

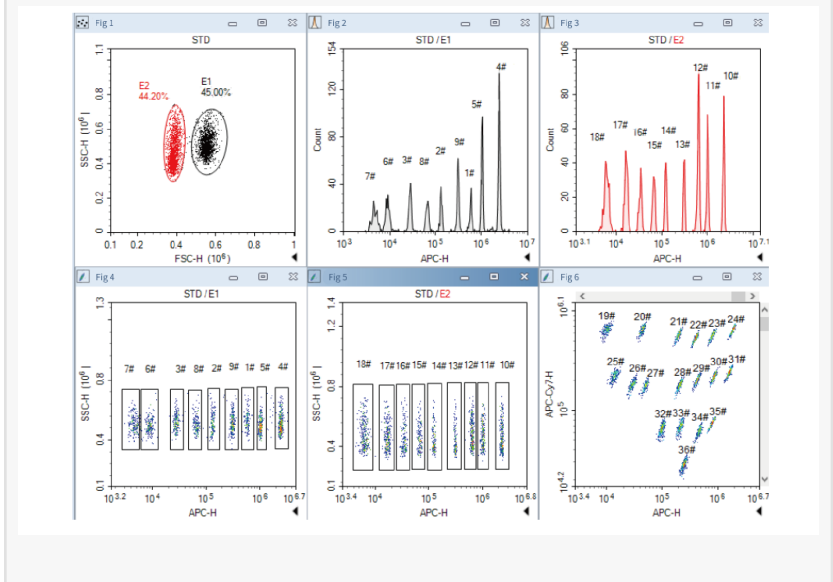
Multiplex Assays: Cloud-Clone Drives Global Advancements in High-throughput Multianalyte Detection

Flow-based CBA platform solutions deliver flexible, high-performance tools for global life-science research

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EINPresswire.com/ -- Modern life-science investigations increasingly demand maximal biological insights from limited sample volumes. Researchers studying tumour immunology, organoids, cell-based therapies, metabolic disorders and neuroscience face a key decision: quantify dozens of protein biomarkers within a single sample aliquot, or run numerous separate single-analyte tests. Multiplex assay technology addresses this critical experimental bottleneck by enabling simultaneous measurement of multiple targets in one reaction, conserving precious samples while generating comprehensive molecular profiles.

[Cloud-Clone](#) has built end-to-end multiplex assay portfolios for the flow-based CBA platform, supplying versatile research tools for global scientific communities.



Should researchers measure 30 cytokines in one single experiment, or run 30 separate assays for 30 individual cytokines?

Driven by rapid progress across tumour immunology, organoid research, cell therapy, metabolic-disease studies and neuroscience, today's scientists are no longer challenged merely by detecting target proteins. The real challenge lies in extracting richer, more reliable datasets from

limited-volume biological specimens.

Conventional ELISA has long served research workflows thanks to solid accuracy and reproducibility. Nevertheless, single-target ELISA cannot keep pace when dozens of cytokines, chemokines and growth factors require parallel profiling. Multiplex assay technology enables simultaneous quantification of multiple analytes in one well, delivering distinct advantages in experimental throughput, sample conservation and reconstruction of complex biological networks, and has become an indispensable tool for life-science research.

As an early innovator in multiplex-assay development, Cloud-Clone leverages in-house R&D capabilities to deliver complete multiplex solutions built upon the flow-based CBA (Cytometric Bead Array) platform, supplying high-performance, multi-species detection products for global research users.

Expanding Global Market Creates New Opportunities for Alternative Reagent Suppliers

Precision-medicine initiatives and novel-drug development fuel continuous growth within the global multiplex-assay market. For research fields including tumour immunology, CAR-T therapy, organoid biology and inflammatory-mechanism exploration, multiplex assays have transitioned from optional techniques to standard laboratory workflows. Flow-based CBA represents one of the mainstream multiplex technical approaches.

- Flow-based CBA: A multiplex protein quantification technique compatible with existing flow-cytometry instruments, eliminating extra capital-equipment investment. Measuring 10 protein biomarkers consumes only one-tenth of the sample volume required for parallel single-plex ELISA, conserving up to 90% of starting material. It delivers cost-effective performance and low false-positive rates.

