



Newsletter

Berlin-Brandenburg research platform BB3R – Issue 9

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BB3R introduces: Skin aging - Highly relevant, extremely diverse, difficult to model (AG Schäfer-Korting / Zoschke, Freie Universität Berlin)

Ageing impairs cellular function and tissue regeneration, promotes disease, and ultimately leads to death. Changes in organ function occur throughout an individual's whole lifespan, and notable differences can be seen among juvenile, adult and aged people. However, the impact of ageing is underrepresented in preclinical research, even though it might contribute to the high attrition rate in current drug development. Human cell-based disease models close the species gap, but the heterogeneity seen among human patients has not yet been adequately reflected.

The research group investigates the impact of ageing on tissue homeostasis, being the basis for the development of e.g. tumor models for aged patients. To qualify the *ex vivo* models for non-clinical applications in substance evaluation, the comparison to human *in vivo* data remains essential. Thus, we designed a head-to-head comparison of *Lactococcus lactis* effects in reconstructed human skin and human volunteers. The results in both models and human volunteers show similar effects of *Lactococcus lactis* on the skin barrier as well the high biocompatibility of the active substance.

Currently, we establish skin and mucosa tumor models and test the efficacy of clinically used as well as of experimental drugs.

New publications:

HAUSMANN, C., ZOSCHKE, C., WOLFF, C., DARVIN, M.E., SOCHOROVÁ, M., KOVÁČIK, A., WANJIKU, B., SCHUMACHER, F., TIGGES, J., KLEUSER, B., LADEMANN, J., FRITSCHKE, E., VÁVROVÁ, K., MA, N. & SCHÄFER-KORTING, M. 2019. Fibroblast origin shapes tissue homeostasis, epidermal differentiation, and drug uptake. Sci Rep, 9, 2913.

HAUSMANN, C.*, HERTZ-KLEPTOW, D.*, ZOSCHKE, C., WANJIKU, B., WENTZIEN-ODENTHAL, A., KERSCHER, M., & SCHÄFER-KORTING, M. 2019. Reconstructed human epidermis predicts barrier improving effects of *Lactococcus lactis* emulsion in humans. Skin Pharm Physiol, 32, 72-80.

BALANSIN RIGON, R.*, KAESSMEYER, S.*, WOLFF, C., HAUSMANN, C., ZHANG, N., SOCHOROVÁ, M., KOVÁČIK, A., HAAG, R., VÁVROVÁ, K., ULRICH, M., SCHÄFER-KORTING, M. & ZOSCHKE, C., 2018. Ultrastructural and molecular analysis of ribose-induced glycosylated reconstructed human skin. Int J Mol Sci, 19, 3521.

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