Stem cell therapy for cardiovascular disease : answering basic questions regarding cell behavior

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CHAPTER 12

Addenda

LIST OF PUBLICATIONS

1. **van der Bogt KEA**, Sheikh AY, Schrepfer S, Hoyt EG, Cao F, Ransohoff K, Contag CH, Robbins RC, Wu JC. *Comparison of Different Adult Stem Cell Types for Treatment of Myocardial Ischemia.* Circulation. 2008 Sep 30;118(14 Suppl):S121-9.
2. **van der Bogt KEA**, Schrepfer S, Yu J, Sheikh AY, Hoyt EG, Ransohoff K, Govaert JA, Cao F, Contag CH, Robbins RC, Wu JC. *Comparison of Transplantation of Adipose Tissue- and Bone Marrow- Derived Mesenchymal Stem Cells in the Infarcted Heart.* Transplantation. 2009 Mar 15;87(5):642-52.
3. **van der Bogt KEA**, Vrancken-Peeters MPFM, van Baalen JM, Hamming JF. *Resection of carotid body tumors: results of an evolving surgical technique.* Ann Surg. 2008 May;247(5):877-84
4. **van der Bogt KEA**, Swijnenburg RJ, Cao F, Wu JC. *Molecular Imaging of Human Embryonic Stem Cells: Keeping an Eye on Differentiation, Tumorigenicity and Immunogenicity.* Cell Cycle. 2006 Dec;5(23):2748-52
5. **van der Bogt KEA**, van Baalen JM, Hamming JF. *Comment on "Carotid chemodectomas: Long-term results of subadventitial resection with deliberate external carotid resection".* Ann Vasc Surg. 2009 Mar;23(2):288-9
6. Sheikh AY*, **van der Bogt KEA*,** Doyle TC, Sheikh MK, Ransohoff KJ, Ali ZA, Palmer OP, Robbins RC, Fischbein MP, Wu JC. *Micro-CT for characterization of murine CV disease models.* JACC Cardiovasc Imaging. 2010 Jul;3(7):783-5. *Shared first authorship
7. Hendry SL*, **van der Bogt KEA***, Sheikh AY, Arai T, Dylla SJ, Drukker M, McConnell MV, Kutschka I, Hoyt EG, Cao F, Weissman IL, Connolly AJ, Pelletier MP, Wu JC, Robbins RC, Yang PC. *Multimodality evaluation of in vivo MRI of myocardial restoration by mouse embryonic stem cells.* J Thorac Cardiovasc Surg. 2008 Oct;136(4):1028-1037. *Shared first authorship
8. Cao F, **van der Bogt KEA**, Sadrzadeh A, Xie X, Sheikh AY, Wang H, Connolly AJ, Robbins RC, Wu JC.*Spatial and Temporal Kinetics of Teratoma Formation from Murine Embryonic Stem Cell Transplantation*. Stem Cells Dev. 2007 Dec;16(6):883-91
9. Swijnenburg RJ, **van der Bogt KEA**, Sheikh AY, Cao F, Wu JC.*Clinical hurdles for the transplantation of cardiomyocytes derived from human embryonic stem cells: role of molecular imaging.* Curr Opin Biotechnol. 2007 Feb;18(1):38-45
10. Sheikh AY, Lin SA, Cao F, Cao YA, **van der Bogt KEA**, Chu P, Chang CP, Contag CH, Robbins RC, Wu JC. *Molecular Imaging of Bone Marrow Mononuclear Cell Homing and Engraftment in Ischemic Myocardium*. Stem Cells. 2007 Oct;25(10):2677-84

11. Lee AS, Tang C, Cao F, Xie X, **van der Bogt K**, Hwang A, Connolly AJ, Robbins RC, Wu JC. *Effects of cell number on teratoma formation by human embryonic stem cells.*Cell Cycle. 2009 Aug 15;8(16):2608-12
12. Govaert JA, Swijnenburg RJ, Schrepfer S, Xie X, **van der Bogt KE**, Hoyt G, Stein W, Ransohoff KJ, Robbins RC, Wu JC. *Poor functional recovery after transplantation of diabetic bone marrow stem cells in ischemic myocardium.* J Heart Lung Transplant. 2009 Nov;28(11):1158-1165
13. Swijnenburg RJ, Govaert JA, **van der Bogt KE**, Pearl JI, Huang M, Stein W, Hoyt G, Vogel H, Contag CH, Robbins RC, Wu JC. *Timing of bone marrow cell delivery has minimal effects on cell viability and cardiac recovery after myocardial infarction.* Circ Cardiovasc Imaging. 2010 Jan;3(1):77-85

CURRICULUM VITAE

The author of this thesis was born on August 20th, 1981 in Nieuwveen, The Netherlands. He grew up in the village of Nieuwkoop, while attending the Ashram College (VWO) in Alphen aan den Rijn. After graduation in 2000, he applied for a decentralized selection procedure for medical school at Leiden University, and started in September of that year.

