CYROI is recruiting a Postdoctoral Researcher in Biology to join our team starting September 1, 2025! Please send your applications to the following addresses: f.lesage@cyroi.fr and e.jestin@cyroi.fr.

**CONTEXT**

Cancer remains one of the leading causes of mortality worldwide, with nearly 10 million deaths recorded in 2020[[1]](#footnote-1). Approximately 90% of cancer-related deaths are due to metastases in patients with solid tumors. Targeted Radionuclide Therapy (TRT), using radioelements, is beginning to be integrated into cancer treatments.

Overexpressed receptors in various cancers can be targeted by radiolabeled ligands, such as gallium-68 for PET, followed by TIRT with a therapeutic radioelement such as lutetium-177. The GIP CYROI is leading the RUNTHERANOS project in collaboration with the Institute for Biochemistry and Bioorganic Chemistry in Leipzig and the UMR5287 INCIA in Bordeaux, focused on these radiotheranostics. Neuropeptide Y (NPY) receptors are promising targets[[2]](#footnote-2), and we aim to optimize specific peptide analogs for Y1, Y2, and Y5 receptors for therapeutic applications.

To overcome the limitation related to the short half-life of gallium-68, we will use radionuclides with longer half-lives, such as fluorine-18 and zirconium-89 for PET diagnosis, and lutetium-177 for therapy. Four types of cancers with poor prognosis have been selected for study within the RUNTHERANOS project – IDH wild-type high-grade glioma, triple-negative breast cancer, pancreatic adenocarcinoma, and small cell lung cancer – each expressing Y1, Y2, and Y5 receptors[[3]](#footnote-3). We therefore plan to evaluate *in vitro* and *in vivo* a series of neuropeptide Y analogs specifically targeting these receptors.

To adhere to ethical standards, GIP CYROI will establish a dedicated technical platform for 3D cell culture and the use of *in ovo* models, such as HET-CAM, which are promising alternatives to animal experimentation. These methods will facilitate the targeting of developed radioligands and reduce the use of animals for scientific purposes while paving the way for collaborations and services in other research areas.

These new alternative methods will be utilized for targeting the radioligands of the RUNTHERANOS project, thereby contributing to the reduction of animal use for scientific purposes and the development of new research techniques. This will also open possibilities for collaborations and service provisions in other fields.

As part of the ERA TALENT FOCUS-4R project, funded by Horizon Europe, the talents from GIP CYROI will receive training within leading institutes on these alternative methods, aimed at enhancing their skills in 3D cell culture and CAM models to improve biomedical research while respecting ethical standards.

**JOB DESCRIPTION**

**MAIN MISSIONS: Post-Doctorate in Biology for the establishment of a technical platform for 3D cell cultures (spheroids/organoids) and the management of PDX cells lines.**

* Active participation in the European project ERA TALENT FOCUS-4R
* Training in techniques: Complete immersion at the UMR INSERM 1312 BRIC (**B**o**R**deaux **I**nstitute of on**C**ology) for a period of 3 months and at Crown BioScience in Leiden (Netherlands) for 6 months.
* At the end of this training period, the candidate will be responsible for implementing the techniques within CYROI.
* Professional relationships:
  + Key collaborators within GIP CYROI: In Vitro Units / Animal Facility and Animal Experimentation / Radiochemistry and Preclinical Imaging
  + Regional collaborators: University / University Hospital / Sainte Clotilde Clinic
  + National & international partners
* Involvement in the FEDER RUNTHERANOS and INTERREG NanoBioscar research programs
* Proposing new research and service projects
* Data processing
* Excellent writing skills (Publications, activity reports, etc.)
* Participation in team meetings and the "Horizon Europe projects" group

**OTHER MISSIONS**

* Monitoring of stock levels (inventory planning)
* Ordering of consumables and small equipment
* Updating of experimental procedures

**REQUIRED SKILLS:**

* PhD degree (Bac +8) in Biology
* Rigor, autonomy, and team spirit

**CONDITIONS:**

* 24-month fixed-term contract (CDD)
* Full-time

**WORK LOCATION:**

* CYROI – Associated with the In Vitro Unit
* Several Missions abroad

1. Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, et al. Global Cancer Observatory: Cancer Today. Lyon: International Agency for Research on Cancer; 2020 (<https://gco.iarc.fr/today>, accessed February 2021). [↑](#footnote-ref-1)
2. Bodin S, Peuker L, Jestin E, Alves I, Vélasco V, Ait-Arsa I, Schollhammer R, Lamare F, Vimont D, MacGrogan G, Hindié E, Beck-Sickinger A, Morgat C. Bioconjugate Chem. 2023, 34, 11, 2014-2021. [↑](#footnote-ref-2)
3. Pascetta SA, Kirsh SM, Cameron M, Uniacke J. Pharmacological inhibition of neuropeptide Y receptors Y1 and Y5 reduces hypoxic breast cancer migration, proliferation, and signaling. BMC Cancer. 2023;23(1):494.

   Körner M, Reubi JC. Neuropeptide Y receptors in primary human brain tumors: overexpression in high-grade tumors. J Neuropathol Exp Neurol. 2008; 67(8):741-9.

   Körner M, Reubi JC. NPY receptors in human cancer: a review of current knowledge. Peptides. 2007;28(2):419-25

   Kim Y, Lee J, Jeong S, Kim WY, Jeong E, Yoon S. Screening of the siGPCR library in combination with cisplatin against lung cancers. Sci Rep. 2022t 17;12(1):17358 [↑](#footnote-ref-3)