piece 1, NC_000913, sgcX_yjhP-, config: linear, direction: -, begin: 4530489, end: 4529655

```
         *      *4530480  *       *4530470  *      *4530460  *      *4530450  *      *4530440  *      *4530430  *      *4530420  *      *4530410
5' t g g g g c g t g t t c g c a c t c a t c g c c c g g t a a c a a c a g g t t c c c g g t a t t t c t g g c t g g a a a t a t c g a g g c t t t a c c t t t g c t 3'
  - trp - gly - val - phe - ala - leu - ile - ala - arg -     phe - pro - val - phe - leu - ala - gly - asn - ile - glu - ala - leu - pro - leu - leu -
      - gly - arg - val - arg - thr - his - arg - pro - val - thr - thr - gly - ser - arg - tyr - phe - trp - leu - glu - ile - ser - arg - leu - tyr - leu - cys - phe -
```

p35 4.1 bits

... p35-(23)-p10 4530396 Gap
... p35-p10 4530396 total 4.7

... p35

... p35-(25)-p10 4530387 Gap
... p35-p10 4530387 total 5.4

```
         *      *4530400  *       *4530390  *      *4530380  *      *4530370  *      *4530360  *      *4530350  *      *4530340  *      *4530330
5' t t g a t c t g a t g t a t c a c c t g c a c a a t a c a t t c a g t a t g t t t a t t a a t c a a g a t g t c a c c t a a g g a g c a t c a t a t g t c a 3'
 -fMet - ile -   -   -   -   -   -   -   -   -   -   -fMet - phe - ile - asn - gln - asp - val - thr - ile - arg - ser - ile - ile - cys - his -
    - asp - leu - met - tyr - his - leu - his - asn - thr - tyr - ser - val - cys - leu - leu - ile - lys - met - ser - pro -   -   -   -fMet - ser -
```

p10 2.0 bits

... ir

... } p35-(23)-p10 4530396 Gap 1.4 bits

sd

{-----------------} sd-(9)-ir 4530333 Gap 2.3 bits

... -----------------| p35-p10 4530396 total 4.7 bits

|-----------------| sd-ir 4530333 sgcX_yjhP- total 13.1 bits

... p35 5.3 bits

p10 4.1 bits

... } p35-(25)-p10 4530387 Gap 4.0 bits
... -----------------| p35-p10 4530387 total 5.4 bits

```
         *      *4530320  *       *4530310  *      *4530300  *      *4530290  *      *4530280  *      *4530270  *      *4530260  *      *4530250
5' c a a c a t g a a c a g t t c t g t c a g c t t g c a g a t g c c g a t g c a c c a g a t g c a c a c a g t g c c a g t g a t c a a t a t t g t g c g 3'
 - gln - his - glu - gln - phe - cys - gln - ala - cys - gly - met - pro - met - ser - ala - pro - asp - ala - his - ser - ala - ser - asp - gln - tyr - cys - ala -
    - asn - met - asn - ser - ser - val - arg - leu - ala - glu - cys - arg - cys - arg - his - gln - met - his - thr - val - pro - val - ile - asn - ile - val - arg -
        -   -   -   -   -   -   -fMet - arg - asn - ala - asp - val - gly - thr - arg - cys - thr - gln - cys - gln -   -   -fMet - cys - val -
```

... ir sgcX_yjhP-

p35 1.6 bits

p10 4.6 bits

{-----------------} p35-(23)-p10 4530254 Gap 1.4 bits
|-----------------| p35-p10 4530254 total 4.7 bits

```
         *      *4530240  *       *4530230  *      *4530220  *      *4530210  *      *4530200  *      *4530190  *      *4530180  *      *4530170
5' t a a t g c a g c g a c a g c a a c g g c a a t c t c a a a c c c t g g g a a g a a g c g g t a t c a g g t t t a g c g a c g c t t c c t t g a t t c c t g g c a a 3'
    - asn - ala - ala - thr - ala - thr - ala - ile - ser - asn - pro - gly - lys - lys - arg - tyr - gln - val -   -   -   -   -fMet - ile - pro - gly - lys -
    - met - gln - arg - gln - gln - arg - gln - ser - gln - thr - leu - gly - arg - ser - gly - ile - arg - phe - ser - gln - leu - pro -   -   -   -   -
```

[###> orf 30 codons

```
   *      *4530160  *       *4530150  *      *4530140  *      *4530130  *      *4530120  *      *4530110  *      *4530100  *      *4530090  *
5' a a a g t c g g c c c g g a g g a a g c a c a t a a g c g t g c a a a a c g t t a t c t g a c g g c a a t g c c a g c c t g g g c t c a t a a a g c g g a g a g t 3'
  - lys - ser - ala - arg - arg - lys - his - ile - ser - val - gln - asn - val - ile -   -   -   -   -fMet - pro - ala - trp - ala - his - lys - ala - glu - ser -
                                                                                                                                                            -fMet
```

```
*      *4530080  *       *4530070  *      *4530060  *      *4530050  *      *4530040  *      *4530030  *      *4530020  *      *4530010  *
5' g a t t t g a g c t g a t t a t c t a t a c t c c c t c t g a a t c t a t t c a g g a g a t c c g a t g t t t t c t t a c a t t a t g c t g g g a a c c a a c g a 3'
  - asp - leu - ser -   -   -   -   -   -   -   -   -   -   -   -   -fMet - phe - ser - tyr - ile - met - leu - gly - thr - asn - asp -
    - ile -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -
```

