

Etiologic features of diarrheagenic microbes in stool specimens from patients with acute diarrhea in Thailand

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Supplemental material

Table S1

Table S2

Table S3

Table S4

Figure S1

Figure S2

Figure S3

Methods

Figure S1. Box and whisker plot showing quantitation cycle (Cq) values of qPCR-positive samples for 24 target genes among 370 diarrheal and 370 non-diarrheal control subjects. The bottom and top of each box represent 25th and 75th percentiles of the data, respectively. The median value is displayed inside the box by the line. The maximum and minimum values are displayed with vertical lines connecting the points to the center box, along with the outliers represented herein indicated by closed and open circles. Numbers indicate the number of positive specimens.

Figure S2. Detection of enteropathogens by month based on qPCR assays and distribution of Cq-values. The blue dots represent Cq values from the non-diarrheal control subjects and the red dots represent Cq values from the diarrheal patients. The red line indicates the cut-off value shown in Table 1.

Figure S3. Detection of enteropathogens by age group using qPCR assays and distribution of Cq-values. The blue dots represent Cq values from the non-diarrheal control subjects and the red dots represent Cq values from the diarrheal patients. The red line indicates the cut-off value shown in Table 1.

Table S1. Clinical symptoms caused by each enteropathogen as determined based on quantitative PCR results and patient data

	All cases				Cases under Cq-cutoff value			
	Yes	No	OR	P-value	Yes	No	OR	P-value
Rotavirus								
Fever	90 (32.6)	11 (12.9)	3.14 (1.61-6.14)	< 0.001 ***	66 (23.9)	11 (12.9)	2.05 (1.04-4.04)	0.034 *
Nausea	19 (22.4)	82 (29.7)	0.69 (0.39-1.22)	0.215	18 (21.2)	59 (21.4)	1 (0.56-1.81)	1
Vomiting	74 (34.3)	27 (18.6)	2.25 (1.37-3.72)	0.001 **	62 (28.7)	15 (10.3)	3.41 (1.86-6.22)	< 0.001 ***
Diarrhea (≥ 10 times/day)	30 (31.6)	69 (27.1)	1.25 (0.75-2.08)	0.425	21 (22.1)	54 (21.2)	1.07 (0.61-1.88)	0.884
Abdominal pain	18 (19.8)	83 (30.7)	0.57 (0.32-1)	0.058	14 (15.4)	63 (23.3)	0.61 (0.33-1.14)	0.139
Fecal WBC	3 (18.8)	25 (23.8)	0.82 (0.23-2.88)	0.762	1 (6.2)	18 (17.1)	0.46 (0.08-2.63)	0.462
Fecal RBC	6 (35.3)	19 (26.8)	1.52 (0.51-4.54)	0.553	4 (23.5)	14 (19.7)	1.32 (0.39-4.44)	0.743
Hospital stay			-0.66 (-1.45, 0.13)	0.105			-0.57 (-1.47, 0.32)	0.210
Norovirus GII								
Fever	44 (15.9)	15 (17.6)	0.87 (0.46-1.65)	0.738	20 (7.2)	9 (10.6)	0.64 (0.29-1.45)	0.361
Nausea	11 (12.9)	48 (17.4)	0.73 (0.36-1.46)	0.403	3 (3.5)	26 (9.4)	0.4 (0.13-1.26)	0.108
Vomiting	47 (21.8)	12 (8.3)	2.99 (1.54-5.81)	0.001 **	24 (11.1)	5 (3.4)	3.25 (1.26-8.41)	0.009 **
Diarrhea (≥ 10 times/day)	11 (11.6)	45 (17.6)	0.63 (0.31-1.26)	0.192	5 (5.3)	22 (8.6)	0.63 (0.24-1.65)	0.371
Abdominal pain	7 (7.7)	52 (19.3)	0.37 (0.17-0.83)	0.009 **	2 (2.2)	27 (10.0)	0.25 (0.07-0.92)	0.014 *
Fecal WBC	3 (18.8)	21 (20.0)	1.02 (0.29-3.62)	1	1 (6.2)	10 (9.5)	0.88 (0.15-5.29)	1
Fecal RBC	1 (5.9)	20 (28.2)	0.23 (0.04-1.31)	0.062	1 (5.9)	10 (14.1)	0.53 (0.09-3.21)	0.684
Hospital stay			-0.61 (-1.58, 0.37)	0.223			-0.28 (-1.62, 1.06)	0.683
Shigella/EIEC								
Fever	32 (11.6)	9 (10.6)	1.07 (0.5-2.31)	1	16 (5.8)	5 (5.9)	0.93 (0.34-2.51)	1
Nausea	10 (11.8)	31 (11.2)	1.08 (0.51-2.28)	0.847	8 (9.4)	13 (4.7)	2.14 (0.87-5.24)	0.115
Vomiting	25 (11.6)	16 (11.0)	1.05 (0.54-2.02)	1	13 (6.0)	8 (5.5)	1.07 (0.44-2.6)	1
Diarrhea (≥ 10 times/day)	8 (8.4)	32 (12.5)	0.67 (0.3-1.48)	0.347	5 (5.3)	15 (5.9)	0.94 (0.35-2.57)	1
Abdominal pain	14 (15.4)	27 (10.0)	1.66 (0.83-3.29)	0.182	10 (11.0)	11 (4.1)	2.91 (1.21-6.96)	0.020 *
Fecal WBC	7 (43.8)	9 (8.6)	8.02 (2.5-25.75)	0.001 **	7 (43.8)	2 (1.9)	32.68 (6.75-158.38)	< 0.001 ***
Fecal RBC	5 (29.4)	9 (12.7)	2.89 (0.86-9.74)	0.134	5 (29.4)	4 (5.6)	6.6 (1.65-26.35)	0.012 *
Hospital stay			-0.31 (-1.41, 0.79)	0.580			-0.74 (-2.23, 0.74)	0.329
Campylobacter								
Fever	36 (13.0)	4 (4.7)	2.75 (1-7.55)	0.031 *	16 (5.8)	2 (2.4)	2.12 (0.55-8.18)	0.263
Nausea	9 (10.6)	31 (11.2)	0.97 (0.45-2.09)	1	4 (4.7)	14 (5.1)	1 (0.34-2.96)	1
Vomiting	20 (9.3)	20 (13.8)	0.64 (0.33-1.23)	0.231	9 (4.2)	9 (6.2)	0.66 (0.26-1.66)	0.461
Diarrhea (≥ 10 times/day)	3 (3.2)	36 (14.1)	0.23 (0.07-0.7)	0.003 **	1 (1.1)	17 (6.7)	0.22 (0.04-1.17)	0.032 *
Abdominal pain	7 (7.7)	33 (12.2)	0.63 (0.27-1.44)	0.334	2 (2.2)	16 (5.9)	0.43 (0.11-1.67)	0.263
Fecal WBC	1 (6.2)	14 (13.3)	0.61 (0.1-3.57)	0.690	1 (6.2)	9 (8.6)	0.98 (0.16-5.97)	1
Fecal RBC	3 (17.6)	6 (8.5)	2.43 (0.59-10.05)	0.367	3 (17.6)	5 (7.0)	2.92 (0.68-12.51)	0.180
Hospital stay			0.96 (-0.13, 2.06)	0.086			0.72 (-0.76, 2.21)	0.342
EAEC (aggR)								
Fever	74 (26.8)	27 (31.8)	0.78 (0.46-1.32)	0.408	9 (3.3)	2 (2.4)	1.19 (0.29-4.88)	1
Nausea	22 (25.9)	79 (28.6)	0.88 (0.51-1.52)	0.680	3 (3.5)	8 (2.9)	1.34 (0.38-4.77)	0.725
Vomiting	52 (24.1)	49 (33.8)	0.62 (0.39-0.99)	0.055	5 (2.3)	6 (4.1)	0.56 (0.18-1.77)	0.360
Diarrhea (≥ 10 times/day)	23 (24.2)	70 (27.5)	0.85 (0.5-1.46)	0.588	1 (1.1)	10 (3.9)	0.37 (0.07-2.09)	0.301
Abdominal pain	27 (29.7)	74 (27.4)	1.12 (0.67-1.89)	0.687	1 (1.1)	10 (3.7)	0.41 (0.07-2.31)	0.303
Fecal WBC	5 (31.2)	25 (23.8)	1.51 (0.5-4.58)	0.541	1 (6.2)	4 (3.8)	2.18 (0.32-14.94)	0.514
Fecal RBC	6 (35.3)	17 (23.9)	1.76 (0.58-5.3)	0.366	1 (5.9)	4 (5.6)	1.36 (0.2-9.35)	1
Hospital stay			-0.41 (-1.19, 0.38)	0.311			-1.07 (-3.28, 1.13)	0.341
EAEC (astA)								
Fever	163 (59.1)	54 (63.5)	0.83 (0.51-1.37)	0.527	7 (2.5)	3 (3.5)	0.66 (0.18-2.39)	0.705
Nausea	52 (61.2)	165 (59.8)	1.06 (0.64-1.73)	0.899	2 (2.4)	8 (2.9)	0.95 (0.23-3.96)	1
Vomiting	129 (59.7)	88 (60.7)	0.96 (0.63-1.48)	0.913	7 (3.2)	3 (2.1)	1.46 (0.4-5.28)	0.746
Diarrhea (≥ 10 times/day)	56 (58.9)	152 (59.6)	0.97 (0.6-1.56)	1	1 (1.1)	8 (3.1)	0.46 (0.08-2.66)	0.454
Abdominal pain	61 (67.0)	156 (57.8)	1.48 (0.9-2.42)	0.138	1 (1.1)	9 (3.3)	0.46 (0.08-2.6)	0.462
Fecal WBC	10 (62.5)	59 (56.2)	1.26 (0.44-3.61)	0.788	0 (0.0)	4 (3.8)	0.68 (0.04-13.29)	1

