

3D FloTrix[®] vivaPREP PLUS

Architect for Cells

— Expert in 3D manufacturing of high quality cells

Outline

- **CytoNiche's Core Technology**
- **Features of vivaPREP PLUS**
- **Performance of vivaPREP PLUS**

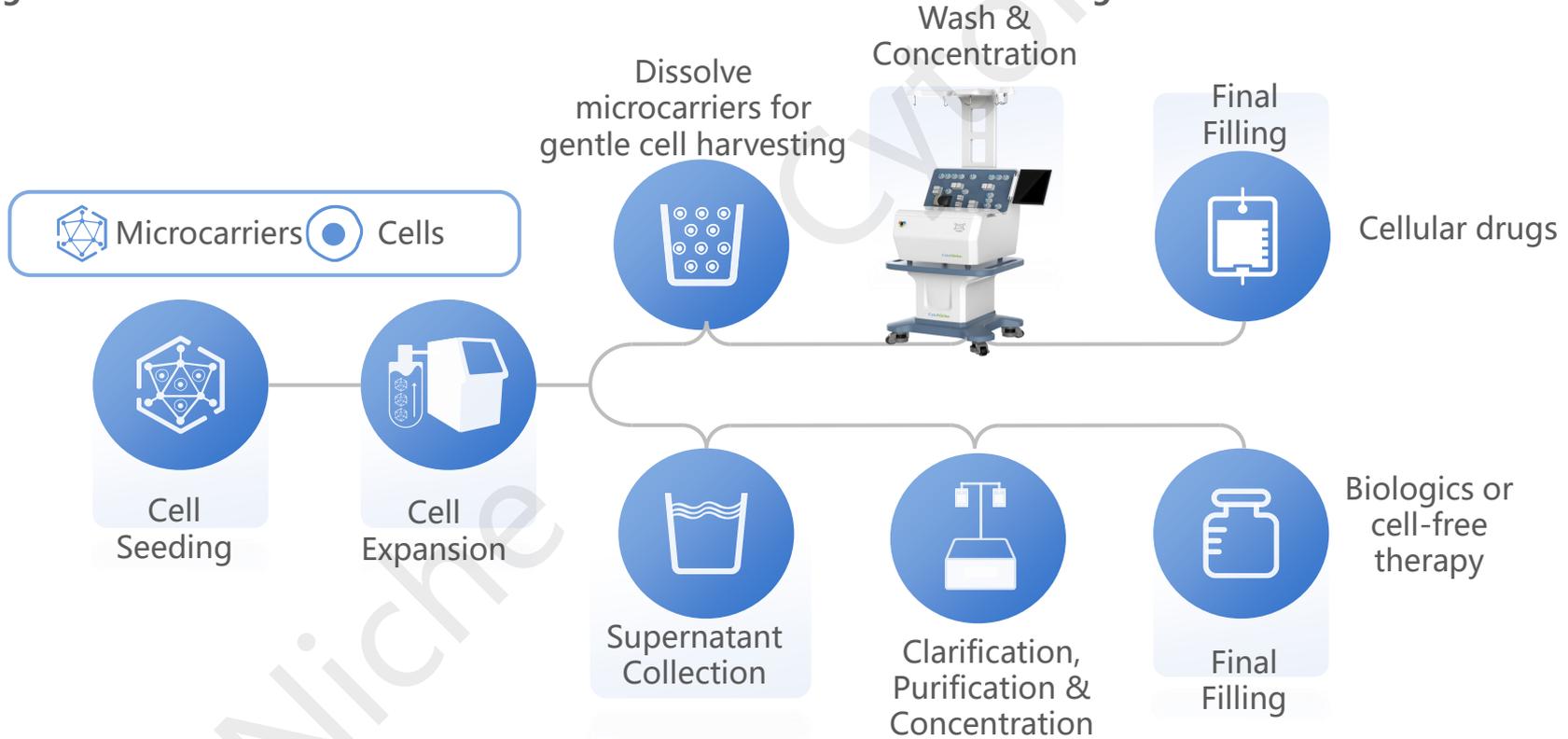


No.1

