FusionGreen Healthcare Pvt. Ltd.

We deliver ...

mindray

Mindray Hematology Solution for **Oncology Hospitals**

Advancing Hematology Solutions to Elevate Diagnosis and Treatment of Cancer Care

Lab's Challenges

- Detection capabilities for immature and abnormal cells.
- Handling challenging samples such as Low-PLT or abnormal cells in peripheral blood for prognosis.
- Lack of pathologists during night shifts.

Lab's Needs

- A reliable analyzer for detecting immature and abnormal cells by cross-referencing morphological results with hematology data in the presence of abnormal samples.
- Solutions for samples with low WBC and PLT counts.
- Remote review of critical samples anytime, anywhere.

Mindray BC-700 Series / CAL 8000 with MC-80 for Medium and Large Samples Laboratories

Hematology-Oncology

BC-700 Series

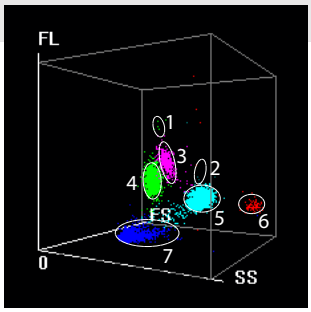
CAL 8000 with Digital Cell Morphology System MC-80

With Mindray 3D SF Cube Technology for Abnormal Cells Detection

SF Cube™

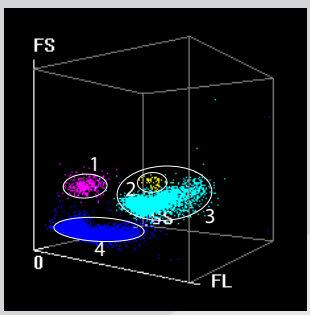
DIFF Scattergram

1. Abnormal lymphocytes
2. Immature granulocytes
3. Monocytes
4. Lymphocytes



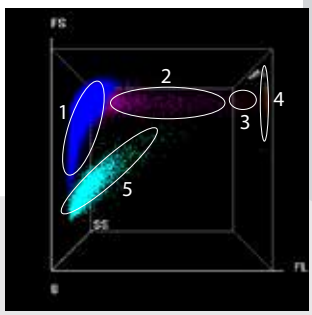
5. Neutrophils and basophils
6. Eosinophils
7. Blood ghost

WNB Scattergram



1. Nucleated red blood cells
2. Basophils
3. White blood cells
4. Blood ghost

RET Scattergram



1. Mature red blood cells
2. Low-fluorescence reticulocytes
3. Medium-fluorescence reticulocytes
4. High-fluorescence reticulocytes
5. Optical platelets

Immature and Abnormal Cells Detection for Early Diagnosis and Prognosis

NRBC, Blast and Immature Granulocytes (IMGs) Detection

The presence of NRBCs, blast cells, and IMGs in peripheral blood samples can serve as important diagnostic indicators of certain types of leukemia, lymphoma, and other hematological malignancies.

NRBC

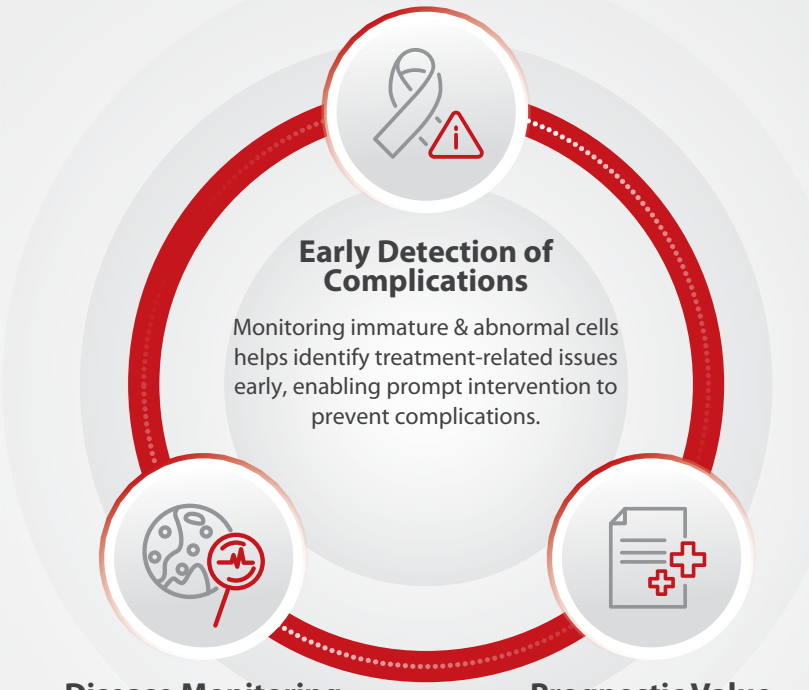
Reportable parameter by direct measurement for accurate WBC+DIFF results

