CytoNiche
Architect for Cells

3D FloTrix® vivaROCK

Architect for Cells

—— Expert in 3D manufacturing of high quality cells

www.cytoniche.com

Outline

- **Brief Introduction of vivaROCK**
  - Overview of vivaROCK
  - Components of vivaROCK
  - Features of vivaROCK
- **Application Field of vivaROCK**
- **Ordering Information**

Brief Introduction of vivaROCK

Overview

Grade: C + A

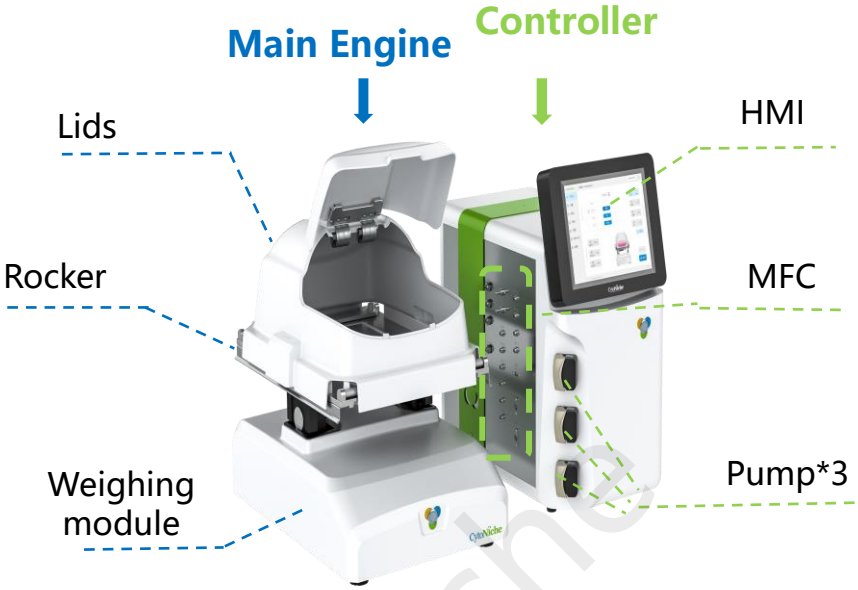
Fully-closed Process

Lower Shear Force

Automated Process

Total volume	1L	3L	10L	20L	50L
Working volume	0.3~0.5L	0.5~1.5L	0.5~5L	1~10L	5~25L

Components



Model: FTVR10 (Standard)、FTVR20、FTVR50(customized)

Culture volume: 0.3~25L

Standard Set includes a 10L tray, with customizable options for 20L/50L trays.

Single- use bags:

FTVR10: 1L, 3L and 10L

FTVR20: 20L

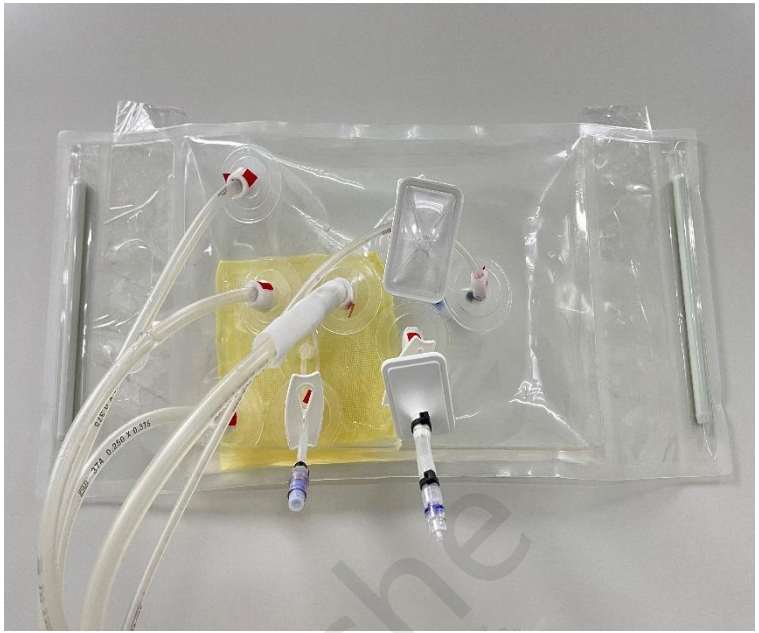
FTVR50: 50L

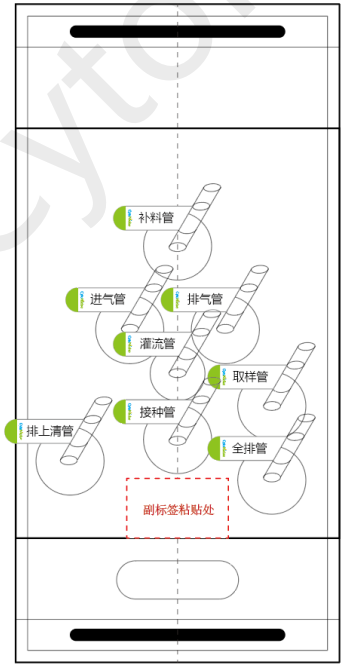
Components-bags

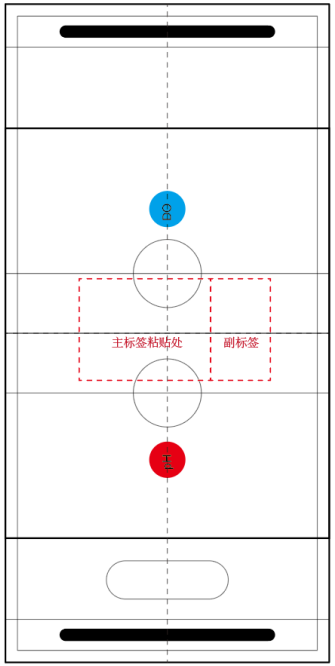
	3D FloTrix® vivaROCK-single use bags				
Total volume	1L	3L	10L	20L	50L
Working volume	0.3-0.5L	0.5-1.5L	0.5-5L	1-10L	5-25L
Basic bags	●	●	●	●	●
Monitoring bags		●	●	●	●
Perfusion bags		●	●	●	●

- Basic bags: no pH, DO
- Monitoring bags: with pH, DO
- Perfusion bags: with pH, DO and perfusion membrane

Components-bags

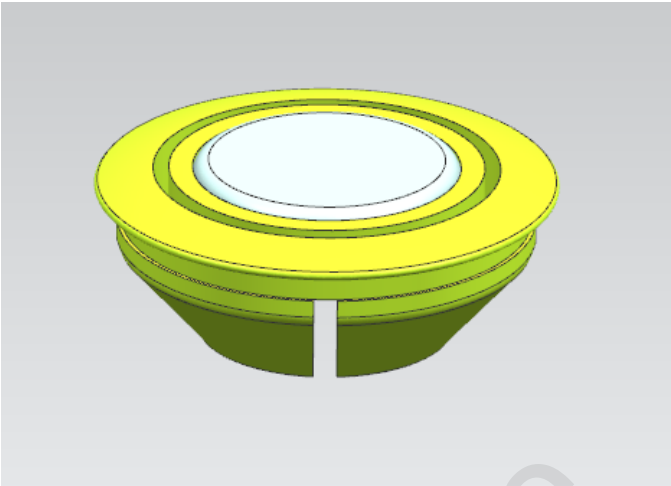






- Perfusion bags: with pH, DO and perfusion membrane
- Equipped with different functional tubing
- 9101 bag membrane, same with cytiva

