



MicroVue™ Complement  
MULTIPLEX



## MicroVue Complement Multiplex Assays

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THOUSANDS OF OPTIONS.  
VAST AMOUNTS OF DATA.



# 17 Complement Proteins... Vast Amounts of Data

## MicroVue Complement Multiplex Assays - Thousands of Options

Comprehensively analyze complement pathways and regulatory proteins

General	C3 Intact	C3a	C3d		
Alternative	Ba	Bb			
Classical	C1q	C2 Intact	C4 Intact	C4a	C4d
Terminal	C5 Intact	C5a	sC5b-9		
Regulation	Factor D	Factor H	Factor I	Factor P	

Maximize data with available panels or customize kits to fit your needs

ANALYTES CATEGORIZED INTO 2 PANELS		
Panel 1	Panel 2	Why 2 Panels?
Ba	C1q	Complement proteins are found at different concentrations in the blood. Panel 1 analytes require a lower dilution factor (1:100) than those in Panel 2 (1:1000) for the multiplex to perform properly. <ul style="list-style-type: none"><li>■ C2 Intact and Factor D can be utilized within both panels.</li></ul>
Bb	C2 Intact	
C2 Intact	C3 Intact	
C3a	C4 Intact	
C3d	C5 Intact	
C4a	Factor D	
C4d	Factor P	
C5a		<b>Why 10-Plex maximum for Panel 1?</b> Incompatibility exists between certain analytes, limiting the multiplexing options. <ul style="list-style-type: none"><li>■ C3a is not compatible with C3d.</li><li>■ C4a is not compatible with C4d.</li></ul>
sC5b-9		
Factor D		
Factor H		
Factor I		

CUSTOMIZED KIT PANELS	
Cat. #	Description
A903	Custom 3-plex - Panel 1
A904	Custom 4-plex - Panel 1
A905	Custom 5-plex - Panel 1
A906	Custom 6-plex - Panel 1
A907	Custom 7-plex - Panel 1
A908	Custom 8-plex - Panel 1
A909	Custom 9-plex - Panel 1
A910	Custom 10-plex - Panel 1
A918	Custom 3-plex - Panel 2
A919	Custom 4-plex - Panel 2
A920	Custom 5-plex - Panel 2
A921	Custom 6-plex - Panel 2

IN-STOCK MULTIPLEX KITS		
Cat. #	Description	Analytes
A900	Panel 1	Ba, Bb, C3a, C4a, C5a, sC5b-9, FH, FI
A901	Panel 1 - Focused	Bb, C3a, C4a, C5a, sC5b-9
A916	Panel 2	C1q, C2, C3, C4, C5, FD, FP
A917	Panel 2 - Focused	C1q, C3, C4, C5

ADDITIONAL REAGENTS	
Cat. #	Description
A950	Panel 1 Calibrators/Controls
A951	Panel 2 Calibrators/Controls

FOR RESEARCH USE ONLY.  
NOT FOR USE IN DIAGNOSTIC PROCEDURES.

