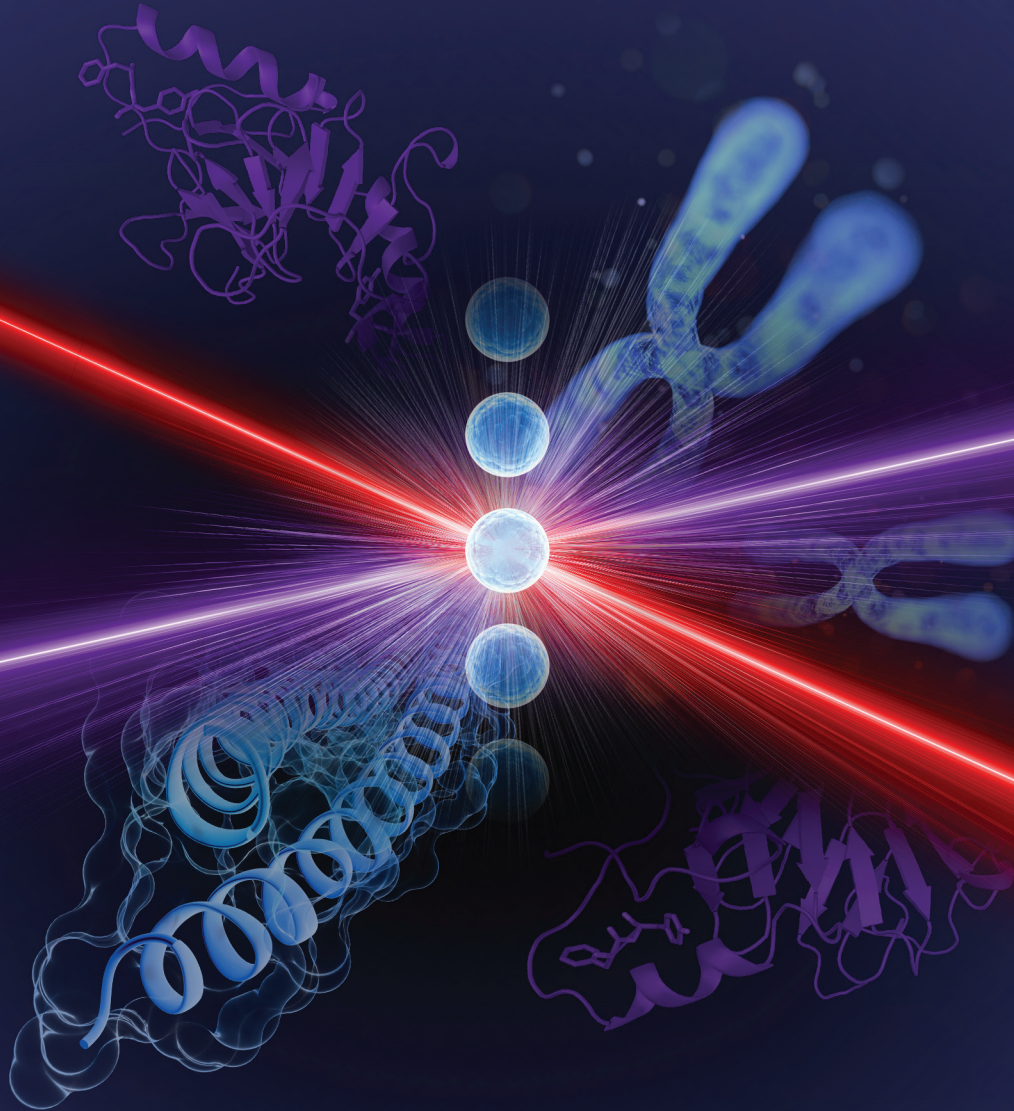


invitrogen



# ProcartaPlex multiplex immunoassays for the Luminex platform

Get exactly the panel you want

**ThermoFisher**  
SCIENTIFIC

# Optimize your research with ProcartaPlex multiplex immunoassays

## **What would the ability to simultaneously quantitate as many as 80 cytokines or other soluble biomarkers from a single 25 $\mu$ L sample do for your research?**

The use of multiplex immunoassays for multiple analyte detection has proven to be an invaluable tool for the comprehensive study of biological systems. As these systems are comprised of networks of secreted proteins including cytokines, chemokines, growth factors, and other proteins, multiplex immunoassays are an efficient method for biomarker profiling of a large set of proteins from a small sample.

Invitrogen™ ProcartaPlex™ multiplex immunoassays provide the ability to create your unique panel and the assurance that you will achieve reproducible results throughout the course of your study.

- More than 90% of ProcartaPlex assays can be combined with one another
- High correlation to our corresponding ELISA kits ( $R^2 > 0.9$ )
- Scalable and reproducible performance regardless of plex size
- Largest published panel for quantitation of up to 65 analytes<sup>[1-4]</sup>

## **What are ProcartaPlex assays?**

ProcartaPlex multiplex immunoassays are bead-based assays for protein quantification based on the principles of a sandwich ELISA with the use of Luminex® xMAP® (multi-analyte profiling) technology.

ProcartaPlex assays are available for use with serum, plasma, cell and tissue lysates, cell culture supernatants, and may be suitable for some bodily fluids. Assays are provided in multiple formats across six species (human, mouse, rat, nonhuman primate, porcine, and canine).

## **ProcartaPlex Mix & Match panels (custom mixed)**

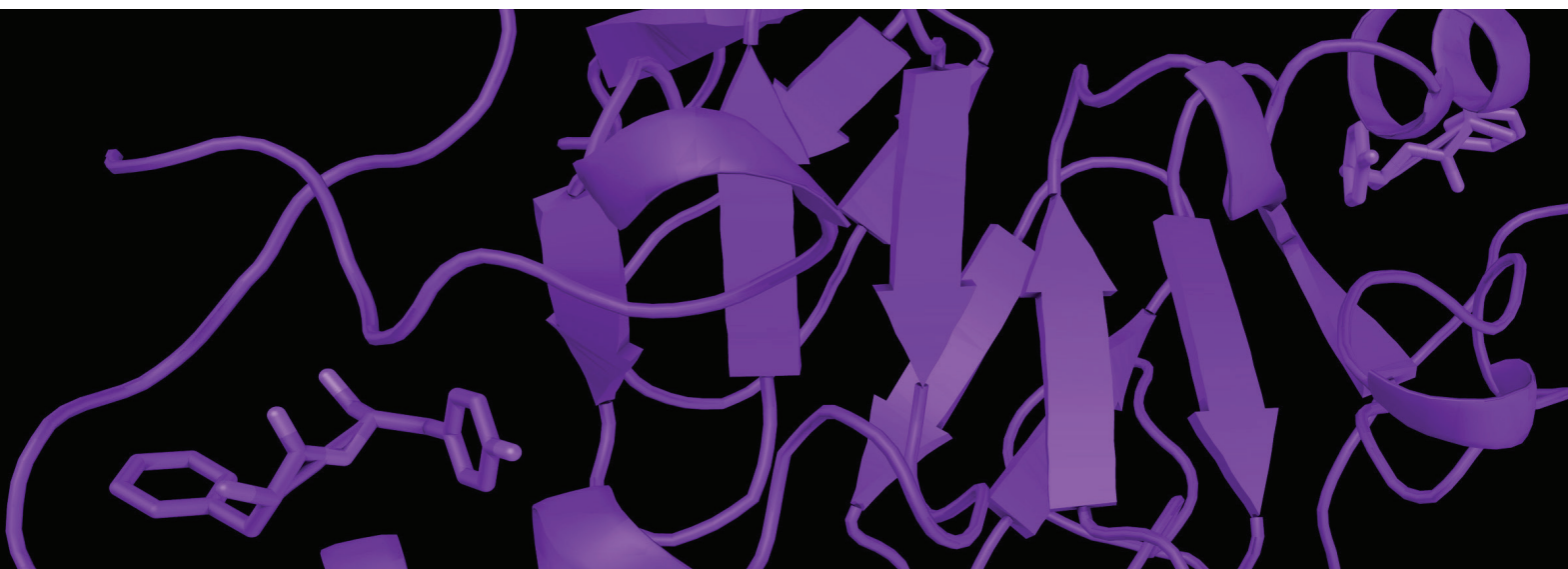
Custom-blended and optimized panels deliver results that are tailored to the panel design of your choice and your sample type. Simply select the desired analytes from a ProcartaPlex Mix & Match list, then select sample type, bead type, and instrument type. A custom assay kit will be built and optimized for your requirements.