CytoNiche's Core Technology

Core Technology: 3D FloTrix® Cell Culture Technology

Using 3D TableTrix® dissolvable microcarriers for adherent cell manufacturing

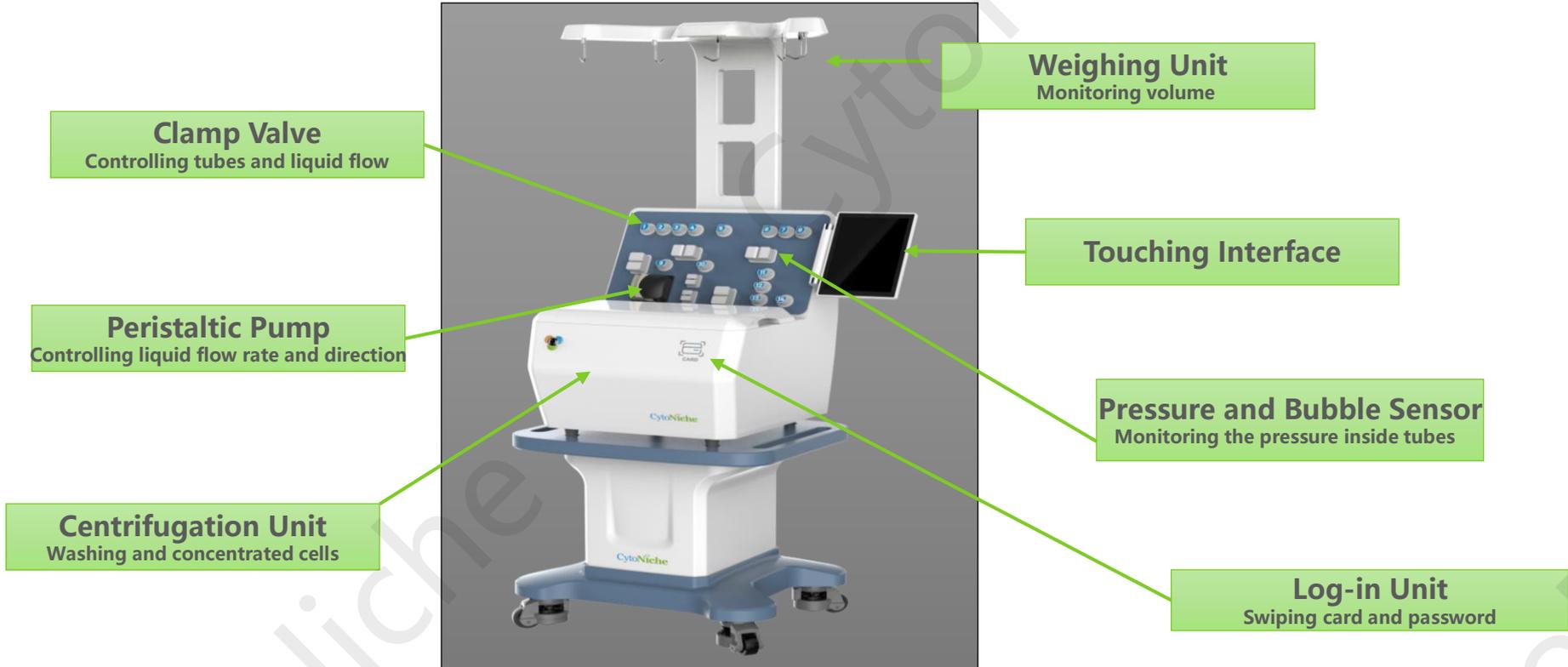




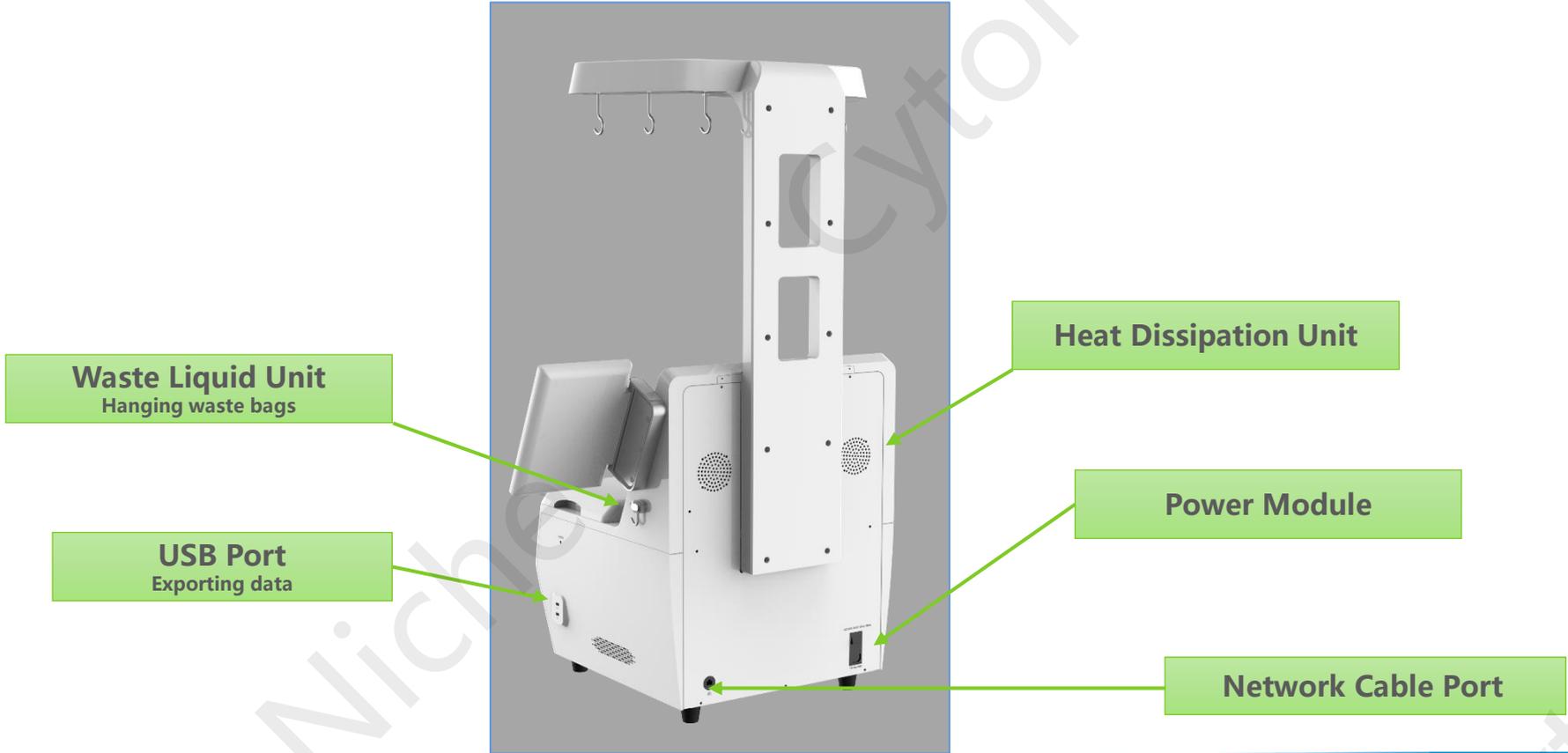
No.2

Features of vivaPREP PLUS

