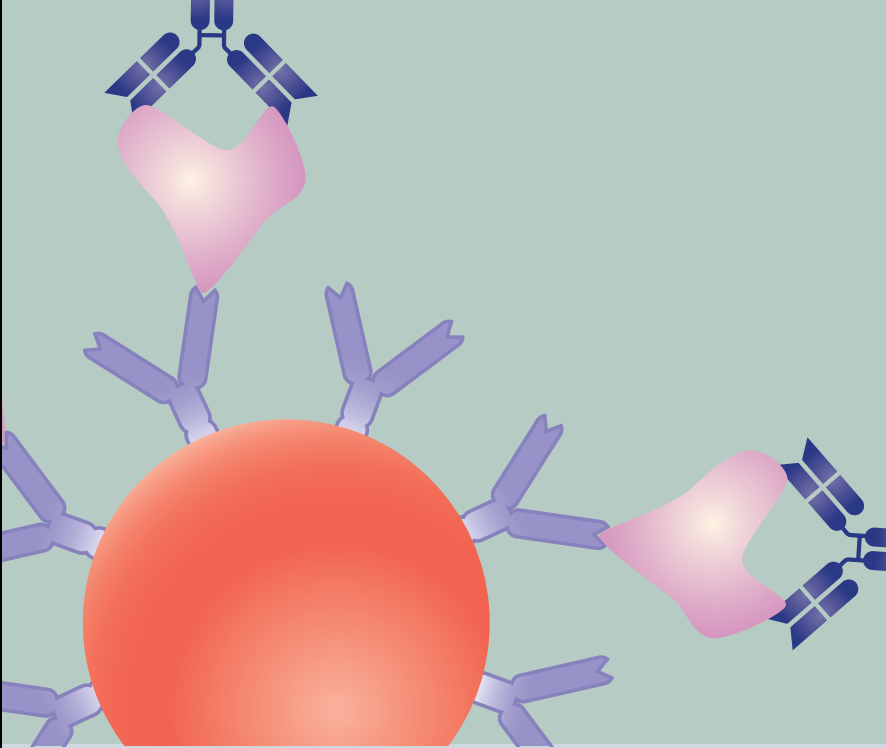


BD™ Cytometric Bead Array



Helping all people
live healthy lives

Multiplexed Bead-Based Immunoassays

BD™ Cytometric Bead Array (CBA)

Multiplexed Bead-Based Immunoassays

BD™ CBA is a flow cytometry application that allows users to quantify multiple proteins simultaneously. The BD CBA system uses the broad dynamic range of fluorescence detection offered by flow cytometry and antibody-coated beads to efficiently capture analytes. Each bead in the array has a unique fluorescence intensity so that beads can be mixed and run simultaneously in a single tube. This method significantly reduces sample requirements and time to results in comparison with traditional ELISA and Western blot techniques.

BD CBA solutions are designed for multiplexed analysis, to provide more data using a single sample. Multiplexing is especially useful when only a small amount of sample is available, maximizing the number of proteins that can be analyzed. With BD CBA, up to 30 proteins can be analyzed using just 25 to 50 µL of sample. Other methods such as ELISA and Western blot require a similar amount of sample, but only one protein can be analyzed from the same volume.

The BD CBA portfolio includes assays for measurement of a variety of soluble and intracellular proteins, including cytokines, chemokines, growth factors, and phosphorylated cell signaling proteins. BD CBA solutions are available in two formats to meet diverse needs:

BD CBA Flex Sets provide an open and configurable method of detection, so that researchers can build their own multiplexes.

BD CBA Kits are preconfigured for achieving consistent results for routine panels.

Available for most BD FACST™ flow cytometers, BD CBA solutions combine our leadership in instrumentation with innovation in application development to deliver a flexible and robust assay system to fulfill diverse research requirements.

BD CBA Flex Sets – Open and Configurable to Maximize Flexibility

The BD CBA Flex Set system provides an open and configurable menu of bead-based reagents designed to make it easy to create multiplex assays.

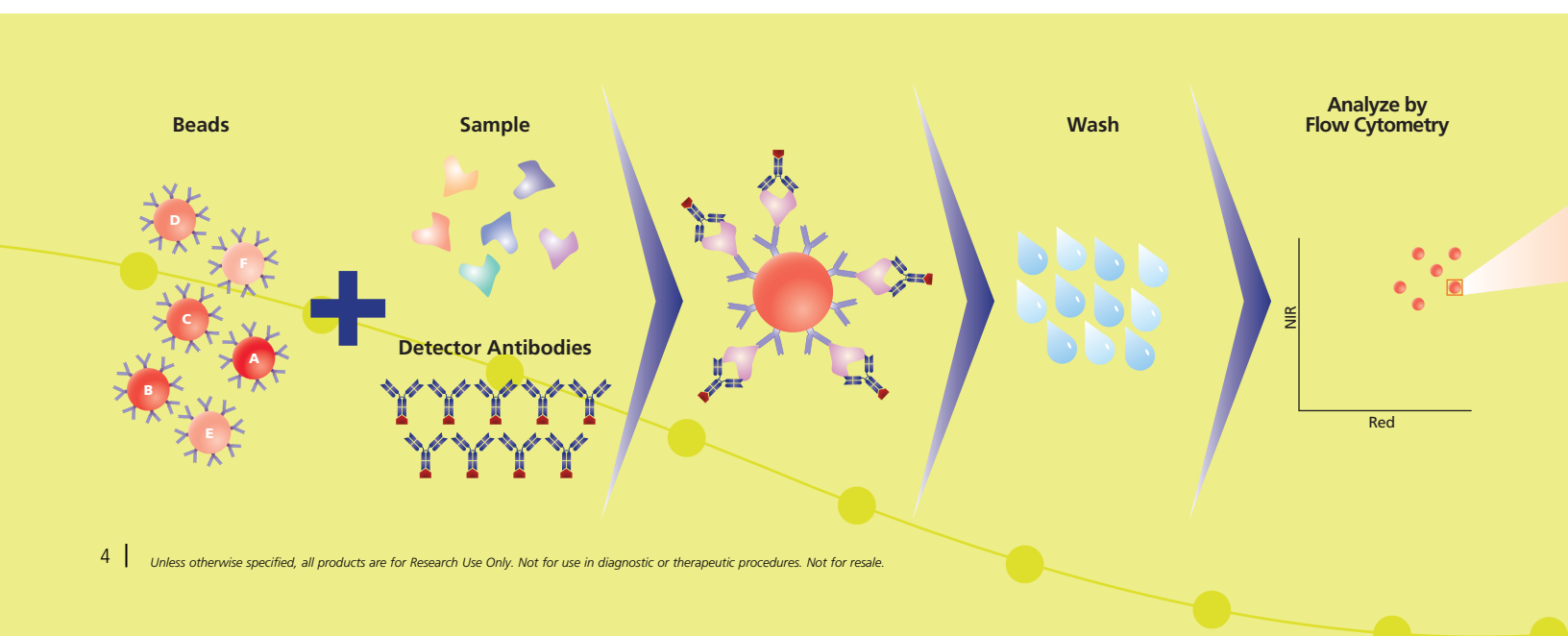
Available specificities include soluble protein assays for detection of human, mouse, or rat cytokines, chemokines, and growth factors; human immunoglobulins; and cell signaling assays for detection of phosphorylated cell signaling proteins. Up to 30 analytes can be measured simultaneously using the BD CBA Flex Set system on a flow cytometer equipped with 488-nm and 633-nm lasers.

