

CAR T cell therapy research solutions

CAR T cell therapy is a type of immunotherapy that has been shown to be highly effective for certain blood cancers, including lymphomas, leukemia, and multiple myeloma. The treatment involves isolating patient T cells and genetically modifying them to express a cancer celltargeting chimeric antigen receptor (CAR) before introducing them into the patient. Research on CAR T cells is progressing rapidly, with scientists investigating additional antigens as CAR T cell targets, antigen combinations, and strategies for targeting the tumor microenvironment.

We offer an extensive collection of high-quality reagents to support you in CAR T cell research and development, including immunoassays for inflammatory factor profiling, antibodies for cellular phenotyping, and proteins for T cell activation and expansion.

Immunoassay tools for cytokine analysis

SimpleStep ELISA® Kits

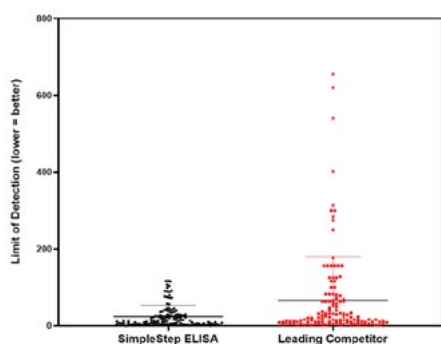
SimpleStep ELISA® kits are highly validated sandwich immunoassays, developed to be as simple and effective as possible in various biological sample types. Unlike traditional sandwich ELISAs with run times of 3 to 6 hours, our kits are designed to save you time at the bench, generating data in only 90 minutes with a one-wash step protocol.

The assays are developed using our recombinant monoclonal antibody pairs, exhibiting exceptional sensitivity (Fig. 1) and consistency. For assessing CAR T cell function, our class leading portfolio provides coverage of relevant targets, including **IFN-γ** and **TNF-α**.

A

Features	Portfolio
90-min, single wash	1000+ targets, including:
Validated on biological samples	CCL2, CCL4, CCL5, CXCL10, GM-CSF, Granzyme B, IFN-γ, IL-10, IL-17a, IL-2, IL-7, IL-15, IL-4, IL-6, TNF-α, Albumin
Calibrated against international standards	

B



C

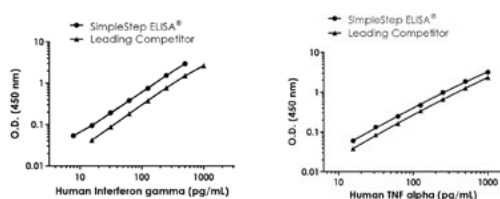


Figure 1. SimpleStep ELISA® kits are a simple, ready-to-use solution for assessing CAR T cell functionality and disease model biology. A) Key features and select targets. B) Sensitivity data comparing 126 kits with those from a leading competitor. C) Standard curve comparison between IFN-γ (ab300323) and TNF-α (ab181421) kits and traditional ELISA kits from leading competitors. In both cases, abcam's kits demonstrated increased sensitivity.

Antibody pairs

Antibody pairs are the foundational building blocks for immunoassays, though identifying a high-performing set can be a lengthy and challenging process. Abcam's unrivaled portfolio of **1,600+ antibody pairs** can provide you with a range of options against targets across oncology, neuroscience, immunology, metabolism, and other research areas.

Our antibody pairs are extensively validated and are supplied as PSB-only/BSA and azide free to make them easily adapted for various assay types, including sandwich ELISAs, TRFRET, and bead-based platforms.

Cytokine arrays

Our membrane cytokine arrays **allow you to simultaneously analyze (Fig. 2) up to 96 cytokines**. Our antibody arrays have pg/mL sensitivity and are easy-to-use, costefficient tools for simultaneous comparison of up to 20 samples. They are antibody pair-based assays (similar to an ELISA) and use the same equipment as chemiluminescent western blots.