## **ProcartaPlex simplex kits (off-the-shelf)**

Simplex kits detect individual analytes and are designed to be added to Invitrogen™ ProcartaPlex panels to increase customization. Alternatively, multiple Invitrogen™ ProcartaPlex™ Simplex sets can be combined and run using the Invitrogen™ ProcartaPlex™ Basic Kit which includes all nontarget-specific reagents needed to perform the ProcartaPlex assay.

## **ProcartaPlex panels (off-the-shelf)**

More than 70 preconfigured panels are available for immediate delivery. Several panels can be combined with one another or with simplex sets.



# Why is the assay based on Luminex technology?

## Profile more biomarkers with less sample amount

Our ProcartaPlex assays are optimized for use with Luminex® systems to enable you to get more information from less sample. Quantitate up to 80 analytes simultaneously with the Luminex® 100™ and 200™ Systems or the Luminex® FLEXMAP 3D® System and up to 50 analytes with the Luminex® MAGPIX® System. All of our ProcartaPlex assays are compatible with as little as 25 µL of plasma or serum samples or 50 µL of cell culture supernatant sample.

## High-throughput analysis

Measure several analytes simultaneously in the same time it takes to run a single ELISA assay. ProcartaPlex protocols are available in 96- and 384-well formats for high-throughput analysis.

## Trusted platform and partnership

As a certified partner of the Luminex corporation and a preferred supplier of high-quality assays for medical and drug discovery research, we have been providing multiplexed reagents optimized for use with Luminex systems for more than 15 years. These instruments have been relied on by life science researchers for almost 20 years, and there are now over 13,000 Luminex® instruments in use around the world.

As a preferred supplier of Luminex® products, we can help you acquire your next Luminex system. Find out more at [thermofisher.com/luminexinstruments](http://thermofisher.com/luminexinstruments)



