

**Supplemental Figure 12: Intergenomic comparisons of sequences carrying SDR**

| ID#  | Replicon <sup>a</sup> | Coord   | Dir | Gene <sup>b</sup> | Size <sup>c</sup> | Has element <sup>d</sup> | Lacks element <sup>d</sup> | Interp'n <sup>e</sup> |
|------|-----------------------|---------|-----|-------------------|-------------------|--------------------------|----------------------------|-----------------------|
| SDR1 |                       |         |     |                   |                   |                          |                            |                       |
| 1.01 | Np.chrom              | 1021297 | F   | NpR0867           | 24+21+24          | Np                       | A7,Av,Nod,Ter              | Rec                   |
| 1.02 | Np.chrom              | 1021335 | F   | NpR0867           |                   | Np                       | A7,Av,Nod,Ter              | Rec                   |
| 1.03 | Np.chrom              | 1381406 | F   | NpF1158           |                   | Np                       | A7,Av                      | Rec                   |
| 1.04 | Np.chrom              | 2686161 | B   | NpF2183           |                   | Np                       | Np                         | New                   |
| 1.05 | Np.chrom              | 4531003 | F   | NpF3593           |                   | Np                       | A7,Av,Nod                  | Rec                   |
| 1.06 | Np.chrom              | 4549647 | F   | NpR3609           | 24                | Np                       | A7,Av,Nod                  | Rec                   |
| 1.07 | Np.chrom              | 4618473 | B   | NpR3667           |                   | Np                       | A7,Av,Nod,Ter              | New                   |
| 1.08 | Np.chrom              | 4736580 | F   | NpR3761           |                   | Np                       | A7,Av,Nod,Lyn,Ter          | ?                     |
| 1.09 | Np.chrom              | 4750549 | F   | NpF3765           |                   | Np                       | A7,Av,Nod                  | Rec?                  |
| 1.10 | Np.chrom              | 4987565 | F   | NpR3970           |                   | Np                       | A7,Av,Nod                  | Rec                   |
| 1.11 | Np.chrom              | 5893843 | F   | NpR4754           | 24                | Np                       | A7,Av,Nod,Lyn,Ter          | ?                     |
| 1.12 | A7120.chrom           | 1236435 | F   | <All1059          |                   | A7                       | Av                         | ?                     |
| 1.13 | A7120.chrom           | 1353787 | F   | <Alr1147          |                   | A7                       | Av                         | ?                     |
| 1.14 | A7120.chrom           | 3314884 | F   | Alr2719           |                   | A7                       | Av,Nod                     | New                   |
| 1.15 | Nod-010               | 45423   | F   | 11744             |                   | Nod                      | Np,A7,Av,Lyn,Ter           | Rec?                  |
| 1.16 | Nod-022               | 33047   | B   | 12753             | 24+24             | Nod                      | A7,Av,Cwat,Lyn             | New                   |
| SDR2 |                       |         |     |                   |                   |                          |                            |                       |
| 2.01 | Np.chrom              | 3693049 | B   | Npf2990           |                   | Np,Av                    |                            |                       |
|      | Np.chrom              | 3693084 | F   | >Npf2990          |                   | Np                       | Av                         | Rec                   |
| 1.15 | Np.chrom              | 3319523 | F   | NpF2675           |                   | Np                       | Np,A7,Av,Lyn,Ter           | Rec?                  |
| 2.02 | Np.chrom              | 4044392 | F   | NpF3251           |                   | Np                       | A7,Av,Nod                  | Rec                   |
| 1.06 | Np.chrom              | 4549615 | B   | NpR3609           |                   | Np                       | A7,Av,Nod                  | Rec                   |
| 2.03 | Np.chrom              | 6123447 | F   | NpF4944           |                   | Np                       | A7,Av,Nod,Ter              | Rec                   |
| 2.04 | Np.chrom              | 6728311 | F   | NpF5449           |                   | Np                       | A7,Av,Nod                  | Rec                   |
| 2.05 | Np.chrom              | 7097535 | B   | NpR5741           |                   | Np                       | A7,Av,Nod                  | In place?             |
| 2.06 | Np.chrom              | 7162815 | F   | NpR5797           |                   | Np,A7,Av                 |                            | Conversion            |
| 2.07 | Av.chrom              | 1468466 | B   | Ava1193           |                   | Av                       | A7                         | Rec                   |
| 2.08 | Av.chrom              | 2542885 | F   | Ava2053           | Av,~A7,~Nod       | Av                       | A7                         | Rec                   |
| 2.09 | Av.chrom              | 3631277 | F   | Ava2924           |                   | Np                       | ?                          |                       |
|      | Av.chrom              | 3641114 | F   | >Ava2936          |                   | Av                       | A7,Nod                     | Rec                   |
| 2.10 | Av.chrom              | 3641147 | F   | >Ava2936          |                   | Av                       | A7,Nod                     | Rec                   |
| 2.11 | Nod-072               | 4299    | B   | 11149             |                   | A7,Av,~Np,Nod            | Ter,Lyn                    | ?                     |
| SDR3 |                       |         |     |                   |                   |                          |                            |                       |
| 3.01 | Np.chrom              | 960360  | B   | <NpF0818          |                   | Np                       | A7                         | Rec                   |
| 3.02 | Np.chrom              | 1617621 | F   | <Npr1329          |                   | Np                       | A7                         | Rec                   |
| 3.03 | Np.pNpB               | 22526   | F   | pNpBR028          |                   | Np                       | Np                         | Rec                   |
| 3.04 | A7120.chrom           | 5552422 | F   | <Alr4649          |                   | A7,Av                    |                            |                       |
| SDR4 |                       |         |     |                   |                   |                          |                            |                       |
| 4.01 | Np.chrom              | 1281458 | B   | Npr1070           | 18                | Np,Nod,Av?               |                            | ?                     |
| 4.02 | Np.chrom              | 2688364 | B   | NpF2183           |                   | Np                       |                            | ?                     |
| 4.03 | Np.chrom              | 5119792 | B   | Npf4077           |                   | Np                       | A7,Av                      | New                   |
| 4.04 | Np.chrom              | 7114150 | F   | NpF5754           |                   | Np                       | A7,Av,Nod,Ter              | New                   |
| 4.05 | A7120.chrom           | 1406403 | B   | <All1193          |                   | A7                       | Av                         | New                   |
| 4.06 | A7120.chrom           | 2408953 | F   | <All2013          | 21                | A7                       | Av                         | New                   |
|      | A7120.chrom           | 2408973 | B   |                   | 21                | A7                       | Av                         | New                   |
| 4.07 | A7120.chrom           | 3521116 | F   | All2883           | 21                | A7                       | A7,Av,Ter                  | New                   |
| 4.08 | A7120.chrom           | 3521556 | B   | All2883           | 21                | A7                       | Av                         | New                   |
| 4.09 | A7120.chrom           | 5782116 | F   | Alr4852           |                   | A7,Av                    |                            |                       |

| ID#  | Replicon <sup>a</sup> | Coord   | Dir | Gene <sup>b</sup> | Size <sup>c</sup> | Has element <sup>d</sup> | Lacks element <sup>d</sup> | Interp'n <sup>e</sup> |
|------|-----------------------|---------|-----|-------------------|-------------------|--------------------------|----------------------------|-----------------------|
| SDR5 |                       |         |     |                   |                   |                          |                            |                       |
| 5.01 | Np.chrom              | 477016  | F   | NpR0377           | 21                | Np                       | A7,Av,Nod                  | New                   |
| 5.02 | Np.chrom              | 566640  | F   | NpR0464           | 21                | Np                       | A7,Av                      | New                   |
| 5.03 | Np.chrom              | 708225  | F   | NpF0596           | 18 or 21          | Np                       | Nod,A7,Av                  | New                   |
| 5.04 | Np.chrom              | 1253854 | F   | NpF1055           | 21                | Np                       | A7,Av,Nod                  | New                   |
| 5.05 | Np.chrom              | 1355627 | F   | NpR1136           | 21                | Np                       | A7,Av,Nod                  | New                   |
| 5.06 | Np.chrom              | 1455749 | B   | NpF1215           | 21                | Np                       | Av,Ter                     | New                   |
| 5.07 | Np.chrom              | 1570740 | B   | NpR1294           | 21                | Np                       | Nod                        | New                   |
| 5.08 | Np.chrom              | 1589455 | B   | NpF1309           | 21                | Np                       | Nod,A7,Av                  | New                   |
| 5.09 | Np.chrom              | 1688474 | B   | NpF1384           | 21                | Np                       | A7,Av,Nod                  | New                   |
| 5.10 | Np.chrom              | 1693017 | B   | NpF1388           | 21                | Np                       | A7,Av,nod,Ter,Lyn          | New                   |
| 5.11 | Np.chrom              | 2188862 | F   | NpR1778           | 21                | Np                       | A7,Nod,Lyn                 | New                   |
| 5.12 | Np.chrom              | 3695259 | F   | NpF2993           | 21                | Np                       | Av,Nod,Lyn                 | New                   |
| 5.13 | Np.chrom              | 3836560 | F   | NpR3078           | 21                | Np                       | A7                         | New                   |
| 5.14 | Np.chrom              | 4345877 | B   | NpF3461           | 21                | Np                       | A7,Av,Nod,Ter              | New                   |
| 5.15 | Np.chrom              | 4386626 | F   | NpR3491           | 18                | Np                       | A7,Av,Nod                  | New                   |
| 5.16 | Np.chrom              | 4522840 | F   | NpR3590           | 21                | Np                       | A7,Av,Nod                  | New                   |
| 5.17 | Np.chrom              | 5032964 | B   | NpR4009           | 21                | Np                       | A7,Av,Nod,Lyn,Ter          | New                   |
| 5.18 | Np.chrom              | 5529346 | F   | NpR4444           | 21                | Np,Nod                   | A7,Av                      | New                   |
| 5.19 | Np.chrom              | 7351944 | B   | NpF5954           | 21                | Np,A7,Av,Nod             | Ter                        | New                   |
| 5.20 | Np.chrom              | 7880219 | F   | NpR6379           | 21                | Np                       | A7,Av,Nod,Ter              | New                   |
| 5.21 | Np.pNpD               | 43308   | F   | pNpDF035          | 0                 | Np,Av                    | -                          |                       |
| 5.22 | A7120.chrom           | 331264  | F   | all0293           | 21                | A7,Av                    | Np,Nod                     | New                   |
| 5.23 | A7120.chrom           | 849183  | F   | all0729           | 21                | A7                       | Av                         | New                   |
| 5.24 | A7120.chrom           | 1210797 | F   | alr1039           | 21                | A7                       | Av,Np,Nod,Lyn              | New                   |
| 5.25 | A7120.chrom           | 1618401 | F   | alr1362           | 21                | A7                       | Av,Np                      | New                   |
| 5.26 | A7120.chrom           | 3838065 | B   | alr3170           | 21                | A7,Av                    | Np                         | New                   |
| 5.27 | A7120.pAlpha          | 13273   | F   | all7016           | 21?               | A7                       | Np                         | New?                  |
| 5.28 | Avar.pAvB             | 50020   | F   | AvaB0036          | 21                | Av                       | A7,Np                      | New                   |
| 5.29 | Nod-003               | 76230   | F   | 14910             | 21                | Nod                      | A7                         | New                   |
| 5.30 | Nod-009               | 54029   | F   | 06964             | 21                | Nod                      | Np                         | New                   |
| 5.31 | Nod-024               | 15395   | B   | 23613             | 21                | Nod                      | Np,A7,Av                   | New                   |
| 5.32 | Nod-048               | 29937   | B   | 06064             | 21                | Nod                      | Np,A7,Av,Lyn,Ter           | New                   |

<sup>a</sup>Replicons are either the chromosome (chrom), a plasmid (pXXX), or a contig from an incompletely sequenced genome. Organisms are from those indicated in Fig. 5, abbreviated: *Nostoc punctiforme* (Np), *Anabaena* PCC 7120 (A7120, A7), *Anabaena variabilis* (Avar, Av), *Nodularia* CCY9414 (Nod), *Trichodesmium erythreum* (Ter), and *Lyngbya* PCC 8106 (Lyn).

<sup>b</sup>The gene shown is the location of the indicated instance of an SDR element, except in those cases where the gene is preceded by "<", indicating the region upstream from the gene, or ">", indicating the region downstream from the gene.

<sup>c</sup>The apparent size in nucleotides is given in cases where the appearance an SDR element is interpreted as an insertion. Multiple numbers are the sizes of the components of a nested SDR element.

<sup>d</sup>The indicated organisms either have or do not have copies of the SDR element in the indicated conserved region.

<sup>e</sup>Instances are interpreted as having arisen by a new insertion, by recombination (rec), or mutation in place. In one instance (labeled "conversion") attention is drawn to an instance where one set of flanking heptameric tandem repeats was apparently converted to another set.

## Intergenomic comparisons of sequences carrying SDR1

SDR1 sequences are highlighted in yellow

Sequences in reverse orientation are in red type

Genes ending in "-R" are inverted, and with coordinates beginning at the end of the gene

### SDR1: Example 1.01 and 1.02 (npr0867)

|               |     |                                                                    |
|---------------|-----|--------------------------------------------------------------------|
| alr1612-R     | 339 | CCACTTCACTAGCGCAGGTATCAGAAAGTTTCGTACTAAAACCTGGCGACG                |
| Ava4223-R     | 339 | CCACTTCACTAGCGCAGGTATCAGAAAGTTTGTACTAAAACCTGGCGACG                 |
| NpR0867-R     | 339 | CAACTTCACTTGCGGTAGTGTCAGCCAGTTTGGTACTGAAACTCGCTACA                 |
| n9414?14228-R | 351 | CGACTTCGCTAGCAGTGGTATCAGAAAGCTTAGTACTAAAACCTGCCACA                 |
| Tery_3558-R   | 336 | CTACCTCACTAGCACAAGTATCAGAAAGCTTAGTACTAAAACCTAGCTACA                |
| consensus     | 351 | * * * * * * * * * * * * * * * * * * * *                            |
|               |     |                                                                    |
| alr1612-R     | 389 | TAACCGAGTAACAAGA <b>GGGACTGGGA</b> -----                           |
| Ava4223-R     | 389 | TAACCGAGTAACAGTAG <b>GTACTGGGA</b> -----                           |
| NpR0867-R     | 389 | TAGCCTAGTAATAATAG <b>GGACTGGAGACTTGTACTGAGCGCAGCCGGAGT</b>         |
| n9414?14228-R | 401 | TAGCCTAACACAGTAACAAC <b>TGAGGA</b> -----                           |
| Tery_3558-R   | 386 | TAACCTAACATTAGTAACAATGGTAAA-----                                   |
| consensus     | 401 | ** * * * * * * * *                                                 |
|               |     |                                                                    |
| alr1612-R     | 416 | - <b>CTGGGACTAGGA</b> ----- <b>TTGGGACTGG</b>                      |
| Ava4223-R     | 416 | - <b>CTGGGAACTAGGA</b> ----- <b>TTGGGAACTGG</b>                    |
| NpR0867-R     | 439 | <b>ATTGGGAACT</b> AAAG <b>ACTTGTACTGAGCAAAGTCGAAGTATTGGGAACTAG</b> |
| n9414?14228-R | 428 | - <b>TAGGGATTAGAGA</b> ----- <b>CTGGGTACTGG</b>                    |
| Tery_3558-R   | 413 | -TTTTCTATAGGAAA-----ATTATTCTGG                                     |
| consensus     | 451 | * * *                                                              |
|               |     |                                                                    |
| alr1612-R     | 441 | <b>GT</b> GA AAAAAGACCAGCATTTATAATTCCTATGCCTACAGCACACAGCGCC        |
| Ava4223-R     | 441 | <b>GT</b> GA AAAAAGCCCAGCATTCATAATTCCTACGCCCACAGCACACAGCGCC        |
| NpR0867-R     | 489 | <b>GT</b> AA AATAAATCCCGAATTTATTATCCCTACTCCCAAGGCACACAGCGCC        |
| n9414?14228-R | 453 | <b>GT</b> ATGAGTAATCCTGAATTGAGAATCCCTACTCCCAAAGCACACAAAGCC         |
| Tery_3558-R   | 436 | GTATAACAGACC-----AATGACCCAAACTCCCATAGCACAGATAGCA                   |
| consensus     | 501 | ** * * * * * * * * * * * * * * *                                   |

