piece 1, NC_000913, hemC_cyaA-, config: linear, direction: -, begin: 3989205, end: 3988770

```
        *      *3989200   *      *3989190   *      *3989180   *      *3989170   *      *3989160   *      *3989150   *      *3989140   *      *3989130   *
5' ctgtttcagagtctcaatatagaggtacaagacgtatcgcctgatttgctaccgtcatgactgtgattccgccaacatca 3'
   - leu - phe - gln - ser - leu - asn - ile - glu - val - gln - asp - val - ser - pro - asp - leu - leu - pro - val - met - thr - val - ile - pro - pro - thr - ser -
     - cys - phe - arg - val - ser - ile -     - glu - val - gln - tyr - arg - gly - thr - arg - arg - ile - ala -
     - val - ser - glu - ser - gln - tyr - arg - gly - thr - arg - arg - ile - ala -
   ...------------------------------] NC_000913.cyaA
```
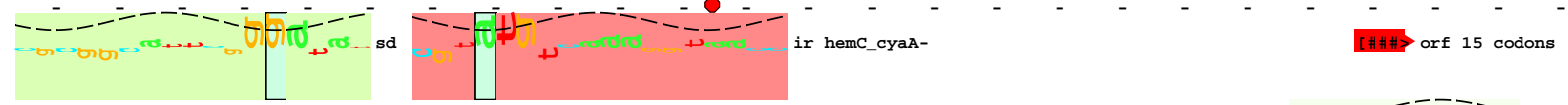
```
        *      *3989120   *      *3989110   *      *3989100   *      *3989090   *      *3989080   *      *3989070   *      *3989060   *      *3989050   *
5' acggtaacacgcggcattcggatatttcgtatgtcaaaggtaacgttaccactttcgcgcctggttttttttagtttca 3'
   - thr - val - thr - arg - gly - ile - arg - asp - ile - ser - tyr - val - lys - gly - asn - arg - tyr - his - phe - ser - arg - leu - val - phe - leu - val - ser -
                                            -fMet - ser - lys - val - thr - val - thr - thr - phe - arg - ala - trp - phe - phe -
```

sd
ir hemC_cyaA-
[###> orf 15 codons

{-------------------} sd-(10)-ir 3989093 Gap 2.7 bits

... sd

|-------------------| sd-ir 3989093 hemC_cyaA- total 7.5 bits

p35 2.7 bits

{--------------------------------------} p35-(23)-p10 3989036 Gap
|-------------------------------------- ... p35-p10 3989036 total 5.1

```
        *3989040   *      *3989030   *      *3989020   *      *3989010   *      *3989000   *      *3988990   *      *3988980   *      *3988970   *
5' cgacgaaaaatggtctaaaacgtgatcaatttaacaccttgctgattgaccgtaagagaaagatgcgctacatacaagtgt 3'
   - arg - arg - lys - asn - gly - leu - lys - arg - asp - gln - phe - asn - thr - leu - leu - ile - asp - arg - lys - glu - arg - cys - ala - thr - tyr - lys - cys -
                    -fMet - val -        -fMet - ile - asn - leu - thr - pro - cys -     -fMet - thr - val - lys - lys - asp - ala - leu - his - thr - ser - val -
                                                                                                                             -fMet - arg - tyr - ile - gln - val -
```
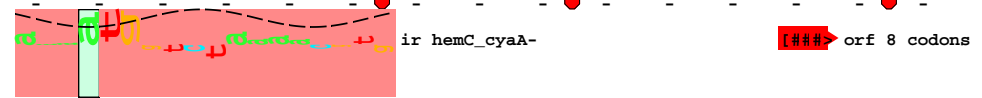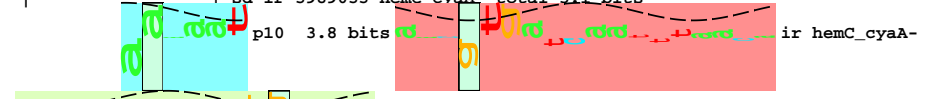
ir hemC_cyaA-
[###> orf 8 codons

... sd
[###> orf 3 codons

{-------------------} sd-(9)-ir 3989033 Gap 2.3 bits
... <-------------------} p35-(23)-p10 3989036 Gap 1.4 bits
... |-------------------| p35-p10 3989036 total 5.1 bits
|-------------------| sd-ir 3989033 hemC_cyaA- total 5.1 bits

p10 3.8 bits
ir hemC_cyaA-

sd

{-------------------} sd-(9)-ir 3989021 Gap 2.3 bits
|-------------------| sd-ir 3989021 hemC_cyaA- total 7.2 bits

```
     *3988960   *      *3988950   *      *3988940   *      *3988930   *      *3988920   *      *3988910   *      *3988900   *      *3988890   *
5' agcaccgtttattctctgtaaattccttattacaacggcgtgaaacgcctgtcaggatccactgccagacctcatttttacg 3'
   - ser - thr - val - tyr - ser - leu -     - phe - leu - ile - thr - thr - ala -     -fMet - lys - arg - leu - ser - gly - ser - thr - ala - arg - pro - his - phe - thr -
     - ala - pro - phe - ile - leu - cys - lys - phe - leu - ile - thr - thr - ala -
```

