Junta de Andalucía
Consejería de Salud y Consumo

FPS groups are looking for R2 researchers who can apply for competitive HR grants from the 2023 call of the *Convocatoria de incorporación de investigadores posdoctorales a grupos de los centros sanitarios y de investigación del SSPA.* Specifically:

CONTRATOS POSDOCTORALES 2023 CSyC / POSTDOCTORAL CONTRACTS 2023 CSyC

Submission of applications: **expected to be launched in July.**

Eligibility requirements: in case that they remain the same as in the last call (2022) - Candidates should:

Junior postdoctoral contract:

- Hold a **PhD degree** of **less or equal to five years**.
- Being the **author of at least two biomedical research publications**, indexed in the Journal Citation Report (JCR), **being the lead person** as first author, last author or corresponding author, **in at least one of them**.
- Have a **research trajectory** with the capacity **to translate into health results** and **aligned with the hosting research group**.

Specialist postdoctoral contract:

- **Hold of the Specialist in Health Sciences title** of any of the specialties listed in Real Decreto 183/2008, of February 8. Regarding to foreign titles of Specialist in Health Sciences, obtained in non-member States of the European Union, they must be recognized or approved by the competent institution, and the application for recognition and homologation will not be valid.
- Hold a **PhD degree** in the **field of health sciences and technologies**.

CONTRATOS POSDOCTORALES 2023 CSyC / POSTDOCTORAL CONTRACTS 2023 CSyC

Information on host group:

1. **Group:** Pancreatic Islet Development & Regeneration
   Main Researcher: Benoit R. Gauthier
   Research Centre: Andalusian Molecular Biology and Regenerative Medicine Centre (CABIMER)

Research line in which the candidate will work: Opening of a new research line using artificial intelligence to model type 1 diabetes and identify new druggable pathways.

Profile of the desired candidate for Specialist Postdoctoral contract:

- PhD in Health and biotechnology
- Experience in islet physiology/drug development/omics
- Motivated to work

More information
Principal Investigator contact: benoit.gauthier@cabimer.es

2. **Group:** Retinal Degeneration: from genetics to therapy
   Main Researcher: Francisco Javier Díaz Corrales.
   Research Centre: Andalusian Molecular Biology and Regenerative Medicine Centre (CABIMER)

Research line in which the candidate will work: Molecular mechanism of retinal degeneration and development of new therapeutic approaches.

Our research group is focused in the study of cellular models of retinal diseases using iPS-derived retinal pigment epithelium (RPE) cells and retinal organoids. In addition, our main research lines are focused in developing new advanced therapies (cell and gene therapy) and neuroprotective drugs for retinal degenerative diseases.

Profile of the desired candidate for Junior Postdoctoral contract:

- Postdoctoral researcher with experience in biomedical sciences.

Profile of the desired candidate for Specialist Postdoctoral contract:

- Postdoctoral researcher with experience in ophthalmology or vision sciences.

More information
Main researcher contact: francisco.diaz@cabimer.es

3. **Group:** Stem Cells and Translational Neurology
   Main Researcher: Vivian Capilla Gonzalez
   Research Centre: Andalusian Molecular Biology and Regenerative Medicine Centre (CABIMER)

Research line in which the candidate will work: Advanced therapies to improve oncological treatments in brain tumor pediatric patients.

Cranial radiotherapy causes a debilitating cognitive decline in children. The use of cell-based therapies to prevent neurological sequelae of radiotherapy has shown promising results in preclinical models. This opens new avenues to improve quality of life of brain tumor pediatric patients, but also adults.

The selected candidate will investigate the neuroprotective effects of MSCs against radiation-related brain damage using cutting-edges technologies, including neuroimaging techniques, multi-omics, iPSC technologies and patient-derived organoids. Importantly, the candidate will collaborate with a multidisciplinary team of biomedical and clinical researchers and will have access to state-of-the-art facilities in CABIMER. In addition, the group is open to innovative or disruptive idea related to regenerative therapies.

This is an amazing opportunity to work in a friendly, dynamic and supportive research environment in a wonderful part of the country.

