SCSS-ISCT Joint Symposium on Frontiers in Cell Therapy – Singapore

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The Stem Cell Society Singapore and the ISCT held the SCSS-ISCT Joint Symposium 2019 from 13 – 15 November which was attended by 250 local and international delegates. It was opened on an upbeat note with Simon Cool, John Connolly, and Krystyn van Vliet, three leaders of Singapore’s cell therapy manufacturing programmes, providing their insights. It was announced earlier in March that 80 million dollars (58M USD) of public research funding would be channeled towards programmes to manufacture living cells as medicine [1].

The symposium was held in the Academia building which was launched in 2013 for diagnostics, research and healthcare education. Sitting on the edge of the Singapore General Hospital campus, there is a link bridge from this building to the Duke-NUS school of medicine. At the conference, there was good representation from this school (set up to foster clinician scientists and grow the local academic medicine ecosystem), including Antonio Bertoletti, and Karl Tryggvason, together with members of his laboratory.

As the namesake of the two co-hosting bodies suggest, the recurring themes of many of the research talks were on the use of stem cells or their differentiated progeny for clinical therapy. These ranged from pre-clinical models of cardiomyocyte transplantation in mice infarct models by Lynn Yap [2], to results of therapies that had been under clinical trial, such as Francis Kee Wong’s talk on the use of mesenchymal stem cells for cartilage repair. Other topics included innovation in the manufacture of cell therapies and harnessing of immune cells to fight disease.

Esco Aster’s Xiangliang Lin announced that the local CMO had signed a memorandum of understanding with A*STAR’s Bioprocessing Technology Institute (BTI) to establish an innovation centre for continuous biomanufacturing. This was just one example of public-private partnership in the co-development of technologies to improve cell therapy manufacture.

John Connolly, who also represented Tessa Therapeutics, described the company’s platform to generate virus-specific T cells. Their most advanced therapy is a product targeting EBV in nasopharyngeal cancer. The phase II conducted at the National Cancer Centre in Singapore produced positive survival data in patients with advanced stages of this cancer, setting the stage for a phase III trial. To support operations in clinical sites in Singapore, USA, Thailand, Malaysia and Taiwan, the company is building a cell therapy production facility in Singapore.

As a research associate for a year between 2015-2016 at BTI, I was considering but unsure about a career in the biomedical sciences. My PI Steve Oh gave me the opportunity to attend both the SCSS conference and the 2016 ISCT international conference which was held at the Suntec Convention Center that year. Going to these two conferences shaped my research interests, contributing to my decision to pursue a PhD in Stem Cell Biology and Regenerative
Medicine at Stanford. In November, I felt glad to be back after three years to present my work and heartened by the exciting new frontiers in cell therapy from Singapore and abroad presented at the symposium.

**Symposium Prize Winners:**

**Outstanding Poster**
Alexander Smith, IMB A*STAR: A synthetic heparan sulphate mimetic for enhancing BMP-2-mediated osteogenesis

**Poster Prize Runners Up**
Natasha Ng, IMCB A*STAR: The type 2 diabetes risk locus gene STARD10 influences pancreatic beta cell differentiation from hESC-derived CRISPR/Cas9-mediated
Li Yen Chong: Preclinical study for myocardial infarction using cardiovascular progenitors

**Best Short Talk**
Esmond Lee, Stanford University: FOXP3 Gene Editing towards autologous stem cell therapy to cure IPEX Syndrome

**Outstanding Young Investigator Lecture:**
Daniel Messerschmidt, IMCB A*STAR: Global translation in early embryos and embryonic stem cells depends on the essential transcription factor PRDM10
Conference delegates at the Academia Building Auditorium in Singapore General Hospital

Keynote Lecture by Fiona Wood: The evolution and challenges introducing cell-based therapies into burn care and scar therapy

Mingling of delegates during poster session

Panel Discussion on the business of cell and gene therapy: Mayasari Lim, Arthur Sampaio, Bryan Choi, Xiangliang Lin, Alicia Henn, and Pawan Gupta, chaired by Antonio Lee and Wen Bo Wang

Prize presentation of Outstanding Poster Prize Award to Natasha Ng by conference chair and co-chair Shigeki Sugii and Simon Cool.

Photography by Li Yen Chong
References

