TYPE (STRAIN) GENOME SERVER

JOB SUMMARY

PRINT DATE:	2026-09-10 15:45:54 +0200
JOB ID:	29ae139a-3a41-4571-a19b-809af76a3ec5
RESULT PAGE:	https://tygs.dsmz.de/user_results/show?guid=29ae139a-3a41-4571-a19b-809af76a3ec5

Table 1: Phylogenies

Publication-ready versions of both the genome-scale GBDP tree and the 16S rRNA gene sequence tree can be customized and exported either in SVG (vector graphic) or PNG format from within the phylogeny viewers in your TYGS result page. For publications the **SVG format is recommended** because it is lossless, always keeps its high resolution and can also be easily converted to other popular formats such as PDF or EPS. Please follow the link provided above!

Table 2: Identification

The below list contains the result of the TYGS species identification routine.

Explanation of remarks that might occur in the below table:

remark [R1]: The TYGS type strain database is automatically updated on an almost daily basis. However, if a particular type strain genome is not available in the TYGS database, this can have several reasons which are detailed in the FAQ. You can request an extended 16S rRNA gene analysis via the 16S tree viewer found in your result page to detect **not yet genome-sequenced** type strains relevant for your study.

remark [R2]: > 70% dDDH value (formula d_4) and (almost) minimal dDDH values for gene-content formulae d_0 and d_6 indicate a potentially unreliable identification result and should thus be checked via the 16S rRNA gene sequence similarity. Such strong deviations can, in principle, be caused by sequence contamination.

remark [R3]: G+C content difference of > 1 % indicates a potentially unreliable identification result because within species G+C content varies no more than 1 %, if computed from genome sequences (PMID: 24505073).

Strain	Conclusion	Identification result	Remark
'Legionella septentrionalis' (RZGR00000000)	belongs to known species	*Legionella septentrionalis*	
'Legionella septentrionalis' (RZGS00000000)	belongs to known species	*Legionella septentrionalis*	
'Legionella septentrionalis' (RZGT00000000)	belongs to known species	*Legionella septentrionalis*	
'Legionella septentrionalis' (RZGV00000000)	belongs to known species	*Legionella septentrionalis*	
'Legionella sp. km535' (RZGU00000000)	belongs to known species	*Legionella moravica*	
'Legionella qingyii' (QHJG00000000)	belongs to known species	*Legionella qingyii*	
'Legionella qingyii' (RZGW00000000)	belongs to known species	*Legionella qingyii*	
'Legionella qingyii' (RZGX00000000)	belongs to known species	*Legionella qingyii*	
'Legionella sp. km772' (RZGQ00000000)	potential new species		see [R1]
'Legionella sainthelensi' (UFAL00000000)	potential new species		see [R1]
'Legionella sainthelensi' (UFAM00000000)	potential new species		see [R1]

Table 3: Pairwise comparisons of user genomes vs. type-strain genomes

The following table contains the pairwise dDDH values between your user genomes and the selected type-strain genomes. The dDDH values are provided along with their confidence intervals (C.I.) for the three different GBDP formulas:

- formula d_0 (a.k.a. GGDC formula 1): length of all HSPs divided by total genome length
- formula d_4 (a.k.a. GGDC formula 2): sum of all identities found in HSPs divided by overall HSP length
- formula d_6 (a.k.a. GGDC formula 3): sum of all identities found in HSPs divided by total genome length

Note: Formula d_4 is independent of genome length and is thus robust against the use of incomplete draft genomes. For other reasons for preferring formula d_4, see the FAQ.

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (QHJG00000000)	*Legionella qingyii* CCTCC AB 2018025	100.0	[100.0 - 100.0]	100.0	[100.0 - 100.0]	100.0	[100.0 - 100.0]	0.01
'Legionella septentrionalis' (RZGS00000000)	*Legionella septentrionalis* km711T	100.0	[100.0 - 100.0]	100.0	[100.0 - 100.0]	100.0	[100.0 - 100.0]	0.03
'Legionella qingyii' (RZGX00000000)	*Legionella qingyii* CCTCC AB 2018025	85.0	[81.3 - 88.1]	99.9	[99.8 - 100.0]	90.3	[87.6 - 92.5]	0.02
'Legionella qingyii' (QHJG00000000)	**'Legionella qingyii' (RZGX00000000)**	85.0	[81.3 - 88.1]	99.9	[99.8 - 100.0]	90.3	[87.6 - 92.5]	0.02
'Legionella qingyii' (RZGW00000000)	**'Legionella qingyii' (RZGX00000000)**	98.5	[97.5 - 99.2]	98.3	[97.5 - 98.8]	99.2	[98.7 - 99.5]	0.0
'Legionella qingyii' (QHJG00000000)	**'Legionella qingyii' (RZGW00000000)**	80.4	[76.5 - 83.8]	97.9	[97.0 - 98.5]	86.2	[83.1 - 88.9]	0.02
'Legionella qingyii' (RZGW00000000)	*Legionella qingyii* CCTCC AB 2018025	80.4	[76.5 - 83.8]	97.9	[97.0 - 98.5]	86.2	[83.1 - 88.9]	0.02
'Legionella septentrionalis' (RZGS00000000)	**'Legionella septentrionalis' (RZGT00000000)**	91.8	[88.8 - 94.0]	97.3	[96.2 - 98.1]	94.8	[92.8 - 96.3]	0.17
'Legionella septentrionalis' (RZGT00000000)	*Legionella septentrionalis* km711T	91.8	[88.8 - 94.0]	97.3	[96.2 - 98.1]	94.8	[92.8 - 96.3]	0.2
'Legionella septentrionalis' (RZGT00000000)	**'Legionella septentrionalis' (RZGV00000000)**	93.2	[90.5 - 95.2]	97.2	[96.1 - 98.0]	95.8	[94.1 - 97.1]	0.02
'Legionella septentrionalis' (RZGR00000000)	**'Legionella septentrionalis' (RZGT00000000)**	92.1	[89.1 - 94.3]	96.6	[95.4 - 97.5]	94.9	[93.0 - 96.4]	0.13
'Legionella septentrionalis' (RZGS00000000)	**'Legionella septentrionalis' (RZGV00000000)**	90.1	[86.9 - 92.6]	96.2	[94.8 - 97.2]	93.5	[91.2 - 95.2]	0.16
'Legionella septentrionalis' (RZGV00000000)	*Legionella septentrionalis* km711T	90.1	[86.9 - 92.6]	96.2	[94.8 - 97.2]	93.5	[91.2 - 95.2]	0.19
'Legionella septentrionalis' (RZGR00000000)	**'Legionella septentrionalis' (RZGV00000000)**	93.0	[90.2 - 95.0]	94.5	[92.8 - 95.8]	95.3	[93.4 - 96.6]	0.11
'Legionella septentrionalis' (RZGR00000000)	**'Legionella septentrionalis' (RZGS00000000)**	90.3	[87.1 - 92.8]	94.5	[92.8 - 95.8]	93.4	[91.1 - 95.1]	0.04
'Legionella septentrionalis' (RZGR00000000)	*Legionella septentrionalis* km711T	90.3	[87.1 - 92.8]	94.5	[92.8 - 95.8]	93.4	[91.1 - 95.1]	0.07
'Legionella sainthelensi' (UFAL00000000)	**'Legionella sainthelensi' (UFAM00000000)**	83.1	[79.2 - 86.3]	72.7	[69.7 - 75.5]	84.1	[80.9 - 86.9]	0.06
'Legionella sp. km535' (RZGU00000000)	*Legionella moravica* DSM 19234	76.7	[72.7 - 80.3]	72.2	[69.2 - 75.1]	78.7	[75.2 - 81.8]	0.12
'Legionella sainthelensi' (UFAL00000000)	*Legionella sainthelensi* ATCC 35248	88.6	[85.2 - 91.3]	69.4	[66.4 - 72.3]	88.0	[85.0 - 90.4]	0.19

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella sainthelensi' (UFAM00000000)	*Legionella sainthelensi* ATCC 35248	78.9	[74.9 - 82.3]	66.5	[63.6 - 69.4]	79.3	[75.9 - 82.3]	0.13
'Legionella qingyii' (RZGX00000000)	*Legionella gormanii* ATCC 33297	76.6	[72.6 - 80.2]	45.2	[42.6 - 47.7]	71.0	[67.5 - 74.2]	0.26
'Legionella qingyii' (RZGX00000000)	*Legionella gormanii* ATCC 33342	76.4	[72.5 - 80.0]	45.2	[42.6 - 47.8]	70.9	[67.4 - 74.1]	0.26
'Legionella qingyii' (QHJG00000000)	*Legionella gormanii* ATCC 33342	59.7	[56.1 - 63.3]	45.2	[42.7 - 47.8]	57.3	[54.1 - 60.4]	0.28
'Legionella qingyii' (RZGW00000000)	*Legionella gormanii* ATCC 33342	78.3	[74.4 - 81.9]	45.2	[42.6 - 47.7]	72.4	[68.9 - 75.6]	0.26
'Legionella qingyii' (QHJG00000000)	*Legionella gormanii* ATCC 33297	59.9	[56.2 - 63.4]	45.2	[42.6 - 47.8]	57.4	[54.2 - 60.6]	0.27
'Legionella qingyii' (RZGW00000000)	*Legionella gormanii* ATCC 33297	78.6	[74.6 - 82.1]	45.1	[42.6 - 47.7]	72.6	[69.1 - 75.8]	0.25
'Legionella sainthelensi' (UFAM00000000)	*Legionella santicrucis* ATCC 35301	53.4	[49.9 - 56.8]	38.3	[35.8 - 40.8]	49.9	[46.8 - 52.9]	0.19
'Legionella sainthelensi' (UFAL00000000)	*Legionella longbeachae* NCTC 11477	62.2	[58.5 - 65.8]	37.5	[35.1 - 40.0]	56.5	[53.3 - 59.6]	0.21
'Legionella sainthelensi' (UFAL00000000)	*Legionella santicrucis* ATCC 35301	54.6	[51.1 - 58.1]	37.3	[34.9 - 39.8]	50.5	[47.5 - 53.6]	0.13
'Legionella sainthelensi' (UFAL00000000)	*Legionella cincinnatiensis* ATCC 43753	57.5	[53.9 - 61.0]	37.1	[34.6 - 39.6]	52.7	[49.6 - 55.7]	0.01
'Legionella sainthelensi' (UFAM00000000)	*Legionella longbeachae* NCTC 11477	55.7	[52.1 - 59.2]	36.6	[34.2 - 39.1]	51.1	[48.0 - 54.2]	0.15
'Legionella sainthelensi' (UFAM00000000)	*Legionella cincinnatiensis* ATCC 43753	53.8	[50.2 - 57.2]	36.5	[34.0 - 39.0]	49.6	[46.5 - 52.6]	0.07
'Legionella septentrionalis' (RZGR00000000)	*Legionella fairfieldensis* ATCC 49588	13.5	[10.7 - 16.8]	35.4	[32.9 - 37.9]	13.9	[11.5 - 16.7]	2.56
'Legionella septentrionalis' (RZGR00000000)	*Legionella jamestowniensis* DSM 19215	13.4	[10.6 - 16.7]	35.0	[32.6 - 37.6]	13.8	[11.4 - 16.6]	2.79
'Legionella septentrionalis' (RZGR00000000)	*Legionella santicrucis* ATCC 35301	13.1	[10.3 - 16.4]	33.3	[30.9 - 35.8]	13.5	[11.1 - 16.3]	5.55
'Legionella septentrionalis' (RZGV00000000)	*Legionella gratiana* ATCC 49413	13.2	[10.5 - 16.5]	31.5	[29.1 - 34.0]	13.6	[11.2 - 16.4]	5.47
'Legionella sainthelensi' (UFAM00000000)	*Legionella gratiana* ATCC 49413	37.6	[34.2 - 41.1]	31.3	[28.9 - 33.8]	35.2	[32.3 - 38.3]	0.0
'Legionella septentrionalis' (RZGR00000000)	*Legionella rubrilucens* ATCC 35304	13.5	[10.8 - 16.9]	30.9	[28.5 - 33.4]	13.9	[11.5 - 16.7]	5.45
'Legionella septentrionalis' (RZGS00000000)	*Legionella norrlandica* LEGN	13.3	[10.6 - 16.7]	30.2	[27.8 - 32.7]	13.7	[11.4 - 16.5]	4.69
'Legionella sainthelensi' (UFAL00000000)	*Legionella gratiana* ATCC 49413	36.9	[33.5 - 40.4]	30.1	[27.7 - 32.6]	34.3	[31.4 - 37.4]	0.07
'Legionella septentrionalis' (RZGR00000000)	*Legionella brunensis* ATCC 43878	13.1	[10.4 - 16.4]	29.6	[27.2 - 32.1]	13.5	[11.2 - 16.3]	3.54
'Legionella septentrionalis' (RZGV00000000)	*Legionella norrlandica* LEGN	13.2	[10.5 - 16.5]	29.2	[26.8 - 31.7]	13.6	[11.2 - 16.4]	4.84
'Legionella septentrionalis' (RZGS00000000)	*Legionella jordanis* ATCC 33623	13.4	[10.6 - 16.7]	28.5	[26.1 - 31.0]	13.8	[11.4 - 16.6]	0.48

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella sainthelensi' (UFAM00000000)	*Legionella hackeliae* ATCC 35250	13.4	[10.6 - 16.7]	28.3	[26.0 - 30.8]	13.8	[11.4 - 16.6]	2.12
'Legionella septentrionalis' (RZGV00000000)	*Legionella parisiensis* DSM 19216	13.0	[10.3 - 16.3]	28.3	[25.9 - 30.8]	13.4	[11.1 - 16.2]	4.34
'Legionella sp. km535' (RZGU00000000)	*Legionella quateirensis* ATCC 49507	36.5	[33.1 - 40.0]	28.0	[25.7 - 30.5]	33.5	[30.5 - 36.6]	0.88
'Legionella sainthelensi' (UFAM00000000)	*Legionella erythra* ATCC 35303	13.0	[10.3 - 16.3]	27.8	[25.4 - 30.2]	13.4	[11.0 - 16.1]	9.85
'Legionella septentrionalis' (RZGS00000000)	*Legionella pneumophila* Philadelphia 1	13.3	[10.5 - 16.6]	27.6	[25.2 - 30.0]	13.7	[11.3 - 16.5]	3.89
'Legionella qingyii' (QHJG00000000)	*Legionella bozemanae* ATCC 33217	26.4	[23.1 - 30.1]	27.5	[25.2 - 30.0]	25.4	[22.5 - 28.5]	0.11
'Legionella qingyii' (RZGX00000000)	*Legionella bozemanae* ATCC 33217	29.7	[26.3 - 33.3]	27.4	[25.0 - 29.9]	28.0	[25.1 - 31.1]	0.09
'Legionella qingyii' (RZGW00000000)	*Legionella bozemanae* ATCC 33217	28.8	[25.5 - 32.5]	27.2	[24.8 - 29.7]	27.3	[24.4 - 30.4]	0.09
'Legionella sainthelensi' (UFAM00000000)	*Legionella quateirensis* ATCC 49507	13.9	[11.1 - 17.2]	27.2	[24.8 - 29.7]	14.2	[11.8 - 17.1]	2.16
'Legionella qingyii' (RZGW00000000)	*Legionella anisa* ATCC 35292	27.9	[24.6 - 31.6]	27.0	[24.7 - 29.5]	26.6	[23.7 - 29.7]	0.37
'Legionella qingyii' (QHJG00000000)	*Legionella anisa* ATCC 35292	25.3	[22.0 - 29.0]	27.0	[24.7 - 29.5]	24.4	[21.6 - 27.5]	0.38
'Legionella qingyii' (RZGX00000000)	*Legionella anisa* ATCC 35292	27.5	[24.2 - 31.2]	27.0	[24.6 - 29.5]	26.2	[23.4 - 29.4]	0.37
'Legionella sainthelensi' (UFAM00000000)	*Legionella anisa* ATCC 35292	17.4	[14.4 - 21.0]	26.9	[24.6 - 29.4]	17.5	[14.9 - 20.5]	1.34
'Legionella septentrionalis' (RZGV00000000)	*Legionella clemsonensis* CDC-D5610	13.2	[10.5 - 16.6]	26.9	[24.6 - 29.4]	13.6	[11.2 - 16.4]	2.95
'Legionella qingyii' (RZGW00000000)	*Legionella tucsonensis* ATCC 49180	31.8	[28.4 - 35.3]	26.8	[24.4 - 29.3]	29.6	[26.6 - 32.7]	0.41
'Legionella qingyii' (QHJG00000000)	*Legionella tucsonensis* ATCC 49180	27.5	[24.2 - 31.1]	26.8	[24.5 - 29.3]	26.2	[23.3 - 29.3]	0.39
'Legionella qingyii' (RZGX00000000)	*Legionella tucsonensis* ATCC 49180	31.3	[27.9 - 34.9]	26.8	[24.4 - 29.3]	29.2	[26.2 - 32.3]	0.41
'Legionella sainthelensi' (UFAM00000000)	*Legionella parisiensis* DSM 19216	17.0	[14.0 - 20.5]	26.5	[24.2 - 29.0]	17.1	[14.5 - 20.1]	1.13
'Legionella sainthelensi' (UFAM00000000)	*Legionella dumoffii* NY 23	16.4	[13.4 - 19.9]	26.4	[24.1 - 28.9]	16.6	[14.0 - 19.5]	2.8
'Legionella qingyii' (RZGW00000000)	*Legionella parisiensis* DSM 19216	27.3	[23.9 - 30.9]	26.3	[23.9 - 28.8]	25.9	[23.0 - 29.0]	0.15
'Legionella qingyii' (QHJG00000000)	*Legionella parisiensis* DSM 19216	24.6	[21.3 - 28.3]	26.3	[23.9 - 28.8]	23.7	[20.9 - 26.8]	0.17
'Legionella qingyii' (RZGX00000000)	*Legionella parisiensis* DSM 19216	26.9	[23.6 - 30.6]	26.2	[23.8 - 28.7]	25.6	[22.7 - 28.7]	0.16
'Legionella septentrionalis' (RZGV00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.3	[10.6 - 16.6]	26.1	[23.8 - 28.6]	13.7	[11.3 - 16.5]	4.23
'Legionella qingyii' (RZGX00000000)	*Legionella steigerwaltii* ATCC 35302	26.3	[23.0 - 30.0]	26.0	[23.6 - 28.5]	25.1	[22.2 - 28.2]	0.44
'Legionella qingyii' (QHJG00000000)	*Legionella steigerwaltii* ATCC 35302	24.0	[20.7 - 27.7]	26.0	[23.6 - 28.5]	23.2	[20.4 - 26.3]	0.46
'Legionella septentrionalis' (RZGV00000000)	*Legionella fallonii* LLAP-10	12.7	[10.0 - 15.9]	25.9	[23.6 - 28.4]	13.1	[10.7 - 15.8]	3.99

