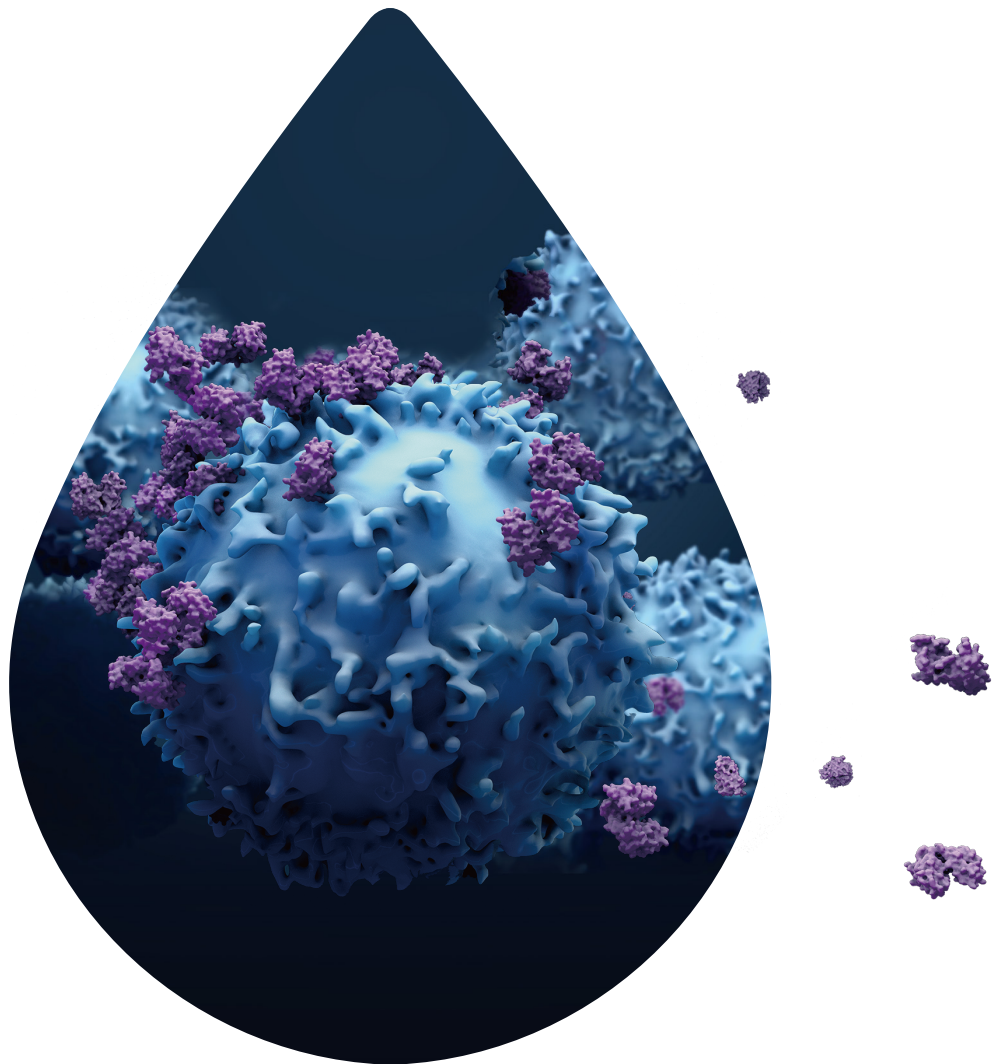


CytoSinct™

Cell Isolation and Activation Solution



- ◎ Highly Efficient
- ◎ Nano-sized GMP Reagent
- ◎ Clinical Grade Tubing Set
- ◎ Automatic Instrument

Efficient and gentle cell isolation is essential for researching specific cell populations, and for developing lifesaving cell and gene therapies products. Purity, recovery and viability are among the most important characteristics of cells after isolation.

GenScript has renowned expertise in developing magnetic beads products for bio separation of various types of biomolecules. CytoSinct™ magnetic beads are powered by immunomagnetic cell separation technology to isolate desired cell populations, by combining the specificity and selectivity of antibody based purification with gentleness of nanoparticles.

