LABQUALITY

External Quality Assessment Scheme

Parasites in faeces, virtual microscopy Round 1, 2023

Specimens
The samples of the round are three virtual images S001, S002 and S003 which can be found in LabScala. The original specimens were faecal specimens fixed with 10% formaldehyde and concentrated using ethyl acetate and stained with iodine.

Background information
Sample S001
Control sample from a patient positive for anti-*Schistosoma* IgM antibodies.

Sample S002
Underweight child adopted from abroad.

Sample S003
Patient with abdominal pain and diarrhoea.

Examinations
Parasites in faeces

Result reporting
Please enter the results via LabScala (www.labscala.com).

Both Protozoa and Worm eggs menus are mandatory. Negative result can be found from both menus. If protozoa is not included in your test selection, choose option Protozoa not in test selection from the Protozoa dropdown list.

Please follow the described guidelines for amounts (see the table below).

Findings/amounts		
1+	= Little	≤2 parasites / 10 fields, magnification of 400 ≤2 ova / specimen, e.g. 22x22 mm cover slip
2+	= Moderate	3-9 parasites / 10 fields, magnification of 400 3-9 ova / specimen, e.g. 22x22 mm cover slip
3+	= Plenty	≥10 parasites / 10 fields, magnification of 400 ≥10 ova / specimen, e.g. 22x22 mm cover slip

Aiforia Cloud program's zoom 40x corresponds to 400x magnification.

Pathogenic findings will be scored.

2023-05-02

INSTRUCTIONS

Product no. 5450
LQ769623011-013/FI

Subcontracting: Sample preparation, sample pretesting, digital image services

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The results should be reported no later than **May 25, 2023**.

The expected results of the round are published in LabScala in the View Reports section by May 30, 2023.

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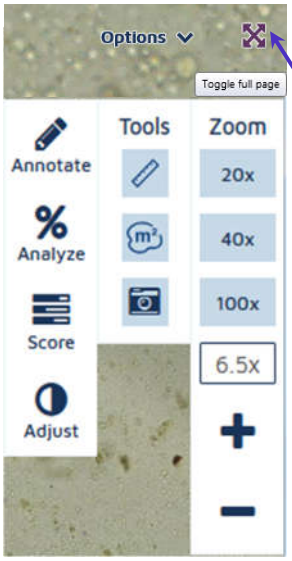
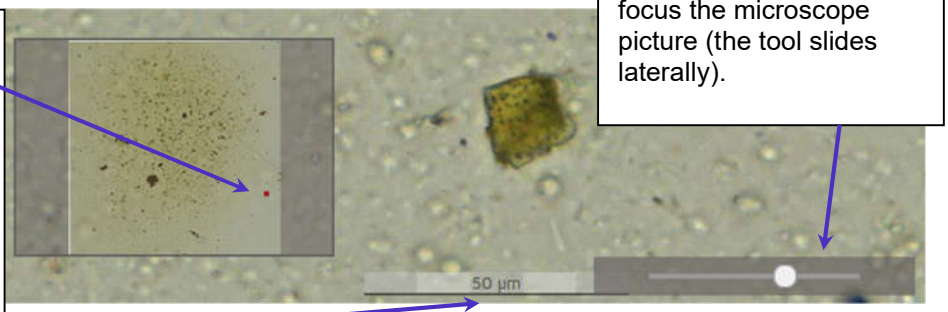


You can zoom in or out with the scroll wheel on your mouse, or by using the zooming controls in the right margin (x20, x40, x100). Alternatively, you can use buttons: + and -.

Cursor up, down, left and right will navigate in x/y directions in addition to the mouse control.

“Toggle full page” switch to full page view.

Use the focus tool to focus the microscope picture (the tool slides laterally).



The red rectangle in the small picture on the lower left corner shows the location of the viewed magnification.

On the bottom left you have the scale tool, which contains a measuring instrument (example 50 µm).

Client report

	No of participants	No of responded participants	Response percentage
Parasites in faeces, virtual microscopy, April, 1-2023	58	54	93.1 %

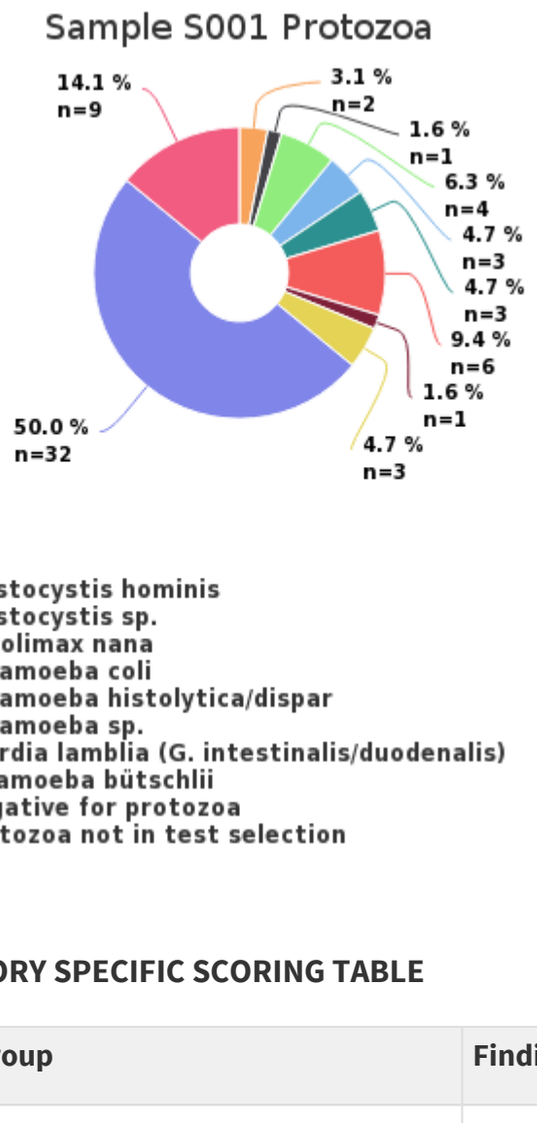
Summary

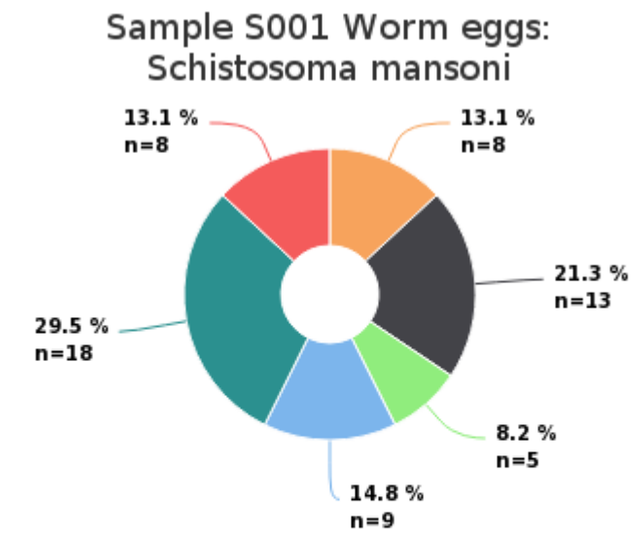
Summary	Own score	Max score	Own success rate	Difference	AVR success rate
Sample S001	-	-	-	-	-
Sample S002	8	8	100 %	15.3 %	84.7 %
Sample S003	4	4	100 %	15 %	85 %
Average:			100 %	15.2 %	84.8 %

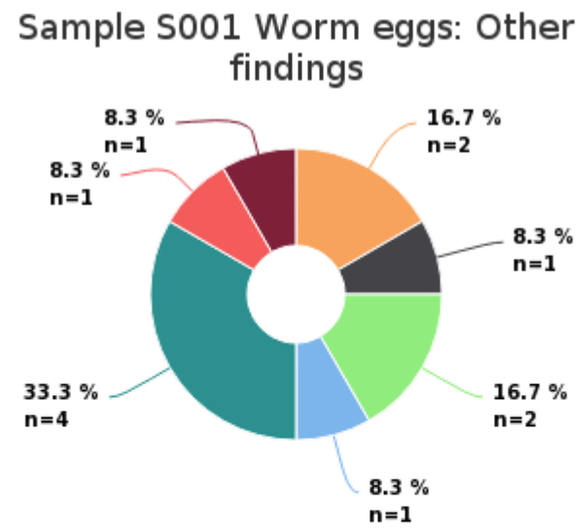
History	Test nr.	Own success rate	Difference	AVR success rate
Round 2022-1	1-1	83.3 %	-0 %	83.4 %
Round 2021-1	1-1	100 %	36.4 %	63.6 %

Sample S001 | Schistosoma mansoni, Entamoeba sp.

Sample S001 results	Responded	AVR success rate	Count
	Report to the clinician	-	137
	Further action	-	38







LABORATORY SPECIFIC SCORING TABLE

Finding group	Finding	Own score	Max score	Own success rate	Difference	AVR success rate
Protozoa	Negative for protozoa	-	-			-
Worm eggs: Schistosoma mansoni	Negative for worm eggs	-	-			-
Total:		-	-	-	-	

REPORT TO THE CLINICIAN

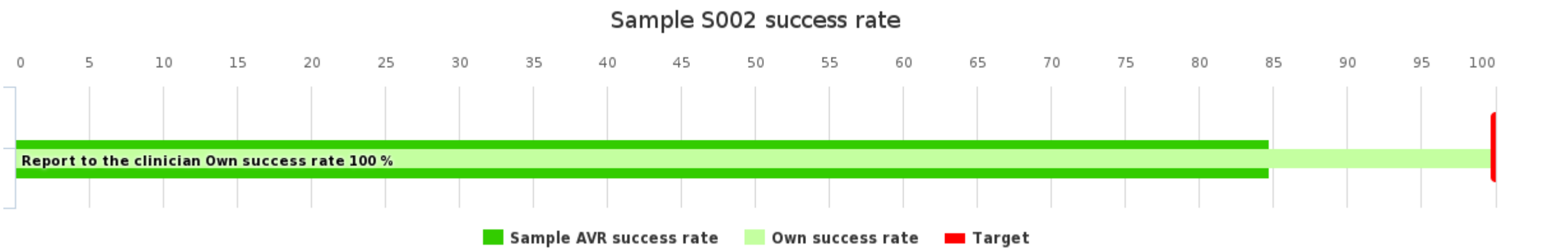
Finding group	Finding	Finding count	Little (+)	Moderate (++)	Plenty (+++)	AVR success rate
Protozoa		**64**				**-**
	Blastocystis hominis	2	1	1		
	Blastocystis sp.	1	1			
	Endolimax nana	4	3		1	
	Entamoeba coli	3	2	1		
	Entamoeba histolytica/dispar	3	1	1	1	
	Entamoeba sp.	6	1	4	1	
	Giardia lamblia (G. intestinalis/duodenalis)	1	1			
	Iodamoeba bütschlii	3	2		1	
	◉ Negative for protozoa	32				
	Protozoa not in test selection	9				
Worm eggs: Schistosoma mansoni		**61**				**-**
	Trematoda, Schistosoma mansoni	8	8			
	Trematoda, Schistosoma sp.	13	9	4		
	Trematoda, Schistosoma japonicum/mekongi	5	4	1		
	Trematoda, Schistosoma haemotobium	9	9			
	◉ Negative for worm eggs	18				
	No reported finding	8				
Worm eggs: Other findings		**12**				**-**
	Trematoda, Schistosoma haemotobium	2	2			
	Cestoidea, Dibothriocephalus latus (Diphyllobothrium latum)	1	1			
	Cestoidea, Hymenolepis nana	2	2			
	Cestoidea, Taenia saginata	1	1			
	Cestoidea, Taenia sp.	4	4			
	Nematoda, Ascaris sp.	1	1			

