

External Quality Assessment Scheme

## EBV mononucleosis, specific antibodies Round 1, 2023

### Specimens

Please find enclosed 3 human plasma samples S001, S002 and S003, each 1.4 mL.

### Caution

Quality control specimens derived from human blood must be handled with the same care as patient samples, i.e. as potential transmitters of serious diseases. The specimens are found to be HBsAg, HCVAb and HIVAgAb negative when tested with licensed reagents, but no known test method can offer complete assurance that the specimens will not transmit these or other infectious diseases.

### Examinations

Specific antibodies:

EBV VCA AbG

EBV VCA AbM

EBV EBNA AbG

EBV IgG Avidity

Clinical interpretation

### Storage and use

After arrival, the samples should be stored at +2...8 °C, and used as soon as possible, preferably within a week. The samples are ready for use. Analyse as patient samples.

### Result reporting

Please enter the results and methods via LabScala (www.labscala.com). If you cannot find your instrument or reagent from the registry, please contact the EQA Coordinator. Report only the results of examinations that are in use in your laboratory. All reported examinations will be scored.

S001



S002



S003



2023-02-14

### INSTRUCTIONS

Product no. 5641

LQ773123011-013/FI

Subcontracting: Sample preparation, sample pretesting

If the kit is incomplete or contains damaged specimens, please report immediately to [info@labquality.fi](mailto:info@labquality.fi).

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The results should be reported no later than **March 9, 2023.**

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The expected results of the round are published in LabScala in the View Reports section by March 14, 2023.

### Inquiries

EQA Coordinator

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Client report

	No of participants	No of responded participants	Response percentage
EBV mononucleosis, specific antibodies, February, 1-2023	94	90	95.7 %

Summary

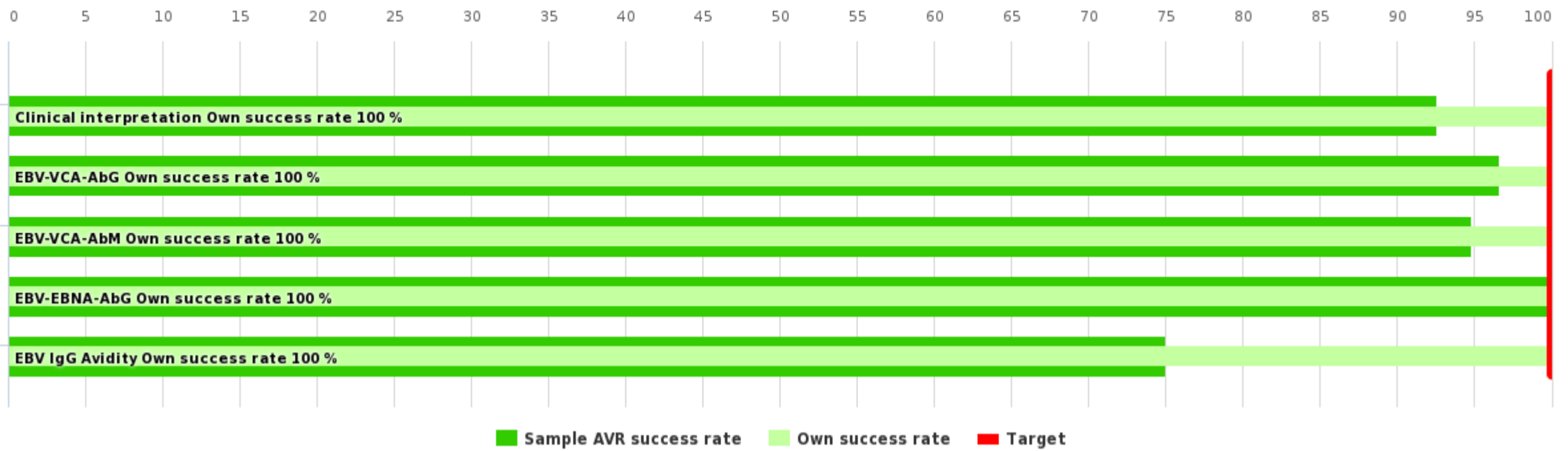


Summary	Own score	Max score	Own success rate	Difference	AVR success rate
Sample S001	12	12	100 %	4.7 %	95.3 %
Sample S002	12	12	100 %	1.5 %	98.5 %
Sample S003	12	12	100 %	0.5 %	99.5 %
Average:			100 %	2.2 %	97.8 %

History	Test nr.	Own success rate	Difference	AVR success rate
Round 2022-1	1-1	94.4 %	-1.1 %	95.5 %
Round 2021-1	1-1	100 %	5.7 %	94.3 %
Round 2020-3	1-1	100 %	2 %	98 %

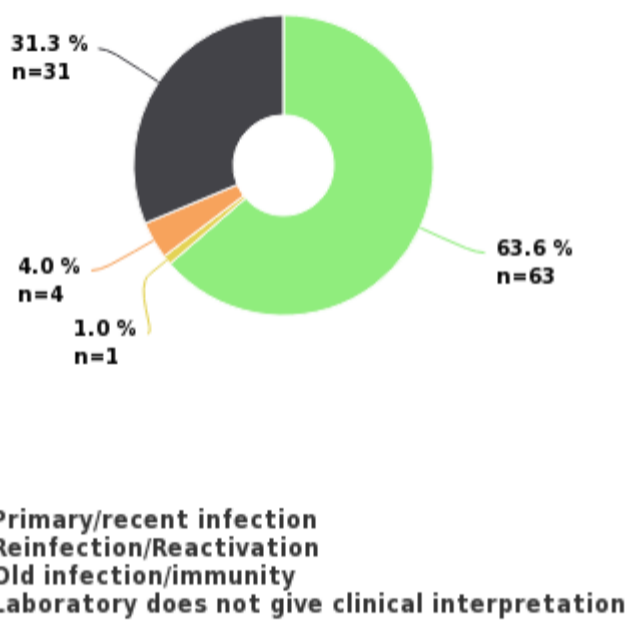
Sample S001

Sample S001 success rate



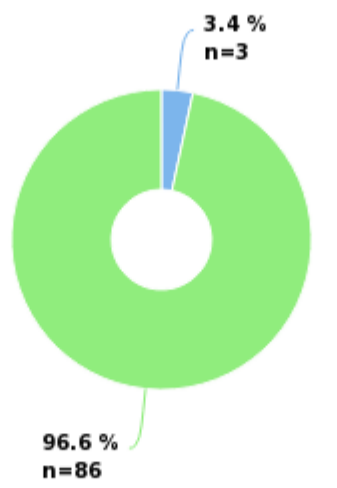
Sample S001 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	4	4	100 %	7.4 %	92.6 %	99
	EBV-VCA-AbG	2	2	100 %	3.4 %	96.6 %	89
	EBV-VCA-AbM	2	2	100 %	5.2 %	94.8 %	97
	EBV-EBNA-AbG	2	2	100 %	0 %	100 %	75
	EBV IgG Avidity	2	2	100 %	25 %	75 %	4
	Total:	12	12	100 %	4.7 %	95.3 %	364

Sample S001 Clinical interpretation



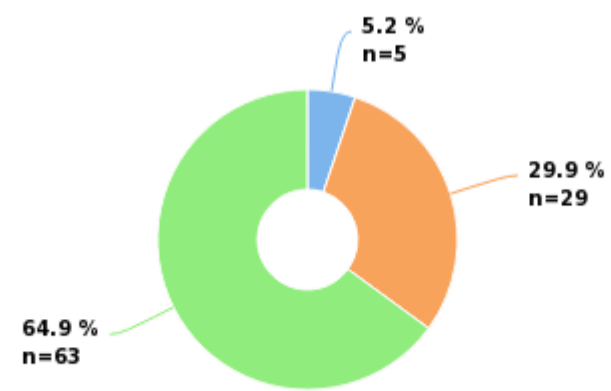
Clinical interpretation	Interpretation	Further action	Interpretation count	Further action count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Primary/recent infection		63		4	4	100 %	0 %	100 %
		New sample requested		18	-	-			
		Would be referred to another laboratory for further examination		5	-	-			
	Reinfection/Reactivation		1		-	-			0 %
	Old infection/immunity		4		-	-			0 %
		New sample requested		2	-	-			
	Laboratory does not give clinical interpretation		31		-	-			-
		Would be referred to another laboratory for further examination		5	-	-			
		New sample requested		5	-	-			
	Total:		99		4	4	100 %	7.4 %	92.6 %

