



**Post-doctoral position in tissue engineering**  
**Design of collagen biomaterials for cartilage tissue engineering**

**Offer Description**

We are currently looking for a post-doctoral researcher to join our “Regeneration of OsteoArticular and Dental tissues” (ROAD) team within the LBTi (Laboratory for Tissue Biology and Therapeutic Engineering). Our laboratory is part of the IBCP research institute and located on the Gerland campus, providing an excellent research environment, core facilities and support services. This postdoctoral position is part of a tissue engineering project funded by the ANR (CARTEGRIN, supervised by Jean-Daniel Malcor), designed to produce biomaterials for cartilage repair.

The postdoctoral researcher will aim to fabricate collagen-based scaffolds which possess optimal architectural, mechanical and biological properties to host mesenchymal stem cells. Biological properties will be adjusted by biomaterial functionalization with triple-helical peptides (THP), a family of peptides that adopt the triple helix conformation of collagen, to prompt mesenchymal stem cell differentiation into chondrocytes. Biomaterials loaded with functional chondrocytes are then destined to be implanted on damaged cartilage *in vivo* to contribute to its repair and prevent osteoarthritis. Alternatively, these biomaterials will constitute engineered cartilage constructs that can serve as platforms to study pathologies associated with cartilage *in vitro*.

The recruited postdoctoral researcher will analyse the effects of THPs on mesenchymal stem cells and chondrocytes, carry out cell-based experiments on THP-functionalized biomaterials, and perform animal studies to evaluate biomaterial integration into cartilage *in vivo*. The hired postdoc will be in charge of designing experiments, performing bench work, troubleshooting and writing reports. She/he will also be expected to produce scientific communications, contribute to laboratory management and mentor PhD/master students.

- Analyse the effects of THPs on mesenchymal stem cells and chondrocytes
- Carry out cell-based experiments on THP-functionalized biomaterials
- Perform animal studies to evaluate biomaterial integration into cartilage *in vivo*
- Design experiments, perform bench work, troubleshoot and write reports
- Produce scientific communications, contribute to laboratory management and mentor PhD/master students

References: Malcor et al., *Biomaterials*, 2016, 85:65-77; Malcor et al., *Biomaterials*, 2018, 182:21-34; Malcor et al., *Regen Biomaterials*, 2020, 7:5 471-482; Colzani et al., *Biomaterials*, 2021, 261 120612; Malcor et al., *Acta Biomaterialia*, 2022, S1742-7061(22)00339-7.

**Host institution**

Laboratoire de Biologie Tissulaire et d'Ingénierie thérapeutique (LBTi)  
UMR5305, 7 Passage du Vercors, 69007, Lyon, France  
OsteoArticular and Dental Research (ROAD) team

### **Application process**

Please send the following documents in English to [jean-daniel.malcor@ibcp.fr](mailto:jean-daniel.malcor@ibcp.fr) :

- Curriculum vitae
- List of publications
- Motivation letter (one page) explaining the candidate's research interests

### **Addition Information**

The job is located in the LBTI (Laboratory for Tissue Biology and Therapeutic Engineering, CNRS UMR5305), at the IBCP (Institute for Biology and Chemistry of Proteins) institute in Lyon. Starting date is expected to be in January 2023. The contract is for two years.

For more information, please visit our website: [https://lbt.iibcp.fr/?page\\_id=1908](https://lbt.iibcp.fr/?page_id=1908)

### **Requirements**

The candidate must have a PhD in biochemistry or cell biology, or a related field. A strong experience in tissue culture, molecular biology, cell-based assays and microscopy techniques is required. Basic knowledge and practice in *in vivo* experimentation would also be an advantage.

The candidate should be autonomous and self-motivated, with good communication skills and a strong ability to work productively as part of a team. A good command of English (both spoken and written) is mandatory.

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