



Whole Workflow
Walk-Away Automation



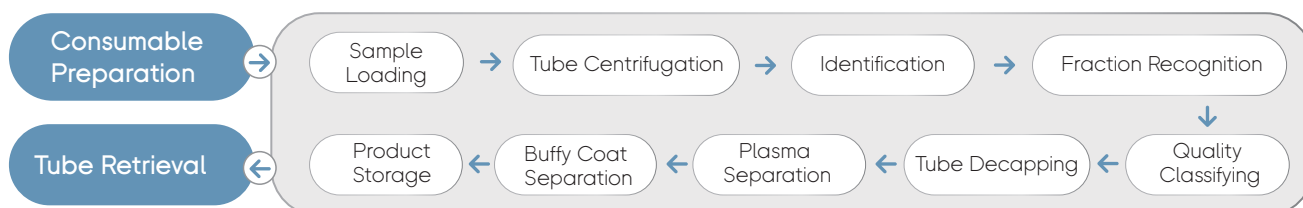
MGIGLab-S

Automated Blood Fractionation Production Line

Product Description

MGIGLab-S Automated Blood Fractionation Production Line, integrated Loading/Unloading, Centrifuge, Information Collection, Buffy Coat Separation, Plasma Separation and Product Storage Module as well as Consumable Stack Area, assembling a large number of manual steps and different individual instruments into a closed system, is used for the whole fractionation workflow and walk-away automation from Blood to Plasma & Buffy Coat, making an annual production output of 100,000 blood samples possible.

- ① Loading/Unloading Module
- ② Centrifuge Module
- ③ Information Collection Module
- ④ Buffy Coat Separation Module
- ⑤ Plasma Separation Module
- ⑥ Product Storage Module
- ⑦ Consumable Stack Area



Product Features

Safe

Whole blood fractionation workflow in a closed system without cross contamination

Efficient

1000 samples/8h, walk-away automation



Stable

Automated sample tracking, less manual errors

Intelligent

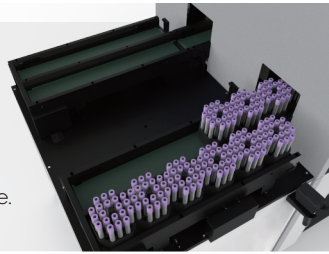
Intelligent and flexible sample scheduling, real-time uploading sample status and pipetting information

System Design

System Design

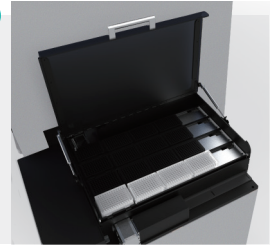
Sample Throughput:
0-240 tubes/time.

Blood Collection Tube:
5 ml EDTA & Genesee tube.



Product Storage Module

Product Storage Throughput:
4/5 columns, each for 4 SBS
deep-well plates or frozen tube
racks with QR code on the
bottom.



Information Collection Module

Sample Tracking: Tube image capture and barcode identification.

Sample Quality Check: Classifying sample quality into different categories -
Normal/Hemolytic/Lipemic/Empty Tube.

Blood Fraction Recognition: Accuracy $\pm 1\text{mm}$, plasma volume calculation,
buffy coat height calculation.

Tube Decapping: 360° rotation.



Buffy Coat Separation Module

Buffy Coat Separation Throughput:
1-2.

Buffy Coat Storage Labware:
Frozen tube with QR code on the bottom.



Centrifuge Module

Centrifuge Speed:
6200 RPM (5800 g RCF).

Tube Type Identification:
Sample & balancing tube
identification by cap color.



Plasma Separation Module

Plasma Separation Throughput:
1-3.

Plasma Storage Labware:
Deep-well plate or frozen tube
with QR code on the bottom.

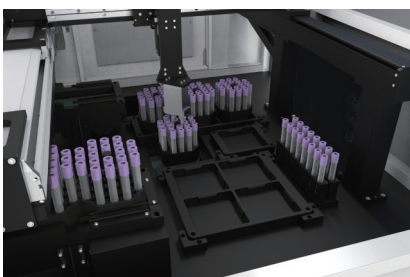


Consumable Stack Area

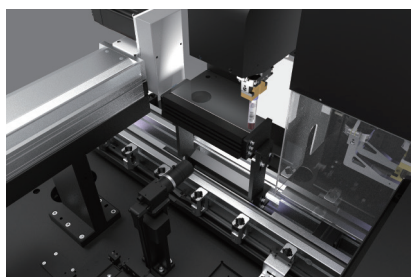
Consumable Storage Throughput:
Tip box, deep-well plate and
frozen tube rack for 8x96 samples.



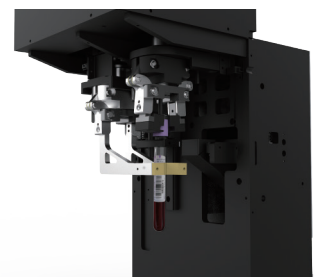
Sample Gasket Handling



Tube Image Capture



360° Rotation Decapping



User Case

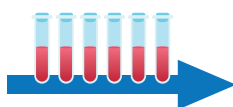
General semi-automated Plasma Separation Process



5 Technicians 8 hours/day

8 semi-automated workstations

35 m²



Automated Blood Fractionation Production Line



1 Technician 8 hours/day

1 production line

15 m²

Specifications

Sample Throughput	1000 samples/8 h
Blood Collection Tube	5 ml EDTA & Genesee Tube
Barcode Scanning	Barcode on blood collection tube, Code 128/Code 39/Codabar. QR code on the bottom of frozen tube.
Centrifuge Unit	Centrifuge Speed: 6200 RPM(5800g RCF). Tube Type Identification: Sample & balancing tube type identification by cap color.
Image Capture Unit	Sample Tracking: Tube image capture and barcode identification. Sample Quality Check: Sample quality classifying into different categories - Normal/Hemolytic/Lipemic/Empty Tube. Blood Fraction Recognition: Accuracy ±1mm, plasma volume calculation, buffy coat height calculation.
Buffy Coat Separation	Buffy Coat Separation Throughput: 1-2. Buffy Coat Storage Labware: Frozen tube with QR code on the bottom.
Plasma Separation	Plasma Separation Throughput: 1-3. Plasma Storage Labware: Deep-well plate or frozen tube with QR code on the bottom.
Pipetting Unit	Pipetting volume: 10-1000 µl
Product Storage	4/5 columns, each for 4 SBS deep-well plates or frozen tube racks with QR code on the bottom.
General Specifications	Dimension: 6000 mm(W) x 1275 mm(D) x 1760 mm(H) Weight: 1500 kg Working Environment: 19 to 25 °C, 20 to 80% RH(Non-condensation), 80 to 106 kPa Power Requirement: 200-240 V, 50/60 Hz, 3300 VA

CONTACT US

MGI Tech Co., Ltd

Building 11, Beishan Industrial Zone, Yantian District, Shenzhen

✉ MGI-service@genomics.cn 🌐 www.mgitech.cn ☎ 4000-688-114

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