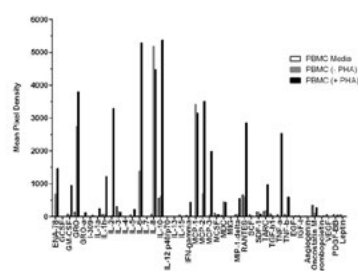


Figure 2. Cells were cultured unstimulated or stimulated with 10 µg/mL PHA. Conditioned media was harvested after 48 hours, aliquoted and assayed using ab133997. Media alone was used as a negative control. Mean pixel density was quantified using CCD camera software analysis.

ELISPOT arrays

The highly sensitive enzyme-linked immunospot (ELISPOT) assay measures the frequency of cytokine-secreting cells at the single cell level. Our **IFN-γ ELISPOT assay** (ab62899) is frequently used in CAR T cell cytokine release analysis, allowing you to capture both qualitative and quantitative data.

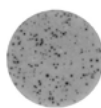


Figure 3. Representative ELISPOT assay images. 1 spot = 1 cell secreting cytokine of interest.

Recombinant antibodies and conjugation solutions for cellular phenotyping

Our portfolio of highly sensitive and specific recombinant monoclonal antibodies can be used in key CAR T cell therapy research and development applications, including flow cytometry-based analysis of immune and tumor cell populations and immunohistochemistry based analysis of tissue specimens. We can provide you with an ever-expanding collection of antibodies conjugated to a broad range of labels, including the Alexa Fluor® range, FITC, PE, and APC. If you have specific antibody-label needs, we can also offer our quick and easy-to-use Lightning-Link® conjugation kits.

Flow cytometry antibodies and conjugates

Flow cytometry is one of the most-used methods for characterizing T cells. We have the broadest coverage of flow cytometry-validated recombinant monoclonal antibodies against relevant targets within CAR T cell therapy research. These include cytotoxic T cell markers, such as CD8, activation markers, such as CD25, and checkpoint inhibitor targets, such as PD-1.

We supply many antibodies conjugated to common dyes, like PE, APC, FITC, and the Alexa Fluor range, so you can build your own panel with an antibody-label mix suitable for your experiment.

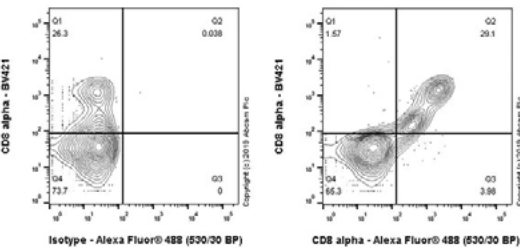


Figure 4. Flow cytometric analysis of human PBMCs labeling CD8 alpha with ab237709 (right) compared with a Rabbit IgG Isotype Control (ab172730) (left). Goat Anti-Rabbit IgG Fc (Alexa Fluor®488) preabsorbed (ab150097) was used as the secondary antibody.

Conjugation ready antibodies – BSA and azide-free

To enhance flexibility, we've formulated over 10,000 of our antibodies and antibody pairs to be carrier-free and conjugation-ready.

Carrier-free antibodies are specifically designed for antibody labeling, saving you time with a simplified protocol. The antibody is added directly to the conjugation reaction, avoiding antibody loss without the need to perform buffer exchange or concentration.

Conjugation-ready antibody benefits

- | | |
|---|---|
| 1 | BSA, sodium azide, and glycerol-free for consistent conjugation |
| 2 | Compatible with a variety of different labels, such as fluorochromes, metal isotopes, oligonucleotides, and enzymes |
| 3 | Recombinantly manufactured for the highest consistency between batches |
| 4 | 1 mg/mL concentration, eliminating the need to concentrate prior to conjugation |
| 5 | Clone-validated in relevant applications, such as IHC and flow cytometry |
| 6 | Purified IgG to increase conjugation yield |

Alexa Fluor® is a registered trademark of Life Technologies. Alexa Fluor® dye conjugates contain(s) technology licensed to Abcam by Life Technologies

abcam recombinant antibodies: consistent, sensitive, and specific

Recombinant monoclonal antibodies are manufactured by cloning antibody-coding genes into expression vectors, enabling controlled antibody production that can be readily scaled for guaranteed long-term supply and batch-to-batch consistency.

