

R&D systems™
by biotechne

Meet Ella *Automated Immunoassay System*

for Precise and
Reproducible Results





Simple Plex Technology on Ella

Reproducible Results You Can Trust

Simple Plex™ Technology combines Ella™ Automated Immunoassay System, with ready-to-run Simple Plex™ Assays for unmatched precision and consistency. Together, they deliver fast, hands-free results you can rely on—with the ability to measure up to eight analytes in less than 90 minutes.

Consistent Results. Superior Performance.

- ✓ Automation minimizes user error
- ✓ Large dynamic range
- ✓ Lot-to-lot consistency
- ✓ Precise, reproducible results
- ✓ Easily transfer across multiple users and sites
- ✓ Built-in standard curves
- ✓ Data you can trust



CE-IVDR Class A Instrument Enabling Clinical and Diagnostic Innovation

Ella CE-IVD is the CE-IVD marked version of the trusted Ella Immunoassay System now self-certified as Class A IVDR instrument for use in the EU, the European Economic Area (EEA) and the European Free Trade Association (EFTA)*. Built on the same proven technology as the RUO Ella system, Ella CE-IVD empowers clinical laboratories and diagnostic developers to confidently advance their in-house test development and clinical trial workflows in accordance with IVDR.



Meet Ella

Scan the QR code or visit
rndsystems.com/ella

*Ella CE-IVD (600-100-CE) is commercially available in select European markets. Availability is subject to local regulatory requirements and may vary by country.

Move Faster, Accomplish More

Hands-free Automation

The Ella System eliminates the tedious setup and lengthy incubations typical of traditional plate-based immunoassays.

The Simple Plex microfluidic cartridge design minimizes user error while ensuring highly precise and reproducible results.

Superior Reproducibility

When the time comes to transfer or expand your study to other labs or a contract research organization, the benchtop automation makes it easy.

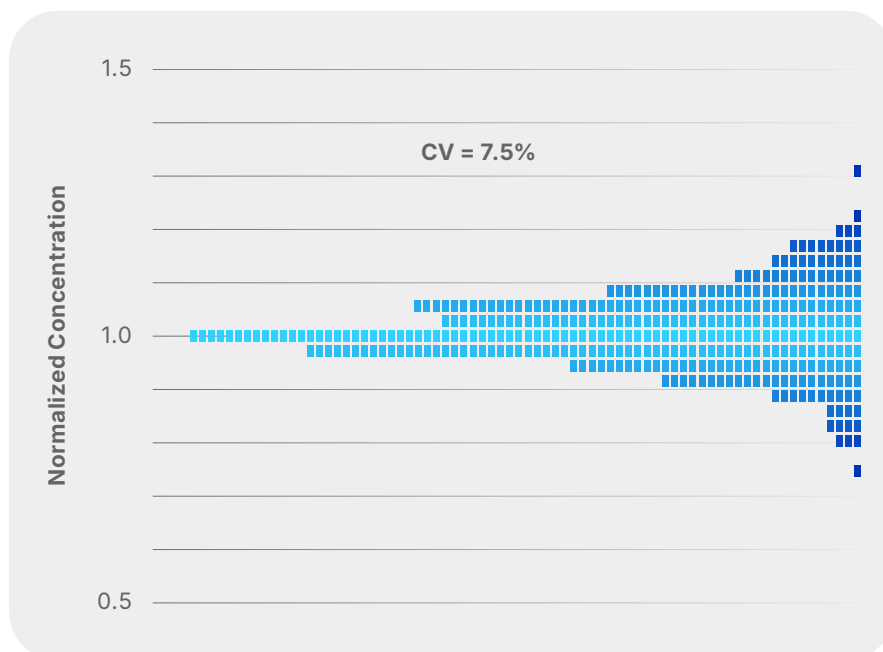
The simple load-and-go workflow, built-in standard curves, and precisely controlled automation help ensure consistent results across multiple users and sites.



Get Consistent Results with Ella

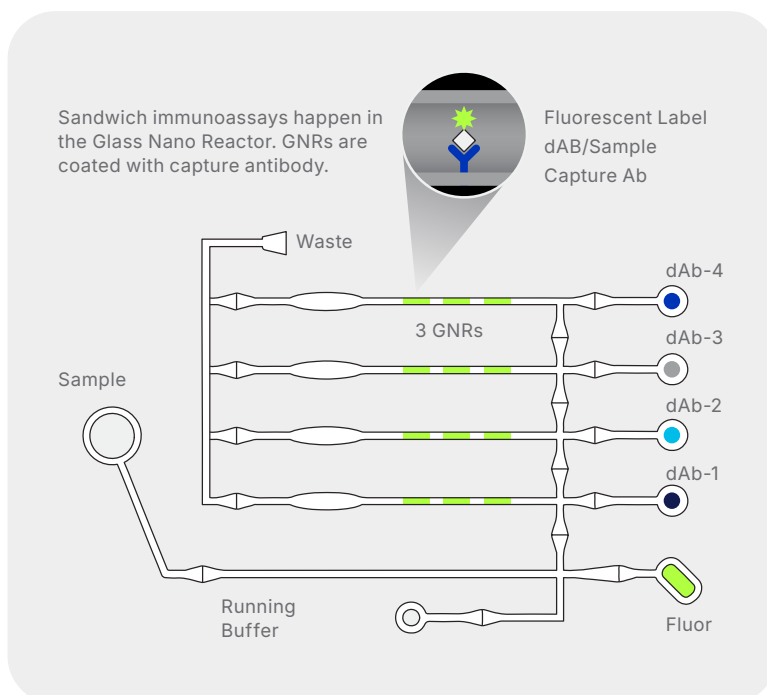
Multi-Site Testing (all results histogram)

