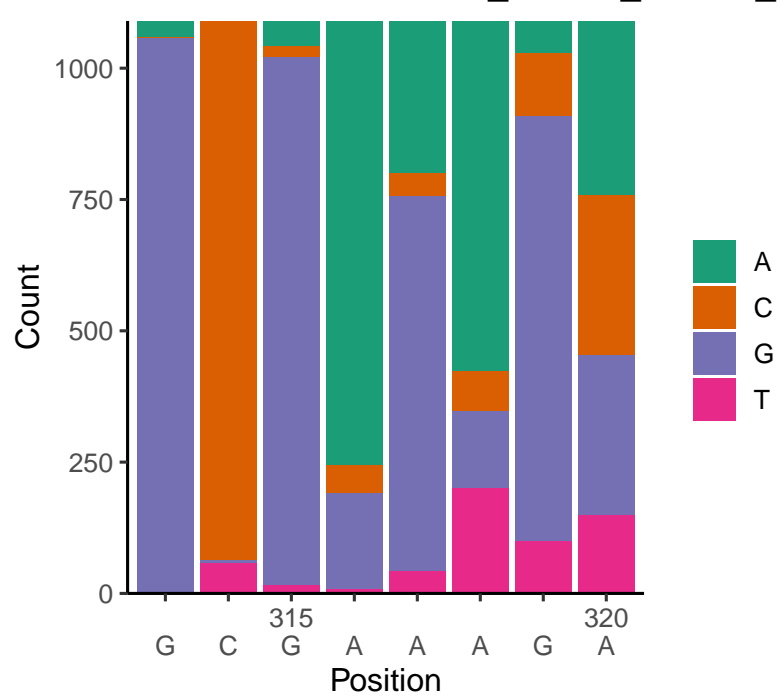
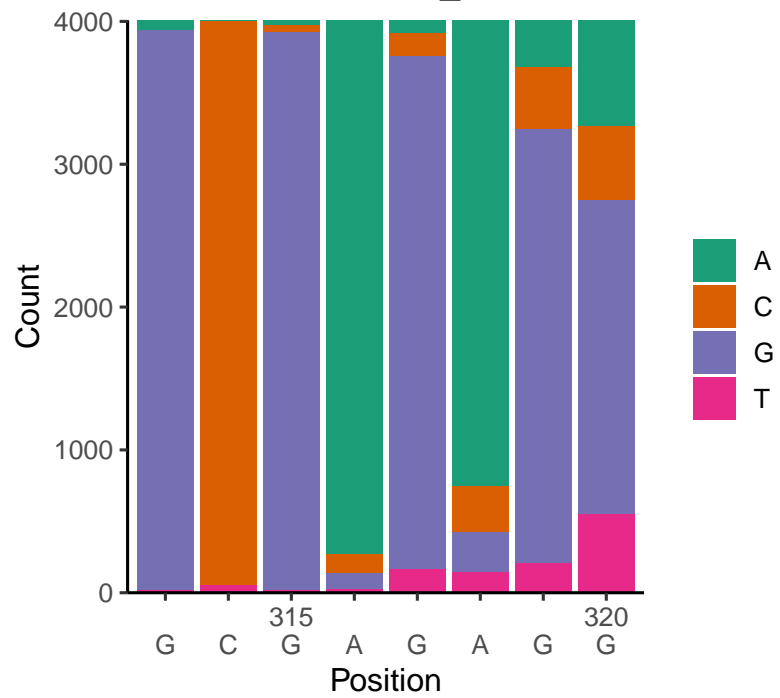


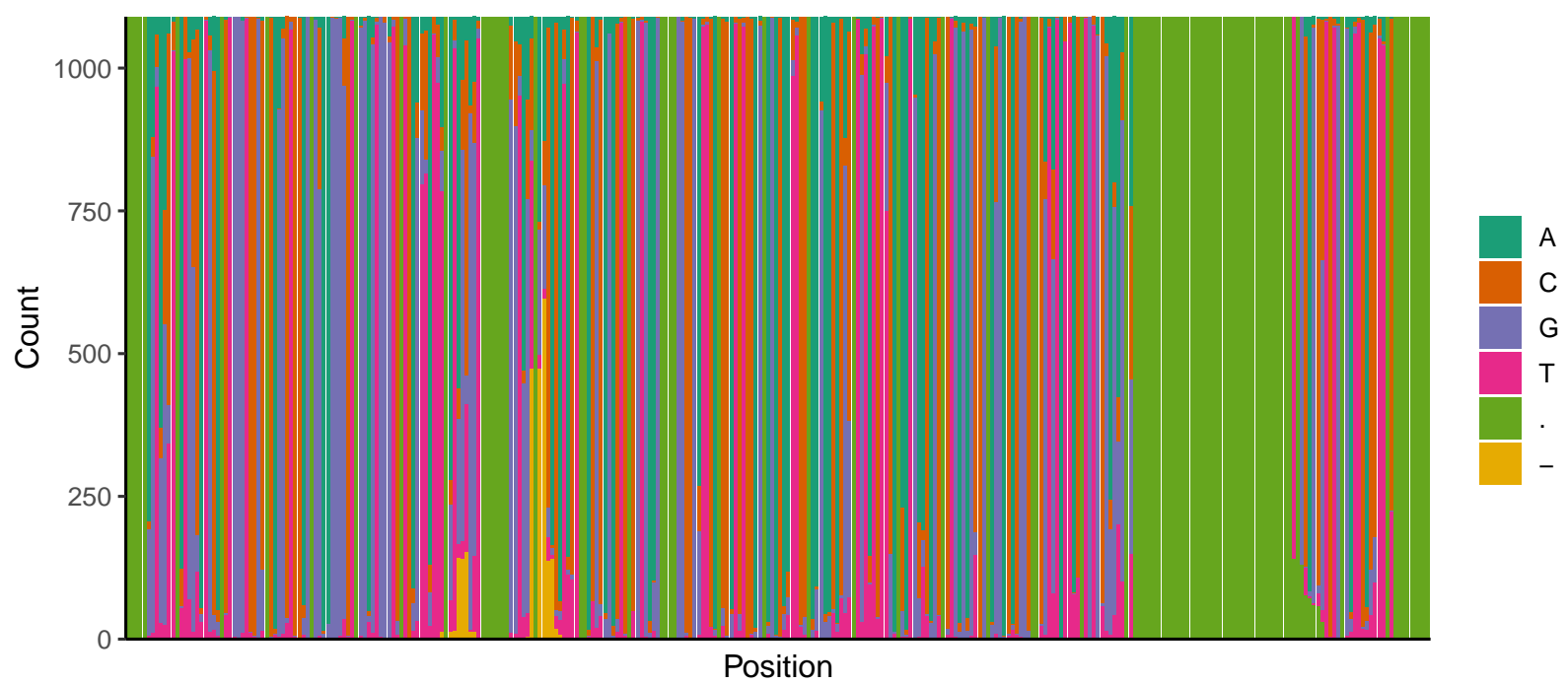
Gene IGHV3–NL1\*01\_T201C\_G267T\_T288C\_T300C