Components of vivaPREP PLUS



Components of vivaPREP PLUS



Features of vivaPREPPLUS---High Precision



【High-Precision Weighing Unit】

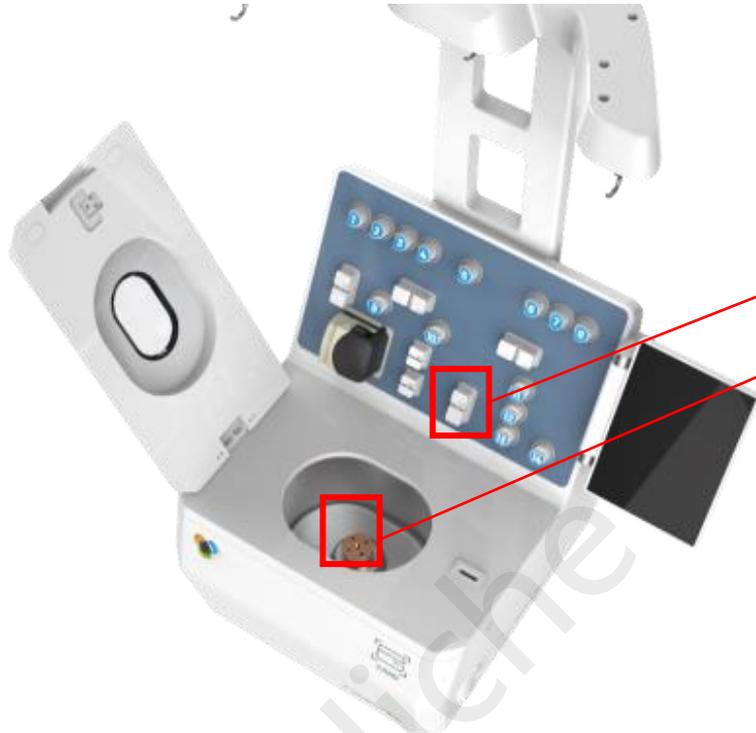
- Real time monitoring of weight changes
- Alarm system for weighing unit

