**Docket #:** S22-125

# Cryopreservation of T regulatory cells

Stanford researchers have developed a method to activate, cryopreserve, and thaw T regulatory (Tregs) cells that preserves their viability, phenotype and function. As compared to current standard techniques for cryopreservation, this new method minimizes manipulation and improves cell viability to retain therapeutic effect. Tregs are useful in a variety of conditions, including but not limited to the treatment of cancer, in association with hematopoietic stem cell transplantation (HCT). Additionally, Tregs can help reduce graft vs host disease (GVHD) and allograft rejection.
For example, a population of cells comprising cryopreserved Tregs can be administered to an HCT recipient subject, and the population of Tregs can serve to reduce or prevent GVHD in the HCT recipient subject.

**Stage of Development**
Clinical testing

## Applications

- **T regulatory cell therapy**

## Advantages

- Allows T regulatory cells to **retain therapeutic effect due to higher cell viability**
- Helps to **maintain T regulatory cell viability, phenotype and function**
- **Improvements as compared to current cryopreservation methods:**
    - Treg surface receptor expression is preserved

- Treg suppression function as measured by their capacity to reduce proliferating CD3 T cells in vitro (suppression assay) is preserved
- Minimal manipulation for cryopreservation of Treg specifically based on length of stimulation and other factors

## Publications


- Meyer, Everett H., M. Scott Killian, Anna Pavlova, Cameron Bader, Sean Summers, Fernando Teque, J. Scott McClellan, and Nathaniel B. Fernhoff. "Rapid Immune Reconstitution and Elevated Regulatory T Cell Frequencies in Patients Treated with Orca-T." *Blood* 140, no. Supplement 1 (2022): 7656-7657.
- Salhotra, Amandeep, Samer A. Srour, Rasmus T. Hoeg, Ayman Saad, Everett H. Meyer, Anna Pavlova, Edmund K. Waller et al. "Orca-Q Demonstrates Favorable GvHD-and-Relapse-Free Survival in Haploidentical Transplants without Post-Transplant Cyclophosphamide. ." *Blood* 140, no. Supplement 1 (2022): 1865-1866.


## Patents

- Published Application: 20260258357
- Published Application: WO2024010933

## Innovators

- Everett Meyer
- Anna Pavlova

## Licensing Contact


### Minxing Li

Licensing and Strategic Alliances Manager

Email