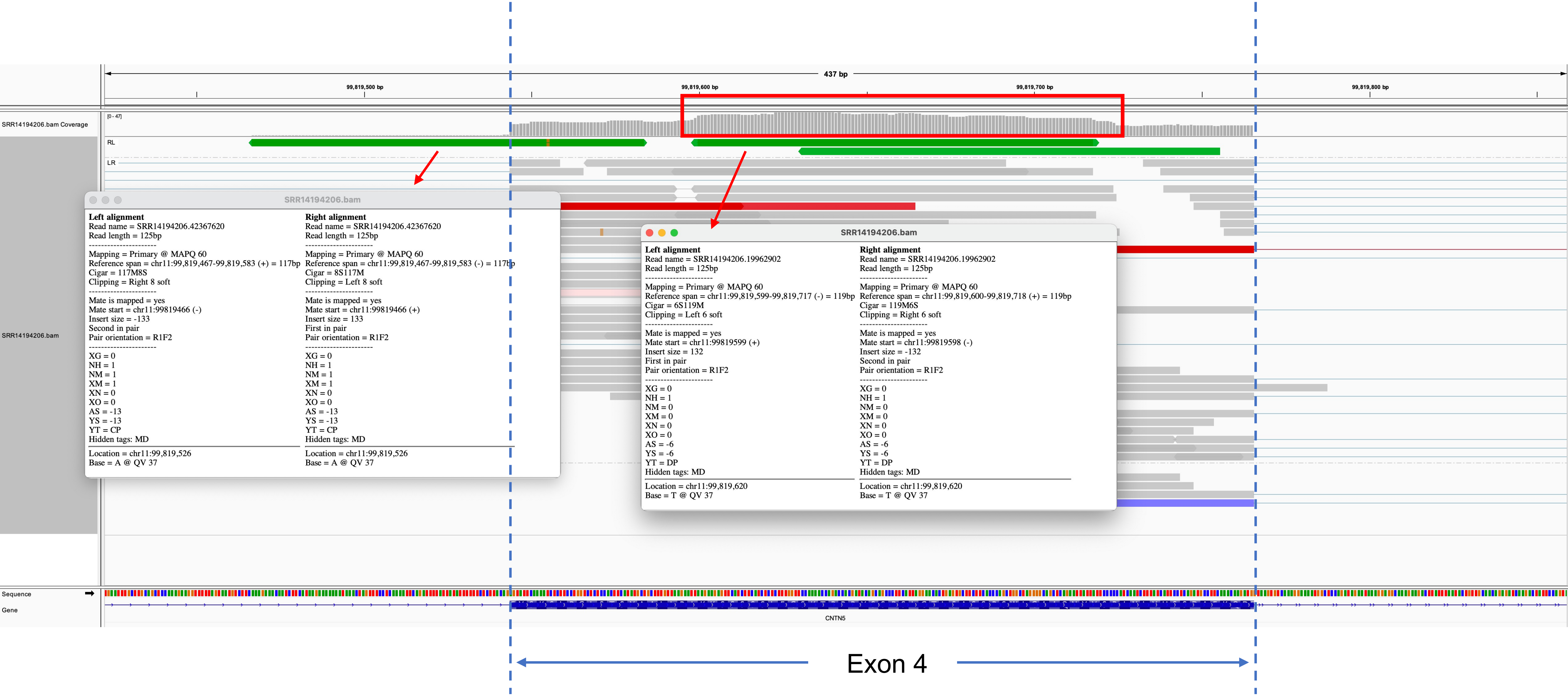
Supplementary File 5

RNA-Seq analysis of one CSV at *CNTN5*

Note:

- The IGV view is grouped by read-pair orientations.
- The region between two dashed blue lines contains *CNTN5* exon 4.
- The red arrow points to the green read-pairs supporting duplicated exon signature and detailed alignment information of supporting read-pairs.
- The read depth increases inside red box compare to read depth outside the red box.

❖ SRR14194206, Control_Male_Precuneus



SRR14194206.bam

```
Left alignment
Read name = SRR14194206.42367620
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,467-99,819,583 (+) = 117bp
Cigar = 117M8S
Clipping = Right 8 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819466 (-)
Insert size = -133
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 1
XM = 1
XN = 0
XO = 0
AS = -13
YS = -13
YT = CP
Hidden tags: MD
Location = chr11:99,819,526
Base = A @ QV 37
```

