

logo

Clostridium septicum	ATGAAAATTATTAATATTGGAGTTTTAGCTCATGTTGATGCGGGAAAAAACTACCTTAACAGAAAAGCTTATTATATAACAGTGGAGCGATTACAGAATTAG	100
RV-16	ATGAAAATTATTAATATTGGAGTTTTAGCTCATGTTGATGCGGGAAAAAACTACCTTAACAGAAAAGCTTATTATATAACAGTGGAGCGATTACAGAATTAG	100
Bryansk 36/16/08	.....	0
Bryansk 36/16/09	.....	0
Bryansk 36/16/10	.....	0
Bryansk 36/16/11	.....	0
Bryansk 36/16/12	.....	0
Bryansk 36/16/14	.....	0
Novosibirsk 10222	.....	0
Novosibirsk 10223	.....	0
Bryansk 36/16/13	.....	0
Omsk 19/15/006	.....	0
Novosibirsk 10226	.....	0
DMV42A	ATGAAAATTATTAATATAGGTGTTTTAGCTCATGTTGACGCAGGAAAAAACTACTTTGACAGAAAAGCTTACTATATACTAGTGGAGCGATTGCGGAGTCAG	100
CJ	.....	0
Astrakhan 14/16/16	.....	0
Novosibirsk 2	.....	0
Kazan 09/15/001	.....	0
Kaluga 10219	.....	0
Kaluga 10218	.....	0
Chuvashiya 10214	.....	0
Kazan 09/15/002	.....	0
Ryazan 3153	.....	0
Ryazan 3079	.....	0
Arkhangelsk 69	.....	0
Arkhangelsk 67	.....	0
Arkhangelsk 62	.....	0
Arkhangelsk 46	.....	0
Chuvashiya 10213	.....	0
Chuvashiya 10209	.....	0
Chuvashiya 10210	.....	0
Chuvashiya 10212	.....	0
Kaluga 36	.....	0
Rits9	ATGAAAATTATTAATATTGGAGTTTTAGCTCATGTTGATGCAGGAAAAAACTACCTTAACAGAAAAGCTTATTATATAACAGTGGAGCGATTACAGAATTAG	100
JH2-2	.....TTATTATATAACAGTGGAGCGATTACAGAATTAG	34
F01	ATGAAAATTATTAATATTGGAGTTTTAGCTCATGTTGATGCAGGAAAAAACTACCTTAACAGAAAAGCTTATTATATAACAGTGGAGCGATTACAGAATTAG	100
CHS-1E	.....	0
consensus	.....	0

logo

Clostridium septicum	GAAGCGTGGACAGAGGTACAACGAAAACGGATAATACGCTTTTAGAA	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	200
RV-16	GAAGCGTGGACAGAGGTACAACGAAAACGGATAATACGCTTTTAGAA	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	200
Bryansk 36/16/08	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Bryansk 36/16/09	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Bryansk 36/16/10	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Bryansk 36/16/11	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Bryansk 36/16/12	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Bryansk 36/16/14	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Novosibirsk 10222	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Novosibirsk 10223	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Bryansk 36/16/13	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGGAATA	53
Omsk 19/15/006	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Novosibirsk 10226	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
DMV42A	GAAGCGTGGATACAGGCACAACAAGAACGGATACTACATTTTGTAGAA	CGTCAGCAGGAATTACAATTCAGACAGCAGTAACCTCTTTTCAGTGGAAAAA	200
CJ	.....	.....	0
Astrakhan 14/16/16	.....	CGTCAGAGAGGACCTTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Novosibirsk 2	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Kazan 09/15/001	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Kaluga 10219	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Kaluga 10218	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Chuvashiya 10214	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Kazan 09/15/002	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Ryazan 3153	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Ryazan 3079	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Arkhangelsk 69	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Arkhangelsk 67	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Arkhangelsk 62	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Arkhangelsk 46	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Chuvashiya 10213	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Chuvashiya 10209	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Chuvashiya 10210	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Chuvashiya 10212	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Kaluga 36	.....	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	53
Rits9	GAAGCGTGGACAAAGGTACAACGAGGACGGATAATACGCTTTTAGAA	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	200
JH2-2	GAAGCGTGGACAAAGGTACAACGAGGACGGATAATACGCTTTTAGAA	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	134
F01	GAAGCGTGGACAAAGGTACAACGAGGACGGATAATACGCTTTTAGAA	CGTCAGAGAGGAATTACAATTCAGACAGGAATAACCTCTTTTCAGTGGAAAAA	200
CHS-1E	.....	.....	0
consensus	.....	*****

