BELACT
BELACT
BELACT

Belgian Group
For Animal Cell Technology

XIIIth BELACT Meeting
Stem Cells : from "science" to "clinical trials"

Friday December the 10th, 2010

Auditorium Maisin UCL-Woluwé

9:00 – 9.45 : Welcome & registration - Coffee

Morning session

- ***9:45–10:00 : Martine Raes (BELACT committee) & Stefanos Grammatikos (ESACT)*** **- Introduction**
- **10:00-10:40: *Pierre Vanderhaegen (ULB, Belgium)* - Overview "From stem cells to neural circuits: mechanisms and implications for neurological diseases"**
- **10:40-11:10: *Cedric Blanpain* (*ULB, Belgium*) "Defining the earlier steps of cardiovascular progenitor specifications"**
- **11:10-11:40*: Catherine Verfaillie (KUL, Belgium*) "Are all mesenchymal stem cells alike: implications for clinical applications."**
- **11:40 - 12:10*: Bernard Rogister (ULg, Belgium)* "Mesenchymal Stem Cells as a source of neo-neurons : a cellular and a molecular study*".***

12:10 -14:00: Poster Session & Exhibition - Sandwiches

Afternoon session

- **14:00-14:20: *C. Baldeschi* (*INSERM, France*) "Pluripotent stem cells differentiation into epidermal cells "**
- **14:20–14:40: *M. Mehtali* (*Vivalis, France*) – "Avian Embryonic Stem Cells for the Industrial Manufacture of Antibodies with enhanced ADCC and Vaccines"**
- **14:40 – 15:00 : *Gisèle Deblandre (Cardio 3D, Belgium)* « C-Cure : Stem cell therapy for heart failure »**
- **15:00-15:20: *Valérie Gangji* (*Bone Therapeutics*, *Belgium*) – "Cell therapy to treat bone disease"**
- ***15:20-15:40: Short coffee break***
- **15:40-16:00: *Julie Kerr*-Conte (*INSERM, France*) – "Stem cells and diabetes: an update''**
- **16:00-16:20: *Françoise Ingels* (*Tigenix, Belgium*) - "ChondroCelect, the regulatory experience with submitting a cell based therapy product"**
- **16:20:17:00: *Etienne Sokal* (UCL) "Stem Cell based regenerative medicine of the liver: From patient's bedside to the industry"**
- **17:00-17:05 Conclusion**

BELACT EXECUTIVE COMMITTEE

Chairman	***Secretary***	***Treasurer***
• ***M. Raes***	• ***I.Knott***	• ***G. Deschamps***
(F.U.N.D.P.)	*(Glaxo SmithKline Biologicals)*	*(Innogenetics)*
Tel. 081/72.41.24	*Tel. 02/656.9226*	*Tel. 09/329.16.19*
Fax. 081/72.41.35	*Fax. 02/656.9013*	*Fax. 09/245.76.15*
Martine.raes@fundp.ac.be	*Isabelle.knott@gskbio.com*	*geert_deschamps@innogenetics.com*

BELACT
BELACT
BELACT

Belgian Group
For Animal Cell Technology

BELACT REPLY FORM
(KINDLY RETURN THIS FORM BY EMAIL BEFORE *NOVEMBER 10TH, 2010)*

TO : I. Knott
at GlaxoSmithKline Biologicals **EMAIL :isabelle.knott@gsk.com**

FROM :

NAME : .....

ADDRESS :.....

.....

TEL : .....

FAX : .....

E-MAIL : .....

- The BELACT Committee welcomes in particular graduate or post-graduate students and the program of the day can be included in 2nd or 3rd cycle courses. For more details, please contact the members of the BELACT Committee representing the different universities

