



**Universiteit
Leiden**
The Netherlands

Functions and requirements of conserved RNA structures in the 3' untranslated region of Flaviviruses

Agostinho Gonçalves Costa da Silva, P.

Citation

Agostinho Gonçalves Costa da Silva, P. (2011, June 27). *Functions and requirements of conserved RNA structures in the 3' untranslated region of Flaviviruses*. Retrieved from <https://hdl.handle.net/1887/17775>

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/1887/17775>

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

Functions and requirements of conserved RNA structures in the 3' untranslated region of Flaviviruses

Patrícia Agostinho Gonçalves Costa da Silva



ISBN: 978-94-6169-098-2

Layout and printing: Optima Grafische Communicatie, Rotterdam, The Netherlands

Images on the cover are taken from or based on experiments described in this thesis.
All rights reserved. No part of this book may be reproduced or transmitted, in any form
or by any means, without permission of the author.

Functions and requirements of conserved RNA structures in the 3' untranslated region of Flaviviruses

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 maandag 27 juni 2011
klokke 11.15 uur

door

Patrícia Agostinho Gonçalves Costa da Silva

geboren te Leiria, Portugal
in 1983

PROMOTIECOMISSIE

Promotor: Prof. Dr. W.J.M. Spaan

Copromotor: Dr. P.J. Bredenbeek

Overige leden: Prof. Dr. E.J. Snijder
Prof. Dr. B. Berkhout (Universiteit van Amsterdam)
Prof. Dr. J.H. Neyts (Katholieke Universiteit Leuven)
Dr. G.P. Pijlman (Universiteit Wageningen)

“Truth in science can be defined as the working hypothesis best suited to open the way to the next better one.”

Konrad Lorenz

**Aos meus pais
E todos os meus “anjinhos”**

Contents

Chapter 1	General introduction	9
Chapter 2	Conservation of the pentanucleotide motif at the top of the yellow fever virus 17D 3' stem-loop structure is not required for replication	35
Chapter 3	An RNA pseudoknot is required for production of yellow fever virus subgenomic RNA by the host nuclease XRN1	55
Chapter 4	Characterization of the sfRNAs that are produced in cells infected with flaviviruses with no known vector and cell fusing agent	83
Chapter 5	Characterization of a stable full-length cDNA clone for the transcription of infectious RNA of a Flavivirus with no known vector	103
Chapter 6	Functions and requirements of conserved RNA structures in the 3' untranslated region of flaviviruses	115
Chapter 7	Epilogue	145
	Summary	153
	Samenvatting	157
	Curriculum Vitae	161