- Luminex (xMAP): Utilises fluorescence-encoded microspheres. Up to 8000 analytes can be measured per single well, supporting both protein and nucleic acid detection. Assays can operate with sample input as low as 25 µL while maintaining sensitivity comparable to ELISA.

- MSD Electrochemiluminescence: Achieves fg level sensitivity with broad linear dynamic range spanning six orders of magnitude and stable signal readouts. Dedicated instrumentation is required, and per well throughput is limited to approximately ten analytes.

Reagent developers worldwide are advancing rapidly via technical innovation, robust supply-chain infrastructure and responsive customer support. Boasting competitive technical metrics and comprehensive product portfolios, Cloud-Clone stands as a leading multiplex-assay provider, breaking long-standing market monopolies and establishing itself among key global suppliers. Cloud-Clone focuses on the flow-based CBA system, making full use of existing laboratory flow cytometry instruments and lowering hardware barriers to satisfy cutting-edge research demands. Investigators can select appropriate workflows according to available laboratory instruments and experimental objectives, achieving “one sample, one detection strategy”.

Figure 1 Cloud-Clone detection platform of Multiplex Assay Kits

Comprehensive Product Portfolio: Pre-validated Panels and Fully Customisable Assays
Cloud-Clone multiplex kits distinguish themselves through comprehensive, highly flexible

product portfolios that cover experimental workflows from basic research through translational medicine.

1. Broad species and analyte coverage: extensive library of over 7000 analytes across more than 10 species Cloud-Clone multiplex assays support more than ten species including human, rat, mouse, guinea-pig, rabbit, chicken, dog, sheep, pig and cattle, with over 7000 detectable analytes. These resources are widely applied for disease-mechanism dissection, pharmacodynamic studies and safety-evaluation projects. Custom development is available for rarely-studied animal species and challenging molecular targets such as hormones and small-molecule compounds, providing critical resources for niche-area research.

2. Disease-focused pre-validated panels: 350+ validated assay sets covering eight major disease areas Tailored to diverse research priorities, Cloud-Clone offers more than 350 rigorously validated fixed panels across autoimmune disorders, neuroscience, cardiovascular conditions, endocrinology, gastroenterology, respiratory disease, bone metabolism and oncology, enabling rapid selection of relevant biomarker combinations:

- Autoimmunity & Inflammation: Mouse 7-plex panel (IL1b, IL2, IL6, IL10, IL17, IL22, TNF- α) for rheumatoid arthritis, inflammatory bowel disease and asthma research; human 12-plex panel (AREG, GM-CSF, IFN- γ , IL10, IL12, IL13, IL17, IL1b, IL22, IL5, IL6, TNF- α) profiling core inflammatory networks for systemic lupus erythematosus and rheumatoid-arthritis studies.
 - Bone-metabolism 13-plex panel: A comprehensive multiplex solution for bone-related research covering bone formation, bone resorption, remodelling regulation, bone-microenvironment inflammation, tissue repair and bone-fat metabolic crosstalk. Targets include ACP5, ALPL, CTXI, DKK1, IL6, LEP, OC, OPG, OPN, PDGF-BB, PINP, RANKL and SOST.
 - Diabetes & Endocrinology: Pre-configured panels including type-2-diabetes-related 5-plex and 6-plex sets, diabetic-nephropathy 6-plex panel, and thyroid-function 5-plex panel (fT3, fT4, T3, T4, TSH), supporting mechanistic research for metabolic illnesses.
 - Neuroscience: Alzheimer's- and Parkinson's-disease-relevant 10-plex panel (ACSL1, AGER, CYP46A1, GFAP, HO1, IL10, IL18, IL1b, TNF- α , TREM2); brain-injury-focused 7-plex panel (IL10, IL1b, IL6, NSE, S100B, TNF- α , TREM1), designed to maximise information yield from precious cerebrospinal-fluid specimens.
 - Cardiovascular disorders: Myocardial-injury inflammatory-burden 8-plex panel (BNP, IL10, IL1a, IL1b, IL33, IL6, TNF- α , TNFI3); atherosclerosis-associated 9-plex panel (C1s, C7, CRP, ICAM1, MPO, PAP, VCAM1, vWF, α 2PI).
 - Gastroenterology: Multiple assay sets for inflammatory bowel disease, hepatitis, liver fibrosis, gastric cancer and colorectal-cancer investigations, for instance the liver-fibrosis-related 6-plex panel (IL10, IL11, IL17, IL21, IL22, IL23).
 - Respiratory disorders: Panels for asthma, chronic obstructive pulmonary disease (COPD) and pulmonary-fibrosis research, such as the asthma-relevant 8-plex panel (IL10, IL12B, IL13, IL17, IL4, IL5, IL6, IL8).
 - Oncology: Assay panels for liver, gastric, colorectal, breast and lung cancer research, including liver-cancer-specific 3-plex panel (CK19, GPC3, MK); angiogenesis-focused 8-plex panel for colorectal and liver-cancer studies (EGF, FGF2, HGF, NGF, PDGF-AA, PDGF-BB, VEGF165, VEGF).
- Custom-development services: freely combinable analytes delivered on demand When pre-

