



Universiteit
Leiden
The Netherlands

Cellular senescence in vitro and organismal ageing

Maier, A.B.

Citation

Maier, A. B. (2008, December 11). *Cellular senescence in vitro and organismal ageing*. Retrieved from <https://hdl.handle.net/1887/13335>

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/1887/13335>

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

Cellular senescence *in vitro* and organismal ageing

Andrea Britta Maier

Cellular senescence *in vitro* and organismal ageing, by Andrea B. Maier.
Leiden University Medical Center

The publication of this thesis was supported by Unilever.

Lay out: A.B. Maier
Printed by Printpartners Ipskamp

ISBN 978-90-9023731-2

© 2008 Leiden, A.B. Maier; the copyright of articles that have been published or accepted for publication, have been transferred to the respective journals and / or organizations.

Cellular senescence *in vitro* and organismal ageing

Proefschrift

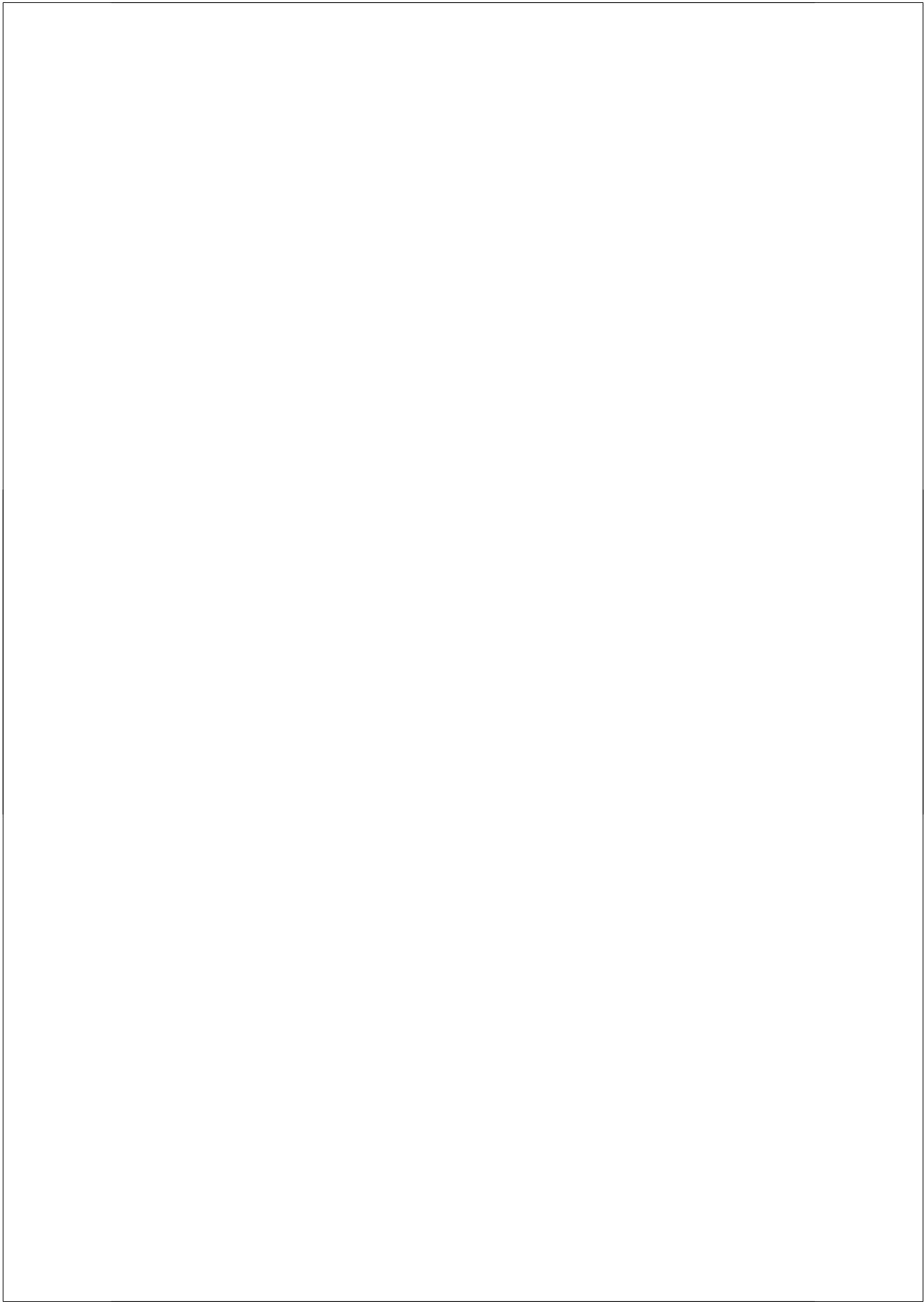
ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van de Rector Magnificus prof. mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op donderdag 11 december 2008
klokke 13.45 uur