Soluble protein assays for the detection of cytokines, chemokines and growth factors

BD CBA Soluble Protein Flex Set assays are available for the detection of cytokines, chemokines, and growth factors from serum, plasma, or tissue culture supernatant samples. These include T cell differentiation factors, modulators of inflammation, and other key markers for monitoring the immune response.

The assays have been formulated to be mixed into any size plex, and they are all sold individually, to provide a highly flexible system. All products are available off-the-shelf so custom orders are not required. Each product area (ie, Human Soluble Protein, Mouse/Rat Soluble Protein, and Human Immunoglobulin) has a unique Master Buffer Kit. All assays within each product area have been verified for performance in single-plex and in multiplexed scenarios to ensure consistent data.

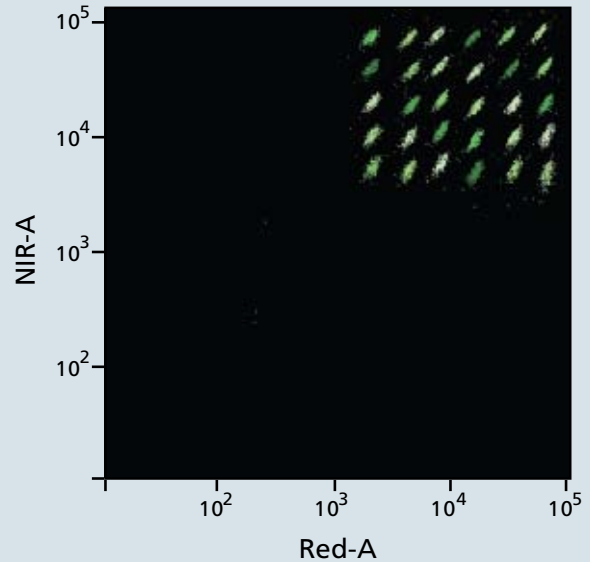
Each assay is composed of an antibody pair that is evaluated for dynamic range, sensitivity, and parallel titration to native biological samples. The detection antibodies are directly labeled with phycoerythrin (PE). By avoiding the streptavidin-biotin-PE detection method employed by other assays, direct PE detection reagents minimize the risk of increased background often caused by endogenous biotin in serum and lysate samples. Thus, BD CBA Flex Sets provide a reliable and flexible method for quantitative detection of multiple analytes in a single serum, plasma, tissue culture supernatant, or cell lysate sample, saving time and conserving precious samples.



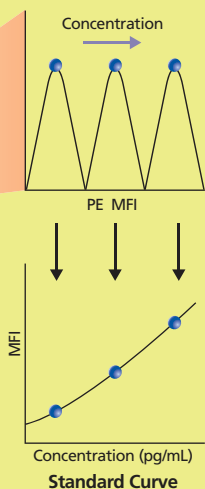
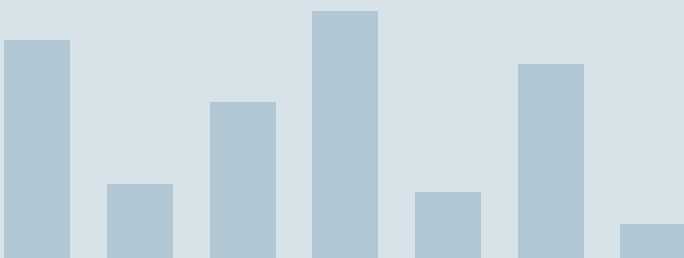
BD CBA Cell Signaling Flex Set Assays for detection of phosphorylated signaling proteins

With the BD CBA Cell Signaling Flex Set system, the benefits of BD CBA assays are extended to researchers investigating cell signaling pathways. The assays cover key signaling molecules involved in B cell and T cell receptor signaling, as well as other pathways in the immune response such as signaling via growth factor receptors and MAP kinase signaling.

The assays include a recombinant protein standard that provides an internal control as well as a means to generate a standard curve and subsequent quantitative analysis. The intuitive analysis software generates a numerical readout in relative units/mL for each protein assayed, delivering the answers needed without additional steps. Low inter- and intra-assay CVs allow researchers to have greater confidence in results.



BD CBA 30-plex assay resolved on the BD FACSAry™ bioanalyzer.



BD CBA Products – designed for easy and efficient multiplexing

- Require no assay formulation regardless of plex size
- Deliver quantitative results from a single small volume sample
- Require less total time and less hands-on time compared with competitive bead-based immunoassays
- Offer automated sample acquisition and increased throughput with the plate-based BD FACSAry bioanalyzer or BD™ High Throughput Sampler Option

BD CBA Flex Sets

- Open and configurable bead-based reagents
- Measure up to 30 analytes simultaneously on a flow cytometer with 488 and 633-nm lasers

Available assays include:

- Soluble protein assays for detection of human, mouse, or rat cytokines, chemokines and growth factors, human immunoglobulins
- Cell signaling assays for detection of phosphorylated cell signaling proteins

Simple Steps to Building a BD CBA Flex Set Multiplex

BD CBA Flex Sets make it easy to build a multiplex by following five simple steps. First choose the analytes to be measured and the corresponding buffer kit. Then follow the simple formulation instructions in the Master Buffer Kit manual. Assay components are all formulated at 1 µL per test for easy calculations, and the unique lyophilized standard pellets facilitate the combination of proteins to make the standards mix. The finished assay can be acquired on a variety of dual-laser flow cytometers and analyzed using FCAP Array™ software.

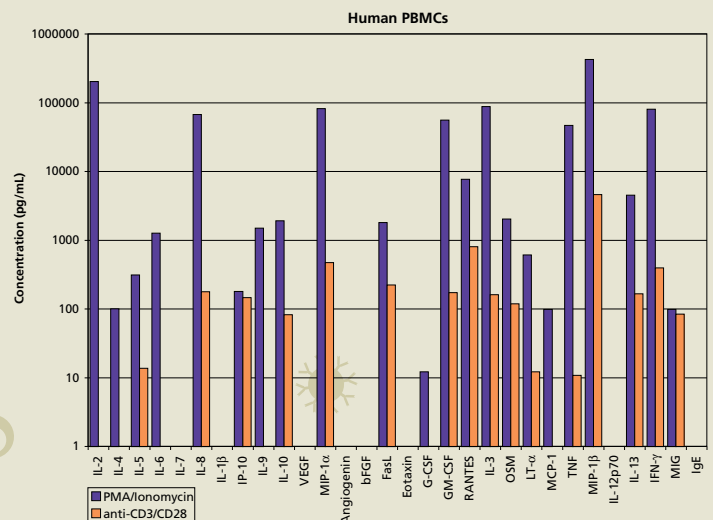
1 Choose from our menu of Human, Mouse, Rat, and Cell Signaling BD CBA Flex Set Assays.

