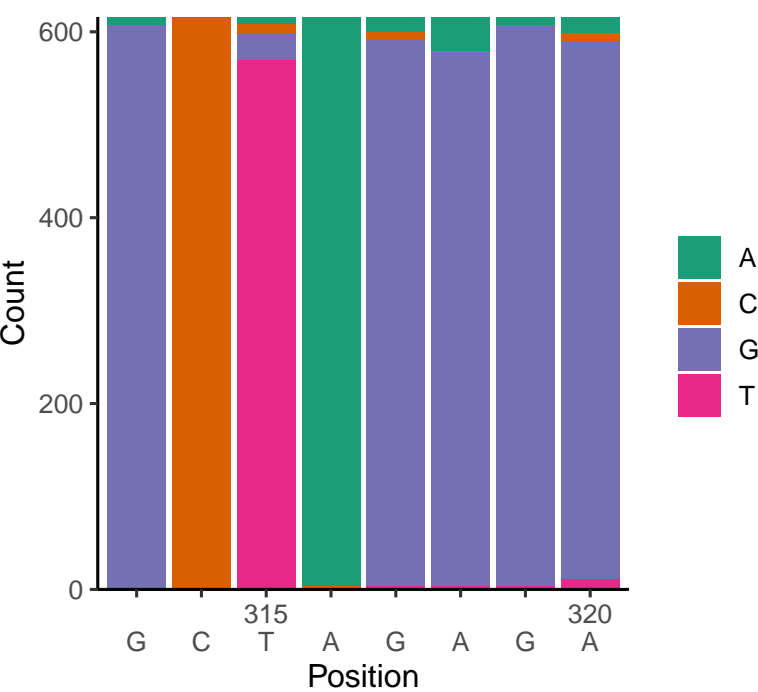
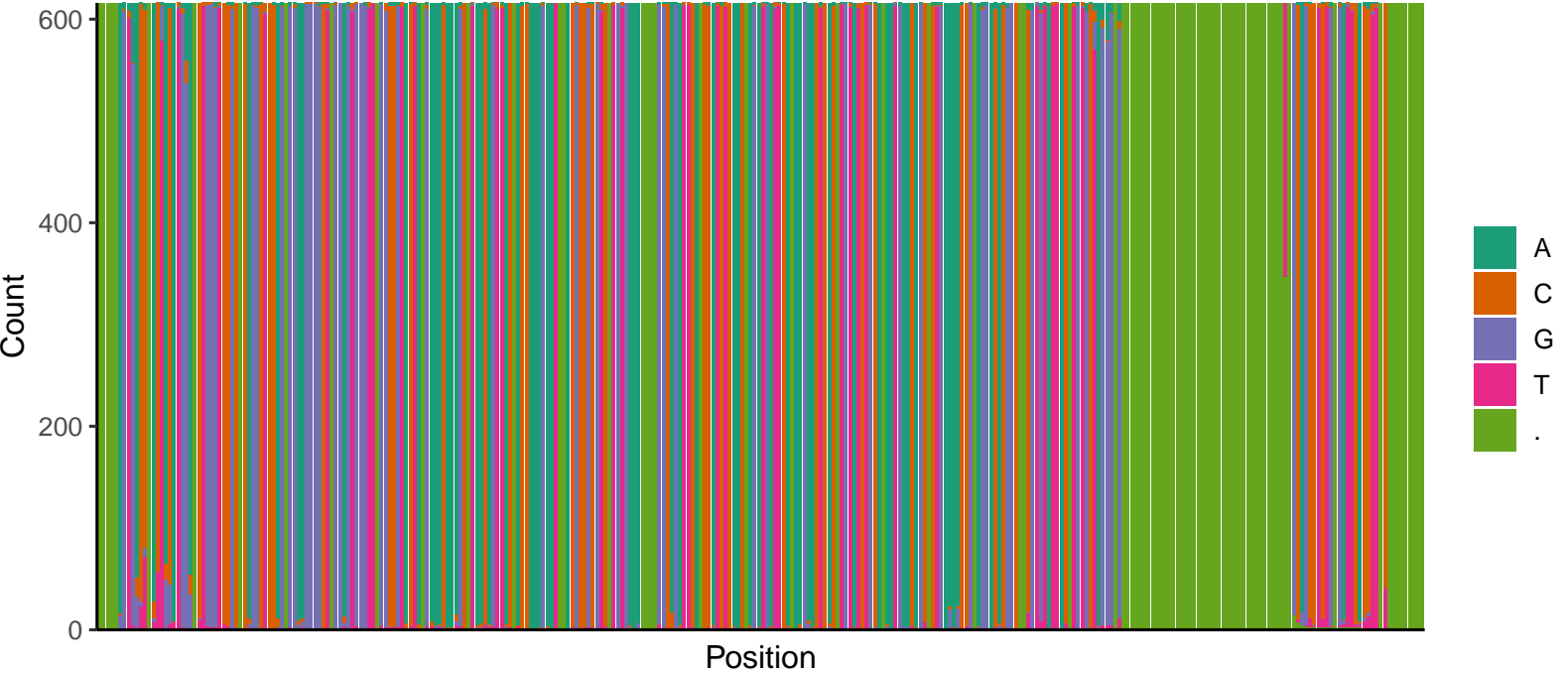


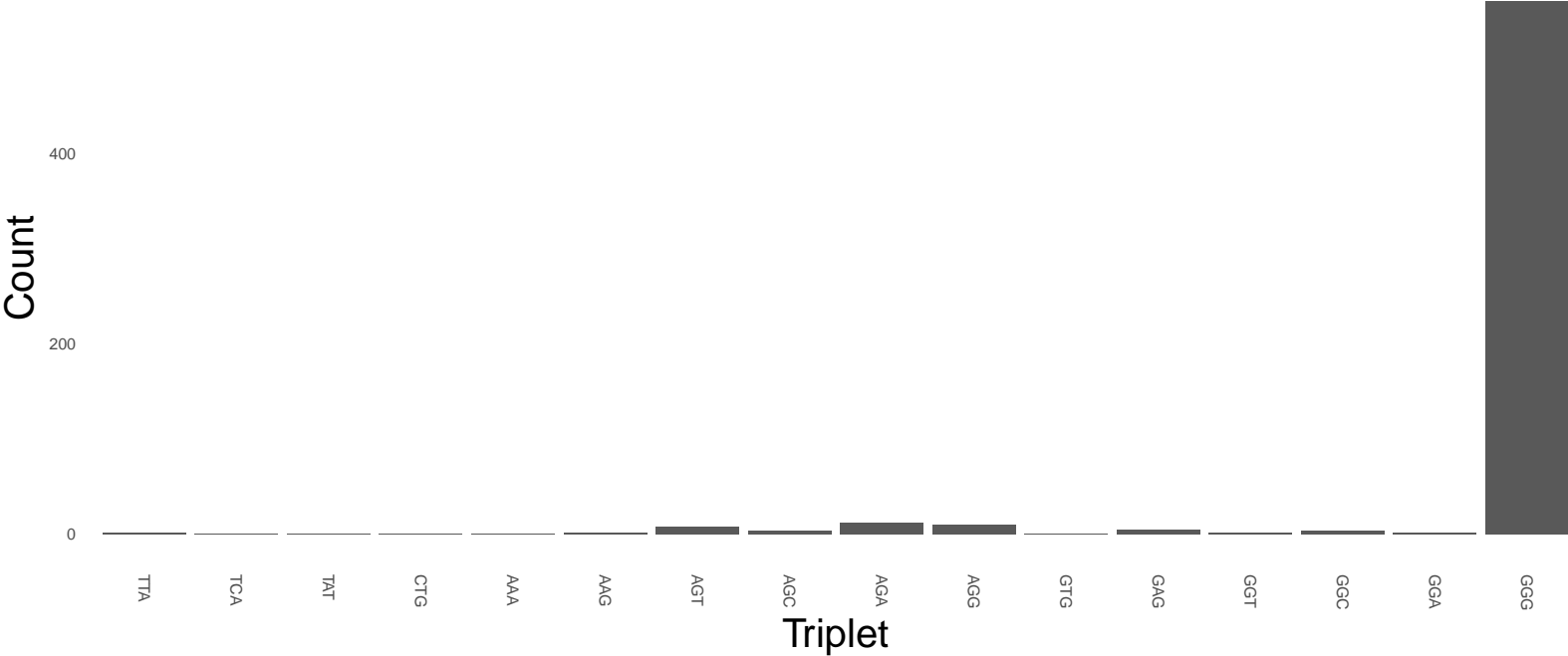
Gene IGHV3-72\*01\_C194A\_G239C



Gene IGHV3-72\*01\_C194A\_G239C

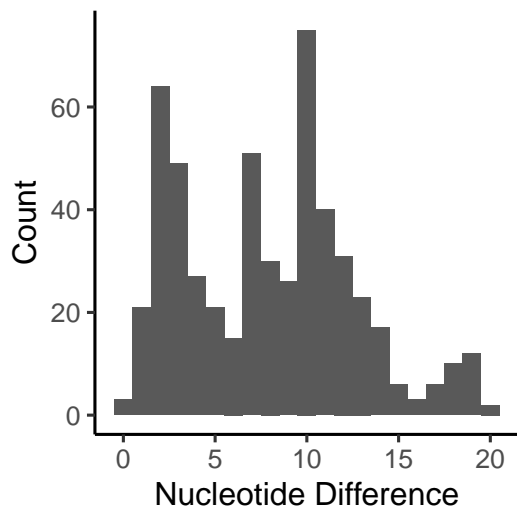


IGHV3-72\*01\_C194A\_G239C- Final 3 nucleotides as a triplet



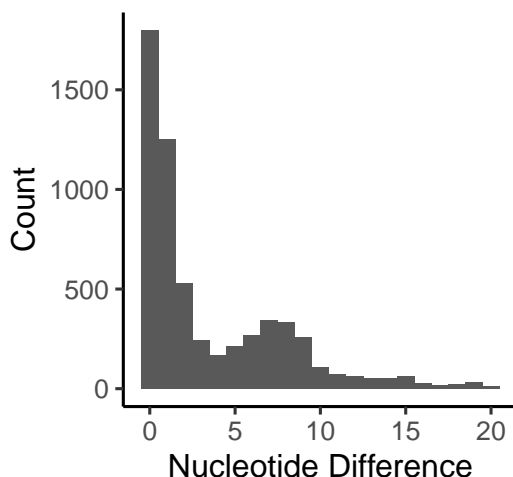
## IGHV1-2\*02

539 sequences assigned  
3 (0.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



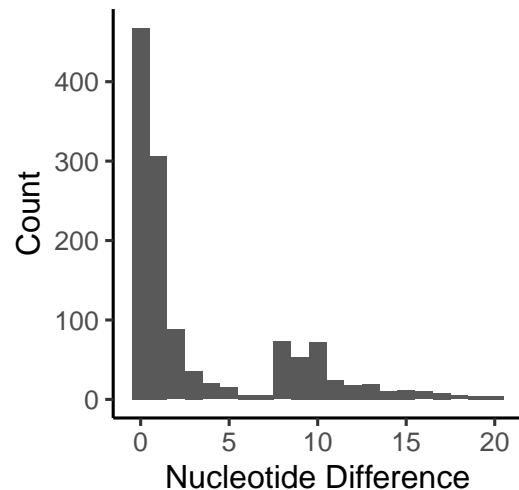
## IGHV1-8\*01

6201 sequences assigned  
1798 (29%) exact matches, in which:  
1589 unique CDR3  
6 unique J