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

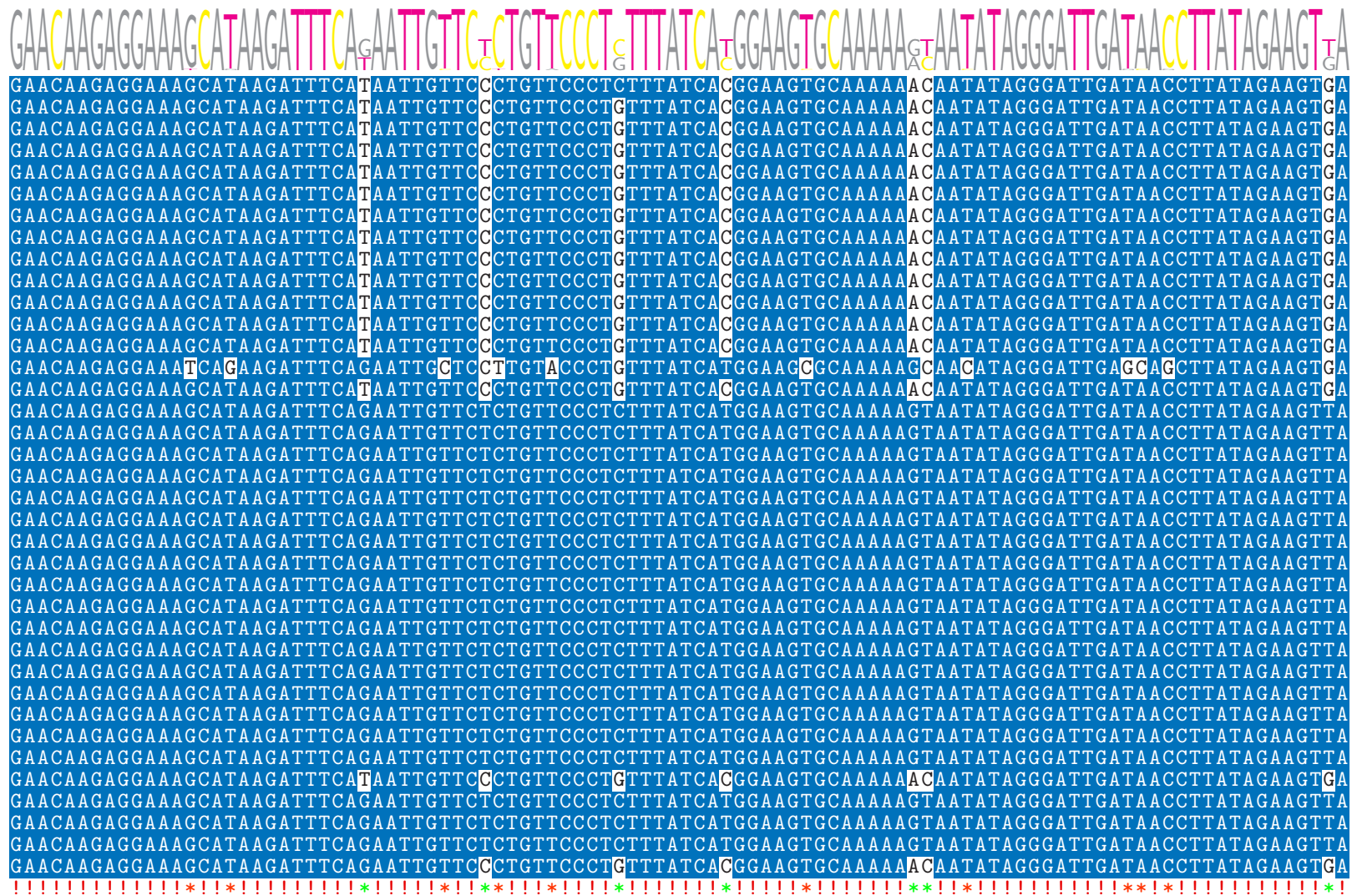
Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

