

Animal-free science at cellasys

J. Wiest

2018/11/16

Berlin / Germany

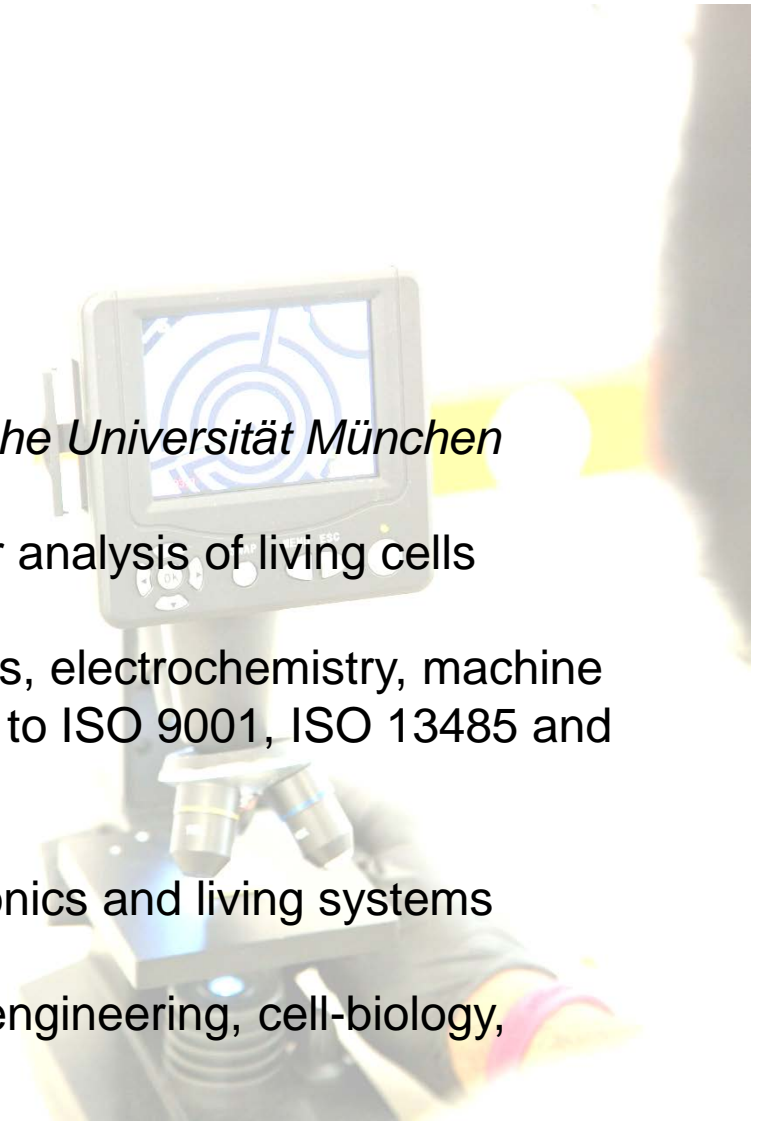
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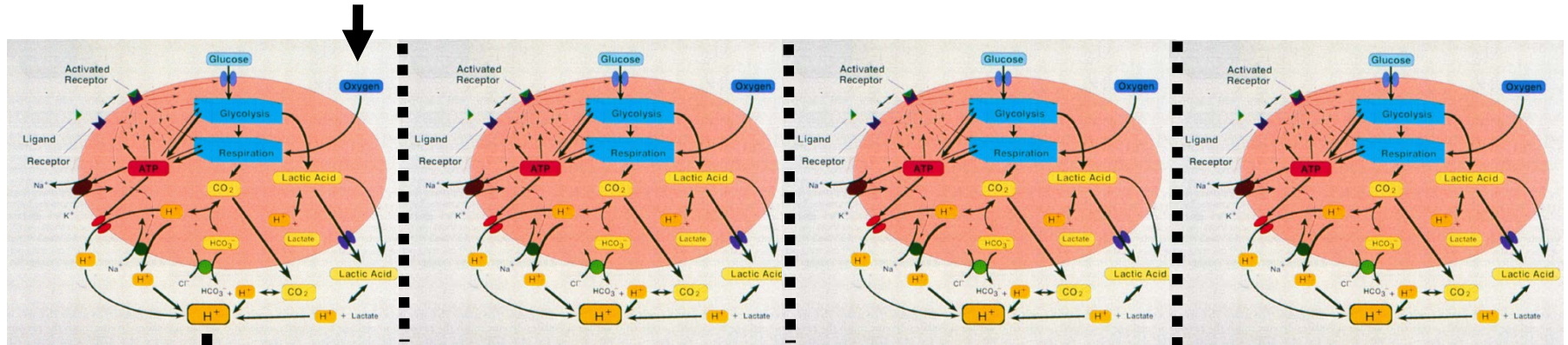
cellasys facts

