

External Quality Assessment Scheme

Puumala virus, antibodies Round 1, 2023

Specimens

Please find enclosed 3 human serum samples S001, S002 and S003, each 0.3 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.

Background information

Sample S001

A 62-year-old male with headache.

Sample S002

A 23-year-old female with hematuria and joint pain.

Sample S003

A 41-year-old male with thrombocytopenia and fever.

Examinations

Puumala virus IgG antibodies

Puumala virus IgM antibodies + POCT

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 results of examinations that are in use in your laboratory. All reported examinations will be scored.

S001



S002



S003



2023-02-22

INSTRUCTIONS

Product no. 5560

LQ774023011-013/FI

Subcontracting: Sample preparation, sample pretesting

If the kit is incomplete or contains damaged specimens, please report immediately to info@labquality.fi.

The results should be reported no later than **March 23, 2023.**

The expected results of the round are published in LabScala in the View Reports section by March 28, 2023.

Inquiries

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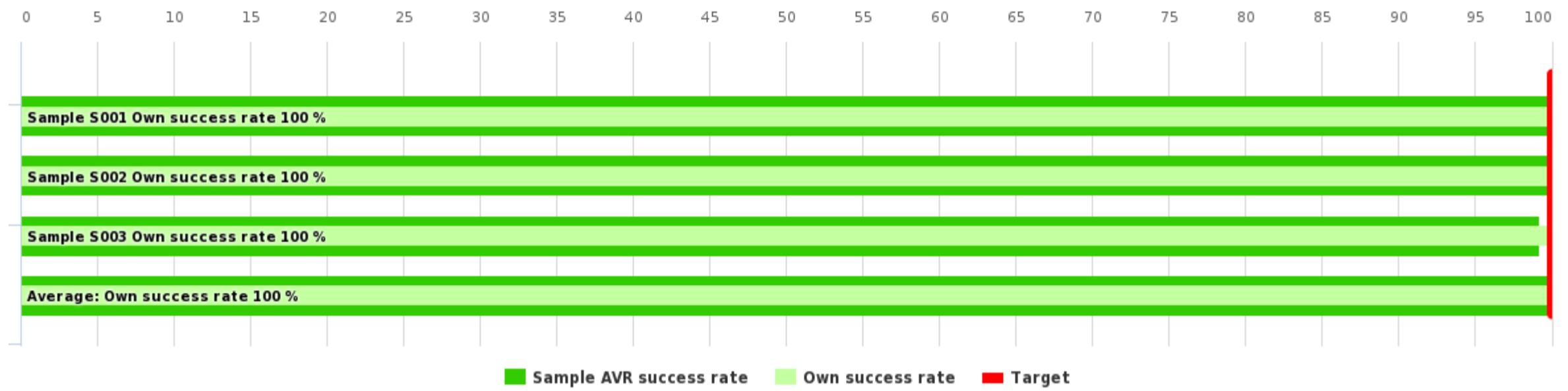


Client report

	No of participants	No of responded participants	Response percentage
Puumala virus, antibodies, March, 1-2023	53	53	100 %

Summary Result 1

Overall success rate by samples

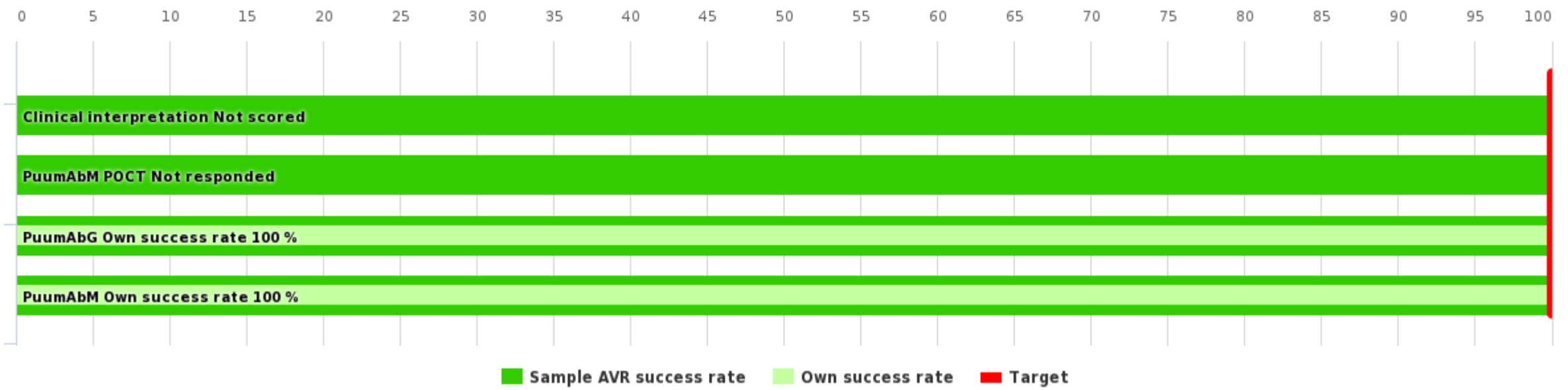


Summary	Own score	Max score	Own success rate	Difference	AVR success rate
Sample S001	4	4	100 %	0 %	100 %
Sample S002	4	4	100 %	0 %	100 %
Sample S003	4	4	100 %	0.8 %	99.2 %
Average:			100 %	0.3 %	99.7 %

History	Test nr.	Own success rate	Difference	AVR success rate
History not found				

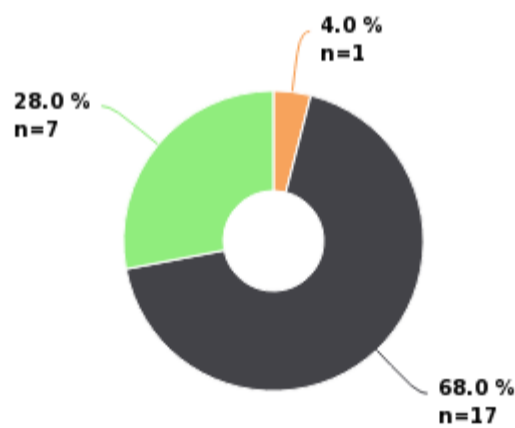
Sample S001 Result 1

Sample S001 success rate



Sample S001 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	100 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	Total:	4	4	100 %	0 %	100 %	109

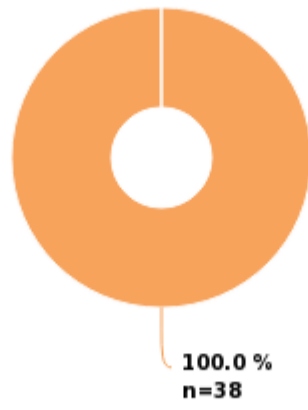
Sample S001 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

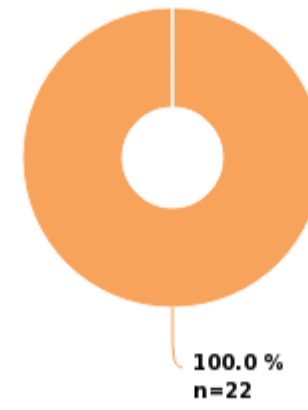
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	No indication of acute/recent infection	1	-	-	-	-	100 %
	No detectable antibodies	17	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S001 PuumAbM POCT



■ Negative

Sample S001 PuumAbG



■ Negative

Sample S001 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		38		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		32					
	Total:		38		-	-	-	-	100 %

