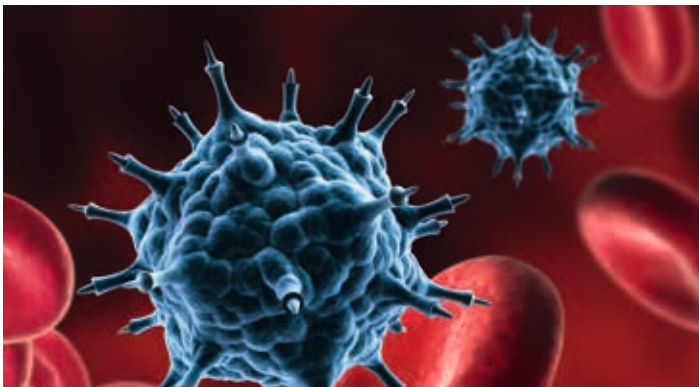


Bavarian Research & Innovation

InfektionsMedizin
Biomarker
ForBIMed
Forschungsstiftung

Bavarian Research Association – Biomarkers in the Fight Against Infectious Diseases

FIGHTING INFECTIONS FASTER AND MORE EFFICIENTLY WITH BIOMARKERS



According to the WHO, infections with viruses, bacteria, parasites or mycotic infections still rank among the top three causes of death in modern, industrialized nations, even rising to the most common cause of death in less developed countries. In addition there seems to be a correlation between such infections and the development of tumors as well as cardiovascular diseases. There are several reasons for the persistence of these infectious diseases. Many pathogens are highly adaptable, often develop multiple resistances to antibiotics or escape conventional medicines and vaccines. The objective of ForBIMed is to discover new, pathogen- and host-specific biomarkers that can serve as

a basis for new diagnostics, therapeutics and vaccinations.

Biomarkers are any measurable characteristics of the pathogen itself or patient-derived reactions that predict or indicate certain illnesses. Within ForBIMed, they serve as an indicator of the presence and severity of a disease as well as of the patient-specific immune reaction. ForBIMed aims to identify which biomarkers are best suited for this and how they can be most effectively utilized. With this knowledge ForBIMed aims to allow for a faster distinction between bacterial and viral infections, as well as between resistance profiles within the different groups of pathogens. In addition, the characterization of host-specific immune parameters to predict the risk

of a transplant rejection or a virus reactivation during immune suppression, as well as the development of improved therapies and

vaccines represent two of the key aspects of this project.

Images:
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RESEARCH TOPICS

Within ForBIMed, 11 university research groups and 9 companies work together on 11 projects. The projects D1 – D7 mainly focus on the development of biomarker-based diagnostic tools. The projects I1 – I4 define and utilize biomarkers to characterize new medications or vaccination platforms as a basis for new intervention strategies.

To reach the goals of ForBIMed and to guarantee applied research, the academic groups and industry partners work closely together. The Research Association, under the leadership of Prof. Dr. Ralf Wagner, also provides training and workshops for the young academic researchers on the projects, enabling them to educate themselves on industry-specific job requirements.

D1 University of Regensburg – Hyglos GmbH:

Bacterial Permeability Increasing Protein (BPI) as a Novel Biomarker for Infections and Inflammation

D2 LMU Munich – NovaTec Immundiagnostica GmbH:

New Antigens from the duodenal ulcer promoting gene (dupA-)-locus as Biomarkers for Improvement of Serological H. pylori Diagnostics

D3 LMU Munich – Mikrogen GmbH:

Development of New Diagnostic Procedures for the Detection of Invasive Fungal Infections

D4 LMU Munich – Bruker Daltonik GmbH:

Detection of Antibiotic and Antimycotic Resistance in vitro and in vivo via MALDI-TOF MS

D5 University of Regensburg – Lophius Biosciences GmbH:

Recombinant Polypeptides with Optimized T-cell Activating Properties

D6 TU Munich – Lophius Biosciences GmbH:

T-cell Diagnostics for Individualized Therapy Following Transplantation

D7 TUM – Juno Therapeutics GmbH:

Development of a Diagnostic k_{off} -rate Assay

I1 University Hospital Erlangen – 4SC Discovery GmbH:

Identification of Key Players in Virus-specific Cellular Signaling as Markers for Therapy, Immunity and Diagnostics

I2 University Hospital Erlangen – 4SC Discovery GmbH:

Characterization of Immunological Biomarkers during Antiviral Therapy by Use of Cellular Targets

I3 TU Munich – AmVac Research GmbH:

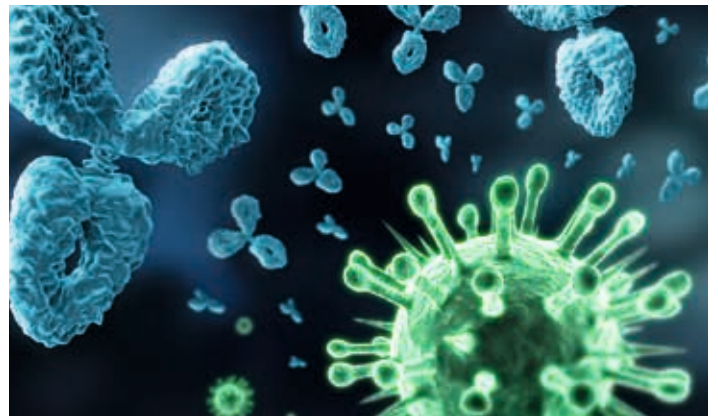
Development of Immunological Assays for Immunomonitoring in the Context of a Viral Vaccination Platform

I4 LMU Munich – SIRION BIOTECH GmbH:

Replicon-Technology for Assessment and Production of Adenoviruses with a High Security Profile



The determination of antibiotic resistency profiles in vitro and in vivo is one of the major goals of ForBIMed (49399692 © Alexander Rath - fotolia.com)



Pathogen-specific antibodies and T-cells represent biomarkers for the diagnosis of infectious diseases and may help to predict the clinical outcome (40071102 © psdesign1 - fotolia.com)

Academic Partners:

University of Regensburg

- Institute for Medical Microbiology and Hygiene

LMU Munich, Max von Pettenkofer Institute

- Chair of Virology
- Chair of Bacteriology

TU Munich

- Institute for Medical Microbiology, Immunology and Hygiene
- Institute for Virology

University Hospital Erlangen

- Immune Modulation Section within the Department of Dermatology
- Institute for Virology

Industrial Partners:

- 4SC Discovery GmbH, Planegg-Martinsried
- AmVac Research GmbH, Martinsried
- Bruker Daltonik GmbH, Bremen
- Hyglos GmbH, Bernried
- Lophius Biosciences GmbH, Regensburg
- Mikrogen GmbH, Neuried
- NovaTec Immundiagnostica GmbH, Dietzenbach
- SIRION BIOTECH GmbH, Martinsried
- Juno Therapeutics GmbH, Göttingen/Munich