

Supplementary Material

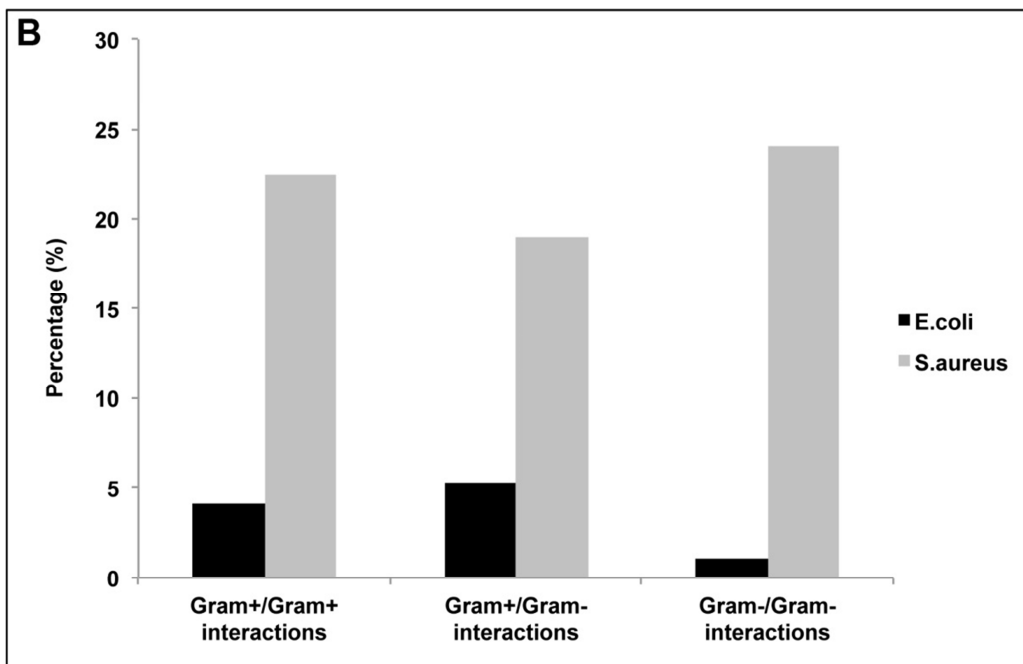
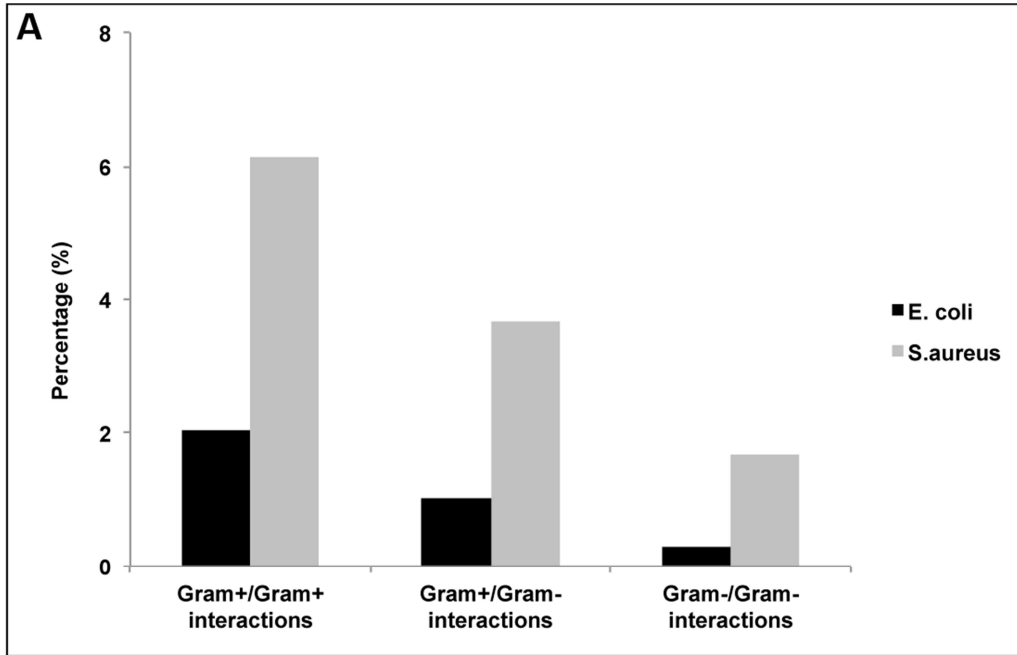
Table S1 Results of antimicrobial screening in confrontation assays for all bacterial isolates used in this study.

Phylum / phylogenetic class	Species	Accession number	isolation medium	AM activity vs <i>E.coli</i>		AM activity vs <i>S.aureus</i>	
Actinobacteria				Monoculture	Interaction	Monoculture	Interaction
Actinobacteria	<i>Micrococcus</i> sp. AD12	KJ685229	TSBA	x		x	
Actinobacteria	<i>Rhodococcus</i> sp. AD22	KJ685237	TSBA			x	x
Actinobacteria	<i>Streptomyces</i> sp. AD29	KJ685244	TSBA	x		x	
Actinobacteria	<i>Micrococcus</i> sp. AD31	KJ685246	TSBA		x (1)		x (9)
Actinobacteria	<i>Streptomyces</i> sp. AD92	KJ685303	CHIT				x (4)
Actinobacteria	<i>Streptomyces</i> sp. AD94	KJ685305	CHIT			x	x
Actinobacteria	<i>Streptomyces</i> sp. AD107	KJ685318	TSBA			x	
Actinobacteria	<i>Streptomyces</i> sp. AD108	KJ685319	TSBA		x (4)		x (8)
Actinobacteria	<i>Mycobacterium</i> sp. AD110	KJ685321	TSBA	x		x	
Actinobacteria	<i>Microbacterium</i> sp. AD141	KJ685346	TSBA		x (2)		x (3)
Actinobacteria	<i>Tsukamurella</i> sp. AD106	KJ685317	TSBA				x (3)
Bacteroidetes							
Flavobacteria	<i>Flavobacterium</i> sp. AD41	KJ685256	TSBA			x	
Flavobacteria	<i>Flavobacterium</i> sp. AD42	KJ685257	TSBA				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD43	KJ685258	TSBA				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD44	KJ685259	TSBA				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD45	KJ685260	TSBA				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD47	KJ685262	TSBA		x (1)	x	x
Flavobacteria	<i>Chryseobacterium</i> sp. AD48	KJ685263	TSBA				x (3)
Flavobacteria	<i>Flavobacterium</i> sp. AD84	KJ685296	CHIT		x (1)	x	
Flavobacteria	<i>Flavobacterium</i> sp. AD85	KJ685297	CHIT				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD86	KJ685298	CHIT	x		x	
Flavobacteria	<i>Flavobacterium</i> sp. AD91	KJ685302	CHIT				x (2)
Flavobacteria	<i>Flavobacterium</i> sp. AD131	KJ685338	TSBA				
Flavobacteria	<i>Flavobacterium</i> sp. AD134	KJ685341	TSBA				
Flavobacteria	<i>Flavobacterium</i> sp. AD142	KJ685347	TSBA				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD146	KJ685351	CHIT				x (2)
Flavobacteria	<i>Flavobacterium</i> sp. AD149	KJ685354	TSBA				
Flavobacteria	<i>Flavobacterium</i> sp. AD151	KJ685355	TSBA		x (1)		
Flavobacteria	<i>Flavobacterium</i> sp. AD155	KJ685358	CHIT				x (1)
Flavobacteria	<i>Flavobacterium</i> sp. AD156	KJ685359	CHIT				x (1)
Sphingobacteria	<i>Pedobacter</i> sp. V48	DQ778037	TSBA		x (1)		
Firmicutes							
Bacilli	<i>Paenibacillus</i> sp. AD50	KJ685264	TSBA	x			
Bacilli	<i>Bacillus</i> sp. AD78	KJ685290	CHIT		x (1)	x	
Bacilli	<i>Paenibacillus</i> sp. AD83	KJ685295	CHIT		x (1)		x (2)
Bacilli	<i>Paenibacillus</i> sp. AD87	KJ685299	CHIT			x	
Bacilli	<i>Paenibacillus</i> sp. AD93	KJ685304	CHIT			x	
Bacilli	<i>Paenibacillus</i> sp. AD116	KJ685325	TSBA				x (1)
Bacilli	<i>Paenibacillus</i> sp. AD117	KJ685326	TSBA	x			
Proteobacteria							
alpha-proteobacteria	<i>Agrobacterium</i> sp. AD1	KJ685218	TSBA				x (1)
alpha-proteobacteria	<i>Phyllobacterium</i> sp. AD34	KJ685249	TSBA				x (1)
alpha-proteobacteria	<i>Mesorhizobium</i> sp. AD38	KJ685253	TSBA				x (1)
alpha-proteobacteria	<i>Mesorhizobium</i> sp. AD112	KJ685322	TSBA				
alpha-proteobacteria	<i>Bosea</i> sp. AD113	KJ685323	TSBA			x	
alpha-proteobacteria	<i>Bradyrhizobiaceae</i> sp. AD126	KJ685334	TSBA				
alpha-proteobacteria	<i>Bosea</i> sp. AD132	KJ685339	TSBA				x (1)
alpha-proteobacteria	<i>Agrobacterium</i> sp. AD140	KJ685345	TSBA				x (1)
alpha-proteobacteria	<i>Rhizobium</i> sp. AD148	KJ685353	TSBA				x (1)
alpha-proteobacteria	<i>Phyllobacterium</i> sp. AD136	KJ685342	TSBA				x (2)
alpha-proteobacteria	<i>Phyllobacterium</i> sp. AD152	KJ685356	TSBA		x (1)	x	
alpha-proteobacteria	<i>Phyllobacterium</i> sp. AD153	KJ685357	TSBA				x (4)
alpha-proteobacteria	<i>Phyllobacterium</i> sp. AD159	KJ685361	TSBA				x (1)
alpha-proteobacteria	<i>Phyllobacterium</i> sp. AD51	KJ685265	CHIT			x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD3	KJ685220	TSBA				
beta-proteobacteria	<i>Burkholderia</i> sp. AD9	KJ685226	TSBA			x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD10	KJ685227	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD15	KJ685231	TSBA	x		x	x
beta-proteobacteria	<i>Burkholderia</i> sp. AD11	KJ685228	TSBA		x (2)	x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD18	KJ685234	TSBA				x (2)
beta-proteobacteria	<i>Collimonas</i> sp. AD19	KJ685235	TSBA			x	
beta-proteobacteria	<i>Collimonas</i> sp. AD23	KJ685238	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD24	KJ685239	TSBA		x (2)		x (1)
beta-proteobacteria	<i>Burkholderia</i> sp. AD25	KJ685240	TSBA	x		x	x
beta-proteobacteria	<i>Burkholderia</i> sp. AD26	KJ685241	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD27	KJ685242	TSBA	x		x	x
beta-proteobacteria	<i>Burkholderia</i> sp. AD28	KJ685243	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD30	KJ685245	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD32	KJ685247	TSBA		x (1)	x	
beta-proteobacteria	<i>Collimonas</i> sp. AD33	KJ685248	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD35	KJ685250	TSBA			x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD37	KJ685252	TSBA		x (1)		x (5)
beta-proteobacteria	<i>Variovorax</i> sp. AD39	KJ685254	TSBA			x	

