

[Title]

Job Profile

CSS

Offer description

Postdoctoral position in nanomedicine for local treatment of glioblastoma at INSERM U1232, France

A postdoctoral position is available at **CRCINA**, INSERM U1232 team 17 « **Design and Application of Innovative Local treatment in Glioblastoma (GLIAD)** », Angers, Loire Valley, France.

=> Research Project: The research will be carried out within the “GLIOSILK” consortium funded by the European Commission under the frame of the ERA-NET EuroNanoMed III (<https://euronanomед.net/>). It involves five European research teams from France, Spain and Italy represented by academic, public health and SME partners.

Coordination and contact: Emmanuel Garcion, CRCINA, INSERM U1232, Team 17, GLIAD, Université d'Angers, Angers, France. emmanuel.garcion@univ-angers.fr

=> Purpose: Brain-tumor glioblastoma (GB) is still considered as one of the worst unmet clinical need in spite of implementation of the therapeutic arsenal available and recent developments in nanomedicine and immunotherapy. With inevitable relapse its prognosis remains devastating. The reasons behind this failure are the tumor heterogeneity and the peritumoral infiltrative niche. A complex interaction between the initial tumor location, its attraction by the peritumoral microenvironment defines a heterogeneous pathway that is probably the more relevant target if we want to develop more curative therapies. In contrast with direct targeting of infiltrated cancer cells for their elimination, GLIOSILK aims to evaluate new bio-interactive interventional silk-fibroin (SF)-based nano-implants in their capability to recruit in controlled brain areas the cells submitted to a chemo-attractant SDF-1 α signal. By developing biocompatible SF-based nano-scaffold and use of well mastered cross-cutting methods, the capability of newly built bio-interactive deposits to define a confined *in situ* gradient and to effectively trap GB cells before elimination (eg. by radiations) while ameliorating the evolution of the disease will be determined. Overall, this multidisciplinary work's purpose is to make significant breakthrough in overcoming treatment resistance in GB, and other solid tumors toward clinical transfer.

Researcher profiles

- First-Stage Researcher (*PhD candidate*)
- Young Researcher (*with less than 4 years research experience after PhD*)
- Established Researcher (*with more than 4 years research experience*)
- Senior Researcher

Research Fields
(2 max.)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Biological Sciences | <input type="checkbox"/> Medical Sciences |
| <input type="checkbox"/> Chemistry | <input type="checkbox"/> Neurosciences |
| <input type="checkbox"/> Computer Science | <input checked="" type="checkbox"/> Pharmacological Sciences |
| <input type="checkbox"/> Engineering | <input type="checkbox"/> Physics |
| <input type="checkbox"/> Environmental Science | <input type="checkbox"/> Technology |

Ethics in Health Sciences

Other (specify):

Main Activities

The postdoctoral fellow will develop, implement and characterize *in vitro* and *in vivo* implantable micro-nanometric devices dedicated to tumor cell trapping as an innovative alternative to the treatment of glioblastoma (silk fibroin sponges, 3D printed matrix and electrospun nanofibers).

He/She will work at the chemistry-biology interface while always being concerned by the translational side and by the possible clinical application of the concept developed.

He/She will contribute to the manufacture of the tools developed and above all be in charge or developing bioassays for their *in vitro* and *in vivo* functional characterization in dedicated models (organoids, orthotopic preclinical model (xenogenic human cells implanted in immunosuppressed rats and syngeneic RG2, implantations in resection cavities). These experiments will allow generating a rationale defining the biocompatibility, bioavailability of the vectorized decoys and efficacy of the trapping. He/She should be independent, hardworker, methodical, enthusiastic, with very good inter-relational qualities, trustworthy person (probity, confidentiality), capable to show intellectual curiosity, proactive in front of the complexity of the scientific problems encountered.

Associated Activities

- Mobilities for the successful completion of the project is to be expected between France and Spain (Santiago de Compostela) or Italy (UNIMORE).

Specific Requirements or Constraints

- Animal experimentation
- Possible work with radiolabeled materials in dedicated confined areas

Skills/Qualifications

- The candidate must have a dual experience in pharmaceutical technology and cell biology, attested by recent publications. Experience with 3D cultures and stereotaxic surgery is valuable.
- In addition to the significant experience of animal experimentation and cell culture attested by stereotaxis and 3D organoids, candidate will be familiar with the classical techniques of molecular and cellular biology, including biochemical assays, RTqPCR, Western blot, fluorescent confocal microscopy, flow cytometry or immunohistochemistry and, if necessary, be able to use the radioactivity for biodistribution/clearance studies.
- He/She should be independent, hardworker, methodical, enthusiastic, with very good inter-relational qualities, trustworthy person (probity, confidentiality), capable to show intellectual curiosity, proactive in front of the complexity of the scientific problems encountered.

Required Experience

X 0 to 2 years 2 to 4 years 4 to 10 years >10 years

Fields:

Required Education Level or Diploma

- PhD in biology and health

Required Languages

- English required.
- French will be useful, Spanish and Italian of interest.

Hosting Unit

Code

INSERM U1232

Name

CRCINA - Center for Research in Cancerology and Immunology Nantes-Angers

Director

GREGOIRE Marc

Composition	TEAM 17 – GARCION Emmanuel
Address	Institut de Biologie en Santé – IRIS – CHU, 4 rue Larrey, Angers – France
Website	http://www.crcina.org
Contract	
Type	Postdoctoral fellowship
Duration	21 months
Salary	
Envisaged Start Date	The start of the contract is scheduled for October 1st to December 1st, 2020.

Application

Applicants must send a CV and a cover letter to:

Contact for further information (name, telephone/mail):

Dr. Emmanuel GARCION,
CRCINA, INSERM U1232,
Team 17 (GLIAD), Angers University, Angers, France.
tel : +33 (2) 44 68 85 43.
emmanuel.garcion@univ-angers.fr,

Deadline for application:

September 30th, 2020.