On average, abcam's high-affinity recombinant antibodies have KD values in the picomolar range. All antibodies undergo a battery of application-specific testing, including multiplex imaging applications that are often used to monitor the tumor microenvironment. Also, abcam remains at the vanguard of using KO cell lines in validation workflows to determine antibody specificity at scale.

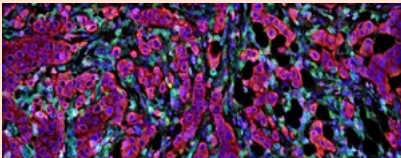


Figure 5. Fluorescence multiplex immunohistochemical analysis of a human breast cancer tissue. The immunostaining was performed on a Leica Biosystems BOND® MAX instrument with an Opal™ 6-Plex Detection Kit (NEL821001KT, Akoya Biosciences®). Markers: Anti-PD-L1 (ab251611; cyan; Opal™ 520), Anti-Granzyme B (ab219803; yellow; Opal™ 540), Anti-PD1 (ab251613; magenta; Opal™ 570), Anti-pan Cytokeratin (ab264485; red; Opal™ 620), Anti-EpCAM (ab225894; red; Opal™ 620), Anti-CD8 alpha (ab251596; green; Opal™ 650) and Anti-FOXP3 (ab96048; orange; Opal™ 690).

Lightning-Link® conjugation kits

We know how difficult it can be to find the perfect combination of antibody and label to build a multiplex flow panel. Our Lightning-Link® kits can be easily used to create an antibody-label combination of choice with the most popular labels for flow spanning from UV to infrared. These kits are compatible with our entire range of carrier-free antibodies and antibody pairs. With a simple two-step protocol, Lightning-Link® conjugation kits make it easy to generate conjugated antibodies with high batch-to-batch consistency (Fig. 6). As Lightning-Link® kits do not require a post-conjugation purification step, antibody is not lost throughout the process. These kits can conjugate up to 100 mg of antibody at a time so remain effective as experimental workflows scale.

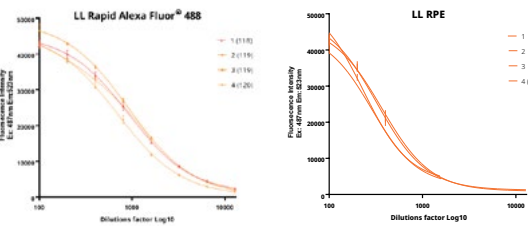


Figure 6. Batch-to-batch consistency of Alexa Fluor® 488 Conjugation Kit (Fast) - Lightning-Link® kits (ab236553) and PE Conjugation Kit - Lightning-Link® kits (ab102918) tested in direct ELISA. For each batch, 100 µg and 60 µg of antibody were conjugated to 100 µg of AF488 /60 µg of PE lyophilized vials and incubated for 15 mins and overnight, respectively. Serial dilution of the conjugate are added to a 96-well plate coated with anti-species antibody and fluorescence detected at the Ex and Em max of each label.

Other useful reagents for your CAR T cell research toolbox

Bioactive proteins

Select cytokines are supplemented into culture media for the activation and expansion of T cells during CAR T cell generation. Our premium bioactive proteins are mammalian-expressed, have ultra-low endotoxin levels, and are tested for activity, purity, and identity. Our proteins are manufactured under ISO 9001:2015 standards and are consistent batch-to-batch to give you the most reliable results possible.

As part of our rigorous QC workflow, abcam develops a functional assay (Fig. 7) to support the validation of every premium protein. This ensures that all our proteins have robust bioactivity, making them ideal for use in cell culture media or in functional studies.