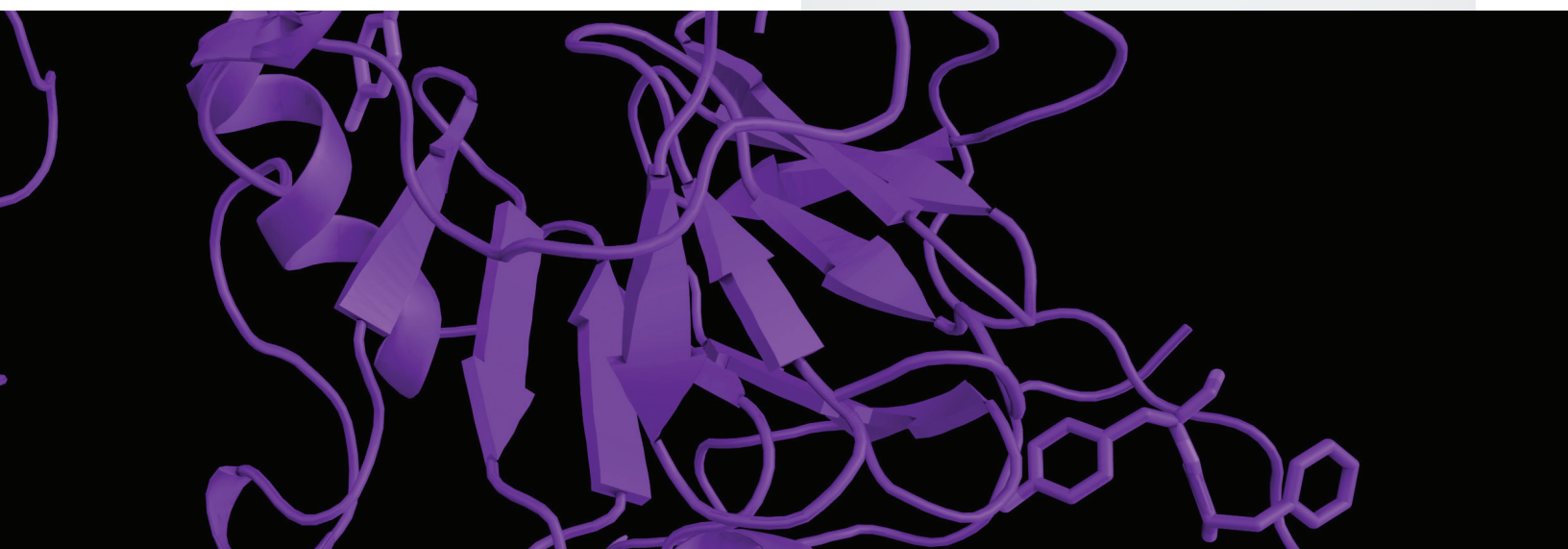
Luminex 200 System

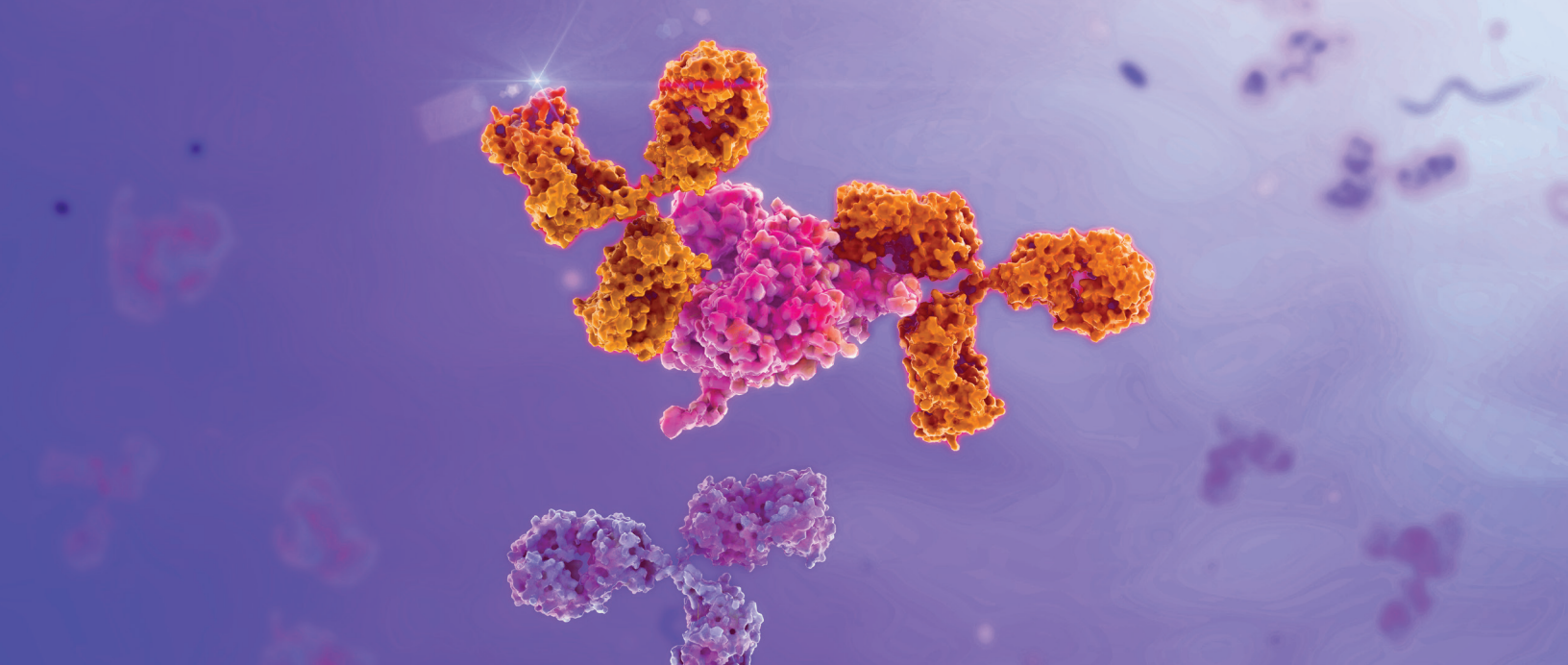


MAGPIX System



FLEXMAP 3D System





## Why ProcartaPlex assays?

### Flexibility

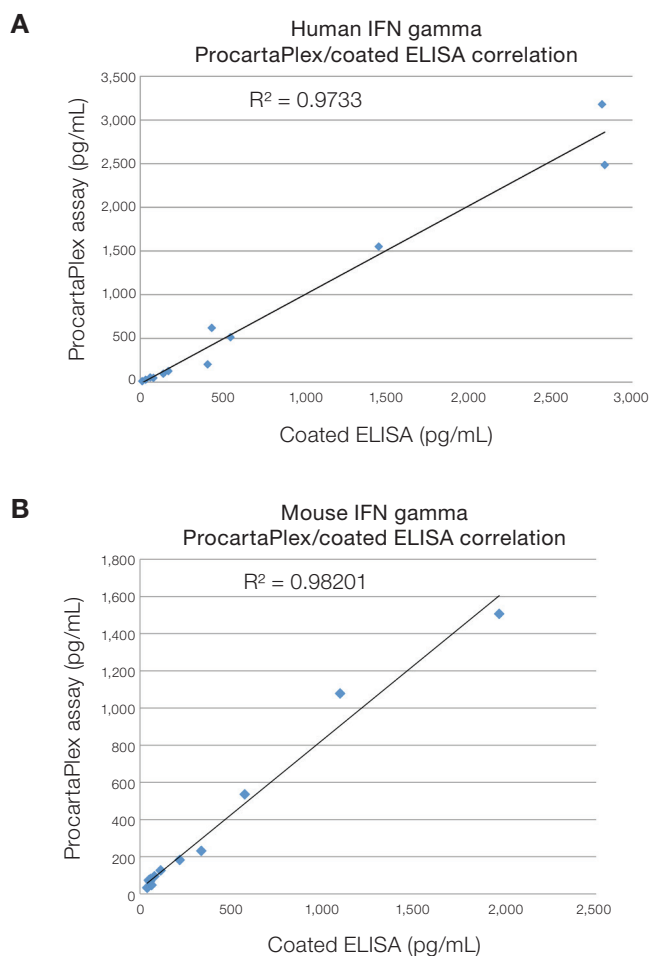
Get exactly the panel you want. Since more than 90% of ProcartaPlex assays can be combined with one another, ProcartaPlex assays allow the creation of highly specific as well as high-plex panels. We currently offer the largest published panel with a 65-plex assay.<sup>[1-4]</sup>

### Reproducible results

ProcartaPlex assays are based on the principles of sandwich ELISA, where two highly specific antibodies recognize different epitopes on the same protein. Reproducible results come from reliable manufacturing. We own and operate a world-class hybridoma facility for manufacturing antibodies; and these antibodies are used in ProcartaPlex assays, enabling the delivery of consistent, reproducible, and high-quality assays.

### Correlation to ELISA

Switch easily from ProcartaPlex assays to ELISA and vice-versa with reliable results. Most of our ProcartaPlex assays use the same antibody pairs as our traditional plate-based ELISAs, resulting in a high correlation ( $R^2 > 0.9$ ) between the two assays. As shown in Figure 1, equivalent results ( $R^2 > 0.9$ ) were obtained using the ProcartaPlex multiplex immunoassays and our traditional plate-based ELISAs for human (Cat. No. BMS228) and mouse (Cat. No. BMS606) IFN gamma. ProcartaPlex assays achieve quantitative results comparable to traditional ELISA results with the added benefits of reduced sample volume, shorter assay time, and lower cost.

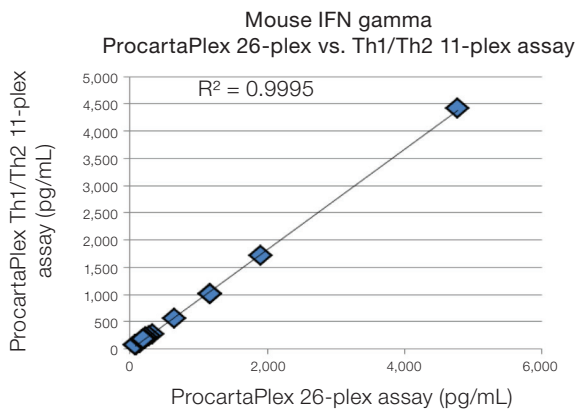


**Figure 1. Results of an experiment measuring IFN gamma in stimulated human and mouse PBMCs.** Supernatants were serially diluted two-fold in normal human or mouse serum, to allow for differential cytokine levels in a serum matrix. Additional cytokines for human and mouse analytes were compared including IL-1, IL-17A, and TNF alpha and similar performance was obtained (data not shown).