- Privately owned Germany based SME
- Founded 2007 as spin off from *Technische Universität München*
- Provider of instrumentation / services for analysis of living cells
- Equipped with laboratories for electronics, electrochemistry, machine shop and cell culture laboratory according to ISO 9001, ISO 13485 and good laboratory practice (GLP)
- Working at the interface between electronics and living systems
- Knowledge in interdisciplinary fields as engineering, cell-biology, informatics, toxicology, ...



Metabolism of living cells

Cellular respiration

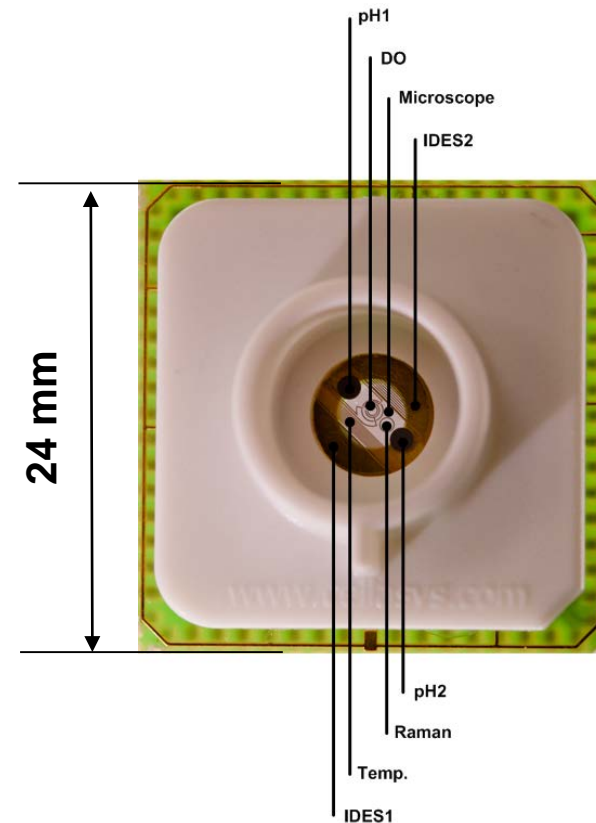


Extracellular acidification

Adhesion / Morphology

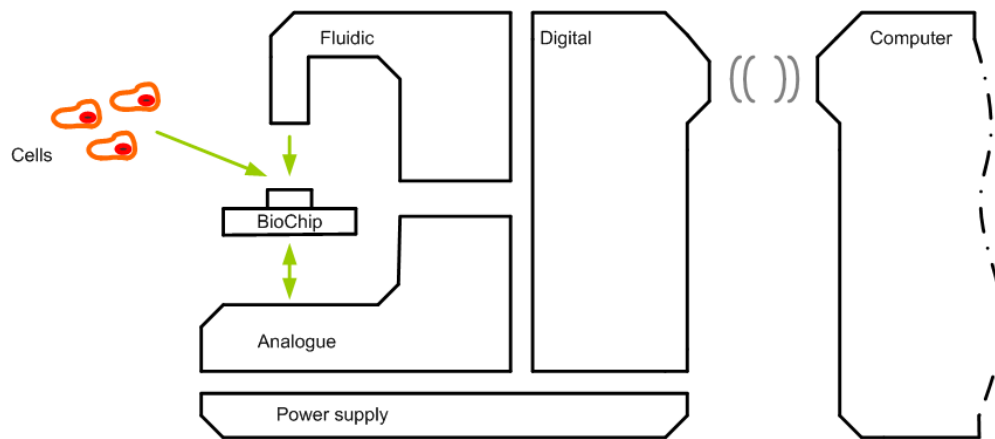
BioChip-D

- Extracellular acidification
- Cellular respiration
- Bio-impedance
- Temperature
- Optical access
- Resistant to 70% Ethanol



