

C U R R I C U L U M V I T A E

August 10, 2010

Name: **Marcus Oliver Muench, Ph.D.**

Position: Senior Scientist
 Blood System Research Institute

Associate Adjunct Professor
 Department of Laboratory Medicine
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EDUCATION:

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|-----------|---|-------------------------------|
| 1981-1983 | College of Marin; Kentfield, CA. | A.S. Physical Sciences |
| 1983-1986 | University of California at Davis, CA | B.S. Genetics |
| 1986-1992 | Cornell University Medical College; New York, NY. | Ph.D. Cell Biology & Genetics |

PRINCIPAL POSITIONS HELD:

- 1986-1992 Graduate Student. Cornell University Medical College. Laboratory of Developmental Hematopoiesis; Sloan-Kettering Institute, New York, NY.
- 1992-1995 Post Doctoral Fellow. Department of Human Immunology; DNAX Research Institute of Molecular and Cellular Biology, Palo Alto, CA.
- 1995-1999 Assistant Research Cellular Biologist. The Fetal Treatment Center Research Laboratory, Department of Surgery; University of California at San Francisco.
- 1999-2000 Research Associate (WOS). The Fetal Treatment Center Research Laboratory, Department of Surgery; University of California at San Francisco.
- 2000-2001 Assistant Research Biologist. Department of Laboratory Medicine; University of California at San Francisco.
- 2001-2006 Assistant Adjunct Professor. Department of Laboratory Medicine; University of California at San Francisco.
- 2006-now Associate Adjunct Professor (WOS) Department of Laboratory Medicine; University of California at San Francisco.
- 2006-2008 Associate Investigator. Blood Systems Research Institute, San Francisco.
- 2009-now Senior Scientist. Blood Systems Research Institute, San Francisco.

HONORS AND AWARDS:

- 1983 "Outstanding Award" for the presentation of a paper at the 3rd annual meeting of The Association of North Bay Scientists.
- 1983 Signorelli Scholarship
- 1983 Mill Valley Rotary Club Scholarship
- 1997 UCSF Academic Senate Individual Investigator Research Grant
- 1997 UCSF Research Evaluation and Allocation Committee Research Grant
- 2001 NIH Research Career Award from NIDDK
- 2005-present Member, UCSF Liver Center

OTHER PROFESSIONAL ACTIVITIES:

MEMBERSHIP in PROFESSIONAL SOCIETIES:

American Association of Blood Banks, ISEH-Society for Hematology and Stem Cells.

INVITED PRESENTATIONS:

INTERNATIONAL

"Identification and characterization of high proliferative potential-colony forming cells (HPP-CFC) in the human fetal liver." Oral presentation at the young investigator's session of the annual meeting of the International Society of Hematology. Rotterdam, Holland, August 1993.

"Enrichment of hematopoietic stem cell activity among human fetal liver cells expressing CD4." Oral presentation at the annual meeting of the International Society of Hematology. New York, NY, August 25, 1996.

"High Efficiency Retroviral Transduction of Human Fetal Liver CD34⁺⁺CD38⁻ lineage- cells." In Utero Stem Cell Transplantation and Gene Therapy/COGENT Society Symposium. Portland Oregon, September 11-14, 1998.

"Microchimerism in goats transplanted in utero with sheep hematopoietic cells." The Fifth International Symposium on In Utero Stem Cell Transplantation and Gene Therapy. Reno, Nevada, October 29, 2001.

"Stem Cells in the Developing Liver." Centre for Regenerative Medicine, University of Bath. Bath, United Kingdom, March 1, 2004.

REGIONAL AND OTHER PRESENTATIONS

"Phenotypic characterization and growth of myeloid and lymphoid progenitors isolated from human fetal liver." Duke University, Durham, NC, Nov. 13, 1995.

"Phenotypic characterization and growth of myeloid and lymphoid progenitors isolated from human fetal liver." Amgen, Thousand Oaks, CA, April 1995.

"Characterization and growth of human fetal hematopoietic stem cells." Universidad Autónoma, Madrid, Spain, Dec. 16, 1996.

