

## Template Alignment: 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_A...

aagacgatatgttacccgataaggcgcagcggctcgggctgaacggggggttcgtgcacacagcccagcttggagcgaacgacctacaccgaactgagatac

10 20 30 40 50 60 70 80 90 100

>> ori >>

template sequence pAS1.2

aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ctacagcgtgagctatgagaaagcgccacgcttcccgaaggagaaaggcggacaggtatccggttaagcggcagggtcggaacaggagagcgcacgaggg

110 120 130 140 150 160 170 180 190 200

>> ori >>

template sequence pAS1.2

aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

agcttccaggggaaacgcctggtatctttatagtcctgtcgggttcgccacctctgacttgagcgtcgatTTTTgtgatgctcgtcaggggggcggag

210 220 230 240 250 260 270 280 290 300

pBR322ori-F

ori

template sequence pAS1.2

aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

cctatggaaaaacgccagcaacgcggcctTTTTacggttcctggcagatcctagatgtggcgcaacgatgccggcgacaagcaggagcgcaccgacttct

310 320 330 340 350 360 370 380 390 400

ori

template sequence pAS1.2

aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

tccgcatcaagtgttttggctctcaggccgaggccacggcaagtatttgggcaaggggtcgctggtattcgtgcagggaagattcggaataccaagta

410

420

430

440

450

460

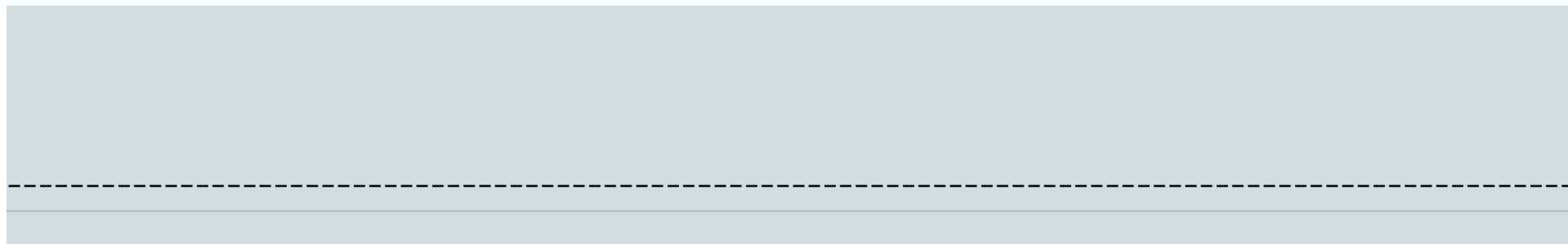
470

480

490

500

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

cgagaaggacggccagacggtctacgggaccgacttcattgccgataaggtggattatctggacaccaaggcaccaggcgggtcaaatacaggaataaggg

510

520

530

540

550

560

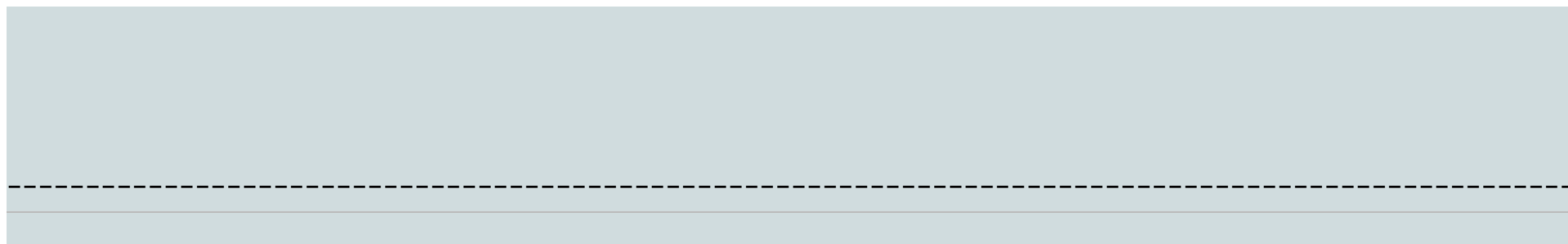
570

580

590

600

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

cacattgccccggcgtgagtcggggcaatcccgcaaggagggtgaatgaatcggacgtttgaccggaaggcatacaggcaagaactgatcgacgcgggggt

610

620

630

640

650

660

670

680

690

700

trfA

»

template sequence pAS1.2

aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

tttccgccgaggatgccgaaaccatcgcaagccgcaccgtcatgcgtgcgccccgcgaaaccttcagtcggtcgcgatggtccagcaagctacggc

710

720

730

740

750

760

770

780

790

800

trfA

»

template sequence pAS1.2

aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

caagatcgagcgcgacagcgtgcaactggctccccctgccctgcccgcgccatcggccgcccgtggagcgttcgcgtcgtcttgaacaggaggcggcaggt

810

820

830

840

850

860

870

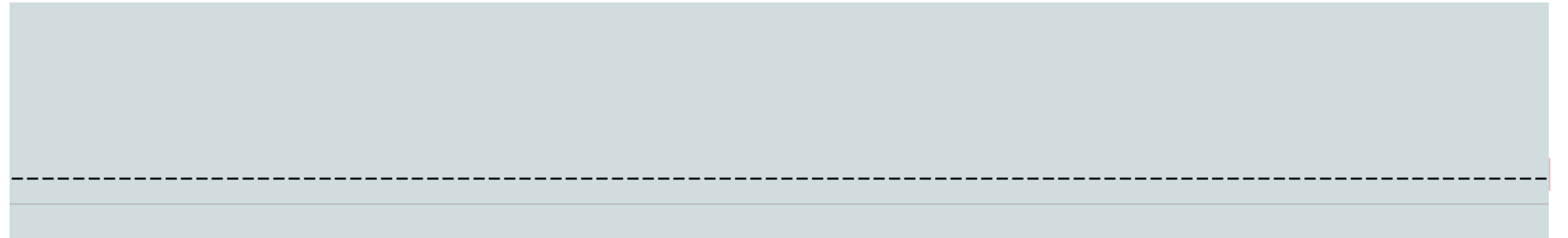
880

890

900

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ttggcgaagtcgatgaccatcgacacgcgaggaactatgacgaccaagaagcgaaaaaccgccggcgaggacctggcaaacaggctcagcgaggccaagc

910

920

930

940

950

960

970

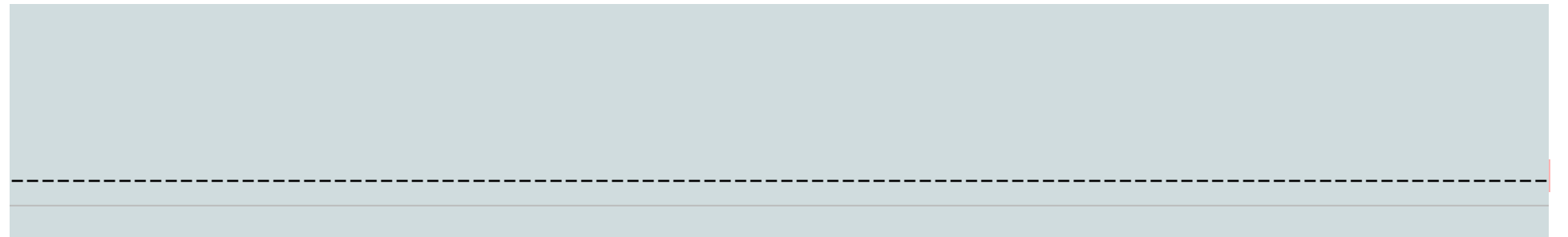
980

990

1,000

>> trfA >>

template sequence pAS1.2



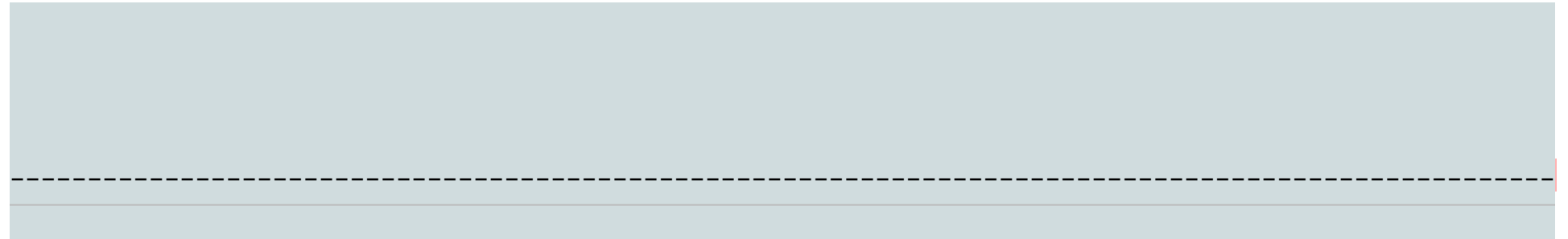
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

aggccgcgttgctgaaacacacgaagcagcagatcaaggaaatgcagctttccttgttcgatattgcgccgtggccggacacgatgagcgatgccaaa

