

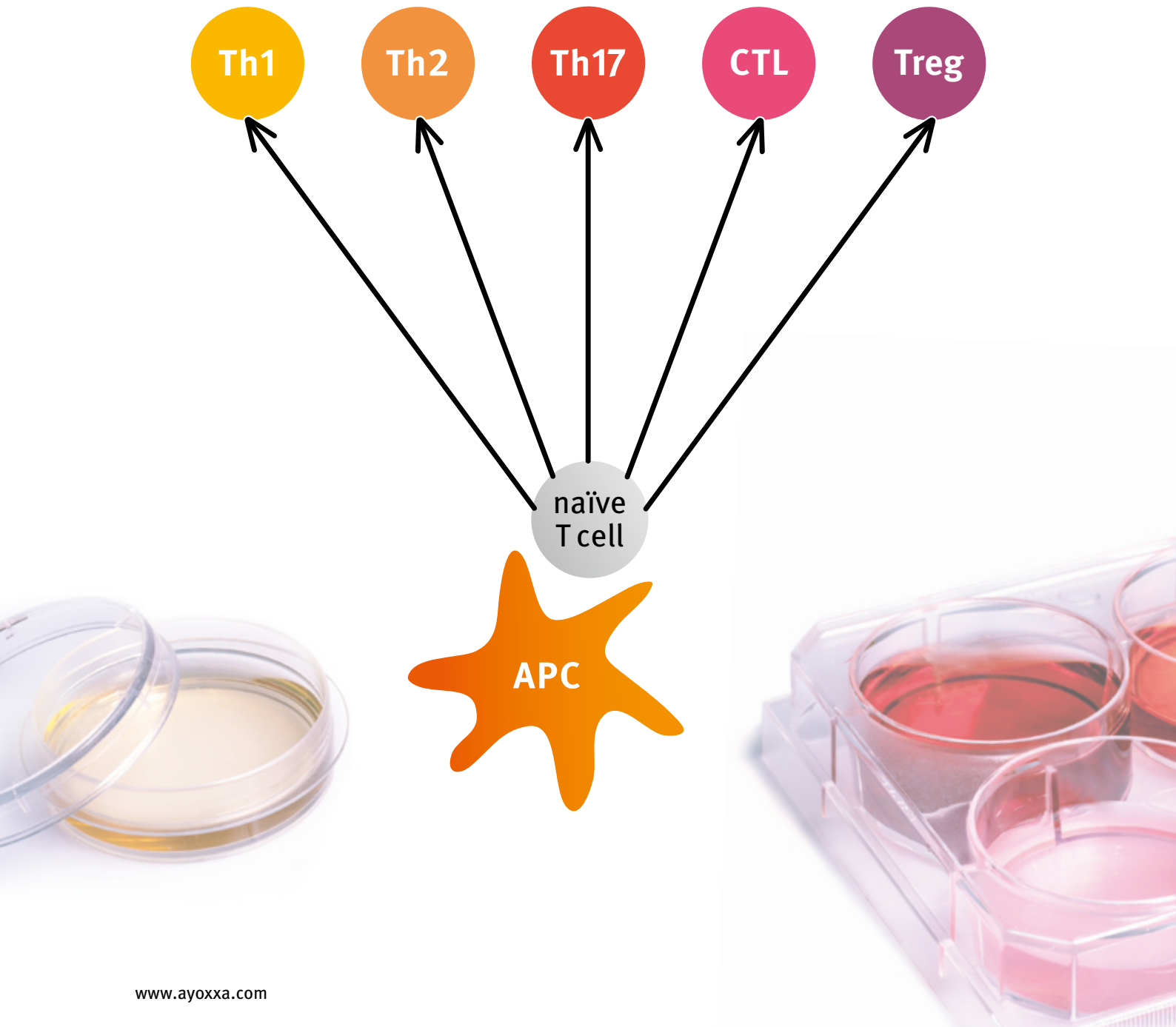
Unravel Complexity



LUNARIS™ T Cell Characterization Kits

Mouse & Human:

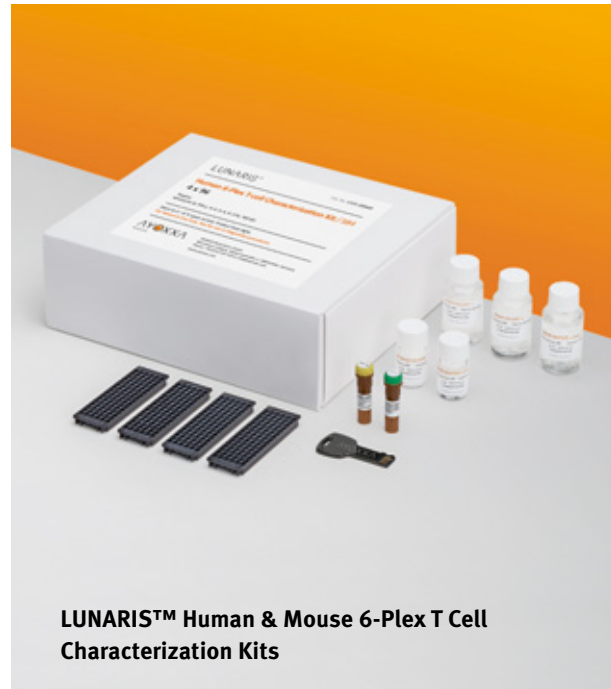
Granzyme B, IFN- γ , IL-2, IL-4, IL-17A, TGF- β 1



LUNARIS™ Human & Mouse T Cell Characterization Kits

Validated, scalable, robust

- > Validated for quantitative analysis of soluble effector molecules secreted by distinct T cell populations
- > Generate biomarker profiles to identify Th1 (IFN- γ), Th2 (IL-4), Th17 (IL-17A), Treg (TGF- β 1), and cytotoxic T cells (granzyme B)
- > Quantify IL-2 as a marker for T cell proliferation
- > Scalable and standardized assay architecture with robust chemistry guarantee reproducibility
- > For translational research with murine and human samples using volumes down to 3 μ L



LUNARIS™ Human & Mouse 6-Plex T Cell Characterization Kits

Quantifies IFN- γ , IL-2, IL-4, IL-17A, TGF- β 1 and granzyme B in cell culture supernatant.

For Research Use Only. Not for use in diagnostic procedures.

Elucidate T Cell Differentiation

Antigen presentation and intercellular signaling prompt the differentiation of naïve T cells into effector subsets that mount effective immune responses. This differentiation process is carefully orchestrated. Dysregulation leading to an altered number or function of differentiated T cell subsets can result in pathologies ranging from autoimmunity to cancer. Thus, a research tool that allows accurate and reproducible identification of predominant T cell subsets in cell culture experiments can help unravel complexity and spot potential points of therapeutic intervention.

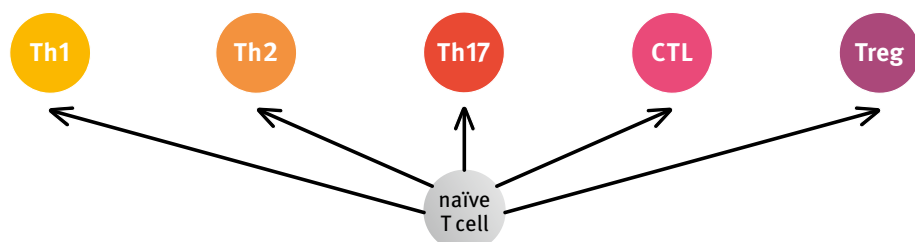
Each T cell subset secretes a characteristic repertoire of effector cytokines that stabilize T cell differentiation, contribute to pathogen clearance, or both. These soluble molecules can be exploited as markers of T cell subtypes and thus, characterize the outcomes of differentiation.