CytoSinct™ manual cell isolation platform is composed of antigen-specific paramagnetic nanobeads, column and magnetic separator. CytoSinct™ beads are nanometer-sized, coated with biodegradable matrix, nontoxic, easy to use, and enable highly efficient cell isolation. CytoSinct™ columns amplify the magnetic field and enable efficient separation with minimum labeling. The separated cells are compatible with most downstream applications including cell culture, activation, expansion, flow cytometry analysis, and translational research.

Armed with the flexibility and specificity of CytoSinct™ cell isolation solution, you can use variety of starting materials including PBMC or Leukoapheresis, for the enrichment and depletion of your desired cell type. Every time using CytoSinct™ isolation products, you will obtain the isolated sample with high purity and recovery.

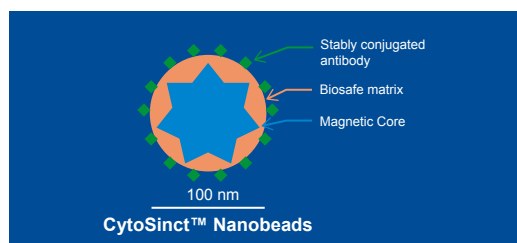


Figure 1 : Schematic diagram showing the structure and size of CytoSinct™ Nanobeads.

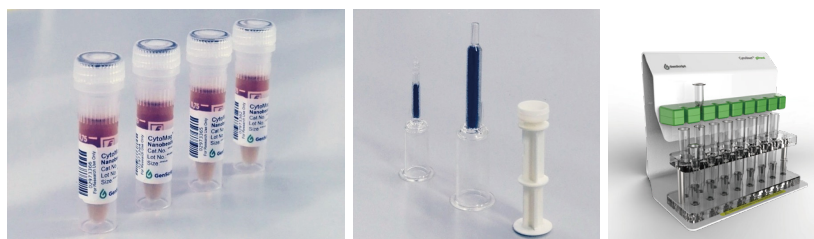


Figure 2 : CytoSinct™ cell isolation platform includes cell isolation nanobeads, columns and magnetic separator.

Product Highlights



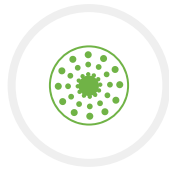
Ultra Purity



High Recovery



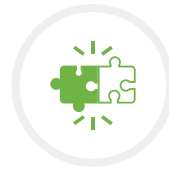
High Viability



Nano-sized



Bio-degradable



Bio-compatible



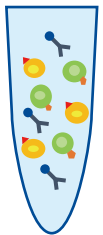
Cost Efficient

Product Advantages

Advantages	GenScript	Vendor A	Vendor B	Vendor C
Cell isolation performance (purity & recovery rate)	✓ ✓	✓ ✓	N/A	✓
Cell activation (cell expansion rate/TCM+TSCM amount)	✓ ✓	✓	✓ ✓	✓
Clinical use	✓	✓	✓	✗
No Bead-removal Step	✓	✓	✗	✗
Safety	✓	✓	✓/✗	✗
Cost Efficiency	✓	✗	✗	✓
Customized beads service	✓	✗	✗	✗

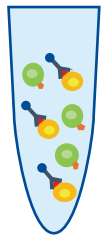
Workflow

GenScript's **CytoSinct™ Nanobeads** purify cells using column based cell isolation.



1

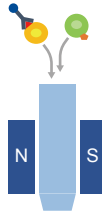
Incubate the starting material with CytoSinct™ Nanobeads.



2

Wash and resuspend the cells in the Isolation Buffer.

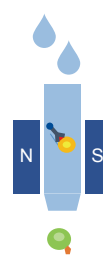
Only the cells expressing the targeted surface marker will bind with the CytoSinct™ Nanobeads.



3

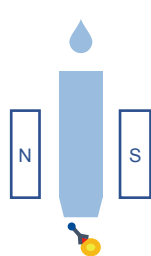
Assemble column onto magnet. Load cell suspension containing both positive and negative population onto the column.

Only the cells bound to the CytoSinct™ Nanobeads will be captured by the magnet.