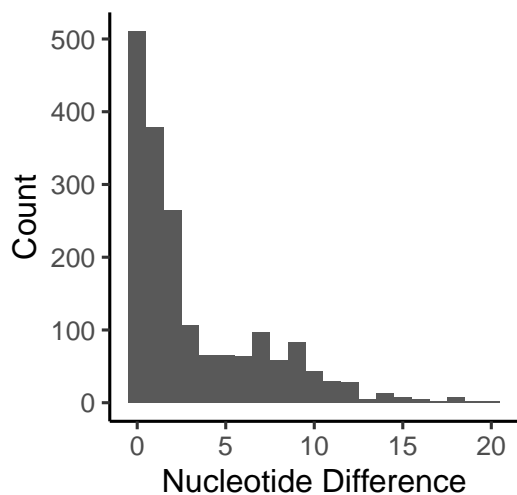
## IGHV1-24\*01

1283 sequences assigned  
468 (36.5%) exact matches, in which:  
414 unique CDR3  
6 unique J



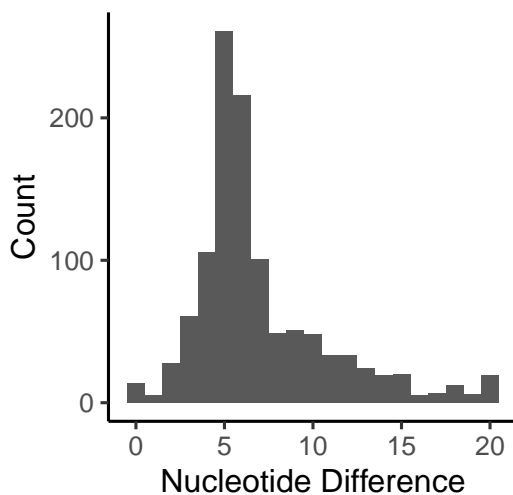
## IGHV1-2\*04

1850 sequences assigned  
511 (27.6%) exact matches, in which:  
452 unique CDR3  
6 unique J



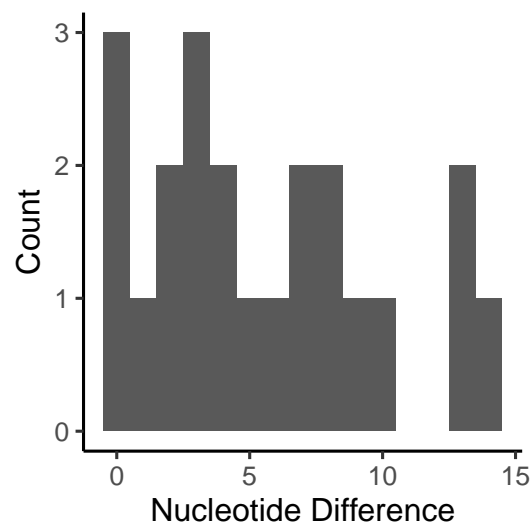
## IGHV1-8\*02

1163 sequences assigned  
14 (1.2%) exact matches, in which:  
14 unique CDR3  
5 unique J



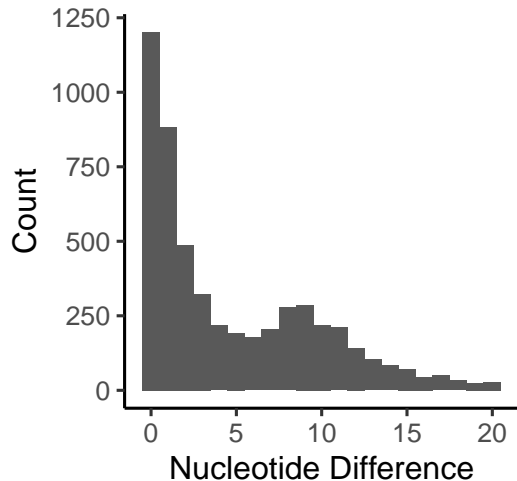
## IGHV1-45\*02

22 sequences assigned  
3 (13.6%) exact matches, in which:  
3 unique CDR3  
3 unique J



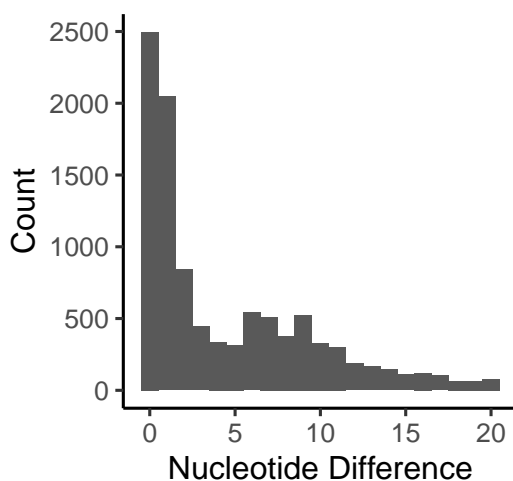
## IGHV1-3\*01\_05

6141 sequences assigned  
1202 (19.6%) exact matches, in which:  
1007 unique CDR3  
6 unique J



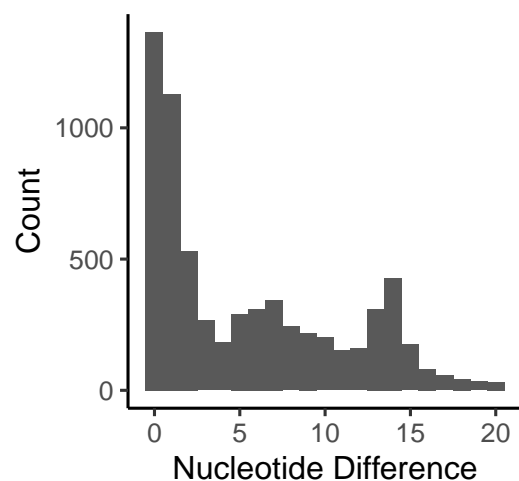
## IGHV1-18\*01

10893 sequences assigned  
2496 (22.9%) exact matches, in which:  
2190 unique CDR3  
6 unique J



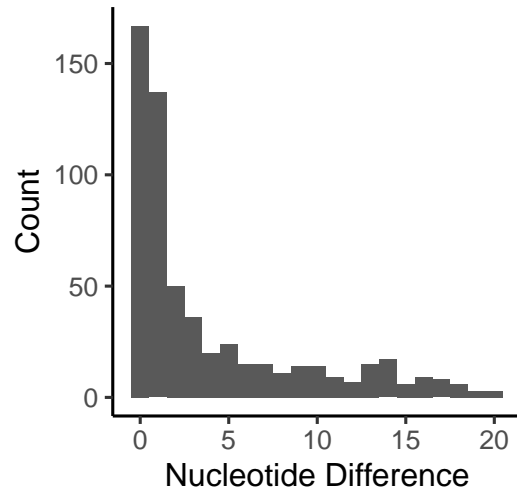
## IGHV1-46\*01

6744 sequences assigned  
1365 (20.2%) exact matches, in which:  
1228 unique CDR3  
6 unique J



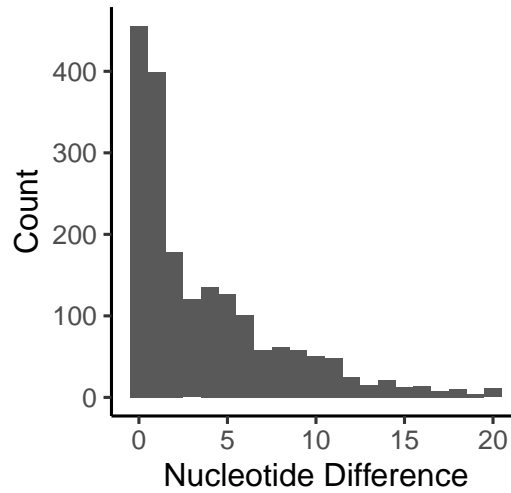
### IGHV1–58\*02

602 sequences assigned  
167 (27.7%) exact matches, in which:  
152 unique CDR3  
5 unique J



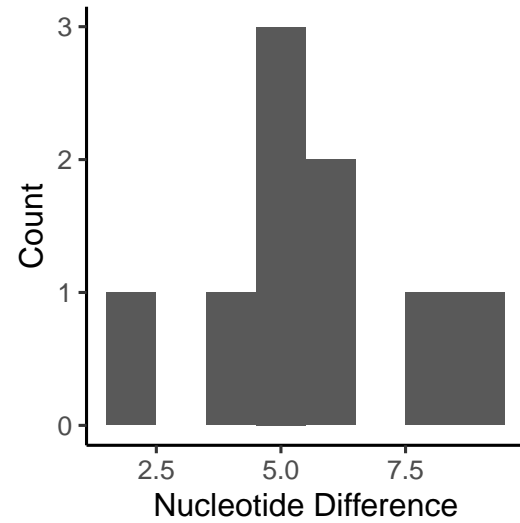
### IGHV2–5\*02

2356 sequences assigned  
456 (19.4%) exact matches, in which:  
399 unique CDR3  
6 unique J



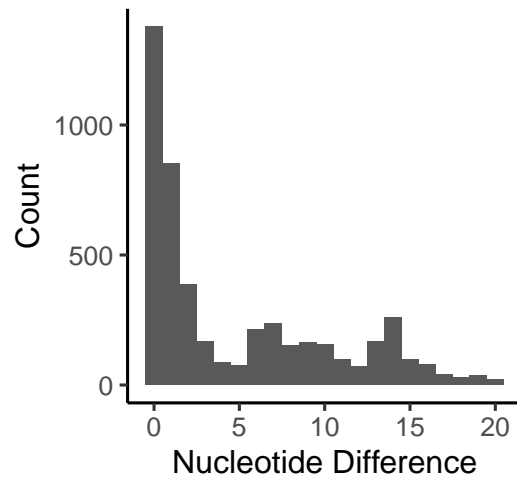
### IGHV2–70D\*04

9 sequences assigned  
No exact matches.



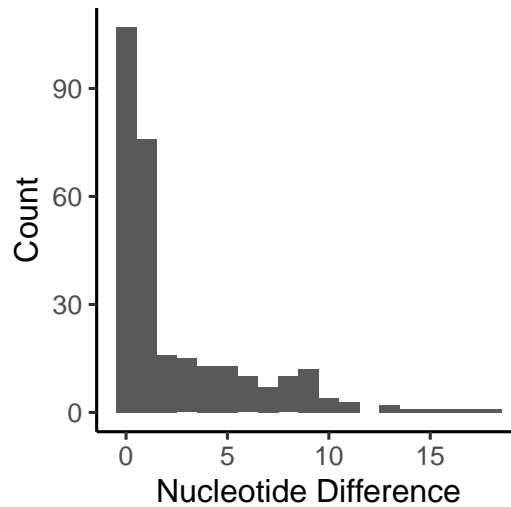
### IGHV1–69\*04\_09

4945 sequences assigned  
1378 (27.9%) exact matches, in which:  
1268 unique CDR3  
6 unique J



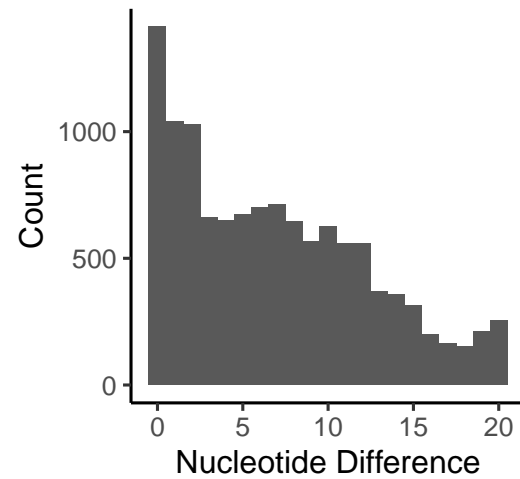
### IGHV2–26\*01

294 sequences assigned  
107 (36.4%) exact matches, in which:  
100 unique CDR3  
5 unique J



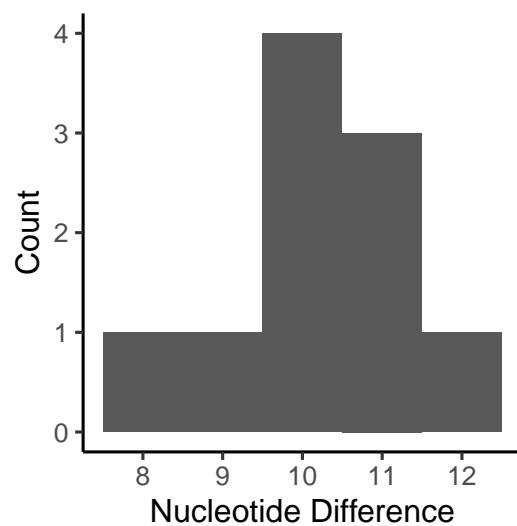
### IGHV3–7\*01

12696 sequences assigned  
1414 (11.1%) exact matches, in which:  
1044 unique CDR3  
6 unique J



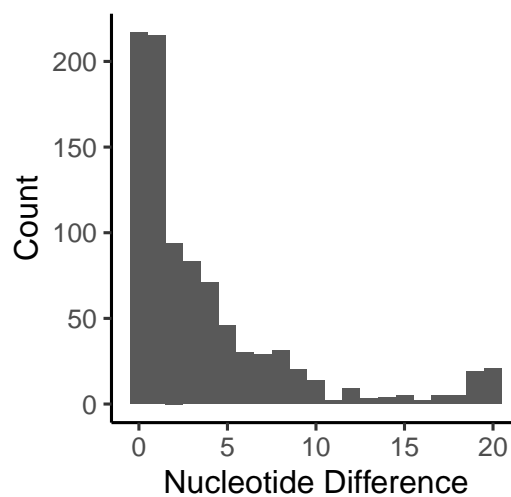
### IGHV1–NL1\*01

10 sequences assigned  
No exact matches.