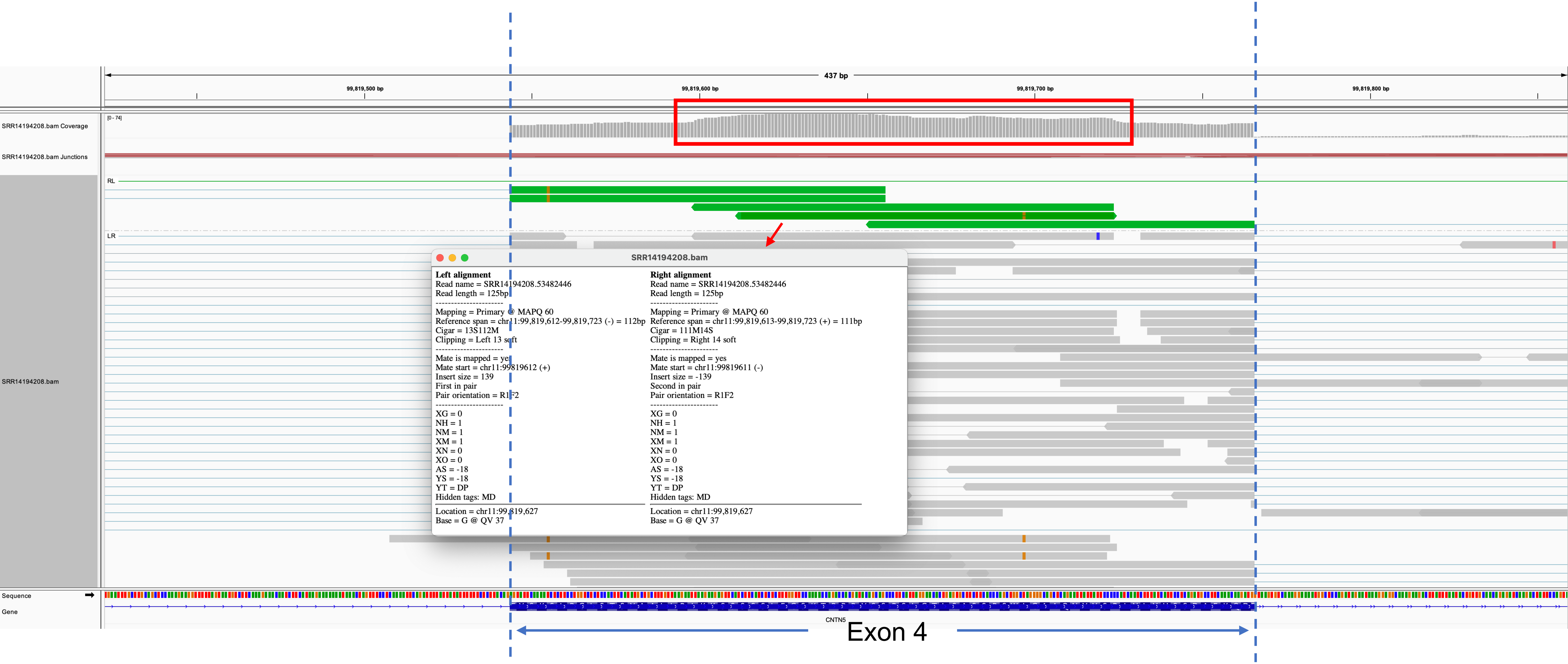
```
Right alignment
Read name = SRR14194206.42367620
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,467-99,819,583 (-) = 117bp
Cigar = 8S117M
Clipping = Left 8 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819466 (+)
Insert size = 133
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 1
XM = 1
XN = 0
XO = 0
AS = -13
YS = -13
YT = CP
Hidden tags: MD
Location = chr11:99,819,526
Base = A @ QV 37
```

SRR14194206.bam

```
Left alignment
Read name = SRR14194206.19962902
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,599-99,819,717 (-) = 119bp
Cigar = 6S119M
Clipping = Left 6 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819599 (+)
Insert size = 132
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -6
YS = -6
YT = DP
Hidden tags: MD
Location = chr11:99,819,620
Base = T @ QV 37
```

```
Right alignment
Read name = SRR14194206.19962902
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,600-99,819,718 (+) = 119bp
Cigar = 119M6S
Clipping = Right 6 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819598 (-)
Insert size = -132
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -6
YS = -6
YT = DP
Hidden tags: MD
Location = chr11:99,819,620
Base = T @ QV 37
```

