

**3 year Post-doctoral position  
in Chemical Microbiology, Lille, France  
ERC INTRACELLTB and Marie Curie ITN “CycloNHit” funded Projects**

**Working area**

Applications are invited for a post-doctoral fellow in **chemical microbiology using high resolution microscopy**. Place: Institut Pasteur of Lille, France affiliated to Inserm (U1019), CNRS (UMR8204) and the University of Lille.

INTRACELLTB is an ERC funded project focused on the understanding of the biological mechanisms underlying the persistence of intracellular mycobacteria and the development of novel therapeutic approaches against Tuberculosis to eradicate the *Mycobacterium tuberculosis* bacillus from its hiding intracellular niche.

CycloNHit is a Marie Curie Initial Training Network (ITN) on nanocarriers for the delivery of antimicrobial agents to fight resistance mechanisms. The objectives of the CycloNHit project are to efficiently encapsulate and protect antibiotics in nanocarriers for both intracellular and extracellular delivery to combat resistant bacteria, and study the mechanisms in biological systems using state-of-the art techniques. Further information: <http://itn-cyclon.eu/>

**Mission and Activities:**

The proposed research project aimed at elucidating the molecular and cellular determinants of the trafficking of antibiotic loaded nanoparticles inside host cells such as macrophages. We have shown that formulation within nanoparticles of current antitubercular led to increased antimicrobial efficacy.

The precise mechanism of action of potent nanoparticles/drugs systems needs to be investigated in particular in terms of subcellular distribution, inflammation and innate immunity modulation. To do this, you will use automated confocal fluorescence microscopy, electron microscopy and cellular microbiology techniques on *Mycobacterium tuberculosis* infected macrophages. State of the art equipment in imaging is available for this project (<http://www.bicel.org/>).

Additionally, the distribution and potency of the nanoparticles/drugs will be investigated *in vivo* using *in vivo* imaging techniques.

This projects is part of the Marie Curie ITN project “Cyclon Hit” aiming at adding to the employability of the recruited researchers through exposure to both academia and enterprises, thus extending the traditional academic research training setting and eliminating cultural and other barriers to mobility. Marie Curie ITN action aims to improve career perspectives of early-stage researchers in both public and private sectors, thereby making research careers more attractive to young people. This will be achieved through a trans-national networking mechanism, aimed at structuring the existing high-quality initial research training capacity throughout Member States and associated countries.

This project also fits into a main research program of the team that is supported by an ERC grant (INTRACELLTB) and that includes the discovery and the generation of novel type of antitubercular agents able to target host macrophages.

**Expected skills:**

The ideal candidate should have previous experience in cell biology, a strong background in imaging techniques and able to work in high containment security facilities (BSL-3). Applicants must also have a good command of English (recruitment will likely be done through a skype interview).

The candidate will have the opportunity to work in an interdisciplinary field. She/he will receive training through summer schools and workshops.

**Eligibility and Constraints**

Applicants must have completed Ph.D degree in cellular biology, and possess excellent skills for microscopy experiments followed by quantitative image analysis. The position is open to individuals of EU, EAA or Swiss nationality, who have spent less than 12 months in France in the last three years. Furthermore, they should be in their first four years of their research carrier.

For more information please check:

[http://ec.europa.eu/research/mariecurieactions/index\\_en.htm](http://ec.europa.eu/research/mariecurieactions/index_en.htm)

The candidate should be able to work in a high containment environment.

**How to apply**

Applicants should send a letter explaining their motivation, full CV including list of publications and one or more academic references.

This is a three year contract by Inserm and CNRS.

Contact:

PRISCILLE BRODIN

Institut Pasteur de Lille

CIIL - Center of Infection and Immunity of Lille

"Chemical Genomics of Intracellular Mycobacteria" Team

INSERM U1019 - CNRS UMR 8204 - Univ Lille Nord de France

1, rue du Professeur Calmette, F-59019 Lille Cedex

Téléphone :+33(0)320 87 11 84

[priscille.brodin@inserm.fr](mailto:priscille.brodin@inserm.fr)

<http://www.ciil.fr/>

