



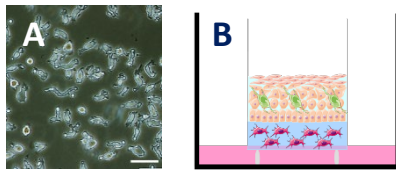
# Newsletter

Berlin-Brandenburg research platform BB3R – Issue 16

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## **BB3R introduces: Working group of Prof. Kleuser**

The research group is focusing on the development of innovative cocultivation methods for skin and immune cells. This includes both two- and three-dimensional cell culture and intends the reduction of animal tests for the assessment of skin sensitizing potential. Despite substantial efforts to develop alternative methods, nearly 6000 mice and guinea pigs were still used for this purpose in Germany in 2019 (source: BMEL). Existing *in vitro* methods often fail to represent the complexities involved in skin sensitization and are therefore not suitable as stand-alone assays. The 2D or 3D cocultivation of keratinocytes, fibroblasts, epidermal Langerhans cells and T cells allows the interaction of all involved cell types, closely mimicking physiological processes in the skin. In the long-term, such models could potentially reduce or even replace the murine local lymph node assay (OECD TG429) and the guinea pig assays (OECD TG406). In addition, subject-specific isolation of skin and immune cells from human hair follicles and peripheral blood, respectively, allows the investigation of differences between autologous and allogeneic coculture as well as the development of personalized approaches in toxicological testing and preclinical research.



**Fig. 1** (A) *Ex vivo* differentiated monocyte-derived Langerhans cells (MoLC). (B) Incorporation of MoLC (green) into reconstructed human skin

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## **New Publications:**

### **Computational Prediction of Potential Inhibitors of the Main Protease of SARS-CoV-2**

R. Abel , M. Paredes Ramos 2 , Q. Chen , H.Pérez-Sánchez , F. Coluzzi, M. Rocco , P. Marchetti, C. Mura , M. Simmaco , P.E Bourne, R. Preissner , P. Banerjee; *Front Chem* 2020 Dec 23;8:590263.

### **Clean bioprinting - Fabrication of 3D organ models devoid of animal components**

J. Berg 1 , J. Kurreck 1; *ALTEX*. 2021;38(2):269-288.

### **The E-Morph Assay: Identification and characterization of environmental chemicals with estrogenic activity based on quantitative changes in cell-cell contact organization of breast cancer cells**

M. Kornhuber, S. Dunst , G. Schönfelder , M.Oelgeschläger; *Environ Int* . 2021 Apr;149:106411.

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