New 3D-Tissue/ Whole-blood Co-culture Models Combined with Multi-Analyte Profile (MAP) Analyses for *In-vivo*-like Immunopharmacology

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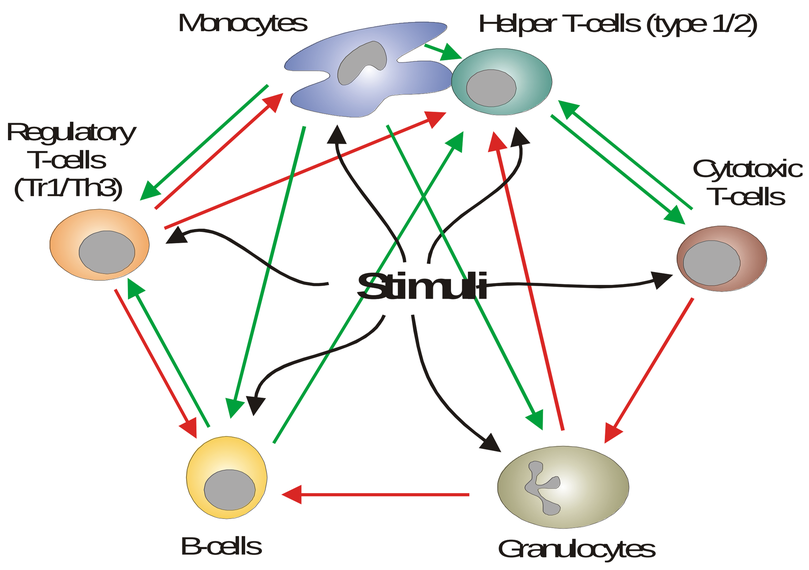
Background

Complex interaction of immunocompetent cells

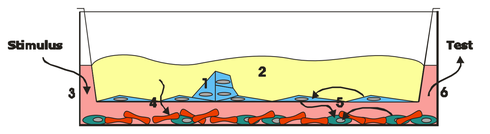


The dialogue between cells of the immune system and cells of various tissues controls inflammation and is mostly mediated by numerous cytokines, chemokines and other messenger molecules. This signaling network can be influenced therapeutically by drugs.

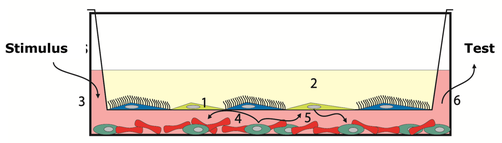
A reliable analysis of immunopharmacological activities of drugs in vitro can only be achieved in an environment that does represent the complexity of such regulatory feedback systems. We therefore developed a series of proprietary organotypic Transwell® co-culture systems, combining human whole-blood cultures with human cultures of e.g. differentiated intestinal epithelia, 3D epidermis, bronchial epithelia, etc. These allow to study drug effects on immune cells from healthy donors in completely human inflamed tissue environments.

Multi-Analyte Profiles were used as complex readouts when testing the culture fluids for drug effects on cell activation (Myriad-RBM MAP analysis via Luminex®).

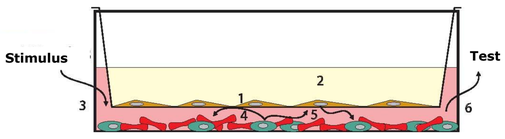
HOT-Co gut:
Co-culture of human
- intestinal epithelium
- fresh whole-blood



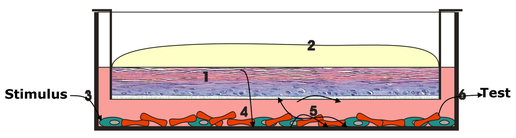
HOT-Co lung II:
Co-culture of human
- bronchial epithelium
- fresh whole-blood



