Applied Cells

# MARS® Bar Platform

## VERSATILE PLATFORM SUPPORTING FLEXIBLE AND COST-EFFECTIVE CELL THERAPY DEVELOPMENT



**FAST AND FLEXIBLE**

**HIGH PERFORMANCE**

**COST-EFFECTIVE**

COST-EFFECTIVE

# Cost-Effective Cell Therapy Development from Lab bench to Clean room

## Cost-Effective

Column-free design reduces sample and reagent costs, very competitive running cost vs other market solutions

## Regulatory Ready

Designed for GMP environments with compliance-ready software and documentation

## GMP reagents

- CD4/CD8 nano biodegradable beads for T cell selection
- CD14 nano biodegradable beads for monocyte selection
- CD3/CD28 micro beads T cells selection and activation

## RUO

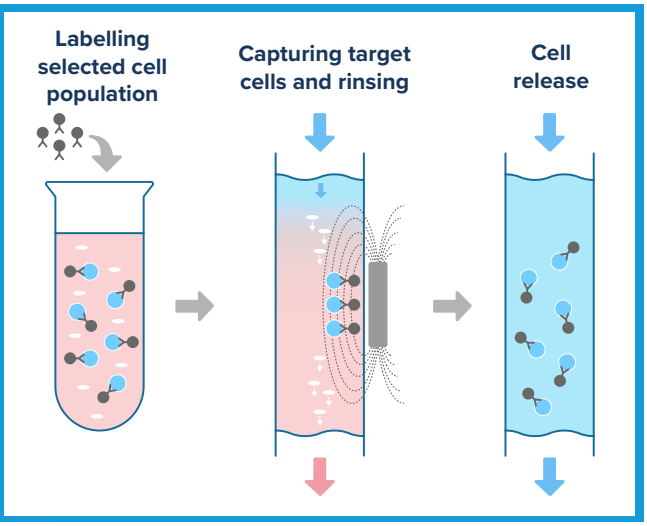
Fast and flexible protocol optimization

RUO reagents for cost-effective workflow

Up to 3 samples in parallel

## Advanced Magnetic Selection

Column-free cell selection
with 50nm - 4.5 µm magnetic beads




## GMP Ready

21CFR Part 11 compliant with Audit Trail

Customizable and lockable protocols

Single use sterile fluidics

ISO13485

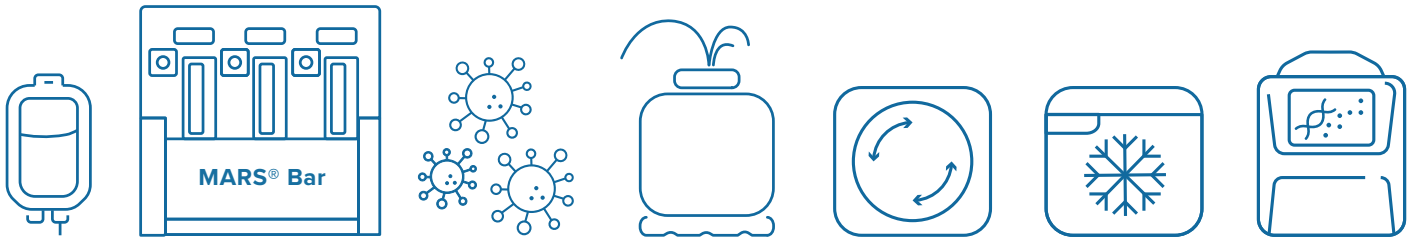
FDA DMF submitted

CE, UL, RoHS, REACH

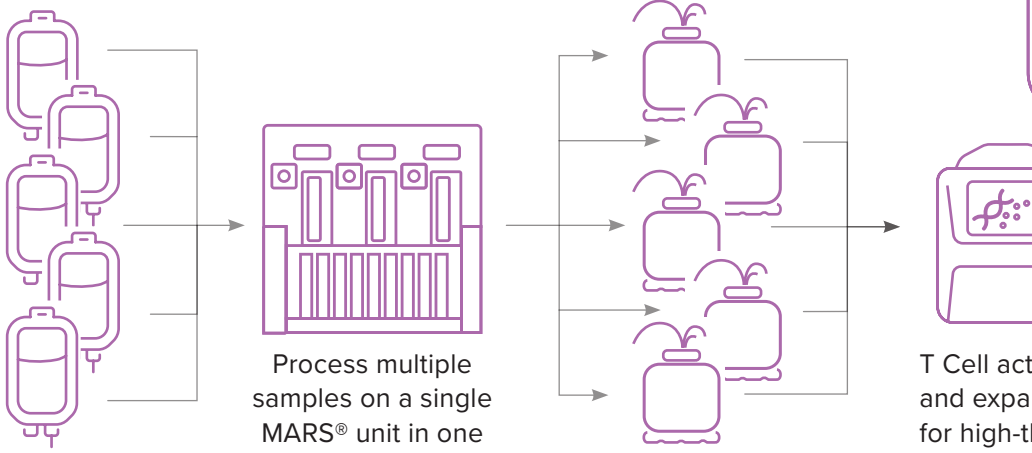
GMP Reagents


FAST AND FLEXIBLE

# Increased Throughput, Reduced Costs and Maximized Value




Isolation | Activation and Transduction | Expansion | Harvest and Cryopreservation | Analytics




Process multiple samples on a single MARS® unit in one day for efficient multi-bioreactor workflows

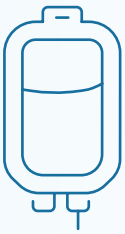
T Cell activation, transduction, and expansion in parallel for high-throughput, cost-effective production

| Specifications | Full LP | ½ LP | ¼ LP |
|---|---|---|---|
| Pre-Label Volume | 50 mL | 25 mL | 25 mL |
