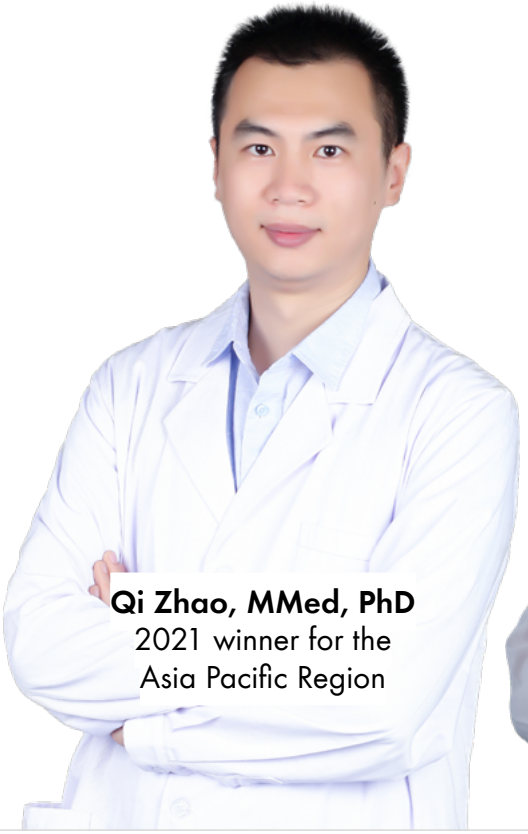
EXPOSOME GRANT

VICHY

5TH EDITION

JUNE 28, 2021

Vijaykumar Patra, PhD
2021 winner for the
Europe North America Region



Qi Zhao, MMed, PhD
2021 winner for the
Asia Pacific Region

Marcelo de Paula Corrêa, PhD
2021 winner for the
LATAM Africa Middle East Region

ABOUT THE VICHY EXPOSOME GRANT

On June 28, 2021, Vichy Laboratoires announced the results of the 5th edition of the Vichy Exposome Grant, an initiative to promote and encourage research to characterize the skin exposome.

For the first time in 2021, three regional grants of €15,000 have been awarded to research projects originating from Asia & Pacific, Europe & North America and Latin America, Africa & Middle East.

A total of 86 grant applications were submitted from 36 different countries worldwide for this edition of the exposome grant, a fourfold growth of applications compared to the previous edition.

«We were overwhelmed by so many excellent applications from all over the world, we've come across a lot of original work. It really shows that there is a very strong interest in exposome research worldwide as it matters to skin.» said Professor Jean Krutmann, Jury Chair and Scientific Director of the Leibniz Research Institute for Environmental Medicine from the Heinrich Heine University Düsseldorf, Germany.
With this 5th successful edition of Vichy Exposome Grant, Vichy Laboratoires are pursuing their commitment to supporting research on human skin exposome.

According to Dr. Delphine Kerob, International Medical Director from Vichy Laboratoires, «Exposome research and its impact on the skin is a rising topic and Vichy Laboratoires has already supported four projects since 2016 leading to three publications. This 5th edition was a great milestone, and we are looking forward to renewing the initiative next year."

THE JURY

The applications have been reviewed by an independent jury of experts chaired by:

PROF. KRUTMANN
GERMANY

And composed of

PROF. CRAIG ELMETS
USA

PROF. HAIDONG KAN
CHINA

PROF. THIERRY PASSERON
FRANCE

PROF. SERGIO SCHALKA
BRAZIL

ELIGIBILITY

Eligible applications may consist in research projects in the field of exposome and the human skin, including projects dealing with skin conditions and diseases, either fundamental or clinical, conducted in any hospital, university or other not-for-profit research institution.

Application related to completed projects will not be considered, as well as project involving animal research, or project investigating medical devices, medicinal or cosmetic products.

Award funding will be disbursed to the host institution. The money granted must be used to accomplish the described research project.

