IDF INNOV

From invention to innovation

NEW CELL THERAPY FOR ACUTE GVHD

Providing antigen-specific T regulatory cells that can be activated after the transplantation to prevent and/or treat GvHD without impairing anti-tumor effect

Exo Tregs ▪ GvHD ▪ HSCT ▪ Cell Therapy ▪ Immunosuppression

APPLICATIONS

- Prevention of acute GvHD
- Treatment of acute GvHD
- Allogenic Hematopoietic Stem Cell Transplantation
- Other diseases caused by pathological T cells (autoimmune diseases, organ transplant rejection)

DEVELOPMENT PHASE

In vivo proof of concept in mice

Ongoing : Proof of concept with human T-cells in mice

PUBLICATIONS

Martin G et al., Eur J Immu 2013

INTELLECTUAL PROPERTY

PCT patent application WO2013076268 filed on 2012

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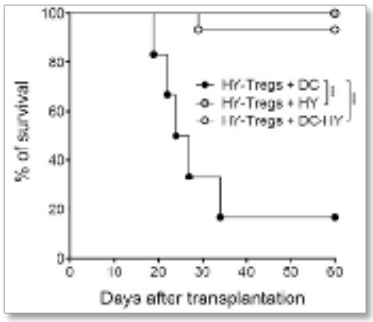
PRESENTATION

Acute graft versus host disease (GvHD) is the main source of morbidity and mortality for patients after allogeneic hematopoietic stem cell transplantation (HSCT, 20 to 90% in severe cases) and has currently no specific and effective treatment. This disease is caused by the reaction of conventional T cells contained in the grafted hematopoietic stem cells against host. Allogenic Tregs have been used in several recent clinical trials to prevent GvHD but their efficiency is limited.

Exo Tregs developed by this offer are specific to an irrelevant antigen (not present in host or donor) and can be activated after transplantation at a chosen time by administration of the irrelevant peptide to the transplanted patient. **With this inducible system, conventional T cells can elicit their anti-tumor effect before being suppressed by antigen-activated Tregs which prevent GvHD, thus optimizing the anti-tumor therapy and improving HSCTs outcomes.**



Kaplan-Meier survival curves showing that Treg prevents GvHD when animals are injected with irrelevant peptide (HY) or cells loaded with peptide (DC-HY) © J. Cohen

COMPETITIVE ADVANTAGES

- 1st safe antigen-specific Tregs
- Good balance of anti-tumor vs GvHD
- Better efficiency than Allo Tregs
- No global immunosuppression
- Inducible system allowing Graft-versus-Tumor effect optimization
- GMP-compliant Treg isolation procedure