"Fetal stem cell therapy." VIRxSYS Corp., Gaithersberg, MD, May 1999.

"Fetal stem cell transplantation." BioTransplant Inc., Charlestown, MA, Nov. 2, 1999.

"Human fetal hematopoiesis." Genentech Inc., Burlingame, CA, Dec. 16, 1999.

"Cytokine regulation of fetal hematopoiesis." Monsanto, St. Louis, MO, Jan. 10, 2000.

"Ex vivo expansion of lymphoid, myeloid and erythroid progenitors." University of Louisville, James Graham Brown Cancer Center, Louisville, KY, Aug. 7, 2000.

"From stem cells to lymphocytes: Cytokine regulation of human fetal hematopoiesis." Coriell Institute for Medical Research, Camden, NJ, Jan. 9, 2001.

"Fetal hematopoietic stem cell transplantation." Meeting of the Development and Regeneration Research Group, University of California at San Francisco, September 10, 2001.

"Fetal stem cells." Reproductive Biology Seminar sponsored by the Center for Reproductive Sciences, University of California at San Francisco, September 28, 2001.

"The fantastic plastic stochastic stem cell." NASA Ames Research Center, Moffett Field, CA, October 23, 2001.

"Erythropoiesis in the human fetus." AVIVA Biosciences Corporation, San Diego, CA, April 8, 2003.

"Ex vivo expansion of hematopoietic progenitors and stem cells." Chiron Corporation, Emeryville, CA, August 25, 2003.

"Fetal stem cell therapy." The Blood Systems Research Institute, San Francisco, CA, September 13, 2005.

"Developmental biology of human stem cells and fetal transplantation." The Blood Systems Foundation/Blood Systems Research Institute Annual Meeting, San Francisco, CA, March 21, 2006.

"Hepatic stem cells in the fetal liver." UCSF Liver Center Retreat and Advisory Board Annual Meeting. Mill Valley, CA, March 25, 2006.

"New hope for in utero transplantation." UCSF Fetal Treatment Center. San Francisco, CA, March 28, 2007.

"Isolation of hepatic progenitors from human fetal liver." Stewart Cooper Laboratory, California Pacific Medical Center, San Francisco, CA, November, 30, 2007.

"Isolation and growth of hepatoblasts and stem cells from fetal human liver." UCSF Liver Interest Group. San Francisco, CA, February 21, 2008.

"In utero stem cell therapy to treat birth defects in blood and tissues." Center for Cerebrovascular Research Department of Anesthesia and Perioperative Care UCSF at San Francisco General Hospital. San Francisco, CA, June 9, 2009.

"Human Fetal Kupffer Cells." Stewart Cooper Laboratory, California Pacific Medical Center, San Francisco, CA, March, 5, 2010.

TEACHING & MENTORING:**FORMAL SCHEDULED UCSF CLASSES:**

Intercessions Advances in Medical Sciences Course, Small Group Leader: April 2006, Oct. 2006, Oct. 2007, May 2008, June 2008, Oct. 2008, April 2009, June 2009, Oct. 2009, April 2010, June 2010.

LABORATORY TEACHING:

Supervision of the research activities in the fields of developmental stem cell biology and fetal medicine of visiting undergraduate students, medical students, postdoctoral fellows and clinical fellows.

STUDENTS SUPERVISED:

Ziba Guy, undergraduate summer student. Sloan-Kettering Institute, Summer 1991.

François Golfier, M.D., visiting graduate student from Hospices Civils de Lyon, France. Fetal Treatment Center, Nov. 1996 - April 1997.

Jason R. Maxwell-Wiggins, medical student on research rotation. Fetal Treatment Center, Summer 1998.

Eva M. Pott Bärtsch, medical student from München, Germany on elective research leave. Fetal Treatment Center, Spring 1999-Summer 2002 (Part Time).

Miling Yan, undergraduate summer student from Caltech University, Summer 2003.

Janice Niver, undergraduate summer student from Tulane University, Summer 2004.

Wei Lee, undergraduate summer student from University of California Davis, Summer 2005.

Julia M. Healy, undergraduate summer student from University of California Berkeley, Summer 2007.

