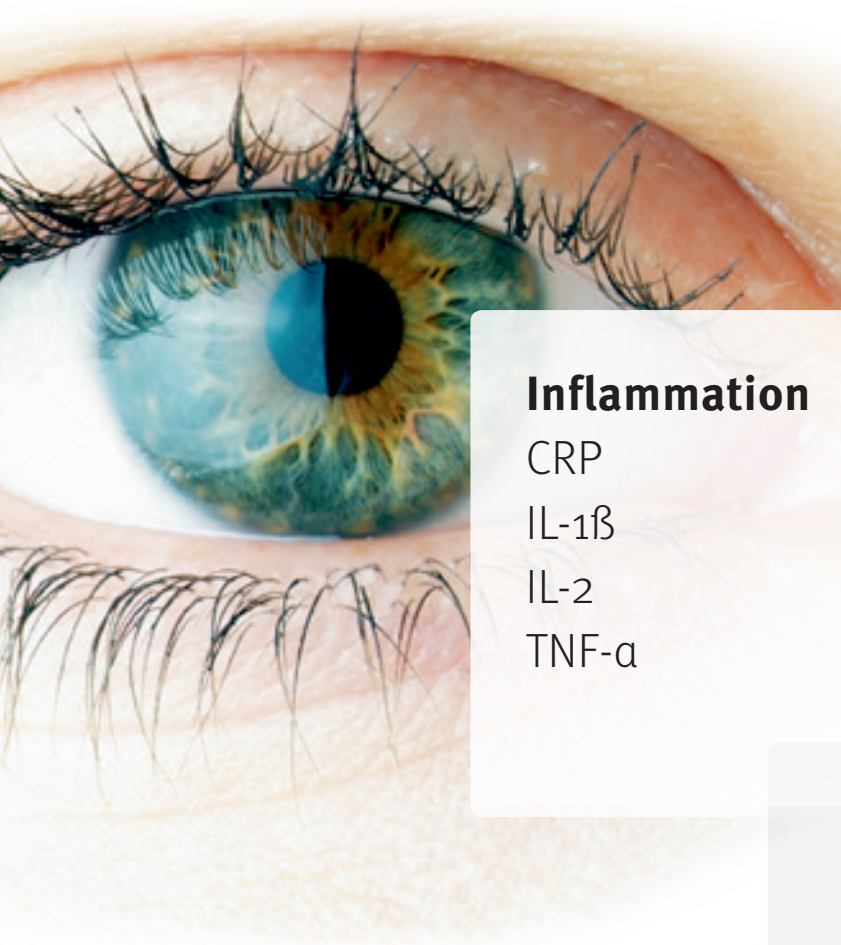


OPHTHALMOLOGY

One Step Ahead In Ophthalmology

LUNARIS™ Ophthalmology Kits



Inflammation

CRP
IL-1 β
IL-2
TNF- α

IL-6
IL-8

Angiogenesis

PlGF
PDGF-BB
VEGF
IGF-1
Ang-1
Ang-2

Chemotaxis

CXCL10
CXCL13
CCL2

LUNARIS™ Human and Mouse Ophthalmology Kits

Robust, Precise, Sensitive

- > Testing minute amounts of vitreous, aqueous humor and retina homogenates down to 3 µL volume
- > Quantitative analysis of soluble cytokines, chemokines and angiogenesis markers
- > Covers vascular endothelial growth factor (VEGF) that has been identified as a critical mediator of ocular neovascularization in retinal angiogenic disease (RAD)

LUNARIS™ Human 6-Plex Ophthalmology Kit

LUNARIS™ Human 6-Plex Ophthalmology Panel for quantification of IL-1β, IL-2, IL-6, IL-8, TNF-α, VEGF

LUNARIS™ Mouse 6-Plex Ophthalmology Kit

LUNARIS™ Mouse 6-Plex Ophthalmology Panel for quantification of Ang-1, Ang-2, CCL2/MCP-1, IGF-1, PDGF-BB, VEGF



LUNARIS™ Human 11-Plex Ophthalmology Kit

LUNARIS™ Human 11-Plex Ophthalmology Panel for quantification of PDGF-BB, Ang-2, PlGF, CCL 2, VEGF, CRP, CXCL10, CXCL12, CXCL13, IL-8, IL-6

