





# Participant Profile

International Bureau (IB)  
of the Federal Ministry of  
Education and Research  
(BMBF)

for the  
**Turkish-German Strategy Workshop 2006**  
**TÜBİTAK Marmara Research Center,**  
**Istanbul- Gebze Turkey**  
**13 – 15 December 2006**

K. Prank, M. Waring, U. Ahlvers, A. Bader, E. Penner, M. Möller, G. Brabant and C. Schöfl (2005) The precision of intracellular calcium spike timing in primary rat hepatocytes. *Syst. Biol.* 2:31-34

Schlesinger F, Meywirth J, Krampfl K, Grosskreutz J, Petri S, Mauth C, Just L, Bader A, Buefler J. (2004) Ligand-gated channels in early mesencephalic neuronal precursors: immunocytochemical and electrophysiological analysis. *European Journal of Neuroscience.* 2004; 19(9):2371-6

Gebhardt R, Hengstler J.G., Mueller D et al.(2003). New Hepatocyte In vitro Systems for Drug Metabolism: Metabolic Capacity and Recommendations for Application in Basic Research and Drug Development, *Standard Operation Procedures Drug Metabolism Reviews*, 35(2, 3):145-213.

Wilkening S, Stahl F, Bader A. (2003) Comparison of primary human hepatocytes and hepatoma cell line Hepg2 with regard to their biotransformation properties. *Drug Metab Dispos.* 2003 Aug;31(8):1035-42 IF: 4,015

DeBartolo, L., Bader, A., Morelli, S., Drioli, E. (2001) Evaluation of cell behaviour related to physico-chemical properties of polymeric membranes to be used in bioartificial organs, *Biomaterials* 23 (2002), 2485 – 2497

Bader, A., Hansen, T., Kirchner, G., Allmeling, C., Haverich, A., Borlak, J. T. (2000) Primary porcine enterocyte spheroidal cultures to study drug oxidation. *Brit. J. Pharmacology* 129 331-342

## 2. Past and present research collaborations

<b>Are you familiar with the European Framework Programme?</b>	<input checked="" type="checkbox"/> <b>Yes</b> <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> with Framework Programme 5  <input checked="" type="checkbox"/> with Framework Programme 6  <input checked="" type="checkbox"/> with Framework Programme 7         </div> <input type="checkbox"/> <b>No</b>				
<b>EU-projects you are involved in:</b>	<table border="1"> <tr> <td style="vertical-align: top;"><b>Past projects</b></td> <td> <b>Programme title / contract number / title / acronym / your function (coordinator / partner / contractor)</b>            HEPADNA - Development of assays for the detection and prediction of co- and anti- mutagenic constituents in food with cells of human origin; 1999-00810; partner            IMBIOTOR- Development of stress responsive bioreactors for Tissue Engineering; G1RG-CT-2000-0293; partner         </td> </tr> <tr> <td style="vertical-align: top;"><b>Present projects</b></td> <td>LIVEBIOMAT- Development of novel polymeric biomaterials for in vitro and in vivo liver reconstruction; 013653; coordinator</td> </tr> </table>	<b>Past projects</b>	<b>Programme title / contract number / title / acronym / your function (coordinator / partner / contractor)</b> HEPADNA - Development of assays for the detection and prediction of co- and anti- mutagenic constituents in food with cells of human origin; 1999-00810; partner IMBIOTOR- Development of stress responsive bioreactors for Tissue Engineering; G1RG-CT-2000-0293; partner	<b>Present projects</b>	LIVEBIOMAT- Development of novel polymeric biomaterials for in vitro and in vivo liver reconstruction; 013653; coordinator
<b>Past projects</b>	<b>Programme title / contract number / title / acronym / your function (coordinator / partner / contractor)</b> HEPADNA - Development of assays for the detection and prediction of co- and anti- mutagenic constituents in food with cells of human origin; 1999-00810; partner IMBIOTOR- Development of stress responsive bioreactors for Tissue Engineering; G1RG-CT-2000-0293; partner				
<b>Present projects</b>	LIVEBIOMAT- Development of novel polymeric biomaterials for in vitro and in vivo liver reconstruction; 013653; coordinator				
<b>Other international collaborations:</b>	European Virtual Institute Regenerative Medicine				
<b>Name(s) and contact details of potential partners:</b>	<b>If you would like to suggest the participation of particular partners from the partner country based on existing contacts or collaboration experience, you are welcome to indicate their names and contact details below:</b>				



# Participant Profile

International Bureau (IB)  
of the Federal Ministry of  
Education and Research  
(BMBF)

for the  
**Turkish-German Strategy Workshop 2006**  
**TÜBİTAK Marmara Research Center,**  
**Istanbul- Gebze Turkey**  
**13 – 15 December 2006**

### 3. Presentation at the Workshop

I will give a presentation at the workshop (approx. 10 min.) to present my institution, my expertise, and my collaboration interests. The contents of my presentations is summarised below (max. 1 page).

Regenerative Medicine is leading to a new paradigm in medicine by transferring heterologous concepts to the onset of autologous technologies, that could lead to tissue regeneration *in vivo*. The long-term goal of this new field is to create a systematized knowledge of individualized therapy from non-biological organ replacement, through hybridized systems, to fully biological implants and finally to human regenerative systems *in vivo*. This presentation gives an overview of the field focusing on our previous developments. Three model tissues including bone, pulmonary heart valves and liver tissue will be presented with respect to tissue regeneration. Extracellular matrix regulates tissue differentiation in at least 3 ways including the biochemical composition of the matrix constituents, the 3-D organization or architecture and via mechanical forces mediated to the cells by the matrix. The *in vivo* extracellular matrix constitutes a biopolymer which potentially plays a permissive role for tissue differentiation. In the cardiovascular model all 3 aspects of the extracellular matrix composition, architecture and mechanical forces come together. Autologous remodelling initiating the *de novo* formation of an autologous valve structure occurred after implantation. The liver model clearly demonstrates that geometric aspects of the extracellular matrix are crucial for the *in vitro* function of liver cells cultured in the physiologic plate configuration. A novel growth factor the regenerates liver cells *in vitro* is discussed. Bioreactor technologies for tissue design including bone / cartilage systems are discussed.

**I agree with the publication of my data on the Workshop website!**

**PLEASE FILL IN THIS FORM UNTIL 22 SEPT. 2006 AND RETURN IT TO:**

**Internationales Buero des BMBF**  
[s.krummacher@fz-juelich.de](mailto:s.krummacher@fz-juelich.de);  
[Christian.schache@dlr.de](mailto:Christian.schache@dlr.de)

**TÜBİTAK-Marmara Research Center**  
[Sunullah.Ozbek@mam.gov.tr](mailto:Sunullah.Ozbek@mam.gov.tr);  
[Artac.Turker@mam.gov.tr](mailto:Artac.Turker@mam.gov.tr)