

TRANSGENIC MICE EXPRESSING CHIMERIC MAJOR HISTOCOMPATIBILITY COMPLEX (MHC)
CLASS II MOLECULES

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims benefit of priority to U.S. Provisional Application No. 61/552,584, filed October 28, 2011, which is incorporated by reference herein in its entirety.

FIELD OF THE INVENTION

[0002] Present invention relates to a non-human animal, e.g., a rodent (e.g., a mouse or a rat) that is genetically engineered to express a humanized Major Histocompatibility Complex (MHC) class II protein, as well as embryos, tissues, and cells expressing the same. The invention further relates to methods for making a genetically modified non-human animal that expresses a humanized MHC II protein. Also provided are methods for using non-human animals, cells, and tissues that express a humanized MHC class II protein for identifying peptides that activate lymphocytes and engage T cells, and for developing human vaccines and other therapeutics.

BACKGROUND OF THE INVENTION

[0003] In the adaptive immune response, foreign antigens are recognized by receptor molecules on B lymphocytes (e.g., immunoglobulins) and T lymphocytes (e.g., T cell receptor or TCR). These foreign antigens are presented on the surface of cells as peptide fragments by specialized proteins, generically referred to as major histocompatibility complex (MHC) molecules. MHC molecules are encoded by multiple loci that are found as a linked cluster of genes that spans about 4 Mb. In mice, the MHC genes are found on chromosome 17, and for historical reasons are referred to as the histocompatibility 2 (H-2) genes. In humans, the genes are found on chromosome 6 and are called human leukocyte

GENETICALLY MODIFIED MICE EXPRESSING CHIMERIC MAJOR HISTOCOMPATIBILITY COMPLEX (MHC) II MOLECULES

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