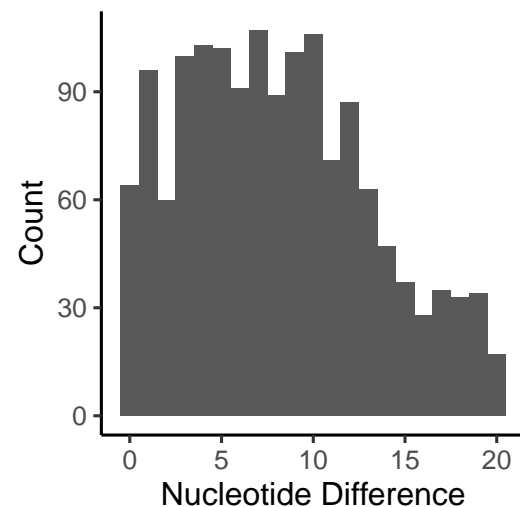
### IGHV2–70\*11\_15

960 sequences assigned  
217 (22.6%) exact matches, in which:  
185 unique CDR3  
5 unique J



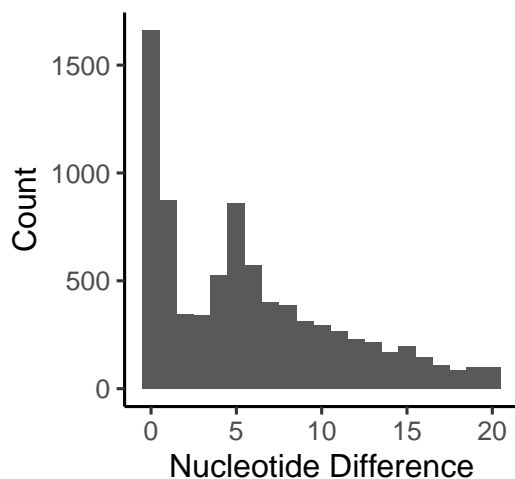
### IGHV3–7\*03

1578 sequences assigned  
64 (4.1%) exact matches, in which:  
59 unique CDR3  
6 unique J



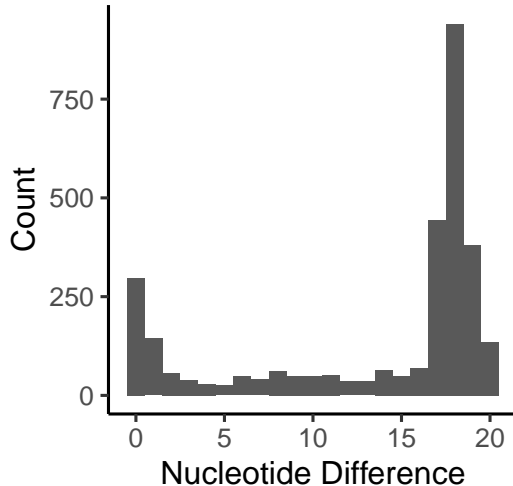
### IGHV3-9\*01

9385 sequences assigned  
1661 (17.7%) exact matches, in which:  
1110 unique CDR3  
6 unique J



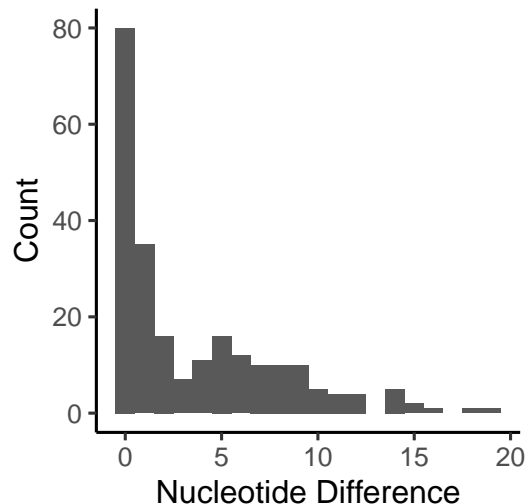
### IGHV3-13\*01

3342 sequences assigned  
297 (8.9%) exact matches, in which:  
215 unique CDR3  
6 unique J



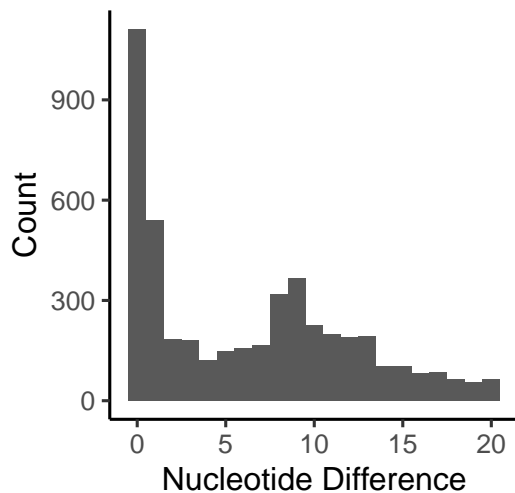
### IGHV3-20\*01\_02

232 sequences assigned  
80 (34.5%) exact matches, in which:  
53 unique CDR3  
5 unique J



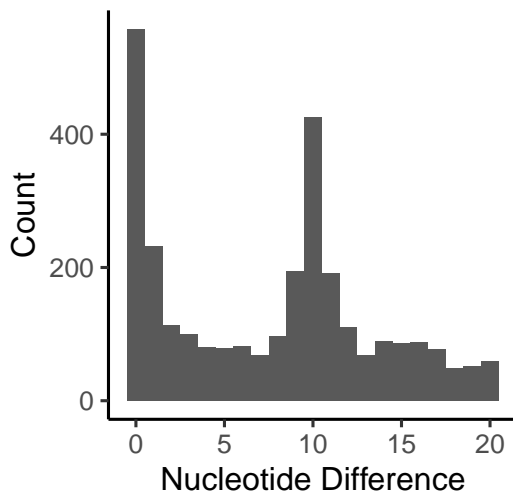
### IGHV3-11\*01

5348 sequences assigned  
1112 (20.8%) exact matches, in which:  
795 unique CDR3  
6 unique J



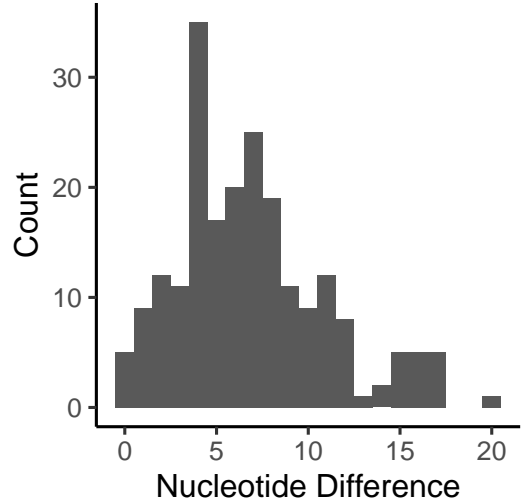
### IGHV3-15\*01\_02

3114 sequences assigned  
558 (17.9%) exact matches, in which:  
405 unique CDR3  
6 unique J



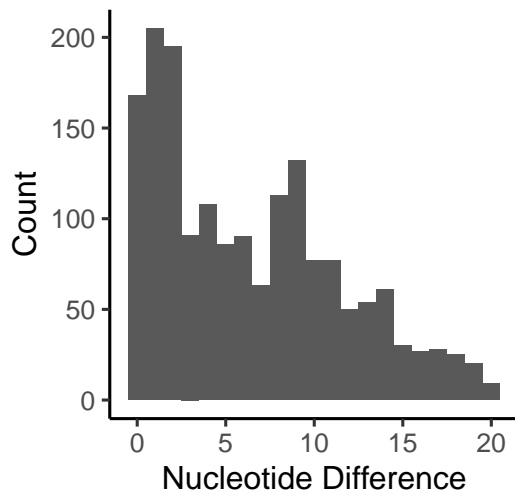
### IGHV3-20\*03\_04

247 sequences assigned  
5 (2%) exact matches, in which:  
4 unique CDR3  
3 unique J



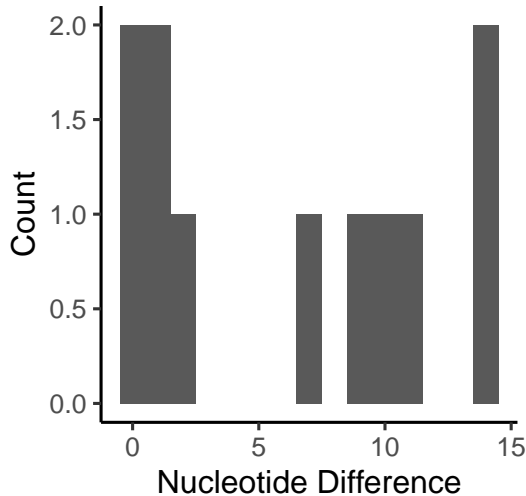
### IGHV3-11\*04

1786 sequences assigned  
168 (9.4%) exact matches, in which:  
162 unique CDR3  
6 unique J



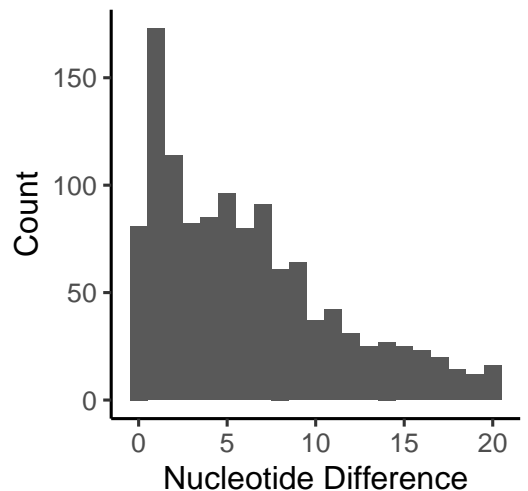
### IGHV3-19\*01

11 sequences assigned  
2 (18.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