### SDR1: Example 1.03 (npf1158)

|           |    |                                                            |
|-----------|----|------------------------------------------------------------|
| all2918   | 1  | ATGAAGAGTAAAAGCAAGATGAATAACC <b>AGGGTGCAGA</b> -----       |
| Ava0982   | 1  | ATGAAGATTAAAAGCAAGATGAAGAACC <b>AGGGTGCAGA</b> -----       |
| NpF1158   | 1  | ATGAGGAATAAA--CAATTGAATA <b>AGGCAGGAGGCAGGTGGTCTGTTCTG</b> |
| consensus | 1  | **** * * * * * * * * * * * * * *                           |
|           |    |                                                            |
| all2918   | 39 | ----- <b>GGGAGGGGT CAGGA</b> -----AGAGAAGCCG               |
| Ava0982   | 39 | ----- <b>GGGAGGGGGCAGGGGGCAGGA</b> AGAGAAGTCG              |
| NpF1158   | 49 | <b>CCGAGCGCAGCCGAGGTGAGGCAGGAGCAGGGGGCAAGA</b> AGTTCTGCTC  |
| consensus | 1  | ***** * * * * * * *                                        |

### SDR1: Example 1.04 (npf2183)

|           |       |                                                    |
|-----------|-------|----------------------------------------------------|
| NpF2183-R | 11703 | AAATCACATAAGCCAAATTAGTTGCTTGTGTCTCAGATATTAGATTATCC |
| NpF2181-R | 2112  | AAATCACGTAAGCCAAATTAGTTGCTTGCCTCTCAGTGATGAGATTATCC |
| consensus |       | *****                                              |
| NpF2183-R | 11653 | TGACTTAACTGAGAAATAAGCTGCCAGTCAGCATCTAAACCTTGTACTGA |
| NpF2181-R | 2062  | TGACTGGACTGAGAAATAAGCTGCCAGTCAGTATCCAAAC-----      |
| consensus |       | *****                                              |
| NpF2183-R | 11603 | GCGGCTTGCCCTGAGCGGAGCCGTTGCGGTAGCGTCCCGTAGGGAGGGA  |
| NpF2181-R | 2022  | -----                                              |
| consensus |       |                                                    |
| NpF2183-R | 11553 | GCCGAAGTGAAGCTGTGCAGTATGCTCAGGCAGTCTGTGAGGAGTTTCT  |
| NpF2181-R | 2022  | -----CAGCTTTGCTTGATGTTGGGACAGTCTATCAAGGAGTTTCT     |
| consensus |       | **** * * * * *                                     |

### SDR1: Example 1.05 (npf3593)

|             |      |                                                     |
|-------------|------|-----------------------------------------------------|
| NpF3593     | 1448 | AGAAGGAAAGGAGTTTGAAGGCTGCGGAACAGTTAGAAATTAATTATTCA  |
| n9414?11624 | 1451 | GGAAGGGTAGTACTCTAAAGCTGCGGAACAGGTAGAGATTAAGTATTCA   |
| all2951     | 1403 | GTAAGGGAACAACCGCTAAAGCTGCCGAGCAAATAGAAATCAATTATGTA  |
| Ava0951     | 1403 | GTAAGGGAACAACCTGCTAAAGCTGCCGAGCAAATAGAAATTAATTATGTA |
| consensus   |      | **** * * * * *                                      |
| NpF3593     | 1498 | GTCCAAAATCCAAAACCTTGTACTGAGCGAAGTCGAAGTATCTAAAATCCA |
| n9414?11624 | 1501 | ACGGATAA-----                                       |
| all2951     | 1453 | GTCGATAATTCAATCA-----GCTAACAAACCA                   |
| Ava0951     | 1453 | GTCGATAATTCAATCA-----GCCAACAAACCA                   |
| consensus   |      | * **                                                |
| NpF3593     | 1548 | GAATTCAGATGTTACCGACAGACTTACTGATGCATCGCCAAAACGGAGAG  |
| n9414?11624 | 1509 | ---GAAGAATGTTACCGACGGATTTACTGAGTCATCGCCAAAACGGAGAG  |
| all2951     | 1479 | G---GGAAATGCTACCAACGGAACCTCAGCCATCGCCTAAACGGCGAA    |
| Ava0951     | 1479 | G---GGAAATGCTACCAACGGAACCTAAGCCATCGCCTAAACGGCGAA    |
| consensus   |      | *** * * * * *                                       |

### SDR1: Example 1.06 (npr3609)

|               |     |                                                     |
|---------------|-----|-----------------------------------------------------|
| alr5125-R     | 545 | TCCCGACGGACAATTTCTGTAAATGCAGGTTTCGAGATGAAGGGAGTGGG  |
| Ava2341-R     | 545 | TCCCGACGCACAATTTCTGTAAATGCAGGTTTCGAGATTGAGGGGGCGGG  |
| NpR3609-R     | 542 | TCTCGGCGGACAATTTCTGTAAATGGTGAATCAGGGTTTAGTGAGGAGT   |
| n9414?14323-R | 548 | TCCCGCCGCACTTTCTGTAAACGCAGGTTTCAGGATTAAC---CCCT     |
| consensus     |     | ** ** * * * * * * * * * * * * * * *                 |
| alr5125-R     | 594 | GAGTAA-----GGAGTGGG-----                            |
| Ava2341-R     | 594 | GAGTGG-----GGAGTGGG-----                            |
| NpR3609-R     | 591 | GAGTAGAGACGCGGATTAATCACGTCCTACCTGAGTGGGCTTGCCGTGAGC |
| n9414?14323-R | 593 | AACTGT-----TGACTGTT-----                            |
| consensus     |     | **                                                  |
| alr5125-R     | 608 | -----GAGTGGGGAAGTTTTTTTGAAGTTGGTTGAATCCTTCGGT       |
| Ava2341-R     | 608 | -----GATGGGGGAAGTTTTTTTGAAGTTGGTTAAATCCTTCGAC       |
| NpR3609-R     | 641 | GTAGCCGAACGGGAGTGTCTGAGTTTTATTAGCTTTTGTAAATCCTTCAGC |
| n9414?14323-R | 607 | -----AACTGTAACTGTTCACTGAC--ACTAAATCCCTCCGC          |
| consensus     |     | * * * * * * * * * * * * * * *                       |
| alr5125-R     | 646 | AATGTTTTCAATTAAGTCTTCTCCGGTAAATTACCCACAGCTACAGCCG   |
| Ava2341-R     | 646 | AATAGTTTTCAATTAAGTCTTCTCCGGTAAATTACCTACAGCTACAGCCG  |
| NpR3609-R     | 691 | AACGATCGCAATTAATTCTTCTACAGGCAAATTGCCACAGCTACAGCAG   |
| n9414?14323-R | 643 | TACAGTTGCAATTAAGTCTTCCACAGGTAAATTACCCACAGCTACAGCCG  |
| consensus     |     | * * * * * * * * * * * * * * *                       |

### SDR1: Example 1.07 (npr3667)

|             |     |                                                            |
|-------------|-----|------------------------------------------------------------|
| all4690     | 101 | TTCAACGGTTGACTGATTTATATAGAGAACGATTACAGCCCA-----            |
| Ava1977     | 101 | TTCAACAGTTGACTGATTTATATAGAGAGCGATTACAGCCCA-----            |
| NpR3667     | 101 | TTCAACAGCTAACGGATTTATACCGCGATCGCCTCAAACCCA <b>TACTTCGG</b> |
| n9414?21160 | 101 | TTCAACAGCTAACGGATTTATATAGCGATCGCCTCCAACCCA-----            |
| Tery_2053   | 101 | TTGACCAAGTTGACCAATTTATATCGCGATCGCCTCAAACCTA-----           |
| consensus   |     | ** * * * * * * * * * * * * * *                             |
| all4690     | 143 | -----ACACACGCATATTAGACATGATGAGTAGTTGGGT                    |
| Ava1977     | 143 | -----ACACACGCATATTAGACATGATGAGTAGTTGGGT                    |
| NpR3667     | 151 | <b>CTACGCTCAGTACAAG</b> ACACCCGCATTCTTGATATGATGAGCAGTTGGGT |
| n9414?21160 | 143 | -----ACACCCTTATACTAGACATGATGAGCAGTTGGGT                    |
| Tery_2053   | 143 | -----ATACTCGAATTTTGGATATGATGGGTAGCTGGGT                    |
| consensus   |     | * * * * * * * * * * * * * * *                              |

# SDR1: Example 1.08 (npr3761)

|             |      |                                                     |
|-------------|------|-----------------------------------------------------|
| alr3638     | 467  | GCCATCCCGTGGTGGAACAGTCCTTACCTGCGGGCTTCTTTGTGCCAAAT  |
| Ava3186     | 1862 | GCCATCCGGTAGTGGAACAGTCCTTACCTGCGGGGTTCTTTGTGCCAAAT  |
| NpR3761     | 1868 | GTCATCCGGTGGTGGAACAGTCCTTACCTGCGGGTTTCTTTGTGCCGAAT  |
| n9414?18228 | 1868 | GTCACCCGGTGGTGGAACAGTCCTTACCGGCTGGGTTTTTTGTGCCGAAT  |
| Tery_3645   | 1901 | GTCATCCGGTGGTAGAAAAATATTTACCTGCTGGGTTTTTTGTACCAAAT  |
| l8106?29900 | 1868 | GACATCCCGTTGTAGAAAAGTTACTTCCGCCGGGATTTTTTTGTGCCGAAT |
| consensus   |      | * * * * * * * * * * * * * * * * * * * *             |
|             |      |                                                     |
| alr3638     | 517  | TCTACAGAGTTAGGGAATATT-----                          |
| Ava3186     | 1912 | TCCACCCAGTTGGGGAGTAAT-----                          |
| NpR3761     | 1918 | TCGACTCAATTAGGTCAAGAGTCATTAGTCAGTAGTCATCTGTCATTAGC  |
| n9414?18228 | 1918 | TCTACGCAATTAGGGAGGGAG-----                          |
| Tery_3645   | 1951 | ACTGCTATATTGGGAAGTAAAAATTTAG-----                   |
| l8106?29900 | 1918 | ACCGCGCAGTTAGGCAGTCGAATACCGG-----                   |
| consensus   |      | * * * * *                                           |
|             |      |                                                     |
| alr3638     | 538  | -----GAAGAACT-TCCCCACTC-----                        |
| Ava3186     | 1933 | -----GAAGAAACC-CACCAACTT-----                       |
| NpR3761     | 1968 | AGATAATCAAGAACAAATAACAAATACCTCTCTACGAGAGGCTGCGCCAA  |
| n9414?18228 | 1939 | -----GAAAGGAACCACAGAGGCGC-----AGAGGGCGCG-----       |
| Tery_3645   | 1979 | -----AGAAAAATAATTGCGGAATTACTCCCTATTCGGCG-----       |
| l8106?29900 | 1946 | -----ATAAAGAAGATGAAGAACTAACCCCTTATTCTTAT-----       |
| consensus   |      | * * *                                               |
|             |      |                                                     |
| alr3638     | 556  | -----CCC                                            |
| Ava3186     | 1951 | -----CCT                                            |
| NpR3761     | 2018 | CGACTACGCTCAGTACAAGTGACCAAGGACAAATGACCAATGACAATCCC  |
| n9414?18228 | 1969 | -----GAGGAAAGA-----CCG                              |
| Tery_3645   | 2014 | -----CCG                                            |
| l8106?29900 | 1981 | -----CCT                                            |
| consensus   |      | * *                                                 |
|             |      |                                                     |
| alr3638     | 559  | GATTTAATTATTCTCACTGGGCCTAATGCTAGTGGTAAAAGTTGTTACCT  |
| Ava3186     | 1954 | GACTTAATTATTCTAACTGGACCAAATGCCAGTGGTAAAAGTTGTTACCT  |
| NpR3761     | 2068 | GATTTGATTATCCTCACCGGGCCAAATGCTAGCGGCAAAAGTTGTTATTT  |
| n9414?18228 | 1981 | GATTTAGTAATTTTGA CTGGACCGAATGCGAGTGGTAAGAGTTGTTATTT |
| Tery_3645   | 2017 | GATTTAATTATTTTAACTGGTCCTAATGCTAGTGGTAAAAGTTGTTATTT  |
| l8106?29900 | 1984 | GATTTAATTATTTTAAACCGGGCCGAATGCCAGTGGAAAAAGTTGTTATTT |
| consensus   |      | * * * * * * * * * * * * * * * * * *                 |

### SDR1: Example 1.09 (npr3765)

|             |      |                                                                    |
|-------------|------|--------------------------------------------------------------------|
| alr3547     | 1007 | GTTTACTCAATCAAGTATTTATGAATCTTCTCAGCAATGCTATTGATGCT                 |
| Ava3526     | 1007 | GTTTACTCAATCAAGTATTTATGAATCTTCTCAGCAATGCCATTGATGCT                 |
| NpF3765     | 1049 | GGTTACTCAATCAGGTATTTATGAATATTTTGGCGAATGCTATTGATGCT                 |
| L8106?24835 | 959  | GACAATTAAGCCAAGTGTATGAACCTTAATTGCAAATAGTATTGATGCT                  |
| consensus   |      | * * * * * ** * * * * * * * * * * * * * * * * * * * * *             |
|             |      |                                                                    |
| alr3547     | 1057 | TTGGAAGAAGCTA <b>TAGTCA</b> -----A                                 |
| Ava3526     | 1057 | TTAGAAGAATCCAC <b>AGTCA</b> -----A                                 |
| NpF3765     | 1099 | ATAGAAG <b>AGTCATTAGTCACTTGTACTGAGCGTAGTCGAAGTA</b> <b>TTAGTCA</b> |
| L8106?24835 | 1009 | TTGGAAGAACAGATGAAAA...                                             |
| consensus   |      | * * * * *                                                          |
|             |      |                                                                    |
| alr3547     | 1077 | ATATTCAGGAATGGTAACCAAGCCACAAATTATCATTTCGGACAGAAATTA                |
| Ava3526     | 1077 | ATATCCGGAATGGTAAGCCACAAATTATCATTTCGGACAGAAATTA                     |
| NpF3765     | 1149 | <b>TTCTGTCATT</b> GGTAAGGGATAAAGGAAAAATTTTATTCGGACTCAACTCA         |
| consensus   |      | * * * * * * * * * * * * * * * * * * * * *                          |
|             |      |                                                                    |
| alr3547     | 1127 | TAGATGATCAGCAAGTAGTAATTCGCATTGCTGACAACGGGATAGGAATC                 |
| Ava3526     | 1127 | TAGGTGATCAGCAAGTAGTAATTCGCATTGCTGACAATGGGATAGGAATT                 |
| NpF3765     | 1199 | CTGATGAAAATCAAGTAATTATTCGTATTTCCGATAATGGCCCGGAATT                  |
| L8106?24835 | 1157 | ...CTAAAGACTACCTTTCCATTAAATTTCTGATAATGGTTTAGGAATT                  |
| consensus   |      | * * * * * * * * * * * * * * * * * * * * *                          |