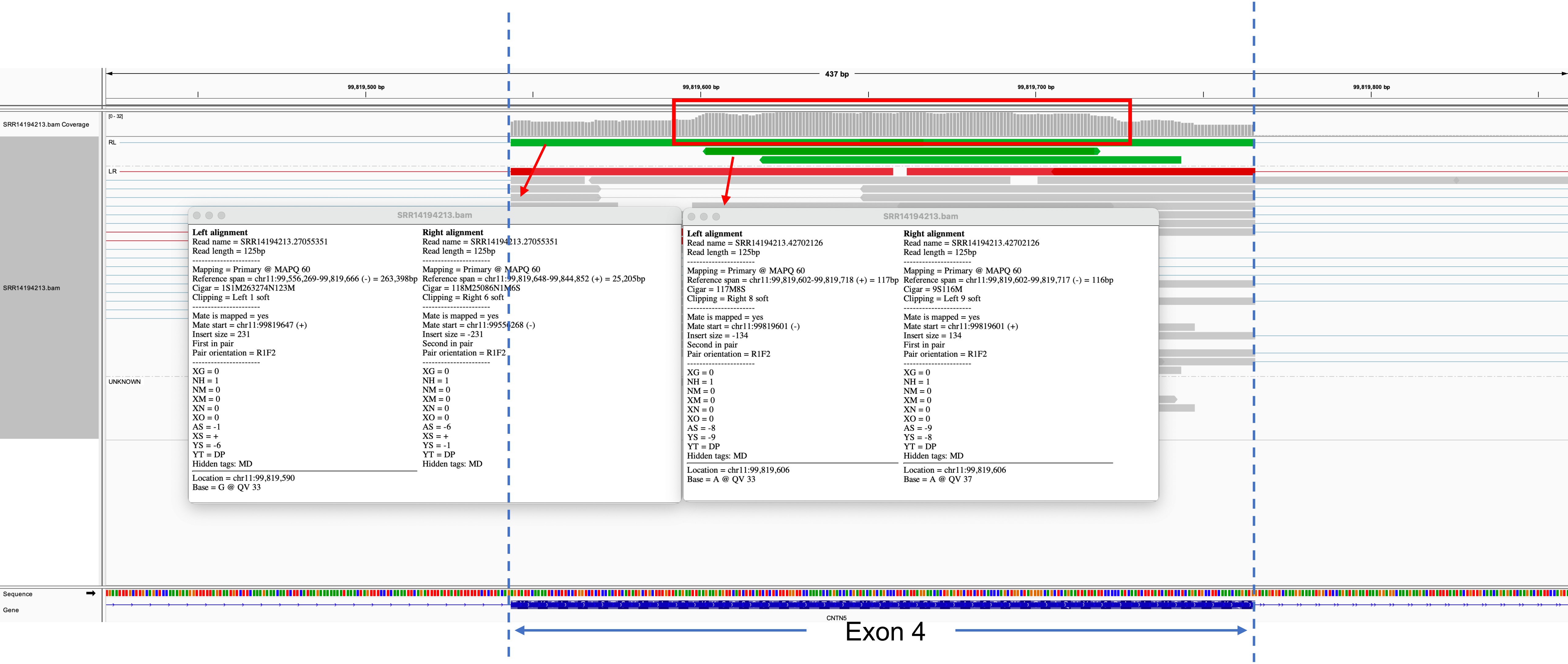
❖ SRR14194208, Control_Female_Precuneus



```
Left alignment
Read name = SRR14194208.53482446
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,612-99,819,723 (-) = 112bp
Cigar = 13S112M
Clipping = Left 13 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819612 (+)
Insert size = 139
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 1
XM = 1
XN = 0
XO = 0
AS = -18
YS = -18
YT = DP
Hidden tags: MD
Location = chr11:99,819,627
Base = G @ QV 37
```

```
Right alignment
Read name = SRR14194208.53482446
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,613-99,819,723 (+) = 111bp
Cigar = 111M14S
Clipping = Right 14 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819611 (-)
Insert size = -139
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 1
XM = 1
XN = 0
XO = 0
AS = -18
YS = -18
YT = DP
Hidden tags: MD
Location = chr11:99,819,627
Base = G @ QV 37
```

❖ SRR14194213, Alzheimer_Disease_Female_Precuneus



```
Left alignment
Read name = SRR14194213.27055351
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,556,269-99,819,666 (-) = 263,398bp
Cigar = 1S1M263274N123M
Clipping = Left 1 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819647 (+)
Insert size = 231
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -1
XS = +
YS = -6
YT = DP
Hidden tags: MD
Location = chr11:99,819,590
Base = G @ QV 33
```

```
Right alignment
Read name = SRR14194213.27055351
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,648-99,844,852 (+) = 25,205bp
Cigar = 118M25086N1M6S
Clipping = Right 6 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99556268 (-)
Insert size = -231
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -6
XS = +
YS = -1
YT = DP
Hidden tags: MD
```

```
Left alignment
Read name = SRR14194213.42702126
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,602-99,819,718 (+) = 117bp
Cigar = 117M8S
Clipping = Right 8 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819601 (-)
Insert size = -134
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -8
YS = -9
YT = DP
Hidden tags: MD
Location = chr11:99,819,606
Base = A @ QV 33
```

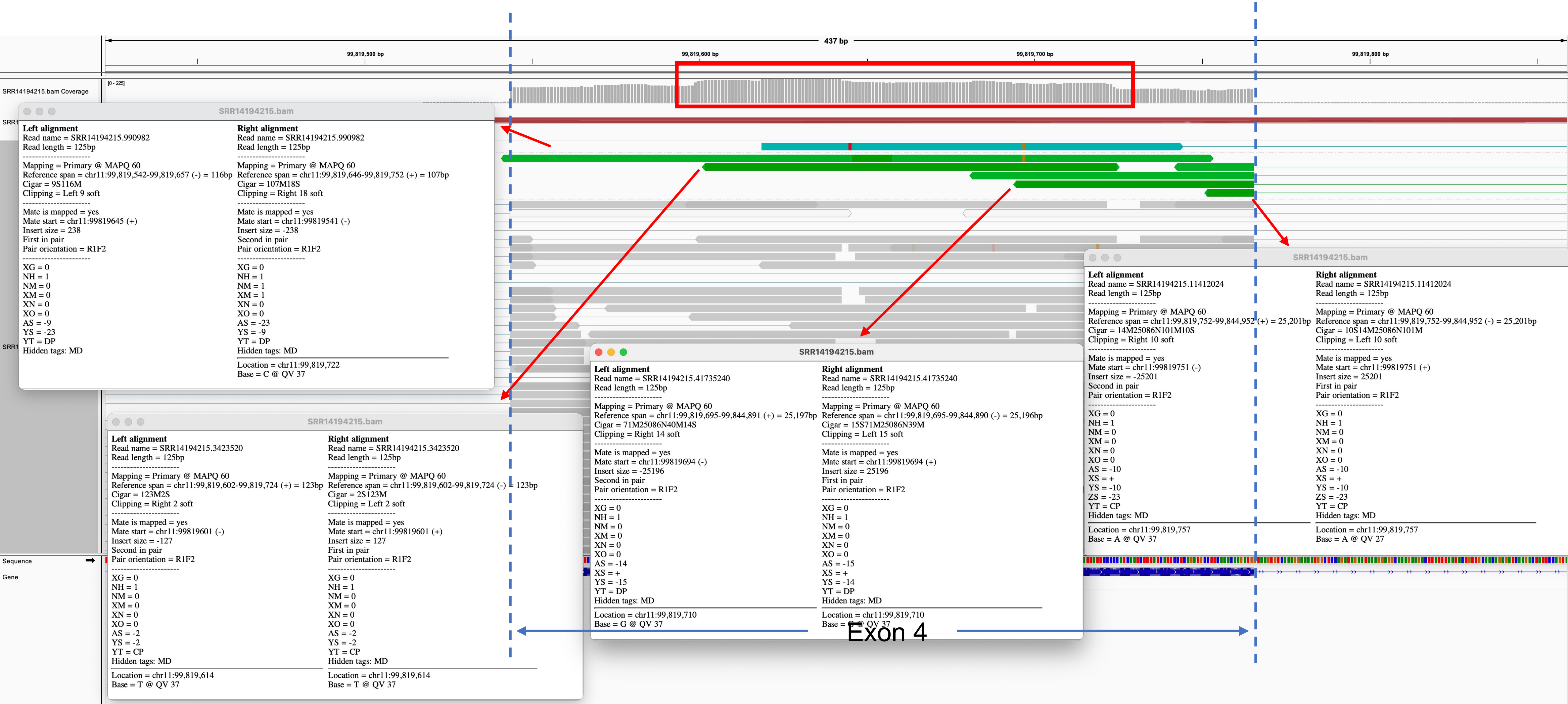
```
Right alignment
Read name = SRR14194213.42702126
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,602-99,819,717 (-) = 116bp
Cigar = 9S116M
Clipping = Left 9 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819601 (+)
Insert size = 134
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -9
YS = -8
YT = DP
Hidden tags: MD
Location = chr11:99,819,606
Base = A @ QV 37
```

