ThermoFisher SCIENTIFIC

EVOLVING

THE FUTURE OF CELL THERAPY MANUFACTURING

Cell therapy

CTS DynaCellect Magnetic Separation System

Automated and closed cell isolation and bead removal

The next-generation cell isolation and bead removal instrument provides a flexible, automated, closed system for magnetic cell separation and bead removal for cell therapy manufacturing. Designed to be used with magnetic beads, the Gibco™ CTS™ DynaCellect™ Magnetic Separation System delivers exceptional cell recovery, purity, high throughput, and process flexibility, and enables the system to seamlessly scale with your process from research to clinical manufacturing without sacrificing cell viability.

The key feature of the instrument is the automated magnet, which is situated on a rocker and enables mixing of cells and beads. Automated fluid management is achieved by a peristaltic pump and pinch valves allowing transfer of fluid. Fluid movement and pressure are monitored by bubble sensors and pressure occlusion sensors, respectively. Customizable protocols enable flexibility from process development to commercial manufacturing. The closed and automated configuration minimizes failures in manufacturing, offering operator-independent results and reduced contamination, while providing increased precision and scalability.

Configuration of the CTS DynaCellect Magnetic Separation System

- Automated magnet
- Rocker
- Embedded graphical user interface (eGUI) with 8 in. touchscreen display (800 x 600 pixels)
- 8 GB storage capacity for protocols
- Fluidics panel: 11 pinch valves, 2 pressure occlusion sensors, 2 bubble sensors, peristaltic pump
- Overfill detector
- Leakage sensor
- Lid sensor
- HEPA filter
- 2 bag hangers
- 2 extension poles
- 2 pole adapters
- 3 USB ports
- Ethernet port
- Power inlet
- Power switch

gibco

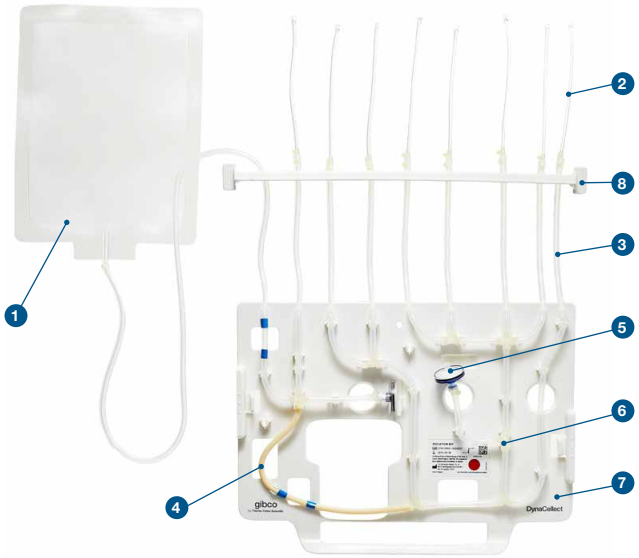
Instrument properties

Category	Property	Specification
Biological input	Maximum cell input	~10^{10} T cells (1,000 mL isolation volume)
Footprint	H x W x D	48.5 (with pole) x 74.95 x 56.2 cm
	Touchscreen display	20.32 cm
	Weight	50 kg
Compliance	21 CFR Part 11	Yes, with upgrade
Compatibility	Open Platform Communications Unified Architecture (OPC UA)	Yes
	Thermo Fisher™ Connect Platform	Yes
Electrical	Supply voltage	100–240 VAC ±10%, 50/60 Hz, 600 W
	Phases	Single
	Maximum rated input current	6 A
	Fuses	2 x 10 A
Sound level	Operating	73 dBA (measured 1 m from instrument)
	Non-operating	63 dBA (measured 1 m from instrument)
Environmental ranges	Ambient temperature	15°C to 30°C
	Transport temperature	–30°C to 60°C (extreme end temperatures at max. 72 hours)
	Storage temperature	15°C to 30°C
	Relative humidity	15–80% (non-condensing)
Operating limits	Max. air pressure	2 bar
	Magnet	Engaged or disengaged
	Pinch valves	Open or closed
	Pump speed	1–150 mL/min
	Rocker angle	–30° to 30°
	Rocker speed	1–30 cpm (cycles per minute)
	Pressure occlusion sensor	Max. 2 bar
	Max. height rocker lid (isolation)	35 mm
	Max. height rocker lid (bead removal)	5 mm
	Overfill detection	1,150 mL (static and rocking)
Magnet	Dimensions	26.5 x 20.5 cm
	Strength	8,000 G
Pole	Max. height	107 cm from the bottom of the rubber foot of the instrument to the tip of the bag hanger hook point
Pole adaptor	Max. weight	3 kg per hook on bag hanger; total 15 kg per bag hanger
HEPA filter		Meets ISO14644-14 standards
		Indoor use only
		Not intended for use in a wet location
		Intended for use in pollution degree 2 environment

CTS DynaCellect Cell Isolation Kit

The Gibco™ CTS™ DynaCellect™ Cell Isolation Kit is specifically designed for the isolation and activation of immune cells in cell processing applications. The schematic of the CTS DynaCellect Cell Isolation Kit is in Figure 1.

