

PURETRANSPLANT
solutions*An Emergent Technologies, Inc. Company***BETTER IMMUNOLOGY TOOLS FOR BETTER HEALTHCARE**

**PURE TRANSPLANT SOLUTIONS, A
SUBSIDIARY OF PURE PROTEIN, IS
FOCUSED ON USING THE POWER OF
OUR SOLUBLE HLA TECHNOLOGY TO
CREATE TOOLS FOR TRANSPLANT
AND TRANSFUSION IMMUNOLOGY.**

Industry

Life Sciences / Biopharmaceuticals

Objective

Pure Transplant Solutions seeks collaborative partnerships with industry leaders to develop and commercialize transplantation and transfusion tools and technology.

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www.pureproteinllc.com/transplantinfo@pureprotein.com**The Role of HLA in Transplantation
Medicine and Autoimmunity Research**

In spite of considerable healthcare expenditure and the recent improvements in technologies available for matching donors and recipients, there are still a large number of patients for which either a suitable donor cannot be found or for whom the graft is rejected by an immune reaction. In the US alone, more than 215,000 people die each year from disease that could be treated by a transplant. One major cause of this problem is the lack of adequate tools for determining donor/recipient matches and the relative inefficiency of immunosuppressive therapies.

The presence of host antibodies directed against donor HLA is a major cause for graft rejection. In addition, mismatches in minor histocompatibility antigens (MiHA), which are mostly polymorphic self-antigens, cause graft-versus-host-disease (GVHD) and chronic solid allograft rejection. Inclusion of anti-HLA antibody screening assays and of MiHA mismatch-detection assays as pre-transplantation tests will significantly improve the resolution and the accuracy of the matching. The result of such tests is a better assessment of the probabilities for success of a transplant and, by the same token, a better definition of the mismatches. This will lead to the development of novel methods to efficiently control the adverse effects of the mismatches. Post-transplant monitoring of HLA antibodies, antibody removal techniques, and induction of immune tolerance are among the most promising approaches for increasing the potential donor pool for any given patient.

Pure Transplant Solutions' mission is to launch a program aimed at developing and commercializing innovative MHC-

based technologies that will significantly reduce the need for immunosuppressive drugs and improve outcomes of organ and marrow transplantation. Attacking both the diagnostic and the therapeutic arms of the market, Pure Transplant Solutions is meant to establish a new standard of care in transplantation medicine. This program will be conducted in collaboration with industry partners that have complementary technical and marketing capabilities in the field of transplantation.

Pure Transplant Solutions has developed and patented several technologies including methods for production, storing and handling of pure soluble HLA proteins (sHLA), methods for utilization of sHLA in epitope discovery, methods for databasing and predicting HLA ligand characteristics, methods of fixing HLA to solid supports, and methods for determination of peptides binding to sHLA. These technologies have a tremendous potential for the development of novel diagnostics and therapeutics in the fields of transplantation, autoimmunity, cancer and infectious diseases. Pure Transplant Solutions has established several collaborations and partnerships based on its proprietary technologies for the transplant market. In addition to developing partnerships with commercial entities, Pure Transplant Solutions is also fostering relationships with government, academic, and philanthropic organizations who share this vision.

Pure Transplant Solutions produces human leukocyte antigens (HLA) for organ transplant diagnostics, transplant therapeutics, and vaccine design. Developing markets in organ transplantation include improved diagnostic assays to prevent transplant rejection, post-transplant monitoring to calculate drug regimens, and active intervention to block organ rejection. With the development of these assays for transplantation, the clinical demand for HLA molecules has grown. In addition, markets in vaccine research and in the development of diagnostic applications tailored for individual patients require HLA proteins.

In addition to organ and tissue transplant medicine, another active area of work is in Transfusion Medicine. Blood centers have traditionally focused on typing red blood cell antigens using the ABO and Rh systems. Red blood cell antigens that are recognized as non-self can lead to severe immunological responses, and even death. More recently, the most common transfusion-related death has become Transfusion Related Acute Lung Injury (TRALI), which is still not fully characterized. TRALI is thought to be caused not by antigens within donated blood but by anti-HLA antibodies, such as from females who have been through a pregnancy or donors who have previously received a transfusion themselves.

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