Yair Reisner

Reisner's research has been involved, for over three decades with the subject of transplantation immunology and, more specifically, with questions relating to bone marrow transplantation (BMT) for patients who do not have a matched donor. BMT is a curative approach for the treatment of a broad range of hematological malignancies, as well as of other acquired and genetic defects of hematopoiesis. Success of BMT has relied in a large part on matching between donor and recipient. Unfortunately, only a minority of patients have a compatible related, or unrelated donor. Working with collaborating physicians, Reisner's research focused on enabling BMT from alternative donors, notably half matched "haploidentical" related donors (i.e. parents or children of the patient) available in the family for almost all patients. Haploidentical BMT (HaploidBMT) has been a formidable challenge due to immune cells mediating rejection or T cells in the graft capable of causing graft-vs-host disease (GVHD). In a series of successive steps and numerous publications , Reisner has provided the medical community with novel insigths enabling BMT across major gentic barriers for patients to who do not have a matched donor in the family. Two major milestones have already been translated into clinical achievements. The first successful mis-matched BMT in a SCID baby ("bubble child") ,paving the road for saving hundreds of patinets over the years , and laterraly overcoming rejection of mis-matched BMT in leukemia patients by the use of megadose stem cell transplants, mediated by a unique 'veto' mechanism, extensively studied by Reisner over the years.

More recently, Reisner demonstrated that another type of veto cells grown ex-vivo offer new exciting possibilities for safer transplants in elderly patients with hematological malignancies , and in non-malignant diseases for whom current protocols are not justified due to their toxicities. These include sickle cell anemia, thalassemia and a variety of auto-immune diseases such as type 1 diabetes. Furthermore , the ability to induce safely stable hematopoietic chimerism and immune tolerance towards donor antigens , could potentially enable subsequent kidney or liver transplantation from the same donor without any need for chronic immune suppression. A clinical trial using this approach is now commencing in MD Anderson Cancer Center in Houston.

Another line of investigation, developed over the past decade, has focused on characterization and potential use of tissue specific stem cells as a new source for organ regeneration . Very recently, Reisner studies have demonstrated in mouse models a new curative approach for lung diseases based on transplantation of lung progenitors across major gentic barriers , in striking resemblance to the cure of blood diseases by BMT.

Prof Reisner received BSc degree in chemistry and psychology from the Hebrew University in 1972, MSc in biochemistry from UC-Berkeley and PH. D in biophysics from Weizmann (1978). After post-doc at Sloan Kettering he returned to the biophysics department at Weizmann in 1981 and between 2005-2014 he served as the head of the Immunology Department. As of March 2018, upon becoming Emeritus Professor , he established an active research group at MD Anderson Cancer Center in Houston.

Reisner's achievements have been recognized by many awards; including the Mortimer M. Borton Award for outstanding Research in Blood and Marrow Transplantation in 1996, the World Technology Network recognition as "one of the top five people in the field of Health and Medicine whose work is of the greatest likely long-term significance" (2003); the Rappaport prize for excellence in biomedical research in 2014, the DKMS Germany Mechtild Harf Science Award in recognition of distinguished pioneers in the field of hematopoietic stem cell transplantation (2018), and the EMET Prize in Bio-Medicine (2019).