

Post-interventional vascular remodeling: novel insights and therapeutic strategies

Sluiter, T.J.

Citation

Sluiter, T. J. (2025, October 16). *Post-interventional vascular remodeling:* novel insights and therapeutic strategies. Retrieved from https://hdl.handle.net/1887/4273530

Version: Publisher's Version

Licence agreement concerning inclusion of doctoral

License: thesis in the Institutional Repository of the University

of Leiden

Downloaded from: https://hdl.handle.net/1887/4273530

Note: To cite this publication please use the final published version (if applicable).

LIST OF PUBLICATIONS

In het Panhuis W, Thiemann E, van Dijk DMAH, Been B, Jarrett K, Meurs A, Kooijman S, Hovingh MV, Modder M, van Os B, Sluiter TJ, Blomberg N, Pronk A, Afkir S, Streefland T, Lalai RA, Taveras M, Zhang S, Adams T, Turpin-Nolan S, Terry L, de Vries MR, Giera M, Rose-John S, Zelcer N, de Boer JF, de Aguiar Vallim T, Febbraio M, Rensen P, Schönke M. The designer cytokine IC7Fc attenuates atherosclerosis development by targeting hyperlipidemia in mice. Science Advances in press

de Jong A, Sluiter TJ, Peters HAB, Lamens A, Jukema JW, Arens R, Quax PHA, de Vries MR. CD137 signaling modulates vein graft atherosclerosis by driving T cell activation and regulating intraplaque angiogenesis. *JACC: Basic to Translational Science* 2025 Aug 1 10(8):101323

Kruit N, Sluiter TJ, de Vries MR. Role of Perivascular Adipose Tissue in Vein Remodeling. *Arteriosclerosis*, Thrombosis and Vascular Biology 2025 May 5(45):576-584

Garoffolo G, Sluiter TJ, Thomas A, Piacentini L, Ruiter MS, Schiavo A, Salvi M, Saccu C, Zoli S, Chiesa M, Yokoyama T, Agrifoglio M, Soncini M, Fiore GB, Martelli G, Condorelli G, Madeddu P, Molinari F, Morbiducci U, Quax PHA, Spinetti G, de Vries MR, Pesce M. Blockade of YAP Mechanoactivation Prevents Neointima Formation and Adverse Remodeling in Arterialized Vein Grafts. Journal of the American Heart Association 2025 April 1 7(14):e037531

De Jong A, Grasso V, van Dijk K, <u>Sluiter TJ</u>, Quax PHA, Jose J, de Vries MR. Comprehensive Unbiased Analysis of Vascular Tissue Changes in Accelerated Atherosclerosis Using High-Resolution Ultrasound combined with Photoacoustic Imaging. bioRxiv 2024 Nov 3 2024.10. 30.621032

Kip P*, Sluiter TJ*, MacArthur MR, Tao M, Kruit N, Mitchell SJ, Jung J, Kooijman S, Gorham J, Seidman JG, Quax PHA, Decano JL, Aikawa M, Ozaki CK, Mitchell JR, de Vries MR. Preoperative methionine restriction induces perivascular adipose tissue browning and improves vein graft remodeling in male mice. *Nature Communications* 2024 Nov 7;1(15):9562

Sluiter TJ, Cruddas L, Ninno F, Schmitz-Rixen T, Tsui J, de Vries MR. **Basic Vascular** Science 2024 Meeting. *Journal of Vascular Surgery – Vascular Science* 2024 (5):100210

Sluiter TJ, Tillie RJHA, de Jong A, de Bruijn JBG, Peters HAB, van de Leijgraaf R, Halawani R, Westmaas M, Starink LIW, Quax PHA, Sluimer JC, de Vries MR. Myeloid PHD2 Conditional Knockout Improves Intraplaque Angiogenesis and Vascular

Remodeling in a Murine Model of Venous Bypass Grafting. *Journal of the American Heart Association* 2024 Feb 6 13(3):033109

Baganha F, <u>Sluiter TJ</u>, de Jong RCM, van Alst LA, Peters HAB, Jukema JW, Delibegovic M, Pettersson K, Quax PHA, de Vries MR. **Phosphorylcholine Monoclonal Antibody Therapy Decreases Intraplaque Angiogenesis and Intraplaque Hemorrhage in Murine Vein Grafts**. *International Journal of Molecular Sciences* 2022 Nov 7:23(21):13662

Kip P, Sluiter TJ, Moore J, Hart A, Ruske J, O'Leary J, Jung J, Tao M, MacArthur MR, Heindel P, de Jong A, de Vries MR, Furkan Burak M, Mitchell SJ, Mitchell JR, Ozaki CK. Short-term Pre-operative Protein Caloric Restriction in Elective Vascular Surgery Patients: A Randomized Clinical Trial. *Nutrients* 2021 Nov 11; 13(11):4024

