PATENTS

Xenotransplantation

Recent patents related to xenografts, tissue repair and prevention of xenotransplant rejection.

Patent number	Description	Assignee	Inventor	Date
US 10,314,944	A chemical process that neutralizes, removes or substantially reduces antigens from and sterilizes and/or strengthens xenograft implants. The techniques yield soft tissue implants having superior structural, mechanical, and/or biochemical integrity. The application is also directed to processes for treating xenograft implants comprising soft tissues such as tendons and ligaments, and to implants produced by such processes.	RTI Surgical (Alachua, FL, USA)	Pedroso PD, Ely AM	6/11/2019
US 10,300,112	Ungulates, including pigs, expressing CTLA4-Ig, as well as tissue, organs, cells and cell lines derived from such animals. Such animals, tissues, organs and cells can be used in research and medical therapy, including xenotransplanation. In addition, methods to prepare organs, tissues and cells expressing the CTLA4-Ig for use in xenotransplantation, and nucleic acid constructs and vectors useful therein.	Revivicor (Blacksburg, VA, USA)	Ayares DL	5/28/2019
US 10,130,737	Tissues derived from animals, which lack any expression of functional α-1,3 galactosyltransferase. Such tissues can be used in the field of xenotransplantation, such as orthopedic reconstruction and repair, skin repair and internal tissue repair or as medical devices.	Revivicor (Blacksburg, VA, USA)	Ayares DL, Rohricht P	11/20/2018
US 10,086,070	A method of preventing or treating xenotransplant rejection in a subject in need thereof, comprising administering a therapeutically effective amount of α-1-antitrypsin in combination with a therapeutically effective amount of an anti-CD8 antibody or an antigen-binding fragment thereof.	Ben Gurion University of the Negev Research and Development Authority (Be'er Sheva, Israel)	Lewis E	10/2/2018
US 9,944,689	Mutant forms of human CTLA4, and their use, e.g., in xenotransplantation.	The General Hospital Corp. (Boston)	Wang Z, Huang CA, Sachs DH	4/17/2018
US 9,642,899	Methods and materials involved in reducing cardiac xenograft rejection. For example, methods and materials for preparing transgenic pigs expressing reduced or no endogenous Sd^a or SDa-like glycans derived from the porcine β1,4-*N*-acetyl-galactosaminyl transferase 2 (B4GALNT2) glycosyltransferase and/or reduced or no endogenous α-Gal antigens, methods and materials for modifying the xenograft recipient's immunological response to non-Gal antigens (e.g., CD46, CD59, CD9, PROCR, and ANXA2) to reduce cardiac xenograft rejection, and methods and materials for monitoring the progress of xenotransplant immunologic rejection.	Mayo Foundation for Medical Education and Research (Rochester, MN, USA)	McGregor CGA, Byrne GW	5/9/2017
US 9,376,684	Anticoagulant proteins which are anchored to cell membranes. The anticoagulant function is preferably provided by heparin, antithrombin, hirudin, TFPI, tick anticoagulant peptide, or a snake venom factor. These anticoagulant proteins are preferably prevented from being constitutively expressed at the cell surface. In particular, expression at the cell surface is regulated according to cell activation, for instance by targeting the protein to a suitable secretory granule. Expression of these proteins renders cells, tissues and organs less vulnerable to rejection after transplantation (e.g., after xenotransplantation).	Imperial Innovations Limited (London)	Riesbeck K, Dorling A, George AJT, Lechler RI	6/28/2016
US 9,339,519	Certain animals, and in particular porcine animals, tissue and cells derived from these, which lack any expression of functional α-1,3-galactosyltransferase and express one or more additional transgenes which make them suitable donors for pancreatic islet xenotransplantation. Also, methods of treatment and prevention of diabetes using cells derived from such animals.	Revivicor (Blacksburg, VA, USA)	Ayares D	5/17/2016

Source: United States Patent and Trademark Office (http://www.uspto.gov).

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