p35 4.8 bits
p10 2.7 bits
p35 4.6 bits

{-------------------------------------} p35-(23)-p10 3988931 Gap 1.4 bits
|-------------------------------------| p35-p10 3988931 total 6.0 bits
{------------ ... p35-(21)-p10 3988865 Gap
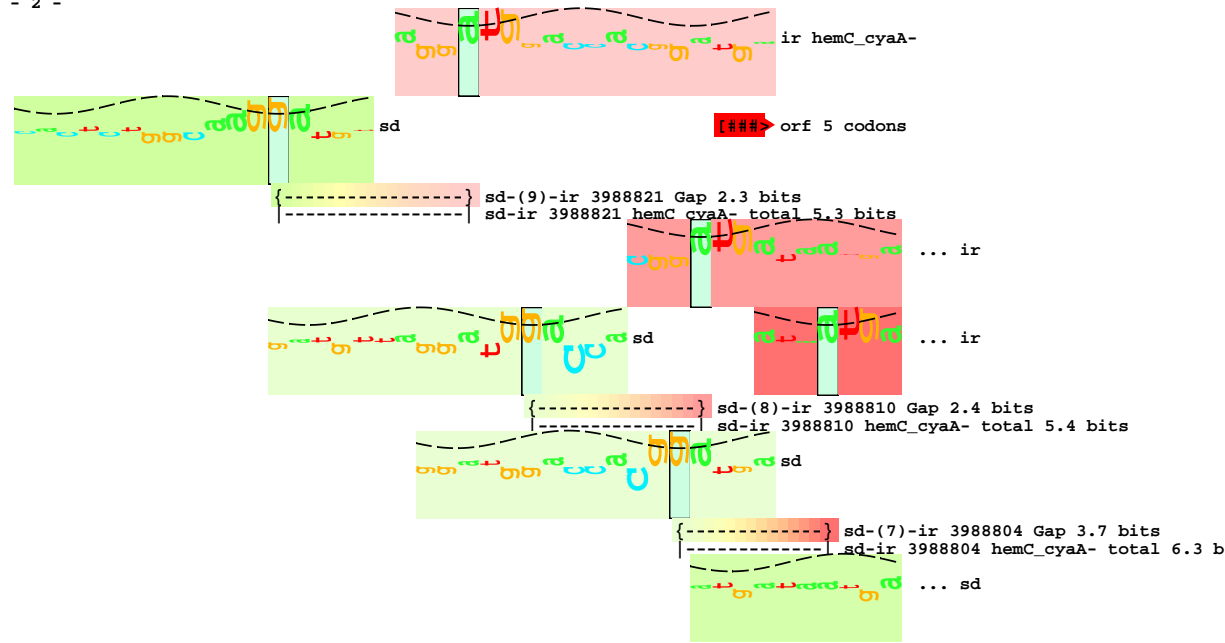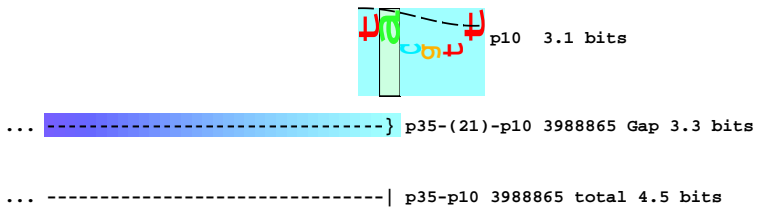|--------- ... p35-p10 3988865 total 4.5

```
     *3988880   *      *3988870   *      *3988860   *      *3988850   *      *3988840   *      *3988830   *      *3988820   *      *3988810   *
5' gtttgcgcaggcgtctacgtttcaccacaaactgacatcactctgcaaggatgttaggatggaccacggatgataatga 3'
   - val - cys - ala - gly - val - tyr - val - ser - pro - gln - his -                            -fMet - asp - his - gly -         - asp - asp - asn - asp -
                                                                                   -fMet - leu - gly - trp - thr - thr - asp - asp - asn - asp -
   -fMet - arg - arg - arg - leu - arg - phe - thr - thr - thr - leu - thr - ser - leu - trp - gln - gly - cys -                  -fMet - ile - met - thr -
```

p10   3.1 bits

ir hemC_cyaA-

... --------------------------------} p35-(21)-p10 3988865 Gap 3.3 bits

sd

[###> orf 5 codons

... ------------------------------| p35-p10 3988865 total 4.5 bits

{---------------} sd-(9)-ir 3988821 Gap 2.3 bits
|---------------| sd-ir 3988821 hemC_cyaA- total 5.3 bits

... ir

sd

... ir

{---------------} sd-(8)-ir 3988810 Gap 2.4 bits
|---------------| sd-ir 3988810 hemC_cyaA- total 5.4 bits

sd

{---------------} sd-(7)-ir 3988804 Gap 3.7 bits
|---------------| sd-ir 3988804 hemC_cyaA- total 6.3 b

... sd

```
  *3988800    *         *3988790    *         *3988780    *         *3988770
5' c g g t a a c a a g c a t g t t a g a c a a t g t t t t a a g 3'
  -   -   -   -   -   -   -   -   -fMet- phe -   -
  - gly - asn - lys - his - val - arg - gln - cys - phe - lys -
      - val - thr - ser - met - leu - asp - asn - val - leu -
```

[------------------------------------- ... NC_000913.hemC

ir hemC_cyaA-

{---------------} sd-(9)-ir 3988789 Gap 2.3 bits
|---------------| sd-ir 3988789 hemC_cyaA- total 8.9 bits

... ir hemC_cyaA-

... ir hemC_cyaA-

... sd