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## **Matrix metalloproteinases in gastric inflammation and cancer : clinical relevance and prognostic impact**

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### **Citation**

Kubben, F. J. G. M. (2007, September 27). *Matrix metalloproteinases in gastric inflammation and cancer : clinical relevance and prognostic impact*. Retrieved from <https://hdl.handle.net/1887/12356>

Version: Corrected Publisher's Version

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# **Matrix Metalloproteinases in Gastric Inflammation and Cancer**

## **Clinical Relevance and Prognostic Impact**

Frank Kubben

Matrix Metalloproteinases in Gastric Inflammation and Cancer  
Clinical Relevance and Prognostic Impact

Kubben, Frank J.G.M.

Thesis, University of Leiden -with references- with summary in Dutch and English  
ISBN 978-90-8559-299-0  
NUR 878

Cover: Mount Etna, Sicily, Italy  
Cover Photo: Thijs Kubben

Layout and printing: Optima Grafische Communicatie, Rotterdam

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The publication of this thesis was financially supported by Abbott B.V., AstraZeneca B.V., Ferring B.V., Janssen-Cilag B.V., Novartis Oncology, Nycomed B.V., Schering-Plough B.V., Tramedico B.V. and UCB Pharma B.V.

# **Matrix Metalloproteinases in Gastric Inflammation and Cancer Clinical Relevance and Prognostic Impact**

## **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 donderdag 27 september 2007  
klokke 13.45 uur

door

**François Jozef Gerard Marie Kubben**

geboren te Geleen  
in 1962

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Voor mijn ouders  
Aan Ellen en Thijs



## Contents

|   |     |
|---|-----|
| <b>Abbreviations</b>  | 9   |
| <b>Chapter 1</b>  |     |
| General introduction  | 11  |
| <b>Chapter 2</b>  |     |
| Mucosal gelatinases MMP-2 and MMP-9 in <i>Helicobacter pylori</i> -associated gastritis   | 37  |
| <b>Chapter 3</b>  |     |
| Eradication of <i>Helicobacter pylori</i> infection favourably affects altered gastric mucosal MMP-9 levels<br><i>Helicobacter</i> 2007, in press                                       | 53  |
| <b>Chapter 4</b>  |     |
| Tissue levels of matrix metalloproteinases MMP-2 and MMP-9 are related to the overall survival of patients with gastric carcinoma<br><i>British Journal of Cancer</i> 1996; 74: 413-417 | 67  |
| <b>Chapter 5</b>  |     |
| Matrix metalloproteinase-2 is a consistent prognostic factor in gastric cancer<br><i>British Journal of Cancer</i> 2006; 94: 1035-1040  | 79  |
| <b>Chapter 6</b>  |     |
| Clinical evidence for a protective role of lipocalin-2 against MMP-9 autodegradation and the impact for gastric cancer<br><i>European Journal of Cancer</i> 2007, in press              | 93  |
| <b>Chapter 7</b>  |     |
| Clinical impact of MMP and TIMP gene polymorphisms in gastric cancer<br><i>British Journal of Cancer</i> 2006; 95: 744-751  | 111 |
| <b>Chapter 8</b>  |     |
| Summarizing discussion  | 131 |
| <b>Chapter 9</b>  |     |
| Samenvattende discussie   | 145 |



|                             |     |
|-----------------------------|-----|
| <b>List of publications</b> | 155 |
| <b>Nawoord</b>              | 161 |
| <b>Curriculum vitae</b>     | 167 |

## Abbreviations

ABC, avidin biotin complex

ADAMs, a disintegrin and metalloproteinases

ADAMTSs, a disintegrin and metalloproteinases with thrombospondin motifs

APMA, *p*-aminophenylmercuric acetate

ARMS, amplification refractory mutation system

BIA, bioactivity assay

BSA, bovine serum albumin

CI, confidence interval

ECM, extracellular matrix

ELISA, enzyme-linked immunosorbent assay

EMMPRIN, extracellular matrix metalloproteinase inducer

ERK, extracellular signal-regulated kinase

F, female

FDA, Food and Drug Administration

HNL, human neutrophil lipocalin, also named NGAL

Hp, *Helicobacter pylori*

HR, hazard ratio

HRP, horseradish peroxidase

kDa, kilo Dalton

M, male

MALT, gastric mucosa associated lymphoid tissue

MMPs, matrix metalloproteinases

MPO, myeloperoxidase

mRNA, messenger ribonucleic acid

MT-MMPs, membrane-type matrix metalloproteinases

NA, not applicable

ND, not defined

NGAL, neutrophil gelatinase-associated lipocalin, also named HNL

NS, non significant

NSAIDs, non-steroidal anti-inflammatory drugs

PBS, phosphate-buffered saline

PCR, polymerase chain reaction

PUMP-1, putative matrix metalloproteinase-1 (MMP-7)

RFLP, restriction fragment length polymorphism

S-2444, pyro-Glu-Gly-Arg-*p*-nitroanilide

SEM, standard error of the mean

SNP, single nucleotide polymorphism

TBS, tris-buffered saline

TIMPs, tissue inhibitors of metalloproteinases

TNM, tumour node metastasis

VEGF, vascular endothelial growth factor

WHO, World Health Organisation