University of Groningen

Exploring novel strategies to rescue Coenzyme A deficiency-related diseases in *Drosophila melanogaster* models

Yu, Yi

DOI:
[10.33612/diss.177562111](https://doi.org/10.33612/diss.177562111)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Yu, Y. (2021). *Exploring novel strategies to rescue Coenzyme A deficiency-related diseases in Drosophila melanogaster models*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.
<https://doi.org/10.33612/diss.177562111>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

**Exploring novel strategies to rescue
Coenzyme A deficiency-related
diseases in *Drosophila*
melanogaster models**

Yi Yu

The research presented in this thesis was performed at the section of Molecular Cell Biology, Department of Biomedical Sciences of Cells & Systems, University Medical Center Groningen, University of Groningen, the Netherlands.

The research in this thesis was financially supported by the China Scholarship Council, University Medical Center Groningen, University of Groningen.

Printing	Gildeprint, Enschede, the Netherlands
Cover design	Qian Wang, Tingting Zheng, Yi Yu
Financial support	University of Groningen, University Medical Center Groningen, Research School of Behavioral and Cognitive Neurosciences

Copyright © 2021 by Yi Yu. All rights reserved. No part of this thesis may be reproduced or transmitted in any form or by any means without prior permission of the author and the publishers holding the copyrights of the published articles.

university of
 groningen

Exploring novel strategies to rescue Coenzyme A deficiency-related diseases in *Drosophila melanogaster* models

PhD thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. C. Wijmenga
and in accordance with
the decision by the College of Deans.

This thesis will be defended in public on

Wednesday 1 September 2021 at 11.00 hours

by

Yi Yu

born on 28 May 1991
in Hubei, China

Supervisor

Prof. O.C.M. Sibon

Co-supervisor

Dr. H. Schepers

Assessment Committee

Prof. S. El Aidy

Prof. B. Mollereau

Prof. K. Hiltunen

Paranymphs

Bart Kanon

Jouke Jan Wedman

Dedicated to my family

Table of Contents

Chapter 1	Introduction to the thesis	11
Chapter 2	Coenzyme A levels influence protein acetylation, CoAlation, and 4'-phosphopantetheinylation: expanding the impact of a metabolic nexus molecule	35
Chapter 3	CoA-dependent activation of mitochondrial acyl carrier protein links four neurodegenerative diseases	53
Chapter 4	Coenzyme A intermediates are transferred between generations and symbiotic species	105
Chapter 5	General discussion and perspectives	151
Appendices	Abbreviations	167
	Nederlandse samenvatting	171
	Acknowledgements	173
	Curriculum vitae	179