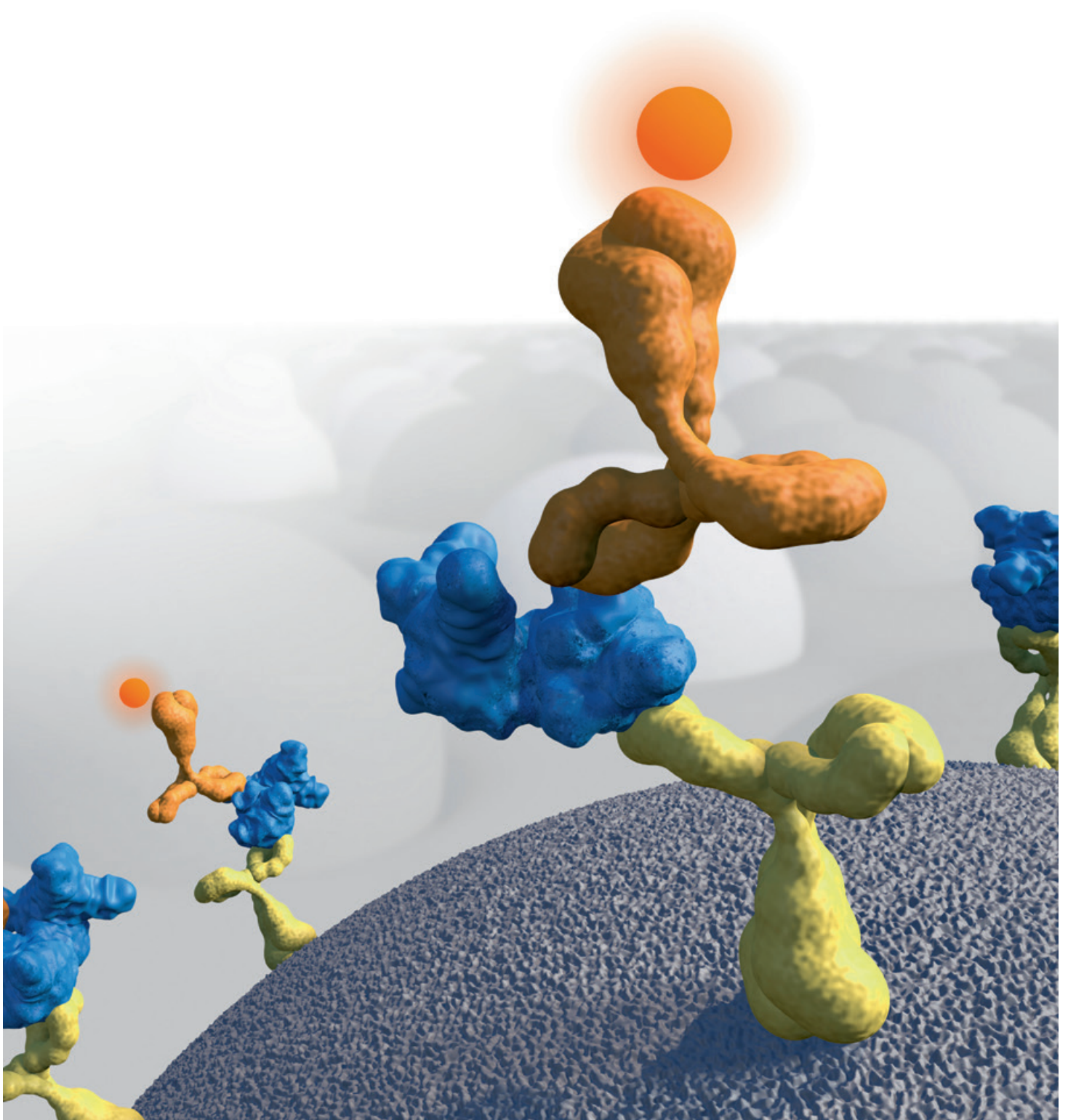


MULTIPLEX PROTEIN ANALYSIS

Enabling Translational Research

LUNARIS™ Technology



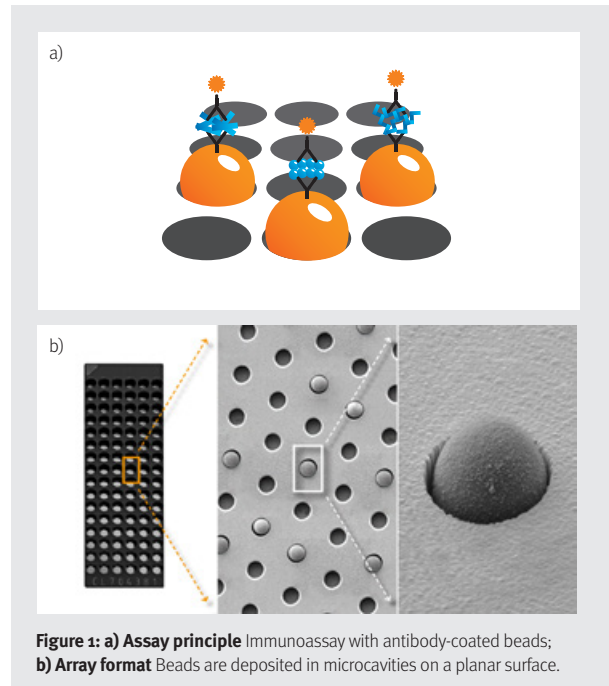
Planar Bead-based Detection

Unique benefits from a simple idea

ELISAs are today's standard for detecting single proteins – quantitative and specific, they are foundational in protein research. LUNARIS™ Technology delivers highly sensitive and simultaneous **quantification of multiple proteins** in a single, small-volume sample.

LUNARIS™ is a unique platform for multiplex protein analysis that merges the **benefits of antibody-coated microbeads and a planar microarray format**. Fluorescence signals of bound target proteins are recorded by high-resolution imaging generating precise and robust data.

- > Planar microarray format allows **low sample volumes** down to 3 µL
- > Seeing is believing **image-based readout** and analysis
- > **No signal quenching** or aggregation effects typical of flow-based systems



Modular and Versatile BioChips

Your assay setup and throughput

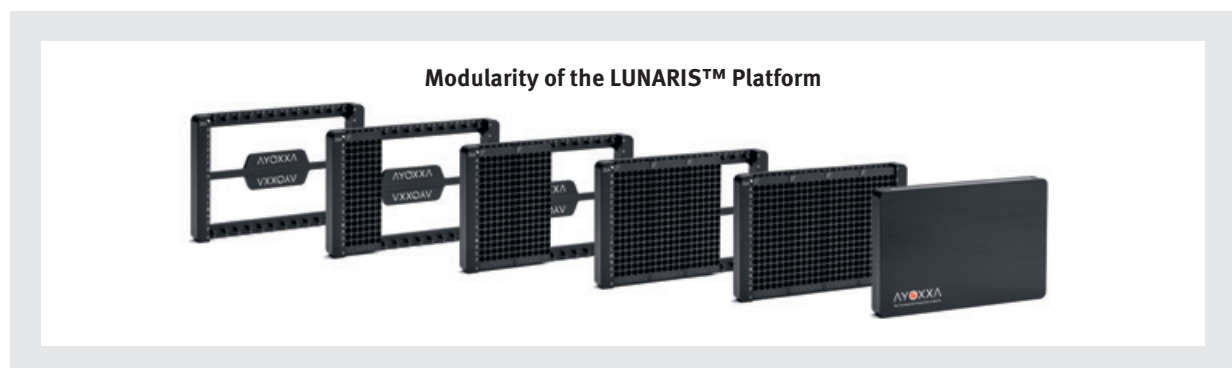
LUNARIS™ BioChips are robust precision devices designed to serve the experiment setup needs of researchers in **academic, industry, and clinical settings**.

The **modular assembly** of BioChips on a LUNARIS™ BaseFrame **allows flexible sample throughput** in a standard MTP format for efficient use of resources and samples.

LUNARIS™ BioChips, BaseFrames, and Lid are produced under strict **German manufacturing standards** for optimal

performance and durability.

The LUNARIS™ BaseFrame 384 holds up to four 96-well BioChips, to flexibly accommodate between 96 and 384 samples per run in a tailored, cost-effective assay layout.



Stringent Data Quality Standards

Data quality that eases method transfer from lab to clinic

The elegant simplicity of LUNARIS™ Technology results in **superior data quality** by design. The **readout is image-based**, providing a direct one-to-one link between analyte presence and recorded signal – **down to pg/mL** amounts and with a **dynamic range over three to four log scales**. Furthermore, the data analysis is designed to preserve information transparency from signal detection to results evaluation.