Each BD CBA Flex Set comes with capture beads, detection reagent, and standards. Sufficient reagents are provided to run 100 tests including two standard curves. All assays are available off-the-shelf and ready for mixing. With BD CBA Flex Sets you can get right to work—no custom orders required.

2 Choose a 100 or 500 test size BD CBA Flex Set Master Buffer Kit.

Each BD CBA Flex Set Master Buffer Kit contains all the assay reagents and instrument setup beads necessary for any size multiplex configured from compatible BD CBA Flex Sets. This means that for running a single-plex assay, a 10-plex assay, or larger, the buffer reagents are optimized to perform with the customized mixture selected and yield the correct number of assay tests.

Human peripheral blood mononuclear cells (PBMCs) stimulated under two different conditions and measured in a BD CBA Flex Set assay (30 plex).



③ Perform the assay following the instructions in the Master Buffer Kit manual.

④ Acquire samples on a dual-laser flow cytometer.

BD CBA Flex Set reagents have been verified for performance on a number of BD dual-laser flow cytometry platforms.

The plate-based BD FACSArray bioanalyzer can be used to optimize assay throughput and workflow. Simply prepare samples and standards in a 96-well filter-bottom plate, launch the previously designed BD FACSArray template, load the plate, and experience truly hands-free sample acquisition.

⑤ Analyze data files using FCAP Array multiplex analysis software.

Use the intuitive, wizard-driven FCAP Array software to plot standard curves and calculate sample concentrations.

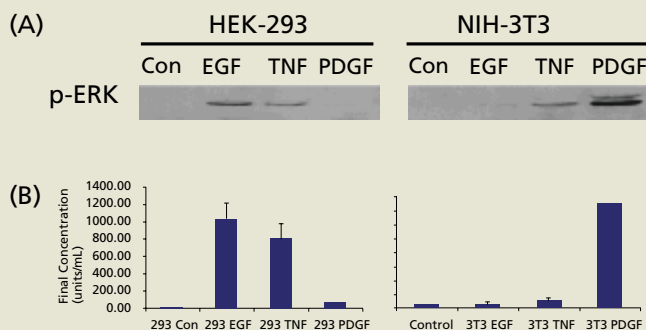
Instrument	Reporter Parameter	Clustering Parameters
BD FACSArray bioanalyzer	Yellow	Red and NIR
BD FACSCanto™ II flow cytometer	PE	APC and APC-Cy™7
BD™ LSR II flow cytometer	PE	APC and APC-Cy7
BD FACSAria™ II cell sorter	PE	APC and APC-Cy7
BD FACSCalibur™ flow cytometer	FL2	FL4 and FL3

Analysis of phospho-ERK1/2 protein levels in HEK 293 and NIH 3T3 cells in response to EGF, TNF, and PDGF stimulation.

Panel (A) shows the results of Western blot analysis.

Panel (B) shows the results of BD CBA Flex Set analysis.

Data courtesy of Dr. Tony Pawson and Dr. Jay Park, Mount Sinai Hospital, Toronto, Canada.

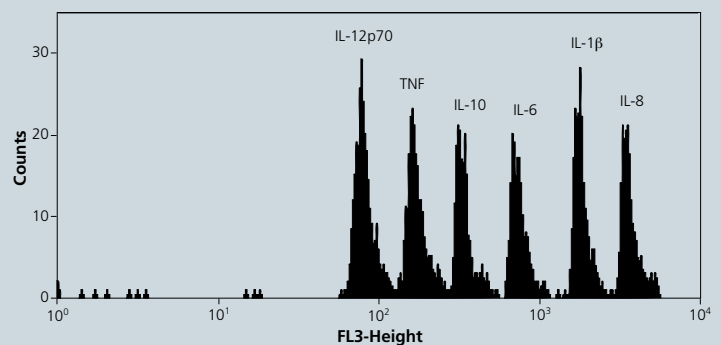


BD CBA Kits – Consistent Results with Routine Panels

BD CBA Kits provide preconfigured panels for ultimate ease of use

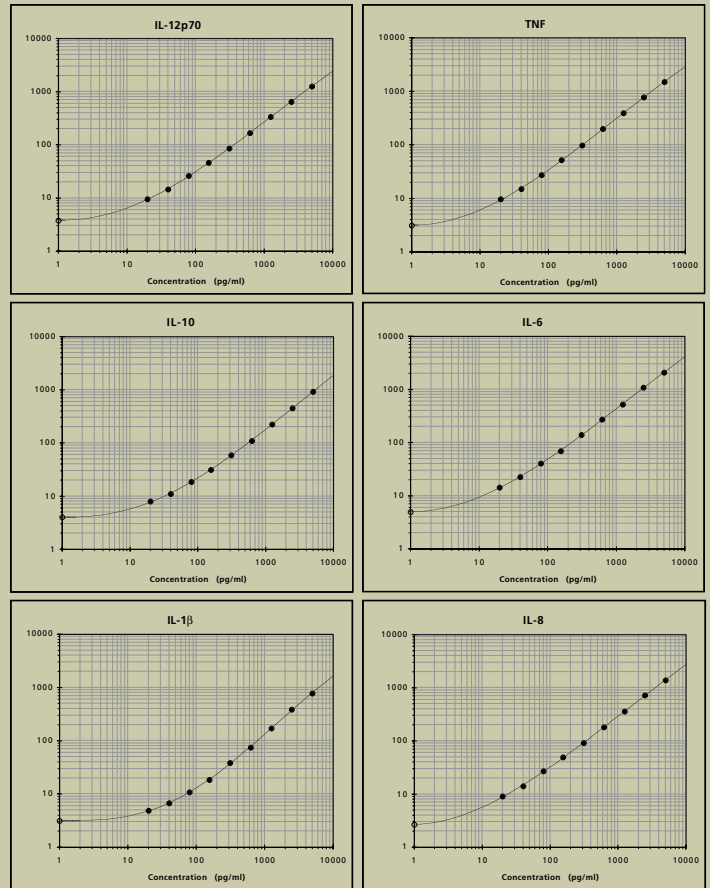
BD CBA kits enable multiplex analysis of complex biological samples on a flow cytometer. In contrast to BD CBA Flex Sets, the kits are preconfigured by functional areas of biology (eg, Th1/Th2 or inflammatory cytokines) to measure up to seven analytes simultaneously using capture beads that contain unique amounts of a single red dye. The unique spectral properties of this dye enable analysis of samples on flow cytometers that have a single 488-nm laser or on dual-laser (488-nm and 633-nm) flow cytometers. Each kit comes complete with all of the buffers and reagents necessary to analyze 80 samples.

Representative data generated using the BD CBA Human Inflammatory Cytokines Kit, showing relative bead fluorescence intensities.



Consistent packages, pre-optimized, and ready to use

Each assay has been stringently developed for ease of use, rapid data analysis, sensitivity, reproducibility, and quality. Each antibody pair used in the kits is evaluated for dynamic range, sensitivity, and parallel titration curves to native biological samples. In addition, the assay diluent and wash buffers in each kit have been formulated to reduce detrimental effects of serum and plasma proteins on assay performance.



