

Laboratory of Experimental Cell Therapy (TheraCell Lab)

Innovation for Sustainable Cell Therapies

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Background

Extensive expertise in the field of cancer immunology and immunotherapy with special focus on the development of translational and clinical studies.

Including but not limited to:

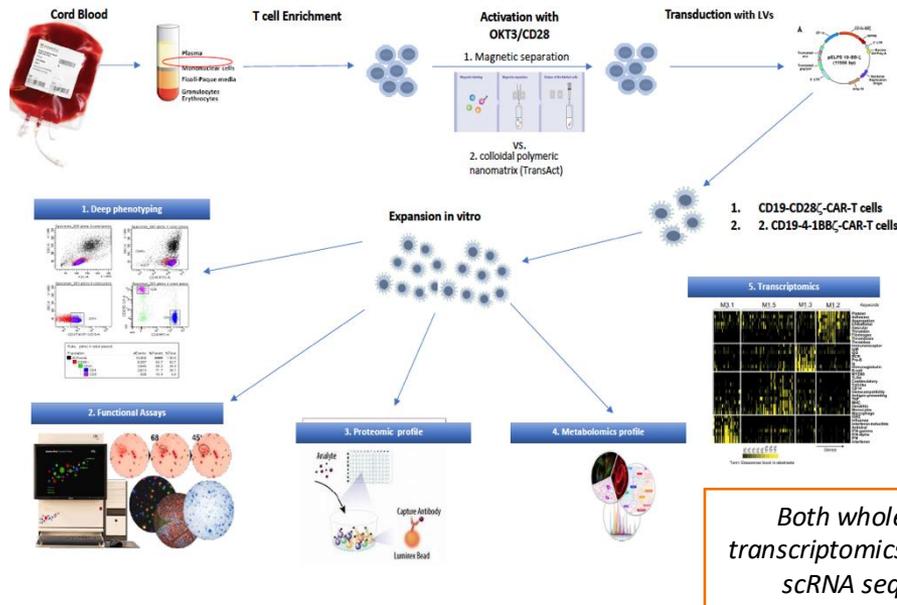
- Harmonization and standardization of multifaceted immunomonitoring of cancer patients undergoing biological drug therapies and enrolled in multi-center institutions.
- Pioneering the investigation of the immunological profile of cancer stem cells (glioma and colorectal cancer) to assess the mechanisms of resistance to immune-mediated responses in cancer patients.
- Lead the Design, pre-clinical and clinical grade validation of the manufacturing of antigen-specific T lymphocytes for adoptive cell therapy.
- Preparation and submission to national regulatory agencies (AIFA, Italy) of the “Investigational Medicinal Product Dossier (IMPD)” for the approval of this novel advanced cell-based (ATMP) clinical study.
- Profiles:

<https://scholar.google.com/citations?user=ucqs5boAAAAJ&hl=it>

<https://www.linkedin.com/in/cristinamaccalli/>

What we do

- **Optimized manufacturing of 'Off-the-Shelf' CAR-T cells utilizing umbilical cord blood (UCB)-derived lymphocytes**
- Advantage of "off-the-shelf" CAR-T cells
 1. overcome the dependence for the cell product manufacture on cancer patients' lymphocytes.
 2. Bypass the relative lengthy manufacturing of clinical grade CAR-T cells.
 3. Rendering the manufacturing more economically sustainable
 4. Increase the potential number of patients who could benefit from this type of therapy



Addressing the needs and implementing the clinical application



Our activities

- Discovery and Clinical implementation through the precision manufacturing of “off-the-shelf” engineered immune cells (CAR-T and NK cells).
- Organization and management of biobanking.
- 2D/3D tumor models to assess *in vitro* the activity against solid tumor of the engineered lymphocytes.
- In vivo models.
- Clinical care with extensive expertise in the field of advanced cell therapy.
- Organizational and regulatory support for advanced cell therapy unit.

Call to Action

Looking for Networks to Participate as Partner

Cooperative tasks:

- “off-the-shelf” engineered immune cells and the deep characterization through multi-omics platforms to develop the precision manufacturing;
- novel and safe gene editing platform;
- Cancer vaccines
- humanized in vivo models;
- 3D/organoid models to investigate the cross talk of engineered immune cells with the tumor microenvironment;
- Integrating either computational modelling, automation, robotics or digital/Artificial Intelligence solutions with meaningful and measurable impact;
- development of clinical trial

The overall aim is to render advanced therapies economically sustainable and provide an impact in the accessibility for broader number of patients.

Looking also for collaborative participation to the European Network of Excellence for ATMP (Tool 07)