

	5	15	25	35	45	55
B.pertussis ATCC 9797	CGTCCGGCCG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGCAT	GCGTGCAGAT
B.bronchiseptica AB 1254	CGTCCGGCCG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGTAT	GCGCGCGGAT
B.bronchiseptica ATCC 786	CGTCCGGCCG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGTAT	GCGCGCGGAT
B.bronchiseptica ATCC 19395	CGTCCGGCTG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGTAT	GCGCGCGGAT
B.parapertussis KP92\83\93	CGTCCGGCCG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGTAT	GCGCGCGGAT
B.parapertussis KP92\437\93	CGTCCGGCCG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGTAT	GCGCGCGGAT
B.parapertussis ATCC 15311	CGTCCGGCCG	GCACCATCCC	GCATACGTGT	TGGCAACCCG	CAACGCGTAT	GCGCGCGGAT

	65	75	85	95	105	115
B.pertussis ATCC 9797	TCG -----	---TCGTACA	AA ACCCTCGA	TTCTTCCGTA	CATCCCGCTA	CTGCAATCCA
B.bronchiseptica AB 1254	GCG-----	---TCGCACA	AAGCCCTCGA	TTCTTCCGCA	CATCCCGCTA	CTGCAATCCA
B.bronchiseptica ATCC 786	GCG-----	---TCGCACA	AAGCCCTCGA	TTCTTCCGCA	CATCCCGCTA	CTGCAATCCA
B.bronchiseptica ATCC 19395	GCGGCGGGAT	GCGTCGCACA	AAGCCCTCGA	TCCTTCCGCA	CATCCCGCTA	CTGCAATCCA
B.parapertussis KP92\83\93	GCGGCGGGAT	GCGTCGCACA	AAGCCCTCAA	TCCTTCCGCA	CATCCCGCTA	CTGTAATCCA
B.parapertussis KP92\437\93	GCGGCGGGAT	GCGTCGCACA	AAGCCCTCAA	TCCTTCCGCA	CATCCCGCTA	CTGTAATCCA
B.parapertussis ATCC 15311	GCGGCGGGAT	GCGTCGCACA	AAGCCCTCAA	TCCTTCCGCA	CATCCCGCTA	CTGTAATCCA

	125	135	145	155	165	175
B.pertussis ATCC 9797	ACACGGCATG	AACGCTCCTT	CGGCGCAAAG	TCGCGCGATG	GTACCGGTCA	CCGTCCGGAC
B.bronchiseptica AB 1254	ACACGGCGCG	AACGCTCCTT	CGGCGCAAAG	TCGCACGATG	GTACCGGTGCG	CCGTCCAGAC
B.bronchiseptica ATCC 786	ACACGGCGCG	AACGCTCCTT	CGGCGCAAAG	TCGCACGATG	GTACCGGTGCG	CCGTCCAGAC
B.bronchiseptica ATCC 19395	ACACGGCGCG	AACGCCCCCT	CGGCGCAAAG	TGCGACGATG	GTACCGGTGCG	CCGTCCGGAC
B.parapertussis KP92\83\93	ACACGGCGCA	AACGCCCCCT	CGGCGCAAAG	TCGCACGATG	GTACCGGTGCG	CCGTCCGGAC
B.parapertussis KP92\437\93	ACACGGCGCA	AACGCCCCCT	CGGCGCAAAG	TCGCACGATG	GTACCGGTGCG	CCGTCCGGAC
B.parapertussis ATCC 15311	ACACGGCGCA	AACGCCCCCT	CGGCGCAAAG	TCGCACGATG	GTACCGGTGCG	CCGTCCGGAC

	185	195	205	215	225	235
B.pertussis ATCC 9797	CGTGTGACC	CCCCTGCCAT	GGTGTGAT	CC GTA AAATAGG	CACCATCA AA	ACGCAGAGGG
B.bronchiseptica AB 1254	TGTGCCGACC	CCCCTGCCAT	GGTGTGATCC	GCAAAATAGG	CGCCACCGAA	ACGCAGAGGG
B.bronchiseptica ATCC 786	TGTGCCGACC	CCCCTGCCAT	GGTGTGATCC	GCAAAATAGG	CGCCACCGAA	ACGCAGAGGG
B.bronchiseptica ATCC 19395	CGTGCCGACC	CCCCTGCCAT	GGTGTGATCC	GCAAAATAGG	CGCCACCGAA	ACGCAGAGGG
B.parapertussis KP92\83\93	CGTGCCGACC	CCCCTGCCAT	GGTGTGATCC	GCAAAATAGG	CGCCACAGAA	ACGCAGAGGG
B.parapertussis KP92\437\93	CGTGCCGACC	CCCCTGCCAT	GGTGTGATCC	GCAAAATAGG	CGCCACAGAA	ACGCAGAGGG
B.parapertussis ATCC 15311	CGTGCCGACC	CCCCTGCCAT	GGTGTGATCC	GCAAAATAGG	CGCCACAGAA	ACGCAGAGGG

....|....|
245

B.pertussis ATCC 9797	GAAGACGGG
B.bronchiseptica AB 1254	GAAGACGGG
B.bronchiseptica ATCC 786	GAAGACGGG
B.bronchiseptica ATCC 19395	GAAGACGGA
B.parapertussis KP92\83\93	GAAGACGGA
B.parapertussis KP92\437\93	GAAGACGGA
B.parapertussis ATCC 15311	GAAGACGGA