❖ SRR14194223, Control_Male_Primary_Visual_Cortex

```
Left alignment
Read name = SRR14194223.19087773
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,604-99,819,723 (+) = 120bp
Cigar = 120M5S
Clipping = Right 5 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819603 (-)
Insert size = -130
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -5
YS = -5
ZS = -5
YT = CP
Hidden tags: MD
Location = chr11:99,819,709
Base = A @ QV 37
```

```
Right alignment
Read name = SRR14194223.19087773
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,604-99,819,723 (-) = 120bp
Cigar = 5S120M
Clipping = Left 5 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819603 (+)
Insert size = 130
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -5
YS = -5
YT = CP
Hidden tags: MD
Location = chr11:99,819,709
Base = A @ QV 37
```

❖ SRR14194215, Control_Female_Primary_Visual_Cortex



```
Left alignment
Read name = SRR14194215.990982
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,542-99,819,657 (-) = 116bp
Cigar = 9S116M
Clipping = Left 9 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819645 (+)
Insert size = 238
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -9
YS = -23
YT = DP
Hidden tags: MD
```

```
Right alignment
Read name = SRR14194215.990982
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,646-99,819,752 (+) = 107bp
Cigar = 107M18S
Clipping = Right 18 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819541 (-)
Insert size = -238
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 1
XM = 1
XN = 0
XO = 0
AS = -23
YS = -9
YT = DP
Hidden tags: MD
Location = chr11:99,819,722
Base = C @ QV 37
```

```
Left alignment
Read name = SRR14194215.3423520
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,602-99,819,724 (+) = 123bp
Cigar = 123M2S
Clipping = Right 2 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819601 (-)
Insert size = -127
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -2
YS = -2
YT = CP
Hidden tags: MD
Location = chr11:99,819,614
Base = T @ QV 37
```

```
Right alignment
Read name = SRR14194215.3423520
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,602-99,819,724 (-) = 123bp
Cigar = 2S123M
Clipping = Left 2 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819601 (+)
Insert size = 127
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -2
YS = -2
YT = CP
Hidden tags: MD
Location = chr11:99,819,614
Base = T @ QV 37
```