4

Add Isolation Buffer onto column to wash out negative cells.



5

Remove magnet from column. Add Isolation Buffer and harvest positive cells.

Learn more at <https://www.genscript.com/cell-separation.html>

For more information contact products@genscript.com

Highly Efficient CD4+CD8+T Cell Isolation from PBMCs

Purity, recovery and viability are among the most important characters of cells post-isolation. CytoSinct™ Nanobeads are nanometer-sized and can isolate your target cells **gently and efficiently**, which makes your postisolation cells suitable for variety of down-stream applications.

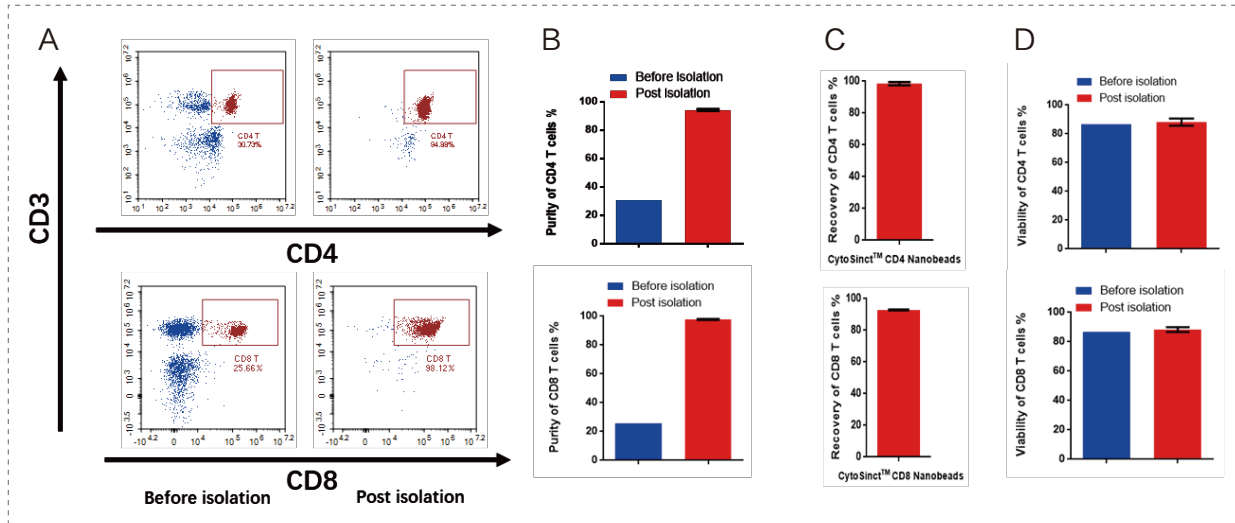


Figure 3. PBMCs were isolated using CytoSinct™ CD4 Nanobeads, human (RUO) (Cat# L00863) and CytoSinct™ CD8 Nanobeads, human (RUO) (Cat# L00864), the results shows **high purity(A,B)**, **high recovery(C)** and **high viability(D)**.

Comparing to the similar products from the competitor, GenScript CytoSinct™ Nanobeads can provide the target cells with **high purity and recovery rate**.