| Label Incubation Time | | 30 min | |
| Pre-MARS® Volume | 130 mL | 65 mL | 35mL |
| **T Cell Selection Time** | **81 min** | **43 min** | **24 min** |
| Total MARS® Time | 92 min | 54 min | 35 min |

# END-TO-END PROCESS

## STEP 1

T cell selection reagents directly into LP sample



**DIRECTLY FROM LEUKOPAK**

**OR**

**SPINNING**

## STEP 2

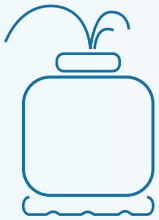
T cell selection
T cells in complete media for G-Rex input




## STEP 3

Activation
Expansion
Fill & Finish

**OPTION 1**
Cells eluted in medium, ready for immediate processing in a bioreactor



**OPTION 2**
Cells eluted in buffer, ready for next step including freezing

### Fast
Quick transition from unprocessed input sample to T cells in media without buffer exchange

### Customizable
Adaptable for quarter to full volume LP processing, maximizing the value of each run

### Reproducible
Consistent, high-quality T cell production with minimal handling

### Streamlined
From leukopak to CAR-T instreamlined workflow

### Hands-Free
Optimized for minimal hands-on operation

### Flexible
Compatible with traditional and fast CAR-T protocols for efficient, robust results

**Experience a faster, more efficient, and cost-effective solution – MARS® delivers it all.**

HIGH PERFORMANCE

# From CAR-T to Transformative Cell Therapies

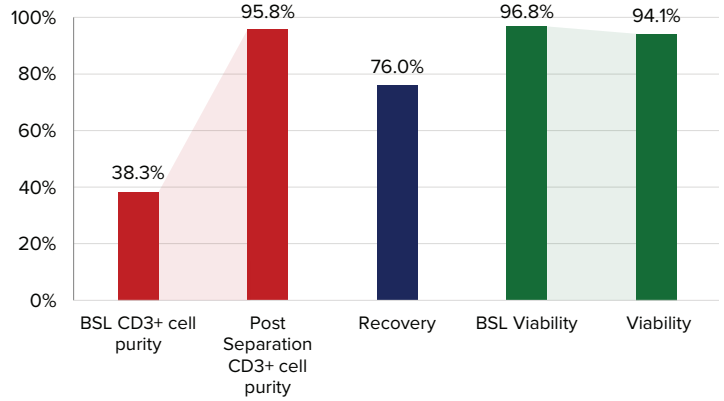
## High Flexibility
Supporting a variety of sample types, volumes, and reagents

## High Purity, Recovery, and Viability
Top performance achieved for fresh or frozen leukopak samples, and directly from peripheral blood

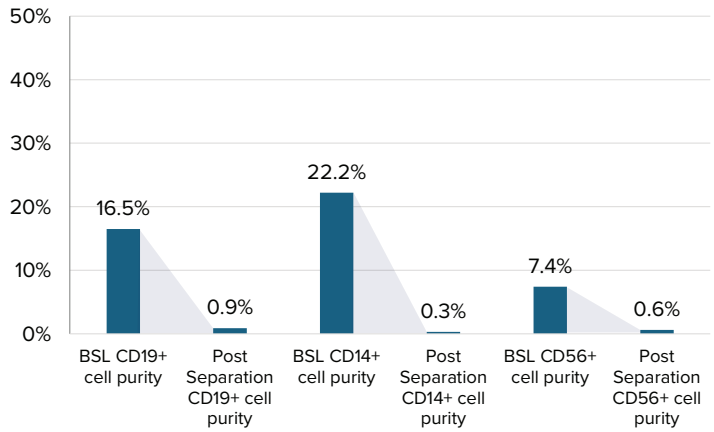
## Direct Elution Options
Cell elution directly into culture media or buffers, achieving volume reduction and buffer exchange for immediate downstream processes