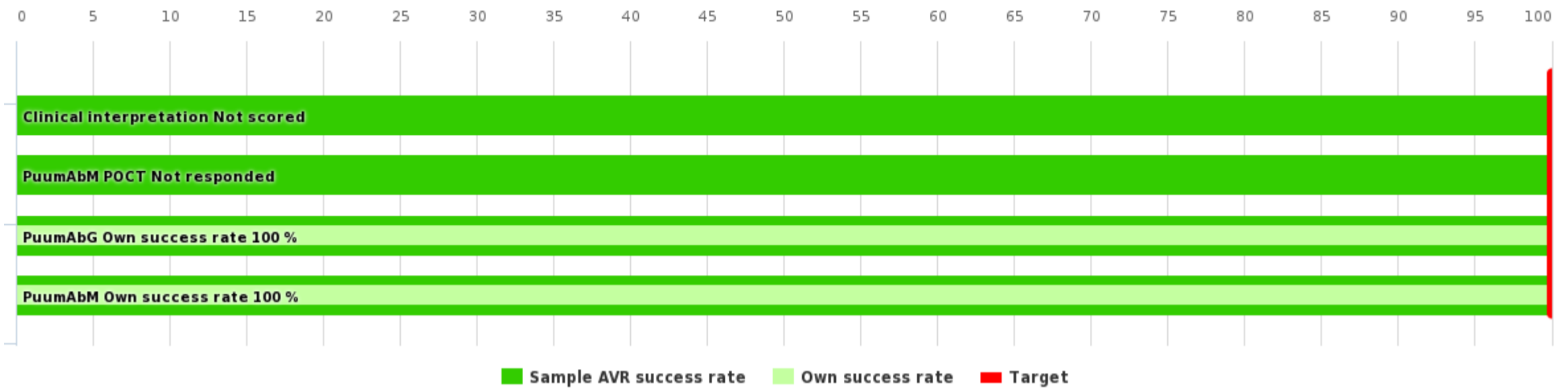
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		22		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		24		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					

		Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

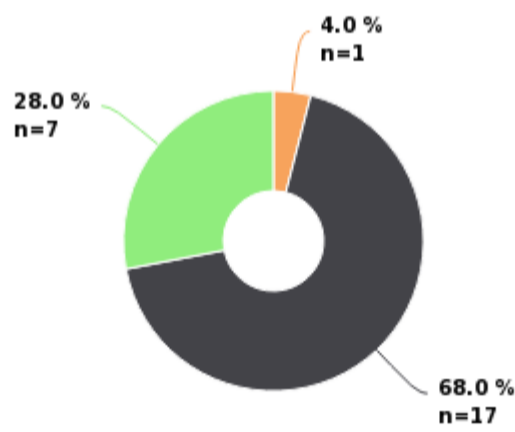
Sample S002 Result 1

Sample S002 success rate



Sample S002 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	100 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	Total:	4	4	100 %	0 %	100 %	109

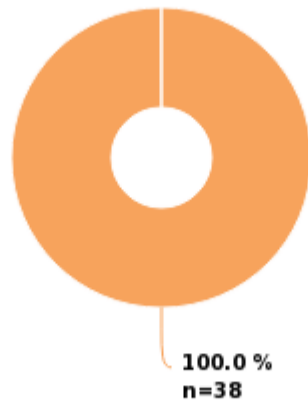
Sample S002 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

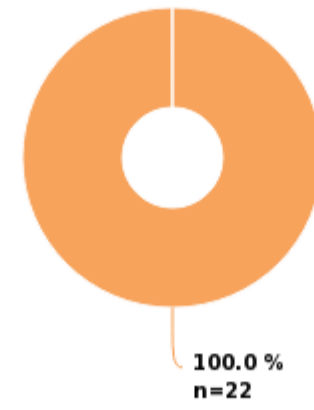
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	No indication of acute/recent infection	1	-	-	-	-	100 %
	No detectable antibodies	17	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S002 PuumAbM POCT



■ Negative

Sample S002 PuumAbG



■ Negative

Sample S002 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		38		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		32					
	Total:		38		-	-	-	-	100 %

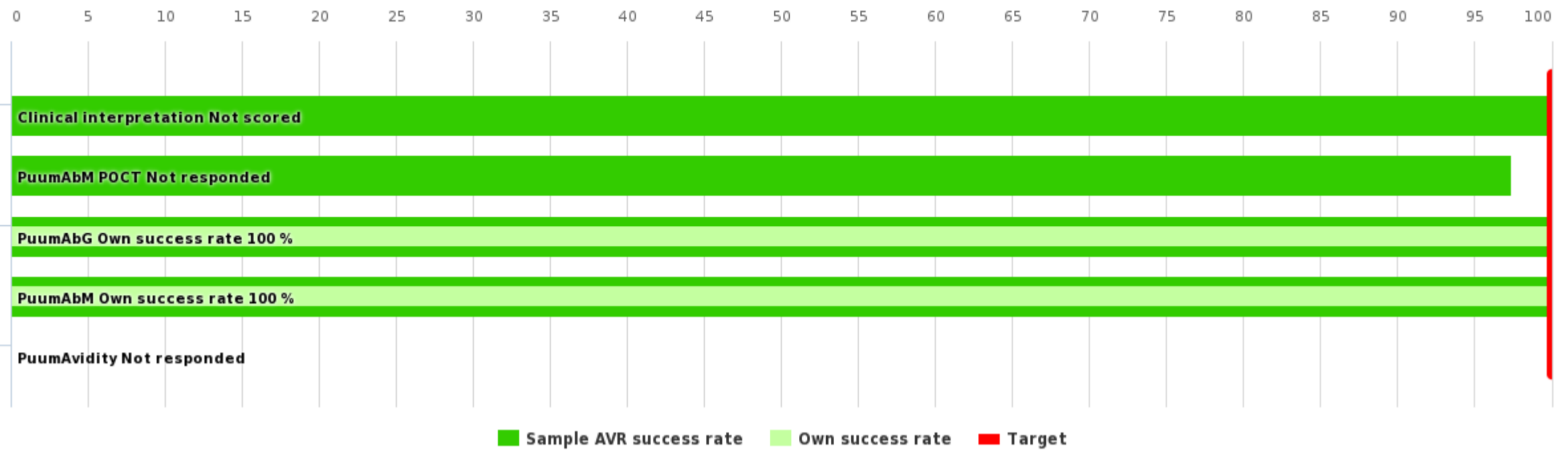
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		22		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		24		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					

		Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

Sample S003 Result 1

Sample S003 success rate



Sample S003 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	97.4 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	PuumAvidity	-	-	-	-	-	1
	Total:	4	4	100 %	0.8 %	99.2 %	110

Sample S003 Clinical interpretation



■ Acute/recent infection
■ Laboratory does not give clinical interpretation

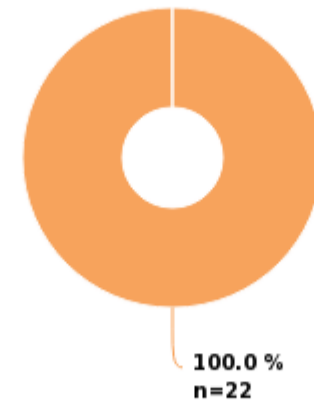
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	Acute/recent infection	18	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S003 PuumAbM POCT



Legend: Negative (orange), Positive (dark grey)

Sample S003 PuumAbG



Legend: Positive (orange)

Sample S003 PuumAbM



Legend: Positive (orange)

Sample S003 PuumAvidity



Legend: Weak avidity (orange)

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		1		-				0 %
		Reagentia ReaScan+ PUUMALA IgM		1					
	Positive		37		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		31					
	Total:		38		-	-	-	-	97.4 %

PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		22		2	2	100 %	0 %	100 %
		<input checked="" type="radio"/> Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		24		2	2	100 %	0 %	100 %

		⊙ Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagenia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

