Role of metabolic pathways and sensors in regulation of dendritic cell-driven T cell responses

Pelgrom, L.R.

Curriculum vitae

Leonard Reinier Pelgrom was born in Haarlem, the Netherlands on May 27th 1988. He graduated from the Ichtus College (Driehuis, The Netherlands) in 2006 and started the bachelor Biomedical Sciences at Leiden University Medical Center in the same year. During his bachelor he took a one-year sabbatical to work as a board member of a student rowing club (Asopos de Vliet, Leiderdorp, The Netherlands) before obtaining his bachelor diploma in 2012. He obtained his master diploma in with distinction at the same university in 2015.

During his master he used molecular biology techniques to help study how blockade of the endocannabinoid system can activate brown fat tissue and diminish obesity at the laboratory of Prof. Rensen (LUMC, department of Endocrinology). For his contribution to this research, he was awarded the LUMC Student Research Award Biomedical Sciences in 2014. During his next internship, at the group of Dr. Guigas (LUMC, department of Molecular Cell Biology & department of Parasitology), he used flow cytometry techniques to help investigate how the generation of white fat cells can be influenced by immunogenic parasite-derived molecules. A growing fascination for this interplay between metabolic and immunological systems led him to pursue a PhD at the LUMC department of Parasitology, under the supervision of Dr. Everts. Here he researched how specific metabolic states of dendritic cells are linked to their ability to prime diverse antigen-specific T cell responses.

He gave presentations at the Keystone Symposia Conferences in 2016 and 2017, for which he was awarded a Seahorse Travel Award and a Keystone Symposium Scholarship respectively. He also gave oral presentations at the Dutch Society of Immunology (NNVI) in 2015 and 2017, the Dutch Society of Parasitology (NVP) in 2016, the European Macrophage and Dendritic Cell Society (EMDS) in 2016, the International Symposium on Dendritic Cells in 2018 and the European Congress of Immunology in 2018. He won the presentation prize at the EMDS.

From 2019-2021 he worked at the group of Dr. Finlay (Trinity Biomedical Sciences Institute, Trinity College Dublin, Dublin, Ireland), where he took his interests in a new direction by researching the potential of bioorthogonal click chemistry to interrogate metabolic states of cells.

Currently he is working at the group of Dr. van Kasteren (Leiden Institute of Chemistry, Leiden University), with whom he wrote a Leiden University Fund (LUF) Impulse Grant - in collaboration with Dr. Kooijman (LUMC, department of Endocrinology) - to investigate the initiation events in atherosclerosis with clickable lipids, a grant which has been accepted in October 2021.

List of publications

1. van der Zande, H.J.P., M.A. Gonzalez, K. de Ruiter, R.H.P. Wilbers, N. García-Tardón, M. van Huizen, K. van Noort, **L.R. Pelgrom**, J.M. Lambooij, A. Zawistowska-Deniziak, F. Otto, A. Ozir-Fazalalikhan, D. van Willigen, M. Welling, J. Poles, F. van Leeuwen, C.H. Hokke, A. Schots, M. Yazdanbakhsh, P. Loke, and B. Guigas, *The helminth glycoprotein omega-1 improves metabolic homeostasis in obese mice through type 2 immunity-independent inhibition of food intake.* Faseb j, 2021. **35**(2): p. e21331.

2. Embgenbroich, M., H.J.P. van der Zande, L. Hussaarts, J. Schulte-Schrepping, **L.R. Pelgrom**, N. García-Tardón, L. Schlautmann, I. Stoetzel, K. Händler, J.M. Lambooij, A. Zawistowska-Deniziak, L. Hoving, K. de Ruiter, M. Wijngaarden, H. Pijl, K. Willems van Dijk, B. Everts, V. van Harmelen, M. Yazdanbakhsh, J.L. Schultze, B. Guigas, and S. Burgdorf, *Soluble mannose receptor induces proinflammatory macrophage activation and metaflammation.* Proc Natl Acad Sci U S A, 2021. **118**(31).

3. Winkel, B.M.F., **L.R. Pelgrom**, R. van Schuijlenburg, E. Baalbergen, M.S. Ganesh, H. Gerritsma, C.M. de Korne, N. Duszenko, M.C.C. Langenberg, S.C. Chevalley-Maurel, H.H. Smits, E.C. de Jong, B. Everts, B. Franke-Fayard, and M. Roestenberg, *Plasmodium sporozoites induce regulatory macrophages.* PLoS Pathog, 2020. **16**(9): p. e1008799.

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5. Patente, T.A., **L.R. Pelgrom**, and B. Everts, *Dendritic cells are what they eat: how their metabolism shapes T helper cell polarization.* Curr Opin Immunol, 2019. **58**: p. 16-23.

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7. Kaisar, M.M.M., M. Ritter, C. Del Fresno, H.S. Jónasdóttir, A.J. van der Ham, **L.R. Pelgrom**, G. Schramm, L.E. Layland, D. Sancho, C. Prazeres da Costa, M. Giera, M. Yazdanbakhsh, and B. Everts, *Dectin-1/2-induced autocrine PGE2 signaling licenses dendritic cells to prime Th2 responses.* PLoS Biol, 2018. **16**(4): p. e2005504.

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