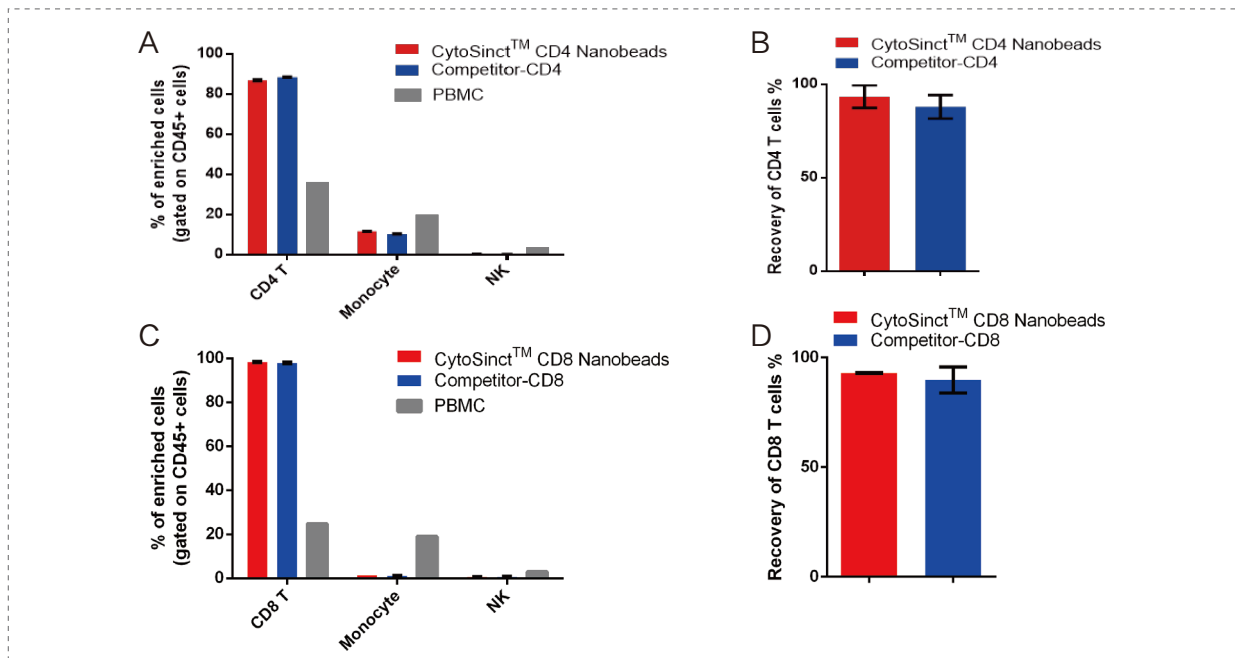


Figure 4. Subpopulation phenotype of post-isolation cells is important for functional and phenotypic studies. Non-T subpopulations like monocyte and NK cells could impact the efficacy of T-cells or therapeutic CAR-T and TCR-T generated from the enrichment. GenScript CytoSinct™ NanoBeads for CD4 and CD8 T-cell isolation efficiently minimize non-T composition in the enrichment population.

Highly Efficient T Cell Isolation from Apheresis

CD4+&CD8+ or CD3+ T cell isolation are both commonly used for the relevant T cell studies. GenScript can provide high quality of both RUO and GMP grade CytoSinct™ Nanobeads, which can support your studies from bench-side to bed-side.

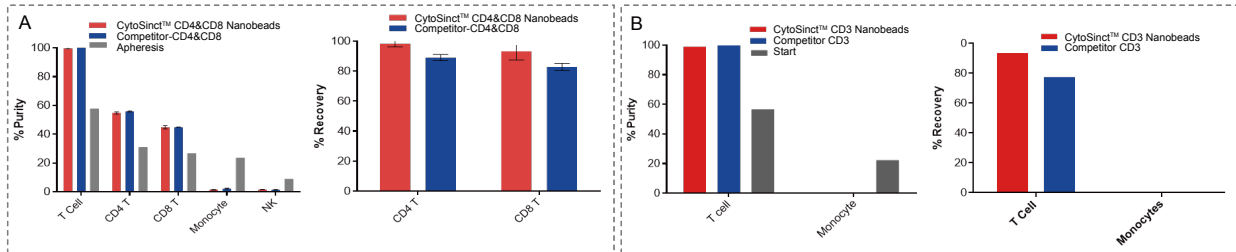


Figure 5. Representative data comparing T cells isolation from leukopheresis samples using GenScript CytoSinct™ Nanobeads and competitor products. **A.** Shows comparison of pre and post isolation data, purity, recovery, and viability for co-isolation of CD4 and CD8 T cell from apheresis using CytoSinct™ CD4 + CytoSinct™ CD8 and competitor reagent. **B.** Shows comparison of pre and post isolation data, purity, recovery, and viability. CD3 T cell from apheresis using CytoSinct™ CD3 and competitor reagent.