Sanghamitra Chakraborty M.S., summer intern from City College of San Francisco Biotechnology Certificate program, Summer 2008.

Chandni Pindoria, undergraduate summer intern from University of California Berkeley, Summer 2009-Winter 2010.

Jen Leddy, undergraduate intern from San Francisco State University, Oct. 2009-March 2010.

Nicole Varga, graduate student intern from Diablo Valley College, Summer 2010.

Robert Lodes, California Institute of Regenerative Medicine funded Stem Cell Research Intern from City College of San Francisco, August 2010-Present.

POSTDOCTORAL FELLOWS SUPERVISED:

George B. Mychaliska, M.D., surgery resident. Fetal Treatment Center, Nov. 1994-June 1996.

Helen T. Housley, M.D., urology resident. Fetal Treatment Center, July 1996-May 1997.

Laurent M. Humeau, Ph.D., postdoctoral research fellow. Fetal Treatment Center, Feb. 1998-Sep. 1998.

Tatsuo Ohkubo, M.D. Ph.D., visiting postdoctoral scholar. Fetal Treatment Center, April 1997-April 1999.

John B. Lopoo, M.D., surgery resident. Fetal Treatment Center, July 1997-March 1999.

Bettina W. Paek, M.D., postdoctoral research fellow. Fetal Treatment Center, July 1997-Dec. 1999.

Jeng-Chang Chen, M.D., visiting postdoctoral scholar from Chang-Gung Children's Hospital, Taoyuan, Taiwan. Fetal Treatment Center, Oct. 2000-Oct. 2002.

David L. Suskind, M.D., pediatric-GI fellow. Department of Pediatrics, July 2001-July 2003.

Jennifer V. Ratcliffe M.D., Ph.D., ObGyn resident. Department of Obstetrics and Gynecology, Sep. 2001-July 2002.

Dong-Xiao Feng, Ph.D., postdoctoral fellow. Laboratory Medicine, Sep 2004-Sep 2006.

Alireza Abdolmohammadi, M.D., postdoctoral fellow. California Pacific Medical Center Research Institute, 2005-2007.

Lung-Kuo (Caspar) Tai, Ph.D., postdoctoral fellow. Blood Systems Research Institute, Oct 2006-2008.

Marina Fomin, Ph.D., postdoctoral fellow. Blood Systems Research Institute, Feb 2006-present.

SERVICE:

UNIVERSITY SERVICE:

DEPARTMENTAL SERVICE:

1995-1999 Research Committee, Department of Surgery

GOVERNMENT AND INTERNATIONAL SERVICE:

1999 National Institute of Health, NHLBI Ad Hoc Reviewer

2001 Swiss National Science Foundation, Ad Hoc Grant Reviewer

2006 National Institute of Health, NIAID Ad Hoc Reviewer for a PO1 focusing on stem cell therapies for primary immunodeficiencies.

2006 National Institute of Health, NIAID Ad Hoc Reviewer for R34 and UO1 clinical trial planning and implementation grants.

2006 Singapore National Medical Research Council, Ad Hoc Grant Reviewer

2007 National Institute of Health, NIAID Ad Hoc Reviewer for a PO1 focusing on stem cell therapies for primary immunodeficiencies.

2007 National Institute of Health, NIAID Ad Hoc Reviewer for R34 and UO1 clinical trial planning and implementation grants.

2008 Singapore National Medical Research Council, Ad Hoc Grant Reviewer

2010 Scientist Solutions, Indian Student Project Grants Reviewer

SERVICE TO PROFESSIONAL PUBLICATIONS:

2005-now Editorial Board Member for Current Stem Cell Research & Therapy, The Open Bone Journal, The Open Stem Cell Journal, ISRN Hematology.

1995-now Ad hoc referee for: Blood, Experimental Hematology, Biotechnology (NY), Journal of Hepatology, Clinical Immunology, Swiss Medical Weekly, Journal of Cancer Research and Clinical Oncology, American Journal of Transplantation, Haematologica/The Hematology Journal, American Journal of Physiology Gastrointestinal and Liver Physiology, Biologicals, Stem Cells and Development, Expert Review of Obstetrics & Gynecology, Journal of Biomedicine and Biotechnology, Expert Opinion on Biological Therapy.