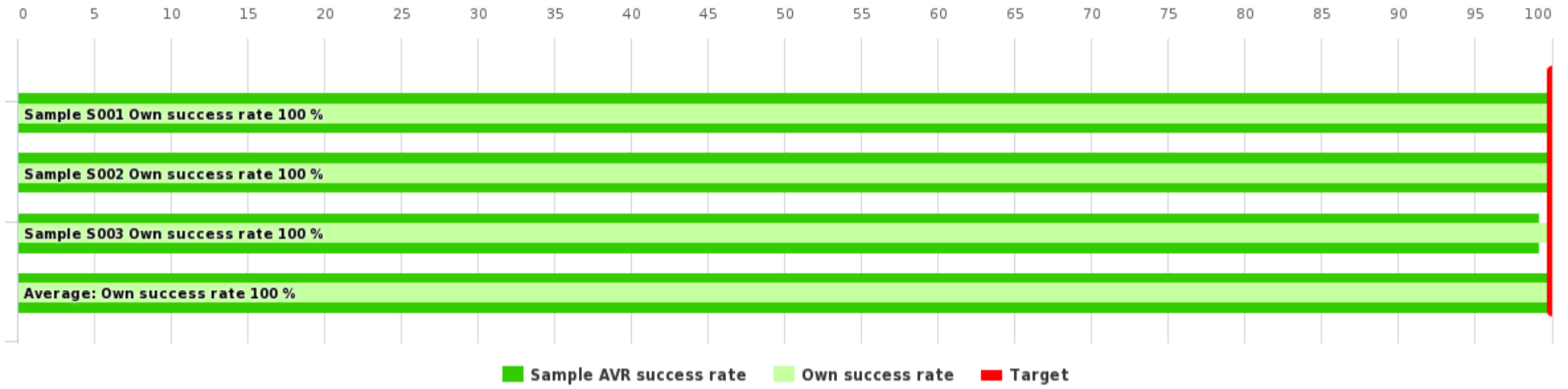
PuumAvidity	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Weak avidity		1		-				-
		In-house IFA		1					
	Total:		1		-	-	-	-	

Client report

	No of participants	No of responded participants	Response percentage
Puumala virus, antibodies, March, 1-2023	53	53	100 %

Summary Result 2

Overall success rate by samples

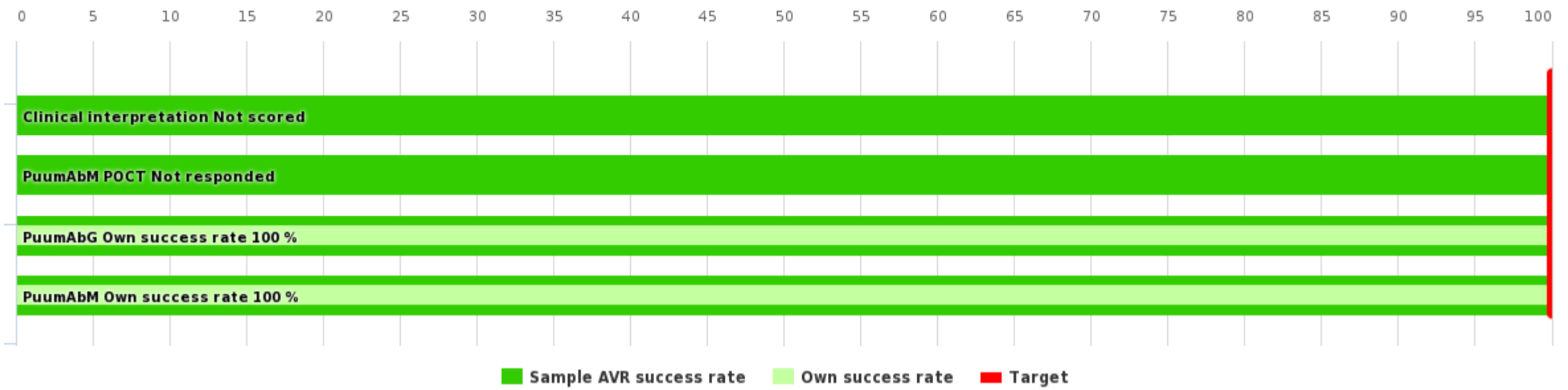


Summary	Own score	Max score	Own success rate	Difference	AVR success rate
Sample S001	4	4	100 %	0 %	100 %
Sample S002	4	4	100 %	0 %	100 %
Sample S003	4	4	100 %	0.8 %	99.2 %
Average:			100 %	0.3 %	99.7 %

History	Test nr.	Own success rate	Difference	AVR success rate
History not found				

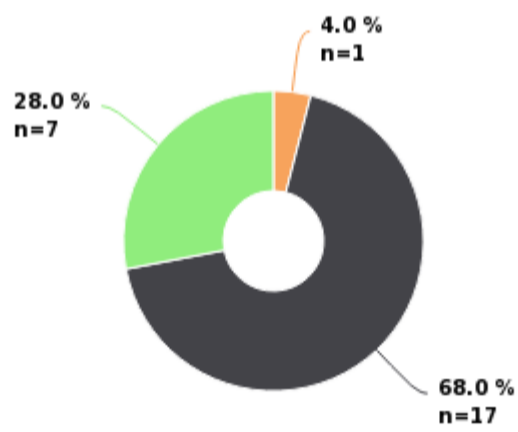
Sample S001 Result 2

Sample S001 success rate



Sample S001 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	100 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	Total:	4	4	100 %	0 %	100 %	109

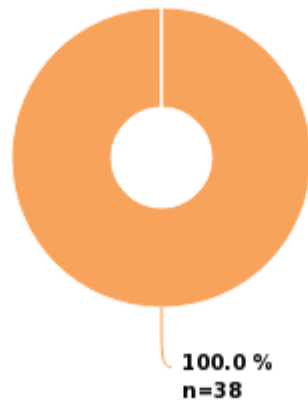
Sample S001 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

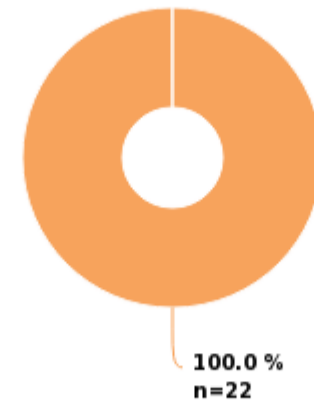
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	No indication of acute/recent infection	1	-	-	-	-	100 %
	No detectable antibodies	17	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S001 PuumAbM POCT



■ Negative

Sample S001 PuumAbG



■ Negative

Sample S001 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		38		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		32					
	Total:		38		-	-	-	-	100 %

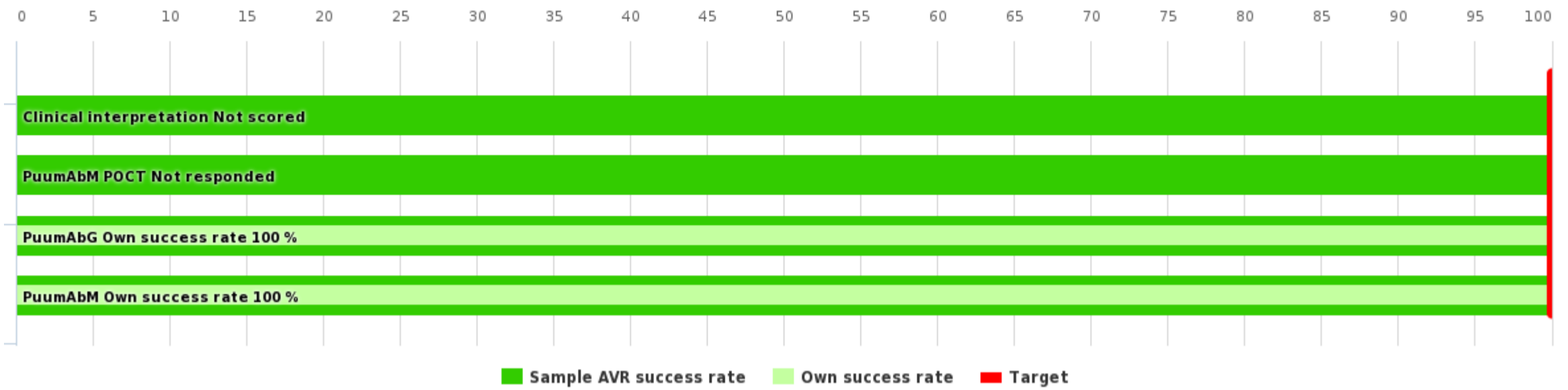
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		22		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		<input checked="" type="radio"/> Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		24		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					

		● Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

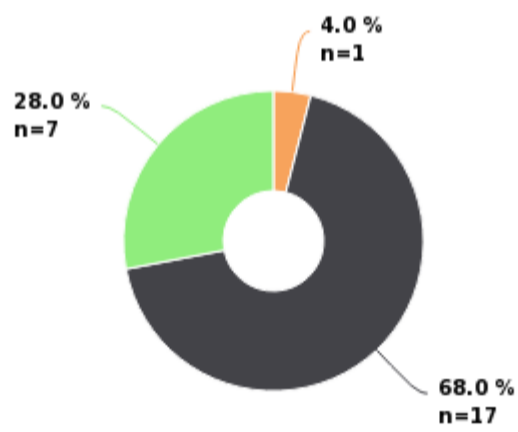
Sample S002 Result 2

Sample S002 success rate



Sample S002 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	100 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	Total:	4	4	100 %	0 %	100 %	109

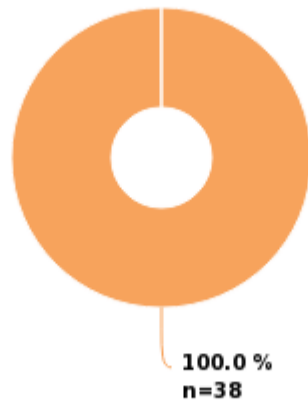
Sample S002 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

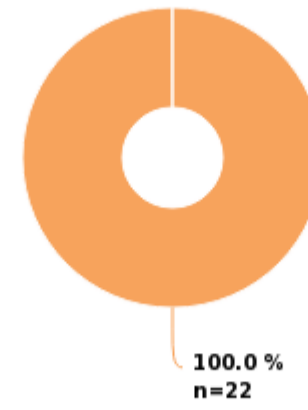
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	No indication of acute/recent infection	1	-	-	-	-	100 %
	No detectable antibodies	17	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S002 PuumAbM POCT



■ Negative

Sample S002 PuumAbG



■ Negative

Sample S002 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		38		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		32					
	Total:		38		-	-	-	-	100 %

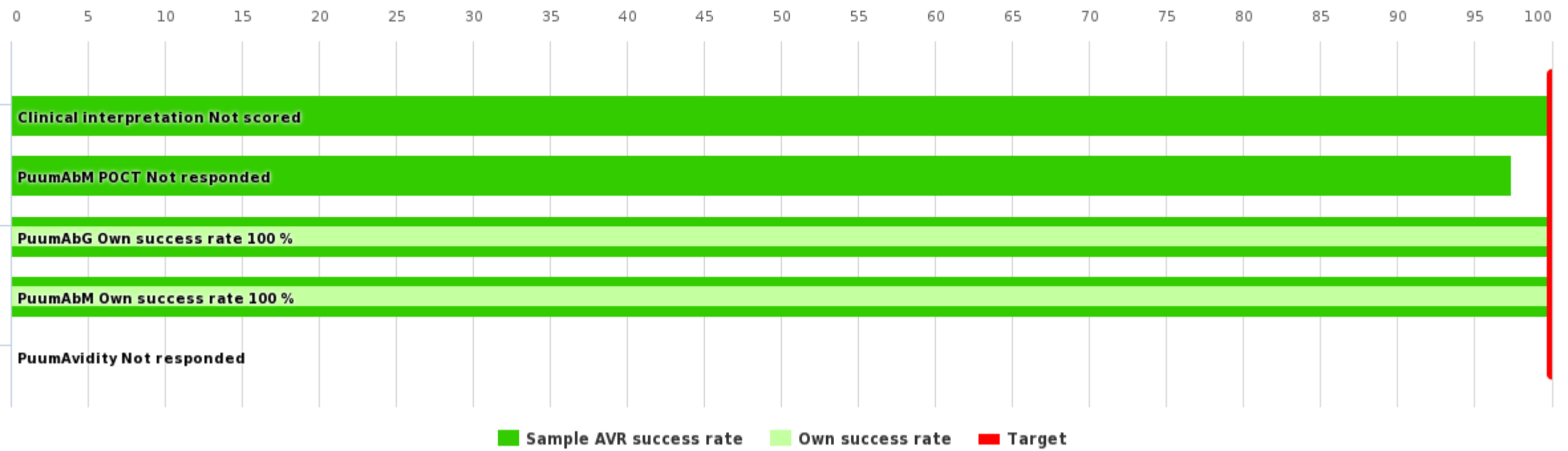
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		22		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		<input checked="" type="radio"/> Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		24		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					

		● Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

Sample S003 Result 2

Sample S003 success rate



Sample S003 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	97.4 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	PuumAvidity	-	-	-	-	-	1
	Total:	4	4	100 %	0.8 %	99.2 %	110

Sample S003 Clinical interpretation



■ Acute/recent infection
■ Laboratory does not give clinical interpretation

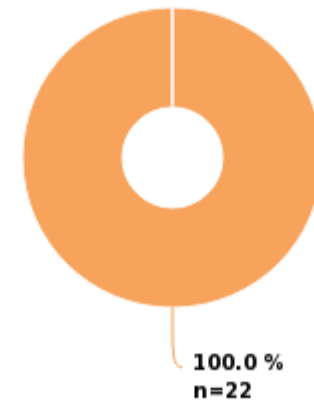
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	Acute/recent infection	18	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S003 PuumAbM POCT



■ Negative ■ Positive

Sample S003 PuumAbG



■ Positive

Sample S003 PuumAbM



■ Positive

Sample S003 PuumAvidity



■ Weak avidity

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		1		-				0 %
		Reagentia ReaScan+ PUUMALA IgM		1					
	Positive		37		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		31					
	Total:		38		-	-	-	-	97.4 %

PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		22		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		<input checked="" type="radio"/> Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		24		2	2	100 %	0 %	100 %

		Euroimmun Hantavirus ELISA		4					
		Euroimmun Hantavirus EUROLINE		2					
		<input checked="" type="radio"/> Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagenia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

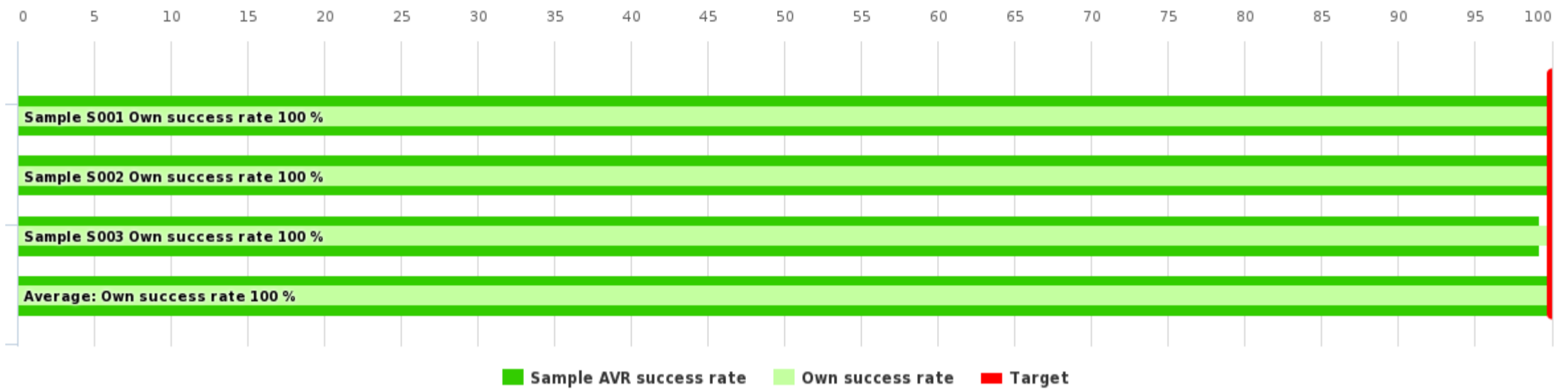
PuumAvidity	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Weak avidity		1		-				-
		In-house IFA		1					
	Total:		1		-	-	-	-	