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGV00000000)	*Legionella pneumophila* Philadelphia 1	13.3	[10.5 - 16.6]	25.9	[23.6 - 28.4]	13.6	[11.3 - 16.4]	4.04
'Legionella qingyii' (RZGW00000000)	*Legionella steigerwaltii* ATCC 35302	26.3	[23.0 - 30.0]	25.7	[23.4 - 28.2]	25.0	[22.2 - 28.1]	0.44
'Legionella sainthelensi' (UFAM00000000)	*Legionella gormanii* ATCC 33297	17.2	[14.1 - 20.7]	25.6	[23.3 - 28.1]	17.2	[14.6 - 20.2]	1.23
'Legionella septentrionalis' (RZGS00000000)	*Legionella parisiensis* DSM 19216	13.2	[10.4 - 16.5]	25.6	[23.3 - 28.1]	13.5	[11.2 - 16.3]	4.18
'Legionella sainthelensi' (UFAM00000000)	*Legionella gormanii* ATCC 33342	17.1	[14.1 - 20.7]	25.5	[23.2 - 28.0]	17.2	[14.6 - 20.2]	1.24
'Legionella qingyii' (QHJG00000000)	*Legionella cherrii* DSM 19213	22.5	[19.3 - 26.2]	25.4	[23.0 - 27.8]	21.9	[19.1 - 25.0]	1.05
'Legionella qingyii' (RZGW00000000)	*Legionella cherrii* DSM 19213	25.0	[21.6 - 28.6]	25.3	[23.0 - 27.8]	23.9	[21.0 - 27.0]	1.04
'Legionella qingyii' (RZGX00000000)	*Legionella cherrii* DSM 19213	24.7	[21.4 - 28.3]	25.3	[23.0 - 27.8]	23.7	[20.8 - 26.8]	1.04
'Legionella sp. km772' (RZGQ00000000)	*Legionella santicrucis* ATCC 35301	13.5	[10.7 - 16.8]	25.1	[22.7 - 27.5]	13.8	[11.4 - 16.6]	2.33
'Legionella septentrionalis' (RZGS00000000)	*Legionella clemsonensis* CDC-D5610	13.3	[10.6 - 16.6]	25.1	[22.8 - 27.6]	13.7	[11.3 - 16.5]	2.79
'Legionella sainthelensi' (UFAM00000000)	*Legionella saoudiensis* LH-SWC	14.3	[11.5 - 17.7]	25.0	[22.7 - 27.5]	14.6	[12.1 - 17.4]	2.58
'Legionella sp. km772' (RZGQ00000000)	*Legionella drancourtii* LLAP 12	13.7	[10.9 - 17.0]	24.9	[22.6 - 27.4]	14.0	[11.6 - 16.8]	0.26
'Legionella qingyii' (RZGX00000000)	*Legionella steelei* ATCC BAA-2169	24.3	[21.0 - 28.0]	24.9	[22.6 - 27.4]	23.3	[20.5 - 26.4]	0.95
'Legionella qingyii' (QHJG00000000)	*Legionella steelei* ATCC BAA-2169	22.5	[19.3 - 26.2]	24.9	[22.6 - 27.4]	21.8	[19.0 - 24.9]	0.96
'Legionella qingyii' (RZGW00000000)	*Legionella steelei* ATCC BAA-2169	24.1	[20.8 - 27.7]	24.8	[22.4 - 27.2]	23.1	[20.3 - 26.2]	0.94
'Legionella septentrionalis' (RZGR00000000)	*Legionella sainthelensi* ATCC 35248	12.9	[10.2 - 16.2]	24.7	[22.4 - 27.2]	13.3	[10.9 - 16.0]	5.23
'Legionella sainthelensi' (UFAM00000000)	*Legionella steigerwaltii* ATCC 35302	16.9	[13.9 - 20.5]	24.6	[22.2 - 27.0]	17.0	[14.4 - 19.9]	1.42
'Legionella septentrionalis' (RZGV00000000)	*Legionella sainthelensi* ATCC 35248	13.0	[10.3 - 16.3]	24.6	[22.3 - 27.1]	13.4	[11.0 - 16.2]	5.34
'Legionella septentrionalis' (RZGR00000000)	*Legionella fallonii* LLAP-10	12.7	[10.0 - 15.9]	24.5	[22.1 - 26.9]	13.1	[10.7 - 15.8]	3.88
'Legionella qingyii' (QHJG00000000)	*Legionella hackeliae* ATCC 35250	13.1	[10.3 - 16.4]	24.5	[22.2 - 27.0]	13.4	[11.1 - 16.2]	1.16
'Legionella qingyii' (RZGX00000000)	*Legionella hackeliae* ATCC 35250	13.1	[10.4 - 16.5]	24.4	[22.1 - 26.9]	13.5	[11.1 - 16.3]	1.15
'Legionella qingyii' (QHJG00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	13.1	[10.4 - 16.4]	24.4	[22.1 - 26.9]	13.5	[11.1 - 16.2]	0.03
'Legionella septentrionalis' (RZGS00000000)	*Legionella fallonii* LLAP-10	12.7	[10.0 - 15.9]	24.3	[22.0 - 26.8]	13.1	[10.7 - 15.8]	3.83
'Legionella septentrionalis' (RZGR00000000)	*Legionella dumoffii* NY 23	13.0	[10.3 - 16.3]	24.3	[22.0 - 26.8]	13.4	[11.0 - 16.2]	2.56

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGS00000000)	*Legionella gratiana* ATCC 49413	13.1	[10.4 - 16.4]	24.2	[21.9 - 26.7]	13.5	[11.1 - 16.3]	5.31
'Legionella septentrionalis' (RZGR00000000)	*Legionella spiritensis* ATCC 35249	13.0	[10.3 - 16.3]	24.2	[21.9 - 26.7]	13.4	[11.0 - 16.1]	3.18
'Legionella qingyii' (RZGX00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	13.2	[10.5 - 16.5]	24.2	[21.9 - 26.6]	13.6	[11.2 - 16.4]	0.01
'Legionella sainthelensi' (UFAM00000000)	*Legionella birminghamensis* ATCC 43702	12.9	[10.2 - 16.2]	24.2	[21.9 - 26.7]	13.3	[11.0 - 16.1]	6.62
'Legionella sainthelensi' (UFAM00000000)	*Legionella pneumophila* Philadelphia 1	13.2	[10.5 - 16.6]	24.1	[21.8 - 26.5]	13.6	[11.2 - 16.4]	1.43
'Legionella septentrionalis' (RZGS00000000)	*Legionella nagasakiensis* JCM 15315	13.8	[11.0 - 17.1]	24.0	[21.7 - 26.5]	14.1	[11.7 - 16.9]	1.09
'Legionella qingyii' (QHJG00000000)	*Legionella beliardensis* NCTC 13315	12.7	[10.0 - 15.9]	23.8	[21.5 - 26.2]	13.0	[10.7 - 15.8]	0.47
'Legionella qingyii' (RZGW00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	13.2	[10.5 - 16.5]	23.8	[21.5 - 26.3]	13.6	[11.2 - 16.3]	0.01
'Legionella sainthelensi' (UFAM00000000)	*Legionella bozemanae* ATCC 33217	16.5	[13.5 - 20.0]	23.7	[21.4 - 26.1]	16.5	[14.0 - 19.5]	1.07
'Legionella sainthelensi' (UFAM00000000)	*Legionella brunensis* ATCC 43878	13.0	[10.3 - 16.3]	23.6	[21.3 - 26.0]	13.3	[11.0 - 16.1]	1.82
'Legionella septentrionalis' (RZGR00000000)	*Legionella waltersii* ATCC 51914	13.0	[10.3 - 16.3]	23.6	[21.3 - 26.1]	13.3	[11.0 - 16.1]	3.13
'Legionella sainthelensi' (UFAM00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	13.1	[10.4 - 16.5]	23.5	[21.2 - 26.0]	13.5	[11.1 - 16.3]	0.99
'Legionella sp. km772' (RZGQ00000000)	*Legionella steelei* ATCC BAA-2169	13.3	[10.5 - 16.6]	23.4	[21.1 - 25.9]	13.6	[11.2 - 16.4]	0.21
'Legionella qingyii' (QHJG00000000)	*Legionella saoudiensis* LH-SWC	14.1	[11.3 - 17.5]	23.4	[21.1 - 25.9]	14.4	[12.0 - 17.2]	1.62
'Legionella sainthelensi' (UFAM00000000)	*Legionella jamestowniensis* DSM 19215	13.0	[10.3 - 16.3]	23.3	[21.0 - 25.7]	13.4	[11.1 - 16.2]	2.57
'Legionella sainthelensi' (UFAL00000000)	*Legionella cherrii* DSM 19213	15.6	[12.7 - 19.1]	23.3	[21.0 - 25.8]	15.8	[13.2 - 18.7]	2.08
'Legionella qingyii' (RZGX00000000)	**'Legionella sainthelensi' (UFAM00000000)**	16.3	[13.4 - 19.8]	23.3	[21.0 - 25.8]	16.4	[13.8 - 19.3]	0.98
'Legionella sainthelensi' (UFAM00000000)	*Legionella qingyii* CCTCC AB 2018025	15.9	[13.0 - 19.4]	23.3	[21.0 - 25.7]	16.0	[13.5 - 18.9]	0.95
'Legionella sp. km535' (RZGU00000000)	*Legionella sainthelensi* ATCC 35248	13.6	[10.8 - 16.9]	23.3	[21.0 - 25.8]	13.9	[11.5 - 16.7]	2.91
'Legionella qingyii' (QHJG00000000)	**'Legionella sainthelensi' (UFAM00000000)**	15.9	[13.0 - 19.4]	23.3	[21.0 - 25.7]	16.0	[13.5 - 18.9]	0.96
'Legionella qingyii' (QHJG00000000)	*Legionella santicrucis* ATCC 35301	15.9	[12.9 - 19.4]	23.3	[21.0 - 25.7]	16.0	[13.5 - 18.9]	1.15
'Legionella sp. km535' (RZGU00000000)	*Legionella birminghamensis* ATCC 43702	13.1	[10.4 - 16.4]	23.2	[20.9 - 25.6]	13.5	[11.1 - 16.2]	3.58
'Legionella qingyii' (QHJG00000000)	*Legionella gratiana* ATCC 49413	16.6	[13.6 - 20.2]	23.2	[21.0 - 25.7]	16.7	[14.1 - 19.6]	0.96
'Legionella sainthelensi' (UFAL00000000)	*Legionella qingyii* CCTCC AB 2018025	15.7	[12.8 - 19.2]	23.2	[20.9 - 25.7]	15.8	[13.3 - 18.7]	1.02

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (QHJG00000000)	*Legionella cincinnatiensis* ATCC 43753	16.0	[13.0 - 19.4]	23.2	[20.9 - 25.6]	16.1	[13.5 - 19.0]	1.03
'Legionella qingyii' (QHJG00000000)	**'Legionella sainthelensi' (UFAL00000000)**	15.7	[12.8 - 19.2]	23.2	[20.9 - 25.7]	15.8	[13.3 - 18.7]	1.02
'Legionella qingyii' (RZGX00000000)	*Legionella saoudiensis* LH-SWC	14.3	[11.5 - 17.7]	23.2	[20.9 - 25.7]	14.6	[12.1 - 17.4]	1.61
'Legionella sainthelensi' (UFAM00000000)	*Legionella steelei* ATCC BAA-2169	16.2	[13.2 - 19.6]	23.2	[20.9 - 25.7]	16.2	[13.7 - 19.2]	1.92
'Legionella qingyii' (RZGW00000000)	**'Legionella sainthelensi' (UFAL00000000)**	16.2	[13.2 - 19.7]	23.2	[20.9 - 25.7]	16.3	[13.7 - 19.2]	1.04
'Legionella qingyii' (RZGX00000000)	**'Legionella sainthelensi' (UFAL00000000)**	16.1	[13.1 - 19.6]	23.1	[20.8 - 25.5]	16.2	[13.6 - 19.1]	1.04
'Legionella qingyii' (RZGW00000000)	*Legionella beliardensis* NCTC 13315	12.7	[10.0 - 16.0]	23.1	[20.8 - 25.6]	13.1	[10.8 - 15.9]	0.49
'Legionella sainthelensi' (UFAM00000000)	*Legionella wadsworthii* ATCC 33877	15.4	[12.5 - 18.8]	23.1	[20.8 - 25.6]	15.6	[13.0 - 18.4]	1.14
'Legionella qingyii' (RZGX00000000)	*Legionella gratiana* ATCC 49413	17.2	[14.2 - 20.8]	23.1	[20.8 - 25.5]	17.2	[14.6 - 20.2]	0.97
'Legionella qingyii' (RZGX00000000)	*Legionella santicrucis* ATCC 35301	16.3	[13.3 - 19.8]	23.1	[20.8 - 25.6]	16.3	[13.8 - 19.3]	1.17
'Legionella qingyii' (RZGW00000000)	*Legionella gratiana* ATCC 49413	17.4	[14.3 - 20.9]	23.1	[20.9 - 25.6]	17.3	[14.7 - 20.3]	0.98
'Legionella qingyii' (RZGX00000000)	*Legionella cincinnatiensis* ATCC 43753	16.5	[13.5 - 20.0]	23.1	[20.8 - 25.5]	16.6	[14.0 - 19.5]	1.04
'Legionella qingyii' (RZGW00000000)	*Legionella santicrucis* ATCC 35301	16.3	[13.3 - 19.8]	23.1	[20.8 - 25.5]	16.3	[13.8 - 19.3]	1.17
'Legionella sainthelensi' (UFAL00000000)	*Legionella anisa* ATCC 35292	16.4	[13.5 - 19.9]	23.0	[20.8 - 25.5]	16.5	[13.9 - 19.4]	1.41
'Legionella sainthelensi' (UFAL00000000)	*Legionella brunensis* ATCC 43878	12.9	[10.2 - 16.2]	23.0	[20.7 - 25.4]	13.3	[10.9 - 16.0]	1.88
'Legionella septentrionalis' (RZGV00000000)	*Legionella santicrucis* ATCC 35301	13.0	[10.3 - 16.3]	23.0	[20.7 - 25.4]	13.4	[11.0 - 16.1]	5.66
'Legionella sainthelensi' (UFAM00000000)	*Legionella fallonii* LLAP-10	13.6	[10.8 - 17.0]	22.9	[20.6 - 25.4]	13.9	[11.5 - 16.7]	1.48
'Legionella sainthelensi' (UFAL00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	13.1	[10.4 - 16.4]	22.9	[20.7 - 25.4]	13.5	[11.1 - 16.2]	1.05
'Legionella sainthelensi' (UFAL00000000)	*Legionella parisiensis* DSM 19216	16.2	[13.3 - 19.7]	22.9	[20.6 - 25.3]	16.3	[13.7 - 19.2]	1.2
'Legionella septentrionalis' (RZGR00000000)	*Legionella erythra* ATCC 35303	13.3	[10.6 - 16.6]	22.9	[20.6 - 25.3]	13.7	[11.3 - 16.5]	4.49
'Legionella qingyii' (RZGW00000000)	*Legionella cincinnatiensis* ATCC 43753	16.6	[13.6 - 20.1]	22.9	[20.6 - 25.4]	16.6	[14.0 - 19.5]	1.05
'Legionella sp. km772' (RZGQ00000000)	*Legionella birminghamensis* ATCC 43702	12.9	[10.2 - 16.2]	22.9	[20.6 - 25.4]	13.3	[10.9 - 16.0]	4.48
'Legionella qingyii' (RZGW00000000)	*Legionella sainthelensi* ATCC 35248	16.3	[13.3 - 19.7]	22.8	[20.6 - 25.3]	16.3	[13.8 - 19.2]	0.85
'Legionella sainthelensi' (UFAL00000000)	*Legionella massiliensis* LegA	12.9	[10.2 - 16.2]	22.8	[20.5 - 25.3]	13.3	[11.0 - 16.1]	4.41
'Legionella qingyii' (QHJG00000000)	*Legionella dumoffii* NY 23	21.4	[18.1 - 25.0]	22.8	[20.5 - 25.2]	20.6	[17.9 - 23.7]	1.84
'Legionella qingyii' (RZGW00000000)	*Legionella dumoffii* NY 23	23.2	[19.9 - 26.8]	22.8	[20.5 - 25.3]	22.1	[19.3 - 25.1]	1.82

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (RZGX00000000)	*Legionella sainthelensi* ATCC 35248	16.1	[13.2 - 19.6]	22.8	[20.5 - 25.2]	16.2	[13.6 - 19.1]	0.85
'Legionella sainthelensi' (UFAL00000000)	*Legionella tucsonensis* ATCC 49180	16.5	[13.5 - 20.0]	22.7	[20.4 - 25.1]	16.5	[13.9 - 19.4]	0.63
'Legionella sainthelensi' (UFAL00000000)	*Legionella bozemanae* ATCC 33217	16.1	[13.1 - 19.6]	22.7	[20.4 - 25.2]	16.2	[13.6 - 19.1]	1.13
'Legionella qingyii' (RZGX00000000)	*Legionella dumoffii* NY 23	23.1	[19.8 - 26.7]	22.7	[20.4 - 25.2]	22.0	[19.2 - 25.1]	1.82
'Legionella qingyii' (QHJG00000000)	*Legionella sainthelensi* ATCC 35248	15.7	[12.8 - 19.2]	22.7	[20.5 - 25.2]	15.8	[13.3 - 18.7]	0.83
'Legionella sp. km535' (RZGU00000000)	**'Legionella septentrionalis' (RZGV00000000)**	13.1	[10.4 - 16.4]	22.7	[20.4 - 25.1]	13.5	[11.1 - 16.2]	2.43
'Legionella septentrionalis' (RZGV00000000)	*Legionella waltersii* ATCC 51914	13.1	[10.4 - 16.4]	22.7	[20.4 - 25.1]	13.5	[11.1 - 16.2]	3.24
'Legionella septentrionalis' (RZGS00000000)	*Legionella waltersii* ATCC 51914	13.2	[10.5 - 16.5]	22.6	[20.3 - 25.0]	13.5	[11.2 - 16.3]	3.09
'Legionella septentrionalis' (RZGS00000000)	*Legionella beliardensis* NCTC 13315	13.0	[10.3 - 16.3]	22.6	[20.3 - 25.0]	13.3	[11.0 - 16.1]	4.83
'Legionella sainthelensi' (UFAL00000000)	*Legionella steelei* ATCC BAA-2169	16.4	[13.4 - 19.8]	22.6	[20.3 - 25.0]	16.4	[13.8 - 19.3]	1.99
'Legionella qingyii' (QHJG00000000)	*Legionella longbeachae* NCTC 11477	15.9	[13.0 - 19.4]	22.6	[20.3 - 25.0]	16.0	[13.4 - 18.9]	0.82
'Legionella sainthelensi' (UFAL00000000)	*Legionella steigerwaltii* ATCC 35302	16.3	[13.3 - 19.8]	22.6	[20.4 - 25.1]	16.4	[13.8 - 19.3]	1.48
'Legionella qingyii' (QHJG00000000)	*Legionella fallonii* LLAP-10	13.5	[10.8 - 16.9]	22.6	[20.3 - 25.1]	13.9	[11.5 - 16.7]	0.52
'Legionella sainthelensi' (UFAL00000000)	*Legionella pneumophila* Philadelphia 1	13.4	[10.6 - 16.7]	22.6	[20.4 - 25.1]	13.7	[11.3 - 16.5]	1.49
'Legionella sainthelensi' (UFAM00000000)	*Legionella cherrii* DSM 19213	15.7	[12.8 - 19.2]	22.5	[20.3 - 25.0]	15.8	[13.3 - 18.7]	2.02
'Legionella septentrionalis' (RZGS00000000)	*Legionella sainthelensi* ATCC 35248	12.9	[10.2 - 16.2]	22.5	[20.3 - 25.0]	13.3	[10.9 - 16.0]	5.19
'Legionella sp. km772' (RZGQ00000000)	*Legionella dumoffii* NY 23	13.5	[10.7 - 16.8]	22.5	[20.2 - 25.0]	13.8	[11.4 - 16.6]	0.66
'Legionella qingyii' (RZGX00000000)	*Legionella fallonii* LLAP-10	13.7	[10.9 - 17.0]	22.5	[20.3 - 25.0]	14.0	[11.6 - 16.8]	0.5
'Legionella sainthelensi' (UFAM00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.3	[10.6 - 16.7]	22.5	[20.2 - 24.9]	13.7	[11.3 - 16.5]	1.24
'Legionella sainthelensi' (UFAL00000000)	*Legionella gormanii* ATCC 33342	16.5	[13.5 - 20.0]	22.5	[20.2 - 24.9]	16.5	[13.9 - 19.4]	1.3
'Legionella sainthelensi' (UFAL00000000)	*Legionella gormanii* ATCC 33297	16.5	[13.5 - 20.0]	22.5	[20.2 - 24.9]	16.5	[13.9 - 19.4]	1.3
'Legionella sp. km535' (RZGU00000000)	*Legionella worsleiensis* ATCC 49508	22.7	[19.4 - 26.3]	22.5	[20.3 - 25.0]	21.7	[18.9 - 24.7]	0.43
'Legionella qingyii' (RZGW00000000)	**'Legionella sainthelensi' (UFAM00000000)**	16.1	[13.2 - 19.6]	22.5	[20.3 - 25.0]	16.2	[13.6 - 19.1]	0.98
'Legionella qingyii' (RZGW00000000)	*Legionella longbeachae* NCTC 11477	16.6	[13.6 - 20.1]	22.5	[20.2 - 24.9]	16.6	[14.0 - 19.6]	0.83
'Legionella sainthelensi' (UFAM00000000)	*Legionella tucsonensis* ATCC 49180	16.4	[13.4 - 19.9]	22.5	[20.2 - 24.9]	16.4	[13.8 - 19.3]	0.57

