Understanding the human innate immune system

*In-silico studies*

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What do you see when you turn out the light?
I can’t tell you, but I know it’s mine.

Oh, I get by with a little help from my friends

~ The Beatles
Acknowledgments

I moved to Saint Petersburg, Russia in the heart of winter back in December 2015.

I remember having a full-course dinner at a café called “The Idiot” to celebrate my birthday, an empty seat in front of me. I remember looking out the window, mesmerized as I see, for the first time, snow, which I fondly call a slow-motion version of rain, lazily piling on the river embankment. I have not gotten used to the lack of sunshine yet, still confused at how swiftly the city gets devoured by darkness.

I’ve come a long way from home to pursue a PhD that, looking back from now, I was not even prepared for.

This is the corner in my thesis where I can fully express my deepest gratitude to the people who have shaped me as a researcher. I’ve come a long way, and I still have a long way to go. Indeed, it’s not always about the destination.

To Professor Dr. Peter M.A. Sloot who has been an excellent mentor, who provided me the necessary guidance I needed, and the motivation to keep going and digging deeper into the fascinating realm of the innate immune response, a field that I’ve grown to love over the years. To Dr. Valeria V. Krzhizhanovskaya, my daily supervisor in Russia, who always has a smile for everyone, and with whom I exchange ideas with over tea, coffee and chocolates, and that person who always has my back when it comes to battling with bureaucracy. To Dr. Emiliano Mancini and Dr. Rick Quax who both have given me a concrete lesson on being a researcher, and for giving me valuable feedback that immensely improved my work. To Dr. Ruud Brands, the token immunologist in the team, whom I converse with regarding the amazing biology behind the system I am working on. To the ITMO university personalities for giving me “the” Russian environment I called my second home.

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Journal Publications


All authors have contributed substantially to the conception and design of the work. All authors have drafted and revised the work for intellectual content. All authors have equally provided the approval for plausible publication of the content. All authors have agreed to be accountable for all aspects of the work, which includes ensuring the accuracy and integrity of all parts of the work.

Presbitero, A., Mancini, E., Castiglione, F., Krzhizhanovskaya, V. V., & Quax, R. (2019). Game of Neutrophils: Modeling the Balance Between Apoptosis and Necrosis. BMC Bioinformatics. (manuscript accepted for publication)

A.P. conceived the idea. All authors contributed to developing the model. A.P. designed the coding work and performed the computational experiments. R.Q. and V.V.K. supervised the findings of this work. All authors have contributed to the writing of the article. All authors have read and approved the final version of the manuscript.


A.P. developed the model. A.P. designed the coding work and performed the computational experiments. C.P. supervised the findings of this work. All authors have contributed to the writing of the article.
Conference Proceedings


Prepared Manuscript

Presbitero, A., Quax, R., Mancini, E., Brands, R., Krzhizhanovskaya, V. V. & Sloot, P. M. A. Detecting Critical Transitions in the Human Innate Immune System Post-Cardiac Surgery

A.P. designed the coding work and performed the computational experiments. R.B. provided consultation for the biology behind the model assumptions. E.M. provided feedback on the manuscript. P.M.A.S. and V.V.K. supervised the findings of this work. All authors have contributed to the writing of the article.
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