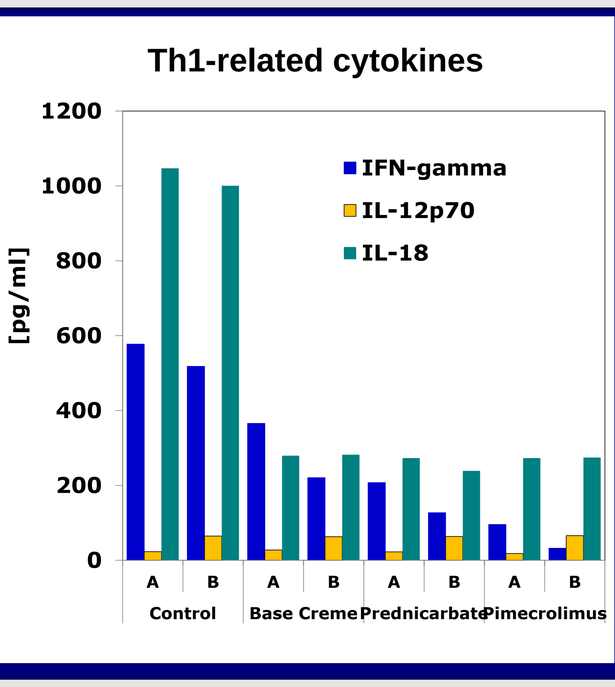
HOT-Co joint:
Co-culture of human
- synovial fibroblasts
- fresh whole-blood

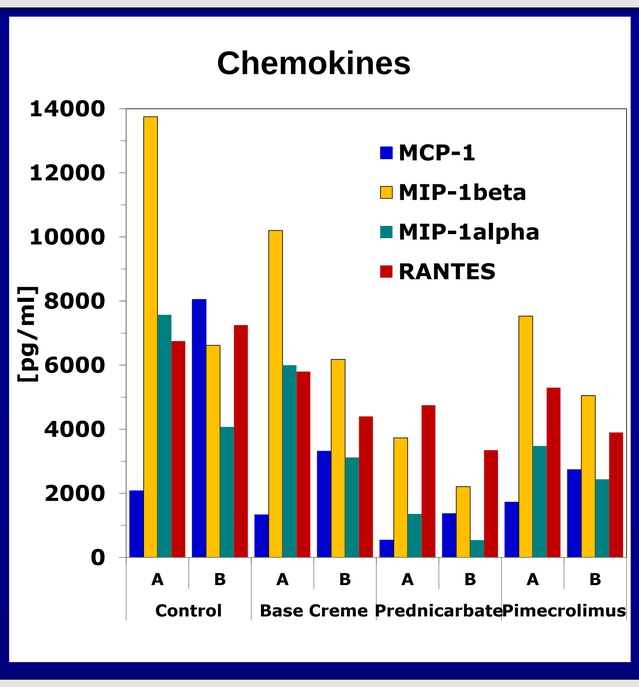


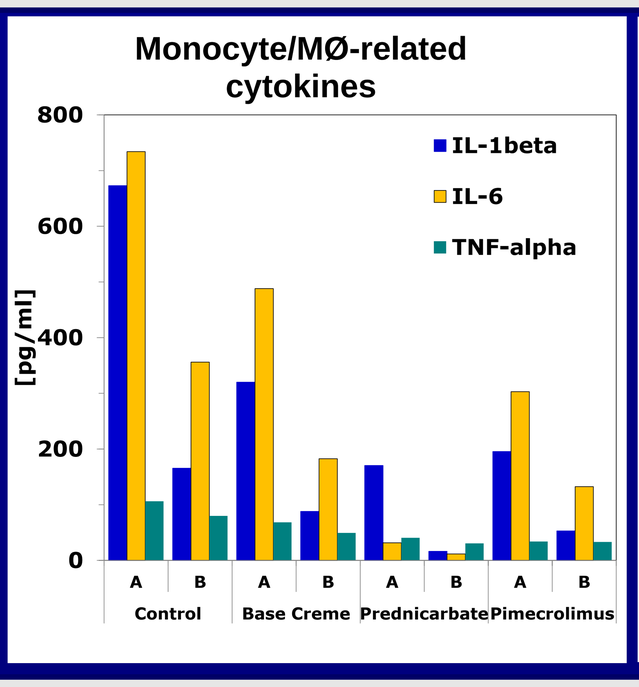
HOT-Co skin:
Co-culture of human
- 3D epidermis
- fresh whole-blood