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella sp. km772' (RZGQ00000000)	**'Legionella sainthelensi' (UFAM00000000)**	13.3	[10.5 - 16.6]	22.5	[20.2 - 25.0]	13.6	[11.3 - 16.4]	2.14
'Legionella sainthelensi' (UFAM00000000)	*Legionella waltersii* ATCC 51914	13.4	[10.6 - 16.7]	22.4	[20.1 - 24.8]	13.7	[11.3 - 16.5]	2.23
'Legionella qingyii' (RZGX00000000)	*Legionella longbeachae* NCTC 11477	16.5	[13.5 - 20.0]	22.4	[20.1 - 24.8]	16.5	[13.9 - 19.4]	0.83
'Legionella sp. km535' (RZGU00000000)	*Legionella anisa* ATCC 35292	13.5	[10.7 - 16.8]	22.4	[20.2 - 24.9]	13.8	[11.4 - 16.6]	1.7
'Legionella qingyii' (RZGX00000000)	*Legionella beliardensis* NCTC 13315	12.7	[10.0 - 16.0]	22.4	[20.1 - 24.9]	13.1	[10.7 - 15.8]	0.49
'Legionella septentrionalis' (RZGS00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.2	[10.5 - 16.6]	22.4	[20.2 - 24.9]	13.6	[11.2 - 16.4]	4.08
'Legionella septentrionalis' (RZGV00000000)	*Legionella jordanis* ATCC 33623	13.1	[10.4 - 16.4]	22.3	[20.1 - 24.8]	13.5	[11.1 - 16.3]	0.63
'Legionella sp. km535' (RZGU00000000)	*Legionella steelei* ATCC BAA-2169	13.6	[10.9 - 17.0]	22.3	[20.1 - 24.8]	13.9	[11.5 - 16.7]	1.12
'Legionella sainthelensi' (UFAL00000000)	*Legionella drancourtii* LLAP 12	14.0	[11.2 - 17.4]	22.3	[20.0 - 24.7]	14.3	[11.9 - 17.1]	2.46
'Legionella sp. km772' (RZGQ00000000)	*Legionella sainthelensi* ATCC 35248	13.2	[10.5 - 16.5]	22.3	[20.0 - 24.7]	13.6	[11.2 - 16.3]	2.01
'Legionella septentrionalis' (RZGR00000000)	*Legionella clemsonensis* CDC-D5610	13.2	[10.5 - 16.5]	22.3	[20.0 - 24.7]	13.6	[11.2 - 16.4]	2.84
'Legionella sainthelensi' (UFAM00000000)	*Legionella shakespearei* DSM 23087	13.2	[10.5 - 16.6]	22.3	[20.0 - 24.8]	13.6	[11.2 - 16.4]	4.86
'Legionella qingyii' (QHJG00000000)	*Legionella brunensis* ATCC 43878	12.9	[10.2 - 16.1]	22.2	[19.9 - 24.6]	13.2	[10.9 - 16.0]	0.86
'Legionella sainthelensi' (UFAL00000000)	*Legionella oakridgensis* ATCC 33761	13.0	[10.3 - 16.3]	22.2	[19.9 - 24.6]	13.4	[11.0 - 16.1]	4.08
'Legionella sp. km535' (RZGU00000000)	*Legionella rowbothamii* LLAP6	13.3	[10.5 - 16.6]	22.1	[19.9 - 24.6]	13.6	[11.2 - 16.4]	0.56
'Legionella septentrionalis' (RZGS00000000)	*Legionella birminghamensis* ATCC 43702	13.0	[10.3 - 16.3]	22.1	[19.9 - 24.6]	13.4	[11.0 - 16.2]	1.31
'Legionella qingyii' (RZGW00000000)	*Legionella saoudiensis* LH-SWC	14.2	[11.3 - 17.5]	22.1	[19.8 - 24.5]	14.4	[12.0 - 17.3]	1.6
'Legionella sainthelensi' (UFAM00000000)	*Legionella impletisoli* OA1-1	12.6	[9.9 - 15.9]	22.1	[19.9 - 24.6]	13.0	[10.7 - 15.8]	3.33
'Legionella qingyii' (RZGX00000000)	*Legionella wadsworthii* ATCC 33877	19.3	[16.1 - 22.9]	22.0	[19.7 - 24.4]	18.8	[16.1 - 21.8]	0.16
'Legionella qingyii' (RZGW00000000)	*Legionella wadsworthii* ATCC 33877	19.4	[16.3 - 23.0]	22.0	[19.7 - 24.5]	19.0	[16.3 - 22.0]	0.16
'Legionella qingyii' (QHJG00000000)	*Legionella drancourtii* LLAP 12	14.3	[11.5 - 17.7]	22.0	[19.7 - 24.4]	14.6	[12.1 - 17.4]	1.44
'Legionella sp. km535' (RZGU00000000)	*Legionella dumoffii* NY 23	13.7	[10.9 - 17.0]	22.0	[19.7 - 24.4]	14.0	[11.6 - 16.8]	0.25
'Legionella sainthelensi' (UFAL00000000)	*Legionella rowbothamii* LLAP6	13.8	[11.0 - 17.1]	22.0	[19.7 - 24.4]	14.1	[11.7 - 16.9]	2.55
'Legionella qingyii' (RZGW00000000)	*Legionella waltersii* ATCC 51914	13.3	[10.6 - 16.6]	22.0	[19.7 - 24.4]	13.6	[11.3 - 16.4]	1.25
'Legionella qingyii' (RZGW00000000)	*Legionella drancourtii* LLAP 12	14.6	[11.7 - 18.0]	22.0	[19.7 - 24.4]	14.8	[12.3 - 17.7]	1.42
'Legionella septentrionalis' (RZGT00000000)	*Legionella fallonii* LLAP-10	12.6	[10.0 - 15.9]	22.0	[19.8 - 24.5]	13.0	[10.7 - 15.8]	4.0

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (QHJG00000000)	*Legionella wadsworthii* ATCC 33877	18.2	[15.1 - 21.8]	22.0	[19.7 - 24.4]	18.0	[15.3 - 20.9]	0.18
'Legionella sp. km535' (RZGU00000000)	**'Legionella sainthelensi' (UFAM00000000)**	13.5	[10.7 - 16.8]	21.9	[19.6 - 24.3]	13.8	[11.4 - 16.6]	3.04
'Legionella qingyii' (RZGW00000000)	*Legionella oakridgensis* ATCC 33761	13.0	[10.3 - 16.3]	21.9	[19.7 - 24.4]	13.4	[11.0 - 16.1]	3.04
'Legionella sainthelensi' (UFAM00000000)	*Legionella norrlandica* LEGN	13.3	[10.6 - 16.7]	21.9	[19.7 - 24.4]	13.7	[11.3 - 16.5]	0.63
'Legionella sainthelensi' (UFAM00000000)	*Legionella impletisoli* JCM 13919	12.6	[9.9 - 15.9]	21.9	[19.7 - 24.4]	13.0	[10.7 - 15.8]	3.32
'Legionella qingyii' (RZGW00000000)	*Legionella brunensis* ATCC 43878	12.9	[10.2 - 16.2]	21.8	[19.6 - 24.3]	13.3	[10.9 - 16.1]	0.84
'Legionella qingyii' (RZGX00000000)	*Legionella drancourtii* LLAP 12	14.5	[11.7 - 17.9]	21.8	[19.6 - 24.3]	14.8	[12.3 - 17.6]	1.42
'Legionella qingyii' (RZGX00000000)	*Legionella brunensis* ATCC 43878	12.9	[10.2 - 16.2]	21.8	[19.6 - 24.3]	13.3	[10.9 - 16.1]	0.85
'Legionella qingyii' (RZGW00000000)	*Legionella pneumophila* Philadelphia 1	13.5	[10.8 - 16.9]	21.8	[19.5 - 24.2]	13.9	[11.5 - 16.7]	0.45
'Legionella sp. km535' (RZGU00000000)	*Legionella parisiensis* DSM 19216	13.6	[10.9 - 17.0]	21.7	[19.5 - 24.2]	13.9	[11.5 - 16.7]	1.91
'Legionella qingyii' (QHJG00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.4	[10.6 - 16.7]	21.7	[19.4 - 24.1]	13.7	[11.3 - 16.5]	0.28
'Legionella sp. km535' (RZGU00000000)	*Legionella cincinnatiensis* ATCC 43753	13.5	[10.8 - 16.9]	21.7	[19.4 - 24.1]	13.9	[11.5 - 16.7]	3.11
'Legionella sp. km772' (RZGQ00000000)	*Legionella rowbothamii* LLAP6	13.3	[10.5 - 16.6]	21.7	[19.4 - 24.1]	13.6	[11.2 - 16.4]	0.35
'Legionella sainthelensi' (UFAM00000000)	*Legionella drancourtii* LLAP 12	14.0	[11.2 - 17.4]	21.7	[19.5 - 24.1]	14.3	[11.9 - 17.1]	2.4
'Legionella sp. km772' (RZGQ00000000)	*Legionella steigerwaltii* ATCC 35302	13.1	[10.4 - 16.4]	21.7	[19.5 - 24.2]	13.5	[11.1 - 16.2]	0.71
'Legionella sp. km772' (RZGQ00000000)	*Legionella fallonii* LLAP-10	13.6	[10.8 - 16.9]	21.7	[19.4 - 24.1]	13.9	[11.5 - 16.7]	0.66
'Legionella sainthelensi' (UFAL00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.4	[10.7 - 16.7]	21.7	[19.5 - 24.2]	13.7	[11.3 - 16.5]	1.3
'Legionella sainthelensi' (UFAL00000000)	*Legionella hackeliae* ATCC 35250	13.0	[10.3 - 16.3]	21.7	[19.5 - 24.1]	13.3	[11.0 - 16.1]	2.19
'Legionella sainthelensi' (UFAM00000000)	*Legionella rowbothamii* LLAP6	13.8	[11.0 - 17.1]	21.7	[19.5 - 24.2]	14.1	[11.7 - 16.9]	2.49
'Legionella qingyii' (QHJG00000000)	*Legionella pneumophila* Philadelphia 1	13.4	[10.6 - 16.7]	21.6	[19.4 - 24.1]	13.7	[11.3 - 16.5]	0.47
'Legionella septentrionalis' (RZGV00000000)	*Legionella brunensis* ATCC 43878	13.0	[10.3 - 16.3]	21.6	[19.3 - 24.0]	13.4	[11.0 - 16.1]	3.65
'Legionella qingyii' (RZGX00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.5	[10.8 - 16.9]	21.6	[19.4 - 24.0]	13.8	[11.4 - 16.6]	0.26
'Legionella septentrionalis' (RZGS00000000)	*Legionella moravica* DSM 19234	13.1	[10.4 - 16.4]	21.6	[19.3 - 24.0]	13.5	[11.1 - 16.2]	2.15
'Legionella sainthelensi' (UFAL00000000)	*Legionella fallonii* LLAP-10	13.4	[10.6 - 16.7]	21.6	[19.3 - 24.0]	13.7	[11.3 - 16.5]	1.54
'Legionella septentrionalis' (RZGS00000000)	*Legionella brunensis* ATCC 43878	13.0	[10.3 - 16.3]	21.5	[19.2 - 23.9]	13.4	[11.0 - 16.1]	3.49

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (QHJG00000000)	*Legionella waltersii* ATCC 51914	13.2	[10.5 - 16.5]	21.5	[19.2 - 23.9]	13.6	[11.2 - 16.3]	1.27
'Legionella septentrionalis' (RZGR00000000)	*Legionella parisiensis* DSM 19216	12.9	[10.2 - 16.2]	21.5	[19.2 - 23.9]	13.3	[10.9 - 16.0]	4.23
'Legionella qingyii' (RZGW00000000)	*Legionella fallonii* LLAP-10	13.5	[10.7 - 16.8]	21.5	[19.3 - 24.0]	13.8	[11.4 - 16.6]	0.5
'Legionella septentrionalis' (RZGR00000000)	*Legionella jordanis* ATCC 33623	13.2	[10.4 - 16.5]	21.5	[19.2 - 23.9]	13.5	[11.1 - 16.3]	0.52
'Legionella sp. km772' (RZGQ00000000)	*Legionella yabuuchiae* OA1-2	12.9	[10.2 - 16.1]	21.5	[19.2 - 23.9]	13.2	[10.9 - 16.0]	1.99
'Legionella sainthelensi' (UFAM00000000)	*Legionella clemsonensis* CDC-D5610	13.1	[10.4 - 16.4]	21.5	[19.3 - 24.0]	13.4	[11.1 - 16.2]	2.52
'Legionella septentrionalis' (RZGV00000000)	*Legionella birminghamensis* ATCC 43702	13.0	[10.3 - 16.3]	21.5	[19.3 - 24.0]	13.3	[11.0 - 16.1]	1.15
'Legionella sainthelensi' (UFAL00000000)	*Legionella norrlandica* LEGN	13.4	[10.7 - 16.7]	21.5	[19.3 - 23.9]	13.7	[11.4 - 16.5]	0.69
'Legionella septentrionalis' (RZGS00000000)	*Legionella massiliensis* LegA	13.0	[10.2 - 16.2]	21.5	[19.3 - 24.0]	13.3	[11.0 - 16.1]	0.97
'Legionella qingyii' (RZGX00000000)	*Legionella pneumophila* Philadelphia 1	13.5	[10.7 - 16.8]	21.5	[19.2 - 23.9]	13.8	[11.4 - 16.6]	0.45
'Legionella qingyii' (RZGW00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.5	[10.8 - 16.9]	21.5	[19.3 - 24.0]	13.8	[11.4 - 16.6]	0.26
'Legionella qingyii' (QHJG00000000)	*Legionella oakridgensis* ATCC 33761	12.9	[10.2 - 16.1]	21.5	[19.3 - 24.0]	13.2	[10.9 - 16.0]	3.06
'Legionella sainthelensi' (UFAL00000000)	*Legionella dumoffii* NY 23	15.6	[12.6 - 19.0]	21.4	[19.2 - 23.9]	15.6	[13.1 - 18.5]	2.86
'Legionella qingyii' (RZGX00000000)	*Legionella waltersii* ATCC 51914	13.3	[10.5 - 16.6]	21.4	[19.1 - 23.8]	13.6	[11.2 - 16.4]	1.25
'Legionella qingyii' (RZGW00000000)	*Legionella hackeliae* ATCC 35250	13.1	[10.4 - 16.4]	21.4	[19.1 - 23.8]	13.4	[11.1 - 16.2]	1.14
'Legionella sainthelensi' (UFAL00000000)	*Legionella beliardensis* NCTC 13315	12.7	[10.0 - 16.0]	21.4	[19.2 - 23.9]	13.1	[10.8 - 15.9]	0.55
'Legionella septentrionalis' (RZGV00000000)	*Legionella moravica* DSM 19234	13.1	[10.4 - 16.4]	21.4	[19.1 - 23.8]	13.5	[11.1 - 16.3]	2.31
'Legionella sp. km535' (RZGU00000000)	*Legionella jamestowniensis* DSM 19215	13.1	[10.4 - 16.4]	21.4	[19.2 - 23.9]	13.4	[11.1 - 16.2]	0.47
'Legionella qingyii' (RZGW00000000)	*Legionella moravica* DSM 19234	13.5	[10.7 - 16.8]	21.4	[19.1 - 23.8]	13.8	[11.4 - 16.6]	2.18
'Legionella sainthelensi' (UFAL00000000)	*Legionella impletisoli* OA1-1	12.6	[9.9 - 15.9]	21.4	[19.2 - 23.9]	13.0	[10.7 - 15.8]	3.39
'Legionella sp. km772' (RZGQ00000000)	*Legionella jamestowniensis* DSM 19215	13.1	[10.4 - 16.4]	21.4	[19.2 - 23.8]	13.5	[11.1 - 16.2]	0.43
'Legionella septentrionalis' (RZGS00000000)	*Legionella hackeliae* ATCC 35250	12.9	[10.2 - 16.2]	21.3	[19.0 - 23.7]	13.3	[11.0 - 16.1]	3.19
'Legionella sp. km535' (RZGU00000000)	*Legionella saoudiensis* LH-SWC	13.4	[10.7 - 16.8]	21.3	[19.1 - 23.8]	13.8	[11.4 - 16.5]	0.46
'Legionella sp. km772' (RZGQ00000000)	*Legionella saoudiensis* LH-SWC	13.3	[10.6 - 16.7]	21.3	[19.1 - 23.7]	13.7	[11.3 - 16.5]	0.45

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGV00000000)	**'Legionella sainthelensi' (UFAM00000000)**	12.9	[10.2 - 16.2]	21.3	[19.1 - 23.7]	13.3	[10.9 - 16.0]	5.47
'Legionella qingyii' (QHJG00000000)	*Legionella clemsonensis* CDC-D5610	12.9	[10.2 - 16.1]	21.2	[19.0 - 23.7]	13.2	[10.9 - 16.0]	1.56
'Legionella sainthelensi' (UFAL00000000)	*Legionella saoudiensis* LH-SWC	13.9	[11.1 - 17.3]	21.2	[19.0 - 23.6]	14.2	[11.8 - 17.0]	2.65
'Legionella sainthelensi' (UFAM00000000)	*Legionella oakridgensis* ATCC 33761	13.0	[10.3 - 16.3]	21.2	[19.0 - 23.6]	13.4	[11.0 - 16.2]	4.02
'Legionella qingyii' (QHJG00000000)	*Legionella moravica* DSM 19234	13.3	[10.6 - 16.6]	21.2	[19.0 - 23.7]	13.6	[11.3 - 16.4]	2.2
'Legionella septentrionalis' (RZGV00000000)	*Legionella shakespearei* DSM 23087	12.9	[10.2 - 16.2]	21.2	[18.9 - 23.6]	13.3	[10.9 - 16.1]	0.61
'Legionella sainthelensi' (UFAL00000000)	*Legionella impletisoli* JCM 13919	12.6	[9.9 - 15.9]	21.2	[18.9 - 23.6]	13.0	[10.7 - 15.8]	3.38
'Legionella sp. km535' (RZGU00000000)	*Legionella santicrucis* ATCC 35301	13.5	[10.7 - 16.8]	21.1	[18.8 - 23.5]	13.8	[11.4 - 16.6]	3.23
'Legionella septentrionalis' (RZGR00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	12.8	[10.1 - 16.1]	21.1	[18.8 - 23.5]	13.2	[10.9 - 16.0]	4.37
'Legionella septentrionalis' (RZGS00000000)	*Legionella santicrucis* ATCC 35301	13.0	[10.3 - 16.3]	21.1	[18.9 - 23.6]	13.4	[11.0 - 16.1]	5.51
'Legionella sp. km535' (RZGU00000000)	*Legionella clemsonensis* CDC-D5610	13.0	[10.3 - 16.3]	21.1	[18.8 - 23.5]	13.4	[11.0 - 16.2]	0.52
'Legionella sainthelensi' (UFAL00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	21.1	[18.8 - 23.5]	12.9	[10.6 - 15.6]	2.49
'Legionella qingyii' (RZGX00000000)	*Legionella moravica* DSM 19234	13.4	[10.7 - 16.8]	21.1	[18.9 - 23.6]	13.8	[11.4 - 16.6]	2.18
'Legionella sp. km772' (RZGQ00000000)	*Legionella anisa* ATCC 35292	13.4	[10.7 - 16.8]	21.0	[18.7 - 23.4]	13.7	[11.4 - 16.5]	0.79
'Legionella qingyii' (RZGW00000000)	*Legionella shakespearei* DSM 23087	13.7	[10.9 - 17.0]	21.0	[18.7 - 23.4]	13.9	[11.5 - 16.8]	3.88
'Legionella qingyii' (RZGW00000000)	*Legionella worsleiensis* ATCC 49508	13.5	[10.7 - 16.8]	21.0	[18.7 - 23.4]	13.8	[11.4 - 16.6]	2.49
'Legionella septentrionalis' (RZGV00000000)	*Legionella jamestowniensis* DSM 19215	13.3	[10.5 - 16.6]	21.0	[18.8 - 23.4]	13.6	[11.2 - 16.4]	2.9
'Legionella septentrionalis' (RZGV00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	12.8	[10.1 - 16.1]	21.0	[18.8 - 23.4]	13.2	[10.8 - 16.0]	4.48
'Legionella sp. km535' (RZGU00000000)	*Legionella bozemanae* ATCC 33217	13.3	[10.6 - 16.7]	21.0	[18.8 - 23.4]	13.7	[11.3 - 16.5]	1.98
'Legionella sp. km772' (RZGQ00000000)	*Legionella hackeliae* ATCC 35250	13.2	[10.4 - 16.5]	21.0	[18.7 - 23.4]	13.5	[11.1 - 16.3]	0.01
'Legionella septentrionalis' (RZGS00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	12.8	[10.1 - 16.1]	21.0	[18.7 - 23.4]	13.2	[10.8 - 15.9]	4.33
'Legionella qingyii' (RZGX00000000)	*Legionella clemsonensis* CDC-D5610	12.9	[10.2 - 16.2]	21.0	[18.7 - 23.4]	13.3	[10.9 - 16.0]	1.54
'Legionella sp. km535' (RZGU00000000)	*Legionella gratiana* ATCC 49413	13.6	[10.9 - 17.0]	20.9	[18.7 - 23.3]	13.9	[11.5 - 16.7]	3.04
'Legionella septentrionalis' (RZGS00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.9	[18.6 - 23.3]	12.9	[10.6 - 15.7]	7.86
'Legionella qingyii' (RZGX00000000)	*Legionella oakridgensis* ATCC 33761	13.0	[10.3 - 16.2]	20.9	[18.7 - 23.4]	13.3	[11.0 - 16.1]	3.04