- I will participate to the XIth BELACT meeting : ☐ Yes ☐ No

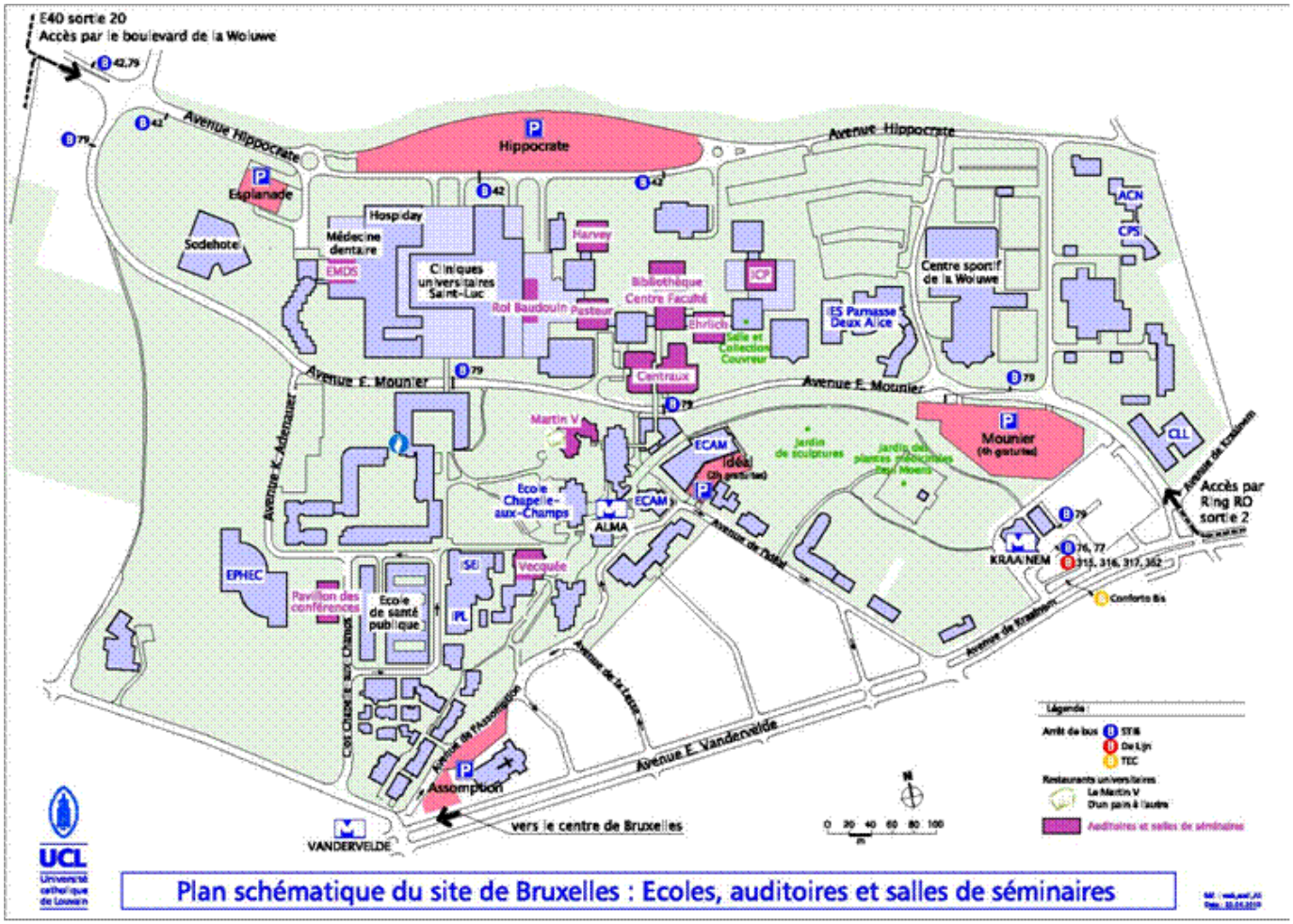
(payment 10 EUROs student – 25 EUROs non-student at the registration desk sandwich & coffee included)

- I will present a poster : ☐ Yes ☐ No
  - The poster session is not restricted to the main meeting topics, but is open to any subject linked to animal /human cell biology or cell culture technology, fundamental or applied
  - The poster abstract has to be sent by Email to isabelle.knott@gsk.com before November 10th, 2010 (Authors, Title, Affiliation, Abstract on one A4 page, any usual PC or Mac format)