	Nematoda, Other nematoda	1	1			
Total:		137				

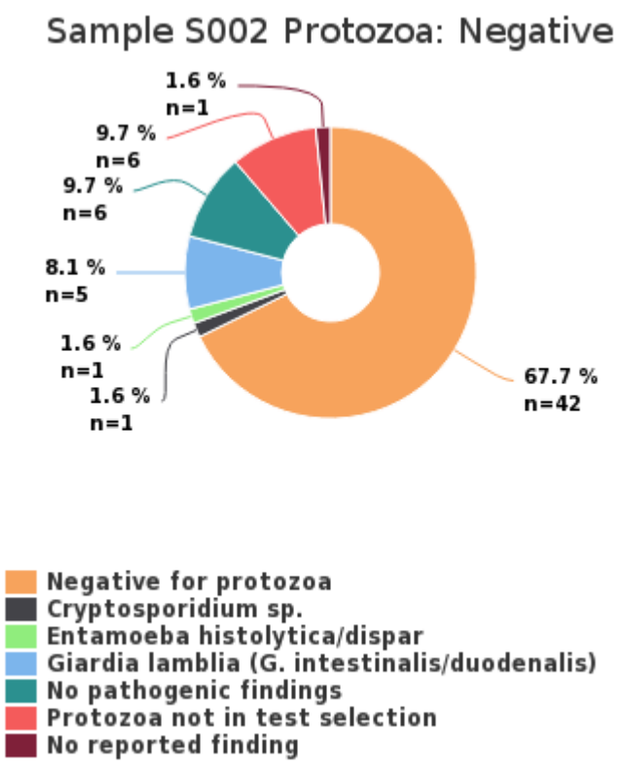
FURTHER ACTION

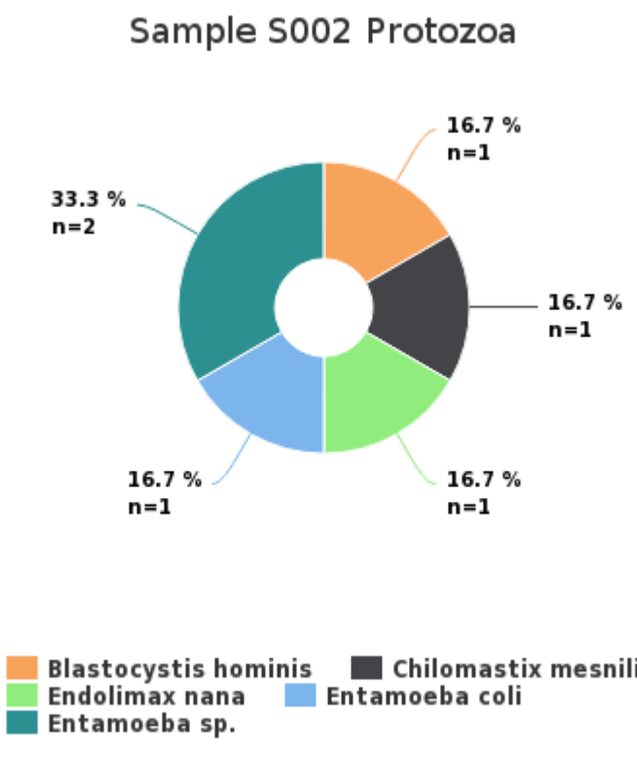
Result	Result count
Not referred for further action	6
Referred for further action	19
Referred for further action for examination of protozoa	2
◉ New sample requested	11
Total:	38

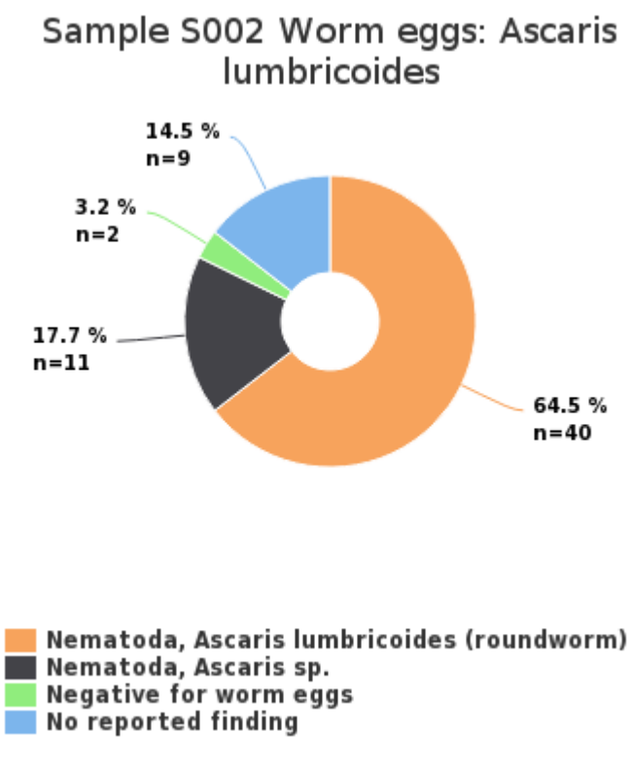
Sample S002 | Ascaris lumbricoides, Trichuris trichiura

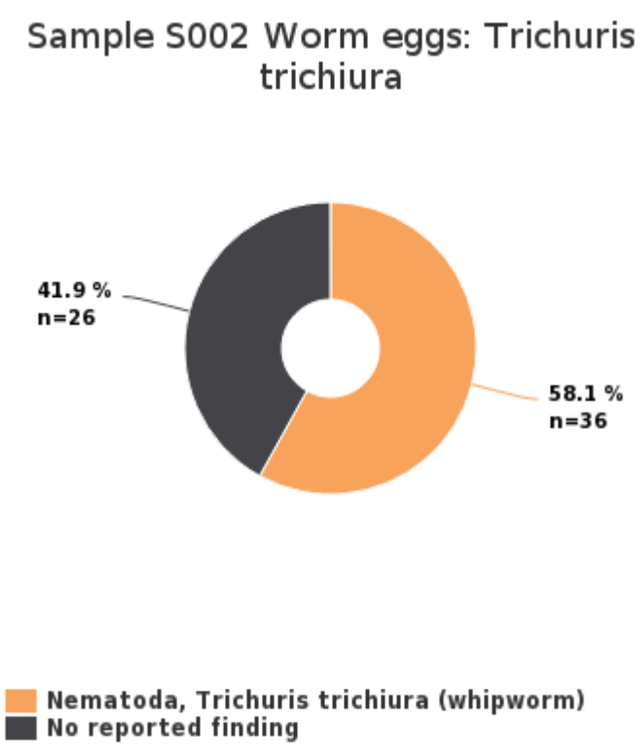


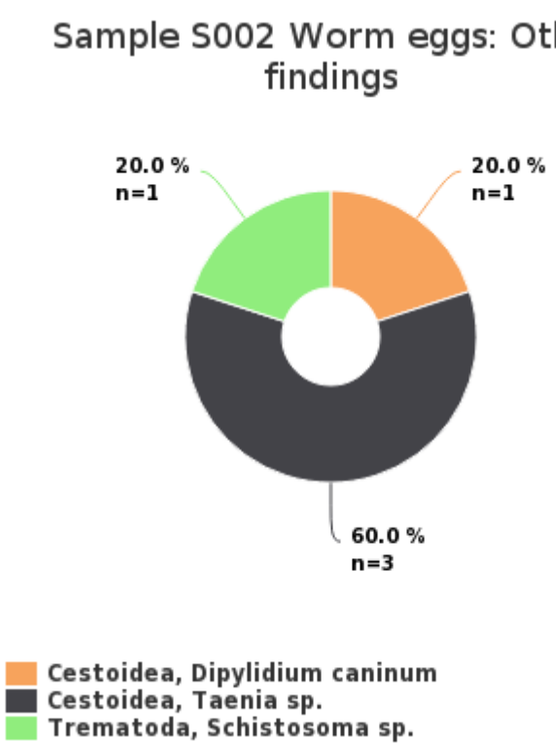
Sample S002 results	Responded	AVR success rate	Count
	Report to the clinician	84.7 %	197
	Further action	-	32











LABORATORY SPECIFIC SCORING TABLE

Finding group	Finding	Own score	Max score	Own success rate	Difference	AVR success rate
Protozoa: Negative	Negative for protozoa	4	4	100 %	12.9 %	87.1 %
Worm eggs: Ascaris lumbricoides	Nematoda, Ascaris lumbricoides (roundworm)	4	4	100 %	17.7 %	82.3 %
Worm eggs: Trichuris trichiura	No reported finding	-	-			-
Total:		8	8	100 %	15.3 %	84.7 %

REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Little (+)	Moderate (++)	Plenty (+++)	AVR success rate
Protozoa: Negative		**62**				**87.1 %**

	◉ Negative for protozoa	42				
	Cryptosporidium sp.	1			1	
	Entamoeba histolytica/dispar	1		1		
	Giardia lamblia (G. intestinalis/duodenalis)	5		3	2	
	No pathogenic findings	6				
	Protozoa not in test selection	6				
	No reported finding	1				
Protozoa		**6**				**-**
	Blastocystis hominis	1		1		
	Chilomastix mesnili	1	1			
	Endolimax nana	1			1	
	Entamoeba coli	1	1			
	Entamoeba sp.	2	1	1		
Worm eggs: Ascaris lumbricoides		**62**				**82.3 %**
	◉ Nematoda, Ascaris lumbricoides (roundworm)	40	5	◉ 20	15	
	Nematoda, Ascaris sp.	11	5	6		
	Negative for worm eggs	2				
	No reported finding	9				
Worm eggs: Trichuris trichiura		**62**				**-**
	Nematoda, Trichuris trichiura (whipworm)	36	33	3		
	◉ No reported finding	26				
Worm eggs: Other findings		**5**				**-**
	Cestoidea, Dipylidium caninum	1		1		
	Cestoidea, Taenia sp.	3		3		
	Trematoda, Schistosoma sp.	1	1			
Total:		197				84.7 %