Components-bags-sensor



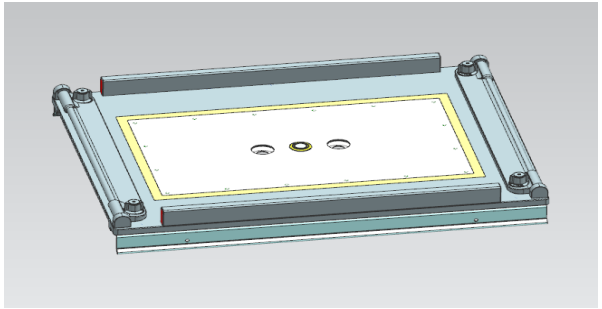
Patch optical pH sensor

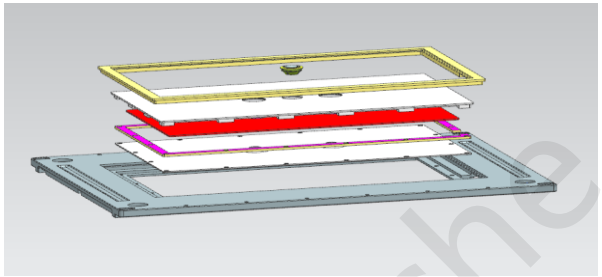
Precise Control-pH/DO sensor

- In-built patch optical sensor in single use bag
- 2-point calibration before factory release
- Precise control by PID program

pH Range	6.0-8.0
pH Control Accuracy	**pH: 6.75- 7.25, ±0.1** **pH: 6.5-7.5, ±0.15**
DO Range	0%-100%
DO Control Accuracy	**±10%**

Temp sensor





Temp sensor onto tray

Precise Control-Temp sensor

- In-built Temp sensor onto tray
- Precise control by PID program

Temp Range	20-40℃，room temp+5℃-40℃
Temp Control Accuracy	**±0.2℃**

vivaROCK bags-Installation

Installation

- Bags installation followed by user manual
- Gas, Temp, PH/DO sensor installation followed by user manual

Basic Info of Controller

Dimension of the controller	Main Engine:350*705*600mm, Rocker:486*602*667mm
Mass	Main Engine:35 kg, Rocker:51kg
Tank material	stainless steel: 304, single-use bag
Input power	AC 100~240V, 50~60Hz
Gas	Supply pressure (1.0 bar-1.5bar)
	Dry, oil-free, dust-free
	gas pipe Φ6
Peristaltic pump	3 sets，0~100 ml/min tubing inside diameter: 0.5-4.8mm(1/50”-3/16”)
Rocking	3~42 rpm，accuracy：±1rpm；
MFC(mass flow controller)	Air: 60-3000mL/min, Accuracy: ±10mL O_2: 20~1000 mL/min, Accuracy: ±1.2% CO_2: 10~500 mL/min, Accuracy: ±0.7%
Weighting module	MAX: 50kg, Accuracy:±0.050 kg
Sensor	Temp: 2-50℃, Accuracy: ±0.2℃ pH: 6.0-8.0,Accuracy:±0.05 DO: 0-100%，Accuracy: ±10%
Control system	PECALS™ control system

