STEM CELL SOCIETY
SINGAPORE

STEM CELL SOCIETY SYMPOSIUM 2012

"Stem Cell Based Therapy"

6th to 7th of September 2012 •Auditorium, Matrix Building Level 2,
30 Biopolis Street, Singapore 138671





Dear Members, Friends, and Supporters,

This newsletter concludes a series of 7 newsletters dedicated to provide information about our Symposium 2012. Also, our keynote speaker Bob Lanza from ACT has agreed to share his presentation with you. Please click **here** to view it.

First, we'd like to take the opportunity to thank all of you who have attended the symposium and supported us this year with their presence and contribution.

Just a few facts about the symposium: this year we had a total of 342 delegates, an increase of 16% over last year. We saw a total of 28 oral presentation including 22 plenary lectures, 4 speakers selected from the abstract and 3 corporate lunch time presentations. We also had a record number of 12 exhibitors and we hope that everyone enjoyed the interaction with our suppliers and major supporters.

This year for the first time we have organized two luncheons in which delegates could meet up with speakers over a casual lunch. The overall positive feedback we have received encourages us to open this event to more delegates during the next symposium.

Some of our speakers as well as invited guests and some delegates visited the Night Safari. This event was indeed great fun as networking could be done in a casual and enjoyable atmosphere. We learned from this years' experience and for the next symposium we are trying to offer a sightseeing social activity cum networking opportunities for all delegates.

We thank you again for your participation in our symposium 2012 and we hope that you have made new friends and met future colleagues and collaborators.

With very best wishes and we hope to welcome you again to **Singapore in 2013**,

The Organizing Committee Stem Cell Society Singapore Symposium 2012

Report

Tammie Kua Symposium Delegate and mother of a child suffering from cerebral palsy

My son, Lui Heng, went through a traumatic birth process in Sept 2009 that culminated in him having the meconium aspiration syndrome complicated by persistent hypertension of newborn. He stayed in the NICU for 5 months and during that time; he went through ECMO, had multiple organ failure, needed kidney dialysis, had multiple infections and for a long time needed respirators to help him breathe. Lui Heng was truly a strong boy as he fought on and finally managed to discharge from NICU in Feb 2010.

Though he recovered enough to be discharged, there were serious consequences to his development which we were unaware of. Initially, neurologists say to give him time to catch up with his peers as he had after all gone through a lot. As time passed, I was unconvinced that all Lui Heng needed is time. It was that time that I began to look for what more can be done for Lui Heng in terms of building his health as well his brain and body.

Lui Heng has the usual barrage of specialist appointments and therapies (Physical and Speech and Feeding clinic) at the local KK women and Children hospital. But in addition, I started Lui Heng on body acupuncture and Chinese medicine to build his health. Lui Heng also had acupuncture to his head to stimulate his brain meridian points. However, I feel there is still not enough results and at one visit, a mother noticed me and referred me to Dr Chan in Kuala Lumpur who does cranial manipulation cum bio magnetic therapy. So about a year or so, every two weeks we will religiously drive up to KL and let Lui Heng be treated by Dr Chan when he flies in to KL from Hong Kong.

It is also at one of my KL visits that I met a mother who was planning stem cell treatment for her cerebral palsy son with the local neurosurgeon. I was then intrigued and I also wanted to see if that treatment will help Lui Heng progress better. I got contacts from the mother and began to arrange for meetings with the various doctors in KL.

The doctors generally agree that Lui Heng seem to display the symptoms for Cerebal Palsy but needed the necessary tests to confirm. Finally after a series of tests in Singapore, Lui Heng was diagnosed with periventricular leukomalacia, microcephaly, global delay and hearing impairment in July 2011. These conditions are commonly generically known as Cerebral Palsy. Though I had suspected this to be the case, hearing it confirmed by the doctors was still very devastating.

At the same time in July 2011, my husband and I attended the Glenn Doman Course for Brain Injured Children when they came down from Philadelphia to conduct a 5 days course. As stem cell treatments had not been finalised, I started this home therapy program for him first. Concurrently, I continued the discussions with the various doctors and hospitals in KL. Though some of the doctors in KL, were quite ready to give stem cell treatments to Lui Heng once we agree, we were hesitant. It never felt right somehow and things never really worked out between any doctors, hospitals and us.

After that, I began searching on internet for stem cell treatments. As expected I found quite a few, all of which based in China. My husband was quite against those I found on internet especially as they are based in China. His fears can be understood due to the many negative media reports that China has received due to few black sheep. But by this time (May 2012), I have truly no idea where else to look for reliable stem cell treatments.

Then in mid Aug 2012, I chanced upon the website of the Stem Cell Society. What was very exciting for me was the news of a stem cell symposium that will be happening very soon on 6 & 7Th Sept 2012. Looking at the scheduled talks and the people who will be coming to Singapore from many parts of the world like US, UK and India, it is like a dream come true for me. It is clear that the symposium will be a place where all the reputable and reliable people from the stem cell industry will be gathering to share their knowledge and network. It will be truly be wonderful if I can meet some of these distinguished people in this field so that I can find out what stem cell options are available for my son.

At the same time I was also worried as the cost of the symposium was high and talks sounded very technical. I was not sure if these industry people will be keen to meet a parent like me. Even if they do meet me, will they be willing to help and share their knowledge and contacts with me? Even as there are hopes, there were plenty of fears as well.

But there is really no choice but go ahead and just try. So I drop off an email to Gerald of Stem cell society. As a back-up, I googled the various speakers online and tried as best as I could to get my email directed to the speakers hoping to arrange for some meeting while they are in Singapore. Thankfully Gerald and Charlotte from the Stem cell society responded pretty fast and made arrangements for me to pay a nominal fee to attend the symposium.

The day before the symposium I was a bundle of nerves. This symposium, I feel, is really the best chance I will ever get, to know the experts in the stem cell industry. This is not going to be like in the internet where the fakes can sound like the real thing. Anyway I prepared for the symposium by reading up more about the stem cell lingo. It helped that I had some science background during my school days. The fact that I had been searching and reading about stem cell treatments online for my son for a year plus should also make things easier.

On the day of the symposium, I arrived slightly late and met Gerald and Charlotte who passed me my bag and booklet for the symposium. For the next two days, the booklet proved to be a most valuable asset. The photos and abstracts inside were really useful to know more about each speaker. The photos were helpful in identifying the speakers later during breaks after the talks. The schedule also helped me to know who to expect to be definitely around as their talk is due to be on and make it possible for me to plan who I can try to speak to.

Throughout the two days, sometimes I feel like I am such a fluke and worry if I sound like some desperate person trying to network and get to know the bigwigs. After all, most of the speakers are CEO, General Directors of big name companies. But when I think of my son, whom I left in the care of my helper to attend the symposium, I just have to press on. This is for him, not me.

Much to my delight, most of the speakers are really friendly and quite approachable. Most are sympathetic and do offer to search if they can see if there are treatments available within their county. I have emailed some and hope something positive can be arranged.

As an end note, I like to highlight about one of the posters I saw at the symposium that talks about stem cell tourism. This poster really speaks to me as I too feel more really needs to be done to provide safeguards and guidance for patients who are determined to take part on more experimental treatment if it does offer a chance of improvement. Imposing regulations just drives the treatments underground and leaves the patients more vulnerable. It only benefits the unscrupulous service providers and leaves the patients in a worse off position.

Report

Tan Hong Yu, Intern Bioprocessing Technology Institute

The Stem Cell Society Symposium was successfully conducted from the 6 to 7 September 2012 at Biopolis, Singapore. This year's symposium put the limelight on clinical trials and the industrial applications of stem cells. Over the course of two days, speakers from around the world shared recent advances in their research, spanning from using neural stem cells to combat cancer to targeting cancer stem cells. I shall highlight three presentations that I have heard during the symposium that especially appealed to me. These presentations are some examples of research in different areas: basic science, translational and industrial-based.

Amongst the several impressive clinical trial presentations on the first day of symposium**, Dr Karen Aboody's** (City of Hope, USA) brain tumor trial using neural stem cells was especially interesting for future mediated cancer treatment. Dr Aboody and her team has postulated a novel drug delivery vehicle in neural stem cells(NSCs) through their tumour-tropic characteristics. The proposed treatment starts with the injection of cytosine deaminase(CD)-expressing clonal human NSC line into the human body, where the NSCs migrate and localize to residual and invasive brain tumours. When the orally administered inactive form 5-fluorocytosine (5-FC) reaches the NSCs, cytosine deaminase converts it to the active 5-fluorouracil. If successful, this novel anti-cancer treatment promises not only to minimize the toxicity of the chemotherapy in the brain tissues, it can also potentially remove residual cancer cells, hence resulting in a higher chance of complete remission. Furthermore, other forms of invasive cancer can also be treated using this approach if found to be successful.

When the first day of symposium featured several clinical trials using various forms of stem cells, the second day was markedly different as the focus was generally on the industrial applications. Several industrial players presented on the industrial relevance of stem cells today and how they are equipped to meet the future demands of stem cells. These are key challenges that lie ahead and can determine stem cells therapy's success on an industrial scale.

Dr. Jon Rowley, Lonza USA presented his strategy in both the upscale and downstream processing of stem cells by adapting protein bioprocessing techniques and technologies to stem cells. It is definitely interesting to see that the use of protein bioprocessing technologies such as tangential flow filter units allow for washing and volume reduction of the stem cells so that they are able to meet the Good Manufacturing Practices(GMP) standards of the FDA 21 Code of Regulations(CFR).

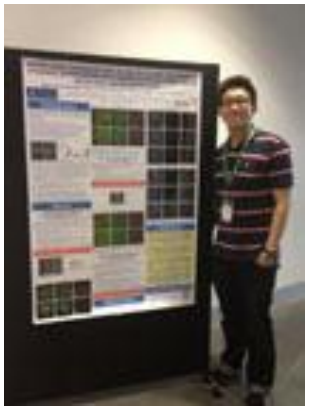
Day two also saw some scientists presenting their findings on other novel methods of targeting cancer cells. **Dr Lim Bing** from GIS presented his group's findings on a novel link between glycine/serine metabolism and tumorigenesis. Through the determination of this link, a specific family of metabolic enzymes critical for tumorigenesis in non-small cell lung cancer can be used as a target for anti-cancer therapy in the future. This paves the way for more forms of novel treatment methods in cancer research, providing greater hope for patients who otherwise have no curative options at the moment.

Throughout the two days of symposium, speakers from all over the world have shown that even though there are still many challenges that stem cells therapy must overcome, the scientific world is on its way to curbing them. Through determining novel targets in anti-cancer treatment, ongoing clinical trials and the industry's preparation for the expansion and purification of stem cells as a form of therapy, we definitely see that the scientific world is working hard to realize its maximum potential. Hopefully, we do not have to wait long for the potential to be translated into reality.

Comments of Travel Fellowship Awardees

Nicolas Tan, **University of Melbourne:**

The travel fellowship gave me the opportunity to interact and listen to world leading scientist. Speakers presented work of the highest calibre, giving an indication of how close we are to seeing cell therapies being available to the public. The symposium exhibited how basic research is essential in the progression of cell therapy programs. I was also able to present and share my work leading to global collaborations.



Samiksha Wasnik, **CSIR-Centre for Cellular and Molecular Biology, India:**

I had a wonderful experience in attending the SCSS Symposium 2012. I was awarded with the travel fellowship, which really helped me in getting familiar with the stem cell research going on in South Asian countries especially in Singapore. I am thoroughly impressed with the high quality research work presented at symposium by the speakers and also with the poster sessions which were equally impressive. It was a good opportunity for me to interact with the national and international delegates and to get their feedback on related to my work. Singapore is definitely a very well established and most functional stem cell research hub in Asia.

I congratulate SCSS Organizers for conducting such a wonderful symposium.

Biby T, Edwin,
Interdisciplinary Research Centre, India:

The conference was fully fledged with renowned speakers in the area of stem cell research and who commercializes the outcome of their findings. The conference envisaged the current status of stem cell research into practice, issues and limitations faced by the clinicians in different countries and therapeutic advancements using different stem cell lineages. For me, this is my first international symposium on which I could present my research findings as a poster. Also I got updates of different research fields and I propagated to our research group to work on these themes. For this I am very much thankful to Stem Cell Society Singapore for selecting me for the Travel Fellowship Program. This was a golden opportunity to the students like me to part take in the esteemed symposium and to interact with scientists and researchers who were working in the same field. I appreciate the organizers for the same and hope it will continue the same in the years to come. I was really empowered or enriched with this innovative and promising program imbued with knowledge economy dissipation. I am here and now trying to introduce my friends to Stem Cell Society and for the upcoming symposiums.

Gina Kusuma, Melbourne University

It has been a fantastic experience for me to visit SCSS Symposium 2012 and present my poster to the fellow stem cell scientists. Coming from Melbourne, the Travel Fellowship helps to cover my trip expenses and thus enables me to gain new knowledge from internationally-recognised experts in regenerative medicine. Within 2 days, the symposium showcased prominent speakers and poster presenters which are essential for PhD students to keep up-to-date with latest advance as well as to contemplate careers in stem cell research.