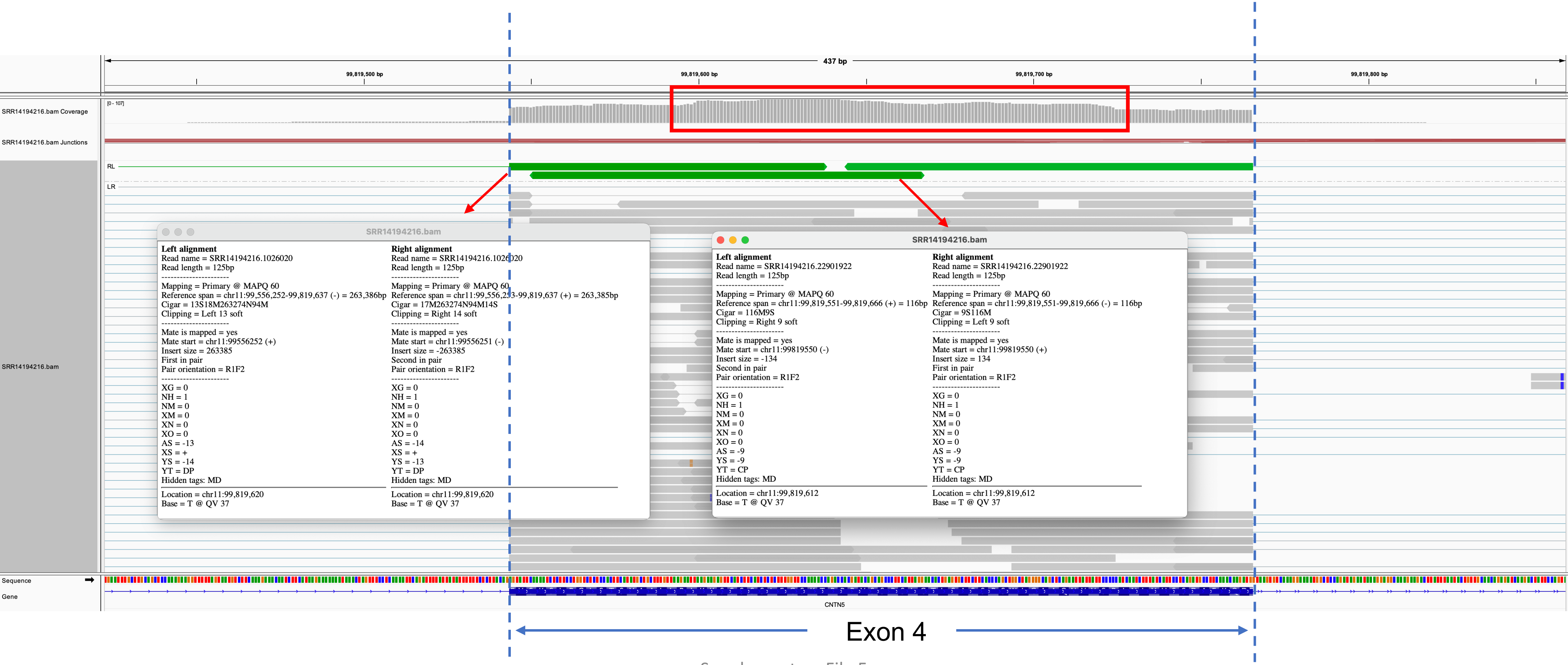
```
Left alignment
Read name = SRR14194215.41735240
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,695-99,844,891 (+) = 25,197bp
Cigar = 71M25086N40M14S
Clipping = Right 14 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819694 (-)
Insert size = -25196
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -14
XS = +
YS = -15
YT = DP
Hidden tags: MD
Location = chr11:99,819,710
Base = G @ QV 37
```

```
Right alignment
Read name = SRR14194215.41735240
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,695-99,844,890 (-) = 25,196bp
Cigar = 15S71M25086N39M
Clipping = Left 15 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819694 (+)
Insert size = 25196
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -15
XS = +
YS = -14
YT = DP
Hidden tags: MD
Location = chr11:99,819,710
Base = G @ QV 37
```

```
Left alignment
Read name = SRR14194215.11412024
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,752-99,844,952 (+) = 25,201bp
Cigar = 14M25086N101M10S
Clipping = Right 10 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819751 (-)
Insert size = -25201
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -10
XS = +
YS = -10
ZS = -23
YT = CP
Hidden tags: MD
Location = chr11:99,819,757
Base = A @ QV 37
```

```
Right alignment
Read name = SRR14194215.11412024
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,752-99,844,952 (-) = 25,201bp
Cigar = 10S14M25086N101M
Clipping = Left 10 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819751 (+)
Insert size = 25201
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -10
XS = +
YS = -10
ZS = -23
YT = CP
Hidden tags: MD
Location = chr11:99,819,757
Base = A @ QV 27
```

❖ SRR14194216, Control_Female_Primary_Visual_Cortex



SRR14194216.bam

```
Left alignment
Read name = SRR14194216.1026020
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,556,252-99,819,637 (-) = 263,386bp
Cigar = 13S18M263274N94M
Clipping = Left 13 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99556252 (+)
Insert size = 263385
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -13
XS = +
YS = -14
YT = DP
Hidden tags: MD
Location = chr11:99,819,620
Base = T @ QV 37
```