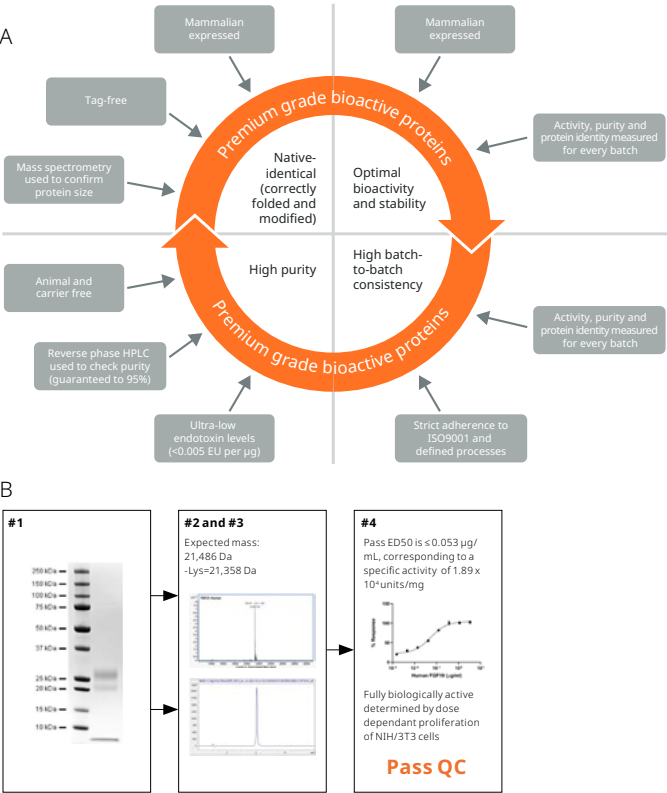


Figure 7. Premium bioactive proteins are our flagship range of best-in class recombinant proteins. A) Summary of features. B) Protein Q/C workflow.

Ab ID	Product name	Purity	Endotoxigenicity
ab259377	Recombinant Human Interferon gamma protein (Active)	>= 95% SDSPAGE	< 0.005 EU/µg
ab259418	Recombinant human IL (Active)-12 p70 protein	>= 95% SDSPAGE	< 0.005 EU/µg
ab259403	Recombinant human IL (Active)-15 protein	>= 95% SDSPAGE	< 0.005 EU/µg
ab285502	Recombinant human IL (Active)-2 protein	> 95% SDSPAGE	< 1.000 EU/µg
ab269176	Recombinant human IL (Active)-21 protein	> 95% SDSPAGE	< 1.000 EU/µg
ab155733	Recombinant human IL-4 protein	> 90% SDSPAGE	< 0.100 EU/µg
ab259381	Recombinant human IL (Active)-6 protein	>= 95% SDSPAGE	< 0.005 EU/µg
ab259382	Recombinant human IL (Active)-7 protein	>= 95% SDSPAGE	<= 0.05 EU/µg
ab50036	Recombinant human TGF beta 1 protein (Active)	> 98% SDSPAGE	< 1.000 EU/µg

Table 1. Premium bioactive recombinant proteins relevant to T cell culture.

Dyes & cytotoxicity assays

Flow-based *in vitro* cytotoxicity assays are commonly used for evaluating efficacy of CAR T cells. Abcam has a selection of highly cited dyes used for functional studies.

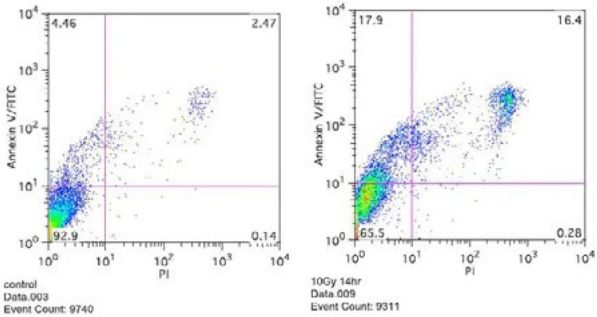


Figure 8. Annexin V-FITC/PI staining of AG06173 primary fibroblasts. 105 cells were used for analysis. Resuspended cells were incubated with Annexin V-FITC for 15 min in the dark. Propidium iodide (ab14083) was used as a counterstain to discriminate necrotic/dead cells from apoptotic cells. Left: negative control - AG06173 untreated cells. Right: positive control - AG06173 cells irradiated at 10 Gy. Image courtesy of S. Khoronenkova PhD, Gray Institute for Radiation Oncology and Biology, University of Oxford, Oxford, UK.

Ab ID	Product name
ab270780	Cytotoxicity Assay Kit (CFSE, 7-AAD)
ab236215	Annexin V-APC Assay Kit
ab139418	Propidium Iodide Flow Cytometry Kit
ab142391	7-Aminoactinomycin D (7-AAD), Fluorescent DNA dye
ab113853	CFSE - Cell Labeling Kit

Table 2. Example dyes and cytotoxicity assays relevant to monitoring cell health.