RESEARCH AND CREATIVE ACTIVITIES:

PEER REVIEWED PUBLICATIONS:

- 1) 1989. Slørdal L, **Muench MO**, Warren DJ, Moore MAS. Radioprotection by murine and human tumor-necrosis factor: dose-dependent effects on hematopoiesis in the mouse. *Eur. J. Haematol.* 43:428-434.
- 2) 1991. Smith C, Gasparetto C, Collins N, Gillio A, **Muench MO**, O'Reilly RJ, Moore MAS. Purification and partial characterization of a human hematopoietic precursor population. *Blood* 77:2122-2128.
- 3) 1992. **Muench MO**, Schneider JG, Moore MAS. Interactions among colony-stimulating factors, IL-1 β , IL-6 and kit-ligand in the regulation of primitive murine hematopoietic cells. *Exp. Hematol.* 20:339-349.
- 4) 1992. **Muench MO**, Moore MAS. Accelerated recovery of peripheral blood cell counts in mice transplanted with in vitro cytokine-expanded hematopoietic progenitors. *Exp. Hematol.* 20:611-618.
- 5) 1992. **Muench MO**, Gasparetto C, Moore MAS. The in vitro growth of murine high proliferative potential-colony forming cells is not enhanced by growth in a low oxygen atmosphere. *Cytokine* 4:488-494.
- 6) 1992. **Muench MO**, Guy Z, Moore MAS. Ex vivo differentiation therapy as a method of leukemic cell purging in murine bone marrow expansion cultures. *Cancer Res.* 52:6576-6582.
- 7) 1993. Smith C, **Muench MO**, Knizewski MR, Gilboa E, Moore MAS. Development of a lacZ marked WEHI-3B D+ murine leukemic cell line as an in-vivo model of acute non-lymphocytic leukemia. *Leukemia* 7:310-317.
- 8) 1993. **Muench MO**, Firpo MT, Moore MAS. Bone marrow transplantation with interleukin-1 plus kit-ligand ex vivo expanded bone marrow accelerates hematopoietic reconstitution in mice without the loss of stem cell lineage and proliferative potential. *Blood* 81:3463-3473.
- 9) 1993. Bárcena A, **Muench MO**, Galy AHM, Cupp J, Roncarolo MG, Phillips JH, Spits H. Phenotypic and functional analysis of T cell precursors in the human fetal liver and thymus. CD7 expression in the early stages of T- and myeloid-cell development. *Blood* 82:3401-3414.
- 10) 1994. Paul SR, Hayes L, Palmer R, Morris GE, Neben TY, Loebelenz J, Pedneault G, Brooks J, Blue I, Moore MAS, **Muench M**, Turner KJ, Shaub R, Goldman SJ, Wood CR. Interleukin-11 expression in donor bone marrow cells improves hematological reconstitution in lethally irradiated recipient mice. *Exp. Hematol.* 22:295.
- 11) 1994. Hannum C, Culpepper J, Campbell D, McClanahan T, Zurawski S, Bazan JF, Kastelein R, Hudak S, Wagner J, Mattson J, Luh J, G. Duda, Martina N, Peterson D, Menon S, Shanafelt A, **Muench M**, Kelner G, Namikawa R, Rennick D, Roncarolo M-G, Zlotnik A, Rosnet O, Dubreuil P, Birnbaum D, Lee F. The ligand for the FLT3/FLK2 receptor tyrosine kinase regulates the growth

response of haemopoietic stem cells and is encoded by multiple variant mRNAs. *Nature* 368:643.