SCORING SUMMARY

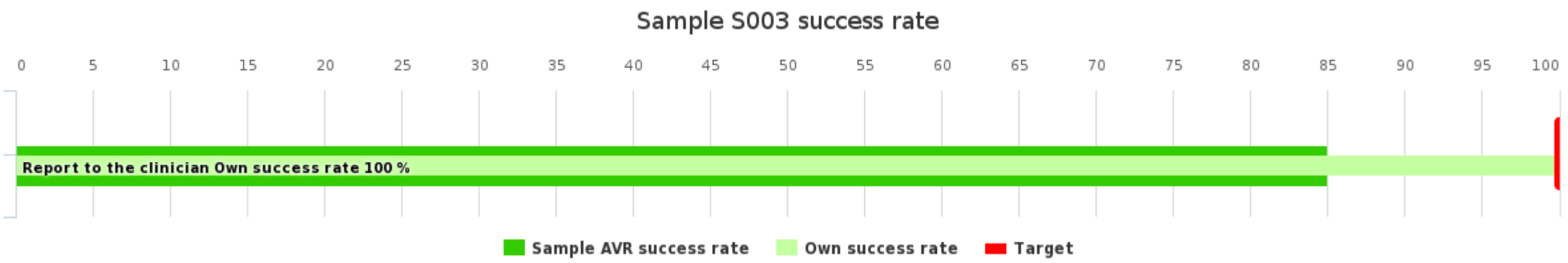
Finding group	Finding	Finding score
Protozoa: Negative		
	Negative for protozoa	4
	Cryptosporidium sp.	0
	Entamoeba histolytica/dispar	0
	Giardia lamblia (G. intestinalis/duodenalis)	0
	No pathogenic findings	4
	Protozoa not in test selection	4
	No reported finding	0
Protozoa		
	Blastocystis hominis	-
	Chilomastix mesnili	-
	Endolimax nana	-
	Entamoeba coli	-
	Entamoeba sp.	-
Worm eggs: Ascaris lumbricoides		
	Nematoda, Ascaris lumbricoides (roundworm)	4
	Nematoda, Ascaris sp.	4
	Negative for worm eggs	0
	No reported finding	0
Worm eggs: Trichuris trichiura		
	Nematoda, Trichuris trichiura (whipworm)	-
	No reported finding	-
Worm eggs: Other findings		
	Cestoidea, Dipylidium caninum	-
	Cestoidea, Taenia sp.	-
	Trematoda, Schistosoma sp.	-
Total:		

FURTHER ACTION

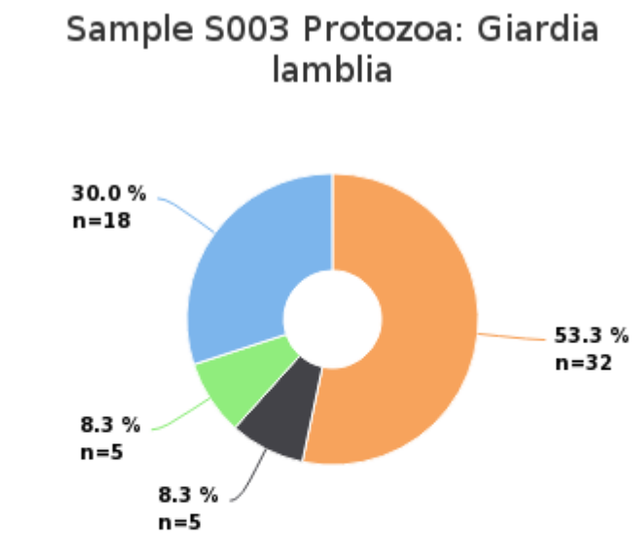
Result	Result count
◉ Not referred for further action	12
Referred for further action	14

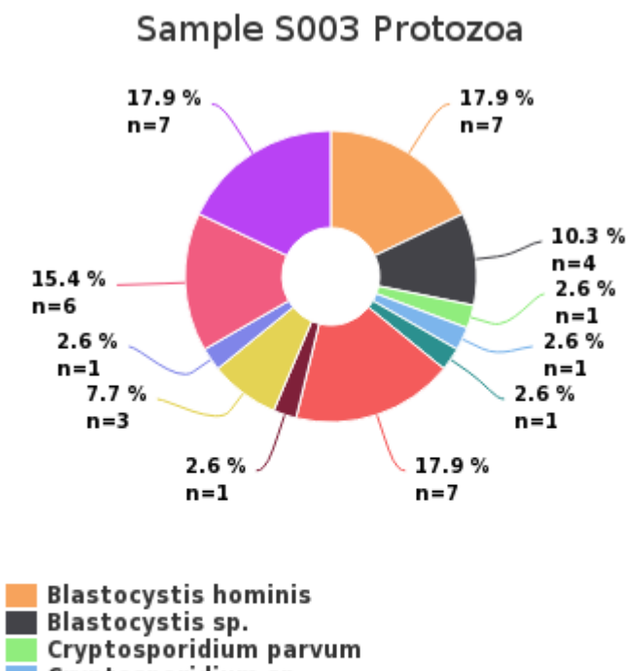
Referred for further action for examination of protozoa	2
New sample requested	4
Total:	32

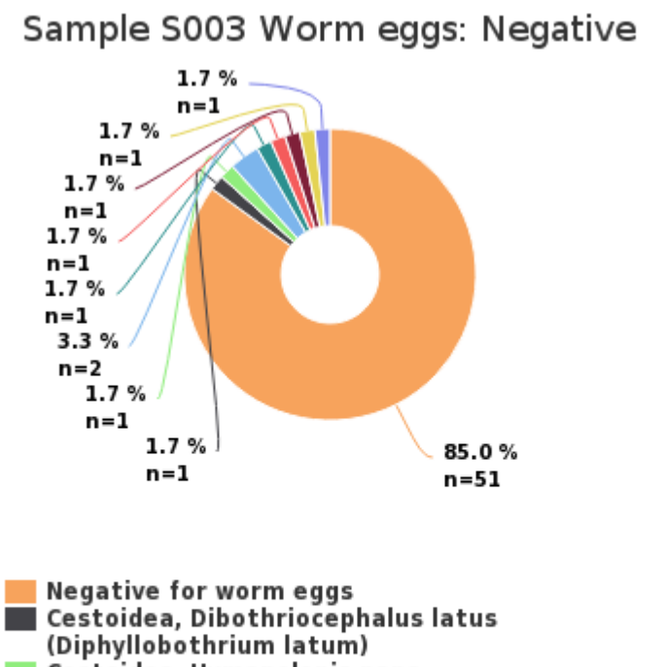
Sample S003 | Giardia lamblia



Sample S003 results	Responded	AVR success rate	Count
	Report to the clinician	85 %	159
	Further action	-	30







LABORATORY SPECIFIC SCORING TABLE

Finding group	Finding	Own score	Max score	Own success rate	Difference	AVR success rate
Protozoa: Giardia lamblia	Giardia lamblia (G. intestinalis/duodenalis)	-	-			-
Worm eggs: Negative	Negative for worm eggs	4	4	100 %	15 %	85 %
Total:		4	4	100 %	15 %	85 %

REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Little (+)	Moderate (++)	Plenty (+++)	AVR success rate
Protozoa: Giardia lamblia		**60**				**-**
	◉ Giardia lamblia (G. intestinalis/duodenalis)	32	3	16	◉ 13	
	Negative for protozoa	5				
	Protozoa not in test selection	5				
	No reported finding	18				
Protozoa		**39**				**-**
	Blastocystis hominis	7	1	4	2	
	Blastocystis sp.	4	2	2		
	Cryptosporidium parvum	1		1		
	Cryptosporidium sp.	1		1		
	Cystoisospora sp.	1	1			
	Endolimax nana	7	4	3		
	Entamoeba - precysts	1	1			
	Entamoeba coli	3		2	1	
	Entamoeba hartmanni	1			1	
	Entamoeba histolytica/dispar	6	2	4		

	Entamoeba sp.	7	1	6		
Worm eggs: Negative		**60**				**85 %**
	◉ Negative for worm eggs	51				
	Cestoidea, Dibothriocephalus latus (Diphyllobothrium latum)	1		1		
	Cestoidea, Hymenolepis nana	1	1			
	Nematoda, Ascaris lumbricoides (roundworm)	2	1	1		
	Nematoda, Ascaris sp.	1	1			
	Nematoda, Enterobius vermicularis (pinworm)	1			1	
	Nematoda, Strongyloides stercoralis, larvae	1	1			
	Trematoda, Paragonimus westermani	1	1			
	Trematoda, Schistosoma mansoni	1	1			
Total:		159				85 %

SCORING SUMMARY

Finding group	Finding	Finding score
Protozoa: Giardia lamblia		
	Giardia lamblia (G. intestinalis/duodenalis)	-
	Negative for protozoa	-
	Protozoa not in test selection	-
	No reported finding	-
Protozoa		
	Blastocystis hominis	-
	Blastocystis sp.	-
	Cryptosporidium parvum	-
	Cryptosporidium sp.	-
	Cystoisospora sp.	-
	Endolimax nana	-
	Entamoeba - precysts	-
	Entamoeba coli	-
	Entamoeba hartmanni	-
	Entamoeba histolytica/dispar	-
	Entamoeba sp.	-
Worm eggs: Negative		
	Negative for worm eggs	4
	Cestoidea, Dibothriocephalus latus (Diphyllobothrium latum)	0
	Cestoidea, Hymenolepis nana	0
	Nematoda, Ascaris lumbricoides (roundworm)	0
	Nematoda, Ascaris sp.	0
	Nematoda, Enterobius vermicularis (pinworm)	0
	Nematoda, Strongyloides stercoralis, larvae	0
	Trematoda, Paragonimus westermani	0
	Trematoda, Schistosoma mansoni	0
Total:		

FURTHER ACTION

Result	Result count
◉ Not referred for further action	11
Referred for further action	9
Referred for further action for examination of protozoa	6
New sample requested	4
Total:	30

Report Info

PARTICIPANTS

Altogether 58 laboratories from 13 countries participated in this EQA round.