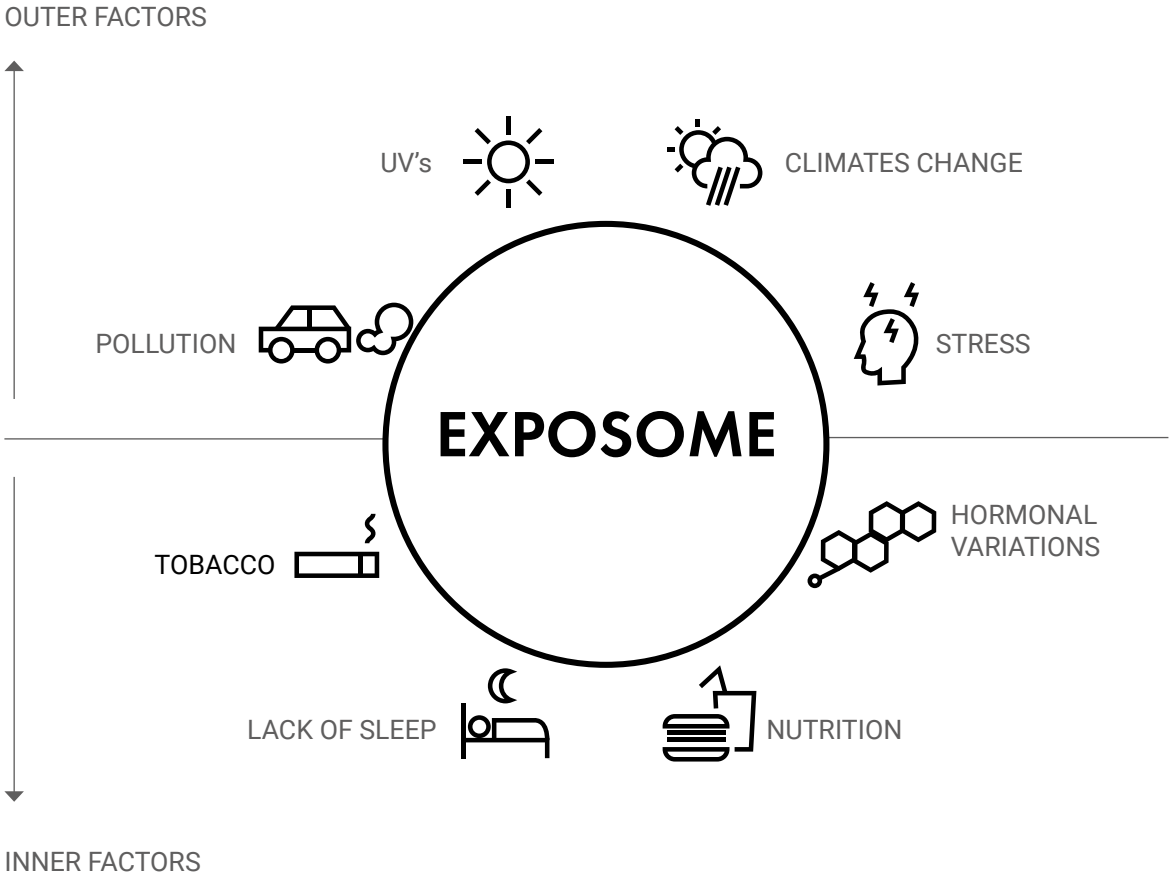
ABOUT THE EXPOSOME

The exposome is the globality of the factors the human body is exposed to, from conception onwards. It complements the genome.

For this highly complex interaction, the term exposome was coined by Dr. Christopher Wild at the International Agency for Research on Cancer, World Health Organization.

The skin exposome comprises several external and internal factors including UV radiation, climatic conditions (heat and humidity), medications, pollution, stress, and dermatology procedures that may damage the skin barrier, induce skin diseases or accelerate skin ageing.

The exposome includes internal & external exposures



WINNER FOR THE EUROPE NORTH AMERICA REGION

VIJAYKUMAR PATRA, PhD

« THE IMPACT OF SKIN MICROBIOME ON THE IMMUNOMODULATORY EFFECTS OF ULTRAVIOLET RADIATION AND ITS MEDIATOR CIS-UROCANIC ACID »

INTERNATIONAL CENTER FOR INFECTIOLOGY RESEARCH, LYON — FRANCE

PROJECT SUMMARY

Skin microbiome exerts a major role in maintaining tissue homeostasis, educating, and modulating immune responses or contributing to various cutaneous pathologies. We have recently shown in preclinical models that skin microbiome significantly hampers the immunosuppressive effects of ultraviolet radiation (UVR). However, the nature of the microbes which inhibit UVR effects, and their underlying mechanisms remains to be uncovered. In the proposed project, we hypothesize that specific cutaneous bacteria impede UV functions through their ability to metabolize cis-urocanic acid (**cis-UCA**), one of the major immunosuppressive metabolites produced upon UV exposure. We will then examine different bacterial species from the **Cyanobacteria** and **Bacteroidetes** phyla, which increased in their abundance upon UV exposure, for their capacity to capture and isomerize **trans-UCA**, the precursor of **cis-UCA**. We will determine whether they use **cis-UCA** for their growth, survival, and/or to acquire pathogenic features through the production of virulence factors. In second step of the project, we will examine the capacity of the respective bacteria to prevent the immunomodulatory effects of **cis-UCA** on reconstructed human epidermis. Finally, we will test for different inhibitors that modulate the metabolism of urocanate pathway to restore the immunosuppressive properties of **cis-UCA**. Our results should bring major insight to better understand how skin microbiome regulate immune responses at the skin interface, and open avenues to optimize the therapeutic protocols which utilize the immunomodulatory properties of UVR.

WINNER FOR THE ASIA PACIFIC REGION

QI ZHAO, PhD, RESEARCH PROFESSOR

« THE INTERPLAY OF LONG-TERM EXPOSURE TO MULTIPLE AIR POLLUTANTS AND CLIMATIC CONDITIONS, AND THEIR COMBINED EFFECT ON EXTRINSIC SKIN AGING IN CHINA »

SHANDONG UNIVERSITY
JINAN — CHINA

PROJECT SUMMARY

Skin aging is an important health issue and public concern. In the real world, the body's skin is exposed to the mixture of different air pollutants and climatic conditions (e.g., ambient heat) rather than a single environmental factor. Although the individual impact of these hazards on skin aging has been discussed, their interactive and combined effects remain largely unclear. As a result, the role of exposome on skin aging may have been underestimated. The lack of investigation is particularly true in China – a country is facing a heavy health burden from air pollution exposure, climate change, and population aging.