# How It Works – Easy To Understand, Easy To Use

## Multiplex Format – ELISA Based Technology For Multiple Analytes

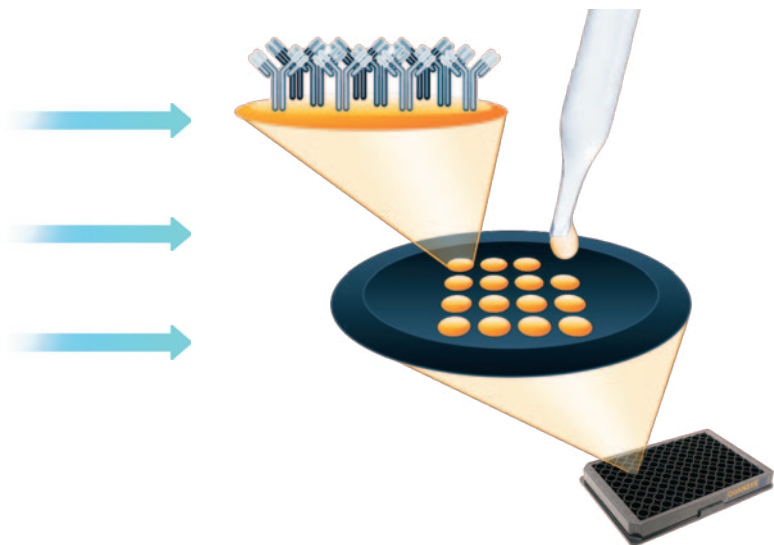
Assay format and workflow

ASSAY STEPS			
<ul style="list-style-type: none"><li>■ Sample volume per well</li><li>■ Sample dilution</li><li>■ Antigen incubation time (2 hrs.)</li></ul>	<ul style="list-style-type: none"><li>■ Wash wells (3X)</li><li>■ Detection volume per well</li><li>■ Detection incubation time (1 hr.)</li></ul>	<ul style="list-style-type: none"><li>■ Wash wells (3X)</li><li>■ SHRP volume per well</li><li>■ SHRP incubation time (20 min.)</li></ul>	<ul style="list-style-type: none"><li>■ Wash wells (3X)</li><li>■ SHRP volume per well</li><li>■ SHRP incubation time (20 min.)</li></ul>
Sample Types	Panel 1 (1:100 Dilution)	Panel 2 (1:1000 Dilution)	
Verified	Serum, Plasma	Serum, Plasma	
In Progress*	Cell Culture Supernatant, Cerebral Spinal Fluid, Saliva, Urine	Cell Culture Supernatant, Cerebral Spinal Fluid, Saliva, Urine	
Cross Reactivity	Panel 1 and Panel 2		
Verified	Human		
In Progress*	Cynomolgus Monkey and Rhesus Monkey <ul style="list-style-type: none"><li>■ Sample Types: Serum</li><li>■ Cross-reactive analytes (Ba, Bb, C2 Intact, C3a, C3d, C4a, C4d, sC5b-9, Factor D, Factor H</li><li>■ CM and RM are not cross reactive for C1q, C4, C5a, and Factor I</li></ul>		

\*Contact Quidel technical support (technicalsupport@quidel.com) for details regarding in-progress or non-listed sample types.

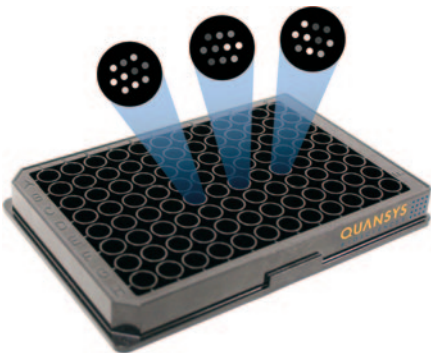
### ELISA within ELISA

- Capture antibody is applied to 350-500 µm spots to bind target proteins.
- Robotic liquid handlers deposit 20-50 nL of print diluent.
- Static 96 well plate specially created to prevent inter-well signal loss.



### Analyte detection

Signal from individual spots is generated via standard biotin and streptavidin-HRP complexing. Chemiluminescent signal detection and intensity is then used to determine presence and quantity of the specific analytes.



# Validated To High Quality MicroVue Standards

## Performance and validation data consistent with MicroVue products

The MicroVue Complement Multiplex product was developed using many of the reagents from Quidel's established complement EIA kits, which are first-in-class products for complement research. This resulted in high correlation between the two platforms and allows for easy transition to the multiplex system. The performance and validation data below demonstrates high consistency.

Panel 1	Ba	Bb	C2	C3a	C3d	C4a	C4d	C5a	sC5b-9	FD	FH	FI
R <sup>2</sup>	0.94	0.915	0.97	0.93	0.98	0.86	0.90	0.96	0.975	0.97	0.925	0.905
Panel 2	C1q	C2	C3	C4	C5	FD	FP					
R <sup>2</sup>	0.97	0.97	0.99	0.94	0.99	0.93	0.998					

Analytes Ba, Bb, C3a, C4a, C4d, C5a, sC5b-9, Factor H, and Factor I were correlated to their corresponding MicroVue single analyte kits.

Analytes C1q, C2, C3, C3d, C4, C5, Factor D, and Factor P were correlated to a series of AAA characterized proteins that were tested in duplicate. The 19 plasma samples and AAA characterized proteins were tested on at least three different days.