Sample S001 EBV-VCA-AbG



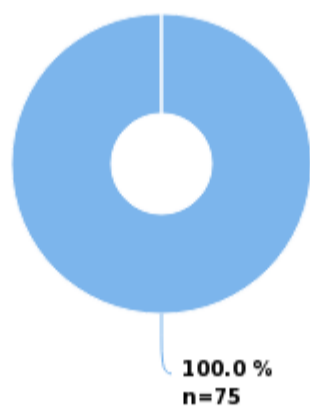
■ Negative ■ Positive

Sample S001 EBV-VCA-AbM



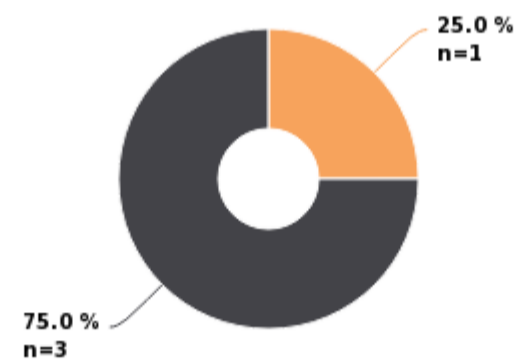
■ Negative ■ Borderline ■ Positive

Sample S001 EBV-EBNA-AbG



■ Negative

Sample S001 EBV IgG Avidity



■ Borderline ■ Weak avidity

OWN DEVICE: EUROIMMUN, IFA

EBV-VCA-AbG	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		3		-				0 %
		Diesse Chorus EPSTEIN-BARR VCA IgG		2					
		Vircell Virapid MONO M&G		1					
	<input checked="" type="radio"/> Positive		86		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-VCA IgG		11					
		Abbott Architect EBV-VCA IgG		12					
		BioMerieux Vidas EBV VCA/EA IgG		3					
		bioMérieux VIDAS EBV Panel		9					
		Diamedix EBV VCA IgG		1					
		DiaSorin LIAISON VCA IgG		36					
		Euroimmun Anti-EBV-CA ELISA IgG		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE IgG		1					
		NovaTec NovaLisa ELISA EBV-VCA IgG		1					
		Siemens Immulite EBV-VCA IgG		1					
		Siemens Novagnost EBV-VCA IgG		1					
		TestLine BLOT-LINE EBV IgG		1					
		TestLine CLIA EBV VCA IgG		1					
		TestLine EIA EBV VCA IgG		2					
		TestLine Microblot-Array EBV IgG		1					
		Vircell Virclia EBV VCA IgG monotest		2					
	Total:		89		2	2	100 %	3.4 %	96.6 %

OWN DEVICE: EUROIMMUN, IFA

EBV-VCA-AbM	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		5		-				0 %
		DiaSorin LIAISON EBV IgM		5					
	Borderline		29		-				100 %
		Abbott Alinity i EBV-VCA IgM		1					
		DiaSorin LIAISON EBV IgM		28					
	<input checked="" type="radio"/> Positive		63		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-VCA IgM		11					
		Abbott Architect EBV-VCA IgM		14					
		Bio-Rad Anti-EBV VCA IgM ELISA		3					
		BioMerieux Vidas EBV VCA IgM		3					
		bioMérieux VIDAS EBV Panel		11					
		Diamedix EBV VCA IgM		1					
		DiaSorin LIAISON EBV IgM		3					
		Diesse Chorus EPSTEIN-BARR VCA IgM II		2					
		Euroimmun Anti-EBV-CA ELISA IgM		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE IgM		1					
		NovaTec NovaLisa ELISA EBV-VCA IgM		1					
		Siemens Immulite EBV-VCA IgM		2					
		Siemens Novagnost EBV-VCA IgM		1					
		TestLine BLOT-LINE EBV IgM		1					
		TestLine CLIA EBV VCA IgM		1					
		TestLine EIA EBV VCA IgM		2					
		TestLine Microblot-Array EBV IgM		1					
		Vircell Virapid MONO M&G		1					
		Vircell Virclia EBV VCA IgM monotest		1					
	Total:		97		2	2	100 %	5.2 %	94.8 %

OWN DEVICE: EUROIMMUN, IFA

EBV-EBNA-AbG	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		75		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-EBNA-1		10					
		Abbott Architect EBV EBNA1 IgG		9					
		BioMerieux Vidas EBV EBNA IgG		4					
		bioMérieux VIDAS EBV Panel		7					
		DiaSorin LIAISON EBNA IgG		31					
		Diesse Chorus EPSTEIN-BARR EBNA IgG		2					
		EPSTEIN-BARR EBNA VIRCLIA IgG MONOTEST		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE EBNA IgG		1					
		NovaTec NovaLisa ELISA EBV-EBNA IgG		1					
		Siemens Novagnost EBV-EBNA IgG		1					
		TestLine BLOT-LINE EBV IgG		1					
		TestLine CLIA EBV EBNA-1 IgG		1					
		TestLine EIA EBV EBNA-1 IgG		2					
		TestLine Microblot-Array EBV IgG		1					
		Vircell Virapid MONO M&G		1					
	Total:		75		2	2	100 %	0 %	100 %

OWN DEVICE: EUROIMMUN, IFA

EBV IgG Avidity	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	Borderline		1		-				0 %
		In-house EIA		1					
	<input checked="" type="radio"/> Weak avidity		3		2	2	100 %	0 %	100 %

		Euroimmun Anti-EBV-CA ELISA IgG AVI		1					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		TestLine EIA EBV VCA IgG		1					
	Total:		4		2	2	100 %	25 %	75 %

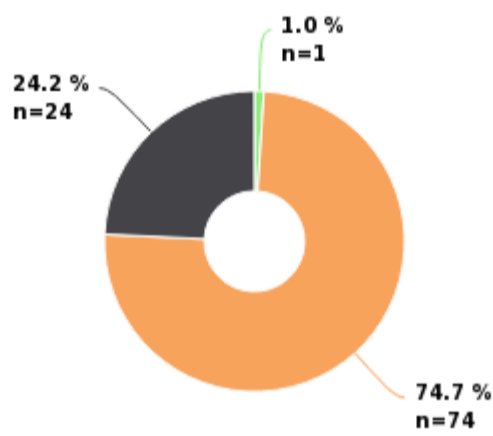
Sample S002

Sample S002 success rate



Sample S002 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	4	4	100 %	1.3 %	98.7 %	99
	EBV-VCA-AbG	2	2	100 %	0 %	100 %	87
	EBV-VCA-AbM	2	2	100 %	2.1 %	97.9 %	96
	EBV-EBNA-AbG	2	2	100 %	2.7 %	97.3 %	74
	EBV IgG Avidity	2	2	100 %	0 %	100 %	3
	Total:	12	12	100 %	1.5 %	98.5 %	359

Sample S002 Clinical interpretation



■ Primary/recent infection  
■ Old infection/immunity  
■ Laboratory does not give clinical interpretation

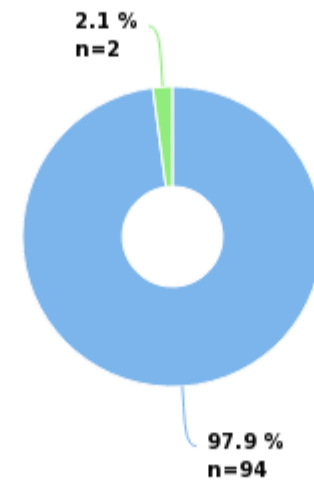
Clinical interpretation	Interpretation	Further action	Interpretation count	Further action count	Own score	Max score	Own success rate	Difference	AVR success rate
	Primary/recent infection		1		-	-			0 %
	<input checked="" type="radio"/> Old infection/immunity		74		4	4	100 %	0 %	100 %
		New sample requested		3	-	-			
		Would be referred to another laboratory for further examination		1	-	-			
	Laboratory does not give clinical interpretation		24		-	-			-
		New sample requested		1	-	-			
	Total:		99		4	4	100 %	1.3 %	98.7 %