Relevant research areas:

- > Infection biology
- > Autoimmune disorders
- > Cancer

Roles of different T cell subsets in health and disease

Biological function	Effector against intracellular bacteria and protozoa	Effector against extracellular parasites	Effector against extracellular bacteria	Tumor and virus clearance	Establishing self-tolerance
Examples where dysregulated	Type 1 diabetes	Allergy, hypersensitivity	Rheumatoid arthritis, multiple sclerosis, psoriasis	Type 1 diabetes, arthritis, liver damage in hepatitis B	Prevention of tumor clearance, autoimmunity



Excellent Data Quality

Validation of the LUNARIS™ Human 6-Plex T Cell Characterization Kit*

Table 1: Performance

Median assay parameters determined for a twelve point standard curve in more than ten experiments. Limit of detection (LoD), lower limit of quantification (LLOQ), and upper limit of quantification (ULOQ) given in pg/mL; dynamic range (DR) on a log scale.

Analyte	LoD	LLOQ	ULOQ	DR
GR2B	13.3	23.2	5000	3.7
IFN- γ	2.0	7.7	1667	3.2
IL-2	1.0	4.6	1000	3.0
IL-4	1.4	7.7	1667	3.2
IL-17A	11.1	23.2	5000	3.7
TGF- β 1	2.4	7.7	1667	3.2

GZMB: granzyme B

Figure 1: Performance

Bar diagram depicting the median assay parameters shown in table 1. The orange bars represents the dynamic range of the assay from LoD (left border) to the ULOQ (right border). The LLOQ is depicted as a white line. Measurement from more than ten validation experiments.

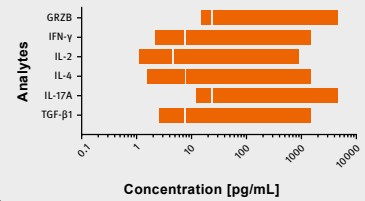


Figure 2: Accuracy

Median recovery rate from 12 experiments quantifying markers in quality control samples spiked at three different concentrations into cell culture supernatants. The targeted recovery range (70–130%) is denoted by the dotted lines/grey shaded area.

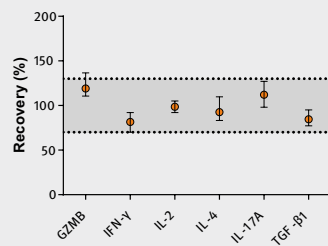
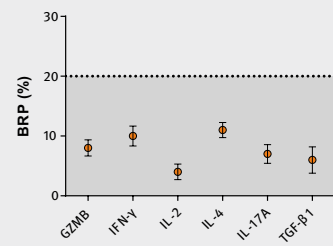


Figure 3: Precision

Between-run precision (BRP) of QC samples spiked into cell culture supernatants. Each data point represents the median between-run precision of three different QC sample concentrations measured in 12 experiments. The targeted precision (<20%) is denoted by the dotted lines/grey shaded area.



* Validation data of the corresponding mouse kit are available upon request.

LUNARIS™ Technology

Innovative technology for translational proteomics

- > **Ease of readout and handling**
- > **Fully integrated system**
- > **Flexible scalability from low to high throughput**
- > **Readout of 384 samples in less than one hour**

AYOXXA's proprietary LUNARIS™ platform for multiplex protein analysis is a fully integrated and scalable system. A dedicated reader automates image-based analysis of immunoassay beads in a planar array, so every bead is read and every bead counts.

LUNARIS™ is optimized for sample volumes as low as 3 μ L – one-tenth the volume required for similar technologies – yet allows full multiplex testing without compromising data quality or precision from precious samples.

With advantages of superior data quality, workflow flexibility and conservation of precious samples, LUNARIS™ enables reliable quantification of biomarkers from model to man – from lab to clinic – from data to insight.