Cell engineering tools

T cell engineering is an essential part of any CAR T cell therapy research program. With over 10 years of expertise in cell engineering, we offer a selection of biochemicals to enhance HDR during CRISPR-Cas9 editing of your CAR construct.

Ab ID	Product name
ab204220	Recombinant S. pyogenes CRISPR-Cas9 protein
ab120299	Brefeldin A, Inhibitor of ADP-ribosylation factor
ab141943	(Z)-4-Hydroxytamoxifen, estrogen receptor modulator
ab120630	Nocodazole, Microtubule inhibitor
ab222375	SCR7 pyrazine, NHEJ inhibitor
ab144558	RI 1, RAD51 inhibitor

Table 3. Example tools that support cell engineering.

CAR T cell therapy research solutions product guide

SimpleStep ELISA® kits

- 1,000+ unique targets
- Simple, 90-minute, single wash protocol
- 10x pack and 384-well format available
- Validated in biological samples
- Calibrated against international standards



Antibody pairs

- 1,600+ antibody pairs
- Recombinant monoclonal technology
- Validated in sandwich ELISA
- Includes capture/detector pair
- Carrier-free and conjugation ready



Flow cytometry antibodies

- A large catalog of recombinant conjugated antibodies
- Available with all commonly used labels, including Alexa Fluor® dyes, PE, APC, FITC and more
- 10,000+ carrier-free conjugation ready antibodies compatible with Lightning-Link® conjugation kits



Premium bioactive proteins

- Class-leading consistency
- Mammalian expressed, guaranteed >95% purity
- Ultra-low endotoxins (<0.005 EU per µg)
- Animal, carrier and tag-free
- Adherence to ISO9001 standards



