- 1 -

piece 1, NC_000913, glnA_typA+, config: linear, direction: +, begin: 4056028, end: 4056449

```
        *4056030  *        *4056040  *        *4056050  *        *4056060  *        *4056070  *        *4056080  *        *4056090  *        *4056100  *
5' cagcatcgtcagtacgtgttcagcggacatactttaactctcctggattggtcatggtcgtcgtggtaacgaaatctgcaa 3'
   - gln - his - arg - gln - tyr - val - phe - ser - gly - his - thr - leu - thr - leu - leu - asp - trp - ser - trp - ser - ser - trp -  -   -   -   -   -
     - ser - ile - val - ser - thr - cys - ser - ala - asp - ile - leu -  -  thr - leu - leu - val - met - val - val - val - val - thr - lys - ser - ala - ile -
... -----------------------------------------------------] NC_000913.glnA                                           ir glnA_typA+
```
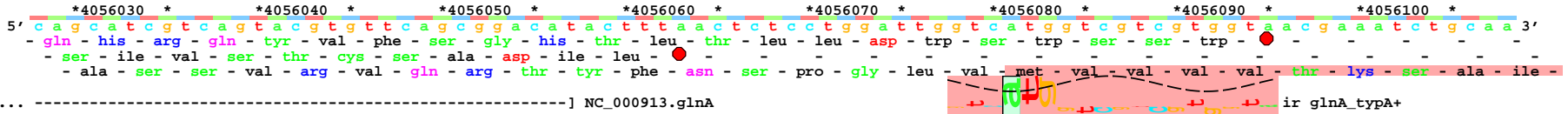
sd-(8)-ir 4056081 Gap 2.4 bits
sd-ir 4056081 glnA_typA+ total 6.7 bits

```
        *4056110  *        *4056120  *        *4056130  *        *4056140  *        *4056150  *        *4056160  *        *4056170  *        *4056180  *
5' ttattttggccgtgtcgccgtaaaaaagataaagcgaaatctgtgccaacttttaaattgcccctaaaaggcgttatcatg 3'
   -   -   -   -   -   -   -   -   -   -   -   -   -   -  -fMet - pro - thr - phe - lys - leu - pro - leu - lys - gly - val - ile - met -
     - ile - leu - ala - val - ser - pro -   -   -   -   -   -   -   -   -
   [###> orf 17 codons                                                                                                ir glnA_typA+                    ... ir
```
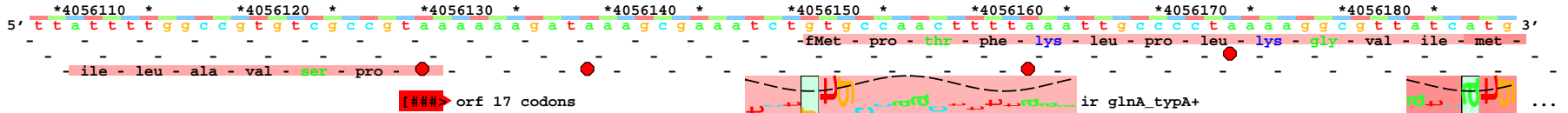
sd-(9)-ir 4056151 Gap 2.3 bits   sd-(8)-ir 4056187 Gap 2.4 bits
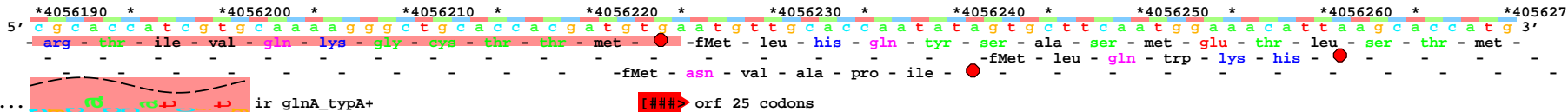sd-ir 4056151 glnA_typA+ total 6.1 bits   sd-ir 4056187 glnA_typA+ total 9.0