### SDR1: Example 1.10 (npr3970)

|               |      |                                                                           |
|---------------|------|---------------------------------------------------------------------------|
| alr0312-R     | 1043 | GCGACACCAGCAATGATGATTCCTCGCTGTGATTGTAACCATTCTG <b>GAGG</b>                |
| Ava4706-R     | 1043 | GCGACACCAGCAATGATGATTCCTCGCTGAGATTTTAACCATTCTG <b>GGGG</b>                |
| NpR3970-R     | 1037 | GCAACACCTGCAATAATAATGCCGCGATCGCATTCTTTCCACTCT <b>TGGGG</b>                |
| n9414?01832-R | 1037 | GCTACACCGCCGATGATTATTCCTCGCTCAGATTTTAACCACTGTG <b>GGGG</b>                |
| consensus     | 1051 | ** * * * * * * * * * * * * * * * * * * * * *                              |
|               |      |                                                                           |
| alr0312-R     | 1093 | <b>AATGGAGAG</b> -----                                                    |
| Ava4706-R     | 1093 | <b>AATGGACAG</b> -----                                                    |
| NpR3970-R     | 1087 | <b>AATGGGGAACTTGTATTGAGCGCAGTCGTTGGCGCAGCCTCTCGTAGAGA</b>                 |
| n9414?01832-R | 1087 | <b>AATCGGGAA</b> -----                                                    |
| consensus     | 1101 | ** * * *                                                                  |
|               |      |                                                                           |
| alr0312-R     | 1102 | ---- <b>TGGGGA</b> -----                                                  |
| Ava4706-R     | 1102 | ---- <b>TTGGGA</b> -----                                                  |
| NpR3970-R     | 1137 | <b>AGTA</b> <b>TGGGGA</b> <b>CTTGTACTGAGCGCAGTCGTTGGCGCAGCCTCTCGTAGA</b>  |
| n9414?01832-R | 1096 | -----                                                                     |
| consensus     |      | * * * * *                                                                 |
|               |      |                                                                           |
| alr0312-R     | 1109 | ----- <b>TGATGA</b> ----- <b>GGGAGTGGGG</b> -                             |
| Ava4706-R     | 1109 | ----- <b>TGATCA</b> ----- <b>GGGAGTGAGG</b> -                             |
| NpR3970-R     | 1187 | <b>GAASTATGGGGA</b> <b>CTTGTACTGAGCGCAGTCGAAGTA</b> <b>TGGGGAATTGGG</b> - |
| n9414?01832-R | 1096 | ----- <b>TGGCGAA</b> ----- <b>TGGGTAAATAGGGT</b>                          |
| consensus     | 1201 | ** * * * *                                                                |
|               |      |                                                                           |
| alr0312-R     | 1125 | TAGTATCTGTTATTCCCGCAAAAAATTCTTCTGGGTGAAACTTAGCCAGT                        |
| Ava4706-R     | 1125 | TAGTATCTGTTATTCCCGCAAAAAATTCTTCTGGGTGAAACTTAGTCAGT                        |
| NpR3970-R     | 1236 | TAATACTTGCTATTCCCTGCGAAGAAGTCTTCTGGGTGGAAGTGGGACTGT                       |
| n9414?01832-R | 1116 | TAGTATGTGCTATTCCCTGCAAAAAAGTCTTCTGGGTGCAACTGTGACTGT                       |
| consensus     | 1251 | ** * * * * * * * * * * * * * * * * * * * * *                              |

# SDR1: Example 1.11 (npr4754)

|             |      |                                                       |
|-------------|------|-------------------------------------------------------|
| alr5127     | 801  | TTTACCTAAATCCCAATTACCAGGAATCCAAGCGTTAATTCAAGTTGCGG    |
| Ava2372     | 801  | ATTACCTAAATCTCAATTACCAGGAGTCCAAGCATTAAATCCAAGTTGCAG   |
| NpR4754     | 801  | TTTACCCAAATCCAACCTTAGCTGGGATACAGGCGTTGATTCAAGTAGGTG   |
| n9414?09271 | 801  | TTTACCCAAAGTCTAATTTACCAGGAATCAAGGCGTTAATTCAAGTAGCTG   |
| Tery_4190   | 795  | TTTACCCCATTTCCAGTTAGCGGGGGTACGAGCATTAAATTCAAGTATCTG   |
| l8106?06150 | 798  | ATTAATGAGTTCCCAAATTGAGGGAGTTCAGGCGTTAATAGAAGTTGCAG    |
| consensus   | 801  | *** ** * * ** * ** * * *                              |
| alr5127     | 851  | GAGTACAAGCCA-CAGGTGAGGGTGTAGGGG---TGCAGGGGT-CTAAG     |
| Ava2372     | 851  | GAGTACAAGCGATCAATTCAAATTCAAAATACCCTTCGGGAACGCCAAG     |
| NpR4754     | 851  | GCGTGCAAGCGAGGGGAGAGG-AGAAGCAGGGGGAGCAGGGGAGCAGGG     |
| n9414?09271 | 851  | GGTTACAGGTGAGGGAAGAAGCAGGGGAGCAGG--GAGCAGGG-AGCAGGG   |
| Tery_4190   | 845  | ATGTTAAAG-----CACAA                                   |
| l8106?06150 | 848  | GATTGAGTGGTTCTCAGG-----TTTCTGAATCCTCAA                |
| consensus   | 851  | * *                                                   |
| alr5127     | 895  | GGTGTAGGGAA---AGACAACTAATACTCCCTGT-----               |
| Ava2372     | 901  | GGCGAACAAAATTCAAATTAATCAATAATGACTCTAATAAGGATTTAAG     |
| NpR4754     | 900  | GAGCAGGGGAGCAGGGGAGGA-----AATTGCCAACTACTTCGAG         |
| n9414?09271 | 898  | GAGCAGGGGAGCAGGGGAGCAGGGGAGCAGGGG-----                |
| Tery_4190   | 859  | GCGCAGGGGAAATTTGAAAGAACTAAGAATCA-----                 |
| l8106?06150 | 881  | AAACAGAGGAGATTGAAGGGAA-TAGAAAAAA-----                 |
| consensus   | 901  | *                                                     |
| alr5127     | 927  | -----CCAATCCCCAGCCACCACCCCTAAACTCTCA                  |
| Ava2372     | 951  | TTATGGTGTCCTCAATCTCCCAATCTCCCAAGTCTCCCAATCTCCCAATCTCC |
| NpR4754     | 939  | TTCTGCTCAGTACAAGTCCAAAATCCAAAATCCAAAATCCAAAATCTGCTCA  |
| n9414?09271 | 930  | ---GCAGGGAGCAAG--GAAACCTTCTGCTTCATCTGCGAAAAGTTTAA     |
| Tery_4190   | 891  | -----AAATCTCTGA                                       |
| l8106?06150 | 912  | -----TTTTAAACAATCA                                    |
| consensus   | 951  | ** * *                                                |
| alr5127     | 959  | AGCCAGAAGATATCGGTTTTCTGTTTGGGGCCGCGTATCAATGCGGTGGGG   |
| Ava2372     | 1001 | AACCAGAAGATATTGGCTTTCTGTTTAGGGCCGCGTATCAATGCAGTTGGT   |
| NpR4754     | 989  | AGCCTGAAGATATCGGGTTTTCTGTTGGGACCACGAATTAATGCTATCGGT   |
| n9414?09271 | 974  | AGCCTGAAGATATTGGCTTTCTGTTGGGGCCACGCATTAATGCTATTGGT    |
| Tery_4190   | 902  | AACCAGATGATATTGGCTTTCTGTTGGTCCCGTATTAATGCAGTGGGA      |
| l8106?06150 | 926  | AACCCGAAGATATTGGCTTTCTGTTAGGGCCTAGAATTAACGCAGTTGGA    |
| consensus   | 1001 | * * * * * * * * * * * * * * * * * * *                 |

### SDR1: Example 1.12 (intergenic sequence right of all1059)

```
A7.chrom 1236361 CCTTCTAGCTCTGGTATGAATGGTCATTGGTCAGT - - TGTCAGTGTTCCT
Av.chrom 4674777 CCTTCTAGCTCTGGTATGACTTGTAAGGGTATAGGGGTATAGGGGTATAA
consensus ***** * * * * * * * * * *

A7.chrom 1236411 TCCTCCTGCTCTAGGCTGGTGAGCGA CTTGCCTTGAGCGGAGTCGAAAGG
Av.chrom 4674827 AATAAATGTTTGCAACCCCTTACACCCTTAAACCCTTACACCCCTACACCC
consensus * * * * * * * * * *

A7.chrom 1236461 AATTT - AACTACTGCCTTC - - TACCTC - TTAAGAGTTCTTAGTCTAGTCA
Av.chrom 4674877 AGCCTCAACAGACAACCTGGGTGCGTAGTTCTAAGTTATTAGTCGAGTCG
consensus * * * * * * * * * * * * * * *
```

### SDR1: Example 1.13 (intergenic sequence right of all1147)

```
A7.chrom 1353714 TTTAAACGCAGAGGGGTGATGAGGTAGGCGCGGAGGTACGCGGAGAGTTA
Av.chrom 5522619 ACGACTGGTGAACCCGAAGGAGGTAGGCGCAAAGGTACGCGGAGAGTTA
consensus * * * * * * * * * * * * * * *

A7.chrom 1353764 TACAAAATCTTTCTTTGCGTCTC TGG - - CTACTGA - GCGAAGTCGAAGTA
Av.chrom 5522669 TACAAAATCTCTCTCTGCGCCTCTGCGCCCAACCGAAGTTTGCTCAACGGG
consensus * * * * * * * * * * * * * * *

A7.chrom 1353814 TG - - - - - - - - - - CGC - - - - - CTCTGCGTGAGATAAAAAAAGGAATT
Av.chrom 5522719 TGGAACCCCCACACCGCAACTTCTCTCTGCGTGAGATAAAAAAAGGAAAT
consensus * * * * * * * * * * * * * * *
```

### SDR1: Example 1.14 (alr2719)

```
alr2719 525 TGAAGGGAAAATAAAGACTGTCACTGTTAGTAAAACACCATCAGGTAAAT
n9414?12753 423 TGAGGGAAAAATCAAGACTGTAAGTGTATGCAAAACAACATCAGGTAAAT
AvaB0285 588 TGAGGGAAAAGTTAAGACTGTAGCCCTATCTAAAAACTGTTCTAATCAAT
consensus 701 * * * * * * * * * * * * * * *

alr2719 575 ACTTGGCATCTATCCTGACTGAAGTAGAGGG TGTTTCGACTCCGCTCAAC
n9414?12753 473 ATTTTCGCATCTATCCTGACTGAAGTAGAAGG - - - - -
AvaB0285 638 ACTTTGCGGCTATTCTTTTTGATGATGGTAA - - - - -
consensus 751 * * * * * * * * * * * * * *

alr2719 625 ACAAGTGAAAAGCCTG - - - CTATTACGGAGGGGAAGATTTACGGTATTGA
n9414?12753 506 - - - - - AGAAAATCCAA - - - CTATTACATTGCGTAAGATCTATGGTATTGA
AvaB0285 671 - - - - - AGACAAACCAGAATCAAATACAGAAGGTAAAGCGATAGGTATTGA
consensus 801 * * * * * * * * * * * * * *
```

### SDR1: Example 1.15 (nod 11744)

|             |     |                                                     |
|-------------|-----|-----------------------------------------------------|
| alr4733     | 601 | ATAGGTTTATTGCATCCCGATTATCCAGGGTTTTTTGAATCCCCACGCGA  |
| Ava1940     | 601 | ATAGGTTTATTGCATCCCGATTATCCAGGGTTTTTTGCATCCCCCGCGA   |
| NpF2675     | 601 | ATCGGATTACTCCACCCCGATTATCAAGGATTTTTTTGAATCCCCCGCGA  |
| n9414?11744 | 601 | ATGGGTTTACTTTCATCCCGACTATCAGGGATTTTTTACGTCCCCCGTGA  |
| Tery_0866   | 601 | ATGGGTTTACTCCATCCAGACCACCATGGTTATTTTGAAGTCTCCCCGAAA |
| Cw?1994     | 601 | ATGGGGTTACTCCATCCCGACTATGATGGTTATTTTACTTCTCCCCGTGA  |
| consensus   | 601 | ** * * * * * * * * * * * * * * * * * * * * *        |
| alr4733     | 651 | ATATTTGGCATGGTATCAAAAG-AGGGAAGAGGGCAGGGGTGCAGGGGGCA |
| Ava1940     | 651 | ATATTTGGCATGGTATCAAAACCA-----                       |
| NpF2675     | 651 | GTATTTGGAATGGTATAAACCCATTGTAGAGACGCGATTTCATCGCGTCT  |
| n9414?11744 | 651 | ATATTTGAAGTGGTATAAAAATCAGAGAATCAGCAAAATTTCCCACTCCC  |
| Tery_0866   | 651 | ATATCTTGAATGGTATCGCCAACAGAAA-----CCAAGT---          |
| Cw?1994     | 651 | CTATTTAACTGGTATCAACAAGAAAAATCTAGTAATCA-----         |
| consensus   | 651 | *** * * * * *                                       |
| alr4733     | 700 | GGGTGCAGGGGGG-----AAAACCACTGTT                      |
| Ava1940     | 679 | ---TCCC-----GCAACGTCGCCACAATCCAGTT                  |
| NpF2675     | 701 | CTAC-----AAAACCGATT                                 |
| n9414?11744 | 701 | CACCCCCGGTTACTGAGCGGAGTCGAAGTAACCCCCACTCCCCAGTC     |
| Tery_0866   | 688 | ---TCCC-----CACCCAGTT                               |
| Cw?1994     | 689 | -----TCCTCTT                                        |
| consensus   | 701 | *                                                   |
| alr4733     | 727 | GTTGGTATTCTTCTTTACCGTAAACACGTCATTACCAAACAACCTATAT   |
| Ava1940     | 703 | GTTGGTATTCTCCTCTACCGTAAACACGTCATCACCAAACAACCTATAT   |
| NpF2675     | 715 | ATCGGTATTCTCCTCTACCGAAAACACGTCATCACAAAACCTACCTACAT  |
| n9414?11744 | 751 | ATCGGGATTTTACTCTACCGCAAGCACGTAATTACCAAACAACCATATAT  |
| Tery_0866   | 700 | GTCGGTATTCTACTCTACCGCAAACACGTCATTACCAAACAACCTTATAT  |
| Cw?1994     | 697 | GTAGCTGTTCTTTTATACCGTAAGCACGTTATCACTAAACAGCCTTATAT  |
| consensus   | 751 | * * * * * * * * * * * * * * * * * * * * *           |

### SDR1: Example 1.16 (nod 12753)

|             |      |                                                    |
|-------------|------|----------------------------------------------------|
| alr2719     | 1168 | CATGACAGGGATGGAACGCAGCTATAAATATTAGAGCCGAAGGCATCAG  |
| n9414?12753 | 1042 | CATGACCGTGATGGAACGCAGCGCTCAATATTAGAGCCGAGGGGATCAG  |
| Cw?4348     | 898  | CATGATAGGGATGAGAACGCCAGCAAGAACATTAGAGCAGAGGGGATCAG |
| AvaB0285    | 1201 | CACGACAGGGATGTGAACGCAAGCATTAACTCAGAGATGAGGGTCTACG  |
| l8106?12460 | 1024 | CATGACAGAGACATAAACGCCGCGATCAATATCAGAGAAGAAGGTTTACG |
| consensus   | 1401 | ** * * * * * * * * * * * * * * * * * * * *         |
| alr2719     | 1218 | AATG-----                                          |
| n9414?12753 | 1092 | AATGCTTGCCCTGAGCATCTCGACTTCGCTCGATGGAACCGAAGCCGAAG |
| Cw?4348     | 948  | GCAA-----                                          |
| AvaB0285    | 1251 | AATTTT-----                                        |
| l8106?12460 | 1074 | ACTTTT-----                                        |
| consensus   | 1451 |                                                    |
| alr2719     | 1222 | --ATAAAGGCGGAAGGTTTCAGCCGTCCTGCTGTAGGAGGGGAGGTAAGT |
| n9414?12753 | 1142 | GGATCAAGGCGGAAGGTTTCAGCCGTCCTGCTGTAGGAGGGGATGTCAGA |
| Cw?4348     | 952  | --TTATCGGTCTTGGAACAGGACTGCTGCTGAAGGAGGAGAAGTCAGA   |
| AvaB0285    | 1257 | GACCTCTGGAACGGGGGATAAAGCCTGTCGCCAGATGTAAGTCGTAGTA  |
| l8106?12460 | 1080 | GAGCC--AGTGCGGTCTTGATGGTCT-CCGTCGAAGATCGACTGGCTTGG |
| consensus   | 1501 | * * *                                              |