CAR T cell therapy research solutions product guide

Immunoassay product offering

Target	Ab ID	Products	SimpleStep (90 mins)	Sensitivity	Sample type
CCL2	ab179886	Human MCP-1 ELISA Kit	X	1.26 pg/mL	Cell culture supernatant, Cerebral Spinal Fluid, Cit plasma, EDTA Plasma, Hep Plasma, Plasma, Serum, Urine
	ab208979	Mouse MCP1 ELISA Kit	X	0.487 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab219045	Rat MCP1 ELISA Kit	X	5.7 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab242231	Monkey MCP1 ELISA Kit	X	16 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
CCL4	ab100597	Human MIP1 beta ELISA Kit (CCL4)		2.5 pg/mL	Cell culture supernatant, Plasma, Serum
	ab215115	Mouse MIP1b ELISA Kit	X	2.1 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab240680	Rat CCL4 ELISA Kit	X	6.9 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab242229	Monkey CCL4 ELISA Kit	X	1.8 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
CCL5	ab174446	Human RANTES ELISA Kit (CCL5)	X	0.091 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Plasma, Serum
	ab100739	Mouse RANTES ELISA Kit (CCL5)		1 pg/mL	Cell culture supernatant, Plasma, Serum
CXCL10	ab289906	Human IP-10 ELISA Kit	X	1.039 pg/mL	Cell culture supernatant, EDTA Plasma, Hep Plasma
	ab260067	Mouse IP-10 ELISA Kit (CXCL10)	X	21.75 pg/mL	Cell culture supernatant, Cit plasma, Serum
	ab270896	Rat CXCL10 ELISA Kit	X	87.45 pg/mL	Cell culture supernatant
	ab314607	Monkey IP-10 (CXCL10) ELISA Kit	X	1.3 pg/mL	Cell culture supernatant, Cerebral Spinal Fluid, EDTA Plasma
GM-CSF	ab174448	Human GM-CSF ELISA Kit (CSF2)	X	3.7 pg/mL	Cell culture media, Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab201276	Mouse GM-CSF ELISA Kit (CSF2)	X	3.1 pg/mL	Cell culture supernatant
	ab236709	Rat GM-CSF ELISA Kit	X	1.1 pg/mL	Serum, Tissue Culture Media
	ab252361	Monkey GM-CSF ELISA Kit	X	8.45 pg/mL	Cell culture media, Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
Granzyme B	ab235635	Human Granzyme B ELISA Kit	X	106 pg/mL	Cell culture supernatant, Cit plasma, Hep Plasma, Serum
	ab238265	Mouse Granzyme B ELISA Kit	X	24.4 pg/mL	Cell culture supernatant, Plasma, Serum
IFN-gamma	ab300323	Human Interferon gamma ELISA Kit	X	3.428 pg/mL	Cell culture media, Cell culture supernatant, EDTA Plasma, Hep Plasma, Saliva, Serum
	ab282874	Mouse IFN gamma ELISA Kit	X	1.9 pg/mL	Cell culture supernatant, Cell Lysate, EDTA Plasma, Hep Plasma, Serum
	ab239425	Rat IFN gamma ELISA Kit	X	1.1 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
IL-10	ab185986	Human IL-10 ELISA Kit (Interleukin-10)	X	1.4 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab255729	Mouse IL-10 ELISA Kit	X	19.8 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab214566	Rat IL-10 ELISA Kit	X	4.89 pg/mL	Cell culture supernatant, Cit plasma, Serum
IL-17a	ab216167	Human IL-17A ELISA Kit	X	1.1 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab199081	Mouse IL-17A ELISA Kit	X	0.5 pg/mL	Cell culture supernatant, Cit plasma, Serum
	ab214028	Rat IL-17A ELISA Kit	X	1.1 pg/mL	Cell culture supernatant, Cit plasma, Serum
	ab283537	Monkey IL-17A ELISA Kit	X	12 pg/mL	Cell culture supernatant
IL-2	ab270883	Human IL-2 ELISA Kit	X	32.1 pg/mL	Cell culture media, Cell culture supernatant, EDTA Plasma, Hep Plasma, Serum
	ab100706	Mouse IL-2 ELISA Kit		1 pg/mL	Cell culture supernatant, Plasma, Serum
	ab221834	Rat IL-2 ELISA Kit	X	4.9 pg/mL	Cell culture media, Cit plasma, Serum
	ab283555	Monkey IL-2 ELISA Kit	X	12 pg/mL	Cell culture supernatant
IL-4	ab215089	Human IL-4 ELISA Kit	X	1.08 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Plasma, Serum
	ab100710	Mouse IL-4 ELISA Kit		1 pg/mL	Cell Lysate, Tissue Lysate
	ab100770	Rat IL-4 ELISA Kit		1.5 pg/mL	Cell culture supernatant, Plasma, Serum
	ab242230	Monkey IL-4 ELISA Kit	X	2.2 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
IL-6	ab178013	Human IL-6 ELISA Kit	X	1.6 pg/mL	Cell culture supernatant, Cerebral Spinal Fluid, Cit plasma, EDTA Plasma, Serum
	ab222503	Mouse IL-6 ELISA Kit	X	11.3 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab234570	Rat IL-6 ELISA Kit	X	43 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab242233	Monkey IL-6 ELISA Kit	X	3.2 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
TNF-alpha	ab181421	Human TNF alpha ELISA Kit	X	4.32 pg/mL	Cell culture supernatant, Cerebral Spinal Fluid, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab208348	Mouse TNF alpha ELISA Kit	X	9.1 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab236712	Rat TNF alpha ELISA Kit	X	1.04 pg/mL	Cell culture supernatant, Cit plasma, EDTA Plasma, Hep Plasma, Serum
	ab252354	Monkey TNF alpha ELISA Kit	X	4.93 pg/mL	Cell culture supernatant, Cerebral Spinal Fluid, Hep Plasma, Serum