LUNARIS™ Services

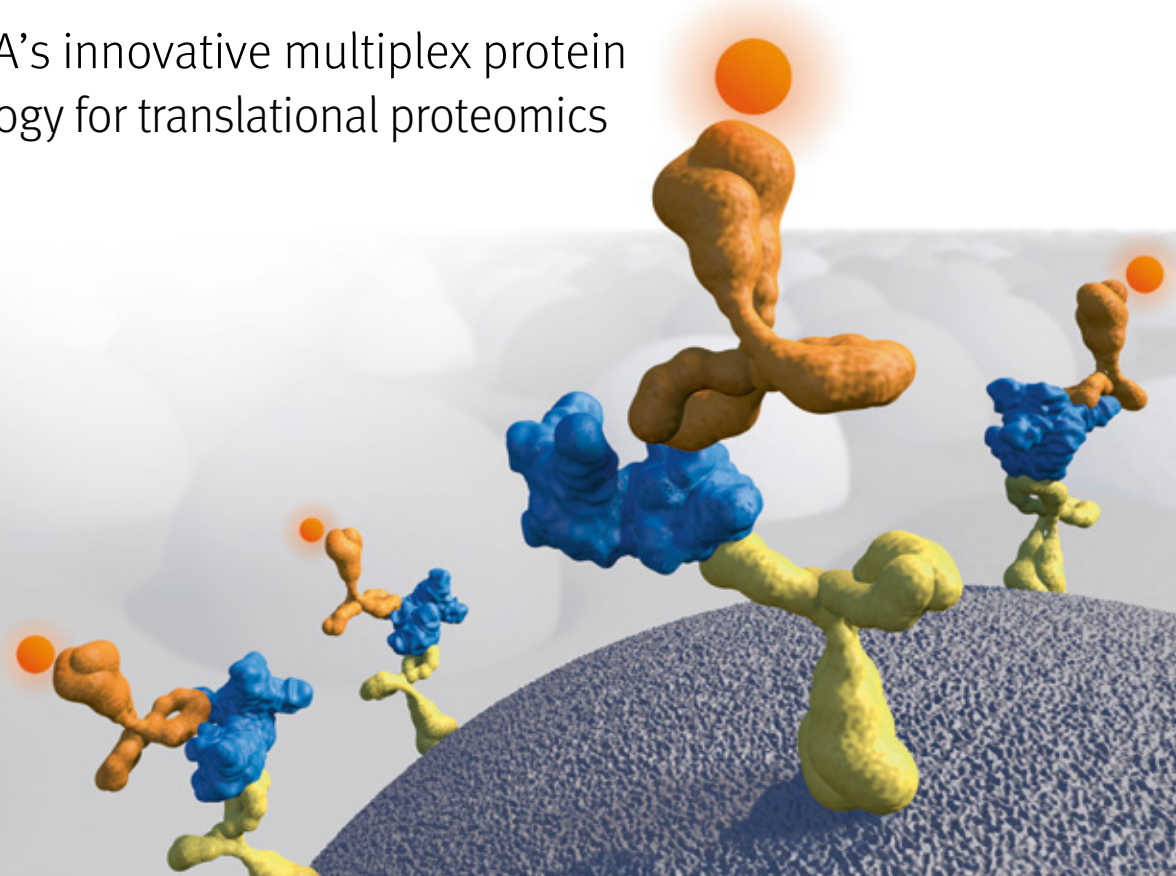
Multiple options to access the advantages of LUNARIS™

- > **Complete testing and readout services**
- > **Send in samples for testing and receive a complete analysis report**
- > **Perform assays in your lab, then send in completed assay plates for readout**
- > **Innovative panel development**
- > **Custom panel configuration**
- > **Custom multiplex assay development**



LUNARIS™ Technology

AYOXXA's innovative multiplex protein technology for translational proteomics



Ordering information

LUNARIS™ Kits	No. of BioChips	Cat. No.	No. of samples*
Human 6-Plex T Cell Characterization Kit	1 × 96 4 × 96	LHTC-2006oS LHTC-2006oF	40 160
Mouse 6-Plex T Cell Characterization Kit	1 × 96 4 × 96	LMTC-2006oS LMTC-2006oF	40 160

* Measured in duplicate

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.

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.
c/o Platinum CFO
2600 Tower Oaks Blvd., Suite 220
Rockville, MD 20852
USA
E-Mail: sales@ayoxxa.com

Unravel complexity

Call the experts:

+49 (0)221-222 529-0

tcc@ayoxxa.com

www.ayoxxa.com