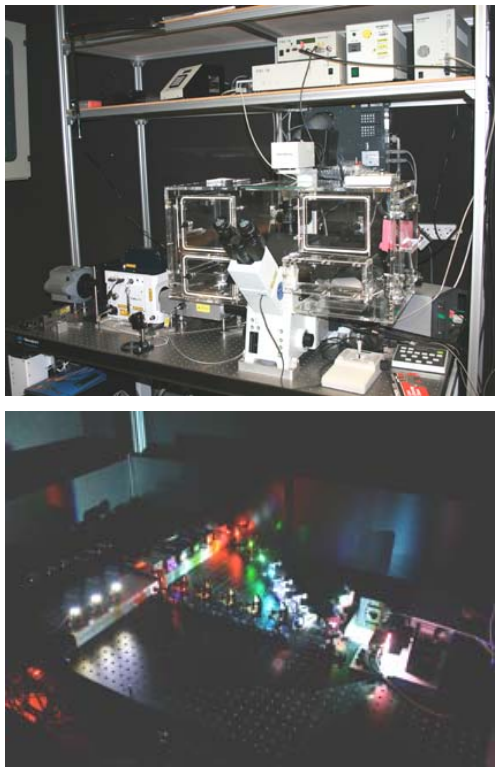
News Letter

Project BioStrength

November, 2010

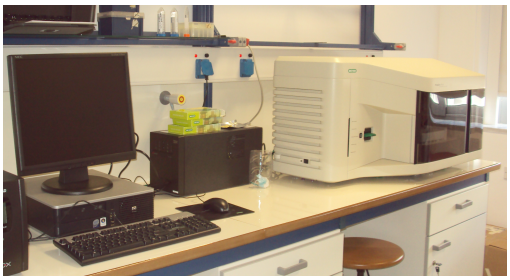
The Department of Molecular Biology and Genetics (MBG) is situated in Thrace, at the crossroad between Europe and Asia. It is the only faculty in Greece providing a curriculum on molecular biology and genetics. MBG excels in basic research, answering key biological questions with application in understanding the molecular basis of human diseases. Project BioStrength has been a major contributor of building the infrastructure and R&D capacity of the department, increasing visibility and fostering collaborations towards realization of MBG's vision of becoming a centre of research excellence in South East Europe.

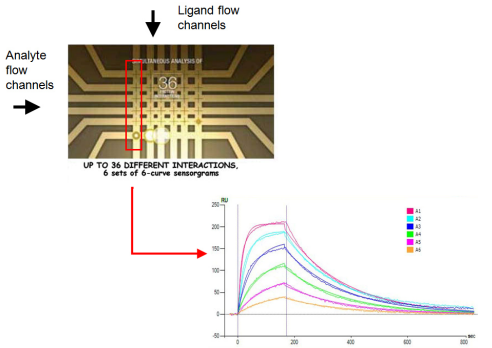
Specifically, under BioStrength we setup and operate the Cell Imaging and Biomolecular Interactions (CiBIT) core facility, a high-end unit which focuses in the areas of Bioimaging and Biomolecular interaction analysis. CiBIT is equipped with unique in Greece state-of-the-art equipment, a customized multi-laser line modular confocal microscope and a multiplex surface plasmon resonance (SPR) biosensor. The unit operates as internal and external (from mid 2011) service providing advanced cellular imaging and characterization of *in vitro* macromolecular and target-drug interactions with support from dedicated scientific staff of international expertise. It is expected that CiBIT will sustain its function as a research and training pole, of great interest to the Greek scientific community and the wider Balkan research area



Customized Andor Revolution Spinning Disk Confocal microscope of CiBIT microcopy unit. Upper: Olympus IX81 inverted fluorescence microscope with environmental control box. Lower: Customized laser combiner

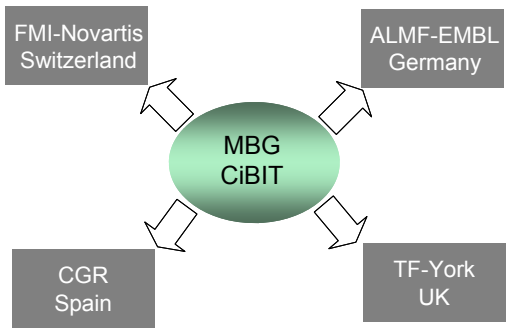
The project has also enhanced dynamic research and training links with knowledgeable institutions and partners via short-term visits (outbound and inbound). Our main partners include the Advanced Light Microscopy Facility of EMBL-Heidelberg, the Technology Facility of University of York, Friedrich Miescher Institute of Novartis Research Foundation-Basel and Center of Genetic Research, Barcelona. In addition, a number of other European research centers have been used in our knowledge-transfer network.





The molecular interactions unit of CiBIT specializes in surface plasmon resonance (SPR) technology. Upper: ProteOn XPR36 multiplex SPR biosensor. Lower: ProteOn XPR36 uses a 6×6 array allowing simultaneous analysis of 36 independent molecular interactions on the SPR chip.

Transfer of knowledge and CiBIT's training capacity have been further enhanced via successful organization of a hands-on workshop under the project, run by CiBIT in October 2010 under the title *"Biomolecular Interactions"*. The workshop focused mainly on the use of SPR technology for the qualitative and quantitative analysis of molecular systems of biological and medical importance and attracted considerable national and international attention.



BioStrength's main partnership scheme

A second hands-on workshop and an international conference scheduled for autumn 2011 will further improve both our training abilities and our public visibility in regional, national and European level.

Overall, the endeavors envisaged in BioStrength have elevated research potential and will be instrumental to attracting further R&D funds and sustain a strong presence in the European research community, establishing MBG into an emerging regional centre of excellence with major impact to socio-economic development.