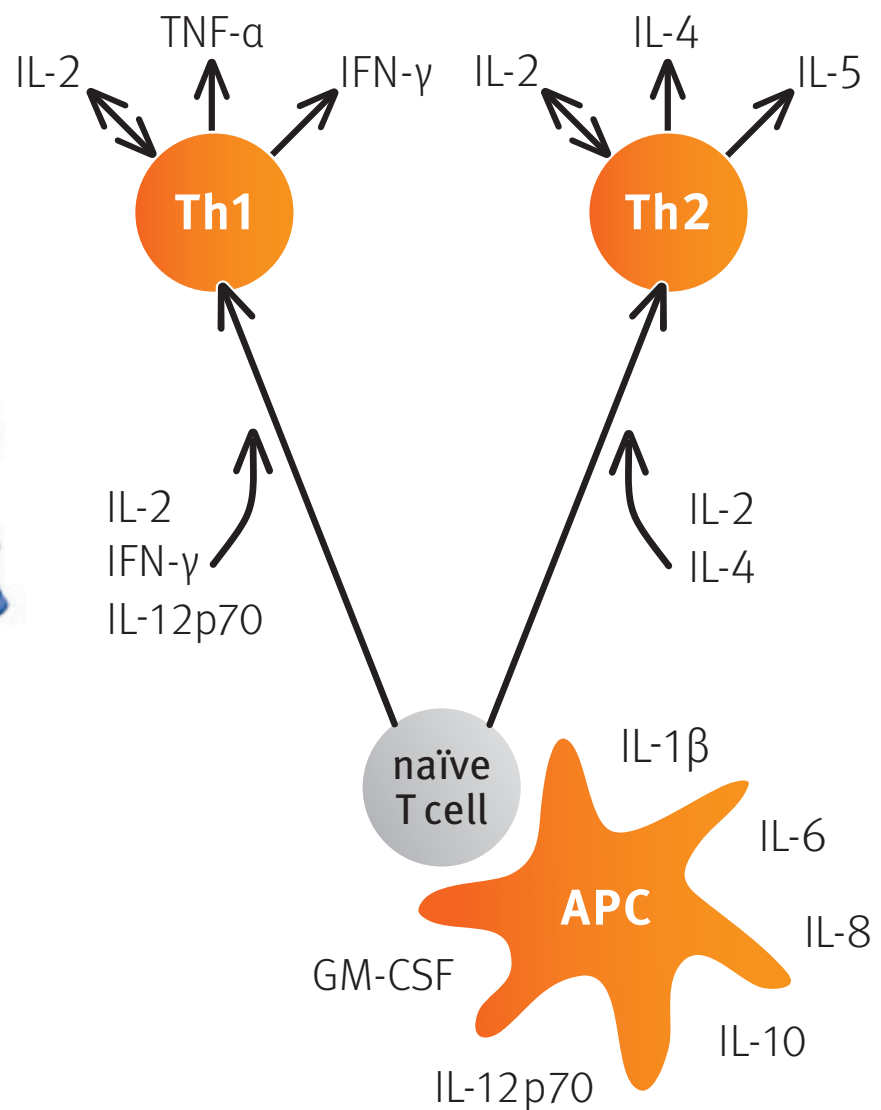


IMMUNOLOGY

Discover Th1/Th2 Cell Biology

LUNARIS™ Human 11-Plex Cytokine Kit



LUNARIST™ Human 11-Plex Cytokine Kit

Validated, Scalable, Robust

- > Validated for quantitative analysis of soluble inflammatory Th1/Th2 cell markers
- > For sample volumes down to 3 μ L
- > Covers targets involved in cell-mediated immunity and humoral response, and changes caused by inflammation.
- > Detects the following biomarkers:
GM-CSF / INF- γ / IL-1 β / IL-2 / IL-4 / IL-5 / IL-6 / IL-8 / IL-10 / IL-12p70 / TNF- α
- > Areas of application:
Allergic and autoimmune disorders, immune response to extra-/intracellular pathogens and extracellular parasites



