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Quest for the cure: towards improving hematopoietic stem cell based lentiviral gene therapy

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Acknowledgment

As Haruki Murakami writes in *Kafka on the Shore*, "...once the storm is over, you won't remember how you made it through, how you managed to survive. You won't even be sure, in fact, whether the storm is really over. But one thing is certain. When you come out of the storm, you won't be the same person who walked in. That's what this storm's all about". Reflecting on my PhD journey, I realize the profound truth in these words. This journey has been a storm in itself and shaping me in ways I never anticipated. What you hold in your hands is just one result of this journey, but the impact of these years reaches far beyond. I owe immense gratitude to those who have been part of this journey.

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Curriculum vitae

Parisa was born on May 15, 1989, in Shiraz, Iran. In 2007, she got her diploma in natural sciences from Yas High School in Shiraz. She obtained her bachelor's degree in biology from Shiraz University in 2012. The following year, she moved to the Netherlands to pursue a master's in Biomedical Science at the University of Amsterdam. During her master's program, she gained research experience through internships in various academic institutions in the Netherlands and the USA.

To expand her experience in industry, Parisa completed an internship at Batavia Biosciences in Leiden, where she contributed to optimizing large-scale virus production. She earned her master's degree in 2016 and continued working as a research assistant at Batavia Biosciences. In 2017, she began a joint PhD project between the Immunology Department at Leiden Medical Center and Batavia Biosciences, under the supervision of Prof. Dr. Frank Staal and Dr. Karin Pike-Overzet. Her research, which focused on improving hematopoietic stem cell-based gene therapy using lentiviruses, resulted in this thesis.

List of Publications

- **Ex Vivo Expansion of Hematopoietic Stem Cells for Therapeutic Purposes: Lessons from Development and the Niche** **Tajer P**, Pike-Overzet K, Arias S, Havenga M, Staal FJT.. *Cells*. 2019 Feb 18;8(2):169.
- **IL3 Has a Detrimental Effect on Hematopoietic Stem Cell Self-Renewal in Transplantation Settings.** **Tajer P**, Canté-Barrett K, Naber BAE, Vloemans SA, van Eggermond MCJA, van der Hoorn ML, Pike-Overzet K, Staal FJT.. *Int J Mol Sci*. 2022 Oct 22;23(21):12736.
- **Utilizing epigenetic regulators to improve HSC-based lentiviral gene therapy.** **Tajer P**, Karakaslar EO, Canté-Barrett K, Naber B.A.E., Vloemans A, van Eggermond M.C.J.A, van der Hoorn M.L, van den Akker E, Pike-Overzet K, Staal F.J.T; *Blood Adv* 2024; 8 (18): 4936–4947.
- **Restoration of T and B Cell Differentiation after RAG1 Gene Transfer in Human RAG1 Defective Hematopoietic Stem Cells** Sorel, N.; Díaz-Pascual, F.; Bessot, B.; Sadek, H.; Mollet, C.; Chouteau, M.; Zahn, M.; Gil-Farina, I.; **Tajer, P.**; van Eggermond, M.; et al.. *Biomedicines* **2024**, *12*, 1495.