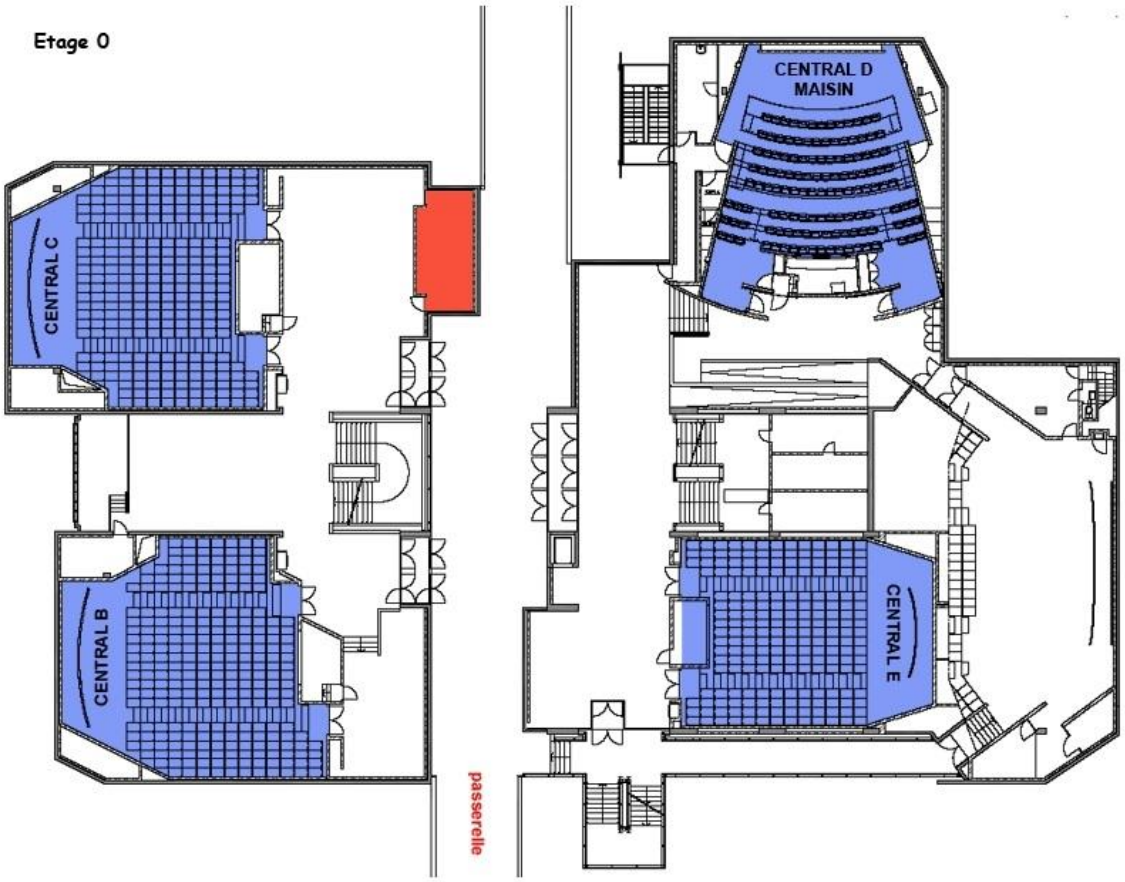
Access to UCL-Woluwé and to Auditoire Maisin located in Auditoires Centraux

http://www.uclouvain.be/en-acces-bxl.html

Campus de Woluwe de l'UCL
Auditoire Maisin
Avenue Emmanuel Mounier, 51
1200 Brussels



Auditoire Maisin in building « Auditoires Centraux » (see Map here below)



BELACT EXECUTIVE COMMITTEE

Chairman	***Secretary***	***Treasurer***
• ***M. Raes***	• ***I.Knott***	• ***G. Deschamps***
(F.U.N.D.P.)	*(Glaxo SmithKline Biologicals)*	*(Innogenetics)*
Tel. 081/72.41.24	*Tel. 02/656.9226*	*Tel. 09/329.16.19*
Fax. 081/72.41.35	*Fax. 02/656.9013*	*Fax. 09/245.76.15*
Martine.raes@fundp.ac.be	*Isabelle.knott@gskbio.com*	*geert_deschamps@innogenetics.com*

Access

http://www.uclouvain.be/en-acces-bxl.html

By car

From all directions, reach the **East Ring** of Brussels, and leave at exit **n° 2** (Kraainem/Wezembeek-Oppem) and follows the signs "**UCL- St Luc**" The parking lots are "Mounier" or STIB.