Performance Data

LUNARIST™ Human 11-Plex Cytokine Kit

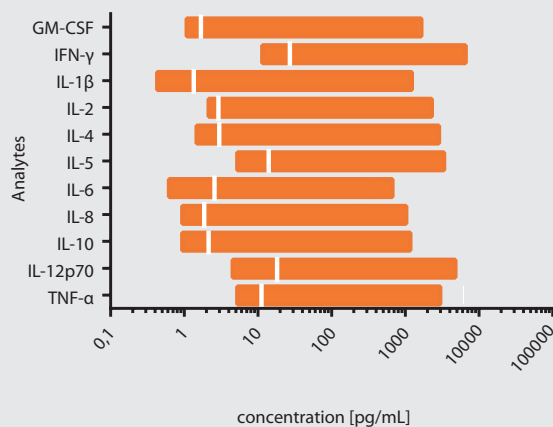


Figure:

Bar diagram depicting the assay parameters shown in table. The orange bar represents the dynamic range of the assay from LoD (left border) to the ULOQ (right border). LLOQ is depicted as a white strip.

Analyte	LoD	LLOQ	ULOQ	DR
GM-CSF	1,0	1,7	1700	3,2
IFN- γ	10,9	27,3	7000	3,8
IL-1 β	0,4	1,3	1300	2,8
IL-2	2,0	2,9	2443	3,5
IL-4	1,4	2,9	3000	3,5
IL-5	5,0	13,7	3500	3,5
IL-6	0,6	2,6	675	2,8
IL-8	0,9	1,7	1062	2,9
IL-10	0,9	2,0	1250	3,0
IL-12p70	4,3	19,5	5000	3,7
TNF- α	5,0	11,7	3000	3,5

Table:

Assay parameters from n=20 experiments
LoD=Limit of Detection, LLOQ=Lower limit of quantification, ULOQ=Upper limit of Quantification, DR=Logarithmic detection range
Median values are depicted in pg/mL.

