

WEDNESDAY SEPTEMBER 14, 2022

EARLY CAREER, YOUNG SCIENTISTS, RESIDENTS AND PHD PRE-CONFERENCE

THURSDAY SEPTEMBER 15, 2022

10:00 – 12:00 ETRS board meeting

12:00 - 13:30 Welcome participants / coffee / placement of posters session 1

13:30 Welcome words from ETRS and Cosmet' in Lyon societies

13:45 **SESSION I: Tissue regeneration lessons from organisms' diversity**

discussion leaders: Tania Shaw (Kings College London, UK) and Florence Ruggiero (ENS/Lyon University, France)

13:45 **Eric Rottinger**, Institute for Research on Cancer and Aging, University Côte d'Azur, Nice, France

Insight into the tissular, cellular and molecular mechanisms driving whole body regeneration in the sea anemone *Nematostella vectensis*

(25 min + 5 min questions)

14:15 **Nadia Mercader Huber**, Institute of Anatomy, University of Bern, Switzerland.

Origin, fate and role of fibroblasts during heart regeneration in the zebrafish

(25 min + 5 min questions)

14:45 [Presentations selected from abstracts \(8 min + 5 min questions each, **abstracts 1-5**\)](#)

Trevor R. Leonardo, University of Illinois Chicago, Chicago, IL, USA

Temporal dynamics of gene regulation in human tissue repair and regeneration

Laurie Nemoz-Billet, ENS-Université de Lyon, CNRS UMR 5242, Lyon, France

Unravelling motor neurons identity and new cell-extracellular matrix interplay in zebrafish motor axon development and regeneration

Dieter Groneberg, Julius-Maximilian University Würzburg, Germany

Nitric oxide sensitive guanylyl cyclase as modulator of fibrosis in various mouse pathologies

Ursula Mirastschijski, University of Bremen, Bremen, Germany

Neo-endosymbiotic keratinocytes with autonomous oxygen production for chronic wound healing

Kenneth W. Liechty, University of Colorado Department of Surgery, Aurora, CO, USA

Promoting improved healing: Lessons learned from the fetus

16:00 - 17:30 COFFEE BREAK / **POSTER SESSION 1**

17:30 **KEYNOTE LECTURE**

discussion leader: Patricia Rousselle (CNRS / Lyon University, France)

Graziella Pelligrini, Centre for regenerative medicine Stefano Ferrari, Modena, Italy

Regeneration of the entire human epidermis using transgenic stem cells.

19:30 - 21:00 WELCOME RECEPTION

FRIDAY SEPTEMBER 16, 2022

8:30 **SESSION II: Tissue Engineering and 3D Printing**

discussion leaders: Christophe Egles (UTC Compiègne, France) and Ryan Moseley (University of Cardiff, UK).

8:30 **Christophe Marquette**, 3D. FAB, Institut de Chimie et Biochimie Moléculaires et Supramoléculaires, University of Lyon, France

3D Bioprinting for tissue engineering

(25 min + 5 min questions)

9:00 [Presentations selected from abstracts \(8 min + 5 min questions each, abstracts 10-12\)](#)

Amelie Reigl, University hospital Würzburg, Würzburg, Germany

Assembloid: combination of iPSC-derived complex skin organoids with a vascular network for fibrosis and infection studies

Patrick Mulder, Association of Dutch Burn Centres, Beverwijk, The Netherlands

Full skin equivalents to simulate burn wound healing and inflammation

Mourad Bekhouche, Tissue Biology & Therapeutic Engineering CNRS, Université Lyon, France

Fibrin-based hydrogels for dental pulp regeneration by mesenchymal stem cells.

09:45 - 10:45 COFFEE BREAK / POSTERS SESSION 1

10:45 **SESSION III: Epithelial insults and innovative therapies**

Discussion leaders : Luisa DiPietro (University of Illinois at Chicago, USA) and Jean Jacques Lataillade (Service de Santé des Armées, France)

10:45 **Leena Bruckner Tuderman**, Faculty of Medicine, Freiburg Institute for Advanced Studies, Germany

Inflammation and fibrosis in epidermolysis bullosa: mechanisms and therapeutic perspectives

(25 min + 5 min questions)

11:15 **Ernst Reichmann**, Tissue Biology Research Unit, University Children's Hospital, Schlieren.

DenovoSkin: a significant step forward in burn and plastic surgery.