Fecal RBC	10 (58.8)	38 (53.5)	1.22 (0.43-3.46)	0.790		1 (5.9)	3 (4.2)	1.78 (0.24-12.98)	1	
Hospital stay			-0.65 (-1.36, 0.06)	0.072				0.65 (-1.95, 3.26)	0.624	
<i>Aeromonas</i>	Yes	No	OR	P-value		Yes	No	OR	P-value	
Fever	44 (15.9)	19 (22.4)	0.65 (0.36-1.19)	0.192		4 (1.4)	4 (4.7)	0.3 (0.08-1.13)	0.092	
Nausea	25 (29.4)	38 (13.8)	2.61 (1.47-4.64)	0.002	**	5 (5.9)	3 (1.1)	5.34 (1.37-20.86)	0.020	*
Vomiting	38 (17.6)	25 (17.2)	1.02 (0.59-1.77)	1		6 (2.8)	2 (1.4)	1.77 (0.41-7.74)	0.483	
Diarrhea (≥ 10 times/day)	27 (28.4)	34 (13.3)	2.58 (1.46-4.56)	0.001	**	6 (6.3)	2 (0.8)	7.36 (1.68-32.3)	0.006	**
Abdominal pain	25 (27.5)	38 (14.1)	2.32 (1.31-4.09)	0.006	**	5 (5.5)	3 (1.1)	4.86 (1.24-18.97)	0.027	*
Fecal WBC	3 (18.8)	27 (25.7)	0.74 (0.21-2.59)	0.758		0 (0.0)	5 (4.8)	0.55 (0.03-10.49)	1	
Fecal RBC	4 (23.5)	17 (23.9)	1.04 (0.31-3.43)	1		1 (5.9)	3 (4.2)	1.78 (0.24-12.98)	1	
Hospital stay			0.16 (-0.76, 1.09)	0.731				-0.16 (-2.77, 2.44)	0.903	
<i>Sapovirus</i>	Yes	No	OR	P-value		Yes	No	OR	P-value	
Fever	11 (4.0)	4 (4.7)	0.78 (0.26-2.4)	0.759		7 (2.5)	2 (2.4)	0.93 (0.22-3.97)	1	
Nausea	7 (8.2)	8 (2.9)	3.02 (1.1-8.32)	0.055		5 (5.9)	4 (1.4)	4.14 (1.16-14.74)	0.037	*
Vomiting	11 (5.1)	4 (2.8)	1.76 (0.58-5.34)	0.421		6 (2.8)	3 (2.1)	1.26 (0.34-4.69)	0.745	
Diarrhea (≥ 10 times/day)	1 (1.1)	13 (5.1)	0.29 (0.05-1.57)	0.124		1 (1.1)	7 (2.7)	0.53 (0.09-3.08)	0.688	
Abdominal pain	2 (2.2)	13 (4.8)	0.53 (0.14-2.1)	0.373		2 (2.2)	7 (2.6)	0.98 (0.23-4.19)	1	
Fecal WBC	0 (0.0)	3 (2.9)	0.89 (0.04-17.98)	1		0 (0.0)	2 (1.9)	1.25 (0.06-27.31)	1	
Fecal RBC	1 (5.9)	1 (1.4)	4.27 (0.42-43.73)	0.351		1 (5.9)	0 (0.0)	13 (0.51-333.64)	0.193	
Hospital stay			-0.33 (-2.28, 1.63)	0.744				-0.37 (-2.97, 2.24)	0.783	
<i>Astrovirus</i>	Yes	No	OR	P-value		Yes	No	OR	P-value	
Fever	9 (3.3)	2 (2.4)	1.19 (0.29-4.88)	1		6 (2.2)	2 (2.4)	0.8 (0.18-3.52)	1	
Nausea	2 (2.4)	9 (3.3)	0.84 (0.2-3.47)	1		2 (2.4)	6 (2.2)	1.25 (0.28-5.47)	1	
Vomiting	7 (3.2)	4 (2.8)	1.13 (0.34-3.69)	1		5 (2.3)	3 (2.1)	1.06 (0.27-4.11)	1	
Diarrhea (≥ 10 times/day)	4 (4.2)	7 (2.7)	1.63 (0.49-5.37)	0.498		3 (3.2)	5 (2.0)	1.72 (0.44-6.72)	0.452	
Abdominal pain	2 (2.2)	9 (3.3)	0.77 (0.19-3.16)	0.737		2 (2.2)	6 (2.2)	1.14 (0.26-4.98)	1	
Fecal WBC	1 (6.2)	3 (2.9)	2.83 (0.39-20.65)	0.437		1 (6.2)	1 (1.0)	6.74 (0.66-68.96)	0.248	
Fecal RBC	0 (0.0)	1 (1.4)	1.34 (0.05-34.4)	1		0 (0.0)	1 (1.4)	1.34 (0.05-34.4)	1	
Hospital stay			-0.93 (-3.13, 1.28)	0.412				-1.02 (-3.93, 1.88)	0.49	
<i>Salmonella</i>	Yes	No	OR	P-value		Yes	No	OR	P-value	
Fever	34 (12.3)	9 (10.6)	1.15 (0.53-2.46)	0.848		7 (2.5)	0 (0.0)	4.76 (0.27-84.19)	0.206	
Nausea	8 (9.4)	35 (12.7)	0.75 (0.34-1.65)	0.565		2 (2.4)	5 (1.8)	1.48 (0.32-6.72)	0.670	
Vomiting	22 (10.2)	21 (14.5)	0.67 (0.36-1.26)	0.247		4 (1.9)	3 (2.1)	0.86 (0.21-3.54)	1	
Diarrhea (≥ 10 times/day)	20 (21.1)	22 (8.6)	2.82 (1.47-5.41)	0.003	**	3 (3.2)	4 (1.6)	2.11 (0.51-8.72)	0.395	
Abdominal pain	12 (13.2)	31 (11.5)	1.2 (0.59-2.41)	0.709		5 (5.5)	2 (0.7)	6.83 (1.5-31.05)	0.013	*
Fecal WBC	3 (18.8)	11 (10.5)	2.13 (0.57-8.02)	0.396		0 (0.0)	3 (2.9)	0.89 (0.04-17.98)	1	
Fecal RBC	4 (23.5)	8 (11.3)	2.49 (0.69-9)	0.236		0 (0.0)	1 (1.4)	1.34 (0.05-34.4)	1	
Hospital stay			-0.59 (-1.66, 0.48)	0.282				-0.01 (-2.92, 2.9)	0.995	
<i>Plesiomonas</i>	Yes	No	OR	P-value		Yes	No	OR	P-value	
Fever	18 (6.5)	14 (16.5)	0.35 (0.17-0.74)	0.008	**	3 (1.1)	3 (3.5)	0.3 (0.07-1.35)	0.145	
Nausea	10 (11.8)	22 (8.0)	1.57 (0.72-3.42)	0.281		1 (1.2)	5 (1.8)	0.88 (0.14-5.42)	1	
Vomiting	21 (9.7)	11 (7.6)	1.29 (0.61-2.72)	0.573		2 (0.9)	4 (2.8)	0.37 (0.08-1.75)	0.224	
Diarrhea (≥ 10 times/day)	9 (9.5)	22 (8.6)	1.14 (0.51-2.53)	0.833		0 (0.0)	6 (2.4)	0.2 (0.01-3.6)	0.196	
Abdominal pain	18 (19.8)	14 (5.2)	4.45 (2.14-9.28)	< 0.001	***	4 (4.4)	2 (0.7)	5.52 (1.16-26.41)	0.037	*
Fecal WBC	1 (6.2)	15 (14.3)	0.57 (0.1-3.29)	0.692		0 (0.0)	4 (3.8)	0.68 (0.04-13.29)	1	
Fecal RBC	1 (5.9)	9 (12.7)	0.6 (0.1-3.64)	0.679		0 (0.0)	2 (2.8)	0.79 (0.04-17.31)	1	
Hospital stay			-0.19 (-1.43, 1.04)	0.759				-0.98 (-3.58, 1.63)	0.462	
<i>ETEC (elt)</i>	Yes	No	OR	P-value		Yes	No	OR	P-value	
Fever	27 (9.8)	7 (8.2)	1.15 (0.49-2.69)	0.832		4 (1.4)	2 (2.4)	0.55 (0.12-2.64)	0.629	
Nausea	8 (9.4)	26 (9.4)	1.04 (0.46-2.34)	1		3 (3.5)	3 (1.1)	3.32 (0.74-14.89)	0.145	
Vomiting	21 (9.7)	13 (9.0)	1.08 (0.53-2.21)	0.856		2 (0.9)	4 (2.8)	0.37 (0.08-1.75)	0.224	
Diarrhea (≥ 10 times/day)	10 (10.5)	24 (9.4)	1.16 (0.54-2.49)	0.839		3 (3.2)	3 (1.2)	2.73 (0.61-12.24)	0.350	
Abdominal pain	7 (7.7)	27 (10.0)	0.79 (0.34-1.83)	0.678		2 (2.2)	4 (1.5)	1.65 (0.35-7.91)	0.644	
Fecal WBC	3 (18.8)	8 (7.6)	2.97 (0.76-11.69)	0.161		0 (0.0)	1 (1.0)	2.11 (0.08-54.04)	1	
Fecal RBC	3 (17.6)	5 (7.0)	2.92 (0.68-12.51)	0.180		0 (0.0)	0 (0.0)	4.09 (0.08-213.19)	1	
Hospital stay			-0.37 (-1.56, 0.82)	0.540				-1.28 (-4.18, 1.62)	0.389	

*, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.

Table S2. Detection of enteropathogens in patients under and over five years of age using qPCR assays

	Number of positive (%) in all cases				Number of positive (%) in cases under Cq-cutoff value				
	< 5 yrs	≥ 5 yrs	OR	<i>P</i> -value	< 5 yrs	≥ 5 yrs	OR	<i>P</i> -value	
Rotavirus	83 (34.4)	21 (16.3)	0.38 (0.22-0.64)	< 0.001	64 (26.6)	16 (12.4)	0.4 (0.22-0.72)	0.001	**
Norovirus GII	50 (20.7)	11 (8.5)	0.37 (0.19-0.73)	0.003	26 (10.8)	3 (2.3)	0.22 (0.07-0.7)	0.004	**
<i>Shigella</i> /EIEC	21 (8.7)	20 (15.5)	1.92 (1.01-3.67)	0.056	6 (2.5)	15 (11.6)	4.9 (1.91-12.59)	0.001	**
<i>Campylobacter</i>	30 (12.4)	10 (7.8)	0.61 (0.29-1.27)	0.218	16 (6.6)	2 (1.6)	0.27 (0.07-1.03)	0.040	*
EAEC (<i>aggR</i>)	64 (26.6)	39 (30.2)	1.2 (0.75-1.92)	0.467	10 (4.1)	1 (0.8)	0.26 (0.05-1.44)	0.106	
EAEC (<i>astA</i>)	133 (55.2)	88 (68.2)	1.73 (1.11-2.71)	0.019	8 (3.3)	2 (1.6)	0.54 (0.13-2.24)	0.504	
<i>Aeromonas</i>	34 (14.1)	32 (24.8)	2 (1.17-3.43)	0.015	2 (0.8)	7 (5.4)	5.87 (1.38-24.95)	0.010	*
Sapovirus	13 (5.4)	2 (1.6)	0.33 (0.08-1.3)	0.097	7 (2.9)	2 (1.6)	0.61 (0.14-2.61)	0.505	
Astrovirus	8 (3.3)	5 (3.9)	1.21 (0.41-3.63)	0.774	5 (2.1)	3 (2.3)	1.19 (0.31-4.62)	1	
<i>Salmonella</i>	31 (12.9)	12 (9.3)	0.71 (0.36-1.42)	0.395	3 (1.2)	4 (3.1)	2.44 (0.59-10.04)	0.244	
<i>Plesiomonas</i>	11 (4.6)	22 (17.1)	4.2 (1.99-8.85)	< 0.001	1 (0.4)	5 (3.9)	7.08 (1.15-43.64)	0.021	*
ETEC (<i>elt</i>)	29 (12.0)	6 (4.7)	0.38 (0.16-0.91)	0.024	4 (1.7)	2 (1.6)	1.03 (0.22-4.93)	1	

*, *P* < 0.05 ; **, *P* < 0.01; ***, *P* < 0.001.

Table S3. Number of pathogens detected in each month or season based on qPCR in 370 diarrheal cases

	Hot				Rainy				Dry and cool				P-value	
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb		
Rotavirus	9	3	4	4	2	3	1	0	6	9	14	49	<0.001	***
Rotavirus –Cut-off*	7	3	4	3	1	2	1	0	5	5	11	38	<0.001	***
Norovirus GII	6	0	1	2	6	2	0	0	4	13	12	15	0.004	**
Norovirus GII –Cut-off	4	0	1	1	3	0	0	0	2	5	5	8	0.093	-
<i>Shigella</i> /EIEC	1	0	3	2	9	3	2	2	1	7	3	8	0.134	-
<i>Shigella</i> /EIEC –Cut-off	0	0	1	1	7	2	1	1	0	3	2	3	0.026	*
<i>Campylobacter</i>	1	3	2	2	5	5	0	5	2	5	4	6	0.207	-
<i>Campylobacter</i> –Cut-off	1	2	1	1	1	1	0	4	0	3	1	3	0.421	-
EAEC (<i>aggR</i>)	11	4	3	6	12	7	8	8	7	10	8	19	0.031	*
EAEC (<i>aggR</i>) –Cut-off	1	1	1	1	2	0	0	1	0	1	1	2	0.355	-
EAEC (<i>astA</i>)	18	9	7	6	20	14	11	16	18	27	25	50	0.270	-
EAEC (<i>astA</i>) –Cut-off	0	0	1	1	0	0	0	0	1	3	3	1	0.112	-
<i>Aeromonas</i>	7	4	4	4	4	5	1	9	6	4	8	10	0.100	-
<i>Aeromonas</i> –Cut-off	1	1	1	0	1	0	0	2	2	0	1	0	0.391	-
Sapovirus	0	0	0	1	5	2	0	0	2	2	3	0	0.138	-
Sapovirus –Cut-off	0	0	0	1	2	1	0	0	2	1	2	0	0.822	-
Astrovirus	0	1	0	0	0	1	0	0	0	5	4	2	0.100	-
Astrovirus –Cut-off	0	0	0	0	0	1	0	0	0	4	1	2	0.193	-
<i>Salmonella</i>	5	1	0	0	5	2	1	9	2	2	3	13	0.092	-
<i>Salmonella</i> –Cut-off	0	0	0	0	1	0	0	1	1	0	0	4	0.515	-
<i>Plesiomonas</i>	4	2	1	3	5	0	2	5	3	3	3	2	0.045	*
<i>Plesiomonas</i> –Cut-off	0	0	0	0	3	0	0	0	2	1	0	0	0.299	-
ETEC (<i>elt</i>)	2	1	0	0	5	4	2	0	3	7	4	7	0.154	-
ETEC (<i>elt</i>) –Cut-off	0	1	0	0	3	0	0	0	0	0	0	2	0.414	-

*, Pathogen positives under cut-off values (see Table 1).