| Bag Weight | Accuracy |
|------------|----------|
| 0~500 g | < 1 g |
| 0.5~5 kg | < 2% |

【High-Precision Liquid Sensor】

- Real time monitoring of liquid flowing
- Properly feedback on abnormal situation

Features of vivaPREPPLUS---High Precision



【High-Precision Sensors】

- Pressure sensor: Real time monitoring of liquid pressure
- Liquid leakage sensor: Real time monitoring of liquid leakage

Features of vivaPREPPLUS



【Flexibility and High-Efficiency】

- Mobile base for high flexibility
- One set of vivaPREP PLUS vs 10-12 manpower



10-20 Personnel



1 vivaPREP PLUS

Hardware Summary

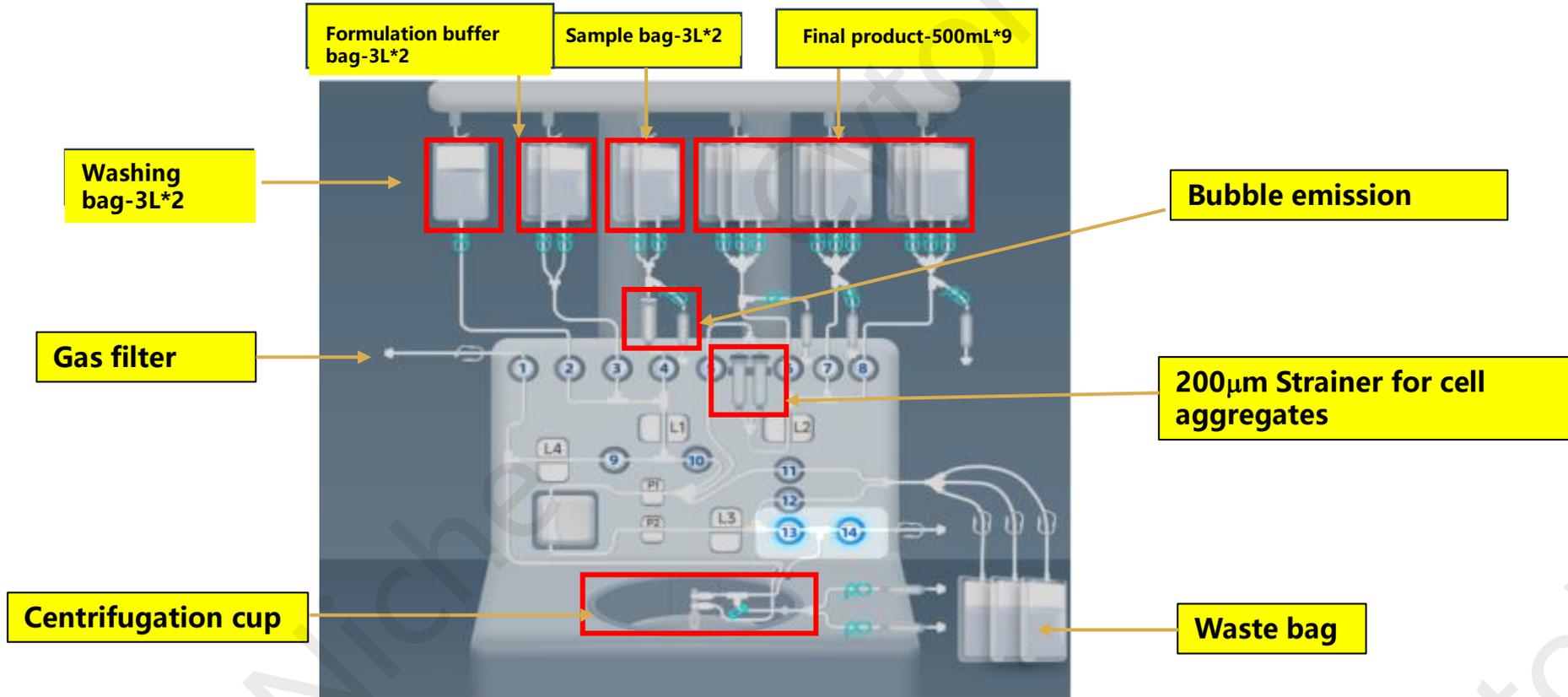


【High-Precision Weighing Unit】

【High-Precision Sensors】

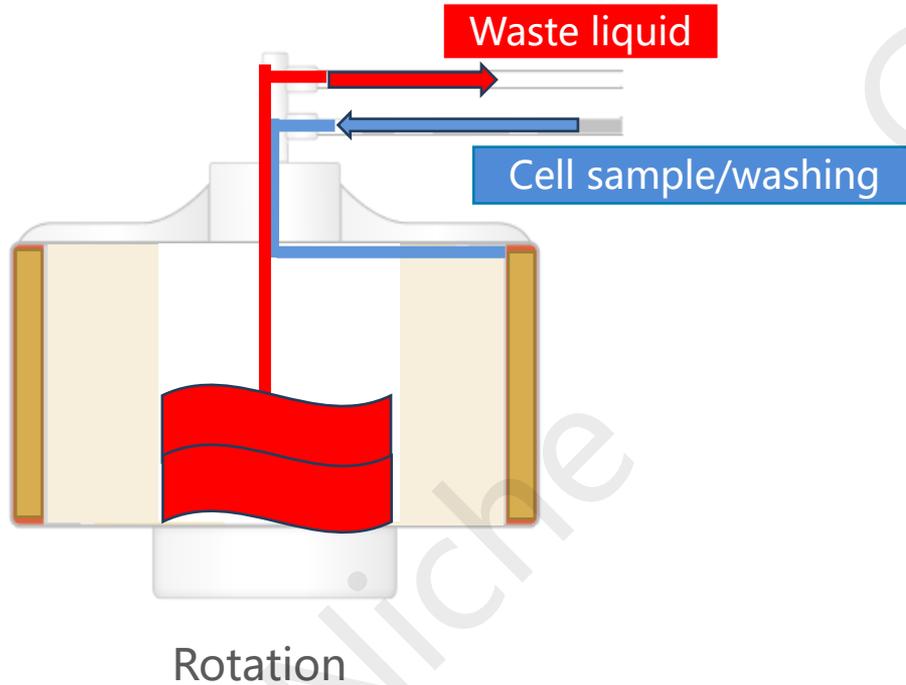
【Flexibility and High-Efficiency】