Features of 3D FloTrix® vivaROCK Controller

Precise Execution

- Automated medium perfusion program
- Immediate power fail recovery

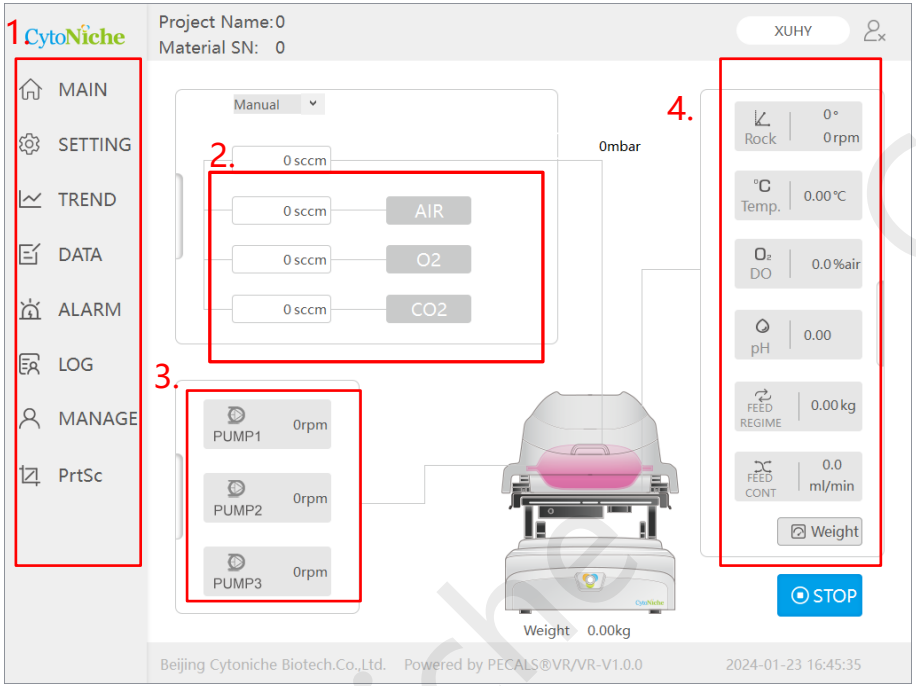
Precise Control

- PID control(pH, DO, Temp)
- Wave program

Precise Logging

- Meet GMP requirement
- Real-time monitoring

Features of 3D FloTrix® vivaROCK Controller

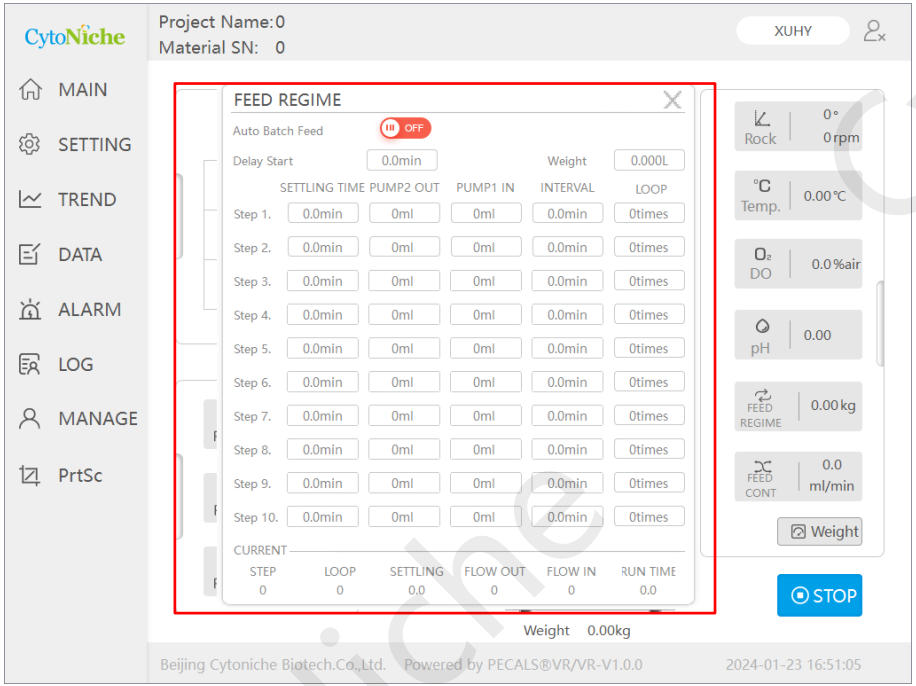


Home Screen

1. **Navigation bar**
2. **Gas control**
3. **Pump control**
4. **Process parameters control**

Tips: When the function is activated, the lines will become thicker； when some parameters are beyond setting range， the lines will become red and process alarm will be triggered.