Testing across 3 sites, 11 users and 9 Ella instruments. 4 different assays were processed for CCL2, IL-6, TNF alpha, and VEGF-A. Eight unique serum samples with 2 controls for a total of 704 data points.

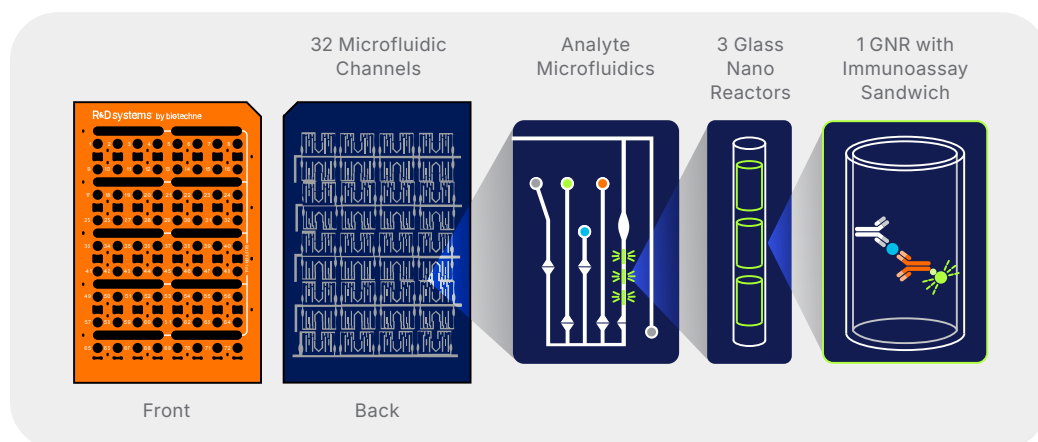


How Simple Plex Technology Works

1. Sample is routed through microfluidic channels
2. Capture antibody captures target analyte
3. Stringent wash removes unbound analyte
4. Detection antibody migrates through microfluidic channel
5. Stringent wash removes unbound detection antibody
6. Scan GNRs



Simple Plex Cartridge Using Microfluidic Technology



Ella interfaces pneumatically with the Simple Plex Assay Cartridge to automate reagent additions, wash steps, and incubations under precisely controlled conditions.

The sample flows through a microfluidic channel where the target protein binds to a capture surface. Unbound analytes are washed away, and a detection reagent is added. Each channel contains three Glass Nano Reactors (GNRs) coated with capture antibodies, providing triplicate measurements for every sample. Results are generated using a factory-calibrated standard curve included with each cartridge.

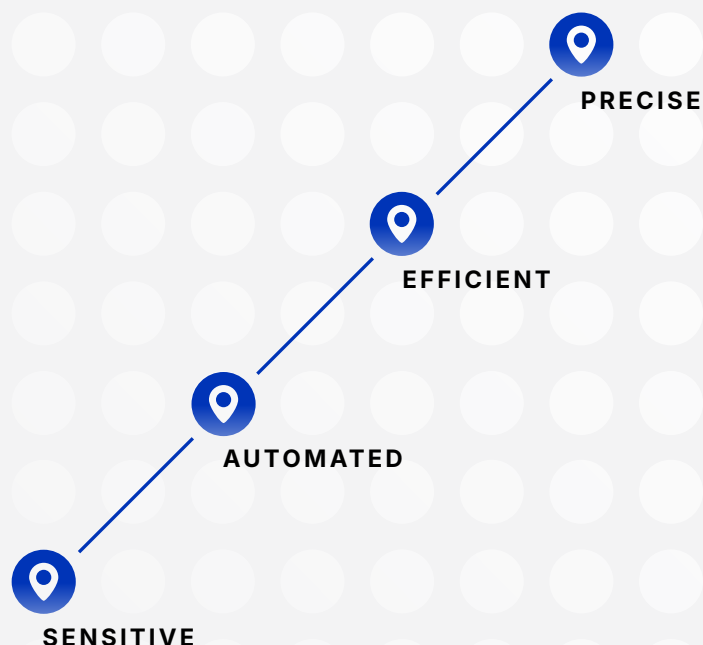
Simple Plex Cartridges are pneumatically operated, pumping liquids from different reservoirs throughout the assay run and leverage valves to allow for analysis of 4 separate analytes at one time.