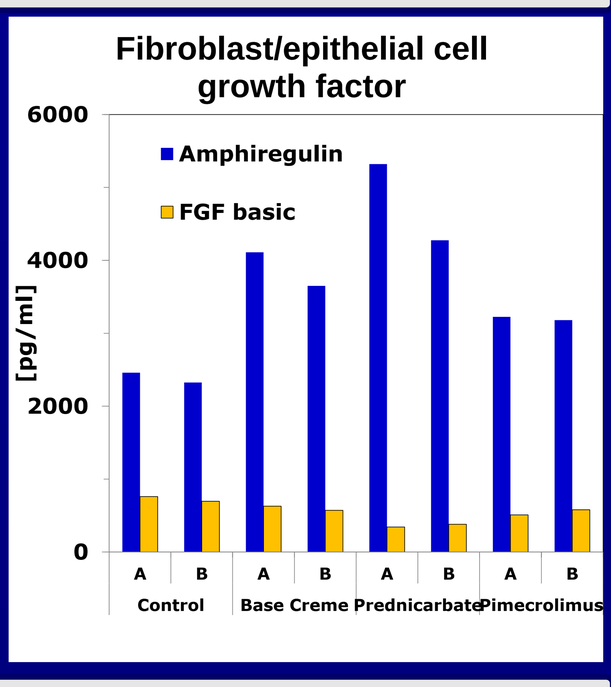


HOT-Co skin (Co-culture of 3D differentiated human epidermis + human whole-blood)