Isolated T cells using CytoSinct™ Nanobeads has a **high purity and recovery rate.**

Enceed™ — World Leading T Cell Activation Reagent

GenScript Enceed™ T cell activation uses CD3 and CD28 as the activation marker for *in vitro* activation and expansion of human T cells. Comparing to the similar products from the competitor, activated T cells using Enceed™ can obtain **higher expansion folds** and **larger total amount of TSCM+TCM**, which is greatly beneficial for the downstream application.

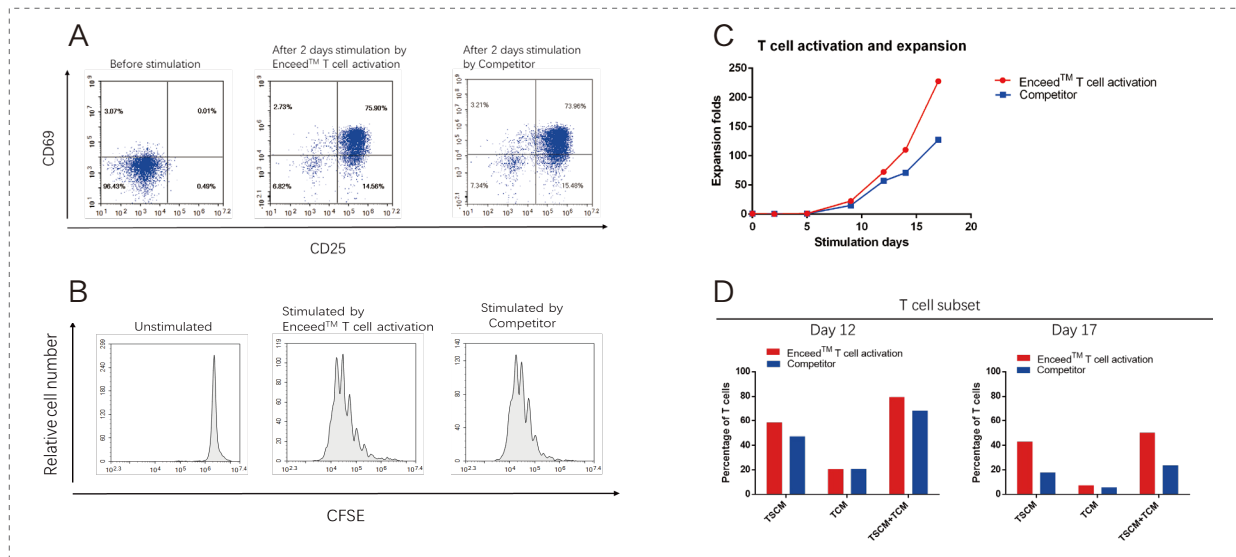
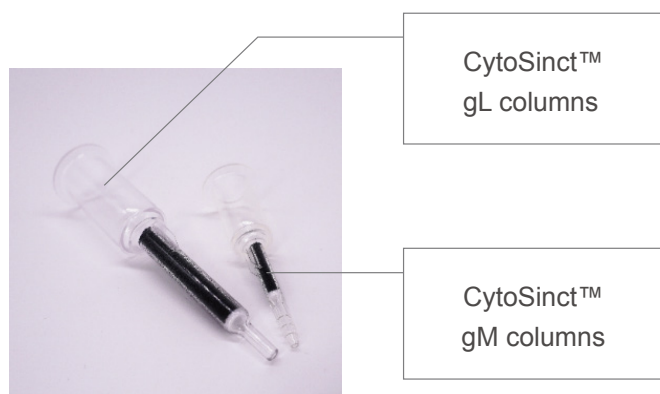


Figure 6. (A) Isolated CD4+CD8+T cells were activated using the Enceed™ T cell activation reagent from GenScript, comparing with the similar activation product from the competitor. After the activation, the cell samples were cultured and expanded for 48 hours, and the CD25+ & CD69+ expression were detected by flowcytometry and shown. **(B)** To show the expansion status after the activation, isolated T cells were stained with CFSE before and 7 days after the activation. **(C)** The expansion folds of the activated T cells were shown along the course of 17 days with the comparison of the activated T cells using competitor's product. **(D)** The memorial phenotypes of the activated T cells were monitored and shown on Day 12 and Day 17 after the activation.