Features of vivaPREPPLUS --- Working Principle



Working Principle

Continuous flow centrifugation and concentration Process



Input

Step 1. Sample centrifugation



Step 2. Sample concentration /250mL



Step 3. Sample washing



Step 4. Sample concentration /250mL

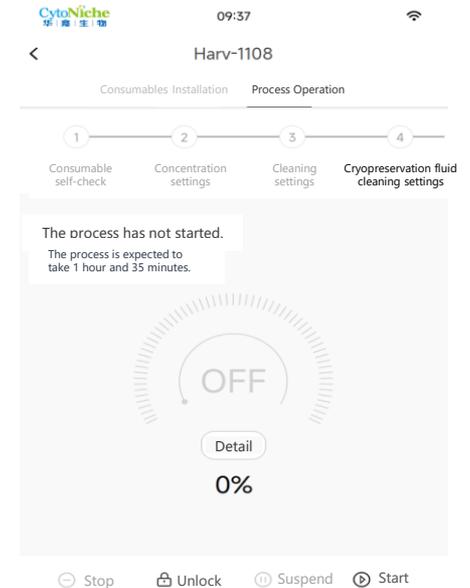
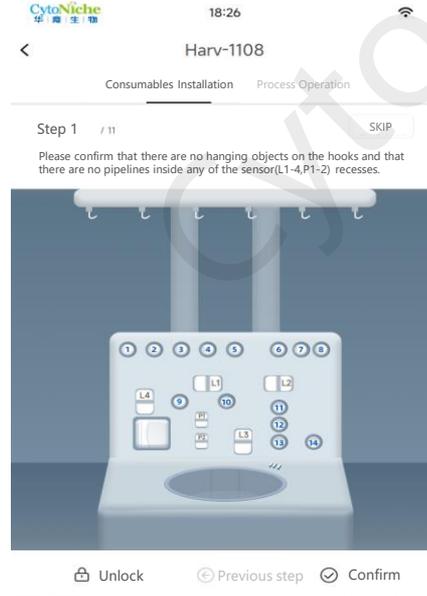
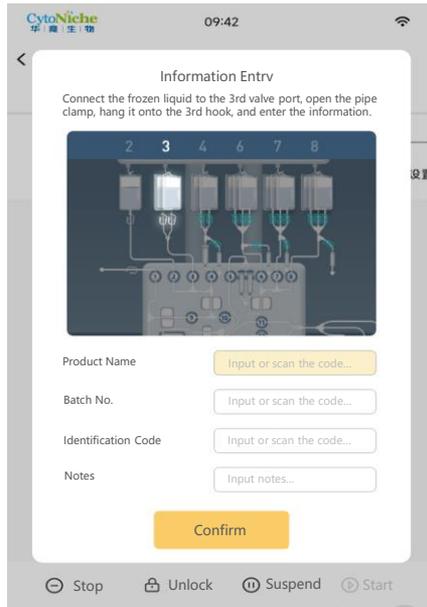


Step 5. Sample formulation(freezing buffer) /250mL



Step 6. Sample resuspension/aliquot

Features of vivaPREP PLUS --- User Friendly Operation



- Log-in
- Installation consumable kit
- Self- detection and progress monitoring

[User Friendly Operation]

- ✓ Diagram-guided step-by-step instructions

Features of vivaPREP PLUS --- Compliance

[Data Log]