## Intergenomic comparisons of sequences carrying SDR2a

SDR2a sequences are highlighted in white type against a dark cyano background  
Sequences in reverse orientation are in red type  
Genes ending in "-R" are inverted, and with coordinates beginning at the end of the gene

### SDR2a: Example 2.01 (npf2990 and downstream region)

```
AvaC0135 1083R AGGGGGAGATAAAAACTCCTCAC-----
NpF2990 1052R AGGGGGAGATAAAAACTCCTCACTCTTATACAGACGCGATGAATCGCGTCT
consensus *****

AvaC0135 1061R -----TCTTATACAGACGCGATTAATCGCGTCTCCTGGCTTCTG
NpF2990 1002R CTACTTCTAATTCTTGTACAGACGCGATTAATCGCGTCTCCTGGCTTCTG
consensus **** *****
```

### SDR2a: Example 2.02 (npf3251)

```
alr3055 677 TACAAGAAATCAAGTTAGAGATACCCAACCCAGAAAACCCACAACCTCAGC
Ava0856 677 TACAAGAAATTAAGCTAGAGATACCCAACCCAGAAAACCCACAACCTCAGC
NpF3251 680 TGCAAGAAGTCAAACCTCGAAATACCCAATCCTCCCCACTCCCCACTCCCT
n9414?07404 680 TAAACGAAATCAAACCTAGAACTACCCA---TCTCCCCACTCCCA-----
consensus 701 * * * * * * * * * *

alr3055 712 ACCAACAACAAGCCAAA-----CGCCTCAGCACTTGCCCTAGT
Ava0856 712 ACCAACAACAAGGCCAAA-----CGCCACAACACTTTCCCTAGT
NpF3251 715 GTACAAACGCGATTTCATCGCGTCTCTCCCCACTCAGCACTCACTTTAGT
n9414?07404 709 -----ACTCAATTTAGT
consensus 751 *** **

alr3055 750 TGTAGGATTACCAGACCGTTGTCACCGCCATCGTCCAGATTGGGTGCGGG
Ava0856 750 TGTAGGATTGCCAGACCGTTGTCACCGCCATCGTCCAGATTGGGTGCGGG
NpF3251 765 GGTAGGATTACCCGATCGCTGTCATCGTCATCGTCCAGATTGGGTACGTG
n9414?07404 717 GGTAGGCTTACCTGACAGATGTCATCGTCGCCGCCCTGATTGGGTACGGG
consensus 801 ***** * * * * *
```

### SDR2a: Example 2.03 (npf4944)

|             |      |                                                    |                                                 |
|-------------|------|----------------------------------------------------|-------------------------------------------------|
| all15136    | 901  | CGTTCTGTAGAAATGCGCCCAGGAAAACCCCTCACTGTCGCCACCTT    | CCC                                             |
| Ava2380     | 829  | CGTTCTGTGGAAATGCGCCCAGGTAAACCCCTCACCGTCGCCACCTTT   | CC                                              |
| NpF4944     | 829  | CGATCTGTGGAAATGAGACCAGGGAAAACCCCTTACTGTCGCCACTTT   | TCCC                                            |
| n9414?00410 | 814  | CAGTCTGTAGCCATCAGTCCCGGTAAACCCCTCACCGTCGCCACTT     | TCCC                                            |
| Tery_0767   | 829  | CATTCTGTAGCGGTTAAACCAGGAAAACCATTAACAGTAGCAAGTTTT   | CC                                              |
| consensus   | 901  | * * * * * * * * * * * * * * * * * * * *            |                                                 |
|             |      |                                                    |                                                 |
| all15136    | 951  | TA-----CA                                          | CCCCAGCCCCATTTATTTGG                            |
| Ava2380     | 879  | CA-----CACCTCCAG                                   | CCCCATCTACTTCG                                  |
| NpF4944     | 879  | TAGTACAGACGCGATTAATCGCGTCT                         | TCCCTCATTTCAGCCCTATACTTTG                       |
| n9414?00410 | 864  | CAC                                                | TCCCCACTCCCCA---CTCCCCACTCCCCACTCCCCAATTTACTTTG |
| Tery_0767   | 879  | TA-----ATACTAAATGTT--                              | TATATTTTG                                       |
| consensus   | 951  | *                                                  | * * * * *                                       |
|             |      |                                                    |                                                 |
| all15136    | 977  | GTTTACCAGGAAACCCCTGCGGCTGTTTTGGTAACATTTTGCGATTTGTG |                                                 |
| Ava2380     | 905  | GTTTACCAGGAAACCCGCGGCTGTTATGGTAACATTTTGCGATTTGTC   |                                                 |
| NpF4944     | 929  | GTTTACCAGGAAACCCCTGCGGCTGTGTTGGTGACATTTTGCGGTTTGTG |                                                 |
| n9414?00410 | 911  | GTTTACCGGGAATCCTGTTTCGGCTTTAGTAACATTTCTGGAGATTTGTG |                                                 |
| Tery_0767   | 902  | GTTTACCAGGAAATCCTGTTTCGGCTTTAGTGAGTTTTTGCGGTTTGTG  |                                                 |
| consensus   | 1001 | ***** * * * * * * * * * * * * * *                  |                                                 |

### SDR2a: Example 2.04 (npf5449)

|             |      |                                                     |                                           |
|-------------|------|-----------------------------------------------------|-------------------------------------------|
| all15137    | 1565 | AGGCAGTAATGCAAAGAGAAACCACAAGGACAACCACTACTGACACCCCC  |                                           |
| Ava2381     | 1553 | AGGCAGTACTGCAAAGAGAAACCACAAGGACAATCACTACTGAAACCGCT  |                                           |
| NpF5449     | 1526 | GCGTCGTCATGCAGCGCGAAACAGTGCGAACCTTCAAAGCTGAAACTTCG  |                                           |
| n9414?07866 | 1550 | GCGTCGTCATGCAACGCGAAACAACACGAACCTCTCAGCGCCGAACACCTG |                                           |
| consensus   |      | * * * * * * * * * * * * * *                         |                                           |
|             |      |                                                     |                                           |
| all15137    | 1621 | ACAAAAAAT                                           | CACTCCCCACTC---CCAACTCCCCACTCCCCACTCCCAT  |
| Ava2381     | 1609 | ACAAAAAAT                                           | CACTCCCCACTC---CCAAACCCCCACTACCAATTCCCCAT |
| NpF5449     | 1582 | ATTAAAAAAT                                          | CAGCACAGACGCGATTAATCGCGTCTCTCCCCACTCCCCAT |
| n9414?07866 | 1606 | CAAAATAAAT                                          | CAC                                       |
| consensus   | 1901 | ** * * * * *                                        | ** **                                     |
|             |      |                                                     |                                           |
| all15137    | 1663 | CATCCCTATTGGTAGTCGGATACAATACCGCATCCAAAACCTTAGGCGATC |                                           |
| Ava2381     | 1651 | CATCCCTATTGGTAGCCGGATACAATACCGCATCCAAAACCTTAAGCGATC |                                           |
| NpF5449     | 1627 | TGTGCCTATCGGTAGTCGAATGCAATATCGAGTGGAACAGAGCGATC     |                                           |
| n9414?07866 | 1639 | TGTACCCATTGGTAGTCGGATGCAAGTACCGATTGCAAAATCAGAGCGATC |                                           |
| consensus   | 1951 | * * * * * * * * * * * * * *                         |                                           |

### SDR2a: Example 2.05 (npr5741)

|             |      |                                       |                                           |
|-------------|------|---------------------------------------|-------------------------------------------|
| NpR5741     | 1148 | GTCATTCCCTAGAAGAAATTGACGAAACCCAAATT   | GTAGAGACGCGATTCT                          |
| n9414?10653 | 1097 | AGCATTCTTTAACGGAATTTGCCCAAACCTCAGGTTT | TAGAACAGCAATCT                            |
| alr1128     | 1103 | AGCAAGGTTTGGGTGAACGCGCAAGCACAGGATT    | TAGAAAGACAATCG                            |
| Ava4689     | 1103 | AGCAAGGTTTGGGTGAACGCGCAAGCACAGGATT    | TAGAAAGACAATCG                            |
| consensus   | 1151 | ** * * * * * * * * * * * * *          | * **                                      |
|             |      |                                       |                                           |
| NpR5741     | 1198 | ATCGCGTCT                             | TCCCAACACCAAAGGAATGAAGCCCACCAATCTCTAGAAAC |
| n9414?10653 | 1147 | ATTCTCTCCTGT                          | CAGCAACAACGGGATGAAGCACAACAAGCTTTAGATGC    |
| alr1128     | 1153 | ATTGTTTATTGT                          | CAGCAGCAACGGGATGAAGCACAACAAGCTTTGGAAAA    |
| Ava4689     | 1153 | ATTGTTTATTGT                          | CAGCAGCAACGGGATGAAGCACAACAAGCTTTGGAAAA    |
| consensus   | 1201 | ** * * * * * * * * * * * * *          |                                           |

### SDR2a: Example 2.06 (npr5797)

|           |      |                           |                                                                          |           |
|-----------|------|---------------------------|--------------------------------------------------------------------------|-----------|
| NpR5796   | 1066 | TGAGAAGTTCATTAAA- - -     | <b>A</b> ACT <b>C</b> CT <b>C</b> ACT <b>C</b> TAAT <b>T</b> CT <b>T</b> | GTACAGACG |
| alr3811   | 1068 | TCAGATGTAAACAGAGGATTTACAT | <b>CTG</b> ACT <b>ACTG</b> ACC <b>AA</b> T                               | GTACAGACG |
| ava1892   | 1068 | TCAGATGTAAATCCTGTGTTTACAT | <b>CTG</b> ACT <b>ACTG</b> ACT <b>ACTG</b> ACAGC                         | GTACAGACG |
| consensus |      | * * * * *                 | ** * * * *                                                               | *****     |

  

|           |      |                 |                                                    |
|-----------|------|-----------------|----------------------------------------------------|
| NpR5796   | 1020 | CGATTAATCGCGTCT | <b>CTG</b> <b>C</b> TTTAACTTGCCAAATATTCACCCATGTTGG |
| alr3811   | 1018 | CGATTAATCGCGTCT | <b>CTG</b> A- -CTAACTTGCCAAATACTCACCCATGTTGG       |
| ava1892   | 1018 | CAATTAATCGCGTCT | <b>CTG</b> A- -CTAACTAGCTAAATACTCACCCATGTTGG       |
| consensus |      | *****           | ***** * * * * *                                    |

### SDR2a: Example 2.07 (ava1193)

|                 |     |                                                             |
|-----------------|-----|-------------------------------------------------------------|
| A7120.asl4244   | 268 | ATATTAATTACTCTGGTTGGGTTGGCATGAAAAAACGATTCGAGATGGTG          |
| A29413B.Ava1193 | 268 | ATATTAATTACTATCGTTGGGTTGGCATGAAAAAATGATTCGA <b>GACA</b> ATT |
| consensus       |     | ***** * * * * *                                             |

  

|                 |     |                       |                                                                       |
|-----------------|-----|-----------------------|-----------------------------------------------------------------------|
| A7120.asl4244   | 318 | CAGGGGGGAGAAGAAAACCAA | <b>TGACA</b> ACT <b>TGACA</b> ACT <b>TGACA</b> ACT <b>TAACA</b> ACT   |
| A29413B.Ava1193 | 318 | - - - - -             | <b>GTACAGACGCG</b> ATTAA <b>TCGCGTCT</b> <b>CT</b> - - - <b>A</b> ACT |
| consensus       |     |                       | *****                                                                 |

  

|                 |     |                                                             |
|-----------------|-----|-------------------------------------------------------------|
| A7120.asl4244   | 368 | <b>A</b> ACTAAATAATTTAAGCGGGTGTATAAGAAAAAGTATGAAAAAAGGAATT  |
| A29413B.Ava1193 | 348 | <b>AA</b> ATAA- TAATTTAAGCGGGTGTATAAGAAAAAGTATGAAAAAAGGAATT |
| consensus       |     | ** * * * *                                                  |

### SDR2a: Example 2.08 (ava2053)

|                 |      |                                                    |
|-----------------|------|----------------------------------------------------|
| Npun.NpF0612    | 1295 | GCGCTTTATTGCACCCTGACGGCACGCCTGCTACCCTGCTTAGTGCGTAA |
| nod.n9414?07384 | 1295 | GTGCTTTATTGCATCCTGACGGTACACCCGCTTCTTTGCTAAGTGCTTAG |
| A7120.alr4784   | 1211 | GTGCCTTGCTTCACCCCGATGGTACTCCCGCCTCTTTATTGAGTGCGTAA |
| A29413B.Ava2053 | 1295 | GTGCCTTGCTGCACCCCGATGGTACTCCCGCCTCTTTGTTGAGTGCTAA  |
| consensus       | 1    | * * * * * * * * * * * * * * * * * * * * *          |

  

|                 |      |                                                            |
|-----------------|------|------------------------------------------------------------|
| Npun.NpF0612    | 1345 | - - - - -ATTATTCATTGGTATCATTAGTTATTTGCTAATGACCAATGA        |
| nod.n9414?07384 | 1345 | - - - - -ATG- - - - -TACT <b>GACA</b> ACT <b>GATA</b> A    |
| A7120.alr4784   | 1261 | TCAGTACTAAGTACTAAGTCAAAAGTCCAGAGTCCAGAGTTTTG <b>TGACAA</b> |
| A29413B.Ava2053 | 1345 | TCAGTACTAAGTACTAAGTCAAAAGTCCAGAGTCCAGAGTTTTG <b>TGACAA</b> |
| consensus       |      | * * * * *                                                  |

  

|                 |      |                                                                                      |
|-----------------|------|--------------------------------------------------------------------------------------|
| Npun.NpF0612    | 1387 | <b>CTA</b> ATGA- - - - -CTAATGACTAATGACTA                                            |
| nod.n9414?07384 | 1364 | <b>CTG</b> ATAA- - - - -CTGATATCTAAA- - - -                                          |
| A7120.alr4784   | 1311 | <b>CAGACAA</b> - - - - -CTGACAATTAACAACCG                                            |
| A29413B.Ava2053 | 1395 | <b>CAGACAA</b> AT <b>GTACAGACGCG</b> ATTAA <b>TCGCGTCT</b> <b>CTAACA</b> ACTAACAACCG |
| consensus       |      | * * * * *                                                                            |

  

|                 |      |                                                       |
|-----------------|------|-------------------------------------------------------|
| Npun.NpF0612    | 1411 | ATGACAAAGGACAACCTTCTATGACTATTACAGTCGAATCTCTAAAACGTC   |
| nod.n9414?07384 | 1388 | - - - - -AACCTGTATGGCTATTCAAGTCGAATCTCAAAAGCGCC       |
| A7120.alr4784   | 1325 | ACAATTA- - - - -AACTAATATGGCTCTGACAGTCGAAACTAAAAAAGAC |
| A29413B.Ava2053 | 1445 | ACAATTA- - - - -AACTAATATGGCTCTGACAGTCGAAACTAAAAAAGAC |
| consensus       |      | ** * * * * * * * * * * * * * * * * * * *              |

A7120. alr0522 890 -----TTACAACGCTCTTAGAAATTCTCCGGCGCAGAGCATCTATTTCT-  
 A29413B. Ava2924 890 -----TTACAACGCTCCTAGAAATTCTTAGACGCAGAGCAGCTATCTC-  
 nod. n9414?13290 884 AAACATTTACAACCTTTGCTAGAAATTCTCCGGCGACGAGTTGCTAGTTAA  
 Npun. NpR3812 992 CCAATTTACAAAACCTTTGGAGATGCTAAAAAGACGAACCTACACTTTAG  
 consensus \*\*\*\*\* \* \* \* \* \* \* \* \* \* \*

