CBmed
BIOMARKER RESEARCH

Immunology

Project Leader
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CBmed
is an internationally recognized biomarker research center with a focus on cancer, metabolism and inflammation.
www.cbmed.at

In cooperation with

Medical University of Graz

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FFG

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Das Land Steiermark

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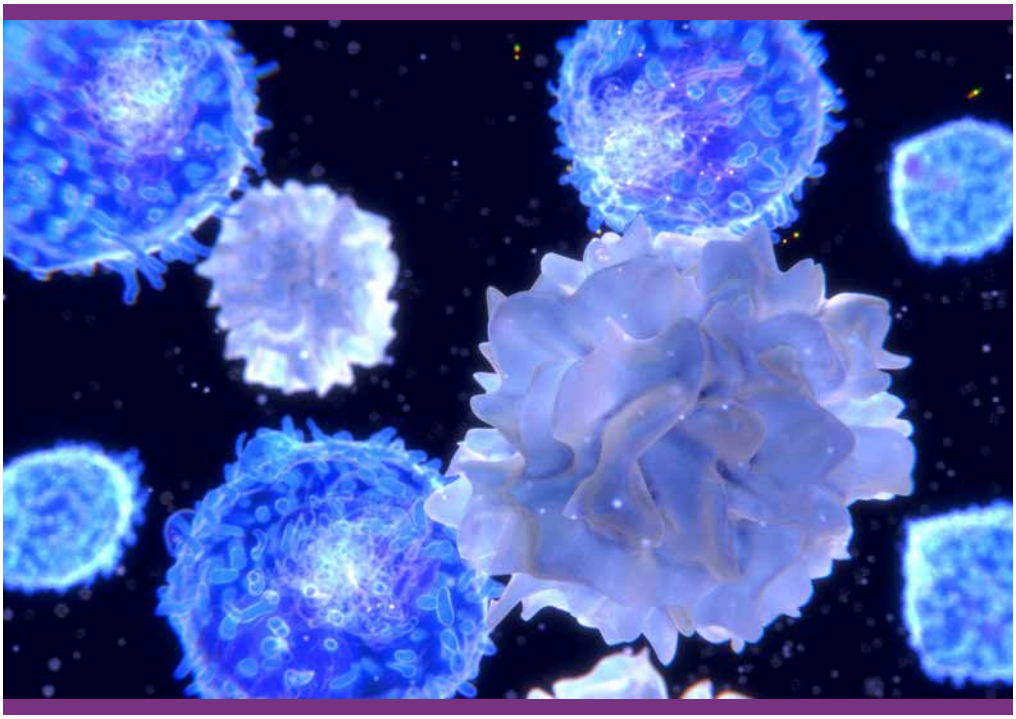
COMET
Competence Centers for Excellent Technologies



The immune system is one of the most complex systems in the human body involved in almost all disease patterns. High-throughput methods enable the assessment of changes in protein patterns of immune cells that are relevant for disease related diagnosis, prognosis and prediction.

Immunophenotyping

- **Diagnostic, prognostic and predictive biomarkers** for immune defects can be measured long before clinical symptoms appear.
- **Highly standardized methods** enable sensitive and comprehensive cell biology analysis.
- **Immune signatures are obtained** for most human diseases where immune cells are affected or contribute to pathophysiology.

Our Expertise

- Basic research, preclinical and clinical studies
- Close cooperation with large Austrian clinical institutions in Graz and Vienna
- Patients recruitment according to customer needs
- A one-stop solution from patient recruitment to professional data management and analysis
- High quality workflow

Established Patient Cohorts

In close cooperation with the Medical University of Graz and Vienna we can offer adequate numbers of almost any patient cohort tailored to customer needs.