Build Your Panel

Scan the QR code or visit
rndsystems.com/panelbuilder

Win Your Workflow, Take Back Your Time



No Curve Prep, No Guesswork

Each Simple Plex Cartridge comes preloaded with factory-calibrated standard curves, so there's no need to manually prepare your own. This not only saves valuable time but also reduces the potential for variability, making your workflow more efficient and cost-effective.

More Data From Smaller Sample Volumes

Whatever your area of research, getting the most data possible from your samples is critical. Simple Plex Cartridges with up to 8 multiplexed assays are available, offering replicate results all from just 25 μ L of sample. Each sample loaded onto the cartridge is assayed in replicate GNRs automatically, eliminating the need to load technical replicates on the cartridge.

Analytical Precision Made Simple

Simple Plex Assays feature top-quality R&D Systems™ Antibodies and Protein Reagents for consistent and accurate biomarker detection. R&D Systems' rigorous quality standards ensure that proteins, antibodies, and immunoassays are optimized for performance reliability, and consistency.

Whether you're looking for the highest quality immunoassay or are a traditional ELISA user looking to reap the benefits of automation, the Ella system delivers data you can trust from a brand you know.

Load and Go Simplicity

Running an assay on Ella is as easy as adding diluted samples and wash buffer to the cartridge and placing it in the instrument. With everything pre-kitted and ready to go, Ella delivers fully analyzed data in just 90 minutes—freeing up your time while maintaining analytical rigor.



Sample
2.5 to 25 μ L



Diluted Sample
50 μ L

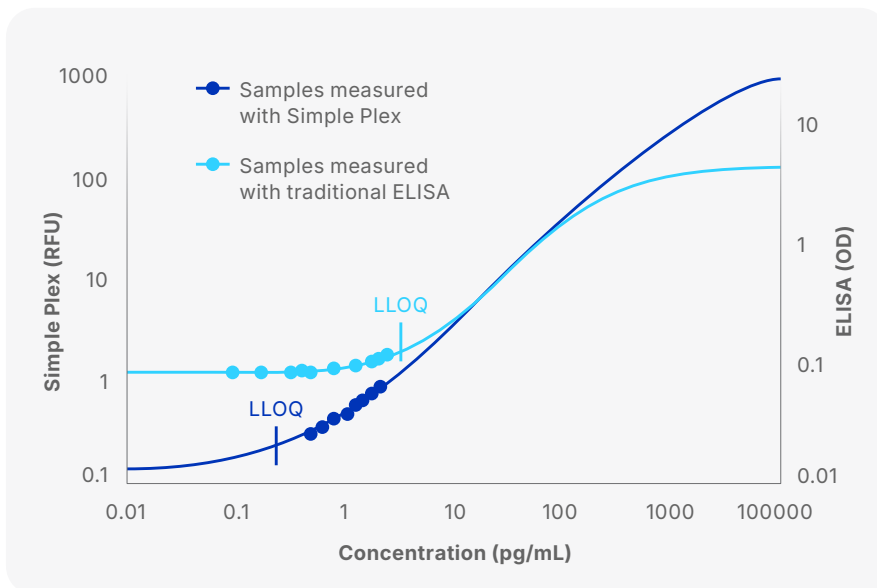


Results Per Sample
Triplicate (3x)

High Sensitivity With Sub-picogram Level Detection

Simple Plex Assays performed on Ella use a fluorescent detection system to deliver excellent low-end sensitivity to detect low expressing proteins and provide a broad dynamic range.

This allows samples containing high and low abundance of analyte to be assayed at a common dilution, reducing the need to rerun samples or perform dilution series.