6xIMOLA-IVD

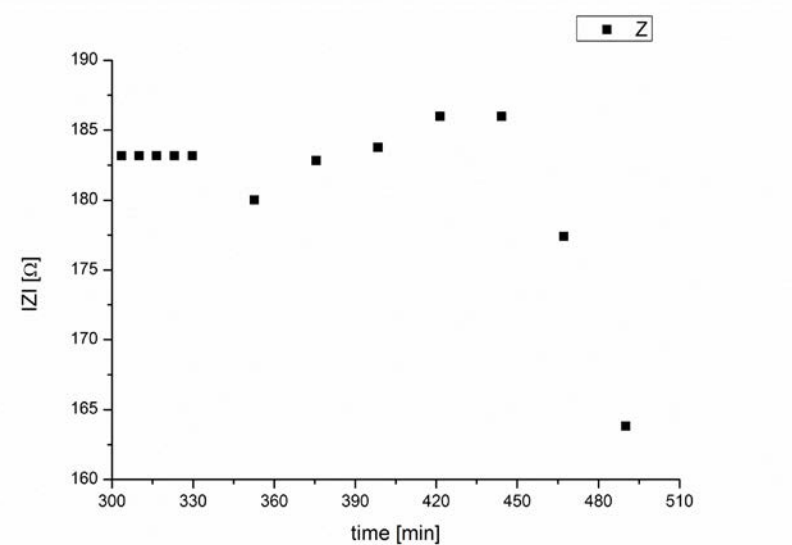
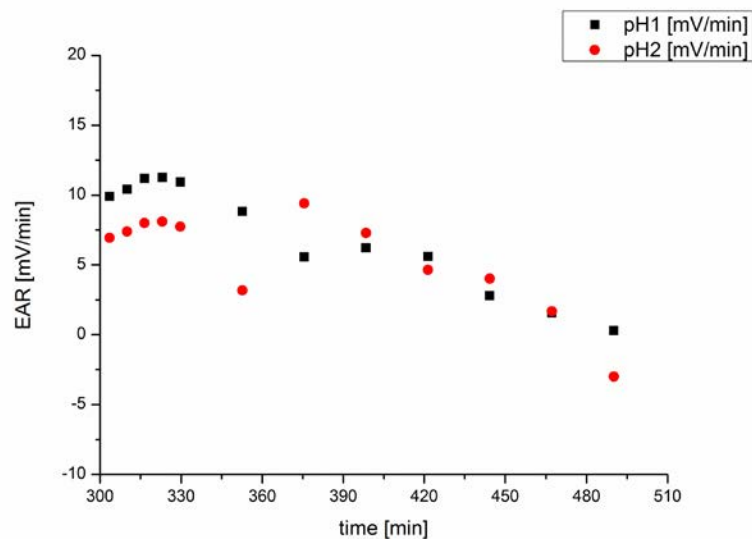
Parallel, label-free monitoring of cellular vitality via monitoring of extracellular acidification, cellular respiration and bio-impedance.