1,010 1,020 1,030 1,040 1,050 1,060 1,070 1,080 1,090 1,100

>> trfA >>

template sequence pAS1.2



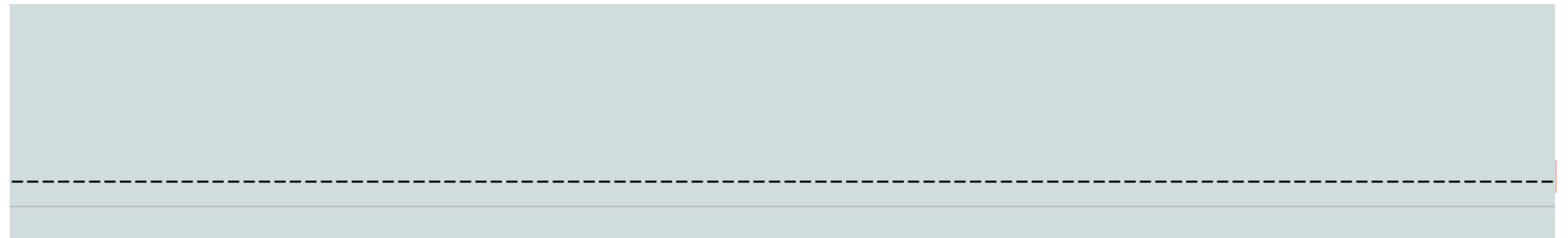
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

cgacacggcccgctctgccctgttcaccacgcgcaacaagaaaatcccgcgcgaggcgctgcaaaacaaggatcattttccacgtcaacaaggacgtgaag

1,110 1,120 1,130 1,140 1,150 1,160 1,170 1,180 1,190 1,200

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

atcacctacaccggcgctcgagctgcgggccgacgatgacgaactggtgtggcagcaggtgttggagtacgcgaagcgcacccctatcggcgagccgatca

1,210

1,220

1,230

1,240

1,250

1,260

1,270

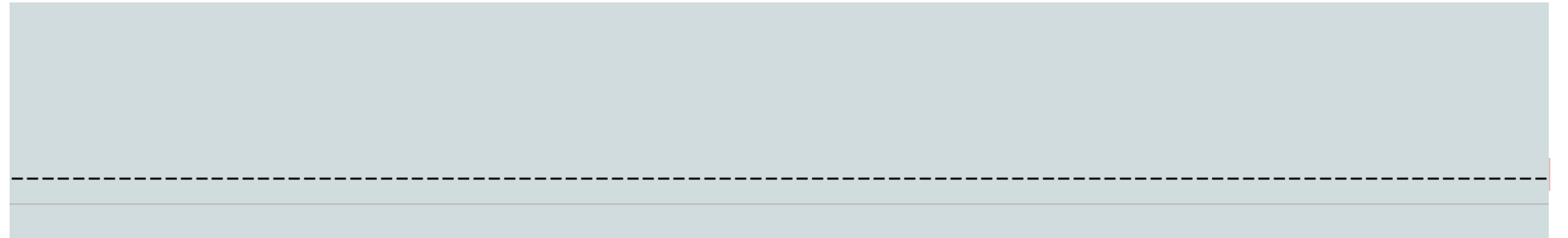
1,280

1,290

1,300

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ccttcacgttctacgagctttgccaggacctgggctggctgatcaatggccggtattacacgaaggccgaggaatgcctgtcgcgcctacaggcgacggc

1,310

1,320

1,330

1,340

1,350

1,360

1,370

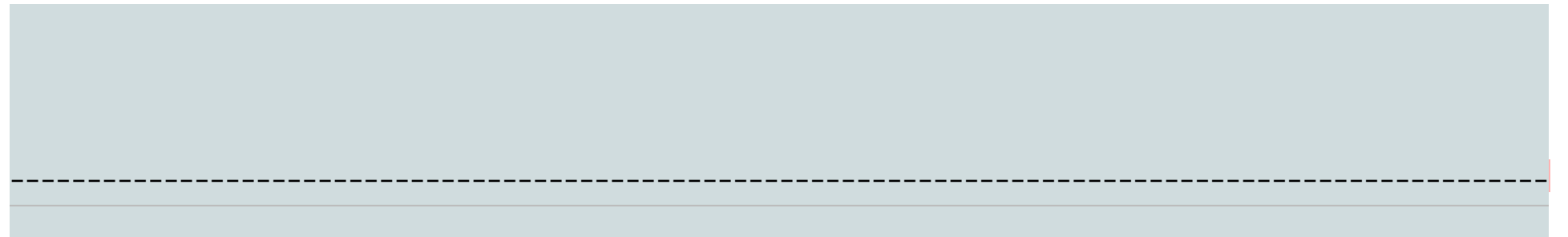
1,380

1,390

1,400

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

gatgggcttcacgtccgaccgcgttgggcacctggaatcgggtgtcgtgctgcaccgcttccgcgtcctggaccgtggcaagaaaacgtcccgttgccag

1,410

1,420

1,430

1,440

1,450

1,460

1,470

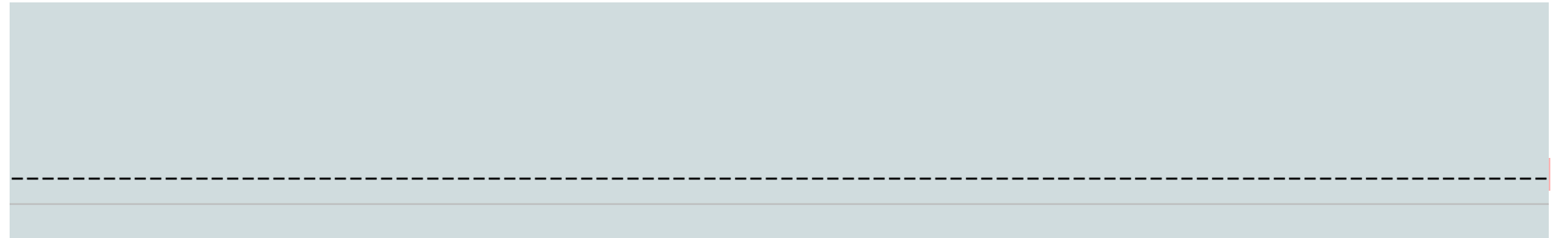
1,480

1,490

1,500

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

gtcctgatcgacgaggaaatcgtcgtgctgtttgctggcgaccactacacgaaattcatatgggagaagtaccgcaagctgtcgccgacggcccgacgga

1,510

1,520

1,530

1,540

1,550

1,560

1,570

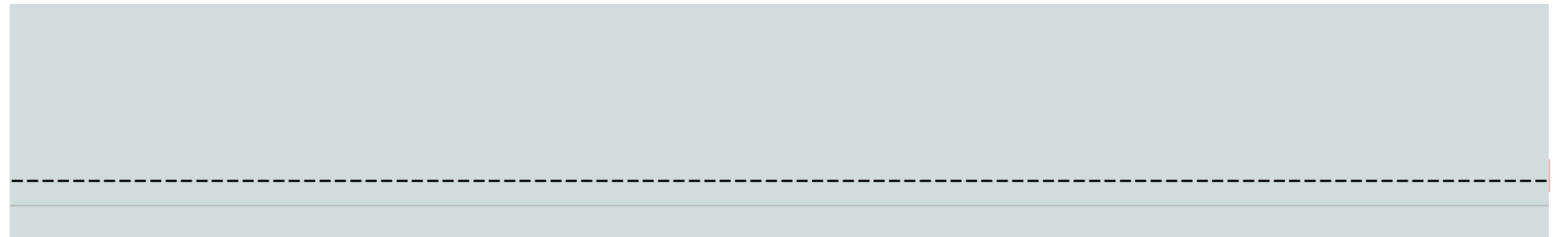
1,580

1,590

1,600

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)



tgttcgactatttcagctcgcaccgggagccgtacccgctcaagctggaaaccttccgcctcatgtgcggatcggattccacccgcgtgaagaagtggcg

1,610

1,620

1,630

1,640

1,650

1,660

1,670

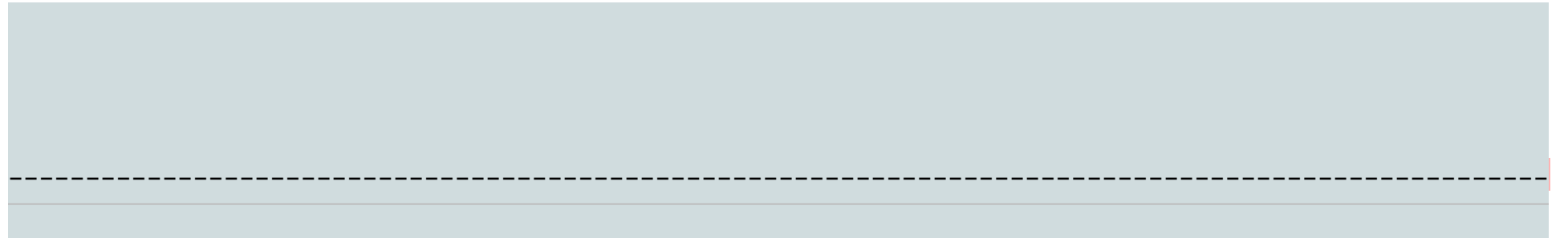
1,680

1,690

1,700

>> trfA >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

cgagcaggtcggcgaagcctgcgaagagttgcgaggcagcggcctggtggaacacgcctgggtcaatgatgacctggtgcattgcaaacgctagggcctt