Blast cells

High sensitivity to avoid missed diagnosis

IMGs

Actual IMG count and flag to reduce review rate



Early Detection of Complications

Monitoring immature & abnormal cells helps identify treatment-related issues early, enabling prompt intervention to prevent complications.

Disease Monitoring

Tracking these cells helps assess treatment response, disease progression, and potential relapse.

Prognostic Value

Predict disease aggressiveness and influence treatment decisions for better outcomes.

Mindray's Performance in Immature and Abnormal Cells Detection

	All flags	All blast	IG	NRBC
TP	359	122	240	133
TN	198	483	361	489
FP	68	32	31	14
FN	15	3	8	4
Sensitivity	96.0	97.6	96.8	97.1
Specificity	74.4	93.8	92.1	97.2
PPV	84.1	79.2	88.6	90.5
NPV	93.0	99.4	97.8	99.2
Efficiency	87.0	94.5	93.9	97.2

Abbreviations: FN, false negatives; FP, false positives; IG, immature granulocytes; NPV, predictive value of negatives; NRBC, nucleated red blood cells; PPV, predictive value of positives; TN, true negatives; TP, true positives.

Zini, G., Cantelli, F., Scavone, F., Barbagallo, O., & Ciminello, A. (2020). Hematological performance of a last generation automated blood cell counter: The Mindray BC-6800 Plus. International Journal of Laboratory Hematology, 42(4), 439–449. https://doi.org/10.1111/ijlh.13218

Morphological Blood Cells Confirmation for Early Diagnosis

Cross Checking with Hematology Analyzer for More Accurate Result

Mindray's labXpert system integrates morphology results with hematology data, enabling precise diagnostic assessments in healthcare settings.

Advanced imaging technology, unified data management, and streamlined reporting facilitate efficient workflow, enhance quality control, and support evidence-based decision-making. This integration optimizes patient care and diagnostic accuracy in oncology and hematology practices.

1. Early Detection
2. Disease Monitoring
3. Subtyping and Classification
4. Prognostic Assessment
5. Treatment Guidance

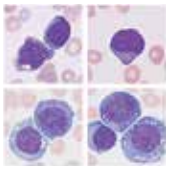
Research on White Blood Cell (WBC)

Compared with the expert-reviewed results of 146,538 cells, the AI pre-classification results have an accuracy rate as high as 97.8%, fully demonstrating that AI has extremely high pre-classification capabilities.

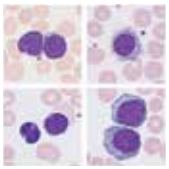
AI Pre-Classification

VS

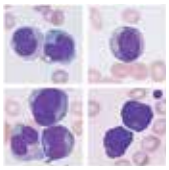
Morphologist Reviewed Result
(Morphologist review was conducted on the AI pre-classification results)



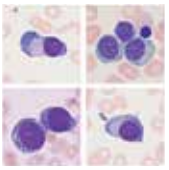
Blast Cells
Accuracy: 89.58%
Sensitivity: 98.38%
Specificity: 99.40%



