UITNODIGING

Voor de openbare verdediging van het doctoraatsproefschrift van

Chen BING

maandag 27 juni 2011
You are cordially invited to the public defense of the thesis of

Bing CHEN

‘Extracellular factors regulate pancreatic fate of human embryonic stem cells’

On Monday 27 June 2011 at 17 hours in auditorium P. Brouwer of the
Faculty of Medicine & Pharmacy
Laarbeeklaan 103, 1090 Brussels

Situering van het proefschrift

Islet transplantation has been suggested to be a promising treatment for type 1 diabetes. However, it is limited by the severe donor shortage. Therefore, success in the β cell differentiation of human ESC will enhance the potential for patient-specific cell transplantation therapy in diabetes.

The thesis by Bing Chen studies how developmentally related extracellular factors influence human ESC differentiation towards pancreatic fate. We intended to reproduce a protocol reported to generate β-like cells on several human ES cell lines. Whereas we failed to induce pancreatic progenitors, hepatocytes developed efficiently under the control of BMP and FGF pathways. BMP antagonism combined with early retinoic acid treatment significantly induced PDX1+ progenitors. These findings underscore the role of extracellular factors and the necessity to mimic developmental signals for optimal pancreatic differentiation from ES cells. Further differentiation of the PDX1+ progenitors towards functioning β cells will set new landmarks in diabetes therapy.

Curriculum Vitae

Bing Chen obtained her MD diploma at the Guangxi Medical University in China (1988). She became a resident in Endocrinology at the First Hospital in Nanning, Guangxi, China (1988-1993). Since 1993 she is registered as an endocrinologist in China. In 2006 she initiated her PhD research at VUB as CSC-student. Her thesis resulted from differentiation of pancreatic fate from human embryonic stem cells by the use of growth factors, which was performed under guidance of Dr. Josue K. Mfopou.