
Clinical-grade manufacturing of NY-ESO-1 TCR-modified stem-like T cells overexpressing the pre-miR-155 SNP, rs377265631

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The aim of the project is to develop a large-scale manufacturing process for long-lived immune cells, so-called stem cell-like T cells (TSCM), which are produced in our preGMP laboratory from naive CD8⁺ T cells (TN) of patients and equipped with a NY-ESO-1 TCR and an immunostimulatory microRNA, the miR-155 SNP rs377265631. These T cells are expected to trigger an enhanced and sustained anti-tumor response in patients, which could allow more patients to benefit from tumor regression in the long term. In the future, they will be used in a Phase I trial to treat patients with metastatic synovial sarcoma, a difficult-to-treat type of cancer.

As part of this project, comprehensive quality control tests are being developed to ensure that the cell product meets the required clinical standards. These tests include verification of the purity, identity and functionality of the modified cells as well as the absence of replication-competent viruses.

This project marks an important step towards clinical application and could significantly improve treatment outcomes for patients with metastatic synovial sarcoma in the long term.