(25 min + 5 min questions)

11:45 [Presentations selected from abstracts \(8 min + 5 min questions each, abstracts 19-21\)](#)

Martin Barbier, CHU de Québec-Université Laval Research Center, Québec, Canada

Gene therapy and bilayered skin substitutes as a potential treatment for Recessive Dystrophic Epidermolysis Bullosa skin wounds

Chloé Laigle, Tissue Biology & Therapeutic Engineering CNRS, Université Lyon and 3-D Matrix Europe, France

Epidermal regeneration guidance of an innovative biomimetic matrix

Andrew Leask, College of Dentistry, University of Saskatchewan, Saskatoon, SK, Canada

A novel treatment for scleroderma fibrosis: The CCN3-based peptide BLR-200 impairs bleomycin-induced skin fibrosis

12:30 LYONBIOPOLE AND ADERLY FORUM

Adriana Toma Houel, Alderly, Invest in Lyon, Lyon, France
Lead Advisor - One Health and Life Sciences

Lyon's Ecosystem Top Emerging Tissue Repair companies
Discussion leader, Mélanie Denizot LyonBiopole, Lyon France
Healshape
BIOmecca

13:00 - 14:30 LUNCH BREAK AND POSTERS SESSION 2

(13:45 - 14:15 ETRS General Assembly)

(14:15 - 14:30 Group photo)

14:30 – 16:30 PARALLEL SESSIONS IVa and IVb

14:30 SESSION IVa: Dermo-cosmetic approaches of skin regeneration and wellness

Discussion leaders: Hans-Oliver Rennekampff (Würselen, Germany) and Nico Forraz (CTI Biotech, Lyon, France)

14:30 Nadira Frescaline, Department of Microbiology, Institut Pasteur, Paris, France
Advances in skin grafting and therapeutic potential of cold atmospheric plasma in the treatment of burn wounds
(25 min + 5 min questions)

15:00 Colin McGuckin, CtiBiotech, Meyzieu-Lyon, France
Regenerative Medicine and 3D bioprinting for Dermo-cosmetic regeneration
(25 min + 5 min questions)

15:30 Presentations selected from abstracts (8 min + 5 min questions each, [abstracts 29-32](#))

Anne-Laure Bulteau, LVMH Recherche. Life Science Dept, Saint Jean de Braye, France
Reconstruction of reconstructed human epidermis containing IPS-derived keratinocytes treated with mitochondrial stimulating plant extracts

Kohta Kanazawa, Hayashibara Co., Ltd and Tissue Biology & Therapeutic Engineering CNRS, Université Lyon, France
Identification of biglycan-positive extracellular vesicles as determinant of epidermal proliferation and renewal

Alexis Desmoulière, SILAB and Neuropathies and Therapeutic Innovations, UR 20218, Limoges University, France
Neurovascular interactions in 2D and 3D skin equivalent models

Christopher Leon-Valdivieso, University of Montpellier, CNRS, ENSCM, Montpellier, France

Towards scarless healing with the use of hybrid collagen-based dermal substitutes: a study on their contraction, physical and biological properties over time

14:30 SESSION IVb: Bone/cartilage repair

Discussion leaders: Frédéric Mallein-Gerin (Lyon University, France) and Lindsay Davies (Karolinska Institutet, Sweden).

14:30 **Ivan Martin**, Tissue Engineering, Department of Biomedicine
University Hospital Basel, Switzerland

Regenerative engineering: designing grafts, processes and signals
(25 min + 5 min questions)

15:00 **Céline Colnot**, Mondor Institute of Biomedical Research INSERM U955, Créteil
Medicine School, Paris, France

Title tba

(25 min + 5 min questions)

15:30 [Presentations selected from abstracts \(8 min + 5 min questions each, **abstracts 36-39**\)](#)

Pauline Wosinski, Université Paris Cité, CNRS, INSERM, ENVA, Paris, France
Enzyme-controlled, nutritive hydrogel for mesenchymal stromal cell survival and paracrine functions

Melissa Kosovari, Laboratoire d'Ingénierie de Surface, Université Laval, Québec, Canada
Surface structuring at the nano and micrometric scale for cell differentiation

Delphine Vertu-Ciolino, Edouard Herriot Hospital and Tissue Biology & Therapeutic
Engineering CNRS, Université Lyon, France

Design of biocompatible nasal cartilage grafts by 3D printing and tissue engineering

Daniel Kronenberg, Institute of Musculoskeletal Medicine, Muenster University, Germany
Modulation of BMP-1 in early stages of fracture repair does not benefit the healing outcome under normal conditions.

