



> pTR-UF-11, ATCC MBA-331

1 gggggggggg gggggggggt ggccactccc tctctgcgcg ctcgctcgt cactgaggcc  
61 gggcgaccaa aggtcgcccc acgcccgggc ttgcccggg cggcctcagt gaggagcga  
121 gcgcgagag agggagtggc caactccatc actagggggt ctagatctg aattcggtac  
181 cctagtatt aatagtaac aattacgggg tcattagttc atagccata tatggagttc  
241 cgcgttacc aacttacgt aatggccc cctggctgac cgccaacga cccccccca  
301 ttgactcaa taatgacgta tgttccata gtaacccaa tagggactt ccatgacgt  
361 caatgggtgg actattfac gtaactgcc cacttgccag tacatcaagt gtatcatatg  
421 ccaagtacg ccctattga cgtcaatgac ggtaaatggc ccgctggca ttatgccag  
481 tacatgacct tatgggactt tctacttgg cagtacatct acgtattagt catcgctatt  
541 accatggtcg aggtgagccc cagttctgc tteactctcc ccatctcccc cccctccca  
601 ccccaattt tttattatt ttttttaa ttttttgg cagcgtggg ggcggggggg  
661 gggggggggc gcgcgccagg cggggcgggg cggggcgagg ggcggggcgg ggcgagggcg  
721 agagtgccg cggcagccaa tcagagcggc gcgctccgaa agtttcttt tatggcgagg  
781 cggcgccggc ggcggcccta taaaagcga agcgcgcggc gggcgggagt cgtgcgacg  
841 ctgcttgc cccgtgccc gtcggcgc gcctcgcgc cggccccc ggctctgact  
901 gaccgcgta ctcccacagg tgagcggcg ggacggcct tctctccgg gctgtaatta  
961 gcgcttggtt taatgacgc ttgttctt tctgtgctg cgtgaaagc ttgaggggct  
1021 ccgggagggc cttttgtgc ggggggagcg gctcgggggg tgcgtgcgtg tgtgtgtgcg  
1081 tgggagcgc cgcgtcggc ccgctgccc cggcgctgt gaggcgtcg ggcgcggcgc  
1141 ggggctttgt gcgctccgca gtgtgcgca ggggagcgc gcccggggcg gtgccccgcg  
1201 gtgcgggggg ggctgcgagg ggaacaaagg ctgctgccc ggtgtgtgcg tgggggggtg  
1261 agcagggggt gtggcgcgcg cggctgggct gtaaccccc cctgcacccc cctccccgag  
1321 ttgctgagca cgccccgct tcgggtgccc ggctccgtac gggcgtggc gcggggctcg  
1381 ccgtccggg cggggggtgg cggcaggtgg ggggtcccgg cggggcgggg ccgctcggg  
1441 ccggggagg ctcgggggag gggcgcggcg gccccggag cgcggcgggc tgtcgaggcg  
1501 cggcgagccg cagccattgc cttttatgt aatcgtgca gaggcgcag ggacttctt  
1561 tgcctcaat ctgtcggag ccgaaatct ggaggcggc ccgaccccc ttagcgggc  
1621 gcggggcga gcggtgccc gccggcagga aggaaatgg cggggagggc ctctgtcgt  
1681 cggcgccc ccgtcccc ctccctcc agcctcggg ctgtccggg ggggacggct  
1741 gcctcgggg gggacgggg agggcgggt tcgcttctg gcgtgtgacc ggcggctcta  
1801 gacctctgc taaccatgt catgctct tcttttct acagctcct ggcaacgtc  
1861 tggttattg tctgtctcat cttttggca aagaattct cgaagatca ggcctgcagg  
1921 cggccccc caccatgagc aaggcgagg aactgtcac tggcgtggt ccaattctc  
1981 tggactgga tggcgtgtg aatggcaca aattttctg cagcggagag ggtgaagggt  
2041 atgccacata cggaaagct accctgaaat tcatctgac cactggaag cctcctgtc  
2101 catggccaac actgtgact accctgacct atggcgtgca gtgctttcc agataccag  
2161 accatatgaa gcagcatgac ttttcaaga gcgcatgcc cgagggctat gtgcaggaga  
2221 gaaccatct tttcaagat gacgggaact acaagaccg cgtgaagtc aagttcgaag  
2281 gtgacacct ggtgaataga atcgactga agggcattga cttaaggag gatgaaaca  
2341 ttctggcca caagtggaa tacaactata actcccaca tgtgtacatc atggccgaca  
2401 agcaaaagaa tggcatcaag gtcaactca agatcagaca caacattgag gatggatccg  
2461 tgcagctgc cgaccattat caacagaaca ctcaatcgg cgacggcct gtgctctcc  
2521 cagacaacca ttacctgccc accagtctg cctgtctaa agatccaac gaaaagagag  
2581 accacatgt cctgctggag tttgtgacc ctgctgggat cacacatggc atggacgagc  
2641 tgtacaagt agcggcccg gggatccaga catgataaga tacattgat agtttgaca  
2701 aaccacaact agaatgcagt gaaaaaatg cttatttgt gaaatttgt atgctattg  
2761 tttatttga accattataa gctgcaataa acaagtaac aacaacaatt gcattcatt  
2821 tatgtttcag gttcaggggg aggtgtggga ggtttttag tcgacctga gcagtgtgt  
2881 ttgcaagag gaagcaaaa gctctccc ccaggcctg aatgttcca ccaagtcca  
2941 aggcagtgt gttttgcaag aggaagcaa aagcctccc accaggcct ggaatgttc  
3001 caccaatgt cgagcaacc cgcccagct cttgtcatt gcgaattca acacgcagat



