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Leden van de examencommissie

Doctoraat in de Medische Wetenschappen
Academiejaar 2010-2011

UITNODIGING

Voor de openbare verdediging van het
doctoraatsproefschrift van

Truus ROELANDT

vrijdag 29 oktober 2010
U wordt vriendelijk uitgenodigd op de
openbare verdediging van het proefschrift
van
Truus ROELANDT

‘From secretion to desquamation: the
pathway between stratum granulosum
and stratum corneum keratinocytes’

Op vrijdag 29 oktober 2010 om 17 uur in
auditorium P. Brouwer van de
Faculteit Geneeskunde & Farmacie
Laarbeeklaan 103, 1090 Brussel

Situering van het proefschrift

The skin barrier research has been initiated in our
department 10 years ago. The continuous search
for keys of evidence that permits to link
epidermal biology to epidermal structure and
function has been the goal of our research group
ever since. The barrier function of the skin
resides in the stratum corneum, formed by the
secretion of lamellar bodies (LB) and the terminal
differentiation of stratum granulosum (SG)
k keratinocytes. This work brings new insights to
explain the pathophysiological mechanisms
involved in the formation of the epidermal
barrier. More specifically we investigated the role
of 1) serine protease (SP)/protease-activated
receptor-2 (PAR-2) signaling, 2) lipid
drafts/caveolae and caveolin-1, and 3) the actin
cytoskeleton. Acute barrier abrogation
accelerates the secretion of intercellular lipids
and the formation of new corneocytes. We found
that PAR-2 is responsible for the activation of the
kinase cascade inducing F/G-actin re-
arrangements and cytoskeletal remodeling,
resulting in the arrest of LB secretion and the
induction of the transition of SG cells into
corneocytes. In parallel, the secretion of LB in
the cytosol of the SG cells is initiated, allowing
the insertion of caveolin-1 into the apical plasma
membrane and caveolae formation. This
phenomenon that occurs following barrier
abrogation is important to serve as a "brake" in
LB secretion, the induction of terminal
differentiation and the arrest of proliferation.
These findings have potential clinical and
therapeutic implications in several skin disorders
categorized by deficient LB secretion and
abnormal differentiation.

Curriculum Vitae

Truus Roelandt was born on September 16th
1979 in Antwerp. She graduated at the Sint-
Maarten Scholen campus Beveren in
Economics-mathematics in 1996. In 2004
she finished her medical studies with great
distinction at the Vrije Universiteit Brussel.
She started her residency in Dermatology
and Venereology in the department in
question of the Universitair Ziekenhuis
Brussel, led by Prof. Dr. Diane Roseeuw.
During the second year of dermatology
training she initiated skin barrier research
under the guidance of Prof. Dr. Jean-Pierre
Hachem. During this period she performed a
research fellowship at the University of
California San Francisco (USA) in the
Dermatology Research Department of Prof.
Dr. Peter M. Elias. During her training she
continued her research and this resulted in
the publication of several manuscripts,
including 4 co-author articles and 4 first
author articles in high ranked dermatological
journals. Truus Roelandt is currently working
in the Department of Dermatology and
Venereology of the Universitair Ziekenhuis
Brussel combining both clinical activities and
research.