3rd Singapore International Conference on Skin Research
& 9th Pan Asian Pacific Skin Barrier Research Symposium

CONFERENCE PROGRAMME

WEDNESDAY 21ST MARCH - DAY 1

08.00 – 16:30 REGISTRATION

08:45 – 09:00 CONFERENCE OPENING AND WELCOME

Thomas DAWSON
Senior Principal Investigator, Institute of Medical Biology, A*STAR
President, Skin Research Society Singapore

09.00 – 10.30 SESSION 1: THE WOUND ENVIRONMENT AND ECOLOGY

Chair: Keith HARDING, Cardiff University, Wales, UK

09.00 – 09.15 Zee UPTON, Institute of Medical Biology, Singapore
David BECKER, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore
Wound care innovation for the tropics - Overview

09.15 – 09.45 Marjana TOMIC-CANIC, University of Miami Miller School of Medicine, USA
Human tissue storytelling: mechanisms, diagnostics and new treatments in wound healing

09.45 – 10.00 Moogaambikai THANGAVELOO, Singapore General Hospital, Singapore
Surviving burns: Connexin 43 downregulation prevents burn progression

10.00 – 10.15 Tony PARKER, Queensland University of Technology, Australia
How bad is my child’s burn? Differences in blister fluid biochemistry to assess paediatric burn wounds

10.15 – 10.30 Chenghao LIU, Nanyang Technological University, Singapore
Inflammation-regulated LRG1 orchestrates vessel leakage, angiogenesis and fibroplasia in cutaneous wound healing

10.30 – 11.00 Morning tea break
11.00 – 12.30  SESSION 2: MECHANISMS OF SKIN INTEGRITY AND DIFFERENTIATION

Chair: Zee UPTON, Institute of Medical Biology, Singapore

11.00 – 11.30  Keith HARDING, Cardiff University, UK
Wound healing - can we learn any lessons from approaches to cancer?

11.30 – 11.45  Benjamin William WALTERS, Institute of Medical Biology, Singapore
Histone acetylation: A key determiner of keratinocyte fate?

11.45 – 12.00  Thuy Tram DANG, Nanyang Technological University, Singapore
Investigating the influence of surface charge on biomaterial-mediated wound healing response by non-invasive imaging approach

12.00 – 12.30  Xin LU, University of Oxford, UK
Regulating p53 and beyond: From cell death to sudden death

12.30 – 14.00  Lunch break

14.00 – 15.45  SESSION 3: WOUND HEALING & THE MICROBIOME - HOST-MICROBE INTERACTIONS

Chair: Thomas DAWSON, Institute of Medical Biology, Singapore

14.00 – 14.30  Elizabeth GRICE, University of Pennsylvania, USA
Skin microbiome roles in inflammation and wound healing

14.30 – 14.45  Baptiste JANELA, Singapore Immunology Network, Singapore
Dermal cDC1 control sustained recruitment and survival of neutrophils through VEGFa secretion in response to cutaneous bacterial infection

14.45 – 15.00  Rathi SARAVANAN, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore
Thrombin derived host defense peptide modulates fibroblast growth and suppresses inflammatory response in vitro and in vivo

15.00 – 15.15  Hao LI, Molecular Engineering Laboratory, Singapore
Elucidating the functional roles of skin microbial secreted proteases

15.15 – 15.45  Kimberly KLINE, Nanyang Technological University, Singapore
Pathogenic mechanisms of Enterococcus Faecalis biofilm-associated wound infection
15.45 – 16.00  Xin LU - Introduction to Key Note Speaker, Birgit LANE

16.00 – 16.30  Birgit LANE, Institute of Medical Biology, Singapore
Building skin research in Singapore

16.30 – 19.00  Poster Session & Networking Session

End of Day 1

THURSDAY 22ND MARCH - DAY 2

08.30 – 16:00  REGISTRATION

09.00 – 10.30  SESSION 4: EMERGING TECHNOLOGIES FOR STUDYING SKIN HEALTH - MODELS
Chair: David BECKER, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

09.00 – 09.30  Pankaj KARANDE, Rensselaer Polytechnic Institute, USA
Fabrication of a vascularized full thickness human skin tissue by 3D bioprinting

09.30 – 09.45  Massimo ALBERTI, Singapore Institute of Manufacturing Technology, Singapore
Microfluidics meets skin research: novel technologies for automated high-throughput ex vivo and in vitro skin testing

09.45 – 10.00  Tom CARNEY, Institute of Molecular and Cell Biology, Singapore
Zebrafish genetics identify novel mechanisms maintaining the skin defensive barrier

10.00 – 10.30  Shann YU, University of Chicago, USA
Engineering lymphangiogenesis in skin: How and Why?

