



Opening position at **Université Paris-Diderot** (Paris, France)

18 month POST-DOCTORAL FELLOWSHIP

Research

In the lungs, the passage of inhaled particles through the air-blood barrier, known as translocation, is of paramount importance for toxicity and pharmacological studies. It involves several processes, such as the crossing of the lung surfactant, the endo- and exocytosis in and out of the pneumocyte cells and the transfer to the capillaries. These processes are complex and despite continuous efforts and extensive experiments on animal models, they are not yet understood. The goal of the project **AlveolusMimics** (*Alveolus mimics using human pluripotent stem cells and mechanistic understanding of nanoparticles translocation through respiratory system*) is to develop human alveolus mimics for mechanistic understanding of nanoparticles translocation through respiratory system.

Context

The post-doctoral position is funded from the Agence Nationale de la Recherche for 18 months, starting in 2018. The work will be performed at the University Paris-Diderot (Paris 7) in collaboration with the École Normale Supérieure in Paris. The members of the consortium are Dr. Yong Chen (Coordinator, ENS Paris), Pr. Armelle Baeza-Squiban (Paris 7) and Dr. Jean-François Berret (Paris 7). In the postdoctoral work, emphasis will be on the interactions of nanoparticles with the alveolar barrier, comparing conventional cell culture models with an alveolus-on-a-chip device specifically built for the project. Motivated candidates should have a solid expertise in biophysics and/or materials science and engineering, with a good knowledge in soft matter. For the nanomaterial characterization, the experimental techniques used will be scattering, spectrometry, and microscopy. For the cellular assays, experience with cell culture and nanotoxicity is required.

If prospective applicants would like to discuss the post informally, please contact:
Dr. Jean-François Berret jean-francois.berret@univ-paris-diderot.fr

Send applications to above email, include CV with names and addresses of two referees / motivation letter required

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References

- J.-F. Berret, *Local viscoelasticity of living cells measured by rotational magnetic spectroscopy*, Nature Communications 7, 10134 (2016)
- F. Mousseau, C. Puisney, S. Mornet, R. Le Borgne, A. Vacher, M. Airiau, A. Baeza-Squiban and J.-F. Berret, *Supported pulmonary surfactant bilayers on silica nanoparticles: Formulation, stability and impact on lung epithelial cells*, Nanoscale, 2017,9, 14967-14978