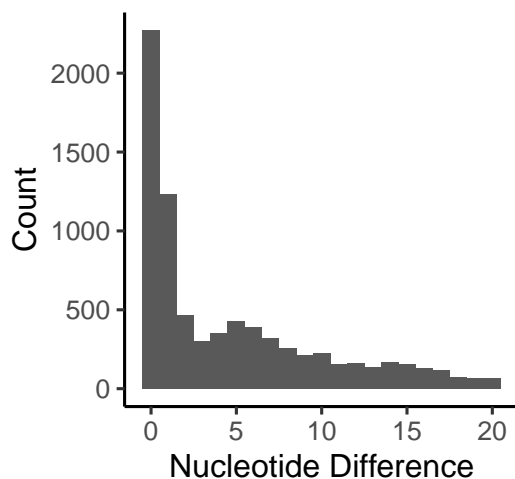
### IGHV3-21\*04

1294 sequences assigned  
81 (6.3%) exact matches, in which:  
77 unique CDR3  
6 unique J



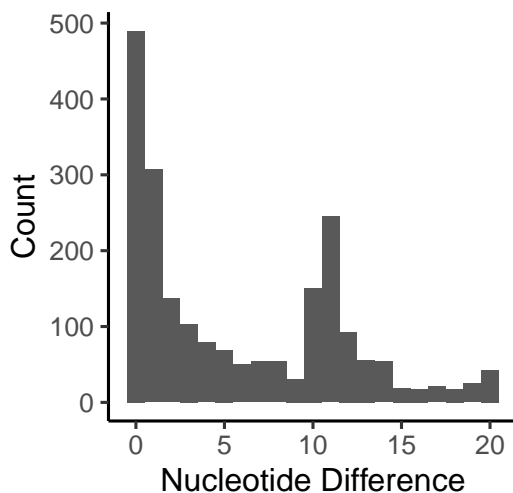
### IGHV3-21\*01\_02

8568 sequences assigned  
2271 (26.5%) exact matches, in which:  
1595 unique CDR3  
6 unique J



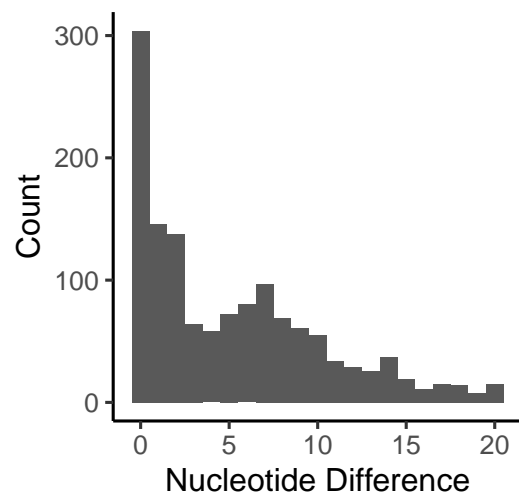
### IGHV3-30\*03

2610 sequences assigned  
490 (18.8%) exact matches, in which:  
455 unique CDR3  
6 unique J



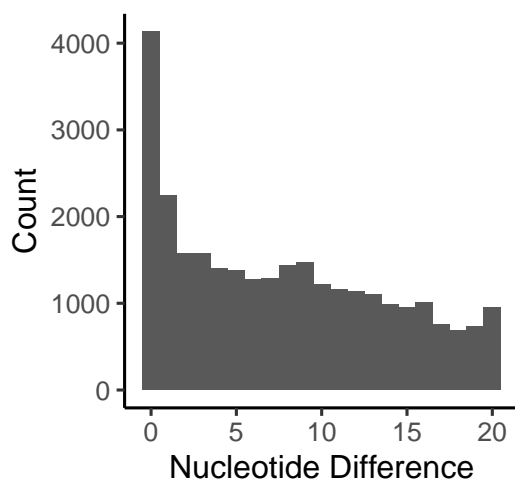
### IGHV3-33\*08

1518 sequences assigned  
304 (20%) exact matches, in which:  
274 unique CDR3  
6 unique J



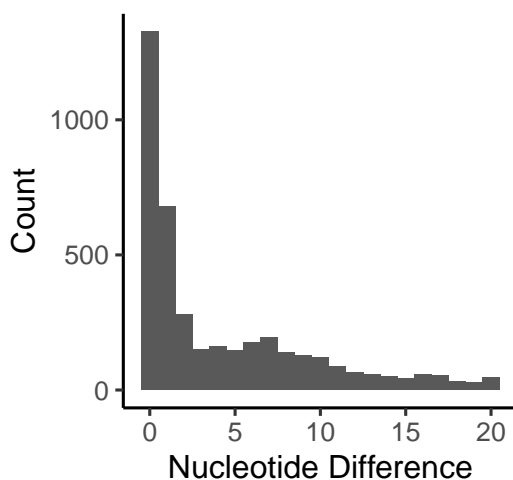
### IGHV3-23\*01\_04

38238 sequences assigned  
4132 (10.8%) exact matches, in which:  
2738 unique CDR3  
6 unique J



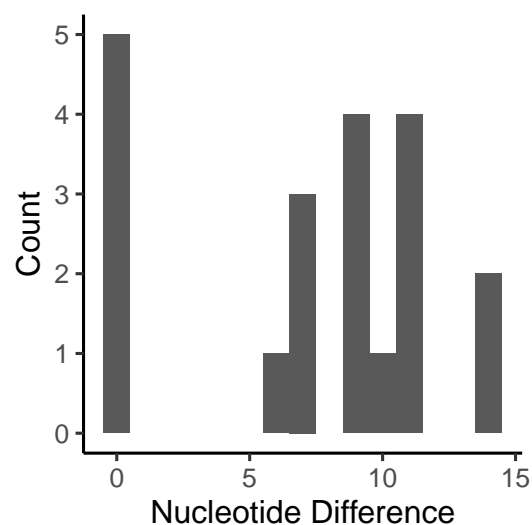
### IGHV3-33\*01

4384 sequences assigned  
1326 (30.2%) exact matches, in which:  
997 unique CDR3  
6 unique J



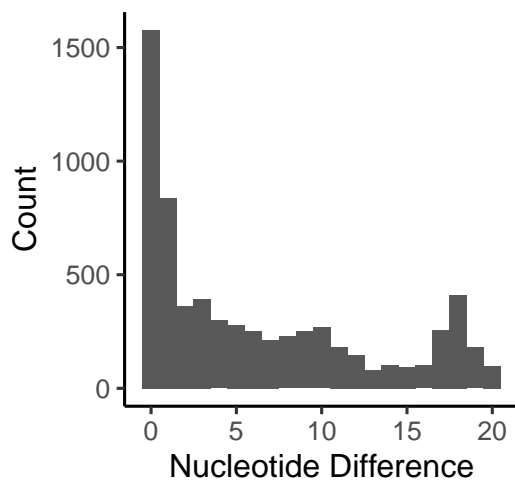
### IGHV3-35\*01

22 sequences assigned  
5 (22.7%) exact matches, in which:  
4 unique CDR3  
3 unique J



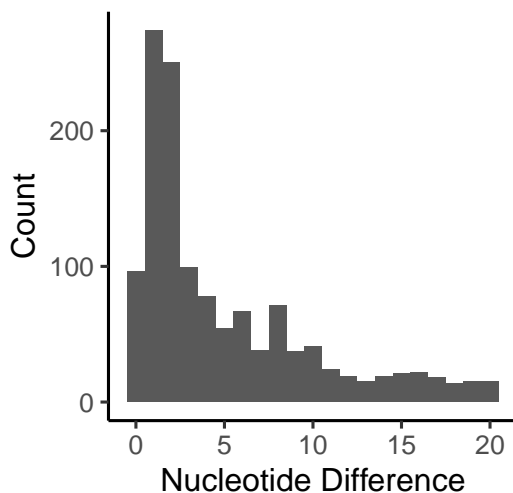
### IGHV3-30-3\*01

7051 sequences assigned  
1577 (22.4%) exact matches, in which:  
1199 unique CDR3  
6 unique J



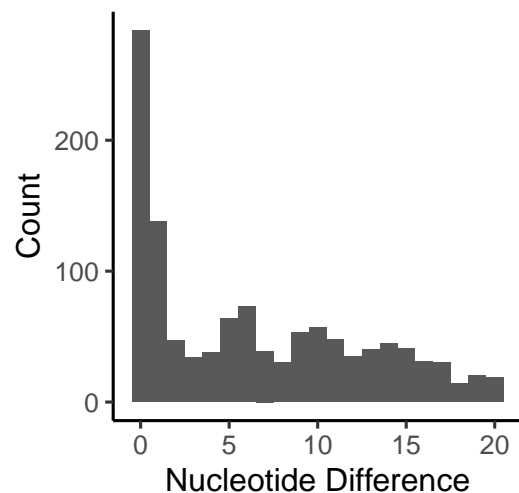
### IGHV3-33\*06

1344 sequences assigned  
96 (7.1%) exact matches, in which:  
94 unique CDR3  
6 unique J



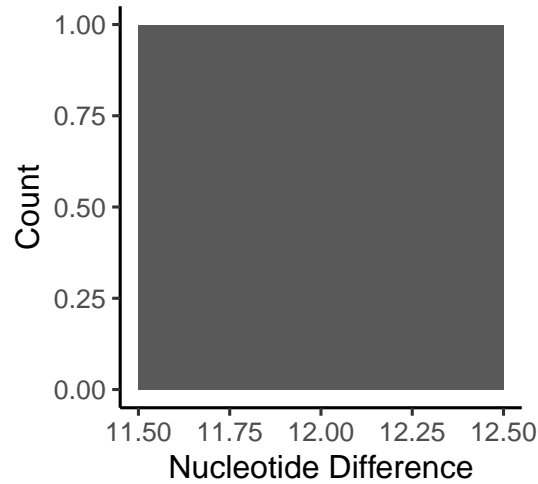
### IGHV3-43\*02

1570 sequences assigned  
284 (18.1%) exact matches, in which:  
197 unique CDR3  
6 unique J



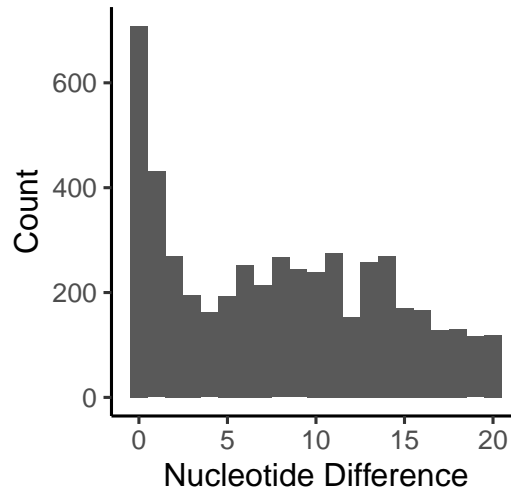
### IGHV3-47\*01

1 sequences assigned  
No exact matches.