16:30 - 17:30 COFFEE BREAK / POSTERS SESSION 2

17:30 - 19:00 SESSION V: Young investigator award session

[\(alphabetical order, 8 min + 5 min questions each, **abstracts 43-49**\)](#)

Discussion leaders: Ulrich auf dem Keller (Technical University of Denmark) and tbc

Emilie Attiogbe, LOEX, Université Laval, Québec, Canada
Autologous, Vascularized and Immunocompetent 3D skin model for wound healing studies

Vahap Canbay, Technical University of Denmark, Dept. of Biotechnology and Biomedicine,
Kgs. Lyngby, Denmark

Functional characterization of dermokine in epidermal differentiation

Kellen Chen, Stanford University, Stanford, CA & University of Arizona College of
Medicine, Tucson, AZ, USA

Characterization of mechanoresponsive inflammatory cells during wound healing

Chen Han, University of Illinois Chicago, Chicago, IL, USA

Microfibril-associated protein 5 regulates skin fibroblast function and scar formation

H. Ibrahim Korkmaz, Amsterdam UMC, VUmc, Amsterdam Movement Sciences Institute, Amsterdam, The Netherlands

Computational modeling of the post-burn immune response

Katrin Peckert-Maier, Universitätsklinikum Erlangen, Erlangen, Germany

Pre-incubation of corneal donor tissue with soluble CD83 improves graft survival via the induction of pro-resolving macrophages

Rana Smaida, INSERM - UMR 1260, Regenerative Nanomedicine, Strasbourg, France

Development of implantable therapeutic wound dressings combined with stem cells for bone and cartilage regeneration

19:30 - 21:00 BOAT TRIP FOR CONFERENCE DINER

SATURDAY SEPTEMBER 17, 2022

9:00 SESSION VI: Cell dynamics in tissue remodeling

discussion leaders: Catherine Moali (Lyon University, France) and Alexis Desmoulière (University of Limoge, France)

9:00 **Boris Hinz**, Laboratory of Tissue Repair and Regeneration, University of Toronto, Canada

Mechanical education of therapeutic mesenchymal stromal cells for enhanced tissue repair

(25 min + 5 min questions)

9:30 **Patrizia Ferretti**, Stem Cell and Regenerative Medicine Section, UCL Great Ormond Street Institute of Child Health, London, UK

Stem cells for modelling human disease and response to damage.

(25 min + 5 min questions)

10:00 [Presentations selected from abstracts \(8 min + 5 min questions each, abstracts 50-52\)](#)

Tanya Shaw, King's College London, London, UK.

Autocrine IL6 drives cell and extracellular matrix alignment in fibrotic fibroblasts

Dmytro Royzman, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

The soluble CD83 molecule accelerates wound closure and improves wound healing quality

Maya Ezzo, Keenan Research Centre for Biomedical Science St. Michael's Hospital, Toronto, Canada

Macrophage acute contact initiates myofibroblast activation by intracellular stress in a calcium-gap-junction process

10:45 - 11:15 COFFEE BREAK

11:15 SESSION VII: Chronic, infected wounds and biomarkers

discussion leaders: Dominique Sigauco Roussel (Lyon University) and Phil Stephens (Cardiff University, UK)

11:15 **Marjana Tomic-Canic** (University of Miami Miller School of Medicine, Miami (FL), USA)

From understanding pathophysiology of chronic wounds to development of biomarkers
(25 min + 5 min questions)

11:45 Presentations selected from abstracts (8 min + 5 min questions each, [abstracts 63-65](#))

Gabriela Cabral, Akribes Biomedical GmbH, Vienna, Austria

Development of personalized treatment for chronic wounds

Helen Brown, School of Dentistry, Cardiff University, Cardiff, Wales, UK

Conditioned medium from fibroblasts and oral progenitor cells inhibits growth and biofilm formation of Staphylococcus isolates

