



Call for 4 Early Stage Researcher PhD fellowships in "ENDONANO: Quantitative detection of bacterial ENDotoxin by novel NANotechnological approaches "

Introduction

ENDONANO is a European Industrial Doctorates (EID) funded in the framework of H2020 Marie Skłodowska-Curie ITN programme. The ENDONANO network aims at delivering industry-oriented PhD training in the field of new concepts and methods for the unbiased and quantitative evaluation of bacterial endotoxin (LPS) in complex matrices. ENDONANO will train 4 Early-Stage Researchers (ESRs) in an overarching training programme involving training-by-research, joint courses of technical, scientific and transferrable skills, participation to public scientific events, and an intense intersectoral networking exchange plan.

The ENDONANO consortium encompasses three academic institutions with strong expertise in inflammation, advanced biosensing, and top expertise in nanotechnology and use of nanoparticles for modulating bacterial functions (CNR, National Research Council, Italy; PLUS, Paris-Lodron University of Salzburg, Austria; ICN2, Institut Català de Nanociència i Nanotecnologia, Spain), two SMEs expert in development and commercialisation of diagnostic detection assays (Diagnosticum-DIAG, Hungary; Blusense-BSD, Denmark) and one biotech company specialised in (magnetic) microbead technology (Milteyi, Germany). All have proven experience in higher education and training, and are endowed with state-of-the-art scientific and technical expertise and infrastructures. The four selected ESRs will experience an intersectoral training programme encompassing 18-month internship in a company, and 18 months in academic institute. Secondments to the associated partners are planned during the fellowships. Students will be enrolled in the PhD programme of PLUS, will engage in training-by-research, and will participate in a series of scientific, technical and complementary skills training events. They will also gain experience in transferring their technology to relevant industry sectors.

Research projects

The scientific and technological goals of ENDONANO include: 1. Investigating the capacity of endotoxin to specifically inducing inflammatory reactions in human primary blood cells; 2. Developing new methods based on endotoxin capture by metal nanoparticles in complex matrices (biological fluids, emulsions, gels, etc.); 3. Designing and implementing signal generation and detection methods for the quantitative endotoxin measurement; 4. Planning assay prototypes to be developed and validated for commercial purposes.

The 4 Early Stage Researchers (ESR)' projects are the following:

ESR1: Human monocytes and macrophages as detectors of bacterial endotoxins.

ESR1 will be employed by CNR (National Research Council - Institute of Biochemistry and Cell Biology-IBBC, Napoli, Italy; Dr. Paola Italiani) for the first 18 months and then by DIAG (Diagnosticum-DIAG, Hungary; Dr. József Prechl) for the final 18 months.

ESR2: Designing LPS binding molecules

ESR2 will be employed by PLUS (Paris-Lodron University of Salzburg, Austria; Dr. Jutta Horejs-Höck) for the first 18 months and then by Miltenyi (Milteyi, Germany; Dr. Christiane Siewert) for the final 18 months.

ESR3: Innovative fluorescence and optomagnetic assay for LPS detection

ESR3 will be employed by CNR (National Research Council - The Institute of Food Sciences, Avellino, ITALY; Dr. Sabato D'Auria) for the first 18 months and then by BSD (Blusense-BSD, Denmark; Dr. Marco Donolato) for the final 18 months.

ESR4: Binding of endotoxin by metal NP in different media

ESR4 will be employed by ICN2 (Institut Català de Nanociència i Nanotecnologia, Spain; Dr. Victor Puntès) for the first 18 months and then by Miltenyi (Milteyi, Germany; Dr. Jonathan Fauerbach) for the final 18 months.

Training Programme

All the selected fellows will be involved in a highly stimulating training programme, both at the local and at the network-wide level.

The training programme comprises:

- 1) Enrolment in the PhD programme “Medical Biology” of PLUS beneficiary’s organization.
- 2) The implementation of the individual research project at the host institution. The research project will involve collaborations with other ENDONANO institutions, to be implemented through secondments.
- 2) Each researcher will be involved in local training sessions.
- 3) Joint scientific courses and meetings will be organised by the ENDONANO consortium, together with short courses for transferable skills training.
- 4) Final joint workshop on “Endotoxin detection, from immune defence to safety regulations”.

Benefits (English, parental leave, vacation days, etc.)

Both employment contracts (with Academia and Company) will be in accordance with the rules of the European Commission (http://ec.europa.eu/research/mariecurieactions/careers_en.htm).

ESRs will receive a Monthly Living Allowance plus a Mobility Allowance (where applicable) compliant with the applicable EC Marie Skłodowska - Curie Actions - ITN (https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-msca_en.pdf page 80).

Eligibility Rules

At the time of recruitment applicants must fulfil the following rules:

Experience:

The fellows must have less than 4 years research experience (Early Stage Researcher) at the signature of the contract (measured from the time the Master’s degree has been obtained). Eligible applicants must not have a PhD.

Mobility:

The applicants must not have resided in the country where the research training activities will take place for more than 12 months in the 3 years immediately prior to the recruitment date (i.e. at the signature of the contract), and must not have carried out their main activity (work, studies, etc.) in that country.

Exceptions International Organisations: Eligible researchers must not have spent more than 12 months in the 3 years immediately prior to the date of selection in the same appointing international organisation.

The applicant must provide a detailed CV, a reference letter, a motivation letter, a copy of original certificate (Degree and Exams) and a declaration of interest by the applicant including preference for two individual project. All the documents must be sent to paola.italiani@endonano.eu before the deadline. (August 30th 2019)

Shortlisting and interviews will take place from September-October 2019. Posts must commence on July 1st, 2019.

The selected candidates will have to start their research activity by the 1st of November 2019.

ENDONANO supports equal opportunity and encourages female researchers to apply for positions.

ENDONANO will also use the Science4Refugees platform opened by EURAXESS for encouraging the participation to the call of refugee scientists, with the aim of helping them resuming their career and being re-integrated in the scientific community.

Applications will be evaluated according to the following criteria:

- Educational record;
- Scientific quality;
- Expected individual impact and benefit of the training to the fellow and to the project.

Specific Requirements (English)

The CV must be without gaps, in order to easily check the mobility and experience rules. CVs that either do not clearly show the past experiences or have gaps will be considered ineligible.

For more information and details on the application procedure, please visit www.endonano.eu