. *Tissue Eng Part A* 15:869-875 (2009)
229. Stolz M, Gottardi R, Raiteri R, Miot S, Martin I, Imer R, Staufer U, Raducanu A, Dueggelin M, Baschong W, Daniels AU, Friederich NF, Aszodi A, Aebi U. Early detection of aging cartilage and osteoarthritis in mice and patient samples using atomic force microscopy. *Nat Nanotechnol* 4:186-192 (2009)
230. Kossowska-Tomaszczuk K, De Geyter C, De Geyter M, Martin I, Holzgrewe W, Scherberich A, Zhang H. The multipotency of luteinizing granulosa cells collected from mature ovarian follicles. *Stem Cells* 27:210-219 (2009)
231. Candrian C, Bonacina E, Früh JA, Vonwil D, Dickinson S, Wirz D, Heberer M, Jakob M, Martin I, Barbero A. Intra-individual comparison of human ankle and knee chondrocytes in vitro: relevance for talar cartilage repair. *Osteoarthritis Cartilage* 17:489-496 (2009)
232. Hoch M, Hirzel E, Lindinger P, Eberle AN, Linscheid P, Martin I, Peters T, Peterli R. Weak functional coupling of the melanocortin-1 receptor expressed in human adipocytes. *J Recept Signal Transduct Res* 28:485-504 (2008)
233. Feder-Mengus C, Ghosh S, Reschner A, Martin I, Spagnoli GC. New dimensions in tumor immunology: what does 3D culture reveal? *Trends Mol Med* 14:333-340 (2008)
234. Wolf F, Candrian C, Wendt D, Farhadi J, Heberer M, Martin I, Barbero A. Cartilage tissue engineering using pre-aggregated human articular chondrocytes. *Eur Cell Mater* 16:92-99 (2008)
235. Tampieri A, Sandri M, Landi E, Pressato D, Francioli S, Quarto R, Martin I. Design of graded biomimetic osteochondral composite scaffolds. *Biomaterials* 29:3539-3546 (2008)
236. Cioffi M, Kueffer J, Stroebel S, Dubini G, Martin I, Wendt D. Computational evaluation of oxygen and shear stress distributions in 3D perfusion culture systems: macro-scale and micro-structured models. *J Biomech* 41:2918-2925 (2008)
237. Kafienah W, Cheung FL, Sims T, Martin I, Miot S, Ruhland CV, Roughley PJ, Hollander AP. Lumican inhibits collagen deposition in tissue engineered cartilage. *Matrix Biol* 27:526-534 (2008)
238. Kon E, Chiari C, Marcacci M, Delcogliano M, Salter DM, Martin I, Ambrosio L, Fini M, Tschon M, Tognana E, Plasenzotti R, Nehrer S. Tissue engineering for total meniscus substitution: animal study in sheep model. *Tissue Eng Part A* 14:1067-1080 (2008)