Table S4. Basic information of the 370 diarrheal and 370 non-diarrheal control subjects

Characteristics	Diarrhea (%)	Control (%)	OR	P-value
No. of subject	370 (100)	370 (100)		
Age group in years				
< 5	241 (65.1)	232 (62.7)	ref	-
5-15	38 (10.3)	46 (12.4)	0.80 (0.5-1.27)	0.337
16-59	53 (14.3)	56 (15.1)	0.91 (0.6-1.38)	0.662
≥ 60	38 (10.3)	36 (9.7)	1.02 (0.62-1.66)	0.949
Sex				
Male	224 (60.5)	189 (51.1)	1.44 (1.08-1.94)	0.014
Female	146 (39.5)	181 (48.9)	ref	-
Three periods (season)				
Mar-Jun (hot)	77 (20.8)	108 (29.2)	-	-
Mar	29 (37.7)	60 (55.6)	0.71 (0.4-1.29)	0.264
Apr	18 (23.4)	20 (18.5)	1.33 (0.63-2.81)	0.456
May	12 (15.6)	12 (11.1)	1.48 (0.6-3.61)	0.393
Jun	18 (23.4)	16 (14.8)	1.66 (0.76-3.63)	0.203
Jul-Oct (rainy)	96 (25.9)	97 (26.2)	-	-
Jul	32 (33.3)	21 (21.6)	2.25 (1.15-4.43)	0.019
Aug	22 (22.9)	19 (19.6)	1.71 (0.82-3.55)	0.15
Sep	15 (15.6)	32 (33.0)	0.69 (0.33-1.44)	0.323
Oct	27 (28.1)	25 (25.8)	1.60 (0.82-3.12)	0.173
Nov-Feb (cool and dry)	197 (53.2)	165 (44.6)	-	-
Nov	27 (13.7)	26 (15.8)	1.53 (0.79-2.99)	0.208
Dec	38 (19.3)	24 (14.5)	2.34 (1.23-4.45)	0.01
Jan	44 (22.3)	65 (39.4)	ref	-
Feb	88 (44.7)	50 (30.3)	2.60 (1.54-4.38)	0
Disease profile				
Frequency of defecation				
≤ 5 times	176 (50.3)	-	-	-
6-9 times	79 (22.6)	-	-	-
≥10 times	115 (31.1)	-	-	-
Stool condition				
Semi solid	9 (2.4)	-	-	-
Watery	189 (51.1)	-	-	-
Liquid mucus	131 (35.4)	-	-	-
Mucus	24 (6.5)	-	-	-
Bloody mucus	17 (4.6)	-	-	-
Fecal WBC (abnormal)	16 (13.2)	-	-	-
Fecal RBC (presence)	17 (19.3)	-	-	-
Systemic syndrome				
Abdominal pain (Yes)	91 (25.1)	-	-	-
Vomiting (Yes)	216 (59.8)	-	-	-
Nausea (Yes)	85 (23.5)	-	-	-
Fever (Yes)	276 (76.5)	-	-	-

