



### **M a r i a R i t a C i t e r o n i**

Born in Ascoli Piceno (Italy)

Master degree in Reproductive Biotechnologies. LM9 Medical, Veterinary and Pharmaceutical Biotechnologies. (University of Teramo, Italy).



### **B a r b a r a B a r b o n i**

VET/02: Veterinary physiology

Full Professor at the University of Teramo (Italy).

Research field: regenerative medicine, traslational medicine, reproduction.



### **N i c h o l a s R . F o r s y t h**

Dean of Research, Professor of Stem Cell Biology

The Guy Hilton Research of Medicine and Health Keele University (United



### **D e v i s G a l e s s o**

R & D Manager  
**Fidia Farmaceutici S.p.A**  
Abano Terme (PD)

*Company mission:* leader in the use of hyaluronic acid, this company is focused on the field of tissue repair. Moreover, it is expanding in the field of personal care in dermatology and estetic medicine.

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## Tendon regenerative medicine: amniotic stem cells and their secretome for the development of hyaluronate functionalized scaffolds.

- The aim of this project is to generate, in synergy with the Institute of Science and Technology in Medicine (ISTM) and Fidia S.p.A, a multifunctional 3D construct to be addressed to the regeneration of tendons / ligaments. In particular, this research is aimed to study the teno-inductive secretome derived from amniotic epithelial stem cells and fetal tendon explants. The secretome will be inserted into nanovectors in order to functionalize a scaffold produced by the University of Salerno and Fidia S.p.a.
- The final purpose of the project is to develop a hyaluronated braided scaffold functionalized with amniotic epithelial stem cells and their secretome, as medical device. The research products will be enhanced through dissemination initiatives and technology transfer activities.

# Company role in PON RI project



- Co-projecting: Fidia S.p.a has co-projected the research and training conducted during the PhD programme. Fidia S.p.a will contribute with its structure and equipment, specialized personnel and its background in the field of medical devices.
- Training: Fidia S.p.a will provide a pre-established training path in the series of procedures that regulate the development of a medical device within the system ISO 13485 certified quality and Quality System Regulation (QSR).
- Research: The Company will be involved in the study of the biodegradability of biopolymer systems adopted for the formulation of scaffolds and in a toxicological study in relation to the various drug delivery formulations.
- Technological transfer: In a long-term vision, the company may have an interest in patenting and in the commercialization of the scaffolds developed in this research.

## Publications



- Russo V, El Khatib M, di Marcantonio L, Ancora M, **Wyrwa R**, Mauro A, Walter T, **Weisser J**, Citeroni MR, **Lazzaro F**, Di Federico M, Berardinelli P, Cammà C, **Schnabelrauch M**, Barboni B. Tendon Biomimetic Electrospun PLGA Fleeces Induce an Early Epithelial-Mesenchymal Transition and Tenogenic Differentiation on Amniotic Epithelial Stem Cells. *Cells*. 2020 Jan 27;9(2). pii: E303. doi:10.3390/cells9020303. PubMed PMID: 32012741.

## Scientific meeting

- Amniotic stem cells and cells derivatives for the development of hyaluronate functionalized biocomposites: the teno-differentiative potential of AECs secretome. Citeroni M.R., Turriani M., Mauro A., Barboni B. *Phd Annual Meeting, Teramo, Italy 15 February 2019*
- Highly tendon inductive potential of conditioned media produced by amniotic stem cell and tendon explant co-cultures: a new low cost approach to improve tendon healing and regeneration. Citeroni M.R., Turriani M., Mauro A., Russo V., El Khatib M., Greco L., **Forsyth N., Della Porta G.**, Ciardulli M.C., Barboni B. *9° I.S.Mu.L.T. Congress Verona, Italy 29 – 30 November 2019*
- Tissue waste-derived tendon inductive bioactive factors: new perspectives to foster tendon healing and regeneration. M.R. Citeroni, M. Turriani, A. Mauro, V. Russo, M. El Khatib, L. Greco, **N. R. Forsyth, G. Della Porta**, M.C. Ciardulli, B. Barboni. *TERMIS EU 2020 Manchester, United Kingdom 26 – 29 May 2020.* (Abstract already accepted).





1. Best Poster presentation, Phd Annual Meeting, Teramo, Italy 15 February 2019