

Supplementary Information

Strain challenge

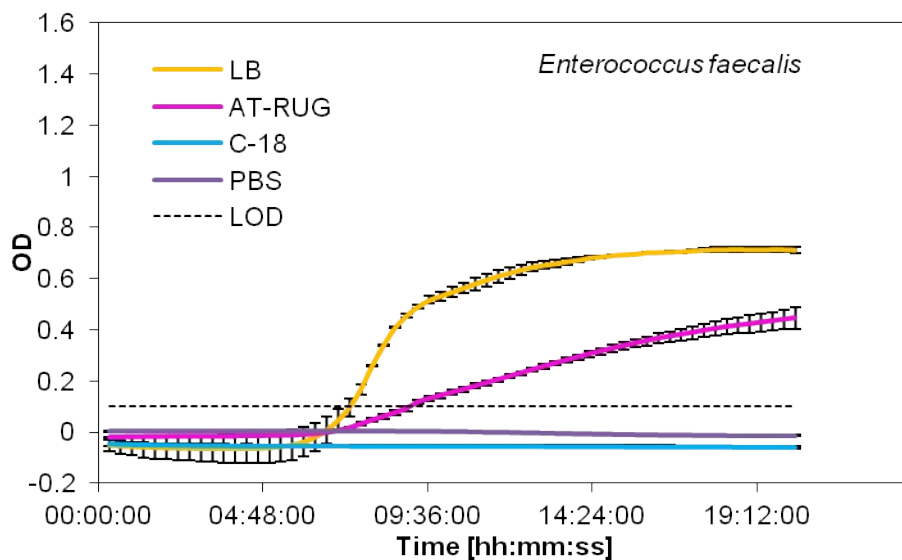


Fig. S1 Growth curve of *Enterococcus faecalis* in different media measured at 365 nm.

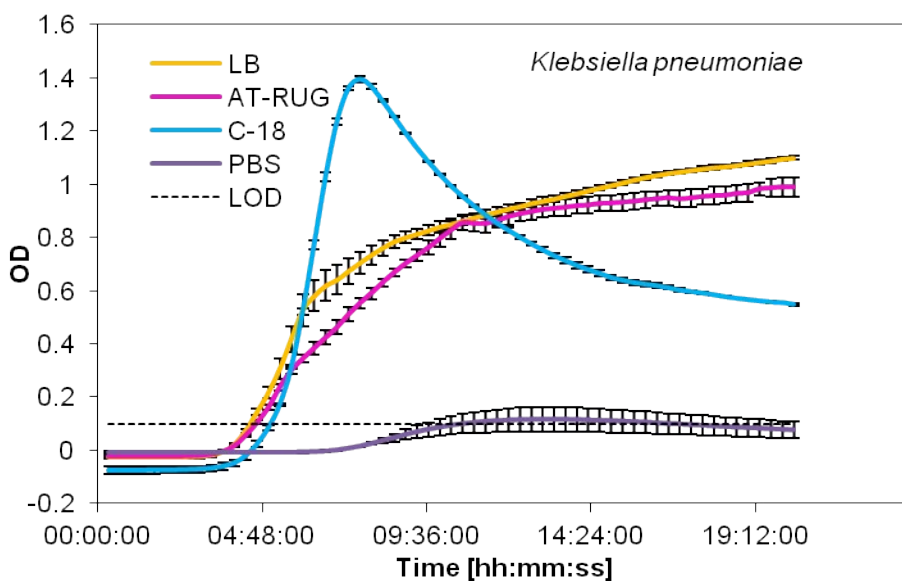


Fig. S2 Growth curve of *Klebsiella pneumoniae* in different media measured at 365 nm.

