

## Post-Doctoral Research Fellowship Available at the University of Milano-Bicocca

The research group led by **Prof. Silvia Brunelli** at the **School of Medicine and Surgery, University of Milano-Bicocca**, is seeking a highly motivated **Post-Doctoral Research Fellow** to join an exciting and ambitious project funded by **Fondazione Telethon**.

**Project Title: “Exploring the Role of SPP1 in Macrophage-Osteogenic Cell Crosstalk and its Involvement in Heterotopic Ossification in Fibrodysplasia Ossificans Progressiva”**

**Project Overview: Fibrodysplasia Ossificans Progressiva (FOP)** is a rare congenital disorder characterized by abnormal bone formation (heterotopic ossification, HO) in ligaments, tendons, and skeletal muscles. FOP is caused by gain-of-function mutations in the ACVR1 gene, which dysregulate the bone morphogenetic protein (BMP) signaling pathway. While significant progress has been made in understanding the disease, the role of immune cells in HO remains controversial. This research aims to investigate the hypothesis that, upon trauma, macrophages (MPs) infiltrating FOP lesions exhibit an altered metabolic signature, leading to an intermediate phenotype that secretes various factors, including SPP1 (osteopontin). This, in turn, may accelerate the differentiation of mutant osteogenic precursors. The findings of this study are expected to provide critical insights into the underlying mechanisms of FOP and potentially pave the way for new therapeutic strategies.

**Methodologies:** The project will take advantage of transgenic murine model of FOP and incorporate state-of-the-art techniques, including CRISPR/Cas9-based genome editing, genome-wide transcriptomic analysis in vitro and in vivo assays,

### Candidate Profile:

We are looking for highly motivated researchers with a PhD in Biology, Biotechnology, Biomedical Sciences, or related fields.

### Desired qualifications and skills:

- Experience in cell and molecular biology
- Expertise in murine models
- Proficiency in bioinformatics and data analysis (including R programming)
- Familiarity with any of the above-mentioned techniques will be considered an advantage

### Position Details:

**Start date:** April 1st, 2024

**Duration:** 1 year (renewable for an additional year)

### Research Environment:

The School of Medicine and Surgery at the University of Milano-Bicocca ([@https://www.medicina.unimib.it/it](https://www.medicina.unimib.it/it)) is located within the BioMedical Campus of Monza. It consistently ranks among the top medical universities in Italy and has received the prestigious “Department of Excellence” financial award in 2018 and 2023. The department offers a dynamic and stimulating environment, with access to cutting-edge research facilities.

### How to Apply:

Interested candidates should send the following documents to **Prof. Silvia Brunelli** at [silvia.brunelli@unimib.it](mailto:silvia.brunelli@unimib.it):

1. A detailed CV
2. A cover letter describing research interests and experience
3. Contact details of at least two referees