

Project 7.2. Development of immunological-molecular system of chondrosarcoma profiling

Supervisor: Anna Czarnecka, PhD/ Michał Mikula, PhD

Institute: Maria Skłodowska-Curie National Research Institute of Oncology (MSCNRIO)

Unit: Department of Soft Tissue/Bone Sarcoma and Melanoma; Department of Genetics

WWW of the unit: <https://www.pib-nio.pl/>

Background:

Bone sarcomas are rare mesenchymal malignancies originating from bone tissue or cartilage. The second most common adult bone sarcoma is chondrosarcoma (ChSA). In sarcomas tumor-associated antigens are commonly expressed as highly immunogenic epitopes can arise from fusion proteins resulting from sarcoma-specific chromosomal translocations. Therefore sarcomas may represent a target for novel immunotherapies. Since immune response induction is a multi-step process with plethora of cells and receptors that need to be activated, detailed characterization of ChSA tumor niche and its immunobiology is required and justify further investigation of the immunological markers role in sarcoma. There is a clear lack of basic scientific knowledge for immunologic phenotype of sarcomas. Until now, ChSA were not included in any large studies on immunobiology. Project funded by the National Science Center (NCN), OPUS scheme. Recruitment for the project is in conjunction with the competition for the NCN's scientific scholarship according to the rules defined by the Resolution No. 25/2019 from 14 March 2019 of the NCN Council.

Aim:

To develop an immunological-molecular system of human bone chondrosarcomas profiling including genomic changes promoting neo-antigen formation and mutational load. We plan to analyze mutation profile of tumor specimens from primary lesions and to correlate these results with clinical-pathological status and patient prognosis.

Requirements:

- MSc in biology, chemistry, biotechnology, medical biology or related sciences
- Motivation for scientific work, supported by previous scientific activity (participation in conferences, internships, publications, membership in scientific societies and circles).
- Authorship or co-authorship in a monograph chapter or a scientific publication
- Knowledge of laboratory techniques such as nucleic acids isolation, the experience with NGS will be an advantage
- Knowledge of statistical analysis
- Good English language skills, allowing free communication in speech and writing confirmed by a university degree or a certificate at a level not lower than B2
- Ability to prepare research results for publication and presentation at conferences confirmed by a conference report as a presenter
- Ability to work under time pressure