239. Vonwil D, Wendt D, Stroebel S, Wallny HJ, Gygax D, Heberer M, Martin I. Assessment of TGF- β 3 bioactivity for potential bioreactor applications. *Biochem Eng J* 39:586-589 (2008)
240. Scheufler O, Schaefer DJ, Jaquiere C, Braccini A, Wendt D, Gasser JA, Galli R, Pierer G, Heberer M, Martin I. Spatial and temporal patterns of bone formation in ectopically prefabricated, autologous cell-based engineered bone flaps in rabbits. *J Cell Mol Med* 12:1238-1249 (2008)
241. Scaglione S, Wendt D, Miggino S, Papadimitropoulos A, Fato M, Quarto R, Martin I. Effects of fluid flow and calcium phosphate coating on human bone marrow stromal cells cultured in a defined 2D model system. *J Biomed Mater Res A* 86:411-419 (2008)
242. Schaeren S, Jaquiere C, Heberer M, Tolnay M, Vercellotti T, Martin I. Assessment of nerve damage using a novel ultrasonic device for bone cutting. *J Oral Maxillofac Surg* 66:593-596 (2008)
243. Degistirici O, Jaquiere C, Schönebeck B, Siemonsmeier J, Götz W, Martin I, Thie M. Defining properties of neural crest-derived progenitor cells from the apex of human developing tooth. *Tissue Eng Part A* 14:317-330 (2008)
244. Wolf F, Haug M, Farhadi J, Candrian C, Martin I, Barbero A. A low percentage of autologous serum can replace bovine serum to engineer human nasal cartilage. *Eur Cell Mater* 15:1-10 (2008)
245. Candrian C, Vonwil D, Barbero A, Bonacina E, Miot S, Farhadi J, Wirz D, Dickinson S, Hollander A, Jakob M, Li Z, Alini M, Heberer M, Martin I. Engineered cartilage generated by nasal chondrocytes is responsive to physical forces resembling joint loading. *Arthritis Rheum* 58:197-208 (2008)
246. Ghosh S, Joshi MB, Ivanov D, Feder-Mengus C, Spagnoli GC, Martin I, Erne P, Resink TJ. Use of multicellular tumor spheroids to dissect endothelial cell-tumor cell interactions: a role for T-cadherin in tumor angiogenesis. *FEBS Lett* 581:4523-4528 (2007)
247. Timmins NE, Scherberich A, Frueh J, Martin I, Jakob M. 3D cell culture and tissue engineering in a T-CUP (Tissue-Culture Under Perfusion). *Tissue Eng* 13:2021-2028 (2007)
248. Scherberich A, Galli R, Jaquiere C, Farhadi J, Martin I. 3D perfusion culture of human adipose tissue-derived endothelial and osteoblastic progenitors generates osteogenic constructs with intrinsic vascularization capacity. *Stem Cells* 25:1823-1829 (2007)
249. Francioli S, Martin I, Sie CP, Hagg R, Tommasini R, Candrian C, Heberer M, Barbero A. Relevance of growth factors for clinical-scale expansion of human articular chondrocytes in automated bioreactors. *Tissue Eng* 13:1227-1234 (2007)
250. Feder-Mengus C, Ghosh S, Weber WP, Wyler S, Zajac P, Terracciano L, Oertli D, Heberer M, Martin I, Spagnoli GC, Reschner A. Multiple mechanisms underlie defective recognition of melanoma cells cultured in three-dimensional architectures by antigen-specific cytotoxic T lymphocytes. *Br J Cancer* 96:1072-1082 (2007)
251. Braccini A, Wendt DJ, Farhadi J, Schaeren S, Heberer M, Martin I. The osteoinductivity of implanted engineered bone constructs is related to the density of clonogenic bone marrow stromal cells. *J Tissue Eng Regen Med* 1:60-65 (2007)