By train

From **Brussels Midi Station** (arrival by THALYS/EUROSTAR), take underground **line 2 towards Simonis**. Change at the **Arts-loi Station** and take **line 1 in the direction of Stockel**. **Exit Alma**.

By underground

The underground which serves the university site is **the line 1 in the direction of Stockel. Exit Alma.** Walk down avenue Mounier.

BELACT EXECUTIVE COMMITTEE

Chairman	***Secretary***	***Treasurer***
• ***M. Raes***	• ***I.Knott***	• ***G. Deschamps***
(F.U.N.D.P.)	*(Glaxo SmithKline Biologicals)*	*(Innogenetics)*
Tel. 081/72.41.24	*Tel. 02/656.9226*	*Tel. 09/329.16.19*
Fax. 081/72.41.35	*Fax. 02/656.9013*	*Fax. 09/245.76.15*
Martine.raes@fundp.ac.be	*Isabelle.knott@gskbio.com*	*geert_deschamps@innogenetics.com*

BELACT
BELACT
BELACT

Belgian Group
For Animal Cell Technology

Chairman : *M. Raes* *(F.U.N.D.P.)* *Tel. +32 (0) 81.72.41.24* *Fax. +32 (0)8./72.41.35* *Martine.raes@fundp.ac.be* ***Secretary :*** *I.Knott* *(Glaxo SmithKline Biologicals)* *Tel. +32 (0) 2.656.92.26* *Fax. +32 (0)2.656.90.13* *Isabelle.knott@gskbio.com*	***Treasurer:*** ***G. Deschamps*** *(Innogenetics)* *Tel. +32(0)9.329.16.19* *Fax. +32(0)0.245.76.15* *geert_deschamps@innogenetics.com*
Members *J.Werenne* *(U.L.B.)* *Tel.+32 (0)2.650.32.29* *Fax. +32 (0) 2.650.32.30* *biocelan@ulb.ac.be* *Y.J. Schneider* *(U.C.L. - LLN)* *Tel. +32(0)10.47.27.91* *Fax. +32(0)1./47.48.95* *YJS@bioc.ucl.ac.be* *C. Grandfils* *(U.L.G.)* *Tel.+32(0)4.366.34.16* *Fax.+32(0)4.366.36.23* C.Grandfils@ulg.ac.be *H. Heremans* *(K.U.L.-REGA Instituut)* *Tel : +32(0)16.33 73 70* *Fax : +32(0)16.33 73 40* *hubertine.heremans@rega.kuleuven.ac.be*	*P. Lefebvre* *Lonza Verviers* *Tel : +32 (0) 87.32.16.71* *Fax : +32 (0) 87.35.19.67* pascal.lefebvre@lonza.com *A.Gilbert* *Novasep-Henogen* *Tel : +32 (0) 71.34.79.00* *Fax : +32 (0) 71.34.79.73* anne.gilbert@henogen.com *N. Havelange* *Artelis* *Tel : +32 (0) 2 264 18 80* *Fax : +32 (0) 2 264 26 00* n.havelange@artelis.be *Stefanos Grammatikos* *UCB* *Tel : +32 (0) 2.386 63 33* *Fax : +32 (0) 2.386 64.81* stefanos.grammatikos@ucb.com

BELACT EXECUTIVE COMMITTEE

Chairman	***Secretary***	***Treasurer***
• ***M. Raes*** *(F.U.N.D.P.)* *Tel. 081/72.41.24* *Fax. 081/72.41.35* *Martine.raes@fundp.ac.be*	• ***I.Knott*** *(Glaxo SmithKline Biologicals)* *Tel. 02/656.9226* *Fax. 02/656.9013* *Isabelle.knott@gskbio.com*	• ***G. Deschamps*** *(Innogenetics)* *Tel. 09/329.16.19* *Fax. 09/245.76.15* *geert_deschamps@innogenetics.com*

