

SKINTEGRITY.CH

Mini-Symposium

***Frontiers in
Skin Aging Research***

January 23, 2023

13:30 - 18:00 h

UZH Main building, KOL-F-104

Rämistrasse 71, Zurich

Mini-Symposium

Frontiers in Skin Aging Research

Program

13:30 Lukas Sommer University of Zurich

Opening words

13:35 Jan Hoeijmakers Erasmus MC & Princess Máxima Center for Pediatric Oncology

DNA damage repair:

understanding the process of aging and nutritional applications for medicine

14:15 Zheng Fan University of Zurich

Macrophage-derived VEGF-A prevents vascular aging in adrenal gland

14:35 Dimitris Kletsas NCSR Demokritos

Effect of UVB on the viability and premature senescence of dermal fibroblasts

15:15 Ganesh Pandian Namasivayam Kyoto University

Targeted transcription therapeutics for skin cell reprogramming

15:35 *Coffee break*

16:20 Karin Scharffetter-Kochanek University Hospital Ulm

Fibroblast senescence and aging in melanoma progression

17:00 Paul Hiebert ETH Zurich

NRF2-regulated ECM and implications for skin aging

17:20 Gian-Paolo Dotto University of Lausanne

Skin aging and cancer prevention: a sex hormones perspective

18:00 Sabine Werner ETH Zurich

Closing words

18:05 - 19:00 *Networking apéro*

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Jan Hoeijmakers

My personal motivation in science is to try to find rational-based solutions for ubiquitously occurring, devastating diseases such as cancer and aging-related pathologies, which represent the dominant healthcare problems world-wide. To find ways to promote healthy aging, I focused on the most important molecule in cells, the DNA, carrying all instructions for life, reasoning that persisting damage to this biomolecule must have lasting deleterious effects on cell function and properties, and hence may contribute to compromised health. Therefore I joined the Department of Genetics of the Erasmus University in Rotterdam in 1981 to work on DNA repair processes in mammals, which preserve the integrity of our genome, despite continuous attack by a plethora of DNA-damaging agents. From the beginning we have consistently made major contributions towards identifying human DNA repair genes, which provided the basis for understanding mechanisms of DNA repair in vitro as well as in live cells and intact mice by developing GFP-tagging and dynamic innovative photobleaching techniques, for generating valid mouse models and for delineating their biological and clinical importance for cancer and aging. In this way we recently pioneered the link between DNA damage, repair and aging and succeeded in getting aging in mice to a significant extent under control. We also identified DNA damage-driven transcriptional stress as major cause of aging explaining the basis of proteinopathies and discovered a surprising effect of nutritional interventions, with implications for repair syndromes, dementia's, chemotherapy and ischemia reperfusion injury in surgery and organ transplantation.



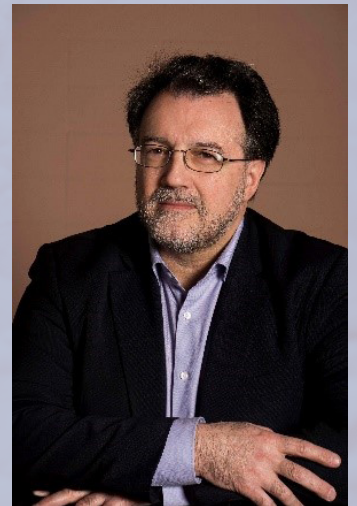
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Dimitris Kletsas

Dimitris Kletsas studied Biology at the University of Thessaloniki and received his Ph.D. degree in Biochemistry, Cell and Molecular Biology from the University of Athens. We worked as a postdoctoral fellow in the EMBL in Heidelberg, the Imperial College and the National Centre for Scientific Research "Demokritos" (NCSR) in Athens. Currently, he is Head of the Laboratory of Cell Proliferation and Ageing, Director of the Institute of Biosciences and Application and Vice-President of the Board of NCSR. His major research interests include: cellular senescence and age-associated diseases, including cancer, skin ageing and intervertebral disc degeneration; tissue repair; stress- and growth factor-mediated intracellular signaling; extracellular matrix; natural products-derived bioactive compounds; stem cells and cell replacement therapy.