Louise Bundgaard, Technical University of Denmark, Kgs. Lyngby, Denmark

Wound exudate degradomics in clinical wound management

12:40 Prizes/Closing ceremony

Patricia Rousselle (CNRS / Lyon University, France), ETRS Meeting Chair

Ulrich auf dem Keller (Technical University of Denmark), President of ETRS

Nico Forraz (CTI Biotech, Lyon, France), President of Cosmet'in Lyon

ETRS Young Investigator Awards

Cosmet'in Lyon Oral Communication Award

ETRS Poster Awards

French Society for Matrix Biology Poster Award

Closing Remarks

13:00 Lunch Bags

List of Abstracts

Abstract title	Presenter	N°
Temporal dynamics of gene regulation in human tissue repair and regeneration	Trevor R. Leonardo	1
Unravelling motor neurons identity and new cell-extracellular matrix interplay in zebrafish motor axon development and regeneration	Laurie Nemoz-Billet	2
Nitric oxide sensitive guanylyl cyclase as modulator of fibrosis in various mouse pathologies	Dieter Groneberg	3
Neo-endosymbiotic keratinocytes with autonomous oxygen production for chronic wound healing	Ursula Mirastschijski	4
Promoting improved healing: Lessons learned from the fetus	Kenneth Liechty	5
Optimized RNA isolation from formalin-fixed paraffin-embedded uterine scar tissue samples delineated by laser microdissection	Alexander Paping	6
Histological collagen content in uterine scars after cesarean delivery correlates with collagen type I and III mRNA expression	Alexander Paping	7
Scarless healing of genital skin	Ursula Mirastschijski	8
The role of mitophagy and mitochondrial respiration in sarcoidosis	Thomas El Jammal	9
Assembloid: combination of iPSC-derived complex skin organoids with a vascular network for fibrosis and infection studies	Amelie Reig	10
Full Skin Equivalents to Simulate Burn Wound Healing and Inflammation	Patrick Mulder	11
Fibrin-based hydrogels for dental pulp regeneration by mesenchymal stem cells	Mourad Bekhouche	12
New clinical development of RGTA based Matrix therapy technology in regenerative medicine	Denis Barritault	13
Cell injuries under hydrodynamic bioprocesses	Mehdi Maleki	14
Triple-helical peptides for cartilage tissue engineering	Jean-Daniel Malcor	15
Human stromal vascular fraction cells in GelMA bioink spheroids using 3D-Bioprinting for adipose tissue reconstruction	Mélanie Dhayer	16
Development of an expandable plug and preliminary evaluation in an ex vivo human fetal membrane model	Rob Meuwese	17
3D printable alginate-gelatin hydrogels with variable viscoelastic properties as sole differentiation factor of induced pluripotent stem cells for tissue engineering	Lucas Lemarié	18
Gene therapy and bilayered skin substitutes as a potential treatment for Recessive Dystrophic Epidermolysis Bullosa skin wounds	Martin Barbier	19
Epidermal regeneration guidance of an innovative biomimetic matrix	Chloé Laigle	20
A novel treatment for scleroderma fibrosis: The CCN3-based peptide BLR-200 impairs bleomycin-induced skin fibrosis	Andrew Leask	21
The syndecan-1 binding domain released by cleavage of laminin-332 impacts dermal repair during wound healing	Patricia Rousselle	22
Stimulatory Effects of Novel Epoxy-Tiglyanes on Chronic Wound Fibroblast Migration are Mediated by Altered Secretome Profiles	Emma L Woods	23
Epoxy-Tiglyanes Primarily Induce Keratinocyte Wound Healing Responses via Classical Protein Kinase C, PKC- β I/ β II, Activation	Jordanna Dally	24
Construction of collagen scaffolds with heparan sulfate mimetics and heparin-binding growth factors to combat skin fibrosis	Merel Gansevoort	25
Systematic review on working mechanisms of signaling pathways in fibrosis during shockwave therapy	Lot Demuynek	26
Dental Pulp disinfection and regeneration: an innovative antibacterial and regenerative scaffold	Marianne Lévêque	27
Macrophage Polarization in Wound Bed treated by a Dermal Substitute: Result of a clinical study and perspectives	Bernard Ragaru	28
Reconstruction of functional human epidermis equivalent containing 5% IPS-derived keratinocytes treated with mitochondrial stimulating plant extracts	Anne-Laure Bulteau	29
Identification of biglycan-positive extracellular vesicles as determinant of epidermal proliferation and renewal	Kohta Kanazawa	30
Neurovascular interactions in 2D and 3D skin equivalent models	Alexis Desmoulière	31
Towards scarless healing with the use of hybrid collagen-based dermal substitutes: a study on their contraction, physical and biological properties over time	Christopher Leon-Valdivieso	32
Altered distribution and expression of Syndecan-1 and/or -4 as an additional hallmark in psoriasis and target for treatment	Anna Michopoulou	33