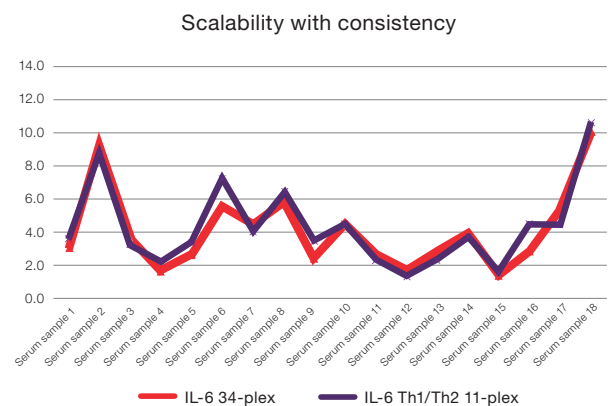
## Scalability

The ability to scale the number of analytes investigated in multiplex experiments is critical for the progression of many projects. For example, it is not uncommon to begin a project by analyzing a large, comprehensive 34-plex cytokine panel on fewer samples (i.e., 100) to determine which analytes are affected by a particular disease or drug treatment. The resulting list of analytes can then be investigated further, for instance, using an 11-plex panel, on a larger set of samples. Thus, there is a great need for scalability in multiplex panel assays in order to enable

researchers to correlate all their data across different stages of their investigation. Many commercially available multiplex assays have not been developed with this level of consistency in mind. However, this specification is a key design requirement incorporated during ProcartaPlex assay development. Data in Figures 2 and 3 illustrate the high correlation between similar analytes in a large and small panel and the scalability when using ProcartaPlex assays. Similar results are obtained when investigating other analytes.



**Figure 2. Data illustrates the high correlation between large- and small-scale multiplex scaling when using the ProcartaPlex assays.** Regression analysis comparing the Invitrogen™ ProcartaPlex™ Mouse Cytokine & Chemokine Panel 1 (26-plex) and the Invitrogen™ ProcartaPlex™ Mouse Th1/Th2 Cytokine Panel (11-plex) yielded an R<sup>2</sup> value >0.9995.



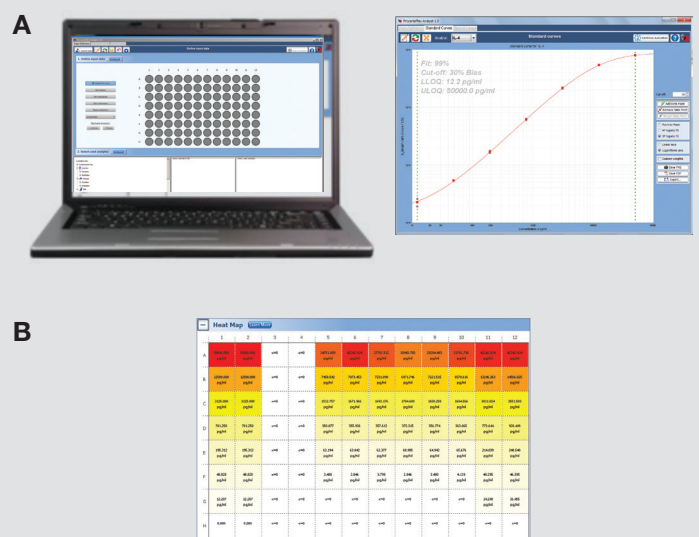
**Figure 3. Scalability of ProcartaPlex multiplex immunoassays.** Human serum samples were run in parallel using both the Invitrogen™ ProcartaPlex™ Human Cytokine & Chemokine Panel 1A (34-plex) and the Invitrogen™ ProcartaPlex™ Human Th1/Th2 Cytokine Panel (11-plex). Experiments demonstrate consistency achieved in both large- and small-scale multiplex panels.

## Free analysis software

Invitrogen™ ProcartaPlex™ Analyst Software is easy to use, yet powerful. It is compatible with \*.csv file output from Luminex instruments and can be downloaded at [thermofisher.com/resources](http://thermofisher.com/resources)

### ProcartaPlex Analyst Software provides:

- 4-parameter logistic (4PL) or 5PL standard curve evaluation (Figure 4)
- Linear, logarithmic, and point-to-point fit
- Predefined dilution factor and standard range
- Export settings for fast and easy reanalysis
- Export graph images for publishing
- At-a-glance sample pattern with a heat map (Figure 4)



**Figure 4. ProcartaPlex Analysis Software includes (A) five-parameter curve fit and (B) heat map analysis for sample.**

# Design your own assay with our custom development services

ProcartaPlex assays provide the ultimate in flexibility; you can select your own analytes and mix them yourself, or design the panel of your choice with our online Invitrogen™ ProcartaPlex™ Panel Configurator. Select your analytes of interest and immediately receive recommendations for the most effective solutions for your panel needs.

The ProcartaPlex multiplex immunoassays represent the most flexible system of assays for the Luminex platform on the market. More than 90% of our ProcartaPlex assays can be combined with one another. A web-based design tool is now available for your made-to-order assays.

To design your own custom assay blend, go to [thermofisher.com/customluminex](http://thermofisher.com/customluminex)

ProcartaPlex analytes	Human	Mouse	Rat	NHP	Canine	Porcine
4-1BB (CD137)	✓					
4-1BBL (CD137L)	✓					
Albumin*			✓			
Adiponectin	✓	✓		✓		
Antithrombin*	✓					
APRIL	✓					
BAFF	✓	✓				
BLC (CXCL13)	✓			✓		
BDNF	✓			✓		
Betacellulin (BTC)		✓				
BTLA (CD272)	✓					
C-peptide	✓					
CD27	✓					
CD28	✓					
CD80 (B7-1)	✓					
Calcitonin	✓					
Caspase-3 (total)	✓					
CD30	✓					
CD30L	✓					
CD40	✓					
CD40L	✓			✓		
CD44var (6var)	✓					
CRP	✓	✓	✓			
Clusterin*			✓			
CTACK (CCL27)	✓					
CTLA-4 (CD152)	✓					
Cortisol	✓					
Cystin C*			✓			
D-Dimer	✓					
DR6	✓					
EDA-1	✓					
EGF	✓					
ENA-78 (CXCL5)	✓	✓				

ProcartaPlex analytes	Human	Mouse	Rat	NHP	Canine	Porcine
Endoglin (CD105)	✓					
Eotaxin (CCL11)	✓	✓	✓	✓		
Eotaxin-2 (CCL24)	✓					
Eotaxin-3 (CCL26)	✓					
E-selectin (CD62E)	✓					
Factor V*	✓					
Factor VII*	✓					
Factor VIII*	✓					
Factor IX*	✓					
Factor X*	✓					
Factor XI*	✓					
Factor XII*	✓					
Factor XIII*	✓					
Fas (APO)	✓					
Fas-L	✓					
FGF-2	✓			✓		
FGF-23	✓					
Fibrinogen	✓					
Fractalkine (CX3CL1)	✓					
Galectin-3	✓					
GAPDH	✓					
G-CSF (CSF-3)	✓	✓	✓	✓		
GITRL	✓					
GITR (CD357)	✓					
GM-CSF	✓	✓	✓	✓		
Granzyme B	✓			✓		
GRO alpha (KC/CXCL1)	✓	✓	✓			
GLP-1	✓					
Ghrelin	✓					
HER-2	✓					
HGF	✓					
HVEM (CD270)	✓					
Insulin	✓					

