



THE UNIVERSITY of TEXAS

HEALTH SCIENCE CENTER AT HOUSTON

Office of Technology Management

METHOD FOR EXPANSION OF T REGULATORY CELLS TO TREAT GRAFT VERSUS HOST DISEASE

Market: There are approximately 100,000 waiting list candidates for organ transplantation. If the candidates receive an organ or multiple organs, they will likely undergo treatment for allograft rejection. For 2005, the estimated market for organ and tissue transplantation market in the United States is \$11.7 billion.

Competitors and Current Problems: A huge unmet need for reduction of transplant rejection by the body of the transplant recipient still exists. One of the most difficult challenges in this field is reducing the immune response mechanisms that occur after an allograft transplant. Immunosuppressive drugs given to transplant recipients can cause organ failure and severe infections. Bone marrow transplant is another option, but there is a risk of graft versus host disease where the immune cells of the bone marrow attack the host tissues.

The Technology: Dr. Stanislaw Stepkowski and his group at the University of Texas Health Science Center at Houston (UTHSC-H) have pioneered the use of nitric oxide (NO) to increase the generation of regulatory T (Treg) cells. The increased level of the regulatory T cells inhibits proliferation of T cells in response to phytohemagglutinin or alloantigens. In addition, NO elevates switching of Treg cells to T regulatory (Tr1) cells. When tested, the Treg/Tr1 cells protected long-term survivals of skin allografts otherwise rejected by Treg cells in SCID mice. This technology has the potential to block allograft rejection or even induce permanent acceptance of allografts.

NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSCH), for which the University has obtained patent protection.

UTHSC-H Ref. No.: 2007-0006

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Patent Status: Pending PCT/US2007/087727

License Available: world-wide; exclusive or non-exclusive

To obtain further information about this technology, please contact:
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