

Table S1: The effect of temperature, pH, NaCl and bile on growth of TF06-26 and *C. aerofaciens*ATCC 25986^T

		TF06-26	<i>C. aerofaciens</i> ATCC 25986 ^T
Temperature (°C)	10	—	—
	15	—	—
	20	—	—
	25	+	+
	30	+	+
	35	+	+
	37	++	++
	42	+	+
	45	+	+
	50	—	—
pH	3	—	—
	3.5	—	—
	4	—	—
	4.5	—	—
	5	+	—
	5.5	+	—
	6	+	+
	6.5	+	+
	7	++	++
	7.5	+	++
	8	+	+
	8.5	—	w
	9	—	—
	10	—	—
NaCl % (w/v)	0	+	+
	0.005	+	+
	0.01	+	+
	0.02	+	+
	0.03	—	—
	0.04	—	—
	0.05	—	—
	0.06	—	—
	0.07	—	—
Bile % (w/v)	0	+	+
	0.05	+	+
	0.1	+	+
	0.2	+	w
	0.3	w	w
	0.4	—	—

0.5

—

—

^T: Type strain.**Table S2:** The antibiotic susceptibility test results of TF06-26

	Zone of Inhibition(mm)
Ampicillin	2.8
Carbenicillin	2.8
Cefazolin	2.7
Penicillin	2.6
Cephalexin	2.6
Piperacillin	2.6
Cefuroxime	2.4
Ceftriaxone sodium	2.4
Cefoperazone	2.4
Tetracycline	2.2
Cephadrine	2.0
Ceftazidime	1.8
Oxacillin	1.5
Gentamicin	0.8
Kanamycin	0
Amikacin	0
Framycetin	0

^T: Type strain.

Table S3: The GenBank accession, total length (bp) and GC content (%) of 13 strains of genus*Collinsella*

	GenBank accession	Total length (Mb)	GC content (%)
<i>C. aerofaciens</i> ATCC 25986 ^T	NZ_AAVN00000000.2	2.44	60.55
<i>C. bouchedurhonensis</i> Marseille-P3296 ^T	NZ_FTL00000000.1	1.88	57.94
<i>C. intestinalis</i> DSM 13280 ^T	NZ_ABXH00000000.2	1.81	62.47
<i>C. phocaeensis</i> Marseille-P3245 ^T	NZ_FQLR00000000.1	2.11	65.50
<i>C. stercoris</i> DSM 13279 ^T	NZ_ABXJ00000000.1	2.48	63.19
<i>C. tanakaei</i> YIT 12063 ^T	NZ_ADLS00000000.1	2.50	60.24
<i>C. ihuae</i> GD8 ^T	NZ_FCOU00000000.1	2.84	64.13
<i>C. provencensis</i> Marseille-P3740 ^T	NZ_FZRI00000000.1	1.74	58.21
<i>C. vaginalis</i> Marseille-P2666 ^T	NZ_FWYK00000000.1	2.14	64.57
<i>C. aerofaciens</i> 2789STDY5834902	NZ_CZAQ00000000.1	2.19	60.10
<i>C. aerofaciens</i> indica	NZ_CP024160.1	2.31	60.10
<i>C. aerofaciens</i> 2789STDY5608842	NZ_CYYF00000000.1	2.14	60.00
<i>C. aerofaciens</i> 2789STDY5608823	NZ_CYYP00000000.1	2.23	59.60

^T: Type strain.**Table S4:** The ANIb values between TF06-26 and 5strain of species *C. aerofaciens*

	1	2	3	4	5	6
1	-	93.90	94.08	93.22	93.05	92.92
2	93.90	-	93.44	93.18	93.12	93.07
3	94.08	93.44	-	93.73	93.60	93.49
4	93.22	93.18	93.73	-	94.93	94.77
5	93.05	93.12	93.60	94.93	-	94.32
6	92.92	93.07	93.49	94.77	94.32	-

1, TF06-26; 2, *C. aerofaciens* 2789STDY5834902; 3, *C. aerofaciens* indica; 4, *C. aerofaciens* 2789STDY5608842; 5, *C. aerofaciens* 2789STDY5608823; 6, *C. aerofaciens* ATCC 25986^T;

^T: Type strain.

