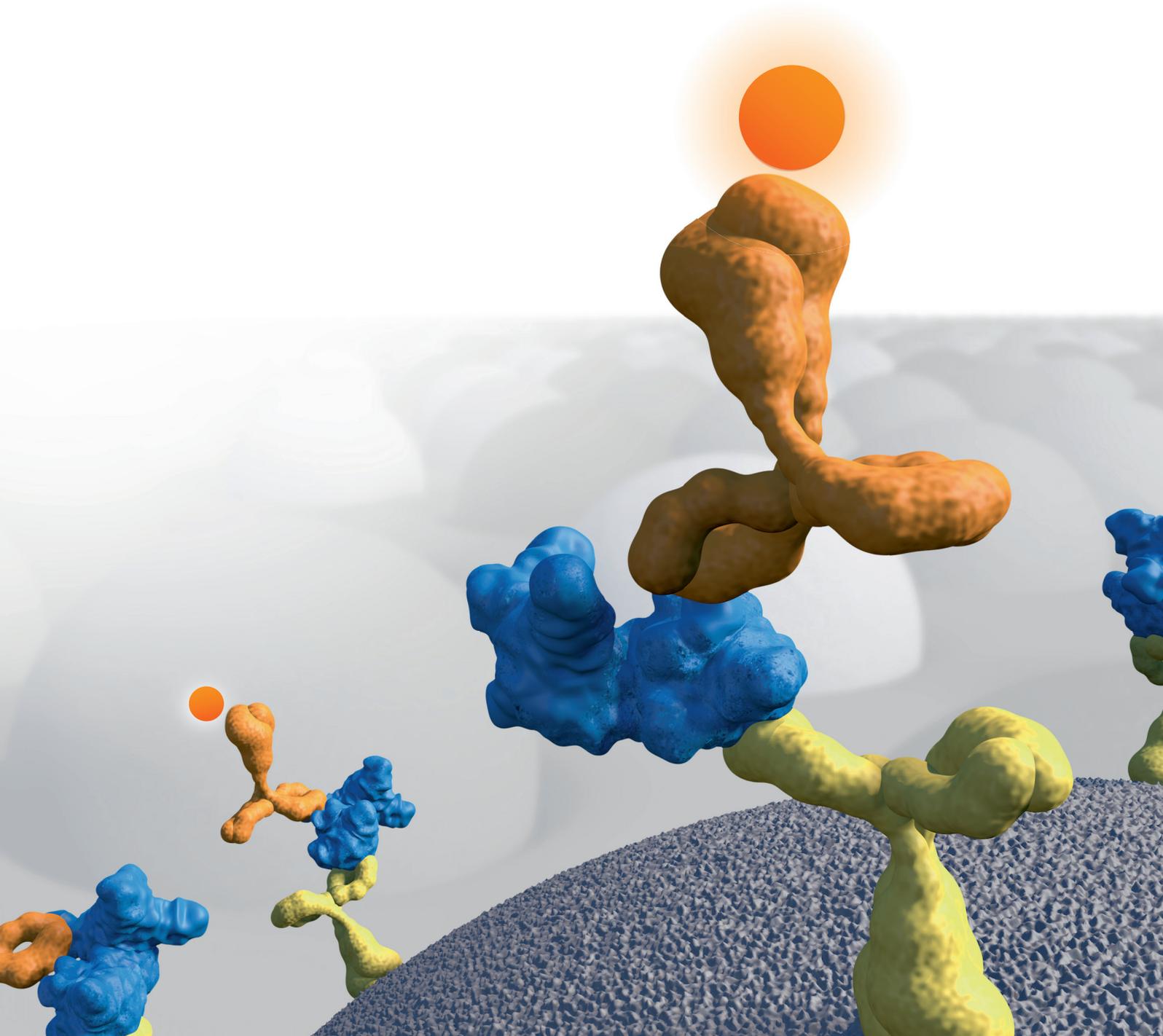


MULTIPLEX PROTEIN ANALYSIS

# Enabling Translational Research

LUNARIS™ Platform Technology



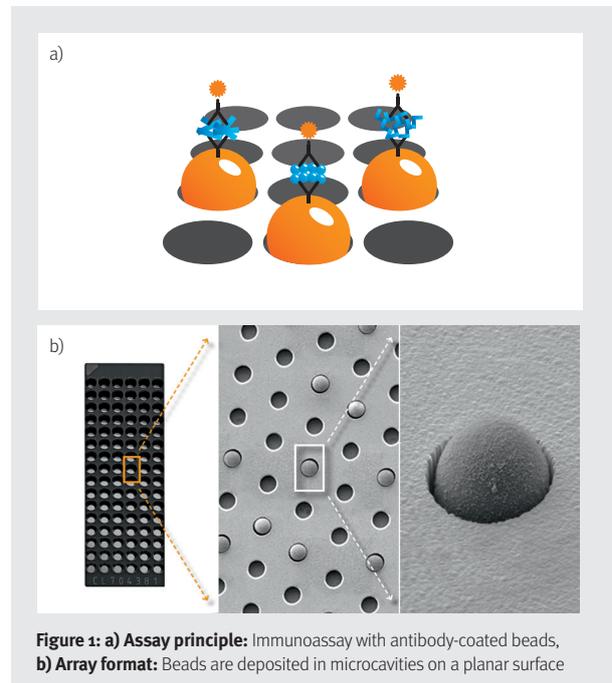
## Planar Bead-based Detection

### Unique benefits from a simple idea

ELISAs are today's standard for detection of 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 merging 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
- > **Eliminate signal quenching** and aggregation effects typical of flow-based systems