Table S1 continuation

Phylum / phylogenetic class	Species	Accession number	isolation medium	AM activity vs <i>E.coli</i>		AM activity vs <i>S.aureus</i>	
Proteobacteria				Monoculture	Interaction	Monoculture	Interaction
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD54	KJ685267	TSBA			x	
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD55	KJ685268	TSBA	x			
beta-proteobacteria	<i>Collimonas</i> sp. AD58	KJ685270	CHIT				
beta-proteobacteria	<i>Collimonas</i> sp. AD59	KJ685271	CHIT				
beta-proteobacteria	<i>Collimonas</i> sp. AD60	KJ685272	CHIT				
beta-proteobacteria	<i>Collimonas</i> sp. AD61	KJ685273	CHIT				x (1)
beta-proteobacteria	<i>Collimonas</i> sp. AD62	KJ685274	CHIT				x (3)
beta-proteobacteria	<i>Collimonas</i> sp. AD63	KJ685275	CHIT			x	x
beta-proteobacteria	<i>Collimonas</i> sp. AD64	KJ685276	CHIT			x	
beta-proteobacteria	<i>Collimonas</i> sp. AD65	KJ685277	CHIT				x (5)
beta-proteobacteria	<i>Collimonas</i> sp. AD66	KJ685278	CHIT			x	
beta-proteobacteria	<i>Collimonas</i> sp. AD67	KJ685279	CHIT				x (2)
beta-proteobacteria	<i>Collimonas</i> sp. AD68	KJ685280	CHIT		x (1)		x (1)
beta-proteobacteria	<i>Collimonas</i> sp. AD69	KJ685281	CHIT				x (3)
beta-proteobacteria	<i>Collimonas</i> sp. AD70	KJ685282	CHIT				x (1)
beta-proteobacteria	<i>Collimonas</i> sp. AD71	KJ685283	CHIT				x (1)
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD72	KJ685284	CHIT		x (1)		x (3)
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD73	KJ685285	CHIT				x (1)
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD74	KJ685286	CHIT	x		x	
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD75	KJ685287	CHIT				x (2)
beta-proteobacteria	<i>Collimonas</i> sp. AD76	KJ685288	CHIT			x	x
beta-proteobacteria	<i>Collimonas</i> sp. AD77	KJ685289	CHIT	x		x	
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD80	KJ685292	CHIT		x (4)	x	
beta-proteobacteria	<i>Silvimonas</i> sp. AD81	KJ685293	CHIT			x	
beta-proteobacteria	<i>Silvimonas</i> sp. AD82	KJ685294	CHIT			x	
beta-proteobacteria	<i>Collimonas</i> sp. AD88	KJ685300	CHIT				x (3)
beta-proteobacteria	<i>Collimonas</i> sp. AD89	KJ685301	CHIT				x (3)
beta-proteobacteria	<i>Collimonas</i> sp. AD95	KJ685306	CHIT	x		x	
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD96	KJ685307	CHIT	x		x	
beta-proteobacteria	<i>Collimonas</i> sp. AD97	KJ685308	CHIT				x (2)
beta-proteobacteria	<i>Collimonas</i> sp. AD98	KJ685309	CHIT				x (5)
beta-proteobacteria	<i>Collimonas</i> sp. AD99	KJ685310	CHIT				x (1)
beta-proteobacteria	<i>Collimonas</i> sp. AD101	KJ685312	CHIT				x (1)
beta-proteobacteria	<i>Collimonas</i> sp. AD102	KJ685313	CHIT				x (1)
beta-proteobacteria	<i>Collimonas</i> sp. AD103	KJ685314	CHIT			x	
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD118	KJ685327	TSBA	x		x	
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD119	KJ685328	TSBA	x		x	
beta-proteobacteria	<i>Burkholderia</i> sp. AD123	KJ685331	TSBA				
beta-proteobacteria	<i>Burkholderia</i> sp. AD127	KJ685335	TSBA	x			
beta-proteobacteria	<i>Variovorax</i> sp. AD130	KJ685337	TSBA				
beta-proteobacteria	<i>Variovorax</i> sp. AD133	KJ685340	TSBA		x (1)	x	
beta-proteobacteria	<i>Collimonas</i> sp. AD137	KJ685343	TSBA				x (1)
beta-proteobacteria	<i>Burkholderia</i> sp. AD138	KJ685344	TSBA				x (1)
beta-proteobacteria	<i>Variovorax</i> sp. AD143	KJ685348	TSBA				x (5)
beta-proteobacteria	<i>Janthinobacterium</i> sp. AD144	KJ685349	CHIT			x	
beta-proteobacteria	<i>Roseateles</i> sp. AD145	KJ685350	CHIT				x (1)
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD2	KJ685219	TSBA				
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD4	KJ685221	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD5	KJ685222	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD6	KJ685223	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD7	KJ685224	TSBA			x	x
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD8	KJ685225	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD14	KJ685230	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD16	KJ685232	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD17	KJ685233	TSBA			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD21	DQ778036	TSBA	x		x	x
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD36	KJ685251	TSBA				
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD79	KJ685291	CHIT			x	
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD100	KJ685311	CHIT			x	x
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD104	KJ685315	CHIT				x (5)
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD105	KJ685316	CHIT				x (2)
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD114	KJ685324	TSBA		x (1)		x (1)
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD122	KJ685330	TSBA				
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD124	KJ685332	TSBA				x (1)
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD125	KJ685333	TSBA	x			
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD157	KJ685360	TSBA				x (1)
gamma-proteobacteria	<i>Luteibacter</i> sp. AD20	KJ685236	TSBA			x	
gamma-proteobacteria	<i>Dyella</i> sp. AD40	KJ685255	TSBA			x	
gamma-proteobacteria	<i>Dyella</i> sp. AD46	KJ685261	TSBA				x (1)
gamma-proteobacteria	<i>Lysobacter</i> sp. AD52	KJ685266	CHIT			x	
gamma-proteobacteria	<i>Dyella</i> sp. AD56	KJ685269	TSBA		x (1)	x	
gamma-proteobacteria	<i>Frateuria</i> sp. AD120	KJ685329	TSBA				
gamma-proteobacteria	<i>Dyella</i> sp. AD129	KJ685336	TSBA				
gamma-proteobacteria	<i>Stenotrophomonas</i> sp. AD147	KJ685352	CHIT				x (1)
gamma-proteobacteria	<i>Rhodonobacter</i> sp. AD109	KJ685320	TSBA				

AM activity = antimicrobial activity against *E.coli* WA321 or *S.aureus* 533R4 in monoculture or in interactions. Isolation media: CHIT= chitin supplemented agar plates, TSBA= Tryptic soy broth agar plates. Numbers in brackets represent the number of interactions that triggered antimicrobial activity either against *E.coli* WA321 or *S.aureus* 533R4.



Supplementary Figure S2 Frequencies of induction (A) or suppression of (B) antimicrobial activities for combinations of Gram- or Gram+ bacterial isolates. Antimicrobial activities were tested against *E.coli* WA321 or *S.aureus* 533R4. Number of tested interactions: Gram+/Gram+: n=49, Gram+/Gram-: n=690, Gram-/Gram-: n=2069. The results of the statistical analyses (Chi-square tests) are presented in **Table S5** and **S6**.

Supplementary Table S3 Bacterial strains used as target and positive control in the high-throughput interaction assay and the agar-overlay assay to detect antimicrobial activity.