Sample S002 EBV-VCA-AbG



Positive

Sample S002 EBV-VCA-AbM



Negative Positive

Sample S002 EBV-EBNA-AbG



Negative Positive

Sample S002 EBV IgG Avidity



Strong avidity

OWN DEVICE: EUROIMMUN, IFA

EBV-VCA-AbG	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		87		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-VCA IgG		10					
		Abbott Architect EBV-VCA IgG		12					
		BioMérieux Vidas EBV VCA/EA IgG		3					
		bioMérieux VIDAS EBV Panel		9					
		Diamedix EBV VCA IgG		1					
		DiaSorin LIAISON VCA IgG		35					
		Diesse Chorus EPSTEIN-BARR VCA IgG		2					
		Euroimmun Anti-EBV-CA ELISA IgG		2					
	<input checked="" type="radio"/> Euroimmun EBV IFA			1					
		Genzyme VIROTECH EBV LINE IgG		1					
		NovaTec NovaLisa ELISA EBV-VCA IgG		1					
		Siemens Immulite EBV-VCA IgG		1					
		Siemens Novagnost EBV-VCA IgG		1					
		TestLine BLOT-LINE EBV IgG		1					
		TestLine CLIA EBV VCA IgG		1					
		TestLine EIA EBV VCA IgG		2					
		TestLine Microblot-Array EBV IgG		1					
		Vircell Virapid MONO M&G		1					
		Vircell Virclia EBV VCA IgG monotest		2					
	Total:		87		2	2	100 %	0 %	100 %

OWN DEVICE: EUROIMMUN, IFA



EBV-VCA-AbM	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		94		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-VCA IgM		11					
		Abbott Architect EBV-VCA IgM		14					
		Bio-Rad Anti-EBV VCA IgM ELISA		3					
		BioMerieux Vidas EBV VCA IgM		3					
		bioMérieux VIDAS EBV Panel		11					
		Diamedix EBV VCA IgM		1					
		DiaSorin LIAISON EBV IgM		34					
		Diesse Chorus EPSTEIN-BARR VCA IgM II		2					
		Euroimmun Anti-EBV-CA ELISA IgM		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE IgM		1					
		NovaTec NovaLisa ELISA EBV-VCA IgM		1					
		Siemens Immulite EBV-VCA IgM		2					
		Siemens Novagnost EBV-VCA IgM		1					
		TestLine BLOT-LINE EBV IgM		1					
		TestLine CLIA EBV VCA IgM		1					
		TestLine EIA EBV VCA IgM		2					
		TestLine Microblot-Array EBV IgM		1					
		Vircell Virapid MONO M&G		1					
		Vircell Virclia EBV VCA IgM monotest		1					
	Positive		2		-				0 %
		DiaSorin LIAISON EBV IgM		2					
	Total:		96		2	2	100 %	2.1 %	97.9 %

OWN DEVICE: EUROIMMUN, IFA

EBV-EBNA-AbG	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		2		-				0 %
		DiaSorin LIAISON EBNA IgG		2					
	<input checked="" type="radio"/> Positive		72		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-EBNA-1		10					
		Abbott Architect EBV EBNA1 IgG		9					
		BioMerieux Vidas EBV EBNA IgG		4					
		bioMérieux VIDAS EBV Panel		7					
		DiaSorin LIAISON EBNA IgG		28					
		Diesse Chorus EPSTEIN-BARR EBNA IgG		2					
		EPSTEIN-BARR EBNA VIRCLIA IgG MONOTEST		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE EBNA IgG		1					
		NovaTec NovaLisa ELISA EBV-EBNA IgG		1					
		Siemens Novagnost EBV-EBNA IgG		1					
		TestLine BLOT-LINE EBV IgG		1					
		TestLine CLIA EBV EBNA-1 IgG		1					
		TestLine EIA EBV EBNA-1 IgG		2					
		TestLine Microblot-Array EBV IgG		1					
		Vircell Virapid MONO M&G		1					
	Total:		74		2	2	100 %	2.7 %	97.3 %

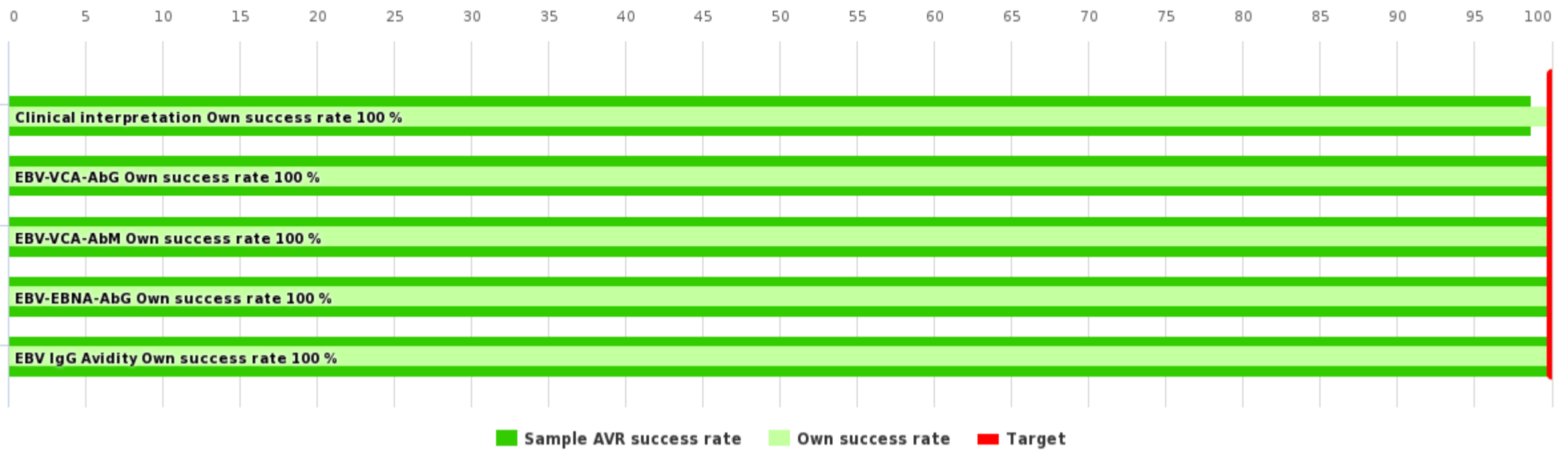
OWN DEVICE: EUROIMMUN, IFA

EBV IgG Avidity	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Strong avidity		3		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		In-house EIA		1					
		TestLine EIA EBV VCA IgG		1					

Total:		3		2	2	100 %	0 %	100 %
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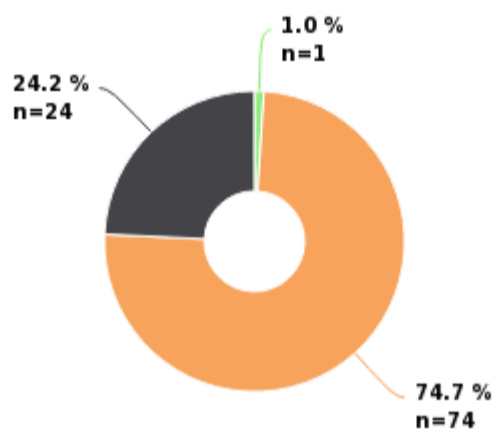
Sample S003

Sample S003 success rate



Sample S003 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	4	4	100 %	1.3 %	98.7 %	99
	EBV-VCA-AbG	2	2	100 %	0 %	100 %	88
	EBV-VCA-AbM	2	2	100 %	0 %	100 %	96
	EBV-EBNA-AbG	2	2	100 %	0 %	100 %	73
	EBV IgG Avidity	2	2	100 %	0 %	100 %	3
	Total:	12	12	100 %	0.5 %	99.5 %	359

Sample S003 Clinical interpretation



■ Primary/recent infection  
■ Old infection/immunity  
■ Laboratory does not give clinical interpretation

Clinical interpretation	Interpretation	Further action	Interpretation count	Further action count	Own score	Max score	Own success rate	Difference	AVR success rate
	Primary/recent infection		1		-	-			0 %
	<input checked="" type="radio"/> Old infection/immunity		74		4	4	100 %	0 %	100 %
		New sample requested		2	-	-			
		Would be referred to another laboratory for further examination		1	-	-			
	Laboratory does not give clinical interpretation		24		-	-			-
		New sample requested		1	-	-			
	Total:		99	1	4	4	100 %	1.3 %	98.7 %