# Sequence information for ATCC<sup>®</sup> MBA-331<sup>™</sup>

3061 gcagtcgggg cgccgcggtc ccaggtccac ttcgcatatt aaggtgacgc gtgtggcctc  
3121 gaacaccgag cgacctgca gccaatatgg gatcggccat tgaacaagat ggattgcacg  
3181 caggttctcc ggccgcttgg gtggagaggc tattcggcta tgaactggca caacagacaa  
3241 tcggctgctc tgatccgcc gtgtccggc tgcagcgcga ggggcgccg gttctttttg  
3301 tcaagaccga cctgtccggt gccctgaatg aactgcagga cgaggcagcg cggctatcgt  
3361 ggctggccac gacgggcggt ccttgcgcag ctgtgctcga cgtgtcact gaagcgggaa  
3421 gggactggct gctattgggc gaagtgccgg gcaggatct cctgtcatct caccttgctc  
3481 ctgccgagaa agtatccatc atggctgatg caatgcggcg gctgcatacg cttgatccgg  
3541 ctacctgcc attcgaccac caagcgaac atcgatcga gcgagcacgt actcggatgg  
3601 aagccggctc tctgatcag gatgatctgg acgaagagca tcaggggctc gogccagccg  
3661 aactgttcgc caggtcaag gcgcgatgc ccgacggcga ggatctctc gtgacccatg  
3721 gcgatgcctg cttgccaat atcatggtgg aaaatggccg cttttctgga tcatcgact  
3781 gtggccggct ggggtgtggc gaccgctatc aggacatagc gttggctacc cgtgatattg  
3841 ctgaagagct tggcggcga tgggctgacc gcttctctgt gctttacggt atcgcgcctc  
3901 ccgattgca gcgcatgcc ttctatgcc ttcttgacga gttcttctga ggggatccgt  
3961 cgactagac tcgctgatca gcctgactg tgcttctag tggcagcca tctgtgttt  
4021 gccctcccc cgtgcttcc ttgacctgg aaggtgccac tcccactgtc ctttctaata  
4081 aaaatgagga aattgcatcg cattgtctga gtaggtgca ttctattctg ggggggtggg  
4141 tggggcagga cagcaagggg gaggattggg aagacaatag caggcatgct ggggagagat  
4201 ctaggaaacc ctatgtagg agttggccac tcctctctg cgcgctcgt cgtcactga  
4261 gggcccccgg gcaaaagccc ggcgtcgggc gacctttggt cggccggcct cagtgcgca  
4321 gcgagcgcgc agagaggag tggccaacc ccccccccc cccctgcag cctgcatta  
4381 atgaatcggc caacgcggg ggagaggcgg ttgctgatt gggcgtctt ccgcttctc  
4441 gctcactgac tcgctgctc cggctgttc gctgcggcga gcggtatcag ctactcaaa  
4501 ggcgtaata cggttatcca cagaatcagg ggataacga gaaagaaca tgtgagcaa  
4561 aggccagcaa aagccagga accgtaaaaa gcccgcgtg ctggcgttt tccataggct  
4621 ccgccccct gacgagcat acaaaaatc acgctcaagt cagaggtggc gaaacccgac  
4681 aggactataa agataccagg cgtttcccc tggagctcc ctcgtgcgt ctctgttcc  
4741 gacctgccg ctaccggat acctgtccg ctttctcct tcgggaagcg tggcgtttc  
4801 tcaatgctca cgtgtaggt atctcagttc ggtgtaggtc gttcgtcca agctgggctg  
4861 tgtgcacgaa cccccgtc agcccagcc ctgccccta tccgtaact atcgtctga  
4921 gtccaaccg gtaagacac acttategcc actggcagca gccactggtg acaggattg  
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5041 cactagaagg acagtattg gatctgccc tctgctgag ccagttacct tcgaaaaag  
5101 agttgtagc tctgatccg gcaaacaaac caccgctggt agcgggtggt ttttgttg  
5161 caagcagcag attacgcga gaaaaaagg atctcaagaa gatccttga tctttctac  
5221 ggggtctgac gctcagtgga acgaaaactc acgttaaggg attttgta tgagattac  
5281 aaaaaggatc ttacctaga tcttttaa taaaaatga agtttaaat caatctaaag  
5341 tatatatgag taaactggt ctgacagta ccaatgctta atcagtgagg cacctatctc  
5401 agcgtctgt ctatttctt catccatagt tgctgactc cccgtcgtg agataactac  
5461 gatacggga gctttaccat ctggccccag tgcgcaatg ataccgcgag acccagctc  
5521 accggctcca gattatcag caataaacca gccagccgga agggccgagc gcagaagtgg  
5581 tctgcaact ttatccgct ccatccagtc tattaattgt tgccgggaag ctagagtaag  
5641 tagttccca gttaatggt tgcgcaact gttgccatt gctacagca tctgtgtg  
5701 acgctcgtc tttggtatg cttcattcag ctccggttc caacgatca ggcgagttac  
5761 atgaccccc atgtgtgca aaaaagcgg tagctcttc ggtctcga tctgtcag  
5821 aagtaagttg gccgagtg tctactcat ggttatgca gactgcata attctctac  
5881 tctcatgca tccgtaagat gctttctgt gactggtgag tactcaaca agtcattctg  
5941 agaatagtt atcggcgac cgagttgctc tggccggcg tcaatacggg ataataccg  
6001 gccacatagc agaacttaa aagtctcat cattgaaaa cgttctcgg ggcgaaaact  
6061 ctcaaggatc ttaccgctg tgatccag ttcgatgaa cccactcgtg cacccaactg  
6121 atctcagca tctttactc tcaccagct tctgggtga gcaaaaacag gaaggcaaaa  
6181 tggcgaaaa aagggaataa gggcgacacg gaaatgtga atactcatac tcttcttt



