

University of Groningen

## 3D liver models in tissue engineering and toxicology

Starokozhko, Viktoriia

**IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.**

*Document Version*

Publisher's PDF, also known as Version of record

*Publication date:*

2016

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Starokozhko, V. (2016). *3D liver models in tissue engineering and toxicology*. University of Groningen.

### Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

### Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

# Acknowledgements





## Acknowledgements

---

I know for sure: dreams come true. When I was still studying in school or even during my first years in the university in Ukraine, I never thought that I will be here one day, in The Netherlands, defending my doctorate degree. The Huygens scholarship that allowed me to do a master program in Groningen changed my life completely and opened so many bright opportunities for me.

I am extremely happy that during my scientific PhD journey I have met so many great, kind and intelligent people. And these few pages cannot fully express how grateful I am to all of them!

I am a lucky PhD student, since I had not only one, but two great supervisors. **Geny**, I could not wish for a better supervisor. You gave me so much support and inspiration during these years that I was always leaving your room with hundreds of ideas, and the conviction that I can do it! You are not only a brilliant scientist and intelligent woman, but you are a great friend, with whom I could share my happiness and worries. As I told you before, I am endlessly amazed about how you can run so many different projects together and still be on top of them. I was so fortunate to have you as my study mentor and my supervisor for one of my master projects, and I loved your study topic and your group so much that when you offered me this PhD position, I was more than happy to accept it! Years fly... And now I am graduating. And I cannot fully express how thankful I am for everything. Enjoy your retirement, free time, hobbies and the many wonderful trips ahead. **Sabeth**, I always felt your support and I always could get advice from you, and you always found time for me. Your sense of humor would cheer up anyone and it was always a great pleasure to talk to you during our conference trips and dinners. Over the years, I have seen your group growing and developing. I wish you good luck with all the new projects.

I would like to express my sincere acknowledgements to the reading committee, **Prof. Peter Olinga**, **Prof. Frans Russel** and **Prof. Robert Porte**, for finding time to read and evaluate this thesis.

**Marjolijn**, my dear paranimph, we always had so many things to talk about, laugh about and complain about, that it was always fun with you! Nobody knows how many times you saved me from collapsing in the lab! Even late in the evening (in fact it would sometimes be in the middle of the night), when I was fighting with the biochip or HPLC, your magic words: “Don’t worry, I’m coming now”, saved me many times from going crazy ☺. After almost 4 years of working together I can read your coded messages, which nobody else would understand (e.g. “pretty please”- can somebody interpret that? I can!).

**Marina**, you are a great person, so cheerful and helpful. I am very happy I got to work with you during my PhD. I could always rely on you, and whenever you were around, I knew, nothing can go wrong ☺. And you were always encouraging me when I was learning Dutch, and it was always nice to chat with you in the lab. **Miriam**, **Catharina** and **Eduard**, your unlimited expertise in many things, always amazed me. Thank you for all the help and advice! **Eduard**, thank you also for your humor, unlimited amount of jokes and teasing (for this, I’m not sure if I should thank you though ;))

**Klaas**, you do not walk, you always run! And that is probably your recipe for managing so many things at the same time and being successful. Thank you for our interesting conversations on

## Acknowledgements

---

scientific topics and on everything else. **Angela**, your enthusiasm and energy are contagious! You are so humorous and smart, that everyone was/is extremely happy working with you. You are a bright scientist and I am sure your future career will be just as bright! And thank you for taking me to your aquaporin family ☺. **Anna** and **Barbro**, your groups are growing rapidly, and I wish you success with any future developments and of course grant applications. Thank you for fruitful discussions during Friday (now Monday) meetings! **Inge** and **Leonie**, thank you for many very useful suggestions and discussions during our meetings. **Inge**, it was always nice to supervise students together and attend the NVT meeting. **Hans** and **Daan**, thank you for teaching me pharmacokinetics and being so enthusiastic about this subject. **Hans**, I hope you are enjoying your free time with your family.

My dear ex-roommates, **Ming**, **Suresh**, **Sarah** and **Andreia**, we are all in different places now and in different countries. **Ming**, you were our most quiet roomie, but we knew that behind this calmness, there is another person hidden, full of energy, curiosity and motivation. You are a kind, supportive and encouraging friend, and we missed you here a lot! I hope you are enjoying your time in China together with your family and I hope to see you again one day. Our disorganized roomie, **Suresh**, you always seemed a bit chaotic, but everyone who got to know you better knows how much generosity and dignity is in you. You are a great friend. I am glad you found a job which you like, you deserve it! Our super active, enthusiastic and open German girl **Sarah**, your desk was always the most organized and we were always jealous ☺. I wish you success in finishing your PhD and you should know that I'm still taking care of your plants and boxes. My new roomies, **Hector** and **Aldy**, I wish you good luck with your PhDs and a new roommate after me ;).

My dear Portuguese, **Andreia**, my PhD life was so joyful because you were in it! You are such a talented, smart and cheerful girl. It seems like you could conquer any challenges. You are wacky, together with **Tiago**. You are my favorite couple! I am happy that we became close friends and went through so many things together (professional and personal). Our trip to Portugal was great and unforgettable. I miss you both a lot (and Di). And I wish you a very happy and successful life in Cardiff, and I will visit you there soon ☺.