CytoSinct™ column and magnetic separator



Advantages

- **Anti-clogging property:** Innovative structure
- **Compatibility:** compatible with beads from other vendors
- **High performance:** High purity, recovery and viability cells after separation



CytoSinct™ M1 magnet



CytoSinct™ L1 magnet



Features

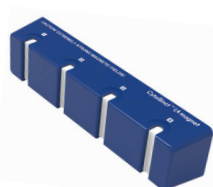
- **High Recovery & Fast Isolation**
- **Flexible Throughput** (single/multi-channel)
- **Easy to operate**



CytoSinct™ M8 magnet



CytoSinct™ L4 magnet



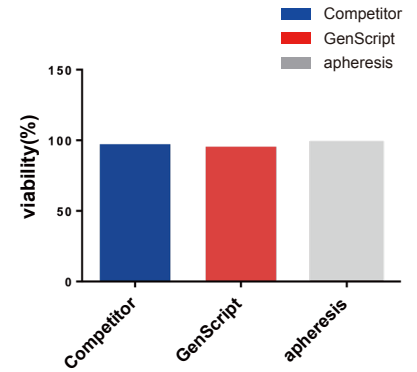
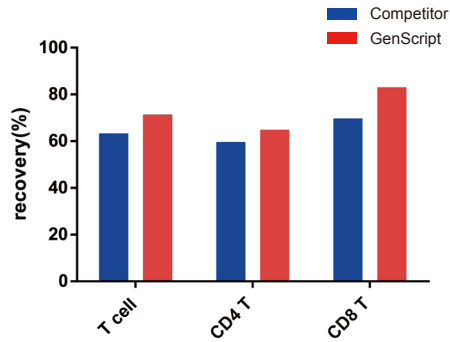
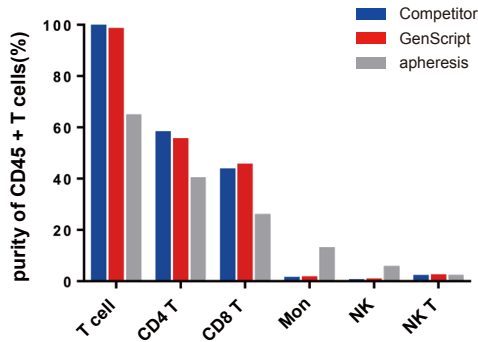
Products List of CytoSinct™ column and magnetic separator

CAT.NO.	Name of products	Standard	Column load capacity
D00007	CytoSinct™ gM columns	25 pc	Up to 10 ⁷ magnetically labeled cells from up to 2×10 ⁸ total cells (each column)
D00008	CytoSinct™ gL columns	25 pc	Up to 10 ⁸ magnetically labeled cells from up to 2×10 ⁹ total cells (each column)
D00006	CytoSinct™ gStand	1 pc	Compatible with all CytoSinct™ Magnets
D00009	CytoSinct™ M1 magnet	1 pc	Holds 1 CytoSinct™ gM column
D00010	CytoSinct™ M8 magnet	1 pc	Holds 8 CytoSinct™ gM columns
D00011	CytoSinct™ L1 magnet	1 pc	Holds 1 CytoSinct™ gL column
D00012	CytoSinct™ L4 magnet	1 pc	Holds 4 CytoSinct™ gL columns

CytoSinct™ 1000 Automated Cell Isolation Instrument

Representative data of Cell Isolation with CytoSinct™ 1000 system

Group	CytoSinct™ Nanobeads	Positive cell%	Instrument	Tubing Set type
Competitor	CytoSinct™ CD4&CD8	64.40%	Competitor Instrument	Competitor Tubing Set
GenScript	CytoSinct™ CD4&CD8	64.40%	GenScript CytoSinct™ 1000	GenScript CytoSinct™ 1000 Tubing Set



- GenScript CytoSinct™ 1000 system can achieve a **high purity, recovery rate and viability** of the target cells.
- Higher cell recovery rate is observed, since CytoSinct™ 1000 instrument has a relevant higher elution efficiency.
- The **closed** and **sterilized** CytoSinct™ 1000 Tubing Set Products are optimized for different applications.