Organism	Strain number	Assay function
<i>Streptomyces rimosus</i>	DSMZ 40 260 (type strain)	positive control, produces oxytetracycline
<i>Streptomyces nodosus</i>	DSMZ 40 109 (type strain)	positive control, produces amphotericin A and amphotericin B
<i>Streptomyces kanamyceticus</i>	DSMZ 40 500 (type strain)	positive control, produces kanamycin A,B and C
<i>Escherichia coli</i> WA321	DSMZ 4509	target, model for human pathogen
<i>Staphylococcus aureus</i> 533R4 Sero var 3	DSMZ 20231	target, model for human pathogen

Supplementary Table S4 Bacterial isolates without any antimicrobial activity against *E.coli* WA 321 or *S.aureus* 533R4 either in paired combination or monoculture.

Phylum / phylogenetic class	Species	Accession number	isolation medium	AM activity vs <i>E.coli</i>		AM activity vs <i>S.aureus</i>	
				Monoculture	Interaction	Monoculture	Interaction
Bacteroidetes							
Flavobacteria	<i>Flavobacterium</i> sp. AD131	KJ685338	TSBA	-	-	-	-
Flavobacteria	<i>Flavobacterium</i> sp. AD134	KJ685341	TSBA	-	-	-	-
Flavobacteria	<i>Flavobacterium</i> sp. AD149	KJ685354	TSBA	-	-	-	-
Proteobacteria							
alpha-proteobacteria	<i>Agrobacterium</i> sp. AD1	KJ685218	TSBA	-	-	-	-
alpha-proteobacteria	<i>Bradyrhizobiaceae</i> sp. AD126	KJ685334	TSBA	-	-	-	-
beta-proteobacteria	<i>Burkholderia</i> sp. AD3	KJ685220	TSBA	-	-	-	-
beta-proteobacteria	<i>Collimonas</i> sp. AD58	KJ685270	CHIT	-	-	-	-
beta-proteobacteria	<i>Collimonas</i> sp. AD59	KJ685271	CHIT	-	-	-	-
beta-proteobacteria	<i>Collimonas</i> sp. AD60	KJ685272	CHIT	-	-	-	-
beta-proteobacteria	<i>Burkholderia</i> sp. AD123	KJ685331	TSBA	-	-	-	-
beta-proteobacteria	<i>Variovorax</i> sp. AD130	KJ685337	TSBA	-	-	-	-
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD2	KJ685219	TSBA	-	-	-	-
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD36	KJ685251	TSBA	-	-	-	-
gamma-proteobacteria	<i>Rhodonobacter</i> sp. AD109	KJ685320	TSBA	-	-	-	-
gamma-proteobacteria	<i>Frateuria</i> sp. AD120	KJ685329	TSBA	-	-	-	-
gamma-proteobacteria	<i>Pseudomonas</i> sp. AD122	KJ685330	TSBA	-	-	-	-
gamma-proteobacteria	<i>Dyella</i> sp. AD129	KJ685336	TSBA	-	-	-	-

Supplementary Table S5: Results of the Chi-square test for frequencies of induction of antimicrobial activity against (A) *E.coli* WA321 and (B) *S.aureus* 533R4. Abbreviations: Rows: Gram-group interactions (1: Gram-/Gram- interactions, 2: Gram+/Gram- interactions, 3: Gram+/Gram+ interactions). Columns: Number of interactions with A: triggering of antimicrobial activity and B: Interactions without triggering.

A 1.6.2014

Contingency Table: Results

 $r \times c$ Contingency Table: Results

The results of a contingency table X^2 statistical test performed at 11:29 on 1-JUN-2014

data: contingency table

	A	B	
1	6	2063	2069
2	7	673	680
3	1	48	49
	14	2784	2798

expected: contingency table

	A	B
1	10.4	2.059E+03
2	3.40	677.
3	0.245	48.8

chi-square = 8.00
degrees of freedom = 2
probability = 0.018

B 1.6.2014

Contingency Table: Results

 $r \times c$ Contingency Table: Results

The results of a contingency table X^2 statistical test performed at 11:30 on 1-JUN-2014

data: contingency table

	A	B	
1	35	2034	2069
2	25	655	680
3	3	46	49
	63	2735	2798

expected: contingency table

	A	B
1	46.6	2.022E+03
2	15.3	665.
3	1.10	47.9

chi-square = 12.6
degrees of freedom = 2
probability = 0.002

Supplementary Table S6: Results of the Chi-square test for the frequencies of silencing of antimicrobial activity against (A) *E.coli* WA 321 and (B) *S.aureus* 533R4. Abbreviations: Rows: Gram-group interactions (1: Gram-/Gram- interactions, 2: Gram+/Gram- interactions, 3: Gram+/Gram+ interactions). Columns: Number of interactions with A: observed silencing of antimicrobial activity and B: without observed silencing.

A 1.6.2014

Contingency Table: Results

 $r \times c$ Contingency Table: Results

The results of a contingency table X^2 statistical test performed at 11:33 on 1-JUN-2014

data: contingency table

	A	B	
1	22	2047	2069
2	36	644	680
3	2	47	49
	60	2738	2798

expected: contingency table

	A	B	
1	44.4	2.025E+03	
2	14.6	665.	
3	1.05	47.9	

chi-square = 44.5
degrees of freedom = 2
probability = 0.000

B 1.6.2014

Contingency Table: Results

 $r \times c$ Contingency Table: Results

The results of a contingency table X^2 statistical test performed at 11:35 on 1-JUN-2014

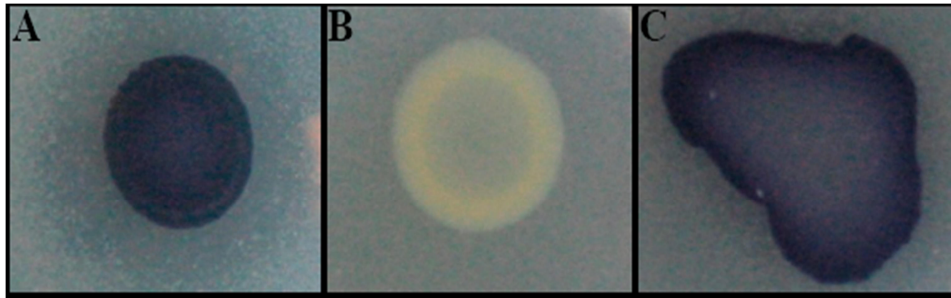
data: contingency table

	A	B	
1	499	1570	2069
2	129	551	680
3	11	38	49
	639	2159	2798

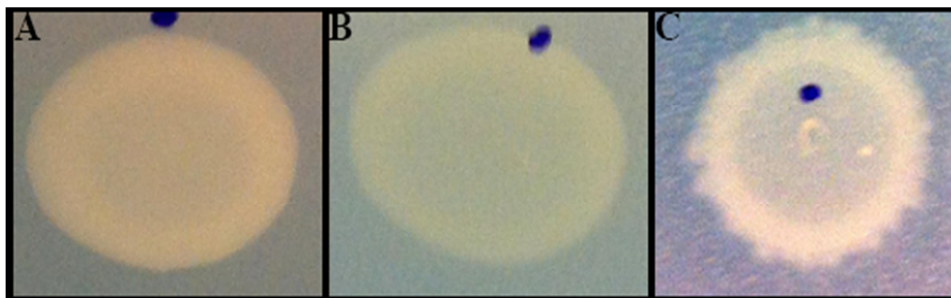
expected: contingency table

	A	B	
1	473.	1.596E+03	
2	155.	525.	
3	11.2	37.8	

chi-square = 7.70
degrees of freedom = 2
probability = 0.021



Supplementary Figure S7 Suppression of antimicrobial activity revealed via the agar overlay assay: *Janthinobacterium* sp. AD55 monoculture (A), *Flavobacterium* sp. AD86 monoculture (B), Interaction *Janthinobacterium* sp. AD55 with *Flavobacterium* sp. AD86 loss of antimicrobial activity against *E. coli* WA321.



Supplementary Figure S8 Induction of antimicrobial activity revealed via the agar overlay assay: *Dyella* sp. AD56 monoculture (A), *Janthinobacterium* sp. AD80 monoculture (B), Interaction *Dyella* sp. AD56 with *Janthinobacterium* sp. AD80 antimicrobial activity against *E. coli* WA321.

Supplementary Table S9 Bacterial combination pairs which suppressed antimicrobial activity against *E.coli* WA 321. For the strain designation please see Table S1.