Representative standard curves generated using the BD CBA Human Inflammatory Cytokines Kit.

BD CBA Products – designed for easy and efficient multiplexing

- Require no assay formulation regardless of plex size
- Deliver quantitative results from a single small volume sample
- Require less total time and less hands-on time compared with competitive bead-based immunoassays
- Offer automated sample acquisition and increased throughput with the plate-based BD FACSAarray bioanalyzer or BD High Throughput Sampler Option

BD CBA Flex Sets

- Open and configurable bead-based reagents
- Measure up to 30 analytes simultaneously on a flow cytometer with 488 and 633-nm lasers

Available assays include:

- Soluble protein assays for detection of human, mouse, or rat cytokines, chemokines and growth factors, human immunoglobulins
- Cell signaling assays for detection of phosphorylated cell signaling proteins

BD CBA Kits

- Preconfigured kits for consistent results with routine panels
- Available for functional areas of biology such as Th1/Th2 and inflammatory cytokines
- Measure up to seven analytes simultaneously
- Compatible with flow cytometers that have a 488-nm laser

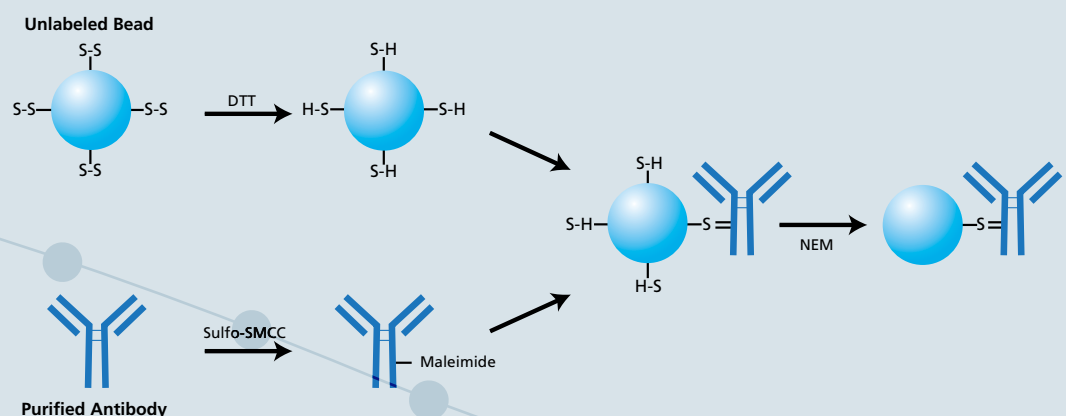
Additional Options to Enhance Flexibility

BD CBA Functional Beads to conjugate for unique requirements

BD CBA Flex Set Functional Beads are unconjugated beads that allow researchers to conjugate their own antibody or protein of interest using sulfo-SMCC chemistry. The conjugation procedure takes less than four hours using common laboratory supplies along with the buffers in the BD CBA Functional Bead Conjugation Buffer Kit.

This is an ideal platform for converting existing ELISAs into bead-based immunoassays that can be mixed with our portfolio of BD CBA Flex Set assays. The availability of multiple bead positions enables creation of novel multiplex panels, while the ability to prepare up to 1,000 tests in a single reaction ensures consistency across a large number of tests.

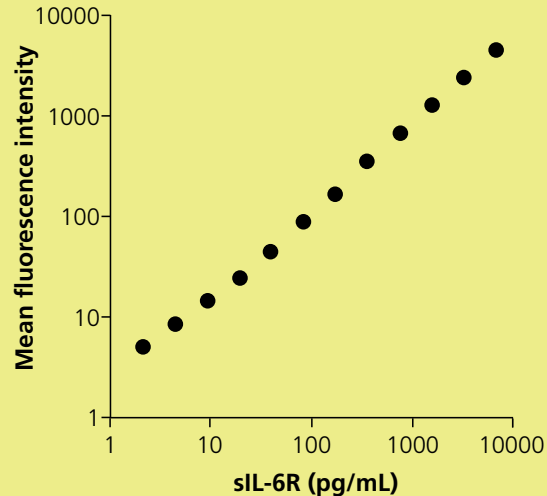
Overview of the functional bead conjugation procedure.



Get help from the BD Custom Technology Team

Mobilizing technology for research applications requires close collaboration. The Custom Technology Team (CTT) at BD Biosciences works with customers to provide solutions through custom reagents, panels, or assay protocols.

Staffed by leading scientists with the breadth and depth of scientific and technical expertise, the CTT team will coordinate with researchers to study the problem at hand, make recommendations, and help implement the solutions. In this way, BD Biosciences technical know-how is translated into practical solutions that allow customers to focus on research.



Standard curve for a soluble IL-6 receptor assay generated using BD CBA Functional Bead E4 following the conjugation procedure in the BD CBA Functional Bead Conjugation Buffer Set manual.

Data courtesy of Joseph Cannon and Gloria Sloan, Medical College of Georgia.

Choose the BD CBA product for your needs

BD CBA Flex Sets

- Open and configurable bead-based reagents
- Measure up to 30 analytes simultaneously on a flow cytometer with 488 and 633-nm lasers

Available assays include:

- Soluble protein assays for detection of human, mouse, or rat cytokines, chemokines and growth factors, human immunoglobulins
- Cell signaling assays for detection of phosphorylated cell signaling proteins

BD CBA Kits

- Preconfigured kits for consistent results with routine panels
- Available for functional areas of biology such as Th1/Th2 and inflammatory cytokines
- Measure up to seven analytes simultaneously
- Compatible with flow cytometers that have a 488-nm laser

BD Functional Beads

- Unconjugated beads that allow researchers to conjugate their own antibody or protein of interest
- Enable the creation of novel bead assays

Highlights of BD CBA Products

Reagents with Superior Quality and Reproducibility

All BD CBA products are evaluated for performance characteristics including reproducibility, linearity, spike recovery, and theoretical limit of detection. These values are reported in the product documentation that is included with each BD CBA product.

Reproducibility

The intra-assay and inter-assay reproducibility are determined by evaluating ten replicates of three different sample levels (intra-assay) and two replicates of three different sample levels from four separate experiments (inter-assay).

Linearity

Cell culture supernatant, serum, or EDTA-plasma is spiked with protein and serially diluted. The diluted samples are assayed and the results are compared with the spiked sample.

Spike recovery

Cell culture supernatant, serum, or EDTA-plasma is spiked with protein and serially diluted. The diluted samples are assayed and the results are compared with a standard curve to determine recovery.

Theoretical limit of detection

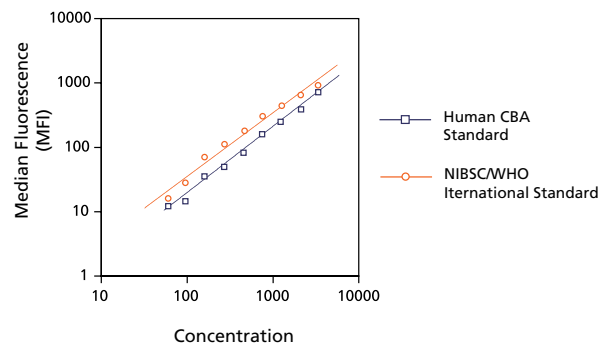
The individual standard curve range for a given cytokine defines the minimum and maximum quantifiable levels using a BD CBA assay. The theoretical limit of detection is defined as the corresponding concentration at two standard deviations above the median fluorescence of 20 replicates of the negative control (0 pg/mL) using a 4- or 5-parameter curve.