## Sequence information for ATCC<sup>®</sup> MBA-331<sup>™</sup>

6241 tcaatattat tgaagcattt atcagggtta ttgtctcatg agcggataca tatttgaatg  
6301 tatttagaaa aataaacaaa taggggttcc gcgcacattt ccccgaaaag tgccacctga  
6361 cgtctaagaa accattatta tcatgacatt aacctataaa aataggcgta tcacgaggcc  
6421 ctttctctc gcgcgttctg gtgatgacgg tgaanaacctc tgacacatgc agtcccggga  
6481 gacggtcaca gcttgtctgt aagcggatgc cgggagcaga caagcccgtc agggcgcgtc  
6541 agcgggtgtt ggccgggtgc ggggctggct taactatgcg gcatcagagc agattgtact  
6601 gagagtgcac catatgcggt gtgaaatacc gcacagatgc gtaaggagaa aataccgcat  
6661 caggaaattg taaactgtaa tattttgta aaattcgcgt taaattttg ttaaatcagc  
6721 tcattttta accaataggc cgaatcggc aaaatccctt ataatcaaa agaatagacc  
6781 gagatagggt tgagtgtgt tccagtttg aacaagagtc cactattaaa gaactggac  
6841 tccaactca aaggcgaaa aacctctat caggcgatg gccactacg tgaacctca  
6901 ccctaataca gtttttggg gtcgaggtgc cgtaaagcac taaatcggaa ccctaaaggg  
6961 agccccgat ttagagcttg acggggaaa cggcgaacg tggcgagaaa ggaagggaag  
7021 aaagcgaag gagcggcgc tagggcgtg gcaagtgtag cggtcacgct gcgcgtaacc  
7081 accacaccg ccgcgctaa tgcgccgta caggcgcgt cgcgccattc gccattcagg  
7141 ctacgcaact gttgggaagg gcgatcggg cgggcctctt cgctattacg ccaggctgca

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(05/10) LMH