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
Bacilli	AD50	beta-proteobacteria	AD10
Bacilli	AD50	Actinobacteria	AD22
Bacilli	AD50	alpha-proteobacteria	AD34
Bacilli	AD50	beta-proteobacteria	AD60
Bacilli	AD50	beta-proteobacteria	AD70
Bacilli	AD50	beta-proteobacteria	AD9
Bacilli	AD50	beta-proteobacteria	AD26
Bacilli	AD50	beta-proteobacteria	AD81
Bacilli	AD50	beta-proteobacteria	AD98
Bacilli	AD50	beta-proteobacteria	AD89
Bacilli	AD50	Bacilli	AD87
Bacilli	AD50	beta-proteobacteria	AD137
Bacilli	AD50	alpha-proteobacteria	AD148
Bacilli	AD50	gamma-proteobacteria	AD157
Bacilli	AD50	Flavobacteria	AD155
Bacilli	AD50	beta-proteobacteria	AD25
Bacilli	AD50	beta-proteobacteria	AD33
Bacilli	AD50	Bacilli	AD83
Bacilli	AD50	beta-proteobacteria	AD101
Bacilli	AD50	gamma-proteobacteria	AD125
Bacilli	AD50	Flavobacteria	AD142
Bacilli	AD117	gamma-proteobacteria	AD20
Bacilli	AD117	Flavobacteria	AD42
Bacilli	AD117	beta-proteobacteria	AD68
Bacilli	AD117	beta-proteobacteria	AD24
Bacilli	AD117	beta-proteobacteria	AD95
Bacilli	AD117	Flavobacteria	AD146
Bacilli	AD117	alpha-proteobacteria	AD159
Bacilli	AD117	gamma-proteobacteria	AD14
Bacilli	AD117	gamma-proteobacteria	AD56
Bacilli	AD117	beta-proteobacteria	AD69
Bacilli	AD117	beta-proteobacteria	AD98
Bacilli	AD117	alpha-proteobacteria	AD001
Bacilli	AD117	Actinobacteria	AD12
Bacilli	AD117	gamma-proteobacteria	AD2
beta-proteobacteria	AD55	beta-proteobacteria	AD11
beta-proteobacteria	AD55	beta-proteobacteria	AD23
beta-proteobacteria	AD55	beta-proteobacteria	AD35
beta-proteobacteria	AD55	Flavobacteria	AD45
beta-proteobacteria	AD55	beta-proteobacteria	AD61
beta-proteobacteria	AD55	beta-proteobacteria	AD71
beta-proteobacteria	AD55	beta-proteobacteria	AD15
beta-proteobacteria	AD55	Actinobacteria	AD22
beta-proteobacteria	AD55	beta-proteobacteria	AD82
beta-proteobacteria	AD55	gamma-proteobacteria	AD100
beta-proteobacteria	AD55	beta-proteobacteria	AD98
beta-proteobacteria	AD55	beta-proteobacteria	AD138
beta-proteobacteria	AD55	beta-proteobacteria	AD143
beta-proteobacteria	AD55	gamma-proteobacteria	AD147
beta-proteobacteria	AD55	beta-proteobacteria	AD10
beta-proteobacteria	AD55	beta-proteobacteria	AD60
beta-proteobacteria	AD55	Flavobacteria	AD86
beta-proteobacteria	AD55	beta-proteobacteria	AD102
beta-proteobacteria	AD55	beta-proteobacteria	AD74
beta-proteobacteria	AD55	alpha-proteobacteria	AD112
beta-proteobacteria	AD55	alpha-proteobacteria	AD126
gamma-proteobacteria	AD125	beta-proteobacteria	AD66
gamma-proteobacteria	AD125	Bacilli	AD50
beta-proteobacteria	AD127	beta-proteobacteria	AD75
beta-proteobacteria	AD127	Actinobacteria	AD107

Supplementary Table S10 Bacterial combination pairs which suppressed antimicrobial activity against *S.aureus* 533R4. For the strain designation please see Table S1.

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
Actinobacteria	AD107	gamma-proteobacteria	AD14
Actinobacteria	AD107	beta-proteobacteria	AD24
Actinobacteria	AD107	gamma-proteobacteria	AD36
Actinobacteria	AD107	beta-proteobacteria	AD62
Actinobacteria	AD107	beta-proteobacteria	AD72
Actinobacteria	AD107	beta-proteobacteria	AD32
Actinobacteria	AD107	Bacilli	AD83
Actinobacteria	AD107	beta-proteobacteria	AD99
Actinobacteria	AD107	gamma-proteobacteria	AD100
Actinobacteria	AD107	alpha-proteobacteria	AD140
Actinobacteria	AD107	Actinobacteria	AD22
Actinobacteria	AD107	Bacilli	AD87
Actinobacteria	AD107	beta-proteobacteria	AD103
Actinobacteria	AD107	beta-proteobacteria	AD127
Actinobacteria	AD107	Flavobacteria	AD146
Flavobacteria	AD41	beta-proteobacteria	AD19
Flavobacteria	AD41	beta-proteobacteria	AD67
Flavobacteria	AD41	beta-proteobacteria	AD25
Flavobacteria	AD41	Actinobacteria	AD94
Flavobacteria	AD41	beta-proteobacteria	AD96
Flavobacteria	AD41	beta-proteobacteria	AD145
Flavobacteria	AD41	Flavobacteria	AD151
Flavobacteria	AD41	gamma-proteobacteria	AD16
Flavobacteria	AD41	beta-proteobacteria	AD54
Flavobacteria	AD41	gamma-proteobacteria	AD8
Flavobacteria	AD41	beta-proteobacteria	AD68
Flavobacteria	AD41	beta-proteobacteria	AD32
Flavobacteria	AD41	beta-proteobacteria	AD58
Flavobacteria	AD41	gamma-proteobacteria	AD5
Flavobacteria	AD41	gamma-proteobacteria	AD79
Flavobacteria	AD41	Bacilli	AD83
Flavobacteria	AD41	Flavobacteria	AD134
Flavobacteria	AD41	Flavobacteria	AD142
Flavobacteria	AD41	beta-proteobacteria	AD24
Flavobacteria	AD41	Bacilli	AD93
Flavobacteria	AD41	beta-proteobacteria	AD27
Bacilli	AD87	gamma-proteobacteria	AD16
Bacilli	AD87	Actinobacteria	AD22
Bacilli	AD87	alpha-proteobacteria	AD38
Bacilli	AD87	Flavobacteria	AD44
Bacilli	AD87	beta-proteobacteria	AD64
Bacilli	AD87	beta-proteobacteria	AD70
Bacilli	AD87	gamma-proteobacteria	AD20
Bacilli	AD87	beta-proteobacteria	AD26
Bacilli	AD87	beta-proteobacteria	AD98
Bacilli	AD87	Bacilli	AD106
Bacilli	AD87	Flavobacteria	AD142
Bacilli	AD87	Flavobacteria	AD149
Bacilli	AD87	gamma-proteobacteria	AD21
Bacilli	AD87	Flavobacteria	AD48
Bacilli	AD87	alpha-proteobacteria	AD148
Bacilli	AD87	Flavobacteria	AD155
Bacilli	AD87	beta-proteobacteria	AD10
Bacilli	AD87	beta-proteobacteria	AD95
Bacilli	AD87	beta-proteobacteria	AD65
Bacilli	AD87	beta-proteobacteria	AD71
Bacilli	AD87	gamma-proteobacteria	AD14
Bacilli	AD87	gamma-proteobacteria	AD36
Bacilli	AD87	beta-proteobacteria	AD62
Bacilli	AD87	beta-proteobacteria	AD89
Bacilli	AD87	Bacilli	AD83
Bacilli	AD87	beta-proteobacteria	AD101

Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
Bacilli	AD87	gamma-proteobacteria	AD100
Bacilli	AD87	alpha-proteobacteria	AD140
Bacilli	AD87	beta-proteobacteria	AD144
Bacilli	AD87	Actinobacteria	AD110
Bacilli	AD87	Bacilli	AD50
Bacilli	AD87	Actinobacteria	AD107
Bacilli	AD93	beta-proteobacteria	AD18
Bacilli	AD93	gamma-proteobacteria	AD40
Bacilli	AD93	beta-proteobacteria	AD66
Bacilli	AD93	beta-proteobacteria	AD19
Bacilli	AD93	gamma-proteobacteria	AD114
Bacilli	AD93	beta-proteobacteria	AD144
Bacilli	AD93	alpha-proteobacteria	AD152
Bacilli	AD93	gamma-proteobacteria	AD17
Bacilli	AD93	gamma-proteobacteria	AD52
Bacilli	AD93	beta-proteobacteria	AD67
Bacilli	AD93	Flavobacteria	AD41
Bacilli	AD93	beta-proteobacteria	AD25
Bacilli	AD93	Actinobacteria	AD92
Bacilli	AD93	Actinobacteria	AD94
Bacilli	AD93	beta-proteobacteria	AD96
Bacilli	AD93	beta-proteobacteria	AD145
Bacilli	AD93	Flavobacteria	AD151
Bacilli	AD93	gamma-proteobacteria	AD16
Bacilli	AD93	beta-proteobacteria	AD119
Bacilli	AD93	beta-proteobacteria	AD7
alpha-proteobacteria	AD113	gamma-proteobacteria	AD17
alpha-proteobacteria	AD113	beta-proteobacteria	AD39
alpha-proteobacteria	AD113	beta-proteobacteria	AD65
alpha-proteobacteria	AD113	gamma-proteobacteria	AD21
alpha-proteobacteria	AD113	Actinobacteria	AD92
alpha-proteobacteria	AD113	beta-proteobacteria	AD143
alpha-proteobacteria	AD113	alpha-proteobacteria	AD153
alpha-proteobacteria	AD113	beta-proteobacteria	AD19
alpha-proteobacteria	AD113	alpha-proteobacteria	AD51
alpha-proteobacteria	AD113	beta-proteobacteria	AD66
alpha-proteobacteria	AD113	Flavobacteria	AD91
alpha-proteobacteria	AD113	Flavobacteria	AD146
alpha-proteobacteria	AD113	beta-proteobacteria	AD118
gamma-proteobacteria	AD4	beta-proteobacteria	AD28
gamma-proteobacteria	AD4	gamma-proteobacteria	AD52
gamma-proteobacteria	AD4	gamma-proteobacteria	AD8
gamma-proteobacteria	AD4	gamma-proteobacteria	AD5
gamma-proteobacteria	AD4	beta-proteobacteria	AD76
gamma-proteobacteria	AD4	gamma-proteobacteria	AD104
gamma-proteobacteria	AD4	Flavobacteria	AD131
gamma-proteobacteria	AD4	alpha-proteobacteria	AD140
gamma-proteobacteria	AD4	beta-proteobacteria	AD30
gamma-proteobacteria	AD4	beta-proteobacteria	AD26
gamma-proteobacteria	AD4	Actinobacteria	AD29
gamma-proteobacteria	AD4	alpha-proteobacteria	AD51
gamma-proteobacteria	AD4	beta-proteobacteria	AD54
gamma-proteobacteria	AD4	beta-proteobacteria	AD74
gamma-proteobacteria	AD4	beta-proteobacteria	AD77
gamma-proteobacteria	AD4	gamma-proteobacteria	AD105
gamma-proteobacteria	AD4	alpha-proteobacteria	AD132
gamma-proteobacteria	AD4	beta-proteobacteria	AD145
gamma-proteobacteria	AD4	beta-proteobacteria	AD39
gamma-proteobacteria	AD4	beta-proteobacteria	AD009
gamma-proteobacteria	AD4	beta-proteobacteria	AD103
gamma-proteobacteria	AD4	gamma-proteobacteria	AD120