Sample S003 EBV-VCA-AbG



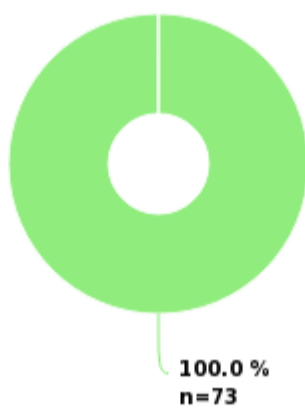
Positive

Sample S003 EBV-VCA-AbM



Negative

Sample S003 EBV-EBNA-AbG



Positive

Sample S003 EBV IgG Avidity



Strong avidity

OWN DEVICE: EUROIMMUN, IFA

EBV-VCA-AbG	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		88		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-VCA IgG		10					
		Abbott Architect EBV-VCA IgG		12					
		BioMerieux Vidas EBV VCA/EA IgG		3					
		bioMérieux VIDAS EBV Panel		9					
		Diamedix EBV VCA IgG		1					
		DiaSorin LIAISON VCA IgG		36					
		Diesse Chorus EPSTEIN-BARR VCA IgG		2					
		Euroimmun Anti-EBV-CA ELISA IgG		2					
	<input checked="" type="radio"/> Euroimmun EBV IFA			1					
		Genzyme VIROTECH EBV LINE IgG		1					
		NovaTec NovaLisa ELISA EBV-VCA IgG		1					
		Siemens Immulite EBV-VCA IgG		1					
		Siemens Novagnost EBV-VCA IgG		1					
		TestLine BLOT-LINE EBV IgG		1					
		TestLine CLIA EBV VCA IgG		1					
		TestLine EIA EBV VCA IgG		2					
		TestLine Microblot-Array EBV IgG		1					
		Vircell Virapid MONO M&G		1					
		Vircell Virclia EBV VCA IgG monotest		2					
	Total:		88		2	2	100 %	0 %	100 %

OWN DEVICE: EUROIMMUN, IFA

EBV-VCA-AbM	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		96		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-VCA IgM		11					
		Abbott Architect EBV-VCA IgM		14					
		Bio-Rad Anti-EBV VCA IgM ELISA		3					
		BioMérieux Vidas EBV VCA IgM		3					
		bioMérieux VIDAS EBV Panel		11					
		Diamedix EBV VCA IgM		1					
		DiaSorin LIAISON EBV IgM		36					
		Diesse Chorus EPSTEIN-BARR VCA IgM II		2					
		Euroimmun Anti-EBV-CA ELISA IgM		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE IgM		1					
		NovaTec NovaLisa ELISA EBV-VCA IgM		1					
		Siemens Immulite EBV-VCA IgM		2					
		Siemens Novagnost EBV-VCA IgM		1					
		TestLine BLOT-LINE EBV IgM		1					
		TestLine CLIA EBV VCA IgM		1					
		TestLine EIA EBV VCA IgM		2					
		TestLine Microblot-Array EBV IgM		1					
		Viracell Virapid MONO M&G		1					
		Viracell Virclia EBV VCA IgM monotest		1					
	Total:		96		2	2	100 %	0 %	100 %

OWN DEVICE: EUROIMMUN, IFA

EBV-EBNA-AbG	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		73		2	2	100 %	0 %	100 %
		Abbott Alinity i EBV-EBNA-1		10					
		Abbott Architect EBV EBNA1 IgG		9					
		BioMérieux Vidas EBV EBNA IgG		4					
		bioMérieux VIDAS EBV Panel		7					
		DiaSorin LIAISON EBNA IgG		29					
		Diesse Chorus EPSTEIN-BARR EBNA IgG		2					
		EPSTEIN-BARR EBNA VIRCLIA IgG MONOTEST		2					
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		Genzyme VIROTECH EBV LINE EBNA IgG		1					
		NovaTec NovaLisa ELISA EBV-EBNA IgG		1					
		Siemens Novagnost EBV-EBNA IgG		1					
		TestLine BLOT-LINE EBV IgG		1					
		TestLine CLIA EBV EBNA-1 IgG		1					
		TestLine EIA EBV EBNA-1 IgG		2					
		TestLine Microblot-Array EBV IgG		1					
		Viracell Virapid MONO M&G		1					
	Total:		73		2	2	100 %	0 %	100 %

OWN DEVICE: EUROIMMUN, IFA

EBV IgG Avidity	Interpretation	Method	Interpretation count	Method count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Strong avidity		3		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun EBV IFA		1					
		In-house EIA		1					
		TestLine EIA EBV VCA IgG		1					
	Total:		3		2	2	100 %	0 %	100 %

## Report Info

### PARTICIPANTS

Altogether 94 laboratories from 22 countries participated in this EQA round.

### REPORT INFO

The results are divided into groups according to the method stated by the laboratory and presented in laboratory-specific tables. Accepted results are marked with green color and laboratory's own result with a black radio button . In the scoring report you will find summaries of overall success rate and sample specific success rates (%). Sample specific interpretations are shown in pie diagrams as percentages and the total interpretation and methodic counts in the tables. If you have not reported any results you will get a note: "You have not responded in time, only global report is available."

For information on report interpretation and performance evaluation, please see the "EQAS Interpretation guidelines" in LabScala User instructions. In case you have any questions regarding the reports, please contact the EQA Coordinator.

### SCORING

The round is scored based on test results and clinical interpretations when 60% or more of the participants report the expected result and when at least three results are reported.

The following general rules are applied:

Correct/expected test result 2/2 points  
False/deviating test result 0/2 points  
Correct/expected clinical interpretation 4/4 points  
False/deviating clinical interpretation 0/4 points

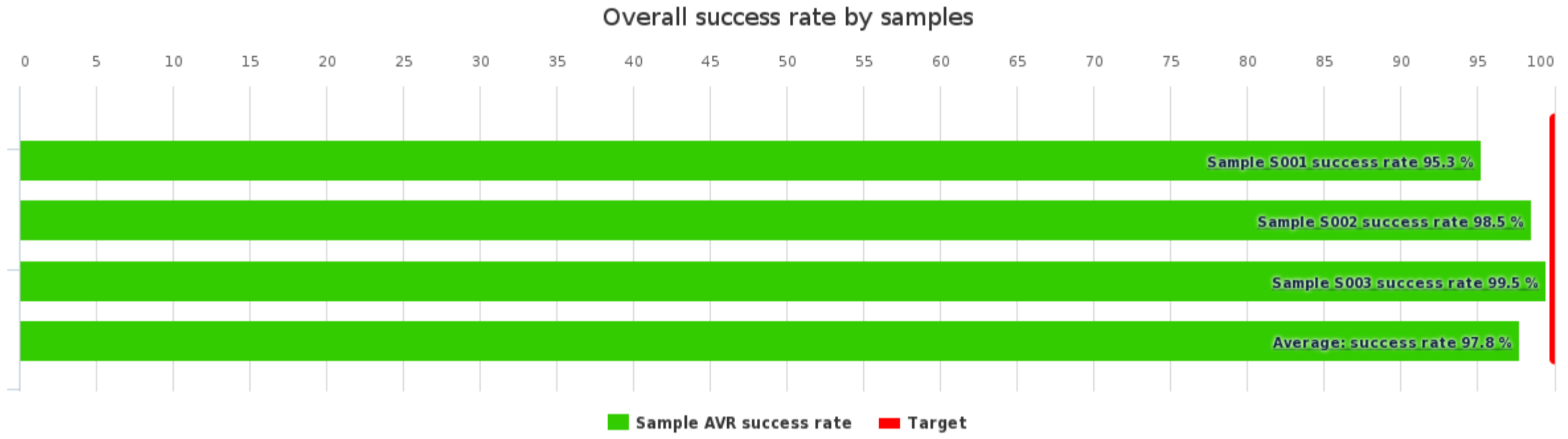
The performance of the laboratory is assessed by the Own success rate (%). The target is 100%. The examination-specific scores obtained by the laboratory in the round are converted to Own success rate per sample (scores/maximum scores\*100). The Laboratory's Own success rate is the average of the sample success rates.

