

# Evaluation of new IgM Measles assay



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## Objectives

In this study, the performance of a new IgM Measles assay BioPlex® 2200 MMV (BioRad, Marnes la Coquette, France) was compared to that of LIAISON® XL Measles IgM (DiaSorin, Saluggia, Italy), used routinely in our laboratory.

## Methods

**Routine specimens:** 140 unselected serum samples, submitted to the laboratory for IgM Measles testing, were examined by these 2 assays.

**Seroconversion sera:** 106 frozen serum specimens from 64 patients of primary infection were used for sensitivity of primary infection study.

## Results

### A/ Routine specimens

Among 140 unselected samples, 136 were negative. Three and 1 samples were detected positive and equivocal by the BioPlex 2200 and LIAISON® XL respectively (Table I).

BioPlex® 2200 MMV IgM	LIAISON® XL IgM Measles assay		
	Negative	Equivocal	Positive
Negative	136	0	0
Equivocal	0	1	0
Positive	0	0	3

Table I. Correlation between results of LIAISON® and BioPlex® IgM assays.

These 2 assays showed a high concordance (100% negative agreement) in samples collected from IgM Measles diagnostic routine.

### B/ Seroconversion sera

Of the 106 samples from 64 patients in primary infection, 101 were positive with both assays. Among the 5 other samples 3 and 4 samples were negative, 2 and 1 were equivocal with BioPlex® and LIAISON® XL respectively. The results of the sensitivity of primary infection were shown in this table II.

106 samples from 64 patients in primary infection	BioPlex®		LIAISON® XL	
	IgG	IgM	IgG	IgM
N° of negative samples	61	3	37	4
N° of equivocal samples	0	2	1	1
N° of positive samples	45	101	68	101
% positive (equivocal included)	42.4	97.2	65.1	96.2

Table II. Results of 106 seroconversion sera.

BioPlex® 2200 MMV IgM showed a good sensitivity of Meales primary infection with 99.1% positive agreement (equivocal results were included).

However BioPlex® 2200 MMV IgG was less sensitive then IgG LIAISON XL® during Meales primary infection (table III).

Interpretation	BioPlex® 2200		LIAISON® XL	
	IgG	IgM	IgG	IgM
Negative	≤ 0.8	≤ 0.8	< 13.5	< 0.9
Equivocal	0.9 - 1.0	0.9 - 1.0	13.5 - 16.5	0.9 - 1.1
Positive	≥ 1.1	≥ 1.1	> 16,5	> 1,1

Patient	Date	BioPlex® 2200 IgG	BioPlex® 2200 IgM	LIAISON® XL IgG	LIAISON® XL IgM
1	07/01/2010	<	2.3	18	1.7
	07/22/2010	5.7	2.6	>300	1.9
9	04/17/2010	0,7	> 4	88	> 4
	05/15/2010	5.2	3.3	>300	> 4
11	04/24/2010	0.3	> 4	60	> 4
	05/17/2010	3.8	2.9	>300	> 4
14	11/15/2010	<	> 4	89	> 4
	01/04/2011	7.6	1.7	>300	1.6
25	04/07/2010	<	3.7	75.8	2.1
	04/24/2010	4.7	2.6	>300	> 4
28	04/09/2018	< 0.2	0.4	<	<
	04/17/2018	0.7	2.4	135	2.5
39	02/26/2018	0.3	> 4	47.90	> 4
	03/20/2018	6.1	3.5	> 300	3.4

Table III: Results IgG and IgM of some samples from patients in primary infection.

## Conclusion

BioPlex® 2200 MMV IgM showed a good overall correlation 99.6% (99.1% positive and 100% negative agreement) with LIAISON® XL Measles IgM. Moreover with the advantages due to automation, this new assay can be considered a suitable tool for routine diagnosis of Measles primary infection.