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
gamma-proteobacteria	AD4	alpha-proteobacteria	AD153
gamma-proteobacteria	AD4	beta-proteobacteria	AD137
gamma-proteobacteria	AD4	beta-proteobacteria	AD64
gamma-proteobacteria	AD4	alpha-proteobacteria	AD34
gamma-proteobacteria	AD4	beta-proteobacteria	AD37
gamma-proteobacteria	AD4	Bacilli	AD78
gamma-proteobacteria	AD4	gamma-proteobacteria	AD2
gamma-proteobacteria	AD4	beta-proteobacteria	AD3
gamma-proteobacteria	AD5	Actinobacteria	AD29
gamma-proteobacteria	AD5	beta-proteobacteria	AD54
gamma-proteobacteria	AD5	gamma-proteobacteria	AD4
gamma-proteobacteria	AD5	gamma-proteobacteria	AD8
gamma-proteobacteria	AD5	beta-proteobacteria	AD77
gamma-proteobacteria	AD5	gamma-proteobacteria	AD105
gamma-proteobacteria	AD5	alpha-proteobacteria	AD132
gamma-proteobacteria	AD5	beta-proteobacteria	AD145
gamma-proteobacteria	AD5	beta-proteobacteria	AD25
gamma-proteobacteria	AD5	beta-proteobacteria	AD009
gamma-proteobacteria	AD5	beta-proteobacteria	AD32
gamma-proteobacteria	AD5	Flavobacteria	AD48
gamma-proteobacteria	AD5	beta-proteobacteria	AD58
gamma-proteobacteria	AD5	beta-proteobacteria	AD73
gamma-proteobacteria	AD5	gamma-proteobacteria	AD79
gamma-proteobacteria	AD5	Bacilli	AD83
gamma-proteobacteria	AD5	Flavobacteria	AD134
gamma-proteobacteria	AD5	Flavobacteria	AD142
gamma-proteobacteria	AD5	beta-proteobacteria	AD37
gamma-proteobacteria	AD5	beta-proteobacteria	AD27
gamma-proteobacteria	AD5	beta-proteobacteria	AD24
gamma-proteobacteria	AD5	beta-proteobacteria	AD102
gamma-proteobacteria	AD5	Bacilli	AD116
gamma-proteobacteria	AD5	alpha-proteobacteria	AD152
gamma-proteobacteria	AD5	alpha-proteobacteria	AD136
gamma-proteobacteria	AD5	beta-proteobacteria	AD63
gamma-proteobacteria	AD5	Flavobacteria	AD41
gamma-proteobacteria	AD5	Bacilli	AD78
gamma-proteobacteria	AD5	beta-proteobacteria	AD81
gamma-proteobacteria	AD5	gamma-proteobacteria	AD104
gamma-proteobacteria	AD5	beta-proteobacteria	AD75
gamma-proteobacteria	AD5	beta-proteobacteria	AD3
gamma-proteobacteria	AD5	Actinobacteria	AD12
gamma-proteobacteria	AD5	Actinobacteria	AD108
gamma-proteobacteria	AD6	beta-proteobacteria	AD30
gamma-proteobacteria	AD6	gamma-proteobacteria	AD56
gamma-proteobacteria	AD6	Bacilli	AD78
gamma-proteobacteria	AD6	beta-proteobacteria	AD81
gamma-proteobacteria	AD6	beta-proteobacteria	AD133
gamma-proteobacteria	AD6	Actinobacteria	AD141
gamma-proteobacteria	AD6	beta-proteobacteria	AD28
gamma-proteobacteria	AD6	beta-proteobacteria	AD24
gamma-proteobacteria	AD6	beta-proteobacteria	AD11
gamma-proteobacteria	AD6	beta-proteobacteria	AD30
gamma-proteobacteria	AD6	gamma-proteobacteria	AD46
gamma-proteobacteria	AD6	beta-proteobacteria	AD72
gamma-proteobacteria	AD6	beta-proteobacteria	AD32
gamma-proteobacteria	AD6	beta-proteobacteria	AD99
gamma-proteobacteria	AD6	beta-proteobacteria	AD97
gamma-proteobacteria	AD6	Flavobacteria	AD151
gamma-proteobacteria	AD6	alpha-proteobacteria	AD140
gamma-proteobacteria	AD6	beta-proteobacteria	AD62
gamma-proteobacteria	AD6	beta-proteobacteria	AD39
gamma-proteobacteria	AD6	beta-proteobacteria	AD80

Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
gamma-proteobacteria	AD6	beta-proteobacteria	AD103
gamma-proteobacteria	AD6	beta-proteobacteria	AD73
gamma-proteobacteria	AD6	beta-proteobacteria	AD7
gamma-proteobacteria	AD8	beta-proteobacteria	AD32
gamma-proteobacteria	AD8	beta-proteobacteria	AD58
gamma-proteobacteria	AD8	gamma-proteobacteria	AD4
gamma-proteobacteria	AD8	gamma-proteobacteria	AD5
gamma-proteobacteria	AD8	gamma-proteobacteria	AD79
gamma-proteobacteria	AD8	Bacilli	AD83
gamma-proteobacteria	AD8	Flavobacteria	AD134
gamma-proteobacteria	AD8	Flavobacteria	AD142
gamma-proteobacteria	AD8	beta-proteobacteria	AD27
gamma-proteobacteria	AD8	beta-proteobacteria	AD24
gamma-proteobacteria	AD8	beta-proteobacteria	AD28
gamma-proteobacteria	AD8	gamma-proteobacteria	AD52
gamma-proteobacteria	AD8	beta-proteobacteria	AD76
gamma-proteobacteria	AD8	gamma-proteobacteria	AD104
gamma-proteobacteria	AD8	Flavobacteria	AD131
gamma-proteobacteria	AD8	alpha-proteobacteria	AD140
gamma-proteobacteria	AD8	beta-proteobacteria	AD30
gamma-proteobacteria	AD8	Flavobacteria	AD41
gamma-proteobacteria	AD8	alpha-proteobacteria	AD34
gamma-proteobacteria	AD8	beta-proteobacteria	AD81
gamma-proteobacteria	AD8	beta-proteobacteria	AD77
gamma-proteobacteria	AD8	Actinobacteria	AD12
gamma-proteobacteria	AD8	gamma-proteobacteria	AD2
beta-proteobacteria	AD9	beta-proteobacteria	AD33
beta-proteobacteria	AD9	beta-proteobacteria	AD59
beta-proteobacteria	AD9	beta-proteobacteria	AD10
beta-proteobacteria	AD9	beta-proteobacteria	AD80
beta-proteobacteria	AD9	beta-proteobacteria	AD88
beta-proteobacteria	AD9	alpha-proteobacteria	AD136
beta-proteobacteria	AD9	Flavobacteria	AD91
beta-proteobacteria	AD9	beta-proteobacteria	AD26
beta-proteobacteria	AD9	beta-proteobacteria	AD32
beta-proteobacteria	AD9	alpha-proteobacteria	AD34
beta-proteobacteria	AD9	beta-proteobacteria	AD60
beta-proteobacteria	AD9	beta-proteobacteria	AD81
beta-proteobacteria	AD9	beta-proteobacteria	AD89
beta-proteobacteria	AD9	beta-proteobacteria	AD137
beta-proteobacteria	AD9	gamma-proteobacteria	AD157
beta-proteobacteria	AD9	beta-proteobacteria	AD25
beta-proteobacteria	AD9	Flavobacteria	AD42
beta-proteobacteria	AD9	Flavobacteria	AD43
beta-proteobacteria	AD9	beta-proteobacteria	AD82
beta-proteobacteria	AD9	Bacilli	AD83
beta-proteobacteria	AD9	Actinobacteria	AD31
beta-proteobacteria	AD9	Bacilli	AD50
gamma-proteobacteria	AD14	gamma-proteobacteria	AD36
gamma-proteobacteria	AD14	beta-proteobacteria	AD62
gamma-proteobacteria	AD14	Bacilli	AD83
gamma-proteobacteria	AD14	gamma-proteobacteria	AD100
gamma-proteobacteria	AD14	alpha-proteobacteria	AD140
gamma-proteobacteria	AD14	beta-proteobacteria	AD144
gamma-proteobacteria	AD14	Actinobacteria	AD22
gamma-proteobacteria	AD14	gamma-proteobacteria	AD20
gamma-proteobacteria	AD14	Flavobacteria	AD44
gamma-proteobacteria	AD14	Flavobacteria	AD42
gamma-proteobacteria	AD14	beta-proteobacteria	AD68
gamma-proteobacteria	AD14	beta-proteobacteria	AD24
gamma-proteobacteria	AD14	beta-proteobacteria	AD95