Client report

	No of participants	No of responded participants	Response percentage
Puumala virus, antibodies, March, 1-2023	53	53	100 %

Summary Result 3

Overall success rate by samples

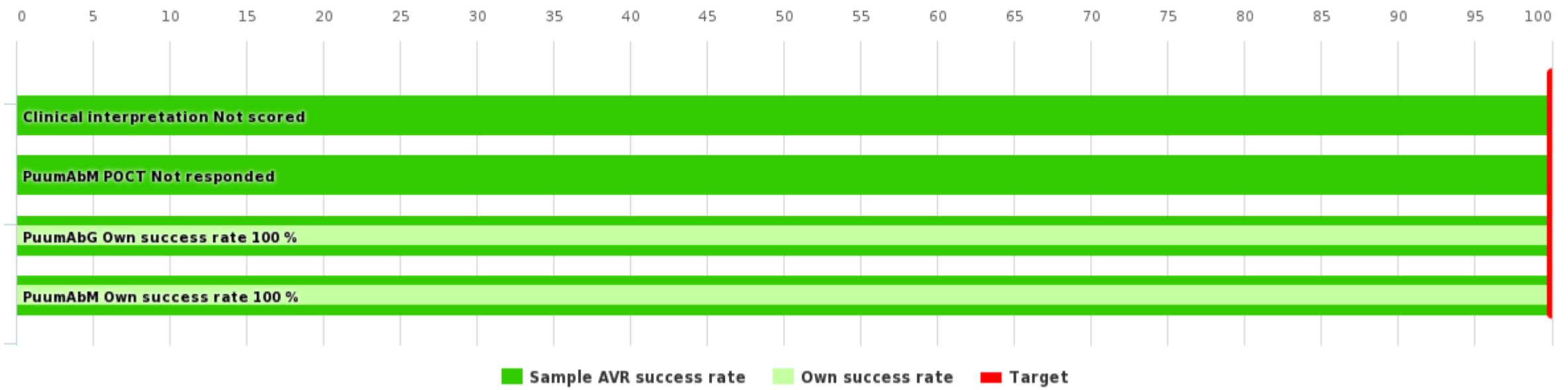


Summary	Own score	Max score	Own success rate	Difference	AVR success rate
Sample S001	4	4	100 %	0 %	100 %
Sample S002	4	4	100 %	0 %	100 %
Sample S003	4	4	100 %	0.8 %	99.2 %
Average:			100 %	0.3 %	99.7 %

History	Test nr.	Own success rate	Difference	AVR success rate
History not found				

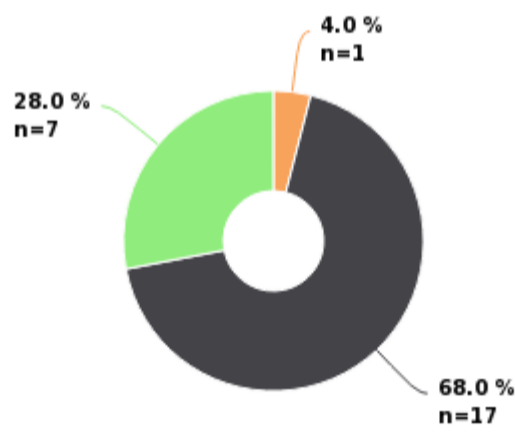
Sample S001 Result 3

Sample S001 success rate



Sample S001 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	100 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	Total:	4	4	100 %	0 %	100 %	109

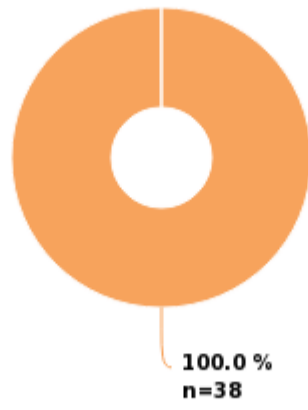
Sample S001 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

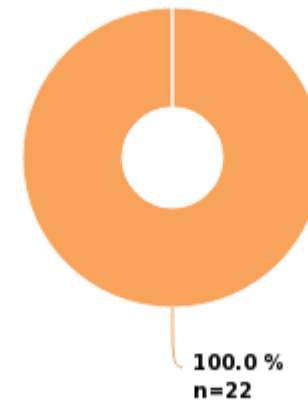
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	No indication of acute/recent infection	1	-	-	-	-	100 %
	No detectable antibodies	17	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S001 PuumAbM POCT



■ Negative

Sample S001 PuumAbG



■ Negative

Sample S001 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		38		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		32					
	Total:		38		-	-	-	-	100 %

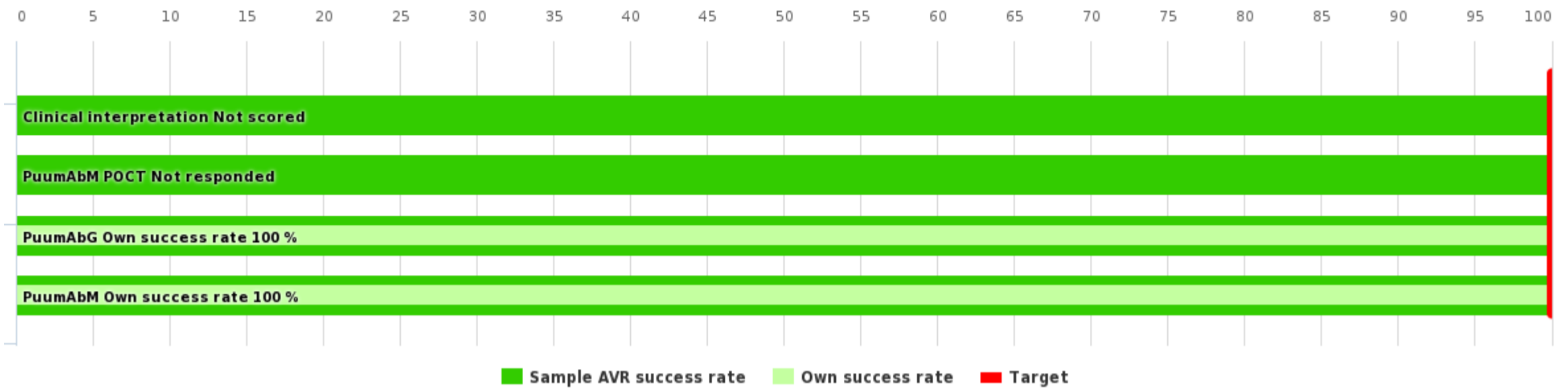
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		22		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		<input checked="" type="radio"/> Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		24		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		<input checked="" type="radio"/> Euroimmun Hantavirus EUROLINE		2					

		Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

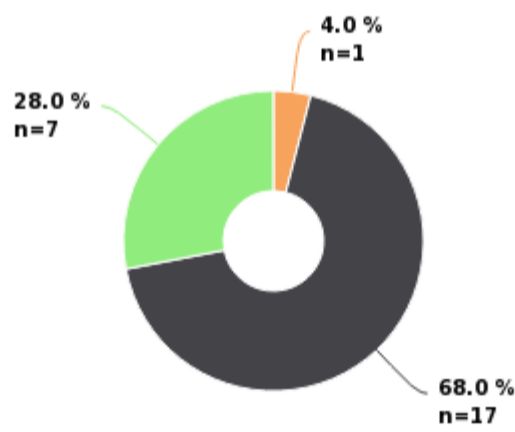
Sample S002 Result 3

Sample S002 success rate



Sample S002 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	100 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	Total:	4	4	100 %	0 %	100 %	109

