



AIT offers a unique and comprehensive technology portfolio for in-depth immune system analysis. We drive translational research in immunology, virology, autoimmunity, cancerous / systemic, allergic and infectious disease, advancing the discovery of novel biomarkers and insights into immune responses.

APPLICATION EXAMPLES

- **Immunomics & Antibody Profiling:** Comprehensive analysis of antibody reactivity patterns using advanced array and sequencing platforms.
- **Biomarker Discovery & Epitope Mapping:** Identification of disease-relevant biomarkers and epitopes selecting from broadest spectrum of technologies.
- **Therapeutic Monitoring:** Evaluation of immune responses and detection of off-target reactivity in treated patient samples, particularly in vaccine development.
- **Diagnostics & Vaccine Development:** Definition of peptide candidates for diagnostic and vaccine applications across a broad spectrum of diseases, including infections, allergies, autoimmunity, and systemic conditions.
- **Companion Diagnostics:** Detection of unintended immune responses and support for targeted therapeutic strategies through off-target reactivity profiling.



Our solutions & services at
molecular-diagnostics.ait.ac.at
or scan the QR Code.

OUR CORE EXPERTISE

- High-density protein and peptide microarrays
- Multiplex protein analysis using bead-arrays and ELISA
- NGS-based antibody profiling (PhIP-Seq, MIPSAs)
- Custom assay development and validation
- Data analysis with integrated bioinformatics support

IMMUNOMICS PLATFORMS & TECHNOLOGIES

Our portfolio covers advanced protein microarray and bead-array services. At AIT, we provide a 16k human protein array for antibody profiling, a 260x pathogen lysate array for infection signatures, and customizable protein/peptide arrays (up to 32,000 features) or bead-arrays (5–500 plex) for high-throughput multiplexing. KREX adds discovery panels such as i-Ome™ (>1,800 proteins), cancer- and autoimmune-specific arrays, and OncoREX p53 variants for antibody and binding studies. With CDI, we offer proteome-wide profiling using HuProt™ arrays (>21,000 full-length proteins) and PhIP-Seq, complemented by target validation and VirScan®, which reveals an individual's viral exposure history to link infection with chronic disease and host–pathogen interactions.

PROTEIN MICROARRAY & BEAD-ARRAY SERVICES

- **AIT-16k Human Protein Array** – Autoantibody profiling with 10 µl serum/plasma, 8,200 transcripts
- **AIT-260x Pathogen Array** – Antibody profiling linked to bacterial infections
- **Custom Protein & Peptide Microarrays** (100–32,000 features) – Flexible formats for high-multiplexed studies
- **Custom Protein & Peptide Bead-Arrays** (5–500 plex) – High-throughput serotesting & immuno-, DNA- or RNA-assays
- **KREX Arrays:** (Standardbio) Ome™ discovery panels – 1,800+ proteins across disease areas, including cancer (500+), autoimmunity (500+), and 100+ p53 variants for antibody and binding screens
- **CDI Arrays:** Proteome & viral profiling – HuProt™ and MouseScan™ microarrays (>21,000 proteins) and VirScan® PhIP-Seq enable autoantibody discovery, biomarker validation, target identification, and viral exposure analysis

NEW

Use your clinical samples for non-consuming measurement of metabolomic & lipoprotein profiling – by our partner lifespin – we will arrange sample measurement in advance of subsequent analyses conducted at our lab (exosomal miRNA, cfRNA, cfDNA, proteomics, immunomics).

NGS-BASED ANTIBODY PROFILING

Explore high-resolution immune profiling technologies based on phage display and next-generation sequencing.

Infinity Bio – MIPSAs Technology

- Infinity Bio's proprietary MIPSAs technology (Molecular Indexing of Proteins by Self-Assembling) is a leap forward in antibody profiling. It achieves unmatched breadth and resolution in mapping the molecular targets of immune responses.
- Comprehensive libraries enable single-test detection of antibodies against all human viruses, self-proteins, and allergens, with panels (VirSIGHT, HuSIGHT, MuSIGHT, AllerSIGHT) combining full-length proteins and peptides.

Phage Immunoprecipitation Sequencing (PhIP-Seq)

- Customised generation of phage-display libraries for presentation of e.g. up to 50aa long peptides on M13 a/o T7 phages
- Conduct enrichment and differential antigenic reactivity analysis of sera/plasma samples or for epitope & antibody-specificity testing e.g.
- detecting antibodies targeting otherwise not accessible peptides
- Epitope mapping and specificity screening

RESEARCH SERVICES & CAPABILITIES

- Recombinant protein production and purification
- Custom array generation and sample analysis (microarray and bead-based)
- Assay development using planar and bead-array platforms
- Bioinformatics, statistical analysis and reporting
- Consulting and experimental design support

OTHER PROTEIN BASED SERVICES

- Analysis services using “catalogue assays” (Luminex® and ELISA)
- Custom assay design and development
- Targeted PROTEOMICS using OLINK® Proximity Extension Assay (PEA) Technology – molecular-diagnostics.ait.ac.at/services/olink/



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