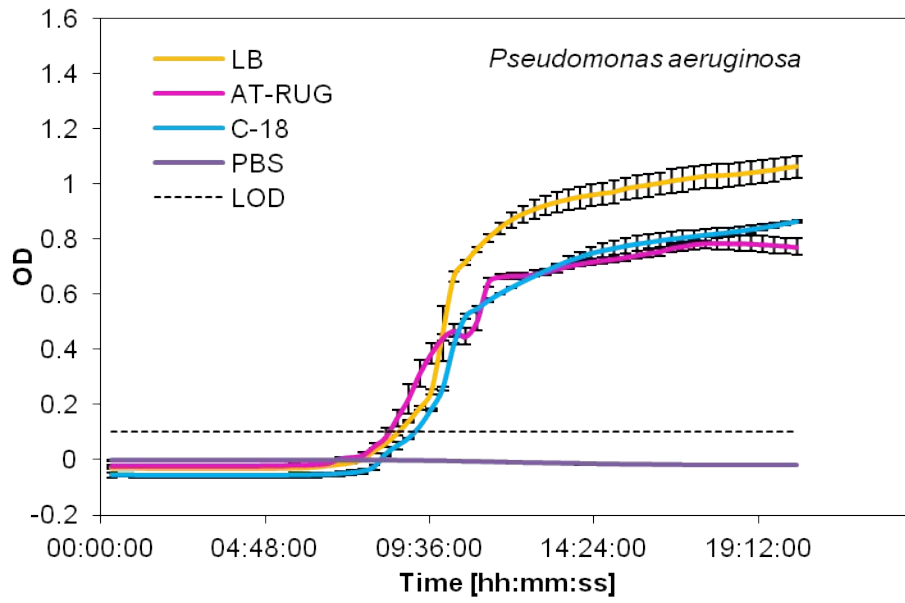


Fig. S3 Growth curve of *Pseudomonas aeruginosa* in different media measured at 365 nm.

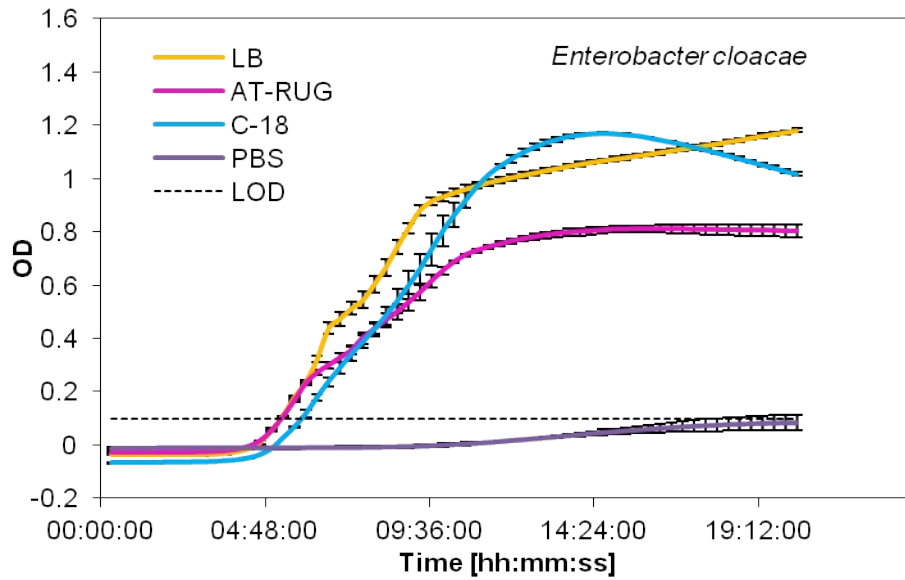


Fig. S4 Growth curve of *Enterobacter cloacae* in different media measured at 365 nm.

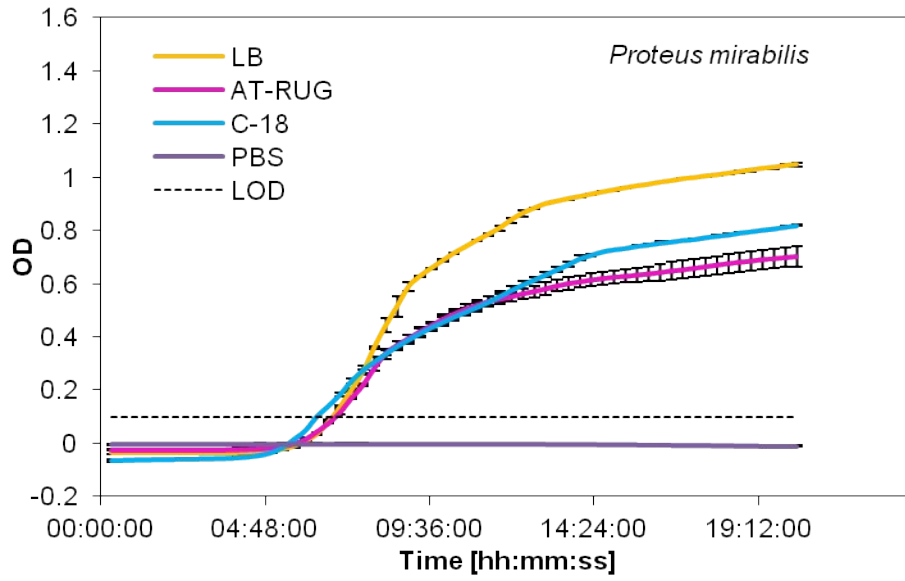


Fig. S5 Growth curve of *Proteus mirabilis* in different media measured at 365 nm.