Standardization of BD CBA Standards to the NIBSC/WHO International Standards

The NIBSC protein standards are recognized by the World Health Organization (WHO) as international biological standards. They meet established requirements for accuracy, consistency, and stability. The NIBSC/WHO standards are assigned potency values in International Units (IU) of biological activity and nominal mass (ie, not absolute mass values). Therefore they cannot be used to establish absolute concentrations for a cytokine preparation. However, these standards do provide a means to facilitate comparisons of cytokine concentration values determined by experiments conducted within different laboratories or methods.

The source of a recombinant protein (ie, insect cell, *E. coli*, etc.) and the affinity of antibodies used can affect the measurement and performance of a protein in an immunoassay. The conversion factors provided in the subsequent tables make it possible to compare protein concentrations in samples measured by different immunoassays that have been standardized to the same NIBSC/WHO standards.

The conversion factor may change based on the batch of either standard. Therefore, the conversion factor is intended to be a guideline indicating whether a BD CBA assay over- or underestimates analyte concentrations relative to the NIBSC/WHO standards. Researchers are advised to incorporate both sets of standards in their assays if they wish to derive data from the NIBSC/WHO standards.



Titration curve comparing the BD CBA Human IFN- γ recombinant standard to the NIBSC/WHO International standard.

Table 1. NIBSC conversion factor summary for BD CBA Flex Set Standards

	NIBSC STANDARD			CALCULATED CONCENTRATION USING BD CBA FLEX SET (PG/ML)	NOMINAL NIBSC CONCENTRATION (PG/ML)	BD CBA FLEX SET: NIBSC/WHO MASS CONVERSION FACTOR
	CODE NO.	MASS UNITS / VIAL	IU VALUE			
Human b-FGF	90-712	4 µg	1,600	1,295.87 ± 103.20	2,500	1.97
Human G-CSF	88-502	100 ng	10,000	1,231.33 ± 87.71	2,500	2.06
Human GM-CSF	88-646	1 µg	10,000	1,551.45 ± 70.33	2,500	1.62
Human IFN-γ	87-586	12.5 ng	250	1,287.44 ± 174.12	2,500	1.97
Human IL-1β	86-680	1 µg	100,000	2,610.76 ± 129.84	2,500	0.97
Human IL-2	86-504	7.6 ng	100	2,148.20 ± 193.43	2,500	1.17
Human IL-3	91-510	1 µg	1,700	1,822.31 ± 117.76	2,500	1.39
Human IL-4	88-656	100 ng	1,000	1,535.99 ± 79.24	2,500	1.65
Human IL-5	90-586	500 ng	5,000	1,084.09 ± 254.01	2,500	2.38
Human IL-6	89-548	1 µg	100,000	2,041.22 ± 220.02	2,500	1.25
Human IL-7	90-530	1 µg	100,000	573.00 ± 94.55	2,500	4.44
Human IL-8	89-520	1 µg	1,000	2,448.42 ± 153.34	2,500	1.04
Human IL-9	91-678	100 ng	1,000	601.58 ± 35.24	2,500	4.20
Human IL-10	93-722	1 µg	5,000	2,510.49 ± 144.61	2,500	1.01
Human IL-11	92-788	500 ng	5,000	13,401.31 ± 1390.37	10,000	0.75
Human IL-12p70	95-544	1 µg	10,000	1,307.09 ± 71.6	2,500	1.93
Human IL-13	95-622	1 µg	1,000	2,723.24 ± 660.88	2,500	0.93
Human MCP-1	92-794	5 µg	5,000 arbitrary units	2,280.63 ± 150.6	2,500	1.10
Human MIP-1α	92-518	2 µg	200 arbitrary units	1,242.93 ± 40.98	2,500	2.04
Human OSM	93-564	1 µg	25,000	531.11 ± 34.17	2,500	4.75
Human RANTES	92-520	10 µg	100,000 arbitrary units	1,589.05 ± 181.79	2,500	1.60
Human TNF	88-786	1 µg	46,500	1,642.65 ± 99.14	2,500	1.54
Human TNFR1	96-528	10 µg	not provided	12,214.45 ± 1165.96	10,000	0.83
Human TNFR2	93-524	10 µg	not provided	707.95 ± 46.45	2,500	3.57
Human VEGF	02-286	13 µg	13,000	1,250.615 ± 72.77	2,500	2.03
Mouse GM-CSF	91-658	1 µg	100,000 arbitrary units	1,748.55 ± 132.95	2,500	1.46
Mouse IL-1β	93-668	100 ng	100,000 arbitrary units	4,531.11 ± 393.89	2,500	0.56
Mouse IL-2	93-566	100 ng	10,000 arbitrary units	368.74 ± 41.31	2,500	6.92
Mouse IL-3	91-662	1 µg	100,000 arbitrary units	1,309.44 ± 77.95	2,500	1.93
Mouse IL-4	91-656	1 µg	10,000 arbitrary units	439.64 ± 43.03	2,500	5.76
Mouse IL-6	93-730	100 ng	10,000 arbitrary units	221.70 ± 49.24	2,500	11.40
Mouse TNF	88-532	1 µg	200,000 arbitrary units	1,540.95 ± 191.70	2,500	1.67

Table 2. NIBSC conversion factor summary for BD CBA Kit Standards

	NIBSC STANDARD			CALCULATED CONCENTRATION USING BD CBA KIT (pg/mL)	NOMINAL NIBSC CONCENTRATION (pg/mL)	BD CBA KIT: NIBSC/WHO MASS CONVERSION FACTOR
	CODE NO.	MASS UNITS / VIAL	IU VALUE			
Human IFN- γ	87-586	12.5 ng	250	4,495.12 \pm 657.67	5,000	1.12
Human IL-1 β	86-680	1 μ g	100,000	3,463.92 \pm 184.87	5,000	1.46
Human IL-2	86-504	7.6 ng	100	3,118.99 \pm 449.33	5,000	1.61
Human IL-4	88-656	100 ng	1,000	5,717.84 \pm 632.51	5,000	0.88
Human IL-5	90-586	500 ng	5,000	3,892.01 \pm 501.66	5,000	1.30
Human IL-6	89-548	1 μ g	100,000	4,986.28 \pm 633.36	5,000	1.01
Human IL-8	89-520	1 μ g	1,000	3,359.12 \pm 319.33	2,500	0.74
Human IL-10	93-722	1 μ g	5,000	4,389.72 \pm 469.84	5,000	1.14
Human IL-12p70	95-544	1 μ g	10,000	3,764.63 \pm 276.73	5,000	1.34
Human MCP-1	92-794	5 μ g	5,000 arbitrary units	2,653.49 \pm 159.89	2,500	0.95
Human RANTES	92-520	10 μ g	100,000 arbitrary units	1,116.63 \pm 90.04	2,500	2.26
Human TNF	88-786	1 μ g	46,500	3,651.85 \pm 417.15	5,000	1.38
Mouse IL-2	93-566	100 ng	10,000 arbitrary units	627.37 \pm 26.29	5,000	8.03
Mouse IL-4	91-656	1 μ g	10,000 arbitrary units	867.48 \pm 59.91	5,000	5.81
Mouse IL-6	93-730	100 ng	10,000 arbitrary units	486.43 \pm 52.42	5,000	10.26
Mouse TNF	88-532	1 μ g	200,000 arbitrary units	2,328.01 \pm 140.83	5,000	2.17

