

Table S1: Pathogenic and beneficial environmental isolates and clinical strains and the presence of genes and phenotypes shown to have an effect on mortality.

Strain Name	Source	Virotype ^a	Bingen Group ID ^b	Pathogen ^c	Hazard ratio	Mean Survival	<i>pic</i>	<i>flmA54</i>	<i>b1432</i>	<i>iroN(2)</i>	<i>sfaD</i>	<i>focG</i>	<i>focA</i>	Total genes
OP50	N.A.	NonPath	A	0	1.00	8.06	0	0	1	1	1	1	1	5
NRC69	Water	NonPath	D	1	4.08	4.50	0	0	0	0	0	0	0	0
NRC82	Water	NonPath	D	1	3.56	4.49	0	0	0	0	0	0	0	0
NRC153	Water	NonPath	D	1	3.55	4.08	0	0	0	0	0	0	0	0
NRC410	Fecal	UPEC	B2	1	3.22	3.46	0	0	1	0	1	1	1	4
NRC83	Water	NonPath	B2	1	3.13	4.53	0	0	0	0	0	0	0	0
NRC186	Water	NonPath	D	1	3.12	4.93	0	0	0	0	0	0	0	0
NRC233	Water	NonPath	A	1	3.08	4.30	0	0	0	0	0	0	0	0
NRC191	Water	NonPath	D	1	3.01	4.62	0	0	0	0	0	0	0	0
NRC423	Fecal	Other ExPEC	B2	1	2.67	3.67	1	0	1	0	1	1	1	5
NRC35	Water	UPEC	D	1	2.61	5.24	0	0	0	0	0	0	0	0
NRC275	Water	NonPath	D	1	2.53	3.73	1	0	0	0	1	1	1	4
NRC50	Water	NonPath	D	1	2.39	5.68	1	0	0	0	0	0	0	1

NRC187	Water	NonPath	D	1	2.32	5.43	0	0	0	0	0	0	0	0
NRC176	Water	NonPath	B2	1	2.20	5.09	0	0	0	0	0	0	0	0
NRC353	Water	NonPath	B1	1	2.06	4.10	1	0	0	0	1	1	1	4
NRC14	Water	NonPath	D	1	2.02	4.75	0	0	0	0	0	0	0	0
NRC37	Water	NonPath	B2	1	1.94	6.54	0	0	0	0	0	0	0	0
NRC517	Fecal	UPEC	B2	1	1.86	5.53	0	0	1	0	1	1	1	4
NRC202	Water	NonPath	D	1	1.85	5.64	0	0	0	0	0	0	0	0
NRC354	Water	NonPath	D	1	1.75	5.00	1	0	0	0	1	1	1	4
NRC225	Water	aEPEC	B2	1	1.74	5.43	0	0	0	0	0	0	0	0
NRC77	Water	NonPath	D	1	1.71	7.08	0	0	0	0	0	0	0	0
NRC212	Water	NonPath	B1	1	1.70	5.90	1	0	0	0	0	0	0	1
NRC199	Water	NonPath	B1	1	1.69	5.67	0	0	0	0	0	0	0	0
NRC194	Water	NonPath	D	1	1.66	5.53	0	0	0	0	0	0	0	0
NRC205	Water	NonPath	B2	1	1.63	5.76	0	0	0	0	0	0	0	0
NRC1	Water	Other ExPEC	B2	1	1.61	6.28	1	0	1	0	1	1	1	5
NRC149	Water	UPEC	B2	1	1.60	5.85	0	0	0	0	1	1	1	3
NRC221	Water	NonPath	D	1	1.57	6.36	0	0	0	0	0	0	0	0
NRC179	Water	NonPath	B2	1	1.56	5.60	0	0	0	0	0	0	0	0
NRC2	Water	UPEC	B2	1	1.56	6.52	1	0	1	0	1	1	1	5
NRC7	Water	NonPath	D	1	1.53	5.37	0	0	0	0	0	0	0	0
NRC34	Water	Other ExPEC	B2	1	1.52	7.41	0	0	0	0	1	0	0	1
NRC8	Water	NonPath	D	1	1.52	5.46	0	0	0	0	0	0	0	0