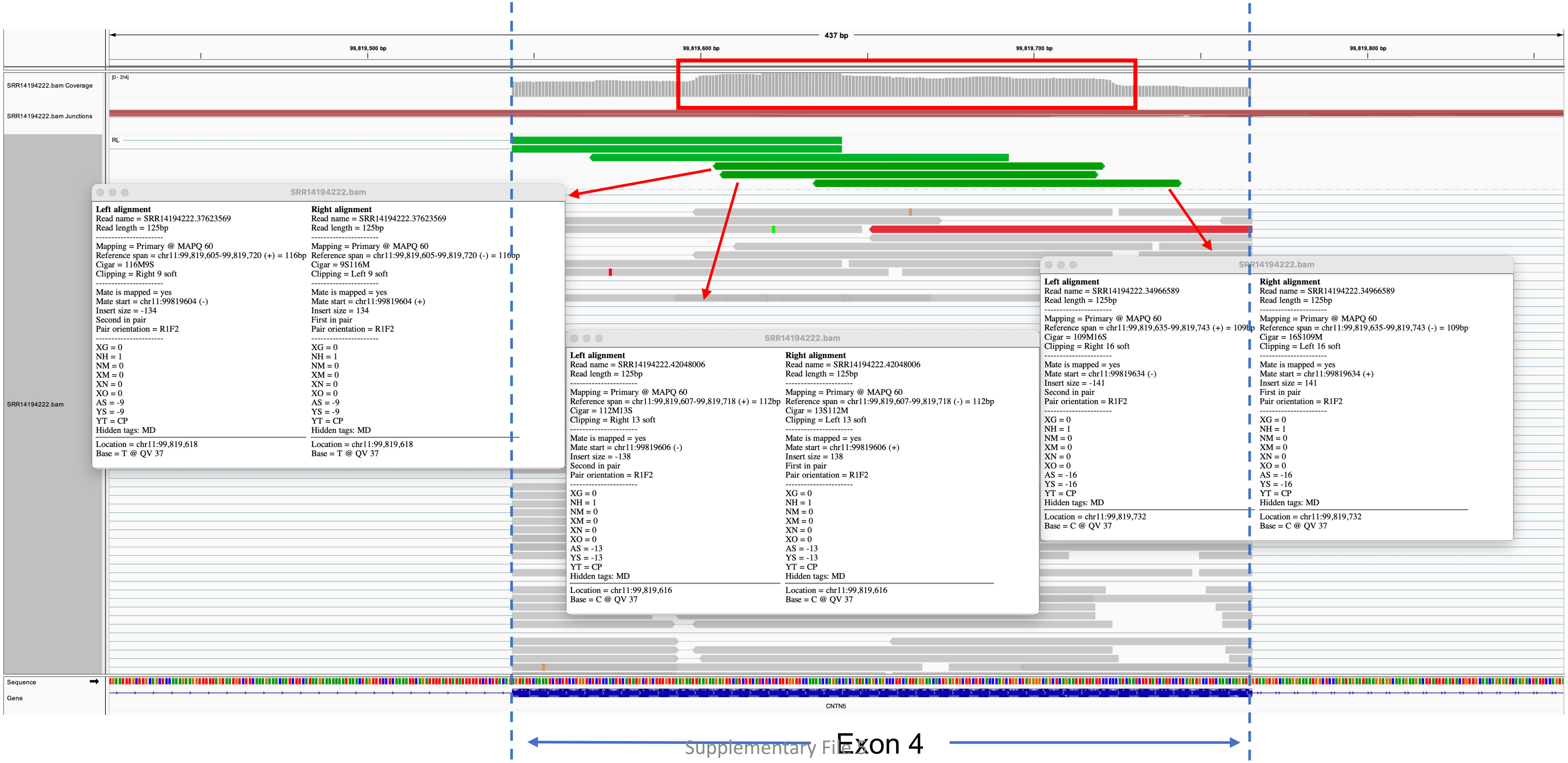
```
Right alignment
Read name = SRR14194216.1026020
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,556,253-99,819,637 (+) = 263,385bp
Cigar = 17M263274N94M14S
Clipping = Right 14 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99556251 (-)
Insert size = -263385
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -14
XS = +
YS = -13
YT = DP
Hidden tags: MD
Location = chr11:99,819,620
Base = T @ QV 37
```

SRR14194216.bam

```
Left alignment
Read name = SRR14194216.22901922
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,551-99,819,666 (+) = 116bp
Cigar = 116M9S
Clipping = Right 9 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819550 (-)
Insert size = -134
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -9
YS = -9
YT = CP
Hidden tags: MD
Location = chr11:99,819,612
Base = T @ QV 37
```

```
Right alignment
Read name = SRR14194216.22901922
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,551-99,819,666 (-) = 116bp
Cigar = 9S116M
Clipping = Left 9 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819550 (+)
Insert size = 134
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -9
YS = -9
YT = CP
Hidden tags: MD
Location = chr11:99,819,612
Base = T @ QV 37
```

❖ SRR14194222, Alzheimer_Disease_Male_Primary_Visual_Cortex



```
Left alignment
Read name = SRR14194222.37623569
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,605-99,819,720 (+) = 116bp
Cigar = 116M9S
Clipping = Right 9 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819604 (-)
Insert size = -134
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -9
YS = -9
YT = CP
Hidden tags: MD
Location = chr11:99,819,618
Base = T @ QV 37
```

```
Right alignment
Read name = SRR14194222.37623569
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,605-99,819,720 (-) = 116bp
Cigar = 9S116M
Clipping = Left 9 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819604 (+)
Insert size = 134
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -9
YS = -9
YT = CP
Hidden tags: MD
Location = chr11:99,819,618
Base = T @ QV 37
```