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

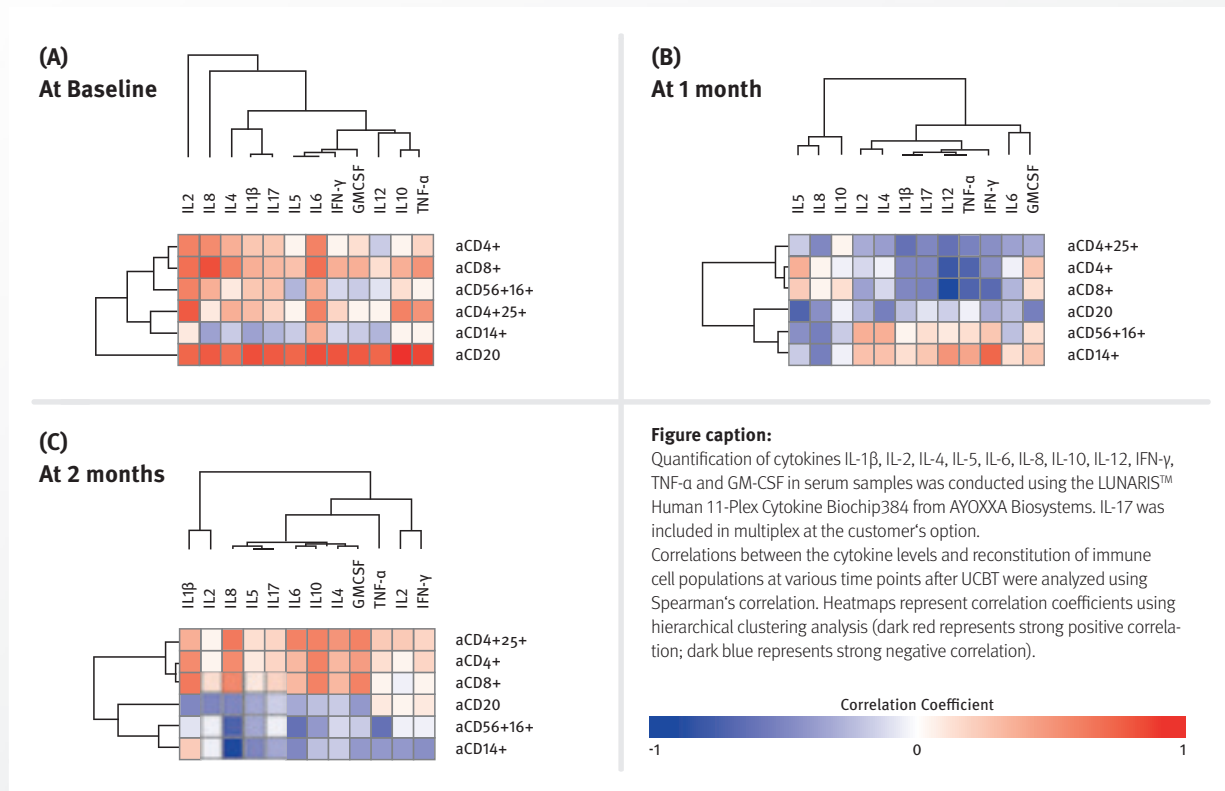
Case study

Using a multi-cytokine panel to assess immune reconstitution following cord blood transplant

The **goal of this study** was to develop an approach that would allow risk assessment for development of acute graft-versus-host disease (aGvHD) and/or for impaired immune reconstitution in adult umbilical cord blood transplant (UCBT) recipients.

Such an approach could potentially guide therapeutic decisions for the prevention of complications that arise from delayed aGvHD and insufficient immune reconstitution in adult UCBT recipients leading to infection-related morbidity and mortality.

Because reconstitution of hematopoietic lineages is delayed in UCBT recipients, the clinical research team focused on cytokines which can be measured in patients' plasma at any time point before or after UCBT. Testing of individual cytokine levels by standard methods, such as ELISA, requires significant sample volume, multiple separate assessments and is costly and time consuming. Therefore the clinical team chose to use the **LUNARIS™ Human 11-Plex Cytokine** multiplex protein detection method, which allows simultaneous assessment of multiple cytokines in a very small volume of patient's serum or plasma, to assess the prognostic value of this multi-cytokine profile in adult UCBT recipients.



Abstract submitted for American Society of Hematology (ASH) Annual Meeting 2017

Title: Assessment of a Multi-Cytokine Profile By a Novel Biochip-Based Assay Reveals Unique Correlation Patterns with Immune Reconstitution after Cord Blood Transplantation in Adults

Abstract ID#: 1980

Authors: Theodoros Karantanos, MD, Haesook T Kim, PhD, Lequn Li, MD, PhD, Corey Cutler, MD, MPH, FRCPC, Joseph H. Antin, MD, Karen Ballen, MD, Jerome Ritz, MD, Ioannis Politikos, MD and Vassiliki Boussiotis, MD, PhD.

»Working with the AYOXXA team was an excellent experience. Every team member was knowledgeable, professional and highly efficient. With the technical input of AYOXXA scientists, we were able to accomplish our goals in an amazingly short period of time.« kind statement by Vassiliki Boussiotis, MD, PhD – Beth Israel Deaconess Medical Center, Harvard Medical School, with permission.

LUNARIS™:

Innovative technology for translational proteomics

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

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

LUNARIS™ is optimized for sample volumes as low as 3 µL, which is as little as one-tenth the volume required for similar technologies, while allowing full multiplex testing without compromising quality or precision in precious samples.

AYOXXA Services:

Multiple options to access the advantages of LUNARIS™

Complete testing & readout services

- > **Send in sample for testing & receive a complete analysis report**
- > **Perform assay in your lab, send completed assay plates for readout**

Innovative panel development:

- > **Custom panel configuration**
- > **Custom multiplex assay development**



Discover Th1/Th2 cell biology

Call the experts:

+49 (0)221-22 25 29-0

+1 (617) 599 5545

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.

Ordering info

MTP plate format	# of LUNARIS™ BioChips	Cat. No.	# of samples in duplicates
96	1×32	LHCY-10110S	8
	3×32	LHCY-10110F	40
384	1×96	LHCY-20110S	40
	4×96	LHCY-20110F	184

LUNARIS™ Human 11-Plex Cytokine Kit

HEADQUARTERS GERMANY

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

www.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., Level 12
The Academia, Discovery Tower
20 College Road
Singapore 169856
Phone: +65 9148 9709
E-Mail: sales@ayoxxa.com