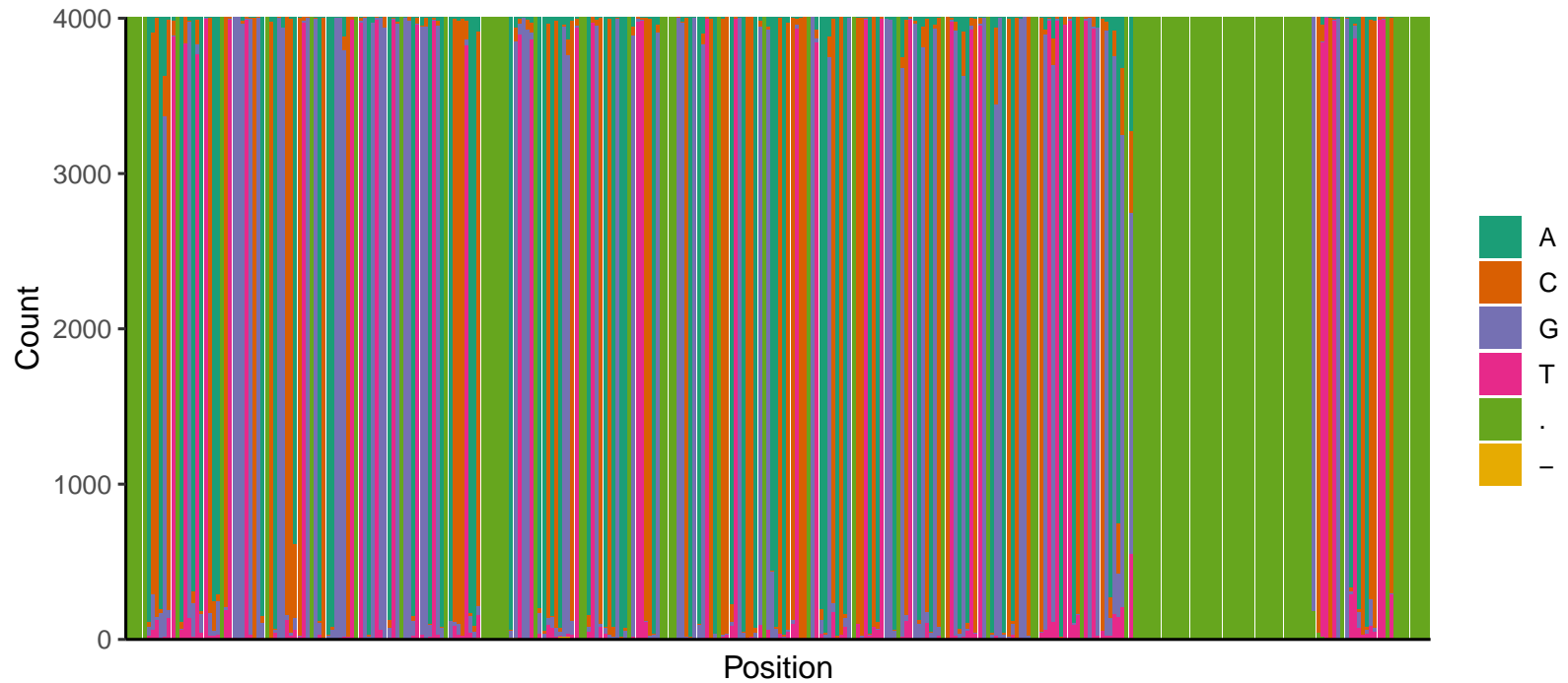
Gene IGHV1–8\*02\_A250G



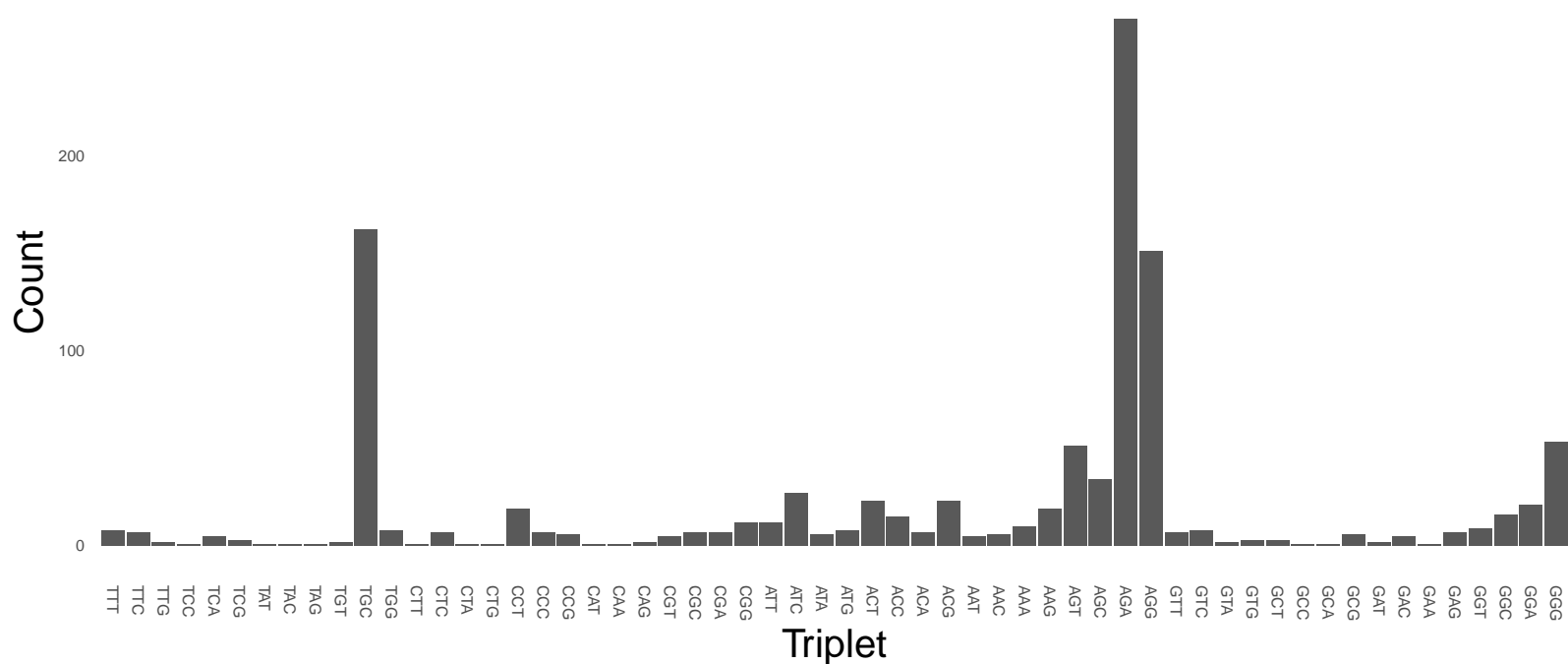
Gene IGHV3–NL1\*01\_T201C\_G267T\_T288C\_T300C



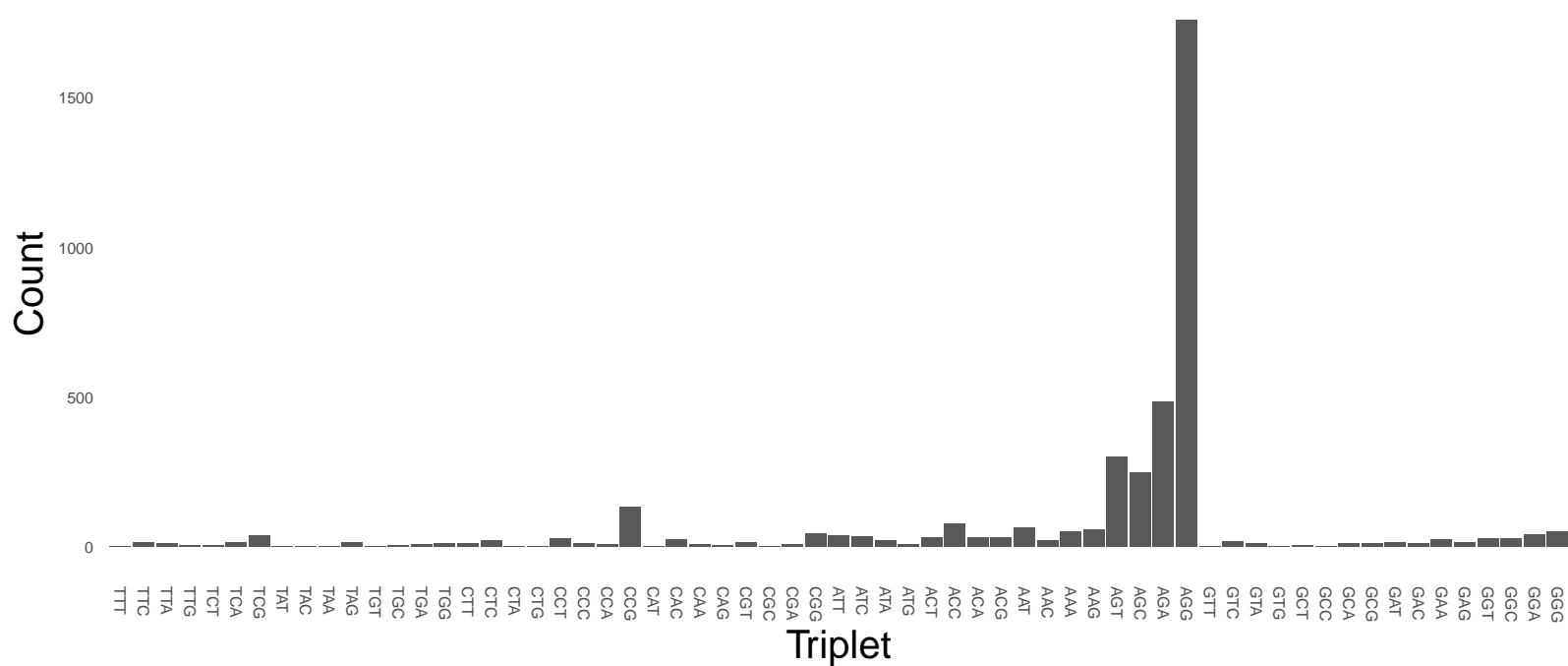
Gene IGHV1–8\*02\_A250G



IGHV3–NL1\*01\_T201C\_G267T\_T288C\_T300C– Final 3 nucleotides as a triplet

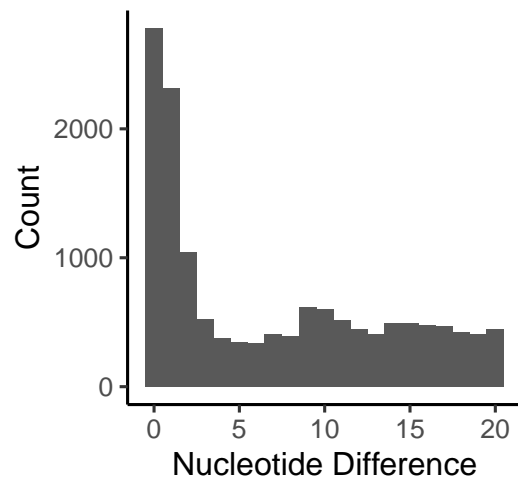


IGHV1–8\*02\_A250G– Final 3 nucleotides as a triplet



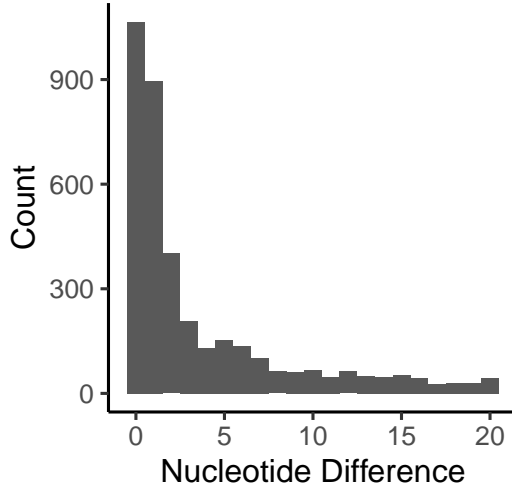
### IGHV1-2\*02

17168 sequences assigned  
2779 (16.2%) exact matches, in which:  
2376 unique CDR3  
7 unique J