NRC364	Fecal	UPEC	D	1	1.49	5.48	0	0	0	0	0	0	0	0
NRC164	Water	NonPath	B1	1	1.43	6.28	0	0	1	0	0	0	0	1
NRC43	Water	NonPath	D	1	1.41	6.85	0	0	0	0	0	0	0	0
NRC197	Water	NonPath	D	1	1.37	6.27	0	0	0	0	0	0	0	0
NRC41	Water	NonPath	D	1	1.35	7.79	0	0	0	0	0	0	0	0
NRC214	Water	NonPath	D	1	1.35	6.73	0	0	1	0	0	0	0	1
NRC162	Water	UPEC	A	1	1.34	6.26	0	0	1	0	1	0	0	2
NRC203	Water	NonPath	D	1	1.33	6.47	0	0	0	0	0	0	0	0
NRC281	Water	NonPath	B2-1	1	1.27	7.04	1	0	0	0	1	1	1	4
NRC216	Water	NonPath	B2	0	0.77	8.33	0	0	0	0	0	0	0	0
NRC72	Water	NonPath	D	0	0.77	11.38	0	0	0	0	0	0	0	0
NRC29	Water	NonPath	B2-1	0	0.76	8.96	1	0	0	1	1	1	1	5
NRC9	Water	NonPath	B1	0	0.76	10.63	0	0	0	1	0	0	0	1
NRC166	Water	NonPath	B1	0	0.76	10.47	0	0	0	0	0	0	0	0
NRC23	Water	NonPath	B2	0	0.75	9.80	0	0	0	0	0	0	0	0
NRC156	Water	NonPath	B1	0	0.75	9.02	0	0	0	0	0	0	0	0
NRC67	Water	NonPath	B2	0	0.74	10.93	0	0	0	0	0	0	0	0
NRC42	Water	NonPath	D	0	0.73	10.46	0	0	0	1	0	0	0	1
NRC155	Water	NonPath	B1	0	0.72	10.16	0	0	0	0	0	0	0	0
NRC60	Water	NonPath	D	0	0.72	11.80	0	0	0	0	0	0	0	0
NRC30	Water	NonPath	D	0	0.71	8.48	0	0	0	0	0	0	0	0
NRC218	Water	NonPath	D	0	0.71	8.71	0	0	0	0	0	0	0	0

NRC167	Water	NonPath	A	0	0.70	9.63	0	0	0	0	0	0	0	0
NRC148	Water	NonPath	B2	0	0.70	10.13	0	0	0	0	0	0	0	0
NRC174	Water	NonPath	D	0	0.68	10.12	0	0	0	0	0	0	0	0
NRC73	Water	NonPath	D	0	0.68	11.46	0	0	0	0	0	0	0	0
NRC66	Water	NonPath	B2	0	0.68	11.26	0	0	0	0	0	0	0	0
NRC27	Water	NonPath	D	0	0.68	9.52	0	0	0	0	0	0	0	0
NRC229	Water	NonPath	D	0	0.67	8.92	0	1	0	0	0	0	0	1
NRC63	Water	NonPath	D	0	0.67	12.26	0	0	0	1	0	0	0	1
NRC62	Water	NonPath	D	0	0.66	11.42	0	0	0	0	0	0	0	0
NRC173	Water	NonPath	D	0	0.60	10.50	0	0	0	0	0	0	0	0
NRC70	Water	NonPath	B2	0	0.58	13.58	0	1	0	0	0	0	0	1
NRC163	Water	NonPath	B2	0	0.58	10.54	0	0	0	0	0	0	0	0
NRC161	Water	NonPath	B1	0	0.57	11.84	0	0	0	0	0	0	0	0
NRC219	Water	NonPath	B1	0	0.57	7.96	0	1	0	0	0	0	0	1
NRC245	Water	NonPath	B2	0	0.52	12.69	0	1	0	0	0	0	0	1
NRC207	Water	NonPath	D	0	0.52	11.27	0	0	0	0	0	0	0	0
NRC25	Water	NonPath	D	0	0.51	11.22	0	0	0	0	0	0	0	0
NRC226	Water	NonPath	A	0	0.50	10.75	0	0	0	0	0	0	0	0
NRC235	Water	NonPath	D	0	0.48	10.28	0	1	0	0	0	0	0	1
NRC46	Water	NonPath	D	0	0.47	12.93	0	0	0	0	0	0	0	0
NRC13	Water	NonPath	B1	0	0.47	11.09	0	1	0	0	0	0	0	1
NRC40	Water	NonPath	D	0	0.43	14.36	0	0	0	0	0	0	0	0

536	N.A.	UPEC	B2	1	3.93	3.07	0	0	1	0	1	1	1	4	
H84	N.A.	EIEC	B2	1	2.15	4.71	0	0	1	0	0	1	1	3	
H10407	N.A.	ETEC	A	1	1.99	4.95	0	1	0	0	0	0	0	1	
E2348/69	N.A.	EPEC	B2	1	1.65	5.64	0	0	0	0	0	0	0	0	
CFT073	N.A.	UPEC	B2	0	0.89	8.97	1	0	1	1	1	1	1	6	
EDL933	N.A.	EHEC	D	0	0.71	10.69	1	1	0	1	1	1	1	5	
17-2	N.A.	EAEC	B2	0	0.70	10.84	0	1	1	1	0	1	0	4	
ATCC 25922	N.A.	UPEC	B2	0	0.66	11.09	1	0	1	1	1	1	1	6	
							# of isolates		17	17	11	31	17	14	14
							Impact on mortality ^d		+	-	+	+	+	+	+

- a. Putative intestinal and extra-intestinal virotypes were identified by microarray using the criteria of Johnson *et al.* (41) and Hamelin *et al.* (34).
- b. Bingen groups or phylotype based on multiplex PCR were identified as described by Clermont *et al.* (19).
- c. An isolate was considered pathogenic (1) when the hazard ratio, calculated by CPH, was significantly higher than 1, or OP50. All non-pathogenic (0) isolates tabulated were significantly less than 1.
- d. The impact on mortality for each gene was determined by CPH for environmental isolates alone. + indicates a significant enhancement in mortality - indicates a significant decreased in mortality.