The success rate for the entire round (AVR success rate) is calculated from the total number of scores given to the results per sample (all scores/maximum scores\*100). The AVG success rate of the entire round is the average of the sample success rates. The difference in the Laboratory's Own success rate (%) to the corresponding numbers for the entire round is shown in the table.

GLOBAL REPORT

	No of participants	No of responded participants	Response percentage
EBV mononucleosis, specific antibodies, February, 1-2023	94	90	95.7 %

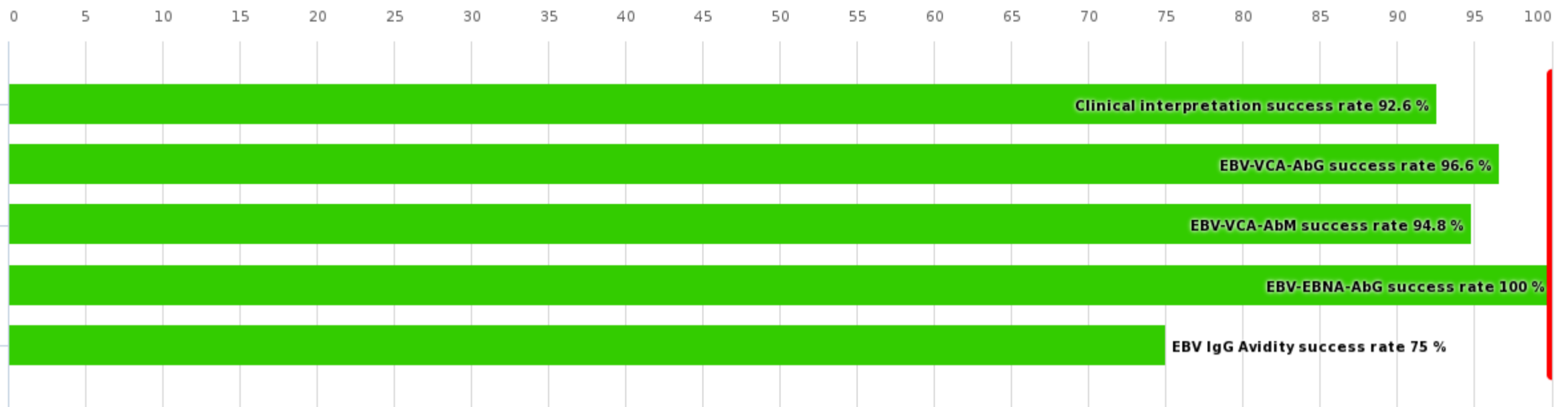
Summary



Summary	AVR success rate
Sample S001	95.3 %
Sample S002	98.5 %
Sample S003	99.5 %
Average:	97.8 %

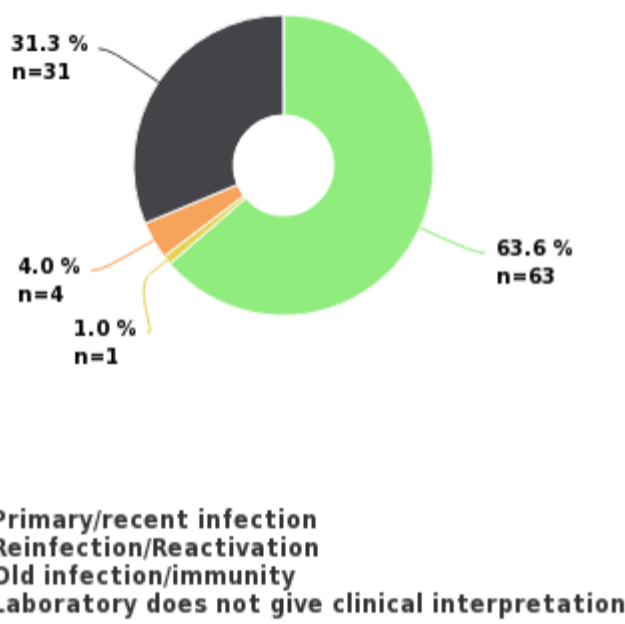
Sample S001

Sample S001 success rate



Sample S001 results	Responded	AVR success rate	Count
	Clinical interpretation	92.6 %	99
	EBV-VCA-AbG	96.6 %	89
	EBV-VCA-AbM	94.8 %	97
	EBV-EBNA-AbG	100 %	75
	EBV IgG Avidity	75 %	4
	Total:	95.3 %	364

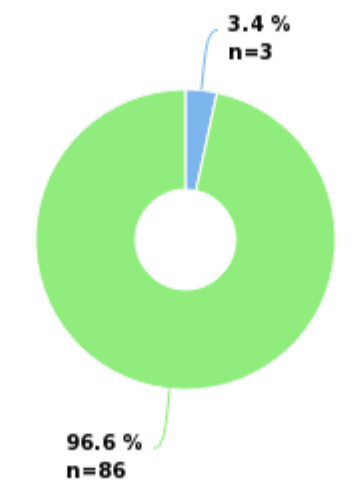
Sample S001 Clinical interpretation



Clinical interpretation	Interpretation	Further action	Interpretation count	Further action count	AVR success rate	Interpretation Score	Further action Score
	Primary/recent infection		63		100 %	4	
		New sample requested		18	-		-
		Would be referred to another laboratory for further examination		5	-		-
	Reinfection/Reactivation		1		0 %	0	
	Old infection/immunity		4		0 %	0	
		New sample requested		2	-		-
	Laboratory does not give clinical interpretation		31		-	-	
		Would be referred to another laboratory for further examination		5	-		-
		New sample requested		5	-		-
	Total:		99		92.6 %		

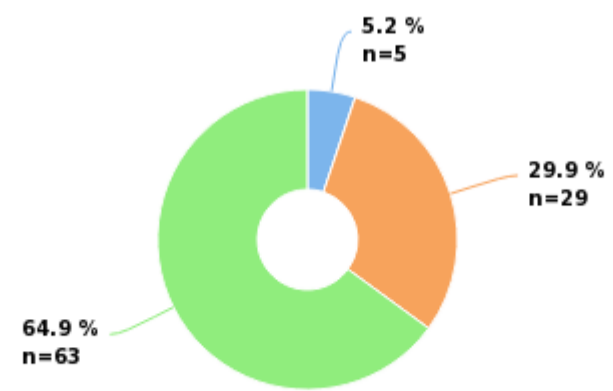


Sample S001 EBV-VCA-AbG



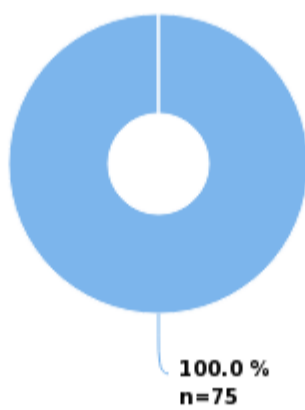
■ Negative ■ Positive

Sample S001 EBV-VCA-AbM



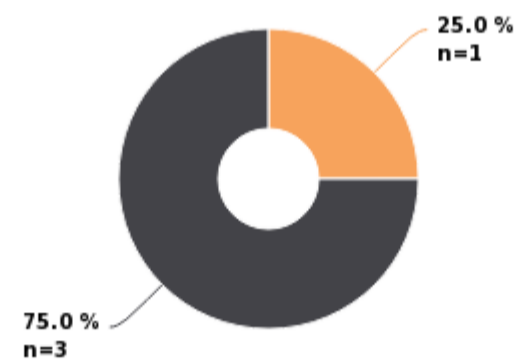
■ Negative ■ Borderline ■ Positive

Sample S001 EBV-EBNA-AbG



■ Negative

Sample S001 EBV IgG Avidity



■ Borderline ■ Weak avidity

EBV-VCA-AbG	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Negative		3		0 %	0
		Diesse Chorus EPSTEIN-BARR VCA IgG		2		
		Vircell Virapid MONO M&G		1		
	Positive		86		100 %	2
		Abbott Alinity i EBV-VCA IgG		11		
		Abbott Architect EBV-VCA IgG		12		
		BioMérieux Vidas EBV VCA/EA IgG		3		
		bioMérieux VIDAS EBV Panel		9		
		Diamedix EBV VCA IgG		1		
		DiaSorin LIAISON VCA IgG		36		
		Euroimmun Anti-EBV-CA ELISA IgG		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE IgG		1		
		NovaTec NovaLisa ELISA EBV-VCA IgG		1		
		Siemens Immulite EBV-VCA IgG		1		
		Siemens Novagnost EBV-VCA IgG		1		
		TestLine BLOT-LINE EBV IgG		1		
		TestLine CLIA EBV VCA IgG		1		
		TestLine EIA EBV VCA IgG		2		
		TestLine Microblot-Array EBV IgG		1		
		Vircell Virclia EBV VCA IgG monotest		2		
	Total:		89		96.6 %	