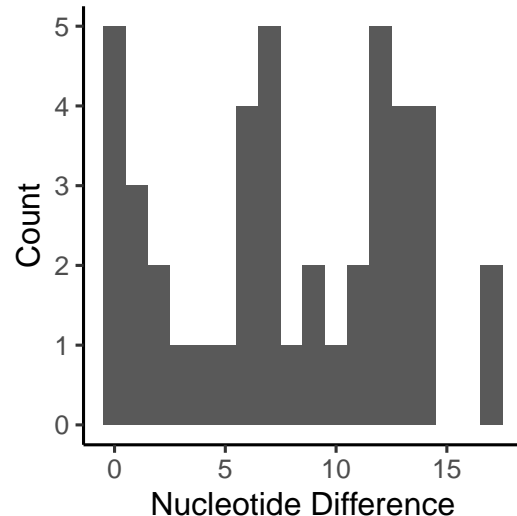
### IGHV1-8\*02\_A250G

4008 sequences assigned  
1066 (26.6%) exact matches, in which:  
906 unique CDR3  
7 unique J



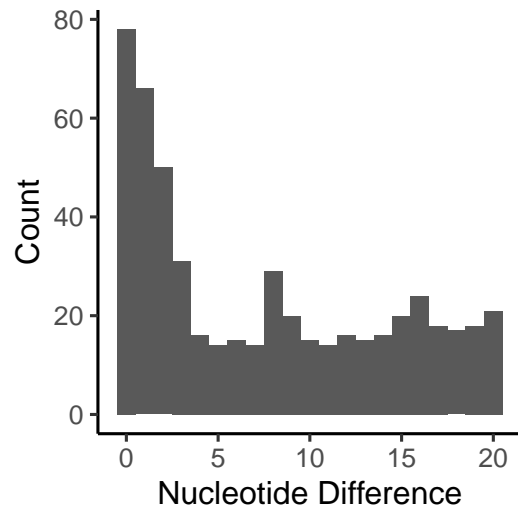
### IGHV1-45\*02

56 sequences assigned  
5 (8.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



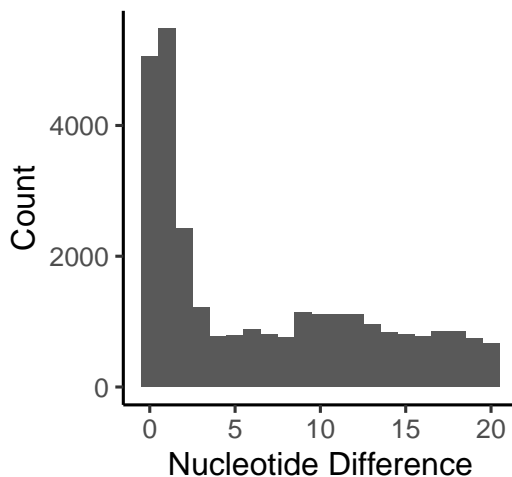
### IGHV1-3\*03

656 sequences assigned  
78 (11.9%) exact matches, in which:  
71 unique CDR3  
6 unique J



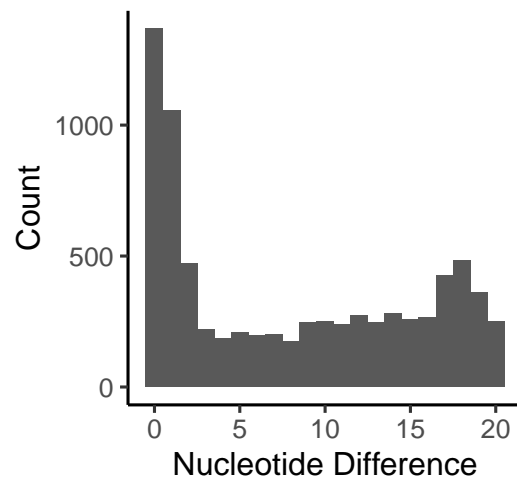
### IGHV1-18\*01

33896 sequences assigned  
5062 (14.9%) exact matches, in which:  
4001 unique CDR3  
7 unique J



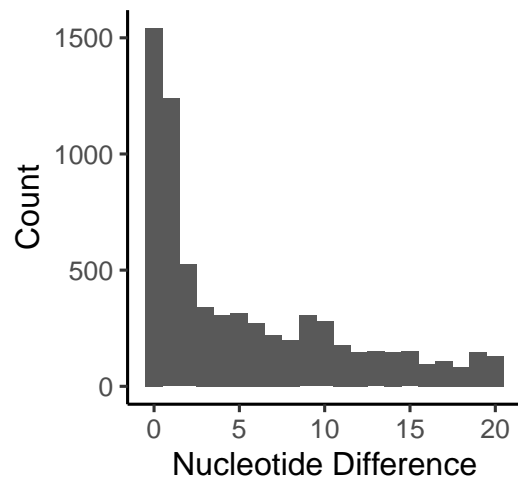
### IGHV1-46\*01

9632 sequences assigned  
1368 (14.2%) exact matches, in which:  
1183 unique CDR3  
7 unique J



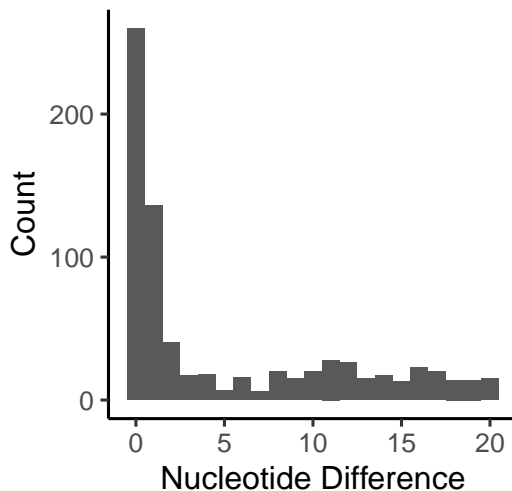
### IGHV1-8\*02

7446 sequences assigned  
1542 (20.7%) exact matches, in which:  
1287 unique CDR3  
7 unique J



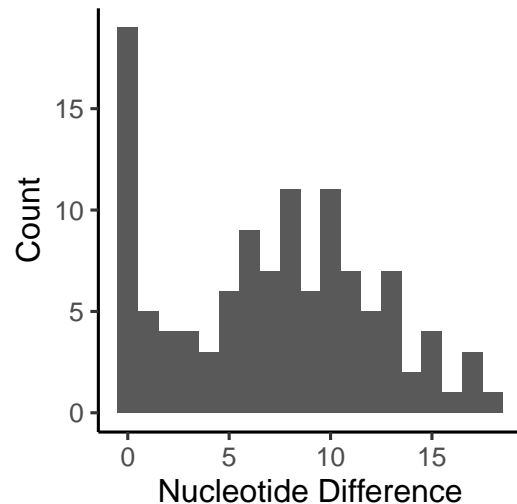
### IGHV1-24\*01

787 sequences assigned  
260 (33%) exact matches, in which:  
231 unique CDR3  
7 unique J



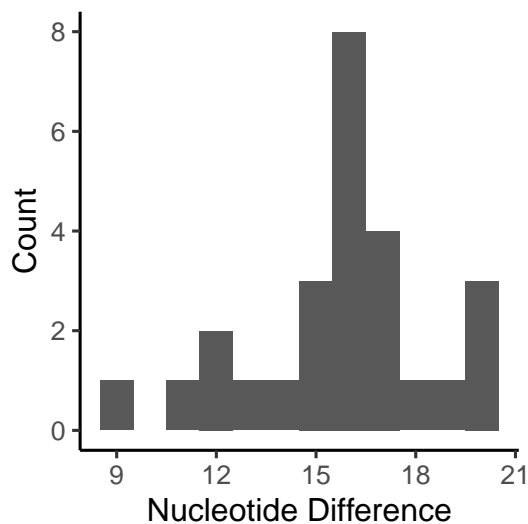
### IGHV1-58\*02

119 sequences assigned  
19 (16%) exact matches, in which:  
19 unique CDR3  
4 unique J



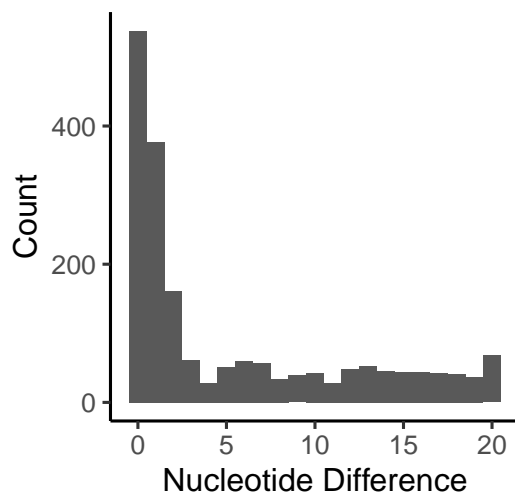
### IGHV1-58\*01\_03

40 sequences assigned  
No exact matches.