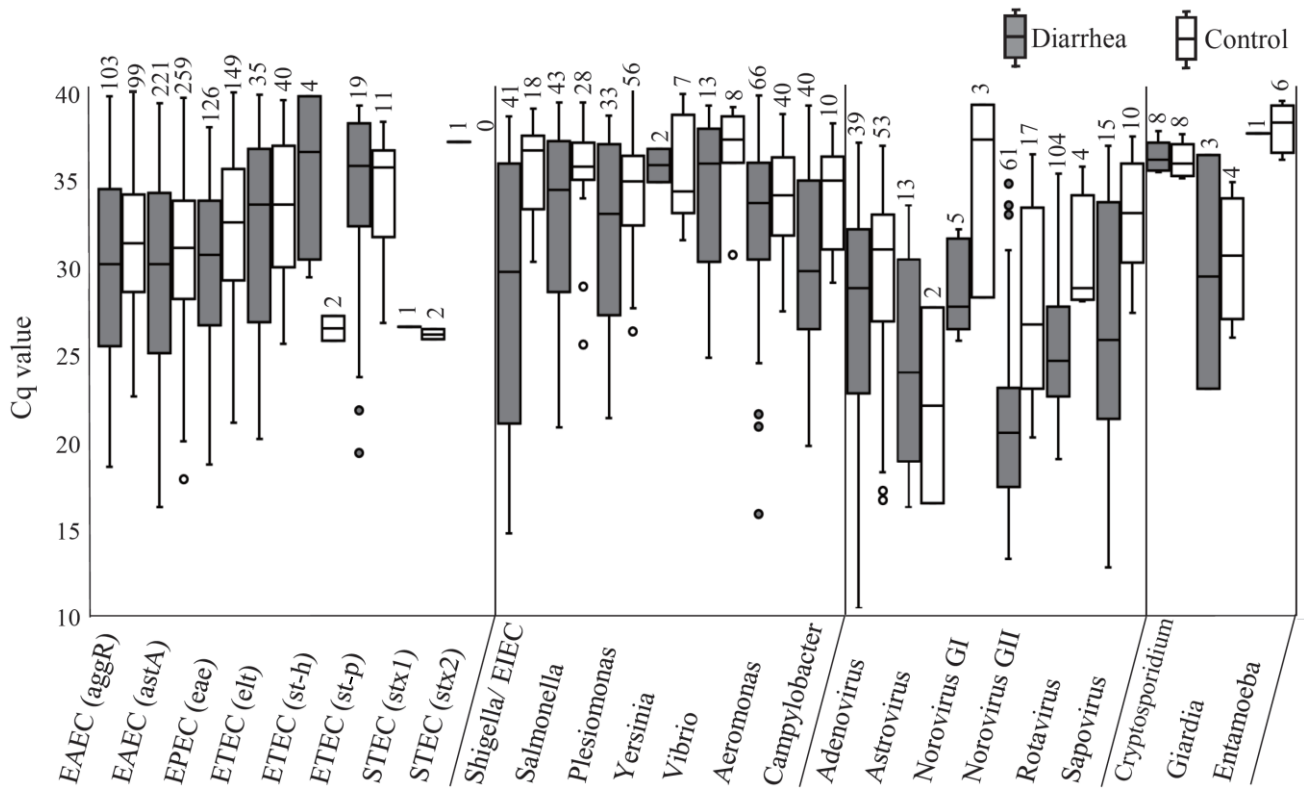
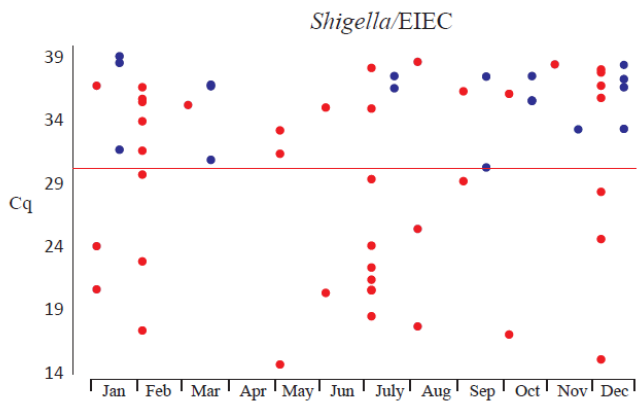
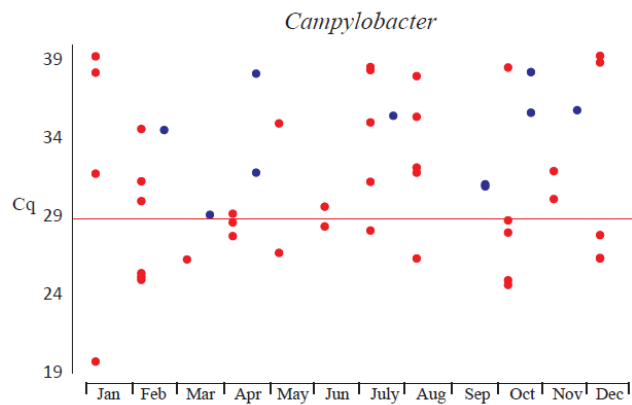
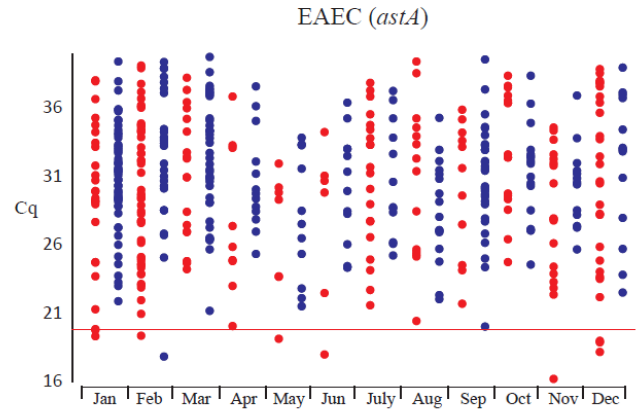
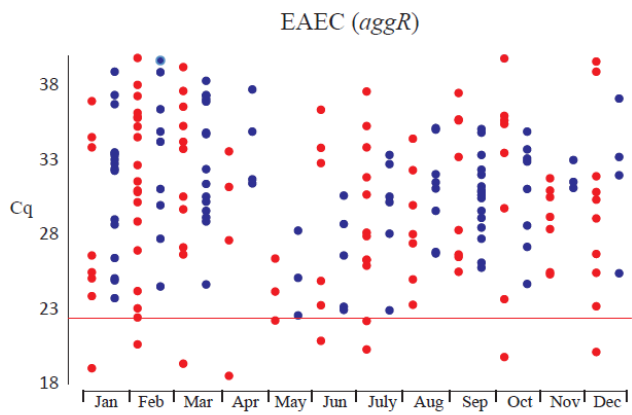
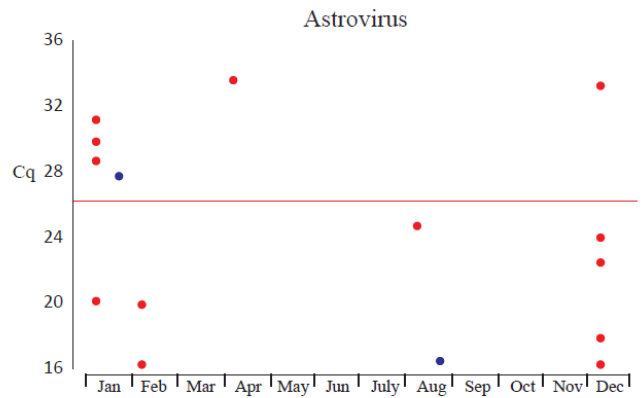
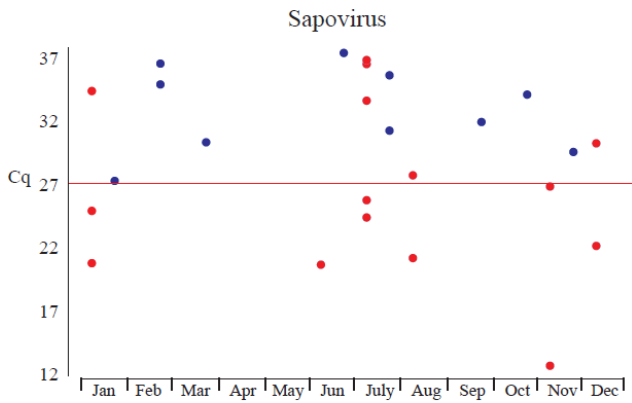
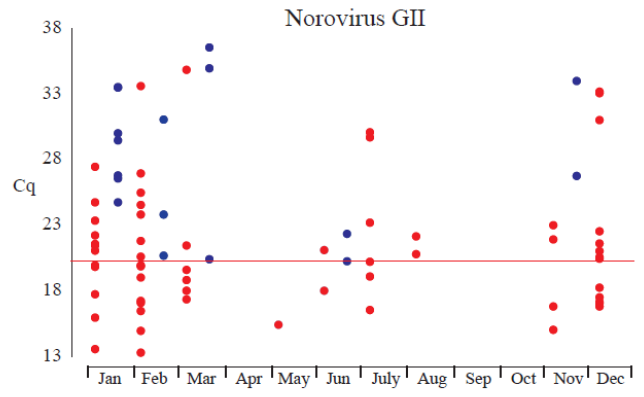
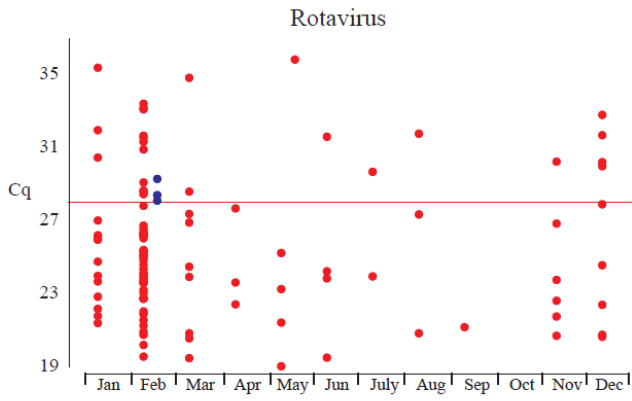


Figure S1. Box and whisker plot showing quantitation cycle (Cq) values of qPCR-positive samples for 24 target genes among 370 diarrheal and 370 non-diarrheal control subjects. The bottom and top of each box represent 25th and 75th percentiles of the data, respectively. The median value is displayed inside the box by the line. The maximum and minimum values are displayed with vertical lines connecting the points to the center box, along with the outliers represented herein indicated by closed and open circles. Numbers indicate the number of positive specimens.