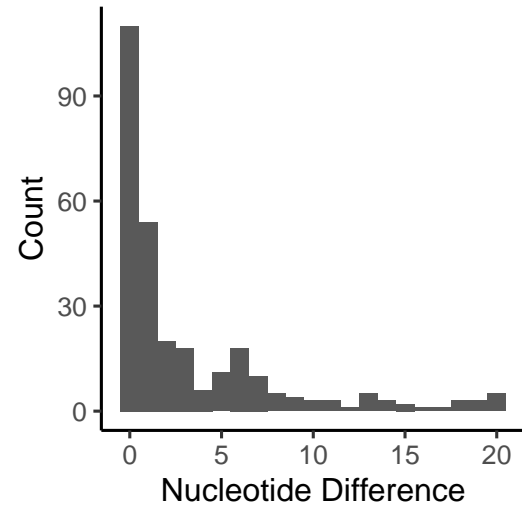
### IGHV3-48\*03

6705 sequences assigned  
709 (10.6%) exact matches, in which:  
510 unique CDR3  
6 unique J



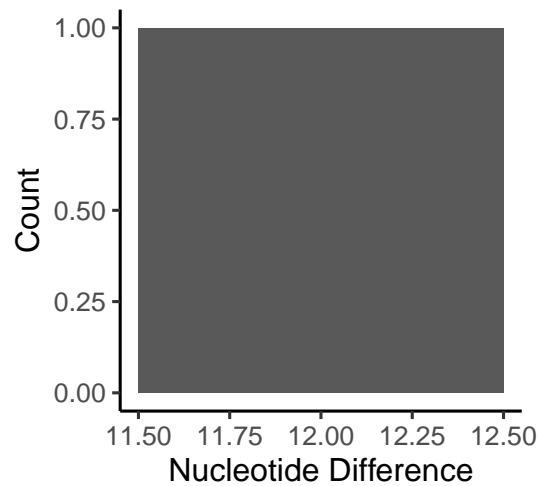
### IGHV3-49\*03\_05

295 sequences assigned  
110 (37.3%) exact matches, in which:  
76 unique CDR3  
5 unique J



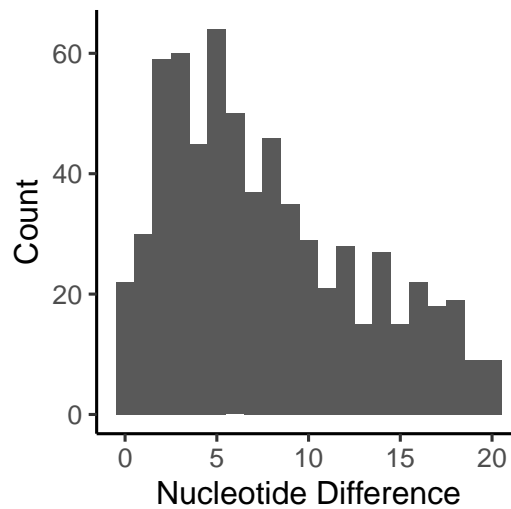
### IGHV3-47\*02

1 sequences assigned  
No exact matches.



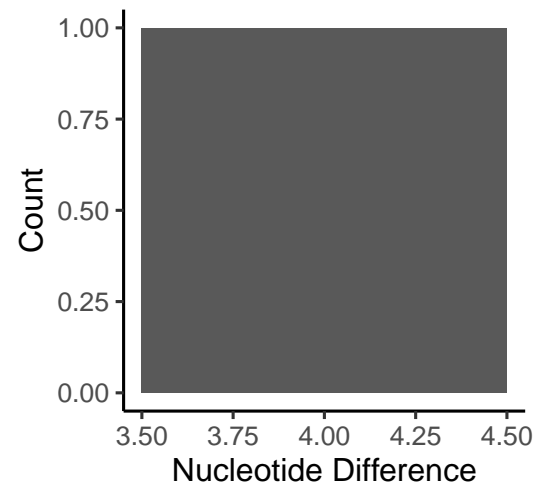
### IGHV3-48\*04

712 sequences assigned  
22 (3.1%) exact matches, in which:  
22 unique CDR3  
3 unique J



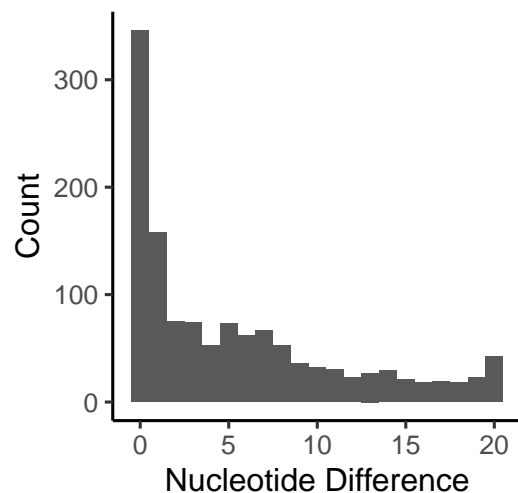
### IGHV3-52\*01\_03

1 sequences assigned  
No exact matches.



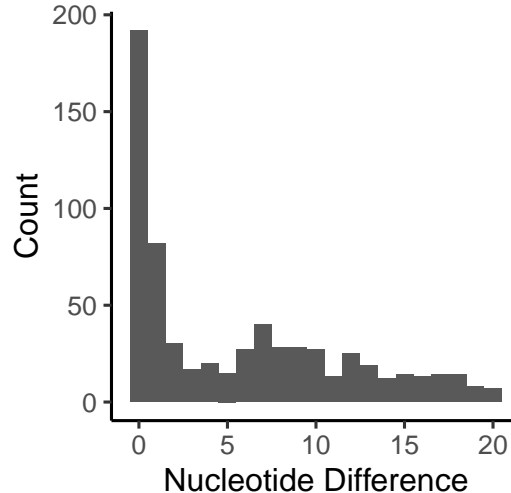
### IGHV3-48\*02

1369 sequences assigned  
346 (25.3%) exact matches, in which:  
244 unique CDR3  
6 unique J



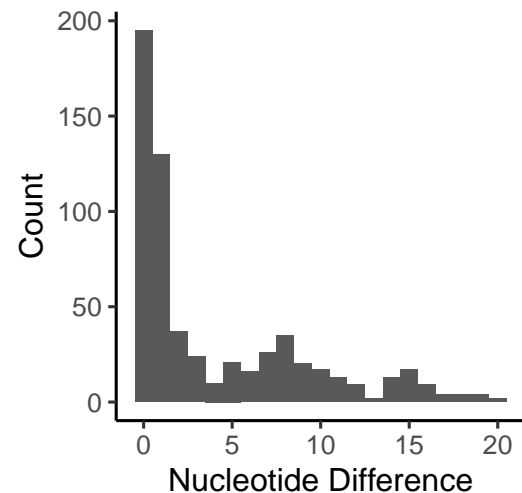
### IGHV3-49\*04

719 sequences assigned  
192 (26.7%) exact matches, in which:  
142 unique CDR3  
5 unique J



### IGHV3-53\*04

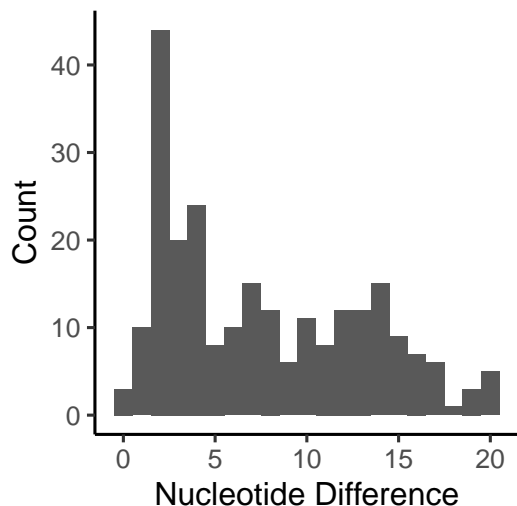
671 sequences assigned  
195 (29.1%) exact matches, in which:  
141 unique CDR3  
5 unique J





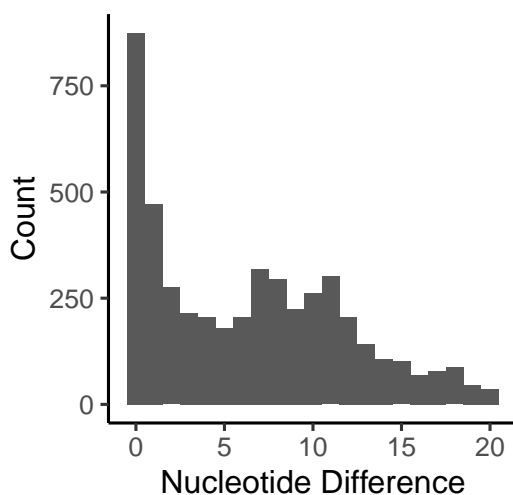
### IGHV3-53\*05

258 sequences assigned  
3 (1.2%) exact matches, in which:  
3 unique CDR3  
3 unique J



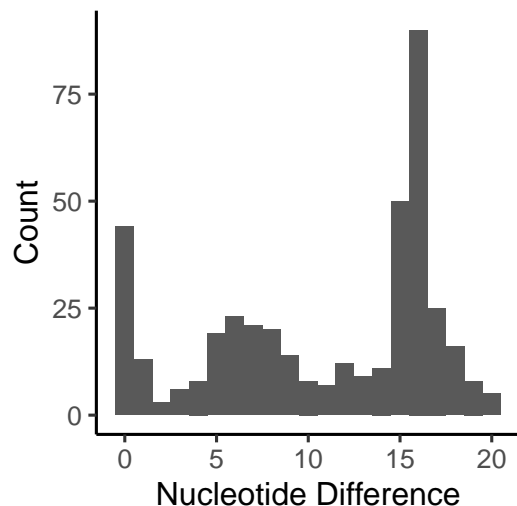
### IGHV3-66\*01

5120 sequences assigned  
875 (17.1%) exact matches, in which:  
646 unique CDR3  
6 unique J



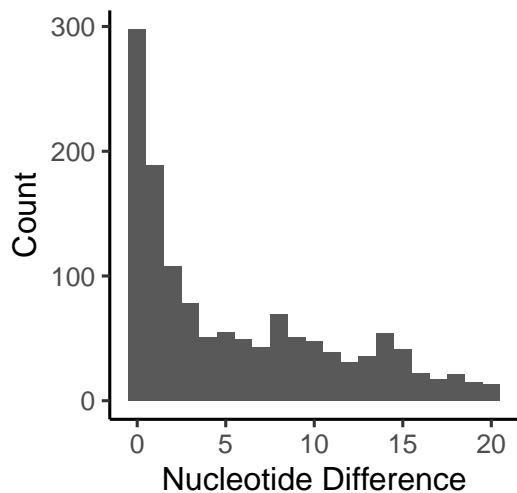
### IGHV3-72\*01

494 sequences assigned  
44 (8.9%) exact matches, in which:  
33 unique CDR3  
4 unique J



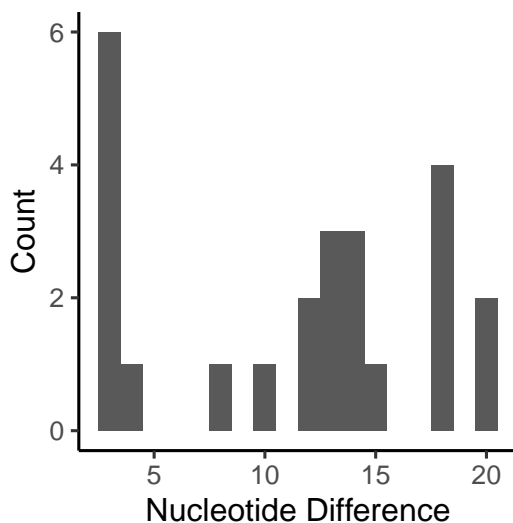
### IGHV3-53\*01\_02

1369 sequences assigned  
298 (21.8%) exact matches, in which:  
211 unique CDR3  
6 unique J



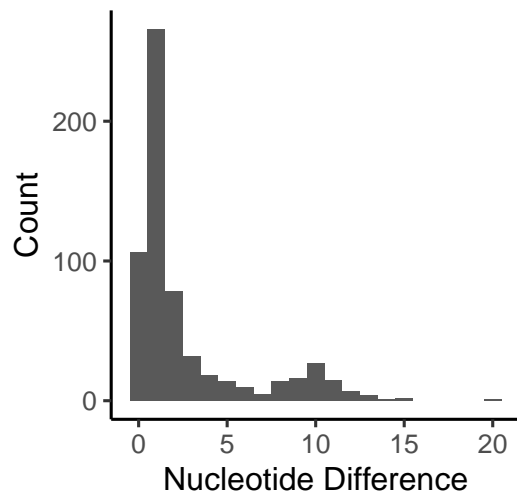
### IGHV3-69-1\*01

41 sequences assigned  
No exact matches.