## Performance data for complement analytes in Panel 1 and Panel 2\*

PANEL 1 (all analytes diluted 1:100 in plasma)				
Analyte	Units	LOD	LLOQ	ULOQ
Ba	ng/mL	0.14	0.34	29.20
Bb	µg/mL	0.002	0.003	0.20
C2 Intact	ng/mL	0.62	1.24	586.20
C3a	ng/mL	0.17	0.36	85.00
C3d	ng/mL	1.18	1.20	479.40
C4a	ng/mL	0.17	0.68	44.60
C4d	µg/mL	0.003	0.006	3.40
C5a	ng/mL	0.0025	0.008	1.85
sC5b-9	ng/mL	1.13	1.86	617.00
Factor D	ng/mL	0.014	0.07	39.90
Factor H	µg/mL	0.25	0.29	6.18
Factor I	ng/mL	20.15	16.67	497.10

PANEL 2 (all analytes diluted 1:1000 in plasma)				
Analyte	Units	LOD	LLOQ	ULOQ
C1q	µg/mL	0.00038	0.003	0.44
C2 Intact	ng/mL	0.30	0.71	362.40
C3 Intact	µg/mL	0.0027	0.102	13.10
C4 Intact	µg/mL	0.024	0.044	6.80
C5 Intact	µg/mL	0.00017	0.002	0.47
Factor D	ng/mL	0.014	0.015	4.60
Factor P	ng/mL	0.22	0.728	154.50

\*Data may slightly vary lot-to-lot. Refer to the lot certificate of analysis for specific performance data.

For complete analyte specifications refer to the Technical Data Sheet located on the Quidel website. Documents can be accessed at: [www.quidel.com/research/elisa-kits/microvue-complement-multiplex](http://www.quidel.com/research/elisa-kits/microvue-complement-multiplex)



# Customer Data Demonstrates Product Quality

## Multiplex being rapidly adopted by the complement community

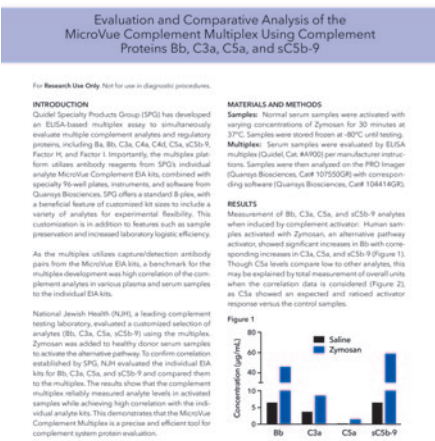
Quidel has been working with key complement research groups, testing laboratories, and biotech/pharma companies to ensure assay efficacy and that accurate data is achieved.

## Product Evaluation – In partnership with a major complement testing laboratory

Title: Evaluation and Comparative Analysis of the MicroVue Complement Multiplex Using Complement Proteins Bb, C3a, C5a, and sC5b-9



Introduction: National Jewish Health (NJH), a leading complement testing laboratory, evaluated a customized selection of analytes (Bb, C3a, C5a, sC5b-9) using the multiplex. Zymosan was added to healthy donor serum samples to activate the alternative pathway. To confirm correlation established by SPG, NJH evaluated the individual EIA kits for Bb, C3a, C5a, and sC5b-9 and compared them to the multiplex. The results show that the complement multiplex reliably measured analyte levels in activated samples while achieving high correlation with the individual analyte kits. This demonstrates that the MicroVue Complement Multiplex is a precise and efficient tool for complement system protein evaluation.

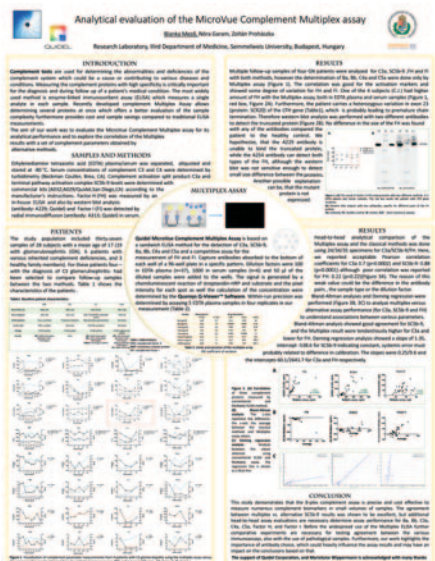


## Poster – Submitted and exhibited at the 2019 European Complement Network symposium

Title: Analytical evaluation of the MicroVue Complement Multiplex Assay

Authors: Blanka Mező, Nóra Garam, Zoltán Prohászka (Research Laboratory, IIIrd Department of Medicine, Semmelweis University, Budapest, Hungary)

Introduction: Complement tests are used for determining the abnormalities and deficiencies of the complement system which could be a cause or contributing to various diseases and conditions. Measuring the complement proteins with high specificity is critically important for the diagnosis and during follow up of a patient's medical condition. The most widely used method is enzyme-linked immunosorbent assay (ELISA) which measures a single analyte in each sample. Recently developed complement Multiplex Assay allows determining several proteins at once which offers a better evaluation of the sample complexity furthermore provides cost and sample savings compared to traditional ELISA measurements.



