Natalia Malara, J Pharmacogenomics Pharmacoproteomics 2017, 8:4 (Suppl)
DOI: 10.4172/2153-0645-C1-018

Implications of circulating tumor cell for precision medicine in intracranial tumors

Natalia Malara
Magna Graecia University, Italy

The immunotherapy in cancer is based on the ancient concept of activating an effective immune-mediated reaction directly against tumour cells. How to efficiently activate the immune system in this direction is still a challenge. In fact, despite the rapid increase of knowledge in oncology, it has contributed to improve immunotherapeutic protocols, some issues still remain unresolved. Three key points represent the main challenges causing vaccine resistance: 1. Continuous dynamic changes of cancer tissues determine intrinsic tumour cell alterations; 2. Adjustments in the tumour microenvironment; 3. Low immune recognition against cancer cells. The tumor during its progression depends on the possibility to analyse cancer cells in real time. Often, the clinicians do not have sources of available tumour cells. In fact, the biopsy of the tumour tissue cannot be repeated many times, for systemic and local complications of the patient. On the other hand, the development of vaccine resistance depends on the heterogeneity of tumor tissue. The cancer heterogeneity represents a limit in the design and application of immunotherapy adopting specific immunogenic protein. The CTCs represent the cancer cell population released in the blood stream and can be considered like a cellular "summary" of the systemic cancer disease. Recent studies report standardized methodology to collect for short-time *in vitro* expanded CTCs. The protocol, making available the cancer cells, without modifying their heterogeneity, provides interesting solutions to overcome the degree of immune tolerance and on the other hand, to reduce the autoimmune spiral triggered by the cryptic epitopes.

Biography

Natalia Malara is a Medical Oncologist with competence in translational medicine, nanotechnology, toxicology in oncologic and cardiovascular field. She conducts clinical and laboratory investigations focusing her attention on circulating tumor and endothelial cells. She acquired a solid experience in nano-biotechnology techniques with translational approach in medicine collaborating with Bionem group guided by Prof. Di Fabrizio. She began her collaboration with Prof. Mollace in July 2009, and since then her research activities are also focused on the project of pre-clinical model finalized to improve pharmacological applications in clinical.

nataliamalara@unicz.it

Notes: