

conference report



With backgrounds in biological, biomedical, clinical and commercial research, more than 300 delegates from 24 countries gathered in Lausanne, Switzerland, last month, to find out about the latest "Advances in Stem Cell Research".

The second annual conference in a series that has quickly built a reputation for high-quality science, it represented an important gathering of the European stem cell community.

The conference kicked off in technical colour, with the screening of EuroStemCell's award-winning film, A Stem Cell Story. Designed to be accessible to a broad general audience, the film also clearly captivated many of the stem cell

experts in the audience, and set a lively tone that continued throughout the conference weekend.

Plenary speaker and stem cell veteran Chris Potten got the science under way,



detailing his extensive study of stem cells in the gut. Interested in the relationship between stem cell proliferation, genome protection and the varying incidence of cancer in different regions of the gut, he presented evidence of Cairns' 30 year-old 'immortal strand' hypothesis. Shahragim Tajbakhsh, of the Pasteur Institute in Paris, picked up this strand later in the meeting, present-

Conference themes

- The potential of stem cell research
- Stem cells and degenerative disease
- Stem cells in development
- Bioindustrial exploitation of stem cells
- Molecular regulation of stem cell fates
- Embryonic and tissue stem cells
- Stem cell research and epithelial repair

ing recent findings about adult muscle stem cells.

Potten closed the first day of the conference by raising some of the key issues for the future of stem cell biology:

- Identifying and understanding the regulatory factors at work
- Manipulating ex-vivo growth and expansion
- Plasticity and control of differentiation
- The role of stem cells in cancer and ageing

countries represented

Argentina, Belgium, Canada, Chile, Cyprus, Estonia, Finland, France, Germany, Greece, India, Iran, Italy, Japan, Latvia, Netherlands, Russia, Singapore, Spain, South Korea, Sweden, Switzerland, UK, USA

Day two began by picking up the first of the issues raised by Potton – regulatory factors. The RIKEN Centre



for Developmental Biology's Shin-Ichi Nishikawa, in his plenary lecture, outlined the role of Notch in hair follicle development.



The European Commission's Charles Kessler then detailed EU support for stem cell research in Europe, and emphasised a continuity of approach in the next re-

search funding programme, Framework Seven.

Subsequent Saturday sessions looked at the potential of stem cell research and its application to degenerative diseases like Huntington's disease, diabetes and muscular dystrophy. Speakers also addressed the role of stem cells in development, and the day closed with a thought-provoking session on the bio-industrial exploitation of stem cells – what are the technical, legislative, financial and ethical challenges that must be addressed?

Sunday morning saw things move back along the chain of development. Janet Rossant's plenary lecture looked at stem cells and lineage development in the early embryo, and compared mouse and human embryonic stem cells.



Embryonic stem cells were further under the spotlight in a series of three talks later that morning. The University of Sheffield's Peter Andrews looked at the adaptive genetic changes observed in ES cells after prolonged culture, and their implications for study-

ing and understanding both self-renewal processes and cancer. Sticking with self-renewal, The University of Edinburgh's Ian Chambers outlined the role of the gene Nanog in mouse embryonic stem cell self-renewal, while Oliver Brüstle, of Bonn Univer-



sity, looked at differentiation of embryonic stem cells – specifically into the neural lineage.

Back to the clinic

On Sunday afternoon, the programme moved back into the clinic, with inspiring stories about the application of stem cell research to epithelial repair.

Conference organizer Yann Barraud spoke about ongoing efforts to improving the technology for life-



saving skin grafts. Geeta Vemuganti, from the LV Prasad Eye Institute in India, presented her sight-saving cell therapy work, using cultured corneal epithelium to treat ocular surface diseases. Michele de Luca reported similar successes in treating patients with vision loss due to chemical burns, and promising results in treating the genetic disease junctional epidermolysis bullosa.

Lively networking...

With a total of 27 oral presentations and more than 80 posters, this conference presented a wide-ranging analysis of the latest advances in a fast-moving field. Outside of scheduled talks, poster sessions, coffee breaks and Saturday's dinner cruise on Lake Geneva provided ample opportunity for informal discussion and lively networking.

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EuroStemCell is an Integrated Project of the European Union's Sixth Framework Programme. Our next public conference will take place in Stockholm, Sweden, from 12-14 October 2007