10.30 – 11.00  Morning tea break

11.00 – 12.45  SESSION 5: EMERGING TECHNOLOGIES IN WOUND TREATMENTS
Chair: Thuy Tram DANG, Nanyang Technological University, Singapore

11.00 – 11.30  Claire HIGGINS, Imperial College London, UK
Bioinspired treatments for pressure ulcers on the residual limb

11.30 – 11.45  Jiah Shin CHIN, Nanyang Technological University, Singapore
Development of scaffolds to promote chronic wound healing
11.45 – 12.00  **Navin Kumar VERMA**, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore  
*Tuning membrane selectivity of polyethylenimines for cost-effective advanced wound dressings*

12.00 – 12.15  **Helena TOPOUZI**, Imperial College London, UK  
*Exploiting inherent properties of hair follicle dermal papilla cells to promote wound healing*

12.15 – 12.45  **Mary CHAN**, Nanyang Technological University, Singapore  
*Cationic hydrogels and polymers for biomedical and environmental disinfection*

12.45 – 14.15  *Lunch break*

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**SESSION 6: EMERGING TECHNOLOGIES FOR STUDYING SKIN HEALTH – NON-INVASIVE TOOLS**

Chair: Steven THNG, Skin Research Institute Singapore, Singapore

14.15 – 14.45  **Lai Guan NG**, Singapore Immunology Network, Singapore  
*Lights, microscope and action: Understanding skin immune responses by multiphoton and light sheet microscopy*

14.45 – 15.00  **Amalina Ebrahim ATTIA**, Singapore Bioimaging Consortium, Singapore  
*Multispectral optoacoustic tomography (MSOT) for three-dimensional reconstruction of non-melanoma skin cancers*

15.00 – 15.15  **Hyunjung KIM**, Seoul Medical Center, Korea  
*Development of at-home measurement device for skin barrier functions integrated with IoT technology for atopic dermatitis education and maintenance.*

15.15 – 15.30  **Chenjie XU**, Nanyang Technological University, Singapore  
*Molecular sensors for the diagnosis of the abnormal fibroblasts derived from abnormal scars*

15.30 – 16.00  **Jens TITZE**, DUKE-NUS Medical School, Singapore  
*Skin barrier function and systemic blood pressure control*

**End of Day 2**
FRIDAY 23RD MARCH - DAY 3

08.30 – 16:30 REGISTRATION

09.00 – 10.45 SESSION 7: ACNE & HAIR

Chair: Carlos CLAVEL, Institute of Medical Biology, Singapore

09.00 – 09.30 Christos ZOUBOULIS, Brandenburg Medical School Theodore Fontane, Germany
*Inflammation and acne: Brand new aspects resulting from sophisticated experimental models*

09.30 – 09.45 Yann BARRANDON, Ecole Polytechnique Fédérale de Lausanne, Switzerland
*From skin to brain*

09.45 – 10.00 Zoe LIM, Institute of Medical Biology, Singapore
*The role of premature senescence in AGA*

10.00 – 10.15 Etienne WANG, National Skin Centre, Singapore
*Oncostatin M is produced by TREM2+ macrophages and maintains hair follicle stem cell quiescence during murine telogen*

10.15 – 10.30 Satoshi NAKAMIZO, Institute of Medical Biology & Singapore Immunology Network, Singapore
*High-fat diet exacerbates neutrophilic folliculitis by facilitating CXCL2 in neutrophils*

10.30 – 10.45 WOO Wei Meng, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore
*The role of Hedgehog signaling in hair follicle dermal microenvironment*

10.45 – 11.15 Morning tea break

11.15 – 11:30 Skin Barrier Sessions in conjunction with PAPSBRs

Welcome Address - President of PAPSBRs
Maoqiang MAN, The Veterans Health Research Institute, San Francisco, USA

Welcome Note from Local Organisers
John COMMON, Institute of Medical Biology, A*STAR and Kenji KABASHIMA, Department of Dermatology, University of Kyoto, Japan

11.30 – 13.15 SESSION 8: SKIN BARRIER & AGEING

Chairs: Birgit LANE, Institute of Medical Biology, Singapore
Jeong Deog LEE, President of KSBR, The Catholic University of Korea, Korea

11.30 – 12.00 **Theodora MAURO**, San Francisco Veterans Hospital & University of California, USA  
*Aged epidermal barrier dysfunction contributes to systemic inflammation*

12.00 – 12.15 **Carlos CLAVEL**, Institute of Medical Biology, Singapore  
*The hair follicle stem cell niche and its regulation during ageing*