ProcartaPlex analytes	Human	Mouse	Rat	NHP	Canine	Porcine
ICAM-1	✓		✓	✓		
IFN alpha	✓	✓		✓		✓
IFN beta	✓	✓				✓
IFN gamma	✓	✓	✓	✓	✓	✓
IFN omega	✓	✓				
IgA*	✓	✓	✓			
IgE*	✓	✓				
IgG1*	✓	✓	✓			
IgG2*	✓					
IgG2a*		✓	✓			
IgG2b*		✓	✓			
IgG2c*		✓	✓			
IgG3*	✓	✓				
IgG4*	✓					
IgM*	✓	✓	✓			
IDO	✓					
IL-1 alpha	✓	✓	✓			
IL-1 beta	✓	✓	✓	✓		✓
IL-1 RA	✓			✓		
IL-2	✓	✓	✓	✓	✓	
IL-2RA (CD25)	✓	✓				
IL-3	✓	✓				
IL-4	✓	✓	✓	✓	✓	✓
IL-5	✓	✓	✓	✓		
IL-6	✓	✓	✓	✓	✓	✓
IL-7	✓	✓		✓		
IL-7RA (CD127)			✓			
IL-8 (CXCL8)	✓			✓	✓	✓
IL-9	✓	✓				
IL-10	✓	✓	✓	✓	✓	✓
IL-12/IL-23p40	✓	✓	✓	✓	✓	✓
IL-12 p70	✓	✓	✓	✓		
IL-13	✓	✓	✓	✓		

\* Analytes only available as part of a panel.

# Sample measurement service

No Luminex instrument available? Sending us your samples can help save you time and money. Our service team consists of highly skilled and experienced professionals who will work with you throughout the stages of your project to help ensure delivery of high-quality data and results.

Benefits of our custom assay service:

- Enables you to obtain reproducible, quantitative data from a small volume
- Receive high-quality assay/data reports created by experienced professionals
- Eliminate the need to buy a Luminex instrument
- Free up time and resources to focus on other projects

ProcartaPlex analytes	Human	Mouse	Rat	NHP	Canine	Porcine
IL-15	✓			✓		
IL-15/IL-15R		✓				
IL-16	✓					
IL-17A (CTLA-8)	✓	✓	✓	✓		
IL-17AF	✓					
IL-17F	✓	✓		✓		
IL-18	✓	✓		✓		
IL-19		✓				
IL-20	✓					
IL-21	✓	✓				
IL-22	✓	✓				
IL-23	✓	✓		✓		
IL-25		✓				
IL-27	✓	✓				
IL-29 (IFN lambda 1)	✓					
IL-31	✓	✓				
IL-33	✓	✓				
IL-37	✓					
IP-10 (CXCL10)	✓	✓	✓	✓		
I-TAC (CXCL11)	✓			✓		
KIM-1*			✓			
LAG-3	✓					
LAP (TGF beta 1)	✓					
Leptin	✓	✓	✓			
Light	✓					
LIF	✓	✓				
L-selectin	✓					
MCP-1 (CCL2)	✓	✓	✓	✓	✓	
MCP-2 (CCL8)	✓					
MCP-3 (CCL7)	✓	✓	✓	✓		
M-CSF	✓	✓				
MDC (CCL22)	✓					
MIF	✓			✓		

ProcartaPlex analytes	Human	Mouse	Rat	NHP	Canine	Porcine
MIG (CXCL9)	✓			✓		
MIP-1 alpha (CCL3)	✓	✓	✓	✓		
MIP-1 beta (CCL4)	✓	✓		✓		
MIP-2 alpha (CXCL2)		✓	✓			
MIP-3 alpha (CCL20)	✓					
MMP-1	✓					
MMP-2	✓					
MMP-3	✓					
MMP-7	✓					
MMP-8	✓					
MMP-9	✓					
MMP-12	✓					
MMP-13	✓					
Myeloperoxidase (MPO)	✓					
NGAL	✓		✓*			
NGF beta	✓		✓	✓	✓	
Oncostatin M (OSM)	✓					
Osteopontin	✓		✓*			
Osteoprotegerin (OPG)	✓					
PAI-1 (Serpin)	✓			✓		
PDGF-BB	✓			✓		
PD-1 (CD279)	✓					
PD-L1 (CD274)	✓					
PD-L2	✓					
PECAM-1	✓					
PIGF	✓					
Protein C*	✓					
Protein S*	✓					
Prothrombin*	✓					
P-selectin	✓					
PYY	✓					
RBP4	✓					
RANKL	✓	✓	✓			

ProcartaPlex analytes	Human	Mouse	Rat	NHP	Canine	Porcine
RANTES (CCL5)	✓	✓	✓	✓		
Resistin (ADSF)	✓			✓		
SAA	✓					
SAP (Pentraxin 2)	✓					
SCF	✓			✓	✓	
SCGF beta	✓					
SDF-1 alpha (CXCL12a)	✓			✓		
ST2 (IL-33R)		✓				
Survivin (BIRC5)	✓					
TGF alpha	✓			✓		
TGF beta 1	✓	✓	✓	✓	✓	✓
Thrombopoietin (TPO)	✓					
TIM-3 (CD366)	✓					
TIMP-1	✓		✓*			
TFF-3*			✓			
TNF alpha	✓	✓	✓	✓	✓	✓
TNF beta	✓			✓		
TNF R1	✓					
TNF R2	✓					
Tissue Plasmon Activator	✓					
TRAIL	✓			✓		
TRAIL-R1	✓					
TRAIL-R2	✓					
TSLP	✓	✓				
Tweak	✓					
VCAM-1	✓		✓	✓		
VEGF-A	✓	✓	✓	✓	✓	
VEGF-D	✓			✓		
VEGF-R1	✓					
VEGF-R2	✓					
VEGF-R3	✓					
vWF*	✓					
ZAG	✓					