logo



Clostridium septicum RV-16	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	1100
Bryansk 36/16/08	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	1100
Bryansk 36/16/09	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Bryansk 36/16/10	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Bryansk 36/16/11	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Bryansk 36/16/12	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Bryansk 36/16/14	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Novosibirsk 10222	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Novosibirsk 10223	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Bryansk 36/16/13	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
Omsk 19/15/006	CACAGAGAGAGA..ATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	951
Novosibirsk 10226	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	953
DMV42A	CACAGAGAGAGAGAATTGAAAATCCCTCCCTCTGCTGCAAACGACTGTTGAACCGAGTAAACCTCAACAAGGAAATGTTACTTGATGCACTTTTAGA	1100
CJ	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	590
Astrakhan 14/16/16	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Novosibirsk 2	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Kazan 09/15/001	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Kaluga 10219	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Kaluga 10218	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Chuvashiya 10214	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Kazan 09/15/002	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Ryazan 3153	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Ryazan 3079	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Arkhangelsk 69	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Arkhangelsk 67	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Arkhangelsk 62	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Arkhangelsk 46	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Chuvashiya 10213	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Chuvashiya 10209	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Chuvashiya 10210	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Chuvashiya 10212	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Kaluga 36	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	953
Rits9	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	1100
JH2-2	.....	754
F01	CACAGAGAAAAAGATTGAAAATCCGCACCCTCTACTACAAACAAGTGTGAACCGAGTAAACCTGAACAGAGAGAAATGTTGCTTGATGCCCTTTTGGGA	1100
CHS-1E	.....	590
consensus	*****	

logo

Clostridium septicum	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1200
RV-16	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1200
Bryansk 36/16/08	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Bryansk 36/16/09	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Bryansk 36/16/10	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Bryansk 36/16/11	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Bryansk 36/16/12	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Bryansk 36/16/14	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Novosibirsk 10222	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Novosibirsk 10223	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Bryansk 36/16/13	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
Omsk 19/15/006	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1051
Novosibirsk 10226	AATCTCCGACAGTGACCCGCTTCTGCGATATTATGTGGATTCTGCGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1053
DMV42A	AATCTCCGACAGTGACCCGCTTCTACAAATATTATGTGGATTCTACGACACATGAAATATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGA	1200
CJ	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	690
Astrakhan 14/16/16	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Novosibirsk 2	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Kazan 09/15/001	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Kaluga 10219	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Kaluga 10218	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Chuvashiya 10214	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Kazan 09/15/002	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Ryazan 3153	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Ryazan 3079	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Arkhangelsk 69	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Arkhangelsk 67	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Arkhangelsk 62	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Arkhangelsk 46	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Chuvashiya 10213	AATCTCAGATAGTGACCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Chuvashiya 10209	AATCTCAGATAGTGACCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Chuvashiya 10210	AATCTCAGATAGTGACCCGCTTCTGCGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Chuvashiya 10212	AATCTCAGATAGTGACCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Kaluga 36	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1053
Rits9	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1200
JH2-2	.....	754
F01	AATCTCAGATAGTGATCCGCTTCTACGATATTACGTGGATTCTACGACACATGAAATTATACCTTTCTTTCTTAGGGAAAGTACAAATGGAAGTGATTAGT	1200
CHS-1E	.....	590
consensus	*****	

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible][illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible][illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible]