Vegan lab

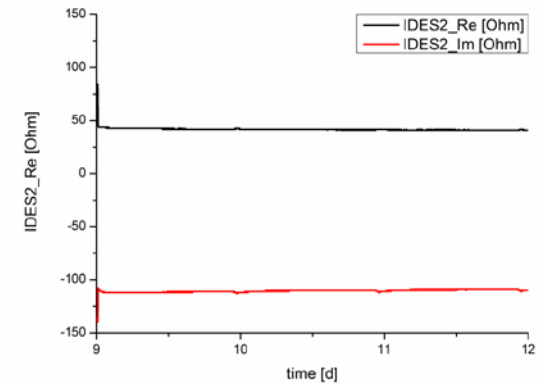
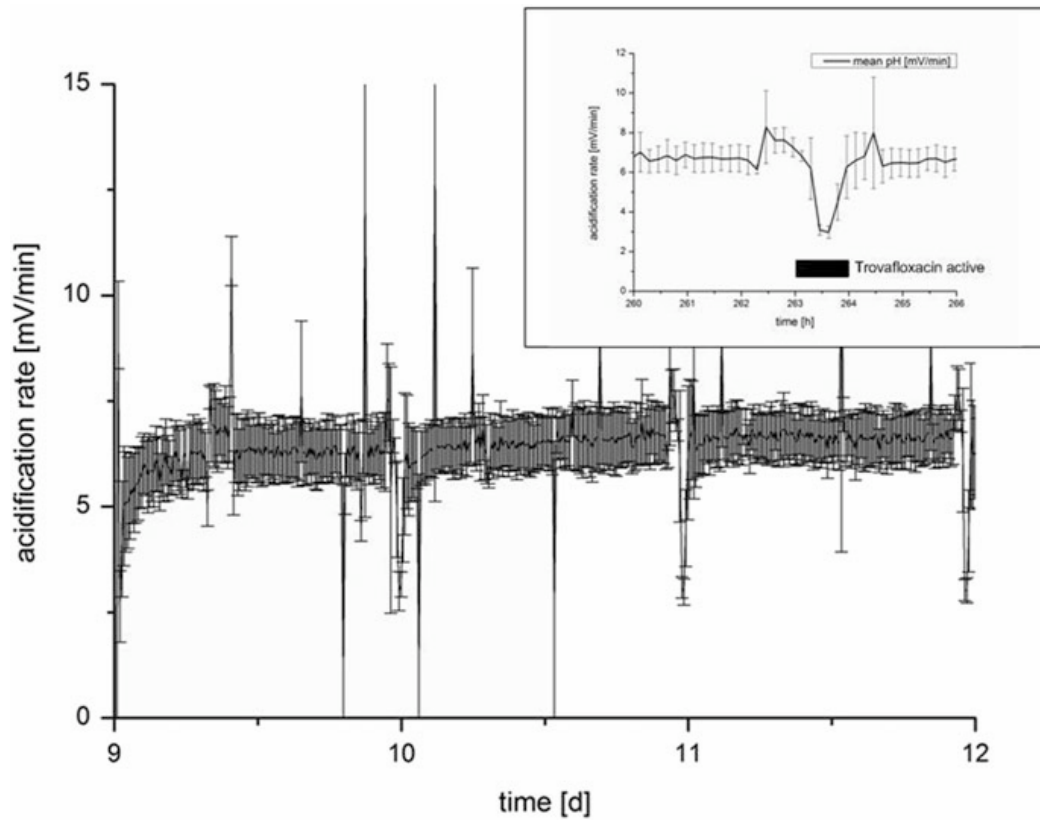
- Established an animal-product free cell culture lab:
Kolar, R., Wiest, J., Feil, M. and Weber, T.: Chemically defined cell culture practice of L929 fibroblasts, ALTEX Proceedings, 2017, 6, 1, 203, ISSN 2194-0479
- Adopted L929 to chemically defined medium
van der Valk, J., Bieback, K., Buta, Ch., Cochrane, B. Dirks, W.G., Fu, J., Hickman, J.J., Hohensee, Ch., Kolar, R., Liebsch, M., Pistolla, F., Schulz, M., Thieme, D., Weber, T., Wiest, J., Winkler, S., Gstraunthaler, G.: Fetal Bovine Serum (FBS): Past – Present – Future, ALTEX, 2018, 35/1, 99-118, doi:10.14573/altex.1705101
- Developed an FBS free test for cytotoxicity:
Wiest, J.: Chemisch definiert - ein zellbasierter Zytotoxizitätsassay ohne fötales Kälberserum. BIoSpektrum, 2017, 23: 61. doi:10.1007/s12268-017-0768-6

Cytosensor – Eye Irritation

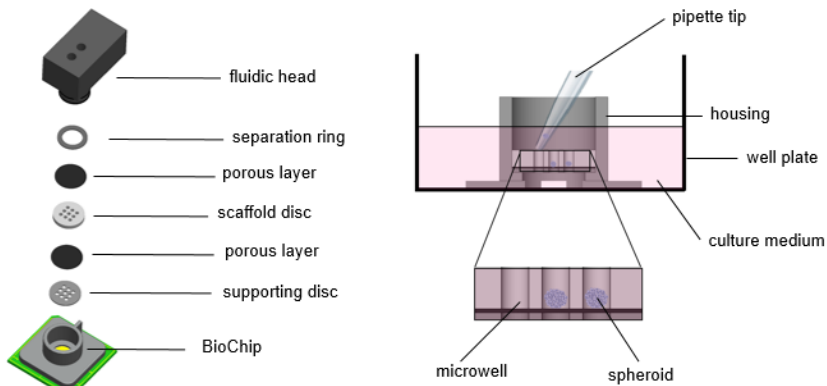


Effect of seven dilutions of SDS toward L929 fibroblasts (left: extracellular acidification rate; right: impedance).