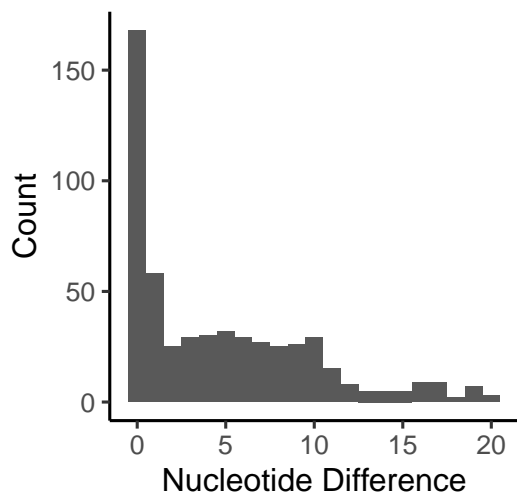
### IGHV3-72\*01\_C194A\_G2

616 sequences assigned  
106 (17.2%) exact matches, in which:  
49 unique CDR3  
3 unique J



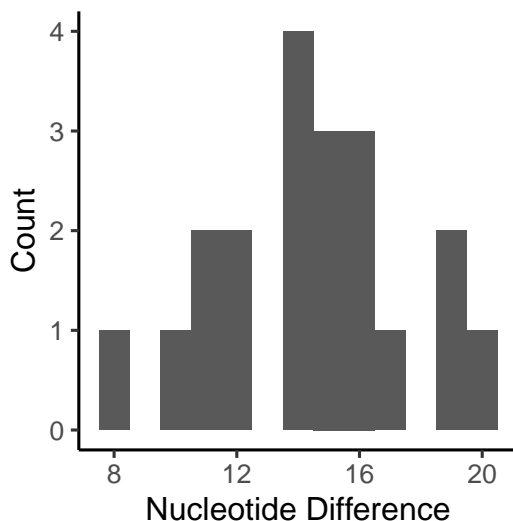
### IGHV3-64\*01

582 sequences assigned  
168 (28.9%) exact matches, in which:  
124 unique CDR3  
6 unique J



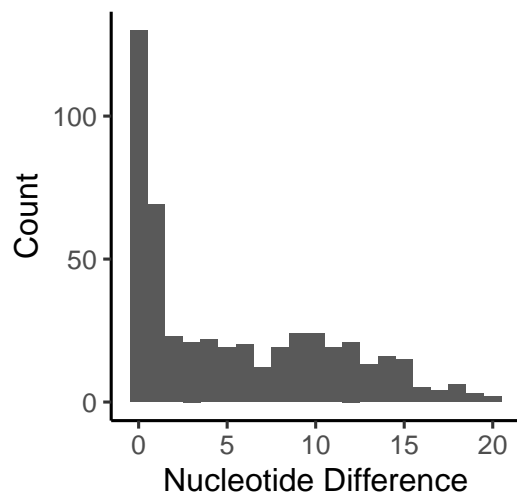
### IGHV3-69-1\*02

48 sequences assigned  
No exact matches.



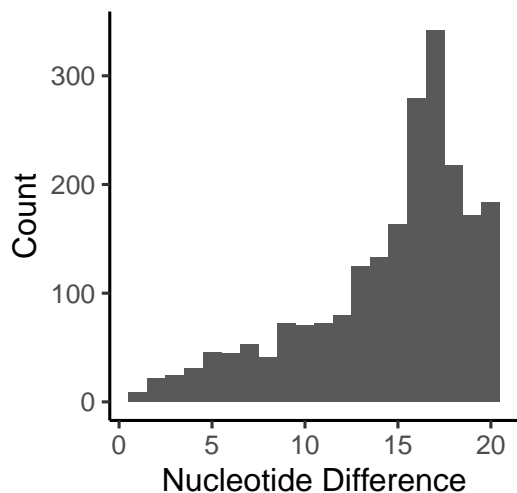
### IGHV3-73\*01\_02

508 sequences assigned  
130 (25.6%) exact matches, in which:  
83 unique CDR3  
5 unique J



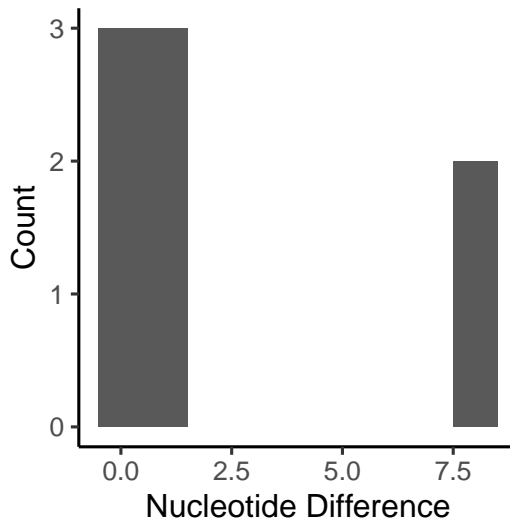
### IGHV3-74\*03

2691 sequences assigned  
No exact matches.



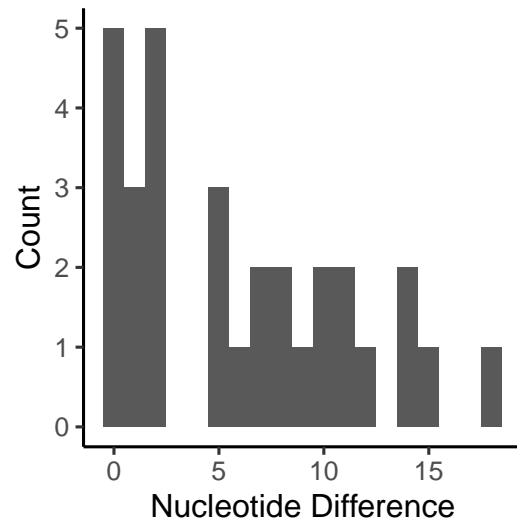
### IGHV3-64D\*06

28 sequences assigned  
3 (10.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



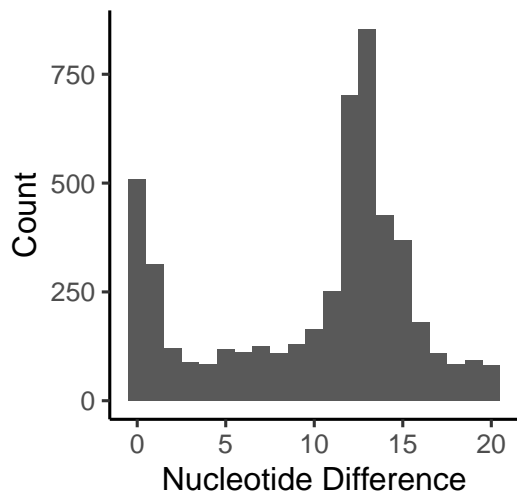
### IGHV4-28\*03

31 sequences assigned  
5 (16.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



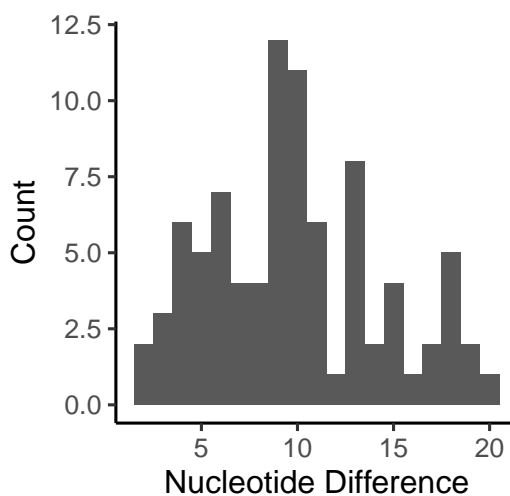
### IGHV3-74\*01\_02

5586 sequences assigned  
508 (9.1%) exact matches, in which:  
363 unique CDR3  
5 unique J



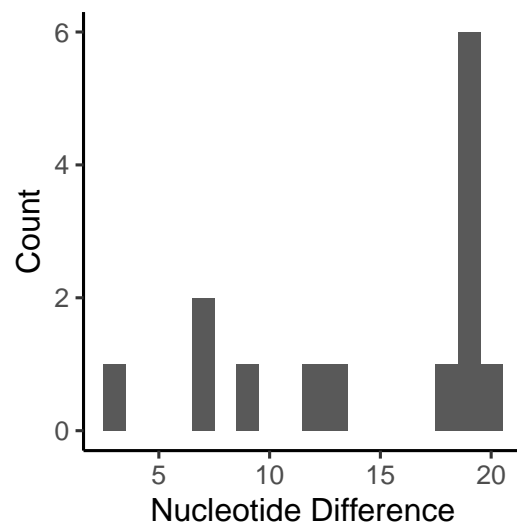
### IGHV3-NL1\*01

98 sequences assigned  
No exact matches.



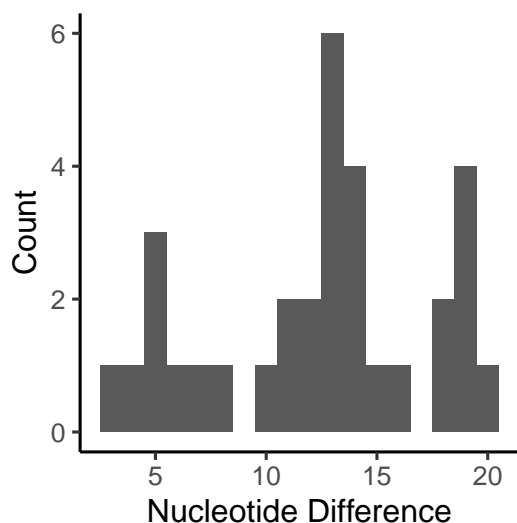
### IGHV4-28\*01\_07

16 sequences assigned  
No exact matches.



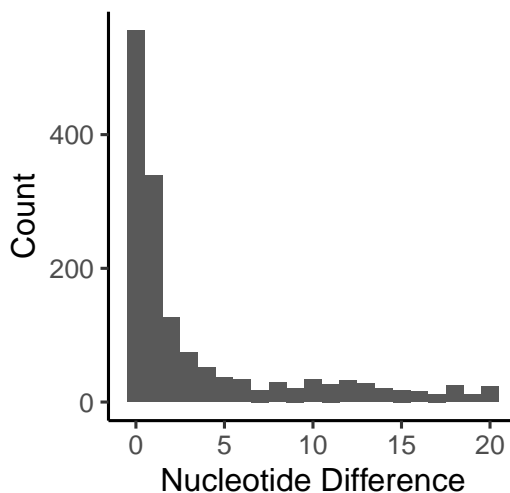
### IGHV3-43D\*04

34 sequences assigned  
No exact matches.



