

### Acknowledgements

Finally the time has come to look back and reflect on the past few years – the quest for PhD. For all this years – at the university and later on – my girlfriend Ania has always provided me with unconditional support. Always full of understanding for the life of a scientist: working overtime and weekends, need for mobility and obviously the salary of a scientist. She has never complained and always expressed her belief in me. Now is the time and place to express my appreciation: thank you, this couldn't be done without you!

How have I reached this point? From time to time an evaluative look back certainly is worthwhile. I think that all this starts before you know what science is at all. It is the parents that are responsible for seeding this appreciation for knowledge. In my case it started with a Little Chemist kit and ended up with blowing up the toilet at school. At all times (well, maybe except for the toilet case) my parents were full of understanding, supported me and showed interest in my progress. For this I can't thank them enough. I hope they are proud of what I achieved and that they see their efforts rewarded. I also hope there's more to come.

In the distant times before I entered the university there were two persons important for my further proceedings. Zdzislaw Zaleski was my chemistry teacher in secondary school. He was able to awaken ambition and competition spirit in some students and induce them to invest their free time and extra work in preparations for the National Chemistry Olympiad. He also spent his free time in the lab preparing his team for the contest. Thanks to him I had the opportunity to represent my school in the "Top 100" final thrice and won myself an entry to the university. Meanwhile my interests drifted somewhat towards biology but never far enough from chemistry to make me a botanist. I found molecular biology a field where these two disciplines meet forming the foundations of life. When the time came to decide what to study I had the flirt with an idea of getting rich. I applied for both the leading business school and science department. Succeeding in both I faced the dilemma, a choice that seemingly was as clear as it gets but still not an easy one. As I see it now, it was my elder brother whose advice finally made my scientific spirit win. I am grateful for that every time I see an army of uniformed people leaving one of those skyscrapers, which is not often since being a scientist certainly is not a nine-to-five job.

It was at the Warsaw University that I've had my first contact with real science. I was a student of Inter-Faculty Individual Studies in Mathematics and Natural Sciences where one could shape their own study programme picking and mixing from seven departments as seemingly distant as biology, mathematics, geography or psychology. Thus it was important for an inexperienced student to have a tutor helping the potential of the student and his interests meet. My tutor was Dr. Aleksandra Dmochowska from the Department of Genetics who helped me through the pitfalls of choosing the lectures and becoming a molecular biologist with an extended chemistry background. It was also her who encouraged me to join the group of Professor Piotr Weglenski for the research part of my master thesis. I worked under the supervision

of Dr Agnieszka Dzikowska and she was the person that really introduced me to labwork. She has always emphasized the need for accuracy, scientific soundness and carefulness in experimental work. How many times did she stop my premature jumping to conclusions with this one question concerning proper controls... This, and the project itself that involved seeding and reseeded of thousands of colonies of *Aspergillus nidulans* taught me patience, being critical towards what you're doing and that scientific success is 1 percent of luck and 99 percent of hard work. She also was an invaluable help in preparation of my thesis, the first piece of scientific text I had to write.

Several friendships of these made during my university time survived the trial of time. I'd like to thank Marcin von Grotthuss, Justyna McIntyre and Wojtek Dragan for being good friends, discussing science at parties and other stuff that I'm not really supposed to mention here. Special thanks to Marcin, my paranymph, for winding up the scientific competition spirit that keeps pushing us forward in the quest for our first Nature papers.