REPORT INFO

On the front page you can see summaries of overall success rate and sample specific success rates which have been calculated from the scores. The reported results and the scores are presented in the same report but in separate tables.
Results from the “Report to the clinician” part are divided into protozoa and worm eggs categories. The findings reported by the participants have been grouped into tables according to the expected (pathogenic) findings of each sample. If a laboratory has reported multiple findings, the additional findings have been grouped separately. The additional findings are not scored. The reported results and the scores are presented in the same report but in separate tables. The reported amounts of findings are also presented in the same “Report to the clinician” table but these results are not scored.
In general, the expected results are marked with green color. Accepted results may also be indicated with yellow color. Laboratory’s own results are indicated with a black radio button ◉. In the participant specific report there is also a laboratory specific scoring table for each sample, where you can find your own result and the scores given.
If you have not reported 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 scoring is based on pathogenic findings. However, all findings in the samples, including non-pathogenic protozoan findings, are reported, and commented. Pathogenic findings can be scored when at least 60% of the participants have reported the correct/expected result and when there are at least three reported results. The report includes a sample specific scoring summary. Laboratory’s scores have been converted to percentage (own success rate, % from maximum scores) with a target at 100%. Own success rate is compared with the success rate of all results.

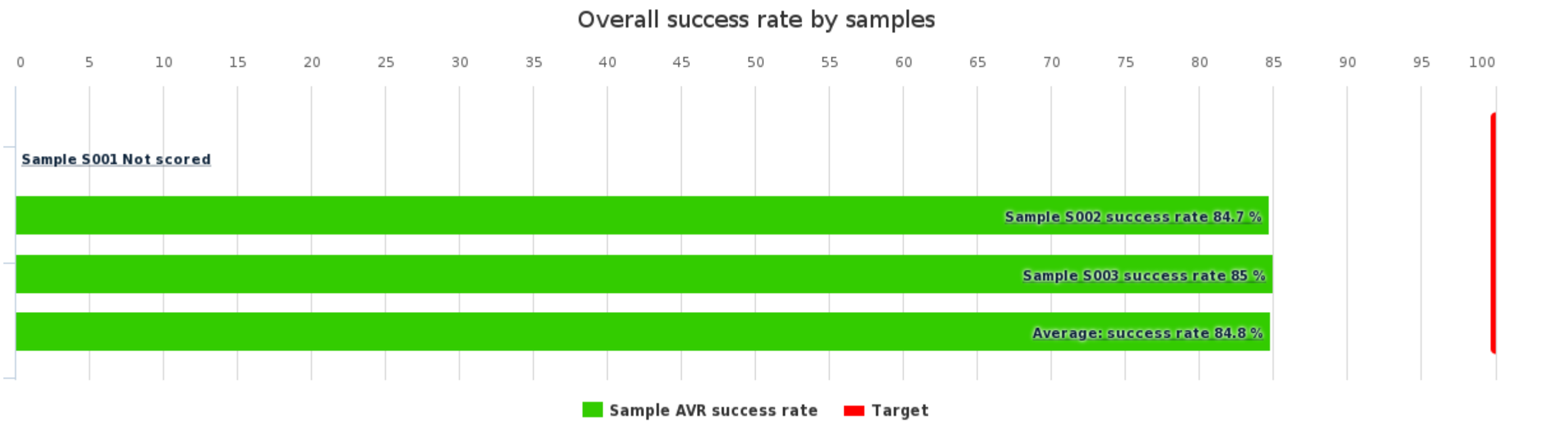
The following general rules are applied:
4 points is reached by reporting the expected result
1-3 points is given to results that are partly correct/insufficient regarding the expected finding
0 points is given for an incorrect/false result

Parasites in faeces, virtual microscopy, April, 1-2023

GLOBAL REPORT

	No of participants	No of responded participants	Response percentage
Parasites in faeces, virtual microscopy, April, 1-2023	58	54	93.1 %

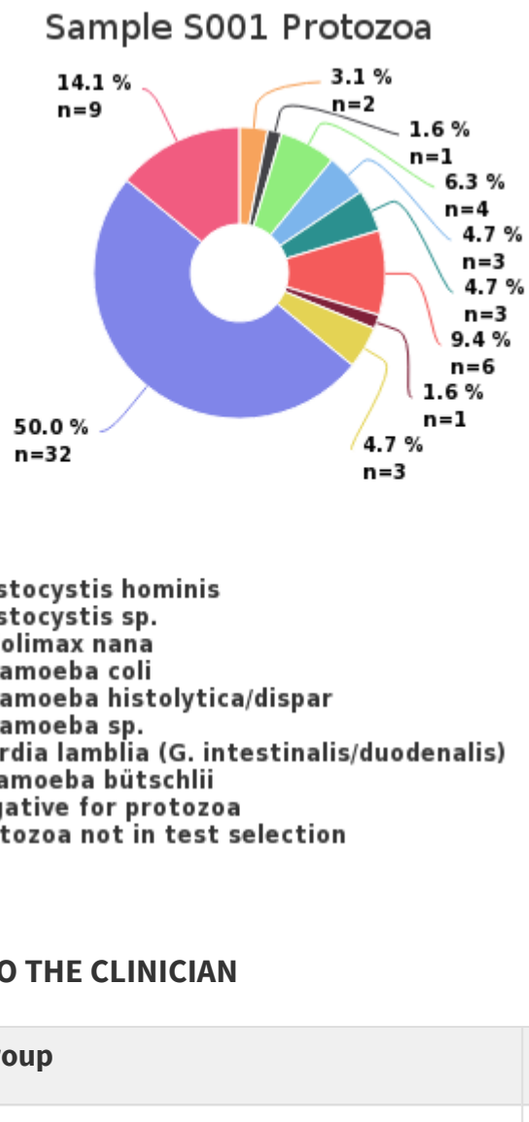
Summary

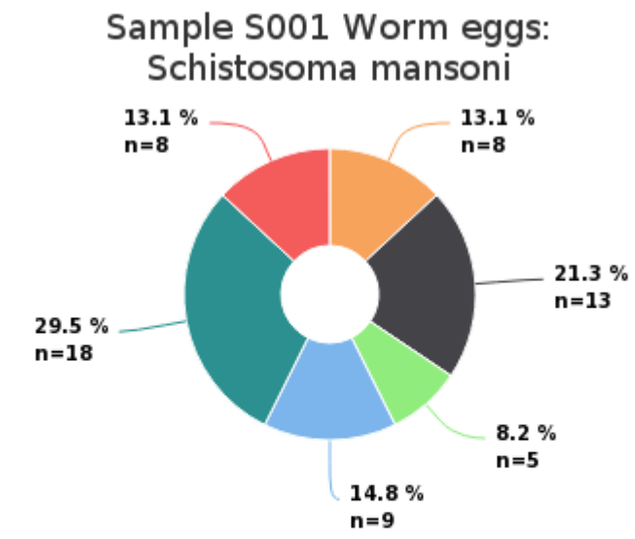


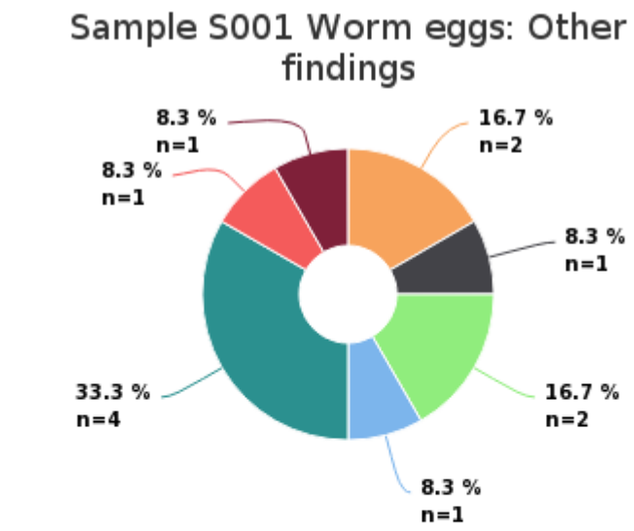
Summary	AVR success rate
Sample S001	-
Sample S002	84.7 %
Sample S003	85 %
Average:	84.8 %

Sample S001 | Schistosoma mansoni, Entamoeba sp.

Sample S001 results	Responded	AVR success rate	Count
	Report to the clinician	-	137
	Further action	-	38







REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Little (+)	Moderate (++)	Plenty (+++)	AVR success rate
Protozoa		**64**				**-**
	Blastocystis hominis	2	1	1		
	Blastocystis sp.	1	1			
	Endolimax nana	4	3		1	
	Entamoeba coli	3	2	1		
	Entamoeba histolytica/dispar	3	1	1	1	
	Entamoeba sp.	6	1	4	1	
	Giardia lamblia (G. intestinalis/duodenalis)	1	1			
	Iodamoeba bütschlii	3	2		1	
	Negative for protozoa	32				
	Protozoa not in test selection	9				
Worm eggs: Schistosoma mansoni		**61**				**-**
	Trematoda, Schistosoma mansoni	8	8			
	Trematoda, Schistosoma sp.	13	9	4		
	Trematoda, Schistosoma japonicum/mekongi	5	4	1		
	Trematoda, Schistosoma haemotobium	9	9			
	Negative for worm eggs	18				
	No reported finding	8				
Worm eggs: Other findings		**12**				**-**
	Trematoda, Schistosoma haemotobium	2	2			
	Cestoidea, Dibothriocephalus latus (Diphyllobothrium latum)	1	1			
	Cestoidea, Hymenolepis nana	2	2			
	Cestoidea, Taenia saginata	1	1			
	Cestoidea, Taenia sp.	4	4			
	Nematoda, Ascaris sp.	1	1			
	Nematoda, Other nematoda	1	1			
Total:		137				

