

Tenure Track Junior Professorship

Profile n°3: Antiviral Strategy for emergence in the South

Key words: Antiviral Therapeutics; Emerging Viral Diseases; Resistance; Immunotherapy; Southern countries

**Planned tenured position as IRD Research Director after a 5-year contract
Chair attached to Emerging Virus Unit (IRD 190, Inserm 1207, IRBA, Aix-Marseille university), in
partnership with Aix-Marseille university, Inserm and ANRS I MIE**

◊ Context and stakes for the Global South

The decision to create this Chair within the Emerging Viruses Unit is fully in line with IRD's commitment to work actively towards achieving the Sustainable Development Goals by 2030, with a view to building a prosperous and just world that respects the rights of peoples and individuals. It is part of the Health axis, with the objective of improving the health of populations in the South, with a specific objective dedicated to communicable diseases and an important place given to emerging infectious diseases and the prevention of the emergence of resistance to anti-infectious compounds. Despite its strategic nature, the theme of antiviral therapeutics for emerging pathogens is not currently the subject of a structured proposal for co-development with southern countries within the IRD and more widely within the French scientific community.

The Emerging Viruses Unit is an IRD unit entirely dedicated to research on emerging viral pathologies in association with the University of Aix-Marseille, Inserm and IRBA. Since 2008, it has been conducting research on antiviral therapies specifically dedicated to emerging viral pathologies. This has enabled it to participate in preclinical and clinical studies against Ebola, Lassa, SARS-CoV-2, dengue fever, chikungunya, Nipah, Zika, etc., using therapeutic monoclonal antibodies, antivirals or hyperimmune plasmas. It hosts a platform for the study of antivirals with the IBISA label.

The proposed position, specifically dedicated to the treatment of emerging viral pathologies, will reinforce the Emerging Viruses Unit's commitment to proposing and co-constructing, with Aix-Marseille University, Inserm and ANRS I MIE, a research strategy on antivirals anchored in its partnerships in the South, at the service of the populations concerned.

◊ Scientific objectives

The last few decades have revealed to the scientific and medical community the acceleration of viral emergence and re-emergence phenomena, and the extent of their medical, economic and societal impact. All international bodies are calling for the implementation of countermeasures (particularly therapeutic), but these are only exceptionally the subject of partnerships with the countries of the South in which these emergences are the most frequent and their impact is often the greatest.

This recruitment will make it possible to offer a new field of collaboration and training to partners in the South and to strengthen the position of partner institutions in a research sector that is in full development and in the process of being structured at the national, European and international levels. In partnership with ANRS I MIE, the scientist recruited will be integrated into the agency's

working groups (GEPC, Pre-Clinical Studies Group) and the unit's international projects (which has participated in more than 20 European projects to date, has coordinated the SILVER antiviral study consortium and directs the European virus collection EVA). He/she will work within the framework of the AD2P research platform, which is supported by Aix-Marseille University. He/she will have to structure a training program accessible to students from the South, in particular in the form of Master's courses and doctoral theses. He/she will ensure the visibility of his/her research and of the institute through these training courses, his/her participation in international scientific projects and collaborations, and his/her publications in high-level international journals.

The recruited scientist will organise his/her activity around complementary themes:

- (i) the development of phenotypic assessment of antiviral activity for emerging pathogens within the AD2P platform. This includes the capacity for automated screening of chemical libraries, resistance assessment for panels of strains of interest developed in interface with the European EVAG project, and participation in the evaluation of molecules within the P4 Inserm-Jean Mérieux. He/she will have to transfer the main elements of this expertise to the partners in the South (cf. below) and ensure the implementation of an associated genotypic surveillance capacity, based on genomics or molecular typing.
- (ii) setting up and transferring a complete and integrated pipeline for the selection, cloning and evaluation of monoclonal antibodies from convalescent lymphocytes, selected for their potent neutralising activity and therefore their therapeutic and/or prophylactic potential
- (iii) He/she will rely on the unit's long-standing collaborations in Colombia, Laos and Mali to start items (i) and (ii). The processes set up should be adaptable to other emergence scenes and thus have a generic design. Crucially, he/she will ensure that he/she is supported by IRD services to provide the appropriate ethical and valorisation framework for his/her work.
- (iv) He/she will have the possibility to develop a more fundamental project of investigation of biotherapies, which could be done in collaboration (e.g., cell therapy of viral infections or study of antiviral bioreactors).

