

S1 Table. Number of chemotaxis genes in *Enterobacteriales* genomes. Genomes comprising a non-redundant set for comparative analysis (43 in total) are shown in bold.

Genus	Species	Strain	Chemotaxis proteins (number of genes)								
			MCP	CheA	CheB	CheCX	CheD	CheR	CheV	CheZ	CheW
aphid	secondary	symbionts secondary endosymbiont of <i>Ctenarytaina eucalypti</i>	0	0	0	0	0	0	0	0	0
aphid	secondary	symbionts secondary endosymbiont of <i>Heteropsylla cubana</i>	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	(<i>Cinara tujaefilina</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	BCc	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. 5A (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. Ak (<i>Acyrtosiphon kondoi</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. APS (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. Bp (<i>Baizongia pistaciae</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. JF98 (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. JF99 (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. LL01 (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. Sg (<i>Schizaphis graminum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. TLW03 (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. Tuc7 (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Buchnera	aphidicola	str. Ua (<i>Uroleucon ambrosiae</i>)	0	0	0	0	0	0	0	0	0
Candidatus	Blochmannia	chromaiodes str. 640	0	0	0	0	0	0	0	0	0
Candidatus	Blochmannia	floridanus	0	0	0	0	0	0	0	0	0
Candidatus	Blochmannia	pennsylvanicus str. BPEN	0	0	0	0	0	0	0	0	0
Candidatus	Blochmannia	vafer str. BVAf	0	0	0	0	0	0	0	0	0
Candidatus	Hamiltonella	defensa 5AT (<i>Acyrtosiphon pisum</i>)	0	0	0	0	0	0	0	0	0
Candidatus	Moranella	endobia PCIT	0	0	0	0	0	0	0	0	0
Candidatus	Moranella	endobia PCVAL	0	0	0	0	0	0	0	0	0
Candidatus	Riesia	pediculicola USDA	0	0	0	0	0	0	0	0	0
Citrobacter	koseri	ATCC BAA-895	14	1	1	0	0	1	1	1	1
Citrobacter	rodentium	ICC168	7	1	1	0	0	1	1	1	1
Cronobacter	sakazakii	ATCC BAA-894	26	1	1	0	0	1	1	1	1
Cronobacter	sakazakii	ES15	23	1	1	0	0	1	1	1	1
Cronobacter	sakazakii	SP291	26	1	1	0	0	1	1	1	1
Cronobacter	turicensis	z3032	28	1	1	0	0	1	1	1	1
Dickeya	dadantii	3937	47	1	1	0	0	1	1	1	1
Dickeya	dadantii	Ech586	48	1	1	0	0	1	1	1	1
Dickeya	dadantii	Ech703	42	1	1	0	0	1	1	1	1
Dickeya	zeae	Ech1591	42	1	1	0	0	1	1	1	1
Edwardsiella	ictaluri	93-146	9	1	1	0	0	1	0	1	1
Edwardsiella	tarda	C07-087	8	1	1	0	0	1	0	1	1
Edwardsiella	tarda	EIB202	8	1	1	0	0	1	0	1	1
Edwardsiella	tarda	FL6-60	8	1	1	0	0	1	0	1	1
Enterobacter	aerogenes	EA1509E	2	1	1	0	0	1	0	1	1
Enterobacter	aerogenes	KCTC 2190	2	1	1	0	0	1	0	1	1
Enterobacter	asburiae	LF7a	20	1	1	0	0	1	1	1	1
Enterobacter	cloacae	EcWSU1	17	1	1	0	0	1	1	1	1
Enterobacter	cloacae	SCF1	14	1	1	0	0	1	1	1	1
Enterobacter	cloacae	subsp. cloacae ATCC 13047	16	2	2	0	0	2	1	2	2
Enterobacter	cloacae	subsp. cloacae ENHKU01	16	1	1	0	0	1	1	1	1
Enterobacter	cloacae	subsp. cloacae NCTC 9394	9	2	1	0	0	2	1	2	2