- 12) 1994. **Muench MO**, Cupp J, Polakoff J, Roncarolo MG. Expression of CD33, CD38 and HLA-DR expression on human fetal liver progenitors with a high proliferative potential. *Blood* 83:3170-3181.
- 13) 1994. Bárcena A, Galy AHM, Punnonen J, **Muench MO**, Schols D, Roncarolo MG, de Vries JE, Spits H. Lymphoid and myeloid differentiation of fetal liver CD34+ lineage- cells in human thymic organ culture. *J. Exp. Med.* 180:123-132.
- 14) 1994. Sánchez MJ, **Muench MO**, Roncarolo MG, Lanier LL, Phillips JH. Identification of a common T/NK cell progenitor in the human fetal thymus. *J. Exp. Med.* 180:569-576.
- 15) 1995. **Muench MO**, Roncarolo MG, Menon S, Xu Y, Kastelein R, Zurawski S, Hannum CH, Culpepper J, Lee F, Namikawa R. FLK-2/FLT-3 ligand (FL) regulates the growth of early myeloid progenitors isolated from human fetal liver. *Blood.* 85:963-972.
- 16) 1996. Namikawa R, **Muench MO**, de Vries JE, Roncarolo MG. The FLK2/FLT3 ligand synergizes with interleukin-7 in promoting stromal-cell-independent expansion and differentiation of human fetal pro-B cells in vitro. *Blood.* 87:1881-1890.
- 17) 1996. Bárcena A, Park SW, Banapour B, **Muench MO** and Mechetner E. Expression of Fas/CD95 and Bcl-2 by primitive hematopoietic progenitors freshly isolated from human fetal liver. *Blood.* 88:2013-2025.
- 18) 1997. **Muench MO**, Roncarolo MG, Namikawa R. Phenotypic and functional evidence for the expression of CD4 by hematopoietic stem cells isolated from human fetal liver. *Blood.* 89:1364-1375.
- 19) 1997. **Muench MO**, Roncarolo MG, Rosnet O, Birnbaum D., Namikawa R. Colony-forming cells expressing high levels of CD34 are the main targets for granulocyte colony-stimulating factor and macrophage colony-stimulating factor in the human fetal liver. *Exp. Hematol.* 25:277-287.
- 20) 1997. Mychaliska GB, **Muench MO**, Swartz MH, Maher JJ, Burns JP, Albanese CT, Harrison MR. In utero hepatocyte transplantation in a rat model. *Surg. Forum* 48:461-463.
- 21) 1998. Mychaliska GB, **Muench MO**, Rice HE, Leavitt AD, Cruz J, Harrison MR. The biology and ethics of banking fetal liver hematopoietic stem cells for in utero transplantation. *J. Ped. Surg.* 33:394-399.
- 22) 1999. Namikawa R, **Muench MO**, Firpo MT, Humeau L, Xu Y, Menon S, Roncarolo MG. Administration of Flk2/Flt3 ligand induces expansion of human high-proliferative potential colony-forming cells in the SCID-hu mouse. *Exp. Hematol.* 27:1029-1037.
- 23) 1999. Golfier F, Bárcena A, Cruz J, Harrison MR, **Muench MO**. Mid-trimester fetal livers are a rich source of CD34+/+++ cells for transplantation. *Bone Marrow Transplant.* 24:451-462.
- 24) 1999. Bárcena A, **Muench MO**, Song KS, Ohkubo T, Harrison MR. Role of CD95/fas and its ligand in the regulation of human CD34++CD38- fetal liver cells. *Exp. Hematol.* 27:1428-1439.
- 25) 1999. **Muench MO**, Bárcena A., Ohkubo T, Harrison MR. Requirement of retinoids for the expression of CD38 on human hematopoietic progenitors in vitro. *Cytotherapy* 1:455-467.
- 26) 2000. Golfier F, Bárcena A, Harrison MR, **Muench MO**. Fetal bone marrow as a source of stem cells for in utero or postnatal transplantation. *Br. J. Haematol.* 109:173-181.
- 27) 2000. **Muench MO**, Humeau L, Paek B, Ohkubo T, Lanier LL, Albanese CT, Bárcena A. Differential effects of interleukin 3, interleukin 7, interleukin 15, and granulocyte-macrophage