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGV00000000)	*Legionella anisa* ATCC 35292	12.9	[10.2 - 16.2]	20.9	[18.7 - 23.3]	13.3	[10.9 - 16.1]	4.13
'Legionella septentrionalis' (RZGV00000000)	*Legionella massiliensis* LegA	12.9	[10.2 - 16.2]	20.9	[18.7 - 23.3]	13.3	[10.9 - 16.1]	1.12
'Legionella qingyii' (RZGX00000000)	*Legionella worsleiensis* ATCC 49508	13.4	[10.7 - 16.7]	20.9	[18.6 - 23.3]	13.7	[11.3 - 16.5]	2.49
'Legionella qingyii' (QHJG00000000)	*Legionella worsleiensis* ATCC 49508	13.3	[10.5 - 16.6]	20.9	[18.7 - 23.3]	13.6	[11.2 - 16.4]	2.51
'Legionella qingyii' (RZGW00000000)	*Legionella rowbothamii* LLAP6	14.0	[11.2 - 17.4]	20.9	[18.7 - 23.3]	14.3	[11.8 - 17.1]	1.51
'Legionella sp. km535' (RZGU00000000)	*Legionella steigerwaltii* ATCC 35302	13.4	[10.7 - 16.8]	20.9	[18.7 - 23.4]	13.8	[11.4 - 16.6]	1.62
'Legionella qingyii' (RZGW00000000)	*Legionella norrlandica* LEGN	13.5	[10.8 - 16.9]	20.9	[18.7 - 23.3]	13.8	[11.4 - 16.6]	0.35
'Legionella septentrionalis' (RZGV00000000)	*Legionella dumoffii* NY 23	13.0	[10.3 - 16.3]	20.9	[18.7 - 23.3]	13.4	[11.0 - 16.1]	2.67
'Legionella qingyii' (RZGW00000000)	*Legionella clemsonensis* CDC-D5610	13.0	[10.3 - 16.3]	20.9	[18.7 - 23.4]	13.4	[11.0 - 16.1]	1.54
'Legionella sp. km772' (RZGQ00000000)	*Legionella jordanis* ATCC 33623	13.0	[10.3 - 16.3]	20.9	[18.7 - 23.3]	13.4	[11.0 - 16.2]	2.7
'Legionella qingyii' (QHJG00000000)	**'Legionella sp. km535' (RZGU00000000)**	13.5	[10.7 - 16.8]	20.8	[18.6 - 23.2]	13.8	[11.4 - 16.6]	2.08
'Legionella sp. km772' (RZGQ00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.8	[18.6 - 23.3]	12.9	[10.6 - 15.6]	4.69
'Legionella qingyii' (QHJG00000000)	*Legionella quateirensis* ATCC 49507	13.6	[10.8 - 16.9]	20.8	[18.6 - 23.3]	13.9	[11.5 - 16.7]	1.2
'Legionella sp. km535' (RZGU00000000)	*Legionella oakridgensis* ATCC 33761	12.8	[10.1 - 16.0]	20.8	[18.6 - 23.2]	13.2	[10.8 - 15.9]	0.97
'Legionella sainthelensi' (UFAL00000000)	*Legionella birminghamensis* ATCC 43702	12.9	[10.2 - 16.2]	20.8	[18.6 - 23.2]	13.2	[10.9 - 16.0]	6.68
'Legionella sp. km535' (RZGU00000000)	**'Legionella qingyii' (RZGW00000000)**	13.7	[10.9 - 17.0]	20.8	[18.6 - 23.3]	14.0	[11.6 - 16.8]	2.06
'Legionella qingyii' (RZGX00000000)	*Legionella rowbothamii* LLAP6	13.9	[11.1 - 17.3]	20.8	[18.6 - 23.3]	14.2	[11.7 - 17.0]	1.51
'Legionella sp. km535' (RZGU00000000)	*Legionella qingyii* CCTCC AB 2018025	13.5	[10.7 - 16.8]	20.8	[18.6 - 23.2]	13.8	[11.4 - 16.6]	2.09
'Legionella septentrionalis' (RZGR00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.8	[18.6 - 23.2]	12.9	[10.6 - 15.6]	7.91
'Legionella qingyii' (QHJG00000000)	*Legionella norrlandica* LEGN	13.4	[10.7 - 16.7]	20.8	[18.5 - 23.2]	13.7	[11.3 - 16.5]	0.33
'Legionella qingyii' (QHJG00000000)	*Legionella rowbothamii* LLAP6	13.7	[10.9 - 17.1]	20.8	[18.6 - 23.3]	14.0	[11.6 - 16.8]	1.53
'Legionella qingyii' (RZGW00000000)	*Legionella massiliensis* LegA	13.0	[10.3 - 16.3]	20.8	[18.5 - 23.2]	13.4	[11.0 - 16.1]	3.37
'Legionella septentrionalis' (RZGV00000000)	*Legionella hackeliae* ATCC 35250	12.9	[10.2 - 16.2]	20.8	[18.5 - 23.2]	13.3	[10.9 - 16.0]	3.35
'Legionella sp. km535' (RZGU00000000)	*Legionella gormanii* ATCC 33297	13.7	[11.0 - 17.1]	20.8	[18.6 - 23.2]	14.0	[11.6 - 16.8]	1.81
'Legionella qingyii' (RZGX00000000)	*Legionella quateirensis* ATCC 49507	13.7	[11.0 - 17.1]	20.8	[18.5 - 23.2]	14.0	[11.6 - 16.8]	1.18

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (RZGW00000000)	*Legionella nagasakiensis* JCM 15315	12.9	[10.2 - 16.2]	20.8	[18.5 - 23.2]	13.3	[10.9 - 16.1]	3.24
'Legionella septentrionalis' (RZGR00000000)	*Legionella hackeliae* ATCC 35250	12.9	[10.2 - 16.2]	20.8	[18.6 - 23.2]	13.3	[10.9 - 16.1]	3.24
'Legionella sainthelensi' (UFAM00000000)	*Legionella nagasakiensis* JCM 15315	13.1	[10.4 - 16.4]	20.8	[18.6 - 23.2]	13.4	[11.1 - 16.2]	4.22
'Legionella septentrionalis' (RZGR00000000)	*Legionella pneumophila* Philadelphia 1	13.2	[10.4 - 16.5]	20.8	[18.6 - 23.3]	13.5	[11.1 - 16.3]	3.93
'Legionella sainthelensi' (UFAM00000000)	*Legionella beliardensis* NCTC 13315	12.8	[10.1 - 16.1]	20.8	[18.6 - 23.3]	13.2	[10.8 - 15.9]	0.49
'Legionella qingyii' (RZGX00000000)	*Legionella norrlandica* LEGN	13.5	[10.8 - 16.9]	20.7	[18.5 - 23.1]	13.9	[11.5 - 16.7]	0.35
'Legionella sainthelensi' (UFAL00000000)	*Legionella shakespearei* DSM 23087	13.4	[10.6 - 16.7]	20.7	[18.5 - 23.1]	13.7	[11.3 - 16.5]	4.92
'Legionella sainthelensi' (UFAL00000000)	*Legionella quateirensis* ATCC 49507	13.4	[10.7 - 16.7]	20.7	[18.5 - 23.2]	13.7	[11.3 - 16.5]	2.22
'Legionella sp. km772' (RZGQ00000000)	**'Legionella sainthelensi' (UFAL00000000)**	13.3	[10.5 - 16.6]	20.7	[18.5 - 23.2]	13.6	[11.2 - 16.4]	2.2
'Legionella septentrionalis' (RZGR00000000)	*Legionella gratiana* ATCC 49413	13.1	[10.3 - 16.4]	20.7	[18.5 - 23.1]	13.4	[11.1 - 16.2]	5.36
'Legionella septentrionalis' (RZGV00000000)	*Legionella fairfieldensis* ATCC 49588	13.2	[10.5 - 16.5]	20.7	[18.5 - 23.1]	13.6	[11.2 - 16.3]	2.67
'Legionella sp. km772' (RZGQ00000000)	*Legionella norrlandica* LEGN	13.3	[10.5 - 16.6]	20.7	[18.5 - 23.2]	13.6	[11.2 - 16.4]	1.51
'Legionella sp. km535' (RZGU00000000)	*Legionella shakespearei* DSM 23087	15.5	[12.6 - 19.0]	20.7	[18.5 - 23.1]	15.6	[13.1 - 18.5]	1.81
'Legionella sainthelensi' (UFAL00000000)	*Legionella clemsonensis* CDC-D5610	13.0	[10.3 - 16.3]	20.7	[18.5 - 23.2]	13.4	[11.0 - 16.2]	2.58
'Legionella sp. km535' (RZGU00000000)	**'Legionella qingyii' (RZGX00000000)**	13.6	[10.8 - 16.9]	20.7	[18.5 - 23.2]	13.9	[11.5 - 16.7]	2.07
'Legionella sainthelensi' (UFAL00000000)	*Legionella jamestowniensis* DSM 19215	12.9	[10.2 - 16.2]	20.7	[18.4 - 23.1]	13.3	[10.9 - 16.1]	2.63
'Legionella septentrionalis' (RZGR00000000)	*Legionella norrlandica* LEGN	13.1	[10.4 - 16.4]	20.7	[18.5 - 23.1]	13.5	[11.1 - 16.2]	4.73
'Legionella sp. km535' (RZGU00000000)	*Legionella tucsonensis* ATCC 49180	13.5	[10.7 - 16.8]	20.7	[18.4 - 23.1]	13.8	[11.4 - 16.6]	2.48
'Legionella qingyii' (RZGW00000000)	*Legionella quateirensis* ATCC 49507	13.8	[11.0 - 17.1]	20.7	[18.5 - 23.2]	14.1	[11.7 - 16.9]	1.18
'Legionella sp. km535' (RZGU00000000)	*Legionella gormanii* ATCC 33342	13.7	[11.0 - 17.1]	20.7	[18.5 - 23.1]	14.0	[11.6 - 16.8]	1.8
'Legionella sp. km535' (RZGU00000000)	*Legionella cherrii* DSM 19213	13.5	[10.7 - 16.8]	20.6	[18.4 - 23.0]	13.8	[11.4 - 16.6]	1.03
'Legionella qingyii' (QHJG00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.6	[18.4 - 23.0]	12.9	[10.6 - 15.6]	3.51
'Legionella septentrionalis' (RZGT00000000)	*Legionella jamestowniensis* DSM 19215	13.1	[10.3 - 16.4]	20.6	[18.4 - 23.0]	13.4	[11.1 - 16.2]	2.92
'Legionella septentrionalis' (RZGV00000000)	*Legionella erythra* ATCC 35303	13.3	[10.5 - 16.6]	20.6	[18.3 - 23.0]	13.6	[11.2 - 16.4]	4.38
'Legionella sainthelensi' (UFAL00000000)	*Legionella wadsworthii* ATCC 33877	15.0	[12.1 - 18.5]	20.6	[18.4 - 23.0]	15.2	[12.7 - 18.0]	1.2

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGR00000000)	*Legionella moravica* DSM 19234	13.1	[10.4 - 16.4]	20.6	[18.3 - 23.0]	13.5	[11.1 - 16.2]	2.2
'Legionella septentrionalis' (RZGS00000000)	*Legionella fairfieldensis* ATCC 49588	13.2	[10.5 - 16.5]	20.6	[18.3 - 23.0]	13.5	[11.2 - 16.3]	2.51
'Legionella sp. km535' (RZGU00000000)	**'Legionella sainthelensi' (UFAL00000000)**	13.5	[10.7 - 16.8]	20.6	[18.4 - 23.0]	13.8	[11.4 - 16.6]	3.11
'Legionella sainthelensi' (UFAM00000000)	*Legionella massiliensis* LegA	12.9	[10.2 - 16.2]	20.6	[18.4 - 23.0]	13.2	[10.9 - 16.0]	4.35
'Legionella sp. km772' (RZGQ00000000)	*Legionella longbeachae* NCTC 11477	13.1	[10.4 - 16.4]	20.6	[18.4 - 23.0]	13.5	[11.1 - 16.2]	1.99
'Legionella sp. km535' (RZGU00000000)	*Legionella jordanis* ATCC 33623	12.9	[10.2 - 16.2]	20.6	[18.4 - 23.0]	13.3	[10.9 - 16.1]	1.8
'Legionella qingyii' (QHJG00000000)	*Legionella shakespearei* DSM 23087	13.5	[10.7 - 16.8]	20.6	[18.4 - 23.0]	13.8	[11.4 - 16.6]	3.9
'Legionella qingyii' (RZGX00000000)	*Legionella shakespearei* DSM 23087	13.6	[10.8 - 16.9]	20.6	[18.4 - 23.0]	13.9	[11.5 - 16.7]	3.88
'Legionella sp. km535' (RZGU00000000)	*Legionella longbeachae* NCTC 11477	13.4	[10.6 - 16.7]	20.6	[18.4 - 23.0]	13.7	[11.3 - 16.5]	2.9
'Legionella septentrionalis' (RZGV00000000)	*Legionella cincinnatiensis* ATCC 43753	12.9	[10.2 - 16.2]	20.5	[18.2 - 22.9]	13.2	[10.9 - 16.0]	5.54
'Legionella sp. km535' (RZGU00000000)	*Legionella wadsworthii* ATCC 33877	13.4	[10.6 - 16.7]	20.5	[18.3 - 23.0]	13.7	[11.3 - 16.5]	1.91
'Legionella sainthelensi' (UFAL00000000)	*Legionella moravica* DSM 19234	13.4	[10.6 - 16.7]	20.5	[18.2 - 22.9]	13.7	[11.3 - 16.5]	3.22
'Legionella septentrionalis' (RZGV00000000)	*Legionella quateirensis* ATCC 49507	12.9	[10.2 - 16.2]	20.5	[18.3 - 22.9]	13.3	[10.9 - 16.0]	3.31
'Legionella sainthelensi' (UFAL00000000)	*Legionella waltersii* ATCC 51914	13.4	[10.6 - 16.7]	20.5	[18.3 - 23.0]	13.7	[11.3 - 16.5]	2.29
'Legionella sp. km535' (RZGU00000000)	*Legionella impletisoli* OA1-1	12.7	[10.1 - 16.0]	20.5	[18.3 - 22.9]	13.1	[10.8 - 15.9]	0.28
'Legionella sp. km535' (RZGU00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.5	[18.2 - 22.9]	12.9	[10.6 - 15.6]	5.59
'Legionella septentrionalis' (RZGV00000000)	*Legionella impletisoli* OA1-1	13.3	[10.5 - 16.6]	20.5	[18.2 - 22.9]	13.6	[11.2 - 16.4]	2.14
'Legionella sp. km772' (RZGQ00000000)	*Legionella quateirensis* ATCC 49507	13.8	[11.0 - 17.1]	20.5	[18.3 - 22.9]	14.0	[11.6 - 16.9]	0.02
'Legionella sp. km535' (RZGU00000000)	*Legionella drancourtii* LLAP 12	13.7	[10.9 - 17.0]	20.5	[18.3 - 22.9]	14.0	[11.5 - 16.8]	0.64
'Legionella sainthelensi' (UFAL00000000)	*Legionella nagasakiensis* JCM 15315	13.1	[10.4 - 16.4]	20.5	[18.3 - 22.9]	13.4	[11.1 - 16.2]	4.28
'Legionella septentrionalis' (RZGV00000000)	*Legionella impletisoli* JCM 13919	13.2	[10.5 - 16.6]	20.4	[18.2 - 22.8]	13.6	[11.2 - 16.4]	2.16
'Legionella sainthelensi' (UFAL00000000)	*Legionella rubrilucens* ATCC 35304	12.9	[10.2 - 16.2]	20.4	[18.2 - 22.8]	13.3	[10.9 - 16.0]	10.88
'Legionella sp. km535' (RZGU00000000)	*Legionella impletisoli* JCM 13919	12.7	[10.1 - 16.0]	20.4	[18.1 - 22.8]	13.1	[10.8 - 15.9]	0.27
'Legionella sp. km772' (RZGQ00000000)	*Legionella cincinnatiensis* ATCC 43753	13.2	[10.5 - 16.5]	20.4	[18.2 - 22.8]	13.5	[11.2 - 16.3]	2.2
'Legionella sainthelensi' (UFAM00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.4	[18.2 - 22.8]	12.9	[10.6 - 15.6]	2.55

