

Evaluation of three fully automated assays for the detection of cytomegalovirus IgM and IgG: DiaSorin LIAISON® XL, Abbott Architect® and Roche Cobas 6000®

Elise Bouthry¹, Thoai Duong Ly², Christelle Vauloup-Fellous¹

¹ Paris-Sud University, AP-HP, Hôpital Paul Brousse, Virologie, Univ Paris-Sud, UMR-S 785, INSERM U785, Villejuif, 94804 France

² Laboratoire Biomnis, Ivry-sur Seine, France

Background/Objectives

Congenital human cytomegalovirus (CMV) infection is the leading cause of congenital viral infection in developed countries, occurring in 0.3% to 2.4% of all live births. Screening for maternal CMV infection is not recommended in most countries but it is commonly performed during pregnancy. Screening for IgG allows identifying women at risk of primary infection, and therefore targeting those who specially need hygiene counseling. Testing for IgM allows identifying women that may have recent primary infection (to be confirmed by IgG avidity).

Our aim was to evaluate the performance of DiaSorin LIAISON®XL CMV IgG II, CMV IgM II assays in comparison with 2 other commercial assays (Abbott Architect® and Roche Cobas 6000®) with four panels.

Results

Table I. Results of the panel of the 81 sequential serum samples collected from 29 pregnant women during CMV primary infection (PI) expressed as percentage of IgM positive/equivocal samples detected to the total number of samples tested during each period.

Analyzer	< 90 days after PI	90-120 days after PI	> 120 days after PI
DiaSorin LIAISON® XL	92,3%	76,9%	81,3%
Abbott Architect®	96,2%	76,9%	87,5%
Roche Cobas 6000®	94,2%	69,2%	37,5%

Table II. Results of the panels of the 53 samples positive for CMV IgG and IgM collected from pregnant women with infection acquired more than three months before, and the 81 serum samples obtained from pregnant women with past infection (CMV IgG positive and CMV IgM negative) expressed as percentage of IgM positive/equivocal samples detected to the total number of samples tested.

Analyzer	IgM
DiaSorin LIAISON® XL	31,3%
Abbott Architect®	37,3%
Roche Cobas 6000®	20,9%

There was a 100% agreement between the three assays for the panel 31 serum samples from seronegative pregnant women (CMV IgG negative and CMV IgM negative)

Conclusion

Table III. Correlation between the DiaSorin LIAISON® XL instrument, the Abbott Architect® assay and the Roche Cobas 6000® assay for both CMV IgG II and CMV IgM II.

Analyzer	DiaSorin LIAISON® XL	Abbott Architect®	Roche Cobas 6000®
DiaSorin LIAISON® XL	-	88,2%	79,7%
Abbott Architect®	88,2%	-	78,5%
Roche Cobas 6000®	79,7%	78,5%	-

Overall, the lastly developed CMV IgM and IgG tests on the DiaSorin LIAISON® XL instrument are suitable for clinical use.