A7120. alr0522 933 --TTCTTAAC-----CGTTGCTTAG-----ACCTGTCTAAAGGGATTGGGGAC  
 A29413B. Ava2924 933 --TTCTTAACAGA-CGCGATTAA-----CCACGCTCTATAAAGAATGATGC  
 nod. n9414?13290 931 AATTATGAACATATCATCCTTAAGGTAGATGCTTCAATTACGAACGTTGC  
 Npun. NpR3812 1042 -----CTCATC---CCACGCCTAAAAATAACGC-TATTTACAGACATTGG  
 consensus \* \* \* \* \* \* \*

>alr0534 810 TCGTTATATTCCCTGGTAACAAGACCACCTTGAGGC**GATAACT**GT-----  
 >Ava2936 810 TCGTTATATTCCCTGGTAACAAGACCACCTTGAAGC**GATAACTGTACAGACG**  
 >n9414?13260 810 CCGTTACATCCCTGCAAATCCCACAAATTAAGACCTGAGT**GCTGAGTTAC**  
 consensus \*\*\*\*\* \*\* \*\* \* \* \* \* \*

>alr0534 853 -----T**GACTGACAAC**T-----  
 >Ava2936 860 **CGATTTCATCGCATTCTAAACAATTGTACAGACGCGATTTCATCGCGTCTCC**  
 >n9414?13260 860 AGGAGTTT**GCACGTGGGTTGAATCAGC**... ..CAA**ACTCAACAAC**T  
 consensus

>alr0534 865 **GACAAC**T**GACAAC**TAA-C**CAAATTATGTCAATCCATTACTTGAATACAA**  
 >Ava2936 910 **AACAAC**T**GACAAC**TAA**ACCAA**ACTATGTCAATCCATTACTTGAATACAA  
 >n9414?13260 1087 **GATAAC**T**GATAAC**T**GATAAC**TGA**AA**T**GACA**ATT**CCTTTACTCGAATACAA**  
 consensus \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## Intergenomic comparisons of sequences carrying SDR3

SDR3 sequences are highlighted in white type against a purple background

Sequences in reverse orientation are in red type

Genes ending in "-R" are inverted, and with coordinates beginning at the end of the gene

### SDR3: Example 3.01 (npf0818 upstream sequence)

```

<n9414?14192-R  -107  TTAACACGGCAAAAAGCCGACTTTATCCGTGATTTAACACTTCCAAAAAT
  <alr1348-R      -119  TTAACACAGCGAAAAGCCGGCTTAGTCAGTGATTCTACACTTAATTTAAAC
  <Ava5043-R      -120  TTAACACGGCGAAAAGCCGACTTAGTCAGTGATTCTACACCTAATTTAAAC
  <NpF0818-R      -109  TTACCACGGC-AAAAGCCGGCTTTGTCAGTGATGTAACACTTAACAAAAC
  consensus      ***  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
*
<n9414?14192-R  -157  CGGCTTTTT-TATAGTTGTTTGTCG-----A
  <alr1348-R      -169  CAGCTTTTTGGATTGTCAGTAATG-----A
  <Ava5043-R      -170  CAGCTTTTTGTATTGTCAGTAATG-----A
  <NpF0818-R      -167  CAGCTTTTTGGATTGTCAGTAATGTTAGCGGTAGCGGGCGTTAGCCC
  consensus      *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
*
<n9414?14192-R  -182  GACGCGA-TAAATTGCGTCTATCAGGAAGT-ATCCAGTC-----
  <alr1348-R      -194  GTAATGAGTAATGAGTGGGGATTGGGGAGTTATTCTTTCTTCATTTTGAA
  <Ava5043-R      -195  GTAATGAATAAGCTGTTCTGCTTTTG-AGTTGCAAAATCCATCGTGAGGG
  <NpF0818-R      -217  GTGCTAAGTCCTGAGTACTTAAGTAAAGTATAGAGTGACCGAGGACTCAA
  consensus      *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

```

### SDR3: Example 3.02 (npr1329 upstream sequence)

```

<NpR1329        -111R  AATGCCTACGAAGTTAGCTGACGGGCTAGGGCTGAGAGATGCCCTTCTTT
  <all3036        -111R  AATGCCTACGAAGTTAGCTGACGGGCTAGGGCTGAGAGATGCCCTCTCT
  consensus      *****  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
*
  <NpR1329        -161R  TTAGGAGTGCTGAGTAACGAGTGCTGTTAGCGGTAGCGGGCGTTAGCCC
  <all3036        -161R  GGCGAGTGCTGAGTAATGAGT-----
  consensus      *****  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
*
  <NpR1329        -211R  GTGCTGAGTTAACTC-----TTCACCTTCTCACTTTTA
  <all3036        -182R  --CTGAGTTCAGTATTTAGCTAGATTTAATGTTTAACTCTTGACTCTTT
  consensus      *****  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
*
  NpR1329         -243R  ACTCCTCACTTTCTATGAGATACGCCCCACAATTTGGTTCCTCCGCTCCA
  all3036         -230R  AGTTGACACTCTCTGTGAGATACGCCCCACAAATTTGGTTCCTCCGCTCCA
  consensus      *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

```

### SDR3: Example 3.03 (pNpBR028)

|            |     |                                                    |
|------------|-----|----------------------------------------------------|
| pNpAF278-R | -51 | TGGTGCAACAATTCAGTCATAGGTCTGAATTCCAGACTGGTAGCGAATCT |
| pNpBR028-R | -96 | TGGTGCAACAATTCAGTCATAGGTCTGAATCCCAGACTAAGAGCAAGTCT |
| consensus  |     | *****                                              |

  

|            |     |                                                  |
|------------|-----|--------------------------------------------------|
| pNpAF278-R | -1  | AAGAGCGTCTTGATTCTGACTCCTGA-----                  |
| pNpBR028-R | -46 | AAGAGCGCCTTGATTCTGACTCCTGTTAGCGGTAGCGGGCGTTAGCCC |
| consensus  |     | *****                                            |

  

|            |     |                                                    |
|------------|-----|----------------------------------------------------|
| pNpAF278-R | 341 | ATTCTGACTTCTGAACCTCTTTATAACAATTCCAGGAATTGTTTTAACTC |
| pNpBR028-R | 341 | ATTCTGACTTCTGAACCTCTTCATAACAATTCCAGGAATTGTTTTAACTC |
| consensus  |     | *****                                              |

### SDR3: Example 3.04 (alr4649 upstream sequence)

|           |                             |                        |
|-----------|-----------------------------|------------------------|
| ava2015   | ACACAACCAGAAATCATTGGTGAAATT | TAA                    |
| asr4648   | ACACAACCAGAAATCATTGGTGAAATT | TAAATATATAGGACTTACGCAC |
| consensus | *****                       |                        |

...146 nt of mini-transposon sequence  
between asr4648 and alr4649 ...

|           |      |                   |                                   |
|-----------|------|-------------------|-----------------------------------|
| <Ava2014  | -149 | AATATAT           | TGCTGAGTTGAGAGTGCTATTAGCGATAGCGGG |
| <alr4649  | -159 | CGTAAGTCCCAATATAT | TGCTGAGTTGAGAGTGCTATTAGCGATAGCGGG |
| consensus | 201  | * * *             | *****                             |

  

|           |      |                                                     |
|-----------|------|-----------------------------------------------------|
| <Ava2014  | -109 | GCGTTCAGTCCGTGCTGAGTTGATAAGCAATCGCTTTGCACTTTCTTCTC  |
| <alr4649  | -109 | GCGTTCAGCCC GTGCTGAGTTGATAACCAATCGTTTTGCACTTTCTTCTC |
| consensus |      | *****                                               |

  

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| <Ava2014  | -59 | AGGGTGCCTGTGATATCAAAAACAAGCTTGCCTTTAGTCAACCCTCCAG  |
| <alr4649  | -59 | AGGATGTCTGTGAAATCAAAAACAAGCTTGTGTTTTAGTCAACCCTTCAG |
| consensus |     | *** ** *****                                       |

  

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| <Ava2014  | 342 | TTTGTAGTTGTGAAGTTTAACTCAGCGTTGATAAGTACCTTCGTGGTAGC |
| <alr4649  | 342 | TTTGTAGTTGTGAAGTTTAACTCAGCGTTGATAAGTACCTTTGTGGTAGC |
| consensus | 351 | *****                                              |

## Intergenomic comparisons of sequences carrying SDR4

SDR4 sequences are highlighted in black type against a cyano background

Sequences in reverse orientation are in red type

Genes ending in "-R" are inverted, and with coordinates beginning at the end of the gene

#### SDR4: Example 4.01 (Region upstream of npr1070)

<NpR1070 -106 ATATATCCT - - - - CCTCGCGGGTTGTGTTAAAAAATAGGTACTCTTCGGGA  
 <n9414?00965 -105 AGCTGGGCTAAGAGCGTAGCCCCTGGGCAATGACGAATTAGTATTAACAA  
 <Ava1116 -102 AAAAGTGCT - - GAGTGGAAAATATTACTCATTACTCAGCACTTATTACTG  
 consensus \* \*\* \* \* \* \* \*

<NpR1070 -60 TATCTCTTAGCGTAAGTCT **TGTTGGCGTAGCCTTTCGTAGAAAG** ACAAG  
 <n9414?00965 -55 TATCCCTACGGGGAAGCAA **GCCTACGCGTAGCATCTCGCAGATAAG** - - - -  
 <Ava1116 -54 -ATTACTCAACATTTCATTTATTTTAT - TAGCGTCTCGAATACAAG - - - -  
 consensus \*\* \* \* \* \* \* \* \* \* \*

<NpR1070 -10 GATAATAAAAGTGGTTCAAAC TAGTCTAAATCCTCAAATAAATCCAGC ->  
 <n9414?00965 -10 GATAATAAACATGAATCAACCTAGTCTTAGTCCCGGTATAAATCAGGTTA  
 <Ava1116 -10 GATCATCAAAGTGGTTCAAAC TAATCTAAGTACAAATATAAACAGCGC - -  
 consensus \*\*\* \*\* \* \* \* \* \* \* \* \* \* \* \* \*

### SDR4: Example 4.02 (npf2183)

NpF2181 7094R TCTCTTTGCCACAGTGC AAAATCTGCATATTGAATCGGCAGTG GCGCTAA  
NpF2183 4262R TGTCCTTTGCCACAGTGC AAAATCTGCATACTGAATCGGCAGTGGTGTCTAA  
consensus \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

NpF2181 7044R AGTCGAGCTTTTT-----  
NpF2183 4212R AGGTGTACCCTTTTCGGGGAAGCAAGCTACGCATAGCGTCTCGTAGAGACG  
consensus \*\* \* \* \*\*

NpF2181 7031R ----ACCTTGAGAATAAGCATTGTAAAGTGTTGCTAGTTCTTGGAGAAAC  
NpF2183 4162R GTTGATCTTGAGAATAAGCGTTGTACAGTGCTGCTAGTTCTTGAAGAAAT  
consensus \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

### SDR4: Example 4.03 (npf4077)

all0403 1 ATGGGTAAATCCTCCTCCGACCACCAAAAGCCTGTCTCTC-----  
Ava2842 1 ATGGGTAAATCCTCCGCCGACCACCAAAAGCCTGTCTCTC-----  
NpF4077 1 ATGGGCAAACCCACCGCAGATTCCCTCCGGGCGGCTTCTCTACGAGACGC  
consensus 1 \*\*\*\*\* \*\* \* \* \* \* \* \* \* \* \* \* \*

all0403 36 -----GTAAAAAGGATGGTAGATTAGTTTGAATCATTCTACCCACA  
Ava2842 36 -----GTAAAAAGGATGGTAGATTAGTTTGAATCATTCTACCCACA  
NpF4077 51 TACGCGAACCAAAAAAGCTGCCAGACTGGTTTGAATCACTCGACACACC  
consensus 51 \*\*\*\*\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

all0403 83 TTCCCGGCCTGATACCTATTTTAGAACGCCTGTGTCAACAAGATGGCATT  
Ava2842 83 TTCCCGGCCTGATACCGATTTTAGAACGCCTGTGTCAACAAGATGGCATT  
NpF4077 101 TTTCTGGTCTTATCCCAATTTTAGAACGTCTTTGTGAGCAGGATGGTATC  
consensus 101 \*\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

#### SDR4: Example 4.04 (NpF5754)

|             |     |                                                       |
|-------------|-----|-------------------------------------------------------|
| alr4044     | 195 | TGGACGAGTACCTTCTGACTCAGGTTATCGCATTTATGTTGACCAGTTAA    |
| Ava1661     | 195 | TGGACGAGTACCTTCTGACTCAGGTTATCGCATTTATGTTGACCAGTTAA    |
| NpF5754     | 195 | TGGACGTGTACCTTCAGATTTCAGGCTATCGCATTTATGTTGACCAGCTAA   |
| n9414?07736 | 195 | TGGACGAATACCTTCAGACTCAGGCTATCGGATTTATGTTGACCAGTTAA    |
| Tery_0712   | 201 | TGGAAGAATTCCATCGGACTCAGGTTACCGAATATATGTTGACCAATTAA    |
| consensus   |     | *** * * * * * * * * * * * * * * * * * * * * * * *     |
|             |     |                                                       |
| alr4044     | 245 | TTACCCCTCTCTGCG-----AGACACTACACGA                     |
| Ava1661     | 245 | TTACCCCTCTCTACG-----AGACACCACACGA                     |
| NpF5754     | 245 | TTACACCTTCTCTGCGTTTCGCGCAGCGTGTCTCGCAGACAGACGCTACGCGG |
| n9414?07736 | 245 | TTACACCTGGTTTTCG-----AGATGCGGCGCGA                    |
| Tery_0712   | 251 | TTAGACCTT-----                                        |
| consensus   |     | * * * *                                               |
|             |     |                                                       |
| alr4044     | 274 | GCAGAAAGTTTTAGCAAAAGAGGTAGAATCAGCCCTACAACAGCATCTGCA   |
| Ava1661     | 274 | ACAGAAAGTGTTAGCAAAAGAGGTAGAATCAGCCCTACAACAGCATTTGCA   |
| NpF5754     | 295 | ACAGAAACTTTAGGGCGAGAAATAGAGGTGGCATTGCAAAAACATCTCCA    |
| n9414?07736 | 274 | ACGGATGTTTTAGCCAAAGAGGTAGAATGCGCTGCAAAATCGCCTCCA      |
| Tery_0712   | 260 | -CAGAAAATCTAGCTTTTGAAATTGAAGAGCTTTTACAAAAGCAACTAAA    |
| consensus   |     | * * * * * * * * * * * * * * * * * * * * * * * *       |

#### SDR4: Example 4.05 (Region upstream of all1193)

|           |      |                                                        |
|-----------|------|--------------------------------------------------------|
| <all1193  | -413 | ACTAGGCTTCAGTTCGTAGTAAGGACTCTAGTCCTTGTTTGTTCGCGGAGCATC |
| <ava0614  | -391 | GCTAGGCTTCATTTCTTAGTAATGAATTTAGTCTTTGTTTG-----         |
| consensus |      | ***** * * * * * * * * * * * * * * * * *                |
|           |      |                                                        |
| <all1193  | -363 | TCGCCAGAGAACTAAAGTTCTCACTACAAACATTTAATTATTTAC          |
| <ava0614  | -350 | -----AGGACTAAATTTCTCACTACGAATATTTTATTATTTAC            |
| consensus |      | ** * * * * * * * * * * * * * * * * *                   |

#### SDR4: Example 4.06 (Region upstream of all2013)

|           |      |                                                    |
|-----------|------|----------------------------------------------------|
| all2013   | -235 | ACTCAGCGTACCTCCCTTCTCTACAAGAGGCTGCGCCAACGGGTTACCA  |
| Ava0005   | -107 | ACTCAGCGTACCTCCCTT-----TGGGTTACCA                  |
| consensus |      | ***** * * * * * * * * * * * * * * * * *            |
|           |      |                                                    |
| all2013   | -185 | GTCGCCTGCGGTTTCGCGTAAGCGTCTCGTAAGAGAGGGAAACCTCCCGC |
| Ava0005   | -78  | GTCGCCTGGGT-----CGGGAAACCTCCCGC                    |
| consensus |      | ***** * * * * * * * * * * * * * * * * *            |