The Chair, which is the result of a partnership between the IRD, Aix-Marseille University, Inserm and ANRS I MIE, consists of a 5-year fixed-term contract (with a 2-month trial period) followed, after a positive evaluation, by tenure in the IRD's research director corps. This tenure will only be possible if the candidate has obtained a Habilitation to direct research (HDR) before the end of the fixed-term contract.

Teaching objectives

The scientist recruited will organise his/her teaching load with a priority with and for the South. He/she will be in charge of a teaching option of about 12 hours in the Master of Microbiology and Infectious Diseases of Aix-Marseille University, dedicated to antiviral therapeutics for emerging viral pathologies. These courses will have a video support and will be freely accessible on the internet for foreign students. Additional online training sessions (TD format) will be organised for partners from the South.

He/she will promote these courses through the IRD network, his/her contacts in the South and training activities in the South for the preparation of the Master's degree and the PhD thesis. He/she will supervise Master's students in the laboratory, and co-supervise and then supervise PhD students after obtaining the HDR, giving priority to students from developing countries and to co-supervision. In agreement with Aix-Marseille University, he/she may contribute to the teaching of biotechnology at

the Polytech engineering school or to the teaching of cellular or molecular biology in the Bachelor's degree course.

Funding available

The winner of the Chair will be awarded (1) by the ANR a funding of 200 k€ (of which at least 120 k€ for salaries -doctoral students, post-doctoral students, contractual IT staff- the balance being reserved for the running of the project), (2) by the IRD the financing of a doctoral contract or a post-doctorate for a period of two years and 30 k€ for a long-term mission (approximately 6 months), (3) by Inserm and Aix-Marseille the financing of 30 k€ of research operation each, and (4) by the ANRS I MIE the financing of 75 k€ of investment and 75 k€ of research operation.

Conditions for applicants

Candidates must fulfil one of the following criteria :

- hold a doctorate as provided in article L.612-7 of the French Education Code;
- hold a PhD or doctoral level of education;
- hold a doctorate in engineering;
- hold a study and research diploma in dental science (DERSO);
- hold a study and research diploma in human biology (DERBH);
- hold an overseas university degree considered equivalent to the above-mentioned diplomas; in this case, applicants should submit an equivalence request.
- show proof of qualifications or scientific works considered equivalent to the above-mentioned diplomas; in this case, applicants should submit an equivalence request.

For the equivalence request - (refer to the file integrated into the platform "démarches-simplifiées).

Applications, selection and interviews

Applications must be submitted online at: <https://demarches.adullact.org/commencer/ird-chaire-de-professeur-ou-professeure-junior-e-2> by **May 11, 2023 at 11:59 p.m. (metropolitan France time)**. Applications will be assessed by a committee comprising IRD members and external experts. Candidates pre-selected by the committee will be invited for interview. Interviews will last for one hour, and will be conducted remotely by video-conference.

The recruitment date for the chair is set for December 1, 2023.

Assessment criteria

- Excellence of the candidate, motivation, scientific and pedagogical supervision capacity
- Quality, originality, interdisciplinarity of the research and teaching projects and their Global South component
- Relevance of the proposed methods with regard to the identified problems
- Relevance and structuring effect of the project within the laboratory and at the level of partnerships
- Coherence with the Site policy
- Adequacy of the means to the proposed project and capacity to mobilise complementary means.