CAR T cell therapy research solutions product guide

Antibody array product offering*

Ab ID	Product name	Targets
ab134003	Human Inflammation Antibody Array Membrane (40 Targets)-	Eotaxin, Eotaxin-2, G-CSF, GM-CSF, ICAM-1, IFN-gamma, I-309, IL-1alpha, IL-1beta, IL-2, IL-3, IL-4, IL-6, IL-6sR, IL-7, IL-8, IL-10, IL-11, IL-12p40, IL-12p70, IL-13, IL-15, IL-16, IL-17, IP-10, MCP-1, MCP-2, M-CSF, MIG, MIP-1alpha, MIP-1beta, MIP-1delta, RANTES, TGF-beta1, TNF-alpha, TNF-beta, sTNF RI, sTNF-RII, PDGF-BB, TIMP-2
ab133996	Cytokine Array Array (Membrane, 23 Targets)- Human Cytokine Antibody	G-CSF, GM-CSF, GRO (alpha, beta & gamma), GRO-alpha, IL-1alpha, IL-2, IL-3, IL-5, IL-6, IL-7, IL-8, IL-10, IL-13, IL15, IFN-gamma, MCP-1, MCP-2, MCP-3, MIG, RANTES, TGF-beta1, TNF-alpha, TNF-beta
ab133997	Cytokine Array Array (Membrane, 42 Targets)- Human Cytokine Antibody	ENA-78, G-CSF, GM-CSF, GRO, GRO-alpha, I-309, IL-1alpha, IL-1beta, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-12 p40/p70, IL-13, IL-15, IFN-gamma, MCP-1, MCP-2, MCP-3, MCSF, MDC, MIG, MIP-1delta, RANTES, SCF, SDF-1, TARC, TGF-beta1, TNF-alpha, TNF-beta, EGF, IGF-I, Angiogenin, Oncostatin M, Thrombopoietin, VEGF-A, PDGF BB, Leptin
ab133998	Cytokine Array Array (Membrane, 80 Targets)- Human Cytokine Antibody	ENA-78, G-CSF, GM-CSF, GRO, GRO-alpha, I-309, IL-1alpha, IL-1beta, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-12 p40/p70, IL-13, IL-15, IFN-gamma, MCP-1, MCP-2, MCP-3, MCSF, MDC, MIG, MIP-1beta, MIP-1delta, RANTES, SCF, SDF-1, TARC, TGF-beta1, TNF-alpha, TNF-beta, EGF, IGF-I, Angiogenin, Oncostatin M, Thrombopoietin, VEGF-A, PDGF-BB, Leptin, BDNF, BLC, Ckß8-1, Eotaxin, Eotaxin-2, Eotaxin-3, FGF-4, FGF-6, FGF-7, FGF-9, Flt-3 Ligand, Fractalkine, GCP-2, GDNF, HGF, IGFBP-1, IGFBP-2, IGFBP-3, IGFBP-4, IL-16, IP-10, LIF, LIGHT, MCP-4, MIF, MIP-3 alpha, NAP-2, NT-3, NT-4, Osteopontin, Osteoprotegerin, PARC, PLGF, TGF-beta2, TGF-beta3, TIMP-1, TIMP-2
ab169809	Human Th1/Th2/Th17 Antibody Array Membrane (34 targets)-	CD30, CD40 Ligand, CD40, G-CSF, GTR, GM-CSF, IFN-gamma, IL-1 beta, IL-1 sRI, IL-1 sRII, IL-2, IL-4, IL-5, IL-6, IL-6 R, IL-10, IL-12 p40, IL-12 p70, IL-13, IL-17, IL-17F, IL-17 R, IL-21, IL-21R, IL-22, IL-23 (p19), IL-28A, MIP-3 alpha, spg130, TGF beta 1, TGF beta 3, TNF alpha, TNF beta, TRANCE.

**All antibody arrays are validated in cell culture supernatant, saliva, milk, urine, serum, plasma, cell culture extracts, other biological fluids, whole blood, tissue extracts, cell lysate, cell culture media.*

ELISPOT product offering

Find all 70+ ELISPOT and FLUOROSPOT available on our [website](#)

Ab ID	Product name
ab62899	Human Interferon Gamma ELISPOT Kit
ab64029	Mouse Interferon gamma ELISPOT Kit
ab64032	Rat Interferon gamma ELISPOT Kit
ab62922	Human Granzyme B ELISPOT Kit
ab62937	Human IL-10 ELISPOT Kit
ab83723	Human IL-17 ELISPOT Kit
ab62926	Human IL-2 ELISPOT Kit
ab64031	Mouse IL-2 ELISPOT Kit
ab281966	Human IL-4 ELISpot Kit
ab62936	Human IL-6 ELISPOT Kit
ab48448	Human Interferon Gamma + IL2 ELISPOT Kit
ab48463	Human Interferon Gamma + Granzyme B ELISPOT Set
ab62945	Human TNF alpha ELISPOT Kit