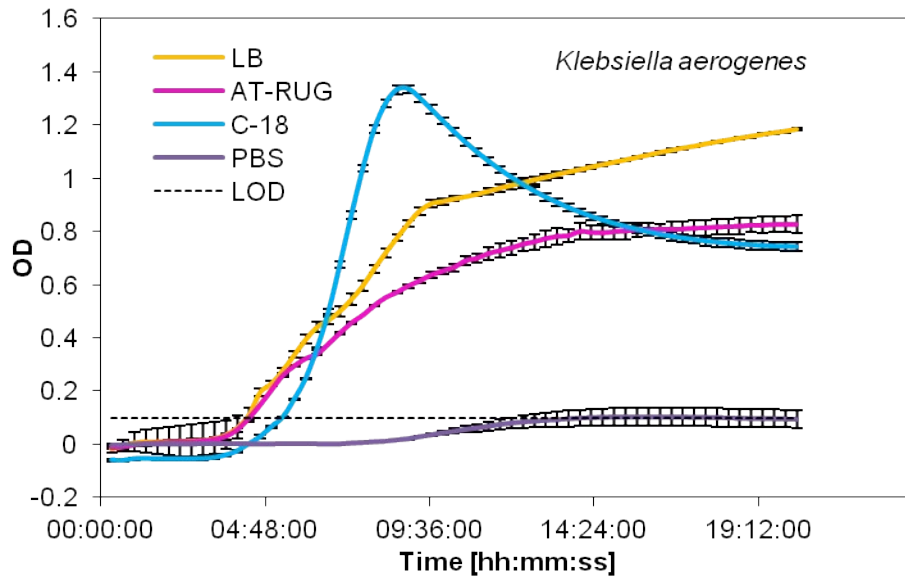


Fig. S6 Growth curve of *Klebsiella aerogenes* in different media measured at 365 nm.

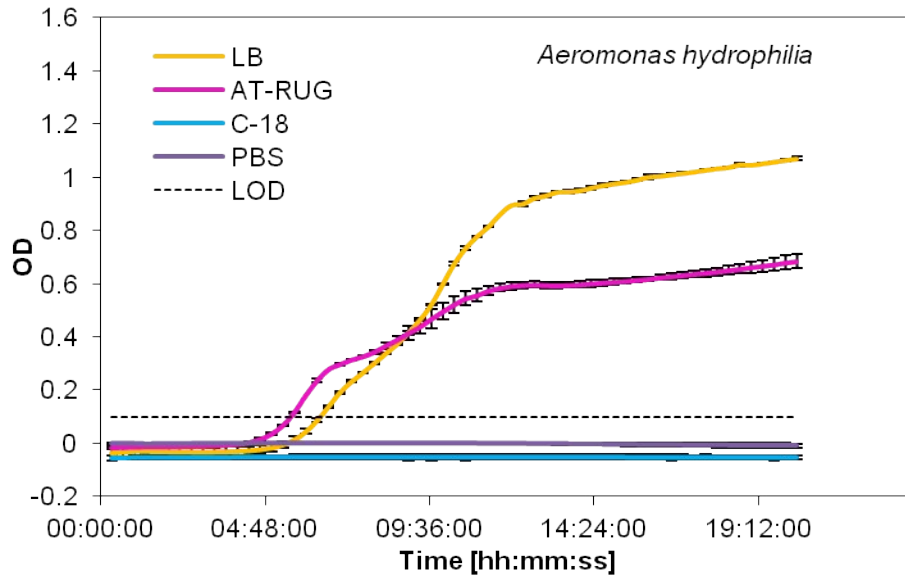


Fig. S7 Growth curve of *Aeromonas hydrophilia* in different media measured at 365 nm.