Enterobacter	cloacae	subsp. dissolvens SDM	16	2	2	0	0	2	1	2	2
Enterobacter	sp.	638	18	1	1	0	0	1	1	1	1
Enterobacteriaceae	bacterium	strain FGI 57	6	1	1	0	0	1	0	1	1
Erwinia	amylovora	ATCC 49946	11	2	2	0	0	2	1	2	2
Erwinia	amylovora	CFBP1430	11	2	2	0	0	2	1	2	2
Erwinia	billingiae	Eb661	29	1	1	0	0	1	1	1	1
Erwinia	pyrifoliae	DSM 12163	13	2	2	0	0	2	1	2	2
Erwinia	pyrifoliae	Ep1/96	13	2	2	0	0	2	1	2	2
Erwinia	sp.	Ejp617	13	2	2	0	0	2	1	2	2
Erwinia	tasmaniensis	Et1/99	13	1	1	0	0	1	1	1	1
Escherichia	blatae	DSM 4481	0	0	0	0	0	0	0	0	0
Escherichia	coli	42	5	1	1	0	0	1	0	1	1
Escherichia	coli	536	3	1	1	0	0	1	0	1	1
Escherichia	coli	55989	5	1	1	0	0	1	0	1	1
Escherichia	coli	ABU 83972	4	1	1	0	0	1	0	1	1
Escherichia	coli	APEC O1	4	1	1	0	0	1	0	1	1
Escherichia	coli	APEC O78	5	1	1	0	0	1	0	1	1
Escherichia	coli	ATCC 8739	5	1	1	0	0	1	0	1	1
Escherichia	coli	B str. REL606	5	1	1	0	0	1	0	1	1
Escherichia	coli	BL21(DE3)	5	1	1	0	0	1	0	1	1
Escherichia	coli	BL21(DE3)	5	1	1	0	0	1	0	1	1
Escherichia	coli	'BL21-Gold(DE3)pLysS AG'	5	1	1	0	0	1	0	1	1
Escherichia	coli	BW2952	5	1	1	0	0	1	0	1	1
Escherichia	coli	CFT073	4	1	1	0	0	1	0	1	1
Escherichia	coli	DH1	5	1	1	0	0	1	0	1	1

Escherichia	coli	DH1	5	1	1	0	0	1	0	1	1
Escherichia	coli	E24377A	5	1	1	0	0	1	0	1	1
Escherichia	coli	ED1a	3	1	1	0	0	1	0	1	1
Escherichia	coli	ETEC H10407	5	1	1	0	0	1	0	1	1
Escherichia	coli	HS	5	1	1	0	0	1	0	1	1
Escherichia	coli	IA11	5	1	1	0	0	1	0	1	1
Escherichia	coli	IAI39	3	1	1	0	0	1	0	1	1
Escherichia	coli	IHE3034	4	1	1	0	0	1	0	1	1
Escherichia	coli	KO11FL	5	1	1	0	0	1	0	1	1
Escherichia	coli	KO11FL	5	1	1	0	0	1	0	1	1
Escherichia	coli	LF82	3	1	1	0	0	1	0	1	1
Escherichia	coli	NA114	4	1	1	0	0	1	0	1	1
Escherichia	coli	O103:H2 str. 12009	4	1	1	0	0	1	0	1	1
Escherichia	coli	O104:H4 str. 2009EL-2050	5	1	1	0	0	1	0	1	1
Escherichia	coli	O104:H4 str. 2009EL-2071	5	1	1	0	0	1	0	1	1
Escherichia	coli	O104:H4 str. 2011C-3493	5	1	1	0	0	1	0	1	1
Escherichia	coli	O111:H- str. 11128	5	1	1	0	0	1	0	1	1
Escherichia	coli	O127:H6 str. E2348/69	3	1	1	0	0	1	0	1	1
Escherichia	coli	O157:H7 str. EC4115	5	1	1	0	0	1	0	1	1
Escherichia	coli	O157:H7 str. EDL933	5	1	1	0	0	1	0	1	1
Escherichia	coli	O157:H7 str. Sakai	5	1	1	0	0	1	0	1	1
Escherichia	coli	O157:H7 str. TW14359	5	1	1	0	0	1	0	1	1
Escherichia	coli	O26:H11 str. 11368	5	1	1	0	0	1	0	1	1
Escherichia	coli	O55:H7 str. CB9615	5	1	1	0	0	1	0	1	1
Escherichia	coli	O55:H7 str. RM12579	4	1	1	0	0	1	0	1	1
Escherichia	coli	O7:K1 str. CE10	4	1	1	0	0	1	0	1	1
Escherichia	coli	O83:H1 str. NRG 857C	4	1	1	0	0	1	0	1	1
Escherichia	coli	P12b	4	1	1	0	0	1	0	1	1
Escherichia	coli	S88	3	1	1	0	0	1	0	1	1
Escherichia	coli	SE11	5	1	1	0	0	1	0	1	1
Escherichia	coli	SE15	4	1	1	0	0	1	0	1	1
Escherichia	coli	SMS-3-5	5	1	1	0	0	1	0	1	1
Escherichia	coli	str. 'clone D i14'	4	1	1	0	0	1	0	1	1
Escherichia	coli	str. 'clone D i2'	4	1	1	0	0	1	0	1	1
Escherichia	coli	str. K-12 substr. DH10B	4	0	1	0	0	1	0	1	1
Escherichia	coli	str. K-12 substr. MDS42	2	0	0	0	0	0	0	0	0
Escherichia	coli	str. K-12 substr. MG1655	5	1	1	0	0	1	0	1	1
