

“ Immunology from a Uterine/Placental Biologist’s Perspective ”



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Time : 15:00 – 16:30

Venue : Lecture room No. 2

(Graduate School of Agricultural Science)

Implantation is the process by which the blastocyst attaches to the uterus for juxtaposition of embryonic membranes with uterine endometrium to establish a functional placenta. During placentation, intimate physical contact between uterine and placental cells facilitates bi-directional interactions essential for successful establishment and maintenance of pregnancy, part of which is to prevent rejection of the conceptus (embryo/fetus and associated extraembryonic membranes). Since Peter Medawar’s recognition that transplantation biology dictates rejection of the conceptus as a semiallogeneic tissue with paternal histocompatibility antigens, many details of how the conceptus is protected from a potentially hostile immune environment remain unclear. Nevertheless, the conceptus establishes an immunological truce with its mother and/or obstructs or directs her immune system to contribute to the immunologic privileged state of the trophoblast. The bulk of immune response to tissue grafts is directed to the major histocompatibility complex (MHC) antigens. Cytokines and hormones regulate expression of MHC molecules during conceptus development, as well as the tissue differentiation and remodeling that occurs at the uterine- placental interface. This regulation of MHC suggests that placental secretions control expression of immune regulatory molecules on uterine and placental cells to provide an immunologically favorable environment for survival of the fetal-placental semi-allograft.

(These lectures are included in Class 2(2) of International Food & Agricultural Immunology Lecture, 2015 and are also highly recommended for Master course students)