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
gamma-proteobacteria	AD14	Bacilli	AD117
gamma-proteobacteria	AD14	Flavobacteria	AD146
gamma-proteobacteria	AD14	alpha-proteobacteria	AD159
gamma-proteobacteria	AD14	gamma-proteobacteria	AD56
gamma-proteobacteria	AD14	Bacilli	AD87
gamma-proteobacteria	AD14	beta-proteobacteria	AD98
gamma-proteobacteria	AD14	beta-proteobacteria	AD69
gamma-proteobacteria	AD14	Actinobacteria	AD107
gamma-proteobacteria	AD14	Actinobacteria	AD12
gamma-proteobacteria	AD16	alpha-proteobacteria	AD38
gamma-proteobacteria	AD16	beta-proteobacteria	AD64
gamma-proteobacteria	AD16	gamma-proteobacteria	AD20
gamma-proteobacteria	AD16	Bacilli	AD87
gamma-proteobacteria	AD16	Bacilli	AD106
gamma-proteobacteria	AD16	Flavobacteria	AD142
gamma-proteobacteria	AD16	Flavobacteria	AD149
gamma-proteobacteria	AD16	gamma-proteobacteria	AD21
gamma-proteobacteria	AD16	beta-proteobacteria	AD19
gamma-proteobacteria	AD16	Flavobacteria	AD48
gamma-proteobacteria	AD16	Flavobacteria	AD41
gamma-proteobacteria	AD16	beta-proteobacteria	AD73
gamma-proteobacteria	AD16	beta-proteobacteria	AD67
gamma-proteobacteria	AD16	beta-proteobacteria	AD25
gamma-proteobacteria	AD16	Actinobacteria	AD94
gamma-proteobacteria	AD16	beta-proteobacteria	AD96
gamma-proteobacteria	AD16	beta-proteobacteria	AD145
gamma-proteobacteria	AD16	Flavobacteria	AD151
gamma-proteobacteria	AD16	beta-proteobacteria	AD54
gamma-proteobacteria	AD16	beta-proteobacteria	AD65
gamma-proteobacteria	AD16	beta-proteobacteria	AD89
gamma-proteobacteria	AD16	Bacilli	AD93
gamma-proteobacteria	AD16	beta-proteobacteria	AD68
gamma-proteobacteria	AD16	Actinobacteria	AD110
gamma-proteobacteria	AD16	beta-proteobacteria	AD7
gamma-proteobacteria	AD17	beta-proteobacteria	AD39
gamma-proteobacteria	AD17	beta-proteobacteria	AD65
gamma-proteobacteria	AD17	gamma-proteobacteria	AD21
gamma-proteobacteria	AD17	Actinobacteria	AD92
gamma-proteobacteria	AD17	alpha-proteobacteria	AD113
gamma-proteobacteria	AD17	beta-proteobacteria	AD143
gamma-proteobacteria	AD17	alpha-proteobacteria	AD153
gamma-proteobacteria	AD17	beta-proteobacteria	AD19
gamma-proteobacteria	AD17	beta-proteobacteria	AD18
gamma-proteobacteria	AD17	alpha-proteobacteria	AD51
gamma-proteobacteria	AD17	gamma-proteobacteria	AD40
gamma-proteobacteria	AD17	beta-proteobacteria	AD66
gamma-proteobacteria	AD17	beta-proteobacteria	AD19
gamma-proteobacteria	AD17	Bacilli	AD93
gamma-proteobacteria	AD17	gamma-proteobacteria	AD114
gamma-proteobacteria	AD17	beta-proteobacteria	AD144
gamma-proteobacteria	AD17	alpha-proteobacteria	AD152
gamma-proteobacteria	AD17	gamma-proteobacteria	AD52
gamma-proteobacteria	AD17	Flavobacteria	AD91
gamma-proteobacteria	AD17	beta-proteobacteria	AD67
gamma-proteobacteria	AD17	beta-proteobacteria	AD118
gamma-proteobacteria	AD17	beta-proteobacteria	AD119
beta-proteobacteria	AD19	Flavobacteria	AD41
beta-proteobacteria	AD19	beta-proteobacteria	AD67
beta-proteobacteria	AD19	beta-proteobacteria	AD18
beta-proteobacteria	AD19	beta-proteobacteria	AD25
beta-proteobacteria	AD19	Actinobacteria	AD94
beta-proteobacteria	AD19	beta-proteobacteria	AD96

Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
beta-proteobacteria	AD19	beta-proteobacteria	AD145
beta-proteobacteria	AD19	Flavobacteria	AD151
beta-proteobacteria	AD19	gamma-proteobacteria	AD16
beta-proteobacteria	AD19	gamma-proteobacteria	AD17
beta-proteobacteria	AD19	beta-proteobacteria	AD54
beta-proteobacteria	AD19	gamma-proteobacteria	AD40
beta-proteobacteria	AD19	beta-proteobacteria	AD39
beta-proteobacteria	AD19	beta-proteobacteria	AD66
beta-proteobacteria	AD19	beta-proteobacteria	AD65
beta-proteobacteria	AD19	Bacilli	AD93
beta-proteobacteria	AD19	gamma-proteobacteria	AD114
beta-proteobacteria	AD19	beta-proteobacteria	AD144
beta-proteobacteria	AD19	alpha-proteobacteria	AD152
beta-proteobacteria	AD19	gamma-proteobacteria	AD21
beta-proteobacteria	AD19	gamma-proteobacteria	AD52
beta-proteobacteria	AD19	Actinobacteria	AD92
beta-proteobacteria	AD19	alpha-proteobacteria	AD113
beta-proteobacteria	AD19	beta-proteobacteria	AD143
beta-proteobacteria	AD19	alpha-proteobacteria	AD153
beta-proteobacteria	AD19	alpha-proteobacteria	AD51
beta-proteobacteria	AD19	beta-proteobacteria	AD68
beta-proteobacteria	AD19	Flavobacteria	AD91
beta-proteobacteria	AD19	beta-proteobacteria	AD7
beta-proteobacteria	AD19	beta-proteobacteria	AD119
beta-proteobacteria	AD19	beta-proteobacteria	AD118
beta-proteobacteria	AD35	beta-proteobacteria	AD11
beta-proteobacteria	AD35	beta-proteobacteria	AD61
beta-proteobacteria	AD35	beta-proteobacteria	AD15
beta-proteobacteria	AD35	beta-proteobacteria	AD82
beta-proteobacteria	AD35	beta-proteobacteria	AD98
beta-proteobacteria	AD35	beta-proteobacteria	AD138
beta-proteobacteria	AD35	beta-proteobacteria	AD143
beta-proteobacteria	AD35	beta-proteobacteria	AD23
beta-proteobacteria	AD35	beta-proteobacteria	AD61
beta-proteobacteria	AD35	Flavobacteria	AD45
beta-proteobacteria	AD35	Flavobacteria	AD86
beta-proteobacteria	AD35	beta-proteobacteria	AD55
beta-proteobacteria	AD39	gamma-proteobacteria	AD17
beta-proteobacteria	AD39	beta-proteobacteria	AD26
beta-proteobacteria	AD39	beta-proteobacteria	AD65
beta-proteobacteria	AD39	gamma-proteobacteria	AD21
beta-proteobacteria	AD39	alpha-proteobacteria	AD51
beta-proteobacteria	AD39	Actinobacteria	AD92
beta-proteobacteria	AD39	alpha-proteobacteria	AD113
beta-proteobacteria	AD39	beta-proteobacteria	AD143
beta-proteobacteria	AD39	alpha-proteobacteria	AD153
beta-proteobacteria	AD39	beta-proteobacteria	AD19
beta-proteobacteria	AD39	alpha-proteobacteria	AD51
beta-proteobacteria	AD39	beta-proteobacteria	AD74
beta-proteobacteria	AD39	beta-proteobacteria	AD103
beta-proteobacteria	AD39	gamma-proteobacteria	AD120
beta-proteobacteria	AD39	beta-proteobacteria	AD137
beta-proteobacteria	AD39	gamma-proteobacteria	AD4
beta-proteobacteria	AD39	beta-proteobacteria	AD64
beta-proteobacteria	AD39	gamma-proteobacteria	AD6
beta-proteobacteria	AD39	beta-proteobacteria	AD66
beta-proteobacteria	AD39	beta-proteobacteria	AD30
beta-proteobacteria	AD39	gamma-proteobacteria	AD56
beta-proteobacteria	AD39	beta-proteobacteria	AD76
beta-proteobacteria	AD39	Bacilli	AD78
beta-proteobacteria	AD39	beta-proteobacteria	AD81
beta-proteobacteria	AD39	beta-proteobacteria	AD133