Now, with a diploma in my pocket I had to decide what to do. I realized that the most career-wise option would be emigration. I also realized that having received a PhD I certainly wouldn't come back to Poland for a postdoc. I decided it was too early to leave everything for a decade or more and applied for a PhD student position at the International Institute of Molecular and Cell Biology in Warsaw, within a joint initiative of IIMCB and Utrecht University. The project was coordinated by Professors Willem Gispen and Michal Witt who were always very helpful when any problems related to international cooperation emerged. I was accepted for the position in the Laboratory of Molecular Immunology headed by Dr Jaroslaw Dastyk, a co-promoter of this thesis and my supervisor in Warsaw. Himself being interested in mast cells he designed a project concerning intracellular trafficking of TNF into mast cell granules. At this point I became a cell biologist. All I had were a fluorescent microscope with a 40x dry objective and a digital camera of the type you take for holidays. I couldn't see anything and when I did I still couldn't photograph it. Now, with an expertise on confocal microscopy I see it was like van Leeuwenhoek trying to see mitochondria. Nevertheless, with the help of my fellow PhD students Dominika Trzaska, Violetta Adamczewska and Ula Wyrzykowska from Laboratory of Molecular Immunology I managed to obtain my first publishable data. We shared the difficulties of colonizing the brand-new institute with Aleksandra Szybinska, Sanne Mikkelsen, Marta Bucko, Grzegorz Kudla, Leszek Lipinski, Lech Trzeciak and many others that, though not mentioned due to space constraints, are certainly not forgotten!

I have to mention that the publication of this paper, my first first-author one, with all its 6 figures in colour was financed by IIMCB, courtesy of Professor Jacek Kuznicki, the director of the institute.

Our Dutch counterparts were Professor Carla Bruijnzeel-Koomen and Dr Edward Knol, a promoter and co-promoter of this thesis, respectively. During my stay in Utrecht they were very helpful in terms of both scientific guidance and everyday life.

The problematics and tools necessary for my project were new to the Department of Allergology and Dermatology but Edward has made every effort to provide me with what I needed or contact me with the people who could help. At this point I have to thank Professors Paul van Diest, Alain Kummer, Paul Coffey and Leo Koenderman for sharing their resources and providing creative environment. When, as usually in a new lab, I was totally lost Miranda Buitenhuis, Adrie van Ieperen-van Dijk and Marloes Laaper-Ertmann helped me to find my way. Onno ten Berge, Inge Haeck, DirkJan Hijnen, Jorg van Loosdregt, Marja Oldhoff and Evert Nijhuis are the guys from my Dermatology room who made the life merry and rich in stroopwaffels. Bert Ruiter and Peter Lee always ready for the joke, fortunately not a practical one. I also have to thank Jantine Korpel and Miranda Jacobs-Verhoef, the secretaries that guided me through the maze of Dutch formalities. Obviously everyone in the department contributed to the great atmosphere for which I thank to the people not mentioned but certainly not forgotten.

In search of equipment and reagents I explored neighbouring departments making friends and receiving help from Marnix Wieffer from Cell Biology Department and the gang from Pathology Department: Pieter deKoning, Eelke Gort, Lennert Ploeger, Niels Bovenschen and Dick van Wichen. Special thanks to Arjan Groot, with whom I spent countless hours in a quiet and deserted lab, biking home well after midnight. Since we happened to live in the same house we've also had our bit of fun together. Thanks, Arie!

I have left The Netherlands richer in a pack of new friends and a box of results that later on turned out to be publishable. A note for any young microscopist: find a sponsor! Publishing a paper full of colour figures is pretty expensive; this time it was Carla and Edward that covered the expense instead of telling me to convert the figures to greyscale.

Having finished the Dutch period I returned to IIMCB and took up a position in the Department of Molecular Biology headed by Professors Maciej and Alicja Zylicz. Scientifically I started a completely new chapter but all along I received from them full moral and financial support I ever needed. The time needed to actually write the thesis has been stolen from my labwork. This thesis wouldn't have come into being without my new bosses and I'm extremely grateful for that. Professor Jacek Kuznicki, the director of IIMCB also showed a vivid interest in my proceedings and finally financed printing of this thesis.

Realizing that the list of people, who in this or other way contributed to my being here, is far from exhaustive, I'm closing this chapter and moving on to new challenges I'm certain that there is something in the words of the song that is occasionally heard around the Anfield Road: "You'll Never Walk Alone".