1,710

1,720

1,730

1,740

1,750

1,760

1,770

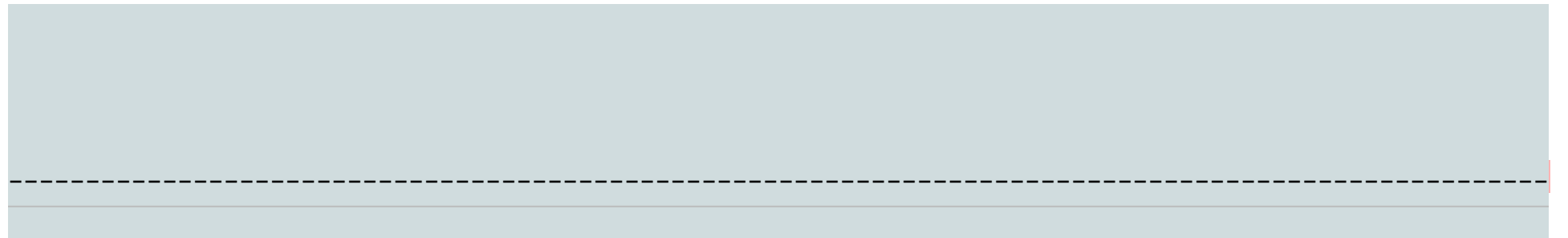
1,780

1,790

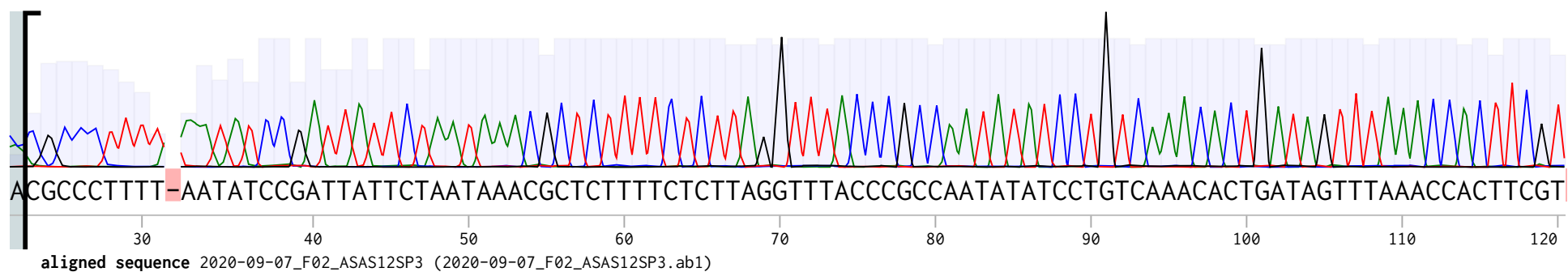
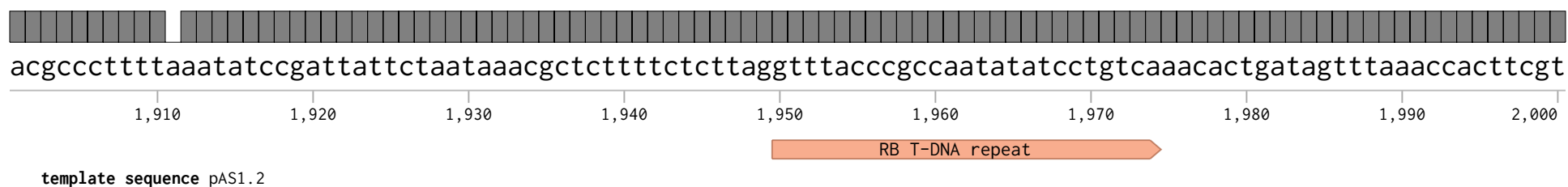
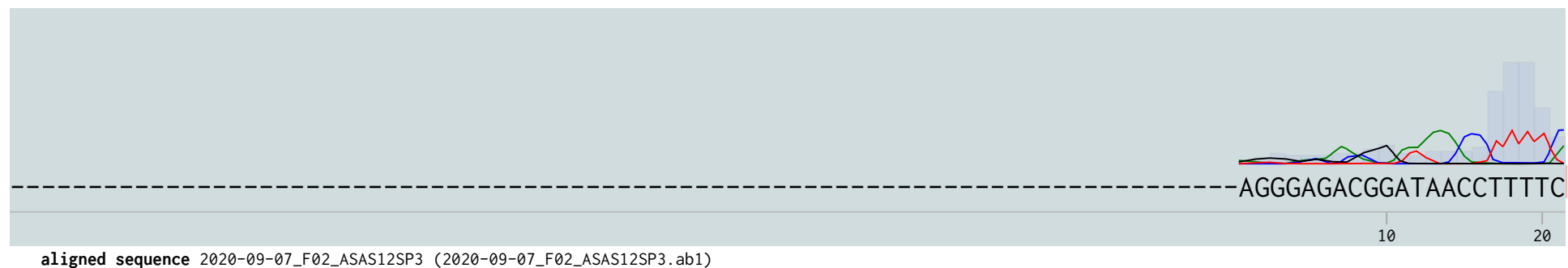
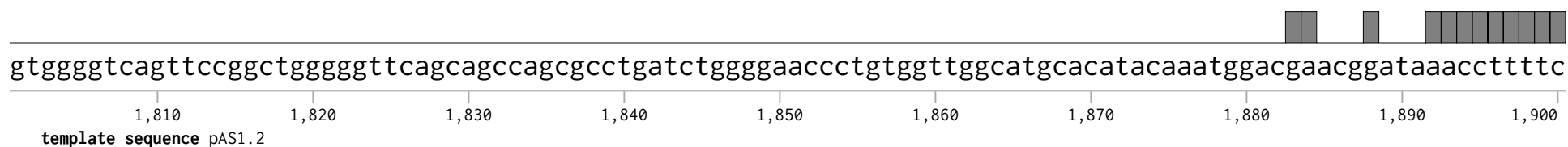
1,800

>> trfA >

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)



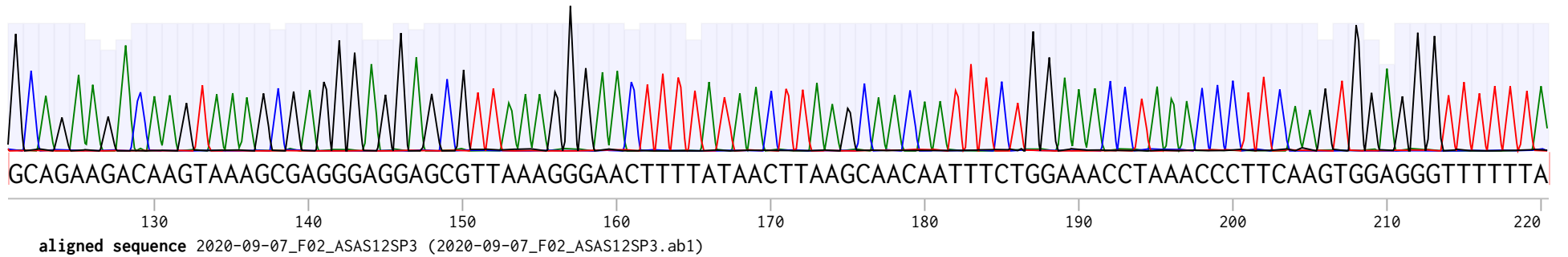
gcagaagacaagtaaagcgagggaggagcgtaaagggaacttttataacttaagcaacaatttctggaacctaacccttcaagtggagggtttttta