Temperate study Switzerland

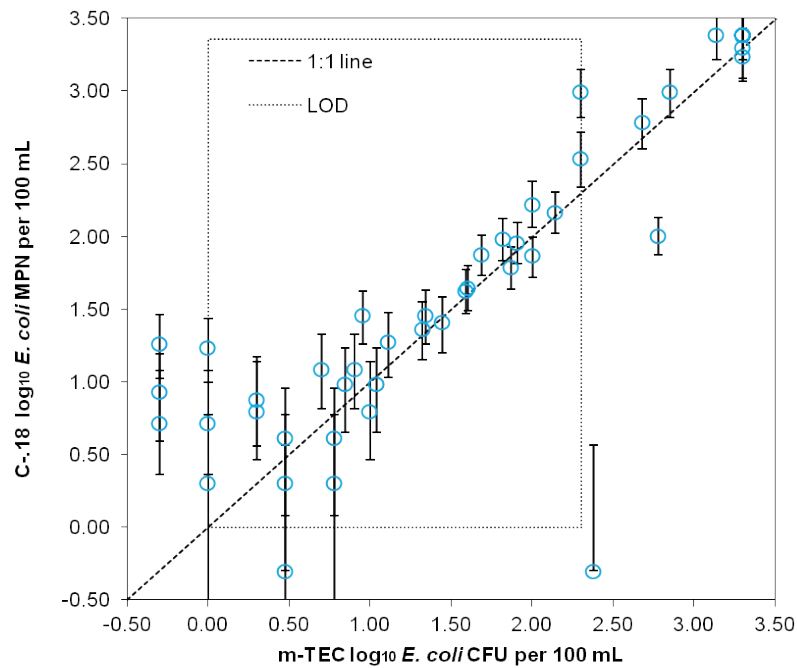


Fig. S8 Scatter plot of C-18 *E. coli* estimates with 95 % confidence intervals versus m-TEC. Confidence intervals are only valid in the range of detection.

Table S1 Results of paired samples t-test including t-value, p-value, 95 % confidence interval (CI) and mean difference (μ_d) of AT-RUG and m-TEC *E. coli* estimates.

	m-TEC			
	t	p-value	μ_d	95 % CI
Two-tailed H_1 $\mu_d \neq 0$	1.013	0.315	0.066	[-0.064, 0.196]
Upper-tailed H_1 $\mu_d > 0$	1.013	0.158	0.066	[-0.043, Inf]
Lower-tailed H_1 $\mu_d < 0$	1.013	0.842	0.066	[-Inf, 0.175]

Table S2 Results of paired samples t-test including t-value, p-value, 95 % confidence interval (CI) and mean difference (μ_d) of AT-RUG and C-18 *E. coli* estimates.

	C-18			
	t	p-value	μ_d	95 % CI
Two-tailed H_1 $\mu_d \neq 0$	-1.122	0.267	-0.033	[-0.092, 0.026]
Upper-tailed H_1 $\mu_d > 0$	-1.122	0.867	-0.033	[-0.082, Inf]
Lower-tailed H_1 $\mu_d < 0$	-1.122	0.133	-0.033	[-Inf, 0.016]

Table S3 Comparison of categorical concentrations of *E. coli* from C-18 using Quanti-Tray®/2000 system and m-TEC using membrane filtration. Percentages refer to the total sampling number.

C-18 (MPN/100 mL)	m-TEC (CFU/100 mL)				Total
	<1	1 - 10	11 - 100	>100	
<1	0 % (0)	1.45 % (1)	0 % (0)	1.45 % (1)	2.9 % (2)
1 - 10	2.9 % (2)	14.49 % (10)	1.45 % (1)	0 % (0)	18.84 % (14)
11 - 100	1.45 % (1)	5.8 % (4)	14.49 % (10)	1.45 % (1)	23.19 % (14)
>100	0 % (0)	0 % (0)	0 % (0)	55.07 % (38)	55.07 % (39)
Total	4.35 % (3)	21.74 % (15)	15.94 % (11)	57.97 % (40)	100 % (69)

Table S4 Comparison of AT-RUG and m-TEC results based on sample positivity for *E. coli*

AT-RUG (MPN/100 mL)	m-TEC (CFU/100 mL)		
	Negative	Positive	Total
Negative	0 % (0)	100 % (2)	100 % (2)
Positive	4.5 % (3)	95.5 % (64)	100 % (67)
Total	4.3 % (3)	95.7 % (66)	100 % (69)