EBV-VCA-AbM	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Negative		5		0 %	0
		DiaSorin LIAISON EBV IgM		5		
	Borderline		29		100 %	2

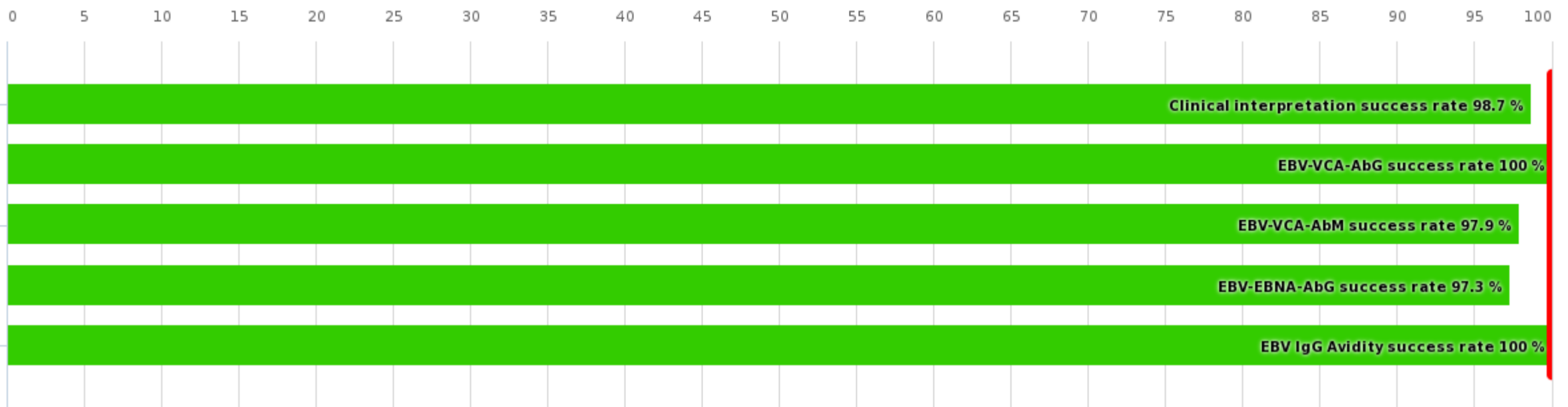
		Abbott Alinity i EBV-VCA IgM		1		
		DiaSorin LIAISON EBV IgM		28		
	Positive		63		100 %	2
		Abbott Alinity i EBV-VCA IgM		11		
		Abbott Architect EBV-VCA IgM		14		
		Bio-Rad Anti-EBV VCA IgM ELISA		3		
		BioMérieux Vidas EBV VCA IgM		3		
		bioMérieux VIDAS EBV Panel		11		
		Diamedix EBV VCA IgM		1		
		DiaSorin LIAISON EBV IgM		3		
		Diesse Chorus EPSTEIN-BARR VCA IgM II		2		
		Euroimmun Anti-EBV-CA ELISA IgM		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE IgM		1		
		NovaTec NovaLisa ELISA EBV-VCA IgM		1		
		Siemens Immulite EBV-VCA IgM		2		
		Siemens Novagnost EBV-VCA IgM		1		
		TestLine BLOT-LINE EBV IgM		1		
		TestLine CLIA EBV VCA IgM		1		
		TestLine EIA EBV VCA IgM		2		
		TestLine Microblot-Array EBV IgM		1		
		Vircell Virapid MONO M&G		1		
		Vircell Virclia EBV VCA IgM monotest		1		
	Total:		97		94.8 %	

EBV-EBNA-AbG	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Negative		75		100 %	2
		Abbott Alinity i EBV-EBNA-1		10		
		Abbott Architect EBV EBNA1 IgG		9		
		BioMérieux Vidas EBV EBNA IgG		4		
		bioMérieux VIDAS EBV Panel		7		
		DiaSorin LIAISON EBNA IgG		31		
		Diesse Chorus EPSTEIN-BARR EBNA IgG		2		
		EPSTEIN-BARR EBNA VIRCLIA IgG MONOTEST		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE EBNA IgG		1		
		NovaTec NovaLisa ELISA EBV-EBNA IgG		1		
		Siemens Novagnost EBV-EBNA IgG		1		
		TestLine BLOT-LINE EBV IgG		1		
		TestLine CLIA EBV EBNA-1 IgG		1		
		TestLine EIA EBV EBNA-1 IgG		2		
		TestLine Microblot-Array EBV IgG		1		
		Vircell Virapid MONO M&G		1		
	Total:		75		100 %	

EBV IgG Avidity	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Borderline		1		0 %	0
		In-house EIA		1		
	Weak avidity		3		100 %	2
		Euroimmun Anti-EBV-CA ELISA IgG AVI		1		
		Euroimmun EBV IFA		1		
		TestLine EIA EBV VCA IgG		1		
	Total:		4		75 %	

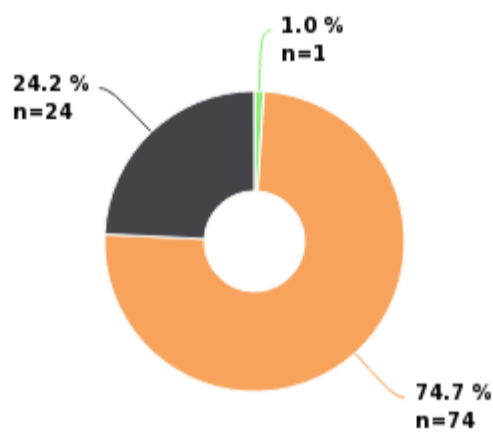
Sample S002

Sample S002 success rate



Sample S002 results	Responded	AVR success rate	Count
	Clinical interpretation	98.7 %	99
	EBV-VCA-AbG	100 %	87
	EBV-VCA-AbM	97.9 %	96
	EBV-EBNA-AbG	97.3 %	74
	EBV IgG Avidity	100 %	3
	<b>Total:</b>	<b>98.5 %</b>	<b>359</b>

Sample S002 Clinical interpretation



■ Primary/recent infection  
■ Old infection/immunity  
■ Laboratory does not give clinical interpretation

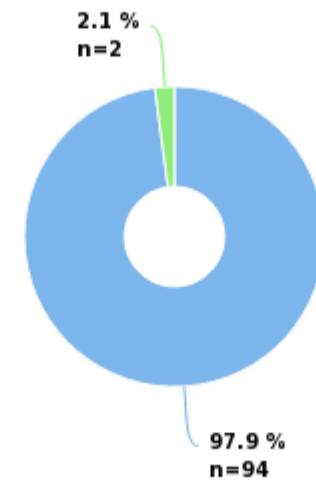
Clinical interpretation	Interpretation	Further action	Interpretation count	Further action count	AVR success rate	Interpretation Score	Further action Score
	Primary/recent infection		1		0 %	0	
	Old infection/immunity		74		100 %	4	
		New sample requested		3	-		-
		Would be referred to another laboratory for further examination		1	-		-
	Laboratory does not give clinical interpretation		24		-	-	
		New sample requested		1	-		-
	<b>Total:</b>		<b>99</b>		<b>98.7 %</b>		

