

University of Groningen

The human HSP70/HSP40 chaperone family

Hageman, Jurre

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:

2008

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

Citation for published version (APA):

Hageman, J. (2008). *The human HSP70/HSP40 chaperone family: a study on its capacity to combat proteotoxic stress*. Groningen: s.n.

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).

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.

THE HUMAN HSP70/HSP40 CHAPERONE FAMILY

A study on its capacity to combat proteotoxic stress

Jurre Hageman

The research described in this thesis was conducted at the Department of Cell Biology, Section of Radiation and Stress Cell Biology, University Medical Center Groningen, University of Groningen, the Netherlands.

This work was supported by Innovatiegerichte Onderzoeksprogramma (IOP) Genomics Grant IGE03018.

The printing of this thesis was financially supported by:

Faculty of Medical Sciences (University Medical Centre Groningen, University of Groningen)

Groningen University Institute for Drug Exploration (GUIDE)

Nijburg Industrie Groep, Sappemeer

Tebu-Bio, Heerhugowaard

Solvay Pharmaceuticals Research Laboratories, Weesp

Vereniging van Huntington, Den Haag

J.E. Jurriaanse Stichting, Rotterdam

BD, Breda

© Copyright 2008 J. Hageman

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, mechanically, by photocopying, recording or otherwise, without the written permission of the author.

Digital version

ISBN: 978-90-367-3562-9

Page layout: J. Hageman

Cover design: J. Hageman

Printed by: Drukkerij van Denderen B.V. Groningen, the Netherlands

RIJKSUNIVERSITEIT GRONINGEN

**THE HUMAN HSP70/HSP40 CHAPERONE FAMILY
A study on its capacity to combat proteotoxic stress**

Proefschrift

ter verkrijging van het doctoraat in de
Medische Wetenschappen
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
woensdag 19 november 2008
om 13:15 uur

door

Jurre Hageman

geboren op 23 januari 1978
te Gouda

Promotor: Prof. dr. H.H. Kampinga

Beoordelingscommissie: Prof. dr. M.E. Cheetham

Prof. dr. N.H. Lubsen

Prof. dr. C. Wijmenga

Table of contents

Chapter 1	Introduction - Structural and functional diversities between members of the human HSPH, HSPA and DNAJ chaperone families	7
Chapter 2	Computational analysis of the human HSPH/HSPA/DNAJ family and cloning of a human HSPH/HSPA/DNAJ expression library	29
Chapter 3	Comparison of intra-organellar chaperone capacity for dealing with stress-induced protein unfolding	51
Chapter 4	Higher eukaryotic cells contain two distinct pathways to deal with protein refolding and aggregation suppression	75
Chapter 5	A DNAJB chaperone subfamily with high activity to suppress toxic protein aggregation	103
Chapter 6	General discussion and perspectives	145
Appendix	Nederlandse samenvatting	159
	Dankwoord	163
	Curriculum vitae	167