2,010 2,020 2,030 2,040 2,050 2,060 2,070 2,080 2,090 2,100

prqRA-HDR

prqR-DOWN-Flank

template sequence pAS1.2



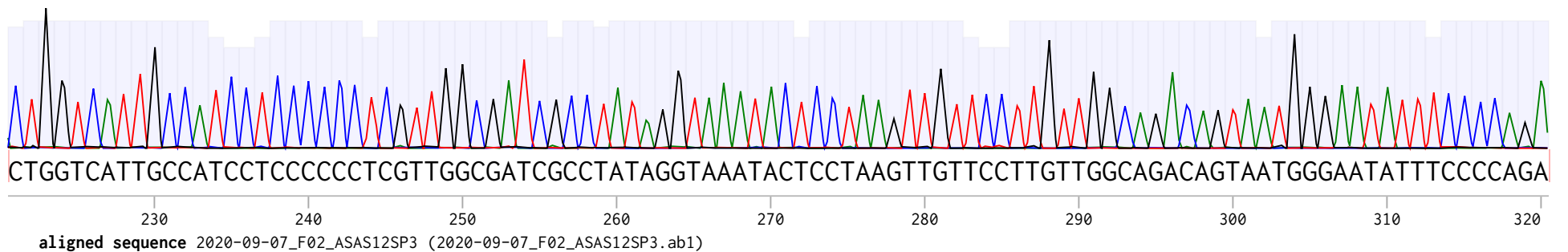
ctggtcattgccatcctccccctcggtggcgatcgccataggtaaatactcctaagttgttccttgttggcagacagtaatgggaatatTTCCCAGA

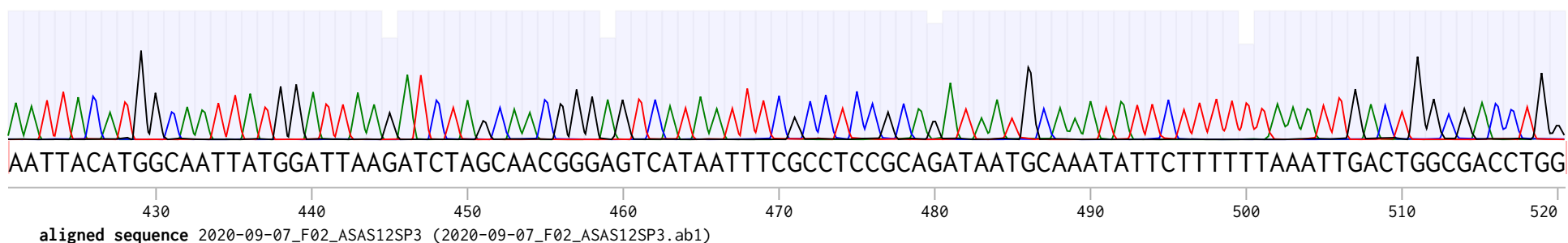
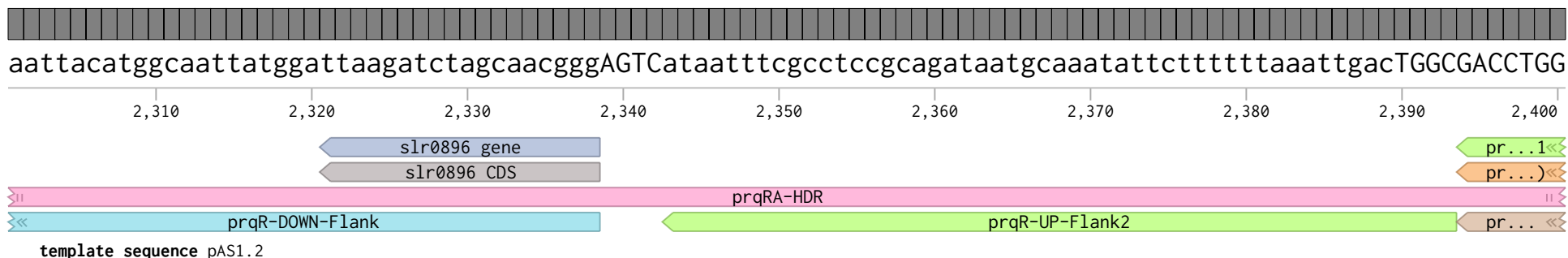
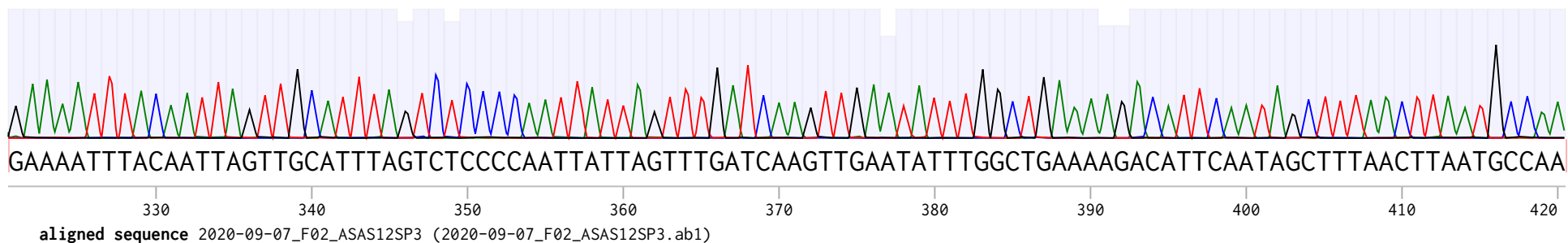
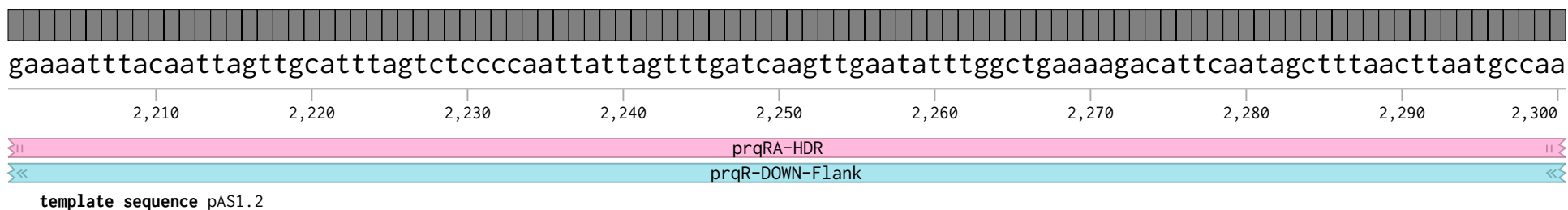
2,110 2,120 2,130 2,140 2,150 2,160 2,170 2,180 2,190 2,200