252. Tyndall A, Walker UA, Cope A, Dazzi F, De Bari C, Fibbe W, Guiducci S, Jones S, Jorgensen C, Le Blanc K, Luyten F, McGonagle D, Martin I, Bocelli-Tyndall C, Pennesi G, Pistoia V, Uccelli A, Wulffraat N, Feldmann M. Immunomodulatory properties of mesenchymal stem cells: a review based on an interdisciplinary meeting held at the Kennedy Institute of Rheumatology Division, London, UK, 31 October 2005. *Arthritis Res Ther* 9:301 (2007)
253. Bocelli-Tyndall C, Bracci A, Spagnoli G, Braccini A, Bouchenaki M, Ceredig R, Pistoia V, Martin I, Tyndall A. Bone marrow mesenchymal stromal cells (BM-MSCs) from healthy donors and auto-immune disease patients reduce the proliferation of autologous- and allogeneic-stimulated lymphocytes in vitro. *Rheumatology* 46:403-408 (2007)
254. Lipski AM, Jaquiere C, Choi H, Eberli D, Stevens M, Martin I, Chen IW, Shastri VP. Nano-scale engineering of biomaterial surfaces. *Adv Mater* 19:553-557 (2007)
255. Grogan SP, Barbero A, Diaz-Romero J, Cleton-Jansen A, Soeder S, Whiteside R, Hogendoorn PCW, Farhadi J, Aigner T, Martin I, Mainil-Varlet P. Identification of markers to characterize and sort human articular chondrocytes with enhanced in vitro chondrogenic capacity. *Arthritis Rheum* 56:586-595 (2007)
256. Martin I, Miot S, Barbero A, Jakob M, Wendt D. Osteochondral tissue engineering. *J Biomech* 40:750-765 (2007)
257. Marsano A, Millward-Sadler SJ, Salter DM, Adesida A, Hardingham T, Tognana E, Kon E, Chiari-Grisar C, Nehrer S, Jakob M, Martin I. Differential cartilaginous tissue formation by human synovial membrane, fat pad, meniscus cells and articular chondrocytes. *Osteoarthritis Cartilage* 15:48-58 (2007)
258. Farhadi J, Fulco I, Miot S, Wirz D, Haug M, Dickinson SC, Hollander AP, Daniels AU, Pierer G, Heberer M, Martin I. Precultivation of engineered human nasal cartilage enhances the mechanical properties relevant for use in facial reconstructive surgery. *Ann Surg* 244:978-985 (2006)
259. Mahmood TA, Miot S, Frank O, Martin I, Riesle J, Langer R, van Blitterswijk CA. Modulation of chondrocyte phenotype for tissue engineering by designing the biologic-polymer carrier interface. *Biomacromolecules* 7:3012-3018 (2006)
260. Bocelli-Tyndall C, Barbero A, Candrian C, Ceredig R, Tyndall A, Martin I. Human articular chondrocytes suppress in vitro proliferation of anti-CD3 activated peripheral blood mononuclear cells. *J Cell Physiol* 209:732-734 (2006)
261. Marsano A, Wendt D, Raiteri R, Gottardi R, Stolz M, Wirz D, Daniels AU, Salter D, Jakob M, Quinn TM, Martin I. Use of hydrodynamic forces to engineer cartilaginous tissues resembling the non-uniform structure and function of meniscus. *Biomaterials* 27:5927-5934 (2006)
262. Grogan SP, Barbero A, Winkelmann V, Rieser F, Fitzimmons J, O'Driscoll S, Martin I, Mainil-Varlet P. Visual histological grading system for the evaluation of *in vitro* generated neo-cartilage. *Tissue Eng* 12:2141-2149 (2006)

