



Universiteit
Leiden
The Netherlands

Immune modulation and monitoring of cell therapy in inflammatory disorders

Suwandi, J.S.

Citation

Suwandi, J. S. (2022, October 18). *Immune modulation and monitoring of cell therapy in inflammatory disorders*. Retrieved from <https://hdl.handle.net/1887/3480350>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3480350>

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

Immune modulation and monitoring of cell therapy in inflammatory disorders

Jessica Sabrina Suwandi

@ 2022 J.S. Suwandi, Leiden, the Netherlands

Immune modulation and monitoring of cell therapy in inflammatory disorders

Cover painting: A.E. Suwandi

Printed by: Proefschriftmaken

ISBN: 978-94-6423-897-6

All rights reserved. No part of this thesis may be reproduced or transmitted in any form, by any means without prior permission of the author.

Immune modulation and monitoring of cell therapy in inflammatory disorders

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof.dr.ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op dinsdag 18 oktober 2022
klokke 11.15 uur

door

Jessica Sabrina Suwandi

Geboren te Jakarta, Indonesië

in 1992

Promotores: Prof. Dr. B.O. Roep
Prof. Dr. J.J. Zwaginga

Co-promotor: Dr. T. Nikolic

Leden promotiecommissie: Prof. Dr. A.C. Lankester
Prof. Dr. F.J.T. Staal
Prof. Dr. E.J.P. de Koning
Prof. Dr. Y. van Kooyk (Department of Molecular Cell
Biology and Immunology, Amsterdam University
Medical Center, Amsterdam)
Dr. T. Rodriguez-Calvo (Type 1 Diabetes Pathology,
Institute of Diabetes Research, Helmholtz Munich)

*“Balance is the perfect state of still water. Let that be our model. It remains quiet within
and is not disturbed on the surface.”*

Confucius

Table of contents

Chapter 1	General introduction	9
Chapter 2	Pancreatic pathology in pre-diabetic patients	27
	Heterogeneity and lobularity of pancreatic pathology in type 1 diabetes during the pre-diabetic phase: a case study <i>Journal of Histochemistry & Cytochemistry</i>	29
Chapter 3	Phenotyping of autoreactive CD8 T-cells in type 1 diabetes patients	57
	Heterogeneity of circulating CD8 T-cells specific to islet, neo-antigen and virus in patients with type 1 diabetes mellitus <i>PLOS one</i>	59
Chapter 4	Investigating regulatory action of tolerogenic dendritic cells	87
4.1	Inducing tissue specific tolerance in autoimmune disease with tolDCs <i>Clinical and Experimental Rheumatology</i>	89
4.2	Multidimensional analyses of proinsulin peptide-specific regulatory T-cells induced by tolerogenic dendritic <i>Journal of Autoimmunity</i>	109
Chapter 5	Cellular immune intervention therapy and monitoring in clinical trials	143
5.1	Translating mechanism of regulatory action of tolDCs to monitoring endpoints in clinical trials <i>Frontiers in Immunology</i>	145
5.2	Induction of immune tolerance by intradermal immunotherapy with tolerogenic dendritic cells pulsed with proinsulin peptide in type 1 diabetes patients	165

5.3	A unique immune signature distinguishes therapy-refractory from therapy-responsive acute graft-versus-host disease <i>Blood, accepted for publication</i>	205
Chapter 6	General discussion	251
Addendum	English summary	272
	Nederlandse samenvatting	276
	List of publications	281
	Acknowledgments	282
	Curriculum vitae	285