- colony-stimulating factor in the generation of natural killer and B cells from primitive human fetal liver progenitors. *Exp. Hematol.* 28:961-973.
- 28) 2001. Huie MA, Cheung MC, **Muench MO**, Becerril B, Kan YW, Marks JD. Antibodies to human fetal erythroid cells from a nonimmune phage antibody library. *Proc. Natl. Acad. Sci. USA* 98:2682-2687.
 - 29) 2001. Oppenheim SM, **Muench MO**, Gutiérrez-Adán A, Moyer AL, BonDurant RH, Rowe JD, Anderson GB. Hematopoietic stem cell transplantation in utero produces sheep-goat chimeras. *Blood Cells Mol. Dis.* 27:296-308.
 - 30) 2001. **Muench MO**, Rae J, Bárcena A, Leemhuis T, Farrell J, Humeau L, Maxwell-Wiggins JR, Capper J, Mychaliska GB, Albanese CT, Martin T, Tsukamoto A, Curnutte J, Harrison MR. Transplantation of a fetus with paternal Thy-1+CD34+ cells for chronic granulomatous disease. *Bone Marrow Transplant.* 27:2001, 355-364.
 - 31) 2001. **Muench MO**, Namikawa R. Disparate regulation of human fetal erythropoiesis by the microenvironments of the liver and bone marrow. *Blood Cells Mol. Dis.* 27:377-390.
 - 32) 2001. Ohkubo T, Bárcena A, Smith CA, Harrison MR, **Muench MO**. High-efficiency retroviral transduction of fetal liver CD38-CD34++ cells: Implications for in utero and ex utero gene therapy. *Fetal Diagn. Ther.* 16:299-307.
 - 33) 2001. **Muench MO**, Bárcena A. Broad distribution of colony-forming cells with erythroid, myeloid, dendritic cell and NK cell potential among CD34²⁺ fetal liver cells. *J. Immunol.* 167:4902-4909.
 - 34) 2002. **Muench MO**, Suskind DL, Bárcena A. Isolation, growth and identification of colony-forming cells with erythroid, myeloid, dendritic cell and NK-cell potential from human fetal liver. *Biol. Proced. Online* 4:10-23.
 - 35) 2003. **Muench MO**, Pott Bärtsch EM, Chen JC, Lopoo JB, Bárcena A. Ontogenic changes in CD95 expression on human leukocytes: Prevalence of T-cells expressing activation markers and identification of CD95-CD45RO+ T-cells in the fetus. *Dev. Comp. Immunol.* 27:899-914.
 - 36) 2003. **Muench MO**, Ratcliffe JV, Nakanishi M, Ishimoto H, Jaffe RB. Isolation of definitive zone and chromaffin cells based upon expression of CD56 (neural cell adhesion molecule) in the human fetal adrenal gland. *J. Clin. Endocrinol. Metab.* 88:3921-3930.
 - 37) 2003. Chen JC, Chang ML, **Muench MO**. A kinetic study of the murine mixed-lymphocyte reaction by 5,6-carboxyfluorescein diacetate succinimidyl ester labeling. *J. Immunol. Meth.* 279:123-133.
 - 38) 2004. Suskind DL, **Muench MO**. Searching for common stem cells of the hepatic and hematopoietic systems in the human fetal liver: CD34+ cytokeratin 7/8+ cells express markers for stellate cells. *J. Hepatol.* 40:261-268.
 - 39) 2004. **Muench MO**, Bárcena A. Stem cell transplantation in the fetus. *Cancer Control* 11:105-118.
 - 40) 2004. **Muench MO**, Bárcena A. Megakaryocyte growth and development factor is a potent growth factor for primitive hematopoietic progenitors in the human fetus. *Pediatr. Res.* 55:1050-1056.
 - 41) 2004. Chen JC, Chang ML, Lee H, **Muench MO**. Haploidentical donor T-cells fail to facilitate engraftment but lessen the immune response of host T-cells in murine fetal transplantation. *Br. J. Haematol.* 126:377-384.
 - 42) 2004. Suskind DL, Rosenthal P, Heyman M, Kong D, Magrane G, Baxter-Lowe L-A, **Muench MO**. Maternal microchimerism in the livers of patients with biliary atresia. *BMC Gastroenterol.* 4:14 (7 pages).