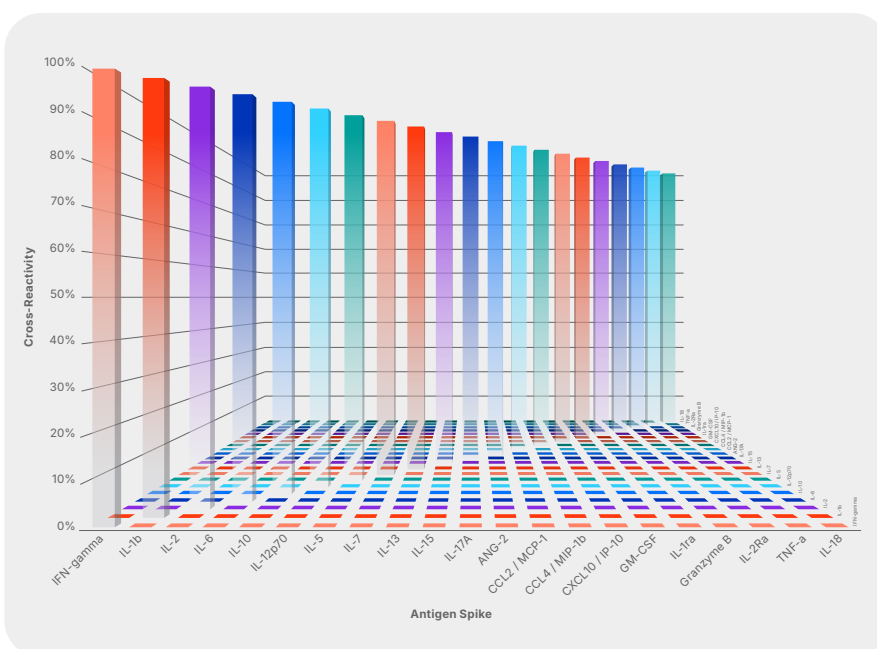
Multi-analyte Data From a Single Sample

Multiplex Without Cross-reactivity

Traditional multiplex assays can be prone to cross-reactivity and interference resulting in sub-par or erroneous data.

Simple Plex Assays eliminate these issues by separating targets into four parallel channels for a maximum of only two assays being carried out in a common environment.

Create your own multiplex panel of up to 8 analytes from a validated list of 350+ targets with flexible cartridge options.



Simple Plex Assays

Powered by R&D Systems

Simple Plex Assays deliver greater precision with minimal training. An automated hands-free workflow helps ensure consistent, reproducible results no matter the lab, instrument, or operator. Quantify up to 8 target analytes in duplicate, or up to 4 target analytes in triplicate. Or maximize throughput for a single analyte with the 72-sample cartridge.

- ✓ Broad analyte coverage with a growing menu of biomarkers.
- ✓ Results in 90 minutes on the Ella System, eliminating manual steps.
- ✓ Get reliable data from cell culture supernates, serum, and plasma.

Broad Range of Validated Targets

The Simple Plex Assay menu of 350+ validated targets span application areas for pre-clinical, clinical research, trials, monitoring to bio-therapeutic manufacturing.

- ✓ Cell and Gene Therapy
- ✓ Bioprocessing
- ✓ Neuroscience
- ✓ Cancer
- ✓ Immunology

Available Assays

Three type of Simple Plex Assays are available, Ultra-Sensitive through Discovery. These assays are intended to help you tailor assay selection to your individual lab needs.



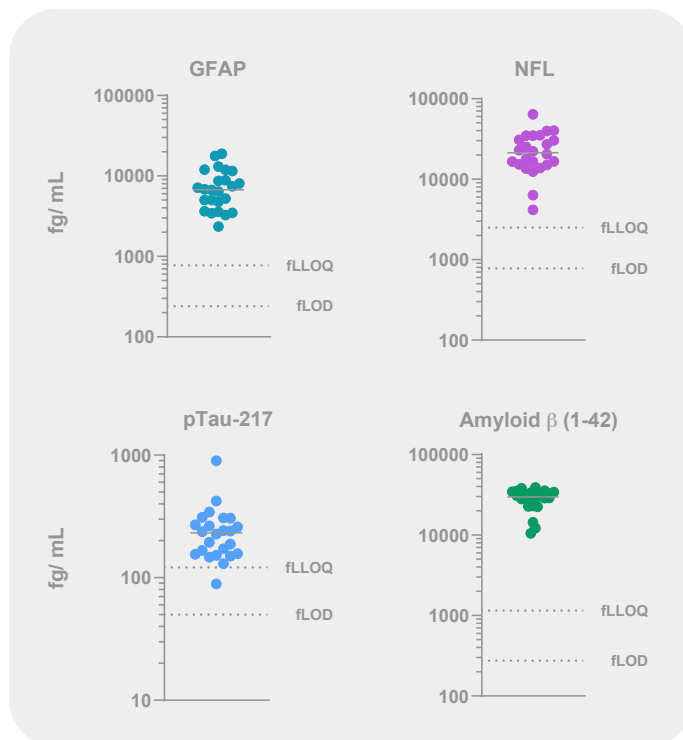
Simple Plex Ultra-Sensitive Assays

Setting a New Gold Standard in Neuro Biomarker Detection

Simple Plex Ultra-Sensitive Assays represent an advanced enhancement of the Simple Plex technology, designed to deliver robust and reproducible measurements of low-abundant proteins in complex biological samples. These innovative assays enable highly reliable detection of endogenous biomarkers at femtogram levels, making them ideal for plasma and serum samples, particularly for key biomarkers in neurology research. This cutting-edge sensitivity provides precise quantification and consistent performance, offering powerful support for early discovery and clinical research applications, driving advancements in biomarker analysis and disease understanding.

Key Benefits

- Femtogram-level sensitivity with high precision and consistency
- Detectability in healthy endogenous plasma samples allows for early-stage monitoring
- Automated workflow and quick time to results (2:50 hours) ensures higher throughput and minimizes error
- Low sample volume (<40 µL) helps preserving precious samples
- Multi-analyte plexing options maximize the information obtained from a single sample



High detectability of neurodegenerative biomarkers in healthy plasma at ultra-low concentrations. Simple Plex Ultra Sensitive Assays demonstrate femtogram-level analytical sensitivity, enabling robust detection of neurodegenerative biomarkers in healthy adults even at ultra low physiological concentrations. In this study, plasma GFAP, NFL, pTau 217, and Amyloid β(1 42) were measured in healthy donors aged 55+ using Simple Plex Ultra Sensitive Assays. All biomarkers showed full detectability and near complete quantifiability across assays*.