Abnormal Lymphocytes
Accuracy: 68.44%
Sensitivity: 97.26%
Specificity: 99.63%

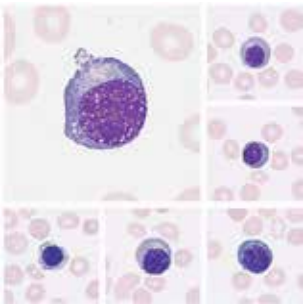


Abnormal Promyelocytes
Accuracy: 89.96%
Sensitivity: 80.00%
Specificity: 99.92%

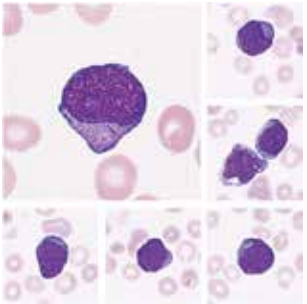


Plasma Cells
Accuracy: 96.61%
Sensitivity: 73.08%
Specificity: 100.00%

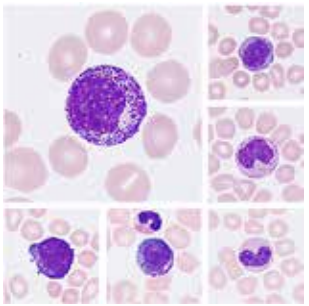
Blood Cell Images Captured from MC-80



NRBC



Blast Cells



IMG

Handling Low Count WBC & PLT Samples Without Human Intervention

Automatic Multiple Counting of Low WBC & PLT

Low WBC

- Inaccurate WBC and DIFF results
- Missed diagnosis of blast cells leading to delay diagnosis & treatment

1. **Accurate WBC & DIFF results are needed**
2. **Confirm the blast cells for early leukemia diagnosis**
3. **Prompt the next step for treatment**

3x

Number of Particles

Ensure accurate determination of low-value cells

Low PLT

- Inaccurate PLT result
- Pseudo-thrombocytopenia leading to delay surgery & wrong medication

1. **Accurate PLT result is needed**
2. **Indicated giant PLT/PLT aggregation**
3. **Free from interferences e.g. RBC fragments and small RBC**

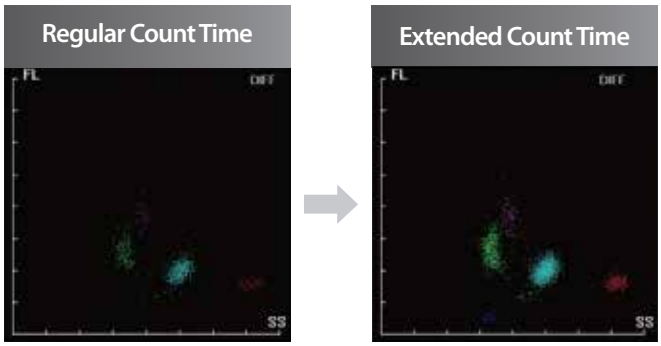
8x

Number of Particles

Ensure accurate determination of low-value cells

labXpert

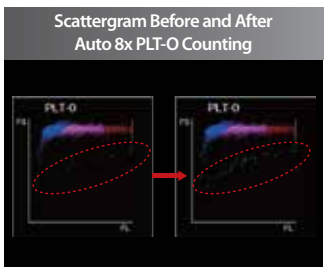
Multiple Counting for Low-WBC Samples

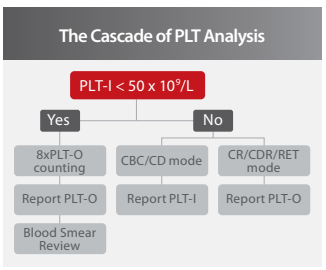


For leucopenia samples (WBC<1.5 x 10^9/L) or with capillary blood samples, we automatically extends the count time to increase the number of cells counted. This process enhances the accuracy and reliability of WBC results.