Sample S002 EBV-VCA-AbG



Positive

Sample S002 EBV-VCA-AbM



Negative Positive

Sample S002 EBV-EBNA-AbG



Negative Positive

Sample S002 EBV IgG Avidity



Strong avidity

EBV-VCA-AbG	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Positive		87		100 %	2
		Abbott Alinity i EBV-VCA IgG		10		
		Abbott Architect EBV-VCA IgG		12		
		BioMérieux Vidas EBV VCA/EA IgG		3		
		bioMérieux VIDAS EBV Panel		9		
		Diamedix EBV VCA IgG		1		
		DiaSorin LIAISON VCA IgG		35		
		Diesse Chorus EPSTEIN-BARR VCA IgG		2		
		Euroimmun Anti-EBV-CA ELISA IgG		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE IgG		1		
		NovaTec NovaLisa ELISA EBV-VCA IgG		1		
		Siemens Immulite EBV-VCA IgG		1		
		Siemens Novagnost EBV-VCA IgG		1		
		TestLine BLOT-LINE EBV IgG		1		
		TestLine CLIA EBV VCA IgG		1		
		TestLine EIA EBV VCA IgG		2		
		TestLine Microblot-Array EBV IgG		1		
		Vircell Virapid MONO M&G		1		
		Vircell Virclia EBV VCA IgG monotest		2		
	Total:		87		100 %	

EBV-VCA-AbM	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Negative		94		100 %	2
		Abbott Alinity i EBV-VCA IgM		11		
		Abbott Architect EBV-VCA IgM		14		
		Bio-Rad Anti-EBV VCA IgM ELISA		3		

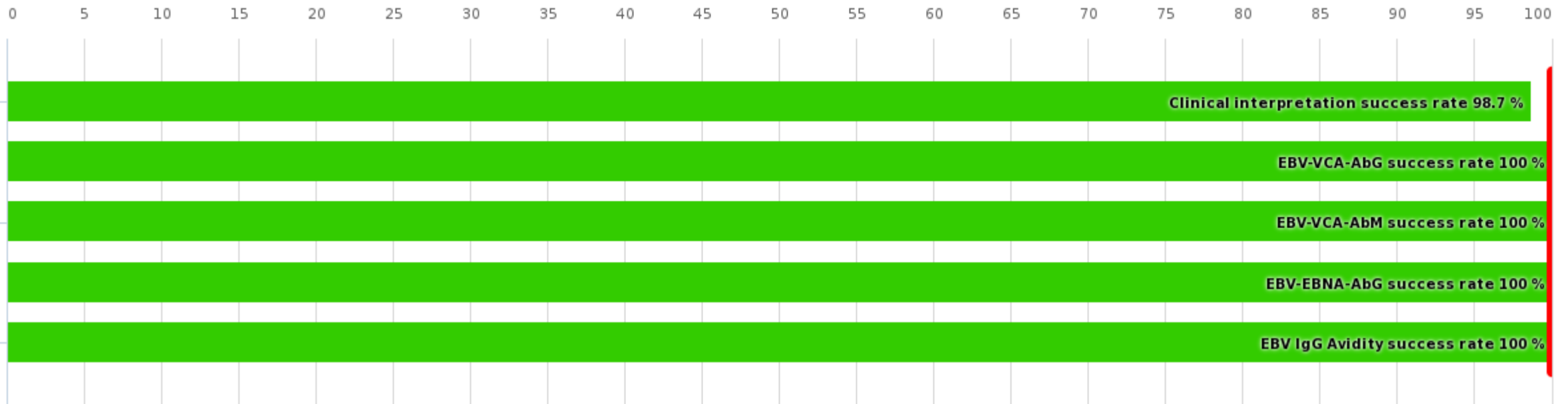
		BioMerieux Vidas EBV VCA IgM		3		
		bioMérieux VIDAS EBV Panel		11		
		Diamedix EBV VCA IgM		1		
		DiaSorin LIAISON EBV IgM		34		
		Diesse Chorus EPSTEIN-BARR VCA IgM II		2		
		Euroimmun Anti-EBV-CA ELISA IgM		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE IgM		1		
		NovaTec NovaLisa ELISA EBV-VCA IgM		1		
		Siemens Immulite EBV-VCA IgM		2		
		Siemens Novagnost EBV-VCA IgM		1		
		TestLine BLOT-LINE EBV IgM		1		
		TestLine CLIA EBV VCA IgM		1		
		TestLine EIA EBV VCA IgM		2		
		TestLine Microblot-Array EBV IgM		1		
		Vircell Virapid MONO M&G		1		
		Vircell Virclia EBV VCA IgM monotest		1		
	Positive		2		0 %	0
		DiaSorin LIAISON EBV IgM		2		
	Total:		96		97.9 %	

EBV-EBNA-AbG	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Negative		2		0 %	0
		DiaSorin LIAISON EBNA IgG		2		
	Positive		72		100 %	2
		Abbott Alinity i EBV-EBNA-1		10		
		Abbott Architect EBV EBNA1 IgG		9		
		BioMerieux Vidas EBV EBNA IgG		4		
		bioMérieux VIDAS EBV Panel		7		
		DiaSorin LIAISON EBNA IgG		28		
		Diesse Chorus EPSTEIN-BARR EBNA IgG		2		
		EPSTEIN-BARR EBNA VIRCLIA IgG MONOTEST		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE EBNA IgG		1		
		NovaTec NovaLisa ELISA EBV-EBNA IgG		1		
		Siemens Novagnost EBV-EBNA IgG		1		
		TestLine BLOT-LINE EBV IgG		1		
		TestLine CLIA EBV EBNA-1 IgG		1		
		TestLine EIA EBV EBNA-1 IgG		2		
		TestLine Microblot-Array EBV IgG		1		
		Vircell Virapid MONO M&G		1		
	Total:		74		97.3 %	

EBV IgG Avidity	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Strong avidity		3		100 %	2
		Euroimmun EBV IFA		1		
		In-house EIA		1		
		TestLine EIA EBV VCA IgG		1		
	Total:		3		100 %	

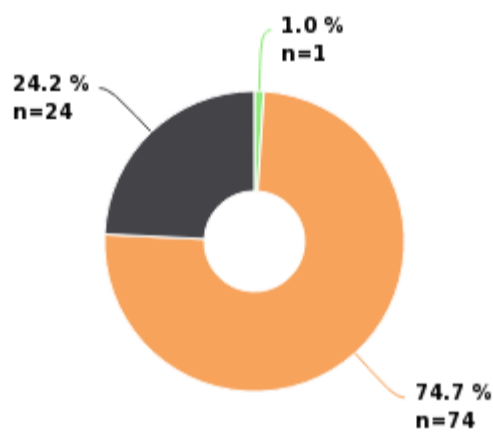
Sample S003

Sample S003 success rate



Sample S003 results	Responded	AVR success rate	Count
	Clinical interpretation	98.7 %	99
	EBV-VCA-AbG	100 %	88
	EBV-VCA-AbM	100 %	96
	EBV-EBNA-AbG	100 %	73
	EBV IgG Avidity	100 %	3
	Total:	99.5 %	359

Sample S003 Clinical interpretation



■ Primary/recent infection  
■ Old infection/immunity  
■ Laboratory does not give clinical interpretation

Clinical interpretation	Interpretation	Further action	Interpretation count	Further action count	AVR success rate	Interpretation Score	Further action Score
	Primary/recent infection		1		0 %	0	
	Old infection/immunity		74		100 %	4	
		New sample requested		2	-		-
		Would be referred to another laboratory for further examination		1	-		-
	Laboratory does not give clinical interpretation		24		-	-	
		New sample requested		1	-		-
	Total:		99		98.7 %		

Sample S003 EBV-VCA-AbG



Positive

Sample S003 EBV-VCA-AbM



Negative

Sample S003 EBV-EBNA-AbG



Positive

Sample S003 EBV IgG Avidity



Strong avidity

EBV-VCA-AbG	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Positive		88		100 %	2
		Abbott Alinity i EBV-VCA IgG		10		
		Abbott Architect EBV-VCA IgG		12		
		BioMérieux Vidas EBV VCA/EA IgG		3		
		bioMérieux VIDAS EBV Panel		9		
		Diamedix EBV VCA IgG		1		
		DiaSorin LIAISON VCA IgG		36		
		Diesse Chorus EPSTEIN-BARR VCA IgG		2		
		Euroimmun Anti-EBV-CA ELISA IgG		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE IgG		1		
		NovaTec NovaLisa ELISA EBV-VCA IgG		1		
		Siemens Immulite EBV-VCA IgG		1		
		Siemens Novagnost EBV-VCA IgG		1		
		TestLine BLOT-LINE EBV IgG		1		
		TestLine CLIA EBV VCA IgG		1		
		TestLine EIA EBV VCA IgG		2		
		TestLine Microblot-Array EBV IgG		1		
		Vircell Virapid MONO M&G		1		
		Vircell Virclia EBV VCA IgG monotest		2		
	Total:		88		100 %	