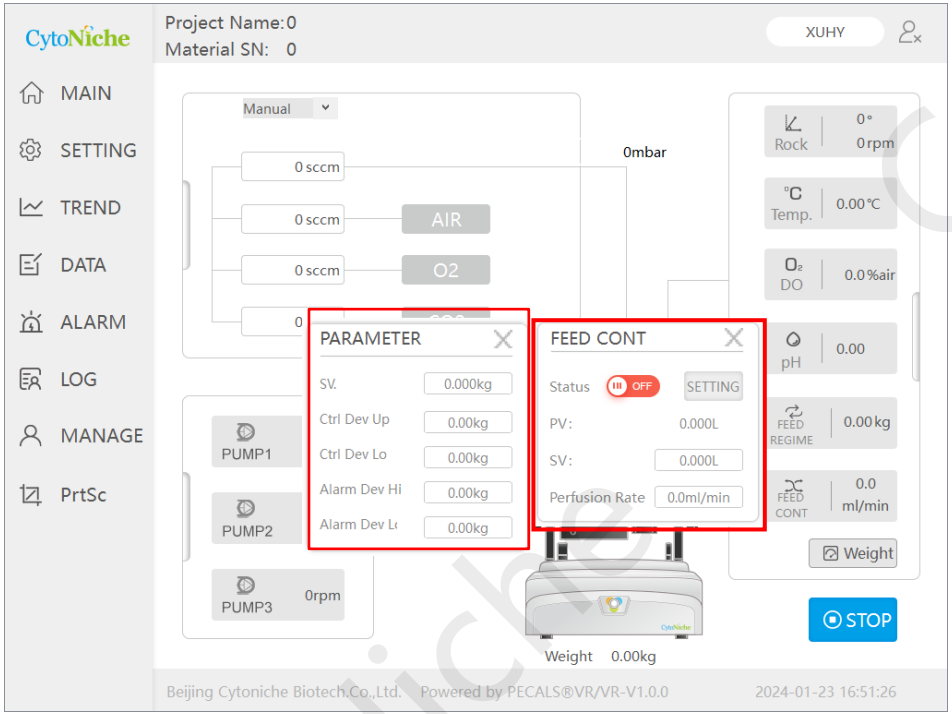
Features of 3D FloTrix® vivaROCK Controller



Auto Medium Exchange Function

- Programmed multi-mode medium exchange regime with auto loop
- Compatible with 3D TableTrix microcarrier cell culture protocol

Features of 3D FloTrix® vivaROCK Controller



Perfusion Process

- **Precise execution**
- Associated with peristaltic pump and rocker weight
- Real-time monitoring bag volume/gas pressure in bag
- Max pump speed: 100mL/min

Features of 3D FloTrix® vivaROCK Controller

Wave process

Precise Control-Wave Mixing

Rocking	3-42rpm
Accuracy	±1rpm
Angle	**1-15°**

Features of 3D FloTrix® vivaROCK Controller

Data Log

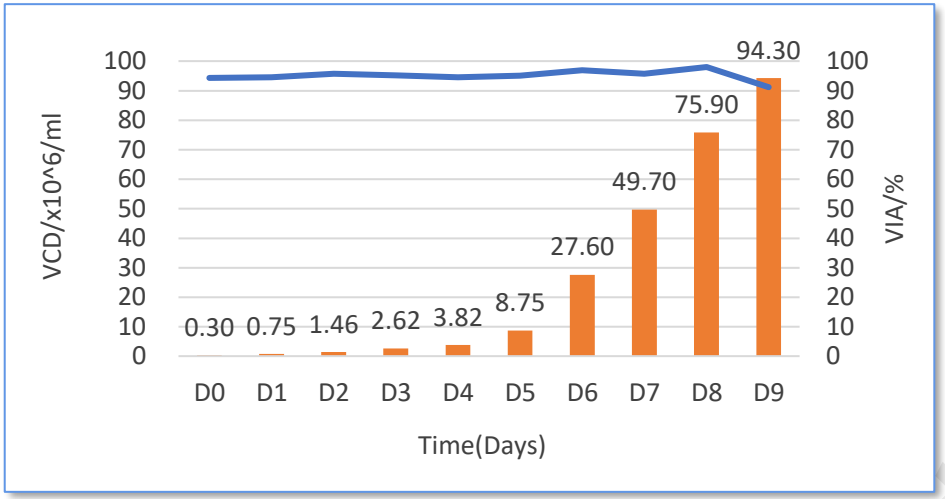
- All data can be recorded and exported
- All deviation data can be recorded and exported
- All operation can be recorded and exported
- All operational record cannot be edited and deleted
- All records can be exported in original format (not edit)

Application Field of vivaROCK

- Antibody: Mammalian cell - CHO
- Cell and Gene Therapy: HEK293
- Vaccine Industry: Vero
- Stem Cell Drug: MSC