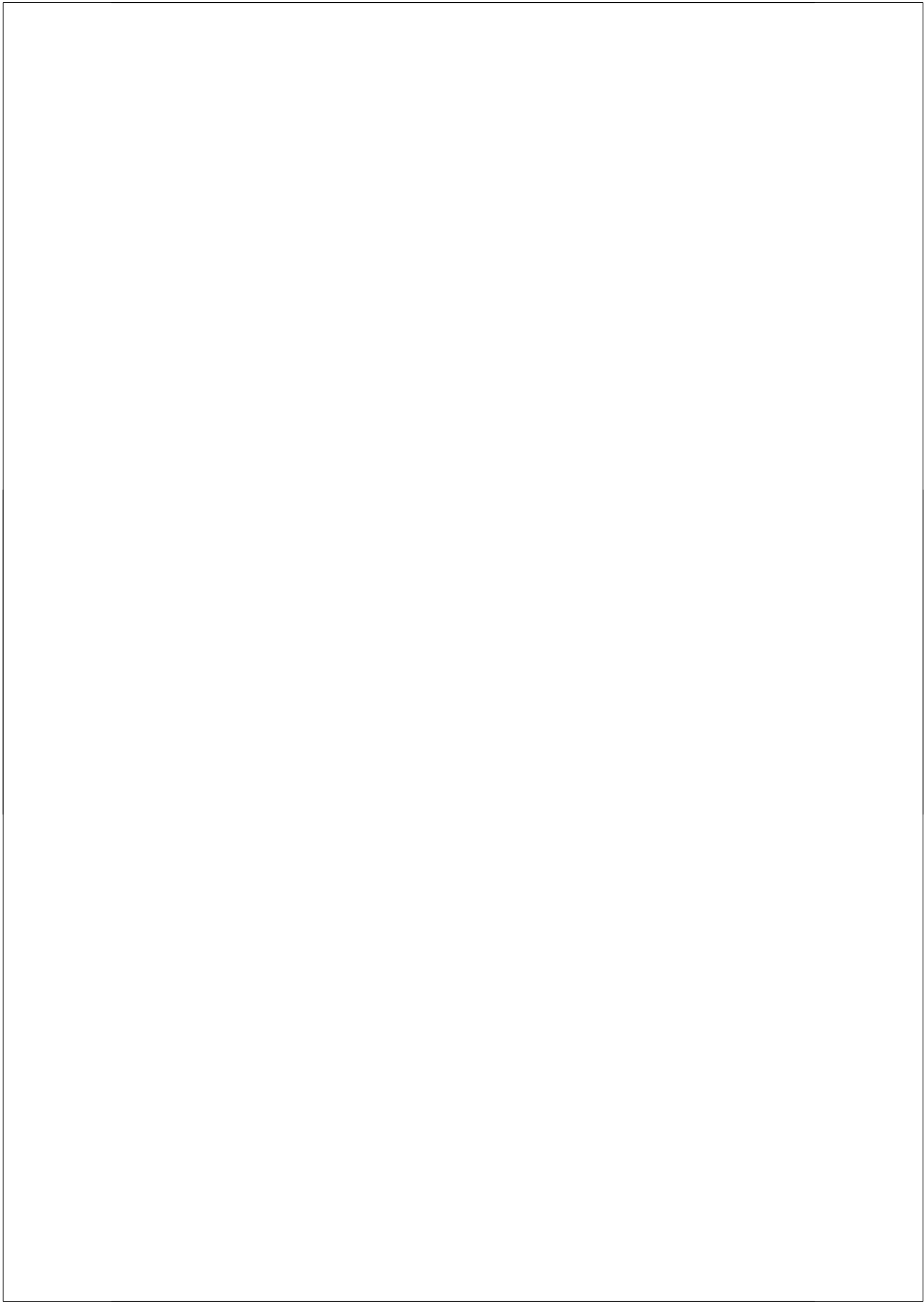
door

Andrea Britta Maier
geboren te Aurich, Duitsland
in 1978

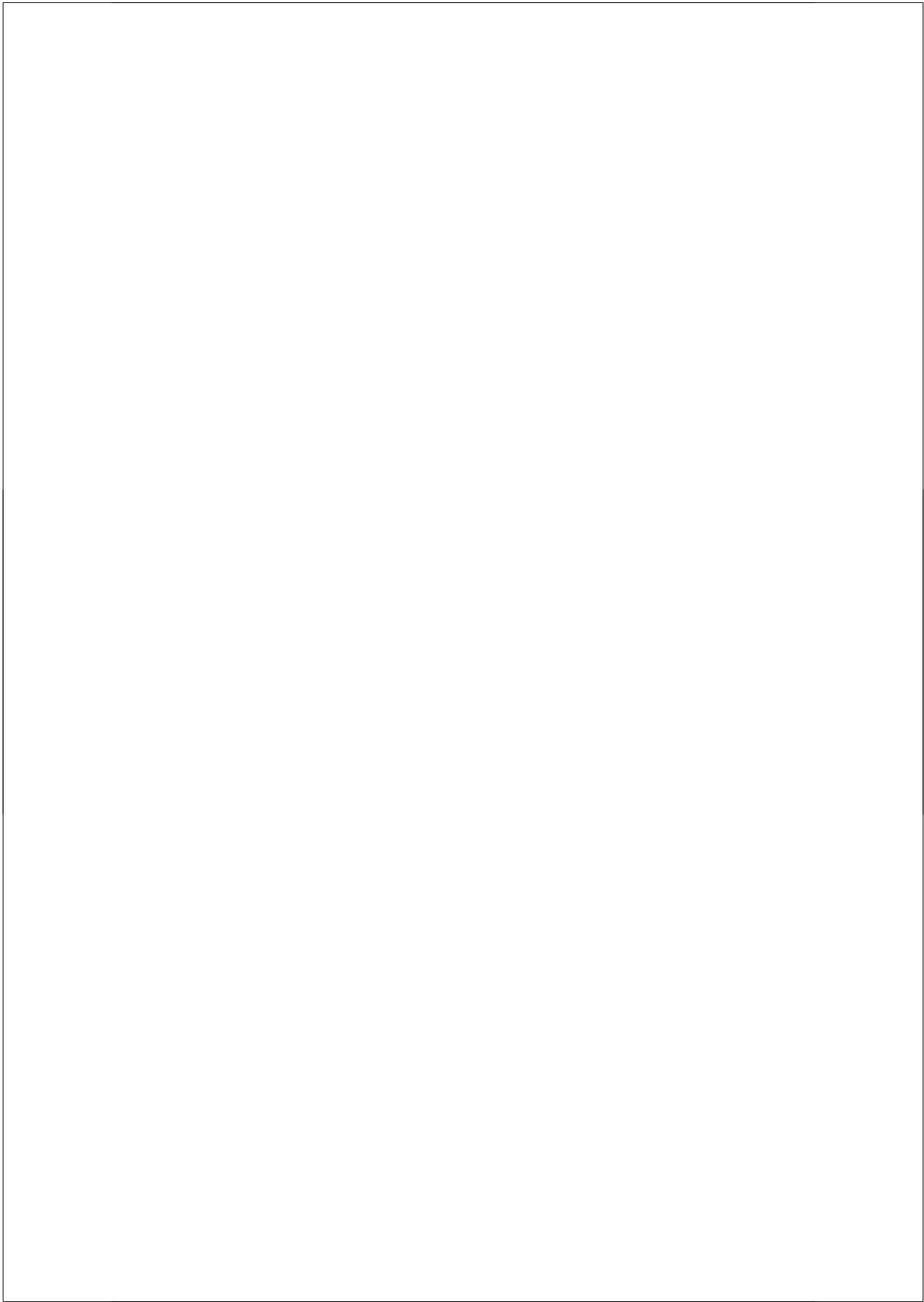
Promotiecommissie

| | |
|---------------|---|
| Promotor | Prof. Dr. R.G.J. Westendorp |
| Co-promotor | Dr. Ir. D. van Heemst |
| Referent | Prof. J. Sedivy, Brown University, Providence, USA |
| Overige leden | Prof. Dr. H.J. Tanke Prof. Dr. J. Hoeijmakers, Erasmus Medisch Centrum, Rotterdam |





To Inka † 2007



Content

| | | |
|-----------|---|-----|
| Chapter 1 | General introduction | 11 |
| Chapter 2 | Persistence of high-replicative capacity in cultured fibroblasts from nonagenarians | 23 |
| Chapter 3 | Beta-galactosidase activity as a biomarker of replicative senescence during the course of human fibroblast cultures | 43 |
| Chapter 4 | Colony formation and colony size do not reflect the onset of replicative senescence in human fibroblasts | 59 |
| Chapter 5 | Influence of the <i>TP53</i> codon 72 polymorphism on the cellular responses to X-irradiation in fibroblasts from nonagenarians | 75 |
| Chapter 6 | Relation between body height and replicative capacity of human fibroblasts in nonagenarians | 99 |
| Chapter 7 | Marked heterogeneity in growth characteristics of myoblast clonal cultures and myoblast mixed cultures obtained from the same individual | 109 |
| Chapter 8 | Relation between replicative senescence of human fibroblasts and life history characteristics | 125 |
| Chapter 9 | General discussion in Dutch | 147 |
| | Acknowledgements | 155 |
| | Publications | 156 |
| | Curriculum vitae | 159 |

