Inserm

Job Offer

# Postdoc position in cellular biology and mitochondrial metabolism

| Job Profile | |
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| **CSS** | **3** |
| **Offer description** | The mitochondrial oxidative phosphorylation (OXPHOS) system, comprising the electron transport chain and ATP synthase, generates membrane potential, drives ATP synthesis, governs energy metabolism, and maintains redox balance. OXPHOS dysfunction is associated with a plethora of diseases ranging from rare inherited disorders to common conditions, including diabetes, cancer, neurodegenerative diseases, as well as aging. There has been great interest in studying regulators of OXPHOS. Among these, team's work has led to the identification of ATPase Inhibitory factor 1 (IF1), an endogenous inhibitor of mitochondrial and cell surface ATP synthase, as a central actor and biomarker of lipid metabolism and mitochondrial bioenergetics.<br>The project is to explore IF1 functions and regulation at the cell, organ, and whole-organism levels and in different pathophysiological conditions, and is driven by the hypothesis that enhancing mitochondrial function will promote healthy aging. Pharmacological approaches to target mitochondrial energy metabolism will be also explored. |
| **Researcher profiles** | ☐ First-Stage Researcher *(PhD candidate)*<br>☒ Young Researcher (*with less than 4 years research experience after PhD)*<br>☒ Established Researcher *(with more than 4 years research experience)*<br>☐ Senior Researcher |
| **Research Fields (2 max.)** | ☒ Biological Sciences<br>☐ Chemistry<br>☐ Computer Science<br>☐ Engineering<br>☐ Environmental Science<br>☐ Ethics in Health Sciences<br>☐ Medical Sciences<br>☐ Neurosciences<br>☐ Pharmacological Sciences<br>☐ Physics<br>☐ Technology<br>☐ Other (specify): |
| **Main Activities** | • Analyse of metabolism and bioenergetics in different cell types and tissues, on various in-vitro, ex-vivo and in-vivo experimental models of genetic and pharmacological invalidation and activation.<br>• The experiments will involve the use of various experimental models (primary hepatocytes, endothelial cells, adipocytes, original transgenic mice and mouse models of endothelial and metabolic dysfunctions) as well as a wide range of methods and technical approaches (immunofluorescence, histology, HTRF, metabolic studies on living cells, lipidomics, transcriptomics), with the support of local technical platforms. |
| **Associated Activities** | • The postdoctoral fellow will present the progress of the project during weekly team meetings |
| **Specific Requirements or Constraints** | • None |
| **Skills/Qualifications** | *Know-how / methodology*: |

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| | • Molecular, biochemical and imaging methods to study mitochondria<br>• Knowledge in mitochondrial energy metabolism<br>• Metabolic studies, in-vivo in mice and ex-vivo on tissues<br>• RNA-Seq and OMICs data Analyses<br>• Strong computer literacy including experience with image analysis, FlowJo, Prism, and Excel. Mastery of R and SAS would be a plus<br><br>*Skills*:<br>• Proficiency in English as members of the teams are English speakers<br>• High levels of initiative, autonomy and the ability to assume a high level of responsibility<br>• Strong interpersonal and mentoring skills needed to effectively deal with students and people of the team |
| **Required Experience** | ☐ 0 to 2 years ☒ 2 to 4 years ☒ 4 to 10 years ☐ >10 years<br>**Fields:** Cell biology and biochemistry, physiopathology |
| **Required Education Level or Diploma** | • A PhD degree preferably in biochemistry or cell biology and physiology<br>• Animal Testing diploma would be a plus |
| **Required Languages** | • English |

| **Hosting Unit** | |
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| **Code** | Inserm UMR1297 |
| **Name** | Institute of Cardiovascular and Metabolic Diseases (I2MC), Team LiMitAging |
| **Director** | Pr Dominique Langin |
| **Composition** | 11 research team |
| **Address** | 1 Avenue du Pr. Jean Poulhès BP 84225 - 31432 Toulouse |
| **Website** | https://www.i2mc.inserm.fr/en/ |

| **Contract** | |
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| **Type** | CDD |
| **Duration** | 12 months renewable |
| **Salary** | From 2 633,57 € gross per month, according to salary scale at Inserm |
| **Envisaged Start Date** | Between February and April 2023 |

## Application

**Applicants must send a CV and a cover letter to:** Laurent.martinez@inserm.fr

**Contact for further information (name, telephone/mail):** Laurent Martinez

**Deadline for application:** 15/01/2023