

2<sup>nd</sup> International Conference on**ADVANCES IN SKIN,****WOUND CARE AND TISSUE SCIENCE**

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***Barritault Denis****University Paris-East Creteil, France***THE HEPARAN SULFATES MIMICS (RGTA) AND THEIR USES IN SKIN HEALING: A TRANSLATIONAL MEDICINE SAGA**

**Background:** Matrix therapy is a newly coined name to emphasize the importance of the extracellular matrix in regenerative medicine. Heparan sulfates (HS) are key elements of the extracellular matrix (ECM) scaffold, which store and protect most growth factors/cytokines controlling the cell migration and differentiation required for healing processes. Tissue injury will lead to destruction of cells and surrounding ECM with resulting scars or fibroses. We have engineered biodegradable nanoparticles (alpha 1-6 polyglucose carboxymethyl sulfate) mimicking (RGTA) to replace destroyed HS in the damaged ECM scaffolding and to protect cytokines produced by healthy neighboring cells, thereby restoring the ECM microenvironment and tissue homeostasis. This matrix therapy approach has considerably improved the quality of healing in various animal models with reduction or absence of fibrosis resulting in a regeneration process. The RGTA technology validated in many preclinical studies is now marketed as human healing agents for corneal and for skin ulcers, the later under the trade name of CACIPLIQ.

**Results:** As of today over 30000 of patients with unfavorable therapeutic outcome have benefit from CACIPLIQ, most leading to wound closure and with no record of adverse effect. A friendly user and cost effective spray form (CACIPLIQSPRAY) is now available providing a larger user access to all types of wounds.

Cochrane analysis tends to demonstrate that RCT in wound care poorly demonstrate efficacy. RCT may not be appropriated in this field as when all best conditions are met natural skin healing will occur and the time to heal in a "RCT controlled wound environment" will reflect internal biological clocks more than external outputs such as product efficacy.

In "real clinic life" RCT conditions do not exist, benefit of CACIPLIQ is better illustrated by reducing the economic burden of hard-to-heal wounds.

**Biography**

Denis Barritault graduated in Physics, completed his PhD in biochemistry in Paris University. Post-doctoral in molecular immunology at Pasteur Institute and NYU as NIH Fogarty Fellow he joined INSERM unit in Paris as developmental biologist. He made the first description and patents of FGF extracted from retina in 1979 and 82 as skin and cornea healing agent, became full professor at Paris-East University in 1985, founded and directed a CNRS Laboratory on cell and tissue regeneration until 2003. He is now President of OTR3, Emeritus professor, honorary director CRRET CNRS unit and author in over 200 publications and 30 patents. He succeeded in transforming his research in basic science into product to treat patients; one to treat skin wound the other for corneal ulcer. Several other products are now in development for new indications in regenerative medicine.

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