Escherichia	coli	str. K-12 substr. W3110	5	1	1	0	0	1	0	1	1
Escherichia	coli	UM146	4	1	1	0	0	1	0	1	1
Escherichia	coli	UMN026	5	1	1	0	0	1	0	1	1
Escherichia	coli	UMNK88	5	1	1	0	0	1	0	1	1
Escherichia	coli	UTI89	4	1	1	0	0	1	0	1	1
Escherichia	coli	W	5	1	1	0	0	1	0	1	1
Escherichia	coli	W	5	1	1	0	0	1	0	1	1
Escherichia	coli	Xuzhou21	5	1	1	0	0	1	0	1	1
Escherichia	fergusonii	ATCC 35469	3	1	1	0	0	1	1	1	1
Klebsiella	oxytoca	E718	0	0	0	0	0	0	0	0	0
Klebsiella	oxytoca	KCTC 1686	0	0	0	0	0	0	0	0	0
Klebsiella	pneumoniae	342	0	0	0	0	0	0	0	0	0
Klebsiella	pneumoniae	KCTC 2242	0	0	0	0	0	0	0	0	0
Klebsiella	pneumoniae	subsp. pneumoniae 1084	0	0	0	0	0	0	0	0	0
Klebsiella	pneumoniae	subsp. pneumoniae HS11286	2	0	0	0	0	0	0	0	0
Klebsiella	pneumoniae	subsp. pneumoniae MGH 78578	0	0	0	0	0	0	0	0	0
Klebsiella	pneumoniae	subsp. pneumoniae NTUH-K2044	0	0	0	0	0	0	0	0	0
Klebsiella	varicola	At-22	0	0	0	0	0	0	0	0	0
Morganella	morganii	subsp. morganii KT	9	1	1	0	0	1	0	1	1
Pantoea	ananatis	AJ13355	42	1	1	0	0	1	1	1	1
Pantoea	ananatis	LMG 20103	42	1	1	0	0	1	1	1	1
Pantoea	ananatis	LMG 5342	45	1	1	0	0	1	1	1	1
Pantoea	ananatis	PA13	42	1	1	0	0	1	1	1	1
Pantoea	sp.	At-9b	20	1	1	0	0	1	1	1	1
Pantoea	vagans	C9-1	29	1	1	0	0	1	1	2	1
Pectobacterium	atrosepticum	SCRI1043	36	1	1	0	0	1	1	1	1
Pectobacterium	carotovorum	subsp. carotovorum PC1	37	1	1	0	0	1	1	1	1
Pectobacterium	carotovorum	subsp. carotovorum PCC21	37	1	1	0	0	1	1	1	1
Pectobacterium	sp.	SCC3193	38	1	1	0	0	1	1	1	1
Pectobacterium	wasabiae	WPP163	38	1	1	0	0	1	1	1	1
Photobacterium	asymbiotica		2	1	1	0	0	1	0	1	1
Photobacterium	luminescens	subsp. laumondii TTO1	2	1	1	0	0	1	0	1	1
Proteus	mirabilis	HI4320	9	1	1	0	0	1	0	1	1
Providencia	stuartii	MRSN 2154	5	1	1	0	0	1	0	2	1
Rahnella	aquatilis	CIP 78.65 = ATCC 33071	17	1	1	0	0	1	1	1	1
Rahnella	aquatilis	HX2	20	1	1	0	0	1	1	1	1
Rahnella	sp.	Y9602	20	1	1	0	0	1	1	1	1
Raoultella	ornithinolytica	B6	0	0	0	0	0	0	0	0	0
Salmonella	bongori	NCTC 12419	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. arizonae serovar 62:z4,z23:- str. RSK2980	8	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Agona str. SL483	8	1	1	0	0	1	1	1	1

Salmonella	enterica	subsp. enterica serovar Choleraesuis str. SC-B67	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Dublin str. CT_02021853	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Enteritidis str. P125109	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Gallinarum str. 287/91	8	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Gallinarum/pullorum	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Heidelberg str. B182	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Heidelberg str. SL476	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Javiana str. CFSAN001992	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Newport str. SL254	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Paratyphi A str. AKU_12601	6	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Paratyphi A str. ATCC 9150	6	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Paratyphi