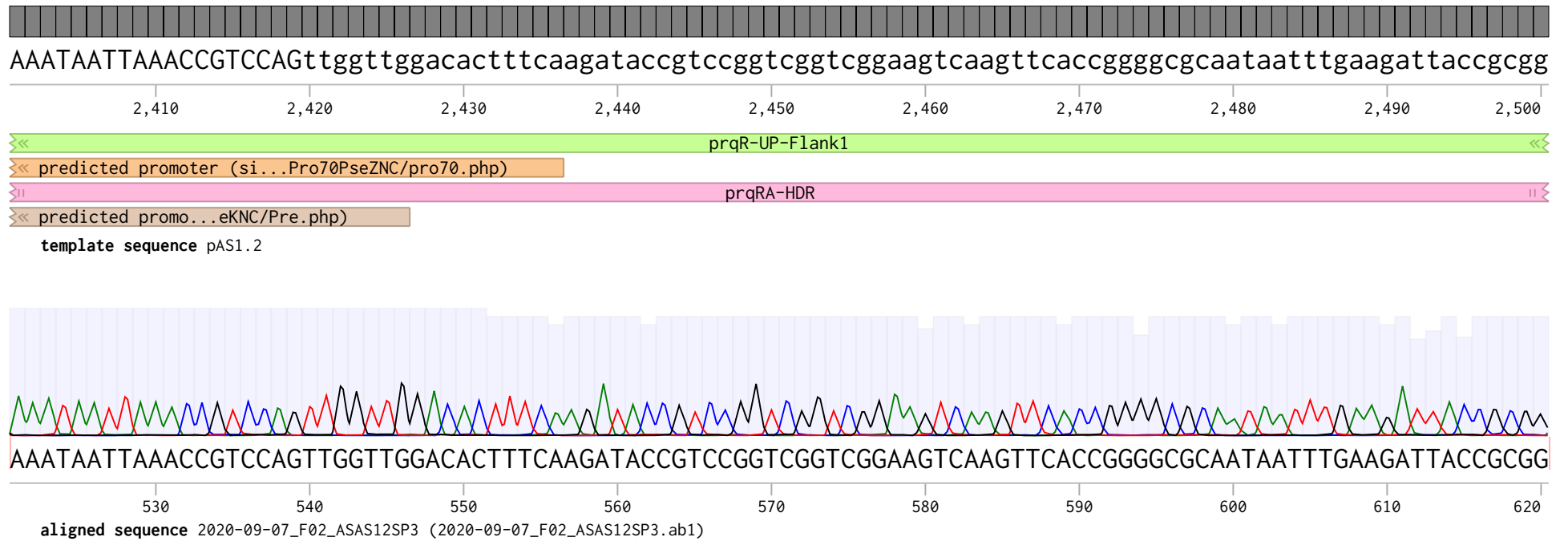
prqRA-HDR

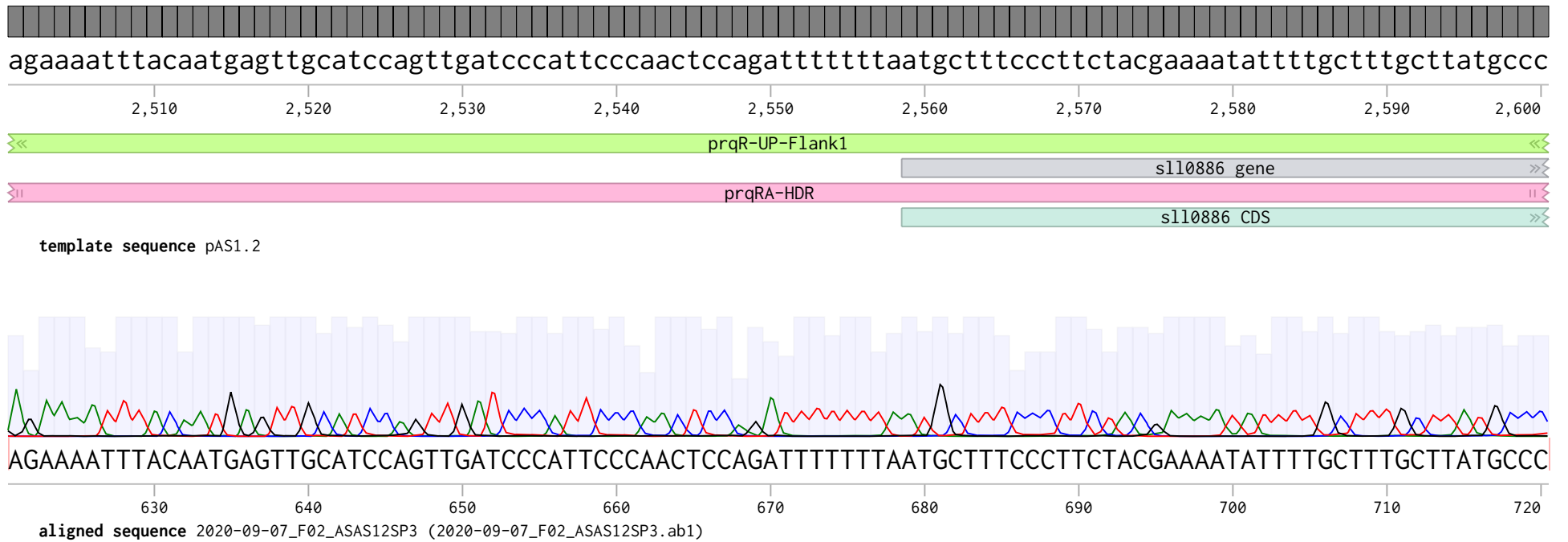
prqR-DOWN-Flank

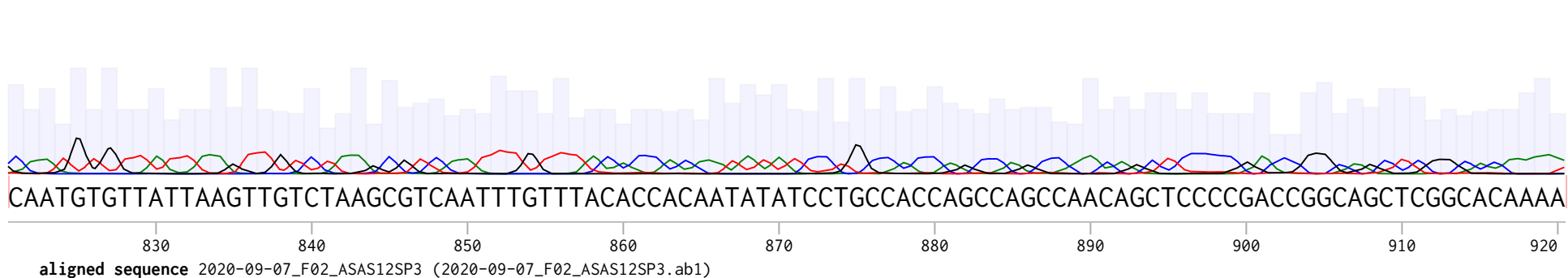
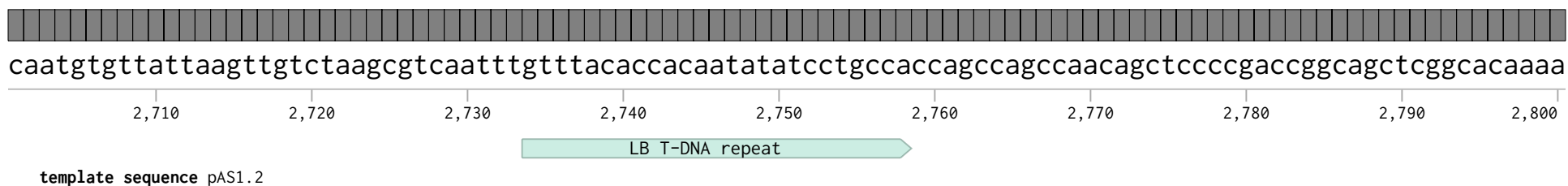
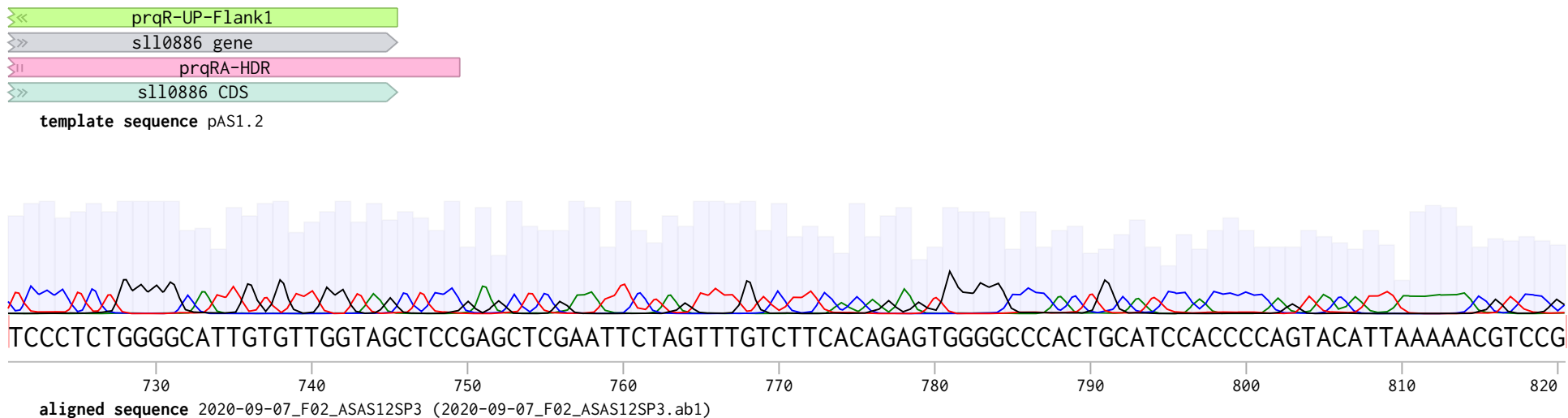
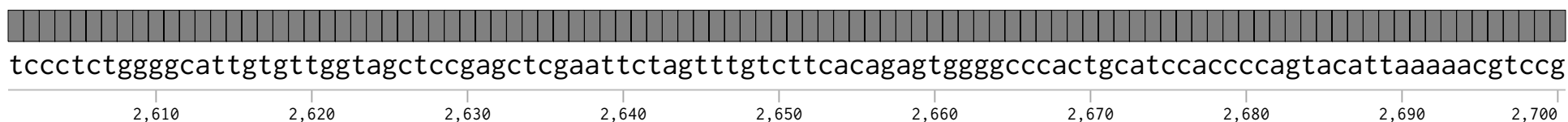
template sequence pAS1.2