EBV-VCA-AbM	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Negative		96		100 %	2
		Abbott Alinity i EBV-VCA IgM		11		
		Abbott Architect EBV-VCA IgM		14		
		Bio-Rad Anti-EBV VCA IgM ELISA		3		

	BioMerieux Vidas EBV VCA IgM		3		
	bioMérieux VIDAS EBV Panel		11		
	Diamedix EBV VCA IgM		1		
	DiaSorin LIAISON EBV IgM		36		
	Diesse Chorus EPSTEIN-BARR VCA IgM II		2		
	Euroimmun Anti-EBV-CA ELISA IgM		2		
	Euroimmun EBV IFA		1		
	Genzyme VIROTECH EBV LINE IgM		1		
	NovaTec NovaLisa ELISA EBV-VCA IgM		1		
	Siemens Immulite EBV-VCA IgM		2		
	Siemens Novagnost EBV-VCA IgM		1		
	TestLine BLOT-LINE EBV IgM		1		
	TestLine CLIA EBV VCA IgM		1		
	TestLine EIA EBV VCA IgM		2		
	TestLine Microblot-Array EBV IgM		1		
	Vircell Virapid MONO M&G		1		
	Vircell Virclia EBV VCA IgM monotest		1		
	<b>Total:</b>		<b>96</b>		<b>100 %</b>

EBV-EBNA-AbG	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Positive		73		100 %	2
		Abbott Alinity i EBV-EBNA-1		10		
		Abbott Architect EBV EBNA1 IgG		9		
		BioMerieux Vidas EBV EBNA IgG		4		
		bioMérieux VIDAS EBV Panel		7		
		DiaSorin LIAISON EBNA IgG		29		
		Diesse Chorus EPSTEIN-BARR EBNA IgG		2		
		EPSTEIN-BARR EBNA VIRCLIA IgG MONOTEST		2		
		Euroimmun EBV IFA		1		
		Genzyme VIROTECH EBV LINE EBNA IgG		1		
		NovaTec NovaLisa ELISA EBV-EBNA IgG		1		
		Siemens Novagnost EBV-EBNA IgG		1		
		TestLine BLOT-LINE EBV IgG		1		
		TestLine CLIA EBV EBNA-1 IgG		1		
		TestLine EIA EBV EBNA-1 IgG		2		
		TestLine Microblot-Array EBV IgG		1		
		Vircell Virapid MONO M&G		1		
	<b>Total:</b>		<b>73</b>		<b>100 %</b>	

EBV IgG Avidity	Interpretation	Method	Interpretation count	Method count	AVR success rate	Interpretation Score
	Strong avidity		3		100 %	2
		Euroimmun EBV IFA		1		
		In-house EIA		1		
		TestLine EIA EBV VCA IgG		1		
	<b>Total:</b>		<b>3</b>		<b>100 %</b>	



## Report Info

### PARTICIPANTS

Altogether 94 laboratories from 22 countries participated in this EQA round.

### REPORT INFO

The results are divided into groups according to the method stated by the laboratory and presented in laboratory-specific tables. Accepted results are marked with green color and laboratory's own result with a black radio button . In the scoring report you will find summaries of overall success rate and sample specific success rates (%). Sample specific interpretations are shown in pie diagrams as percentages and the total interpretation and methodic counts in the tables. If you have not reported any results you will get a note: "You have not responded in time, only global report is available."

For information on report interpretation and performance evaluation, please see the "EQAS Interpretation guidelines" in LabScala User instructions. In case you have any questions regarding the reports, please contact the EQA Coordinator.

### SCORING

The round is scored based on test results and clinical interpretations when 60% or more of the participants report the expected result and when at least three results are reported.

The following general rules are applied:

Correct/expected test result 2/2 points  
False/deviating test result 0/2 points  
Correct/expected clinical interpretation 4/4 points  
False/deviating clinical interpretation 0/4 points

The performance of the laboratory is assessed by the Own success rate (%). The target is 100%. The examination-specific scores obtained by the laboratory in the round are converted to Own success rate per sample (scores/maximum scores\*100). The Laboratory's Own success rate is the average of the sample success rates.

The success rate for the entire round (AVR success rate) is calculated from the total number of scores given to the results per sample (all scores/maximum scores\*100). The AVG success rate of the entire round is the average of the sample success rates. The difference in the Laboratory's Own success rate (%) to the corresponding numbers for the entire round is shown in the table.

External Quality Assessment Scheme

## EBV mononucleosis, specific antibodies Round 1, 2023

### Specimens

Samples of this EQA round were human plasma, each of which originated from a single donor. Based on the pre-testing and the results obtained in the round, the samples were homogeneous, stable and suitable for the external quality assessment scheme. The materials were sent without temperature control packaging.

The expected results were as follows:

#### Sample S001 (LQ773123011)

EBVAbG	Positive
EBVAbM	Positive
EBNA-IgG	Negative
Avidity, IgG	Weak
Clinical interpretation	Primary/recent infection

#### Sample S002 (LQ773123012)

EBVAbG	Positive
EBVAbM	Negative
EBNA-IgG	Positive
Avidity, IgG	Strong
Clinical interpretation	Old infection/immunity

#### Sample S003 (LQ773123013)

EBVAbG	Positive
EBVAbM	Negative
EBNA-IgG	Positive
Avidity, IgG	Strong
Clinical interpretation	Old infection/immunity

Pre-test methods: Euroimmun Anti-EBV-CA ELISA IgG and IgM, Euroimmun Anti-EBV-CA ELISA IgG AVI and Premier EBV-NA IgG ELISA.

### Report info

Please see the description of the data analysis on the last page of the laboratory-specific reports and global reports. It is important to read the Final report first, because it contains important information of the samples and results in each round.

### Comments – Expert

In the first round of the year, a total of 94 sets of samples were distributed for testing with 90 (95.7%) participants reporting results within the specified period. As usual, some laboratories reported results from various testing methods.

For sample S001, 96.6% of the laboratories reported a positive result for EBVAbG. Of the reported results for the EBVAbM analyte, 64.9% were positive and 29.9% were borderline. The majority of borderline results (96.6%) were determined using a specific method (DiaSorin LIAISON EBV IgM). This observation may be explained by the method's analyte-specific settings, as the numerical values of borderline results corresponded to positive results. Therefore, borderline results were also scored 2/2 p. All laboratories performing the EBNA-IgG assay reported the expected negative result. Four laboratories performed the EBV IgG avidity test, of which three (75%) reported the correct result as weak avidity. Of those who reported clinical interpretation, 92.6% provided the expected result (primary/recent infection).

2023-03-15

### FINAL REPORT

Product no. 5641

Subcontracting: Sample preparation,  
sample pretesting

Samples sent	2023-02-14
Round closed	2023-03-09
Expected results	2023-03-14
Final report	2023-03-15

### Request for correction

Typing errors in laboratory's result forms are on laboratory's responsibility. Labquality accepts responsibility only for result processing. Requests must be notified by writing within three weeks from the date of this letter.

### Authorized by

EQA Coordinator  
Kati Luiro  
kati.luiro@labquality.fi

### Expert

PhD, Clinical Microbiologist  
Jari Martelin,  
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www.labquality.com



For sample S002, the expected results of positive EBVAbG and negative EBVAbM were reported by 100% and 97.9% of the participant, respectively. Of those who performed the EBNA-IgG assay, 97.3% reported the expected positive result. Only three laboratories reported EBV IgG avidity results, all of which correctly reported strong avidity. Of those who reported clinical interpretation, 98.7% provided the expected result (old infection/immunity).

For sample S003, all results for the three most determined analytes (EBVAbM, EBVAbG, and EBNA-IgG) were correctly reported as negative, positive, and positive, respectively. Three participants reported results for the EBV IgG avidity, all of which correctly reported strong avidity. Of those who reported clinical interpretation, 98.7% provided the expected result (old infection/immunity).

#### **Exceptions in scoring**

The borderline EBVAbM results of sample S001 were scored 2/2 p. as the positive results.

#### **End of report**