FURTHER ACTION

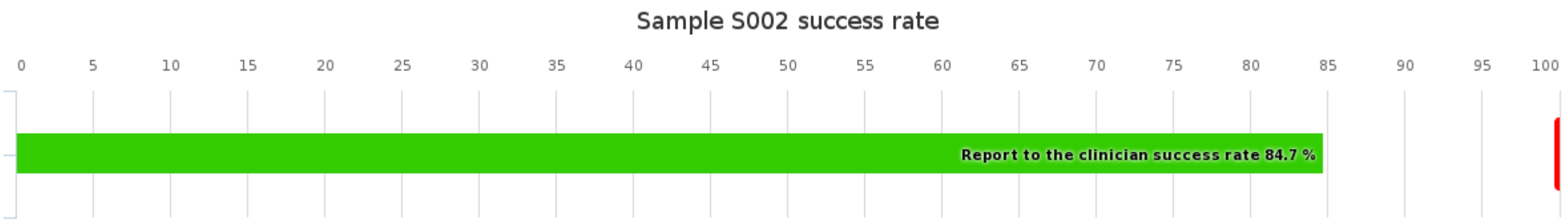
Result	Result count

LABQUALITY

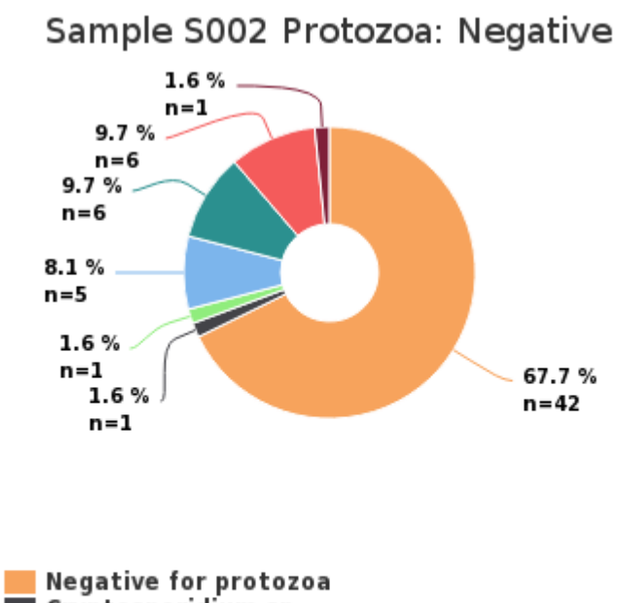
Parasites in faeces, virtual microscopy, April, 1-2023

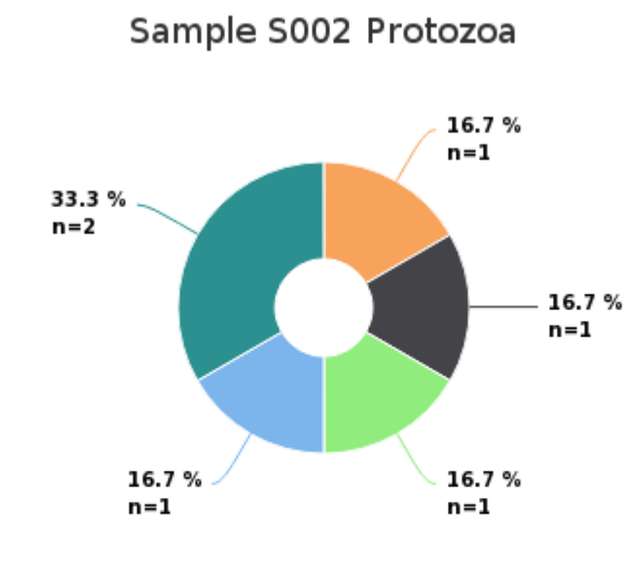
Not referred for further action	6
Referred for further action	19
Referred for further action for examination of protozoa	2
New sample requested	11
Total:	38

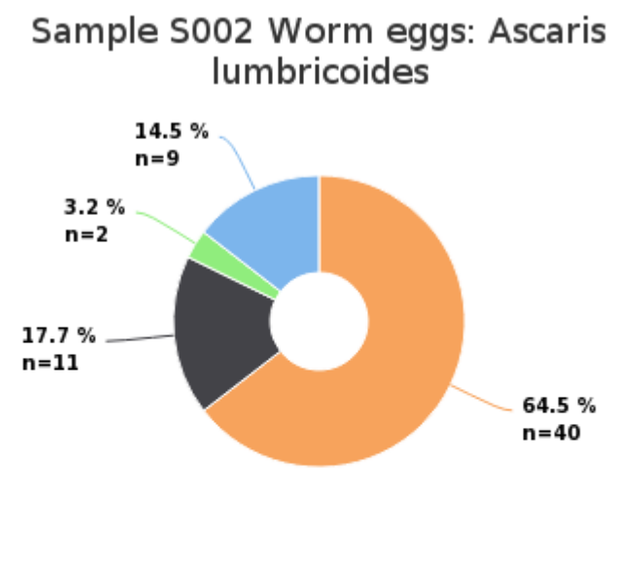
Sample S002 | Ascaris lumbricoides, Trichuris trichiura

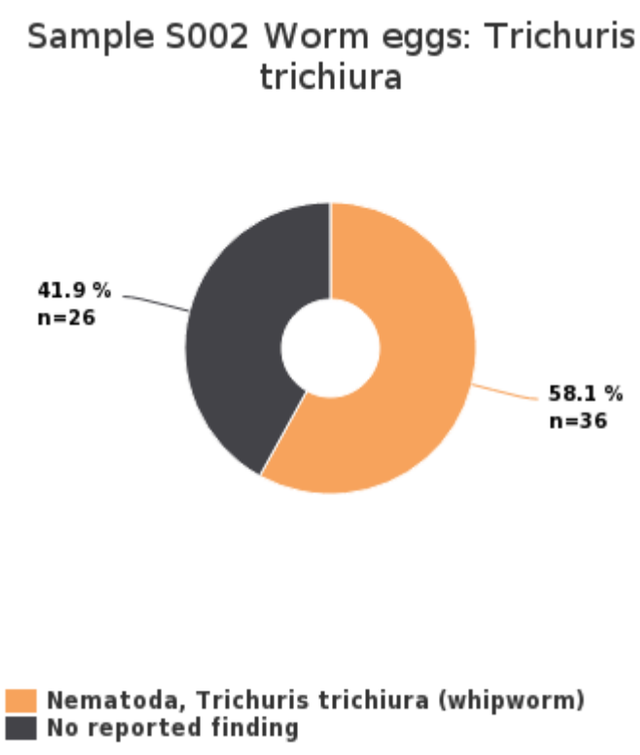


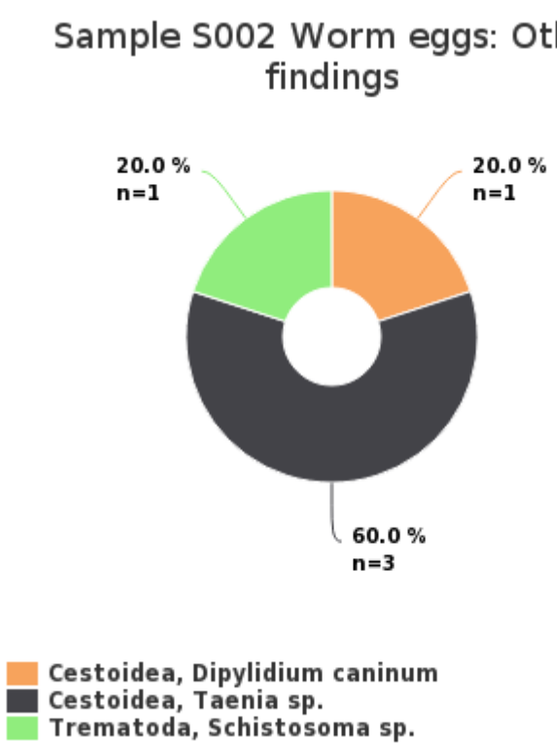
Sample S002 results	Responded	AVR success rate	Count
	Report to the clinician	84.7 %	197
	Further action	-	32











REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Little (+)	Moderate (++)	Plenty (+++)	AVR success rate
Protozoa: Negative		**62**				**87.1 %**
	Negative for protozoa	42				
	Cryptosporidium sp.	1			1	
	Entamoeba histolytica/dispar	1		1		
	Giardia lamblia (G. intestinalis/duodenalis)	5		3	2	
	No pathogenic findings	6				
	Protozoa not in test selection	6				
	No reported finding	1				

Protozoa		**6**				**-**
	Blastocystis hominis	1		1		
	Chilomastix mesnili	1	1			
	Endolimax nana	1			1	
	Entamoeba coli	1	1			
	Entamoeba sp.	2	1	1		
Worm eggs: Ascaris lumbricoides		**62**				**82.3 %**
	Nematoda, Ascaris lumbricoides (roundworm)	40	5	20	15	
	Nematoda, Ascaris sp.	11	5	6		
	Negative for worm eggs	2				
	No reported finding	9				
Worm eggs: Trichuris trichiura		**62**				**-**
	Nematoda, Trichuris trichiura (whipworm)	36	33	3		
	No reported finding	26				
Worm eggs: Other findings		**5**				**-**
	Cestoidea, Dipylidium caninum	1		1		
	Cestoidea, Taenia sp.	3		3		
	Trematoda, Schistosoma sp.	1	1			
Total:		197				84.7 %

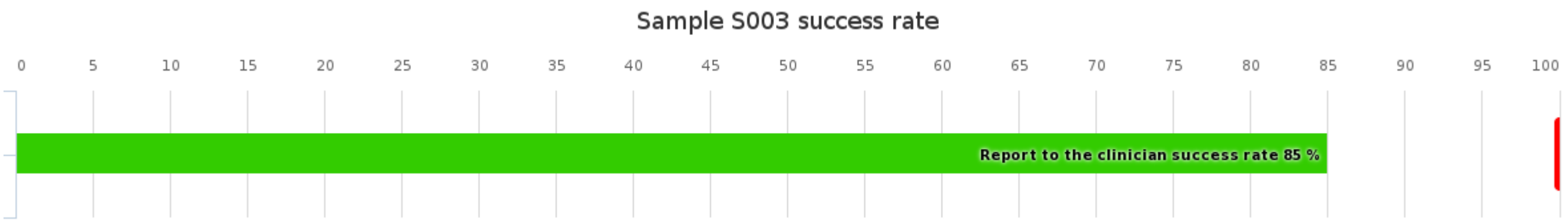
SCORING SUMMARY

Finding group	Finding	Finding score
Protozoa: Negative		
	Negative for protozoa	4
	Cryptosporidium sp.	0
	Entamoeba histolytica/dispar	0
	Giardia lamblia (G. intestinalis/duodenalis)	0
	No pathogenic findings	4
	Protozoa not in test selection	4
	No reported finding	0
Protozoa		
	Blastocystis hominis	-
	Chilomastix mesnili	-
	Endolimax nana	-
	Entamoeba coli	-
	Entamoeba sp.	-
Worm eggs: Ascaris lumbricoides		
	Nematoda, Ascaris lumbricoides (roundworm)	4
	Nematoda, Ascaris sp.	4
	Negative for worm eggs	0
	No reported finding	0
Worm eggs: Trichuris trichiura		
	Nematoda, Trichuris trichiura (whipworm)	-
	No reported finding	-
Worm eggs: Other findings		
	Cestoidea, Dipylidium caninum	-
	Cestoidea, Taenia sp.	-
	Trematoda, Schistosoma sp.	-
Total:		