263. Laschke MW, Harder Y, Amon M, Martin I, Farhadi J, Ring A, Torio-Padron N, Schramm R, Ruecke M, Junker D, Haeufel JM, Carvalho C, Heberer M, Germann G, Vollmar B, Menger MD. Angiogenesis in tissue engineering: breathing life into constructed tissue substitutes. *Tissue Eng* 12:2093-2104 (2006)
264. Marsano A, Wendt D, Quinn TM, Sims TJ, Farhadi J, Jakob M, Heberer M, Martin I. Bi-zonal cartilaginous tissues engineered in a rotary cell culture system. *Biorheology* 43:553-560 (2006)
265. Wendt D, Stroebel S, Jakob M, John GT, Martin I. Uniform tissues engineered by seeding and culturing cells in 3D scaffolds under perfusion at defined oxygen tensions. *Biorheology* 43:481-488 (2006)
266. Barbero A, Grogan SP, Mainil-Varlet P, Martin I. Expansion on specific substrates regulates the phenotype and differentiation capacity of human articular chondrocytes. *J Cell Biochem* 98:1140-1149 (2006)
267. Eberhardt M, Salmon P, von Mach MA, Hengstler JG, Brulport M, Linscheid P, Seboek D, Oberholzer J, Barbero A, Martin I, Mueller B, Trono D, Zulewski H. Multipotential nestin and Isl-1 positive mesenchymal stem cells isolated from human pancreatic islets. *Biochem Biophys Res Commun* 345:1167-1176 (2006)
268. Nestic D, Whiteside R, Brittberg M, Wendt D, Martin I, Mainil-Varlet P. Cartilage tissue engineering for degenerative joint disease. *Adv Drug Deliv Rev* 58:300-322 (2006)
269. Miot S, Scandiucci de Freitas P, Wirz D, Daniels AU, Sims T, Hollander AP, Mainil-Varlet P, Heberer M, Martin I. Cartilage tissue engineering by expanded goat articular chondrocytes. *J Orthop Res* 24:1078-1085 (2006)
270. Farhadi J, Jaquiere C, Haug M, Pierer G, Zeilhofer HF, Martin I. Bone and cartilage tissue engineering for facial reconstructive surgery. *IEEE Eng Med Biol Mag* 25:106-109 (2006)
271. Scaglione S, Braccini A, Wendt D, Jaquiere C, Beltrame F, Quarto R, Martin I. Engineering of osteoinductive grafts by isolation and expansion of ovine bone marrow stromal cells directly on 3D ceramic scaffolds. *Biotechnol Bioeng* 93:181-187 (2006)
272. Woodfield T, Miot S, Martin I, van Blitterswijk CA, Riesle J. The regulation of expanded human nasal chondrocyte re-differentiation capacity by substrate composition and gas plasma surface modification. *Biomaterials* 27:1043-1053 (2006)
273. Wendt D, Jakob M, Martin I. Bioreactor-based engineering of osteochondral grafts: from model systems to tissue manufacturing. *J Biosci Bioeng* 100:489-494 (2005)
274. Jaquiere C, Schaeren S, Farhadi J, Mainil-Varlet P, Kunz C, Zeilhofer HF, Heberer M, Martin I. In vitro osteogenic differentiation and in vivo bone-forming capacity of human isogenic jaw periosteal cells and bone marrow stromal cells. *Ann Surg* 242:859-867 (2005)
275. Ghosh S, Rosenthal R, Zajac P, Weber WP, Oertli D, Heberer M, Martin I, Spagnoli GC, Reschner A. Culture of melanoma cells in 3-dimensional architectures results in impaired immunorecognition by cytotoxic T lymphocytes specific for Melan-A/MART-1 tumor-associated antigen. *Ann Surg* 242:851-857 (2005)
276. Bramono DS, Richmond JC, Weitzel PP, Chernoff H, Martin I, Volloch V, Jakuba CM, Diaz F, Gandhi JS, Kaplan DL, Altman GH. Characterization of transcript levels for matrix molecules and proteases in ruptured human anterior cruciate ligaments. *Connect Tissue Res* 46:53-65 (2005)
277. Farhadi J, Jaquiere C, Barbero A, Jakob M, Schaeren S, Pierer G, Heberer M, Martin I. Differentiation-dependent upregulation of BMP-2, TGF-beta1, and VEGF expression by FGF-2 in human bone marrow stromal cells. *Plast Reconstr Surg* 116:1379-1386 (2005)
278. Braccini A, Wendt D, Jaquiere C, Jakob M, Heberer M, Kenins L, Filipowicz AW, Quarto R, Martin I. Three-dimensional perfusion culture of human bone marrow cells and generation of osteoinductive grafts. *Stem Cells* 23:1066-1072 (2005)
279. Moretti M, Wendt D, Dickinson SC, Sims TJ, Hollander AP, Kelly DJ, Prendergast PJ, Heberer M, Martin I. Effects of in vitro preculture on in vivo development of human engineered cartilage in an ectopic model. *Tissue Eng* 11:1421-1428 (2005)
280. Moretti M, Wendt D, Schaefer D, Jakob M, Hunziker EB, Heberer M, Martin I. Structural characterization and reliable biomechanical assessment of integrative cartilage repair. *J Biomech* 38:1846-1854 (2005)
281. Von Knoch F, Jaquiere C, Kowalsky M, Schaeren S, Alabre C, Martin I, Rubash HE, Shanbhag AS. Effects of bisphosphonates on proliferation and osteoblast differentiation of human bone marrow stromal cells. *Biomaterials* 26:6941-6949 (2005)
282. Barbero A, Palumberi V, Wagner B, Sader R, Grote MJ, Martin I. Experimental and mathematical study of the influence of growth factors on the growth kinetics of adult human articular chondrocytes. *J Cell Physiol* 204:830-838 (2005)
283. Ghosh S, Spagnoli GC, Martin I, Ploegert S, Heberer M, Reschner A. Three-dimensional culture of melanoma cells profoundly affects gene expression profile: a high density oligonucleotide array study. *J Cell Physiol* 204:522-531 (2005)
284. Mauney JR, Jaquiere C, Volloch V, Heberer M, Martin I, Kaplan DL. In vitro and in vivo evaluation of differentially demineralized cancellous bone scaffolds combined with human bone marrow stromal cells for tissue engineering. *Biomaterials* 26:3173-3185 (2005)
285. Miot S, Woodfield T, Daniels A, Suetterlin R, Peterschmitt I, Heberer M, van Blitterswijk C, Riesle J, Martin I. Effects of scaffold composition and architecture on human nasal chondrocyte redifferentiation and cartilaginous matrix deposition. *Biomaterials* 26:2479-2489 (2005)
286. Stevens MM, Langer R, Marini RP, Martin I, Shastri VP. FGF-2 enhances TGFb1-induced periosteal chondrogenesis. *J Orthop Res* 22:1114-1119 (2004)