- 43) 2005. Chen JC, Chang ML, Lee H, **Muench MO**. Prevention of graft rejection by donor type II CD8⁺ T-cells (Tc2 cells) is not sufficient to improve engraftment in fetal transplantation. *Fetal Diagn. Ther.* 20:35-43
- 44) 2006. **Muench MO**, Ohkubo T, Smith CA, Suskind DL, Bárcena A. Maintenance of proliferative capacity and retroviral transduction efficiency of human fetal CD38⁻CD34⁺⁺ stem cells. *Stem Cells Dev.* 15:97-108.
- 45) 2006. Ishimoto H, **Muench MO**, Higuchi T, Minegishi K, Tanaka M, Yoshimura Y, Jaffe RB. Midkine, a heparin-binding growth factor, selectively stimulates proliferation of definitive zone cells of the human fetal adrenal gland. *J. Clin. Endocrinol. Metab.* 91:4050-4056.
- 46) 2008. Chen JC, Chang ML, **Muench MO**. Persistence of allografts in the peritoneal cavity after prenatal transplantation in mice. *Transfusion* 48:553-560.
- 47) 2008. Chen JC, Chang ML, Huang SF, Chang PY, **Muench MO**, Fu RH, Ou LS, Kuo ML. Prenatal tolerance induction: Relationship between cell dose, marrow T-cells, chimerism and tolerance. *Cell Transplant.* 17:495-506.
- 48) 2008. Drake PM, Nathan JK, Stock CM, Chang PV, **Muench MO**, Nakata D, Reader JR, Gip P, Golden KPK, Weinhold B, Gerardy-Schahn R, Troy II FA, Bertozzi CR. Polysialic acid, a glycan with highly restricted expression, is found on human and murine leukocytes and modulates immune responses. *J. Immunol.* 181:6850-6858.
- 49) 2008. Mold JE, Michaëlsson J, Burt TD, **Muench MO**, Beckerman KP, Busch MP, Lee TH, Nixon DF, McCune JM. Maternal alloantigens promote the development of tolerogenic fetal regulatory T cells *in utero*. *Science* 322:1562-1565.
- 50) 2009. Bárcena A, Kapidzic M, **Muench MO**, Gormley M, Scott MA, Weier JF, Ferlatte C, Fisher SJ. The human placenta is a hematopoietic organ during the embryonic and fetal periods of development. *Dev. Biol.* 327:24-33, Epub Dec 3, 2008.
- 51) 2009. Bárcena A, **Muench MO**, Kapidzic M, Fisher SJ. A new role for the human placenta as a hematopoietic site throughout gestation. *Reprod. Sci.* 16:178-187.
- 52) 2009. Salvador B, Zhou Y, Michault A, **Muench MO**, Simmons G. Characterization of Chikungunya pseudotyped viruses: Identification of refractory cell lines and demonstration of cellular tropism differences mediated by mutations in E1 glycoprotein. *Virology* 393:33-41, Epub Aug 18, 2009.
- 53) 2010. Glowacka I, Bertram S, Herzog P, Pfefferle S, Steffen I, **Muench MO**, Simmons G, Hofmann H, Kuri T, Weber F, Eichler J, Drosten C, Pöhlmann S. Differential downregulation of ACE2 by the spike proteins of severe acute respiratory syndrome coronavirus and human coronavirus NL63. *J. Virol.* 84:1198-1205, Epub Oct. 28, 2009.
- 54) 2010. Erlendsson LS, **Muench MO**, Hellman U, Hrafnkelsdóttir SM, Jonsson A, Balmer Y, Mäntylä E, Örvar BL. Barley as a green factory for the production of functional Flt3 ligand. *Biotechnol. J.* 5:163-171, Epub Oct. 20, 2009.
- 55) 2010. Chen JC, Kuo ML, Ou LS, Chang PY, **Muench MO**, Shen CR, Chang HL, Yu HY, Fu RH. Characterization of tolerance induction through prenatal marrow transplantation: the requirement for a threshold level of chimerism to establish rather than maintain postnatal skin tolerance. *Cell Transplant.* (In Press).