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
beta-proteobacteria	AD39	Actinobacteria	AD141
beta-proteobacteria	AD39	beta-proteobacteria	AD11
beta-proteobacteria	AD39	Flavobacteria	AD91
beta-proteobacteria	AD39	gamma-proteobacteria	AD105
beta-proteobacteria	AD39	beta-proteobacteria	AD28
beta-proteobacteria	AD39	beta-proteobacteria	AD118
beta-proteobacteria	AD39	Actinobacteria	AD110
beta-proteobacteria	AD54	gamma-proteobacteria	AD5
beta-proteobacteria	AD54	beta-proteobacteria	AD19
beta-proteobacteria	AD54	Actinobacteria	AD29
beta-proteobacteria	AD54	Flavobacteria	AD41
beta-proteobacteria	AD54	gamma-proteobacteria	AD4
beta-proteobacteria	AD54	beta-proteobacteria	AD77
beta-proteobacteria	AD54	gamma-proteobacteria	AD105
beta-proteobacteria	AD54	alpha-proteobacteria	AD132
beta-proteobacteria	AD54	beta-proteobacteria	AD145
beta-proteobacteria	AD54	beta-proteobacteria	AD67
beta-proteobacteria	AD54	beta-proteobacteria	AD009
beta-proteobacteria	AD54	beta-proteobacteria	AD25
beta-proteobacteria	AD54	Actinobacteria	AD94
beta-proteobacteria	AD54	beta-proteobacteria	AD96
beta-proteobacteria	AD54	Flavobacteria	AD151
beta-proteobacteria	AD54	gamma-proteobacteria	AD16
beta-proteobacteria	AD54	beta-proteobacteria	AD37
beta-proteobacteria	AD54	beta-proteobacteria	AD68
beta-proteobacteria	AD54	Bacilli	AD78
beta-proteobacteria	AD54	beta-proteobacteria	AD3
beta-proteobacteria	AD54	beta-proteobacteria	AD7
beta-proteobacteria	AD64	gamma-proteobacteria	AD16
beta-proteobacteria	AD64	beta-proteobacteria	AD26
beta-proteobacteria	AD64	alpha-proteobacteria	AD38
beta-proteobacteria	AD64	alpha-proteobacteria	AD51
beta-proteobacteria	AD64	gamma-proteobacteria	AD20
beta-proteobacteria	AD64	Bacilli	AD87
beta-proteobacteria	AD64	Bacilli	AD106
beta-proteobacteria	AD64	Flavobacteria	AD142
beta-proteobacteria	AD64	Flavobacteria	AD149
beta-proteobacteria	AD64	gamma-proteobacteria	AD21
beta-proteobacteria	AD64	beta-proteobacteria	AD74
beta-proteobacteria	AD64	Flavobacteria	AD48
beta-proteobacteria	AD64	beta-proteobacteria	AD39
beta-proteobacteria	AD64	beta-proteobacteria	AD103
beta-proteobacteria	AD64	gamma-proteobacteria	AD120
beta-proteobacteria	AD64	alpha-proteobacteria	AD153
beta-proteobacteria	AD64	beta-proteobacteria	AD137
beta-proteobacteria	AD64	gamma-proteobacteria	AD4
beta-proteobacteria	AD64	beta-proteobacteria	AD65
beta-proteobacteria	AD64	beta-proteobacteria	AD76
beta-proteobacteria	AD64	beta-proteobacteria	AD89
beta-proteobacteria	AD64	beta-proteobacteria	AD123
beta-proteobacteria	AD64	Actinobacteria	AD110
beta-proteobacteria	AD66	beta-proteobacteria	AD18
beta-proteobacteria	AD66	gamma-proteobacteria	AD40
beta-proteobacteria	AD66	beta-proteobacteria	AD19
beta-proteobacteria	AD66	Bacilli	AD93
beta-proteobacteria	AD66	gamma-proteobacteria	AD114
beta-proteobacteria	AD66	beta-proteobacteria	AD144
beta-proteobacteria	AD66	alpha-proteobacteria	AD152
beta-proteobacteria	AD66	gamma-proteobacteria	AD17
beta-proteobacteria	AD66	gamma-proteobacteria	AD52
beta-proteobacteria	AD66	beta-proteobacteria	AD39
beta-proteobacteria	AD66	beta-proteobacteria	AD67

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
beta-proteobacteria	AD66	beta-proteobacteria	AD65
beta-proteobacteria	AD66	gamma-proteobacteria	AD21
beta-proteobacteria	AD66	Actinobacteria	AD92
beta-proteobacteria	AD66	alpha-proteobacteria	AD113
beta-proteobacteria	AD66	beta-proteobacteria	AD143
beta-proteobacteria	AD66	alpha-proteobacteria	AD153
beta-proteobacteria	AD66	alpha-proteobacteria	AD51
beta-proteobacteria	AD66	gamma-proteobacteria	AD125
beta-proteobacteria	AD66	beta-proteobacteria	AD119
gamma-proteobacteria	AD79	gamma-proteobacteria	AD8
gamma-proteobacteria	AD79	beta-proteobacteria	AD32
gamma-proteobacteria	AD79	beta-proteobacteria	AD58
gamma-proteobacteria	AD79	gamma-proteobacteria	AD5
gamma-proteobacteria	AD79	Bacilli	AD83
gamma-proteobacteria	AD79	Flavobacteria	AD134
gamma-proteobacteria	AD79	Flavobacteria	AD142
gamma-proteobacteria	AD79	beta-proteobacteria	AD27
gamma-proteobacteria	AD79	beta-proteobacteria	AD24
gamma-proteobacteria	AD79	Flavobacteria	AD41
gamma-proteobacteria	AD79	beta-proteobacteria	AD81
gamma-proteobacteria	AD79	beta-proteobacteria	AD130
gamma-proteobacteria	AD79	Actinobacteria	AD12
beta-proteobacteria	AD81	beta-proteobacteria	AD10
beta-proteobacteria	AD81	gamma-proteobacteria	AD6
beta-proteobacteria	AD81	alpha-proteobacteria	AD34
beta-proteobacteria	AD81	beta-proteobacteria	AD30
beta-proteobacteria	AD81	beta-proteobacteria	AD60
beta-proteobacteria	AD81	gamma-proteobacteria	AD56
beta-proteobacteria	AD81	beta-proteobacteria	AD9
beta-proteobacteria	AD81	Bacilli	AD78
beta-proteobacteria	AD81	beta-proteobacteria	AD89
beta-proteobacteria	AD81	beta-proteobacteria	AD137
beta-proteobacteria	AD81	gamma-proteobacteria	AD157
beta-proteobacteria	AD81	beta-proteobacteria	AD25
beta-proteobacteria	AD81	beta-proteobacteria	AD33
beta-proteobacteria	AD81	beta-proteobacteria	AD133
beta-proteobacteria	AD81	Actinobacteria	AD141
beta-proteobacteria	AD81	beta-proteobacteria	AD28
beta-proteobacteria	AD81	beta-proteobacteria	AD11
beta-proteobacteria	AD81	Flavobacteria	AD43
beta-proteobacteria	AD81	beta-proteobacteria	AD39
beta-proteobacteria	AD81	beta-proteobacteria	AD89
beta-proteobacteria	AD81	beta-proteobacteria	AD32
beta-proteobacteria	AD81	beta-proteobacteria	AD58
beta-proteobacteria	AD81	gamma-proteobacteria	AD5
beta-proteobacteria	AD81	Bacilli	AD83
beta-proteobacteria	AD81	gamma-proteobacteria	AD79
beta-proteobacteria	AD81	beta-proteobacteria	AD80
beta-proteobacteria	AD81	Flavobacteria	AD134
beta-proteobacteria	AD81	Flavobacteria	AD142
beta-proteobacteria	AD81	beta-proteobacteria	AD27
beta-proteobacteria	AD81	Bacilli	AD50
beta-proteobacteria	AD81	beta-proteobacteria	AD7
beta-proteobacteria	AD81	Actinobacteria	AD12
beta-proteobacteria	AD82	beta-proteobacteria	AD11
beta-proteobacteria	AD82	beta-proteobacteria	AD35
beta-proteobacteria	AD82	beta-proteobacteria	AD61
beta-proteobacteria	AD82	beta-proteobacteria	AD15
beta-proteobacteria	AD82	beta-proteobacteria	AD98
beta-proteobacteria	AD82	beta-proteobacteria	AD138
beta-proteobacteria	AD82	beta-proteobacteria	AD143

