

# COMPARISON OF TWO AUTOMATED IMMUNOASSAY SYSTEMS FOR THE DETECTION OF EBV-ASSOCIATED ANTIBODIES.

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## Introduction

In recent years the evolution of diagnostic immunoassay technologies allowed the automated measurement/detection of different types of antibodies related to the Epstein-Barr Virus infections (mononucleosis), improving the analytical performances of the old low automated methods.

## Aim of the study

The purpose of this study is to compare the results of two monoplex automated systems for the measurement/detection of the main EBV serological markers mononucleosis-associated antibodies (Viral Capsid Antigen (VCA)-IgG, VCA-IgM, and EBNA (Epstein-Barr Nuclear Antigen)-IgG), represented by Immulite Xpi (Siemens Healthineers, Germany) and Maglumi 2000 Plus (SNIBE, China).

## Materials and methods

The study involved altogether 120 patients, 35 patients with acute mononucleosis patients, 18 with past infection, 3 patients with re-activated mononucleosis, and 64 healthy subjects without clinical history of Epstein-Barr Virus infection.

## Results

The negative-positive agreement of the 2 automated methods was 87.5%, 94.2%, and 95.8, for VCA-IgG, VCA-IgM, and EBNA-IgG antibodies, respectively (table 1). The diagnostic sensitivity for VCA-IgG was higher for Immulite (89.3% vs 78.6%) than Maglumi, whereas the diagnostic sensitivity for VCA-IgM and EBNA-IgG was higher for Maglumi (92.1% vs 81.6%, and 95.2% vs 85.6%, respectively) than Immulite (Table 2).

Sensitivity	Total	Positive	%
VCA IgG + (MAG)	56	44	78.6
VCA-IgG + (IMM)	56	50	89.3
VCA-IgM (MAG)	38	35	92.1
VCA-IgM (IMM)	38	31	81.6
EBNA-IgG (MAG)	21	20	95.2
EBNA-IgM (IMM)	21	18	85.6

Table 1. Diagnostic sensitivity of the two methods in active and previous mononucleosis (no. 56 patients), in active and reactivated mononucleosis (no. 38 patients), and in previous and reactivated mononucleosis (no. 21 patients).

Concordance	Positive (no.)	Negative (no.)	Discordant (no.)	Total
VCA IgG	87	18	15	105/120 = 87.5%
VCA-IgM	31	82	7	113/120 = 94.2%
EBNA-IgG	22	93	5	115/120 = 95.8%

Table 2. Positive negative agreement of the two methods in 120 patients.

## Conclusions

The results of the present study confirm the high analytical performances of the two monoplex automated systems: the results of the recent automated method (Maglumi, SNIBE) was similar to those of the more consolidated method (Immulate, Siemens).

## Reference

Niller HH, Bauer G. Epstein-Barr Virus: Clinical diagnostics. Methods Mol Biol 2017;1532:33-55