Appendix A

```
   1  gccactgcgg cgcctaccat gcaagtcgag cgaagggata ctacggtacg aacttagtcg
  61  gcggacgggt gagtaacgcg tggacaatct acccctgtaga ctgggataac acctcgaaag
 121  gggtgctaat accggataat gtcaagggca tccttttcga agaaaggagg gaatcctata
 181  gtggattccc ctccctttac tattggtgag ggtaacgccc accaggcgac tatgggtacc
 241  cggcctgaga gggtgaacgg ccacctgaac tgaacacggt ccaactccta cgggaggcag
 301  cgtgggaatt tgtgcatggg gaaaccctga cacagcaccc cgcgtgagtg aaaaaggctt
 361  cggtctaaac tcaataattg ggaagaaaga atgacggtcc atacaaagcc ccggctaact
 421  acgtgccaca ccgcggtaat actagggggc gagcttgtcc gattactgtc agcagcgcgg
 481  tatacgtagg gcgagcgttt cggaatctgg cgtaaagagc acgtagcggc tataaagtca
 541  gatgtgaaaa acctggtcaa ccgagggtat gcatctgaaa ctaaatagct gagtcaggag
 601  aggagagcgg aattcctggt gtagcggtga aatgcgtaga gatcaggaag aataccagtg
 661  gcgaaagcgg ctctctggac ttgaactgac gctgaggtgc gaaagcgtgg ggagcaaaca
 721  ggattagata ccctggtagt ccacgccgta aacgatggat actaggtgtg ggttagtata
 781  atccgtgccg gagttaacgc aataagtatc ccgcctgggg agtacggccg caaggttgaa
 841  actcaaagga attgacgggg gcccgcacaa gcagcggagc atgtggttta attcgaagca
 901  acgcgaagaa ccttaccagg gcttgacatc cacagaatcg agtagaaata cttgagtgcc
 961  tcgtaagagg agctgtgaga caggtggtgc atggttgtcg tcagctcgtg tcgtgagatg
1021  ttgggttaag tcccgcaacg agcgcaaccc ctgttggtag ttaccagcgt aaagacgggg
1081  actctaccga gactgccgtg gataacacgg aggaaggcgg ggatgacgtc aaatcatcat
1141  gccctttatg ccctgggcta cacacgtgct acaatggcct gaacagaggg cagcgaagga
1201  gcgatccgga gcgaatccca gaaaacaggt cccagttcag attgcaggct gcaacccgcc
1261  tgcatgaaga cggagrrgct agtaatcgcg gatcagcatg ccgcggtgaa tacgttcccg
1321  ggccttgtac acaccgcccg tcacaccacg agagtttaca acacccgaag tcagtgacct
1381  aaccgaaagg gaggaggccg aaggtggaaa atg
```

Figure A.1 The 16S rDNA sequence of *Thermoanaerobacterium thermosaccharolyticum* strain NOI-1

```
   1 ctggcggcgt gcctaacaca tgcaagtcga gcggggatat acggaaggtt taccggaagt
  61 atatcctagc ggcggacggg tgagtaacgc gtgggtaacc tacctcatac agggggataa
 121 cacagggaaa cctgtgctaa taccgcataa tataacgggg cggcatcgtc ctgttatcaa
 181 aggagaaatc cggtatgaga tgggcccgcg tccgattagc tggttggtga ggtaacggct
 241 caccaaggcg acgatcggta gccgaactga gaggttggtc ggccacattg ggactgagac
 301 acggcccaga ctcctacggg aggcagcagt ggggaatatt gcgcaatggg ggaaaccctg
 361 acgcagcaac gccgcgtgaa ggaagaaggc cttcgggttg taaacttctt tgattgggga
 421 cgaaggaagt gacggtaccc aaagaacaag ccacggctaa ctacgtgcca gcagccgcgg
 481 taatacgtag gtggcgagcg ttgtccggaa ttactgggtg taaagggcgc gtaggcgggg
 541 atgcaagtca gatgtgaaat tccggggctt aaccccggcg ctgcatctga aactgtatct
 601 cttgagtgct ggagaggaaa gcggaattcc tagtgtagcg gtgaaatgcg tagatattag
 661 gaggaacacc agtggcgaag gcggctttct ggacagtaac tgacgctgag gcgcgaaagc
 721 gtggggagca aacaggatta gataccctgg tagtccacgc cgtaaacgat ggatactagg
 781 tgtaggaggt atcgacccct tctgtgccgg agttaacaca ataagtatcc ccacctgggg
 841 agtacggccg caaggttgaa actcaaagga attgacgggg gcccgcacaa gcagtggagt
 901 atgtggttta attcgaagca acgcgaagaa ccttaccagg gcttgacatc cctctgacag
 961 ctctagagat agggcttccc ttcggggcag aggagacagg tggtgcatgg ttgtcgtcag
1021 ctcgtgtcgt gagatgttgg gttaagtccc gcaacgagcg caacccttgt cgttagttgc
1081 cagcacgtta aggtgggcac tctagcgaga ctgccggcga caagtcggag gaaggtgggg
1141 acgacgtcaa atcatcatgc cccttatgtc ctgggctaca cacgtactac aatggctgct
1201 acaaagggaa gcgataccgc gaggtggagc aaatccccaa aagcagtccc agttcggatt
1261 gcaggctgaa actcgcctgc atgaagtcgg aattgctagt aatggcaggt cagcatactg
1321 ccgtgaatac gttcccgggc cttgtacaca ccgcccgtca caccatgaga gtctgcaaca
1381 cccgaagtca gtagtctagc cgcagaggag agcgcgccga aggtggggca ag
```

Figure A.2 The 16S rDNA sequence of *Clostridium thermocellum* strain NKP-2