BELACT
BELACT
BELACT

Belgian Group
For Animal Cell Technology

XIII[th] BELACT Meeting – Friday December the 10[th], 2010 - Brussels

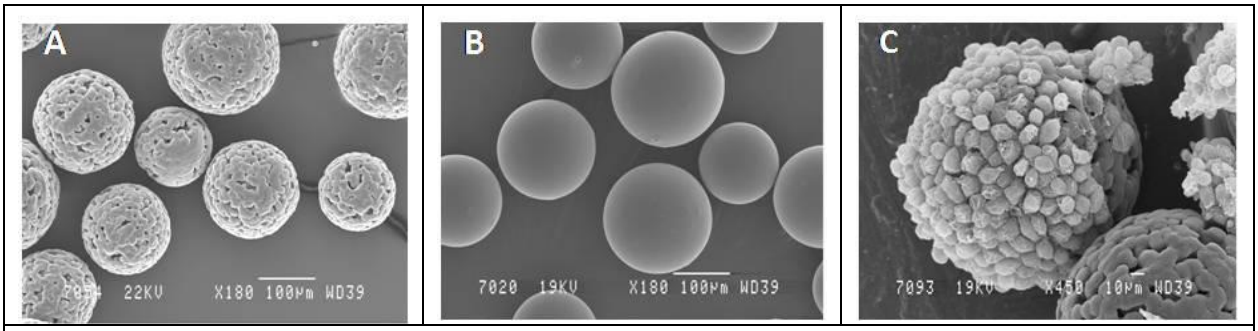
Optimisation of new biodegradable microcarriers tailored for tissue engineering

A. TSOY[1], Ch. Sevrin[2], C. Kottgen[2], L. Pravata[3], V. Maquet[3], E. Markvicheva[2] and Ch. Grandfils[2]
[1] *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia;*
[2]*Interfacultary Research Centre on Biomaterials (CEIB), University of Liège, Chemistry Institute, B6C, B-4000 Liège (Sart-Tilman), Belgium - University of Liege, Belgium, Prof. Ch. Grandfils;*
[3]*KitoZyme S.A., Parc Industriel des Hauts-Sarts, Zone 2, Rue Haute Claire, 4, B-4040 Herstal – Belgium.*
***** for any correspondence: C.Grandfils@ulg.ac.be

Biodegradable and biocompatible microcarriers are attractive materials for tissue engineering. The large surface that they develop, their facility to transfer cells, the ability to combine different cell types are amongst the advantages which retain their attention as potential biomaterial to promote wound healing. Various animal cell lines, such as chondrocytes (for chondrogenesis in cartilage tissue regeneration), stem cells, fibroblasts, hepatocytes, mesenchymal stromal cells can be cultivated on microcarriers for these purposes. The most frequently used materials are either synthetic polymers, such as poly(L-lactic acid) (PLLA), polyglycolide (PGA), their copolymers : poly(lactic-co-glycolic acid) (PLGA) or natural materials (for example collagen, chitosan). In view to optimize microcarriers for a given application, one of the key parameters which should be taken into consideration to promote cell attachment is the grafting of adhesion moieties to the microcarrier surface. These functionalities are indeed very well-known to greatly affect first cell adhesion, but also cell proliferation and differentiation. Natural macromolecules, such as laminin, collagen, and peptide sequences are commonly recognized by the adhesion proteins of the cells (in particular integrins) to favor the cell adhesion process. Obviously this biochemical signals are absent on synthetic macromolecules.

The aim of the research was to optimize new PLA microbeads as microcarriers for tissue engineering. The surface properties of these microbeads have been modified with polycationic sequences in order to promote the adhesion of fibroblasts. For this purpose we have adopted either a chitosan either a chitosan-g-polylactide copolymer. This last material has been physically entrapped to the surface of the microbeads during microcarrier formation whilst the former polysaccharide has been adsorbed through a prewetting process.

In view to select the more suitable amphiphilic chitosan-g-polylactide for microbead formation a preliminary solubility study of chitosan-g-polylactide has been carried out. Microbeads have been realized adopting homemade PLLA and PDLLA polymers with tailored macromolecule features (molecular weight, composition and polydispersity) in view to control the size, degradation rate and surface roughness of the microbeads.



SEM images of PLLA (A), PDLLA (B) microbeads and PDLLA microbeads cultivated with mouse fibroblasts after 7d, microbead surface were preliminarily coated with chitosan (C).

Acknowledgments: The research was carried out with the financial support of the University of Liege, of Wallonia/Bruxelles International (Bilateral agreement with Russian Federation) and of the European Project : Bioproduction (FP6).