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
beta-proteobacteria	AD82	beta-proteobacteria	AD23
beta-proteobacteria	AD82	Flavobacteria	AD45
beta-proteobacteria	AD82	beta-proteobacteria	AD9
beta-proteobacteria	AD82	beta-proteobacteria	AD33
beta-proteobacteria	AD82	beta-proteobacteria	AD59
beta-proteobacteria	AD82	beta-proteobacteria	AD10
beta-proteobacteria	AD82	Flavobacteria	AD86
beta-proteobacteria	AD82	beta-proteobacteria	AD80
beta-proteobacteria	AD82	beta-proteobacteria	AD88
beta-proteobacteria	AD82	alpha-proteobacteria	AD136
beta-proteobacteria	AD82	Flavobacteria	AD91
beta-proteobacteria	AD82	beta-proteobacteria	AD26
beta-proteobacteria	AD82	beta-proteobacteria	AD55
beta-proteobacteria	AD82	Actinobacteria	AD31
beta-proteobacteria	AD103	beta-proteobacteria	AD26
beta-proteobacteria	AD103	alpha-proteobacteria	AD51
beta-proteobacteria	AD103	beta-proteobacteria	AD74
beta-proteobacteria	AD103	beta-proteobacteria	AD39
beta-proteobacteria	AD103	gamma-proteobacteria	AD120
beta-proteobacteria	AD103	alpha-proteobacteria	AD153
beta-proteobacteria	AD103	beta-proteobacteria	AD137
beta-proteobacteria	AD103	gamma-proteobacteria	AD4
beta-proteobacteria	AD103	beta-proteobacteria	AD64
beta-proteobacteria	AD103	beta-proteobacteria	AD76
beta-proteobacteria	AD103	beta-proteobacteria	AD24
beta-proteobacteria	AD103	gamma-proteobacteria	AD46
beta-proteobacteria	AD103	beta-proteobacteria	AD72
beta-proteobacteria	AD103	beta-proteobacteria	AD32
beta-proteobacteria	AD103	gamma-proteobacteria	AD105
beta-proteobacteria	AD103	beta-proteobacteria	AD99
beta-proteobacteria	AD103	beta-proteobacteria	AD97
beta-proteobacteria	AD103	Flavobacteria	AD151
beta-proteobacteria	AD103	alpha-proteobacteria	AD140
beta-proteobacteria	AD103	gamma-proteobacteria	AD6
beta-proteobacteria	AD103	Actinobacteria	AD110
beta-proteobacteria	AD103	Actinobacteria	AD107
beta-proteobacteria	AD144	beta-proteobacteria	AD18
beta-proteobacteria	AD144	gamma-proteobacteria	AD14
beta-proteobacteria	AD144	gamma-proteobacteria	AD40
beta-proteobacteria	AD144	gamma-proteobacteria	AD36
beta-proteobacteria	AD144	beta-proteobacteria	AD66
beta-proteobacteria	AD144	beta-proteobacteria	AD62
beta-proteobacteria	AD144	beta-proteobacteria	AD19
beta-proteobacteria	AD144	Bacilli	AD93
beta-proteobacteria	AD144	Bacilli	AD83
beta-proteobacteria	AD144	gamma-proteobacteria	AD114
beta-proteobacteria	AD144	gamma-proteobacteria	AD100
beta-proteobacteria	AD144	alpha-proteobacteria	AD140
beta-proteobacteria	AD144	alpha-proteobacteria	AD152
beta-proteobacteria	AD144	gamma-proteobacteria	AD17
beta-proteobacteria	AD144	gamma-proteobacteria	AD52
beta-proteobacteria	AD144	Actinobacteria	AD22
beta-proteobacteria	AD144	Flavobacteria	AD44
beta-proteobacteria	AD144	beta-proteobacteria	AD67
beta-proteobacteria	AD144	Actinobacteria	AD92
beta-proteobacteria	AD144	Bacilli	AD87
gamma-proteobacteria	AD20	Flavobacteria	AD42
gamma-proteobacteria	AD20	beta-proteobacteria	AD68
gamma-proteobacteria	AD20	gamma-proteobacteria	AD16
gamma-proteobacteria	AD20	beta-proteobacteria	AD24
gamma-proteobacteria	AD20	beta-proteobacteria	AD95

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
gamma-proteobacteria	AD20	Bacilli	AD117
gamma-proteobacteria	AD20	Flavobacteria	AD146
gamma-proteobacteria	AD20	alpha-proteobacteria	AD159
gamma-proteobacteria	AD20	gamma-proteobacteria	AD14
gamma-proteobacteria	AD20	beta-proteobacteria	AD15
gamma-proteobacteria	AD20	gamma-proteobacteria	AD56
gamma-proteobacteria	AD20	alpha-proteobacteria	AD38
gamma-proteobacteria	AD20	beta-proteobacteria	AD37
gamma-proteobacteria	AD20	beta-proteobacteria	AD64
gamma-proteobacteria	AD20	beta-proteobacteria	AD74
gamma-proteobacteria	AD20	beta-proteobacteria	AD63
gamma-proteobacteria	AD20	Bacilli	AD87
gamma-proteobacteria	AD20	Bacilli	AD106
gamma-proteobacteria	AD20	Flavobacteria	AD142
gamma-proteobacteria	AD20	Flavobacteria	AD149
gamma-proteobacteria	AD20	beta-proteobacteria	AD27
gamma-proteobacteria	AD20	gamma-proteobacteria	AD21
gamma-proteobacteria	AD20	Flavobacteria	AD48
gamma-proteobacteria	AD20	Flavobacteria	AD84
gamma-proteobacteria	AD20	beta-proteobacteria	AD101
gamma-proteobacteria	AD20	Actinobacteria	AD141
gamma-proteobacteria	AD20	Flavobacteria	AD47
gamma-proteobacteria	AD20	beta-proteobacteria	AD69
gamma-proteobacteria	AD20	beta-proteobacteria	AD65
gamma-proteobacteria	AD20	beta-proteobacteria	AD98
gamma-proteobacteria	AD20	beta-proteobacteria	AD89
gamma-proteobacteria	AD20	beta-proteobacteria	AD88
gamma-proteobacteria	AD20	Actinobacteria	AD12
gamma-proteobacteria	AD20	Actinobacteria	AD110
gamma-proteobacteria	AD20	Actinobacteria	AD108
gamma-proteobacteria	AD40	beta-proteobacteria	AD18
gamma-proteobacteria	AD40	beta-proteobacteria	AD66
gamma-proteobacteria	AD40	beta-proteobacteria	AD19
gamma-proteobacteria	AD40	Bacilli	AD93
gamma-proteobacteria	AD40	gamma-proteobacteria	AD114
gamma-proteobacteria	AD40	beta-proteobacteria	AD144
gamma-proteobacteria	AD40	alpha-proteobacteria	AD152
gamma-proteobacteria	AD40	gamma-proteobacteria	AD17
gamma-proteobacteria	AD40	gamma-proteobacteria	AD52
gamma-proteobacteria	AD40	beta-proteobacteria	AD67
gamma-proteobacteria	AD40	Actinobacteria	AD92
gamma-proteobacteria	AD40	beta-proteobacteria	AD119
gamma-proteobacteria	AD52	gamma-proteobacteria	AD4
gamma-proteobacteria	AD52	beta-proteobacteria	AD18
gamma-proteobacteria	AD52	beta-proteobacteria	AD28
gamma-proteobacteria	AD52	gamma-proteobacteria	AD40
gamma-proteobacteria	AD52	gamma-proteobacteria	AD8
gamma-proteobacteria	AD52	beta-proteobacteria	AD76
gamma-proteobacteria	AD52	gamma-proteobacteria	AD104
gamma-proteobacteria	AD52	Flavobacteria	AD131
gamma-proteobacteria	AD52	alpha-proteobacteria	AD140
gamma-proteobacteria	AD52	beta-proteobacteria	AD30
gamma-proteobacteria	AD52	beta-proteobacteria	AD66
gamma-proteobacteria	AD52	gamma-proteobacteria	AD8
gamma-proteobacteria	AD52	beta-proteobacteria	AD19
gamma-proteobacteria	AD52	Bacilli	AD93
gamma-proteobacteria	AD52	gamma-proteobacteria	AD114
gamma-proteobacteria	AD52	beta-proteobacteria	AD144
gamma-proteobacteria	AD52	alpha-proteobacteria	AD152
gamma-proteobacteria	AD52	gamma-proteobacteria	AD17
gamma-proteobacteria	AD52	alpha-proteobacteria	AD34
gamma-proteobacteria	AD52	beta-proteobacteria	AD67

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Table S10 continuation

Phylogenetic class	Strain code genus A	Phylogenetic class	Strain code genus B
gamma-proteobacteria	AD52	beta-proteobacteria	AD77
gamma-proteobacteria	AD52	gamma-proteobacteria	AD2
alpha-proteobacteria	AD51	beta-proteobacteria	AD26
alpha-proteobacteria	AD51	gamma-proteobacteria	AD17
alpha-proteobacteria	AD51	beta-proteobacteria	AD74
alpha-proteobacteria	AD51	beta-proteobacteria	AD39
alpha-proteobacteria	AD51	beta-proteobacteria	AD103
alpha-proteobacteria	AD51	gamma-proteobacteria	AD120
alpha-proteobacteria	AD51	alpha-proteobacteria	AD153
alpha-proteobacteria	AD51	beta-proteobacteria	AD137
alpha-proteobacteria	AD51	gamma-proteobacteria	AD4
alpha-proteobacteria	AD51	beta-proteobacteria	AD39
alpha-proteobacteria	AD51	beta-proteobacteria	AD64
alpha-proteobacteria	AD51	beta-proteobacteria	AD65
alpha-proteobacteria	AD51	gamma-proteobacteria	AD21
alpha-proteobacteria	AD51	Actinobacteria	AD92
alpha-proteobacteria	AD51	alpha-proteobacteria	AD113
alpha-proteobacteria	AD51	beta-proteobacteria	AD143
alpha-proteobacteria	AD51	beta-proteobacteria	AD19
alpha-proteobacteria	AD51	beta-proteobacteria	AD76
alpha-proteobacteria	AD51	beta-proteobacteria	AD66
alpha-proteobacteria	AD51	gamma-proteobacteria	AD105
alpha-proteobacteria	AD51	beta-proteobacteria	AD118