Ophthalmology

Molecular biomarkers for translational research

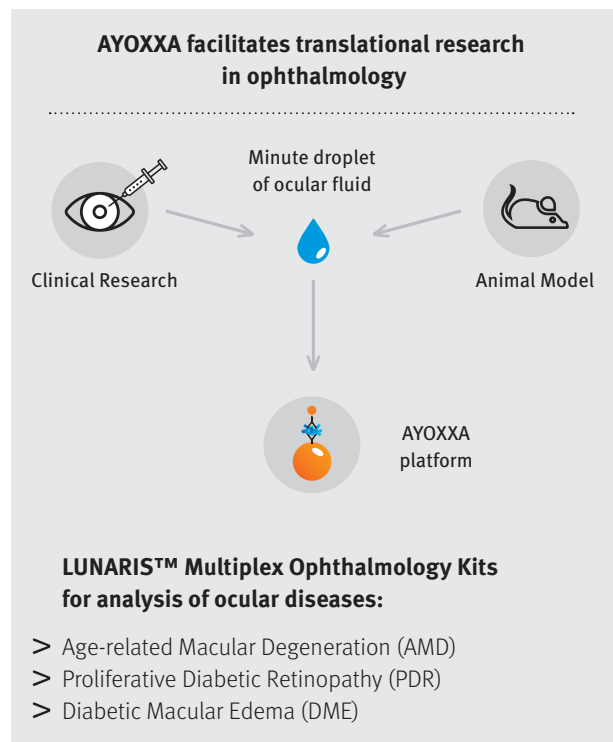
Retinal angiogenic diseases (RAD) such as proliferative diabetic retinopathy (PDR), diabetic macular edema (DME) and age-related macular degeneration (AMD) are the leading causes of blindness worldwide.

In addition to the central role of VEGF in pathogenesis, several angiogenic and inflammatory factors such as Angiopoietin-2, CCL2 (MCP-1), CXCL10 (IP-10), CXCL12 (SDF-1), CXCL13 (BCA-1), IL-6, IL-8, PlGF and PDGF-BB, have been found to play a significant role.

Investigating disease underlying mechanisms within the eye, researchers face the challenge that ocular samples from clinical interventions or mouse models are rare, of very low volume and may be highly viscous.

Offering optimized preparation protocols for ocular fluids (vitreous and aqueous humor) requiring less than 5 µL sample volume, AYOXXA's robust and precise LUNARIS™ Multiplex Ophthalmology kits enable researchers to get the maximum information out of their precious samples.

The LUNARIS™ system has been thoroughly validated in numerous collaborations with scientific partners including the Singapore Eye Research Institute, SERI, (<http://www.seri.com.sg/>), one of the leading eye research institutes worldwide and the European biomedical consortium EYE-RISK (<http://www.eyerisk.eu/>).



Excellent Data Quality

LUNARIS™ Human 11-Plex Ophthalmology Kit Validation

Table 1: Performance

Median assay parameters from n = 20 validation experiments.
LoD = Limit of detection, LLOQ = Lower limit of quantification, ULOQ = Upper limit of quantification, DR = Logarithmic detection range. All values depicted as pg/mL.

Analyte	LoD	LLOQ	ULOQ	DR
Ang-2	27	69	50000	4,7
CCL2	16	17	10000	4,8
CRP	4,4	10	5000	3,7
CXCL10	6,2	14	1111	3,0
CXCL12	82	226	16667	4,2
CXCL13	4,1	6,9	1667	3,2
IL-6	0,3	0,5	333	2,5
IL-8	0,2	3,1	222	2,3
PDGF-BB	2,0	4,6	6667	3,8
PIGF	2,0	4,6	3333	3,5
VEGF	12	23	5556	3,7

Figure 1: Performance

Bar diagram depicting the median assay parameters shown in table 1. The orange bars represent 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.

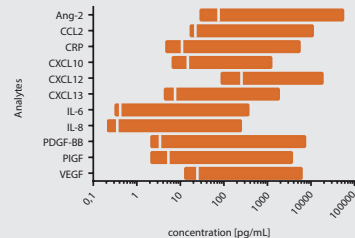


Figure 2: Dilution linearity

Graph depicts dilution linearity of spiked vitreous humor samples. VEGF concentrations measured from serially diluted samples are plotted against the dilution factor used.

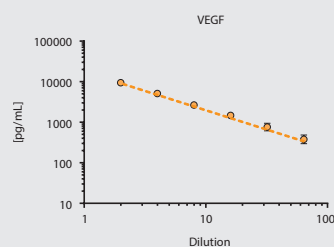
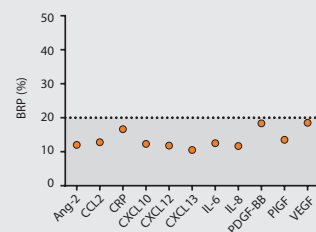


Figure 3: Precision

Between-run precision (BRP) of QC samples spiked into vitreous humor samples. Each data point represents the median between-run precision of three different QC sample concentrations measured in n = 10 experiments. The desired precision (<20%) is denoted by the dotted lines/grey shaded area.