#### SDR4: Example 4.07 (all2883)

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| all2883   | 102 | CAGTTGCTTAGAAACAAGTACTCTGGCAATGGTGCTGGAGATTTTTGAGC |
| Ava1021   | 66  | CAGTTGCTTAGAAACAAGTACTCTGGCAATGGTGCTGGAGGTTTTGAGC  |
| NpF2889   | 150 | TAGCTGCCTCCAGACATCTTCTTTGGCAGTGGTGCTGGAGATTTTTGAGC |
| Tery_3802 | 48  | AGTTTGCTTAGATACAGAAAATTTGCAAGTAGTATGGTCAATTTTCTCTA |
| consensus |     | *** * * *** * * * * * * * *                        |

  

|           |     |                                                     |
|-----------|-----|-----------------------------------------------------|
| all2883   | 152 | AACAGCAATGCGATGGGCGTTGCGGTAGCGTCTCAAAGAGAGAGCCCCGCC |
| Ava1021   | 116 | AACAGCAATGCGATCGCT-----ACCGCCCCGCC                  |
| NpF2889   | 200 | AAGAGCAGTGCGAT-----                                 |
| Tery_3802 | 98  | GAGAAAAATGTAAC-----                                 |
| consensus |     | * * * * *                                           |

  

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| all2883   | 202 | TTGGGCGATCGCTTGGTGATAGTAAATGAGCAGCAATGCCCCGTTGGGTT |
| Ava1021   | 145 | TTTGCGATCGCTTGGTGATAGTAAATGAGCAGCAATGCCCCGTTGGGTT  |
| NpF2889   | 213 | -----CGCTTGGTAGTAGTGAATCAGCAGCAATACCCCATCGGATT     |
| Tery_3802 | 111 | -----GAGTTAGTAATAGTAAATCTTCAACACCAACCACTAGGATT     |
| consensus |     | ** *** * * * * * * * * * *                         |

#### SDR4: Example 4.08 (all2883)

|           |     |                                                   |
|-----------|-----|---------------------------------------------------|
| all2883   | 572 | CTGGTTTGAGGGGATCACCTATGGGGGGTGAACGCCATCTCTACAAGAG |
| Ava1021   | 533 | CTGATTTGAGGGGATCACCTATGGAGAGTGAACGCCGA-----       |
| consensus |     | *** ***** * *****                                 |

  

|           |     |                                                       |
|-----------|-----|-------------------------------------------------------|
| all2883   | 622 | GCTGCGCCAAACGCGACGTTTCATTGCGGGATGTCGCCCCGTTCTCTGCGAGA |
| Ava1021   | 572 | -----CGCTACATTTCATTGCAGGATGTCGCCCCGTTCTCTGCGAGA       |
| consensus |     | *** ** *****                                          |

#### SDR4: Example 4.09 (alr4852)

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| alr4852   | 301 | TGGGAGCGTGAGTCTATAATTGAGAATGCAGCAAGTGTGAAGTTAATTGT |
| Ava2126   | 301 | TGGGAGCGTGAGTCCATCATTGAGAATCCAGCAAGTGTGAAGTTAATTGT |
| consensus | 301 | ***** * * *****                                    |

  

|           |     |                                                   |
|-----------|-----|---------------------------------------------------|
| alr4852   | 351 | TGAAGTTGTCAGCAC-----                              |
| Ava2126   | 351 | TGAAGTTGTCAGCACGGCAGTTGCTTCAAGCCGGGAACCCGTCCAACGC |
| consensus | 351 | *****                                             |

  

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| alr4852   | 366 | -----TAATTGGCGTGATGATTATTACAAAAAATGTGCTGATTAC      |
| Ava2126   | 401 | ACTGCCTCACTAACTGGCGTGATGATTATTACAAAAAGCGTGCTGATTAT |
| consensus | 401 | *** *****                                          |

  

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| alr4852   | 406 | GTTGCGGTAGCGTCTCGAAGAGAAGAGATGGGTATACCTGAATACTGGAT |
| Ava2126   | 451 | GTTGCGGTAGCGTCTCGAAGGGAAGAGATGGGTATTCCTGAATACTGGAT |
| consensus | 451 | *****                                              |

  

|           |     |                                                    |
|-----------|-----|----------------------------------------------------|
| alr4852   | 456 | TATAGACTACGCAGGTTTGGGTGGACGAGCTTTTATTGGCAACCCTAAGC |
| Ava2126   | 501 | TGTAGACTATGCCGGCTTGGGTGGACGAGCTTTTATTGGCAACCCTAAAC |
| consensus | 501 | * ***** * * *****                                  |

## Intergenomic comparisons of sequences carrying SDR5

SDR5 sequences are highlighted in pink

Sequences in reverse orientation are in red type

Genes ending in "-R" are inverted, and with coordinates beginning at the end of the gene

### SDR5: Example 5.01 (npr0377)

|             |     |                                                    |
|-------------|-----|----------------------------------------------------|
| NpR0377     | 138 | GTATGCAGTCGTCAAAGAACTAATTGATGCAGGTGGGGATATCAACGCTC |
| n9414?14960 | 141 | CTATGCAGTTGTTAGAGAGCTAATTGATTTAGGGGCAAATATTAATGCTA |
| all1426     | 201 | TGATGCCGTCGTCAAAGAACTAATTGATTTAGGTGTAGATATCAATGCTA |
| Ava3944     | 198 | TAATTCGTCGTCAAGGAATTAATTGATTTAGGTGTGGATATCAATGCTA  |
| consensus   |     | ** * * * * * * * * * * * * * * * * * * * * * * *   |
| NpR0377     | 188 | AAAATAGCGATGCCTCCGGCGGGCTACGCCTACGCAACAATGCTTTGTGG |
| n9414?14960 | 191 | AAAATCATGAC-----CGGAATAATGCTTTATGG                 |
| all1426     | 251 | GAAACAACGAC-----AATAATAATGCTTTGTGG                 |
| Ava3944     | 248 | GAAACAACGAC-----AATAATAATGCTTTGTGG                 |
| consensus   |     | *** ** * * * * * * * * * *                         |
| NpR0377     | 238 | TTTGCTTGCTTTGGTAATCACTACGATTTAATTAATTTACTGTTGGCTGC |
| n9414?14960 | 220 | TTTGCTTGCTTTGGAAATCATTACGAGTTAATTAGCTTGCTGCTAGCCGC |
| all1426     | 280 | TTTGCTTGCTTTGGCAATCATTATGACTTAATTCATCTGCTACTGGCTGC |
| Ava3944     | 277 | TTTGCTTGCTTTGGTAATCATTATGATTTAATTCATCTGCTACTGGCAGC |
| consensus   |     | * * * * * * * * * * * * * * * * * * * * * * * *    |

### SDR5: Example 5.02 (npr0464)

|           |     |                                                     |
|-----------|-----|-----------------------------------------------------|
| all12438  | 155 | AACCTCTAGATGATGCCCTAGCAGAT-----AGA                  |
| Ava0371   | 155 | TACTCTTAGATGATGCCCTAGCAGAT-----AGA                  |
| NpR0464   | 155 | AGCTTCTAGATGATGCCCTAGCGATGTCTACGACGGGCTACGCCTACGC   |
| consensus |     | ** * * * * * * * * * * * * * * *                    |
| all12438  | 189 | TCCTGTGAAGTATACATTGTAGATGTGAAGGTGCAGGTAGAACCAGGGGCG |
| Ava0371   | 189 | TCCTGTGAAGTATACATTGTAGATGTGAAGGTGCAGGTAGAGCCAGGGGCG |
| NpR0464   | 205 | ACCTGTGAAGTATACATTGTAGATGTGAAAGTGCAGTTAGAACCAGGGGCA |
| consensus |     | * * * * * * * * * * * * * * * * * * * * * * * *     |

### SDR5: Example 5.03 (npf0596)

|             |     |                                                     |
|-------------|-----|-----------------------------------------------------|
| NpF0596     | 451 | GTGCGCGGCTGTATGGAGATCATTGGTGATGCGATGTCTACGGCGGTACAC |
| n9414?19202 | 451 | GTGCGTGGTTGTACAGAAATAGTTGGCTATGCTGG-----            |
| alr4447     | 451 | GTGCGTGGTTGTCTAGAAATAATAAGTGCCGCAAC-----            |
| Ava1372     | 451 | GTGCGCGGTTGTCTAGAAATCATCAGTGCCGCAAC-----            |
| consensus   |     | * * * * * * * * * * * * * * * *                     |
| NpF0596     | 501 | TGAACGCAGTCGAAGTGCTGGCTACGCCTACGCATTTGATCGTATATGCG  |
| n9414?19202 | 477 | -----CGCTTTTGATACTATCTGCT                           |
| alr4447     | 482 | -----ACAAGTATTTGATATTGTTGTG                         |
| Ava1372     | 482 | -----GCAAGCATTTAATATTGTGTG                          |
| consensus   |     | * * * * * * * * * * * * * * *                       |
| NpF0596     | 551 | TAGCCTGCGGTACAGCTACCACACTTACTGGGATTGCGCTTTTCATTGCAT |
| n9414?19202 | 506 | TGGCTTGTGGTACAGGTACTACATTAGCTGGTACTGCACTTGCCTCAAT   |
| alr4447     | 509 | TAGCTTGTGGTACAGCCACCACCCTAGCAGGTATCGCTCTGGCACTGGAA  |
| Ava1372     | 509 | TAGCTTGTGGTACAGCCACTACTCTAGCAGGTATCGCTCTGGCGCTGGAA  |
| consensus   |     | * * * * * * * * * * * * * * * *                     |

### SDR5: Example 5.04 (npf1055)

```
all1413      1 GTGCTATTTACATTTTGCGG-----ATCGCCGG
Ava3962      1 GTGCTATTTACATTTTGCGG-----ATCGCTGG
NpF1055      1 GTGCGTTTTCAATTTTGGCTTTGCCGCCGTAGGCATCGCCAG
consensus    ****      *****
```

```
all1413      29 GTCAATGGCTATCACCGTTGTCTCTGTGCCAAAAGCTACAGCCCAGATAC
Ava3962      29 GTCAATGGCTATCACCGTTGTCTCTATGCCAAAAGCTACAGCCCAGATAC
NpF1055      50 TTCAATGGCTATAGCCGTTGTACCTGTAGCAAAAAGCCACAGCCCAGATTG
consensus    *****      *****
```

### SDR5: Example 5.05 (npr1136)

```
alr4064     1050 AGACATATCATCTCTAAAAGAACAAGTAATAATTAACAAAGATTACC
Ava1642     1050 AGACATATCATCTCACAAAGAACAAGTAGTAATTAACAAAGATTACC
NpR1136     1050 AAATATTTCCGCACCAGCAGACAAGAAGTAATCAATTGGGAACATC
n9414?06099 1050 AAATACCACCTCACCATCAGAACAGGCGGTAGTGAATCGGGATTATC
consensus    * * * * *
```

```
alr4064     1097 CAGGCATCATCCTAGAGCAAGAA-----AAGCCT
Ava1642     1097 CAGGCATCATTCTAGAGCAAGAA-----AAGCCC
NpR1136     1097 CTGGTATAGTTTTGCAAAACGATGTCTCCGACGGGCTACGCCTACCGGCA
n9414?06099 1097 TTGGTATTCTTGTGCAGAAACGAA-----CAAGAA
consensus    ** * * *
```

```
alr4064     1126 CTCCAACCTCCAGTTACAACAACCCTTACATTATTATATAA
Ava1642     1126 CTCCAACCTCCAGTTACAACAGCCCTTACATTTATGA--
NpR1136     1147 CTACAACCCAGCTACAAAAAACATTTAAATCGTATTAA
n9414?06099 1126 CTGCAACCGCAACTGCAAAAATTATCACATTGA-----
consensus    ** *****
```

### SDR5: Example 5.06 (npf1215)

```
Ava4152     151 GAAGTTGCTGAGAAAGTTTGCCACGAGGGGTATGTAGCTGT-----
NpF1215     151 GAAGTTGCTGAGAAATTTGCCAAGAAGGCTATGTTGCGATGTCTACGAC
Tery_2503    151 GAAGTAACAGAAAAAATTGCTAAAGAAGTTATGTGCGAT-----
consensus    *****
```

```
Ava4152     192 -----TGCCTCTGCACTTTATCAACGAACTGCTCCCGTTTTCG
NpF1215     201 GGGCTACGCCTACGCACCGACTTTATTTCAACGCACTGCTCCTGTTTTG
Tery_2503    192 -----CGCTCCCTCAATTTACCAACGTCAAGCTCCTGTTTTG
consensus    ** * * *
```

### SDR5: Example 5.07 (npr1294)

```
NpR1294      448 GAAGATGCAGGTTACGGCGAATCTCGACAGTTTAACAGCGATATCTACGA
n9414?06964  451 GAAGATGCTGGCTATGGTGAATCTCGGCAGTTTAACCGCG-----
consensus    *****
```

```
NpR1294      498 TCGCCTTCGCCAACGCACTGGTGTAACTTAGGTGTGGCACTAGGCAGAC
n9414?06964  492 -----AACGCACTGGTGTAGTATTGGGTGTGGCTGTGGGTAGGC
consensus    *****
```

### SDR5: Example 5.08 (npf1309)

|             |     |                                |                                  |
|-------------|-----|--------------------------------|----------------------------------|
| all2509     | 551 | ACTTGGATTTGTCTTCCCAAGAGGTAGATT | CAGAGTCACAAGGCGTATTT             |
| Ava0441     | 551 | ACTTGGATTTGTCTTCCCAAGAGGTAGAT  | GCAGAGTCACAAGGCGCATTT            |
| NpF1309     | 551 | ATATGAACCTACCAGCTCAAGAGGCACAA  | ACAGAATCGCAAGCGATGTTG            |
| n9414?10877 | 551 | ATTTGAATTTACCCCCAGAAGAAGCTGA   | TACAGACTCACAAGCAGCTTTT           |
| consensus   |     | * * * * *                      | * * * * *                        |
|             |     |                                |                                  |
| all2509     | 601 | GAATATTTACAAGGCAAC             | -----GATATCATCCT                 |
| Ava0441     | 601 | GAATATTTACAGGCAAT              | -----GATGTCATCCT                 |
| NpF1309     | 601 | GAATTTTACGGGCGCAT              | GTCTACAACGGGCTACGCCAACGCGCGATGGT |
| n9414?10877 | 601 | ACTTATTTACGCGTAAT              | -----CGCCGCGATTCT                |
| consensus   |     | * * * * *                      | * * *                            |
|             |     |                                |                                  |
| all2509     | 630 | CAGTTTATAGATGATGAGTTAGATCCGG   | CGATCGTGGGACAGAAAGCCGCTA         |
| Ava0441     | 630 | CAGTTTATAGATGATGAGTTAGATCCGG   | CGATCGTGGGACACAAAGCCGCTA         |
| NpF1309     | 651 | TTCTTTAGATGAAGAGTTGGATGCTGCT   | ATTGTCGGAGAAAAGCCGCGCTA          |
| n9414?10877 | 630 | GACTTTAGATGACGAGTTAGATGCTACG   | GTGTTTGGAGAAAAAGCAGCTA           |
| consensus   |     | * * * * *                      | * * * * *                        |

### SDR5: Example 5.09 (npr)

|             |     |                                 |                                    |
|-------------|-----|---------------------------------|------------------------------------|
| NpF1384     | 601 | CTGACTTCTGACTGTAAGTTTCATCAGTTT  | CAAGAAAGCCGAGATGCCTA               |
| n9414?19954 | 601 | TTAACTTCTGATTGTAAGTTCCATCAGTTT  | CAGGAAAGCCGCGAT-----               |
| alr3216     | 601 | CTGACTTCTGACTGCAAGTTCCATCAGTTT  | CAAGAAAGCCGCGAT-----               |
| Ava4876     | 601 | CTAACTTCTGACTGCAAAATTCATCAGTTT  | CAAGAAAGCCGCGAT-----               |
| consensus   |     | * * * * *                       | * * * * *                          |
|             |     |                                 |                                    |
| NpF1384     | 651 | CGGCGGGCTGCGCCAA                | CGCAATCTTATTTTAATAGATGCGGGACATTATG |
| n9414?19954 | 646 | -----CGGCATCTAATTTTAATTGATGCGGG | ACATTATG                           |
| alr3216     | 646 | -----CGCGGTTTAATTCTCATCGACGCTGG | ACATTATG                           |
| Ava4876     | 646 | -----CGCGGTTTAATTCTCATCGATGCTGG | ACACTATG                           |
| consensus   |     | ***                             | * * * * *                          |