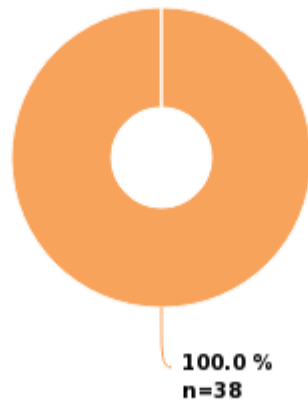
Sample S002 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

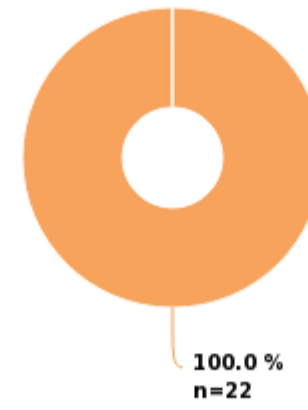
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	No indication of acute/recent infection	1	-	-	-	-	100 %
	No detectable antibodies	17	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S002 PuumAbM POCT



■ Negative

Sample S002 PuumAbG



■ Negative

Sample S002 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		38		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		32					
	Total:		38		-	-	-	-	100 %

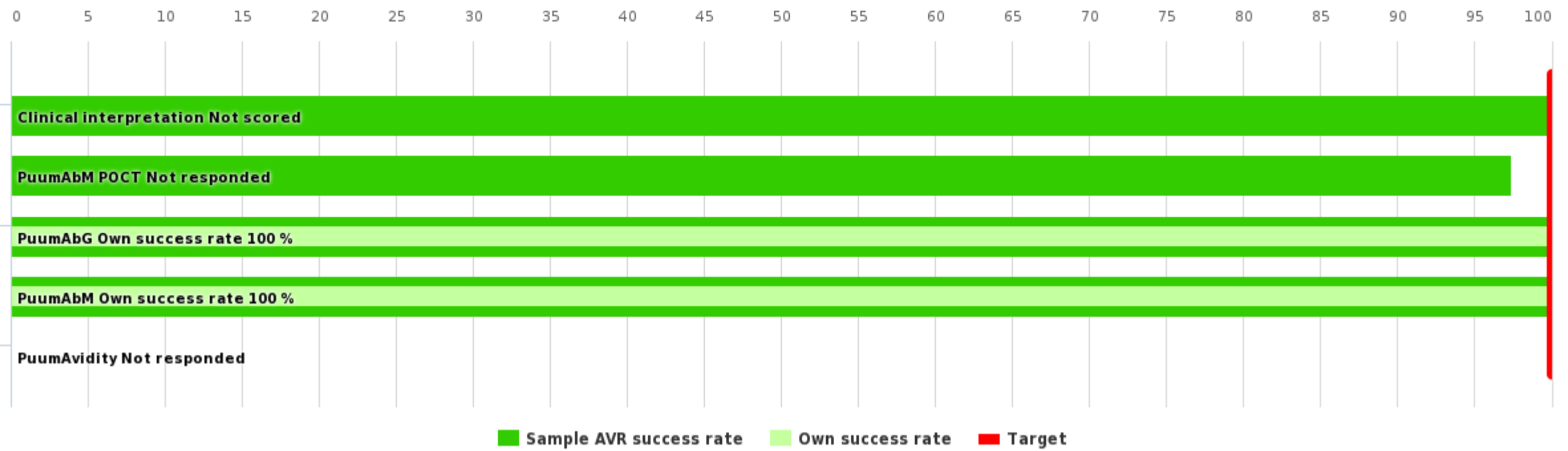
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		22		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		<input checked="" type="radio"/> Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Negative		24		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		<input checked="" type="radio"/> Euroimmun Hantavirus EUROLINE		2					

	Euroimmun Hantavirus IFA		1						
	Focus Diagnostics Hantavirus DxSelect ELISA		2						
	IBL Hantavirus Puumala ELISA		1						
	In-house EIA		1						
	In-house Immunoblot		1						
	Mikrogen Diagnostisk recomLine HantaPlus		2						
	Reagentia Puumala EIA		10						
	Total:		24		2	2	100 %	0 %	100 %

Sample S003 Result 3

Sample S003 success rate



Sample S003 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Clinical interpretation	-	-	-	-	100 %	25
	PuumAbM POCT	-	-	-	-	97.4 %	38
	PuumAbG	2	2	100 %	0 %	100 %	22
	PuumAbM	2	2	100 %	0 %	100 %	24
	PuumAvidity	-	-	-	-	-	1
	Total:	4	4	100 %	0.8 %	99.2 %	110

Sample S003 Clinical interpretation



■ Acute/recent infection
■ Laboratory does not give clinical interpretation

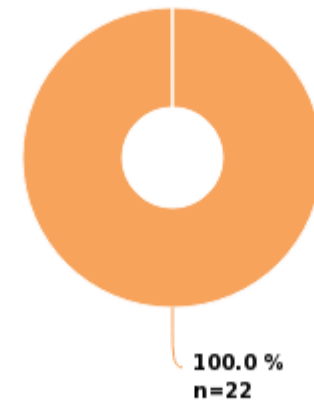
Clinical interpretation	Interpretation	Interpretation count	Own score	Max score	Own success rate	Difference	AVR success rate
	Acute/recent infection	18	-	-	-	-	100 %
	<input checked="" type="radio"/> Laboratory does not give clinical interpretation	7	-	-	-	-	-
	Total:	25	-	-	-	-	100 %

Sample S003 PuumAbM POCT



Legend: Negative (orange), Positive (dark grey)

Sample S003 PuumAbG



Legend: Positive (orange)

Sample S003 PuumAbM



Legend: Positive (orange)

Sample S003 PuumAvidity



Legend: Weak avidity (orange)

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Negative		1		-				0 %
		Reagentia ReaScan+ PUUMALA IgM		1					
	Positive		37		-				100 %
		Reagentia POC PUUMALA IgM		6					
		Reagentia ReaScan+ PUUMALA IgM		31					
	Total:		38		-	-	-	-	97.4 %

PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		22		2	2	100 %	0 %	100 %
		Euroimmun Hantavirus ELISA		4					
		<input checked="" type="radio"/> Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		2					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house IFA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagentia Puumala EIA		6					
	Total:		22		2	2	100 %	0 %	100 %

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	<input checked="" type="radio"/> Positive		24		2	2	100 %	0 %	100 %

		Euroimmun Hantavirus ELISA		4					
		<input checked="" type="radio"/> Euroimmun Hantavirus EUROLINE		2					
		Euroimmun Hantavirus IFA		1					
		Focus Diagnostics Hantavirus DxSelect ELISA		2					
		IBL Hantavirus Puumala ELISA		1					
		In-house EIA		1					
		In-house Immunoblot		1					
		Mikrogen Diagnostisk recomLine HantaPlus		2					
		Reagen Puumala EIA		10					
	Total:		24		2	2	100 %	0 %	100 %

PuumAvidity	Interpretation	Test kit	Interpretation count	Test kit count	Own score	Max score	Own success rate	Difference	AVR success rate
	Weak avidity		1		-				-
		In-house IFA		1					
	Total:		1		-	-	-	-	

Report Info**PARTICIPANTS**

Altogether 53 laboratories from 12 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
Puumala virus, antibodies, March, 1-2023	53	53	100 %