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. Our technology includes a dedicated reader and an image-based analysis for a 100% read-out of data.

LUNARIS™ is optimized for sample volumes as low as 3 µL, which is as little as one-tenth the volume required for similar technologies, and enables full multiplex testing of 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.

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.**

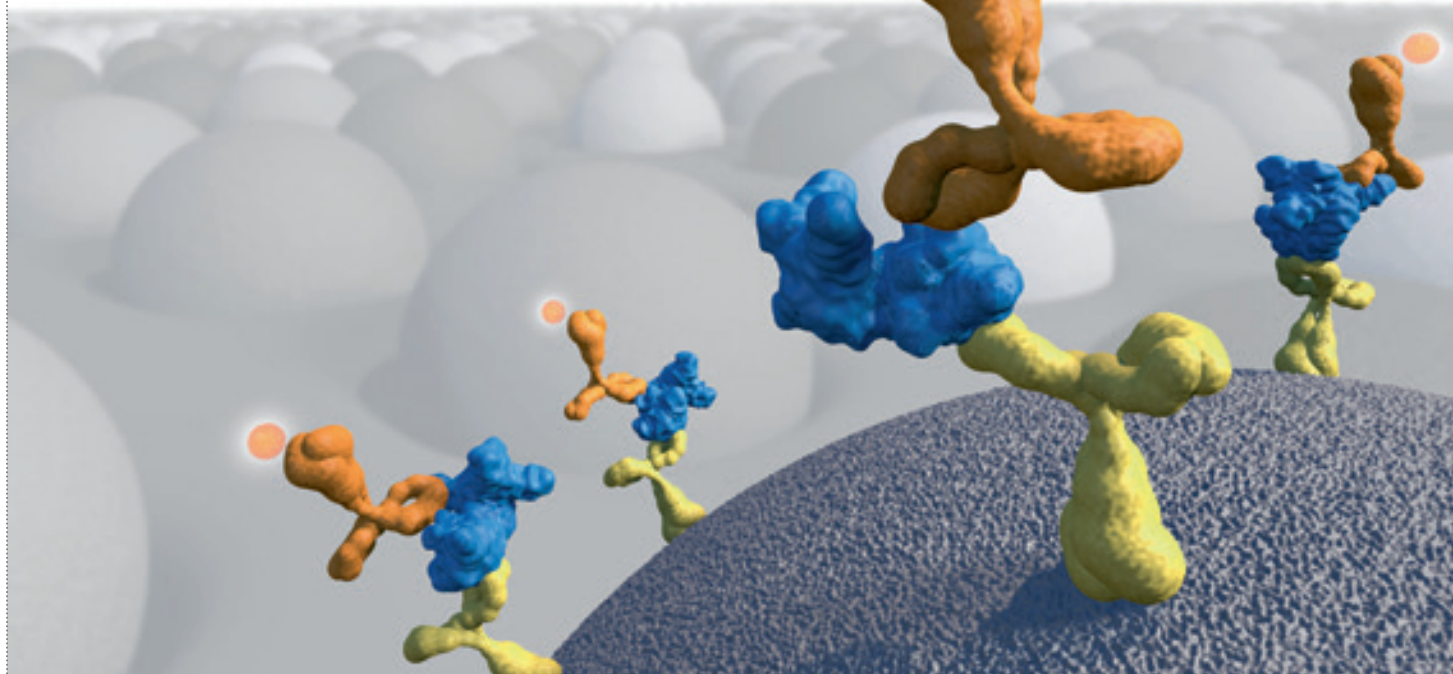
Innovative panel development:

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



LUNARIS™

AYOXXA's innovative multiplex protein technology for translational proteomics



Be one step ahead in
Ophthalmology

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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.

LUNARIS™	MTP plate format	# of LUNARIS ™ BioChips	Cat. No.	# of samples in duplicates
Mouse 6-Plex Ophthalmology Kit	96	1 x 32 3 x 32	LMOP-10060S LMOP-10060F	8 40
	384	1 x 96 4 x 96	LMOP-20060S LMOP-20060F	40 184
Human 6-Plex Ophthalmology Kit	96	1 x 32 3 x 32	LHOP-10060S LHOP-10060F	8 40
	384	1 x 96 4 x 96	LHOP-20060S LHOP-20060F	40 184
Human 11-Plex Ophthalmology Kit	96	1 x 32 3 x 32	LHOP-10110S LHOP-10110F	8 40
	384	1 x 96 4 x 96	LHOP-20110S LHOP-20110F	40 184

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