PLT-O with Multiple Counting for Low-Count Platelet Samples

To begin with, PLT-I value obtained from impedance channel is firstly compared with a default value (50×10^9/L). If this is lower than the cutoff value, the analyzer can automatically prolong counting time up to 8-fold in order to collect more PLT particles for further analysis. In addition, Auto 8×PLT-O Counting Technology can eliminate other interference factors (e.g. fragmented RBC/WBC) which are often easily miscounted as PLT by the impedance channel. No additional sampling, no manual intervention, no additional channels and reagents required. 8×PLT-O counting is both efficient and effective in counting low PLT accurately.



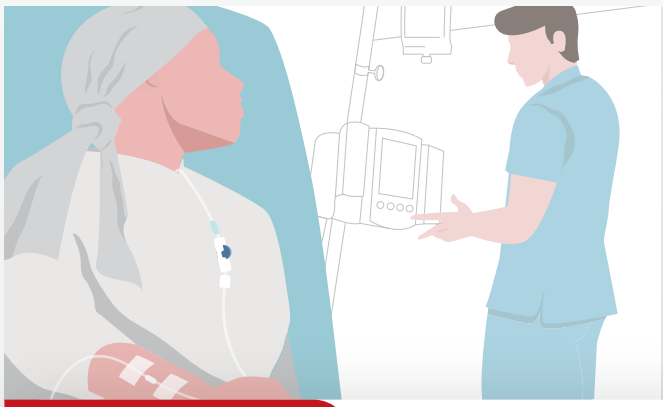


** DECLARATION: Products may not be licensed in accordance with the laws in all countries. Please check with your local representative for availability.*

Total PLT Solution for Better Cancer Patients Monitoring for Treatment

Accurate PLT Count with Images Captured from MC-80

Total PLT Solution for Anti-Interference and Accurate PLT Results



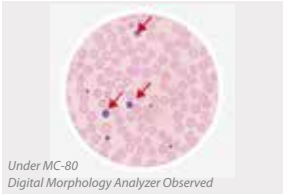
Chemotherapy is a cornerstone in cancer treatment, but its side effects can pose challenges for patients, the drugs can directly affect the bone marrow, impairing platelet production.

Clinical Case

A patient with systematic lupus erythematosus revisited the hospital and got checked by Mindray BC-700 Series hematology analyzer.

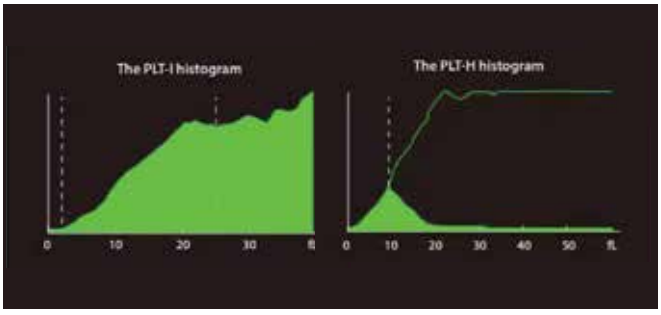
Cbc Results from BC-700 Series	
MCV	98.8 fL
MPV	17.0 fL
P-LCR	75.2%
PLT-I	52x 10^9/L
PLT-H	89x 10^9/L
PLT-O	91x 10^9/L

Microscopic examination revealed evident large PLTs (arrows) having a similar size to the RBCs in multiple high-power lens.