Top Performance



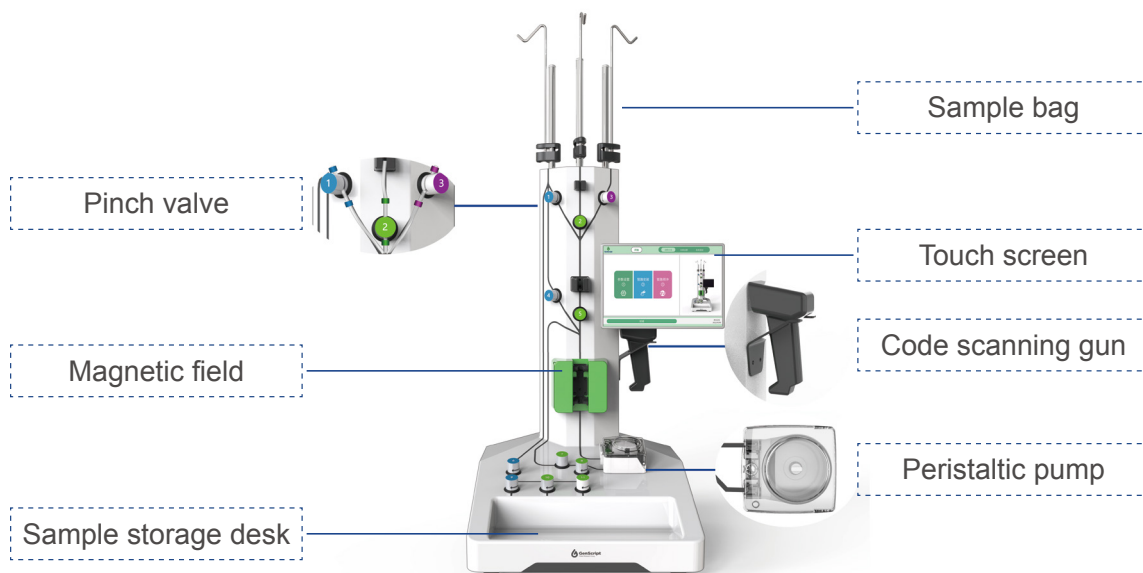
Wireless Transmission



Data Integrity
(21 CFR Part 11)



Customized Service



Cell Therapy Product List

CytoSinct™ Isolation & Enceed™ Activation Nanobeads

Field	Cat.No	Name	Size	Capability
T Cell	L00863	CytoSinct™ CD4 Nanobeads, human	1 mL/0.5 mL	Up to 1×10 ⁹ /5×10 ⁸ total MNCs
	L00864	CytoSinct™ CD8 Nanobeads, human	1 mL/0.5 mL	Up to 1×10 ⁹ /5×10 ⁸ total MNCs
	L00896	CytoSinct™ CD3 Nanobeads, human	1 mL/0.5 mL	Up to 1×10 ⁹ /5×10 ⁸ total MNCs
	L00897	CytoSinct™ TCR αβ Nanobeads, human	1 mL/7.5 mL	Up to 1×10 ⁹ /2×10 ¹⁰ total MNCs
	L00899	Enceed™ T cell Activation, human	1 mL/0.5 mL	Up to 2×10 ⁸ /1×10 ⁸ T cells
NK Cell	L00903	CytoSinct™ CD56 Nanobeads, human	1 mL/0.5 mL	Up to 1×10 ⁹ /5×10 ⁸ total MNCs
Stem Cell	L00967	CytoSinct™ CD34 Nanobeads, human	1 mL	Up to 1×10 ⁹ total MNCs
Universal	L00898	CytoSinct™ Streptavidin Nanobeads	1 mL/0.5 ml	Up to 1×10 ⁹ /5×10 ⁸ total MNCs
Monocytes	L00956	CytoSinct™ CD14 Nanobeads, human	1 mL/0.5 ml	Up to 1×10 ⁹ /5×10 ⁸ total MNCs
B Cell	L00957	CytoSinct™ CD19 Nanobeads, human	1 mL/0.5 ml	Up to 1×10 ⁹ /5×10 ⁸ total MNCs