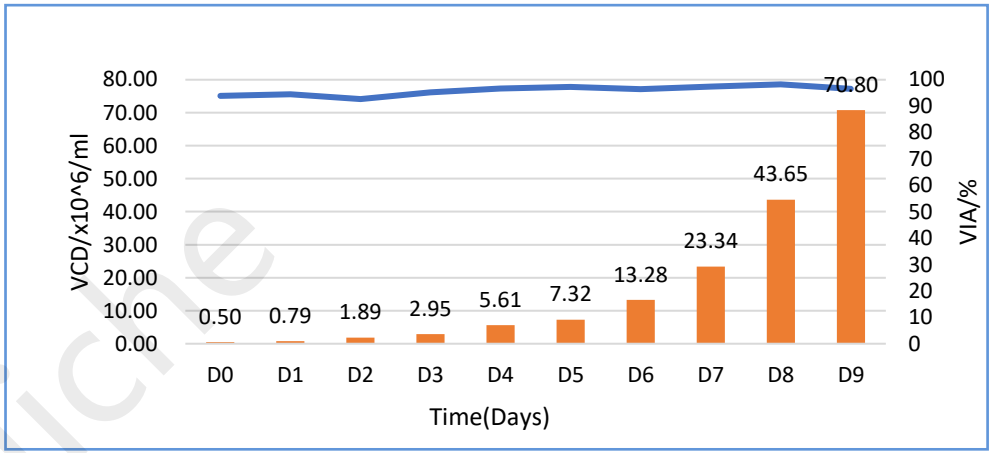
Application Field of vivaROCK

- Antibody: Mammalian cell - CHO
- Bag: 3L perfusion bag
- Process parameters: working volume 2L，seeding density-0.3×10^6cells/mL，
- Conclusion：**after Day9 cell culture，max cell density-9.43x10^7/mL, cell expansion factor-314.3 fold**



Application Field of vivaROCK

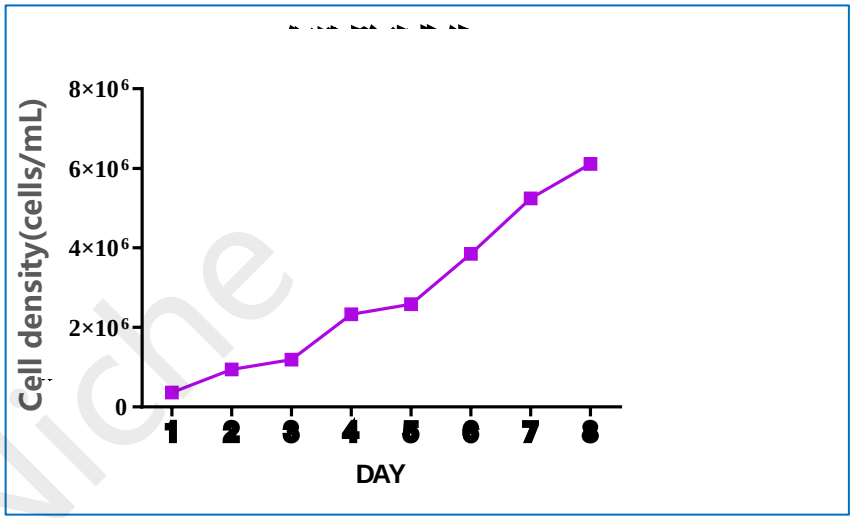
- Cell and Gene Therapy: HEK293
- Bag: 3L perfusion bag
- Process parameters: working volume 2L，seeding density-0.5×10^6cells/mL，
- Conclusion：**after Day9 cell culture，max cell density-7.08x10^7/mL, cell expansion factor-141.6 fold**



