

University of Groningen

## Mechanisms of TRAIL-resistance

Zhang, Baojie

DOI:  
[10.33612/diss.124219664](https://doi.org/10.33612/diss.124219664)

**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:*  
2020

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

*Citation for published version (APA):*  
Zhang, B. (2020). *Mechanisms of TRAIL-resistance: novel targets to enhance TRAIL sensitization for cancer therapy*. University of Groningen. <https://doi.org/10.33612/diss.124219664>

### 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.*

# **Mechanisms of TRAIL-Resistance**

Novel Targets to Enhance TRAIL Sensitization  
for Cancer Therapy

**Baojie Zhang**

The research presented in this PhD thesis was performed at the Department of Chemical and Pharmaceutical Biology, University of Groningen, the Netherlands.

Cover image: Designed by flo222 / pixabay

Print: Ridderprint | [www.ridderprint.nl](http://www.ridderprint.nl).

ISBN (printed version): 978-94-034-2657-0

ISBN (electronic version): 978-94-034-2656-3



university of  
 groningen

# **Mechanisms of TRAIL-Resistance**

Novel Targets to Enhance TRAIL Sensitization  
for Cancer Therapy

**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

Monday 11 May 2020 at 9.00 hours

by

**Baojie Zhang**

born on 15 June 1986  
in Shandong, China

## **Supervisors**

Prof. W.J. Quax

Prof. F.J. Dekker

## **Assessment Committee**

Prof. K. Poelstra

Prof. F.A.E. Kruyt

Prof. G.J. Peters

# Contents

## Chapter 1

Introduction and scope of the thesis ..... 7

## Chapter 2

Death receptor 5 is activated by fucosylation in colon cancer cells..... 13

## Chapter 3

Death Receptor 5 Displayed on Extracellular Vesicles Decreases TRAIL sensitivity of Colon Cancer Cells ..... 39

## Chapter 4

Improving TRAIL-induced apoptosis in cancers by interfering with histone modifications..... 53

## Chapter 5

Histone deacetylase inhibitors sensitize TRAIL-induced apoptosis in colon cancer cells..... 69

## Chapter 6

A Novel Histone Acetyltransferase Inhibitor A485 Improves Sensitivity of Non-small-cell Lung Carcinoma Cells to TRAIL ..... 95

## Chapter 7

Summary and Future Perspectives..... 125

## Chapter 8

Nederlandse Samenvatting ..... 131

Bibliography ..... 135

Acknowledgements..... 157

Publications..... 161