Table S5 Comparison of AT-RUG and C-18 results based on sample positivity for *E. coli*

AT-RUG (MPN/100 mL)	C-18 (MPN/100 mL)		
	Negative	Positive	Total
Negative	50 % (1)	50 % (1)	100 % (2)
Positive	1.5 % (1)	98.5 % (66)	100 % (67)
Total	2.9 % (2)	97.1 % (67)	100 % (69)

Table S6 Comparison of C-18 and m-TEC results based on sample positivity for *E. coli*

C-18 (MPN/100 mL)	m-TEC (CFU/100 mL)		
	Negative	Positive	Total
Negative	0 % (0)	100 % (2)	100 % (2)
Positive	4.5 % (3)	95.5 % (64)	100 % (67)
Total	4.3 % (3)	95.7 % (66)	100 % (69)

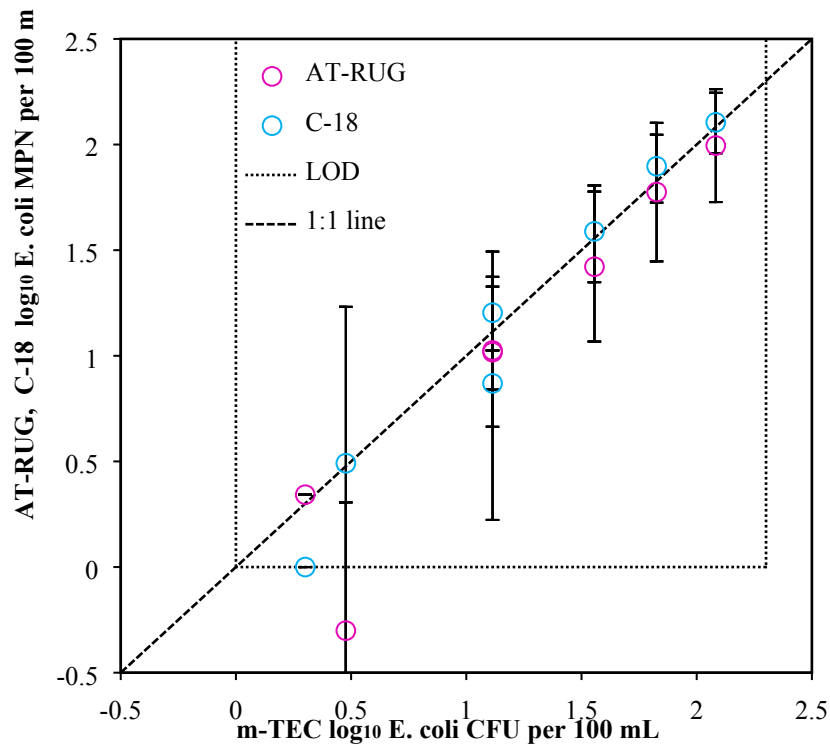


Fig. S9 Laboratory comparison of AT-RUG and C-18 *E. coli* estimates with 95 % confidence intervals versus m-TEC. Confidence intervals are only valid in the range of detection.