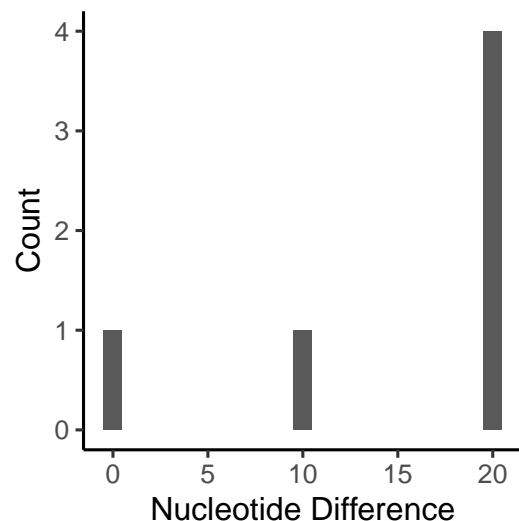
### IGHV1-69\*10

2304 sequences assigned  
538 (23.4%) exact matches, in which:  
468 unique CDR3  
7 unique J



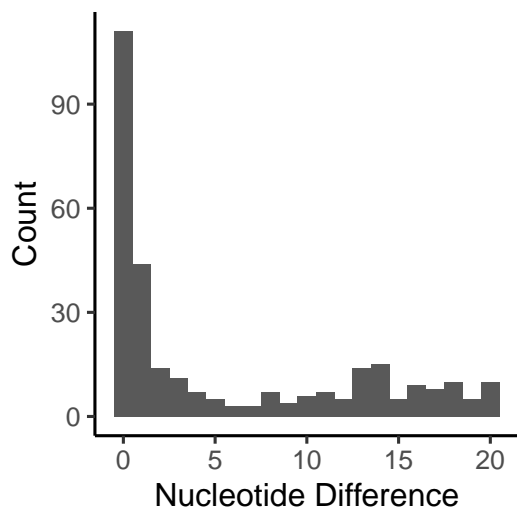
### IGHV2-70\*11\_15

9 sequences assigned  
1 (11.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



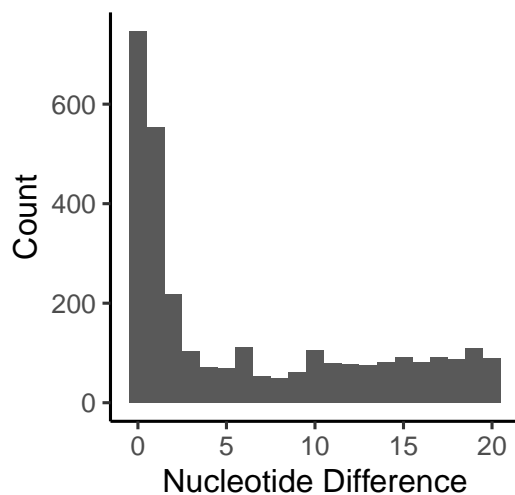
### IGHV1-69-2\*01

364 sequences assigned  
111 (30.5%) exact matches, in which:  
96 unique CDR3  
7 unique J



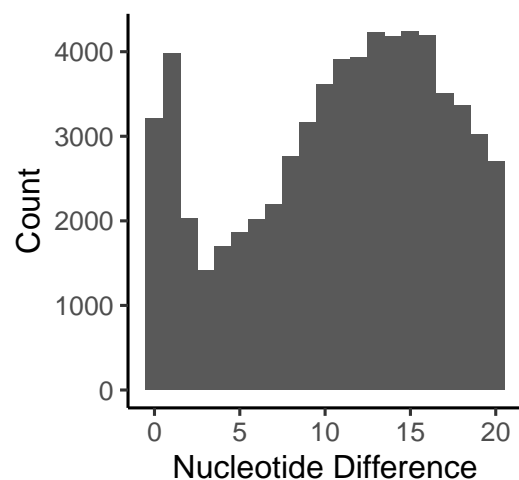
### IGHV1-69\*06\_14

3685 sequences assigned  
747 (20.3%) exact matches, in which:  
667 unique CDR3  
7 unique J



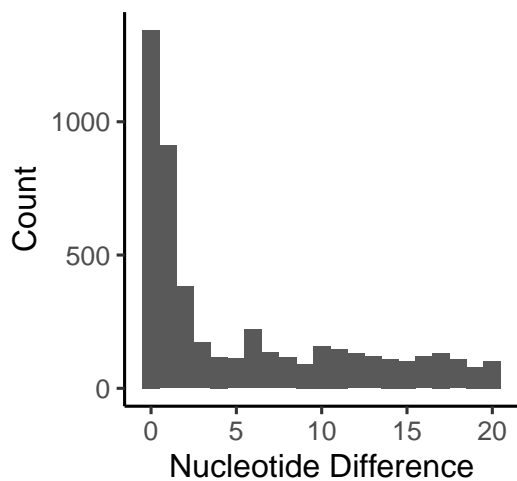
### IGHV3-7\*01

79705 sequences assigned  
3205 (4%) exact matches, in which:  
2683 unique CDR3  
7 unique J



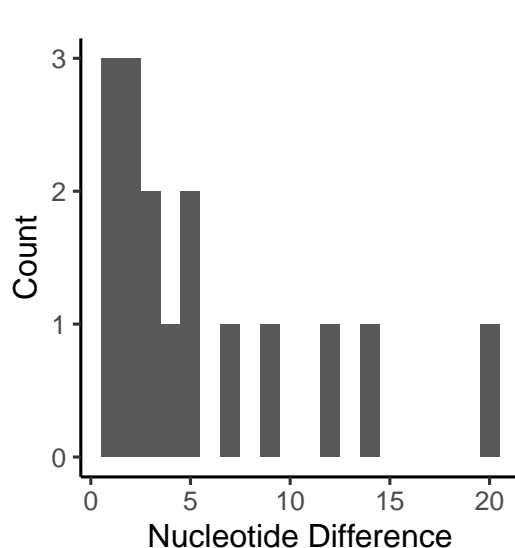
### IGHV1-69\*05

5943 sequences assigned  
1344 (22.6%) exact matches, in which:  
1190 unique CDR3  
7 unique J



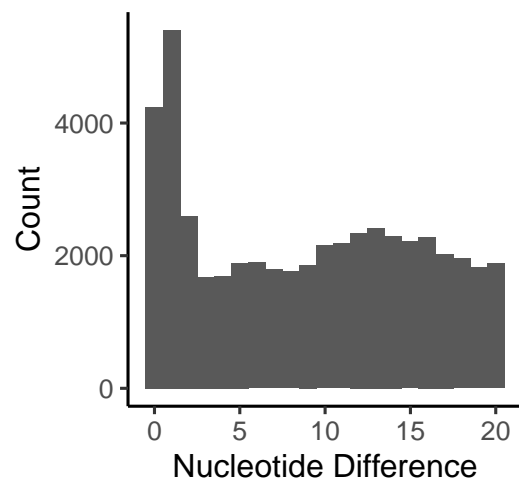
### IGHV2-5\*02

18 sequences assigned  
No exact matches.



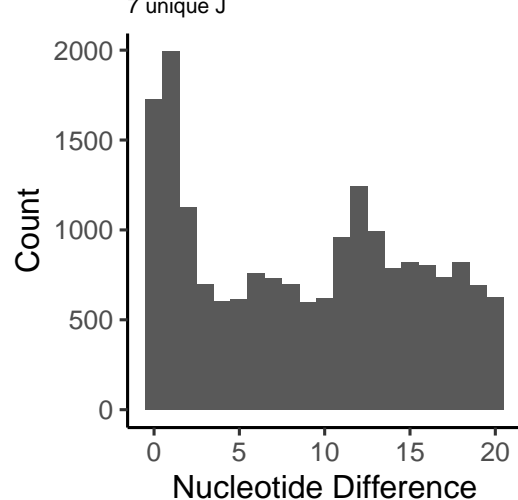
### IGHV3-9\*01

61506 sequences assigned  
4238 (6.9%) exact matches, in which:  
3327 unique CDR3  
7 unique J



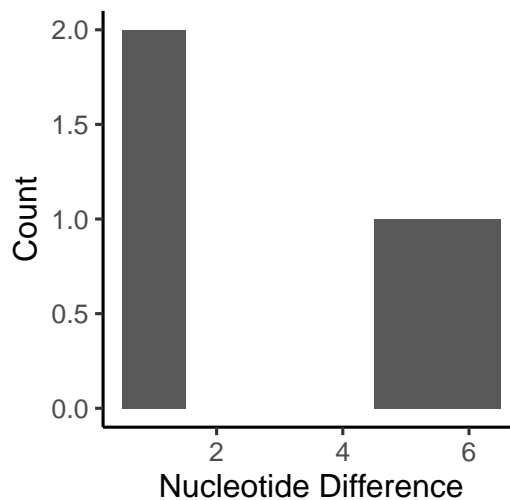
### IGHV3-11\*04

23926 sequences assigned  
1727 (7.2%) exact matches, in which:  
1465 unique CDR3  
7 unique J



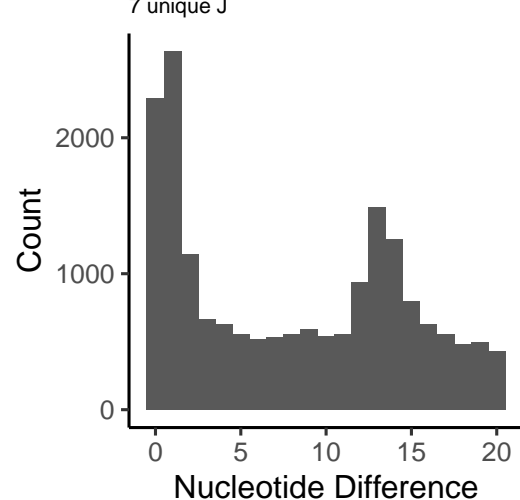
### IGHV3-19\*01

4 sequences assigned  
No exact matches.