*fLLOQ: functional Lower Limit Quantification
(=analytical LLOQ x dilution factor)

**fLOD: functional Limits of Detection
(=analytical LOD x dilution factor)

*pTau 217 levels in healthy adults can be especially low, and detectability and quantifiability may vary across studies, sample cohorts, and demographics.

Simple Plex Discovery Assays

Fast, Accurate, Consistent

Simple Plex Discovery Assays provide the flexibility you need to explore new biomarkers and accelerate translational research.

Designed for early-stage research and preclinical studies, these assays offer a broad menu of biomarkers, rapid results, and a streamlined workflow to help you generate reliable data faster.

Request a Custom Assay

Accelerate your research with support from our custom development team.

Our scientific experts will collaborate with you to design Simple Plex Assays or panels tailored to your specific analytes and required scale.

You'll have a dedicated project manager and receive ongoing support from kickoff through delivery.

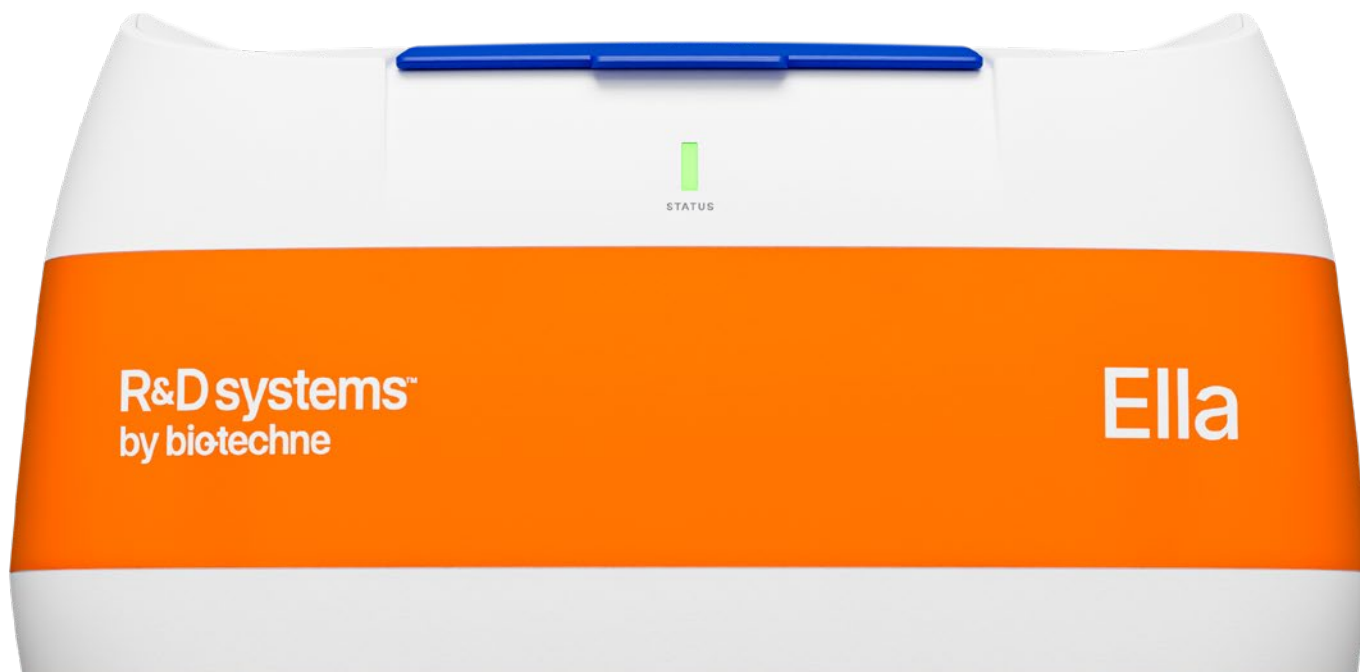
Research Advantages

- ✓ **Comprehensive**
Broad analyte coverage with a growing menu of biomarkers.
- ✓ **Speed**
Results in 90 minutes on the Ella system, eliminating manual steps.
- ✓ **Reliable**
Get reliable data from cell culture supernates, serum, and plasma.
- ✓ **Customizable**
New assay development in a fraction of the time with custom services.