Application Field of vivaROCK

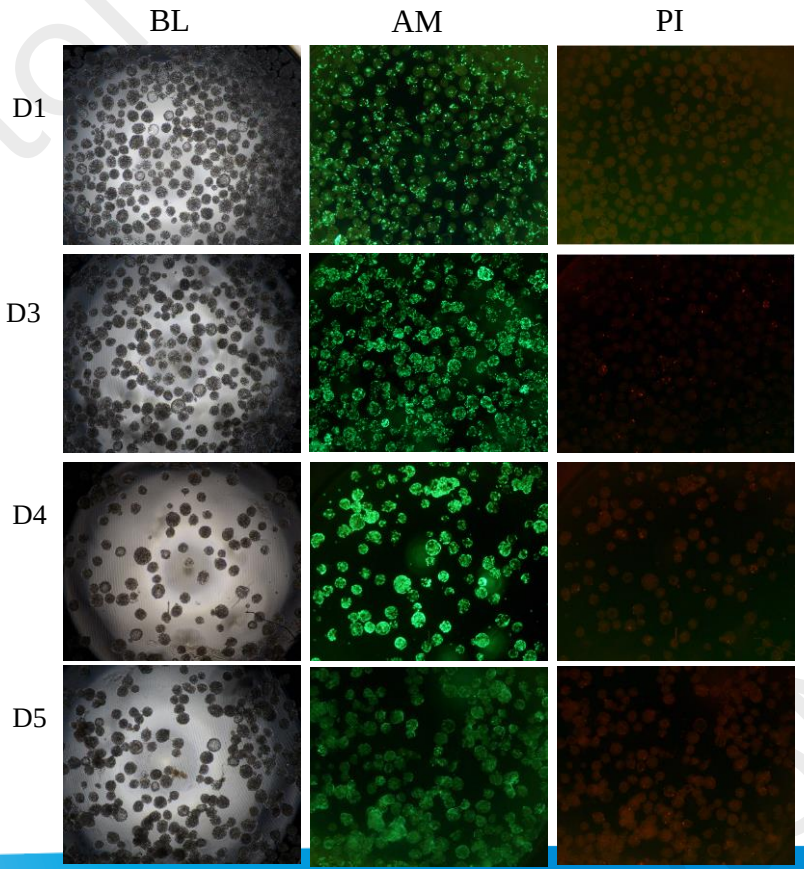
Vaccine Industry: Vero cell

- Bag: 3L monitor bag with pH and Do module
- Process parameters: working volume 1L，seeding density-0.5×10^6cells/mL，microcarrier-V01(6g/L)
- Conclusion：**after Day8 cell culture，max cell density-6x10^6/mL, cell expansion factor-18 fold**



Application Field of vivaROCK

- Stem Cell Drug: MSC
- Bag: 3L monitor bag with pH and Do module
- Process parameters: working volume 1L，seeding density-3.5×10^7cells/mL，microcarrier-W01(1.4g/L)
- Conclusion：**after Day5 cell culture，max cell density-3.85x10^8/mL, cell expansion factor-11.2 fold**



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Ordering Information

Ordering Information

Product Name	Catalogue No.	Description	Note
3D FloTrix® vivaROCK Bioreactor	FTVR10	1 controller, 1 vessel, 1 PECALS control system	10L tray
	FTVR20		Customized 20L tray
	FTVR50		Customized 50L tray
3D FloTrix® vivaROCK Culture Bag (1L Basic)	R021-01-01	1pc/bag	Basic bag
3D FloTrix® vivaROCK Culture Bag (3L Basic)	R021-03-01	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (10L Basic)	R021-10-01	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (20L Basic)	R021-20-01	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (50L Basic)	R021-50-01	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (3L Monitor)	R021-03-02	1pc/bag	Monitor bag With pH DO probe
3D FloTrix® vivaROCK Culture Bag (10L Monitor)	R021-10-02	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (20L Monitor)	R021-20-02	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (50L Monitor)	R021-50-02	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (3L Perfusion)	R021-03-03	1pc/bag	Perfusion bag With pH DO probe, perfusion membrane
3D FloTrix® vivaROCK Culture Bag (10L Perfusion)	R021-10-03	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (20L Perfusion)	R021-20-03	1pc/bag	
3D FloTrix® vivaROCK Culture Bag (50L Perfusion)	R021-50-03	1pc/bag	

Thank you

Launching a new era for industrialising cell manufacturing

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