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Posterior heart field and epicardium in cardiac development : PDGFR α and EMT

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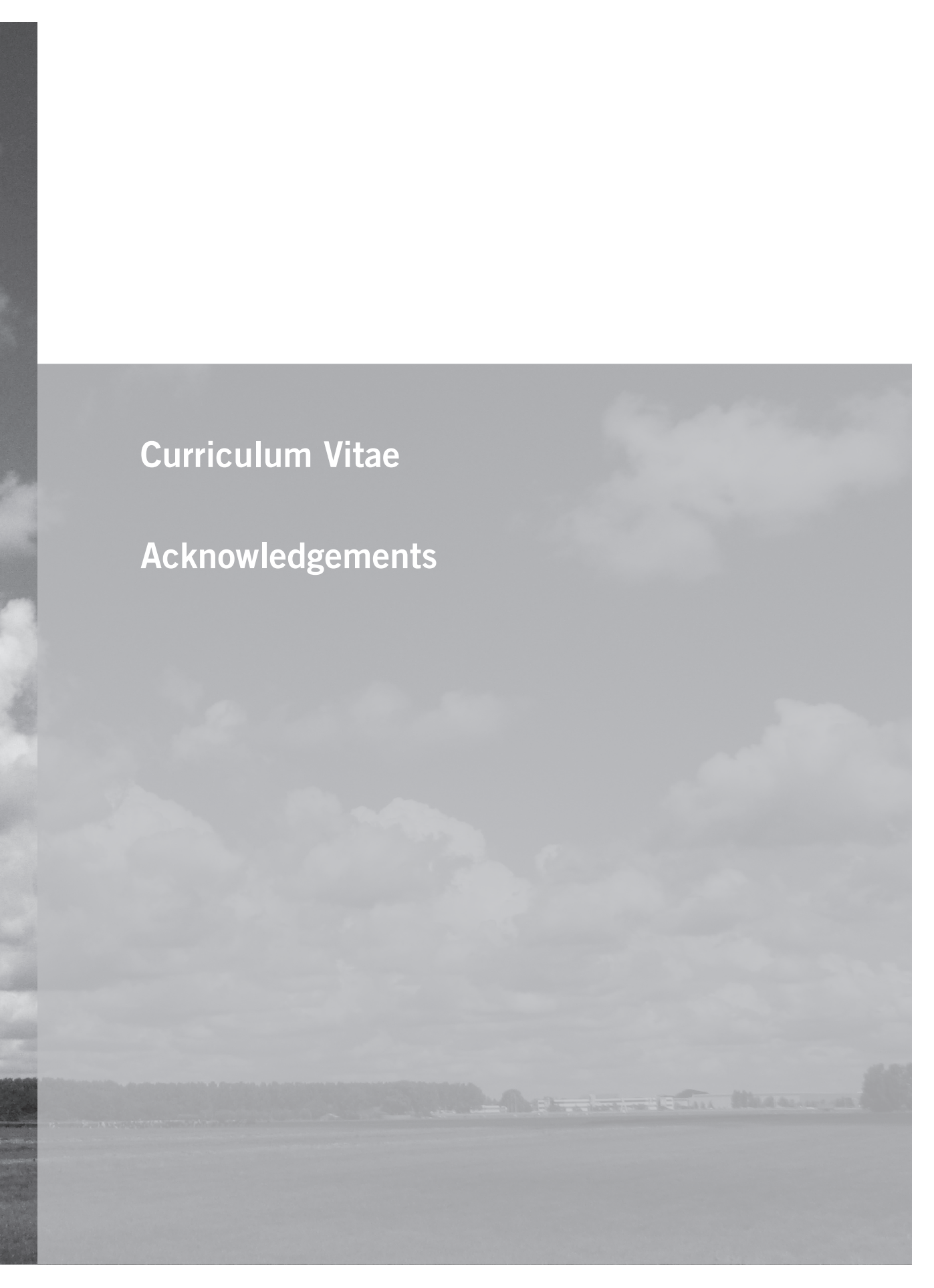
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Curriculum Vitae

Acknowledgements

CURRICULUM VITAE

Noortje Anna Maria Bax was born in Eindhoven, The Netherlands, at March 12th 1981. She graduated from the Pleincollege Eckart in 1998 (HAVO) and 2000 (Atheneum). In 2000, she started her study Biology at the Radboud University Nijmegen, where she performed three research internships in the direction of Medical Biology. The first was carried out at the Department of Obstetric and Gynaecology of the University Medical Center St. Radboud under supervision of Dr. P. de Boer, and was entitled “Fertilisation in Poly (ADP-ribose) polymerase knock-out mice oocytes”. During this internship she also wrote a thesis entitled “The versatility of Poly (ADP-Ribose) Polymerase. Her second internship was carried out at the Department of Orthodontics and Oral Biology, also at the University Medical Center St. Radboud. This research project was entitled “Tissue engineering of Oral mucosa” and was performed under supervision of Prof. Dr. G. Flik (Department of Organismal Animal Physiology) and Dr. H.W. Von den Hoff (Department of Orthodontics and Oral Biology). For the department of Orthodontics and Oral Biology, Noortje wrote another thesis entitled “Epithelial-mesenchymal interactions in tooth development”. Her final research project was performed at the Department of Cardiology of the Leiden University Medical Center under the supervision of Prof. Dr. A. van der Laarse, Dr. D.E. Atsma both from Leiden University Medical Center and Prof. Dr. E.J. van Zoelen of the Department Cell and Applied Biology of the Radboud University. This research project was entitled “Vasculogenesis or angiogenesis after mesenchymal stem cell therapy?” and the title of the thesis was “Differentiation of hemangioblast to endothelial cell”. Noortje graduated in March 2006.