287. Schaefer DB, Wendt D, Moretti M, Jakob M, Jay GD, Heberer M, Martin I. Lubricin reduces cartilage-cartilage integration. *Biorheology* 41:503-508 (2004)
288. Schaefer D, Seidel J, Martin I, Jundt G, Heberer M, Grodzinsky A, Vunjak-Novakovic G, Freed L. Engineering and characterization of functional osteochondral repair tissue. *Orthopade* 33:721-726 (2004)
289. Jakob M, Démartean O, Suetterlin R, Heberer M, Martin I. Chondrogenesis of expanded adult human articular chondrocytes is enhanced by specific prostaglandins. *Rheumatology* 43:852-857 (2004)
290. Tay AG, Farhadi J, Suetterlin R, Pierer G, Heberer M, Martin I. Cell yield, proliferation, and postexpansion differentiation capacity of human ear, nasal, and rib chondrocytes. *Tissue Eng* 10:762-770 (2004)
291. Barbero A, Grogan S, Schaefer D, Heberer M, Mainil-Varlet P, Martin I. Age related changes in human articular chondrocyte yield, proliferation and post-expansion chondrogenic capacity. *Osteoarthritis Cartilage* 12:476-484 (2004)
292. Heim M, Frank O, Kampmann G, Sochocky N, Pennimpede T, Fuchs P, Hunziker W, Weber P, Martin I, Bendik I. The phytoestrogen genistein enhances osteogenesis and represses adipogenic differentiation of human primary bone marrow stromal cells. *Endocrinology* 145:848-859 (2004)
293. Martin I, Wendt D, Heberer M. The role of bioreactors in tissue engineering. *Trends Biotechnol* 22:80-86 (2004)
294. Jakob M, Démartean O, Schaefer D, Stumm M, Heberer M, Martin I. Enzymatic digestion of adult human articular cartilage yields a small fraction of the total available cells. *Connect Tissue Res* 44:173-180 (2003)
295. Démartean O, Wendt D, Braccini A, Jakob M, Schaefer D, Heberer M, Martin I. Dynamic compression of cartilage constructs engineered from expanded human articular chondrocytes. *Biochem Biophys Res Commun* 310:580-588 (2003)
296. Wendt D, Marsano A, Jakob M, Heberer M, Martin I. Oscillating perfusion of cell suspensions through three-dimensional scaffolds enhances cell seeding efficiency and uniformity. *Biotechnol Bioeng* 84:205-214 (2003)
297. Barbero A, Ploegert S, Heberer M, Martin I. Plasticity of clonal populations of de-differentiated adult human articular chondrocytes. *Arthritis Rheum* 48:1315-1325 (2003)
298. Démartean O, Jakob M, Schäfer D, Heberer M, Martin I. Development and validation of a bioreactor for physical stimulation of engineered cartilage. *Biorheology* 40:331-336 (2003)
299. Altman GH, Lu HH, Horan RL, Calabro T, Ryder D, Kaplan DL, Stark P, Martin I, Richmond JC, Vunjak-Novakovic G. Advanced bioreactor with controlled application of multi-dimensional strain for tissue engineering. *J Biomech Eng* 124:742-749 (2002)
300. Martin I, Démartean O, Braccini A. Recent advances in cartilage tissue engineering: from the choice of cell sources to the use of bioreactors. *JSME Int J Ser C-Mech Syst Mach Elem Manuf* 45:851-861 (2002)
301. Kafienah W, Jakob M, Démartean O, Frazer A, Barker MD, Martin I, Hollander AP. Three-dimensional tissue engineering of hyaline cartilage: comparison of adult nasal and articular chondrocytes. *Tissue Eng* 8:817-826 (2002)
302. Schäfer D, Martin I, Jundt G, Seidel J, Heberer M, Grodzinsky AJ, Bergin I, Vunjak-Novakovic G, Freed LE. Tissue engineered composites for the repair of large osteochondral defects. *Arthritis Rheum* 46:2524-2534 (2002)
303. Martin I, Mastrogiacomo M, De Leo G, Muraglia A, Beltrame F, Cancedda R, Quarto R. Fluorescence microscopy imaging of bone for automated histomorphometry. *Tissue Eng* 8:847-852 (2002)
304. Altman GH, Horan RL, Lu HH, Moreau J, Martin I, Richmond JC, Kaplan DL. Silk matrix for tissue engineered anterior cruciate ligaments. *Biomaterials* 23:4131-4141 (2002)
305. Vunjak-Novakovic G, Obradovic B, Martin I, Freed LE. Bioreactor studies of native and tissue engineered cartilage. *Biorheology* 39:259-268 (2002)
306. Zelikin AN, Lynn DM, Farhadi J, Martin I, Shastri V, Langer R. Erodible conducting polymers for potential biomedical applications. *Angew Chem Int Ed* 41:141-144 (2002)
307. Frank O, Heim M, Jakob M, Barbero A, Schäfer D, Bendik I, Dick W, Heberer M, Martin I. Real-time quantitative RT-PCR analysis of human bone marrow stromal cells during osteogenic differentiation in vitro. *J Cell Biochem* 85:737-746 (2002)
308. Altman GH, Horan RL, Martin I, Farhadi J, Stark PR, Volloch V, Richmond JC, Vunjak-Novakovic G, Kaplan DL. Cell differentiation by mechanical stress. *FASEB J* 16:270-272 (2002)
309. Obradovic B, Martin I, Padera RF, Treppo S, Freed LE, Vunjak-Novakovic G. Integration of engineered cartilage. *J Orthop Res* 19:1089-1097 (2001)
310. Martin I, Suetterlin R, Baschong W, Heberer M, Vunjak-Novakovic G, Freed LE. Enhanced cartilage tissue engineering by sequential exposure of chondrocytes to FGF-2 during 2D expansion and BMP-2 during 3D cultivation. *J Cell Biochem* 83:121-128 (2001)
311. Obradovic B, Martin I, Freed LE, Vunjak-Novakovic G. Bioreactor studies of natural and tissue engineered cartilage. *Ortop Traumatol Rehabil* 3:181-189 (2001)
312. Martin I, Shastri V, Padera R, Langer R, Vunjak-Novakovic G, Freed LE. Selective differentiation of mammalian bone marrow stromal cells cultured on three-dimensional polymer foams. *J Biomed Mater Res* 55:229-235 (2001)
313. Jakob M, Démartean O, Schäfer D, Hintermann B, Dick W, Heberer M, Martin I. Specific growth factors during the expansion and redifferentiation of adult human articular chondrocytes enhance chondrogenesis and cartilage formation in vitro. *J Cell Biochem* 81:368-377 (2001)
314. Martin I, Jakob M, Schäfer D, Dick W, Spagnoli G, Heberer M. Quantitative analysis of gene expression in human articular cartilage from normal and osteoarthritic joints. *Osteoarthritis Cartilage* 9:112-118 (2001)
315. Schäfer D, Martin I, Shastri V, Padera R, Langer R, Freed LE, Vunjak-Novakovic G. In vitro generation of osteochondral composites. *Biomaterials* 21:2599-2606 (2000)

