

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/138625> holds various files of this Leiden University dissertation.

Author: Munckhof, E.H.A. van den

Title: 16S rRNA gene profiling: Direct and indirect applications for clinical microbiology

Issue Date: 2020-12-08

16S rRNA GENE PROFILING

Direct and indirect applications
for clinical microbiology

Ellen H.A. van den Munckhof

**16S rRNA gene profiling:
Direct and indirect applications for clinical microbiology**

©2020, Ellen H.A. van den Munckhof

Cover design and layout: Colinda van de Sande

Printing: Drukkerij van de Sande

ISBN: 978-90-8285-121-2

16S rRNA GENE PROFILING

Direct and indirect applications
for clinical microbiology

Proefschrift

Ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus Prof. mr. C.J.J.M. Stolker
volgens besluit van het College voor Promoties
te verdedigen op dinsdag 8 december 2020

klokke 11.15 uur
door

Ellen Hendrika Adriana van den Munckhof

Geboren te Delft
In 1988

Promotor	Prof. dr. E.J. Kuijper
Copromotoren	Dr. C.W. Knetsch (DDL Diagnostic Laboratory, Rijswijk) Dr. M.A. Leverstein-van Hall (Alrijne Ziekenhuis, Leiden)
Leden promotiecommissie	Prof. dr. L.G. Visser Prof. dr. E.A.M. Sanders (RIVM, Bilthoven) Prof. dr. R.F. Lamont (University of Southern Denmark, Odense)

The work described in this thesis was performed at DDL Diagnostic Laboratory, Rijswijk, The Netherlands, and at the department of Medical Microbiology, Leiden University Medical Center, Leiden, The Netherlands.

The clinical trials described in this thesis were sponsored by Cutanea Life Sciences, Inc. The opinions expressed in this thesis are those of the authors and do not necessarily represent those of Cutanea Life Sciences, Inc.

The printing of this thesis was kindly supported by the Stichting Pathologie, Onderzoek en Ontwikkeling (SPOO) Foundation and DDL Diagnostic Laboratory.

TABLE OF CONTENTS

Chapter 1	General introduction, aim and outline of the thesis	7
------------------	---	---

PART 1: DIRECT CLINICAL APPLICATION

Chapter 2	Evaluation of a stepwise approach using microbiota analysis, species-specific qPCRs and culture for the diagnosis of lower respiratory tract infections	47
------------------	---	----

PART 2: INDIRECT CLINICAL APPLICATIONS

Chapter 3	Comparison of Amsel criteria, Nugent score, culture and two CE-IVD marked quantitative real-time PCRs with microbiota analysis for the diagnosis of bacterial vaginosis	67
Chapter 4	Developing an algorithm for the diagnosis of abnormal vaginal discharge in a Dutch clinical setting: a pilot study	81
Chapter 5	The vaginal microbiota in the course of bacterial vaginosis treatment	101
Chapter 6	Inter- and intra-patient variability over time of lesional skin microbiota in adult patients with atopic dermatitis	115

PART 3: TRANSLATION OF RESEARCH INTO THE CLINIC

Chapter 7	Nasal microbiota dominated by <i>Moraxella</i> spp. is associated with respiratory health in the elderly population: a case control study	133
Chapter 8	Balanopreputial sac and urine microbiota in patients with male genital lichen sclerosus	151
Chapter 9	General discussion and future perspectives	175
Chapter 10	Summary	215
	Nederlandse samenvatting	221
	List of publications	227
	Curriculum vitae	229
	Dankwoord	231