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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.

### ESR4 – UH (double degree with Università degli Studi “Magna Graecia” di Catanzaro) Nanomedicine translation into the clinic

**Objectives:** To generate industrial scale-up validation, to ensure batch-to-batch reproducibility, and standardization of the nanomaterials' physicochemical properties for translation into the clinic.

**Expected Results:** (1) Evaluate the scaling-up and batch control of nanomaterials for composite tendon biomimetic hydrogels and nanoplateforms. (2) Optimize the physicochemical properties of composite tendon biomimetic scaffolds, hydrogels, and newly and already tested therapeutic nanoplateforms for scale-up, low cost and large production before and after the integration of various components as nanomedicines. (3) Compare the composition of safe and biocompatible nanomaterials, as well as the physicochemical properties of nanomedicines before and after the scale-up and large production. (4) Design and develop protocols, and validate nanomedicines for the scale-up. (5) Design, setup, and built-up regulatory documents. (6) Translate the protocols developed for the production of nanomedicines in clinic and treat patients affected by tendinopathies.

**Keywords:** nanoparticles, nanomedicines, manufacturing processes, drug delivery, biomedical engineering, hydrogels

**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 [Dipartimento di Medicina Sperimentale e Clinica, Università degli Studi “Magna Graecia” di Catanzaro \(UNICZ, Italy\)](#), and secondments at [Department of Molecular Medicine and Surgery, Karolinska Institutet \(KI, Sweden\)](#), [Bayer Oy \(Finland\)](#), and [Capsamedix Oy \(Finland\)](#).

**Double PhD Tutors:** Prof. H. A. Santos (Doctoral Programme in Drug Research, UH); Prof. M. Fresta (Doctoral Programme in Life Sciences, UNICZ).

### Main contact:

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

[www.p4fit.eu/jobs](http://www.p4fit.eu/jobs)