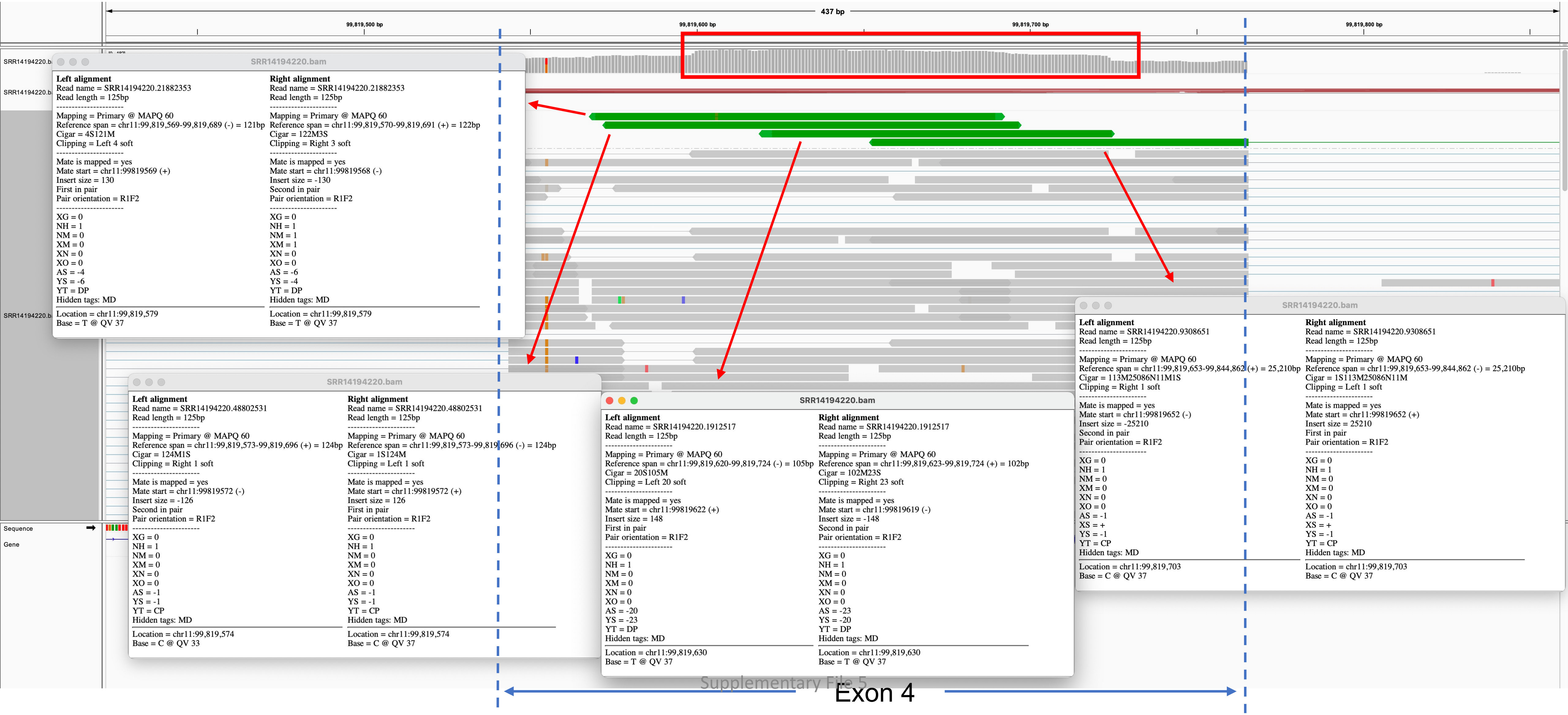
```
Left alignment
Read name = SRR14194222.42048006
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,607-99,819,718 (+) = 112bp
Cigar = 112M13S
Clipping = Right 13 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819606 (-)
Insert size = -138
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -13
YS = -13
YT = CP
Hidden tags: MD
Location = chr11:99,819,616
Base = C @ QV 37
```

```
Right alignment
Read name = SRR14194222.42048006
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,607-99,819,718 (-) = 112bp
Cigar = 13S112M
Clipping = Left 13 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819606 (+)
Insert size = 138
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -13
YS = -13
YT = CP
Hidden tags: MD
Location = chr11:99,819,616
Base = C @ QV 37
```

```
Left alignment
Read name = SRR14194222.34966589
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,635-99,819,743 (+) = 109bp
Cigar = 109M16S
Clipping = Right 16 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819634 (-)
Insert size = -141
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -16
YS = -16
YT = CP
Hidden tags: MD
Location = chr11:99,819,732
Base = C @ QV 37
```

```
Right alignment
Read name = SRR14194222.34966589
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,635-99,819,743 (-) = 109bp
Cigar = 16S109M
Clipping = Left 16 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819634 (+)
Insert size = 141
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -16
YS = -16
YT = CP
Hidden tags: MD
Location = chr11:99,819,732
Base = C @ QV 37
```