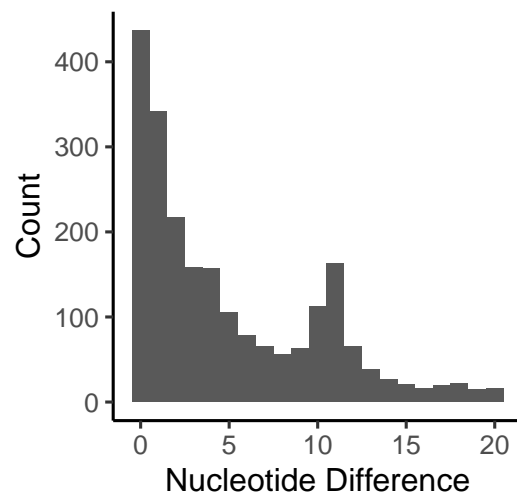
### IGHV4-4\*02\_03

1671 sequences assigned  
556 (33.3%) exact matches, in which:  
503 unique CDR3  
6 unique J



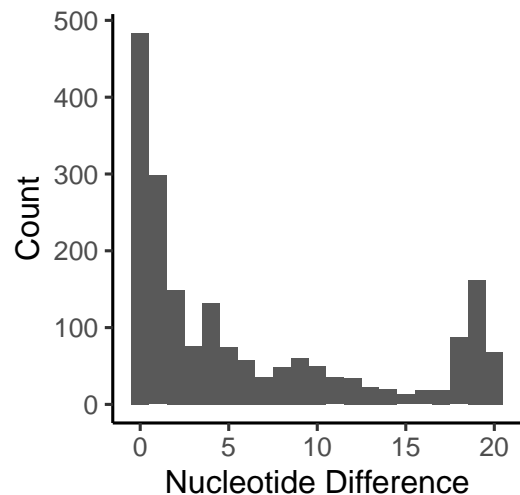
### IGHV4-30-4\*01

2313 sequences assigned  
437 (18.9%) exact matches, in which:  
393 unique CDR3  
6 unique J



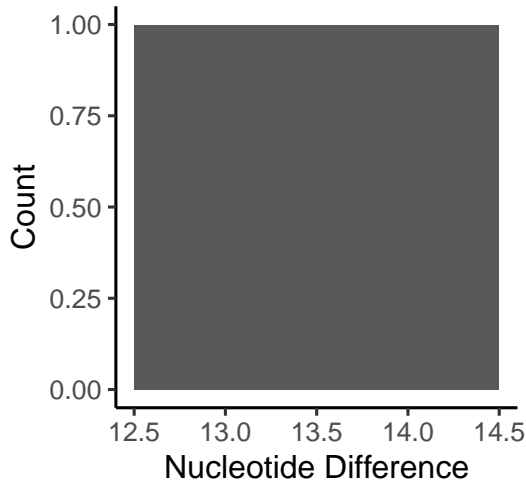
### IGHV4-30-2\*01

2186 sequences assigned  
484 (22.1%) exact matches, in which:  
364 unique CDR3  
6 unique J



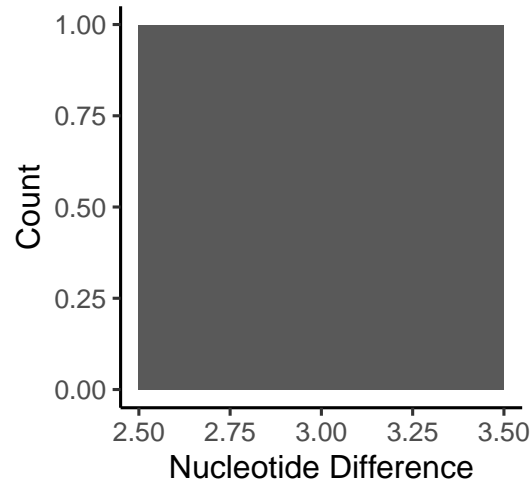
### IGHV4-38-2\*01

3 sequences assigned  
No exact matches.



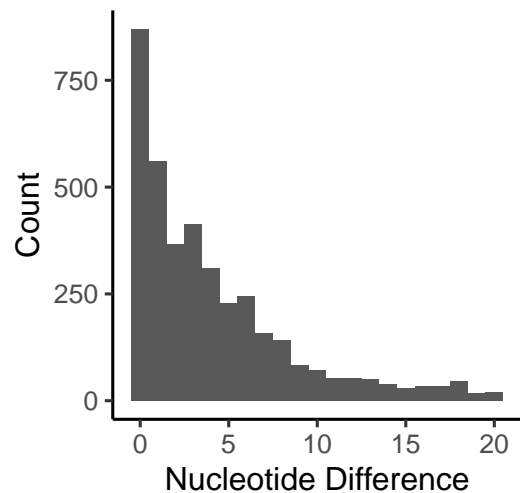
### IGHV4-55\*09

1 sequences assigned  
No exact matches.



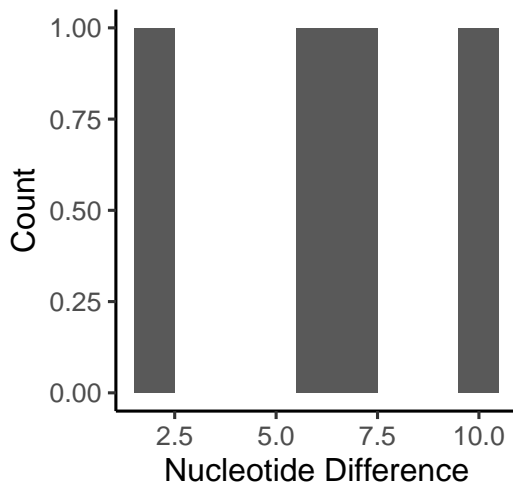
### IGHV4-31\*02

4398 sequences assigned  
870 (19.8%) exact matches, in which:  
776 unique CDR3  
6 unique J



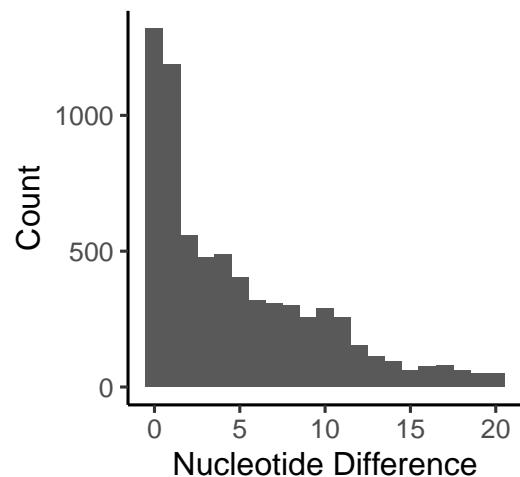
### IGHV4-38-2\*02

6 sequences assigned  
No exact matches.



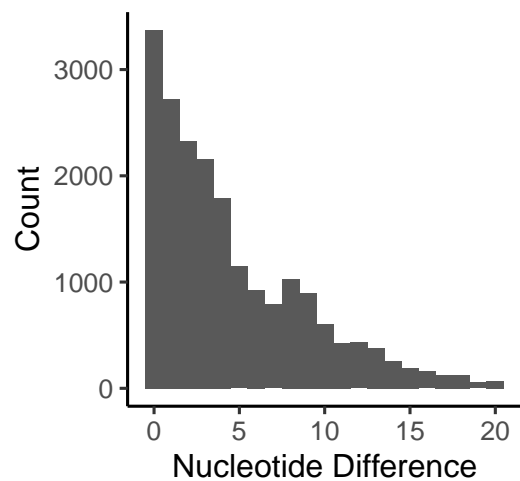
### IGHV4-59\*08

7734 sequences assigned  
1319 (17.1%) exact matches, in which:  
1150 unique CDR3  
6 unique J



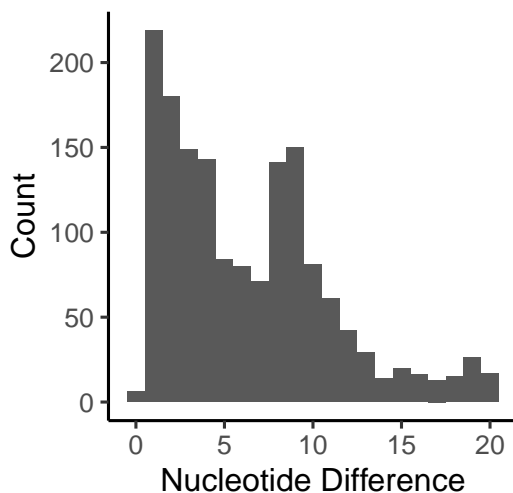
### IGHV4-34\*01\_02

20390 sequences assigned  
3372 (16.5%) exact matches, in which:  
2747 unique CDR3  
6 unique J



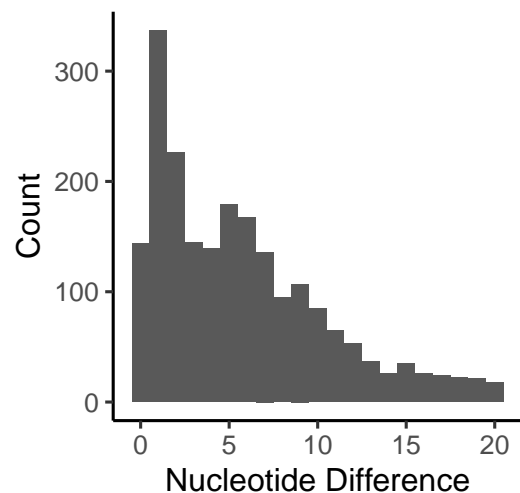
### IGHV4-39\*07

1827 sequences assigned  
6 (0.3%) exact matches, in which:  
6 unique CDR3  
2 unique J



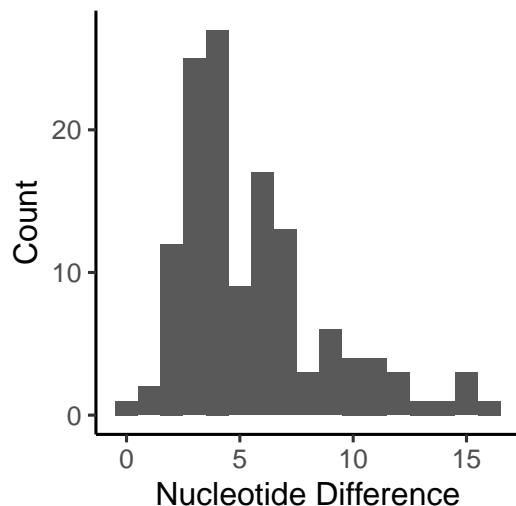
### IGHV4-59\*12

2258 sequences assigned  
144 (6.4%) exact matches, in which:  
144 unique CDR3  
5 unique J



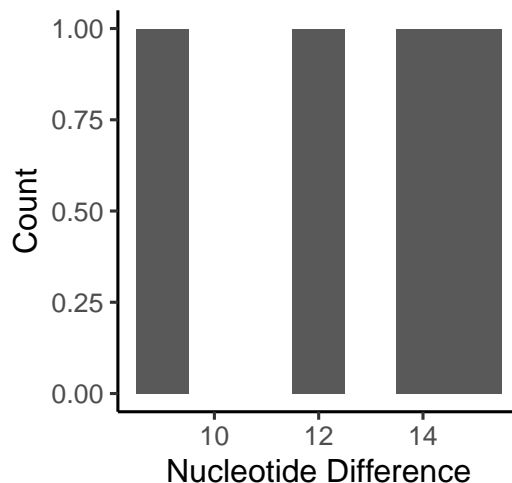
### IGHV4-61\*05

137 sequences assigned  
1 (0.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



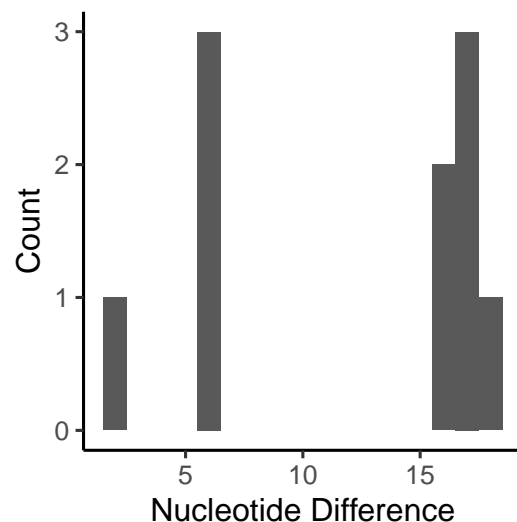
### IGHV1/OR15-3\*02

4 sequences assigned  
No exact matches.



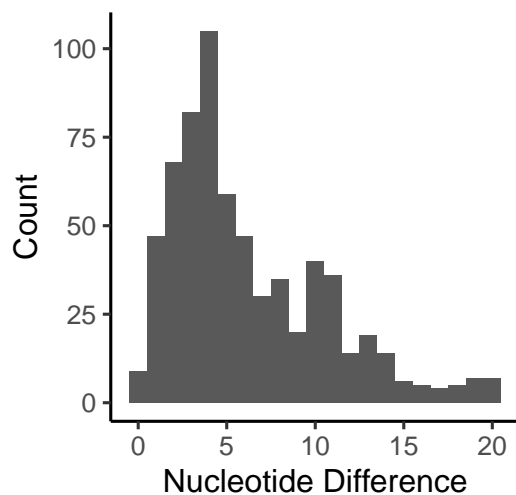
### IGHV5-10-1\*01\_03

13 sequences assigned  
No exact matches.