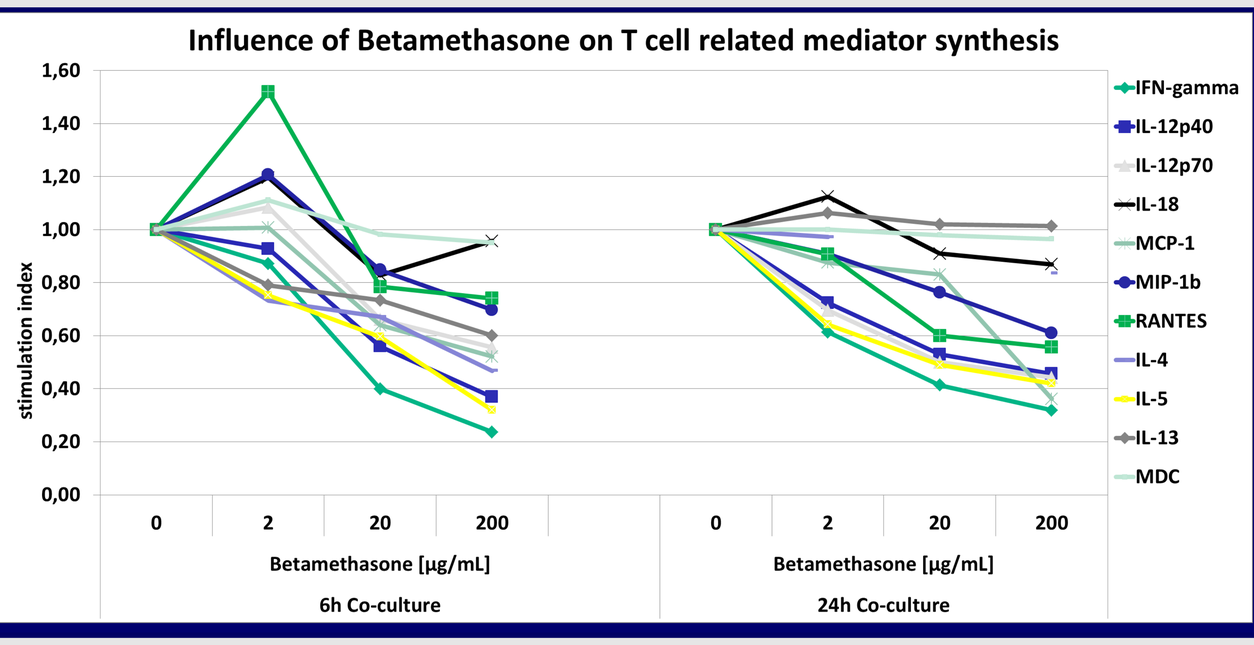


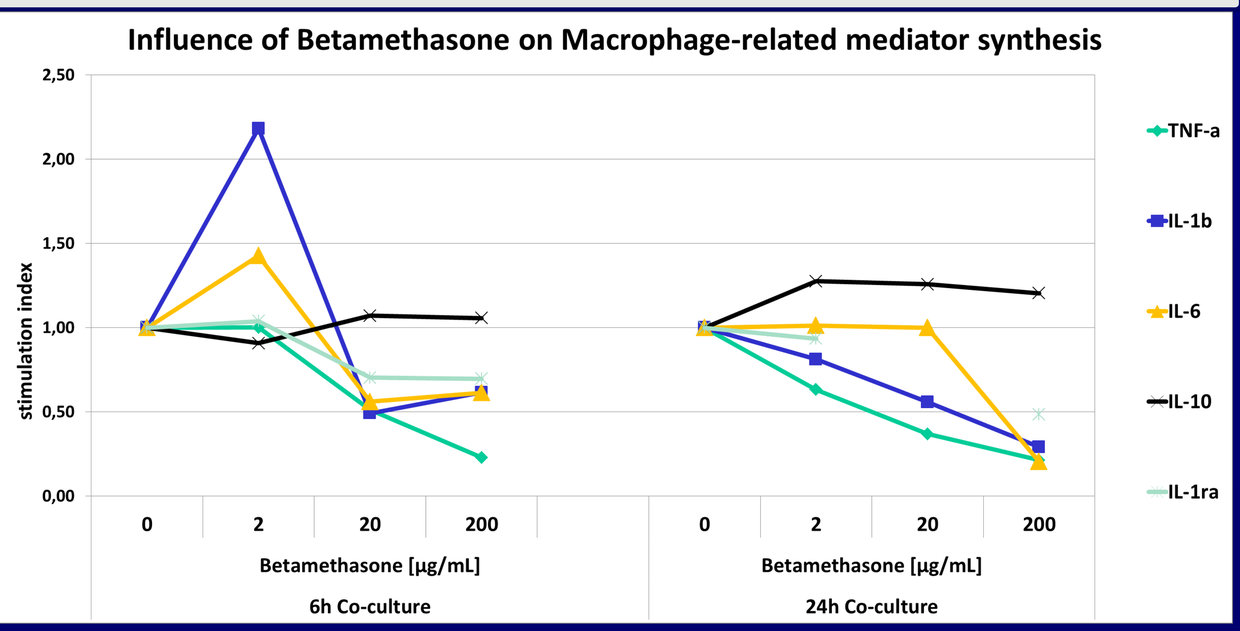




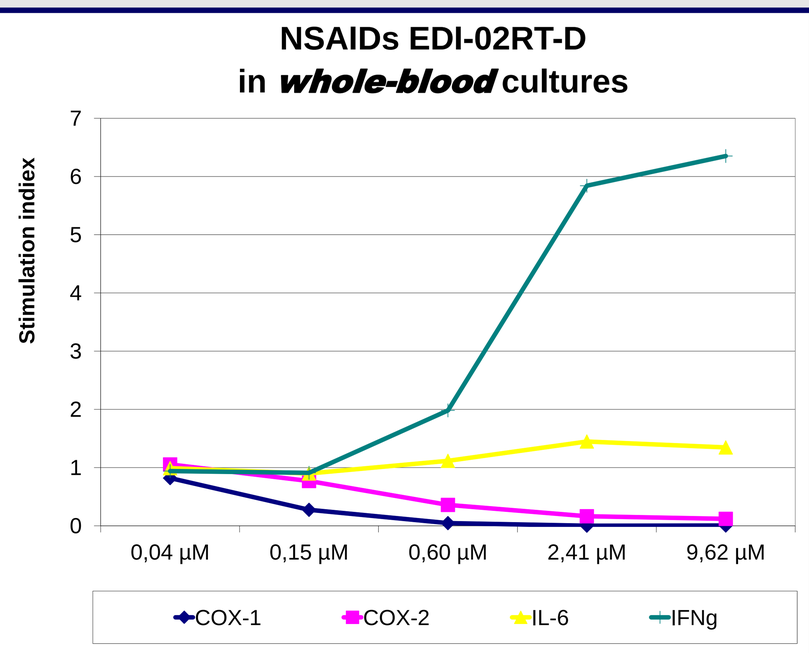


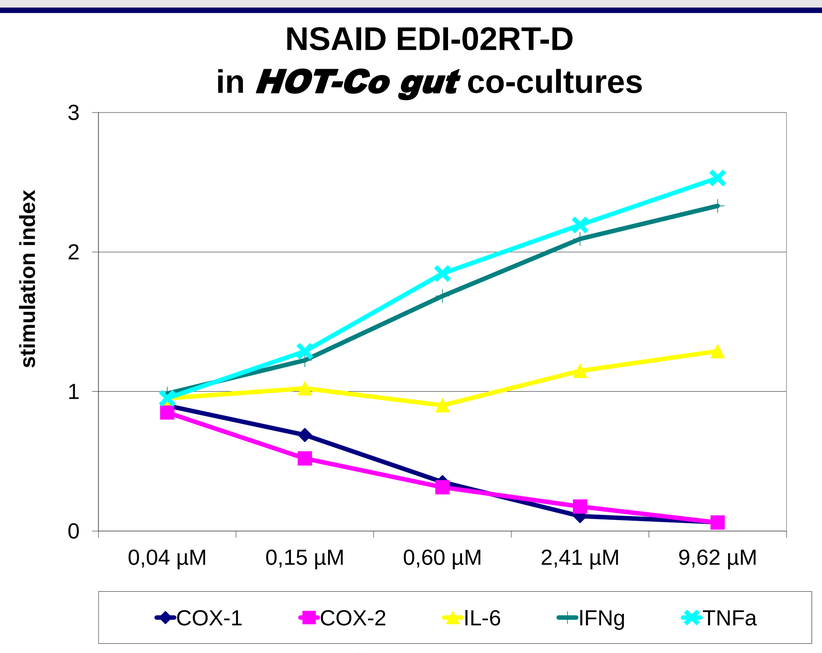
EDI-Co lung II (Co-culture of differentiated human bronchial