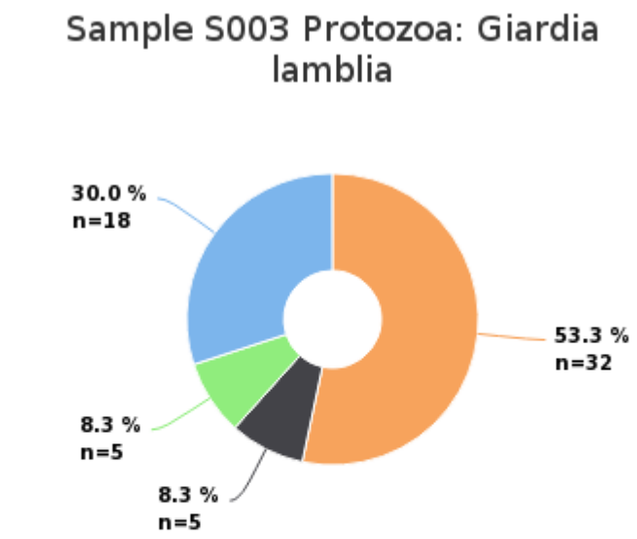
FURTHER ACTION

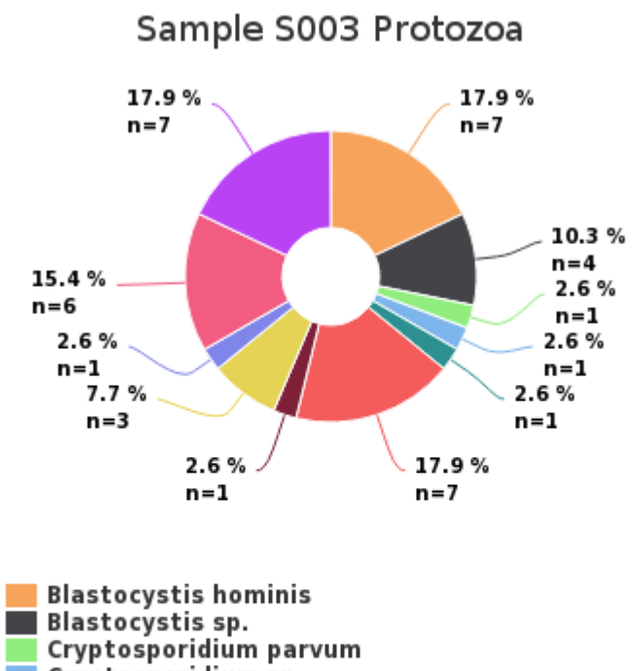
Result	Result count
Not referred for further action	12
Referred for further action	14
Referred for further action for examination of protozoa	2
New sample requested	4
Total:	32

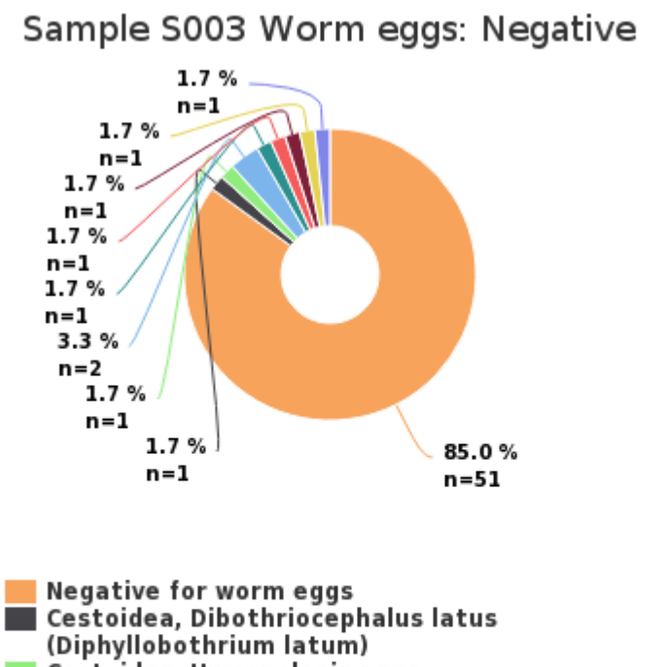
Sample S003 | Giardia lamblia



Sample S003 results	Responded	AVR success rate	Count
	Report to the clinician	85 %	159
	Further action	-	30







REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Little (+)	Moderate (++)	Plenty (+++)	AVR success rate
Protozoa: Giardia lamblia		**60**				**-**
	Giardia lamblia (G. intestinalis/duodenalis)	32	3	16	13	
	Negative for protozoa	5				
	Protozoa not in test selection	5				
	No reported finding	18				
Protozoa		**39**				**-**
	Blastocystis hominis	7	1	4	2	
	Blastocystis sp.	4	2	2		
	Cryptosporidium parvum	1		1		
	Cryptosporidium sp.	1		1		
	Cystoisospora sp.	1	1			
	Endolimax nana	7	4	3		
	Entamoeba - precysts	1	1			
	Entamoeba coli	3		2	1	
	Entamoeba hartmanni	1			1	
	Entamoeba histolytica/dispar	6	2	4		
	Entamoeba sp.	7	1	6		
Worm eggs: Negative		**60**				**85 %**
	Negative for worm eggs	51				
	Cestoidea, Dibothriocephalus latus (Diphyllobothrium latum)	1		1		
	Cestoidea, Hymenolepis nana	1	1			
	Nematoda, Ascaris lumbricoides (roundworm)	2	1	1		

	Nematoda, Ascaris sp.	1	1			
	Nematoda, Enterobius vermicularis (pinworm)	1			1	
	Nematoda, Strongyloides stercoralis, larvae	1	1			
	Trematoda, Paragonimus westermani	1	1			
	Trematoda, Schistosoma mansoni	1	1			
Total:		159				85 %

SCORING SUMMARY

Finding group	Finding	Finding score
Protozoa: Giardia lamblia		
	Giardia lamblia (G. intestinalis/duodenalis)	-
	Negative for protozoa	-
	Protozoa not in test selection	-
	No reported finding	-
Protozoa		
	Blastocystis hominis	-
	Blastocystis sp.	-
	Cryptosporidium parvum	-
	Cryptosporidium sp.	-
	Cystoisospora sp.	-
	Endolimax nana	-
	Entamoeba - precysts	-
	Entamoeba coli	-
	Entamoeba hartmanni	-
	Entamoeba histolytica/dispar	-
	Entamoeba sp.	-
Worm eggs: Negative		
	Negative for worm eggs	4
	Cestoidea, Dibothriocephalus latus (Diphyllobothrium latum)	0
	Cestoidea, Hymenolepis nana	0
	Nematoda, Ascaris lumbricoides (roundworm)	0
	Nematoda, Ascaris sp.	0
	Nematoda, Enterobius vermicularis (pinworm)	0
	Nematoda, Strongyloides stercoralis, larvae	0
	Trematoda, Paragonimus westermani	0
	Trematoda, Schistosoma mansoni	0
Total:		

FURTHER ACTION

Result	Result count
Not referred for further action	11
Referred for further action	9
Referred for further action for examination of protozoa	6
New sample requested	4
Total:	30

Report Info

PARTICIPANTS

Altogether 58 laboratories from 13 countries participated in this EQA round.

REPORT INFO

On the front page you can see summaries of overall success rate and sample specific success rates which have been calculated from the scores. The reported results and the scores are presented in the same report but in separate tables.
Results from the “Report to the clinician” part are divided into protozoa and worm eggs categories. The findings reported by the participants have been grouped into tables according to the expected (pathogenic) findings of each sample. If a laboratory has reported multiple findings, the additional findings have been grouped separately. The additional findings are not scored. The reported results and the scores are presented in the same report but in separate tables. The reported amounts of findings are also presented in the same “Report to the clinician” table but these results are not scored.
In general, the expected results are marked with green color. Accepted results may also be indicated with yellow color. Laboratory’s own results are indicated with a black radio button ◉. In the participant specific report there is also a laboratory specific scoring table for each sample, where you can find your own result and the scores given.
If you have not reported 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 scoring is based on pathogenic findings. However, all findings in the samples, including non-pathogenic protozoan findings, are reported, and commented. Pathogenic findings can be scored when at least 60% of the participants have reported the correct/expected result and when there are at least three reported results. The report includes a sample specific scoring summary. Laboratory’s scores have been converted to percentage (own success rate, % from maximum scores) with a target at 100%. Own success rate is compared with the success rate of all results.

The following general rules are applied:
4 points is reached by reporting the expected result
1-3 points is given to results that are partly correct/insufficient regarding the expected finding
0 points is given for an incorrect/false result

LABQUALITY

External Quality Assessment Scheme

Parasites in faeces, virtual microscopy Round 1, 2023

Specimens
Samples of this EQA round were virtual faecal slides. The original specimens were faecal samples fixed with 10% formaldehyde and concentrated using ethyl acetate and stained with iodine. The digital sample material was identical for all participants, stable, and suitable for external quality assessment.

The content of the samples was as follows:

Sample S001 (LQ769623011)
Expected findings: *Schistosoma mansoni* (little), *Entamoeba* sp. (little)
Background information: Control sample from a patient positive for anti-*Schistosoma* IgM antibodies.

Sample S002 (LQ769623012)
Expected findings: *Ascaris lumbricoides* (moderate), *Trichuris trichiura* (little)
Background information: Underweight child adopted from abroad.

Sample S003 (LQ769623013)
Expected finding: *Giardia lamblia* (moderate),
Background information: Patient with abdominal pain and diarrhoea.

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

Sample S001: *Schistosoma mansoni* (little), *Entamoeba* sp. (little)

Sample S001 contained a small amount of *Entamoeba* cysts and *Schistosoma mansoni* eggs. 57% (35/61) reported *Schistosoma* and 12 participants *Entamoeba.* 32 participants reported the sample as negative for protozoa and 18 reported the sample as negative for worm eggs.

Protozoan findings in the sample were challenging to identify. In the expected results published earlier *Giardia lamblia* and *Blastocystis* were also mentioned. Reliable identification of these findings was not possible from the sample, thus, they were left out of the finding list. Especially in the sample S001 focusing to smaller findings, like protozoans, was poor. This might be due to fact, that it was necessary to have more sample volume/slide to ensure presence of *Schistosoma* eggs, which are big in size and usually not so numerous in faeces. Thus, the height of scanning was higher than usually. In the future we will pay more attention to quality of scanned samples.

