

## APPENDIXES

**Table 4.1a** Global positioning system (GPS) of fifty samples collected around Bachok, Kelantan.

Sample	Source	GPS position	
		N	E
1	Kg Pak Mayong jetty	05° 53.374'	102° 28.494'
2	Near Kg Pak Mayong jetty	05° 52.796'	102° 28.223'
3	Kg Siam river	05° 52.467'	102° 27.707'
4	Kg Lembah river	05° 52.110'	102° 27.314'
5	Kg Ajin river	05° 51.287'	102° 26.340'
6	Kg Ajin river	05° 50.993'	102° 26.340'
7	Kg Cerang Ruku	05° 52.049'	102° 29.484'
8	Sg Cerang Ruku	05° 52.281'	102° 29.310'
9	Near the Aquaculture Cage	05° 52.328'	102° 29.325'
10	Near the Aquaculture Cage	05° 52.543'	102° 29.343'
11	Canal water	05° 52.650'	102° 28.900'
12	Canal water	05° 53.099'	102° 28.871'
13	Canal water	05° 53.477'	102° 28.739'
14	Mouth of canal	05° 53.724'	102° 29.060'
15	Opposite Kg Mayong jetty	05° 53.442'	102° 28.636'
16	River in mangrove (muddy)	06° 07.499'	102° 22.320'
17	Pantai irama river mouth	06° 06.947'	102° 21.617'
18	Kuala Melawi river mouth	06° 04.163'	102° 23.889'
19	Kg Tok Bali	05° 53.361'	102° 30.254'
20	Kuala Semerak	05° 52.991'	102° 52.170'
21	Kg Dalam	05° 52.376'	102° 32.101'
22	Tok Bali	05° 55.113'	102° 29.179'
23	Sg Gali (jetty)	05° 57.178'	102° 26.390'
24	Sg Gali (near river mouth)	05° 57.149'	102° 26.913'
25	Opposite Kg Ajin river	05° 51.901'	102° 29.637'
26	Opposite Kg Ajin river	05° 51.094'	102° 25.231'
27	Temasu Telok Lubok	05° 54.807'	102° 22.533'
28	Sg Tasek	05° 54.524'	102° 22.623'

29	Tali air	05° 57.843'	102° 21.086'
30	Sg Tasek (mid river)	05° 54.141'	102° 21.531'
31	upper Sg Tasek	05° 54.391'	102° 20.953'
32	Near Bkt Awang	05° 49.872'	102° 25.017'
33	Near Kg Tok Luchar	05° 49.653'	102° 28.185'
34	Between Bachok & Sudara	06° 01.207'	102° 24.960'
35	Sg Rejang	06° 01.240'	102° 25.135'
36	Sg Dua (IOES)	05° 59.755'	102° 25.814'
37	Sg Limau Nipis	05° 59.307'	102° 26.044'
38	Jeram Pasu	04° 31.978'	101° 25.568'
39	Jeram Linang	05° 44.450'	102° 22.615'
40	Kg Rejang	06° 01.903'	102° 25.780'
41	Kuala Rejang	06° 01.510'	102° 26.015'
42	Kg Sg Dua	05° 56.811'	102° 27.488'
43	Tok Bali	05° 55.667'	102° 28.540'
44	Muara	05° 55.048'	102° 28.364'
45	Hutan Lipur Bkt Bakar Semerak	05° 43.190'	102° 15.628'
46	Sg Pengkalan Datu	06° 07.039'	102° 17.753'
47	Kuala Senok	06° 09.914'	102° 20.657'
48	Sg Senok	06° 09.933'	102° 20.152'
49	Pantai Sabak	06° 08.323'	102° 19.389'
50	Kuala Kemasin	06° 07.678'	102° 22.127'



**Table 4.5a** Antimicrobial susceptibility test result of 29 *E. coli* strains. The breakpoints used to categorize isolates as resistant or not resistant to each antimicrobial agent were those recommended by the National Committee for Clinical Laboratory Standards, 2004 (NCCLS 2004).