ir sgcX_yjhP-

sd

p10 5.1 bits

{---------------} sd-(8)-ir 4530035 Gap 2.4 bits
|---------------| sd-ir 4530035 sgcX_yjhP- total 11.2 bits

p35 1.2 bits

{-----------------------------------} p35-(23)-p10 4530025 Gap 1.4 bits
|-----------------------------------| p35-p10 4530025 total 4.8 bits

```
        *4530000  *      *4529990  *      *4529980  *      *4529970  *      *4529960  *      *4529950  *      *4529940  *      *4529930  *
5' cctgccacgcgccattacattctaagatccgctgatggagatgctggggtatccacgtgcaggacgtaatgaagagggagc 3'
   leu - pro - arg - ala - ile - thr - phe -  ●   -   -   -   -   -fMet - glu - met - leu - gly - tyr - pro - arg - ala - gly - arg - asn - glu - glu - gly - ala -
                                                                 -fMet - gln - asp - val - met - lys - arg - glu - arg -
           [###> orf 19 codons
```

```
        *4529920  *      *4529910  *      *4529900  *      *4529890  *      *4529880  *      *4529870  *      *4529860  *      *4529850  *
5' gtcctgcaacaagtggtgctataacagttaccgcgtttattcatcctcattatttcaaccataatcactggtctctcca 3'
   - ser - cys - asn - lys - val - val - leu -  ●  -   -   -   -   -   -
   - pro - ala - thr - lys - trp - cys - tyr - asn - ser - tyr - arg - val - leu - phe - ile - leu - ile - ile - ser - thr - ile - ile - thr - gly - leu - ser - ser -
```

p35 4.8 bits

p10 5.5 bits

{-------------------------} p35-(24)-p10 4529860 Gap 2.4 bits
|-------------------------| p35-p10 4529860 total 7.9 bits

```
        *4529840  *      *4529830  *      *4529820  *      *4529810  *      *4529800  *      *4529790  *      *4529780  *      *4529770  *
5' gcccgtaactttcacaaacgttgagcgctttattccactcggctcacataatttttattgttcagcttggcgcgtttt 3'
                                                                                    -fMet - phe - ser - phe - ala - arg - phe -
                                                                              -fMet - arg - val - phe -
   - pro -  ●   -   -   -   -fMet - ser - ala - phe - ile - pro - leu - gly - ser - his - asn - phe - leu - phe - val - gln - leu - cys - ala - phe - ser -
```

p35 4.8 bits

p10 4.4 bits

... p35

{---------} p35-(21)-p10 4529791 Gap 3.3 bits
|---------| p35-p10 4529791 total 5.9 bits

{----- ... p35-(21)-p10 4529742 Gap
|----- ... p35-p10 4529742 total 4.6

p35 4.8 bits

p10 1.3 bits

{-----------------------} p35-(23)-p10 4529788 Gap 1.4 bits
|-----------------------| p35-p10 4529788 total 4.7 bits

p10 3.2 bits

{--------------------------} p35-(26)-p10 4529786 Gap 3.7 bits
|--------------------------| p35-p10 4529786 total 4.2 bits

```
        *4529760  *      *4529750  *      *4529740  *      *4529730  *      *4529720  *      *4529710  *      *4529700  *      *4529690  *      *4529680
5' cacgtgaacgttctcacaattattcgaccagtctgcgccctataaaacgtcaacgagtgattgtttacggtctacggaga 3'
   - his - val - asn - val - leu - thr - ile - ile - arg - pro - val - cys - ala - tyr - lys - thr - leu - asn - glu -  ●   - -fMet - phe - tyr - gly - leu - arg - arg -
   - thr -  ●   -   -   -   -   -   -   -
   - arg - glu - arg - ser - his - asn - tyr - ser - thr - ser - leu - arg - leu -  ●   -   -   -   - -fMet - ile - val - leu - arg - ser - thr - glu - ile -
```

... p35 4.6 bits

p10 3.3 bits

... sd

{-------- ... sd-(9)-ir 4529674 Gap
|-------- ... sd-ir 4529674 sgcX_yjhP-

... {-------------------------} p35-(21)-p10 4529742 Gap 3.3 bits
... |-------------------------| p35-p10 4529742 total 4.6 bits

```
              *      *4529670  *      *4529660  *
5' tagctatgtcatttttctgtgcagga 3'
                                       -fMet
   -   -   -   -   -   -   -   -
   - ala - met - ser - phe - ser - val - gln -
```

```
...  sd        [--------------------------------- ...  NC_000913.sgcX


...  ----------] sd-(9)-ir 4529674 Gap 2.3 bits
...  ----------| sd-ir 4529674 sgcX yjhP- total 8.6 bits

                                    ir sgcX_yjhP-
```