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (RZGW00000000)	*Legionella jamestowniensis* DSM 19215	12.9	[10.2 - 16.2]	20.4	[18.2 - 22.8]	13.3	[10.9 - 16.0]	1.59
'Legionella sp. km772' (RZGQ00000000)	*Legionella clemsonensis* CDC-D5610	12.9	[10.2 - 16.2]	20.3	[18.1 - 22.7]	13.3	[10.9 - 16.1]	0.38
'Legionella sp. km535' (RZGU00000000)	*Legionella beliardensis* NCTC 13315	12.8	[10.1 - 16.1]	20.3	[18.1 - 22.7]	13.2	[10.8 - 15.9]	2.55
'Legionella sainthelensi' (UFAL00000000)	*Legionella erythra* ATCC 35303	12.8	[10.1 - 16.1]	20.3	[18.0 - 22.7]	13.2	[10.8 - 15.9]	9.91
'Legionella sp. km772' (RZGQ00000000)	*Legionella worsleiensis* ATCC 49508	13.6	[10.9 - 17.0]	20.3	[18.0 - 22.7]	13.9	[11.5 - 16.7]	1.33
'Legionella sp. km772' (RZGQ00000000)	*Legionella septentrionalis* km711T	12.9	[10.2 - 16.2]	20.3	[18.1 - 22.7]	13.3	[10.9 - 16.1]	3.15
'Legionella sp. km772' (RZGQ00000000)	*Legionella gratiana* ATCC 49413	13.4	[10.6 - 16.7]	20.3	[18.1 - 22.7]	13.7	[11.3 - 16.5]	2.13
'Legionella sp. km772' (RZGQ00000000)	*Legionella parisiensis* DSM 19216	13.3	[10.6 - 16.6]	20.3	[18.1 - 22.7]	13.6	[11.3 - 16.4]	1.0
'Legionella sp. km772' (RZGQ00000000)	*Legionella brunensis* ATCC 43878	13.0	[10.3 - 16.3]	20.3	[18.1 - 22.7]	13.3	[11.0 - 16.1]	0.31
'Legionella sainthelensi' (UFAM00000000)	*Legionella moravica* DSM 19234	13.4	[10.6 - 16.7]	20.3	[18.1 - 22.7]	13.7	[11.3 - 16.5]	3.16
'Legionella sainthelensi' (UFAM00000000)	*Legionella rubrilucens* ATCC 35304	12.9	[10.2 - 16.1]	20.3	[18.1 - 22.7]	13.2	[10.9 - 16.0]	10.81
'Legionella sp. km772' (RZGQ00000000)	**'Legionella septentrionalis' (RZGT00000000)**	12.9	[10.2 - 16.2]	20.3	[18.1 - 22.7]	13.2	[10.9 - 16.0]	3.35
'Legionella sp. km535' (RZGU00000000)	*Legionella waltersii* ATCC 51914	13.9	[11.1 - 17.3]	20.3	[18.1 - 22.7]	14.2	[11.8 - 17.0]	0.82
'Legionella septentrionalis' (RZGR00000000)	*Legionella massiliensis* LegA	12.9	[10.2 - 16.2]	20.3	[18.1 - 22.7]	13.3	[10.9 - 16.1]	1.01
'Legionella qingyii' (RZGW00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.3	[18.1 - 22.7]	12.9	[10.6 - 15.6]	3.53
'Legionella sp. km772' (RZGQ00000000)	**'Legionella septentrionalis' (RZGS00000000)**	12.9	[10.2 - 16.2]	20.3	[18.1 - 22.7]	13.3	[10.9 - 16.1]	3.18
'Legionella sainthelensi' (UFAM00000000)	*Legionella yabuuchiae* OA1-2	12.7	[10.0 - 16.0]	20.3	[18.1 - 22.7]	13.1	[10.7 - 15.8]	4.13
'Legionella septentrionalis' (RZGS00000000)	*Legionella tucsonensis* ATCC 49180	12.8	[10.1 - 16.1]	20.2	[18.0 - 22.6]	13.2	[10.8 - 16.0]	4.75
'Legionella qingyii' (QHJG00000000)	*Legionella nagasakiensis* JCM 15315	12.9	[10.2 - 16.2]	20.2	[18.0 - 22.6]	13.2	[10.9 - 16.0]	3.26
'Legionella septentrionalis' (RZGR00000000)	*Legionella birminghamensis* ATCC 43702	12.9	[10.2 - 16.2]	20.2	[17.9 - 22.6]	13.3	[10.9 - 16.0]	1.26
'Legionella septentrionalis' (RZGR00000000)	*Legionella quateirensis* ATCC 49507	12.9	[10.2 - 16.2]	20.2	[18.0 - 22.6]	13.3	[10.9 - 16.1]	3.2
'Legionella sp. km772' (RZGQ00000000)	*Legionella wadsworthii* ATCC 33877	13.2	[10.4 - 16.5]	20.2	[17.9 - 22.6]	13.5	[11.1 - 16.3]	1.0
'Legionella sainthelensi' (UFAL00000000)	*Legionella fairfieldensis* ATCC 49588	13.0	[10.3 - 16.3]	20.2	[17.9 - 22.6]	13.3	[11.0 - 16.1]	2.86
'Legionella septentrionalis' (RZGT00000000)	*Legionella brunensis* ATCC 43878	12.9	[10.2 - 16.2]	20.2	[18.0 - 22.6]	13.3	[10.9 - 16.1]	3.66
'Legionella qingyii' (RZGW00000000)	*Legionella rubrilucens* ATCC 35304	12.8	[10.1 - 16.1]	20.2	[18.0 - 22.7]	13.2	[10.8 - 16.0]	9.83

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (QHJG00000000)	*Legionella massiliensis* LegA	12.9	[10.2 - 16.2]	20.2	[17.9 - 22.6]	13.3	[10.9 - 16.0]	3.39
'Legionella septentrionalis' (RZGR00000000)	**'Legionella sainthelensi' (UFAL00000000)**	12.9	[10.2 - 16.2]	20.2	[18.0 - 22.6]	13.2	[10.9 - 16.0]	5.42
'Legionella sp. km772' (RZGQ00000000)	*Legionella bozemanae* ATCC 33217	13.3	[10.5 - 16.6]	20.1	[17.9 - 22.6]	13.6	[11.2 - 16.4]	1.07
'Legionella sp. km772' (RZGQ00000000)	**'Legionella sp. km535' (RZGU00000000)**	13.7	[10.9 - 17.0]	20.1	[17.9 - 22.5]	14.0	[11.6 - 16.8]	0.91
'Legionella sp. km772' (RZGQ00000000)	**'Legionella septentrionalis' (RZGR00000000)**	12.8	[10.1 - 16.1]	20.1	[17.9 - 22.5]	13.2	[10.8 - 15.9]	3.22
'Legionella qingyii' (RZGX00000000)	*Legionella nagasakiensis* JCM 15315	12.9	[10.2 - 16.2]	20.1	[17.9 - 22.6]	13.3	[10.9 - 16.0]	3.24
'Legionella sp. km535' (RZGU00000000)	*Legionella hackeliae* ATCC 35250	13.0	[10.3 - 16.3]	20.1	[17.9 - 22.5]	13.4	[11.0 - 16.1]	0.92
'Legionella sp. km772' (RZGQ00000000)	*Legionella oakridgensis* ATCC 33761	13.0	[10.3 - 16.3]	20.1	[17.9 - 22.5]	13.3	[11.0 - 16.1]	1.88
'Legionella sp. km772' (RZGQ00000000)	*Legionella cherrii* DSM 19213	13.2	[10.5 - 16.5]	20.1	[17.9 - 22.5]	13.5	[11.2 - 16.3]	0.12
'Legionella septentrionalis' (RZGV00000000)	*Legionella beliardensis* NCTC 13315	12.8	[10.1 - 16.1]	20.1	[17.9 - 22.5]	13.2	[10.8 - 15.9]	4.98
'Legionella septentrionalis' (RZGV00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	20.1	[17.9 - 22.5]	12.9	[10.6 - 15.7]	8.02
'Legionella septentrionalis' (RZGR00000000)	*Legionella anisa* ATCC 35292	12.9	[10.2 - 16.2]	20.1	[17.9 - 22.5]	13.3	[11.0 - 16.1]	4.01
'Legionella septentrionalis' (RZGV00000000)	*Legionella rubrilucens* ATCC 35304	13.3	[10.5 - 16.6]	20.1	[17.9 - 22.5]	13.6	[11.2 - 16.4]	5.34
'Legionella sp. km535' (RZGU00000000)	*Legionella massiliensis* LegA	13.0	[10.3 - 16.3]	20.1	[17.9 - 22.5]	13.4	[11.0 - 16.2]	1.31
'Legionella sp. km535' (RZGU00000000)	*Legionella fallonii* LLAP-10	14.2	[11.4 - 17.5]	20.1	[17.9 - 22.5]	14.4	[12.0 - 17.2]	1.56
'Legionella qingyii' (QHJG00000000)	*Legionella jamestowniensis* DSM 19215	12.9	[10.2 - 16.1]	20.1	[17.9 - 22.5]	13.2	[10.9 - 16.0]	1.61
'Legionella sp. km535' (RZGU00000000)	*Legionella norrlandica* LEGN	13.9	[11.1 - 17.3]	20.1	[17.9 - 22.5]	14.2	[11.7 - 17.0]	2.42
'Legionella qingyii' (RZGX00000000)	*Legionella massiliensis* LegA	13.0	[10.3 - 16.3]	20.0	[17.8 - 22.4]	13.3	[11.0 - 16.1]	3.37
'Legionella septentrionalis' (RZGS00000000)	*Legionella anisa* ATCC 35292	12.9	[10.2 - 16.2]	20.0	[17.8 - 22.4]	13.3	[11.0 - 16.1]	3.97
'Legionella sp. km772' (RZGQ00000000)	*Legionella shakespearei* DSM 23087	13.7	[10.9 - 17.1]	20.0	[17.7 - 22.4]	14.0	[11.6 - 16.8]	2.72
'Legionella septentrionalis' (RZGT00000000)	*Legionella clemsonensis* CDC-D5610	12.9	[10.2 - 16.2]	20.0	[17.8 - 22.4]	13.3	[10.9 - 16.0]	2.97
'Legionella sp. km772' (RZGQ00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	13.3	[10.6 - 16.6]	20.0	[17.8 - 22.4]	13.6	[11.3 - 16.4]	1.15
'Legionella sp. km772' (RZGQ00000000)	*Legionella waltersii* ATCC 51914	13.4	[10.6 - 16.7]	20.0	[17.8 - 22.4]	13.7	[11.3 - 16.5]	0.09
'Legionella septentrionalis' (RZGR00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.2	[10.5 - 16.6]	20.0	[17.7 - 22.4]	13.6	[11.2 - 16.4]	4.12

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGS00000000)	*Legionella cincinnatiensis* ATCC 43753	12.9	[10.2 - 16.2]	19.9	[17.7 - 22.3]	13.3	[10.9 - 16.0]	5.38
'Legionella sp. km772' (RZGQ00000000)	*Legionella nagasakiensis* JCM 15315	12.9	[10.2 - 16.2]	19.9	[17.7 - 22.3]	13.3	[10.9 - 16.1]	2.08
'Legionella septentrionalis' (RZGR00000000)	*Legionella cincinnatiensis* ATCC 43753	13.0	[10.3 - 16.2]	19.9	[17.7 - 22.3]	13.3	[11.0 - 16.1]	5.43
'Legionella sp. km772' (RZGQ00000000)	*Legionella gormanii* ATCC 33297	13.3	[10.6 - 16.6]	19.9	[17.7 - 22.3]	13.6	[11.3 - 16.4]	0.9
'Legionella septentrionalis' (RZGS00000000)	*Legionella jamestowniensis* DSM 19215	13.2	[10.5 - 16.5]	19.9	[17.7 - 22.3]	13.6	[11.2 - 16.3]	2.75
'Legionella sainthelensi' (UFAM00000000)	*Legionella worsleiensis* ATCC 49508	13.3	[10.6 - 16.6]	19.9	[17.7 - 22.3]	13.6	[11.2 - 16.4]	3.47
'Legionella septentrionalis' (RZGT00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	19.8	[17.6 - 22.2]	12.9	[10.6 - 15.6]	8.04
'Legionella septentrionalis' (RZGV00000000)	*Legionella longbeachae* NCTC 11477	12.8	[10.1 - 16.1]	19.8	[17.6 - 22.2]	13.2	[10.8 - 15.9]	5.33
'Legionella sp. km772' (RZGQ00000000)	*Legionella gormanii* ATCC 33342	13.3	[10.6 - 16.6]	19.8	[17.6 - 22.2]	13.6	[11.3 - 16.4]	0.9
'Legionella septentrionalis' (RZGV00000000)	*Legionella tucsonensis* ATCC 49180	12.9	[10.2 - 16.2]	19.8	[17.6 - 22.2]	13.3	[10.9 - 16.0]	4.9
'Legionella septentrionalis' (RZGS00000000)	*Legionella erythra* ATCC 35303	13.2	[10.5 - 16.5]	19.8	[17.6 - 22.2]	13.5	[11.2 - 16.3]	4.53
'Legionella septentrionalis' (RZGR00000000)	**'Legionella sainthelensi' (UFAM00000000)**	12.8	[10.1 - 16.1]	19.8	[17.6 - 22.2]	13.2	[10.8 - 15.9]	5.36
'Legionella septentrionalis' (RZGR00000000)	*Legionella tucsonensis* ATCC 49180	12.9	[10.2 - 16.2]	19.8	[17.6 - 22.2]	13.3	[10.9 - 16.1]	4.79
'Legionella sainthelensi' (UFAM00000000)	*Legionella fairfieldensis* ATCC 49588	13.0	[10.2 - 16.2]	19.8	[17.6 - 22.2]	13.3	[11.0 - 16.1]	2.8
'Legionella sainthelensi' (UFAM00000000)	*Legionella taurinensis* NCTC 13314	12.8	[10.1 - 16.1]	19.8	[17.6 - 22.2]	13.2	[10.9 - 16.0]	11.21
'Legionella qingyii' (RZGW00000000)	*Legionella taurinensis* NCTC 13314	12.9	[10.2 - 16.2]	19.8	[17.6 - 22.2]	13.3	[10.9 - 16.0]	10.23
'Legionella sainthelensi' (UFAL00000000)	*Legionella yabuuchiae* OA1-2	12.7	[10.0 - 15.9]	19.8	[17.6 - 22.2]	13.1	[10.7 - 15.8]	4.19
'Legionella qingyii' (QHJG00000000)	**'Legionella sp. km772' (RZGQ00000000)**	13.3	[10.6 - 16.6]	19.7	[17.5 - 22.1]	13.6	[11.2 - 16.4]	1.18
'Legionella sp. km772' (RZGQ00000000)	**'Legionella septentrionalis' (RZGV00000000)**	12.8	[10.1 - 16.1]	19.7	[17.5 - 22.1]	13.2	[10.8 - 15.9]	3.33
'Legionella septentrionalis' (RZGV00000000)	*Legionella taurinensis* NCTC 13314	13.2	[10.5 - 16.5]	19.7	[17.5 - 22.1]	13.5	[11.2 - 16.3]	5.74
'Legionella septentrionalis' (RZGT00000000)	*Legionella massiliensis* LegA	12.9	[10.2 - 16.1]	19.7	[17.5 - 22.1]	13.2	[10.9 - 16.0]	1.14
'Legionella qingyii' (RZGX00000000)	*Legionella jamestowniensis* DSM 19215	12.9	[10.2 - 16.2]	19.7	[17.5 - 22.1]	13.3	[10.9 - 16.0]	1.59
'Legionella sp. km535' (RZGU00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	14.0	[11.2 - 17.4]	19.7	[17.5 - 22.1]	14.3	[11.8 - 17.1]	2.05

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella sp. km772' (RZGQ00000000)	*Legionella qingyii* CCTCC AB 2018025	13.3	[10.6 - 16.6]	19.7	[17.5 - 22.1]	13.6	[11.2 - 16.4]	1.18
'Legionella septentrionalis' (RZGT00000000)	*Legionella santicrucis* ATCC 35301	12.7	[10.0 - 16.0]	19.7	[17.5 - 22.1]	13.1	[10.7 - 15.8]	5.68
'Legionella qingyii' (QHJG00000000)	*Legionella rubrilucens* ATCC 35304	12.7	[10.0 - 16.0]	19.7	[17.5 - 22.1]	13.1	[10.8 - 15.9]	9.85
'Legionella sp. km535' (RZGU00000000)	*Legionella septentrionalis* km711T	13.0	[10.3 - 16.3]	19.6	[17.4 - 22.0]	13.4	[11.0 - 16.1]	2.24
'Legionella septentrionalis' (RZGR00000000)	**'Legionella sp. km535' (RZGU00000000)**	12.9	[10.2 - 16.2]	19.6	[17.4 - 22.0]	13.3	[10.9 - 16.1]	2.32
'Legionella septentrionalis' (RZGS00000000)	*Legionella londiniensis* ATCC 49505	13.2	[10.5 - 16.5]	19.6	[17.4 - 22.0]	13.5	[11.2 - 16.3]	1.14
'Legionella septentrionalis' (RZGS00000000)	**'Legionella sp. km535' (RZGU00000000)**	13.0	[10.3 - 16.3]	19.6	[17.4 - 22.0]	13.4	[11.0 - 16.1]	2.27
'Legionella septentrionalis' (RZGV00000000)	*Legionella gormanii* ATCC 33297	12.9	[10.2 - 16.2]	19.6	[17.4 - 22.0]	13.3	[10.9 - 16.1]	4.24
'Legionella sp. km772' (RZGQ00000000)	**'Legionella qingyii' (RZGX00000000)**	13.4	[10.6 - 16.7]	19.6	[17.4 - 22.0]	13.7	[11.3 - 16.5]	1.16
'Legionella sp. km772' (RZGQ00000000)	**'Legionella qingyii' (RZGW00000000)**	13.4	[10.6 - 16.7]	19.6	[17.4 - 22.0]	13.7	[11.3 - 16.5]	1.16
'Legionella qingyii' (QHJG00000000)	*Legionella taurinensis* NCTC 13314	12.8	[10.1 - 16.1]	19.6	[17.4 - 22.0]	13.2	[10.8 - 15.9]	10.25
'Legionella sp. km535' (RZGU00000000)	*Legionella taurinensis* NCTC 13314	12.9	[10.2 - 16.1]	19.6	[17.4 - 22.0]	13.2	[10.9 - 16.0]	8.17
'Legionella sainthelensi' (UFAL00000000)	*Legionella worsleiensis* ATCC 49508	13.3	[10.6 - 16.6]	19.6	[17.4 - 22.0]	13.6	[11.2 - 16.4]	3.53
'Legionella septentrionalis' (RZGS00000000)	*Legionella rubrilucens* ATCC 35304	13.2	[10.5 - 16.5]	19.5	[17.3 - 21.8]	13.5	[11.2 - 16.3]	5.5
'Legionella qingyii' (RZGW00000000)	*Legionella jordanis* ATCC 33623	13.0	[10.3 - 16.3]	19.5	[17.3 - 21.9]	13.3	[11.0 - 16.1]	3.86
'Legionella sp. km772' (RZGQ00000000)	*Legionella pneumophila* Philadelphia 1	13.5	[10.8 - 16.9]	19.5	[17.3 - 21.9]	13.8	[11.4 - 16.6]	0.71
'Legionella septentrionalis' (RZGV00000000)	*Legionella oakridgensis* ATCC 33761	13.5	[10.7 - 16.8]	19.5	[17.3 - 21.9]	13.8	[11.4 - 16.6]	1.45
'Legionella qingyii' (RZGW00000000)	*Legionella fairfieldensis* ATCC 49588	12.9	[10.2 - 16.2]	19.5	[17.3 - 21.9]	13.3	[10.9 - 16.0]	1.82
'Legionella sainthelensi' (UFAL00000000)	*Legionella taurinensis* NCTC 13314	12.9	[10.2 - 16.2]	19.5	[17.3 - 21.9]	13.3	[10.9 - 16.1]	11.27
'Legionella qingyii' (QHJG00000000)	*Legionella jordanis* ATCC 33623	12.9	[10.2 - 16.2]	19.5	[17.3 - 21.9]	13.3	[10.9 - 16.0]	3.88
'Legionella qingyii' (RZGX00000000)	*Legionella rubrilucens* ATCC 35304	12.8	[10.1 - 16.1]	19.5	[17.3 - 21.9]	13.2	[10.8 - 15.9]	9.84
'Legionella sp. km772' (RZGQ00000000)	*Legionella beliardensis* NCTC 13315	12.9	[10.2 - 16.2]	19.5	[17.3 - 21.8]	13.3	[10.9 - 16.0]	1.65
'Legionella septentrionalis' (RZGV00000000)	*Legionella steelei* ATCC BAA-2169	12.9	[10.2 - 16.2]	19.5	[17.3 - 21.9]	13.3	[10.9 - 16.0]	3.55
'Legionella septentrionalis' (RZGT00000000)	*Legionella hackeliae* ATCC 35250	12.9	[10.2 - 16.2]	19.4	[17.2 - 21.8]	13.2	[10.9 - 16.0]	3.36

