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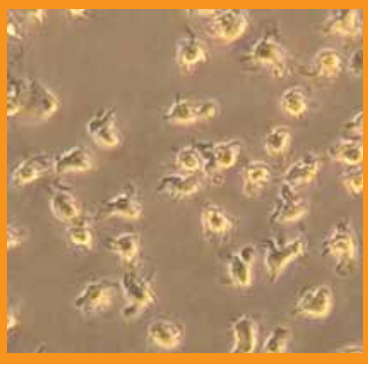
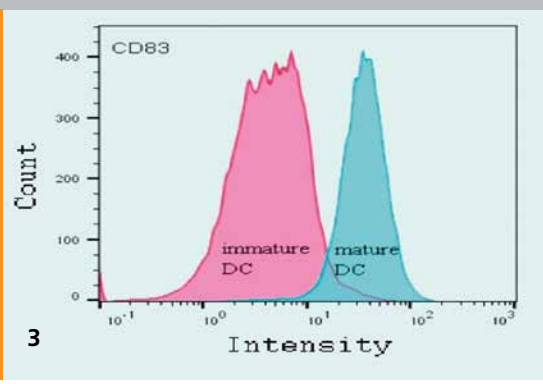
FRAUNHOFER INSTITUTE OF MOLECULAR BIOLOGY AND APPLIED ECOLOGY IME





1 *Biacore device @ Fraunhofer IME / Susanne Schiffmann*

2 *Dendritic Cells@ Fraunhofer IME / Thomas Ulshöfer*

3 *Flow cytometry histogram @ Fraunhofer IME / Susanne Schiffmann*

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IMMUNE CELL FUNCTION TESTS

A wide variety of in-vitro immune cell function tests are available within the Fraunhofer IME, branch for Translational Medicine and Pharmacology. Emphasis is laid on immune cell activity and immunogenicity. Maturation, differentiation, activation, polarization and proliferation of primary human immune cells (monocytes, dendritic cells, T-cells) are performed. Furthermore, assays for the determination of neutralizing antibodies in serum of patients treated with biologicals have been established and can be customized. State-of-the art cellular, immunological, biochemical, analytical, proteomic and genomic techniques are employed.

Immune cell function test systems

- Differentiation/activation of human **dendritic cells**
- Differentiation/polarization of human **M1-/M2-Macrophages**
- Activation/proliferation of human **T-cells (TH_1, TH_2, TH_{17}, T_{reg})**
- Co-culture of human **DC and T-cells**

Read-Outs: Change in morphology, cytokine/chemokine determination (mRNA/protein level), surface marker determination (flow cytometry), inflammatory mediator analysis (e.g. NO, PGE_2, ROS), metabolic alterations (Oxygen consumption rate (OCR), extracellular acidification rates (ECARs))

Assay for neutralizing antibody determination

- Determination of biologicals using surface plasmon resonance (SPR) technology or ELISA
- Determination of neutralizing antibodies against the biologicals using SPR technology or ELISA

Selected publication

Shiratori H, Feinweber C, Luckhardt S, Wallner N, Geisslinger G, Weigert A, Parnham MJ. An in vitro test system for compounds that modulate human inflammatory macrophage polarization. European Journal of Pharmacology 2018;833:328-338. doi.org/10.1016/j.ejphar.2018.06.017.