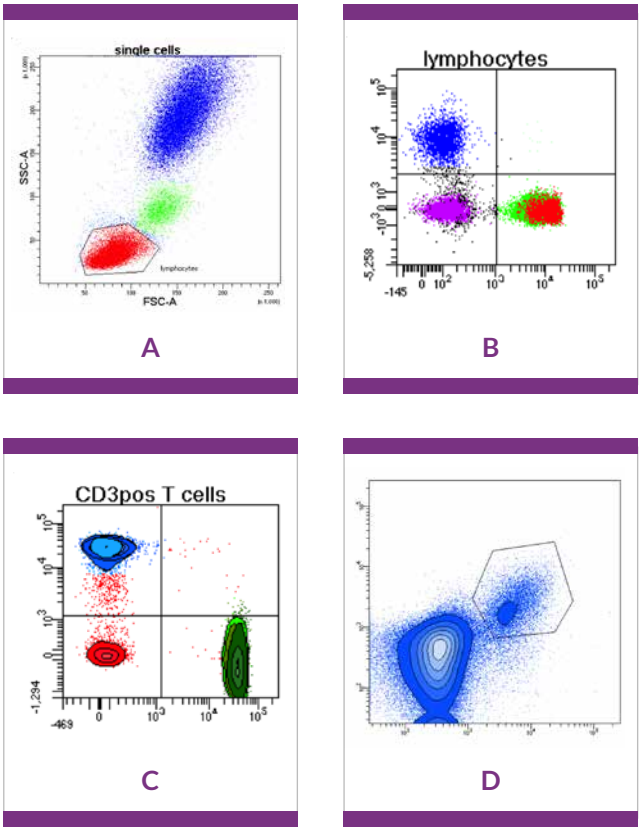
- Pediatric and adult type 1 diabetes mellitus
- First degree relatives of T1D patients
- Type 2 diabetes mellitus
- Rheumatoid diseases, sclerosis, SLE
- Kidney transplantation
- Inflammatory bowel diseases
- Cancer
- Matched healthy controls

Our Resources

We offer state-of-the-art technologies for quantification and functional assessment of peripheral immune cells and tissue infiltrating cells by using highly standardized laboratory methods and professional clinical data assessment.

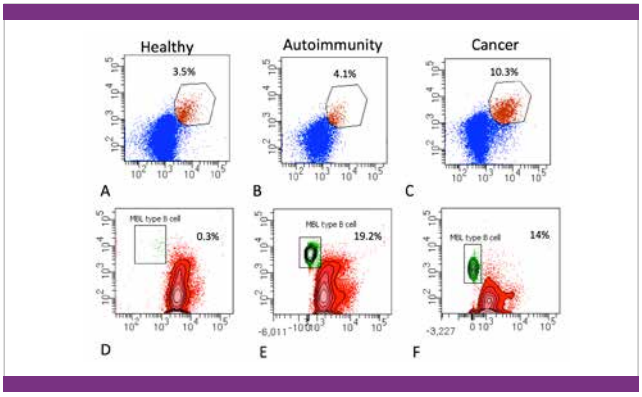
- FACS platform (BD LSRFortessa)
- Quantitative cytokine assays (ELISA, ELISpot)
- Chemotaxis assay
- Co-culture assays
- Proliferation and cell stimulation tests
- Primary cell cultures & immortalized cultures
- Stem cell isolation and culturing methods
- Professional clinical data management

CurrentProjects



FACS analysis of peripheral regulatory T cells in type 1 diabetes;
A. *FSC/SSC plot showing size and granularity of the cells;*
B. *CD3 staining for T cells;*
C. *CD4 and CD8 staining for the discrimination of T helper and cytotoxic cells;*
D. *regulatory T cell staining (CD4posCD25hiCD127lowFoxP3hi)*

FACS Laboratory



Different numbers of T- and B-cell subtypes in the peripheral blood of healthy controls, autoimmune patients, and newly-diagnosed colon cancer patients. A-C FACS analysis for regulatory T cells within CD4^{pos} T helper cells. D-F FACS analysis for monoclonal B-cell lymphocytosis like cells (MBL-like B cells).

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