p35 5.6 bits   p10 6.3 bits

p35-(23)-p10 4056184 Gap 1.4 bits
p35-p10 4056184 total 10.5 bits
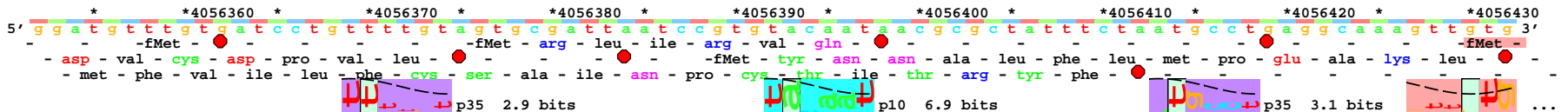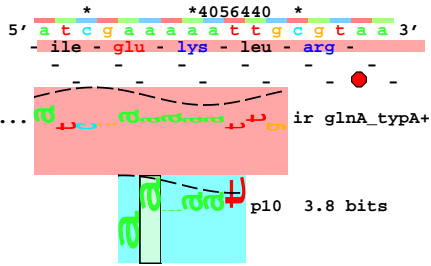
```
        *4056190  *        *4056200  *        *4056210  *        *4056220  *        *4056230  *        *4056240  *        *4056250  *        *4056260  *        *4056270
5' cgcaccatcgtgcaaaagggctgcaccacgatgtgaatgttgcaccaatatagtgcttcaatggaaacattaagcaccatg 3'
   - arg - thr - ile - val - gln - lys - gly - cys - thr - thr - met -  -fMet - leu - his - gln - tyr - ser - ala - ser - met - glu - thr - leu - ser - thr - met -
                                                                       -fMet - asn - val - ala - pro - ile -                -fMet - leu - gln - trp - lys - his -
... ir glnA_typA+                                                      [###> orf 25 codons
```

```
              *        *4056280  *        *4056290  *        *4056300  *        *4056310  *        *4056320  *        *4056330  *        *4056340  *        *4056350
5' ttggtgcaatgacctttggataacccttttttatgtcctcgtgaaagcgatcacaaagggactctgcaatacttgtttgcgga 3'
   - leu - val - gln -   -   -   -fMet - asp - asn - pro - phe - tyr - ala - pro -   -   -   -   -   -   -   -   -   -
                                                                -fMet - leu - arg - glu - ser - asp - his - lys - gly - thr - leu - gln - tyr - leu - phe - ala - glu -
                      -fMet - thr - phe - gly -                -fMet - lys - ala - ile - thr - lys - gly - leu - cys - asn - thr - cys - leu - arg - arg -
```

p35 1.9 bits   p10 5.3 bits

p35-(22)-p10 4056302 Gap 2.3 bits
p35-p10 4056302 total 4.9 bits

```
              *        *4056360  *        *4056370  *        *4056380  *        *4056390  *        *4056400  *        *4056410  *        *4056420  *        *4056430
5' ggatgtttgtgatcctgttttgtagtgcgattaatccgtgtacaataacgcgctatttctaatgcctgaggcaaagttgtg 3'
   -   -  -fMet -   -   -   -   -   -  -fMet - arg - leu - ile - arg - val - gln -   -   -   -  -fMet -
   - asp - val - cys - asp - pro - val - leu -   -   -   -   -   -fMet - tyr - asn - asn - ala - leu - phe - leu - met - pro - glu - ala - lys - leu -
     - met - phe - val - ile - leu - phe - cys - ser - ala - ile - asn - pro - cys - thr - ile - thr - arg - tyr - phe -   -   -
```

p35 2.9 bits   p10 6.9 bits   p35 3.1 bits   ... ir

p35-p10 4056393 total 8.4 bits   sd

p35-(23)-p10 4056393 Gap 1.4 bits

sd-(8)-ir 4056430 Gap 2.4 bits
sd-ir 4056430 glnA_typA+ total 7.2
... p35-(24)-p10 4056438 Gap
... p35-p10 4056438 total 4.5

```
      *        *4056440  *
5' a t c g a a a a a t t g c g t a a 3'
   - ile - glu - lys - leu - arg -
   -     -     -     -  ●  -
... ir glnA_typA+
```

p10 3.8 bits

... p35-(24)-p10 4056438 Gap 2.4 bits
... p35-p10 4056438 total 4.5 bits