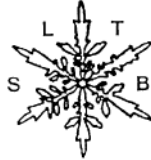


# SLTB Newsletter



## **Application of Cryopreservation from Human Tissue Engineering to Plant Genebank Integration**

### **Announcement of the Next SLTB AGM and Scientific Conference**

To be held from 7th to 9th September 2009 in connection with a Meeting of the Working Group 2 of the European COST Action 871 on Plant Cryopreservation (CRYOPLANET) from 9th to 11th September 2009

This year, Germany will be hosting the Annual General Meeting and the joint scientific conference on cryopreservation. The last event in Germany was located in the North and was very well organised by Andreas Sputtek. Now we want to move to the central parts represented by the states of Lower Saxony and Saxony Anhalt. Two scientific centres will organise the activities in close cooperation, namely the Institute of Multiphase Processes at the Leibniz University Hannover and the Leibniz Institute of Plant Genetics and Crop Plant Research Gatersleben (IPK).



The Institute of Multiphase Processes (IMP) belongs to the Faculty of Mechanical Engineering at the Leibniz University Hannover. One research area of the institute is the cryopreservation of cells and tissues with specific research groups in the field of Biothermodynamics and Biomedical Process Technology within the Cluster of Excellence REBIRTH. Its main goal is the long-term preservation of cells and tissue engineered products by improvement of the preservation processes by applying new and optimal parameters and preservation techniques. The team of mechanical and electrical engineers and biologists under

one roof is very important to address this research area. The Institute of Multiphase Processes is equipped with many commercial and self made controlled rate freezers (CM 2000 {Carbueros Metallicos/Air Products },  $\mu$ -Freezer{IMP}), freeze dryer (Christ), state of the art and challenging analysing techniques such as FTIR, DSC, CT, cryomicroscopy, REM, confocal laser scanning microscopy, live cell imaging, Bridgman and power down devices. Furthermore, it is equipped with a cell culture lab (S1) (stem cells, human endothelial cells, lung and kidney cell lines) and a bioreactor lab.

IMP is also working in the field of tissue engineering, designing and developing specific synthetic and biomimetic scaffolds for soft and hard tissue replacement with techniques like electrospinning and directional solidification. The cell seeding of these scaffolds is done in specially designed bioreactors. The cell-seeded scaffolds can be studied by confocal laser scanning microscopy in 3D and with a special florescence microscope with a culture chamber online with the seeding process. Cryopreservation of the tissue is studied in canine tumour tissue and cell-seeded scaffolds.



The Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) in Gatersleben is a large and internationally renowned plant research centre working on problems in modern biology by focussing on cultivated plants. Our basic, application oriented and interdisciplinary research seeks to collect new knowledge and to find new technologies aiming at the extensive use of plant genetic resources for optimised nutrient production and environmentally friendly agriculture. With the central *ex situ* gene bank, IPK possesses a unique collection of plant genetic resources from more than 3,000 botanic species of about 800 different genera. Our stock currently totals approximately 148,000 accessions.

As not all material can be stored in seed genebanks, the research group In Vitro Storage and Cryopreservation is engaged in cryopreservation of vegetatively propagated crops, mainly potato, garlic, mint and some others. The group relies on well-established cryopreservation protocols such as droplet freezing and vitrification. The world's largest potato cryo-collection is located here. However, extending the methods to new species or new target organs is not easy. Therefore, further research is needed to elucidate the different steps of the procedures and to integrate the cryopreservation techniques into the genebank strategy, which is being attempted in our group.

To build a bridge between the Human Tissue Engineering and Genebank Integration means to involve a whole spectrum of applied research including fundamental approaches. It is, therefore, no problem to include your own research results in the scope of the conference. We warmly welcome you to our places and expect participation of large numbers of SLTB members and all others who are interested in these modern biotechnological topics.

As the overlap to the activities of the COST Action 871 (Cryopreservation of Crop Species in Europe) is evident, there is a good opportunity to kill two birds with one stone and to bring together researchers of both organisations.

Furthermore, both Hannover and Quedlinburg (the place where the hotels are situated for the second part) are very historical cities giving good surroundings for the conference. The medieval city of Quedlinburg is a World Heritage Site, and we will do our best to give you some impression of the nice half-timber style houses situated around a medieval castle in the hilly landscape not far from the Harz Mountains.

# Programme

## Venue Hannover:

Leibniz Universität Hannover, Nienburger Strasse 1,  
D-30167 Hannover, Lecture Hall No. A104

### Monday 7 September 2009

18:00	Registration Mounting of posters
20:00	Conference Reception

### Tuesday 8 September 2009

08:00	Registration and coffee/tea
08:30	Welcome
09:00-13:30	Session 1 (Human/Medical applications)
12:30-13:30	Lunch and posters
13:30-18:30	Session 2 (Human/Medical applications – free communications) Followed by General Discussion
18:30-19:30	General Business Meeting SLTB
20:30- open end	Visit to IMP, Barbecue

### Wednesday 9 September 2009

8:00 - 12:00	Session 3 (Plant Cryopreservation)
12:00	Lunch
13:00	Bus Transfer to Quedlinburg
16:00 – 17:30	Guided Tour through the Medieval City of Quedlinburg
17:30 – 18:30	Check in to the Hotels for COST meeting participants
19:30	Begin Conference Dinner at Romantik Hotel Quedlinburg
23:00	Bus Return to Hannover for participants taking part in the SLTB conference only

**Venue: Gatersleben  
Leibniz Institute of Plant Genetics and Crop Plant  
Research, Main Auditorium  
Corrensstraße 3,  
D-06466 Gatersleben**

**Thursday 10 September**

**Meeting of the Working Group 2 of COST ACTION 871**

<b>8:15</b>	<b>Bus transfer from Quedlinburg to Gatersleben</b>
<b>8:30 - 9:00</b>	<b>Registration of COST Participants</b>
<b>09:00-13:30</b>	<b>Session 1</b>
<b>12:30-13:30</b>	<b>Lunch and posters</b>
<b>13:30-17:45</b>	<b>Session 2</b>
<b>18:00</b>	<b>Bus transfer from Gatersleben to Quedlinburg</b>

**Friday 11 September**

<b>8:15</b>	<b>Bus transfer from Quedlinburg to Gatersleben</b>
<b>08:45-13:30</b>	<b>Session 3 and Closing</b>
<b>12:30-13:30</b>	<b>Lunch</b>
<b>13:30-17.00</b>	<b>Beginning of COST MC meeting</b>

## Conference Organisers - Host Institutes

### **Professor Dr. Birgit Glasmacher**

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Further details will be appearing on the website ([www.slbtb.info](http://www.slbtb.info)) soon.