# Developed Using Innovative ELISA Technology

Quidel has partnered with Quansys Biosciences to bring the MicroVue Complement Multiplex Assay to the scientific community. The combination of Quidel's high quality reagents and the Quansys technology platform creates a first-in-class solution for complement research.



- Adaptable and customizable platform
- Simple and robust protocols that minimize training and promotes a quick set up
- Reduce time spent running assays
- Accurately detect antigens at low concentrations
- Saves time and money while using less sample
- Combine multiple detection methods to increase assay range and sensitivity
- Decrease the need for multiple dilutions and measure high and low abundant protein

## Q-View™ IMAGER

### High quality, reproducible chemiluminescent imaging

A high quality, low-cost solution to chemiluminescent and western blot imaging

Advantages:

- Low cost vs. other multiplex instrumentation
- Compact (~10k kg)
- User friendly with low maintenance requirement
- Variety of support and service plans available to accommodate specific user needs



## Q-View™ SOFTWARE

### Quickly acquire and analyze data in 3 easy steps

A powerful tool for the high sensitivity imaging and quantitative analysis of Q-Plex Arrays and other assays, such as classic ELISAs and blots.

Functionality:

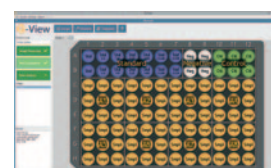
- Drives the Q-View Imager
- Time-saving "Auto" features
- Advanced image acquisition minimizes noise with maximum sensitivity
- Multiple regression models
- Outlier masking
- Pass/fail calculations automatically detect and flag errors
- Customizable reports and charts

Advantages:

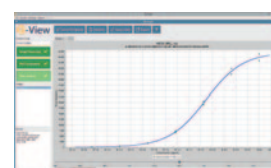
- cGMP-compatible
- Full touch-screen support
- Concise embedded help and online video tutorials
- Publication-quality, customizable reports and graphs
- Works online or offline dependent on security needs



Image Processing



Well Assignment



Data Analysis

# Beyond Complement – Access Additional Kits

Quansys offers additional multiplex kits focused on the immune system



Quidel offers the Q-Plex array portfolio of multiplex products. This includes multiplex kits for the immune system and infectious disease. In addition to human specific kits, options for mouse, rat, and porcine are also available.

