

## **Precision Nanomedicine in Cancer**

Toffoli Giuseppe MD. Director Experimental and Clinical Pharmacology Unit CRO-National Cancer Institute. AVIANO-Italy

Treatment based on the individual characteristics of each patient and peculiarities of tumor is the ultimate goal of precision medicine in cancer therapy. More than to define a unique treatment for each individual (this is the goal of personalized medicine), precision medicine aims to define a therapy strategy for particular groups of individuals or tumors with specific characteristics. Combining together diagnostic and therapeutic strategy, the so called theragnostic, precision medicine offers a unique medical product for specific individuals with cancer. In the last few years genomic, proteomic and metabolomic greatly increased precision medicine, but an emerging role is derived from nanomedicine. The implementation of nanomedicine in cellular, preclinical, and clinical studies has led to develop diagnostic tools more efficient, easy to use, and sensitive and to develop nanotechnology-modified compounds able to overcome the barriers in cancer treatment. Combining together different expertise including Medical doctors, Chemists, Physics and Engineers we are trying to develop an innovative nanotechnology-based platform to carry out real-time, highly sensitive, and inexpensive quantification of biomarkers and drug in plasma patients and to develop nanodrugs derived from exosomes.