



Universiteit  
Leiden  
The Netherlands

## **Differentiated thyroid carcinoma : nuclear medicine studies**

Verkooijen, R.B.T.

### **Citation**

Verkooijen, R. B. T. (2009, September 15). *Differentiated thyroid carcinoma : nuclear medicine studies*. Retrieved from <https://hdl.handle.net/1887/13978>

Version: Corrected 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/1887/13978>

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

# **Differentiated Thyroid Carcinoma**

## **Nuclear Medicine Studies**

**R.B.T. Verkooijen**

Differentiated Thyroid Carcinoma; Nuclear Medicine Studies  
Copyright: R.B.T. Verkooijen  
Eindhoven 2009  
ISBN 978-90-8759-076-5

Cover design: BVD Buro voor design, 's-Gravenhage

Printed by: U2pi B.V. (jouwboek.nl), Voorburg

© 2009 R.B.T. Verkooijen

The printing of this thesis was financially supported by:

- GE Healthcare, Eindhoven
- Genzyme Nederland, Naarden
- IBA molecular, Louvain-la-Neuve, België
- Covidien Nederland B.V., Zaltbommel

Copyright of individual chapters lies with the publisher of the journal listed at the beginning of each respective chapter. No part of this thesis may be reproduced in any form, by print, photocopy, digital file, internet, or any other means without written permission from the author.

# **Differentiated Thyroid Carcinoma**

## **Nuclear Medicine Studies**

### **Proefschrift**

ter verkrijging van  
de graad van Doctor aan de Universiteit Leiden,  
op gezag van Rector Magnificus prof. mr. P.F. van der Heijden,  
volgens besluit van het College voor Promoties  
te verdedigen op dinsdag 15 september 2009  
klokke 13.45 uur

door

**Ronald B.T. Verkooijen**

geboren te 's-Gravenhage  
in 1972

## Promotiecommissie

### **Promotores:**

Prof. dr. J.A. Romijn  
Prof. dr. J.W.A. Smit

### **Co-promotor:**

Dr. M.P.M. Stokkel

### **Overige leden:**

Prof. dr. B.L.F. van Eck-Smit (referent)  
Prof. dr. J. Kievit  
Dr. E.P.M. van der Kleij-Corssmit  
Prof. dr. J. Morreau  
Prof. dr. P.P. van Rijk  
Prof. dr. G.J.J. Teule

# Contents

<b>Chapter 1</b>	General introduction and aims of this thesis	7
<b>Chapter 2</b>	Radioiodine-131 in differentiated thyroid cancer: a retrospective analysis of an uptake-related ablation strategy	29
<b>Chapter 3</b>	The success rate of $^{131}\text{I}$ ablation in differentiated thyroid cancer: comparison of uptake-related and fixed-dose strategies	51
<b>Chapter 4</b>	The success rate of $^{131}\text{I}$ ablation in thyroid cancer patients is significantly reduced after a diagnostic activity of 40 MBq $^{131}\text{I}$	71
<b>Chapter 5</b>	A new functional parameter measured at the time of ablation that can be used to predict differentiated thyroid cancer recurrence during follow-up	89
<b>Chapter 6</b>	The incidence of second primary tumors in thyroid cancer patients is increased, but not related to treatment of thyroid cancer	109
<b>Chapter 7</b>	Indium-111 octreotide scintigraphy for the detection of non-functioning metastases from differentiated thyroid cancer: diagnostic and prognostic value	127
<b>Chapter 8</b>	Six month follow-up after $^{111}\text{In}$ -DTPA-octreotide therapy in patients with progressive radioiodine non-responsive thyroid cancer	149
<b>Chapter 9</b>	Summary and Discussion	175
<b>Chapter 10</b>	Samenvatting	191
	Nawoord	203
	List of Publications	205
	Curriculum Vitae	207

