

HuMoSC: Human Monocyte-derived Suppressor Cells

GvHD / transplantation / autoimmunity / inflammation



CONTEXT

Current treatments for Graft versus Host Disease (GvHD) are based on immunosuppressive drugs; however, those are efficient only in about 50% of the patients and are associated with severe infections.

Cell therapies belong to emerging strategies to prevent lethal GvHD; nevertheless, current cells therapies are negatively affected by the patient inflammatory state and may promote tumor growth.

DESCRIPTION

In order to avoid the issues of current therapies, we have developed a novel cellular therapy capable to act on such mortality/morbidity-associated disease such as GvHD.

Our unique approach originates in *ex vivo* generation of human suppressor cell subpopulation of monocytic origin, the HuMoSC. HuMoSC induce and maintain immune tolerance in hematopoietic stem-cell transplantation thus preventing lethal GvHD.

HuMoSC significant efficiency and mechanism of action has potential for further applications in solid organ transplantation and autoimmune disorders.

COMPETITIVE ADVANTAGES

- Significant GvHD prevention
- Can be generated from autologous or allogenic sources
- Immunomodulating action (no complete immunosuppression as with immunosuppressive drugs)
- Efficacy not altered under inflammatory conditions or in presence of immunosuppressive drugs *in vitro*
- Easy to generate and ready for use in clinical trials
- Very stable and can be cryopreserved



Markets & applications

Pharmaceutical - cell therapy :

- ❖ GvHD Prevention
- ❖ Graft rejection
- ❖ Autoimmune diseases



Development stage

- Efficacy validated in a preclinical humanized mouse model
- Mechanism of action largely elucidated



Research team

Laboratory "Interactions Hôte-Greffon-Tumeur & Ingénierie Cellulaire et Génique" INSERM - UBFC



Intellectual property

French patent application (March 19th, 2014) and PCT application (WO2015140077)



Target partnership

Patent licensing or co-development

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