A new, automated, four-colour interphase FISH approach for the simultaneous detection of specific aneuploidies of diagnostic and prognostic significance in

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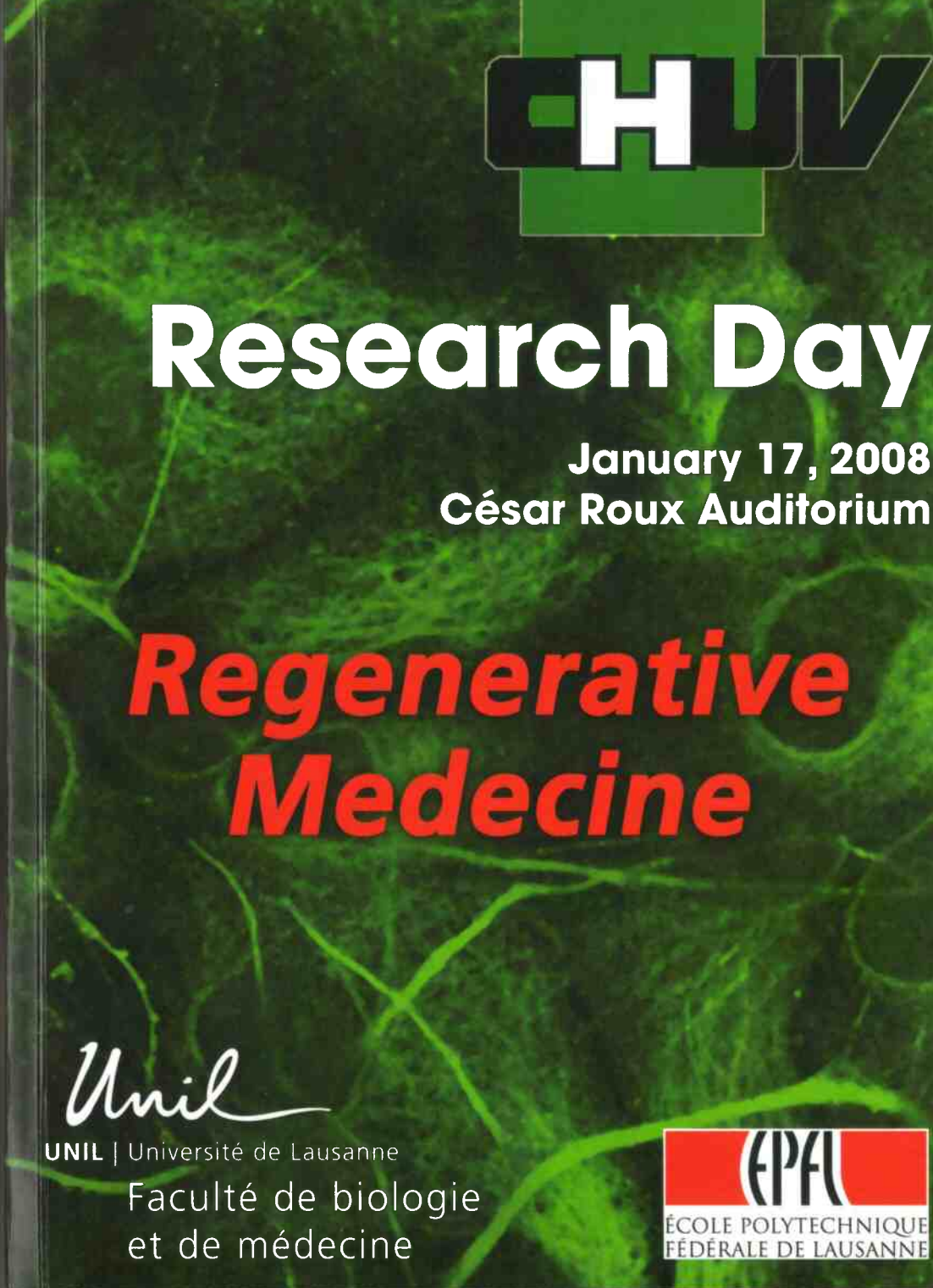
In hyperdiploid acute lymphoblastic leukaemia (ALL), the simultaneous occurrence of specific aneuploidies confers a more favourable outcome than hyperdiploidy alone. Interphase (I) FISH complements conventional cytogenetics (CC) through its sensitivity and ability to detect chromosome aberrations in non-dividing cells. To overcome the limits of manual I-FISH, we developed an automated four-colour I-FISH approach and assessed its ability to detect concurrent aneuploidies in ALL.

I-FISH was performed using centromeric probes for chromosomes 4, 6, 10 and 17. Parameters established for automatic nucleus selection and signal detection were evaluated (3 controls). Cut-off values were determined (10 controls, 1000 nuclei/case). Combinations of aneuploidies were considered relevant when each aneuploidy was individually significant. Results obtained in 10 ALL patients (1500 nuclei/patient) were compared with those by CC.