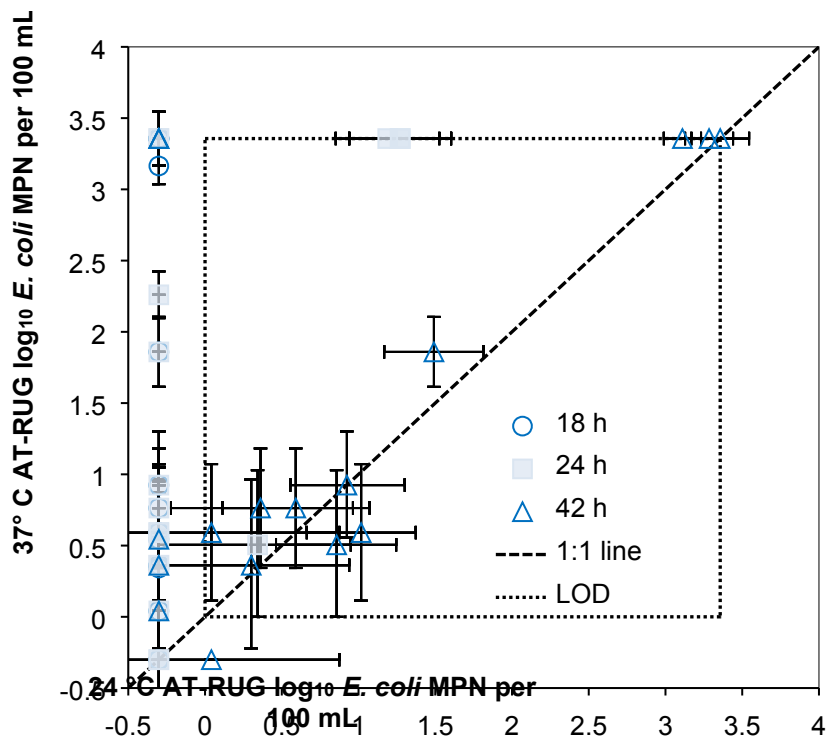


Fig. S10 Scatter plot of AT-RUG *E. coli* estimates at 24 °C with 95 % confidence intervals versus AT-RUG at 37 °C. Confidence intervals are only valid in the range of detection.

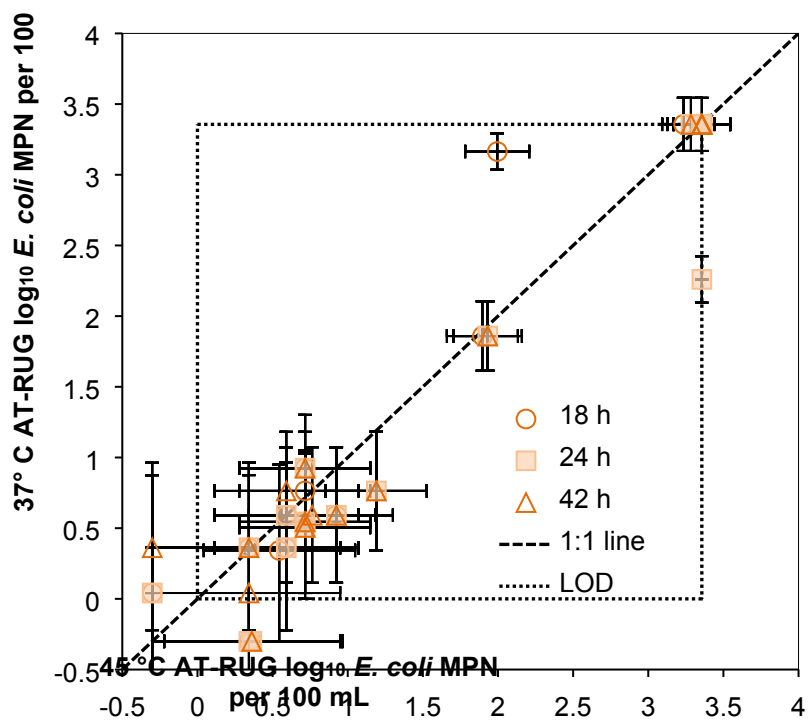


Fig. S11: Scatter plot of AT-RUG *E. coli* estimates at 45 °C with 95 % confidence intervals versus AT-RUG at 37 °C. Confidence intervals are only valid in the range of detection.

Tropical study Uganda

Table S7 Results of paired samples t-test including t-value, p-value, 95 % confidence interval (CI) and mean difference (μ_d) of AT-RUG and m-ColiBlue24® *E. coli* estimates

	m-ColiBlue24®			
	t	p-value	μ_d	95 % CI
Two-tailed H_1 $\mu_d \neq 0$	2.451	0.016	0.116	[0.022, 0.210]
Upper-tailed H_1 $\mu_d > 0$	2.451	0.008	0.116	[-0.037, Inf]
Lower-tailed H_1 $\mu_d < 0$	2.451	0.992	0.116	[-Inf, 0.195]

Table S8 Comparison of AT-RUG and m-ColiBlue24® results based on sample positivity for *E. coli*

AT-RUG (MPN/100 mL)	m-ColiBlue24® (CFU/100 mL)		
	Negative	Positive	Total
Negative	77.8 % (14)	22.2 % (4)	100 % (18)
Positive	4.5 % (3)	95.5 % (64)	100 % (67)
Total	20.0 % (17)	95.5 % (68)	100 % (85)