MULTIPLEX ELISA KITS		
Cat. #	Description	Analytes
<b>HUMAN</b>		
150233HU	Human Angiogenesis (9-plex)	ANG-2, FGF basic, HGF, IL-8, PDGF-BB, TIMP-1, TIMP-2, TNF- $\alpha$ , VEGF
112033HU	Human Cytokine Panel 2 (4-plex)	IL-1 $\alpha$ , IL-4, IL-6, TNF- $\alpha$
125433HU	Human Chemokine (4-plex)	IL-8, IP-10, MCP-1, RANTES
120233HU	Human Chemokine (9-plex)	Eotaxin, GRO- $\alpha$ , I-309, IL-8, IP-10, MCP-1, MCP-2, RANTES, TARC
112433HU	Human Cytokine – High Sensitivity (15-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-10, IL-12p70, IL-13, IL-15, IL-17, IL-23, IFN- $\gamma$ , TNF- $\alpha$ , TNF- $\beta$
110433HU	Human Cytokine – Inflammation (9-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-6, IL-8, IL-10, IFN- $\gamma$ , TNF- $\alpha$
119733HU	Human Cytokine – Release (16-plex)	IL-1 $\beta$ , IL-1Ra, IL-2, IL-2Ra, IL-6, IL-6R, IL-8, IL-10, IL-12p70, IL-13, IFN- $\gamma$ , INF- $\alpha$ , TNF- $\alpha$ , GM-CSF, MCP-1, MIP-1 $\alpha$
110933HU	Human Cytokine – Screen (16-plex)	IL-1 $\alpha$ , IL-5, IL-12p70, IL-23, IL-1 $\beta$ , IL-6, IL-13, IFN- $\gamma$ , IL-2, IL-8, IL-15, TNF- $\alpha$ , IL-4, IL-10, IL-17, TNF- $\beta$
110333HU	Human Cytokine – Stripwells (16-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-4, IL-5, IL-6, IL-8, IL-10, IL-12p70, IL-13, IL-15, IL-17, IL-23, IFN- $\gamma$ , TNF- $\alpha$ , TNF- $\beta$
115433HU	Human Cytokine (4-plex)	IL-6, IL-10, IFN- $\gamma$ , TNF- $\alpha$
115233HU	Human Cytokine Panel 1 (6-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-6, IL-10, IFN- $\gamma$ , TNF- $\alpha$
115333HU	Human Cytokine Panel 2 (6-plex)	IL-4, IL-6, IL-8, IL-10, IFN- $\gamma$ , TNF- $\alpha$
569849HU	Human Environmental Enteric Dysfunction (EED)	RBP4, CRP, AGP, Ferritin, sTfR, Tg, HRP2, I-FABP, sCD14, IGF-1, FGF21
332149HU	Human Female Hormone (8-plex)	Adiponectin, Cortisol, C-peptide, E1G, FSH, HCG- $\beta$ , IL-6, IL-10
112533HU	Human High Sensitivity (4-plex)	IL-4, IL-6, IL-10, IFN- $\gamma$
565949HU	Human Malaria (5-plex)	HRP2, LDH-Pv, LDH-Pan, PDH-Pf, CRP
565149HU	Human Micronutrient (7-plex)	AGP, CRP, Ferritin, HRP2, RBP4, sTfR, Tg
340949HU	Human MMP (6-plex)	MMP-1, MMP-2, MMP-3, MMP-7, MMP-9, MMP-13
691649HU	Human SARS-CoV-2 IgG (4-plex)	SARS-CoV-2 S1, SARS-CoV-2, S2, Negative control, Positive control
711649HU	Human SARS-CoV-2 IgG Quantitative	SARS-CoV-2 S1, SARS-CoV-2 S2, Sheep FC negative control, Anti-human IgG positive control
447249HU	Human TGF $\beta$ HDR Singleplex Assay	TGF $\beta$
<b>MOUSE</b>		
110449MS	Mouse Cytokine – Inflammation (14-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-6, IL-10, IL-12p70, IL-17, MCP-1, TNF- $\alpha$ , MIP-1 $\alpha$ , GM-CSF, RANTES
115449MS	Mouse Cytokine Panel 1 (4-plex)	MCP-1, MIP-1 $\alpha$ , RANTES, TNF- $\alpha$
115249MS	Mouse Cytokine Panel 1 (6-plex)	IL-1 $\gamma$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-6, IL-10, TNF- $\alpha$
115549MS	Mouse Cytokine Panel 2 (4-plex)	IFN- $\gamma$ , IL-1 $\beta$ , IL-6, TNF- $\alpha$
115349MS	Mouse Cytokine Panel 2 (6-plex)	IL-1 $\alpha$ , IL-10, MCP-1, MIP-1 $\alpha$ , RANTES, TNF- $\alpha$
110949MS	Mouse Cytokine – Screen (16-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-5, IL-6, IL-10, IL-12p70, IL-17, MCP-1, IFN- $\gamma$ , TNF- $\alpha$ , MIP-1 $\alpha$ , GM-CSF, RANTES
110349MS	Mouse Cytokine – Stripwells (16-plex)	IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-5, IL-6, IL-10, IL-12p70, IL-17, MCP-1, IFN- $\gamma$ , TNF- $\alpha$ , MIP-1 $\alpha$ , GM-CSF, RANTES
112049MS	Mouse Cytokine Panel 3 (4-plex)	IL-2, IL-4, IL-6, TNF- $\alpha$
<b>RAT</b>		
111649RT	Rat Cytokine Inflammation (9-plex)	IL-1 $\alpha$ , IL-4, IL-12p70, IL-1 $\beta$ , IL-6, IFN- $\gamma$ , IL-2, IL-10, TNF- $\alpha$
<b>PORCINE</b>		
119149PC	Porcine Cytokine – High Sensitivity (4-plex)	IL-1 $\alpha$ , IL-6, IL-8, TNF- $\alpha$



Thousands of Options. Vast Amounts of Data.

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