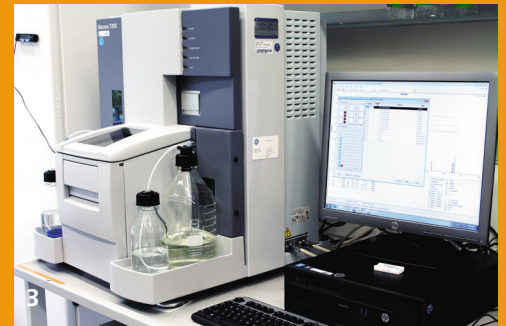
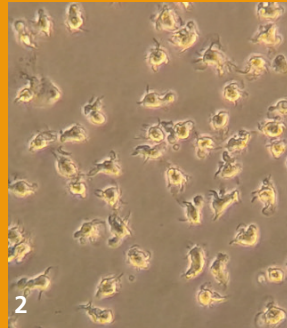
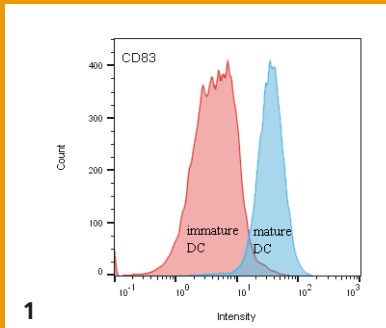




# Fraunhofer IME

FRAUNHOFER INSTITUTE FOR MOLECULAR BIOLOGY AND APPLIED ECOLOGY IME



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- 1 *Flow cytometry histogram*
- 2 *Image of mature DCs*
- 3 *Biacore device*

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## IMMUNE CELL FUNCTION TESTS

A wide variety of in-vitro immune cell function tests are available within the Fraunhofer IME Project Group 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.

### TECHNIQUES AND METHODS

Cell culture techniques

- Apoptosis assay, proliferation assay, migration assay, adhesion assay

Imaging methods

- Imaging of surface proteins on human primary cells by flow cytometry

Analysis of inflammatory mediators

- LC-MS/MS of lipid mediators such as sphingolipids, eicosanoids, endocannabinoids, lysophosphatidic acids in plasma/serum or immune cells
- Flow cytometry or ELISA based analysis of cytokines and chemokines

- Quantitative PCR based analysis of mRNA of cytokines, chemokines, transcription factors
- Surface plasmon resonance based analysis of proteins

### TEST SYSTEMS AND ASSAYS

Immune cell function test systems

- Differentiation/activation of human dendritic cells
- Differentiation/polarization of human M1-/M2-Macrophages
- Activation/proliferation of human T cells (TH1, TH2, TH17, Treg)
- Co-culture of human DC and T cells

*Read-Outs:* Change in morphology, cytokine/chemokine (mRNA/protein level) determination, surface marker determination (flow cytometry), inflammatory mediator analysis (e.g. NO, PGE2)

Assay for neutralizing antibody determination

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