The new MARS® workflow enables the elution of immunomagnetically captured cells directly into the optimal medium, providing **rapid**, **centrifuge-free separation** and preparing cells for **immediate processing** (**activation**, **expansion**, etc) directly from MARS®. It also allows the elution of immunomagnetically captured cells in buffer, providing **rapid process** preparing cells for **freezing**.

### CD3+ CELL ISOLATION IN MEDIUM




### DEPLETION OF UNWANTED CELLS




Our proprietary, column-free technology delivers high purity and recovery of target cells, while effectively eliminating unwanted ones. This streamlined process using proprietary MARS® In-Situ Rinse saves time and **improves purity** and **recovery**, reducing manipulation steps and simplifying the process, **minimizing handling** and **saving time**.

# SPECIFICATIONS

| | MARS® Bar Flex (Research use) | MARS® Bar (Cell therapy development) |
|---|---|---|
| **SAMPLE** | | |
| **Magnetic Cell labeling** | ✓ | ✓ |
| **Containment** | 5 mL, 15 mL, 50 mL tubes | Bags |
| **Sample processing** | 1 sample each module Max 3 samples in parallel | 1 sample by 3 parallel channels |
| **Sample types** | | |
| • Whole blood | ✓ | ✓ |
| • Apheresis | ✓ | ✓ |
| • Leukopaks | ✓ | ✓ |
| • Frozen PBMC's | ✓ | ✓ |
| • Bone marrow | ✓ | ✓ |
| • Dissociated Tissue | ✓ | |
| **REAGENTS & CONSUMABLES** | | |
| **Isolation buffer** | MARS® MAG buffer | |
| **Isolation reagents** | | |
| • MARS® MAG lines (RUO) | ✓ | |
| • MARS® Ingenuity Line (RUO, GMP) | ✓ | ✓ |
| **Fluidics** | Open-end tubing sets<br>Cleaning and sterilization protocols | Closed tubing set (Gamma radiated) |
| **CELL ISOLATION** | | |
| **Positive isolation** | ✓ | ✓ |
| • Direct from Whole Blood & Leukopak | ✓ | ✓ |
| **Depletion** | ✓ | ✓ |
| **Positive & negative tubing sets** | Same (program enabled change) | |
| **OPERATIONS** | | |
| **Speed** | Protocol dependent; 0.5-6 mL/min | |
| Column-free **MARS® MAG in-flow technology** | ✓ | ✓ |
| **Separation channels** | Flex-BIBO scalable | |
| **Redundancy** | 3x Modules | |
| **Time to assemble tubing set** | <5 min* | <15 min* |
| **Time to initiate isolation** | <2 min | < 8 min |
| **Typical time to process 1e9 cells** | <15 min (75e6/mL) | |
| **Capacity** | 0.5 - 45 mL per module | 20 mL - 1L \| Expandable >1L |
| **In-situ rinse for higher purity** | ✓ | ✓ |
| **Max total cells processable** | No practical limit | |
| **Batched isolation** | ✓ | ✓ |
| **Operation in bio-safety hood** | ✓ | N/A |
| **Additional configuration** | Serial program** | N/A |
| **SOFTWARE** | | |
| **Pre-programmed protocols** | ✓ | ✓ |
| **Adjustable & lockable parameters** | ✓ | ✓ |
| **Tiered user rights, Logged UI events** | ✓ | ✓ |
| **21CFR Part 11 Compliant** | ✓ | ✓ |
| **Encrypted logs** | ✓ | ✓ |
| **INSTRUMENT** | | |
| **Dimensions** | 20.5" W x 16.5" D x 19.75" H<br>52cm W x 41 cm D x 50 cm H | 20.5" W x 16.5" D x 28" H<br>52cm W x 42cm D x 74cm H |
| **Weight** | 62 lb / 28 kg | 59 lb / 27 kg |

* With standard training ** Customizable on demand

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## ISO 13485:2016

**Learn more**
https://appliedcells.com/cell-therapy/


For research use only. Not for use in therapeutic or diagnostic procedures. The MARS® Bar instrument and tubing set are designed, manufactured and tested under quality system certified to ISO 13485:2016. Not a medical device.



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