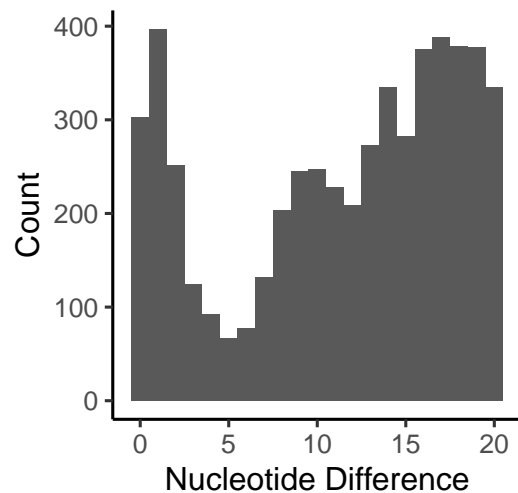
### IGHV3-21\*03

21370 sequences assigned  
2290 (10.7%) exact matches, in which:  
1723 unique CDR3  
7 unique J



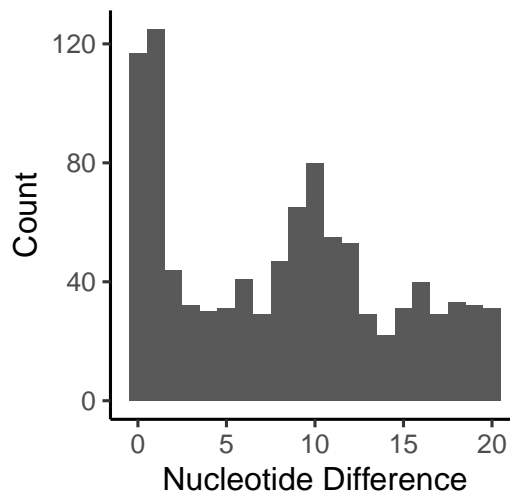
### IGHV3-13\*01

8563 sequences assigned  
303 (3.5%) exact matches, in which:  
240 unique CDR3  
6 unique J



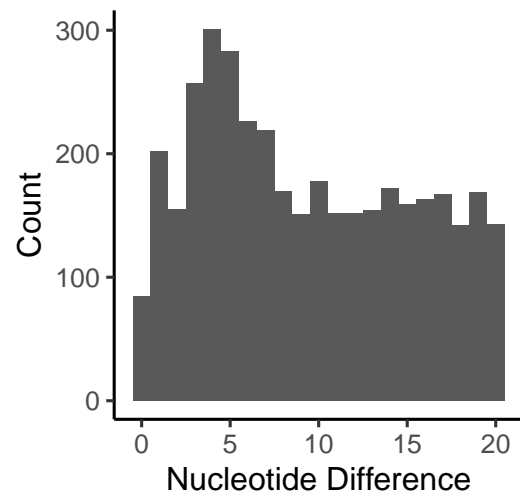
### IGHV3-20\*01\_02

1226 sequences assigned  
117 (9.5%) exact matches, in which:  
92 unique CDR3  
6 unique J



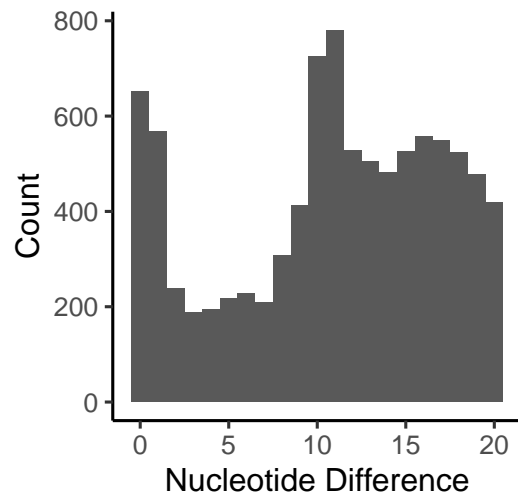
### IGHV3-21\*04

4722 sequences assigned  
85 (1.8%) exact matches, in which:  
84 unique CDR3  
7 unique J



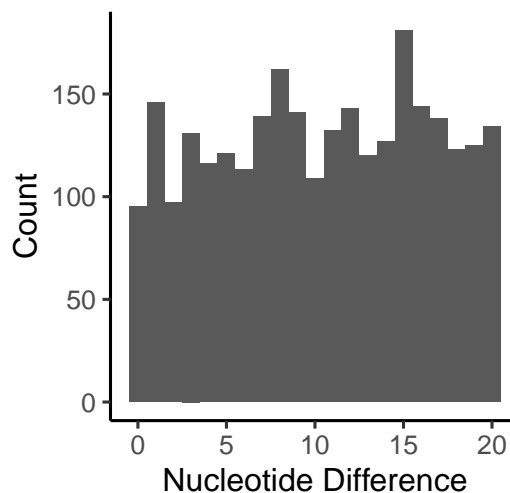
### IGHV3-15\*01\_02

12741 sequences assigned  
651 (5.1%) exact matches, in which:  
568 unique CDR3  
7 unique J



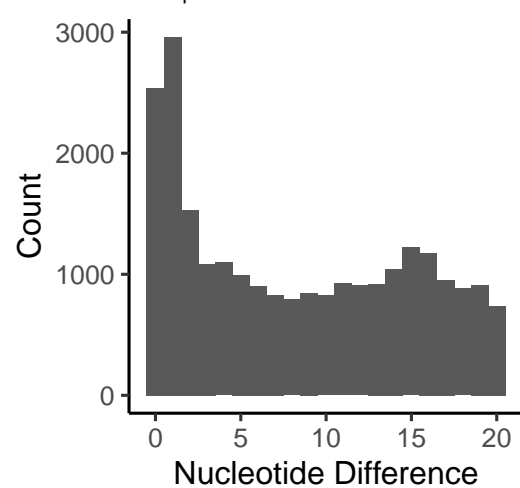
### IGHV3-20\*03\_04

3587 sequences assigned  
95 (2.6%) exact matches, in which:  
80 unique CDR3  
5 unique J



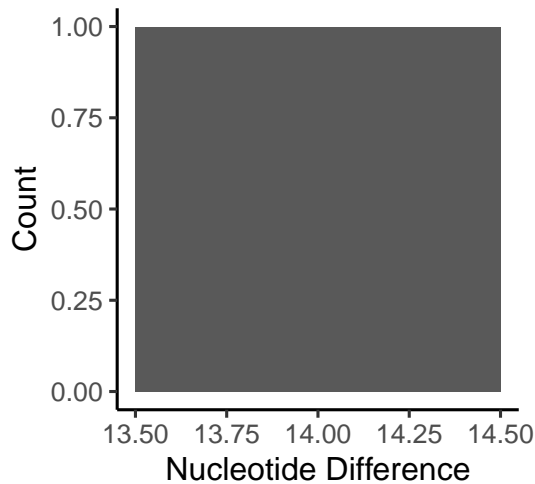
### IGHV3-21\*01\_02

29073 sequences assigned  
2539 (8.7%) exact matches, in which:  
2094 unique CDR3  
7 unique J



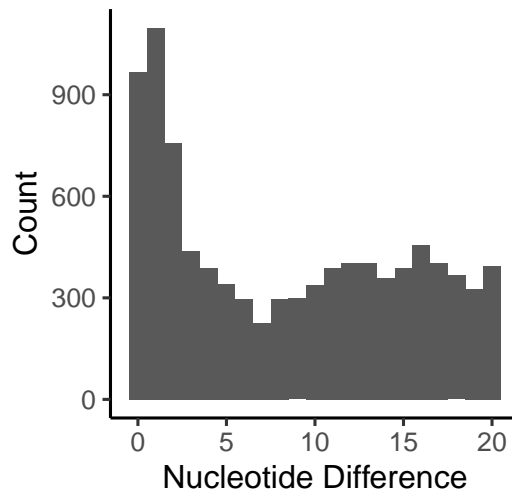
### IGHV3-22\*01\_02

3 sequences assigned  
No exact matches.



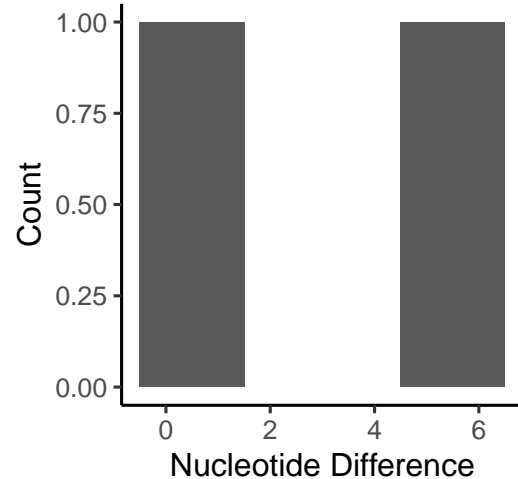
### IGHV3-33\*06

11487 sequences assigned  
968 (8.4%) exact matches, in which:  
713 unique CDR3  
7 unique J



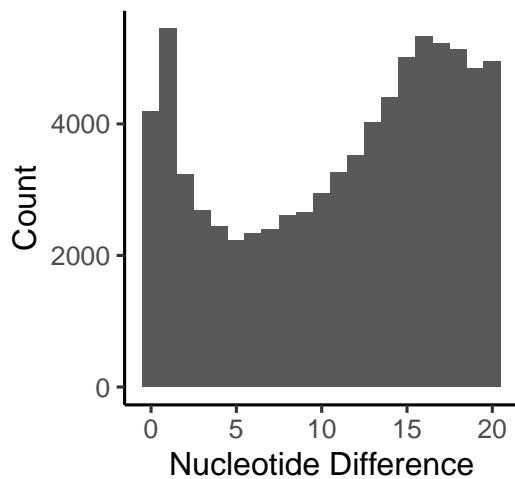
### IGHV3-35\*02

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



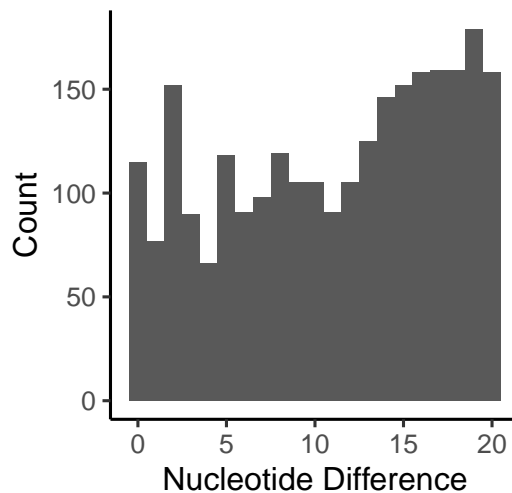
### IGHV3-23\*01\_04

126586 sequences assigned  
4187 (3.3%) exact matches, in which:  
3344 unique CDR3  
7 unique J



