



**STEM CELL SOCIETY**  
SINGAPORE

# STEM CELL SOCIETY ANNUAL GENERAL MEETING

**03 May 2013, Thur, Creation** Theatrette, Matrix Building **Level 4**  
30 Biopolis Street, Singapore 138671

## PROGRAMME

**4.00 - 5.00pm**

**Sir Roy CALNE**

Visiting Professor of Surgery at the National University of Singapore

**"Prospects for gene and stem cell therapy for diabetes"**

**5.00 – 5:30pm**

**Annual General Meeting (for SCSS members only)**

**5.30pm onwards:**

**Networking (brought to you by Stem Cell Society Singapore)**

**Hosted by:**

**Dr. Huck Hui NG**

President SCSS and ED GIS



# SPEAKER

**Sir Roy CALNE, NUS**

## **Prospects for gene and stem cell therapy for diabetes**

### **Abstract**

After more than 12 years experience by our group in this field, it would seem that progress has been slow, data are often unsubstantiated and some important questions deserve to be addressed. The literature is expanding at an extraordinary rate and claims have often been made for potential advances with no follow up reports describing attempts at independent verification. The models have varied but the use of in vivo experiments with chemically induced diabetes has often been non-rigorous in excluding the possibility of spontaneous recovery from the chemical damage.

In vivo attempts to utilise gene therapy have been disappointing although the data of treatment of haemophilia B in patients with hepatotropic AAV8 vector injected intravenously have yielded encouraging preliminary results. The advantages of a direct in vivo procedure are great by avoiding in vitro manipulation of cells of untried and possibly perilous transplantations techniques.

The goal of constitutive insulin secretion should be the initial objective, since the mechanism of insulin storage in granules and its release according to glucose concentration is not fully understood. Controlled constitutive production of insulin to give a basal synthesis of insulin would certainly be of help to some diabetics, particularly those suffering from unawareness hypoglycaemia under current therapies. Further study of the storage and release mechanisms in normal beta cells is clearly indicated.

### **Biography**

**Sir Roy Yorke Calne**, FRS, is a surgeon and pioneer in organ transplantation. Since 1959 his research has focused on identifying new immunosuppressive agents and he was the first to develop and use Azathioprine, Cyclosporine, Rapamycin and Campath 1H in organ transplantation. In 1965 Sir Roy started a kidney transplant programme in Cambridge and performed the first liver transplantation operation in Europe in 1968.

In 1987, together with Professor Wallwork and the team at Papworth he performed the world's first liver, heart, and lung transplant.

He did the first intestinal transplant in the U.K. in 1992, and the first successful combined stomach, intestine, pancreas, liver, and kidney cluster transplant in 1994.

Sir Roy was Harkness Fellow at Harvard Medical School from 1960-61 and Professor of Surgery at Cambridge University between 1965 and 1998. He was awarded the 2012 Lasker-DeBakey Clinical Medical Research Award, together with Dr. Thomas Starzl, for the development of liver transplantation.

Sir Roy is Visiting Professor of Surgery at the National University of Singapore, involved in collaborative research directed to the development of gene and stem cell therapy for the treatment of diabetes.