Tell Us About Your Custom Assay Needs

Scan the QR code or visit
rndsystems.com/simple-plex-custom



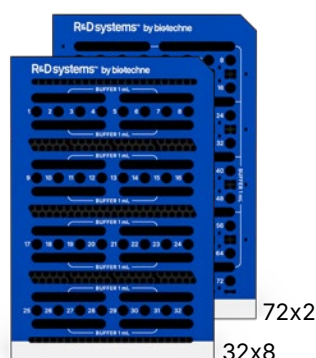
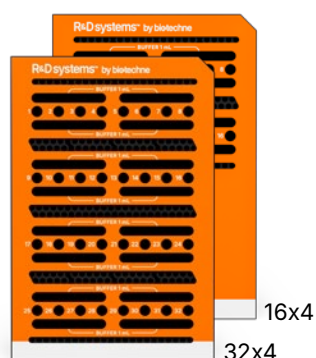
Exploring Simple Plex Discovery to Ultra-Sensitive Assays

	Simple Plex Discovery Assays	Simple Plex Assays	Simple Plex Ultra-Sensitive Assays
Recommended When	EARLY RESEARCH TESTING Less stringent assay specifications for discovery and early research	HIGHLY VALIDATED KITS Precise and accurate results with tight performance specifications for regulated environments	HIGHLY VALIDATED KITS FOR ULTRA-SENSITIVE DETECTION Sensitive and accurate results for detection of low-abundant proteins at healthy endogenous levels
Sensitivity	sub pg/ml	sub pg/ml	fg/ml
Assay Run Time	75 min	75 min	155 min
Required Sample Volume	≤25 µL	≤25 µL	≤40 µL
Species (currently available)	Human, Mouse, Rat	Human, Mouse, Rat, Non-Human Primate	Human
Multiplex	Up to 8	Up to 8	Up to 4 (limited by available analytes)
Precision	Intra-assay: ≤12% Inter-assay: ≤12% Verified across 2 manufactured lots	Intra-assay: ≤10% Inter-assay: ≤12% Validated across 3+ manufactured lots Extensively tested throughout manufacture and validated to ensure long-term consistency	Intra-assay: ≤10% Inter-assay: ≤12% Validated across 3+ manufactured lots Extensively tested throughout manufacture and validated to ensure long-term consistency
Linearity	Range 75-125% Verified across 2 manufactured lots	Range 80-120% Validated across 3+ manufactured lots	Range 70-130% Validated across 3+ manufactured lots
Recovery	Range 75-125% Verified across 2 manufactured lots	Range 80-120% Validated across 3+ manufactured lots	Range 70-130% Validated across 3+ manufactured lots
Assay Validation	Verified with recombinant proteins	Verified recombinant proteins and natural samples	Verified recombinant proteins and natural samples

Flexible Formats to Fit Your Workflow

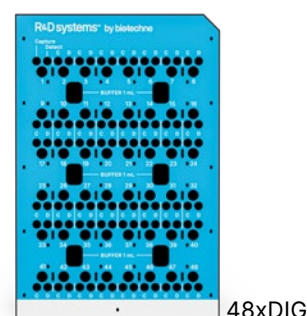
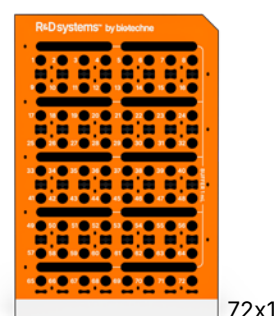
Scaling Throughput With Precision

Multianalyte cartridges let you measure 2, 3, or 4 target analytes in parallel, with each analyte quantified in triplicate for robust, reproducible data. Choose from 16- or 32-sample configurations to scale throughput with ease.



Amplified Profiling Precision

For broader profiling, multiplex cartridges allow simultaneous quantification of 5 to 8 analytes per sample. Each channel features two spatially separated capture antibodies, delivering duplicate measurements for every target and enabling up to 256 reportable results per run.



Multi-Analyte

Up to 4 assays in separate channels

- Up to 32 samples
- 4 Assays
- 3 Replicates

Multiplex

Up to 8 assays for higher plexing

- Up to 72 samples
- 8 Assays
- 2 Replicates

Single Plex

Fast + scalable

- Up to 72 samples
- 1 Assay
- 3 Replicates

Design Your Own

Use your own reagents

- Up to 48 samples
- 1 Assay
- 3 Replicates

Need Complete Control?

The open cartridge format lets you build your own immunoassay using your selected reagents. Screen up to 48 antibody pairs as you customize and optimize your assay—ideal for development workflows requiring flexibility and precision.