## Modular and Versatile BioChips

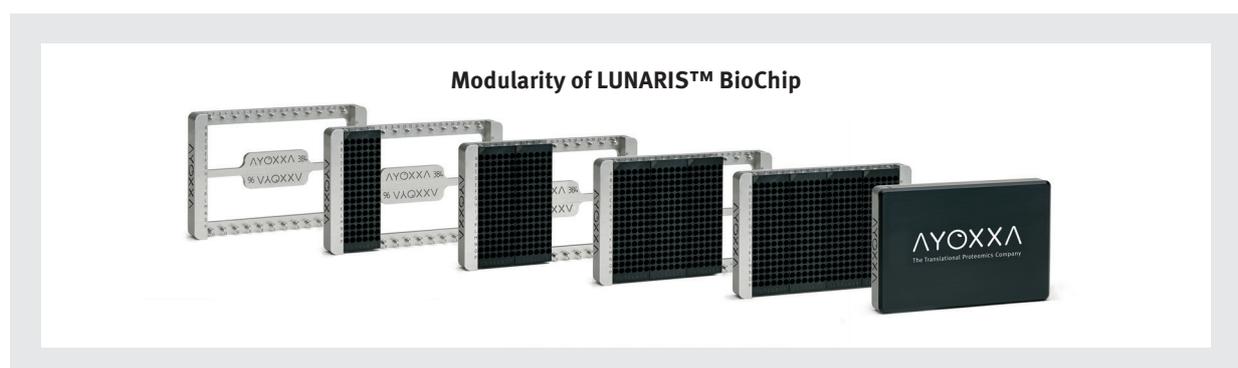
### Your assay setup and throughput

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 an efficient use of resources and samples.

LUNARIS™ BioChips, BaseFrame, and Lid are produced under strict **German manufacturing standards** for optimal performance and durability.

The LUNARIS™ BaseFrame holds both MTP **96-well** and **384-well plate formats**. Insert up to three 32-well BioChips on a BaseFrame, or simply rotate the frame 180 degrees to assemble up to four 96-well BioChips. Thus, the system flexibly accommodates **32 to 384 samples** for tailored, cost-effective assay layouts.



## Stringent Data Quality Standards

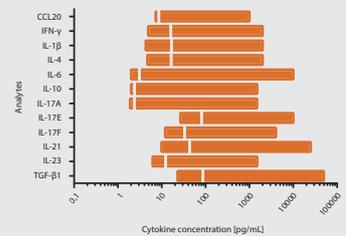
### Data quality that eases method transfer from lab to clinic

The elegant simplicity of the 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**

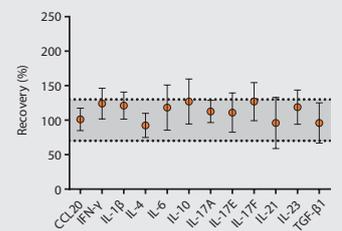
**Figure 2: Performance**

Bar diagram depicting the median assay parameters. The orange bar represents the dynamic range of the assay from LoD (left border) to the ULOQ (right border). The LLOQ is depicted as a white line. n = 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 n = 10 experiments. The targeted recovery range (70-130%) is denoted by the dotted lines/grey shaded area.



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

## Facilitating Translational Medicine

### Current focus areas

Our portfolio of LUNARIS™ Kits is designed to **measure multiple proteins** 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

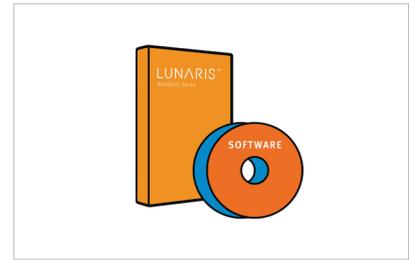


Research over the last few decades has uncovered a growing number of biomarkers of eye diseases and dysfunctions that have proven indispensable as diagnostic and therapeutic indicators. The ophthalmology cluster of LUNARIS™ Kits constitutes a trailblazing solution for examining cytokines, angiogenesis markers, and chemokines associated with eye pathologies because they enable their 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
- > Renowned German high-precision optics
- > Scalable from low to high throughput
- > 384 samples read in less than an hour

## 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 available in detailed reports or export files

## LUNARIS™ Services

Dedicated expertise tailored to your needs:

- > Complete Testing Services
- > BioChip Readout Services
- > Custom Panel Development

Deciphering  
Complex Biology

**Call the experts:**  
**+49 (0)221-22 25 29-0**  
sales@ayoxxa.com

www.ayoxxa.com

**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 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.

### HEADQUARTERS GERMANY

AYOXXA Biosystems GmbH  
BioCampus Cologne  
Nattermannallee 1, 50829 Köln, Germany  
Phone: +49 (0) 221 222 529-0  
E-Mail: sales@ayoxxa.com

### USA

AYOXXA Biosystems Inc.  
1 Broadway  
Cambridge, MA 02142 USA  
Phone: +1 (617) -599 5545  
E-Mail: sales@ayoxxa.com

### SINGAPORE

AYOXXA Living Health Technologies Pte Ltd  
2 Jurong East Street 21  
#04-20 IMM Building  
Singapore 609601  
Phone: +65 9148 9709  
E-Mail: sales@ayoxxa.com