Process Records

Start Date: 2022/03/10 End Date: 2022/05/10

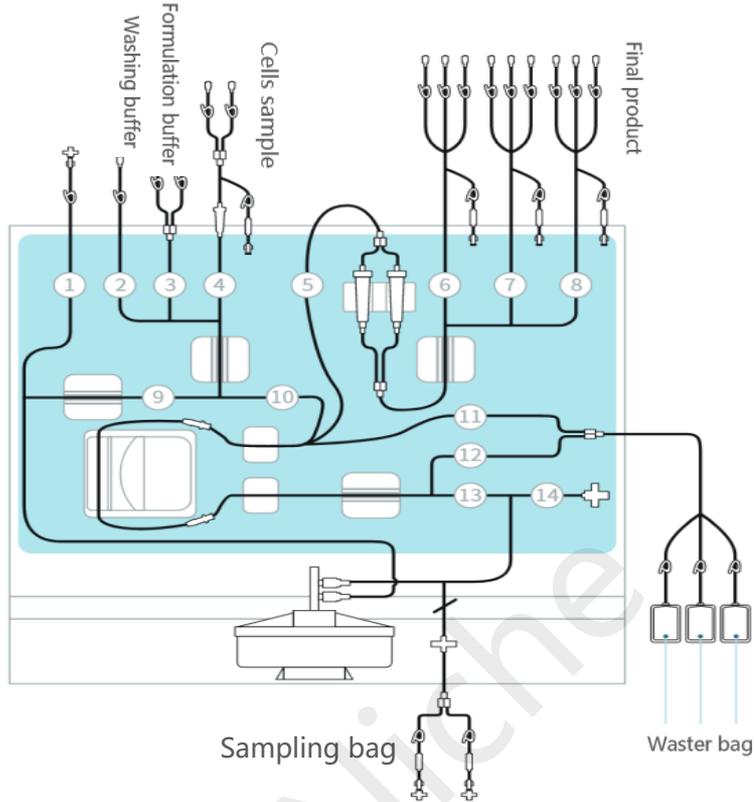
User: Search

108 records in total

| No. | Start Time | User | Process | Detail |
|-----|---------------------|------|---------|--------|
| 72 | 2022-04-27 14:16:17 | CB | | |
| 73 | 2022-04-27 14:05:48 | CB | | |
| 74 | 2022-04-27 14:01:01 | CB | | |
| 75 | 2022-04-27 13:57:01 | CB | | |
| 76 | 2022-04-27 13:53:17 | CB | | |
| 77 | 2022-04-27 11:53:41 | CB | | |
| 78 | 2022-04-27 11:24:39 | CB | | |
| 79 | 2022-04-27 11:20:03 | CB | | |
| 80 | 2022-04-27 10:29:09 | CB | | |
| 81 | 2022-04-27 10:25:29 | CB | | |
| 82 | 2022-04-27 10:21:54 | CB | | |
| 83 | 2022-04-27 10:17:52 | CB | | |
| 84 | 2022-04-27 10:15:38 | CB | | |

- ✓ User management
- ✓ Traceable operational process and integrated data
- ✓ Complete and protected records
- ✓ Exportable data
- ✓ Comply with 21 CFR PART 11 and GMP requirements

Features of vivaPREP PLUS --- Consumables



[Safe and Fully Closed Consumables]

- ✓ Medical-grade PVC material for tubes
- ✓ Fully closed process by welding and sealing

Summary of vivaPREP PLUS

| Basic Parameters | | |
|------------------|---|---|
| Characteristics | Dimensions (W×D×H)(mm) | 620×530×1770(Without base: 620×530×1182) |
| | Weight (kg) | 70.5(Without base: 60) |
| | Capacity | 0.1-8L of cells ($10^9 \sim 10^{10}$ MSCs) per batch |
| | Liquid replacement efficiency | > 99.9% |
| | Maximum process flow rate | 18L/h |
| | Aliquot volume(mL)/bag | 10-250mL |
| | Volume accuracy | < 2mL |
| | Fully automated, closed by welding and sealing | |
| | Centrifuge, wash, concentrate, formulate, aliquot | |
| | with touchscreen, with barcode reader, floorstanding with detachable mobile trolley | |
| Cells quality | Cell density deviation among different bags | < 5% |