Entamoebas from the sample could be identified from round shape and size (10–35 µm), which is very suitable for e.g. *Entamoeba coli.* With careful focusing even the amount of nuclei could be counted, in some cases it was higher than four, also typical for *E. coli.* However, the entire *Entamoeba* family was accepted.

There were few eggs of *Schistosomes* in the sample. Eggs are big (110–180 µm), and differentiation them from debris is challenging. Typical feature

2023-06-21

FINAL REPORT

Product no. 5450

Subcontracting: Sample preparation, sample pretesting, digital image services

Samples sent	2023-05-02
Round closed	2023-05-25
Expected results	2023-05-30
Final report	2023-06-21

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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of the eggs, the lateral spine near the posterior end, was not visible. Thus, all members of *Schistosoma* family were accepted as an answer.

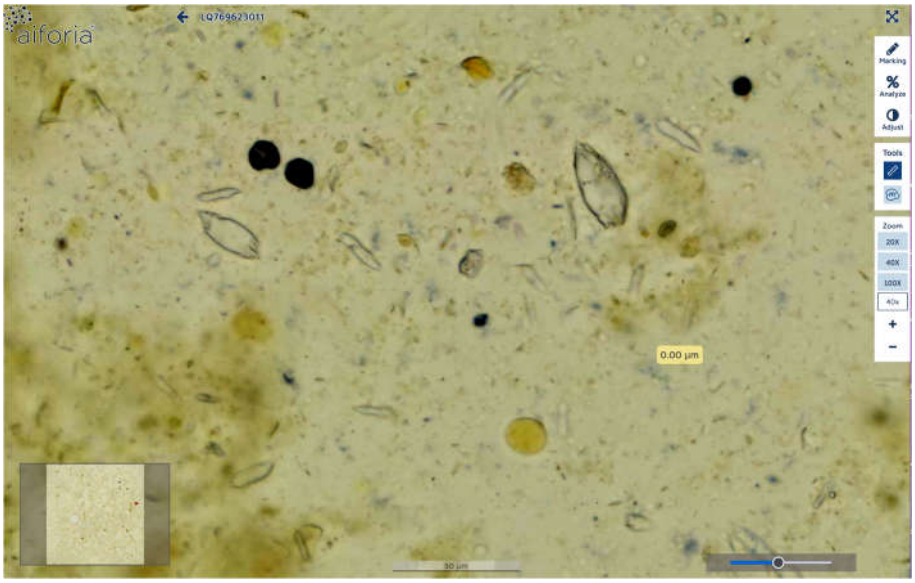

Figure 1. *Entamoeba* cyst in the sample S001.

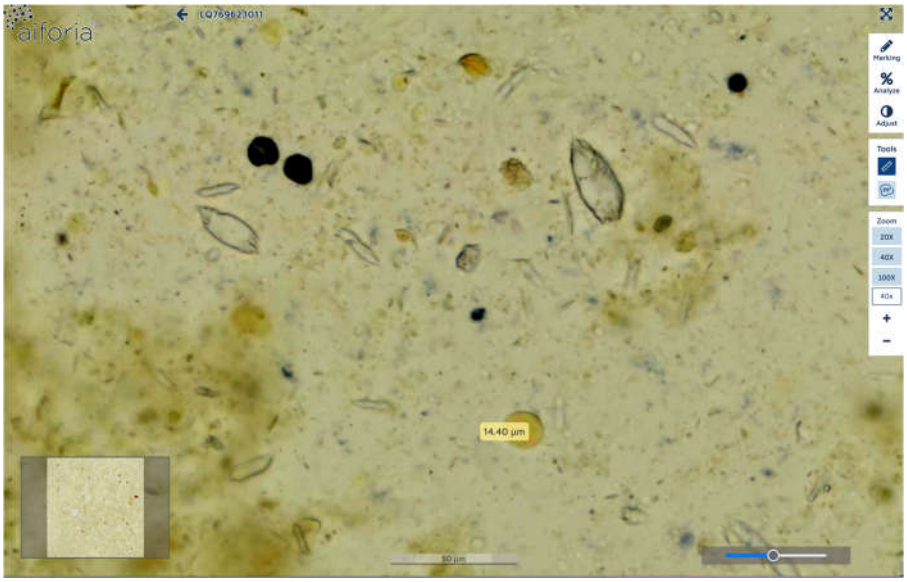

Figure 2. Size of *Entamoeba* cyst in the sample S001 is approx. 14 µm.

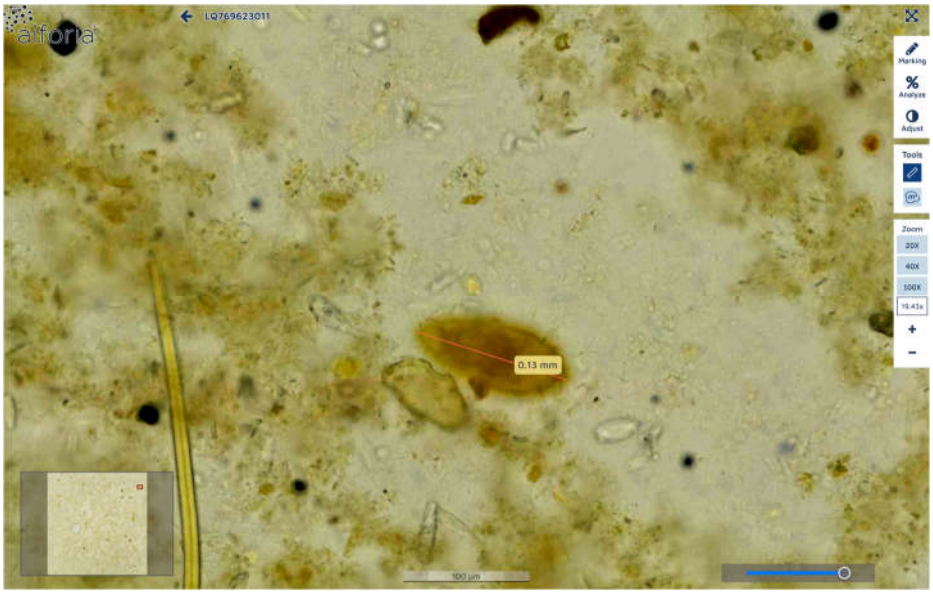

Figure 3. *Schistosoma mansoni* egg in sample S001.

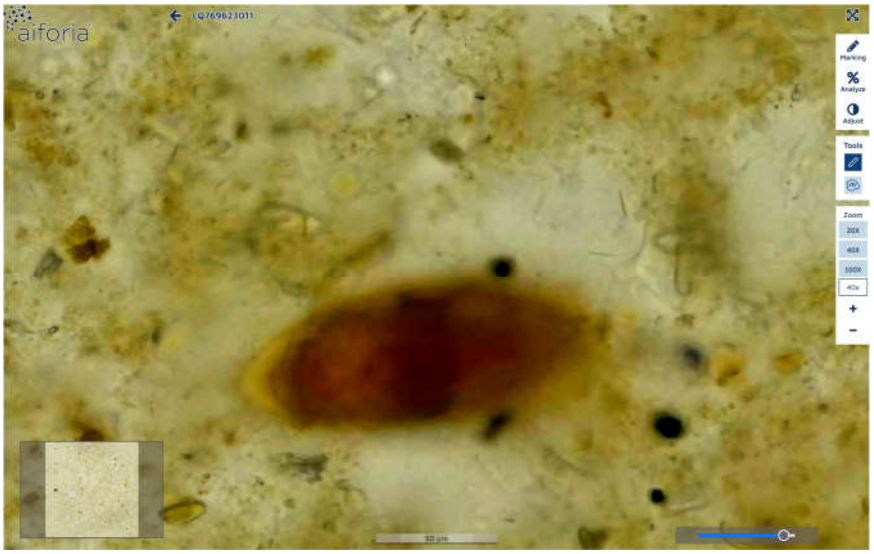

Figure 4. *Schistosoma mansoni* egg in sample S001.

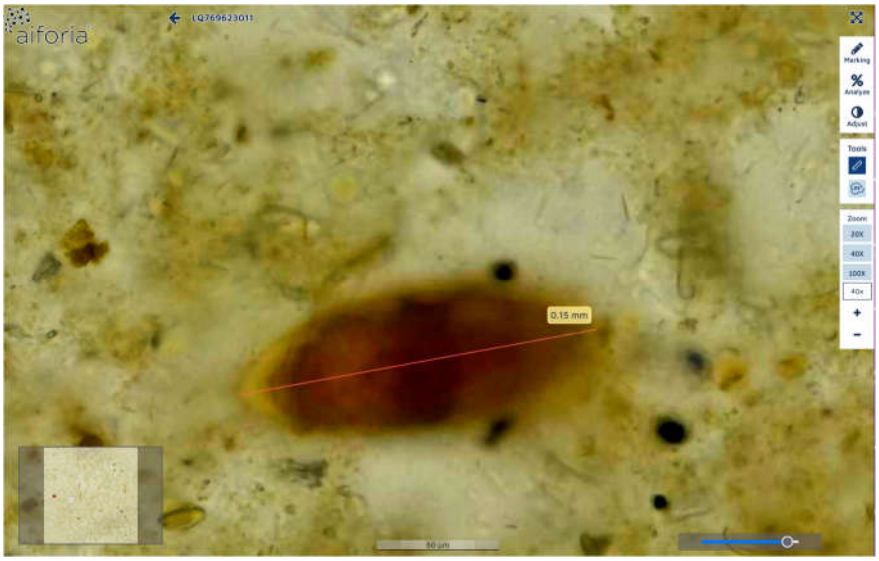

Figure 5. *Schistosoma mansoni* egg in sample S001.

Sample S002: *Ascaris lumbricoides* (moderate), *Trichuris trichiura* (little)

Sample S002 contained a moderate amount of *Ascaris lumbricoides* and a small amount of *Trichuris trichiura* eggs. 82% (51/62) of the participants reported *Ascaris* and 58% (36/62) reported *T. trichiura*. Two participants reported the sample as negative for worm eggs and 42 (75%) reported the sample as negative for protozoa.

