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Comparative testing for AB0-RH-K and D-Variants Diagast Qwalys® 3 using E.M. ® Technology vs. OCD Auto-Vue®Innova BioVue™ System

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INTRODUCTION

The Qwalys®3 based on the E.M.®Technology is a fully automated analyzer for all routine methods in the immunohematological laboratory. We evaluated AB0-RH-K and D-Variants with a new developed weak-D-testing method. The aim of this study is to compare two fully automated technologies: The E.M.®T. on Qwalys®3 vs. Bio-Vue™ on Auto-Vue Innova®.

BACKGROUND

E.M.® Technology developed by Diagast is an innovative technology based on magnetic hemagglutination assays and avoids all centrifugation and washing steps. Testing for the D antigen is a very important step in the labortory routine allowing to avoid a possible D alloimmunization and preventing the probability of hemolytic transfusion reaction. The Weak-D test developed by DIAGAST is based on an evolution of the E.M.®Technology: The magnetization of the red blood cells is specifically targeted thanks to the IRONMAG, a magnetic solution containing Anti-Gpa antibodies coupled to the magnetic beads. In addition we evaluated the AB0-RH-K and Weak-D test for accuracy and performance against the Bio-Vue™ method.
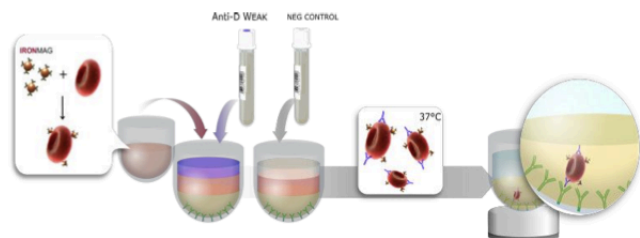

Fig.1: Weak-D test in E.M.® Technology

Fig.2: Qwalys® 3 Diagast's fully automated system

METHODS

A total of 51 donor samples already known as having weak or partial D antigens, 122 samples for AB0-D and 31 samples for RH-K Phenotyping have been analyzed by E.M.®Technology using the fully automated System Qwalys®3 and Bio-Vue™ method using the fully automated system Auto-Vue® Innova.
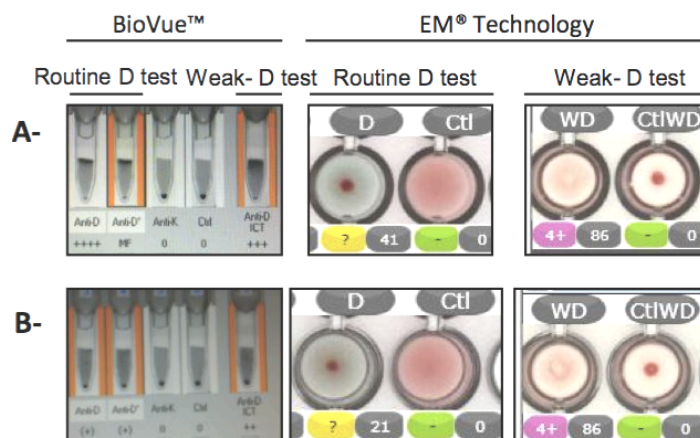

Fig.3: Examples of reactions strength BioVue™ vs. E.M.®T
A – Weak-D sample
B – Partial D sample

RESULTS / CONCLUSIONS

51 samples tested for D antigen (4 partial-D an 47 weak-D), 122 samples tested for AB0-D and 31 tested for RH-K-Phenotyped were correctly identified in accordance to the expected results.

Conclusion: This comparative study shows that the AB0-D, RH-K-Phenotyping and Weak-D testing by E.M.®Technology method is as specific and sensitive as the BioVue™ method. The Qwalys®3 CCD-Camera processes remarkable.