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## Postdoctoral/scientist position is open to join the ERA-Net project IMMOSCAN and work at the University of L'Aquila, Italy, on the role of immune osteoclasts in cancer – implications for therapy.

**Starting:** Between March 31<sup>st</sup> and May 31<sup>st</sup>, 2023

**Deadline for application:** February 28<sup>th</sup>, 2023

**Salary:** Depending on the experience. Position funded for 3 years.

**Project:** We are seeking highly motivated scientists/ post-doctoral researchers interested in osteoclast biology, bone cancer and osteoimmunology to join our consortium. Despite progresses in diagnosis and treatment, bone tumors remain incurable. In the bone, cancer cells disrupt the balance between bone-forming osteoblasts, bone-resorbing osteoclasts and immune cells, leading to excessive bone destruction by osteoclasts. However, osteoclasts have recently been identified as innate immune cells, some of which being immune suppressive, which might participate in cancer progression and resistance to immunotherapies. Our aim is to characterize these osteoclasts and their participation in immune suppression and tumor progression. This will be achieved by using state-of-the art technologies for transcriptomic and bone imaging, as well as functional assays in preclinical models and human biopsies. Novel therapeutic strategies to target immune suppressive osteoclasts will be explored in pre-clinical models.

### Host laboratory:

- **Pr Anna Teti's lab** (University of L'Aquila, Italy) will recruit a postdoc with expertise in in vitro and in vivo pre-clinical models to investigate the role of extracellular vesicles in mediating the immunosuppressive function of osteoclasts in the context of bone metastases.

### The project will be performed in partnership with the IMMOSCAN consortium members:

- **Pr Hanna Taipaleenmäki** (Hospital of Ludwig-Maximilians-University Munich, Germany)
- **Pr Dominique Heymann** (University of Nantes, France)
- **Pr Claudine Blin-Wakkach** (Université Côte d'Azur, CNRS, Nice, France)
- **Pr Thomas L. Andersen and Christina M. Andreasen** (University of Southern Denmark, Denmark)

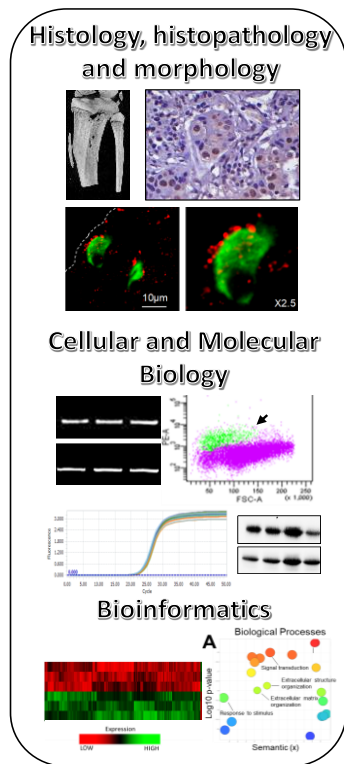
**Requirements:** in addition to technical skills corresponding to the project, strong experience in cell biology, preclinical models, animal experimentation is required. Ability to work independently, creativity and excellent team spirit, communication and organization skills are essential. English practice is mandatory.

**To apply:** send a CV, a motivation letter, a list of publication and the name and e-mail of 3 referees who could be contacted for recommendation to [annamaria.teti@univaq.it](mailto:annamaria.teti@univaq.it).



## Postdoctoral position at the University of L'Aquila, Italy Working on Bone Pathophysiology

**Bone** is a peculiar connective tissue, which functionally interacts with many other organs and systems. Three cell types accomplish bone functions: the osteoblasts, having osteogenic functions; the osteoclasts, having resorption activity; the osteocytes, having mechanosensor function and actively contributing to mineral homeostasis by their endocrine activity. The crosstalk among bone cells is crucial for the correct bone homeostasis. The **Bone Biopathology Laboratory** (The Lab) investigates bone cell dysfunctions leading to cancer-, genetic-, metabolic- and disuse-induced bone diseases to understand their underlying molecular mechanisms and to test innovative therapies. The Lab has an international reputation and many collaborations with groups in Europe and in the USA, and is led by Prof. Anna Teti, a scientist recognised worldwide for her pioneer studies on osteoclast biology, technology and pathophysiology. She is Past-President of the European Calcified Tissue Society and collaborates tightly with the American Society for Bone and Mineral Research for the dissemination of musculoskeletal science. She is Editor of Bone and sits in the Editorial Board of various scientific journals, including Cancer Research, Cancers and Calcified Tissue International. The Lab is coordinated by Dr. Antonio Maurizi, expert in bone pathophysiology, cellular stress and innovative therapies. He has been trained in Europe, USA and Australia and is supported by national and international grants. The Lab provides a lively international atmosphere and exchanges students and personnel with various Universities and labs in Europe, USA and Australia.



**Role in the TRANSCAN-3 IMMOSCAN project:** IMMOSCAN is a consortium of 5 excellent laboratories based in Germany, France, Denmark and Italy. The hypothesis of IMMOSCAN is that immunosuppressive osteoclasts (IsOCs) create a cancer permissive microenvironment in bone. Thus, targeting IsOCs might be a novel therapeutic strategy to limit tumour growth in bone. To address this hypothesis, IMMOSCAN aims to i) identify and characterize IsOCs in the bone-cancer microenvironment, ii) determine the origin, function and molecular mechanism of IsOCs and iii) target the IsOCs to improve the efficacy of immunotherapy and control tumour progression. The role of the **Bone Biopathology Laboratory** will be to in-depth investigate the role of extracellular vesicles (EVs) in mediating the immunosuppressive function of OCs in the metastatic microenvironment. The postdoc will perform in vitro and in vivo analysis with IsOC-derived EVs, including EVs from naive and manipulated IsOCs. **Postdoc secondments between partners are anticipated in IMMOSCAN, thus providing an international training.**

**Techniques you will apply:** Molecular, cellular and in vivo state-of-the-art techniques (see figures), as well as effective therapeutic approaches, such as RNA interference and drug repurposing. To learn more about our publications and expertise, please visit <http://www.ncbi.nlm.nih.gov/pubmed> and search for Maurizi A and Teti A, University of L'Aquila.

**Living in L'Aquila:** L'Aquila is located in the heart of the mountain region of Abruzzi, 721 mt above sea level. It is a pleasant town in the central Italy with a population of about 80,000 people. Nearby L'Aquila, there are many natural and monumental areas, including mountains (around 3.000 mt height) and ski slopes, lakes, and historical towns. It is about 1-hour drive from Rome, which may be reached by a comfortable bus service. **The University of L'Aquila** is a public institution with over 14,000 students and a strong focus on scientific research. The Lab receives and trains international students in Placement. More information at [www.univaq.it](http://www.univaq.it).

### L'Aquila and surroundings



Basilica di Collemaggio



Piazza Duomo



Palazzo dell'Emiciclo



Basilica di San Bernardino



Fontana Luminosa



Bone Biopathology Lab



Gran Sasso d'Italia



Campo Imperatore



Scanno



Rocca Calascio



Castel del Monte



Lago di Campotosto