



ETB Award for the most innovative European biotech cooperation

The ETB Award honours finalised projects funded under the frame of the EUROTRANS-BIO (ETB) programme that have generated innovative scientific and technological outcomes and show high economic potential.

QuBIS project – An international success story

“Targeted functional genomics based on Mass Spectrometry (MS), Surface Plasmon Resonance imaging (SPRi) and Stable Isotope (SI)-labeling: Application towards the understanding of the function of PDZ-domains as switchboard for signal transduction.”

In a combined effort of industrial and academic partners, two quantitative methods in proteomics were developed: the platforms SILAC and SPRi.

The cooperation is based on the industrial partners Bruker Daltonik GmbH (Germany), Genoptics (France) and Silantes GmbH(Germany), and the academic partners Ecole Normale Supérieure de Cachan (ENS – France) and the Ruhr-University at Bochum (RUB – Germany).

The biological question posed by the partners at the RUB was: which proteins interact with the PDZ domains? PDZ proteins are multi-domain proteins which serve as switchboard for connecting different signal transduction chains.

SILAC and SPRi were the techniques used to identify the proteins or peptides interacting with the PDZ domains: **SILAC** is a quantitative proteomics method based on metabolic isotopic labelling of cell culture and permits determination of relative differences of proteins in cell cultures. **SPRi** (surface Plasmon resonance imaging) is a quantitative proteomics method permitting determination of interaction parameters of PDZ-domain proteins.

Impact of the ETB project

Silantes coordinated the project. It is the only European company producing stable isotopic compounds of biological origin. Silantes succeeded in extending the SILAC technology from a cell culture to in vivo application of mice and other model organisms.

Genoptics and ENS could demonstrate the potential of multiplex quantitative SPR analysis in the study of macromolecular interactions. Genoptics recently joined Horiba Scientific. Based on the results of this ETB project Horiba and Bruker Daltonics are cooperating in the field SPRi technology.

Bruker Daltonics. The implementation of SILAC and other labelled quantification workflow greatly increased the software capabilities of Brukers' ProteinScape Proteomics software and strengthened Brukers' position in the field of LC-MALDI-TOF/TOF and ESI-ion trap application.

RUB succeeded in identifying several PDZ domain-binding proteins for the scaffolding protein FRMPD2 and characterized one of these candidates (the Catenin family member p0071) in detail. The results were published.



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EUROTRANS-BIO –Programme

ETB has funded 114 biotech projects worth more than 200 Mio € – involving 280 SMEs, 97 academic organisations and 6 large companies, organised in small consortia.

The next ETB call will open on October 4th, 2011.

ETB is present at Bio-Europe 2011, visit us at booth n°43!!