316. Martin I, Obradovic B, Treppo S, Grodzinsky AJ, Langer R, Freed LE, Vunjak-Novakovic G. Modulation of the mechanical properties of tissue engineered cartilage. *Biorheology* 37:141-147 (2000)
317. Kon E, Muraglia A, Corsi A, Bianco P, Marcacci M, Martin I, Boyde A, Ruspantini I, Chistolini P, Rocca M, Giardino R, Cancedda R, Quarto R. Autologous bone marrow stromal cells loaded onto porous hydroxyapatite ceramic accelerate bone repair in critical-size defects of sheep long bones. *J Biomed Mater Res* 49:328-337 (2000)
318. Shastri V, Martin I, Langer R. Macroporous polymer foams by hydrocarbon templating. *Proc Natl Acad Sci USA* 97:1970-1975 (2000)
319. Martin I, Obradovic B, Freed LE, Vunjak-Novakovic G. Method for quantitative analysis of glycosaminoglycan distribution in cultured natural and engineered cartilage. *Ann Biomed Eng* 27:656-662 (1999)
320. Freed L, Martin I, Vunjak-Novakovic G. Frontiers in tissue engineering. In vitro modulation of chondrogenesis. *Clin Orthop Relat Res* 367:46-58 (1999)
321. Martin I, Vunjak-Novakovic G, Yang J, Langer R, Freed LE. Mammalian chondrocytes expanded in the presence of fibroblast growth factor-2 maintain the ability to differentiate and regenerate three-dimensional cartilaginous tissue. *Exp Cell Res* 253:681-688 (1999)
322. Vunjak-Novakovic G, Martin I, Obradovic B, Treppo S, Grodzinsky AJ, Langer R, Freed LE. Bioreactor cultivation conditions modulate the composition and mechanical properties of tissue engineered cartilage. *J Orthop Res* 17:130-138 (1999)
323. Marcacci M, Kon E, Zaffagnini S, Giardino R, Rocca M, Corsi A, Benvenuti A, Bianco P, Quarto R, Martin I, Muraglia A, Cancedda R. Reconstruction of extensive long bone defects in sheep using porous hydroxyapatite sponges. *Calcif Tissue Int* 64:83-90 (1999)
324. Muraglia A, Martin I, Cancedda R, Quarto R. A nude mouse model for human bone formation in unloaded conditions: dexamethasone and fibroblast growth factor 2 synergistic effect. *Bone* 22:131S-134S (1998)
325. Vunjak-Novakovic G, Obradovic B, Martin I, Bursac PM, Langer R, Freed LE. Dynamic cell seeding of polymer scaffolds for cartilage tissue engineering. *Biotechnol Progr* 14:193-202 (1998)
326. Freed LE, Hollander AP, Martin I, Barry JR, Langer R, Vunjak-Novakovic G. Chondrogenesis in a cell-polymer-bioreactor system. *Exp Cell Res* 240:58-65 (1998)
327. Martin I, Padera RF, Vunjak-Novakovic G, Freed LE. In vitro differentiation of chick embryo bone marrow stromal cells into cartilaginous and bone-like tissues. *J Orthop Res* 16:181-189 (1998)
328. Casabona F, Martin I, Cancedda R, Quarto R. Prefabricated engineered bone flaps: an experimental model of tissue reconstruction in plastic surgery. *Plastic Reconstr Surg* 101:577-581 (1998)
329. Freed LE, Langer R, Martin I, Pellis NR, Vunjak-Novakovic G. Tissue engineering of cartilage in space. *Proc Natl Acad Sci USA* 94:13885-13890 (1997)
330. Tavella S, Bellese G, Castagnola P, Martin I, Piccini D, Doliana R, Colombatti A, Cancedda R, Tacchetti C. Regulated expression of fibronectin, laminin and related integrin receptors during the early chondrocyte differentiation. *J Cell Sci* 110:2261-2270 (1997)
331. Martin I, Muraglia A, Campanile G, Cancedda R, Quarto R. Fibroblast Growth Factor-2 supports ex vivo expansion and maintenance of osteogenic precursors from human bone marrow. *Endocrinology* 138:4456-4462 (1997)
332. Martin I, Dozin B, Quarto R, Cancedda R, Beltrame F. Computer-based technique for cell aggregation analysis and cell condensation in in vitro chondrogenesis. *Cytometry* 28:141-146 (1997)
333. Martin I, Quarto R, Dozin B, Cancedda R. Producing prefabricated tissues and organs via tissue engineering. *IEEE Eng Med Biol Mag* 16:73-80 (1997)
334. Martin I, Toso C, Diaspro A, Fato M, Facchini A, Marcacci M, Strocchi R, De Pasquale V, Zaffagnini S, Beltrame F. 2D/3D Image analysis as a tool for tissue engineering. *Minerva Biotechnologica* 9:11-16 (1997)