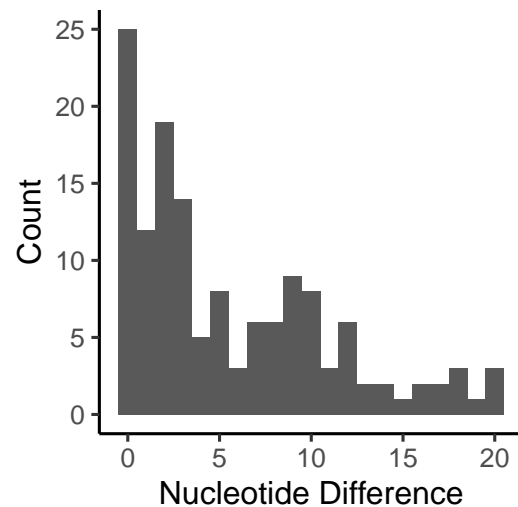
### IGHV3-33\*08

3764 sequences assigned  
115 (3.1%) exact matches, in which:  
115 unique CDR3  
6 unique J



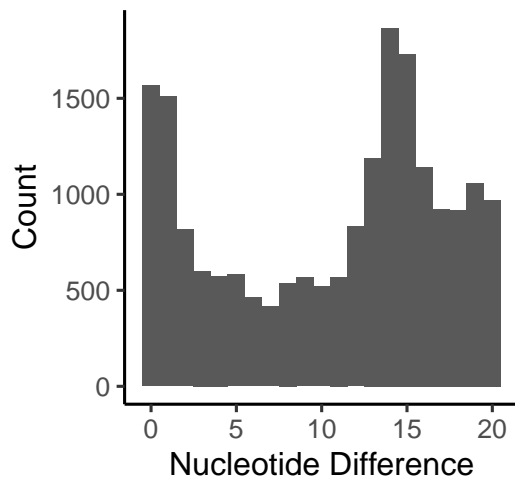
### IGHV3-38-3\*01

147 sequences assigned  
25 (17%) exact matches, in which:  
25 unique CDR3  
5 unique J



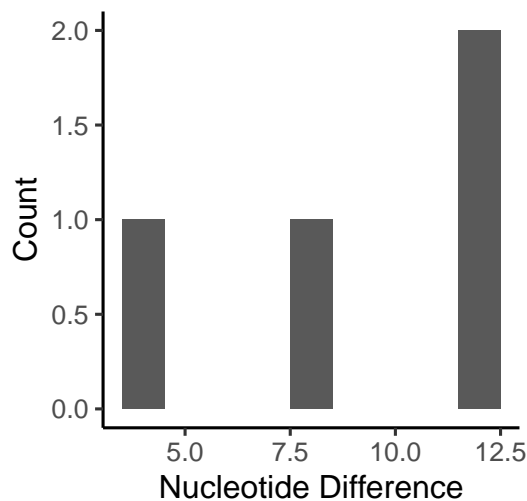
### IGHV3-33\*01

23084 sequences assigned  
1566 (6.8%) exact matches, in which:  
1213 unique CDR3  
7 unique J



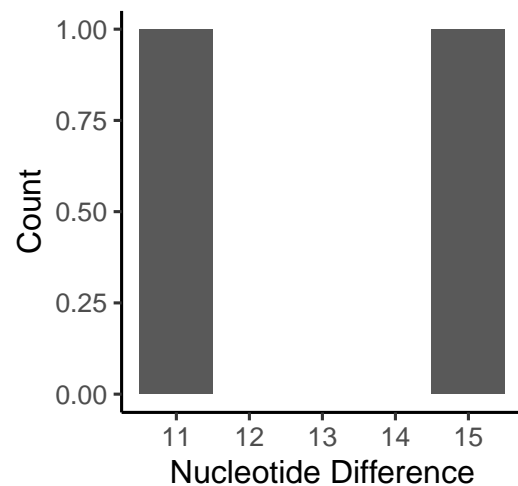
### IGHV3-35\*01

4 sequences assigned  
No exact matches.



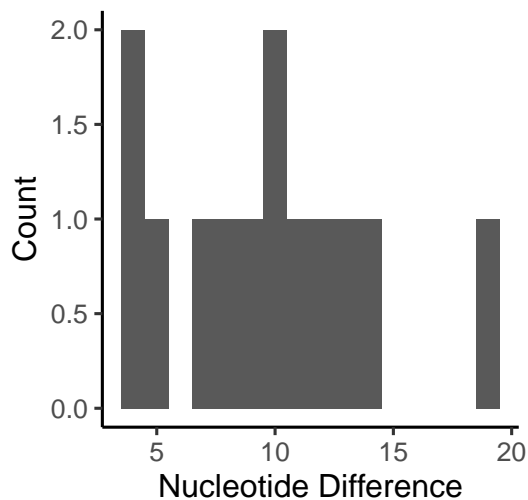
### IGHV3-38\*02

2 sequences assigned  
No exact matches.



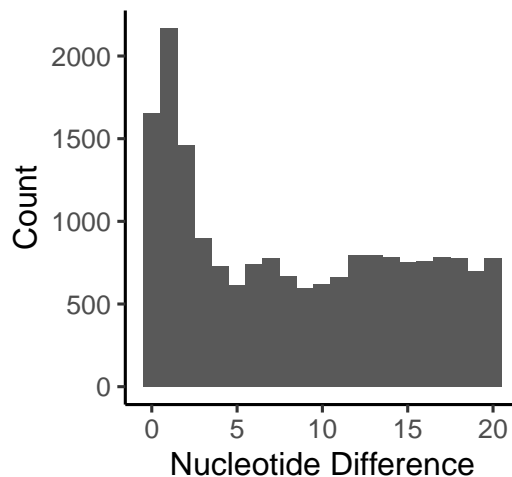
### IGHV3-38\*03

13 sequences assigned  
No exact matches.



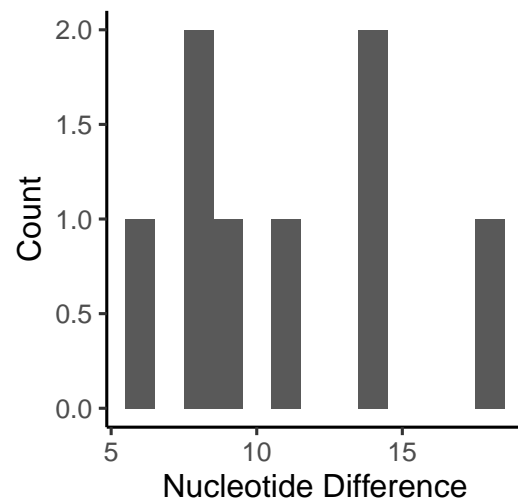
### IGHV3-48\*03

24478 sequences assigned  
1655 (6.8%) exact matches, in which:  
1340 unique CDR3  
7 unique J



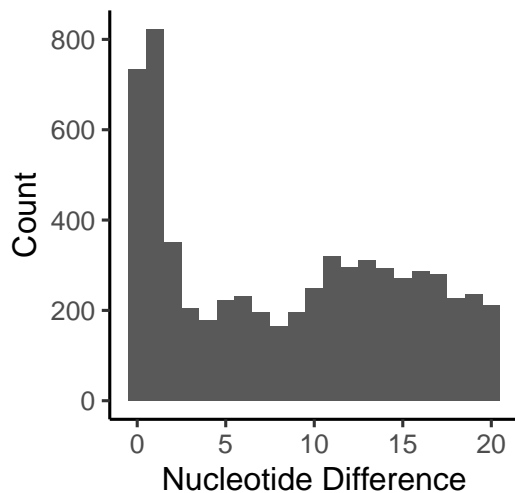
### IGHV3-52\*01\_03

9 sequences assigned  
No exact matches.



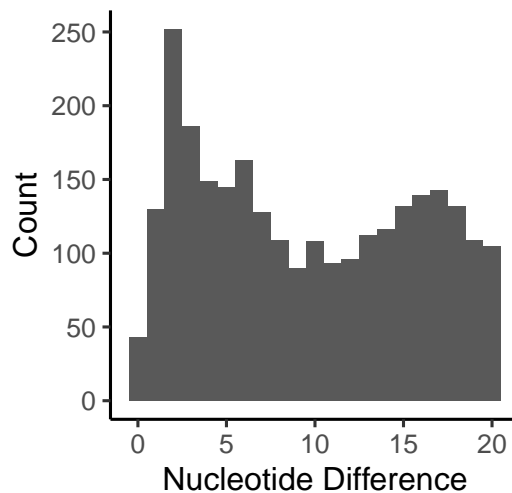
### IGHV3-43\*01

8511 sequences assigned  
735 (8.6%) exact matches, in which:  
596 unique CDR3  
7 unique J



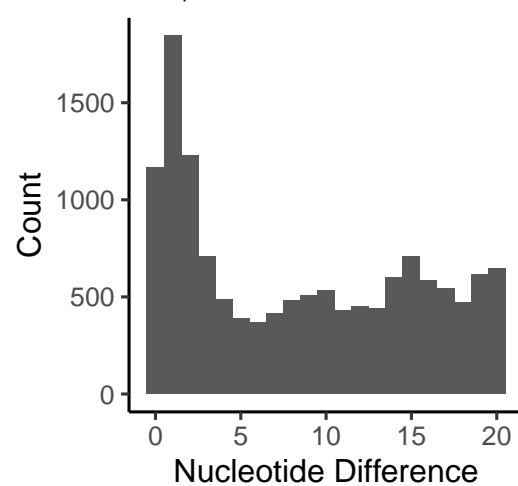
### IGHV3-48\*04

3726 sequences assigned  
43 (1.2%) exact matches, in which:  
39 unique CDR3  
7 unique J