- Maximum capacity: 1,000 mL
- Enables isolation to be done in a class C cleanroom
- 8 weldable lines for input and output bags: DEHP-free connections (150 mm, 2.4 mm ID, 4.0 mm OD)
- Sterile air filter: 0.20 µm
- Gamma sterilized



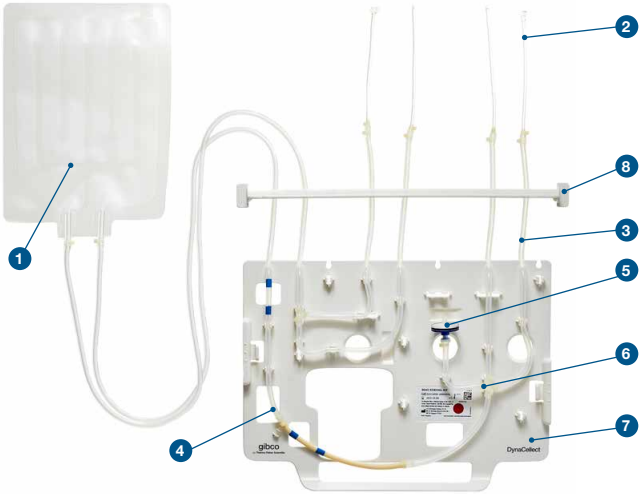
1. Isolation bag
2. PVC tubing
3. Silicone tubing
4. Bioprene tubing
5. Sterile air filter
6. Oetiker clamps
7. Cassette
8. Tube holder

Figure 1. CTS DynaCellect Cell Isolation Kit (Cat. No. A52300).

CTS DynaCellect Bead Removal Kit

The Gibco™ CTS™ DynaCellect™ Bead Removal Kit is specifically designed for bead removal from immune cells for cell processing applications. The schematic of the CTS DynaCellect Bead Removal Kit is in Figure 2.

- Continuous processing
- Enables bead removal to be done in a class C cleanroom
- 4 weldable lines for input and output bags: DEHP-free PVC connections (150 mm, 2.4 mm ID, 4.0 mm OD)
- Sterile air filter: 0.20 µm
- Gamma sterilized



1. Bead removal bag
2. PVC tubing
3. Silicone tubing
4. Bioprene tubing
5. Sterile air filter
6. Oetiker clamps
7. Cassette
8. Tube holder

Figure 2. CTS DynaCellect Bead Removal Kit (Cat. No. A52301).

CTS DynaCellect software

The CTS DynaCellect Magnetic Separation System comes with two protocols: isolation and bead removal. Protocols can be customized through the intuitive user-programmable interface to create and manage all instrument actions. Programmable actions include:

- Engaged or disengaged the magnet
- Open or close the pinched valves
- Change the pump speed (~2–300 mL/min)
- Change the specified volume of the pump
- Change the rocker angle (–30° to 30°)
- Change the rocker speed (1–30 cpm)
- Change the air pressure sensor (maximum 2 bar)

Additionally, the software is easily locked, so that when you are ready to move your optimized process to manufacturing, users can no longer adjust the process settings. The clinical manufacturing mode also includes an optional software module that supports the following features:

- Enables compliance with 21 CFR Part 11
- Ready for DeltaV™ communication via OPC UA
- Able to provide a summary file (sample ID, run ID, SUT lot, bead lot, operator, date)
- Prepared for barcoding through the USB port

Ordering information

Product	Quantity	Cat. No.
CTS DynaCellect Magnetic Separation System + SmartStart Orientation at installation + 2-year warranty with planned maintenance (PM) in second year	1	A55867
CTS DynaCellect Magnetic Separation System + SmartStart Orientation at installation + Installation qualification (IQ) and operational qualification (OQ) + 2-year AB Qualification with OQ post PM and/or repair	1	A55868
CTS DynaCellect Cell Isolation Kit	5 pack	A52300
CTS DynaCellect Bead Removal Kit	5 pack	A52301

Learn more at **thermofisher.com/dynacellect**

gibco