### SDR5: Example 5.10 (npf1388)

|             |     |                                 |                                |
|-------------|-----|---------------------------------|--------------------------------|
| Tery_0146   | 363 | TTCCGTTAATGAAATTTATATT          | CGTC-----ATC                   |
| l8106?15295 | 357 | TAGCGTTAATGAAATTTATGT           | GCGTC-----CTC                  |
| NpF1388     | 375 | TAGCGTCAATGAAATTTATGT           | GCGATGTCTACGACGGGCTACGCCAACGCG |
| alr1117     | 378 | TAGTGTGAATGAAATTTATATC          | CGCC-----CAG                   |
| Ava4699     | 378 | TAGTGTCAATGAAATTTATATT          | CGCC-----CAG                   |
| n9414?12408 | 378 | TAGTGTGAATGAAATATATATTA         | GAC-----CAG                    |
| consensus   |     | * * * * *                       | * *                            |
|             |     |                                 |                                |
| Tery_0146   | 377 | AATGGCAGGAGAGAAAGTCAAAACCCTAGTT | AATGTCCACAGTTCAGTTTAT          |
| l8106?15295 | 371 | AATGGAAACAACATCTCAAAACCGTTGTCA  | ACGTTTCATAGTTTCAGTTTAC         |
| NpF1388     | 389 | ATTTTCAGAAACAGCTAAAAACCATAGTGA  | ATGTTTCATAGTTCTGTTTAC          |
| alr1117     | 392 | AATTTTCGTCATAGTGTAACCTACCGTTGT  | AGACGTTTCACAGTTCAGTTTAT        |
| Ava4699     | 392 | AATTTTCGTCATAGTGTAACCTACAGTTGT  | AGATGTTTCACAGTTCAGTTTAC        |
| n9414?12408 | 392 | AATTTTCGCCAAAATATCAATACAGTTGT   | AGATATTTCATAGTTTCAGTTTAT       |
| consensus   | 401 | * * *                           | * * * * *                      |

### SDR5: Example 5.11 (npr1778)

|             |      |                                                     |
|-------------|------|-----------------------------------------------------|
| NpR1778     | 1156 | AAGCGAATTTTTGATCGCTTTTACCGAGTTGATAGCGATGCCTACGACGG  |
| l8106?16799 | 1198 | ACCAAAATTTTTGACCGATTTTATCGCATTAAATAGTGAT-----       |
| all17583    | 1162 | ACTAAAATTTTTGACCGCTTCTATCGAGTCAATAGCGAT-----        |
| n9414?20535 | 1162 | CCCAGAATTTTTGATCGCTTTTATCGAGTTCATAGCGAT-----        |
| consensus   |      | ***** ** ** * * * * *                               |
| NpR1778     | 1206 | GCTGCGCTTACGCTCTCGTAGCTCTGGCGGTTCTGGGATTGGGATTAGCGA |
| l8106?16799 | 1237 | -----CGCTCTCGGAGTACAGGAGGTTTCAAGTTTAGGATTAGCAA      |
| all17583    | 1201 | -----CGCTCTCGTAGCACTGGCGGTTCTGGTTTGGGATTAGCGA       |
| n9414?20535 | 1201 | -----CGCTCTCGTAAACTGGCGGTTCTGGATTAGGATTAGCGA        |
| consensus   |      | ***** * * * * * * * * *                             |

### SDR5: Example 5.12 (npf2993)

|             |     |                                                    |
|-------------|-----|----------------------------------------------------|
| n9414?14670 | 683 | GTGATGTCCCCAGTCCCTGAAAG-----ACCGC                  |
| l8106?12825 | 683 | GAGATATACCCCAATCTCTCAAAG-----ATCGT                 |
| AvaC0132    | 686 | GTGATGTCCCGGAATCATTGCG-----ATCGC                   |
| NpF2993     | 686 | GTGATGTCCCGGAATCATTGCGTTGGCATAGCCGCCGTAGGCATCGC    |
| consensus   |     | * * * * * * * *                                    |
| n9414?14670 | 712 | AAATTAATCTCTTTAGATATGGGGGCTTTAATCGCCGGGGCGAAATTCCG |
| l8106?12825 | 712 | AAACTGATCGCATTAGATATGGGAGCCTTAATTGCCGGAGCAAATTCG   |
| AvaC0132    | 715 | AAACTAATAGCTTTAGACATGGGTGCGTTAATTGCCGGAGCCAAATACCG |
| NpF2993     | 715 | AAACTAATAGCTTTAGACATGGGTGCGTTAATTGCCGGAGCCAAATACCG |
| consensus   |     | *** * * * * * * * * * * * * * * *                  |

### SDR5: Example 5.13 (npr3078)

|           |      |                                                    |
|-----------|------|----------------------------------------------------|
| all15323  | 1286 | TTACTAATCAAAATAATTTTATTAAG-----CGT                 |
| NpR3078   | 1334 | TTACAGAACGAAATAATTTTAGCGATGCCTGCGGCGGGCTTCGCCTACGC |
| consensus |      | **** * * * * * * * *                               |
| all15323  | 1315 | GTAGAAGTTGCCCGTGCTGGCGGCTGTGCTTTTTTGCCAAAATATCTGCC |
| NpR3078   | 1384 | CTTGAGGTTGCACGAGCTGGCGGTCGTGCTTTTTTGAGAAATCCATGCC  |
| consensus |      | * * * * * * * * * * * * * * *                      |

### SDR5: Example 5.14 (npf3461)

|             |     |                                                     |
|-------------|-----|-----------------------------------------------------|
| all1327     | 298 | GATAATGGCATATTTAGCGGTGTACTATCTCAAAGTCCAGCTAT-----   |
| Ava3794     | 298 | GATAATGGCATATTTAGCGGTGTATTAGCTCAAAGTCGAGCTAT-----   |
| NpF3461     | 301 | GATAATGGTATCTTTAGCGGCGTACTTAGTCAAAGTCCGGCGATGTCTAC  |
| n9414?03688 | 301 | GATAATGGCATATTTAGTGGGGTACTCAGTCAAAGTCCAGCCAT-----   |
| Tery_4783   | 286 | GACAATGGTATTTTTAGTGAAT - TTTGGAAAATTTTGAAATACAAAATA |
| consensus   |     | ** * * * * * * * * * * * *                          |
| all1327     | 342 | -----GGCAGTTGTGGAGCTAACTAATTCCAGTATTGGC             |
| Ava3794     | 342 | -----GGCAGTTGTAGAACTAACTAATCCCCAGTATTGGC            |
| NpF3461     | 351 | GACGGGCTACGCCTACGCAGCCGTTGAACTTACAAATCTTAATATTGGC   |
| n9414?03688 | 346 | -----TAACACCGTTGAACTGACAAACCCTAATTATTGGC            |
| Tery_4783   | 335 | TCCAGG-----TAGTTACCCTTACTAATTCTGAGTATTGGC           |
| consensus   |     | ** * * * * * * * * *                                |

### SDR5: Example 5.15 (npr3491)

|             |      |                                      |                                        |              |
|-------------|------|--------------------------------------|----------------------------------------|--------------|
| all0293     | 2990 | CAAAATACCGGAAAGCTCGCTGGGAAAGCCCAGAA  | GAT                                    | ACT-----     |
| Ava3067     | 2990 | CAAAATACCGGAAAGCTCGCTGGGAAAGCCCAGAA  | GAT                                    | AAT-----     |
| NpR3491     | 3056 | CTAAATCTCGGCAATCACGCCTAGAAACACAAA    | GCGAT                                  | GCCTGCGGCGAG |
| n9414?13485 | 3014 | CCAAATATCGGCAAACCCGCGACCTGAACCAGCCAG | GAT                                    | AAT-----     |
| consensus   |      | * * * * *                            |                                        |              |
| all0293     | 3031 | -----CAGAAAATTACCAG---               | TAATCCTTGGCAATGGCAACCCTC               |              |
| Ava3067     | 3031 | -----CAGAAAATTACCAG---               | TAATCCTTGGCAATGGCAACCGTC               |              |
| NpR3491     | 3106 | CTACGCCTACGC                         | AAAACTACCAGCAGTAATCCTTGGCAATGGCAACCGTC |              |
| n9414?13485 | 3055 | -----GAAACAATTACCAA---               | AAATCCTTGGCAATGGCAACCTGC               |              |
| consensus   |      | * * * * *                            |                                        |              |

### SDR5: Example 5.16 (npr3590)

|             |      |                                                    |       |                          |
|-------------|------|----------------------------------------------------|-------|--------------------------|
| NpR3590     | 1262 | TAATATTGAGTCGGCAAGCAG                              | GCGAT | GCCTACGGCGGGCAAAGCCAACGC |
| n9414?16092 | 1283 | TAATGCTGAGTCGCCAAGCCG                              | GAGAA | -----CGC                 |
| all3010     | 1259 | TAATGTTGAGTAGGCAAGCAG                              | GCGAT | -----AAG                 |
| Ava0901     | 1259 | TAATGTTGAGTAGGCAAGCAG                              | GTGAT | -----AAG                 |
| consensus   |      | * * * * *                                          |       |                          |
| NpR3590     | 1312 | ACAGGAGAAGCCAACGCACTAGTAAATTTAGGTTACAGCGAAGTCATGCA |       |                          |
| n9414?16092 | 1312 | ACAGCAGAAGCCAATGCTCTGGTAAACTTAGGTTACAGCGAAGTCATGCA |       |                          |
| all3010     | 1288 | ACAGGCGAGACTAATGCACTGGTAAATCTAGGTTACAGCGAAGTGATGCA |       |                          |
| Ava0901     | 1288 | ACAGGCGAGACTAATGCACTGGTAAATCTAGGTTACAGCGAAGTGATGCA |       |                          |
| consensus   |      | * * * * *                                          |       |                          |

### SDR5: Example 5.17 (npr4009)

|             |     |                                          |                                            |  |
|-------------|-----|------------------------------------------|--------------------------------------------|--|
| alr4112     | 275 | TTGGCGAAATGGAACCTCGCTTGGCGACATTTAAA----- |                                            |  |
| Ava0793     | 275 | TCGGCGAAATGGAATTGGCTTGGCGACATTTAAA-----  |                                            |  |
| NpR4009     | 278 | TTGGGGAAATGGAACCTCGCTTGGCGAAATTT         | GCGTTGGCGCAGCCAGCCG                        |  |
| n9414?06859 | 278 | TCGGCGAAATGGAACCTCGCTTGGCGATATTTACA----- |                                            |  |
| l8106?28541 | 272 | TGGGAGAAATGGAACCTCGCATGGCGAAATCTTAA----- |                                            |  |
| Tery_4482   | 272 | TAGGGGAAATGGAGTTAGCGTGGCGATATCTCAA-----  |                                            |  |
| consensus   |     | * * * * *                                |                                            |  |
| alr4112     | 309 | ----GTC                                  | TTTGCCTTGGGTAGGAATTACCGGCACTAACGGCAAAACCAC |  |
| Ava0793     | 309 | ----GTC                                  | TTTGCCTTGGGTAGGAATTACCGGCACTAATGGCAAAACCAC |  |
| NpR4009     | 328 | CAGGCATCGCT                              | ACCTTGGGTAGGAATTACAGGTACTAACGGTAAACTAC     |  |
| n9414?06859 | 312 | ----AGCTT                                | CCCCCTGGGTATTACTGGCACGAATGGTAAACCAC        |  |
| l8106?28541 | 306 | ----CGCTGT                               | ACCTTGGGTGGGAATCACTGGAACGAATGGAAAAACAAC    |  |
| Tery_4482   | 306 | ----GTC                                  | TTTCTCCTGGGTGGGTATTACCGGTACTAATGGCAAAACTAC |  |
| consensus   |     | *                                        |                                            |  |

### SDR5: Example 5.18 (npr4444)

|             |     |                                                                                    |
|-------------|-----|------------------------------------------------------------------------------------|
| NpR4444     | 91  | CAGAGTGCAGATGCAGCCCACAAAATTGCACCATTGACTTTTACATCTAG                                 |
| n9414?11072 | 91  | CAAGATACAGATCCAGAGCATATCATTTTCACTGACTTTTACATCTAA                                   |
| all1003     | 91  | CAAAGTACAGATACAGTTTACCAAATCGCCCCGCTAAATTTTATCTCGAC                                 |
| l8106?00265 | 301 | CAAAGTACAGATGCGGTTTCATCAGATCGCTCCCTTGGTCTATGAAGACTC                                |
| Tery_1824   | 211 | TATAGCCAAGATGTAGAACATGGTATTGCTTCTCTGAGTTATGACTCTGA                                 |
| consensus   |     | *        ****       *       **       **       *       *       *                    |
|             |     |                                                                                    |
| NpR4444     | 141 | CCCACAAGAA <b>GCGAT - GCCTGCGGCG - GGCTTCGCC - TACGC</b> TAATCTTA                  |
| n9414?11072 | 141 | TCCCCAAGAA <b>GCGATCGCCG - GGC</b> <b>GGGCTT</b> <b>GCCC</b> <b>ATCGC</b> CAATCTCA |
| all1003     | 141 | ACCAGAAGAG <b>GCGAT</b> -----AAACAAGCTCA                                           |
| l8106?00265 | 351 | GGCTACTGAA <b>GCAT</b> -----T <b>G</b> AGCGGCTAA                                   |
| Tery_1824   | 261 | ACCGCAGAT <b>GCGAT</b> ----- <b>CGC</b> TAATTTAA                                   |
| consensus   |     | *        **       *                                                                |
|             |     |                                                                                    |
| NpR4444     | 188 | AAGAGATTATTCTGTCCTTACCAAGAACCAAAATCATTACCGAAAGCCAA                                 |
| n9414?11072 | 191 | AAGCAATCATACAATCCTTACCCAGAACCAAAATAATCACCGAAACAGAA                                 |
| all1003     | 167 | AAAGTGTAAATTCATCTTTACCTCGCACTAAAATCATTAGCGAAAGTCCC                                 |
| l8106?00265 | 377 | AAACGATTATTCAAATATGGATAATGCCAAAATTATTCGTGAGAGTAAA                                  |
| Tery_1824   | 287 | AACAAATAATTGAATCAATGCCTCGAACTAATATTGTAAAGGAAGAAGAG                                 |
| consensus   |     | **       *       *       *                                                         |

### SDR5: Example 5.19 (npf5954)

|             |      |                                                                           |
|-------------|------|---------------------------------------------------------------------------|
| all0937     | 1198 | GAAGATTTTCGAGCGGCTTTGGTGTTAATGATCCAAGCAAAT <b>GATACCTC</b>                |
| Ava0514     | 1171 | GAAGATTTTCGCGCGGCTTTGGTGTTAATGATCCAAGCAAAT <b>GATACCTC</b>                |
| NpF5954     | 1201 | AATGATTTTCGTGCGGGTTTGGTGTTTCATGGTACAGGCCA <b>GCAATGCCTA</b>               |
| n9414?04395 | 1195 | CAGGATTTCCGCGCAGGTTTGTATTTCATGGTACAAGCAA <b>GGGATGCCTA</b>                |
| Tery_0595   | 1168 | CAAAAATTTTTCGCGGGTTTGTGTTTATGGTTAAGGCAA <b>GCGAT</b> -----                |
| consensus   |      | *       *       *       *       *       *       *       *       *       * |
|             |      |                                                                           |
| all0937     | 1248 | <b>CGCTGGCAAAGCTACGCA</b> AACTAGCTGAAAAATCCATTAAACAGCTAG                  |
| Ava0514     | 1221 | <b>CGCTGGCAAAGCTACGCA</b> AACTAGCTGAAACAGCCATTAAACAGCTAG                  |
| NpF5954     | 1251 | <b>CGGCGGGCAAAGCTACGCA</b> AATTCAGCCGAAGCATCCATAAAACAATTGG                |
| n9414?04395 | 1245 | <b>CGGCGGGCAAAGTCTACGCA</b> AGTCGGCTGAAGCATCTTTGAAAAAGCTGG                |
| Tery_0595   | 1213 | ----- <b>CGCCGTGTAGCTGAAGACTCTCTGAAAAAATTAG</b>                           |
| consensus   |      | ***       **       ***       *       *       ***       *                  |