The outcome is exceptional data quality that meets international regulatory standards and facilitates the **transfer of research findings to clinical applications**.

- > **High quality** antibody pairs
- > Thoroughly tested and **confirmed performance** of each kit (accuracy, precision, linearity)
- > **Minimized** sample matrix effects and **cross-reactivity**

Figure 2: Performance
Bar diagram depicting the median assay parameters. The orange bars represent the dynamic range of the assay from LoD = limit of detection (left border) to the ULOQ = upper limit of quantification (right border). The LLOQ = lower limit of quantification is depicted as a white line. Measurements from 20 validation experiments.

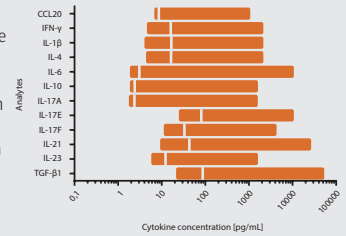
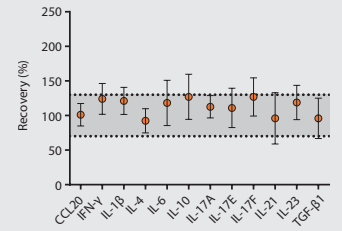


Figure 3: Accuracy
Median recovery rate from cell culture supernatant. Each data point represents the median accuracy and standard deviation of three different QC sample concentrations measured in 10 experiments. The targeted recovery range (70-130%) is denoted by the dotted lines/grey shaded area.



(Validation data shown are from the LUNARIS™ Mouse 12-Plex Th17 Kit)

Facilitating Translational Medicine

Current focus areas

Our portfolio of LUNARIS™ Kits is designed to **measure multiple protein biomarkers** in a **variety of clinically relevant sample types**, granting insights into disease causes and potential therapies, and advancing translational proteomics at all stages from lab to clinic.

Inflammation



Understanding mechanisms and effects of inflammation can inform a range of medical questions in allergy management, autoimmunity, intra- and extracellular pathology, cell-mediated and humoral immune responses. Our inflammation cluster of LUNARIS™ Kits targets meaningful selections of secreted and soluble cytokines implicated in T cell differentiation and effector functions.

Ophthalmology



Research over the last few decades has uncovered a growing number of biomarkers of eye diseases and dysfunctions that have proven indispensable as diagnostic and therapeutic indicators. The ophthalmology cluster of LUNARIS™ Kits constitutes a trailblazing solution for examining cytokines, angiogenesis markers, and chemokines associated with eye pathologies because they enable analyte detection in rare, low-volume and even viscous ocular samples from human clinical interventions or mouse models.

Immuno-Oncology



Cytokine profiles offer a telltale snapshot of immune function that can inform treatment decisions in next-generation cancer therapies. Sensitive detection of cytokines can reveal susceptibility of cancer tumors to immune-based strategies like adoptive T cell-mediated immunotherapy, or to antibody-based cancer drugs. Our immuno-oncology cluster of LUNARIS™ Kits enables sensitive detection of multiple relevant cytokines in a single, small, minimally invasive biofluid sample.



LUNARIS™ Kits

- > Detect and quantify multiple disease-relevant biomarkers in sample volumes down to 3 µL
- > Applicable to a variety of clinically relevant sample types
- > Translate knowledge from mouse to man

LUNARIS™ Reader

- > Load-and-read, fully integrated system
- > High-precision optics made in Germany
- > Two models to match your throughput
- > 96 samples read in less than 10 minutes

LUNARIS™ Software

- > Jump-right-in software; just open a readout file
- > Complete data evaluation in less than a minute
- > Intelligent QC function for clear results reliability
- > All raw data, results, and graphs exportable to customized reports or data spreadsheets

LUNARIS™ Services

Dedicated expertise tailored to your needs:

- > Complete testing services
- > BioChip readout services
- > Custom panel development

AYOXXA Biosystems is dedicated to the vision of enabling success in translational research.

Building upon an innovative technology platform, our mission is to develop robust assay panels for translational research applications. Our LUNARIS™ multiplex protein analysis platform is optimized for translating knowledge generated in basic research to clinical studies. With its advantages in terms of quality, flexibility and efficiency, LUNARIS™ enables reliable quantification of biomarkers from model to man – from lab to clinic – from data to insight.

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