The Glypican-1/c-Met and Glypican-1/Vascular Endothelial Growth Factor Receptor 2 complexes regulate hair follicle angiogenesis	Charlie Colin-Pierre	34
Modulation of Aryl hydrocarbon Receptor (AhR) activity in the skin	Raphaël Coatmeur	35
Enzyme-controlled, nutritive hydrogel for mesenchymal stromal cell survival and paracrine functions	Pauline Wosinski	36
Surface structuring at the nano and micrometric scale for cell differentiation	Melissa Kosovari	37
Design of biocompatible nasal cartilage grafts by 3D printing and tissue engineering	Delphine Vertu-Ciolino	38
Modulation of BMP-1 in early stages of fracture repair does not benefit the healing outcome under normal conditions	Daniel Kronenberg	39
The tissue-specific deletion of Lsd-1 protects the articular cartilage from OA progression	Jérôme E. Lafont	40
Integrating aspiration-assisted bioprinting and near-field electrospinning for tissue engineering	Alexandre Dufour	41
Engineering a biomimetic hybrid hydrogel to regenerate bone	Camila Bussola Tovani	42
Autologous, Vascularized and Immunocompetent 3D skin model for wound healing studies	Emilie Attiogbe	43
Functional characterization of dermokine in epidermal differentiation	Vahap Canbay	44
Characterization of mechanoresponsive inflammatory cells during wound healing	Kellen Chen	45
Microfibril-associated protein 5 regulates skin fibroblast function and scar formation	Chen Han	46
Computational modeling of the post-burn immune response	Ibrahim Korkmaz	47
Pre-incubation of corneal donor tissue with soluble CD83 improves graft survival via the induction of pro-resolving macrophages	Katrin Peckert-Maier	48
Development of implantable therapeutic wound dressings combined with stem cells for bone and cartilage regeneration	Rana Smaida	49
Autocrine IL-6 drives cell and extracellular matrix alignment in fibrotic fibroblasts	Tanya Shaw	50
The soluble CD83 molecule accelerates wound closure and improves wound healing quality	Dmytro Royzman	51
Macrophage acute contact initiates myofibroblast activation by inducing intracellular stress in a calcium- and gap-junction-dependent process	Maya Ezzo	52
Clonal analysis of mesothelium during healthy, developing, and injured conditions	Aydan Sardogan	53
Procollagen C-proteinase enhancer-1 (PCPE-1) but not PCPE-2 is correlated with collagen deposition in a murine model of cardiac fibrosis	Manon Napoli	54
Heterogeneity of hyaluronic acid in aging fascia leads to differences in wound healing process	Haifeng Ye	55
Transcriptomic changes in phagocytic fibroblasts	Lin Chen	56
Specific features of adipose tissue (AT)-derived stromal cells and exosomes isolated from the two layers of the subcutaneous AT	Alexis Desmoulière	57
Fibroblast-specific expression of the proangiogenic protein CCN1 is linked to checkpoint inhibitor resistance in melanoma	Andrew Leask	58
An in vitro co-culture model for muscle regeneration and fibrosis	Zhihao Wang	59
The Extended Local Inflammatory Response After Burn Injury is Driven by Innate Immune Cells and Pro-inflammatory Cytokines	Patrick Mulder	60
Glyoxal altered dermal fibroblast phenotype through lipid droplets accumulation, impaired migration capacity and disturbed extracellular matrix deposition	Cécile Guillon	61
Mechanically Induced Epigenetic Patterns Memorize Myofibroblast Transcription Profiles in Mesenchymal Stromal Cells	Fereshteh Younesi	62
Development of personalized treatment for chronic wounds	Gabriela Cabral	63
Conditioned medium from fibroblasts and oral progenitor cells inhibits growth and biofilm formation of Staphylococcus isolates	Helen Louise Brown	64
Wound exudate degradomics in clinical wound management	Louise Bundgaard	65
Strong alterations of collagen biosynthesis and fibrillogenesis in the dermis of recessive dystrophic epidermolysis bullosa mice	Mélissa Dussoyer	66
Angiogenin released from ABCB5+ MSCs Promotes Healing of Diabetic Wounds by triggering Angiogenesis	Karmveer Singh	67
Characterization of the Progression of Experimental Bleomycin-Induced Dermal Fibrosis	John Nguyen	68
The role of dermal adipocytes in wound healing	Petra Kotzbeck	69
In vivo monitoring of inflammatory mediators during wound healing progression using dermal open flow microperfusion	Elisabeth Hofmann	70

The role of advanced enzyme-based antimicrobials with limited resistance development in healing of infected chronic wounds	Eveline Torfs	71
Innate defense after colonization of burn wound models by <i>Staphylococcus aureus</i>	Bouke Boekema	72
Bone morphogenetic protein 7 decreases inflammation and metalloproteinase-9 in improving diabetic wound healing	Ermelindo C Leal	73
Small extracellular vesicles are not responsible for the anti-bacterial action of oral progenitor cells	Phil Stephens	74
NRF2 Activation in Diabetic Wound Healing: Comparison of Electrophilic and Non-Electrophilic NRF2 Activators	May Barakat	75
Deciphering adipose-derived stem cells secretion role in wound healing delay associated with diabetic foot ulcer	Iris Lemeunier	76
Monocyte- and neutrophil extracellular traps are present in the dermal microvasculature of burns wounds and coincide with a procoagulant phenotype	Britt van der Leeden	77