epithelium + human whole-blood)

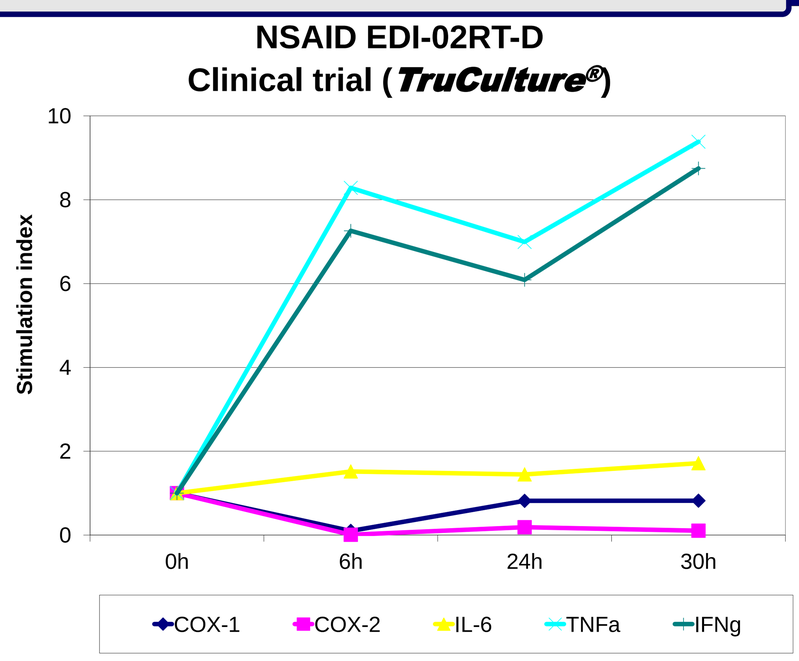




Translational value of whole-blood / whole-blood co-cultures / whole-blood *TruCulture®*







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