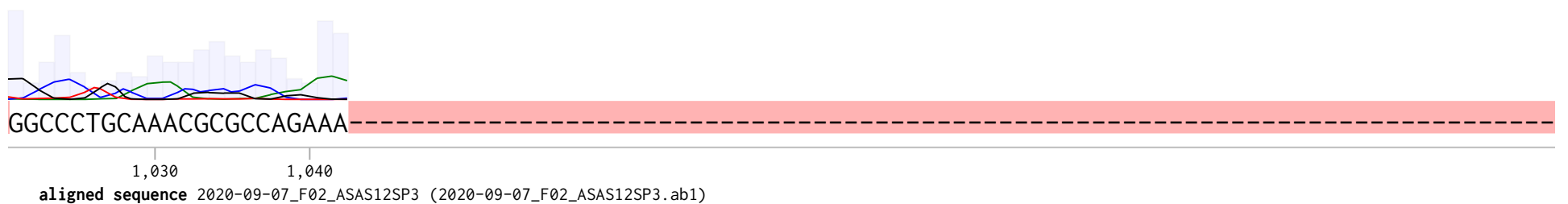
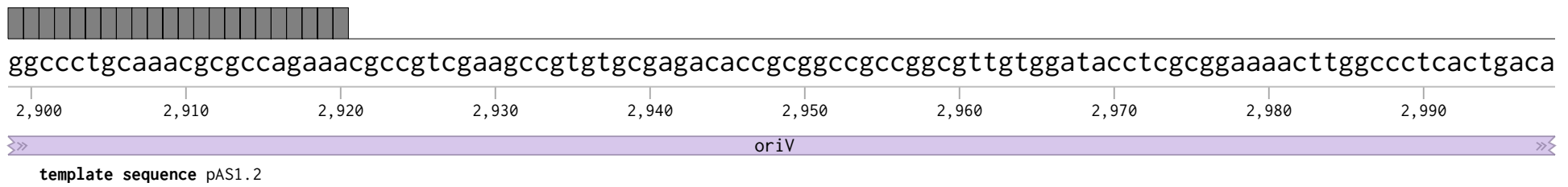
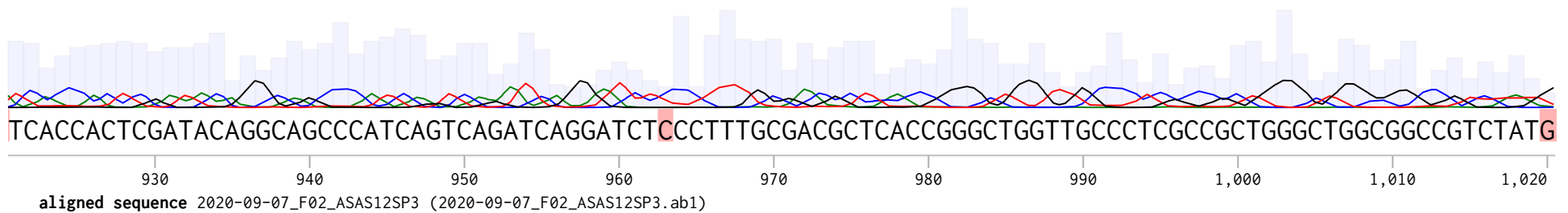
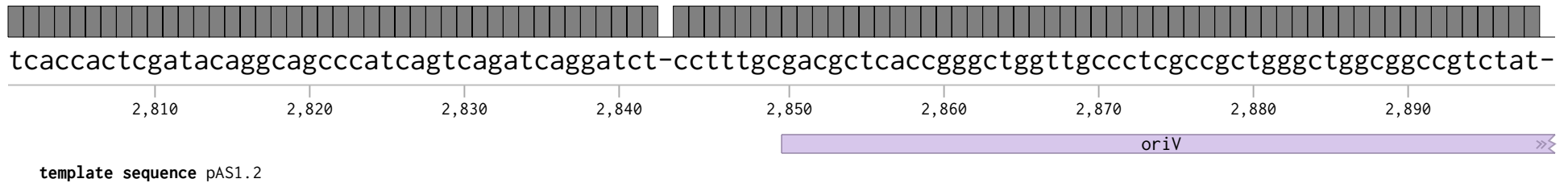














gatgaggggcgacgttgacacttgaggggcccactcaccggcgcgcggttgacagatgaggggcaggctcgatttcggccggcgacgtggagctggcc

3,000 3,010 3,020 3,030 3,040 3,050 3,060 3,070 3,080 3,090

>> oriV >>

template sequence pAS1.2

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aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

agcctcgcaaatcggcgaaaacgcctgattttacgcgagtttcccacagatgatgtggacaagcctgggggataagtgccctgcggtattgacacttgagg

3,100 3,110 3,120 3,130 3,140 3,150 3,160 3,170 3,180 3,190

>> oriV >>

template sequence pAS1.2

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aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ggcgcgactactgacagatgaggggcgcgacatccttgacacttgaggggcagagtgctgacagatgaggggcgcacatttgacatttgaggggctgtcca

3,200 3,210 3,220 3,230 3,240 3,250 3,260 3,270 3,280 3,290

>> oriV >>

template sequence pAS1.2

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aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

caggcagaaaatccagcatttgcaagggtttccgcccgtttttcggccaccgctaacctgtcttttaacctgcttttaaccaatatttataaaccttgt

3,300 3,310 3,320 3,330 3,340 3,350 3,360 3,370 3,380 3,390

>> oriV >>

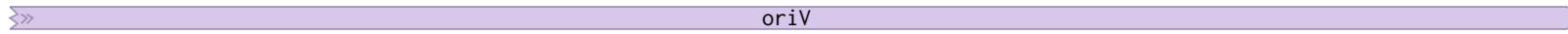
template sequence pAS1.2

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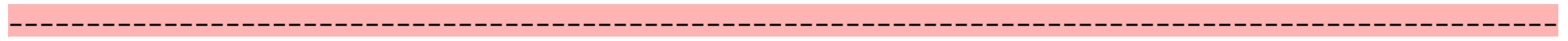
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ttttaaccagggtgcgccctgtgcgctgaccgcgcacgccgaaggggggtgcccccttctcgaaccctcccggcccgctaacgcgggcctcccatc

3,400 3,410 3,420 3,430 3,440 3,450 3,460 3,470 3,480 3,490



template sequence pAS1.2



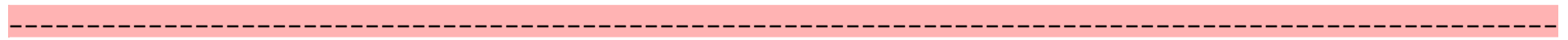
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ccccagggtgcgccctcgccgcgaacggcctcaccccaaaaatggcagcgctggccaattcgtgcgcggaaccctatttgtttttttctaaa

3,500 3,510 3,520 3,530 3,540 3,550 3,560 3,570 3,580 3,590



template sequence pAS1.2



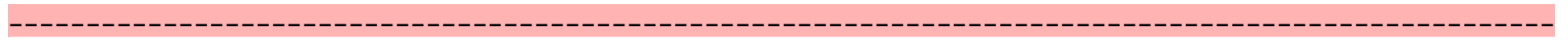
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

tacattcaaatagtatccgctcatgagacaataaccctgataaatgcttcaataatattgaaaaaggaagagtatgagtattcaacatttccgtgtcgc

3,600 3,610 3,620 3,630 3,640 3,650 3,660 3,670 3,680 3,690



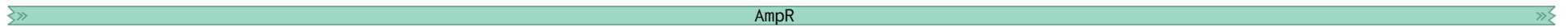
template sequence pAS1.2



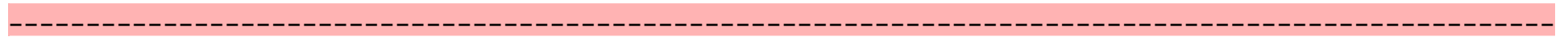
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ccttattcccttttttgcggcattttgccttcctgtttttgctcaccagaaacgctggtgaaagtaaaagatgctgaagatcagttgggtgcacgagtgc

3,700 3,710 3,720 3,730 3,740 3,750 3,760 3,770 3,780 3,790

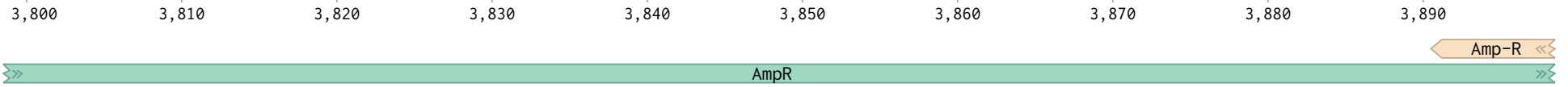


template sequence pAS1.2

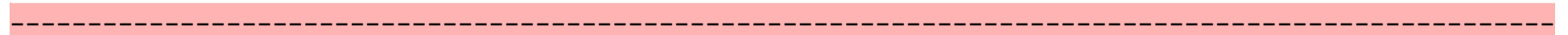


aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

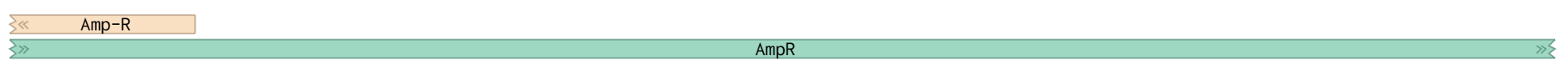
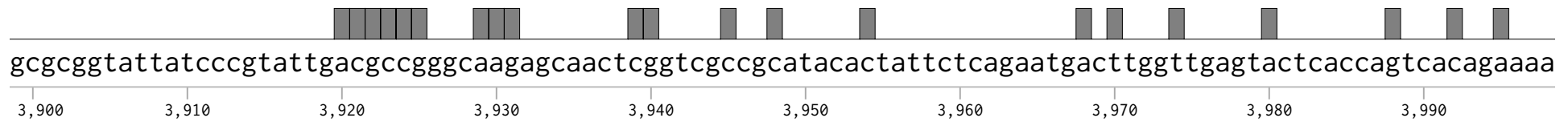
ggttacatcgaactggatctcaacagcggtaagatccttgagagttttcgccccgaagaacgtttccaatgatgagcactttttaagttctgctatgtg