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella sainthelensi' (UFAM00000000)	*Legionella spiritensis* ATCC 35249	12.8	[10.1 - 16.1]	19.4	[17.2 - 21.8]	13.2	[10.9 - 16.0]	8.54
'Legionella sp. km772' (RZGQ00000000)	*Legionella moravica* DSM 19234	13.6	[10.8 - 16.9]	19.4	[17.2 - 21.8]	13.8	[11.5 - 16.7]	1.02
'Legionella qingyii' (RZGX00000000)	*Tamlana fucoidanivorans* CW2-9T	12.5	[9.8 - 15.8]	19.4	[17.2 - 21.8]	12.9	[10.6 - 15.6]	3.53
'Legionella qingyii' (QHJG00000000)	*Legionella fairfieldensis* ATCC 49588	12.8	[10.1 - 16.1]	19.4	[17.2 - 21.8]	13.2	[10.8 - 16.0]	1.84
'Legionella septentrionalis' (RZGV00000000)	*Legionella steigerwaltii* ATCC 35302	12.8	[10.1 - 16.1]	19.4	[17.2 - 21.8]	13.2	[10.8 - 15.9]	4.05
'Legionella septentrionalis' (RZGS00000000)	*Legionella bozemanae* ATCC 33217	12.8	[10.1 - 16.1]	19.4	[17.2 - 21.8]	13.2	[10.8 - 15.9]	4.25
'Legionella sp. km535' (RZGU00000000)	*Legionella londiniensis* ATCC 49505	12.7	[10.0 - 16.0]	19.4	[17.2 - 21.8]	13.1	[10.8 - 15.9]	3.41
'Legionella sainthelensi' (UFAL00000000)	*Legionella spiritensis* ATCC 35249	13.0	[10.3 - 16.3]	19.4	[17.2 - 21.8]	13.4	[11.0 - 16.1]	8.6
'Legionella septentrionalis' (RZGV00000000)	*Legionella gormanii* ATCC 33342	12.9	[10.2 - 16.2]	19.4	[17.2 - 21.8]	13.3	[10.9 - 16.1]	4.23
'Legionella sainthelensi' (UFAM00000000)	*Legionella jordanis* ATCC 33623	13.1	[10.4 - 16.4]	19.4	[17.2 - 21.8]	13.4	[11.1 - 16.2]	4.84
'Legionella septentrionalis' (RZGS00000000)	*Legionella oakridgensis* ATCC 33761	13.5	[10.7 - 16.8]	19.4	[17.2 - 21.8]	13.8	[11.4 - 16.6]	1.3
'Legionella septentrionalis' (RZGR00000000)	*Legionella beliardensis* NCTC 13315	13.0	[10.3 - 16.3]	19.4	[17.2 - 21.8]	13.3	[11.0 - 16.1]	4.87
'Legionella sainthelensi' (UFAL00000000)	*Legionella jordanis* ATCC 33623	13.1	[10.4 - 16.4]	19.3	[17.1 - 21.7]	13.5	[11.1 - 16.2]	4.9
'Legionella qingyii' (RZGX00000000)	*Legionella jordanis* ATCC 33623	12.9	[10.2 - 16.2]	19.3	[17.1 - 21.7]	13.3	[10.9 - 16.0]	3.86
'Legionella sp. km535' (RZGU00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	14.6	[11.7 - 18.0]	19.3	[17.1 - 21.7]	14.7	[12.3 - 17.6]	1.81
'Legionella sp. km772' (RZGQ00000000)	*Legionella tucsonensis* ATCC 49180	13.3	[10.5 - 16.6]	19.3	[17.1 - 21.7]	13.6	[11.2 - 16.4]	1.57
'Legionella sp. km535' (RZGU00000000)	*Legionella rubrilucens* ATCC 35304	12.9	[10.2 - 16.2]	19.3	[17.1 - 21.7]	13.2	[10.9 - 16.0]	7.77
'Legionella sp. km535' (RZGU00000000)	*Legionella brunensis* ATCC 43878	13.1	[10.4 - 16.4]	19.3	[17.1 - 21.7]	13.4	[11.1 - 16.2]	1.22
'Legionella septentrionalis' (RZGT00000000)	*Legionella oakridgensis* ATCC 33761	13.5	[10.8 - 16.9]	19.3	[17.1 - 21.7]	13.8	[11.4 - 16.6]	1.47
'Legionella qingyii' (RZGW00000000)	*Legionella yabuuchiae* OA1-2	12.7	[10.0 - 15.9]	19.3	[17.1 - 21.7]	13.1	[10.7 - 15.8]	3.15
'Legionella qingyii' (QHJG00000000)	*Legionella yabuuchiae* OA1-2	12.6	[10.0 - 15.9]	19.3	[17.1 - 21.7]	13.0	[10.7 - 15.8]	3.17
'Legionella septentrionalis' (RZGV00000000)	*Legionella worsleiensis* ATCC 49508	13.0	[10.3 - 16.3]	19.3	[17.1 - 21.7]	13.4	[11.0 - 16.2]	2.0
'Legionella sp. km772' (RZGQ00000000)	*Legionella fairfieldensis* ATCC 49588	12.9	[10.2 - 16.2]	19.3	[17.1 - 21.7]	13.2	[10.9 - 16.0]	0.67
'Legionella septentrionalis' (RZGR00000000)	*Legionella oakridgensis* ATCC 33761	13.6	[10.8 - 16.9]	19.3	[17.1 - 21.7]	13.8	[11.5 - 16.7]	1.34

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGS00000000)	*Legionella worsleiensis* ATCC 49508	13.0	[10.3 - 16.3]	19.2	[17.0 - 21.6]	13.4	[11.0 - 16.2]	1.85
'Legionella sainthelensi' (UFAM00000000)	*Legionella septentrionalis* km711T	12.9	[10.2 - 16.2]	19.2	[17.0 - 21.6]	13.3	[10.9 - 16.0]	5.29
'Legionella septentrionalis' (RZGS00000000)	*Legionella impletisoli* OA1-1	13.1	[10.4 - 16.5]	19.2	[17.0 - 21.6]	13.5	[11.1 - 16.3]	1.99
'Legionella septentrionalis' (RZGT00000000)	*Legionella shakespearei* DSM 23087	12.8	[10.1 - 16.1]	19.2	[17.0 - 21.6]	13.2	[10.8 - 15.9]	0.63
'Legionella septentrionalis' (RZGS00000000)	**'Legionella sainthelensi' (UFAM00000000)**	12.9	[10.2 - 16.2]	19.2	[17.0 - 21.6]	13.3	[10.9 - 16.0]	5.32
'Legionella septentrionalis' (RZGT00000000)	*Legionella sainthelensi* ATCC 35248	12.7	[10.0 - 16.0]	19.2	[17.0 - 21.6]	13.1	[10.8 - 15.8]	5.36
'Legionella septentrionalis' (RZGV00000000)	*Legionella saoudiensis* LH-SWC	13.1	[10.3 - 16.4]	19.2	[17.0 - 21.6]	13.4	[11.0 - 16.2]	2.89
'Legionella sp. km535' (RZGU00000000)	*Legionella pneumophila* Philadelphia 1	14.6	[11.8 - 18.0]	19.2	[17.1 - 21.6]	14.8	[12.3 - 17.6]	1.61
'Legionella septentrionalis' (RZGR00000000)	*Legionella nagasakiensis* JCM 15315	13.2	[10.5 - 16.5]	19.2	[17.0 - 21.6]	13.6	[11.2 - 16.3]	1.14
'Legionella qingyii' (RZGX00000000)	*Legionella fairfieldensis* ATCC 49588	12.9	[10.2 - 16.2]	19.2	[17.0 - 21.5]	13.2	[10.9 - 16.0]	1.83
'Legionella qingyii' (RZGX00000000)	*Legionella taurinensis* NCTC 13314	12.8	[10.1 - 16.1]	19.1	[16.9 - 21.5]	13.2	[10.8 - 15.9]	10.23
'Legionella septentrionalis' (RZGS00000000)	*Legionella quateirensis* ATCC 49507	12.9	[10.2 - 16.2]	19.1	[17.0 - 21.5]	13.3	[10.9 - 16.1]	3.16
'Legionella sp. km772' (RZGQ00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	13.5	[10.7 - 16.8]	19.1	[16.9 - 21.5]	13.8	[11.4 - 16.6]	0.9
'Legionella septentrionalis' (RZGT00000000)	*Legionella pneumophila* subsp. *fraseri* ATCC 33156	12.8	[10.1 - 16.0]	19.1	[16.9 - 21.5]	13.1	[10.8 - 15.9]	4.5
'Legionella qingyii' (RZGW00000000)	*Legionella erythra* ATCC 35303	12.9	[10.2 - 16.2]	19.1	[16.9 - 21.5]	13.3	[10.9 - 16.0]	8.87
'Legionella sainthelensi' (UFAL00000000)	*Legionella londiniensis* ATCC 49505	12.7	[10.0 - 15.9]	19.1	[16.9 - 21.5]	13.1	[10.7 - 15.8]	6.52
'Legionella septentrionalis' (RZGS00000000)	*Legionella dumoffii* NY 23	13.0	[10.3 - 16.3]	19.1	[16.9 - 21.5]	13.4	[11.0 - 16.1]	2.52
'Legionella sp. km772' (RZGQ00000000)	*Legionella impletisoli* OA1-1	12.8	[10.1 - 16.0]	19.1	[16.9 - 21.5]	13.1	[10.8 - 15.9]	1.19
'Legionella septentrionalis' (RZGV00000000)	*Legionella nagasakiensis* JCM 15315	13.3	[10.6 - 16.7]	19.1	[16.9 - 21.5]	13.6	[11.3 - 16.4]	1.25
'Legionella septentrionalis' (RZGR00000000)	*Legionella shakespearei* DSM 23087	12.8	[10.1 - 16.1]	19.1	[16.9 - 21.5]	13.2	[10.9 - 16.0]	0.5
'Legionella septentrionalis' (RZGV00000000)	**'Legionella sainthelensi' (UFAL00000000)**	12.9	[10.2 - 16.2]	19.1	[16.9 - 21.5]	13.3	[10.9 - 16.0]	5.53
'Legionella qingyii' (RZGW00000000)	*Legionella impletisoli* OA1-1	12.8	[10.1 - 16.0]	19.0	[16.8 - 21.4]	13.1	[10.8 - 15.9]	2.35
'Legionella septentrionalis' (RZGR00000000)	*Legionella taurinensis* NCTC 13314	13.2	[10.5 - 16.5]	19.0	[16.8 - 21.4]	13.5	[11.2 - 16.3]	5.85

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGS00000000)	*Legionella steigerwaltii* ATCC 35302	12.8	[10.1 - 16.1]	19.0	[16.8 - 21.4]	13.2	[10.8 - 15.9]	3.89
'Legionella septentrionalis' (RZGR00000000)	*Legionella worsleiensis* ATCC 49508	13.0	[10.3 - 16.3]	19.0	[16.9 - 21.4]	13.4	[11.0 - 16.2]	1.89
'Legionella septentrionalis' (RZGS00000000)	*Legionella impletisoli* JCM 13919	13.1	[10.4 - 16.4]	19.0	[16.9 - 21.4]	13.5	[11.1 - 16.3]	2.0
'Legionella septentrionalis' (RZGR00000000)	*Legionella longbeachae* NCTC 11477	12.8	[10.1 - 16.1]	19.0	[16.8 - 21.4]	13.2	[10.8 - 15.9]	5.21
'Legionella septentrionalis' (RZGS00000000)	*Legionella spiritensis* ATCC 35249	13.1	[10.3 - 16.4]	19.0	[16.8 - 21.3]	13.4	[11.0 - 16.2]	3.23
'Legionella septentrionalis' (RZGR00000000)	*Legionella bozemanae* ATCC 33217	12.8	[10.1 - 16.1]	19.0	[16.8 - 21.4]	13.2	[10.8 - 15.9]	4.29
'Legionella septentrionalis' (RZGS00000000)	*Legionella shakespearei* DSM 23087	12.9	[10.2 - 16.2]	19.0	[16.8 - 21.4]	13.3	[10.9 - 16.1]	0.46
'Legionella sp. km772' (RZGQ00000000)	*Legionella impletisoli* JCM 13919	12.8	[10.1 - 16.0]	19.0	[16.8 - 21.4]	13.1	[10.8 - 15.9]	1.18
'Legionella sp. km535' (RZGU00000000)	*Legionella yabuuchiae* OA1-2	12.8	[10.1 - 16.0]	19.0	[16.8 - 21.3]	13.1	[10.8 - 15.9]	1.09
'Legionella qingyii' (QHJG00000000)	*Legionella impletisoli* OA1-1	12.7	[10.0 - 15.9]	18.9	[16.7 - 21.2]	13.1	[10.7 - 15.8]	2.37
'Legionella qingyii' (RZGW00000000)	*Legionella birminghamensis* ATCC 43702	13.0	[10.3 - 16.3]	18.9	[16.7 - 21.3]	13.4	[11.0 - 16.1]	5.64
'Legionella septentrionalis' (RZGT00000000)	*Legionella parisiensis* DSM 19216	12.8	[10.1 - 16.1]	18.9	[16.7 - 21.2]	13.2	[10.8 - 15.9]	4.35
'Legionella qingyii' (RZGW00000000)	*Legionella impletisoli* JCM 13919	12.8	[10.1 - 16.0]	18.9	[16.7 - 21.3]	13.1	[10.8 - 15.9]	2.34
'Legionella sp. km772' (RZGQ00000000)	*Legionella taurinensis* NCTC 13314	13.0	[10.2 - 16.2]	18.9	[16.8 - 21.3]	13.3	[11.0 - 16.1]	9.07
'Legionella septentrionalis' (RZGS00000000)	*Legionella wadsworthii* ATCC 33877	12.8	[10.1 - 16.1]	18.9	[16.8 - 21.3]	13.2	[10.8 - 15.9]	4.18
'Legionella qingyii' (RZGX00000000)	*Legionella yabuuchiae* OA1-2	12.7	[10.0 - 15.9]	18.9	[16.7 - 21.3]	13.0	[10.7 - 15.8]	3.15
'Legionella septentrionalis' (RZGS00000000)	*Legionella drancourtii* LLAP 12	12.9	[10.2 - 16.2]	18.9	[16.7 - 21.2]	13.3	[10.9 - 16.0]	2.91
'Legionella septentrionalis' (RZGR00000000)	*Legionella steigerwaltii* ATCC 35302	12.8	[10.1 - 16.1]	18.9	[16.7 - 21.3]	13.2	[10.8 - 15.9]	3.94
'Legionella septentrionalis' (RZGV00000000)	*Legionella drancourtii* LLAP 12	12.9	[10.2 - 16.2]	18.9	[16.7 - 21.3]	13.3	[10.9 - 16.1]	3.07
'Legionella septentrionalis' (RZGR00000000)	*Legionella impletisoli* OA1-1	13.1	[10.4 - 16.4]	18.9	[16.7 - 21.3]	13.5	[11.1 - 16.2]	2.03
'Legionella qingyii' (RZGW00000000)	*Legionella spiritensis* ATCC 35249	12.9	[10.2 - 16.2]	18.8	[16.6 - 21.1]	13.3	[10.9 - 16.0]	7.56
'Legionella qingyii' (QHJG00000000)	*Legionella spiritensis* ATCC 35249	12.8	[10.1 - 16.1]	18.8	[16.6 - 21.1]	13.2	[10.8 - 15.9]	7.58
'Legionella septentrionalis' (RZGT00000000)	**'Legionella sp. km535' (RZGU00000000)**	12.9	[10.2 - 16.2]	18.8	[16.6 - 21.1]	13.3	[10.9 - 16.0]	2.44

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella qingyii' (QHJG00000000)	*Legionella birminghamensis* ATCC 43702	12.9	[10.2 - 16.2]	18.8	[16.6 - 21.2]	13.3	[10.9 - 16.1]	5.66
'Legionella septentrionalis' (RZGT00000000)	*Legionella beliardensis* NCTC 13315	12.8	[10.1 - 16.0]	18.8	[16.6 - 21.1]	13.1	[10.8 - 15.9]	5.0
'Legionella septentrionalis' (RZGS00000000)	*Legionella taurinensis* NCTC 13314	13.1	[10.4 - 16.5]	18.8	[16.6 - 21.2]	13.5	[11.1 - 16.3]	5.9
'Legionella septentrionalis' (RZGR00000000)	*Legionella impletisoli* JCM 13919	13.1	[10.4 - 16.4]	18.8	[16.6 - 21.2]	13.4	[11.1 - 16.2]	2.04
'Legionella sainthelensi' (UFAL00000000)	*Legionella septentrionalis* km711T	13.0	[10.3 - 16.3]	18.7	[16.6 - 21.1]	13.4	[11.0 - 16.2]	5.35
'Legionella septentrionalis' (RZGS00000000)	**'Legionella sainthelensi' (UFAL00000000)**	13.0	[10.3 - 16.3]	18.7	[16.6 - 21.1]	13.4	[11.0 - 16.2]	5.38
'Legionella qingyii' (RZGX00000000)	*Legionella spiritensis* ATCC 35249	12.8	[10.1 - 16.1]	18.7	[16.6 - 21.1]	13.2	[10.9 - 16.0]	7.56
'Legionella qingyii' (QHJG00000000)	*Legionella impletisoli* JCM 13919	12.7	[10.0 - 15.9]	18.7	[16.5 - 21.1]	13.1	[10.7 - 15.8]	2.36
'Legionella septentrionalis' (RZGT00000000)	*Legionella moravica* DSM 19234	12.9	[10.2 - 16.2]	18.7	[16.6 - 21.1]	13.3	[10.9 - 16.1]	2.33
'Legionella septentrionalis' (RZGT00000000)	*Legionella taurinensis* NCTC 13314	13.2	[10.4 - 16.5]	18.6	[16.4 - 21.0]	13.5	[11.1 - 16.3]	5.73
'Legionella septentrionalis' (RZGS00000000)	*Legionella longbeachae* NCTC 11477	12.8	[10.1 - 16.0]	18.6	[16.4 - 20.9]	13.1	[10.8 - 15.9]	5.17
'Legionella septentrionalis' (RZGT00000000)	*Legionella fairfieldensis* ATCC 49588	13.0	[10.3 - 16.2]	18.6	[16.5 - 21.0]	13.3	[11.0 - 16.1]	2.68
'Legionella qingyii' (RZGX00000000)	*Legionella erythra* ATCC 35303	12.9	[10.2 - 16.2]	18.6	[16.4 - 21.0]	13.3	[10.9 - 16.0]	8.87
'Legionella sainthelensi' (UFAM00000000)	*Legionella londiniensis* ATCC 49505	12.7	[10.0 - 16.0]	18.6	[16.4 - 20.9]	13.1	[10.8 - 15.9]	6.46
'Legionella septentrionalis' (RZGV00000000)	*Legionella bozemanae* ATCC 33217	12.8	[10.1 - 16.0]	18.6	[16.4 - 20.9]	13.1	[10.8 - 15.9]	4.4
'Legionella qingyii' (QHJG00000000)	*Legionella erythra* ATCC 35303	12.8	[10.1 - 16.1]	18.6	[16.5 - 21.0]	13.2	[10.9 - 16.0]	8.89
'Legionella sp. km772' (RZGQ00000000)	*Legionella massiliensis* LegA	13.0	[10.3 - 16.3]	18.6	[16.4 - 21.0]	13.4	[11.0 - 16.1]	2.21
'Legionella septentrionalis' (RZGT00000000)	*Legionella nagasakiensis* JCM 15315	13.2	[10.5 - 16.5]	18.6	[16.4 - 21.0]	13.5	[11.2 - 16.3]	1.27
'Legionella septentrionalis' (RZGT00000000)	*Legionella birminghamensis* ATCC 43702	12.8	[10.1 - 16.1]	18.5	[16.3 - 20.9]	13.2	[10.8 - 15.9]	1.14
'Legionella sp. km772' (RZGQ00000000)	*Legionella erythra* ATCC 35303	13.0	[10.3 - 16.3]	18.5	[16.4 - 20.9]	13.3	[11.0 - 16.1]	7.71
'Legionella qingyii' (RZGX00000000)	*Legionella birminghamensis* ATCC 43702	13.0	[10.3 - 16.3]	18.5	[16.3 - 20.8]	13.3	[11.0 - 16.1]	5.64
'Legionella septentrionalis' (RZGS00000000)	*Legionella saoudiensis* LH-SWC	13.1	[10.3 - 16.4]	18.5	[16.3 - 20.9]	13.4	[11.0 - 16.2]	2.73
'Legionella septentrionalis' (RZGS00000000)	*Legionella steelei* ATCC BAA-2169	12.9	[10.2 - 16.2]	18.5	[16.4 - 20.9]	13.3	[10.9 - 16.1]	3.39