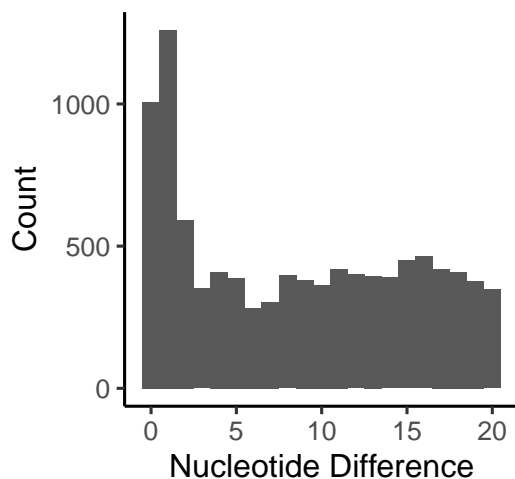
### IGHV3-53\*01\_02

19485 sequences assigned  
1167 (6%) exact matches, in which:  
937 unique CDR3  
7 unique J



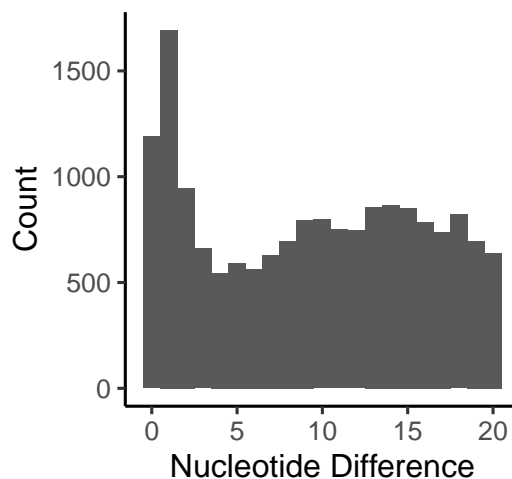
### IGHV3-48\*01

12184 sequences assigned  
1008 (8.3%) exact matches, in which:  
817 unique CDR3  
7 unique J



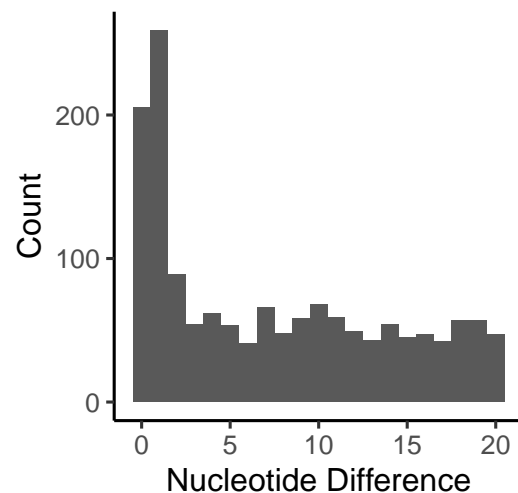
### IGHV3-49\*04

22479 sequences assigned  
1190 (5.3%) exact matches, in which:  
943 unique CDR3  
7 unique J



### IGHV3-64\*01

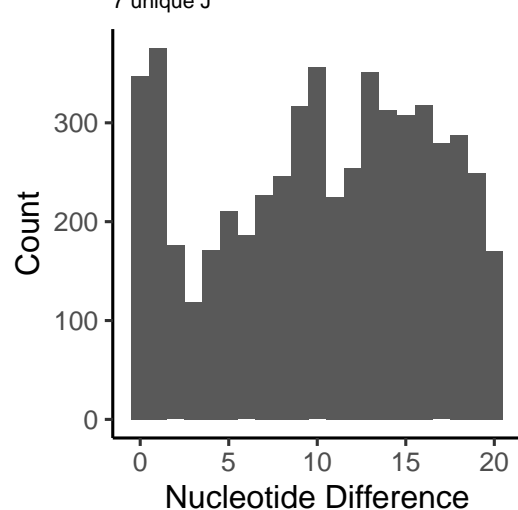
2183 sequences assigned  
205 (9.4%) exact matches, in which:  
165 unique CDR3  
7 unique J





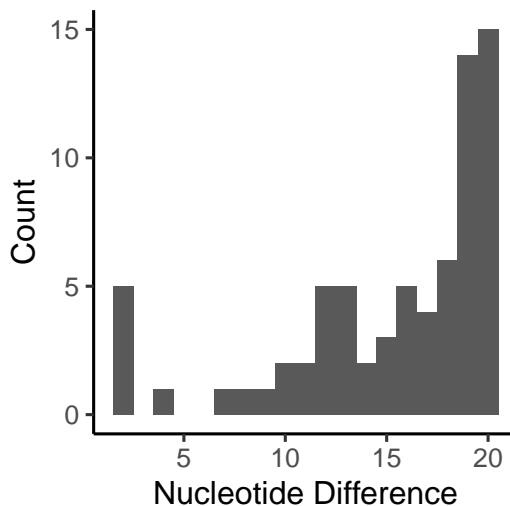
### IGHV3-64\*02\_07

6681 sequences assigned  
347 (5.2%) exact matches, in which:  
283 unique CDR3  
7 unique J



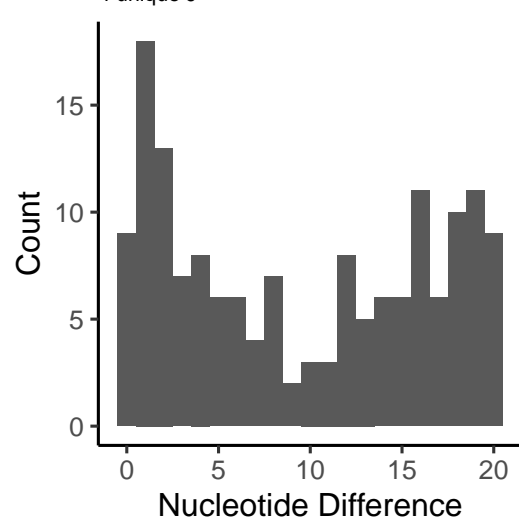
### IGHV3-66\*03

229 sequences assigned  
No exact matches.



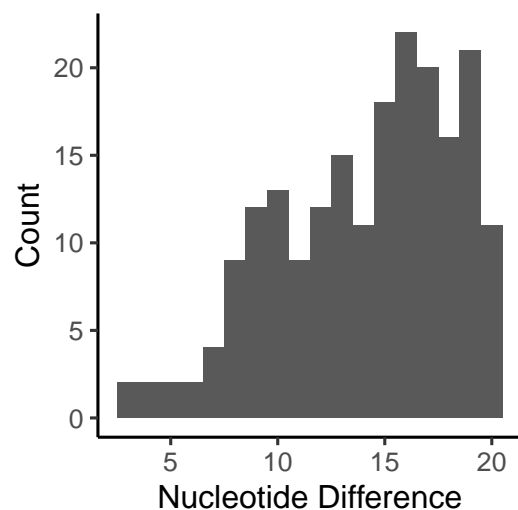
### IGHV3-69-1\*02

325 sequences assigned  
9 (2.8%) exact matches, in which:  
9 unique CDR3  
4 unique J



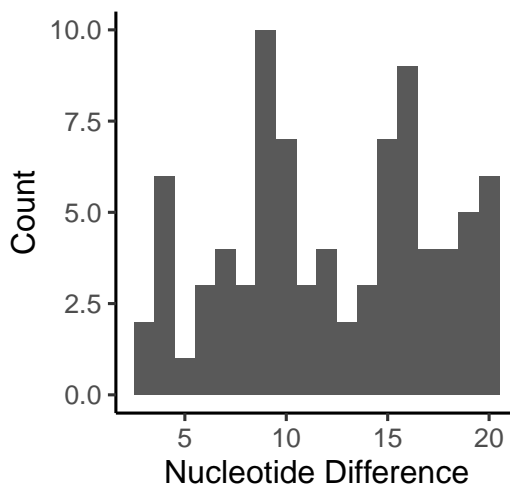
### IGHV3-66\*01

346 sequences assigned  
No exact matches.



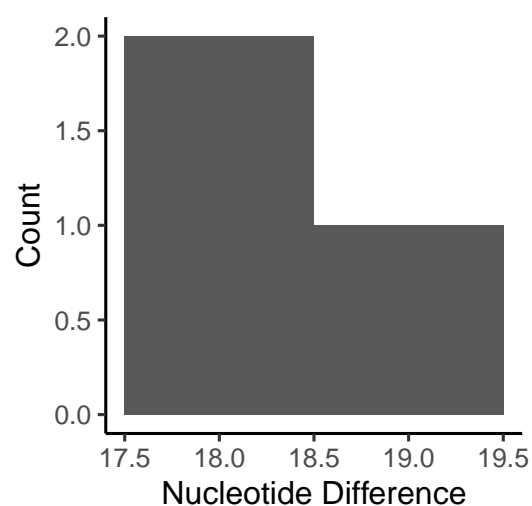
### IGHV3-66\*04

119 sequences assigned  
No exact matches.



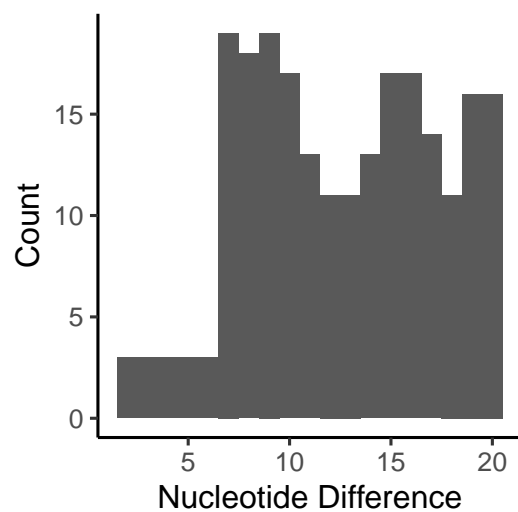
### IGHV3-71\*03

8 sequences assigned  
No exact matches.