To fill the research gap, this project will explore the independent, interactive, and combined effects of chronic exposure to different air pollutants (i.e., particulate matter, nitrogen dioxide, and ozone) and ambient heat on skin aging in the Chinese elderly. The project will make use of the Taizhou study cohort. Located at the junction of north and south China, Taizhou is in the middle of the spectrum – both geographically, climatically, and genetically, which promises the representativeness of our results. The findings will help to understand the impact of environmental factors as a whole on skin aging in Chinese elderly.

WINNER FOR THE LATAM AFRICA MIDDLE EAST REGION

MARCELO DE PAULA CORRÊA, PhD, RESEARCH PROFESSOR

« EXPOSOME OF THINGS (EXPOT): IMPROVING THE KNOWLEDGE ON THE ENVIRONMENTAL DATA RELATED TO THE SKIN HEALTH USING NEW TECHNOLOGIES, BIG DATA AND ARTIFICIAL INTELLIGENCE »

FEDERAL UNIVERSITY OF ITAJUBÁ
BRAZIL

PROJECT SUMMARY

Research on skin health involve interdisciplinary subjects. On the one hand, the individual's behavior, lifestyle and genetic factors. On the other hand, external factors such as exposure to the sun, weather and air pollution. The lack of studies that integrate these intrinsic and extrinsic factors limit the advance of knowledge about skin health. This lack is due to several factors, such as:

- difficulties in integrating interdisciplinarity research;
- the limited use of recent data analysis tools (data mining, big data, machine learning, etc.);
- the high cost of collecting, storing and transmitting data provided by obsolete systems; and, specifically related to the extrinsic aspects,
- the lack of consistent meteorological measurement networks, mainly in less developed countries.

This research project aims to integrate low-cost environmental measurements, data transmission systems and data analysis to provide scientific and educational information for the industry, scientists and society. For this purpose, we propose an experimental set of environmental measurements based on a new generation of low-cost instruments and wireless data transmission performed in different Brazilian regions. In parallel, studies on photoprotection behavior and skin damage can be conducted in these areas. These data will feed a database for deep analysis based on statistical tools. This research project will be conducted by a multidisciplinary team involving physicists, doctors, chemists and engineers. We hope that this interdisciplinary effort can bring relevant contributions for the understanding of skin exposome.

PREVIOUS GRANT WINNERS

2019

Prof. Giuseppe Valacchi
Italy

"INVOLVEMENT OF INFLAMMASOME ACTIVATION IN EXPOSOME-INDUCED CUTANEOUS CONDITIONS"

Published in December 2020 in Toxicology Letters: Ferrara F, Pambianchi E, Woodby B, Messano N, Therrien JP, Pecorelli A, Canella R, Valacchi G. Evaluating the effect of ozone in UV induced skin damage. Toxicol Lett. 2021 Mar 1;338:40-50. doi: 10.1016/j.toxlet.2020.11.023. Epub 2020 Dec 3. PMID: 33279629.

2018

Prof. Christine Moissl-Eichinger
Austria

"IMPACT OF THE EXPOSOME ON THE HUMAN SKIN MICROBIOME"

Publication ongoing.

2017

Dr. Agatha Schwarz
Germany

"SKIN MICROBIOME-DERIVED SHORT-CHAIN FATTY ACIDS AS MODULATORS OF THE HUMAN SKIN IMMUNE SYSTEM"

Published in June 2020 in the Journal of Investigative Dermatology: Schwarz A, Philippsen R, Schwarz T. Induction of Regulatory T Cells and Correction of Cytokine Disbalance by Short-Chain Fatty Acids: Implications for Psoriasis Therapy. J Invest Dermatol. 2021 Jan;141(1):95-104.e2. doi: 10.1016/j.jid.2020.04.031. Epub 2020 Jun 13. PMID: 32544478.

2016

Dr. Tamara Schikowski
Germany

"ANALYSIS OF THE COMBINED EFFECTS OF AIR POLLUTION AND SUN EXPOSURE ON EXTRINSIC SKIN AGEING ON A GERMAN SALIA COHORT OF 800 WOMEN"

Published in April 2019 in the Journal of Investigative Dermatology: Hüls A, Sugiri D, Fuks K, Krutmann J, Schikowski T. Lentigine Formation in Caucasian Women-Interaction between Particulate Matter and Solar UVR. J Invest Dermatol. 2019 Apr;139(4):974-976. doi: 10.1016/j.jid.2018.09.034. Epub 2018 Nov 4. PMID: 30404022.

EXPOSOME GRANT

VICHY
LABORATOIRES

The Vichy Exposome Grant supported by Vichy Laboratoires is intended to promote and encourage research activity to characterize the skin exposome.

vichy.com/vichygrant
vichygrant@vichy.com

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VICHY
PIONEERING
THE EXPOSOME RESEARCH

Conception: Entropy & Magic Morning for Vichy Laboratoires, June 2021