Table S5: The core gene, accessory genes and unique genes number of TF06-26 and 13 strains of genus *Collinsella*

Organism name	Core genes	Accessory genes	Unique genes
<i>C. bouchesdurhonensis</i> Marseille-P3296 ^T	535	719	331
<i>C. intestinalis</i> DSM 13280 ^T	535	767	200
<i>C. phocaeensis</i> Marseille-P3245 ^T	535	816	296
<i>C. stercoris</i> DSM 13279 ^T	535	871	435
<i>C. tanakaei</i> YIT 12063 ^T	535	968	583
<i>C. ihuae</i> GD8 ^T	535	845	824
<i>C. provencensis</i> Marseille-P3740 ^T	535	533	347
<i>C. vaginalis</i> Marseille-P2666 ^T	535	596	517
TF06-26	535	1206	130
<i>C. aerofaciens</i> ATCC 25986 ^T	535	1253	135
<i>C. aerofaciens</i> 2789STDY5834902	535	1145	82
<i>C. aerofaciens</i> indica	535	1216	103
<i>C. aerofaciens</i> 2789STDY5608842	535	1150	79
<i>C. aerofaciens</i> 2789STDY5608823	535	1201	98

^T: Type strain.

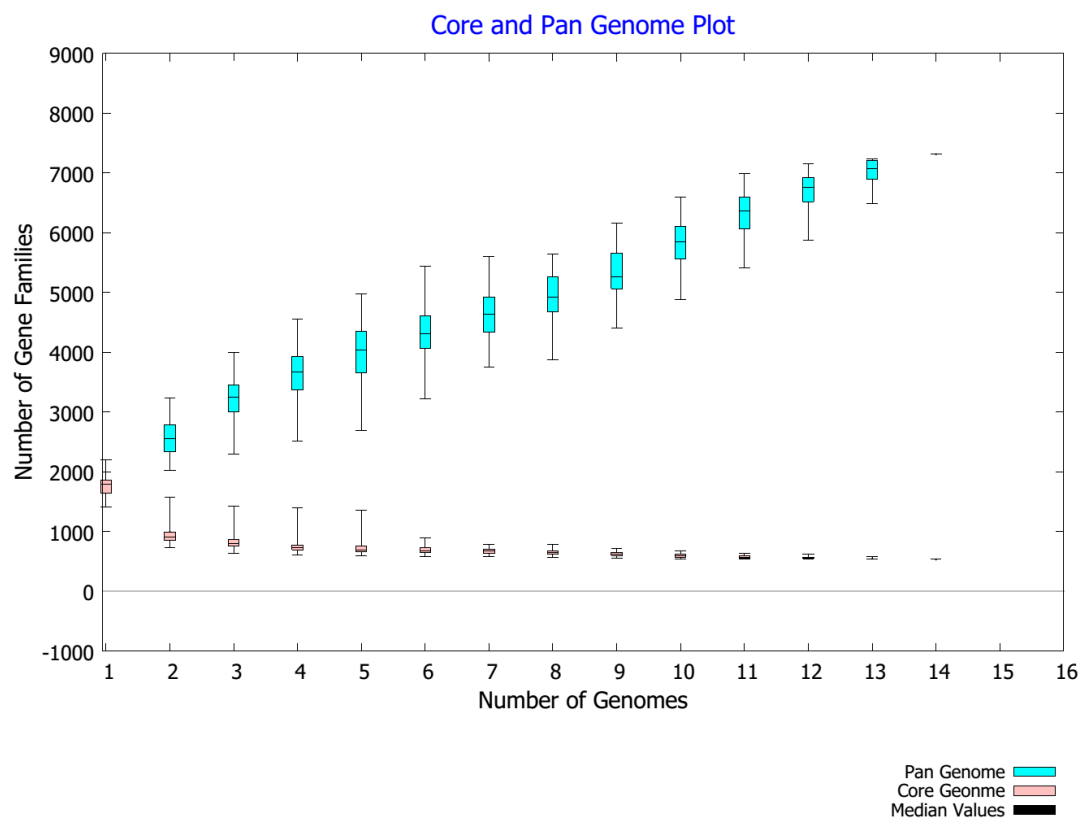


Figure S1. The core genome and pan genome of TF06-26 and 13 genomes of the genus *Collinsella*.