# ProcartaPlex panels

## Human ProcartaPlex Immune Monitoring Panel (65-plex)

Analyte (bead region)				
Cat. No. EPX650-10065-901				
APRIL (88)	GM-CSF (44)	IL-7 (26)	IL-23 (63)	MIP-1α (12)
BAFF (86)	Gro α (61)	IL-8 (27)	IL-27 (14)	MIP-1β (47)
BLC (29)	HGF (46)	IL-9 (52)	IL-31 (37)	MIP-3α (56)
βNGF (55)	IFN alpha (48)	IL-10 (28)	IP-10 (22)	MMP-1 (64)
CD30 (84)	IFN gamma (43)	IL-12p70 (34)	I-TAC (57)	SCF (39)
CD40L (74)	IL-1α (62)	IL-13 (35)	LIF (15)	SDF-1α (13)
ENA-78 (82)	IL-1β (18)	IL-15 (65)	MCP-1 (51)	TNF alpha (45)
Eotaxin (33)	IL-2 (19)	IL-16 (70)	MCP-2 (8)	TNF beta (54)
Eotaxin-2 (30)	IL-2R (9)	IL-17A (36)	MCP-3 (68)	TNF-R2 (85)
Eotaxin-3 (49)	IL-3 (73)	IL-18 (66)	M-CSF (67)	TRAIL (58)
FGF-2 (75)	IL-4 (20)	IL-20 (81)	MDC (87)	TSLP (80)
Fractalkine (59)	IL-5 (21)	IL-21 (72)	MIF (53)	TWEAK (97)
G-CSF (42)	IL-6 (25)	IL-22 (76)	MIG (69)	VEGF-A (78)

## Human ProcartaPlex panels

Th1/Th2 Cytokine Panel (11-plex)				A
Cat. No. EPX110-10810-901				
GM-CSF	IL-2	IL-6	IL-18	
IFN gamma	IL-4	IL-12 p70	TNF alpha	
IL-1 beta	IL-5	IL-13		
Th9/Th17/Th22/Treg Cytokine Panel (7-plex)				B
Cat. No. EPX070-10817-901				
IL-9	IL-17A	IL-22	IL-27	
IL-10	IL-21	IL-23		
Cytokine Panel 1C (7-plex)				C
Cat. No. EPX070-10010-901				
IFN alpha	IL-1RA	IL-15	TNF beta (LTA)	
IL-1 alpha	IL-7	IL-31		
Chemokine Panel 1 (9-plex)				D
Cat. No. EPX090-12187-901				
Eotaxin (CCL11)	MIP-1 alpha (CCL3)			
GRO alpha (CXCL1)	MIP-1 beta (CCL4)			
IL-8 (CXCL8)	SDF-1 alpha (CXCL12)			
IP-10 (CXCL10)	RANTES (CCL5)			
MCP-1 (CCL2)				
Growth Factor Panel 1 (11-plex)				E
Cat. No. EPX110-12170-901				
BDNF	HGF	SCF		
NGF beta	LIF	VEGF-A		
EGF	PDGF-BB	VEGF-D		
FGF-2	PIGF			

## Human ProcartaPlex panel combinations

Th9/Th17/Th22/Treg & Cytokine Panel 1C (14-plex)	B	C			
Cat. No. EPX140-12174-901					
Cytokine 1C & Chemokine Panel 1 (15-plex)	C	D			
Cat. No. EPX150-12176-901					
Th9/Th17/Th22/Treg & Chemokine Panel 1 (16-plex)	B	D			
Cat. No. EPX160-12175-901					
Th1/Th2 & Cytokine Panel 1C (18-plex)	A	C			
Cat. No. EPX180-12172-901					
Th1/Th2/Th9/Th17/Th22/Treg Cytokine Panel (18-plex)	A	B			
Cat. No. EPX180-12165-901					
Th1/Th2 & Chemokine Panel 1 (20-plex)	A	D			
Cat. No. EPX200-12173-901					
Cytokine Panel 1B (25-plex)	A	B	C		
Cat. No. EPX250-12166-901					
Cytokine & Chemokine Panel 1A (34-plex)	A	B	C	D	
Cat. No. EPX340-12167-901					
Cytokine/Chemokine/Growth Factor Panel 1 (45-plex)	A	B	C	D	E
Cat. No. EPX450-12171-901					



## Human cytokine/chemokine/growth factor ProcartaPlex panels

Essential Th1/Th2 Cytokine Panel (6-plex)			
Cat. No. EPX060-10009-901			
IFN gamma	IL-5	IL-12 p70	
IL-4	IL-6	TNF alpha	
Essential Panel 2 (4-plex)			
Cat. No. EPX040-10008-901			
IL-10	IL-8 (CXCL8)	IL-10	IL-17A (CTLA-8)
Inflammation Panel (20-plex)			
Cat. No. EPX200-12185-901			
E-selectin	IL-1 alpha	IL-10	MCP-1 (CCL2)
GM-CSF	IL-1 beta	IL-12p70	MIP-1 beta (CCL4)
ICAM-1	IL-4	IL-13	MIP-1 alpha (CCL3)
IFN alpha	IL-6	IL-17A (CTLA-8)	P-selectin
IFN gamma	IL-8 (CXCL8)	IP-10 (CXCL10)	TNF alpha
Myokine Panel (8-plex)			
Cat. No. EPX080-12186-901			
BDNF	IL-6	IL-10	LIF
IL-1RA	IL-8 (CXCL8)	IL-15	TNF alpha

## Human antibody isotyping ProcartaPlex panels

Antibody Isotyping Panel (7-plex)*			
Cat. No. EPX070-10818-901			
IgG1	IgG2	IgG3	IgG4
IgA	IgE	IgM	

## Human metabolism/obesity panels

Metabolism/Obesity Panel 1 (5-plex)*			
Cat. No. EPX050-15805-901			
RBP4	ICAM-1	NGAL	Adiponectin
ZAG			

## Human coagulation ProcartaPlex panels

Coagulation Panel 1 (6-plex)			
Cat. No. EPX060-10824-901			
Factor XI	Factor XII	Factor XIII	
Antithrombin	Prothrombin	CRP	
Coagulation Panel 2 (3-plex)*			
Cat. No. EPX030-10823-901			
Factor V	Factor VII	Factor VIII	
Coagulation Panel 3 (4-plex)*			
Cat. No. EPX040-10825-901			
Factor IX	Protein S	Protein C	vWF

## Human MMP ProcartaPlex panels

MMP-Panel 1 (5-plex)			
Cat. No. EPX050-10015-901			
MMP-1	MMP-8	MMP-12	MMP-13
MMP-7			
MMP-Panel 2 (3-plex)*			
Cat. No. EPX030-10829-901			
MMP-2	MMP-3	MMP-9	

## Human immuno-oncology ProcartaPlex panels

Immuno-Oncology Panel (14-plex)			
Cat. No. EPX140-15803-901			
BTLA	LAG-3	TIM-3	CD27
GITR	PD1	CD28	CD152 (CTLA4)
HVEM	PD-L1	CD80	
IDO	PD-L2	4-1BB (CD137)	

## Human TNFSF ProcartaPlex panels

TNF Ligand Panel (15-plex)*			
EPX150-15801-901			
4-1BBL	EDA-1	NGF beta	RANKL
APRIL	FasL	TNF alpha	TRAIL
BAFF	GITRL	TNF beta	Tweak
CD30L	CD40L	LIGHT	
TNF Receptor Panel (12-plex)*			
EPX120-15802-901			
CD30	DR6	TNF-R1	TRAIL-R1
CD40	Fas (APO)	TNF-R2	TRAIL-R2
GITR	HVEM	4-1BB (CD137)	CD27

\* Panel cannot be combined with other ProcartaPlex panels or Simplex kits.