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella sp. km535' (RZGU00000000)	*Legionella nagasakiensis* JCM 15315	13.0	[10.2 - 16.2]	18.5	[16.4 - 20.9]	13.3	[10.9 - 16.1]	1.18
'Legionella septentrionalis' (RZGT00000000)	*Legionella jordanis* ATCC 33623	12.9	[10.2 - 16.2]	18.5	[16.4 - 20.9]	13.2	[10.9 - 16.0]	0.65
'Legionella qingyii' (RZGX00000000)	*Legionella impletisoli* OA1-1	12.7	[10.0 - 16.0]	18.5	[16.3 - 20.9]	13.1	[10.8 - 15.9]	2.35
'Legionella septentrionalis' (RZGR00000000)	*Legionella drancourtii* LLAP 12	12.9	[10.2 - 16.2]	18.4	[16.3 - 20.8]	13.2	[10.9 - 16.0]	2.96
'Legionella septentrionalis' (RZGT00000000)	**'Legionella sainthelensi' (UFAM00000000)**	12.7	[10.0 - 16.0]	18.4	[16.2 - 20.8]	13.1	[10.7 - 15.8]	5.49
'Legionella septentrionalis' (RZGR00000000)	*Legionella steelei* ATCC BAA-2169	12.8	[10.1 - 16.1]	18.4	[16.3 - 20.8]	13.2	[10.8 - 15.9]	3.44
'Legionella septentrionalis' (RZGV00000000)	*Legionella wadsworthii* ATCC 33877	12.8	[10.1 - 16.1]	18.4	[16.3 - 20.8]	13.2	[10.8 - 15.9]	4.33
'Legionella sp. km535' (RZGU00000000)	*Legionella spiritensis* ATCC 35249	12.9	[10.2 - 16.2]	18.4	[16.3 - 20.8]	13.3	[10.9 - 16.0]	5.5
'Legionella septentrionalis' (RZGT00000000)	**'Legionella sainthelensi' (UFAL00000000)**	12.8	[10.1 - 16.0]	18.4	[16.3 - 20.8]	13.1	[10.8 - 15.9]	5.55
'Legionella septentrionalis' (RZGR00000000)	*Legionella londiniensis* ATCC 49505	13.2	[10.5 - 16.5]	18.4	[16.3 - 20.8]	13.5	[11.1 - 16.3]	1.1
'Legionella septentrionalis' (RZGV00000000)	*Legionella londiniensis* ATCC 49505	13.2	[10.5 - 16.5]	18.4	[16.3 - 20.8]	13.5	[11.1 - 16.3]	0.99
'Legionella qingyii' (RZGW00000000)	*Legionella londiniensis* ATCC 49505	12.7	[10.0 - 16.0]	18.3	[16.2 - 20.7]	13.1	[10.8 - 15.9]	5.48
'Legionella sp. km772' (RZGQ00000000)	*Legionella rubrilucens* ATCC 35304	12.9	[10.2 - 16.2]	18.3	[16.1 - 20.7]	13.3	[10.9 - 16.1]	8.68
'Legionella septentrionalis' (RZGR00000000)	*Legionella rowbothamii* LLAP6	12.9	[10.2 - 16.2]	18.3	[16.1 - 20.6]	13.3	[10.9 - 16.0]	2.87
'Legionella qingyii' (RZGX00000000)	*Legionella impletisoli* JCM 13919	12.7	[10.0 - 16.0]	18.3	[16.2 - 20.7]	13.1	[10.8 - 15.8]	2.34
'Legionella qingyii' (QHJG00000000)	*Legionella londiniensis* ATCC 49505	12.7	[10.0 - 15.9]	18.3	[16.1 - 20.6]	13.0	[10.7 - 15.8]	5.5
'Legionella septentrionalis' (RZGT00000000)	*Legionella pneumophila* Philadelphia 1	12.9	[10.2 - 16.2]	18.2	[16.0 - 20.6]	13.3	[10.9 - 16.0]	4.06
'Legionella septentrionalis' (RZGR00000000)	**'Legionella qingyii' (RZGW00000000)**	12.8	[10.1 - 16.1]	18.2	[16.0 - 20.6]	13.2	[10.9 - 16.0]	4.38
'Legionella septentrionalis' (RZGR00000000)	*Legionella wadsworthii* ATCC 33877	12.8	[10.1 - 16.1]	18.2	[16.0 - 20.5]	13.2	[10.8 - 15.9]	4.22
'Legionella septentrionalis' (RZGR00000000)	*Legionella saoudiensis* LH-SWC	12.9	[10.2 - 16.2]	18.2	[16.1 - 20.6]	13.3	[10.9 - 16.1]	2.78
'Legionella septentrionalis' (RZGS00000000)	*Legionella gormanii* ATCC 33297	12.9	[10.2 - 16.1]	18.2	[16.0 - 20.6]	13.2	[10.9 - 16.0]	4.08
'Legionella septentrionalis' (RZGT00000000)	*Legionella quateirensis* ATCC 49507	12.8	[10.1 - 16.1]	18.2	[16.1 - 20.6]	13.2	[10.8 - 15.9]	3.33
'Legionella sp. km535' (RZGU00000000)	*Legionella fairfieldensis* ATCC 49588	13.1	[10.4 - 16.4]	18.1	[16.0 - 20.5]	13.4	[11.1 - 16.2]	0.24

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGT00000000)	*Legionella steigerwaltii* ATCC 35302	12.8	[10.1 - 16.0]	18.1	[16.0 - 20.5]	13.1	[10.8 - 15.9]	4.06
'Legionella septentrionalis' (RZGV00000000)	*Legionella rowbothamii* LLAP6	12.9	[10.2 - 16.2]	18.1	[15.9 - 20.4]	13.3	[10.9 - 16.0]	2.98
'Legionella septentrionalis' (RZGT00000000)	*Legionella waltersii* ATCC 51914	12.8	[10.1 - 16.1]	18.1	[16.0 - 20.5]	13.2	[10.8 - 15.9]	3.26
'Legionella septentrionalis' (RZGT00000000)	*Legionella dumoffii* NY 23	12.8	[10.1 - 16.1]	18.1	[15.9 - 20.4]	13.2	[10.9 - 16.0]	2.69
'Legionella septentrionalis' (RZGT00000000)	*Legionella steelei* ATCC BAA-2169	12.8	[10.1 - 16.1]	18.1	[15.9 - 20.4]	13.2	[10.8 - 15.9]	3.56
'Legionella sp. km772' (RZGQ00000000)	*Legionella londiniensis* ATCC 49505	12.8	[10.1 - 16.1]	18.0	[15.8 - 20.3]	13.2	[10.8 - 15.9]	4.32
'Legionella septentrionalis' (RZGR00000000)	*Legionella gormanii* ATCC 33297	12.8	[10.2 - 16.1]	18.0	[15.9 - 20.4]	13.2	[10.9 - 16.0]	4.13
'Legionella septentrionalis' (RZGT00000000)	*Legionella gratiana* ATCC 49413	12.8	[10.1 - 16.0]	18.0	[15.8 - 20.3]	13.1	[10.8 - 15.9]	5.48
'Legionella septentrionalis' (RZGR00000000)	*Legionella qingyii* CCTCC AB 2018025	12.8	[10.1 - 16.0]	18.0	[15.9 - 20.4]	13.1	[10.8 - 15.9]	4.4
'Legionella qingyii' (QHJG00000000)	**'Legionella septentrionalis' (RZGR00000000)**	12.8	[10.1 - 16.0]	18.0	[15.9 - 20.4]	13.1	[10.8 - 15.9]	4.4
'Legionella sp. km535' (RZGU00000000)	*Legionella erythra* ATCC 35303	13.0	[10.2 - 16.2]	18.0	[15.8 - 20.3]	13.3	[10.9 - 16.1]	6.8
'Legionella septentrionalis' (RZGS00000000)	**'Legionella qingyii' (RZGW00000000)**	13.0	[10.3 - 16.3]	18.0	[15.9 - 20.4]	13.3	[11.0 - 16.1]	4.34
'Legionella septentrionalis' (RZGT00000000)	*Legionella impletisoli* OA1-1	13.1	[10.4 - 16.4]	18.0	[15.9 - 20.3]	13.4	[11.1 - 16.2]	2.16
'Legionella septentrionalis' (RZGT00000000)	*Legionella anisa* ATCC 35292	12.7	[10.0 - 16.0]	18.0	[15.9 - 20.4]	13.1	[10.7 - 15.8]	4.14
'Legionella septentrionalis' (RZGS00000000)	*Legionella cherrii* DSM 19213	12.9	[10.2 - 16.1]	18.0	[15.9 - 20.4]	13.2	[10.9 - 16.0]	3.3
'Legionella septentrionalis' (RZGV00000000)	*Legionella spiritensis* ATCC 35249	12.8	[10.1 - 16.1]	18.0	[15.9 - 20.4]	13.2	[10.8 - 15.9]	3.07
'Legionella septentrionalis' (RZGT00000000)	*Legionella bozemanae* ATCC 33217	12.8	[10.1 - 16.0]	18.0	[15.9 - 20.4]	13.1	[10.8 - 15.9]	4.42
'Legionella septentrionalis' (RZGT00000000)	*Legionella norrlandica* LEGN	12.8	[10.2 - 16.1]	18.0	[15.9 - 20.4]	13.2	[10.9 - 16.0]	4.86
'Legionella septentrionalis' (RZGV00000000)	**'Legionella qingyii' (RZGW00000000)**	13.0	[10.3 - 16.2]	18.0	[15.9 - 20.4]	13.3	[11.0 - 16.1]	4.49
'Legionella qingyii' (RZGW00000000)	*Legionella septentrionalis* km711T	13.0	[10.3 - 16.3]	18.0	[15.9 - 20.4]	13.3	[11.0 - 16.1]	4.31
'Legionella septentrionalis' (RZGR00000000)	*Legionella yabuuchiae* OA1-2	13.2	[10.4 - 16.5]	17.9	[15.8 - 20.2]	13.5	[11.1 - 16.3]	1.23

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGS00000000)	*Legionella gormanii* ATCC 33342	12.8	[10.2 - 16.1]	17.9	[15.8 - 20.3]	13.2	[10.9 - 16.0]	4.08
'Legionella septentrionalis' (RZGR00000000)	*Legionella cherrii* DSM 19213	12.9	[10.2 - 16.2]	17.9	[15.8 - 20.3]	13.2	[10.9 - 16.0]	3.34
'Legionella septentrionalis' (RZGV00000000)	*Legionella cherrii* DSM 19213	12.9	[10.2 - 16.2]	17.9	[15.8 - 20.3]	13.3	[10.9 - 16.0]	3.46
'Legionella septentrionalis' (RZGV00000000)	*Legionella yabuuchiae* OA1-2	13.2	[10.4 - 16.5]	17.9	[15.7 - 20.2]	13.5	[11.1 - 16.3]	1.34
'Legionella septentrionalis' (RZGT00000000)	*Legionella londiniensis* ATCC 49505	13.1	[10.4 - 16.4]	17.9	[15.8 - 20.3]	13.4	[11.1 - 16.2]	0.97
'Legionella septentrionalis' (RZGT00000000)	*Legionella impletisoli* JCM 13919	13.1	[10.4 - 16.4]	17.9	[15.8 - 20.3]	13.4	[11.0 - 16.2]	2.17
'Legionella septentrionalis' (RZGT00000000)	*Legionella longbeachae* NCTC 11477	12.7	[10.1 - 16.0]	17.9	[15.8 - 20.3]	13.1	[10.8 - 15.9]	5.34
'Legionella qingyii' (QHJG00000000)	*Legionella septentrionalis* km711T	12.9	[10.2 - 16.2]	17.8	[15.6 - 20.1]	13.2	[10.9 - 16.0]	4.32
'Legionella septentrionalis' (RZGT00000000)	*Legionella tucsonensis* ATCC 49180	12.7	[10.0 - 16.0]	17.8	[15.7 - 20.1]	13.1	[10.8 - 15.9]	4.92
'Legionella septentrionalis' (RZGT00000000)	*Legionella cherrii* DSM 19213	12.9	[10.2 - 16.1]	17.8	[15.6 - 20.1]	13.2	[10.9 - 16.0]	3.47
'Legionella septentrionalis' (RZGV00000000)	*Legionella qingyii* CCTCC AB 2018025	12.8	[10.1 - 16.1]	17.8	[15.6 - 20.1]	13.2	[10.8 - 15.9]	4.52
'Legionella qingyii' (RZGX00000000)	*Legionella londiniensis* ATCC 49505	12.7	[10.0 - 16.0]	17.8	[15.7 - 20.2]	13.1	[10.7 - 15.8]	5.48
'Legionella septentrionalis' (RZGS00000000)	*Legionella qingyii* CCTCC AB 2018025	12.9	[10.2 - 16.2]	17.8	[15.6 - 20.1]	13.2	[10.9 - 16.0]	4.36
'Legionella septentrionalis' (RZGT00000000)	*Legionella erythra* ATCC 35303	13.0	[10.3 - 16.3]	17.8	[15.7 - 20.2]	13.3	[11.0 - 16.1]	4.36
'Legionella septentrionalis' (RZGT00000000)	*Legionella wadsworthii* ATCC 33877	12.8	[10.1 - 16.1]	17.8	[15.6 - 20.1]	13.2	[10.8 - 15.9]	4.35
'Legionella qingyii' (QHJG00000000)	**'Legionella septentrionalis' (RZGS00000000)**	12.9	[10.2 - 16.2]	17.8	[15.6 - 20.1]	13.2	[10.9 - 16.0]	4.35
'Legionella qingyii' (QHJG00000000)	**'Legionella septentrionalis' (RZGV00000000)**	12.8	[10.1 - 16.1]	17.8	[15.6 - 20.1]	13.2	[10.8 - 15.9]	4.51
'Legionella septentrionalis' (RZGR00000000)	*Legionella gormanii* ATCC 33342	12.8	[10.2 - 16.1]	17.7	[15.6 - 20.0]	13.2	[10.9 - 16.0]	4.12
'Legionella septentrionalis' (RZGT00000000)	*Legionella saoudiensis* LH-SWC	12.9	[10.2 - 16.2]	17.7	[15.5 - 20.0]	13.3	[10.9 - 16.0]	2.9
'Legionella septentrionalis' (RZGR00000000)	**'Legionella qingyii' (RZGX00000000)**	12.8	[10.1 - 16.1]	17.7	[15.6 - 20.1]	13.2	[10.8 - 15.9]	4.38
'Legionella septentrionalis' (RZGV00000000)	**'Legionella qingyii' (RZGX00000000)**	12.9	[10.2 - 16.2]	17.6	[15.5 - 20.0]	13.2	[10.9 - 16.0]	4.49

Query	Subject	d_0	C.I. d_0	d_4	C.I. d_4	d_6	C.I. d_6	Diff. G+C Percent
'Legionella septentrionalis' (RZGS00000000)	*Legionella rowbothamii* LLAP6	12.9	[10.2 - 16.2]	17.6	[15.5 - 19.9]	13.3	[10.9 - 16.0]	2.83
'Legionella septentrionalis' (RZGT00000000)	*Legionella cincinnatiensis* ATCC 43753	12.7	[10.0 - 16.0]	17.6	[15.5 - 20.0]	13.1	[10.7 - 15.8]	5.55
'Legionella septentrionalis' (RZGT00000000)	*Legionella worsleiensis* ATCC 49508	13.0	[10.2 - 16.2]	17.6	[15.5 - 20.0]	13.3	[10.9 - 16.1]	2.02
'Legionella septentrionalis' (RZGT00000000)	*Legionella gormanii* ATCC 33297	12.8	[10.1 - 16.1]	17.6	[15.4 - 19.9]	13.2	[10.8 - 15.9]	4.25
'Legionella septentrionalis' (RZGT00000000)	*Legionella rubrilucens* ATCC 35304	13.0	[10.3 - 16.3]	17.6	[15.5 - 20.0]	13.3	[11.0 - 16.1]	5.33
'Legionella septentrionalis' (RZGT00000000)	**'Legionella qingyii' (RZGW00000000)**	12.8	[10.1 - 16.1]	17.5	[15.4 - 19.9]	13.2	[10.8 - 15.9]	4.51
'Legionella qingyii' (RZGX00000000)	*Legionella septentrionalis* km711T	12.9	[10.2 - 16.2]	17.5	[15.4 - 19.8]	13.3	[10.9 - 16.0]	4.31
'Legionella septentrionalis' (RZGT00000000)	*Legionella yabuuchiae* OA1-2	13.2	[10.4 - 16.5]	17.5	[15.4 - 19.8]	13.5	[11.1 - 16.3]	1.36
'Legionella septentrionalis' (RZGT00000000)	*Legionella pneumophila* subsp. *pascullei* ATCC 33737	12.9	[10.2 - 16.2]	17.5	[15.3 - 19.8]	13.2	[10.9 - 16.0]	4.25
'Legionella septentrionalis' (RZGT00000000)	*Legionella gormanii* ATCC 33342	12.8	[10.1 - 16.1]	17.5	[15.4 - 19.9]	13.2	[10.8 - 15.9]	4.25
'Legionella septentrionalis' (RZGT00000000)	*Legionella rowbothamii* LLAP6	12.9	[10.2 - 16.2]	17.5	[15.4 - 19.9]	13.3	[10.9 - 16.0]	3.0
'Legionella septentrionalis' (RZGS00000000)	**'Legionella qingyii' (RZGX00000000)**	12.9	[10.2 - 16.2]	17.5	[15.4 - 19.8]	13.3	[10.9 - 16.0]	4.34
'Legionella septentrionalis' (RZGS00000000)	*Legionella yabuuchiae* OA1-2	13.3	[10.5 - 16.6]	17.5	[15.4 - 19.9]	13.6	[11.2 - 16.4]	1.18
'Legionella septentrionalis' (RZGT00000000)	*Legionella drancourtii* LLAP 12	12.8	[10.1 - 16.1]	17.4	[15.3 - 19.7]	13.2	[10.8 - 15.9]	3.09
'Legionella septentrionalis' (RZGT00000000)	*Legionella spiritensis* ATCC 35249	12.8	[10.1 - 16.1]	17.4	[15.3 - 19.7]	13.2	[10.8 - 15.9]	3.06
'Legionella sp. km772' (RZGQ00000000)	*Legionella spiritensis* ATCC 35249	12.9	[10.2 - 16.2]	17.3	[15.2 - 19.6]	13.3	[10.9 - 16.0]	6.4
'Legionella septentrionalis' (RZGT00000000)	*Legionella qingyii* CCTCC AB 2018025	12.7	[10.1 - 16.0]	17.2	[15.1 - 19.6]	13.1	[10.8 - 15.9]	4.53
'Legionella qingyii' (QHJG00000000)	**'Legionella septentrionalis' (RZGT00000000)**	12.7	[10.1 - 16.0]	17.2	[15.1 - 19.6]	13.1	[10.8 - 15.9]	4.53
'Legionella septentrionalis' (RZGT00000000)	**'Legionella qingyii' (RZGX00000000)**	12.8	[10.1 - 16.1]	17.1	[15.0 - 19.4]	13.2	[10.8 - 15.9]	4.51

Table 4: Strains in your dataset

Joint dataset of automatically determined closest type strains (if this mode was chosen), manually selected type strains (if selected accordingly) and the provided user strains, if provided (marked in yellow).