BD CBA Product List

BD CBA Flex Sets

Cell Signaling – Human, Mouse, Rat

DESCRIPTION	REACT	APPS	REG	SIZE	CAT. NO.	NEW
Phospho Akt1 (S473) Flex Set (Bead A4)	Hu	FCM	RUO	100 tests	560144	●
Phospho Akt1 (T308) Flex Set (Bead A4)	Hu	FCM	RUO	100 tests	560208	●
Phospho Akt2 (S474) Flex Set (Bead A5)	Hu	FCM	RUO	100 tests	560147	●
Phospho Akt2 (T309) Flex Set (Bead A5)	Hu	FCM	RUO	100 tests	560146	●
Phospho BLNK (Y84) Flex Set (Bead C9)	Hu	FCM	RUO	100 tests	560063	●
Phospho Btk (Y551) Flex Set (Bead D5)	Hu	FCM	RUO	100 tests	560004	
Phospho c-Jun (S63) Flex Set (Bead D8)	Hu	FCM	RUO	100 tests	560059	
Phospho eNos (S1177) Flex Set (Bead C7)	Hu, Ms	FCM	RUO	100 tests	560021	
Phospho eNos (T495) Flex Set (Bead C7)	Hu	FCM	RUO	100 tests	560065	
Phospho ERK1/2 (T202/Y204) Flex Set (Bead C4)	Hu, Ms, Rat	FCM	RUO	100 tests	560012	
Phospho Itk (Y511) Flex Set (Bead C6)	Hu, Ms, Rat	FCM	RUO	100 tests	560008	
Phospho JNK1/2 (T183/Y185) Flex Set (Bead B5)	Hu, Ms, Rat	FCM	RUO	100 tests	560013	
Phospho MEK1/2 (S222) Flex Set (Bead A6)	Hu	FCM	RUO	100 tests	560150	●
Phospho p38 (T180/Y182) Flex Set (Bead B6)	Hu, Ms, Rat	FCM	RUO	100 tests	560010	
Phospho Paxillin (Y118) Flex Set (Bead E4)	Hu	FCM	RUO	100 tests	560215	●
Phospho PLC-γ (Y783) Flex Set (Bead B7)	Hu, Ms, Rat	FCM	RUO	100 tests	560009	
Phospho Pyk2 (Y402) Flex Set (Bead D9)	Hu	FCM	RUO	100 tests	560148	●
Phospho Rsk (S380) Flex Set (Bead D7)	Hu	FCM	RUO	100 tests	560055	
Phospho Rsk (T573) Flex Set (Bead D7)	Hu, Ms, Rat	FCM	RUO	100 tests	560024	
Phospho SLP-76 (Y145) Flex Set (Bead D6)	Hu	FCM	RUO	100 tests	560067	●
Phospho Stat1 (Y701) Flex Set (Bead C5)	Hu	FCM	RUO	100 tests	560015	
Phospho Stat3 (Y705) Flex Set (Bead C8)	Hu	FCM	RUO	100 tests	560093	●
Phospho Syk (Y352) Flex Set (Bead B9)	Hu, Ms, Rat	FCM	RUO	100 tests	560014	
Phospho ZAP-70 (Y319) Flex Set (Bead B8)	Hu, Ms	FCM	RUO	100 tests	560011	
Total Akt1 Flex Set (Bead A4)	Hu	FCM	RUO	100 tests	560206	●
Total Akt2 Flex Set (Bead A5)	Hu	FCM	RUO	100 tests	560207	●
Total Jnk Flex Set (Bead B5)	Hu	FCM	RUO	100 tests	560214	●
Total p38-α Flex Set (Bead B6)	Hu	FCM	RUO	100 tests	560145	●
Total Stat1 Flex Set (Bead C5)	Hu, Ms, Rat	FCM	RUO	100 tests	560017	
Total Syk Flex Set (Bead B9)	Hu	FCM	RUO	100 tests	560020	
Total ZAP-70 Flex Set (Bead B8)	Hu, Ms, Rat	FCM	RUO	100 tests	560019	

BD CBA Flex Sets

Cell Signaling – Supporting Reagents

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Cell Signaling Master Buffer Kit (Required for use with BD CBA Cell Signaling Flex Sets)	FCM	RUO	100 tests	560005	
	FCM	RUO	500 tests	560006	
Wash Buffer	FCM	RUO	130 mL	560105	
30-Plex Bead Mixture (Used for verification of instrument setup)	FCM	RUO	1 vial	558522	

BD CBA Flex Sets

Cell Signaling – Standards

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Phospho ERK1/2 (T202/Y204) Standard	FCM	RUO	Lyophilized	1 vial	560027	
Phospho JNK1/2 (T183/Y185) Standard	FCM	RUO	Lyophilized	1 vial	560029	
Phospho p38 (T180/Y182) Standard	FCM	RUO	Lyophilized	1 vial	560028	

