City University of Hong Kong
Department of Biomedical Sciences
presents a seminar

"INVASION AND IMMUNE ESCAPE MECHANISMS OF THE PLACENTA"

by

Professor Douglas F. Antczak, VMD, PhD
Dorothy Havemeyer McConville Professor of Equine Medicine
College of Veterinary Medicine, Cornell University

Date : 10 March 2016
Time: 4pm to 5.30pm
Venue: G5-216 (green zone), 5/F, Academic 1 Building, CityU

About the speaker

Doug Antczak is the Dorothy Havemeyer McConville Professor of Equine Medicine at Cornell's Baker Institute for Animal Health. Dr. Antczak earned his Bachelor of Arts degree at Cornell University and his veterinary degree at the University of Pennsylvania. He undertook his PhD thesis research at the University of Cambridge, UK. Dr. Antczak's research on immunological and genetic aspects of the fetal-maternal relationship has included studies of the regulation of expression Major Histocompatibility Complex genes and molecules in the placenta, the composition and function of uterine lymphocytes, and alterations in maternal immune reactivity during pregnancy. In addition to direct application in reproductive medicine, this research has implications for our understanding of tumor biology and viral infectious diseases, and for advancing clinical organ transplantation.

Abstract

The placenta is of recent origin, coinciding with the evolution of mammals roughly 200 million years ago. The placenta has two characteristics that make the study of this temporary organ of general interest in biomedical science. First, some types of placental cells are highly invasive, with many similarities to invading and metastatic tumors. However, the invasion of the placenta is almost always highly regulated and controlled, leading to normal function and safe passage for the fetus to independent life. Second, the placenta has developed overlapping and independent mechanisms for evading maternal anti-fetal immune responses that could result in pregnancy loss. These mechanisms have relevance for studies of tumor biology, clinical organ transplantation, and some types of viral infections. This seminar will provide an overview of invasive cells of the placenta and some of the key mechanisms that allow these cells to survive destruction by maternal immune cells. It will include consideration of a highly novel case of co-option of an immune system molecule by the placenta of the horse, and thus demonstrate how research on a domestic animal species can illuminate principles of biomedical science and also benefit an animal patient population in veterinary medicine.

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All are welcome