



POSITION

Project Title/ Job position title

Molecular bases of endotoxin tolerance in six pathologies / Pre-doctoral position

Area of Knowledge

Life Science Panel

Medicine, Public Health, Sports Science, Nutrition, Clinical Psychology, Healthcare Management

Research Project/Research Group Description

Endotoxin tolerance is a clinical phenomenon in which patients are at increased risk of new infections. A number of recent articles describe clinical examples of endotoxin tolerance, including not only sepsis but also diseases such as cystic fibrosis, acute coronary syndrome and cancer. This refractory state is associated with the innate immune system and notably increases the incidence of infections, which compromise patients' quality of life and increase mortality and healthcare costs. Numerous mechanisms are involved in the control of endotoxin tolerance; however, a full understanding of this phenomenon remains elusive. Several studies have indicated common mechanistic paradigms in endotoxin tolerance across various diseases. Based on our experience, expertise and previous data, our main aim is to obtain a user-friendly score for endotoxin tolerance grading in patients who suffer from sepsis, cystic fibrosis, myocardial infarction, chronic obstructive pulmonary disease, stroke and HIV infection. Implementation of a new national Clinical Practice Guideline for the prevention of infections in these patients will be also a main goal. This clinical tool will help clinicians to classify patients according to their risk of suffering infections. In addition, an in-depth study of both specific and common genetic, epigenetic and proteomic features of all these diseases would be very useful in establishing new clinical protocols and pharmacological targets. We propose a thorough molecular study to obtain a set of new disease-specific and disease-common biomarkers for secondary infections risk prediction and to develop a fine-tuned chip-based test for clinical use. Finally, a validation of new drug directed targets that might prevent/revert endotoxin tolerance will be tested in pre-clinical studies.

Job position description

Role

The post-holder will contribute to a MINECO (PIE/00065 to ELC) funded project focusing on the determination of molecular mechanisms involved in endotoxin tolerance (ET). The job requires knowledge in the immunology field, innate immune system and wet lab. The focus is on patients with ET related pathologies, thus requires technical expertise in human samples treatment, cell culture, animal models as well as data management and analysis. Besides, the candidate will also be expected to contribute to the formulation of research publications, to work closely with collaborators, and to develop knowledge exchange and capacity building.

Responsibilities

1. Assist and contribute to predetermined, prescribed or individual / joint research objectives, under supervision of the PI and in accordance with the project deliverables.



2. Design, set up and perform experiments, maintain experimental resources, analyse and interpret results and contribute to the development of experimental strategies.
3. Document research output including analysis and interpretation of all data, maintaining records and databases, drafting reports and papers as appropriate.
4. Contribute to the presentation of work at conferences, seminars, colloquia and workshops to develop and enhance our research profile.
5. Collaborate with colleagues and participate in team/group meetings/seminars/workshops across the research Group/ and wider community.
6. Keep up to date with current knowledge and recent advances.
7. Undertake any other duties of equivalent standing as assigned by the Director of Institute or the PI.

Skills

1. Experience in molecular, cellular and immunological techniques.
2. Experience in animal models design and management.
3. Experience in microscopy techniques.
4. Excellent interpersonal skills including team working and a collegiate approach.
5. Excellent communication skills (oral and written), including public presentations and ability to communicate complex data/concepts clearly and concisely.
6. Appropriate workload/time/project/budget/people management skills.
7. Extensive IT and data analysis/interpretation skills as appropriate.
8. Self motivation, initiative and independent thought/working.
9. Initiative and judgement to resolve problems independently, including demonstrating a flexible and pragmatic approach.

GROUP LEADER

Title: Dr, PhD

Full name: Eduardo Manuel López-Collazo

Email: elopezc@salud.madrid.org

Research project/Research group website: The risk of infections in several pathologies: A thorough study with clinical tools development for personalised medicine / <http://www.idipaz.es/PaginaDinamica.aspx?IdPag=155&Lang=EN>