International Patent Applications

1. Jakob M, Jakob K, Martin I, Timmins N. Bioreactor for tissue engineering. Filed, 2004. Issued, 2008 (US Pat. N. 0311650)
2. Martin I, Wendt D, Braccini A, Jakob M, Quarto R. Reverse-flow perfusion of three-dimensional scaffolds. Filed, 2004. Issued, 2008 (US Pat. N. 0318315)
3. Shastri VP, Martin I. Chimeric scaffolds for tissue engineering. Filed, 2001.
4. Shastri VP, Zelikin A, Lynn D, Martin I, Langer R. Bioerodible conducting materials. Filed, 2001. Issued, 2003 (US Pat. N. 0166831)
5. Shastri VP, Martin I, Langer R, Rahman N. Electroactive materials for stimulation of biological activity of stem cells. Filed, 2001. Issued, 2003 (US Pat. N. 6569654)
6. Altman G, Kaplan D, Vunjak-Novakovic G, Martin I. Bioengineered anterior cruciate ligament. Filed, 1999. Issued, 2002 (US Pat. N. 0062151)
7. Martin I, Jakob M, Démarteau O. Use of eicosanoids for tissue engineering. Filed, 2000. Issued, 2001 (WO 01/92472)
8. Freed LE, Martin I, Langer R, Vunjak-Novakovic G. Use of growth factors and hormones for expansion of mammalian cells and tissue engineering. Filed, 1999. Issued, 2000 (CA2344399)
9. Shastri VP, Martin I, Langer R, Seidel J. Three-dimensional polymer matrices. Filed, 1998. Issued, 1999 (US Pat. N. 009149).

10. Shastri VP, Rahman N, Martin I, Langer R. Electroactive materials for stimulation of biological activity of bone marrow stromal cells. Filed, 1998. Issued, 2001 (US Pat. N. 6190893)