Available Assays



Explore Available Assays

Scan the QR code or visit
rndsystems.com/assaymenu

Impurity Testing

CHO-HCP 3G-1
 Endonuclease
 Green Fluorescent Protein (GFP)
 HEK 293 HCP 3G
 Protein A

Viral Titer Quantification

AAV1
 AAV2
 AAV3
 AAV6
 AAV8
 AAV9
 HIV-1 Gag p24

Human Analytes

Adiponectin/Acrp30, total
 AFP
 Alpha 2-Macroglobulin
 alpha-Synuclein
 Amphiregulin
 Amyloid Beta aa1-40
 Amyloid Beta aa1-42,
Ultra-Sensitive
 Angiogenin
 Angiopoietin-1
 Angiopoietin-2
 Angiopoietin-like 3 (ANGPTL3)
 Angiopoietin-like 4 (ANGPTL4)
 Angiopoietin-like Protein 7/
 ANGPTL7 **Discovery**
 ASC
 Axl
 BAFF

BCMA/TNFRSF17
 BDNF, free
 beta-Defensin 2 **Discovery**
 beta-Synuclein
 BLC/BCA-1/CXCL13
 BMP-2
 BMP-9
 C-Reactive Protein (CRP)
 CA125/MUC16
 Carbonic Anhydrase IX/ CA9
 Caspase-1
 CCL2/MCP-1
 CCL4/MIP-1 beta
 CCL3/MIP-1 alpha
 CCL5/RANTES
 CCL7/MCP-3
 CCL8/MCP-2

Human Analytes *(continued)*

CCL11/Eotaxin Discovery	CXCL1	FAP
CCL13/MCP-4 Discovery	CX3CL1/Fractalkine	Fas/TNFRSF6
CCL16/HCC-4	CXCL5/ENA-78	Fas Ligand/TNFSF6
CCL17/TARC	CXCL9/MIG	Ferritin
CCL18/PARC	CXCL10/IP-10	FGF-19
CCL19/MIP-3 beta	CXCL12/SDF-1 alpha	FGF-21
CCL20/MIP-3 alpha	CXCL13/BLC/BCA-1	FGF-23
CCL22/MDC	Cyr61 (CCN1)	FGF-7/KGF
CCL26/Eotaxin-3	Cystatin C	Fibronectin
CD14	Cytokeratin 18	Flt-3 Ligand
CD21	D-Dimer	Follistatin
CD23/Fc epsilon RII Discovery	DcR3/TNFSF6B	Fractalkine/CX3CL1
CD25/IL-2 R alpha	DKK-1	G-CSF
CD27	DLL1 Discovery	Galectin-1 Discovery
CD28 Discovery	Dopa Decarboxylase/DDC	Galectin-3
CD40 Ligand	DPPIV/CD26 Discovery	Galectin-3BP/MAC-2BP Discovery
CD40/TNFRSF5	E-Cadherin	Galectin-9 Discovery
CD155/PVR Discovery	E-Selectin	GAS6
CD163	EGF	GDF-8
CG beta Discovery	ENA-78/CXCL5	GDF-15
Chitinase 3-like 1/YKL-40	Endoglin/CD105	GDNF Discovery
Clusterin	Endothelin-1	GFAP, Ultra-Sensitive
COMP/Thrombospondin-5	ENPP-2	GM-CSF
Complement Factor D Discovery	Eotaxin-3/CCL26	gp130
Coagulation Factor III / Tissue Factor Discovery	EPO	Granzyme A
CTGF/CCN2	ErbB2	Granzyme B
CTLA-4	FABP2/I-FABP	Growth Hormone (hGH)

Human Analytes *(continued)*

HE4/WFDC2	IL-11	Mesothelin
Hepcidin	IL-12-p70	MICA
HGF	IL-13	MIF
HGF R/c-MET	IL-15	MIP-1 alpha/CCL3
HIV-1 p24	IL-16 Discovery	MIP-1 beta/CCL4
HVEM	IL-17A	MIP-3 alpha/CCL20
ICAM-1	IL-18	MMP-7
IFN-alpha (multi-subtype)	IL-18 BPa	MMP-8
IFN-alpha 2	IL-19	MMP-9
IFN-beta	IL-21	Myeloperoxidase (MPO)
IFN-gamma	IL-22	Nectin-2
IGFBP-1	IL-33	Nectin-4 Discovery
IGFBP-2	I-TAC	Neprilysin/CD10
IGFBP-rp1/IGFBP-7	Insulin	Neurofilament Light (NF-L), Ultra-Sensitive
IgG Pan	LAG-3	Neurofilament Heavy (NF-H) Discovery
IL-1-alpha	LBP	Neurogranin
IL-1-beta	LDLR Discovery	Neutrophil Elastase/ELA2
IL-1ra/IL-1F3	Leptin	NGF R/TNFRSF16
IL-2	LIGHT	NGF-beta
IL-3 Discovery	Lipocalin-2/NGAL	Osteopontin (OPN)
IL-4	M-CSF	Osteoprotegrin/OPG
IL-5	M-CSF R Discovery	OX40/TNFRSF4 Discovery
IL-6	MAdCAM-1	OX40 Ligand/TNFSF4 Discovery
IL-6 R-alpha	MBL Discovery	Pancreatic Polypeptide/PP Discovery
IL-7	MCP-2/CCL8	Park 7 Discovery
IL-8/CXCL8	MCP-3/CCL7	Proprotein Convertase 9/PCSK9
IL-10	MDC/CCL22	