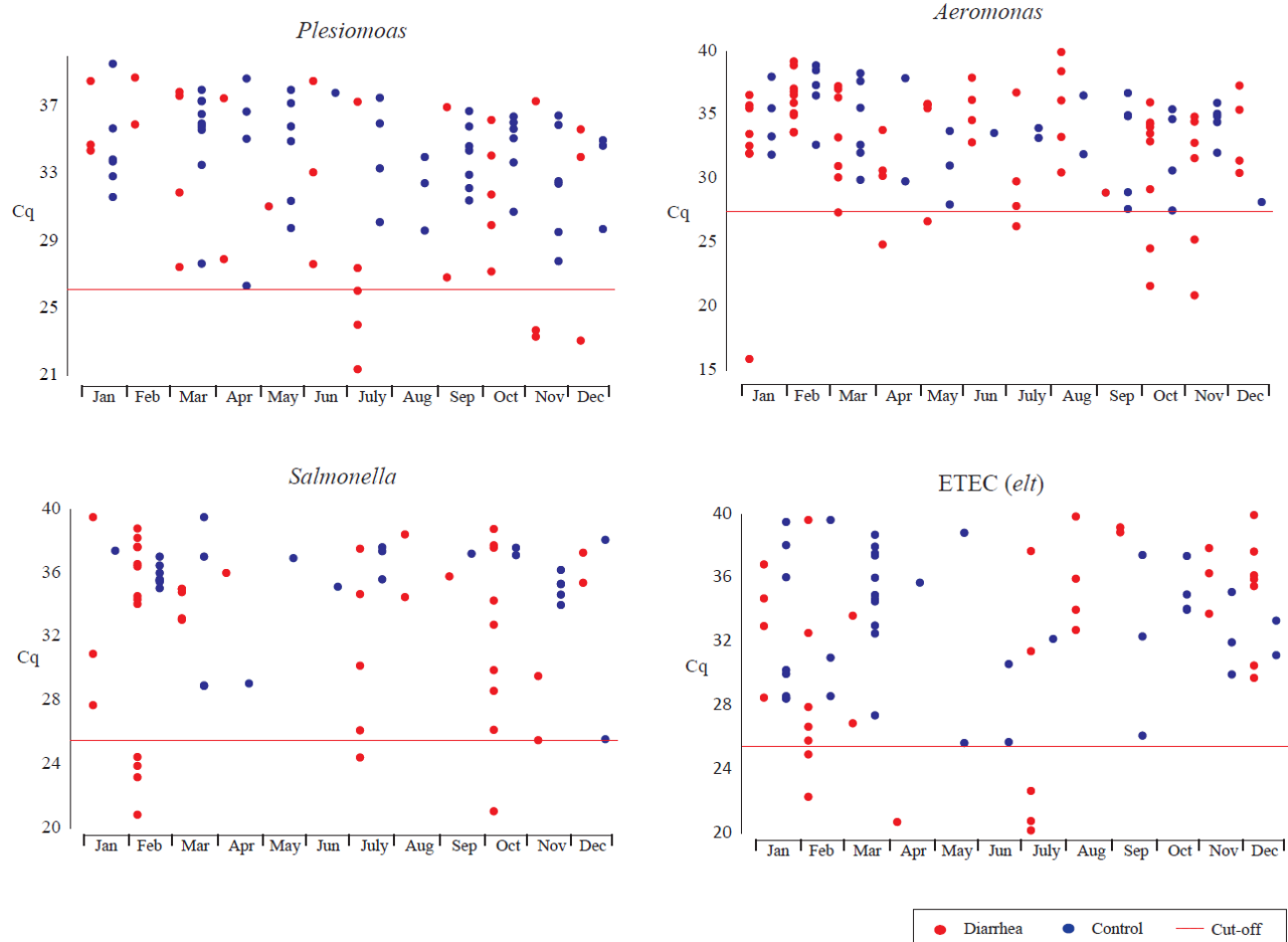
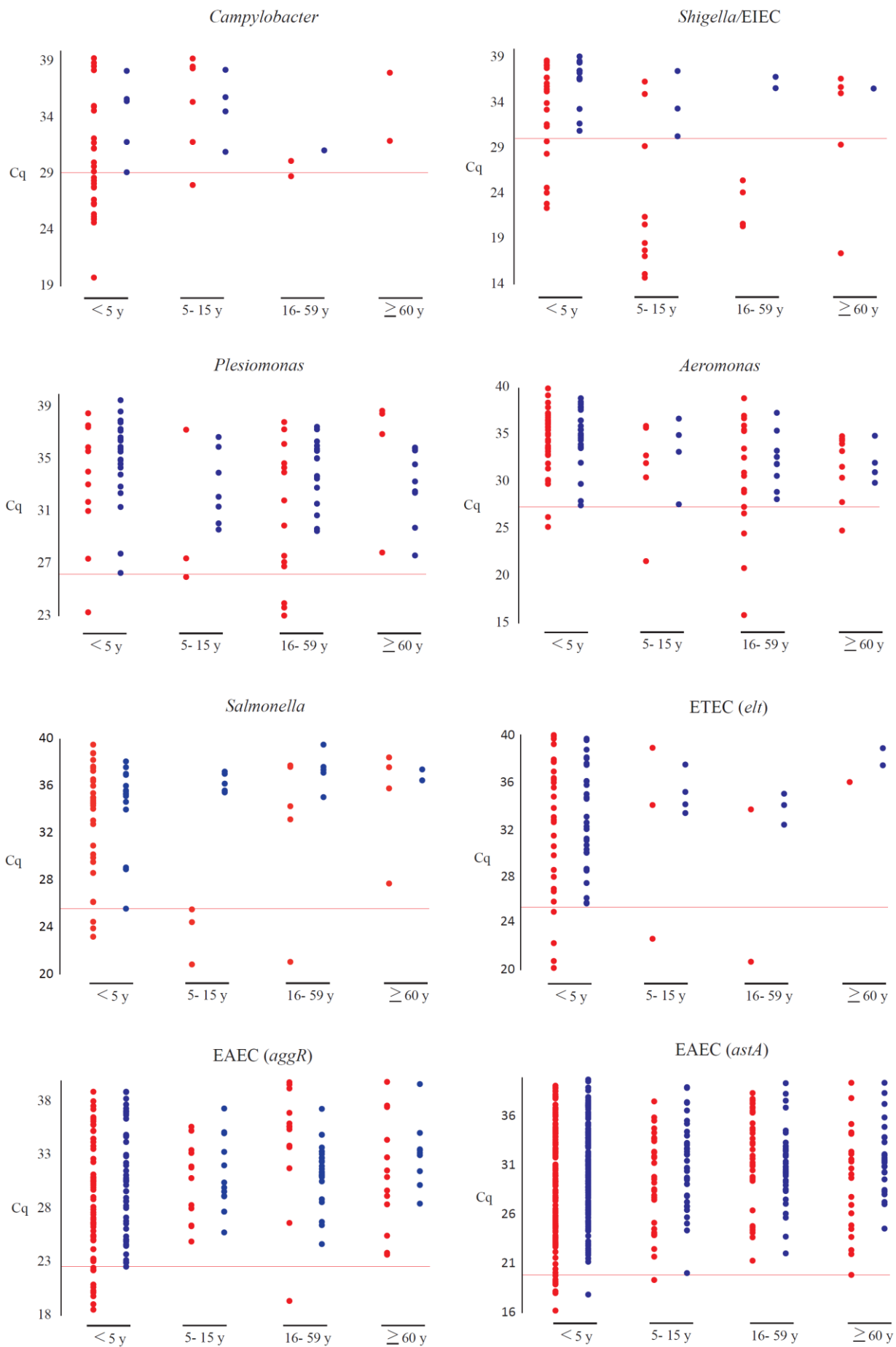