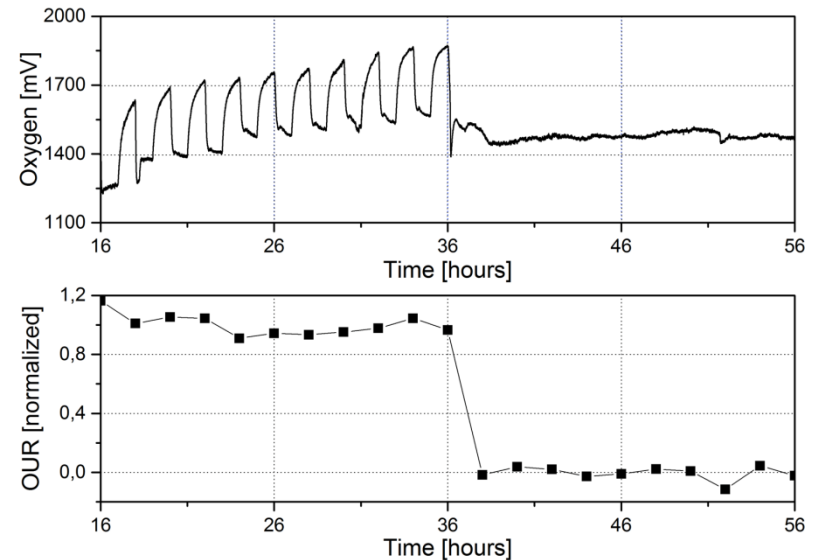
28 day repeated dose (Trovafloracin)



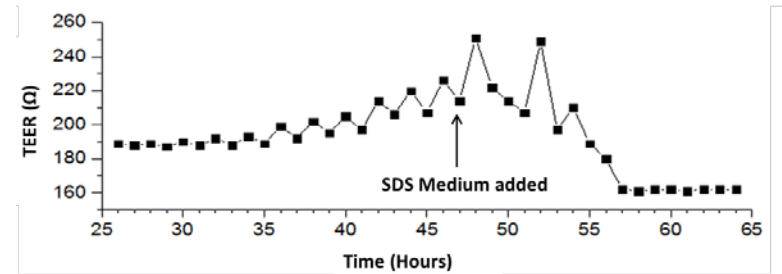
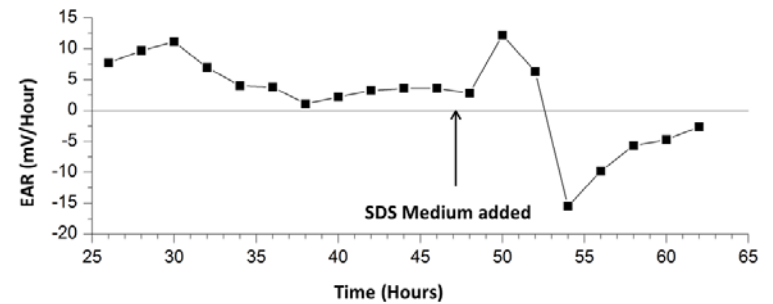
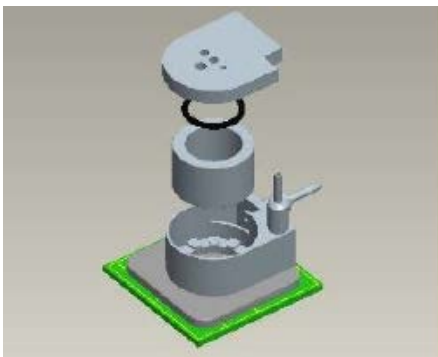
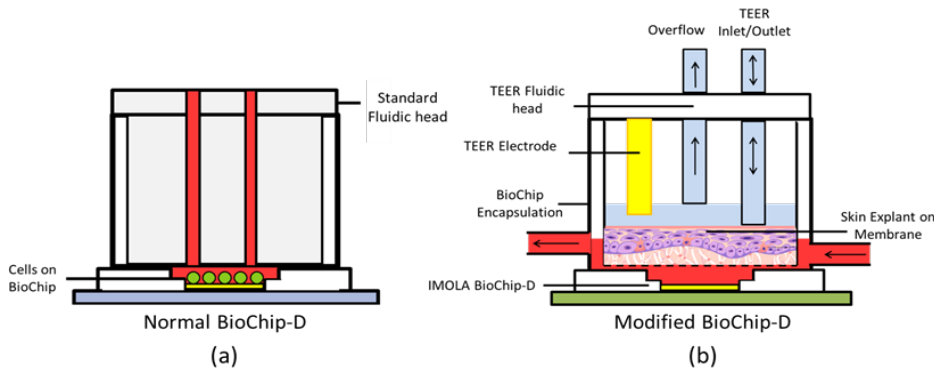
3D spheroid monitoring



Oxygen monitoring



Skin-on-a-chip



Dankeschön - Thank you!

Further information:
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