## Mouse ProcartaPlex panels

Th1/Th2 Cytokine Panel (11-plex)			A
Cat. No. EPX110-20820-901			
GM-CSF	IL-4	IL-13	
IFN gamma	IL-5	IL-18	
IL-1 beta	IL-6	TNF alpha	
IL-2	IL-12 p70		
Th9/Th17/Th22/Treg Cytokine Panel (6-plex)			B
Cat. No. EPX060-20822-901			
IL-9	IL-17A	IL-23	
IL-10	IL-22	IL-27	
Cytokine Panel 1B (10-plex)			C
Cat. No. EPX100-26091-901			
G-CSF (CSF-3)	IL-31	ENA-78 (CXCL5)	
IFN alpha	IL-1 alpha	M-CSF (CSF-1)	
IL-15 (IL-15R)	IL-3		
IL-28	LIF		
Chemokine Panel 1 (9-plex)			D
Cat. No. EPX090-20821-901			
Eotaxin (CCL11)	MCP-1 (CCL2)	MIP-1 beta (CCL4)	
GRO alpha (CXCL1)	MCP-3 (CCL7)	MIP-2 (CXCL2)	
IP-10 (CXCL10)	MIP-1 alpha (CCL3)	RANTES (CCL5)	

## Rat ProcartaPlex panels

Th Complete Panel (14-plex)			A
Cat. No. EPX140-30120-901			
G-CSF (CSF-3)	IL-2	IL-12p70	
GM-CSF	IL-4	IL-13	
IFN gamma	IL-5	IL-17A (CTLA-8)	
IL-1 alpha	IL-6	TNF alpha	
IL-1 beta	IL-10		
Chemokine Panel 1 (8-plex)			B
Cat. No. EPX080-30121-901			
Eotaxin (CCL11)	MCP-1 (CCL2)	MIP-2 (CXCL2)	
GRO alpha (KC/CXCL1)	MCP-3 (CCL7)	Rantes (CCL5)	
IP-10 (CXCL10)	MIP-1 alpha (CCL3)		

## Mouse ProcartaPlex panel combinations

Th9/Th17/Th22/Treg & Chemokine Panel (15-plex)	B	D		
Cat. No. EPX150-26089-901				
Th1/Th2/Th9/Th17/Th22/Treg Cytokine Panel (17-plex)	A	B		
Cat. No. EPX170-26087-901				
Th1/Th2 & Chemokine Panel I (20-plex)	A		D	
Cat. No. EPX200-26090-901				
Cytokine & Chemokine Panel 1 (26-plex)	A	B	D	
Cat. No. EPX260-26088-901				
Cytokine & Chemokine Panel 1A (36-plex)	A	B	C	D
Cat. No. EPX360-26092-901				

## Mouse antibody isotyping ProcartaPlex panels

Antibody Isotyping Panel (7-plex)*		
Cat. No. EPX070-20815-901		
IgG1	IgG2a	IgG2b
IgG3	IgA	IgE
IgM		
Antibody Isotyping Panel 2 (7-plex)*		
Cat. No. EPX070-20816-901		
IgG1	IgG2b	IgG2c
IgG3	IgA	IgE
IgM		

## Rat ProcartaPlex panel combinations

Cytokine & Chemokine Panel (22-plex)	A	B
Cat. No. EPX220-30122-901		

## Rat antibody isotyping ProcartaPlex panels

Antibody Isotyping Panel (6-plex)*		
Cat. No. EPX060-30123-901		
IgG1	IgG2a	IgG2b
IgG2c	IgA	IgM

## Rat kidney toxicity ProcartaPlex panels

Kidney Toxicity Panel 1 (5-plex)*		
EPX050-30124-901		
KIM-1	VEGF-A	TFF-3
Osteopontin	Calbindin	
Kidney Toxicity Panel 2 (5-plex)*		
EPX050-30125-901		
Cystatin C	TIMP-1	Clusterin
Albumin	NGAL	

\* Panel cannot be combined with other ProcartaPlex panels or Simplex kits. For Research Use Only. Not for Use in Diagnostic Procedures.

## Nonhuman primate ProcartaPlex panels

Th Cytokine Panel (14-plex)			A
Cat. No. EPX140-40040-901			
GM-CSF	IL-5	IL-17A	
IFN gamma	IL-6	IL-18	
IL-1 beta	IL-10	IL-23	
IL-2	IL-12p70	TNF alpha	
IL-4	IL-13		
Cytokine Panel 1b (6-plex)			B
Cat. No. EPX060-40042-901			
CD40L	IFN alpha	IL-15	
G-CSF	IL-1 RA	IL-7	
Chemokine Panel (10-plex)			C
Cat. No. EPX100-40041-901			
BLC (CXCL13)	I-TAC (CXCL11)	MIP-1 beta (CCL4)	
Eotaxin (CCL11)	MCP-1 (CCL2)	SDF-1 alpha (CXCL12)	
IL-8 (CXCL8)	MIG (CXCL9)		
IP-10 (CXCL10)	MIP-1 alpha (CCL3)		
Growth Factor Panel (7-plex)			D
Cat. No. EPX070-40043-901			
BDNF	PDGF-BB	VEGF-D	
NGF beta	SCF	-	
FGF-basic	VEGF-A		

## Nonhuman primate ProcartaPlex panel combinations

Cytokine & Chemokine Panel (30-plex)	A	B	C		
Cat. No. EPX300-40044-901					
Cytokine/Chemokine/Growth Factor Panel (37-plex)	A	B	C	D	
Cat. No. EPX370-40045-901					

## Porcine ProcartaPlex panels

Cytokine Panel (9-plex)		
Cat. No. EPX090-60829-901		
IFN alpha	IL-4	IL-10
IFN gamma	IL-6	IL-12/IL-23 p40
IL-1 beta	IL-8 (CXCL8)	TNF alpha

## Canine ProcartaPlex panels

Cytokine/Chemokine/Growth Factor Panel 1 (11-plex)		
Cat. No. EPX11A-50511-901		
IFN gamma	IL-8 (CXCL8)	SCF
IL-2	IL-10	TNF alpha
IL-4	IL-12/IL-23 p40	VEGF-A
IL-6	MCP-1 (CCL2)	

# ProcartaPlex High Sensitivity Immunoassays

Invitrogen™ ProcartaPlex™ High Sensitivity Immunoassays offer accurate quantitation of key cytokines significantly below the detection limit of conventional assays for Luminex systems.

ProcartaPlex High Sensitivity Immunoassays enable the multiplexed analysis of human and mouse analytes in very low concentrations in various matrices, including serum, plasma, bodily fluids, and cell culture supernatant samples. These high-sensitivity multiplex assays are ideal when sample input is limited, and protein expression is in the low pg/mL range.

Accurate quantification below conventional limits is achieved through a proprietary signal amplification technology. The signal amplification has negligible effects on the assay background, thereby increasing the signal-to-noise ratio of the cytokine standards on the lower end of the standard curve. This also allows for more accurate and reproducible measurement of cytokines with low expression levels.