Method	PLT-I	PLT-H	PLT-O	PLT-M	Flow Cytometry
PLT(x 10^9/L)	52	89	91	92	90

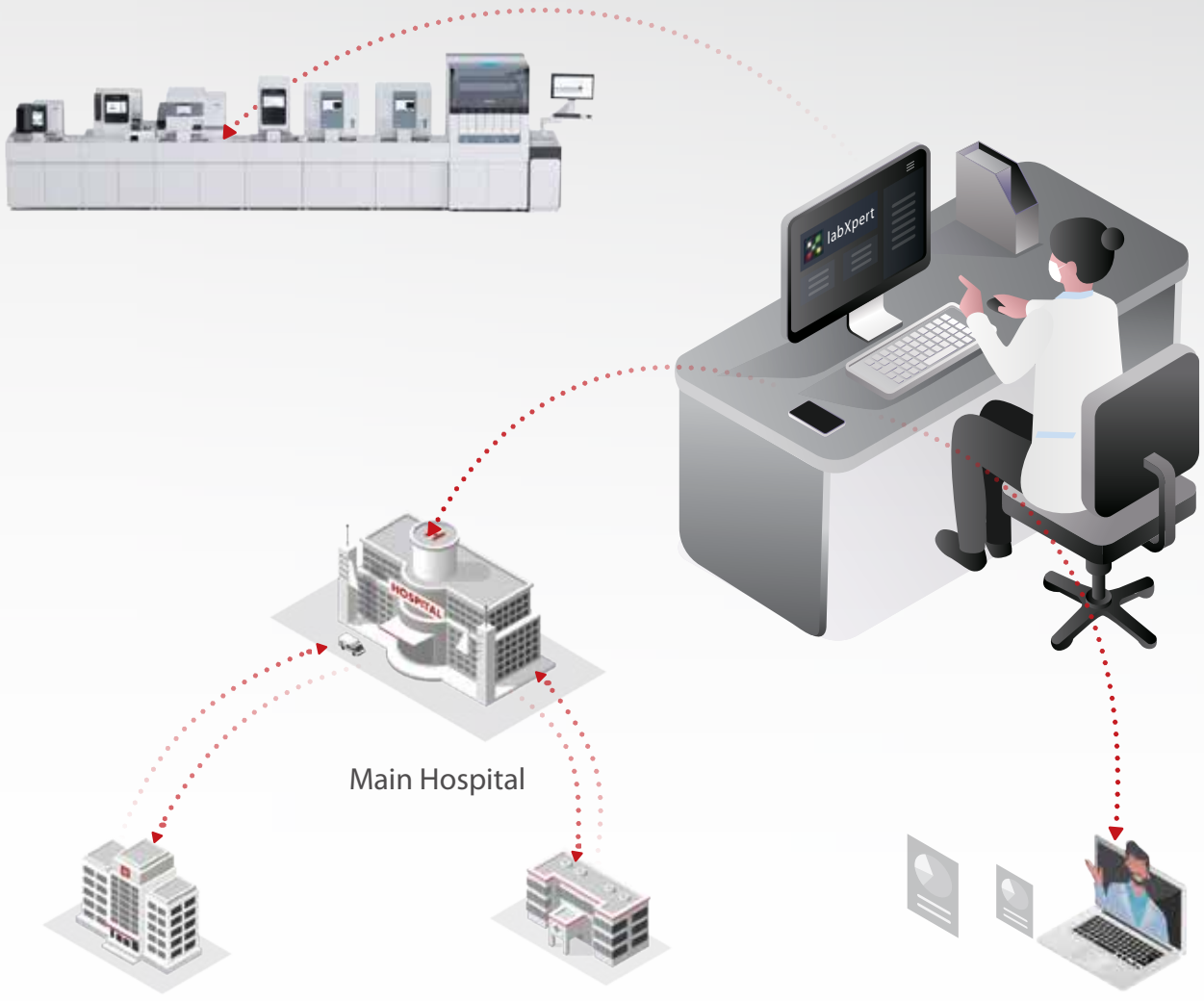
The PLT count measured by flow cytometry was 90x10^9/L, which was consistent with that by PLT-H. In this case, the MPV and P-LCR values increased signicantly. The tail of the PLT histogram was elevated, suggesting that large PLTs may be present in this sample, which would cause a pseudo-thrombocytopenia. The information obtained from the DIFF channel can ensure the accurate detection of large PLTs, avoiding unnecessary blood transfusion.



Revolutionize Lab Workflow with labXpert System

Real-Time Integration for Remote Diagnostics and Enhanced Clinical Expertise Utilization

Elevate your laboratory capabilities with labXpert software, enabling real-time integration and sharing of testing results. Experience the benefits of remote diagnostics and optimized utilization of clinical professional expertise, a valuable resource in high demand. Streamline operations, enhance efficiency, and drive better outcomes in your lab with labXpert system.



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