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Karin Scharffetter-Kochanek

Karin Scharffetter-Kochanek is a dermatologist. She researches inflammatory skin diseases such as psoriasis and the complex processes involved in disorders of wound healing. At the beginning of her career, Scharffetter-Kochanek studied the effects of UV radiation on the skin. For some years now, she has been increasingly concerned with aging processes in cells.

In an interdisciplinary research group, Karin Scharffetter-Kochanek is investigating when and how stem cells age and what effects this aging has in various organs.

She wants to describe the aging processes in more detail. In the long term, she hopes to develop new preventive and therapeutic approaches that enable "healthy aging."

Another research focus is disorders of wound healing. She wants to know how wounds develop and which factors play a role in skin regeneration. Together with her team, she has clarified molecular mechanisms of wound healing disorders - for example in "open legs" (ulcus cruris) - and thus provided important insights for new therapies.

Since a research stay in the USA, she has also devoted herself to autoimmune diseases such as psoriasis. She developed mouse models to research the disease. Researchers now know that several gene mutations are involved in the development of psoriasis. In recent years, Scharffetter-Kochanek and her research group have been able to localize three of the genes involved to a chromosomal fragment.

At the beginning of her career, Karin Scharffetter-Kochanek studied sunburn and the effects of UV radiation. Influenced by her work in the clinic, she sees the skin and its diseases in a systemic approach and has an eye on the interplay with other organs.



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Gian-Paolo Dotto

Prof. Gian-Paolo Dotto is director of the Laboratory of Skin Aging and Cancer Prevention, in the Dermatology Department at Massachusetts General Hospital and Harvard Medical School, director of the Personalised Cancer Prevention Program, University Hospital (CHUV) in Lausanne (CH) and President of the international Cancer Prevention Institute (iCPI).

He is an elected member of the European Molecular Biology Organization (2011), the Academia Europaea (2012), the Leopoldina German National Academy of Sciences (2014) and an Overseas Fellow of the Royal Society of Medicine (2018). He is the recipient of a number of awards, including the American Skin Association Achievement Award (2012), an ERC Advanced investigator grant award (2013) the Jurg Tschopp Award for Excellence in Biological Sciences (2015) and the Life Time Achievement Award from the University of Lausanne, School of Medicine and Biology (2020). He has been a contributor for the Osservatore Romano, the official newspaper of the Holy See, as well as the Science and Society section of EMBO Reports.



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Zheng Fan

New blood vessel ingrowth in skin is critical for the survival of skin grafts and tissue-engineered skin substitutes, because abundant vascularization is an absolute requirement for skin homeostasis, regeneration, and wound healing. Zheng's research as a postdoc in the research group of Christian Stockmann is aiming to understand how blood vessels grow in skin tissue and how endothelial cells orchestrate with other cell types, such as fibroblasts or immune cells, to ensure normal function of skin.



Ganesh Pandian Namasivayam

Ganesh started his research at the IIT Madras and moved to Niigata University with a Japanese Government scholarship to complete his Ph.D. in 2009. He relocated as a Research Associate at Kyoto University in 2010 after serving as a visiting scientific advisor in the Ushiki patent office. He is now a tenured Associate Professor (Jr.) and PI at Kyoto University Institute for Advanced Study, visiting professor at AO Research Institute (Switzerland), Rutgers University (USA) and a scientific advisor in ReguGene Co. Ltd.



Paul Hiebert

Paul Hiebert received his Ph.D. from the University of British Columbia, Canada and is currently conducting research at ETH Zurich as a senior scientist in the research group of Sabine Werner. His research is focused on the role of the transcription factor NRF2 in regulating ECM in the skin and its impact on wound healing, cancer, and skin aging.



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