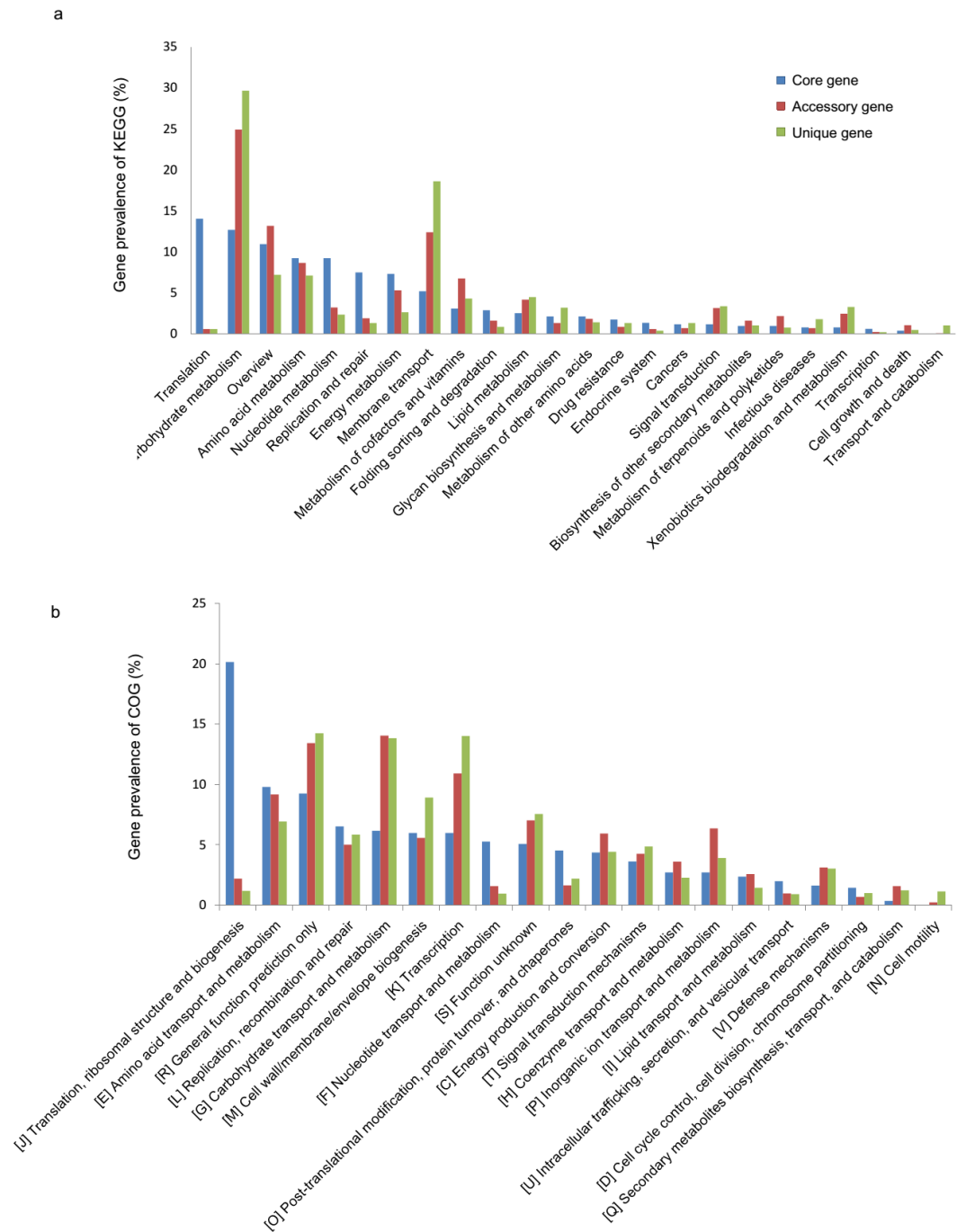


Figure S2. Function annotation of the core, accessory and unique genes of 14 genomes. (a) KEGG-based functional annotation; (b) COG-based functional classification.