

# Evaluation of Mindray BC-5000 hematology analyzer: a new miniature 5-part WBC differential instrument

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## SUMMARY

**Introduction:** The Mindray BC-5000 automated hematology analyzer is a miniature, automated hematology analyzer, and 5-part leukocyte differential counter for *in vitro* diagnostic use in clinical laboratories.

**Methods:** Precision, linearity, carryover, and method comparison were carried out. The analyzer was evaluated and compared with the Sysmex XE-2100 hematology analyzer and manual microscopic in the hematology laboratory of a tertiary hospital in Chinese.

**Results:** There were minimal carryover (<0.25%), and excellent linearity for white blood cell, and platelet counts ( $r > 0.99$ ). Within-run precision was good at all levels for the routine cell blood count parameters (CV < 3.5%). Between-run precision was acceptable at all levels for the analysis parameters (CV < 5%) except for eosinophil and basophil (CV% >10%). BC-5000 displayed very good correlation ( $r > 0.94$ ) with the XE-2100 for cell blood count and cell differential parameters except for basophil ( $r = 0.72$ ). The comparison of 258 leukocyte differential count results analyzed in parallel with manual microscopy, BC-5000 analyzer showed perfect specificity (93%) and negative predictive value (90%) on abnormal blood samples.

**Conclusion:** It is concluded that the overall performance of the BC-5000 is acceptable. The miniature analyzer is suitable for use in small- to medium-size laboratories.

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