Book chapters

1. Wixmerten, A, Miot, S, Martin, I. Roadmap and Challenges for Investigator Initiated Clinical Trials With Advanced Therapy Medicinal Products (ATMPs). In R. L. Reis, & M. E. Gomes (Eds.), *Encyclopedia of Tissue Engineering and Regenerative Medicine*. Academic Press (Elsevier) 1:57–70 (2019)
2. Scotti C, Tonarelli B, Papadimitropoulos A, Piccinini E, Todorov A, Centola M, Barbero A, Martin I. In: Massimiliano Gnecci (ed.), *Mesenchymal Stem Cells: Methods and Protocols*, *Methods in Molecular Biology*, Springer 1416: 413-424 (2016)
3. Asnaghi MA, Smith T, Martin I, Wendt D. Bioreactors: Enabling Technologies for Research and Manufacturing. In Van Blitterswijk & De Boer, *Tissue Engineering 2nd Ed*. Academic Press (Elsevier) 12:393-425 (2015)
4. Miot S, Marsano A, Martin I. Cell-based tissue engineering approaches for disc regeneration. In: *Biomaterials for spinal surgery*. Woodhead Publishing 496-506 (2012)
5. Wendt D, Riboldi SA, Cioffi M, Martin I. Bioreactors in Tissue Engineering: Scientific Challenges and Clinical Perspectives. In: Kasper C, van Griensven M, eds. *Adv Biochem Eng Biotechnol*. Springer 112:1-27 (2009)
6. Wendt D, Timmins N, Malda J, Janssen F, Ratcliffe A, Vunjak-Novakovic G, Martin I. Bioreactors for Tissue Engineering. In: C. van Blitterswijk, ed. *Tissue Engineering*. Academic Press (Elsevier) 16:483-506 (2008)
7. Barbero A, Martin I. Human articular chondrocytes culture. *Methods Mol Med* 140:237-247 (2007)
8. Martin I, Barbero A, Jakob M, Miot S, Wendt D. Fabrication of cartilage-bone constructs for osteochondral repair. In: S. Zanasi, M. Brittberg, M. Marcacci, eds. *Basic Science, Clinical Repair and Reconstruction of Articular Cartilage Defects: Current Status and Prospects*. Timeo Editore, Bologna (Italy) 109:1013-1025 (2006)
9. Martin I, Schaefer D, Dozin B. The repair of osteochondral defects. In: H Petite, R Quarto, eds. *Engineered Bone*. Landes Bioscience, Georgetown, TX 3:165-176 (2004)
10. Lee DA, Martin I. Bioreactor culture techniques for cartilage tissue engineering. In: AP Hollander, PV Hatton, eds. *Methods in Molecular Biology: Biopolymer Methods in Tissue Engineering*. Humana Press, Totowa, NJ 238:159-170 (2003)
11. Martin I, Frank O. Real-time quantitative RT-PCR assays. In: AP Hollander, PV Hatton, eds. *Methods in Molecular Biology: Biopolymer Methods in Tissue Engineering*. Humana Press, Totowa, NJ 238:231-237 (2003)
12. Shatri P, Martin I. Tissue Engineering by Cell Transplantation. In: A. Haverich et al. (eds.), *Stem Cell Transplantation and Tissue Engineering*, Schering Editor Springer 29-45 (2002)
13. Heberer M, Martin I. Was gibt es Neues in der Chirurgischen Forschung? Speziell: Tissue Engineering. In: K Messmer, J Witte, eds. *Was gibt es Neues in der Chirurgie?* Landsberg/Lech: Ecomed 1-27 (2001)

Reviewing

1. Reviewer of scientific papers for *Adv Mater*, *Arthritis Rheum*, *Biomaterials*, *Nat Biotech*, *Nat Mater*, *PLoS Med*, *Proc Natl Acad Sci USA*, *Science Transl Med*, *Stem Cells*, *The Lancet*, *Trends Biotechnol* and many other journals
2. Reviewer of grant proposals for the EC Framework Program 6 & 7, the European Research Council, the U.K. Arthritis Research Campaign, the U.K. Biotechnology and Biological Sciences Research Council, the french National Research Agency, the Italian Ministry for Education, University and Research, the Swiss National Science Foundation, the Canadian Natural Sciences and Engineering Research Council, the Dutch Organisation for Scientific Research, the US-Israel Binational Science Foundation, the U.S. National Science Foundation and many other private and public institutions

Honors

Several awards were given to the young investigators of the group by different international societies for the work presented at conferences or by different institutions for the recognition of key achievements (including **Pfizer**, **Novartis** and **Baxter Foundations**).

Information events for public and social media

- 2015: Information event for public by the Basel Stem Cell Network: «Regenerative Chirurgie am Bewegungsapparat»
2016 - WDR Wissen website “Nasenknorpel soll Kniegelenke heilen”

Euro news: knowledge “A transplant operation of cartilage from the nose could bring help to people who suffer knee problems”

SRF Puls website “Nasenknoorpel fürs kaputte Knie, Phase II”

YouTube “Story of scientist”

Euresearch event “La participation Suisse à Horizon 2020: un modèle de réussite and Schweizer Beteiligung an Horizon 2020: Erfolgsgeschichten” “BIOengineered grafts for Cartilage Healing In Patients”

Grand Angle “BIO-CHIP”

Frankfurter allgemeine Sonntagszeitung “Die vergessene Volkskrankheit”

Neue Zürcher Zeitung “Gelenkknoorpel aus der Nase”