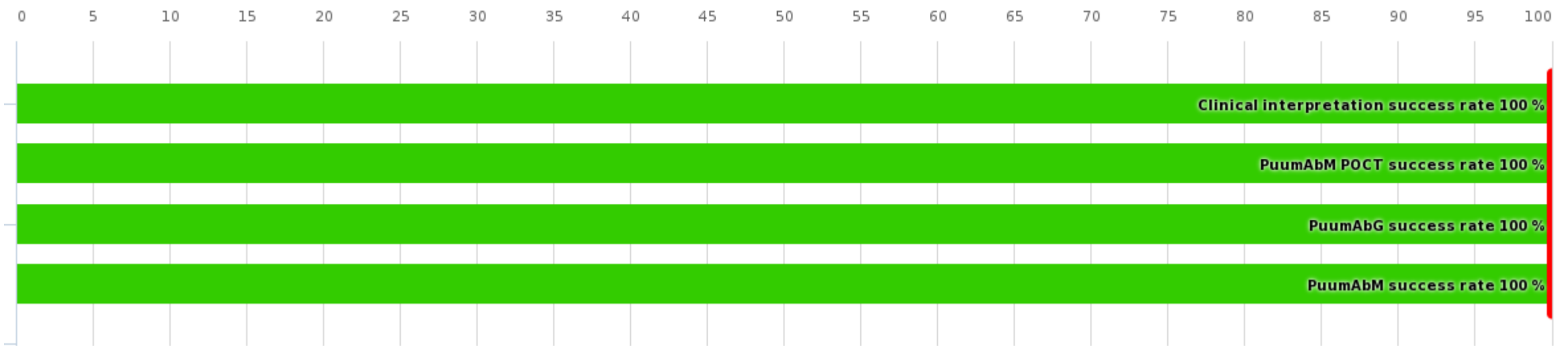
Summary



Summary	AVR success rate
Sample S001	100 %
Sample S002	100 %
Sample S003	99.2 %
Average:	99.7 %

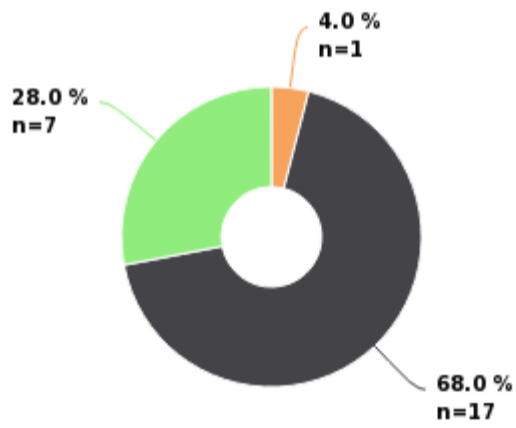
Sample S001

Sample S001 success rate



Sample S001 results	Responded	AVR success rate	Count
	Clinical interpretation	100 %	25
	PuumAbM POCT	100 %	38
	PuumAbG	100 %	22
	PuumAbM	100 %	24
	Total:	100 %	109

Sample S001 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

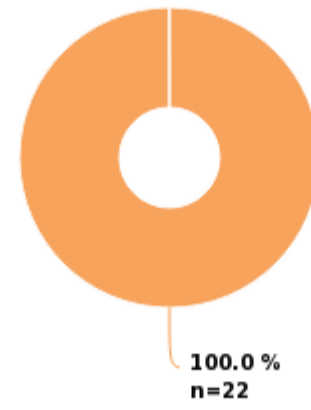
Clinical interpretation	Interpretation	Interpretation count	AVR success rate	Interpretation Score
	No indication of acute/recent infection	1	100 %	4
	No detectable antibodies	17	100 %	4
	Laboratory does not give clinical interpretation	7	-	-
	Total:	25	100 %	

Sample S001 PuumAbM POCT



■ Negative

Sample S001 PuumAbG



■ Negative

Sample S001 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		38		100 %	2
		Reagent POC PUUMALA IgM		6		
		Reagent ReaScan+ PUUMALA IgM		32		
	Total:		38		100 %	

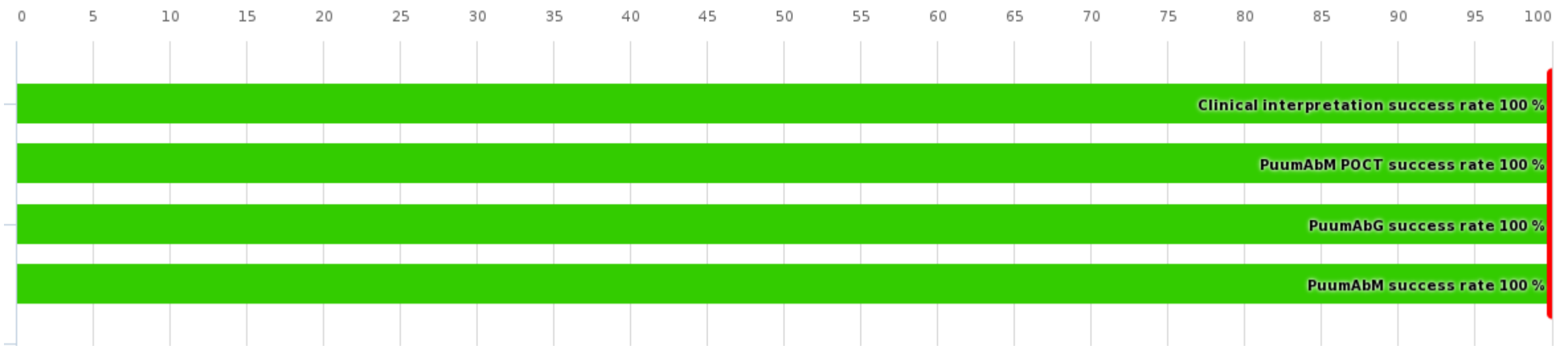
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		22		100 %	2
		Euroimmun Hantavirus ELISA		4		
		Euroimmun Hantavirus EUROLINE		2		
		Euroimmun Hantavirus IFA		2		
		Focus Diagnostics Hantavirus DxSelect ELISA		2		
		IBL Hantavirus Puumala ELISA		1		
		In-house EIA		1		
		In-house IFA		1		
		In-house Immunoblot		1		
		Mikrogen Diagnostisk recomLine HantaPlus		2		
		Reagent Puumala EIA		6		
	Total:		22		100 %	

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		24		100 %	2
		Euroimmun Hantavirus ELISA		4		
		Euroimmun Hantavirus EUROLINE		2		
		Euroimmun Hantavirus IFA		1		
		Focus Diagnostics Hantavirus DxSelect ELISA		2		
		IBL Hantavirus Puumala ELISA		1		

		In-house EIA		1		
		In-house Immunoblot		1		
		Mikrogen Diagnostisk recomLine HantaPlus		2		
		Reagentia Puumala EIA		10		
	Total:		24		100 %	

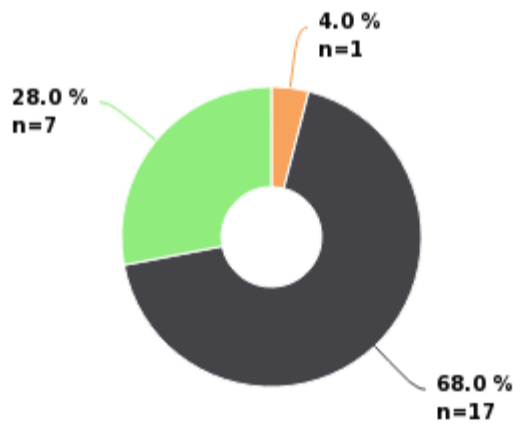
Sample S002

Sample S002 success rate



Sample S002 results	Responded	AVR success rate	Count
	Clinical interpretation	100 %	25
	PuumAbM POCT	100 %	38
	PuumAbG	100 %	22
	PuumAbM	100 %	24
	Total:	100 %	109