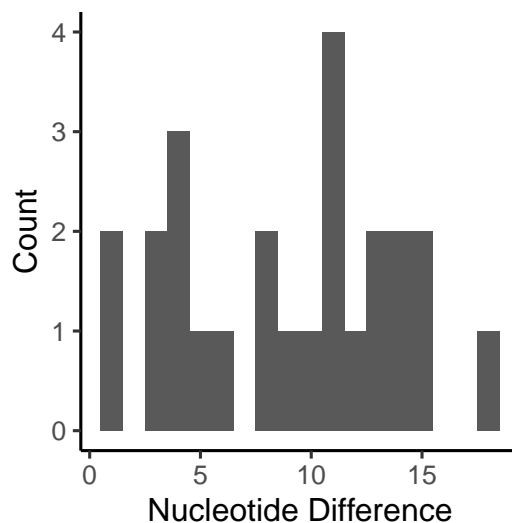
### IGHV4-61\*08

678 sequences assigned  
9 (1.3%) exact matches, in which:  
8 unique CDR3  
3 unique J



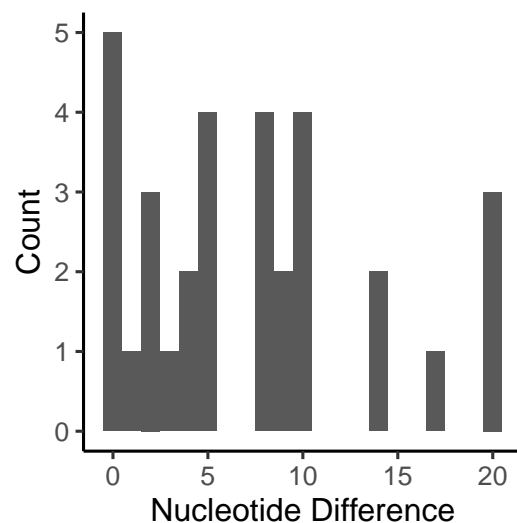
### IGHV4/OR15-8\*01

26 sequences assigned  
No exact matches.



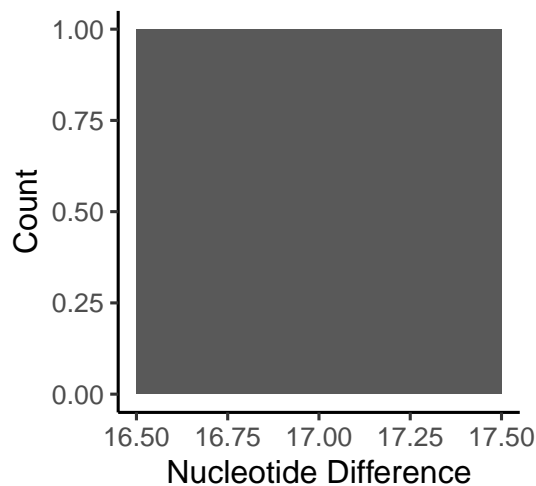
### IGHV5-51\*04

42 sequences assigned  
5 (11.9%) exact matches, in which:  
5 unique CDR3  
2 unique J



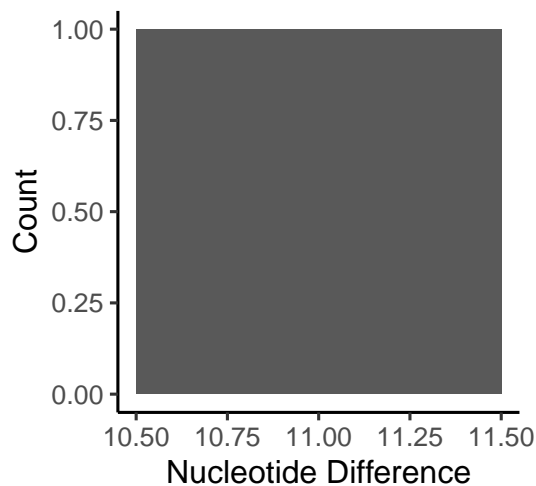
### IGHV1/OR15-2\*02\_03

2 sequences assigned  
No exact matches.



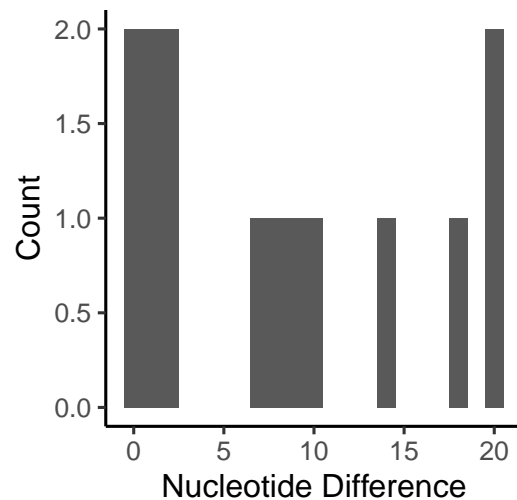
### IGHV1/OR15-9\*01

1 sequences assigned  
No exact matches.



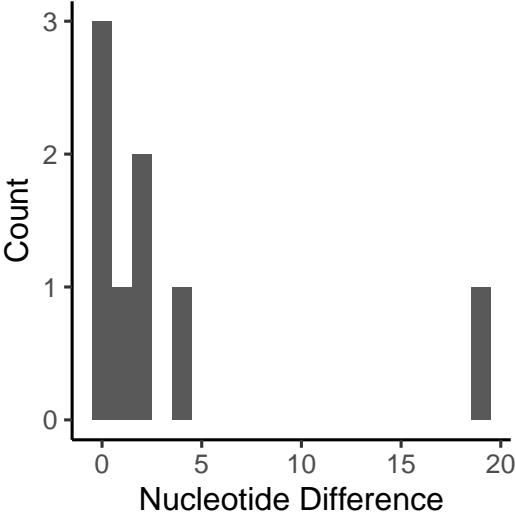
### IGHV5-51\*06

117 sequences assigned  
2 (1.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



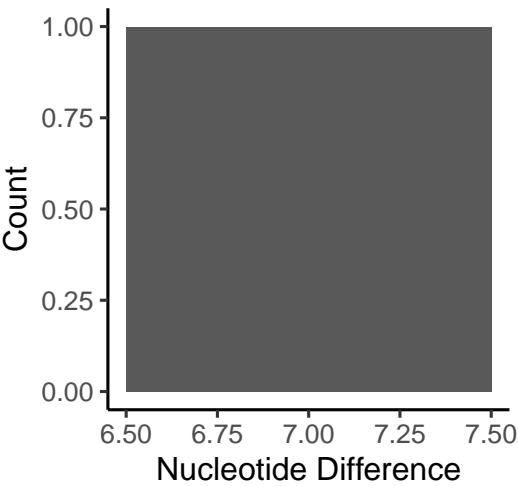
IGHV5-51\*07

12 sequences assigned  
3 (25%) exact matches, in which:  
3 unique CDR3  
3 unique J



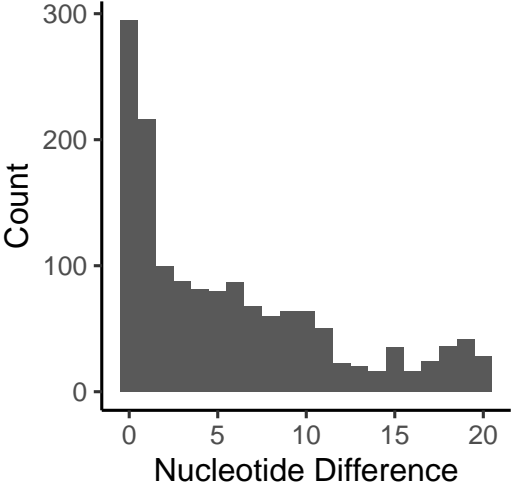
IGHV3/OR16-9\*01

1 sequences assigned  
No exact matches.



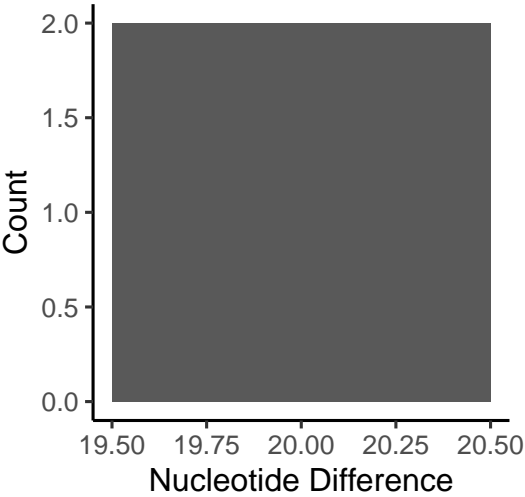
IGHV6-1\*01\_02

1737 sequences assigned  
295 (17%) exact matches, in which:  
261 unique CDR3  
6 unique J



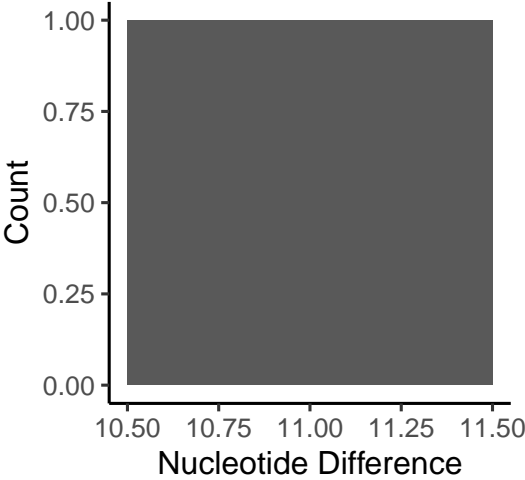
IGHV3/OR16-13\*01

2 sequences assigned  
No exact matches.



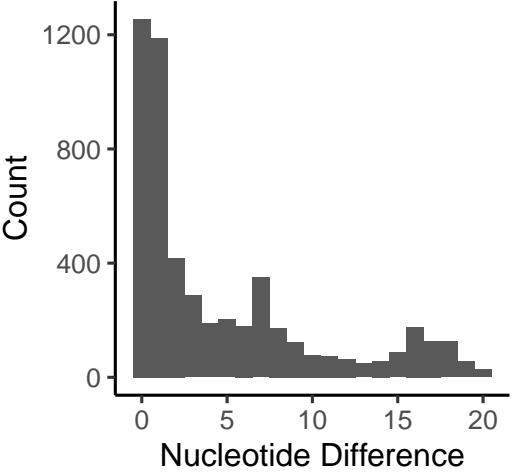
IGHV3/OR16-6\*02

1 sequences assigned  
No exact matches.

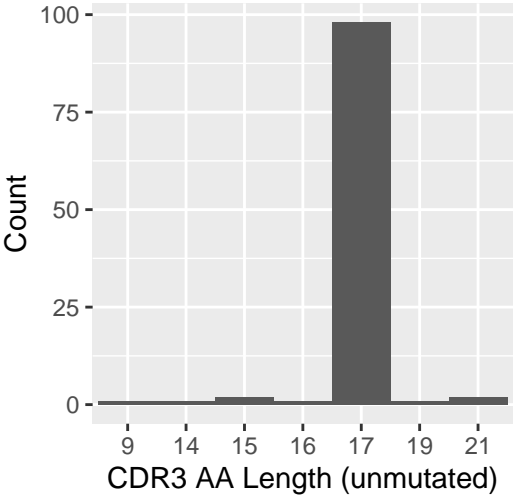


IGHV7-4-1\*02

5361 sequences assigned  
1255 (23.4%) exact matches, in which:  
1077 unique CDR3  
6 unique J



IGHV3-72\*01\_C194A\_G239C





[illegible]