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella oakridgensis ATCC 33761	Orrison et al. 1983	CIP 103884; CCUG 16414; DSM 21215; NCTC 11531; Oak Ridge 10; OR-10	*Legionella oakridgensis*	2773209	40.9	2932	Gp0013845	PRJNA183980	SAMN02641506	GCA_000512355	2558860203
Legionella pneumophila subsp. *pascullei* ATCC 33737	Brenner et al. 1989	CIP 105570; CCUG 31226 A; CCUG 31226; DSM 7515; U8W	*Legionella pneumophila* subsp. *pascullei*	3431069	38.1	3048	Gp0133674	PRJNA239272	SAMN02650970	GCA_000586255	
Legionella beliardensis NCTC 13315	Lo Presti et al. 2001	CIP 106632; ATCC 700512; DSM 19152; liard A1; Montbeliard A1; Montbéliard A1	*Legionella beliardensis*	3538304	37.3	3125	Gp0384399	PRJEB6403	SAMEA4412675	GCA_900452395	
Legionella septentrionalis km711T	Li et al. 2021	KCTC 15655; NBRC 113219	*Legionella septentrionalis*	2651472	42.1	2359		PRJNA224116	SAMN10610692	GCF_003989745	
Legionella shakespearei DSM 23087	Verma et al. 1992	214; CIP 103541; ATCC 49655; CCUG 31228 A; CCUG 31228; NCTC 12829	*Legionella shakespearei*	3508986	41.7	2985	Gp0013848	PRJNA169766	SAMN02440432	GCA_000373765	2515154162

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella longbeachae NCTC 11477	McKinney et al. 1982	CIP 103880; ATCC 33462; CCUG 46622; DSM 10572; Long Beach 4	*Legionella longbeachae*	4121576	37.0	3445		PRJNA510202	SAMN10599827	GCA_004283175	
Legionella taurinensis NCTC 13314	Lo Presti et al. 1999	CIP 106300; ATCC 700508; CCUG 44901; DSM 21897; Turin I n° 1; Turin I No. 1	*Legionella taurinensis*	3151601	48.1	2876	Gp0384400	PRJEB6403	SAMEA4412680	GCA_900452865	
Legionella impletisoli OA1-1	Kuroki et al. 2007	DSM 18493; JCM 13919; OA1-1	*Legionella impletisoli*	2492103	40.2	2316		PRJEB24896	SAMEA5198051	GCA_900639875	
Legionella clemsonensis CDC-D5610	Palmer et al. 2016		*Legionella clemsonensis*	3272100	39.4	2932	Gp0258950	PRJNA326348	SAMN05254214	GCA_002240035	
Legionella moravica DSM 19234	Wilkinson et al. 1989	316-36; CIP 103883; ATCC 43877; CCUG 31117; NCTC 12239; CDC 1634; CDC 1634-CZK-E	*Legionella moravica*	3761766	40.0	3219	Gp0013844	PRJNA185635	SAMN02441510	GCA_000423305	2522572178

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella gormanii ATCC 33342	Morris et al. 1980	CIP 104724; ATCC 33297; ATCC 33342; CCUG 12267; DSM 16641; DSM 25296; NCTC 11401; LS-13	*Fluoribacter gormanii*; *Legionella gormanii*	3812314	38.1	3345	Gp0131767	PRJNA329785	SAMN05421777	GCA_900156395	2681812897
Legionella rowbothamii LLAP6	Adeleke et al. 2001	ATCC 700991; CCUG 43887; DSM 21678	*Legionella rowbothamii*	3966228	39.3	3426		PRJEB24896	SAMEA5198062	GCA_900639985	
Legionella yabuuchiae OA1-2	Kuroki et al. 2007	DSM 18492; JCM 14148	*Legionella yabuuchiae*	2638659	41.0	2378		PRJEB24896	SAMEA5198072	GCA_900640115	
Legionella nagasakiensis JCM 15315	Yang et al. 2012	ATCC BAA-1557; CDC-1796-JAP-E	*Legionella nagasakiensis*	2676583	41.1	2534		PRJEB24896	SAMEA5198055	GCA_900639915	
Legionella saoudiensis LH-SWC	Bajrai et al. 2016	DSM 101682; CSUR P2101; LS-1	*Legionella saoudiensis*	3846014	39.4	3341	Gp0143847	PRJEB11688	SAMEA3647790	GCA_001465875	
Legionella sainthelensi ATCC 35248	Campbell et al. 1984	CIP 103885; CCUG 29672; DSM 19231; NCTC 11988; Mt. St. Helens 4	*Legionella sainthelensi*	4108625	37.0	3550	Gp0018889	PRJNA223118	SAMN02744009	GCA_000621685	2558309002

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella cherrii DSM 19213	Brenner et al. 1985	CIP 103842; ATCC 35252; CCUG 29666; NCTC 11976; ORW	*Legionella cherrii*	3698 064	38.9	3177	Gp0013839	PRJNA222237	SAMN02743988	GCA_000621385	2558309037
Legionella fairfieldensis ATCC 49588	Thacker et al. 1991	1725-Aus-E; CIP 105266; CCUG 31235 A; CCUG 31235; NCTC 12488	*Legionella fairfieldensis*	2651 631	39.6	2506	Gp0044111	PRJNA223037	SAMN02743993	GCA_000621525	2558860982
Legionella wadsworthii ATCC 33877	Edelstein et al. 1983	CIP 103886; CCUG 16415; DSM 21896; NCTC 11532; Wadsworth 81-716A	*Legionella wadsworthii*	3573 650	38.0	3168	Gp0018919	PRJNA234416	SAMN02744130	GCA_000701265	2561511070
Tamlana fucoidanivorans CW2-9T	Li et al. 2020	CICC 24749; KCTC 72389	*Allotamlana fucoidanivorans*; *Tamlana fucoidanivorans*	3999 027	34.3	3345		PRJNA544675	SAMN11845908	GCA_006265225	
Legionella jamestowniensis DSM 19215	Brenner et al. 1985	CIP 103845; ATCC 35298; CCUG 29669; JCM 7590; NCTC 11981; JA-26-G1-E2	*Legionella jamestowniensis*	3408 907	39.4	3036	Gp0013842	PRJNA221073	SAMN02746073	GCA_900114725	2600255316
Legionella qingyii CCTCC AB 2018025	Wu et al. 2019	KCTC 15636; km488; NRBC 113223	*Legionella qingyii*	5227 415	37.8	3955	Gp0389901	PRJNA465828	SAMN09090942	GCA_003184185	

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella fallonii LLAP-10	Adeleke et al. 2001	ATCC 700992; CCUG 43886; DSM 19889	*Legionella fallonii*	4434 890	38.3	3850	Gp0122638	PRJEB7322	SAMEA2785663	GCA_000953135	
Legionella hackeliae ATCC 35250	Brenner et al. 1985	CIP 103844; CCUG 31232 A; CCUG 31232; DSM 19214; JCM 7563; NCTC 11979; Lansing 2	*Legionella hackeliae*	3570 857	39.0	3218	Gp0122637	PRJEB7321	SAMEA2785664	GCA_000953655	
Legionella norrlandica LEGN	Rizzardi et al. 2015	ATCC BAA-2678; CCUG 65936; NCTC 14631	*Legionella norrlandica*	3070 847	37.5	2338	Gp0094869	PRJNA246269	SAMN02746164	GCA_000770585	
Legionella massiliensis LegA	Campocasso et al. 2012	DSM 24804; CSUR P146	*Legionella massiliensis*	4387 007	41.2	3767	Gp0044362	PRJEB6598	SAMEA2747211	GCA_000756815	
Legionella bozemanae ATCC 33217	(Garrity et al. 1980) Brenner et al. 1980	ALLO1; CIP 103872; DSM 16523; WIGA	*Fluoribacter bozemanae*; *Legionella bozemanae*	4113 435	37.9	3624		PRJNA281295	SAMN03486950	GCA_001648595	
Legionella jordanis ATCC 33623	Cherry et al. 1982	CIP 105268; CCUG 16413; DSM 19212; NCTC 11533; BL-540	*Legionella jordanis*	3087 298	41.7	2825		PRJNA281299	SAMN03486956	GCA_001648675	

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella gormanii ATCC 33297	Morris et al. 1980	CIP 104724; ATCC 33297; ATCC 33342; CCUG 12267; DSM 16641; DSM 25296; NCTC 11401; LS-13	*Fluoribacter gormanii*; *Legionella gormanii*	3812 103	38.1	3301		PRJNA281301	SAMN03486957	GCA_001648685	
Legionella dumoffii NY 23	Brenner et al. 1980	CIP 103876; ATCC 33279; CCUG 11881; DSM 17625; NCTC 11370	*Fluoribacter dumoffii*; *Legionella dumoffii*	3894 641	39.6	3449	Gp0012805	PRJNA74015	SAMN02469353	GCA_000236165	2547132117
Legionella impletisoli JCM 13919	Kuroki et al. 2007	DSM 18493; JCM 13919; OA1-1	*Legionella impletisoli*	2485 448	40.2	2291		PRJDB10510	SAMD00245244	GCA_014646855	
Legionella drancourtii LLAP 12	La Scola et al. 2004	ATCC 50991	*Legionella drancourtii*	8140 168	39.2	3959	Gp0004932	PRJNA39279	SAMN02471332	GCA_000162755	645058794
Legionella parisiensis DSM 19216	Brenner et al. 1985	CIP 103847; ATCC 35299; CCUG 29670; JCM 7561; NCTC 11983; PF-209C-C2	*Legionella parisiensis*	4232 284	38.0	3916	Gp0378973	PRJNA312141	SAMN04495209	GCA_001736145	

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella anisa ATCC 35292	Gorman et al. 1985	CIP 103870; CCUG 29665; DSM 17627; JCM 7573; NBIMCC 8852; NCTC 11974; WA-316-C3	*Legionella anisa*	4396 893	38.2	3732	Gp0133607	PRJNA224116	SAMN04274764	GCF_001467525	
Legionella gratiana ATCC 49413	Bornstein et al. 1991	CIP 105267; CCUG 44894; DSM 21233; NCTC 12388; CDC 1242; Lyon 8420412	*Legionella gratiana*	3924 747	36.8	3446	Gp0132661	PRJNA224116	SAMN04274776	GCF_001467695	
Legionella brunensis ATCC 43878	Wilkinson et al. 1989	441-1; CIP 103874; CCUG 31114; DSM 19236; NCTC 12240; CDC 1635	*Legionella brunensis*	3748 018	38.7	3170	Gp0132962	PRJNA224116	SAMN04274767	GCF_001467025	
Legionella londiniensis ATCC 49505	Dennis et al. 1993	1477; CIP 105269; CCUG 44895; DSM 21234; NCTC 12374	*Legionella londiniensis*	2400 013	43.3	2129	Gp0133319	PRJNA224116	SAMN04274782	GCF_001467825	
Legionella birminghamensis ATCC 43702	Wilkinson et al. 1988	1407-AL-H; CIP 103871; CCUG 31233 A; CCUG 31233; DSM 19232; JCM 7559; NCTC 12437	*Legionella birminghamensis*	3736 683	43.5	3235	Gp0133232	PRJNA224116	SAMN04274765	GCF_001467505	

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella erythra ATCC 35303	Brenner et al. 1985	CIP 103843; CCUG 29667; DSM 17644; JCM 7564; NCTC 11977; SE-32A-C8	*Legionella erythra*	3237 543	46.7	2961	Gp0133677	PRJNA224116	SAMN04274772	GCF_001467615	
Legionella rubrilucens ATCC 35304	Brenner et al. 1985	CIP 103848; CCUG 29671; DSM 11884; JCM 7565; NCTC 11987; WA-270A-C2	*Legionella rubrilucens*	3128 807	47.7	2874	Gp0132663	PRJNA224116	SAMN04274791	GCF_001468125	
Legionella santicrucis ATCC 35301	Brenner et al. 1985	CIP 103849; CCUG 29673; DSM 19325; DSM 23075; JCM 7557; NCTC 11989; SC-63-C7	*Legionella santicrucis*	4818 052	36.7	4254	Gp0133608	PRJNA224116	SAMN04274793	GCF_001468135	
Legionella spiritensis ATCC 35249	Brenner et al. 1985	CIP 103850; CCUG 29715; CCUG 31118; DSM 19324; JCM 7562; NCTC 11990; Mount Saint Helens 9; Mt St Helens-9	*Legionella spiritensis*	3312 138	45.4	2944	Gp0133505	PRJNA224116	SAMN04274795	GCF_001468165	
Legionella steelei ATCC BAA-2169	Edelstein et al. 2012	IMVS 3113; IMVS 3376	*Legionella steelei*	4227 062	38.8	3716	Gp0133443	PRJNA224116	SAMN04274796	GCF_001468005	

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella steigerwaltii ATCC 35302	Brenner et al. 1985	CIP 103851; CCUG 29674; DSM 23076; JCM 7558; NCTC 11991; SC-18-C9	*Legionella steigerwaltii*	3948 340	38.3	3471	Gp0133609	PRJNA224116	SAMN04274797	GCF_001468065	
Legionella waltersii ATCC 51914	Benson et al. 1996	2074-AUS-E; CIP 104965; CCUG 44924; DSM 21908	*Legionella waltersii*	3648 718	39.1	3387	Gp0132986	PRJNA224116	SAMN04274799	GCF_001468085	
Legionella pneumophila Philadelphia 1	Brenner et al. 1979 emend. Brenner et al. 1988	CIP 103854; ATCC 33152; CCUG 9568; DSM 25069; DSM 7513; JCM 7571; NBIMCC 8848; NCTC 11192	*Legionella pneumophila*; *Legionella pneumophila* subsp. *pneumophila*	3397 753	38.3	2942	Gp0000541	PRJNA22	SAMN02603156	GCA_000008485	637000148
Legionella quateirensis ATCC 49507	Dennis et al. 1993	1335; CIP 105271; CCUG 44899; DSM 21253; NCTC 12376	*Legionella quateirensis*	4197 232	39.0	3522	Gp0133462	PRJNA224116	SAMN04274789	GCF_001467955	
Legionella worsleiensis ATCC 49508	Dennis et al. 1993	1347; CIP 105114; CCUG 44923; DSM 21907; NCTC 12377	*Legionella worsleiensis*	3065 894	40.3	2643	Gp0133187	PRJNA224116	SAMN04274800	GCF_001467535	

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
Legionella pneumophila subsp. *fraseri* ATCC 33156	Brenner et al. 1989	CIP 103858; CCUG 13398; DSM 7514; NBIMCC 8887; NCTC 11233; Los Angeles 1; Los Angelos-1	*Legionella pneumophila* subsp. *fraseri*	2203310	37.8	1968	Gp0133226	PRJNA224116	SAMN02650967	GCF_000586315	
Legionella tucsonensis ATCC 49180	Thacker et al. 1990	1087-AZ-H; CIP 105113; CCUG 31119; DSM 19246; NCTC 12439	*Legionella tucsonensis*	3356307	37.4	2965	Gp0133365	PRJNA224116	SAMN04274798	GCF_001468035	
Legionella cincinnatiensis ATCC 43753	Thacker et al. 1989	72-OH-H; CIP 103875; CCUG 31230 A; CCUG 31230; DSM 19233; NCTC 12438	*Legionella cincinnatiensis*	4052168	36.8	3467	Gp0132660	PRJNA224116	SAMN04274769	GCF_001467545	
'Legionella qingyii' (QHJG00000000)				5241559	37.8	4197					
'Legionella sp. km772' (RZGQ00000000)				3407521	39.0	3274					
'Legionella septentrionalis' (RZGR00000000)				2569255	42.2	2411					
'Legionella septentrionalis' (RZGS00000000)				2660547	42.2	2491					

Strain	Authority	Other deposits	Synonyms	Base pairs	Percent G+C	No. proteins	Goldstamp	Bioproject accession	Biosample accession	Assembly accession	IMG OID
'Legionella septentrionalis' (RZGT00000000)				2445666	42.3	2266					
'Legionella sp. km535' (RZGU00000000)				3677876	39.9	3125					
'Legionella septentrionalis' (RZGV00000000)				2545809	42.3	2366					
'Legionella qingyii' (RZGW00000000)				3721623	37.8	3225					
'Legionella qingyii' (RZGX00000000)				3808297	37.8	3314					
'Legionella sainthelensi' (UFAL00000000)				4095037	36.8	3511					
'Legionella sainthelensi' (UFAM00000000)				4516585	36.8	3990					

Methods, Results and References

The genome sequence data were uploaded to the Type (Strain) Genome Server (TYGS), a free bioinformatics platform available under https://tygs.dsmz.de, for a whole genome-based taxonomic analysis [1]. The analysis also made use of recently introduced methodological updates and features [2,3]. Information on nomenclature, synonymy and associated taxonomic literature was provided by TYGS's sister database, the List of Prokaryotic names with Standing in Nomenclature (LPSN, available at https://lpsn.dsmz.de) [2,3]. The results were provided by the TYGS on 2021-03-27. The TYGS analysis was subdivided into the following steps:

Determination of closely related type strains

Determination of closest type strain genomes was done in two complementary ways: First, all user genomes were compared against all type strain genomes available in the TYGS database via the MASH algorithm, a fast approximation of intergenomic relatedness [4], and, the ten type strains with the smallest MASH distances chosen per user genome. Second, an additional set of ten closely related type strains was determined via the 16S rDNA gene sequences. These were extracted from the user genomes using RNAmmer [5] and each sequence was subsequently BLASTed [6] against the 16S rDNA gene sequence of each of the currently 25333 type strains available in the TYGS database. This was used as a proxy to find the best 50 matching type strains (according to the bitscore) for each user genome and to subsequently calculate precise distances using the Genome BLAST Distance Phylogeny approach (GBDP) under the algorithm 'coverage' and distance formula d_5 [7]. These distances were finally used to determine the 10 closest type strain genomes for each of the user genomes.

Pairwise comparison of genome sequences

For the phylogenomic inference, all pairwise comparisons among the set of genomes were conducted using GBDP and accurate intergenomic distances inferred under the algorithm 'trimming' and distance formula d_5 [7]. 100 distance replicates were calculated each. A second GBDP phylogenomic analysis was inferred using the amino acid sequences of the entire proteome, promising a better resolved phylogeny in datasets of only remotely related strains. Digital DDH values and confidence intervals were calculated using the recommended settings of the GGDC 4.0 [2,7].

Phylogenetic inference

The resulting intergenomic distances were used to infer a balanced minimum evolution tree with branch support via FASTME 2.1.6.1 including SPR postprocessing [8]. Branch support was inferred from 100 pseudo-bootstrap replicates each. The trees were rooted at the midpoint [9] and visualized with PhyD3 [10].

Type-based species and subspecies clustering

The type-based species clustering using a 70% dDDH radius around each of the 51 type strains was done as previously described [1]. The resulting groups are shown in Table 1 and 4. Subspecies clustering was done using a 79% dDDH threshold as previously introduced [11].

Results

Type-based species and subspecies clustering

The resulting species and subspecies clusters are listed in Table 4, whereas the taxonomic identification of the query strains is found in Table 1. Briefly, the clustering yielded 51 species clusters and the provided query strains were assigned to 5 of these. Moreover, user strains were located in 6 of 53 subspecies clusters.

Figure caption SSU tree

Figure 1. Tree inferred with FastME 2.1.6.1 [8] from GBDP distances calculated from 16S rDNA gene sequences. The branch lengths are scaled in terms of GBDP distance formula d_5. The numbers above branches are GBDP pseudo-bootstrap support values > 60 % from 100 replications, with an average branch support of 61.3 %. The tree was rooted at the midpoint [9].

Figure caption genome tree

Figure 2. Tree inferred with FastME 2.1.6.1 [8] from GBDP distances calculated from genome sequences. The branch lengths are scaled in terms of GBDP distance formula d_5. The numbers above branches are GBDP pseudo-bootstrap support values > 60 % from 100 replications, with an average branch support of 37.6 %. The tree was rooted at the midpoint [9].

Figure caption proteome tree

Figure 3. Tree inferred with FastME 2.1.6.1 [8] from whole-proteome-based GBDP distances. The branch lengths are scaled via GBDP distance formula d_5. Branch values are GBDP pseudo-bootstrap support values > 60 % from 100 replications, with an average branch support of 91.4 %. The tree was midpoint-rooted [9].

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