Sluiter TJ, van Buul JD, Huveneers S, Quax PHA, de Vries MR. Endothelial Barrier Function and Leukocyte Transmigration in Atherosclerosis. *Biomedicines*. 2021; 9(4):328

Kip P, Tao M, Trocha KM, MacArthur MR, Peters HAB, Mitchell SJ, Mann CG, Sluiter TJ, Jung J, Patterson S, Quax PHA, De Vries MR, Mitchell JR, Ozaki CK. Periprocedural Hydrogen Sulfide Therapy Improves Vascular Remodeling and Attenuates Vein Graft Disease. Journal of the American Heart Association. 2020 Nov 17;9(22)

Parma L, Peters HAB, <u>Sluiter TJ</u>, Simons KH, Lazzari P, De Vries MR, Quax PHA. bFGF blockade reduces intraplaque angiogenesis and macrophage infiltration in atherosclerotic vein graft lesions in ApoE3*Leiden mice. Scientific Reports 2020 Sep 29;10(1)

CURRICULUM VITAE

Thijs Sluiter was born on September 3rd 1998 in Amsterdam, the Netherlands. In 2010, he began his pre-university education (gymnasium) at Willem de Zwijgercollege in Bussum, graduating in 2016. That summer, he enrolled in medical school at Leiden University Medical Center (LUMC). In the fall of 2018, he spent a semester studying at the University of Edinburgh.

After completing his bachelor's degree, Thijs joined the vascular surgery research lab of Dr. Margreet de Vries and Prof. Dr. Paul Quax at LUMC. In November 2019, he moved to Boston to work under the supervision of Dr. Peter Kip, Prof. Dr. C. Keith Ozaki, and Prof. Dr. J.R. Mitchell, focusing on preoperative dietary restriction to improve outcomes in vascular surgery.

Driven to spur his academic career, Thijs began his PhD in July 2020, supported by a grant from the Rembrandt Institute for Cardiovascular Sciences awarded to Dr. Margreet de Vries, Dr. Stephan Huveneers (Amsterdam UMC, location AMC), and Prof. Dr. Jaap van Buul (Sanquin and Amsterdam UMC, location AMC). The results of this collaborative project are presented in this thesis. From August to December 2024, he continued his research as a postdoctoral fellow in Dr. M.R. de Vries her group.

In February 2025, Thijs commenced his clinical internships to complete his medical training. He currently resides in The Hague with his partner and their son Fedde. Looking ahead, he aspires to become a clinician-scientist specializing in cardiovascular medicine.

DANKWOORD

The work described in this thesis is the result of a team effort and therefore requires appreciation of all those involved.

Dr. de Vries, dear Margreet, thank you for the trust you've always placed in me—it was an honor to be hired on your first major personal grant and to witness and contribute to the growth of your research group. I truly value the strong professional and personal bond we've built over the years and look forward to continuing our fruitful collaboration.

Prof. dr. Quax, dear Paul, thank you for recognizing my enthusiasm early on and for the trust you showed by sending me to Boston—it truly sparked my passion for science and vascular biology. Your ability to see the bigger picture, connect with others, and guide people toward their goals, is something I've always admired.

Prof. dr. Ozaki, dear Keith, the way you combine top-notch research with clinical work, is something I can only aspire to do. Your continuous effort to improve your own skills and transfer them to your fellows, whilst also enjoying life and capturing special moments on camera, is unique and has made a significant impact on me and many others.

Dear Erna, without you the whole vascular research group would collapse. Not only are you a laboratory magician, but also an extremely pleasant person to work with who is always supportive. Your optimism and work ethic are unparalleled and I am proud to call you my friend and paranymph.

Special thanks to all other PhD-candidates and post-docs of the vascular surgery research group, Laura, Peter, Eva, Alwin, Tamar, Judith, Vincent, Kayleigh, Nicky and Eduard, it was a pleasure working with you.

All collaborators, especially the Rembrandt team, Rianne, Stephan and Jaap, thank you for your criticism, scientific input and the fun that we have had during our meetings.

All students, specifically Remco, Raghed, Michelle, Lineke, Takumi, Celine and Britt; I am very proud of your achievements and eager to follow your professional and personal milestones in the future. I hope that you have enjoyed your internship as much as I did.

All my friends and family, it is hard to describe how important you are to me. Through thick and thin we support each other and will continue to do so in the future.

And a special thanks to Annette, Cecile, Edgar, Milou, Noor, Piet Hein, Ruben, Sem and Vivian, I always value your support, advice and comments. Even on the things which I do wrong (in your eyes). We are very close and you have given me a perfect upbringing and provided extremely fertile ground to develop myself as a person.

Lieve Taya, meeting you is the best thing that has happened to me. I look forward to everything that is yet to come.

Lieve Fedde, because of you I got promoted from boy to father, and the love that I feel for you is unprecedented.