BD CBA Product List

BD CBA Flex Sets

Soluble Proteins – Human

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Human Angiogenin Flex Set (Bead C4)	FCM	RUO	100 tests	558328	
Human Basic FGF Flex Set (Bead C5)	FCM	RUO	100 tests	558327	
Human sCD40 Ligand Flex Set (Bead C7)	FCM	RUO	100 tests	560305	●
Human sCD121a Flex Set (Bead B6)	FCM	RUO	100 tests	560276	●
Human sCD121b Flex Set (Bead B7)	FCM	RUO	100 tests	560281	●
Human Eotaxin Flex Set (Bead C7)	FCM	RUO	100 tests	558329	
Human Fas Ligand (FasL) Flex Set (Bead C6)	FCM	RUO	100 tests	558330	
Human Fractalkine Flex Set (Bead C6)	FCM	RUO	100 tests	560265	●
Human G-CSF Flex Set (Bead C8)	FCM	RUO	100 tests	558326	
Human GM-CSF Flex Set (Bead C9)	FCM	RUO	100 tests	558335	
Human Granzyme A Flex Set (Bead D9)	FCM	RUO	100 tests	560299	●
Human Granzyme B Flex Set (Bead D7)	FCM	RUO	100 tests	560304	●
Human IgE Flex Set (Bead E9)	FCM	RUO	100 tests	558682	
Human IFN- γ Flex Set (Bead B8)	FCM	RUO	100 tests	560111	●
Human IFN- γ Flex Set (Bead E7)	FCM	RUO	100 tests	558269	
Human IL-1 α Flex Set (Bead D6)	FCM	RUO	100 tests	560153	●
Human IL-1 β Flex Set (Bead B4)	FCM	RUO	100 tests	558279	
Human IL-2 Flex Set (Bead A4)	FCM	RUO	100 tests	558270	
Human IL-3 Flex Set (Bead D5)	FCM	RUO	100 tests	558355	
Human IL-4 Flex Set (Bead A5)	FCM	RUO	100 tests	558272	
Human IL-5 Flex Set (Bead A6)	FCM	RUO	100 tests	558278	
Human IL-6 Flex Set (Bead A7)	FCM	RUO	100 tests	558276	
Human IL-7 Flex Set (Bead A8)	FCM	RUO	100 tests	558334	
Human IL-8 Flex Set (Bead A9)	FCM	RUO	100 tests	558277	
Human IL-9 Flex Set (Bead B6)	FCM	RUO	100 tests	558333	
Human IL-10 Flex Set (Bead B7)	FCM	RUO	100 tests	558274	
Human IL-11 Flex Set (Bead D5)	FCM	RUO	100 tests	560228	●
Human IL-12/IL-23p40 Flex Set (Bead E5)	FCM	RUO	100 tests	560154	●
Human IL-12p70 Flex Set (Bead E5)	FCM	RUO	100 tests	558283	
Human IL-13 Flex Set (Bead E6)	FCM	RUO	100 tests	558450	
Human IP-10 Flex Set (Bead B5)	FCM	RUO	100 tests	558280	
Human LIF Flex Set (Bead B6)	FCM	RUO	100 tests	560271	●
Human LT- α Flex Set (Bead D5)	FCM	RUO	100 tests	560083	
Human MCP-1 Flex Set (Bead D8)	FCM	RUO	100 tests	558287	
Human MIG Flex Set (Bead E8)	FCM	RUO	100 tests	558286	
Human MIP-1 α Flex Set (Bead B9)	FCM	RUO	100 tests	558325	
Human MIP-1 β Flex Set (Bead E4)	FCM	RUO	100 tests	558288	
Human OSM Flex Set (Bead D5)	FCM	RUO	100 tests	560084	
Human RANTES Flex Set (Bead D4)	FCM	RUO	100 tests	558324	
Human TNF Flex Set (Bead C4)	FCM	RUO	100 tests	560112	●
Human TNF Flex Set (Bead D9)	FCM	RUO	100 tests	558273	
Human Soluble TNFRI Flex Set (Bead C4)	FCM	RUO	100 tests	560156	●
Human Soluble TNFRII Flex Set (Bead C5)	FCM	RUO	100 tests	560155	●
Human VEGF Flex Set (Bead B8)	FCM	RUO	100 tests	558336	

BD CBA Product List

BD CBA Flex Sets

Soluble Proteins - Immunoglobulins

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Human IgA Flex Set (Bead C9)	FCM	RUO	100 tests	558681	
Human IgG1 Flex Set (Bead C4)	FCM	RUO	100 tests	558675	
Human IgG2 Flex Set (Bead C5)	FCM	RUO	100 tests	558676	
Human IgG3 Flex Set (Bead C6)	FCM	RUO	100 tests	558677	
Human IgG4 Flex Set (Bead C7)	FCM	RUO	100 tests	558678	
Human IgM Flex Set (Bead C8)	FCM	RUO	100 tests	558680	
Human Total IgG Flex Set (Bead C6)	FCM	RUO	100 tests	558679	

BD CBA Flex Sets

Soluble Proteins - Mouse

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Mouse G-CSF Flex Set (Bead D4)	FCM	RUO	100 tests	560152	●
Mouse GM-CSF Flex Set (Bead B9)	FCM	RUO	100 tests	558347	
Mouse IFN- γ Flex Set (Bead A4)	FCM	RUO	100 tests	558296	
Mouse IL-1 α Flex Set (Bead E4)	FCM	RUO	100 tests	560157	●
Mouse IL-1 β Flex Set (Bead E5)	FCM	RUO	100 tests	560232	●
Mouse IL-2 Flex Set (Bead A5)	FCM	RUO	100 tests	558297	
Mouse IL-3 Flex Set (Bead A8)	FCM	RUO	100 tests	558346	
Mouse IL-4 Flex Set (Bead A7)	FCM	RUO	100 tests	558298	
Mouse IL-5 Flex Set (Bead A6)	FCM	RUO	100 tests	558302	
Mouse IL-6 Flex Set (Bead B4)	FCM	RUO	100 tests	558301	
Mouse IL-9 Flex Set (Bead B5)	FCM	RUO	100 tests	558348	
Mouse IL-10 Flex Set (Bead C4)	FCM	RUO	100 tests	558300	
Mouse IL-12/IL-23p40 Flex Set (Bead D7)	FCM	RUO	100 tests	560151	●
Mouse IL-12p70 Flex Set (Bead D7)	FCM	RUO	100 tests	558303	
Mouse IL-13 Flex Set (Bead B8)	FCM	RUO	100 tests	558349	
Mouse IL-17A Flex Set (Bead B5)	FCM	RUO	100 tests	560283	●
Mouse IL-21 Flex Set (Bead B6)	FCM	RUO	100 tests	560160	●
Mouse KC Flex Set (Bead A9)	FCM	RUO	100 tests	558340	
Mouse MCP-1 Flex Set (Bead B7)	FCM	RUO	100 tests	558342	
Mouse MIG Flex Set (Bead D9)	FCM	RUO	100 tests	558341	
Mouse MIP-1 α Flex Set (Bead C7)	FCM	RUO	100 tests	558449	
Mouse MIP-1 β Flex Set (Bead C9)	FCM	RUO	100 tests	558343	
Mouse RANTES Flex Set (Bead D8)	FCM	RUO	100 tests	558345	
Mouse TNF Flex Set (Bead C8)	FCM	RUO	100 tests	558299	

BD CBA Product List

BD CBA Flex Sets

Soluble Proteins - Rat

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Rat IFN- γ Flex Set (Bead A6)	FCM	RUO	100 tests	558305	
Rat IL-1 α Flex Set (Bead A4)	FCM	RUO	100 tests	560159	●
Rat IL-4 Flex Set (Bead B9)	FCM	RUO	100 tests	558307	
Rat IL-6 Flex Set (Bead A9)	FCM	RUO	100 tests	558308	
Rat TNF Flex Set (Bead C8)	FCM	RUO	100 tests	558309	
Rat IL-10 Flex Set (Bead A8)	FCM	RUO	100 tests	558306	

BD CBA Flex Sets

Soluble Proteins - Supporting Reagents

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Human Soluble Protein Master Buffer Kit (Required for use with BD CBA Human Soluble Protein Flex Sets)	FCM	RUO	100 tests	558264	
	FCM	RUO	500 tests	558265	
Human Immunoglobulin Master Buffer Kit (Required for use with BD CBA Human Ig Flex Sets)	FCM	RUO	100 tests	558683	
Mouse/Rat Soluble Protein Master Buffer Kit (Required for use with BD CBA Mouse/Rat Soluble Protein Flex Sets)	FCM	RUO	100 tests	558266	
	FCM	RUO	500 tests	558267	
Assay Diluent	FCM	RUO	30 mL	560104	●
Wash Buffer	FCM	RUO	130 mL	560105	●
30-Plex Bead Mixture (Used for verification of instrument setup)	FCM	RUO	1 vial	558522	