Profile of the desired candidate for Junior Postdoctoral contract:

- Knowledge of the relevant literature in the field of the project
- Previous experience in biomedicine projects
- Cellular and molecular biology skills (e.g., cell culture, microscopy, gen and protein expression techniques)
- Publications in relevant scientific journals

- Stays in renowned research centers
- Statistical ability
- Written and spoken English

Profile of the desired candidate for Specialist Postdoctoral contract:

- Knowledge of the relevant literature in the field of the project
- Previous experience in biomedicine projects
- Demonstrated ability to conceptualize relevant theoretical questions, and design appropriate experimental tests of these questions.
- Cellular and molecular biology skills (e.g., cell culture, microscopy, gen and protein expression techniques)
- Publications in relevant scientific journals as main author
- Stays in renowned research centers, preferably in international centers.
- Statistical ability
- Written and spoken English

More information
Main researcher contact: vivian.capilla@cabimer.es

4. **Group:** Genomic Editing applied to Advanced Therapies
   Main Researcher: Karim Benabdellah
   Research Centre: Andalusian Centre for Genomics and Oncological Research (GENYO)

Research line in which the candidate will work:

- Preclinical development of universal EXO-CARTs and their potential application in cancer immunotherapy protocols.
- Universal CAR-T immunotherapy based on the selection of subpopulations and generation of TCR and HLA-/- universal CAR-Ts.
- Enhancement of anti-CD19 CAR-Ts through controlled expression of factors and cytokines that improve persistence and efficacy (Fourth-generation CAR-T strategy).

Profile of the desired candidate for Junior Postdoctoral contract:

- PhD in Biology related field.
- Strong background and expertise in the chosen area of research.
- Experience in preclinical models.
- Proficient in experimental design, data analysis, and relevant statistical methods.
- Excellent written and verbal communication skills in English.
- Ability to work independently and collaboratively in a team-oriented environment.

More information
Main researcher contact: karim.benabdel@genyo.es

5. **Group:** Genetics of Complex Inflammatory Diseases
   Main Researcher: Researcher Marta E. Alarcón-Riquelme
   Research Centre: Andalusian Centre for Genomics and Oncological Research (GENYO)

Research line in which the candidate will work:
a) Understanding the mechanisms of non-responses to therapies in systemic lupus erythematosus (SLE) and other inflammatory diseases.

b) The use of preclinical models to understand the roles of genes in lupus.

We perform basically two lines of research: Understanding the heterogeneity of immune-mediated diseases with a particular focus on SLE with analyses that may help elucidate biomarkers of flares and remission as well as therapeutic responses and the study of the function of genes and their mechanisms of action using preclinical models of disease. We focus on the B-cell gene Bank1.

Profile of the desired candidate for Junior Postdoctoral contract:

- Work on immunophenotyping using mass cytometry, extensive and documented experience in mass cytometry design and analyses. This is related to the first research line.

Profile of the desired candidate for Specialist Postdoctoral contract:

- Basic immunology knowledge with long standing experience in preclinical models of lupus (preferably) or other autoimmune diseases. This is related to the 2d research line.

More information
Main researcher contact: marta.alarcon@genyo.es

6. **Group:** Genetics of Complex Inflammatory Diseases
   Main Researcher of the Project: Concepción Marañón Lizana
   Research Centre: Andalusian Centre for Genomics and Oncological Research (GENYO)

Research line in which the Junior Postdoctoral candidate will work:

a) IFN-directed drugs as a therapeutic approach for systemic autoimmune diseases

Since plasmacytoid dendritic cells (pDC) are key players in the control of autoimmune responses through the production of high amounts of IFN, we propose a multidisciplinary pDC-based strategy for the discovery of novel strategic approaches for the management of prototypic IFN-mediated diseases, namely psoriasis (PSO), systemic lupus erythematosus (SLE) and Sjögren syndrome (SjS). Our approach integrates computational methods, in vitro screening and in vivo testing, in the search of both new repurposing strategies and the discovery of new active molecules. This project proposes novel and integrative strategies allowing the advance in the development of new therapeutic options of SADs patients.

Profile of the desired candidate for Junior Postdoctoral contract:

- PhD in the area of Biomedicine
- Experience in cellular immunology, cell/animal models or data analysis
- Willing to integrate a dynamic, international and translational team

Research line in which the Specialist Postdoctoral candidate will work:

b) Urine biomarkers for the non-invasive diagnosis of renal disease in systemic autoimmune diseases

Systemic autoimmune Diseases (SADs) constitute a heterogeneous group of complex inflammatory diseases involving the connective tissue with autoimmune origin. In these diseases the inflammation is not restricted to a specific organ, in a way that every single patient can show a unique combination of clinical manifestations, giving to overlapping diagnosis. Among the possible symptoms, nephritis constitutes the most severe manifestation, which can only be assessed by renal biopsy, which is an invasive procedure. Currently the monitoring of the renal state is carried out using low-specific analytical parameters in the blood and the urine. These markers do not have the power to differentiate between activity and chronicity, given the low clinicopathologic correlation found in this group of diseases. Thus, there is a real need to set up new methods for the diagnosis and stratification of SADs patients in risk to suffer from renal disease. We propose the urine as a non-invasive source of information about the renal inflammatory state in SADs patients. The integration of the data of excreted autoantibodies, the cell composition of the urine sediment and the profile of extracellular microvesicles will give us useful information about the inflammatory state of the kidney. Moreover, we will be able to estimate the role of the deposed immunocomplexes and the infiltrated populations in the induction of a local pathogenic immune response in SADs patients. In addition, we expect that the resulting data will give the tools for a better risk estimation for renal disease, as well as for the monitoring of the responses to the treatments.

