

**1. Project Title/ Job Position title:**

Novelty therapy with exosomes in stroke.

**2. Area of Knowledge:** Life Sciences

**3. Group of disciplines:**

Human Biology, Microbiology, Molecular Biology, Genetics, Cellular Biology, Genomics and Proteomics, Biochemistry

**4. Research project/ Research Group description**

One of the research lines of the Neurology and Cerebrovascular Diseases Research Group of IdiPAZ is focused on Cerebrovascular diseases, more particularly on:

Development of translational research studies (both animal and clinical studies) in cerebrovascular diseases, with the objectives of increasing the understanding of the pathogenesis of both cerebral infarction (with cortical and subcortical affectation) and cerebral hemorrhage. To identify prognostic biomarkers and therapeutic targets mainly aimed at the promotion of brain protection and repair, with a special interest on the development of cell therapy as well as in trophic factors, extracellular vesicles and remyelinating drugs. Clinical trials of cell therapy in acute cerebral infarction (clinical trial AMASCIS and European Consortium RESSTORE-H2020).

Development of innovative strategies in the diagnosis and treatment of ischemic stroke, through the development of an independent operator-ultrasound device for brain visualization and for enhancement by ultrasound of drug therapies (BDNF, exosomes) in the ischemic area.

Evaluation of the benefit of the implementation of prehospital clinical scales able to identify of patients of cerebral artery occlusion susceptible to mechanical thrombectomy in order to shorten treatment delay and improve the prognosis of patients. Comparative analysis of benefit and risk of primary mechanical thrombectomy versus intravenous thrombolysis in patients with acute ischemic stroke within the first 4.5 hours from onset.

Study of the clinical (neurological and neuropsychological) and anthropological factors influencing functional recovery and reintegration of stroke patients as well as the compliance with the recommendations for secondary stroke prevention.

**5. Job position description**

Role: The candidate will be in charge of performing different experimental activities in collaboration with other members of the group in order to evaluate the possible beneficial effects of exosome therapy on the functional recovery in experimental animal models of stroke as well as to study the prognostic predictor potential of exosomes as biomarkers. He/she will be trained accordingly and mentored through the completion of his/her PhD thesis.

Responsibilities

Set up and perform experiments, maintain experimental resources (as cell lines, reagents, etc.) according to protocols, analyze & interpret results and contribute to the development of experimental strategies with accuracy and honesty.

Keep updated the laboratory notebook and properly store and manage the data produced during the project.

Collaborate with colleagues and participate in team activities (such as meetings, seminars, workshops, etc.) across the research group and wider scientific community while keeping up to date with current knowledge and recent advances.

Participate in knowledge exchange with both society and industry, to promote the value of research in public health and to contribute to the dissemination of his/her research results in the principles of EU's Open Science policy.

Contribute Undertake any other duties of equivalent standing as assigned to him/her.

### Skills

Degree in Life Sciences (Biology, Biochemistry, Biotechnology or similar).

Experience with laboratory animals is desirable (FELASA accreditation).

Experience in cell culture is desirable.

Motivation, critical thinking and problem-solving oriented skills.

Good interpersonal skills, including team working.

Good communication skills, willingness to engage in public presentations and ability to transmit complex concepts in a clear way.

Good time and workload management skills, including both initiative and flexibility.

### **Group Leader**

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