❖ SRR14194220, Alzheimer_Disease_Female_Primary_Visual_Cortex



```
SRR14194220.bam

Left alignment                                            Right alignment
Read name = SRR14194220.21882353                          Read name = SRR14194220.21882353
Read length = 125bp                                       Read length = 125bp
----------------------                                    ----------------------
Mapping = Primary @ MAPQ 60                               Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,569-99,819,689 (-) = 121bp  Reference span = chr11:99,819,570-99,819,691 (+) = 122bp
Cigar = 4S121M                                            Cigar = 122M3S
Clipping = Left 4 soft                                    Clipping = Right 3 soft
----------------------                                    ----------------------
Mate is mapped = yes                                      Mate is mapped = yes
Mate start = chr11:99819569 (+)                           Mate start = chr11:99819568 (-)
Insert size = 130                                         Insert size = -130
First in pair                                             Second in pair
Pair orientation = R1F2                                   Pair orientation = R1F2
----------------------                                    ----------------------
XG = 0                                                    XG = 0
NH = 1                                                    NH = 1
NM = 0                                                    NM = 1
XM = 0                                                    XM = 1
XN = 0                                                    XN = 0
XO = 0                                                    XO = 0
AS = -4                                                   AS = -6
YS = -6                                                   YS = -4
YT = DP                                                   YT = DP
Hidden tags: MD                                           Hidden tags: MD

Location = chr11:99,819,579                               Location = chr11:99,819,579
Base = T @ QV 37                                          Base = T @ QV 37
```

```
SRR14194220.bam

Left alignment                                            Right alignment
Read name = SRR14194220.48802531                          Read name = SRR14194220.48802531
Read length = 125bp                                       Read length = 125bp
----------------------                                    ----------------------
Mapping = Primary @ MAPQ 60                               Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,573-99,819,696 (+) = 124bp  Reference span = chr11:99,819,573-99,819,696 (-) = 124bp
Cigar = 124M1S                                            Cigar = 1S124M
Clipping = Right 1 soft                                   Clipping = Left 1 soft
----------------------                                    ----------------------
Mate is mapped = yes                                      Mate is mapped = yes
Mate start = chr11:99819572 (-)                           Mate start = chr11:99819572 (+)
Insert size = -126                                        Insert size = 126
Second in pair                                            First in pair
Pair orientation = R1F2                                   Pair orientation = R1F2
----------------------                                    ----------------------
XG = 0                                                    XG = 0
NH = 1                                                    NH = 1
NM = 0                                                    NM = 0
XM = 0                                                    XM = 0
XN = 0                                                    XN = 0
XO = 0                                                    XO = 0
AS = -1                                                   AS = -1
YS = -1                                                   YS = -1
YT = CP                                                   YT = CP
Hidden tags: MD                                           Hidden tags: MD

Location = chr11:99,819,574                               Location = chr11:99,819,574
Base = C @ QV 33                                          Base = C @ QV 37
```

```
SRR14194220.bam

Left alignment                                            Right alignment
Read name = SRR14194220.1912517                           Read name = SRR14194220.1912517
Read length = 125bp                                       Read length = 125bp
----------------------                                    ----------------------
Mapping = Primary @ MAPQ 60                               Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,620-99,819,724 (-) = 105bp  Reference span = chr11:99,819,623-99,819,724 (+) = 102bp
Cigar = 20S105M                                           Cigar = 102M23S
Clipping = Left 20 soft                                   Clipping = Right 23 soft
----------------------                                    ----------------------
Mate is mapped = yes                                      Mate is mapped = yes
Mate start = chr11:99819622 (+)                           Mate start = chr11:99819619 (-)
Insert size = 148                                         Insert size = -148
First in pair                                             Second in pair
Pair orientation = R1F2                                   Pair orientation = R1F2
----------------------                                    ----------------------
XG = 0                                                    XG = 0
NH = 1                                                    NH = 1
NM = 0                                                    NM = 0
XM = 0                                                    XM = 0
XN = 0                                                    XN = 0
XO = 0                                                    XO = 0
AS = -20                                                  AS = -23
YS = -23                                                  YS = -20
YT = DP                                                   YT = DP
Hidden tags: MD                                           Hidden tags: MD

Location = chr11:99,819,630                               Location = chr11:99,819,630
Base = T @ QV 37                                          Base = T @ QV 37
```

```
SRR14194220.bam

Left alignment                                               Right alignment
Read name = SRR14194220.9308651                              Read name = SRR14194220.9308651
Read length = 125bp                                          Read length = 125bp
----------------------                                       ----------------------
Mapping = Primary @ MAPQ 60                                  Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,653-99,844,862 (+) = 25,210bp  Reference span = chr11:99,819,653-99,844,862 (-) = 25,210bp
Cigar = 113M25086N11M1S                                      Cigar = 1S113M25086N11M
Clipping = Right 1 soft                                      Clipping = Left 1 soft
----------------------                                       ----------------------
Mate is mapped = yes                                         Mate is mapped = yes
Mate start = chr11:99819652 (-)                              Mate start = chr11:99819652 (+)
Insert size = -25210                                         Insert size = 25210
Second in pair                                               First in pair
Pair orientation = R1F2                                      Pair orientation = R1F2
----------------------                                       ----------------------
XG = 0                                                       XG = 0
NH = 1                                                       NH = 1
NM = 0                                                       NM = 0
XM = 0                                                       XM = 0
XN = 0                                                       XN = 0
XO = 0                                                       XO = 0
AS = -1                                                      AS = -1
XS = +                                                       XS = +
YS = -1                                                      YS = -1
YT = CP                                                      YT = CP
Hidden tags: MD                                              Hidden tags: MD

Location = chr11:99,819,703                                  Location = chr11:99,819,703
Base = C @ QV 37                                             Base = C @ QV 37
```

❖ SRR14194221, Alzheimer_Disease_Female_Primary_Visual_Cortex

```
Left alignment
Read name = SRR14194221.26306259
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,663-99,844,860 (-) = 25,198bp
Cigar = 13S103M25086N9M
Clipping = Left 13 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819663 (+)
Insert size = 0
First in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -13
XS = +
ZS = -22
YT = UP
Hidden tags: MD
Location = chr11:99,819,728
Base = C @ QV 37

Right alignment
Read name = SRR14194221.26306259
Read length = 125bp
----------------------
Mapping = Primary @ MAPQ 60
Reference span = chr11:99,819,664-99,844,861 (+) = 25,198bp
Cigar = 102M25086N10M13S
Clipping = Right 13 soft
----------------------
Mate is mapped = yes
Mate start = chr11:99819662 (-)
Insert size = 0
Second in pair
Pair orientation = R1F2
----------------------
XG = 0
NH = 1
NM = 0
XM = 0
XN = 0
XO = 0
AS = -13
XS = +
ZS = -23
YT = UP
Hidden tags: MD
Location = chr11:99,819,728
Base = C @ QV 37
```

Supplementary File 5