S-susceptible, MS-moderately susceptible, R-resistant, I-intermediate

	Ceftriazone (CRO)	Streptomycin (S)	Sulfamethoxazole (SXT)	Ampicillin (AMP)	Ciprofloxacin (CIP)	Kanamycin (K)	Nalidixic acid (NA)	Tetracycline (TE)	Gentamycin (CN)	Amoxicillin (AMC)	Chloramphenicol (C)
EC1	S	S	S	R	S	S	S	S	S	S	S
EC2	S	S	S	MS	S	S	S	S	S	S	S
EC4	S	S	S	MS	S	S	S	I	S	S	S
EC5	S	S	S	MS	S	S	S	S	S	S	S
EC6	S	S	S	S	S	S	S	I	S	S	S
EC7	S	S	S	S	S	S	S	S	S	S	S
EC8	S	S	S	S	S	S	S	S	S	S	S
EC10	S	S	S	MS	S	S	S	S	S	S	S
EC11	S	S	S	MS	S	S	S	S	S	S	S
EC12	S	S	S	MS	S	S	S	S	S	S	S
EC13	S	S	S	S	S	S	S	S	S	S	S
EC14	S	S	S	S	S	S	S	I	S	S	S
EC15	S	S	R	R	S	S	S	S	S	S	R
EC16	S	S	S	S	S	S	S	S	S	S	S
EC18	S	S	S	MS	S	S	S	S	S	S	S
EC23	S	S	S	MS	S	S	S	S	S	S	S
EC24	S	S	S	MS	S	S	S	S	S	S	S
EC29	S	S	S	MS	S	S	S	S	S	S	S
EC30	S	S	S	S	S	S	S	S	S	S	S
EC31	S	S	S	MS	S	S	S	S	S	S	S
EC32	S	S	S	MS	S	S	S	S	S	S	S
EC33	S	S	S	MS	S	S	S	S	S	S	S
EC36	S	S	S	MS	S	S	S	S	S	S	S
EC38	S	S	S	MS	S	S	S	S	S	S	S
EC39	S	S	S	MS	S	S	S	S	S	S	S
EC44	S	S	S	MS	S	S	S	I	S	S	S
EC45	S	S	S	MS	S	S	MS	S	S	S	S
EC46	S	S	S	MS	S	S	S	S	S	S	S
EC48	S	S	S	MS	S	S	S	S	S	S	S

**Table 4.1b** Salinity and other detailed particulars of 15 samples

<b>Sample</b>	<b>Overall depth (m)</b>	<b>Temperature</b>	<b>µS</b>	<b>TDS</b>	<b>Salinity</b>	<b>DO (%)</b>	<b>DO</b>	<b>pH</b>	<b>ORP</b>
1	3.00	-	-	-	-	-	-	-	-
2	0.50	-	-	-	-	-	-	-	-
3	5.20	30.89	28112	14.50	13.10	60.00	4.15	7.66	-49.50
4	5.20	30.83	289720	16.35	15.30	58.50	3.99	7.91	-82.50
5	6.00	30.52	24650	14.48	13.31	63.60	4.42	7.71	-32.50
6	6.40	30.44	20236	11.91	10.70	65.50	4.52	7.79	-66.40
7	3.90	32.21	42668	24.37	23.58	128.80	8.27	8.38	148.70
8	4.80	31.85	43915	25.20	24.44	124.30	8.05	8.46	173.10
9	3.00	32.06	39528	22.90	21.96	155.80	9.93	8.63	107.20
10	3.60	32.21	39372	22.56	21.67	177.60	11.58	8.69	37.90
11	3.90	32.29	39332	22.24	21.34	165.30	10.76	9.06	134.10
12	-	31.98	36094	20.68	19.67	144.00	9.20	8.88	43.20
13	2.70	31.18	32548	18.05	16.63	78.10	5.41	8.29	-18.70
14	3.70	31.58	28798	16.56	15.20	86.00	5.77	7.91	-14.20
15	4.30	31.64	22636	13.05	11.88	72.40	4.96	7.54	-7.50

**Table 5** Holding times and temperature recommended by commercial laboratories

Parameter	Matrix	Container	Thermal Storage Conditions	Maximum Holding Time	Ref.
Coliform & other bacteria	Compost	P, G S	4°C	48 hours	[#104]
Faecal coliform	Compost	P, G, HDPE	Cool, 4°C (Ice Pack)	24 hours	[#112]
Bacteria	Solid waste	P		24 hours	[#32]
Total coliform	Environmental solids	S P	Cool, 4°C	30 hours	[#81]
Bacti-faecal coliform	Sludge	G			[#69]
Faecal coliform	Biosolids	P, G	Cool to 4°C	24 hours	[#20]
Faecal coliform	Environmental solids	S P	Cool, 4°C	6 hours	[#81]
Faecal coliform	Sewage sludge	P, G	Cool to 4°C	24 hours	[#27]
Faecal coliform	Sewage sludge		Refrigerate (do not freeze)	24 hours	[#18]
Faecal coliform	Sludge	Jar		24 hours	[#69]
Coliform (total, <i>E. coli</i> , Enterococci)	Surface water	S P	Cool 4°C	6 hours	[#71]
Heterotrophic plate count	Environmental solids	S P	Cool, 4°C	24 hours	[#81]
Faecal streptococci	Environmental solids	S P	Cool, 4°C	6 hours	[#81]
Faecal streptococci	Sludge	P			[#69]
Salmonella	Biosolids	P, G	Cool to 4°C	24 hours	[#20]
Salmonella	Compost	P, G, HDPE	Cool, 4°C	24 hours	[#112]
Salmonella	Sewage sludge	P, G	Cool to 4°C	24 hours	[#27]
Salmonella	Sewage sludge		Refrigerate (do not freeze)	24 hours	[#18]
Salmonella	Sludge	Jar		24 hours	[#69]
Enteric virus	Compost	P, G, HDPE	Cool, 4°C/ Freeze	24 hours/ 2 weeks	[#112]
Enteric virus	Compost	S G	-70°C	>8 hours	[#104]
Enteric virus	Compost	S P, G	4°C	8 hours	[#104]
Enteric virus	Sewage sludge	P, G	Up to 25°C/ 2-10°C	2 hours/ 48 hours	[#27]