Profile of the desired candidate for Specialist Postdoctoral contract:

- Specialization in Medicine, Pharmacy, Biology, Chemistry or Biochemistry. If the certificates have been obtained abroad, they must be recognized or homologated by the competent body.
- PhD in the area of Biomedicine
- Experience in the area of autoimmunity, rheumatology or biomarker discovery
- Willing to integrate a dynamic, international and translational team

More information @MaranonGenyo
Main researcher contact: concepcion.maranon@genyo.es

7. **Group:** Gene Regulation, Stem cells and Development
   Main Researcher: Verónica Ramos Mejía
   Research Centre: Andalusian Centre for Genomics and Oncological Research (GENYO)

Research line in which the candidate will work: Modeling carcinogenesis with stem cells.

The “Cancer Stem Cells” hypothesis suggests that some cells might suffer a process of "malignant reprogramming" driven by genetic/epigenetic alterations, and some of them will acquire characteristics of stem cells. In fact, aggressive poorly differentiated human cancers express high levels of the core pluripotency master genes of stem cells, suggesting that during tumor progression there is a reprogramming to a more dedifferentiated state. These “malignant stem cells” can trigger abnormal variations of the normal tissue

development process, giving rise to tumor formation and progression. As cancer stem cells are closely related to normal stem cells, in this project we aim to gain knowledge on the cellular and molecular similarities and differences between a normal stem cell and its malignant counterpart, using human Pluripotents Stem Cells models that mimic genomic and epigenetic alterations frequently found in cancer.

Profile of the desired candidate:

- PhD or equivalent doctoral degree in a relevant scientific area
- Experience in contemporary cell biology/molecular biology techniques
- Experience in cell culture
- Experience in the analysis of gene function
- Excellent publication record in peer-reviewed journals
- Excellent analytical and problem-solving skills
- Team membership skills within multidisciplinary research teams
- Excellent communication and presentation skills

More information
Main researcher contact: veronica.ramos@genyo.es

8. **Group:** Proteases and Extracellular Matrix
   Main Researcher: Juan Carlos Rodríguez-Manzaneque
   Research Centre: Andalusian Centre for Genomics and Oncological Research (GENYO)

Research line in which the candidate will work: Evaluating the key contribution of extracellular matrix components during tumor progression.

Fight against cancer requires a deep knowledge of multiple players within the complex tumor heterogeneity, including the composition and nature of the dynamic extracellular matrix (ECM), and its contribution for immune infiltration and bad prognosis.

Profile of the desired candidate for Junior Postdoctoral contract:

- Expertise in the study and characterization of cell populations in tumors, using techniques such as immunohistochemistry, cytometry, or others.
- Knowledge of the use of tumor mouse models and their relationships with specific human tumors.
- Knowledge of bioinformatic tools to analyze RNAseq and disease-related big data.

More information
Main researcher contact: juancarlos.rodriguez@genyo.es

9. **Group:** Big Data Department - Computational Medicine Platform
   Main Researcher of the Project: Miguel Ángel Armengol de la Hoz
   Research Centre: Big Data Department - Computational Medicine Platform - Andalusian Public Foundation Progress and Health – FPS (Seville)

Research line in which the candidate will work:

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Development of a common Andalusian framework for the Evaluation of Health Technologies based on Artificial Intelligence solutions in collaboration between AETSA-FPS and the Big Data Area of FPS.

Profile of the desired candidate for Junior Postdoctoral contract:
PhD in Computer Engineering or Telecommunications Engineering or Mathematics or Statistics or Data Science or Bioinformatics or Physics or Psychology, with proven experience in data analysis and scientific papers published in health journals. Knowledge of Python, R, SQL or JS. B2 level in English or similar.

Profile of the desired candidate for Specialist Postdoctoral contract:
PhD in engineering, mathematics or statistics, studies related to data science or machine learning. Experience in health technology assessment, data science, statistics or ML-based decision support systems. Knowledge of Python, R, SQL and JS.C1 level of English or similar.

More information
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