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OPEN PhD POSITION in Innovative Training Networks

We are looking for a dedicated and highly motivated Early Stage Researcher (ESR), who will join our team to build multidisciplinary expertise for fostering future medical solutions applied to tendon repair and diagnosis.

P4 FIT description (4 years MCSA-ITN-EJD project starting January 2021)

Perspectives For Future Innovation in Tendon repair (P4 FIT) fosters to build a new generation of ESRs with adequate skills to explore non-conventional therapeutic and diagnostic solutions by exploiting the technological advances in nanomedicine. The translation of innovative nanodevices carried out on integrated pre-clinical and vet/human clinical settings are expected to produce solid evidence-based datasets able to reduce fragmentation still limiting the impact of biomedical discoveries and to offer a unique opportunity for identifying new predictive biomarkers through the use of AI and deep learning data analysis. Working across disciplines and sectors, **P4 FIT** will foster the 15 ESRs to be creative, critical, autonomous intellectual risk takers at the frontiers of research with the R&I mind-set necessary for thriving careers. **P4 FIT** will allow to fill the EU gap in tendon healthcare, building up a generation of researchers able to develop nano-based biomedical devices by integrating biology advances to technology innovation, and to computational revolution. The **P4 FIT** cross-disciplinary approach includes 6 beneficiaries and 21 partner organizations (10 academic and 11 non-academic) from across Europe.

ESR8 – MUW (double degree with Friedrich Alexander University Erlangen Nuremberg) Scaffolds immune risk management

Objectives: To identify predictive biomarkers of scaffolds immune-biosafety.

Expected Results: (1) Identification of the pattern recognition receptors (e.g., TLRs) involved in the detection of tendon biomimetic scaffolds. (2) Explore in vitro the process of uptake, processing and presentation of scaffold compounds from phagocytes to T cells. (3) Amniotic cell-derived secretomes modulation of the T cell stimulatory function of human phagocytes and DCs. (4) Biodegradability tests. (5) Cytotoxicity tests on patients' blood samples or aged/diabetic animal blood samples to personalise scaffolds immune-biosafety. (6) Biomechanical kinetic evaluation of the scaffolds during the process of immune-degradation. (7) Identification of the molecular fingerprint of the adaptive immuno-response processed by T cells against tendon biomimetic scaffolds. (8) Identification of immune-cell-based biomarkers predictive of scaffold tolerance.

Keywords: immune reactivity/tolerance against scaffolds, immune-based biomarkers

Applicant Profile: Master level in biomedical engineering, biomaterials science or related field, ideally with background in immunology, medicine, cellular and molecular biology, bioinformatics or engineering. Excellent communication skills (both written and oral) in English.

PhD main locations: The recruited ESR is given the opportunity to conduct 3-years of PhD studies at [Institute of Immunology, Medical University of Vienna \(MUW, Austria\)](#) and at [Institute of Biomaterials, Friedrich Alexander University Erlangen-Nuremberg \(FAU, Germany\)](#), and secondments at [Università Cattolica del Sacro Cuore \(UCSC, Italy\)](#), at [Faculty of Bioscience, Agri-Food and Environmental Technology, University of Teramo \(UNITE, Italy\)](#), at [ASSUT Europe S.p.A. \(Italy\)](#), and at [Innovent e.V. \(Germany\)](#).

Double PhD Tutors: Prof. J. Stöckl (Doctoral Programme in Immunology, MUW); Prof. A. R. Boccaccini (Doctoral Programme in Engineering (Biomaterials), FAU).

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More details about P4 FIT project, requirements for the candidates and recruitment procedure:

www.p4fit.eu/jobs