Clostridium septicum
RV-16
Bryansk 36/16/08
Bryansk 36/16/09
Bryansk 36/16/10
Bryansk 36/16/11
Bryansk 36/16/12
Bryansk 36/16/14
Novosibirsk 10222
Novosibirsk 10223
Bryansk 36/16/13
Omsk 19/15/006
Novosibirsk 10226
DMV42A
CJ
Astrakhan 14/16/16
Novosibirsk 2
Kazan 09/15/001
Kaluga 10219
Kaluga 10218
Chuvashiya 10214
Kazan 09/15/002
Ryazan 3153
Ryazan 3079
Arkhangelsk 69
Arkhangelsk 67
Arkhangelsk 62
Arkhangelsk 46
Chuvashiya 10213
Chuvashiya 10209
Chuvashiya 10210
Chuvashiya 10212
Kaluga 36
Rits9
JH2-2
F01
CHS-1E
consensus

[illegible][illegible]

logo

Clostridium septicum	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGTCCAAATAGTCGGATAGATAAAAGTACGATATA	1900
RV-16	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGTCCAAATAGTCGGATAGATAAAAGTACGATATA	1900
Bryansk 36/16/08	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Bryansk 36/16/09	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Bryansk 36/16/10	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Bryansk 36/16/11	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Bryansk 36/16/12	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Bryansk 36/16/14	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Novosibirsk 10222	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Novosibirsk 10223	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Bryansk 36/16/13	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Omsk 19/15/006	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1720
Novosibirsk 10226	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
DMV42A	AGCGTTTGTTTAAACAGAGTTAAAAGGGTACTATGTTACTACTGGTGAATCTGTTTGTCAGCCCCGTCGTCCAAATAGTCGGATAGATAAAAGTACGATATA	1900
CJ		1099
Astrakhan 14/16/16	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Novosibirsk 2	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Kazan 09/15/001	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Kaluga 10219	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Kaluga 10218	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Chuvashiya 10214	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Kazan 09/15/002	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Ryazan 3153	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Ryazan 3079	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Arkhangelsk 69	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Arkhangelsk 67	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Arkhangelsk 62	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Arkhangelsk 46	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Chuvashiya 10213	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Chuvashiya 10209	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Chuvashiya 10210	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Chuvashiya 10212	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Kaluga 36	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGT	1722
Rits9	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGTCTAAATAGTCGGATAGATAAAAGTAAGATATA	1900
JH2-2		754
F01	AGTGTGTTGTTTAAACAGAGTTAAAAGGGTACCATGTTACTACCGGTGAACCTGTTTGCCAGCCCCGTCGTCCAAATAGTCGGATAGATAAAAGTACGATATA	1900
CHS-1E		590
consensus	*****	

logo

	TGTTCAATAAAATAACTTAG	
Clostridium septicum	TGTTCAATAAAATAACTTAG	1920
RV-16	TGTTCAATAAAATAACTTAG	1920
Bryansk 36/16/08	.....	1722
Bryansk 36/16/09	.....	1722
Bryansk 36/16/10	.....	1722
Bryansk 36/16/11	.....	1722
Bryansk 36/16/12	.....	1722
Bryansk 36/16/14	.....	1722
Novosibirsk 10222	.....	1722
Novosibirsk 10223	.....	1722
Bryansk 36/16/13	.....	1722
Omsk 19/15/006	.....	1720
Novosibirsk 10226	.....	1722
DMV42A	TGTTCAATAAAATAACTTAG	1920
CJ	.....	1099
Astrakhan 14/16/16	.....	1722
Novosibirsk 2	.....	1722
Kazan 09/15/001	.....	1722
Kaluga 10219	.....	1722
Kaluga 10218	.....	1722
Chuvashiya 10214	.....	1722
Kazan 09/15/002	.....	1722
Ryazan 3153	.....	1722
Ryazan 3079	.....	1722
Arkhangelsk 69	.....	1722
Arkhangelsk 67	.....	1722
Arkhangelsk 62	.....	1722
Arkhangelsk 46	.....	1722
Chuvashiya 10213	.....	1722
Chuvashiya 10209	.....	1722
Chuvashiya 10210	.....	1722
Chuvashiya 10212	.....	1722
Kaluga 36	.....	1722
Rits9	TGTTCAATAAAATAACTTAG	1920
JH2-2	.....	754
F01	TGTTCAATAAAATAACTTAG	1920
CHS-1E	.....	590
consensus		

☐ non-conserved
☒ ≥ 50% conserved