**A**

```
1     GTGAAGAACTGGACTGTTCGCCAGCGAATCCTGGCAAGTTTCGCCGTGATCATCGCGATC 60
61    ATGCTGCTGATGGCCGCTACTGCGTACGTGAAGATGTTGACGGTGGAAAAGGGCGCCTAC 120
121   CGTGTCCAGGACGACGCCATGCCGGGGATGTACTTCATCACCCTGGTACGCAGTTCGTGG 180
181   ACCGACAACTACCTGCAGACCCAGGAACTGTTCGGCGTCACCGACGACCAGAGCTGAGC 240
240   AAGGCCGAGGCTGACAGCATCCTTGCCAGCGAGGAGCGCCTGGACCAGCAGATCGCCTCC 300
301   TACCAGAAGACCATGAACCCGGACGAGGCCCGCGACCACGAACTGCTCGCCGGTTTCCTG 360
361   GGTGTGCGCAAGGCCTACCTGGAGCAGCACGACAAGGTGCTCGAGCTGTATCGCGAGAAA 420
421   CGCTTCGAAGAAGCCGGCAAGCTCGTCGCCGGCCCGTTGACCGAGCACTGGCGCGACGGT 480
481   CGCAAGTACCTCAACGAGCTGATCGAGCTGAACAAGGACATCGCCGATCGCGCCTCGGAG 540
541   AACATCGTCAACGCGGTGGACGACGCCGAACTGAGCATGCTGGTGACCCTGTTGCTGGCG 600
601   GTGGTGGTAGCCGGCATCTGCGGGTTCCTGCTGTTGCGGGCGATCACCCAGCCGATCCAG 660
661   AAGATCGTCCGCAGCCTCGACCTGATGGCCGGCGGCGACCTCACCGCGCGCCTGAACCTT 720
721   GGCCGCCGCGACGAGTTCGGCGCCATCGAGACCGGTTTCAATGGCATGGCCGAGGAACTC 780
781   AAGGGCCTGGTGTCGCAGGCCCAGCGTTCTTCGGTGCAGGTCACCACCTCGGTCAC**CGAG** 840
841   **ATCGCCGCGACCTCCAAGCAGCAGCAGGCCACCGCCACCGAAACCGCCGCGACC**ACCACG 900
901   GAGATCGGCGCCACTTCTCG**CGAGATCGCCGCCACCTC**GCGCGACCTGGTGCGGACCATG 960
961   AGCGAAGTCTCCGGCGCCGCCGAGCAGACTTCGACCCTGGCCGGTTCCGGCCAGTTGGGC 1020
1021  CTGGCGCGCATGGAGGAAACCATGCACCACGTGATGGGCGCGGCCGACCTGGTCAACGCC 1080
1081  AAGCTGGCGATCCTCAACGAGAAGGCCGGCAACATCAACCAGGTGGTCACCACCATCGTC 1140
1141  AAGGTCGCCGACCAGACCAACCTGCTCTCGCTGAACGCCGCCATCGAGGCGGAGAAGGCC 1200
1201  GGCGAGTACGGCCGCGGGTTCGCCGTGGTGGCCACCGAGGTGCGCCGGCTGGCGGACCAG 1260
1261  ACCGCGGTCGCCACCTACGATATCGAGCAGATGGTGCGCGAGATCCAGTCGGCGGTATCG 1320
1321  GCCGGGGTGATGGGCATGGACAAGTTCTCCGAGGAGGTCCGCCGCGGTATCGCCGAGGTC 1380
1381  GGCCAGGTCGGCGAGCAACTGTCGCAGATCATCCAGCAGGTGCAGGCGCTGGCGCCGCGG 1440
1441  GTGCAGATGGTCAACGAGGGCATGCAGGCCCAGGCGACCGGTGCCGAGCAGATCAACCAG 1500
1501  GCGCTGGTGCAACTGGGCGAGGCCACCGGGCAGACCGTGGAGTCGCTGCGCCAGGCCAGC 1560
1561  TTCGCCATCGATGAGCTGAACCTGGTGGCGAACGGGCTGCGCAACGGCGTATCCCGCTTC 1620
1621  AAAGTCTGA                                                    1629
```

**B**

```
PA14       MKN------------------WTVRQRILASFAVIIAIMLLMAATAYVKMLTVEKGAYRVQDDAMPGMYFITLVRSSWTDNYLQ 66
PAO1       MKN------------------WTVRQRILASFAVIIAIMLLMAATAYVKMLTVEKGAYRVQDDAMPGMYFITLVRSSWTDNYLQ 66
Pfl01      MKN------------------WTLRQRILASFAVIIAIMLLMVVVSYSRLLKIEASENSVRDDAIPGVYYSSMIRGAWVDSYLQ 66
Bcen2424   MATVTPRATNESLHPTIGAARLTLGNRILLSFGVLFVLMLVTAGVSYERLRAINAEAVSIERDSLPGVYLASSLRAAVNETFVM 84
           * .                   *: :*** **.*::.:**: . .:* ::  ::     :. *::**:*  : :*.:  :.::

PA14       TQELFGVTDDHELSKAEADSILASEERLDQQIASYQKTMNPDEARDHELLAGFLGVRKAYLEQHDKVLELYREKRFEEAGKLVA 150
PAO1       TQELFGITDDHELSKAEADSILASEERLDQQIASYQKTMNPDEARDHELLAGFQAVRKDYLEQHDKVLELYREKRFEEAGKLVA 150