My dear **Xiaoyu**, thank you for being my roommate to being my great friend. You developed so much from the first time I have met you. You are a beautiful mother now and very open-minded and intelligent woman. I wish all the happiness to you and your family. And I hope to witness the successful life of our little princess, baby June. **Benoit**, it was always a pleasure to observe your fights with Andreia. Thank you for the great time during our lunches, dinners, parties and of course our great trip to Paris! **Mackenzie**, you were my supervisor during my first master project and you became my friend afterwards. You always like to challenge yourself with new goals and therefore I wish you success with any new challenge you put in front of you. **Carian** and **Christina**, you have graduated just before me and I wish you good luck with your chosen paths and careers.

**Sylvia**, you are the kindest and the most patient person I have ever met. Your standards of honesty taught us all a lot. I wish you good luck with choosing a new path for yourself; you deserve to

## Acknowledgements

---

have the best one! **Natalia**, of course I will not forgive you for going on holidays one week before my defense ;). But I still want to thank you for bringing cookies to our office and your once-a-year smile. Good luck with finishing your PhD (and do not slice your fingers anymore).

Dear **Jan**, I don't know what our lab would look like without your supervision. Your greetings and smile in the morning would make any day better right away. Thank you for all the help in the lab and with many other issues! **Gillian**, I always went to the third floor to get coffee, specifically to have a chance to chat with you. You always bring so much fun to this group and I will miss you dearly (my witty wacky friend). You are the best! **Bert**, thank you for taking care of all our publications and conference abstracts. Enjoy your retirement and free time! **Henk**, thank you for our chats every now and then, and I wish you good luck with your numerous students.

I would like to thank our FTB colleagues of the **slicing group** (Peter, Dorenda, Su, Nia, Jo, Emma, Gerian, Radit, Jasper, Emilia, Rick, Tobias, Mitchel, Isabel, Miriam, Iris, Alix, Bao Tung...I hope I did not forget anyone!) for a great time and nice chats in the slicing lab. **Su**, I am waiting for you to present me one of your paintings one day ;). **Gerian**, you are a lovely, smart and hard-working girl, I am sure that you will be very successful in your PhD. **Jo**, you are a great person, so kind, polite and cheerful. It was a great pleasure to work with you and I wish you good luck with finishing off your PhD. **Emma**, you were the boss of your PhD supervisor already when you were a master student. Continue being so bossy and confident ☺.

I would like to thank all the **surgeons in the UMCG** for their willingness and dedication in providing us with human tissue. Without your great work, scientific progress in our field would not be possible.

**Pieter**, thank you for all your help with the biochip experiments. You were always very supportive and willing to help. You are defending your doctorate degree just one week before me, so I wish you good luck on that great day! Also, I would like to thank all members of the **Pharmaceutical analysis group** for their support when I was working in their labs. **Maciej**, thank you for your help and advice during our work together. And of course I should thank you for our great trip to Milan and waiting for me while I was shopping ☺. **Margo**, thanks for our always nice conversations whenever we bumped into each other. You are a very talented artist. And thank you for being my professional photographer on the 23<sup>rd</sup> of December ☺!

My super cheerful and friendly colleagues, **Valentina, Adhy, Fransien, Roberta, Daphne, Laura, Keni, Gwenda, Jiaying, Sophie** and **Anienke**, I wish you good luck with starting, continuing or finishing your PhDs! It was always a great pleasure to chat with you during lunch or whenever we had a chance! I hope we will keep in touch. **Amirah**, you are so kind and cheerful. I think you brought the Indonesian sun to the Netherlands to shine in our group. Good luck with finishing your PhD so soon already. I would also like to thank all our **visiting guests** for their friendliness and scientific contributions. And to all my former colleagues, who left the group some time ago (**Christa, Magda, Kaisa, Inge, Margo** and others), thank you!

## Acknowledgements

---

I am very thankful to my dear students, **Samiksha, Getahun, Nashwa, Ruby** and **Jessica**, I did not only teach you but I have also learned a lot from you. I wish you success in your future careers and plans.

I cannot end without thanking the **University of Groningen** and the EU Framework 7 program for funding my PhD. I would like to express my acknowledgements to all great people who were involved in this **NanoBio4Trans project**. It was my pleasure working with you on this big and ambitious goal: a bioartificial liver. Especially I would like to thank **Jenny, Martin, Mette** and **Anders** for our close collaboration.

I would like thank my dear teacher and supervisor in Ukraine, **Anna Vladimirovna**, and my dean **Olga Ivanovna**. Thank you for all your endless support and knowledge you gave me. Also, I would like to thank all my **friends** in the Netherlands, in Ukraine and many other countries for the great time and their friendship.

And finally I would like to thank my family. **Henk** and **Wietske**, I cannot express how happy I am to have you. Your kindness, support and care always made me feel at home. I'm very happy that you can share this major day with me! **Ymkje** and **Jelmer**, thank you for being always so friendly and welcoming. My dear **Bauke**, I am happy that you are my paranimph on this important occasion. You always have been and are my guardian angel. Thank you for always being there for me and being proud of me. In my happy moments you always laughed with me, and you supported me greatly in difficult times, when I needed it the most. I love you very much. Finally, I want to thank my dear **parents**, who always supported me so much in everything and who always said: "go for it, you will definitely be able to do it". And my wings were growing. Мої дорогі мамо і тато, я вам безмірно вдячна за все що ви мені дали, за вашу безкрайню підтримку, любов та турботу. Якщо б не ваша віра в мене, я б мабуть не досягла всього того, що в мене є сьогодні. Я вас дуже люблю. **Anton**, thank you for coming to my defense and bringing your family with you ☺. My dear **sister**, you always believed in me and when I was doubting or indecisive (and that happens quite often), I would talk to you, and everything would become more clear. You always bring so much joy to my life, now together with your two little angels. Love you lots and lots.

Thank you,  
Dr. Vika