| | Cell viability (in ref. initial viability) | > 90% |
| | Recovery rate (for <10 Billion) | > 90% |

Analysis of Competitive Product



| Key parameters | CytoNiche | Cytiva |
|---------------------------|-----------|------------|
| Price (USD) | ***** | 200,000(?) |
| Initial volume | 0.1~8L | 0.1~10L |
| Harvesting volume | 10~250ml | 15~300ml |
| Volume accuracy | 2 ml | 2.5 ml |
| Maximum process flow rate | 18L/h | 10L/h |
| Cell recovery rate | > 90% | > 85% |

【Our Strength】

- ✓ Higher cell recovery rate
- ✓ More precise control system

Performance Data of vivaPREP PLUS

【vivaPREP PLUS vs manual operation】

| | Cell number | Manpower | Capacity/ manpower | Cells recovery rate | Cells viability |
|------------------|--------------------|----------|-----------------------|------------------------|-----------------|
| Manual operation | 1×10^{10} | 10 | 1×10^9 | 80-90% | 86-92% |
| vivaPREPPLUS | 1×10^{10} | 1-2 | 1×10^{10} | > 90% | 93-95% |

【vivaPREP PLUS vs competitor】

| | Cell number | Initial volume | Efficiency(cells/h) | Cells recovery rate | Cells viability |
|--------------|--------------------|----------------|---------------------|------------------------|-----------------|
| Competitor | 1×10^9 | 1L | 5×10^8 | 61.42% | 96.77% |
| vivaPREPPLUS | 1×10^{10} | 5L | 33×10^8 | 95% | 97.78% |

Product Bundles

| Category No. | Product Name | Qty | Spec |
|------------------|--|--------|---------|
| vivaPREP PLUS | 3D FloTrix® vivaPREP PLUS Cell Processing System | 1 unit | |
| vivaPREP-PLUS-00 | 3D FloTrix® vivaPREP PLUS Disposable Cell Processing Kit | 1 cas | 2pc/cas |

Thank you

Launching a new era for industrialising cell manufacturing



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