NON-PEER REVIEWED PUBLICATIONS:

- 1) 1990. Moore MAS, **Muench MO**, Warren DJ, Laver J. Cytokine networks involved in the regulation of haemopoietic stem cell proliferation and differentiation. In *Molecular Control of Haemopoiesis*, CIBA Symposium No 148. Eds. John Wiley & Sons, Chichester. p.43-58.

- 2) 1993. **Muench MO**. Cytokine interactions in the regulation of primitive murine hematopoietic progenitors. Ph.D. Thesis, Cornell University Medical College, New York.
- 3) 1994. Bárcena A, **Muench MO**, Roncarolo MG, Spits H. In search of T-cell progenitors in the human fetal liver. *Res. Immunol.* 145:120-123.
- 4) 1994. **Muench MO**, Roncarolo MG, Namikawa R, Bárcena A., Moore MAS. Progress in the ex vivo expansion of hematopoietic progenitors. *Leuk. Lymph.* 16:1-11.
- 5) 1995. Bárcena A, **Muench MO**, Roncarolo MG, Spits H. Tracing the expression of CD7 and other antigens during T- and myeloid-cell differentiation in the human fetal liver and thymus. *Leuk. Lymph.* 17:1-11.
- 6) 1995. **Muench MO**, Roncarolo MG, Namikawa R. Effects of cytokine administration on human hematopoiesis in SCID-hu mice. In *Human Hematopoiesis in SCID Mice* Eds. M-G. Roncarolo, B. Péault and R. Namikawa. R.G. Landes Co., Austin. p.53-68.
- 7) 1996. Namikawa R, **Muench MO**, Roncarolo MG. Regulatory roles of the ligand for Flk2/Flt3 tyrosine kinase receptor on human hematopoiesis. *Stem Cells.* 14:388-395.
- 8) 1999. **Muench MO**, Shieh J-H. In vitro development of megakaryocytes and platelets. In *Primary Hematopoietic Cells, Volume 4 of the Human Cell Culture series.* Eds. Koller MR, Palsson BO, Masters JWR. Kluwer Academic Publishers, Boston. pp. 287-315.
- 9) 2000. **Muench MO**, Golfier F. Fetal hematopoietic stem cell transplantation. In *The Unborn Patient, The Art and Science of Fetal Therapy, Third Edition.* Eds. Harrison MR, Evans MI, Adzick NS, Holzgreve W. W.B. Saunders Company, Philadelphia. pp. 617-628.
- 10) 2005. **Muench MO**. In utero transplantation: baby steps towards an effective therapy. *Bone Marrow Transplant.* 35:537-547.
- 11) 2005. **Muench MO**, Bárcena A. Novel T-cell populations in the human fetus. In *Progress in Immunology Research.* Ed. Veskler BA. Nova Science Publishers, New York. pp. 21-43
- 12) 2006. **Muench MO**, Firpo MT, Bárcena A. Turning embryonic and fetal stem cells into red cells: Erythropoiesis as a model for the challenges of tissue engineering. In *New Developments in Stem Cell Research.* Ed. Greer, Erik V. Nova Science Publishers, New York. pp. 31-57.
- 13) 2008. **Muench MO**. Transplantation NK.O.'ed in the First Trimester. *Blood* 112:4790-4791.

ABSTRACTS:

- 1) **Muench MO**, Bárcena A, Spits H, Roncarolo MG. Identification and characterization of high proliferative potential-colony forming cells (HPP-CFC) in the human fetal liver. *Exp. Hematol.* 21:1013. Annual meeting of the International Society of Hematology. Rotterdam, Holland, August 1993.
- 2) Culpepper J, Hannum C, Mattson J, Luh J, McClanahan T, Campbell D, Zurawski S, Wagner J, Hudak S, Martina N, Rennick D, Peterson D, Kastelein R, Menon S, Dang W. Bazan JF, **Muench M**, Kelner G, Roncarolo M-G, Zlotnik A, Rosnet O, Dubreuil P, Birnbaum D, Lee F. Characterization of the ligand for FLT3/FLK2. Annual meeting of the American Association of Immunologists. Anaheim, CA, April 1994.
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