



**Open position for a staff scientist (post-doc/IR level) for WP2 of the
PROGRAMME FÉDÉRATEUR AVIESAN NANOTUMOR
« TOWARDS A SUBCELLULAR MAPPING OF THE CANCER CELL »**

Context:

In 2019, the French National Alliance for Life Sciences and Health (Aviesan) launched the 1st edition of its Aviesan Federating Program (PFA), whose objectives are:

- To structure scientific communities in specific and priority areas by developing large-scale interdisciplinary national consortia;
- To create a dynamic at the border between several fields to explore research niches that have not yet been studied in an interdisciplinary approach, by developing a complementarity of know-how.

Entitled "Towards a subcellular map of the tumour cell - NANOTUMOR", this 1st edition of the PFA program was organised by the Multi-Organisation Thematic Institutes (ITMO) Cancer and Molecular and Structural Bases of Life (BMSV) of Aviesan, funded by the 3rd Cancer Plan (2014-2019) and operated by Inserm.

The PFA NANOTUMOR is the first program at the interface between cancer research (ITMO Cancer) and molecular and structural life sciences (ITMO BMSV). Its objectives are:

- to draw a structural and functional mapping of the cancer cell;
- to perform the analysis of cancer cell plasticity, both at the dynamic and functional level;
- to establish a morphological atlas of the cancer cell, and to characterise the multi-protein complexes present within;
- to study the dynamics of cancer-driven cell transformation and how the cells adapt to it;
- to cross-compare normal and cancer cells;
- to model interaction networks which are perturbed in cancer;
- to identify innovative anti-cancer targets, together with novel pharmacological compounds
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More precisely, the NANOTUMOR project is structured around 4 work packages (WP) which aim to:

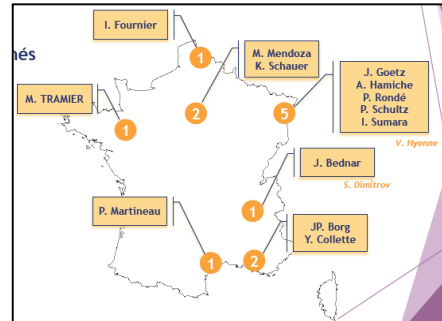
- WP1: Isolate, characterize the protein composition and determine the structure of key molecular complexes involved in cancer onset and progression.
- WP2: Quantify alterations of intracellular organelles during the cancer cascade and identify and characterize protein complexes that sustain oncogenic intracellular signatures.
- WP3: Develop biosensors, protein and chemical inhibitors to characterize *in cellulo* the molecular or cellular targets and to modify their properties by targeted inhibitors.

- WP4: Integrate in vivo and validate the targeted candidate protein complexes in vivo on patients samples

The consortium is composed of 13 teams, working on the PFA **NANOTUMOR** project and located as follows: Strasbourg (5 teams), Paris (2), Marseille (2), Lille (1), Lyon (1), Montpellier (1), Rennes (1).

In the framework of this consortium, we are recruiting a staff scientist dedicated to the Work Package 2 of the **NANOTUMOR** Program.

The fellow will be mainly located in Paris but, as the participants to the consortium are located on several sites, a significant traveling activity is also envisaged and several stays in designated partner's lab is expected, particularly in Strasbourg.



Mission and main tasks:

To support the research program of WP2, a fellow will be hired for 18 months. This person will realize mainly experiments linked to WP2 but testing and optimization of reagents from other work packages will be part of his/her tasks. The experiments of the WP2 require a fellow trained in microfabrication, imaging and image analysis. He/she will be in charge of the implementation of the micropatterning approach for use in the consortium, optimizing experimental conditions for different cell models and the use of micropatterns for a variety of imaging approaches, from live cell imaging (FCS, FRAP, FRET) to FIB/SEM. He/she will also perform intravital imaging and Correlative Light Electron Microscopy (CLEM) in zebrafish and mouse. The IR will need to perform high-end image acquisition as well as sophisticated image analysis and software development.

Profile, operating and behavioural skills:

- Applicants must hold a Ph.D. in biology, biochemistry, biophysics, or a related fields and must have research experience and strong attention to detail
- In-depth knowledge of cell imaging and multimodal microscopy
- Good knowledge of zebrafish handling and mouse injection
- Instrumental development and/or software
- Willingness to work in interaction with several teams

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