Glucocorticoids, metabolic adaptations and recovery : studies in specific mouse models

Auvinen, H.E.

ACKNOWLEDGEMENTS

Finally, it is done and the four years of research has come to an end. This point, however, was not reached without hard work. Nor did I make it here alone. Many people have had a special contributing role in the making of this thesis and I wish to show my respect for their support and thank them.

Prof. dr. Pereira, dear Alberto, thank you for your guidance and the discussions we have had over this period of time. Together we were able solve many scientific issues regarding our challenging research. The most valuable lessons I have learned from you, in the form of advice and aphorisms, however, are not related to the scientific research, but to everyday life, which I will remember, cherish and apply regardless where I go. Prof. dr. Rensen, dear Patrick, thank you for the scientific discussion and support that you have provided. Your enthusiasm for research is truly an inspiration to many. Dr. Biermaz, dear Nienke, thank you for your support, comments and discussions that have often improved the scientific out-put and taken it forward from a dead-end.

During my time in the ENDO-lab, I have met a group of absolutely fantastic personalities, who have ever so often brighten the day with good jokes, saved the day with valuable help, and created all-around good atmosphere. In alphabetical order: Amanda (thanks for all the clamps), An, Angela, Anton, Anita, Bruno, Cheryl, Edwin, Hanno P, Hans R, Huub, Iliana, Inneke, Irene, Isabel, Ivo, Jan v. K, Jan S, Janine, Janna, Janny, Jimmy, Jiska, José, Judith, Karien, Ko, Laura, Lianne v. B, Lianne v.d. W, Louie H, Maggy, Man-Chi, Marieke, Martiene, Martijn, Mattijs, Nikos, Padmini, Paul, Peter, Randa, Rasvan, Rosa, Sam, Sander, Silvia, Sjoerd, Susan, Vanessa, Vicky and Wen. It is true, a good lab is a sum of the people who work there and it takes a lab to raise a student. It has been wonderful working with all of you. I would like to particularly thank Nancy for you have been my ally and confidant and I have been your biggest fan through these four years. Mieke, thank you for simply being there. Mariëtte, never loose that drive and joy. Chris, you are the spirit of the lab. Thank you for fixing pretty much everything. Trea and Hetty, thank you for your hands-on help in lab. Onno, we met the first time spring 2006 when I was just an eager student and it has been great pleasure to also have the opportunity to work with you. I would also like to extend my thanks to Ben and Fred at E0. Thank you for the great care of the animals in my experiments and always facilitating the circumstances needed for stress research (however odd they may have seemed). Without your co-operation and help, I would have not gotten very far. I would also like to thank secretaries Marjanne, Marjolein and Caroline for your administrative help.

Claudia and Laura, my paranymfen, you both have been a great support for me during these four years. Claudia, you have offered good advice, good help and good times. One could not ask for more from a colleague and a mate. I really miss the click of your heels in the hallways. Laura, we have known each other for over twenty years. You have decided, completely disregarding my warnings, to start PhD research yourself. I hope I can be the support for you, during the coming years of twilight that you have been for me.

Finally, I would like to thank my families who have welcomed me home with open arms from where ever I might be returning and provided me with food and sauna in Kauppi, Viinikka, Fiskari and Hippilä. I would like to thank brother-Joel for all the favors and all my friends for the soft spot on the sofa and late nights. What memories we have together! Bob, honey, this thesis is as much yours as it is mine. Eight years abroad have passed and now it is time to put on the ruby shoes, click heels and say “there’s no place like home”.

LIST OF PUBLICATIONS (FULL PAPERS)

Auvinen HE, Wang Y, Princen H, Romijn JA, Havekes LM, Smit JWA, Meijer OC, Biermasz NR, Rensen PCN, Pereira AM. Both transient and continuous corticosterone excess inhibit atherosclerotic plaque formation in APOE*3-Leiden.CETP mice. *Plos One* 2013 second revision

Auvinen HE, Coomans CP, Boon MR, Romijn JA, Biermasz NR, Meijer OC, Havekes LM, Smit JWA, Rensen PCN, Pereira AM. Glucocorticoid excess induces long-lasting changes in body composition in male C57Bl/6J mice only in the presence of high fat diet. *Submitted*

Auvinen HE, Romijn JA, Biermasz NR, Pijl H, Havekes LM, Smit JW, Rensen PC, Pereira AM. The effects of high fat diet on the basal activity of the hypothalamus-pituitary-adrenal axis in mice. *Journal of Endocrinology* 2012; 214: 191-7

Auvinen HE, Romijn JA, Biermasz NR, Havekes LM, Smit JW, Rensen PC, Pereira AM. Effects of high fat diet on the Basal activity of the hypothalamus-pituitary-adrenal axis in mice: a systematic review. *Hormone and Metabolic Research* 2011; 43: 899-906

de Leeuw van Weenen JE, Auvinen HE, Parlevliet ET, Coomans CP, Schröder-van der Elst JP, Meijer OC, Pijl H. Blocking dopamine D2 receptors by haloperidol curtails the beneficial impact of calorie restriction on the metabolic phenotype of high-fat diet induced obese mice. Journal of *Neuroendocrinology* 2011; 23: 158-67

Sareila O, Korhonen R, Auvinen H, Hämäläinen M, Kankaanranta H, Nissinen E, Moilanen E. Effects of levo- and dextrosimendan on NF-kappaB-mediated transcription, iNOS expression and NO production in response to inflammatory stimuli. *British Journal of Pharmacology* 2008; 155: 884-95

CURRICULUM VITAE

Hanna Elina Auvinen was born on 24th of July 1980 in Tampere, Finland. Year 1999 she graduated from art gymnasium (Tammerkosken lukio) in Tampere. Year 2004 she started her biomedicine (biomedicin) studies in Karolinska Institut in Stockholm, Sweden. During these studies, she spent spring term 2006 in Leiden University as an exchange student. Summer 2007 she worked in the Department of Immunology and Pharmacology in Tampere University to construct a stabily transfected cell line for mouse iNOS-promotor. She returned again to Leiden to Leiden/Amsterdam Center for Drug Research to conduct her master thesis project titled "Cannabinoid Receptor 1 Expression in the Rat Brain Under Different Conditions of Glucocorticoid Exposure" under the supervision of dr. A.M. Pereira. She graduated from Karolinska Institut with a degree of Master of Medical Science with a Major in Biomedicine (Biomedicine Magister Exam) in the spring 2008. After obtaining her master degree she started her PhD research under the supervision of dr. A.M. Pereira in the Department of Endocrinology and Metabolic Diseases in the Leiden University Medical Center. Her PhD research, results of which are presented in this thesis, was completed in August 2012. Since then she has returned to Finland.