In April 2006, she started her PhD-project at the department of Anatomy and Embryology under the supervision of Prof. Dr. A.C. Gittenberger-de Groot. In March 2008, Dr. M-J. Goumans became her second supervisor as part of Noortje her PhD-project was more focussed on *in vitro* work.

In September 2010, she started working as a post-doc at the department of Biomedical Engineering of the Technical University Eindhoven in the Soft Tissue Biomechanics lab, where she works on cell-matrix interactions together with Prof. C.V.C Bouten.

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The collaboration with several international research groups has improved the quality of this thesis and without their support the chapters of this thesis concerning PDGFR α would not be realized. I am very grateful to Dr. Steven Bleyl (Department of Pediatrics, University of Utah School of Medicine, Salt Lake City, Utah, USA), Prof. Christer Betsholtz and Radiosa Gallini for their valuable contributions and scientific input.

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List of Publications



LIST OF PUBLICATIONS

Epicardium-derived cells are important for correct development of the Purkinje fibers in the avian heart.

Eralp, I., Lie-Venema, H., **Bax, NAM.**, Wijffels, MC., Van der Laarse, A., Deruiter, MC., Bogers, AJ., Van den Akker, NMS., Gourdie, RG., Schalij, MJ., Poelmann, RE., Gittenberger-de Groot, AC.

Anat Rec A Discov Mol Cell Evol Biol. 2006 Dec;288(12):1272-80.

Epicardial cells of human adults can undergo an epithelial-to-mesenchymal transition and obtain characteristics of smooth muscle cells in vitro.

Van Tuyn, J., Atsma, DE., Winter, EM, van der Velde-van Dijke, I., Pijnappels, DA., **Bax, NAM.**, Knaan-Shanzer, S., Gittenberger-de Groot, AC., Poelmann, RE., van der Laarse, A., van der Wall, EE., Schalij, MJ., de Vries, AAF.

Stem Cells. 2007 Feb;25(2):271-8.

Origin, fate and function of epicardium-derived cells in cardiac development and their relation to congenital heart defects.

Lie-Venema, H., van den Akker, NMS., **Bax, NAM.**, Winter, EM., Maas, S., Kekarainen, T., Hoeben, R., deRuiter, MC., Poelmann, RE., Gittenberger-de Groot, AC.

The Scientific World Journal. 2007 Nov;7:1777-98

Platelet-derived growth factor is involved in the differentiation of second heart field-derived cardiac structures in chicken embryos.

Bax, NAM., Lie-Venema, H., Vicente-Steijn, R., Bleyl, SB., Van den Akker, NMS., Maas, S., Poelmann, RE., Gittenberger-de Groot, AC.

Dev Dyn. 2009 Oct;238(10):2658-69

Dysregulation of the PDGFRA gene causes inflow tract anomalies including TAPVR: integrating evidence from human genetics and model organisms.

Bleyl, SB., Saijoh, Y., **Bax, NAM.**, Gittenberger-de Groot, AC., Wisse, LJ., Chapman, SC., Hunter, J., Shiratori H., Hamada, H., Yamada, S., Shiota, K., Klewer, SE., Leppert, ME., Schoenwolf GC.

Hum Mol Genet. 2010 Apr;19(7):1286-301

Electrical activation of Sinus venosus myocardium and expression patterns of RhoA and Isl-1 in the chick embryo.

Vicente-Steijn R., Kolditz, DP., Mahtab, EA., Askar, SF., **Bax, NAM.**, Van Der Graaf, LM., Wisse, LJ., Passier, R., Pijnappels, DA., Schalij, MJ., Poelmann, RE., Gittenberger-de Groot, AC., Jongbloed, MR.

J Cardiovascular Electrophysiol. 2010 April

Cardiac malformation in *Pdgfra* mutant embryos are associated with increased expression of WT1 and Nkx2.5 in the second heart field.

Bax, NAM., Bleyl, SB., Gallini, R., Wisse, LJ., Hunter, J., van Oorschot, AAM., Mahtab, EAF., Lie-Venema, H., Goumans, M-J., Betsholtz, C., Gittenberger-de Groot, AC.

Dev Dyn. 2010 Aug;239(8):2307-17

Epicardium-derived cells enhance proliferation, cellular maturation and alignment of cardiomyocytes.

Weeke-Klimp, A., **Bax, NAM.**, Bellu, AR., Winter, EM., Vrolijk, J., Plantinga, J., Maas, S., Brinker, M., Mahtab, EA., Gittenberger-de Groot, AC., van Luyn, MJ., Harmsen, MC., Lie-Venema, H.

J Mol Cell Cardiol. 2010 Oct;49(4):606-16