GMP Grade Nanobeads

Cat.No	Name	Size	Capability
L00932	CytoSinct™ CD4 Nanobeads, human (GMP)	7.5 mL	Up to 4×10 ¹⁰ total MNCs
L00933	CytoSinct™ CD8 Nanobeads, human (GMP)	7.5 mL	Up to 4×10 ¹⁰ total MNCs
L00934	CytoSinct™ CD3 Nanobeads, human (GMP)	7.5 mL	Up to 4×10 ¹⁰ total MNCs
L00935	Enceed™ T cell Activation, human (GMP)	4 mL	Up to 1×10 ⁸ T cells

Consumables and Instruments

Cat.No	Name	Size	Capability
D00006	CytoSinct™ gStand	1 pc	Compatible with all CytoSinct™ Magnets
D00007	CytoSinct™ gM columns	25 pc	Up to 10 ⁷ magnetically labeled cells from up to 2×10 ⁸ total cells (each column)
D00008	CytoSinct™ gL columns	25 pc	Up to 10 ⁸ magnetically labeled cells from up to 2×10 ⁹ total cells (each column)
D00009	CytoSinct™ M1 magnet	1 pc	Holds 1 CytoSinct™ gM column
D00010	CytoSinct™ M8 magnet	1 pc	Holds 8 CytoSinct™ gM columns
D00011	CytoSinct™ L1 magnet	1 pc	Holds 1 CytoSinct™ gL column
D00012	CytoSinct™ L4 magnet	1 pc	Holds 4 CytoSinct™ gL columns
D00023	CytoSinct™ 1000	1U	
D00029	CytoSinct™ 1000 Tubing Set	1 pc	Up to 60×10 ⁹ total cells
D00030	CytoSinct™ 1000 LS Tubing Set	1 pc	Up to 120×10 ⁹ total cells
D00031	CytoSinct™ 1000 Depletion Tubing Set	1 pc	Up to 120×10 ⁹ total cells

Cell Therapy Product List

Cas Nuclease Recommendation

Applications	Recommendations	Cat. No.	Product Names
Gene KO/KI with high editing efficiency	Ultra SpCas9 (wt)	Z03621	GenCRISPR™ Ultra NLS-Cas9-Research
		Z03623	GenCRISPR™ Ultra NLS-Cas9- basic GMP
		Z03623-GMP	GenCRISPR™ Ultra NLS-Cas9-GMP
Gene KO/KI with low off-target effects	Ultra eSpCas9 (mt)	Z03622	GenCRISPR™ Ultra eSpCas9-2NLS-Research
		Z03624	GenCRISPR™ Ultra eSpCas9-2NLS-basic GMP
		Z03624-GMP	GenCRISPR™ Ultra eSpCas9-2NLS-GMP
Gene KI with high KI efficiency	SpCas9 with optimized NLS	Z03701	GenCRISPR™ Cas9 v1.1
		Z03702	GenCRISPR™ Cas9 v1.2
Gene KO/KI following with flow cytometry or other fluorescent assays	SpCas9-eGFP fusion protein	Z03393	GenCrispr NLS-Cas9-EGFP Nuclease
		Z03467	
Gene KO/KI with lower MW Cas nucleases	AsCas12a	Z03502	GenCRISPR™ Cas12a (Cpf1) Nuclease
	LaCas12a	Z03753	GenCRISPR™ LbCas12a Nuclease
	SaCas9	Z03699	GenCRISPR™ SaCas9 2NLS Nuclease
<i>in vitro</i> Diagnostics	LwaCas13a	Z03486	GenCRISPR™ Cas13a (C2c2) Nuclease
	LbuCas13a	Z03742	GenCRISPR™ LbuCas13a Nuclease
	AsCas12a	Z03502	GenCRISPR™ Cas12a (Cpf1) Nuclease
	LaCas12a	Z03753	GenCRISPR™ LbCas12a Nuclease

www.GenScript.com
GenScript USA Inc.
860 Centennial Ave.
Piscataway, NJ 08854 USA

Toll-Free: 1-877-436-7274
Tel: 1-732-885-9188
Fax: 1-732-210-0262
Email: product@genscript.com.cn