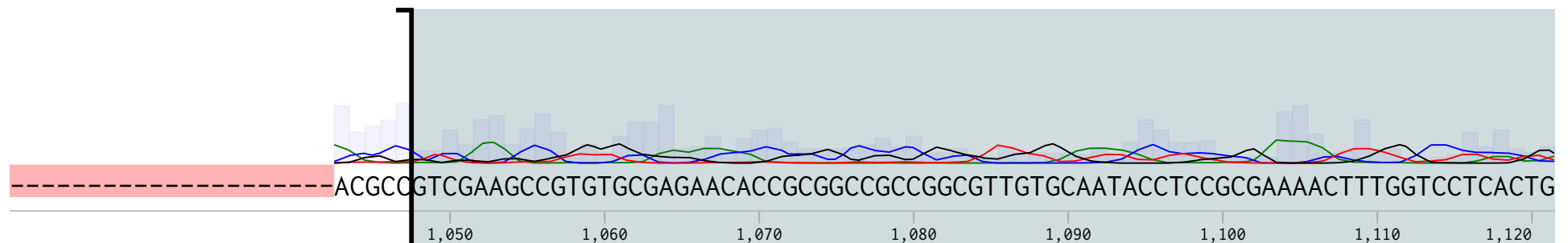
template sequence pAS1.2



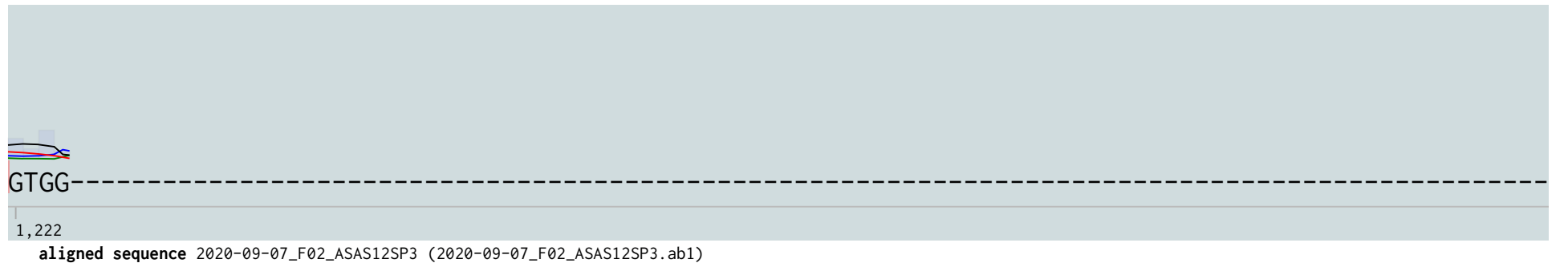
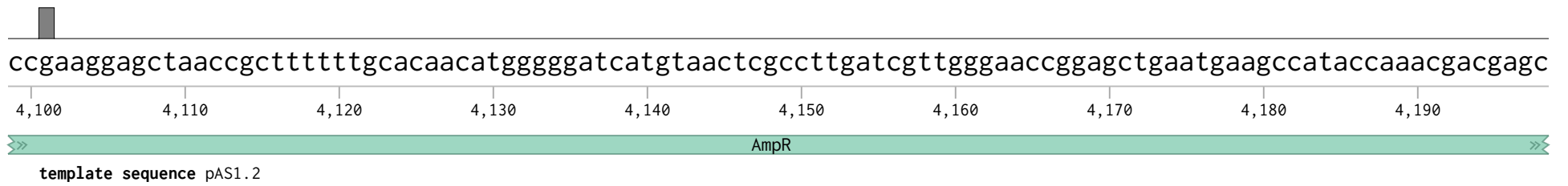
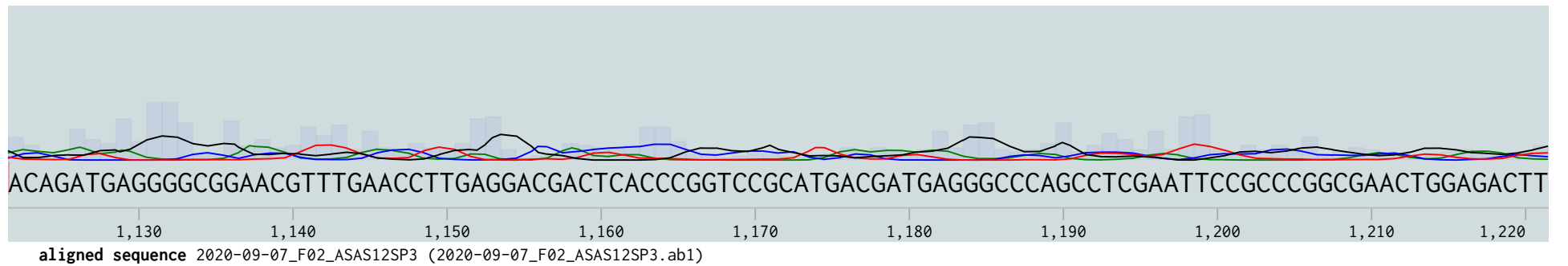
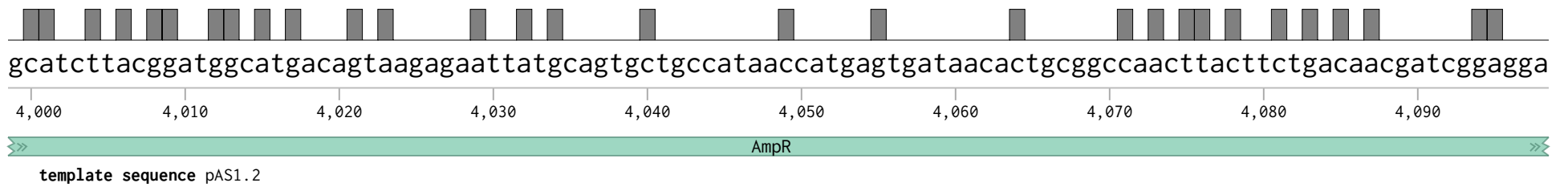
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)



template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

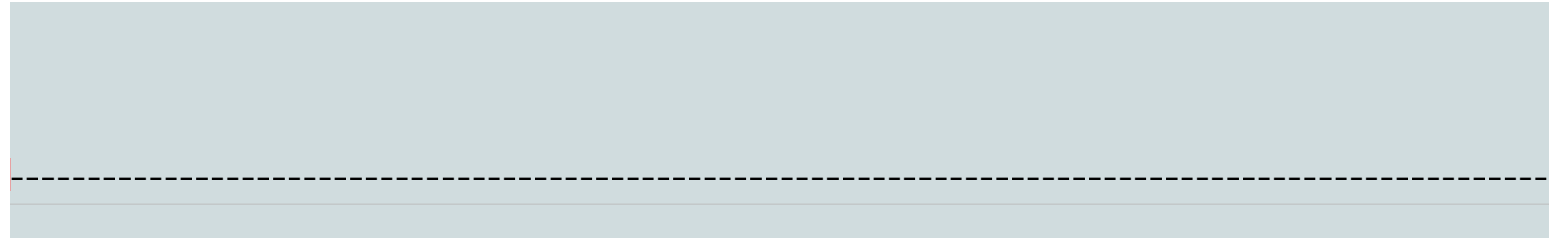


gtgacaccacgatgcctgtagcaatggcaacaacgttgcgcaaactattaactggcgaactacttactctagcttcccggcaacaattaatagactggat

4,200 4,210 4,220 4,230 4,240 4,250 4,260 4,270 4,280 4,290

>> AmpR >>

template sequence pAS1.2



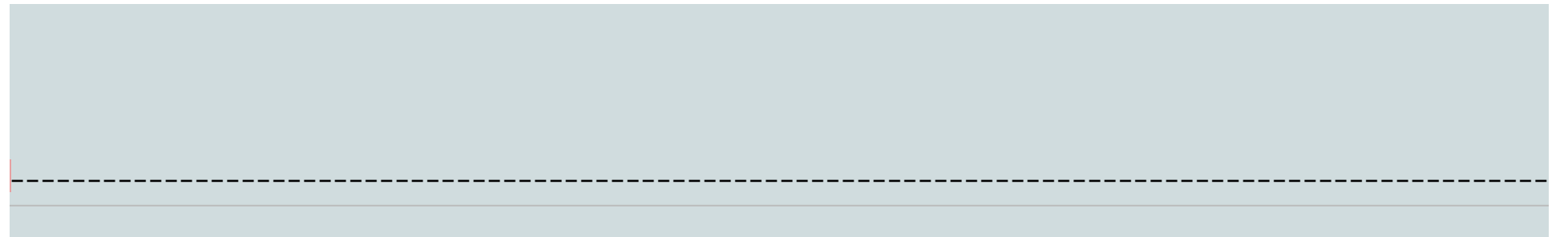
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ggaggcggataaagtgtgcaggaccacttctgcgctcggcccttccggctggctgggtttattgctgataaatctggagccggtgagcgtgggttctcgcggt