While attending medical school, he was an active participant in the Student Society Leidse Studenten Vereniging Minerva. Moreover, he worked as an allocation officer at the Eurotransplant International Foundation. In his fourth year, he got introduced to surgical research with projects concerning the surgical treatment of carotid body tumors, supervised by prof. dr. J.F. Hamming. Through this project and his work at Eurotransplant, the author got interested in transplantation and surgery and decided to spend a year abroad to gain experience in basic science.

Having received several research grants including ones from the Fulbright Foundation and the American Heart Association, he moved to Palo Alto, California, United States of America in 2005 and to San Francisco in 2006. As a visiting researcher in Stanford University's Laboratory of Cardiothoracic Transplantation, he initiated his first basic scientific studies under the supervision of prof. dr. R.C. Robbins. Soon, he was introduced to dr. J.C. Wu to collaborate on projects merging the fields of stem cell treatment and molecular imaging. After 14 months and having completed most of the work as described in this thesis, he returned to the Netherlands to finish medical school. During that time, he received the Hippocrates Foundation Research Award, the Dick Held Research Award, and a Vascular Biology Working Group Award for the publication as presented in chapter 6 of this thesis.

After finishing medical school in 2008, he received a Professor Michaël-van Vloten Foundation grant to perform more research on the topic of stem cell transplantation in order to finish this thesis. This time, he initiated a research project that was performed in part at Leiden University under the supervision of prof. dr. J.F. Hamming as well as at Stanford under the supervision of dr. J.C. Wu and prof. dr. R.C. Robbins. The work as described in this thesis was presented at the American Heart Association Scientific Sessions in 2007 and 2009. At this moment, the author lives in Amsterdam, The Netherlands, and is a surgical resident at the Leiden University Medical Center under the supervision of prof. dr. J.F. Hamming.

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Bobby Robbins, who I greatly admire. You're an example of how to combine basic scientific research with a flourishing surgical practice. Your enthusiasm has been a major stimulant for carrying out the studies in this thesis and pursuing a career in academic surgery.

Dear Joe, I have watched the expansion of your lab with great admiration. In October 2005, we were having lab meetings just with four of us. When I left Stanford in 2010, we were over 20 people. Yet, you manage to return papers and answer emails within a day. Your ambition and perseverance are impressing but secondary when it comes to great mentorship. Not only have you introduced me to the world of basic science and molecular imaging, but you have also managed to provide insight in running a lab and writing grant proposals. Those aspects of your mentorship will be invaluable throughout my career. And I must admit, whenever you start a sentence with "I keep telling you guys….", in the end it turns out that you're usually right.

Dear Grant, thanks for making me feel welcome and at home from the first minute I entered the lab. Multi-tasking through micro-surgery, listening to KFOG, drinking coffee, and talking sports on the phone with your buddies all at the same time, you have done so much work for my projects. Thanks a million and we'll meet again in Oregon.

Dear Jaap, guiding me through my first research experience, then through the PhD studies, and now through the surgery program, you have been the constant factor throughout my career ever since I was introduced to you in 2004. Thank you for your mentorship, I hope we'll be able to continue the collaboration for a long time.

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To my "paranymfen", Maarten and Willem, friends in life and science. You have been involved in this project from the very first moment. It's a great pleasure and a reassurance to have you there until the very last.

To Rutger-Jan, Johannes, Ernst Jan, Alwine, Laura, C-11-14, the girls at Peet's Coffee and all my colleagues in lab and around campus: It would have been a lot more boring without you. Thanks for your great company, humor, and hard work.

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To my family: By providing me with every kind of support I could wish for, you have contributed to every single letter in this thesis.

Lastly, I consider myself very lucky to have worked (and still work) in an environment where so many colleagues have become friends, and where so many friends have become colleagues. It has been five years since I was first introduced to stem cell research. Since that point, it has been constantly on the back of my mind. It has lead to a load of new ideas and has shaped new goals for the future. Now, it's time pursue these new goals.

Koen van der Bogt

October 2010

"Wrap it up, write it down, and you've got your paper right there!"

COLOFON

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