## Features include:

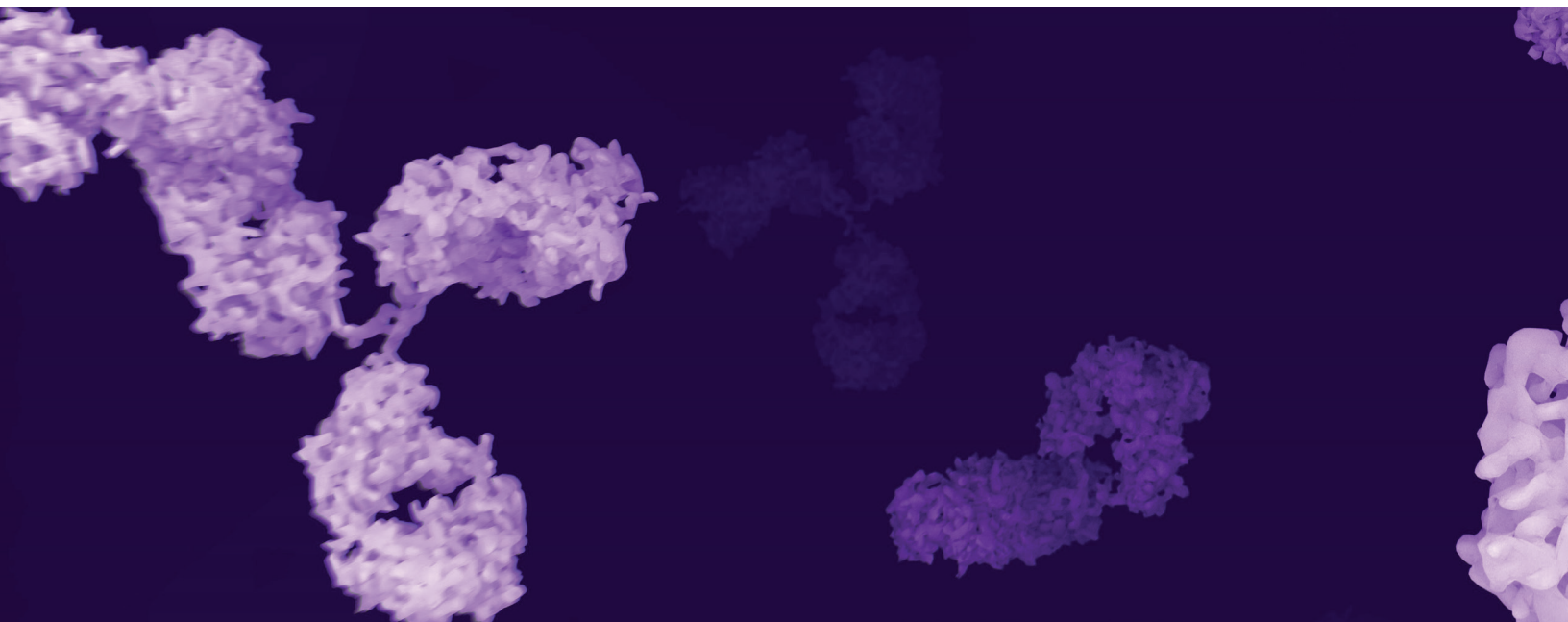
- High sensitivity detection of cytokine concentrations; in fg/mL
- Inter- and intra-assay coefficients of variation (CV) < 10%
- Small sample input (25 µL) ideal for precious serum or plasma samples
- Easy-to-use, simple ELISA-like protocol typically completed in less than 4 hours
- Convenient, ready-to-use kits for quantitation of up to 9 cytokines
- Trusted platform based on the principles of a sandwich ELISA and utilizing Luminex xMAP (multianalyte profiling) technology

## High-sensitivity ProcartaPlex panels

Human High-Sensitivity Panel (9-plex)		
Cat. No. EPXS090-12199-901		
IFN gamma	IL-4	IL-12 p70
IL-1 beta	IL-6	IL-17A (CTLA-8)
IL-2	IL-10	TNF alpha

Mouse High-Sensitivity Panel (5-plex)		
Cat. No. EPXS050-22199-901		
IFN gamma	IL-4	TNF alpha
IL-2	IL-6	

All analytes listed above are also available as ProcartaPlex Simplex kits; an Invitrogen™ ProcartaPlex™ High-Sensitivity Basic Kit that includes all nontarget-specific reagents needed to perform the assay.



# ProcartaPlex Platinum Immunoassays

The Invitrogen™ ProcartaPlex™ Platinum Immunoassays are our most verified, bead-based multiplexing assay system. Similar to our Human and Mouse IFN-gamma ELISAs, ProcartaPlex Platinum assays have to pass more than 30 qualification criteria for reproducible high performance of the kits.

## Features include:

- Matrix-specific diluents: optimized diluents for use with serum and plasma
- High performance: spike recovery and dilution linearity between 70 and 130%
- Sample friendly: only 25 µL of serum or plasma sample needed
- 100% combinability: all Invitrogen™ ProcartaPlex™ Platinum simplex kits can be combined with one another
- All in one: 100% of the required reagents are included in our panels

Platinum Human Panel 1 (42-plex)			
Cat. No. EPXP420-10200-901			
BDNF	IL-15	IL-7	PECAM-1
Eotaxin	IL-16	IL-8	P-Selectin
GM-CSF	IL-17A	IL-9	RANTES
GRO alpha	IL-1 beta	IP-10	SCF
HGF	IL-1RA	LIF	TNF alpha
IFN alpha	IL-2	MCP-2	TNF-R2
IFN gamma	IL-20	MIP-1 alpha	tPA
IL-1 alpha	IL-21	MIP-1 beta	TSLP
IL-10	IL-4	OPG	VEGF-A
IL-12p70	IL-5	PDGF-BB	VEGF-D
IL-13	IL-6		

Platinum Human Panel 2 (13-plex)			
Cat. No. EPXP130-10100-901			
IFN gamma	IL-2	IL-8	GM CSF
IL-12p70	IL-4	IL-10	
IL-13	IL-5	IL-17A	
IL-1 beta	IL-6	TNF alpha	

All analytes listed above are also available as ProcartaPlex Simplex kits; an Invitrogen™ ProcartaPlex™ Platinum Basic Kit that includes all nontarget-specific reagents needed to perform the assay.



## References

1. Hornig M et al. (2015) Distinct plasma immune signatures in me/cfs are present early in the course of illness. *Science Advances* 1(1):e1400121.
2. Horing M et al. (2015) Cytokine network analysis of cerebrospinal fluid in myalgic encephalomyelitis/chronic fatigue syndrome. *Molecular Psychiatry* 10.1038.
3. DiCarlo J et al. (2014) Cytokine and Chemokine Patterns Across 100 Days after Hematopoietic Stem Cell Transplantation in Children. *Biology of Blood and Marrow Transplantation* 20(3):361–369.
4. Siebert JC et al. (2012) The Stanford Data Miner: a novel approach for integrating and exploring heterogeneous immunological data. *Journal of Translational Medicine* 10:62.

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