



Universiteit  
Leiden  
The Netherlands

## Development of novel anti-cancer strategies utilizing the zebrafish xenograft model

Chen, Q.

### Citation

Chen, Q. (2020, September 1). *Development of novel anti-cancer strategies utilizing the zebrafish xenograft model*. Retrieved from <https://hdl.handle.net/1887/136271>

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/1887/136271>

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

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/136271> holds various files of this Leiden University dissertation.

**Author:** Chen, Q.

**Title:** Development of novel anti-cancer strategies utilizing the zebrafish xenograft model

**Issue Date:** 2020-09-01

**Development of novel anti-cancer strategies  
utilizing the zebrafish xenograft model**

**Quanchi Chen**

ISBN: 978-94-92597-49-6

Thesis layout & cover designed by Quanchi Chen

Printed by Boekendeal.nl

©2020 Quanchi Chen, Leiden, the Netherlands

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

# **Development of novel anti-cancer strategies utilizing the zebrafish xenograft model**

**Proefschrift**

ter verkrijging van  
de graad van Doctor aan de Universiteit Leiden,  
op gezag van Rector Magnificus prof.mr. C.J.J.M. Stolker,  
volgens besluit van het College voor Promoties  
te verdedigen op dinsdag 1 september 2020  
klokke 12:30 uur

door

**Quanchi Chen**

Geboren te Yancheng, China  
in 1990

**Promotores:** Prof. dr. B. Ewa Snaar-Jagalska and  
Prof. dr. Sylvestre Bonnet

**Promotiecommissie:** Prof. dr. Gilles P. van Wezel  
Prof. dr. Annemarie H. Meijer  
Prof. dr. Alexander Kros  
Prof. dr. Peter ten Dijke (Leiden University Medical Center)  
Prof. dr. Martine Jager (Leiden University Medical Center)

# Table of contents

<b>Chapter 1</b>	<b>Introduction and thesis outline</b>	<b>1</b>
<b>Chapter 2</b>	<b>Lactic acid secreted by glycolytic B16.F10 melanoma cells attracts macrophages to drive angiogenesis</b>	<b>19</b>
<b>Chapter 3</b>	<b>TLD1433 photosensitizer inhibits conjunctival melanoma cell growth in zebrafish ectopic and orthotopic tumour models</b>	<b>45</b>
<b>Chapter 4</b>	<b>New ruthenium-based photoactivated chemotherapy compound is cytotoxic for various tumour cells in culture and conjunctival melanoma cells in a zebrafish orthotopic xenograft model</b>	<b>77</b>
<b>Chapter 5</b>	<b>Light-triggered cancer cell-specific targeting and liposomal drug delivery in a zebrafish xenograft model</b>	<b>111</b>
<b>Chapter 6</b>	<b>Summary</b>	<b>141</b>
	Nederlandse Samenvatting	139
	Abbreviations	143
	Publication list	146
	Curriculum vitae	147