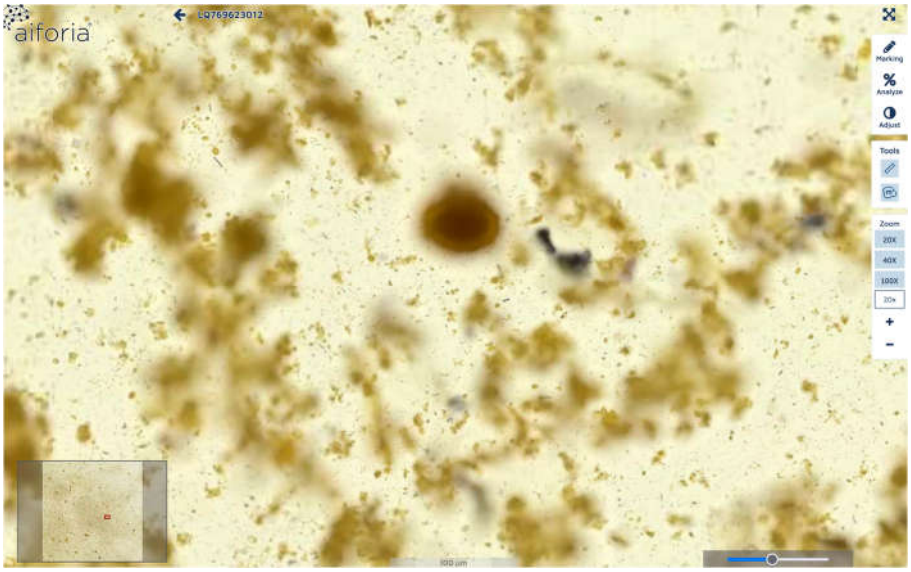

Figure 6. *Ascaris lumbricoides* in sample S002.

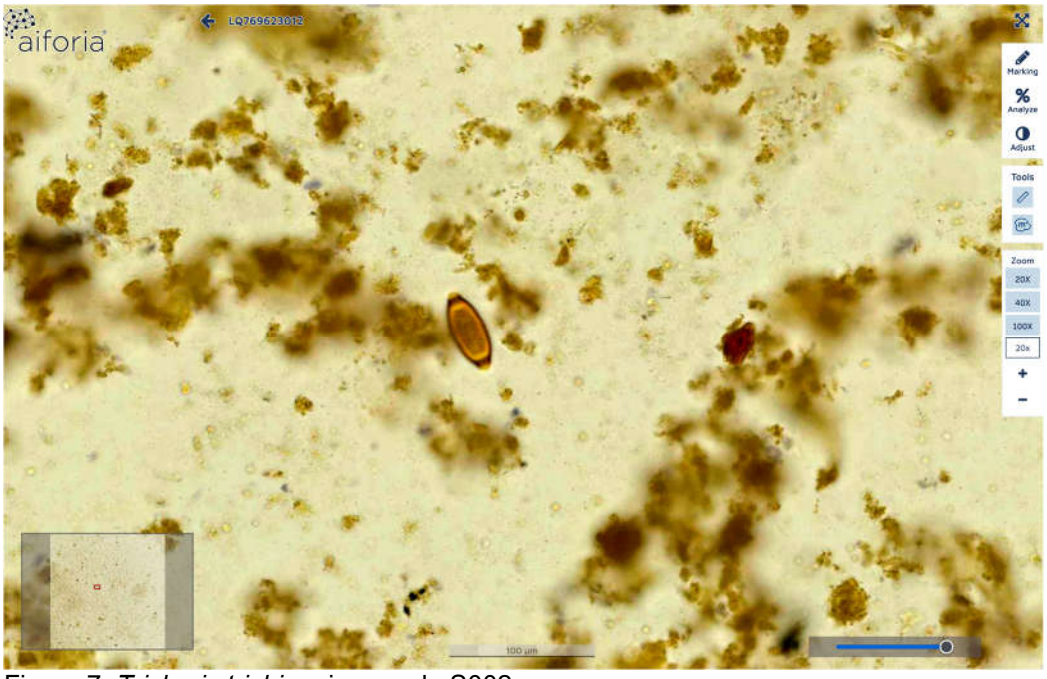

Figure 7. *Trichuris trichiura* in sample S002.

Eggs of *Ascaris lumbricoides* stained quite dark, but they were identifiable due to shape and size (45–75 µm) and from the lighter outer surface. *Ascaris lumbricoides* was very well identified from the sample.

Eggs of *Trichuris trichiura* are quite easy to identify due to typical shape and features. Challenge with this finding was the amount of eggs in the slide, which was quite low. Despite the low amount, participants had found and identified *Trichuris trichiura* well.

Sample S003: *Giardia lamblia* (moderate)

Sample S003 contained a moderate amount of *Giardia lamblia* cysts. 53% (32/60) reported *G. lamblia.* 51 participants reported the sample as negative for worm eggs and five as negative for protozoa. On the contrary to the expected results published earlier, *Trichuris trichiura* was not present in the scanned sample. This is most probably due to a very low amount of eggs in the original sample, which resulted to that none were present In the scanned one.

Giardia lamblia, on the other hand, was more easily found and identified compared to the protozoan in sample S001. Focusing was easier, and the amount of cysts also higher. Cysts were typical in shape and size.

Figure 8. *Giardia lamblia* cyst in sample S003.

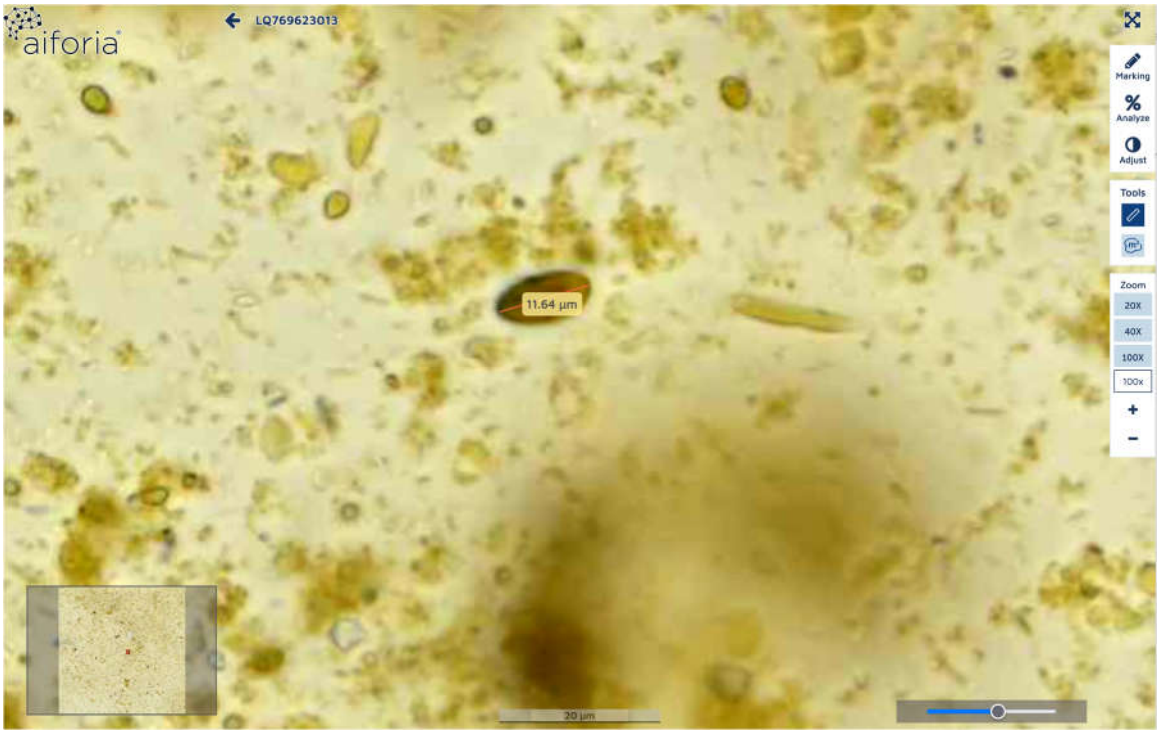

Figure 9. *Giardia lamblia* cyst in sample S003.

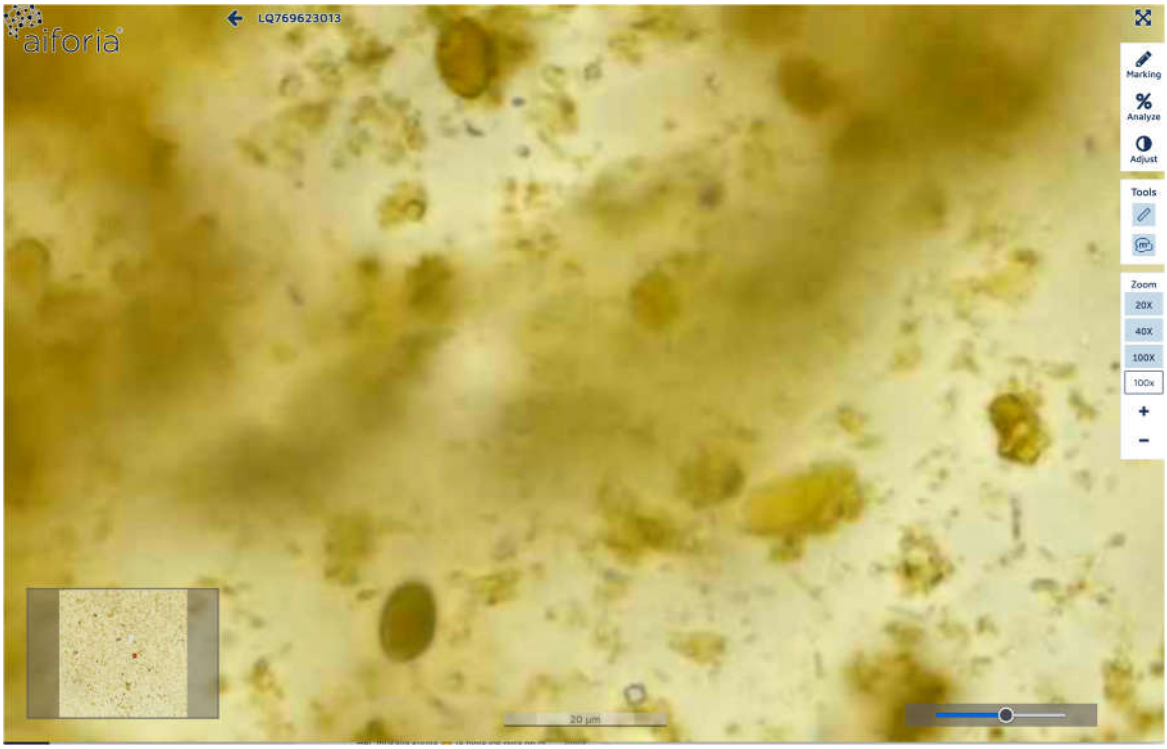

Figure 10. Two *Giardia lamblia* cysts in sample S003.

Exceptions in scoring

Schistoma mansoni in sample S001, *Trichuris trichiura* in sample S002 and *Giardia lamblia* in sample S003 were not scored as the success rates were below 60%.

End of report