Sample S002 Clinical interpretation



- No indication of acute/recent infection
- No detectable antibodies
- Laboratory does not give clinical interpretation

Clinical interpretation	Interpretation	Interpretation count	AVR success rate	Interpretation Score
	No indication of acute/recent infection	1	100 %	4
	No detectable antibodies	17	100 %	4
	Laboratory does not give clinical interpretation	7	-	-
	Total:	25	100 %	

Sample S002 PuumAbM POCT



■ Negative

Sample S002 PuumAbG



■ Negative

Sample S002 PuumAbM



■ Negative

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		38		100 %	2
		Reagent POC PUUMALA IgM		6		
		Reagent ReaScan+ PUUMALA IgM		32		
	Total:		38		100 %	

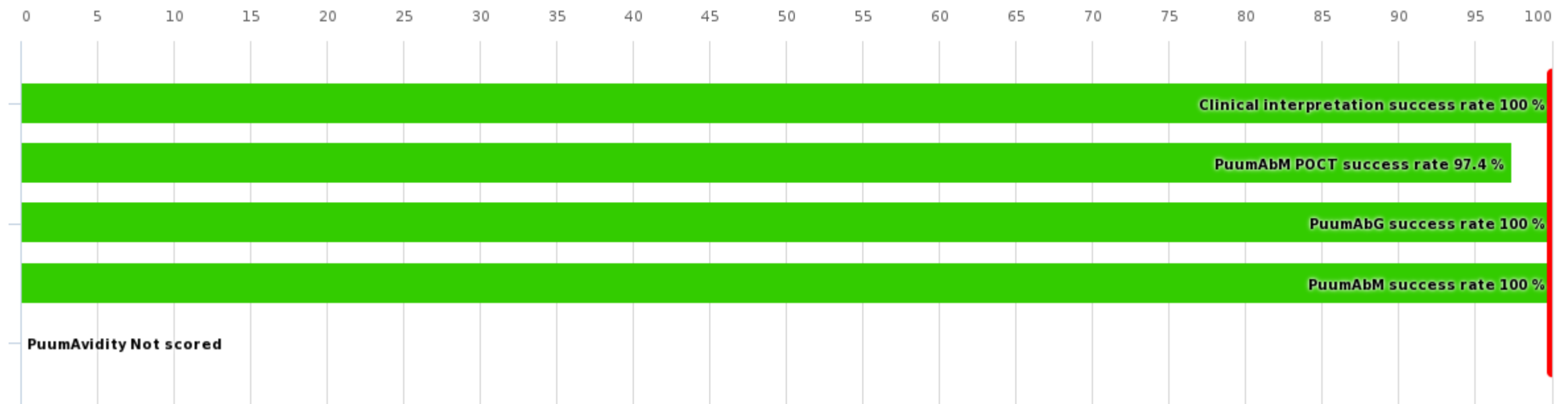
PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		22		100 %	2
		Euroimmun Hantavirus ELISA		4		
		Euroimmun Hantavirus EUROLINE		2		
		Euroimmun Hantavirus IFA		2		
		Focus Diagnostics Hantavirus DxSelect ELISA		2		
		IBL Hantavirus Puumala ELISA		1		
		In-house EIA		1		
		In-house IFA		1		
		In-house Immunoblot		1		
		Mikrogen Diagnostisk recomLine HantaPlus		2		
		Reagent Puumala EIA		6		
	Total:		22		100 %	

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		24		100 %	2
		Euroimmun Hantavirus ELISA		4		
		Euroimmun Hantavirus EUROLINE		2		
		Euroimmun Hantavirus IFA		1		
		Focus Diagnostics Hantavirus DxSelect ELISA		2		
		IBL Hantavirus Puumala ELISA		1		

		In-house EIA		1		
		In-house Immunoblot		1		
		Mikrogen Diagnostisk recomLine HantaPlus		2		
		Reagentia Puumala EIA		10		
	Total:		24		100 %	

Sample S003

Sample S003 success rate



Sample S003 results	Responded	AVR success rate	Count
	Clinical interpretation	100 %	25
	PuumAbM POCT	97.4 %	38
	PuumAbG	100 %	22
	PuumAbM	100 %	24
	PuumAvidity	-	1
	Total:	99.2 %	110

Sample S003 Clinical interpretation



■ Acute/recent infection
■ Laboratory does not give clinical interpretation

Clinical interpretation	Interpretation	Interpretation count	AVR success rate	Interpretation Score
	Acute/recent infection	18	100 %	4
	Laboratory does not give clinical interpretation	7	-	-
	Total:	25	100 %	

Sample S003 PuumAbM POCT



Legend: Negative (orange), Positive (dark grey)

Sample S003 PuumAbG



Legend: Positive (orange)

Sample S003 PuumAbM



Legend: Positive (orange)

Sample S003 PuumAvidity



Legend: Weak avidity (orange)

PuumAbM POCT	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Negative		1		0 %	0
	Positive	Reagenta ReaScan+ PUUMALA IgM	37	1	100 %	2
		Reagenta POC PUUMALA IgM		6		
		Reagenta ReaScan+ PUUMALA IgM		31		
	Total:		38		97.4 %	

PuumAbG	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Positive		22		100 %	2
		Euroimmun Hantavirus ELISA		4		
		Euroimmun Hantavirus EUROLINE		2		
		Euroimmun Hantavirus IFA		2		
		Focus Diagnostics Hantavirus DxSelect ELISA		2		
		IBL Hantavirus Puumala ELISA		1		
		In-house EIA		1		
		In-house IFA		1		
		In-house Immunoblot		1		
		Mikrogen Diagnostisk recomLine HantaPlus		2		
		Reagenta Puumala EIA		6		
	Total:		22		100 %	

PuumAbM	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Positive		24		100 %	2
		Euroimmun Hantavirus ELISA		4		
		Euroimmun Hantavirus EUROLINE		2		
		Euroimmun Hantavirus IFA		1		

		Focus Diagnostics Hantavirus DxSelect ELISA		2		
		IBL Hantavirus Puumala ELISA		1		
		In-house EIA		1		
		In-house Immunoblot		1		
		Mikrogen Diagnostisk recomLine HantaPlus		2		
		Reagen Puumala EIA		10		
	Total:			24		100 %

PuumAvidity	Interpretation	Test kit	Interpretation count	Test kit count	AVR success rate	Interpretation Score
	Weak avidity		1		-	-
		In-house IFA		1		
	Total:		1			

Report Info

PARTICIPANTS

Altogether 53 laboratories from 12 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

Puumala virus, antibodies Round 1, 2023

Specimens

Samples of this EQA round were human serum. 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 (LQ774023011)

PuumAbG	Negative
PuumAbM	Negative
IgG avidity	Not measurable
Clinical interpretation	No detectable antibodies

Sample S002 (LQ774023012)

PuumAbG	Negative
PuumAbM	Negative
IgG avidity	Not measurable
Clinical interpretation	No detectable antibodies

Sample S003 (LQ774023013)

PuumAbG	Positive
PuumAbM	Positive
IgG avidity	Weak avidity
Clinical interpretation	Acute/recent infection

Pre-test methods: Puumala IgG IFA In-house, Reagent PUUMALA IgM EIA, Reagent POC PUUMALA IgM, Puumala IgG avidity IFA In-house.

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 – Experts

The first Puumala virus EQA round this year went almost perfectly. No specificity problems were seen as all laboratory results as well as clinical interpretations reported for the negative samples (S001 and S002) were as expected. Only one false negative IgM result obtained using commercial POC-IgM test was reported for the acute/recent infection sample (S003).

Exceptions in scoring

No exceptions.

End of report

2023-03-27

FINAL REPORT

Product no. 5560

Subcontracting: Sample preparation, sample pretesting

Samples sent	2023-02-22
Round closed	2023-03-23
Expected results	2023-03-24
Final report	2023-03-27

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

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