### SDR5: Example 5.20 (npr6379)

|             |     |                                                                              |
|-------------|-----|------------------------------------------------------------------------------|
| all0443     | 672 | AACCATTACTAGCCCTAGCAGTGGCGCTGTACACCAAAG <b>GCGAT</b> -----                   |
| Ava2856     | 713 | AACCATTGCTAGCTCTAGCAGTGGCTCTGTATACCAAAG <b>GCGAT</b> -----                   |
| NpR6379     | 659 | AACCTTTATTGGCTTTGGCAGTGGCACTGTATACGCAAG <b>GCGATGCCTCC</b>                   |
| n9414?22308 | 692 | AACCTTTATTAGCCTTAGCAGTGGCAATGTATAATCAAG <b>GCGAT</b> -----                   |
| Tery_5036   | 701 | AACCACTTTTAGCAATAGCAGTAGCTCTTTACGCTCAAG <b>GGAT</b> -----                    |
| consensus   |     | ****       *       *       *       *       *       *       *       *       * |
|             |     |                                                                              |
| all0443     | 716 | ----- <b>CGC</b> CAACAGGGTATATCTTTAGGAGAAGCCGCACT                            |
| Ava2856     | 757 | ----- <b>CGC</b> CAACAGGGTATATCTTTAGGAGAAGCCGCACT                            |
| NpR6379     | 709 | <b>GGCGAGCTACGCTTACGCA</b> ACAAGGATTAAGCTTGGGAGAAGCTGCACT                    |
| n9414?22308 | 736 | ----- <b>CGC</b> CAAAAAGCCCTATCAATGGGAGAAGCAGCTCT                            |
| Tery_5036   | 745 | -----AAAGAACAAGTCTGGCAAAGGGAGAAGAAGCCCT                                      |
| consensus   |     | *       *       *                                                            |

### SDR5: Example 5.21 (pnpDF035)

|           |     |                     |                    |               |
|-----------|-----|---------------------|--------------------|---------------|
| AvaC0167  | 351 | TGCGGGTGAAATTGGGGCT | CGGTTGGCGAAGCCCGTC | ATAGACATCGCTA |
| pNpDF035  | 351 | TGGGGGTGCGATTGGGGCT | CGGTTGACGAAGCCCTCG | CAGACATTGCTA  |
| consensus |     | ** *****            | *****              | ***** **      |

  

|           |     |                        |                             |
|-----------|-----|------------------------|-----------------------------|
| AvaC0167  | 401 | AATTATTTGGCGAAGACCCAGA | ACTGCAAATTAAGAAGATTTACGCGGC |
| pNpDF035  | 401 | AATTATTTGGTGAAGACCCAGA | ACTGCAAATTAAGAAGATTTACGCGGC |
| consensus |     | *****                  | *****                       |

### SDR5: Example 5.22 (all0293)

|             |      |                        |                               |
|-------------|------|------------------------|-------------------------------|
| all0293     | 3767 | CAGAATCTACATGGCTTACCAA | ACATTCTCTCAGCAATATTGACTATCAA  |
| Ava3067     | 3767 | CAGAATCTAGCTGGCTTACCCA | ACATTCTCTCAGCAATCTTGACTATCAA  |
| NpR3491     | 3854 | TAGATTCAACTTGGCTAACCA  | AGAGTTCACAAGAAAATCCTGACTATCAG |
| n9414?13485 | 3791 | CATATTCTAGCTGGGTTAGCC  | ACAGTTCTGAGAATAATTCTGACTACCAG |
| consensus   |      | * * * * *              | *****                         |

  

|             |      |                             |     |            |              |
|-------------|------|-----------------------------|-----|------------|--------------|
| all0293     | 3817 | CGGATGTCTACGACGGGCTACGCCAAC | CGC | CAACACACA  | ACTGTTTGAAAA |
| Ava3067     | 3817 | CGGATGTCTACGACGGGCTACGCCAAC | CA  | CAACACACCA | CTTTTGAAAA   |
| NpR3491     | 3904 | CGGAT                       | CGC | CACAGCACC  | ACTTTTGAAAA  |
| n9414?13485 | 3841 | CGGAT                       | CGC | ATCTGCACC  | ACTGTTTGAAAA |
| consensus   |      | *****                       | * * | *** ** *   | *****        |

### SDR5: Example 5.23 (all0729)

|           |      |                           |                |             |
|-----------|------|---------------------------|----------------|-------------|
| all0729   | 2769 | ATCAGCTTTCTGGTGTGGGTAAAGT | GATAGTAGAAATTA | CGGATGTCTAC |
| Ava4631   | 2769 | ATCAGCTTTCTGGTGTGGGTAAAGT | GATAGTAGAAATTA | CGGAT       |
| consensus |      | *****                     |                | -----       |

  

|           |      |                 |       |                                  |
|-----------|------|-----------------|-------|----------------------------------|
| all0729   | 2800 | GACGAGCTGCGCTTA | CGC   | AAGCGAGCAGAAGAAGCGCTCAAAGAAAGCAT |
| Ava4631   | 2794 | -----           | CGC   | CAACGAGCAGAAGAAGCTCTCAAAGAAAGCGT |
| consensus |      |                 | *** * | *****                            |

### SDR5: Example 5.24 (alr1039)

|             |     |                           |                            |
|-------------|-----|---------------------------|----------------------------|
| alr1039     | 804 | GGTTTCTCAGTATGCAGCTTTGGG  | AGCATTACAAGCAAAACCAGAGTATT |
| Ava3695     | 804 | GGTTTCTCAGTATGCAGCTTTGGG  | AGCATTGCAAGCAAAACCAGAATATT |
| NpF0585     | 948 | AATTTCCCAATATGCAGCTTTAGGG | GCAATTGCAAGCGAAAGAGGAGTATT |
| n9414?00875 | 804 | TGTTTCTCAGTATGCAGCATTAGG  | AGCATTACAAGCCAAGCCAGAGTATT |
| l8106?05056 | 801 | GATCTCCCAATATGCAGCAATAGGG | GCGTTGAAAGCCGGATTAAATTATT  |
| consensus   |     | * * * *                   | *****                      |

  

|             |     |                   |                |                    |
|-------------|-----|-------------------|----------------|--------------------|
| alr1039     | 854 | TACAGGATCATATTGGA | CGGTTGGCGCAGCC | GCCGTAGGCATCGCTCAA |
| Ava3695     | 854 | TACAAGATCATATTAG  | CGG            | ATCGCTCAA          |
| NpF0585     | 998 | TGCAGAGTAATATAGGT | GCA            | ATTTTTCAA          |
| n9414?00875 | 854 | TACAGAAAAACATTGGT | GCT            | ATTTCCCAA          |
| l8106?05056 | 851 | GTCAACCGAAAATTAAG | GAA            | ATTGCGAAA          |
| consensus   |     | *                 | * ** *         | ** **              |

  

|             |      |                          |                            |
|-------------|------|--------------------------|----------------------------|
| alr1039     | 904  | GTCAGACAAATAGTATTCGACTAC | CTCAAGCAACTGCAAGGCTTATGTAA |
| Ava3695     | 883  | GTGAGGAAAATAGTATTCGACTAC | CTCAACCAACTCCAAGGCTTATGTAC |
| NpF0585     | 1027 | GTGCGGCAATTAGTACTCGACTCT | CTTAACCGCCTAGAAGGTTTATGTAG |
| n9414?00875 | 883  | GTCCGAGAAATAGTCATAGATGCC | CTCAAACCCCTAGAAGGTTTATGTAG |
| l8106?05056 | 880  | GTACGACAGTTCCTGTTAGAACAA | CTTAGTCAATTGGATTCAATTTGTAC |
| consensus   |      | ** * * *                 | *****                      |

### SDR5: Example 5.25 (alr1362)

```
alr1362 648 TCCATTAGATACAGTAGAGCAAATGCGGTAGGCATAGCCCGTCGTAGAC
Ava4024 648 TCCATTAGATACAGTAGAGCAAATGCGG-----
NpF1319 651 TCCCCTTGATACAGTAGAACAGATGCGG-----
consensus *** * ***** ** *****

alr1362 698 ATCGCTTAAAAATCCAGCAGTAGTAAATCGGAAATTGTGGTATATCCTGAT
Ava4024 677 AGCGCTTAAAAATCCAGCAGTAGTAAATCGGAAATTGTTGTGTATCCTGAT
NpF1319 680 ATCACCTTAAAGTCTAGTAGCAGCAAATCTGAGATCATCGTCTACCCCGAT
consensus * * ***** ** ** * * * * * * * * * * * * * *
```

### SDR5: Example 5.26 (alr3170)

```
alr3170 1305 GGGAATGTTGACTAATATTAGCGATGTCTACGACGAGCTGCGCTTACGCA
Ava3868 1305 GGGAATGTTAACTAATATTAGCGATGTCTACGACGA CTGCGCTTACGCA
pNpAR143 1383 GGGGATGTTACTAACATCACTGAC-----CGCA
consensus *** ** * ***** ** * **

alr3170 1355 AACAAGCAGAAGCTTCATTGCAAGAAAGCAAGGAACGTTTAGACGGAATT
Ava3868 1355 AACAAGCAGAAGCTTCATTGCAAGAAAGCAAAGAACGTTTAGACGGAATT
pNpAR143 1412 AACTAGCAGAAGCTGCACTGCAAGAAAGCAAACAACGTTTAGATGGAATT
consensus *** ***** ** ***** ***** *
```

### SDR5: Example 5.27 (all7016)

```
all7016 401 TCACCGATTTGAGTTCTATTTGCTTGACCTATCTGTTTGGGCTGCAACA
NpF5271 395 TTATAGATTTGAGTGCGCTTTGTCTGCACATTTCTACTTGGGTGGCAAGG
consensus * * ***** * ***** * * * * * * * *

all7016 451 GTTGATTACAACTCTACTGCCACAGCAAAGTCGCACCACTATCCTTTTCA
NpF5271 445 GTAAAATCGCAACATCC-----ACTACTATTACA
consensus ** * * * * * * * * * * * * * *

all7016 501 AAGCGATGCCTGCGGCGGGCTACGCCAACCTTAACACCTCGTGAGTTAC
NpF5271 478 GACAGAG-----CGTTTAACGCCTCGTGAAATGC
consensus * ** * ***** * *

all7016 551 AAATTGCTCAGTTGGTTGCTTTGGGGCTAACTAACGCAGAAATTGGGCAT
NpF5271 503 AAATTGCTCAGTTGGTGGCTCAAGGACAAACCAATGCAGAAATTAGTGCT
consensus ***** * * * * * * * * * * * * * *
```

### SDR5: Example 5.28 (AvaB0036)

```
alr7200 201 AACTTTACATCCAATTAACAGTATCAGGCGAT-----
AvaB0036 201 AACTTTACAAACAGTTGACCAGTATCAGGCGATGCCTGCGGCGGGCTGCG
pNpBR212 201 AAGTTTACAAAGAGTTGACCAGTATCAAGCAAT-----
consensus 201 ** ***** * * * * * * * * * *

alr7200 234 ----CGCCAAAAACCGACGCGAAAATTACTTTGAAATTCTCCAATTCTGG
AvaB0036 251 CCTACGCCAAAAACCGACGCGAACATTACTTTGAAATTTTGAGGTTTGG
pNpBR212 234 ----CGCCAAAAGCAGGCGCGAACATTACTTTGAAATTCTCCGATTCTGG
consensus 251 ***** * * * * * * * * * * * * * *
```

### SDR5: Example 5.29 (nod 14910)

```
alr0681      1 ATGAATAACTGGACTTTAGAACAACTGCATTTTCGGTGCG-----
n9414?14910  1 ATGAATAACTGGACTGTAGAACAAATTGCCTTTTCGGTGCGTTGCCTACGG
consensus    *****
```

  

```
alr0681      41 -----ATCGCCTTTCTGTACGTCTTGAACGATTAGCACAGAACT
n9414?14910  51 CGAGCGAAGCTATCGCCTTTCTGTACGTCTTGAACGATTGGCACAGAACT
consensus    *****
```

### SDR5: Example 5.30 (nod 06964)

```
NpR1294      448 GAAGATGCAGGTTACGGCGAATCTCGACAGTTTAACAGCGATATCTACGA
n9414?06964  451 GAAGATGCTGGCTATGGTGAATCTCGGCAGTTTAACCGCG-----
consensus    *****
```

  

```
NpR1294      498 TCGCCTTCGCCAACGCACTGGTGTAACTTTAGGTGTGGCACTAGGCAGAC
n9414?06964  492 -----AACGCACTGGTGTAGTATTGGGTGTGGCTGTGGGTAGGC
consensus    *****
```

### SDR5: Example 5.31 (nod 23613)

```
NpF2705      251 CTGTTCTCGGCAATATTTCCGCG-----ATCGCA
n9414?23613  251 CGGTTTTAGGAAATACTTCGGCGATGGCTTTGCCCGCCGACGGCATCGCA
alr2463      245 CCATTCTCGGAAATATTTCTGCG-----ATCGCT
Ava0395      245 CCATTCTAGGTAATATTTCTGCG-----ATCGCT
consensus    *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

  

```
NpF2705      280 CCGTTGGTAGTTTCATTTTGATGAAGAAAATTCCATCCTTGTCCGCAACTA
n9414?23613  301 CCATTAATACTACATTTTGACGAGTCAAATTCGCTCATTGTTTCGTAAATTA
alr2463      274 CCTTTGGTGGTACATTTTGATGAGGAAAATTCCATCCTCGTTCGCAGTTA
Ava0395      274 CCTTTGGTGGTACATTTTGATGAGGAAAATTCCATCCTCGTTCGCAGTTA
consensus    **  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

### SDR5: Example 5.32 (nod 06064)

```
all1106      735 ACGGGGAGAACCCATGCTAATGTTTGAGAGCGAT-----
Ava3710      699 ACGGGGAGAACCTATGCTAATGTTTGAGAGCGAT-----
NpF2869      711 ACGAGGAGAACCTGTGATGATGTTTGAGCGCGAT-----
n9414?06064  708 ACGGGGAGAACCTGCGATGATGTTTGAGAGCGATGTCTACGACGGGCTAC
l8106?17447  714 ACGGGGCGAACCTGCGATAATGTTTGAAAAGAA-----
Tery_3794    714 ACAAGGTTTACCCGCTTGATGTTTGAAACTGGA-----
consensus    **  *  *  *  *  *  *  *  *  *  *  *  *
```

  

```
all1106      769 -----CGCCCTAGTCGCTTTGGTATTCTACCCCGTCATGGCGACAATAGT
Ava3710      733 -----CGCCCTAGTCGCTTTGGTATTCTACCTCGTCATGGTGACAATAGT
NpF2869      745 -----CGCCCAGTCGTTTTGGAATTGTACCGCGTCATGGTGACAACAGT
n9414?06064  758 GCCTACGCCCAGTCGCTTTGGCATTATCCCCCGTCATGGCGACAACAGT
l8106?17447  748 -----ACACCGAGTCGTTTTGGTATTGTTCTCGTCACGGGGATAATAGC
Tery_3794    748 -----GTCCCAGTCGTTTTGGTATTTTACCTCGCTGTGGAACAATGAA
consensus    *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```