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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.

ESR3 – UH (double degree with Medical University of Vienna)

Nanovectors and multidrug loading technology for the treatment of tendinopathy

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

Expected Results: (1) Microfluidic approach to synthesize innovative multilayered and complex nanohybrid platforms (MCNPs) made from organic and inorganic materials aimed to co-deliver immunomodulatory and tendon regenerative agents (commercial growth factors and/or characterized bioactive molecules). (2) Evaluate *in vitro* the physicochemical and biopharmaceutical properties of the MCNPs. (3) Control and modify the release profile of MCNPs. (4) Explore *in vitro* the process of uptake, processing and presentation of MCNPs from phagocytes to T cells. (5) Mapping of local cytosolic enzymatic activity in phagocytes to T cells by biodegradable silicon nanoneedles. (6) Test the stability and storage conditions of MCNPs.

Keywords: microfluidics, nanoparticles, nanomedicines, biomedical engineering, drug delivery, cell studies, *in vitro*

Applicant Profile: Master level in Pharmaceutical Sciences, Biotechnology, Biomedical Engineering, Nanotechnology, Nanomedicine, Pharmacy, Pharmaceutical Chemistry and Technology, or related field, ideally with a multidisciplinary background in microfluidics and nanoparticles. 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 [Faculty of Pharmacy, University of Helsinki \(UH, Finland\)](#) and at [Medical University of Vienna \(MUW, Austria\)](#), and secondments at [King's College London \(KCL, United Kingdom\)](#), at [Dipartimento di Farmacia, Università degli Studi "G. d'Annunzio" di Chieti – Pescara \(Italy\)](#), and at [iDelivery \(Italy\)](#).

Double PhD Tutors: Prof. H. A. Santos (Doctoral Programme in Drug Research, UH); Prof. J. Stöckl (Doctoral Programme in Immunology, MUW).

Main contact:

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

www.p4fit.eu/jobs