Human Analytes *(continued)*

PD-1 Discovery	Spinesin Discovery	TRAIL
PD-L1/B7-H1	ST2/IL-1 R4 (IL-33 R)	Trappin-2/Elafin
PD-L2 Discovery	Syndecan-1 Discovery	TRANCE/RANK L/TNFSF11 Discovery
PDGF-AB Discovery	Syndecan-4	TREM-1
PDGF-BB	S100B	TREM-2
Pentraxin 3/TSG-14	TACI/TNFRSF13B	TSLP Discovery
Perforin	Tau, Phospho 217 Ultra-Sensitive	UCH-L1
Periostin/OSF-2	Tau, Total	uPAR
Placenta Growth Factor (PIGF)	TFF3	u-Plasminogen/uPA-1
Pro-Collagen I alpha 1 Discovery	TFPI Discovery	Uromodulin Discovery
Pro-Gastrin-releasing Peptide	TfR Discovery	Uteroglobin Discovery
Procalcitonin	TGF-alpha Discovery	VAP-1 Discovery
P-Selectin/CD62P	TGF-beta 1	VCAM-1
RAGE	Thrombomodulin Discovery	VEGF (VEGF-A)
Reg-3a	Thrombospondin-1 (THBS1)	VEGF R1/Flt-1
Relaxin-2 Discovery	Thrombospondin-2 Discovery	VEGF R2/KDR
Resistin	Tie-2	VEGF-B
SCF	TIM-1/KIM-1/HAVCR	VEGF-C
Serpin A1	TIM-3	VEGF-D
Serpin A4/Kallistatin	TIMP-1	Vitamin D BP
Serpin E1/PAI-1	TIMP-2	
Serpin F1/PEDF Discovery	TNF alpha	
Siglec-9	TNF R1	
SP-D	TNF RII	

Rat Analytes

Angiopoietin-2
 beta-Synuclein
 CD25/IL-2 R alpha
 Chitinase 3-like 1
 Cystatin C
 FGF-21
 Flt-3 Ligand
 GDF-8
 IL-2 R alpha
 Lipocalin 2
 MCP-1/CCL2
 M-CSF
 MMP-9, Total **Discovery**
 Neurofilament Light (NF-L)
 Osteopontin (OPN)
 Park 7 **Discovery**
 RANTES/CCL5
 SP-D
 S100B
 TGF-beta 1
 TIM-1
 TREM-2
 VCAM-1/CD106
 VEGF-A

Mouse Analytes

Adiponectin
 Alpha- Fetoprotein/AFP
 Angiopoietin-2
 Angiopoietin-like 3 (ANGPTL3)
 BAFF
 beta-Synuclein
 CCL3/MIP-alpha
 CCL4
 CD25/IL-2 R alpha
 Chitinase 3-like 1
 C-Reactive Protein/CRP
 CXCL1/KC
 CXCL2/MIP-2
 CXCL10/IP-10/CRG-2
 CXCL13/BLC/BCA-1
 CXCL15
 Cystatin C
 Erythropoietin/EPO
 FGF-21
 Flt-3 Ligand
 G-CSF
 GDF-8
 GDF-15
 GM-CSF

Granzyme B
 IFN-gamma
 IL-1-beta
 IL-1ra/IL-1F3
 IL-2
 IL-2 R alpha
 IL-4
 IL-5
 IL-6
 IL-7
 IL-12 p70
 IL-17
 IL-18
 IP-10/CXCL10
 Lipocalin-2/NGAL
 MCP-1/CCL2
 M-CSF
 MMP-9 Total **Discovery**
 Neurofilament Light (NF-L)
 Osteopontin (OPN)
 P-Selectin
 Park 7 **Discovery**
 RANTES/CCL5
 SDF-1 alpha/CXCL12
 SP-D
 ST2/IL-33R/IL-1R4
 S100B
 TGF-beta 1
 TIM-1/KIM-1
 TNF-alpha
 TREM-2
 VCAM-1/CD106
 VEGF-A

Non-Human Primate Analytes

Angiopoietin-1	IL-4
Angiopoietin-like 3 (ANGPTL3)	IL-5
BDNF, free	IL-6
CCL19/MIP-3 beta	IL-6 R alpha
CCL2/MCP-1	IL-8/CXCL8
CCL3/MIP-1 alpha	IL-10
CCL4/MIP-1 beta	IL-13
CCL5/RANTES	IL-15
CD163	IL-17A
C-Reactive Protein (CRP)	IL-18
CTLA-4	Insulin
CXCL10/IP-10	Nectin-2/CD112
CXCL13/BLC/BCA-1	Neurofilament Light (NF-L)
FAS Ligand	Neurogranin
Fibronectin	PDGF-BB
FLT-3 Ligand	PD-L1/B7-H1
GM-CSF	Perforin
Granzyme A	P-Selectin/CD62P
Granzyme B	TIMP-2
IFN-alpha	TNF R1
IFN-gamma	TNF RII
IGFBP-rp1/IGFBP-7	TNF-alpha
IL-1b	uPAR
IL-2	VEGF-A



CE-IVD marked



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