12.15 – 12.30 **Sophie BELLANGER**, Institute of Medical Biology, Singapore  
*Nicotinamide controls the proliferation/differentiation balance in human primary keratinocytes*

12.30 – 12.45 **Audrey Shimei WANG**, Institute of Medical Biology, Singapore  
*Identification and characterization of senescent cells in aging skin*

12.45 – 13.15 **Emi NISHIMURA**, Tokyo Medical and Dental University, Japan  
*Stem cells orchestrate hair follicle aging program*

13.15 – 14.45 Lunch break

14.45 – 16.30 **SESSION 9: SKIN BARRIER & DISEASE**

Chairs: Theodora MAURO, San Francisco Veterans Hospital & University of California, USA  
Hamm Ming SHEU, National Cheng Kung University, Taiwan

14.45 – 15.15 **Sara BROWN**, University of Dundee, Scotland, UK  
*Genetic mechanisms in atopic eczema: What can we learn about skin barrier in vivo and in vitro?*

15.15 – 15.30 **Yuka SHIBATA**, Kochi University, Japan  
*Decreased skin water holding capacity in patients with muscular dystrophy*

15.30 – 15.45 **Sekyoo JEONG**, Seowon University, Cheongju, Korea  
*Enhancement of epidermal function delays relapse of psoriasis: A pilot self controlled trial*

15.45 – 16.00 **John COMMON**, Institute of Medical Biology, Singapore  
*Skin microbiome profiles of atopic dermatitis patients segregate into two community composition types that are stable before and after therapy*

16.00 – 16.30 **Kenji KABASHIMA**, Department of Dermatology, University of Kyoto, Japan  
*Interactions between barrier function and immune response in health and disease*
16.30 – 17.00 **PRIZE CEREMONY**  
Zee UPTON, Institute of Medical Biology, Singapore and David BECKER, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

18:00 – 21:30 **CONFERENCE DINNER @ Privé, Asian Civilisations Museum**  
Buses to Privé leave the Matrix Building pick-up area at 17:30.  
Please arrange your own transport from the restaurant back home. The nearest MRT station is Raffles Place.

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**SATURDAY 24TH MARCH - DAY 4**

08.30 – 09:00 **REGISTRATION**

09.00 – 10.45 **SESSION 10: SKIN BARRIER DEVELOPMENT & INTEGRITY**  
Chairs: So Yun CHO, Director of Board of Members of KSBR  
Leah VARDY, Institute of Medical Biology, Singapore

09.00 – 09.30 **Akiharu KUBO**, Keio University School of Medicine, Tokyo, Japan  
*Tight but dynamic: The sophisticated barrier system of mammalian skin*

09.30 – 09.45 **Li HE**, Institute of Dermatology & Venereology of Yunnan province, Kunming, China  
*MicroRNA-224-5p induced claudin-5 deficiency contributes to defective permeability barrier in sensitive skin*

09.45 – 10.00 **Kento KITADA**, DUKE-NUS Medical School, Singapore  
*Increased glucocorticoid hormone actions via melanocortin 3 receptor deletion induce skin-specific Na⁺ and water loss*

10.00 – 10.15 **Anisa RAHIM**, Institute of Medical Biology, Singapore  
*Unravelling gene regulation in the epidermis during differentiation*

10.15 – 10.45 **Florent GINHOUX**, Singapore Immunology Network, Singapore  
*Human dendritic cells: From development to functions.*

10.45 – 11.15 **Morning tea break**

11.15 – 13.00 **SESSION 11: SKIN BARRIER & THE IMMUNE SYSTEM**  
Chairs: Chih-Hung (Abel) LEE, Kaohsiung Chang Gung Memorial Hospital, Taiwan  
Kenji KABASHIMA, Department of Dermatology, University of Kyoto, Japan
11.15 – 11.45  Chang Ook PARK, Yonsei University College of Medicine, Seoul, Korea  
*Tissue-resident memory T cells as an immune barrier*

11.45 – 12.00  Rintaro SHIBUYA, Kyoto University Graduate School of Medicine, Japan  
*Complement activation increases susceptibility to surfactant-induced irritant contact dermatitis*

12.00 – 12.15  Anand Kumar ANDIAPPAN, Singapore Immunology Network, Singapore  
*Whole transcriptome analysis of peripheral blood reveals strong proinflammatory signatures associated with skin relevant FLG mutants*

12.15 – 12.30  Jiajia MA, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore  
*A proteolytic regulator of epidermal integrity and inflammation*

12.30 – 13.00  Franklin ZHONG, Institute of Medical Biology, Singapore  
*NLRP1 inflammasome in skin inflammation and cancer susceptibility*

13.00  END OF CONFERENCE