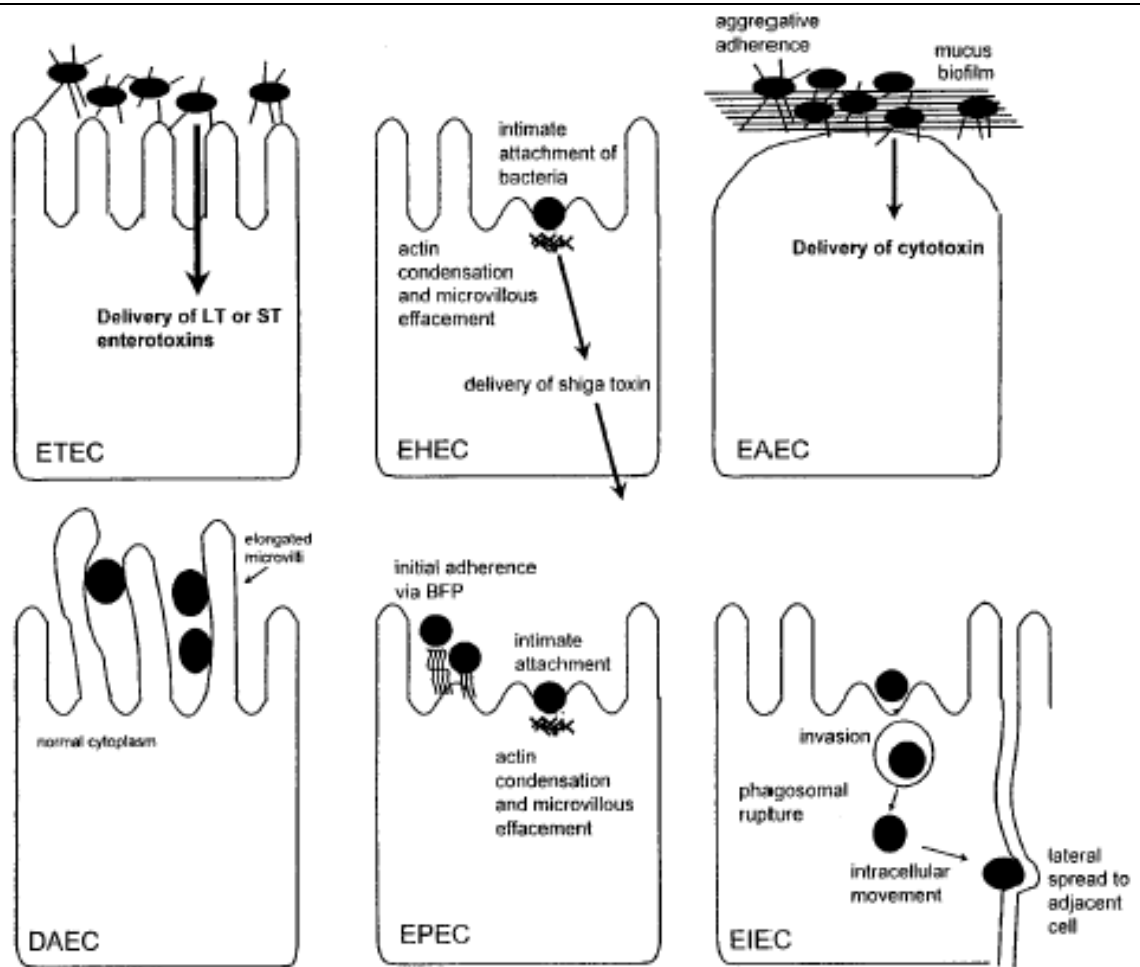


FIG. 3. Pathogenic schemes of diarrheagenic *E. coli*. The six recognized categories of diarrheagenic *E. coli* each have unique features in their interaction with eukaryotic cells. Here, the interaction of each category with a typical target cell is schematically represented. It should be noted that these descriptions are largely the result of *in vitro* studies and may not completely reflect the phenomena occurring in infected humans. See the text for details.