B str. SPB7	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Paratyphi C strain RKS4594	8	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Schwarzengrund str. CVM19633	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhi str. CT18	6	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhi str. P-stx-12	7	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhi str. Ty2	6	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. 14028S	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. 798	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. D23580	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. LT2	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. SL1344	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. ST4/74	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. T000240	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. U288	9	1	1	0	0	1	1	1	1
Salmonella	enterica	subsp. enterica serovar Typhimurium str. UK-1	9	1	1	0	0	1	1	1	1
Serratia	marcescens	FGI94	6	1	1	0	0	1	0	1	1
Serratia	marcescens	WW4	7	1	1	0	0	1	0	1	1
Serratia	plymuthica	AS9	4	1	1	0	0	1	0	1	1
Serratia	proteamaculans	568	6	1	1	0	0	1	0	1	1
Serratia	sp.	AS12	4	1	1	0	0	1	0	1	1
Serratia	sp.	AS13	4	1	1	0	0	1	0	1	1
Serratia	symbiotica	str. 'Cinara cedri'	0	0	0	0	0	0	0	0	0
Shigella	boydii	CDC 3083-94	4	1	1	0	0	1	0	1	1
Shigella	boydii	Sb227	2	0	1	0	0	1	0	1	0
Shigella	dysenteriae	Sd197	2	0	0	0	0	0	0	0	0
Shigella	flexneri	2002017	4	1	1	0	0	1	0	1	1
Shigella	flexneri	2a str. 2457T	4	1	1	0	0	1	0	1	1
Shigella	flexneri	2a str. 301	4	1	1	0	0	1	0	1	1
Shigella	flexneri	5 str. 8401	4	1	1	0	0	1	0	1	1
Shigella	sonnei	Ss046	4	1	1	0	0	1	0	1	1
Sodalis	glossiniidius	str. 'morsitans'	0	0	1	0	0	0	0	1	1
Wigglesworthia	glossinidia	endosymbiont of Glossina brevipalpis	0	0	0	0	0	0	0	0	0
Wigglesworthia	glossinidia	endosymbiont of Glossina morsitans morsitans (Yale colony)	0	0	0	0	0	0	0	0	0
Xenorhabdus	bovienii	SS-2004	2	1	1	0	0	1	0	1	1
Xenorhabdus	nematophila	ATCC 19061	2	1	1	0	0	1	0	1	1
Yersinia	enterocolitica	subsp. enterocolitica 8081	12	1	1	0	0	1	1	1	1
Yersinia	enterocolitica	subsp. palearctica 105.5R(r)	11	1	1	0	0	1	1	1	1
Yersinia	enterocolitica	subsp. palearctica Y11	11	1	1	0	0	1	1	1	1
Yersinia	pestis	A1122	8	1	1	0	0	1	0	1	1
Yersinia	pestis	Angola	7	1	1	0	0	1	0	1	1
Yersinia	pestis	Antiqua	9	1	1	0	0	1	0	1	1
Yersinia	pestis	biovar Medievalis str. Harbin 35	7	1	1	0	0	1	0	1	1
Yersinia	pestis	biovar Microtus str. 91001	7	1	1	0	0	1	0	1	1
Yersinia	pestis	CO92	6	1	1	0	0	1	0	1	1
Yersinia	pestis	D106004	9	1	1	0	0	1	0	1	1
Yersinia	pestis	D182038	9	1	1	0	0	1	0	1	1
Yersinia	pestis	KIM10+	7	1	1	0	0	1	0	1	1
Yersinia	pestis	Nepal516	9	1	1	0	0	1	0	1	1
Yersinia	pestis	Pestoides F	9	1	1	0	0	1	0	1	1
Yersinia	pestis	Z176003	9	1	1	0	0	1	0	1	1
Yersinia	pseudotuberculosis	IP 31758	8	1	1	0	0	1	0	1	1
Yersinia	pseudotuberculosis	IP 32953	8	1	1	0	0	1	0	1	1
Yersinia	pseudotuberculosis	PB1/+	8	1	1	0	0	1	0	1	1
Yersinia	pseudotuberculosis	YP111	7	1	1	0	0	1	0	1	1