BD CBA Product List

BD CBA Flex Sets

Soluble Proteins - Standards

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Human IFN- γ Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558456	
Human IL-1 β Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558457	
Human IL-2 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558461	
Human IL-4 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558462	
Human IL-5 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558463	
Human IL-6 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558464	
Human IL-8 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558465	
Human IL-10 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558458	
Human IL-12 p70 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558459	
Human IL-13 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558460	
Human IP-10 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558466	
Human MCP-1 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558467	
Human MIP-1 α Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558468	
Human MIP-1 β Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558469	
Human RANTES Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558470	
Human TNF Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558472	
Mouse IFN- γ Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558473	
Mouse IL-2 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558476	
Mouse IL-4 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558477	
Mouse IL-5 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558478	
Mouse IL-6 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558479	
Mouse IL-10 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558474	
Mouse IL-12 p70 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558475	
Mouse TNF Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558480	
Rat IFN- γ Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558481	
Rat IL-6 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558483	
Rat IL-10 Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558482	
Rat TNF Flex Set Standard	FCM	RUO	Lyophilized	1 vial	558484	

BD CBA Product List

BD CBA Flex Sets

Functional Beads

DESCRIPTION	APPS	REG	SIZE	CAT. NO.	NEW
Functional Bead (A4)	Array	RUO	6,000 tests	558578	
Functional Bead (A5)	Array	RUO	6,000 tests	560031	
Functional Bead (A6)	Array	RUO	6,000 tests	560032	
Functional Bead (A7)	Array	RUO	6,000 tests	560033	
Functional Bead (A8)	Array	RUO	6,000 tests	560034	
Functional Bead (A9)	Array	RUO	6,000 tests	558579	
Functional Bead (B4)	Array	RUO	6,000 tests	560035	
Functional Bead (B5)	Array	RUO	6,000 tests	558586	
Functional Bead (B6)	Array	RUO	6,000 tests	558645	
Functional Bead (B7)	Array	RUO	6,000 tests	558580	
Functional Bead (B8)	Array	RUO	6,000 tests	558581	
Functional Bead (B9)	Array	RUO	6,000 tests	558646	
Functional Bead (C4)	Array	RUO	6,000 tests	558647	
Functional Bead (C5)	Array	RUO	6,000 tests	558648	
Functional Bead (C6)	Array	RUO	6,000 tests	558582	
Functional Bead (C7)	Array	RUO	6,000 tests	558587	
Functional Bead (C8)	Array	RUO	6,000 tests	558649	
Functional Bead (C9)	Array	RUO	6,000 tests	558650	
Functional Bead (D4)	Array	RUO	6,000 tests	560036	
Functional Bead (D5)	Array	RUO	6,000 tests	558583	
Functional Bead (D6)	Array	RUO	6,000 tests	558654	
Functional Bead (D7)	Array	RUO	6,000 tests	558655	
Functional Bead (D8)	Array	RUO	6,000 tests	558656	
Functional Bead (D9)	Array	RUO	6,000 tests	558657	
Functional Bead (E4)	Array	RUO	6,000 tests	558584	
Functional Bead (E5)	Array	RUO	6,000 tests	560037	
Functional Bead (E6)	Array	RUO	6,000 tests	560038	
Functional Bead (E7)	Array	RUO	6,000 tests	560039	
Functional Bead (E8)	Array	RUO	6,000 tests	560040	
Functional Bead (E9)	Array	RUO	6,000 tests	558585	

BD CBA Flex Sets

Functional Beads - Supporting Reagents

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Functional Bead Conjugation Buffer Set (Required for use with BD CBA Functional Beads)				FCM	RUO	Set	15 reactions	558556	
Mouse Ig Detector (PE-labeled antibody for confirmation of conjugation)	Ms	Polyclonal	Goat Ig	FCM	RUO	PE	25 tests	558550	
Rabbit IgG Detector (PE-labeled antibody for confirmation of conjugation)	Rab	C101-359	Mouse (BALB/c) IgG ₁ , κ	FCM	RUO	PE	25 tests	558553	
Rat Ig Detector (PE-labeled antibody for confirmation of conjugation)	Rat	Poly1271	Goat Ig	FCM	RUO	PE	25 tests	558551	

BD CBA Product List

BD CBA Kits

Human

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Human Anaphylatoxin Kit	FCM	RUO	C4a, C3a, C5a	80 tests	552363	
Human Chemokine Kit	FCM	RUO	IL-8, RANTES, MIG, MCP-1, IP-10	80 tests	552990	
Human Inflammatory Cytokines Kit	FCM	RUO	IL-8, IL-1 β , IL-6, IL-10, TNF, IL-12p70	80 tests	551811	
Human Th1/Th2 Cytokine Kit	FCM	RUO	IL-2, IL-4, IL-5, IL-10, TNF, IFN- γ	80 tests	550749	
Human Th1/Th2 Cytokine Kit II	FCM	RUO	IL-2, IL-4, IL-6, IL-10, TNF, IFN- γ	80 tests	551809	

BD CBA Kits

Mouse

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Mouse Immunoglobulin Isotyping Kit	FCM	RUO	Heavy and light chain isotypes of IgG ₁ , IgG _{2a} , IgG _{2b} , IgG ₃ , IgA, IgM, IgE	100 tests	550026	
Mouse Inflammation Kit	FCM	RUO	IL-6, IL-10, MCP-1, IFN- γ , TNF, IL-12p70	80 tests	552364	
Mouse Th1/Th2 Cytokine Kit	FCM	RUO	IL-2, IL-4, IL-5, IFN- γ , TNF	80 tests	551287	

BD CBA Kits

Non-Human Primate

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Non-human Primate Th1/Th2 Cytokine Kit	FCM	RUO	IL-2, IL-4, IL-5, IL-6, TNF, IFN- γ	80 tests	557800	

BD CBA Kits

Standards

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
Human Inflammatory Cytokines Lyophilized Standard	FCM	RUO	IL-8, IL-1 β , IL-6, IL-10, TNF, IL-12p70	1 vial	552932	
Human Th1/Th2 Cytokine Lyophilized Standard	FCM	RUO	IL-2, IL-4, IL-5, IL-6, IL-10, TNF, IFN- γ	1 vial	551810	
Mouse Inflammation Lyophilized Standard	FCM	RUO	IL-6, IL-10, MCP-1, TNF, IFN- γ , IL-12p70	1 vial	620280	
Mouse Th1/Th2 Cytokine Lyophilized Standard	FCM	RUO	IL-2, IL-4, IL-5, IFN- γ , TNF	1 vial	552967	

BD CBA Analysis Software

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.	NEW
FCAP Array v1.0.1 (PC, Windows® XP)	FCM	RUO	PC Compatible CD-ROM and User's Guide	1 CD	641488	

Instrumentation

DESCRIPTION	CAT. NO.	NEW
BD FACSAArray bioanalyzer	340128	
SPHERO™ Daily QC Particles for BD FACSAArray	558542	

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