



Universiteit
Leiden
The Netherlands

The role of glucocorticoid receptor signaling in metabolic disease: a matter of time and sex

Li, S.

Citation

Li, S. (2025, April 23). *The role of glucocorticoid receptor signaling in metabolic disease: a matter of time and sex*. Retrieved from <https://hdl.handle.net/1887/4212748>

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/1887/4212748>

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

**The role of glucocorticoid
receptor signaling in metabolic
disease: A matter of time and sex**

Sheng Li

**The role of glucocorticoid receptor signaling in metabolic disease:
A matter of time and sex**

© 2025, Sheng Li

Cover design: S. Li & Z. Ye

Layout design: S. Li

Printing: Ridderprint

ISBN: 978-94-6522-112-0

The work described in this thesis was performed at the Department of Medicine, Division of Endocrinology of the Leiden University Medical Center, Leiden, the Netherlands.

Financial support by Leiden University Fund-Mulder Hamelers and Corcept Therapeutics company.

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

The role of glucocorticoid receptor signaling in metabolic disease: A matter of time and sex

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 woensdag 23 april 2025
klokke 13:00 uur

door

Sheng Li

geboren te Ulanhot, China,
in 1992

Promotor

Prof. Dr. O.C. Meijer

Co-promotor

Dr. J. Kroon

Leden promotiecommissie

Prof. Dr. P.C.N. Rensen

Prof. Dr. V. Dubois (Ghent University)

Dr. L. Kervezee

Dr. M.R. Boon (Erasmus Medical Center)

TABLE OF CONTENTS

Chapter 1	General introduction and outline	7
Chapter 2	Sexual dimorphism in transcriptional and functional glucocorticoid effects on mouse skeletal muscle	35
Chapter 3	Out-of-phase treatment with the synthetic glucocorticoid betamethasone causes disturbances in glucose metabolism in mice	67
Chapter 4	Glucocorticoid receptor antagonism improves glucose metabolism in a mouse model of polycystic ovary syndrome	99
Chapter 5	General discussion and future perspectives	131
Chapter 6	English summary	149
	Nederlandse samenvatting	
	List of publications	
	Curriculum Vitae	
	Acknowledgements	