4,300 4,310 4,320 4,330 4,340 4,350 4,360 4,370 4,380 4,390

>> AmpR >>

template sequence pAS1.2



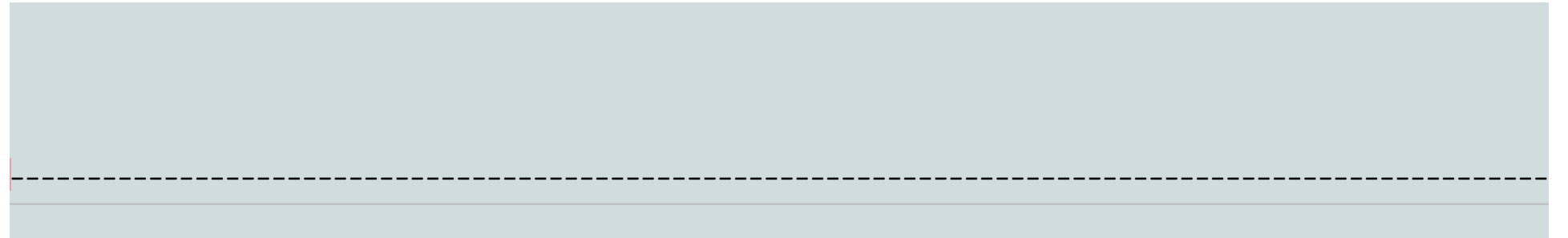
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

atcattgcagcactggggccagatggtaagccctcccgtatcgtagttatctacacgacggggagtcaggcaactatggatgaacgaaatagacagatcg

4,400 4,410 4,420 4,430 4,440 4,450 4,460 4,470 4,480 4,490

>> AmpR >>

template sequence pAS1.2



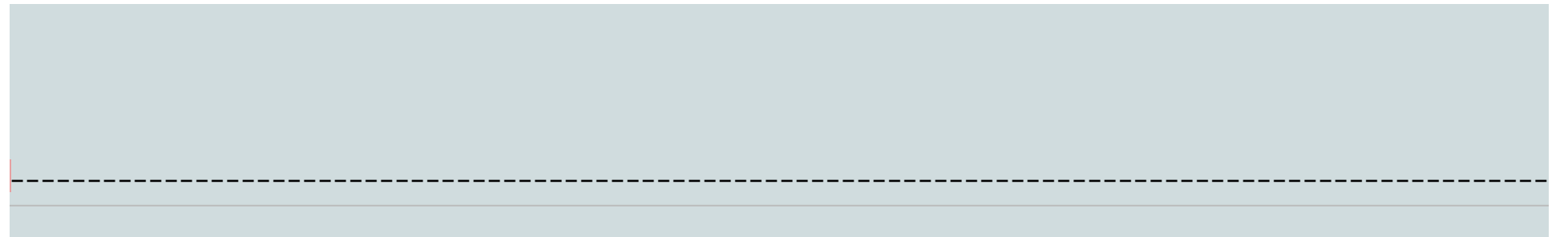
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ctgagataggtgcctcactgattaagcattggtaactgtcagaccaagtttactcatatatacttttagattgattttaaacttcatttttaatttaaag

4,500 4,510 4,520 4,530 4,540 4,550 4,560 4,570 4,580 4,590

>> AmpR >

template sequence pAS1.2



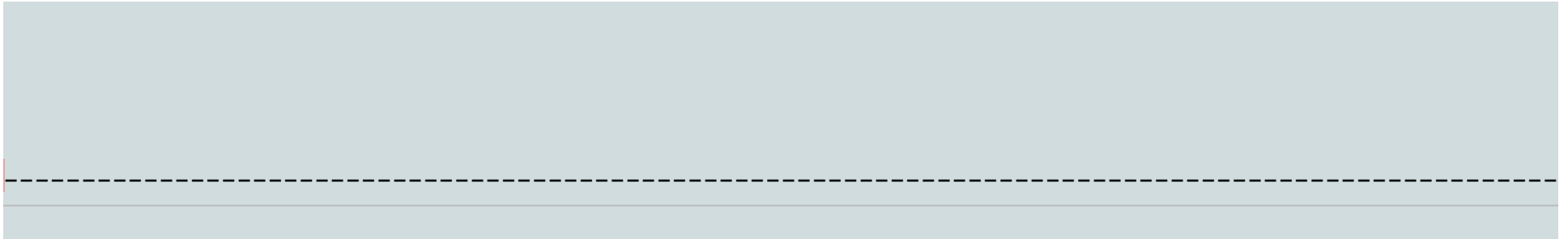
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)



gatctaggtgaagatcctttttgataatctcatgaccaaaatcccttaacgtgagttttcgttccactgagcgtcagaccccgtagaaaagatcaaagga

4,600 4,610 4,620 4,630 4,640 4,650 4,660 4,670 4,680 4,690

template sequence pAS1.2



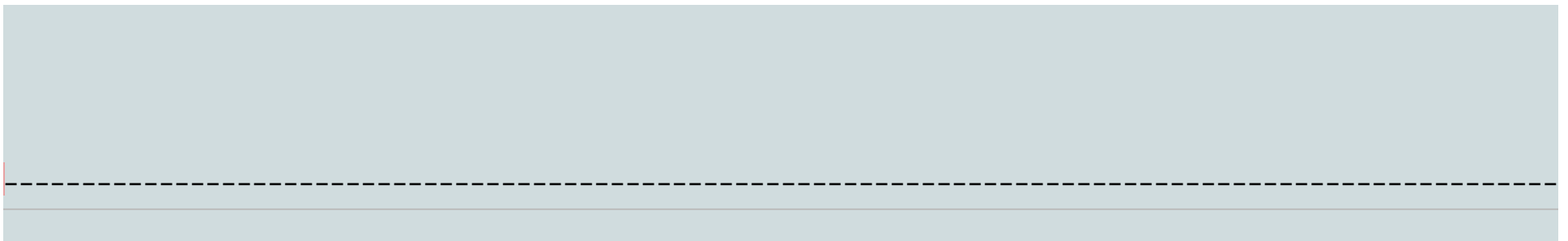
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

tcttcttgagatccttttttctgcgcgtaatctgctgcttgcaacaaaaaaaccaccgctaccagcggtggtttgtttgccgatcaagagctaccaa

4,700 4,710 4,720 4,730 4,740 4,750 4,760 4,770 4,780 4,790

ori

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

ctctttttccgaaggtaactggcttcagcagagcgcagataccaaatactgtccttctagtgtagccgtagttaggccaccacttcaagaactctgtagc

4,800 4,810 4,820 4,830 4,840 4,850 4,860 4,870 4,880 4,890

>> ori >>

template sequence pAS1.2



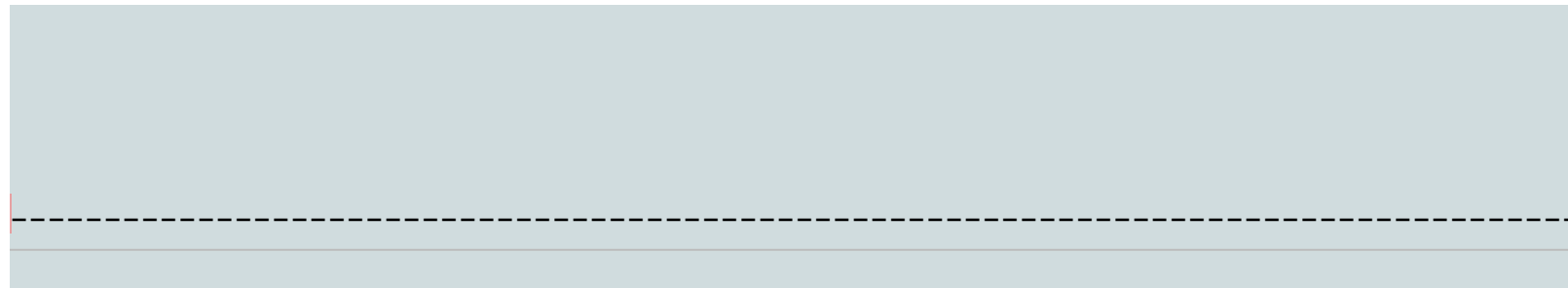
aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)

accgcctacatacctcgctctgctaatacctgttaccagtggctgctgccagtggcgataagtcgtgtcttaccgggttgga

4,900 4,910 4,920 4,930 4,940 4,950 4,960 4,970 4,980

>> ori >>

template sequence pAS1.2



aligned sequence 2020-09-07\_F02\_ASAS12SP3 (2020-09-07\_F02\_ASAS12SP3.ab1)