Various combinations of aneuploidies were identified. All clones detected by CC were observed by I-FISH. I-FISH revealed numerous additional abnormal clones, ranging between 0.1 % and 31.6%, based on the large number of nuclei evaluated.

Four-colour automated I-FISH permits the identification of concurrent aneuploidies of prognostic significance in hyperdiploid ALL. Large numbers of cells can be analysed rapidly by this method. Owing to its high sensitivity, the method provides a powerful tool for the detection of small abnormal clones at diagnosis and during follow up. Compared to CC, it generates a more detailed cytogenetic picture, the biological and clinical significance of which merits further evaluation. Once optimised for a given set of probes, the system can be easily adapted for other probe combinations.


c-HUV
Research Day
January 17, 2008
César Roux Auditorium
Regenerative Medecine
Unil
UNIL | Université de Lausanne
Faculté de biologie
et de médecine
EPFL
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

CHUV RESEARCH DAY 2008

Thursday, January 17th, 2008

"Regenerative Medicine"

08:30 **Presentation of the 2008 Research Day**
Professor Ivan Stamenkovic, Vice Dean for Research

08:45 **Keynote speaker 1**

Professor Philippe Menasché
Department of Cardio-Vascular Surgery
Hôpital Européen G. Pompidou, Paris
"Promises and pitfalls of skeletal myoblast therapy"

09:30 **Coffee & Posters**

10:30 **6 short talks**

12:00 **Keynote speaker 2**

Professor Giulio Cossu
Stem Cell Research Institute, Milano
"Towards a cell therapy for muscular dystrophy"

12:45 **Lunch, Coffee & Posters**

14:00 **Keynote speaker 3**

Professor Michele De Luca
Department of Biomedical Sciences, Modena
Epithelial Stem Cell Research Centre, Venice
"Epithelial stem cells and regenerative medicine"

14:45 **6 short talks**

16:15 **Coffee & Posters**

17:00 **Keynote speaker 4**

Professor Lior Gepstein
Dept of Physiology & Biophysics, Technion – Haifa, Israel
"Myocardial Regeneration by Human Embryonic Stem Cells"

17:45 **Poster Prizes Ceremony**

18:00 **Apéritif & Buffet**

ATTENDANCE IS FREE - NO REGISTRATION IS NECESSARY

NOTE: Posters will be displayed from
Wednesday January 16st early morning to Friday January 18th early morning.

12 short talks

Schedule	Names, departments	Titles
Morning		
10h30 - 10h45	**Boris Hinz** Laboratoire de biophysique cellulaire - EPFL	*"The myofibroblast - friend and foe in tissue regeneration"*
10h45 – 11h00	**Matthias Lutolf** Laboratoire de cellules souches et bioengineering - EPFL	*"Bioengineering artificial stem cell niches".*
11h00 – 11h15	**Corinne Kostic** Unité de thérapie génique et biologie des cellules souches – Hôpital Ophtalmique	*"Gene therapy preclinical studies for Leber congenital amaurosis"*
11h15 – 11h30	**Anne Zurn** Chirurgie expérimentale - CHUV	*"Delayed peripheral nerve priming improves regeneration of sensory axons into the spinal cord following dorsal root injury."*
11h30 – 11h45	**Meta Djojosubroto** Unité de thérapie génique et biologie des cellules souches – Hôpital Ophtalmique	*"Increased chromosomal aberrations and transformation of adult mouse retinal stem cells"*
11h45 – 12h00	**Paola Bonfanti** Chirurgie expérimentale - CHUV & Laboratoire de dynamique des cellules souches - EPFL	*"Thymic epithelial cells have skin potency"*
Afternoon		
14h45 – 15h00	**Dominique Pioletti** Laboratoire de biomécanique en orthopédie - EPFL	*"In Vivo evaluation of human fetal cells as allogenic cell source for tissue engineering"*
15h00 – 15h15	**Mikaël Martino** Laboratoire de médecine régénérative et de pharmacobiologie - EPFL	*"Controlling mesenchymal stem cells response to biomaterials with recombinant integrin-specific fibronectin fragments"*
15h15 – 15h30	**Dela Golshayan** Nephrologie et Centre de Transplantation d'organes - CHUV	*"Mechanisms of Allograft rejection and tolerance in transplantation"*
15h30 - 15h45	**Jonathan Bloch** Médecine Interne - CHUV	*"Spleen derived vascular progenitor cell transfer restores metabolic and vascular insulin sensitivity in high-fat diet insulin resistant mice"*
15h45 - 16h00	**Marc-Etienne Roehrich** Cardiologie – CHUV	*"Immunophenotypical analysis of putative cardiac progenitor cells isolated based on high ALDH activity from adult mouse and human hearts"*
16h00 – 16h15	**Mohamed Nemir** Dpt de Médecine - CHUV	*"Control of cardiac integrity via the Notch1 receptor pathway".*