Ab ID	Product name
ab48452	Human Interferon Gamma + IL2 FLUOROSPOT Kit
ab48460	Human IL-10 + IL-2 FLUOROSPOT Set
ab48468	Human Interferon Gamma + Granzyme B FLUOROSPOT Kit
ab48431	Human Interferon gamma + IL5FLUOROSPOT Kit
ab105253	Human IL-17A + Interferon gamma FLUOROSPOT Set
ab48463	Human Interferon Gamma + Granzyme B ELISPOT Set
ab62945	Human TNF alpha ELISPOT Kit
ab48452	Human Interferon Gamma + IL2 FLUOROSPOT Kit
ab48460	Human IL-10 + IL-2 FLUOROSPOT Set
ab48468	Human Interferon Gamma + Granzyme B FLUOROSPOT Kit
ab48431	Human Interferon gamma + IL5 FLUOROSPOT Kit
ab105253	Human IL-17A + Interferon gamma FLUOROSPOT Set

CAR T cell therapy research solutions product guide

Antibody product offering

Ab ID	Product name	Flow cytometry	IHC	Conjugated Primary
ab32	Anti-Myc tag antibody [9E10]	x	x	13 available
ab254376	Recombinant Anti-CCR4 antibody [EPR23502-85]	X		1 available
ab254377	Recombinant Anti-CCR5 antibody [EPR23449-327]	X		
ab303672	Recombinant Anti-CCR6 antibody [EPR24085-145]	X		
ab217181	Anti-CCR7 antibody	X	X	
ab255816	Recombinant Anti-CD127 antibody [EPR22835-249]	X		1 available
ab134114	Recombinant Anti-CD19 antibody [EPR5906]	X (intra)	X	4 available
ab264557	Recombinant Anti-IL-2 Receptor alpha antibody [EPR22816-65]	X		
ab283860	Recombinant Anti-CD28 antibody [EPR24592-5]	X		1 available
ab135372	Recombinant Anti-CD3 antibody [SP162]	X (intra)	X	6 available
ab213215	Recombinant Anti-CD4 antibody [SP35]	X	X	6 available
ab273499	Recombinant Anti-TRAP/CD40L antibody [EPR20727-307]	X		2 available
ab8217	Anti-CD45RA antibody [MEM-56]		X	3 available
ab23	Anti-CD45RO antibody [UCH-L1]	X	X	3 available
ab237709	Recombinant Anti-CD8 alpha antibody [CAL66]	X	X	4 available
ab216338	Recombinant Anti-CTLA4 antibody [EPR22860-65]	X		
ab259865	Recombinant Anti-CXCR3 antibody [EPR23845-44]	X		
ab254415	Recombinant Anti-CXCR5 antibody [EPR23463-30]	X	X	2 available
ab236875	Recombinant Anti-ICOS antibody [EPR22181]	X		2 available
ab222104	Recombinant Anti-IL-23R antibody [EPR22838-4]	X		
ab259916	Recombinant Anti-CD161 antibody [EPR23831-120]	X		1 available
Ab300349	Anti-CD137 antibody [EPR25096-57]	X		
ab108403	Recombinant Anti-CD38 antibody [EPR4106]	X	X	4 available
ab307081	Recombinant Anti-CD69 antibody [EPR25398-81]	X	X	
ab92742	Recombinant Anti-Ki67 antibody [EPR3610]	X (intra)	X	8 available
ab209236	Recombinant Anti-LAG-3 antibody [EPR20261]	X	X	5 available
ab234444	Recombinant Anti-PD1 antibody [NAT105]	X (intra)	X	4 available
ab205921	Recombinant Anti-PD-L1 antibody [28-8]	X	X	9 available
ab289547	Recombinant Anti-TIGIT antibody [4D4]	X		
ab210543	Recombinant Anti-TIM 3 antibody [EPR20767]	X		