configured panels cannot satisfy specialised experimental requirements, Cloud-Clone provides highly adaptable custom-assay services:

- Flexible target selection: custom-build panels combining any analytes selected from the 70000+ target library, ranging from 1 to 8 markers per assay.
- Fast lead-times: orders with ≤ 4 analytes are delivered within 1-3 weeks; complex custom panels feature substantially shorter turnaround compared with imported equivalents.
- Support for uncommon molecular combinations, including hormone- and small-molecule-based panels, with multiple successful delivery references.

Figure 2 Multiplex Assay Kits dataset generated from Cloud-Clone dual-fluorescence flow-based multiplex assays

Market Position and Future Outlook: Advancing Multiplex-assay Innovation for Global Science
Cloud-Clone is established among major global multiplex-assay suppliers. Powered by its library of more than 70000 analytes, multi-species compatibility, flow-based CBA platform and flexible custom-development workflows, Cloud-Clone occupies a leading position within the worldwide multiplex-reagent landscape.

As precision-medicine and translational-research initiatives continue to evolve, multiplex detection technologies will play expanding roles across early-stage disease screening, pharmaceutical development, pharmacodynamic evaluation and personalised-therapy guidance. Cloud-Clone will keep refining core assay technologies, optimising product performance and broadening species-and-target coverage. By combining robust technical performance with dedicated customer service, Cloud-Clone enables higher-quality life-science research across the globe.

Choosing Cloud-Clone means selecting dependable data output and accelerated research progress. Whether investigating inflammatory immunology, metabolic pathologies, neuroscience, bone biology, drug screening or translational projects, users can obtain tailored assay solutions. With solid technical foundations and sustained innovation investment, Cloud-Clone continues to deliver high-quality biological-reagent products for the global scientific community.

Sample scarcity and demand for multi-parameter profiling represent persistent challenges for contemporary biomedical research. Multiplex assays serve as vital tools to resolve these bottlenecks. Cloud-Clone will keep expanding its validated flow-CBA-based multiplex-assay portfolio, delivering reliable, cost-effective high-throughput detection solutions and accelerating global scientific discovery.

About Cloud-Clone Corp.

Cloud-Clone Corp. is dedicated to the development and production of high-quality immunoassay reagents and detection solutions. With a focus on antibody engineering, multiplex assay development, and cross-platform compatibility, the company provides research tools designed to support precision medicine and advanced biomedical investigation globally. Our core products and services include the research and development of proteins, antibodies, ELISA kits, primary cells, and multiplex cytokine assay kits, as well as professional CRO services to fully meet

the diverse needs of biomedical research and related fields.
For more information about Cloud-Clone Corp, visit www.cloud-clone.com.

CLOUD-CLONE CORP.(CCC)

Tel: 001-832-538-0970, 0086-27-8425-9552

Email: mail@cloud-clone.com, sales@cloud-clone.us

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