

**Title:**

Targeted nanoparticles to enhance in vivo activities of CAR T-cells

**Supervisors:**

Prof. Giuseppe Toffoli, Experimental and Clinical Pharmacology Unit, Centro di Riferimento Oncologico, IRCCS, National Cancer Institute, Aviano, Italy

Prof. Paolo Macor, Dept. of Life Sciences, University of Trieste, Trieste, Italy

**Description of the project:**

The project aims to develop new strategies for the treatment of solid tumors, with a focus on hepatocellular carcinoma, and in particular to improve the production and activity of CAR T-cell therapies. Targeted nanoparticles offer the almost unique ability to alter the tumor microenvironment delivering drugs or inducing the local production of recombinant proteins. In particular, the ability to trigger a local inflammatory process could promote the recruitment of a greater number of CAR T cells and reduce the activity of inhibitory cells in the cancer microenvironment. Definition of the potential strategies, the production of the targeted nanosystems, in vitro characterization, and in vivo analysis of efficacy and side effects will be part of the activities required to characterize the therapeutic approaches.