Pfl01      TQELLGLKEGQGISSEDAADYKAFESRLQEQMANYRGTVVTDEDK--LEFAAFEKYHDAYLKIQDAVLDLHKRNLEADAVKLFH 148
Bcen2424   LQQATFVETDPDAVQRDLAKIADATKQVESLSVDYQASIFRDDDR--ARFATFRGAYDRYLPLLTDAVQRHRGSRDE-AIAAY- 164
            *:   :  .    . :  .     .:::.  ..*: ::  *: :    :* *    . **     .:: :: .    *

PA14       GPLTEHWRDGRKYLNELIELNKDIADRASENIVNAVDDAELSMLVTLLLAVVVAGICGFLLLRAITQPIQKIVRSLDLMAGGDL 234
PAO1       GPLTEHWREGRKYLNEMIELNKDIADRASDNIVNAVDDAELSMLVTLLLAVVVAGICGFLLLRAITQPIQKIVRSLDLMAGGDL 234
Pfl01      EQLTPTWYSGRMKLNDIISENKRVADQAMANIDEAVAAAKVSMFVSLVVAVLAAGFCGLLLMRAIMAPMNRIVQILDIMRTGDL 232
Bcen2424   AKVLPGWAEVVQDANIMVQENRKFADQSARVIRESVQDAEVVLVGALTIMLLSALGLGYMLYRSVTVPMARLVEVHDVMRTGNL 248
             :   * .     * ::. *: .**::   * ::*  *:::. :* : :: *   * :* *::  *: ::*.  *:*  *:*

PA14       TARLNLGRRDEFGAIETGFNGMAEELKGLVSQAQRSSVQVTTSVTEIAATSKQQQATATETAATTTEIGATSREIAATSRDLVR 318
PAO1       TARLNLGRRDEFGAIETGFNGMAEELKGLVSQAQRSSVQVTTSVTEIAATSKQQQATATETAATTTEIGATSREIAATSRDLVR 318
Pfl01      SSRLNLERKDEFGAVETGFNDMMTELTSLVSQAQRSSVQVTTSVTEIAATSKQQQATATETAATTTEIGATSREIAATSRDLVR 316
Bcen2424   THRLDLRRRDEFGTLETGFNRMADELTELVARAQQSSMQVTTSVAEIAATSREQQATANETAATTTEIGATSREIFATSRDLLR 332
           : **:* *:****::***** *  **. **::**:**:******:******::*****.**************** ******:*

PA14       TMSEVSGAAEQTSTLAGSGQLGLARMEETMHHVMGAADLVNAKLAILNEKAGNINQVVTTIVKVADQTNLLSLNAAIEAEKAGE 402
PAO1       TMSEVSGAAEQTSTLAGSGQLGLARMEETMHHVMGAADLVNAKLAILNEKAGNINQVVTTIVKVADQTNLLSLNAAIEAEKAGE 402
Pfl01      TMTEVSTAADQASVLAGSGQQGLARMEDTMHSVMGAADLVNAKLAILNEKAGNINQVVVTIVKVADQTNLLSLNAAIEAEKAGE 400
Bcen2424   TMNEVAGVAEQSATLAGVSQSGLTRMGETMRSVMDAAGSVNAKLAILNEKALNINQVVATITKVADQTNLLSLNAAIEAEKAGE 416
           **.**: .*:*::.*** .* **:** :**: **.**. ************ ******.**.********************

PA14       YGRGFAVVATEVRRLADQTAVATYDIEQMVREIQSAVSAGVMGMDKFSEEVRRGIAEVGQVGEQLSQIIQQVQALAPRVQMVNE 486
PAO1       YGRGFAVVATEVRRLADQTAVATYDIEQMVREIQSAVSAGVMGMDKFSEEVRRGIAEVGQVGEQLSQIIQQVQALAPRVQMVNE 486
Pfl01      YGRGFAVVATEVRRLADQTAVATYDIEQMVREIQSAVSAGVMGMDKFSEEVRRGMAEVQQVGEQLSQIIHQVQALAPRVLMVNE 484
Bcen2424   YGRGFAVVATEIRRLADQTAVATYDIEQTVKEIQSAVSAGVMGMDKFSEEVRRGMLDVQQVGGQLSQIIAEVQTLAPRFQMVNE 500
           ***********:**************** *:************************: :* *** ****** :**:****. ****

PA14       GMQAQATGAEQINQALVQLGEATGQTVESLRQASFAIDELNLVANGLRNGVSRFKV-- 542
PAO1       GMQAQATGAEQINQALVQLGEATGQTVESLRQASFAIDELNLVANGLRNGVSRFKV-- 542
Pfl01      GMQAQATGAEQINHALVQLGDASSQTVESLRQASFAIDELSQVAVGLRSGVSRFKV-- 540
Bcen2424   GMQTQANGAEQITQALSQLSEAAQQTAESLRQSSQAIDDLTLVANQLRTSVSRFKVDA 558
           ***:**.*****.:** **.:*: **.*****:* ***:*. **  **..******
```