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al-Farabi Kazakh University News

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This blog is supposed to describe some of activities of plant biologists and others while teaching, doing research and outreaching common society at the oldest Kazakh universities engaged in developing natural sciences in Kazkahstan. It is based on solid platform of previous academic research as personal contributions of the breeders, geneticists, molecular biologists, cytogeneticists, population geneticists, experts in evolutionary biology and biostatistics. Prof. N. Udolskaya, Prof. G. Biyashev, Prof. R. Bersimbayev and Prof. K. Shulembayeva have made a great contribution to current state of research in plant biology and all the fields enlisted above. Our task is to make international plant biology audience familiar with news, research profile as possibility to teach and pave academic mobility to that university for joint plant research and teaching/learning activities.

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Bienvenue al Almaty: International Yeast Two-Hybrid Training for Students is On

*Posted By **Zaure G. Aytasheva**, 1 minute ago*

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Supervisor: Professor Thierry Berges, Uni-Poitiers, France

This week Department of Molecular Biology and Genetics, KazNU is hosting Professor Thierry Berges, University of Poitiers, France, who has arrived by Erasmus+ Program to kindly hold practical training on yeast two-hybrid system for the Bachelors students in Biology and Biotechnology. 30 students are attending the seminar, and at least half of them are involved in experimental workshop. Currently this group is focused on cells

transformation by the following protocol handed by Professor Berges:

Yeast transformation

Each group of students will perform the following three co-transformations:

Co-transformation 1: pBTM116-Ras (plasmid #1) + pGADGH-Raf (plasmid #2)

Co-transformation 2: pBTM116-Ras (plasmid #1) + pGADGHm (control plasmid #2)

Co-transformation 3: pBTM116m (control plasmid #1) + pGADGH-Raf (plasmid #2)

The following procedure is for 1 co-transformation (**important : the whole procedure must be carried out in sterile conditions)**:

- Transfer 1 mL of L40 overnight culture into a sterile eppendorf tube
- centrifuge 1 min at 10,000 rpm at room temperature, and eliminate the supernatant
- resuspend the cells with 100 µL of **solution A**
- incubate for 1 hour at 30°C
- centrifuge 1 min at 10,000 rpm at room temperature, and eliminate the supernatant
- add directly to the cell pellet 10 µL of the first plasmid then 10 µL of the second plasmid
- resuspend the cells gently with the pipet tip
- add 200 µL of **solution B**, mix well by pipeting up and down then incubate for 30 min at 30°C
- invert the tube 4-5 times to homogenize the suspension
- heat shock for 5 min at 42°C
- centrifuge 1 min at 10,000 rpm at room temperature, and eliminate the supernatant
- resuspend the cells with 200 µL of **solution C**
- put a **sterile whatman filter** on the surface of a Petri dish containing minimal medium supplemented with adenine and histidine ; wait 5-10 minutes (until the filter is wet)
- spread the suspension on the surface of the whatman filter
- incubate >5 jours at 30°C

ü Composition of the solutions :

solution A	solution B	solution C
Tris-HCL 10 mM pH 7,5 EDTA 1 mM pH 8 Lithium acetate 0,1 M	Tris-HCL 10 mM pH 7,5 EDTA 1 mM pH 8 Lithium acetate 0,1 M	Tris-HCL 10 mM pH 7,5 EDTA 1 mM pH 8 Sorbitol 0,6 M

sorbitol 1 M	PEG 4000 40 %(w/v)	

Web links and contact information for students:

http://stim.labo.univ-poitiers.fr/organigramme/direction/les-enseignantschercheurs/thierry-berges/

http://sfa.univ-poitiers.fr/m-berges-thierry-173371.kjsp

https://www.researchgate.net/profile/Thierry_Berges

Latest publications issued by Professor Berges:

1. CERVEAU N., BOUCHON D., BERGES T. & GREVE P. (2014) Molecular evolution of the androgenic hormone in terrestrial isopods. Gene 540:71-77.

2. BERNARD M., DEJOS C., BERGES T., REGNACQ M. & VOISIN P. (2014) Activation of rhodopsin gene transcription in cultured retinal precursors of chicken embryo: role of Ca2+ signaling and hyperpolarization-activated cation channels. J Neurochem. 129:85-98.

3. BARAKAT R., GOUBET I., MANON S., BERGES T. & ROSENFELD E. (2014) Unsuspected pyocyanin effect in yeast under anaerobiosis. Microbiologyopen 3:1-14.

4. DEJOS C., BERGES T., BERNARD M., REGNACQ M. and VOISIN P. Canthin-6-one displays antiproliferative activity and induces cell cycle arrest in G2/M. In préparation.

Major courses offered to students:

- L2 Life Sciences: Genetics, Microbiology and Immunology
- L2 Life Sciences: Methodology in Biomedical ResearchMéthodologies
- L3 Life Sciences: Cellular Metabolism II
- L3 Life Sciences: Methodology in gene genetics

The staff of the department does appreciate Professor Berges'es efforts to teach students effective gene techniques.

Tags: *gene expression* *transformation* *yeast two-hybrid system* *(add +)*

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