Figure S2. Detection of enteropathogens by month based on qPCR assays and distribution of Cq-values. The blue dots represent Cq values from the non-diarrheal control subjects and the red dots represent Cq values from the diarrheal patients. The red line indicates the cut-off value shown in Table 1.



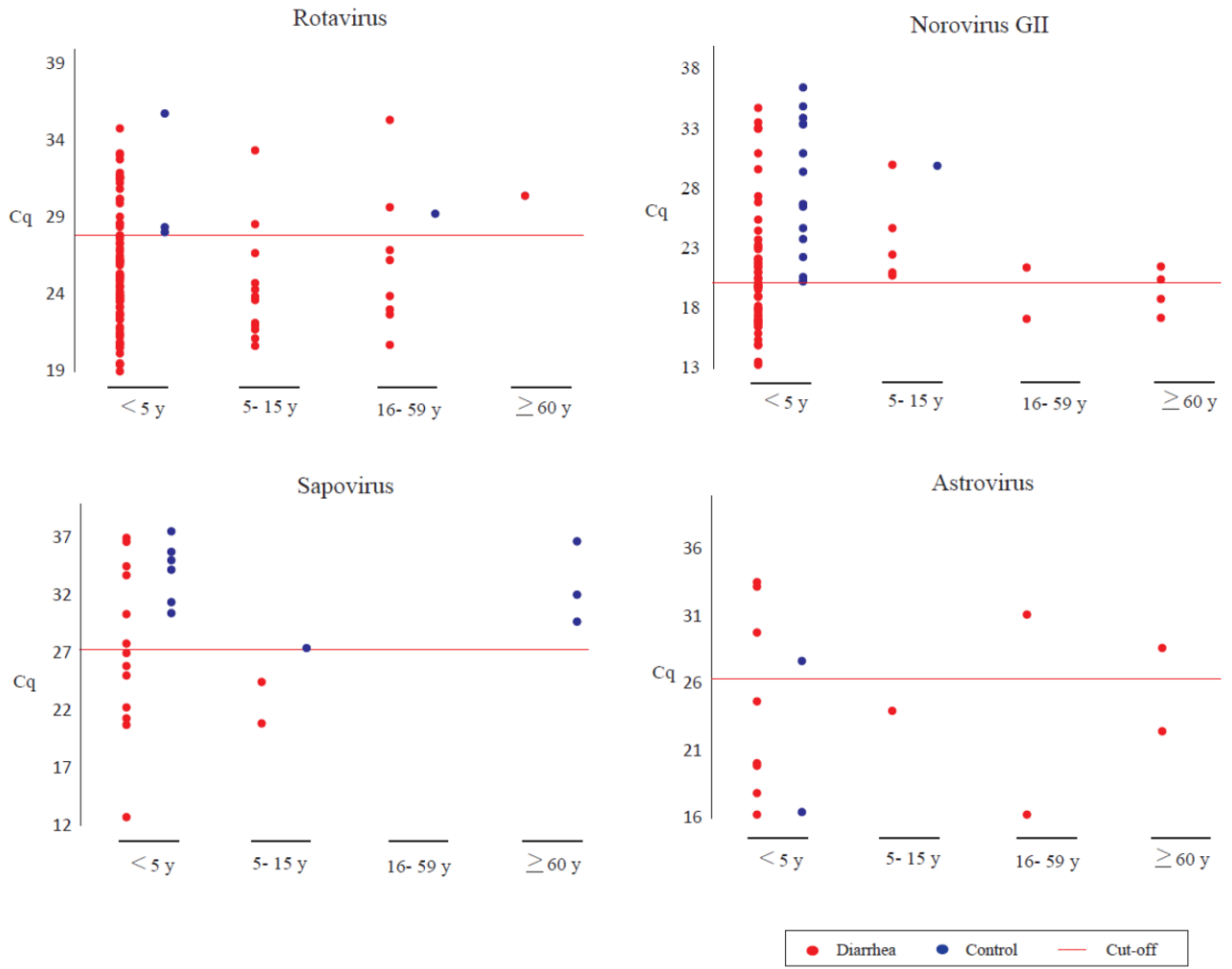


Figure S3. Detection of enteropathogens by age group using qPCR assays and distribution of Cq-values. The blue dots represent Cq values from the non-diarrheal control subjects and the red dots represent Cq values from the diarrheal patients. The red line indicates the cut-off value shown in Table 1.

Supplementary methods

We reported the patient baseline characteristics and disease profile with proportions, stratified by the groups. The relationships between disease profile and pathogens detected/not detected in the cases were presented as ORs and *P*-values were determined using the Fisher's exact test, as shown in Table 1. Similarly, we also reported the relationships between disease profile and Cq-value (positive/negative).