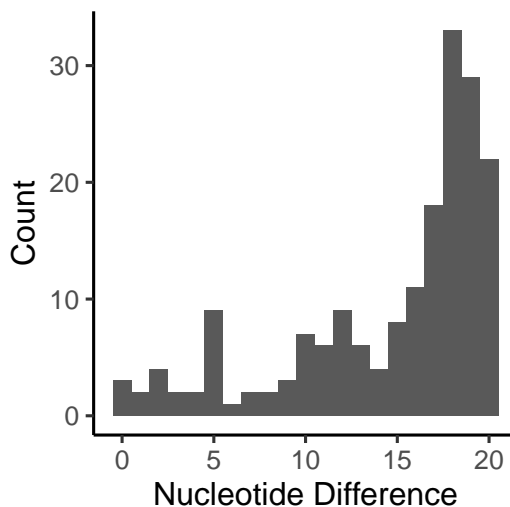
### IGHV3-66\*02

324 sequences assigned  
No exact matches.



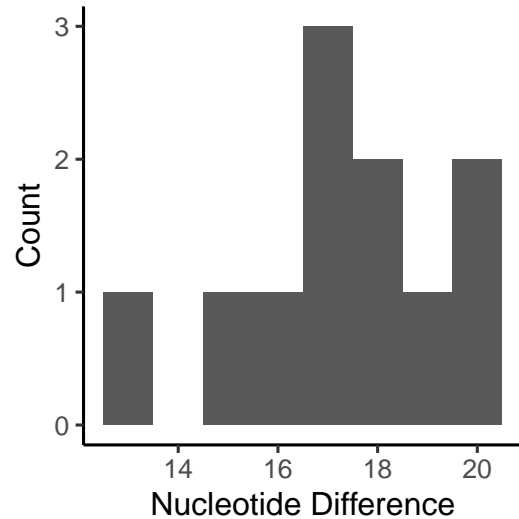
### IGHV3-69-1\*01

377 sequences assigned  
3 (0.8%) exact matches, in which:  
3 unique CDR3  
2 unique J



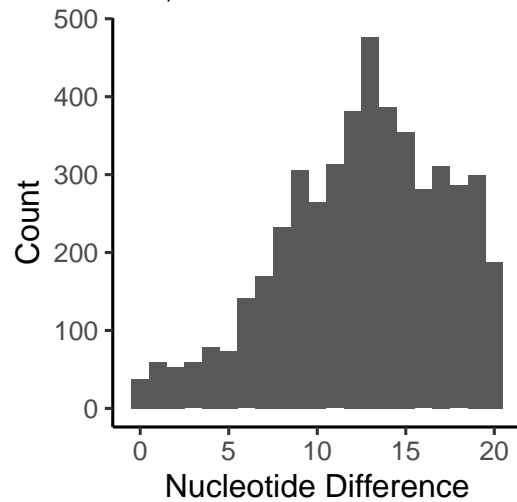
### IGHV3-71\*01\_04

67 sequences assigned  
No exact matches.



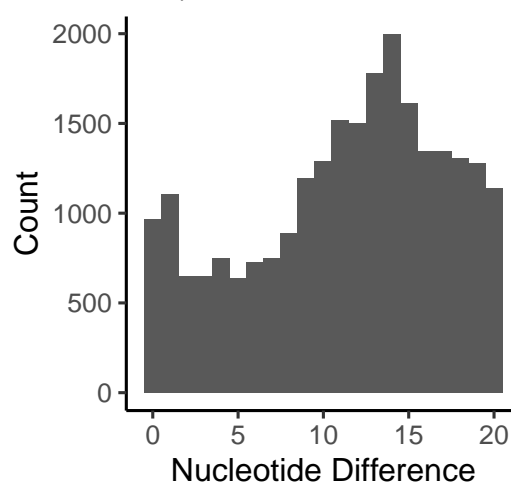
### IGHV3-72\*01

5912 sequences assigned  
38 (0.6%) exact matches, in which:  
33 unique CDR3  
4 unique J



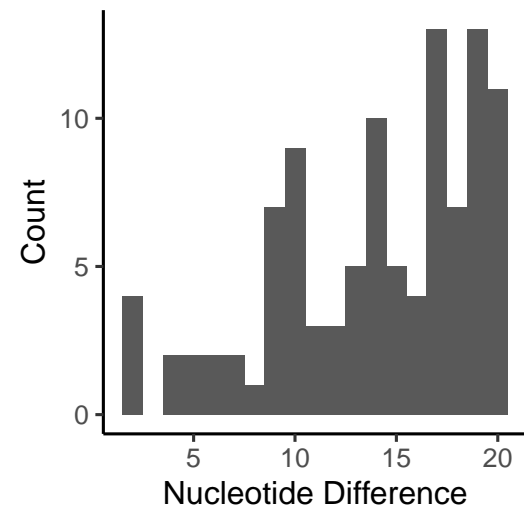
### IGHV3-74\*01\_02

35137 sequences assigned  
965 (2.7%) exact matches, in which:  
790 unique CDR3  
7 unique J



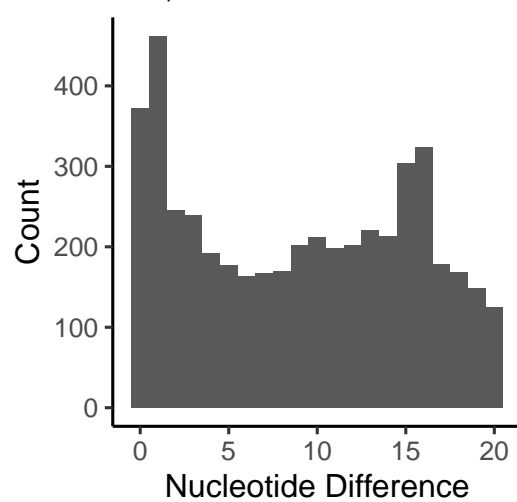
### IGHV3-NL1\*01

196 sequences assigned  
No exact matches.



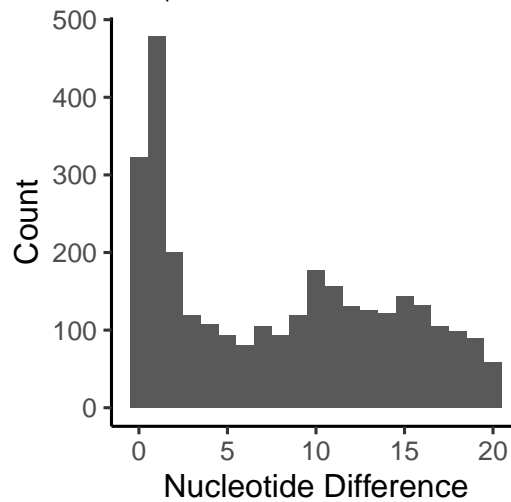
### IGHV3-73\*01\_02

6636 sequences assigned  
372 (5.6%) exact matches, in which:  
310 unique CDR3  
7 unique J



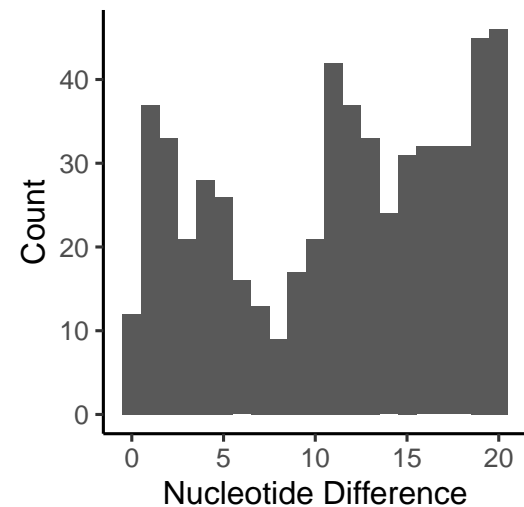
### IGHV3-43D\*04

3598 sequences assigned  
323 (9%) exact matches, in which:  
260 unique CDR3  
7 unique J



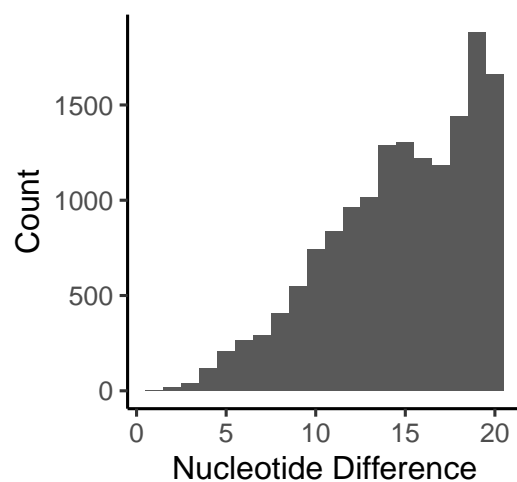
### IGHV3-NL1\*01\_T201C\_G

1090 sequences assigned  
12 (1.1%) exact matches, in which:  
12 unique CDR3  
4 unique J



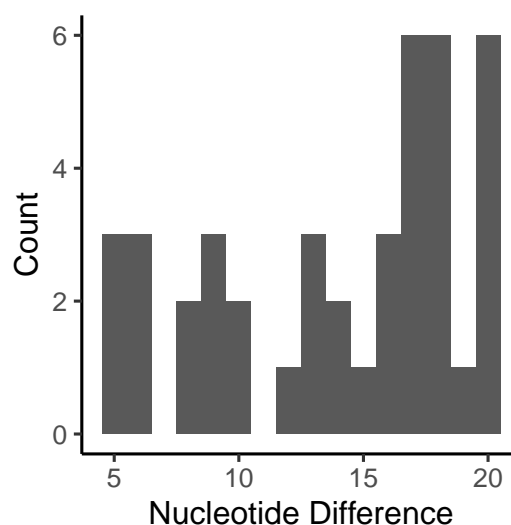
### IGHV3-74\*03

24778 sequences assigned  
No exact matches.



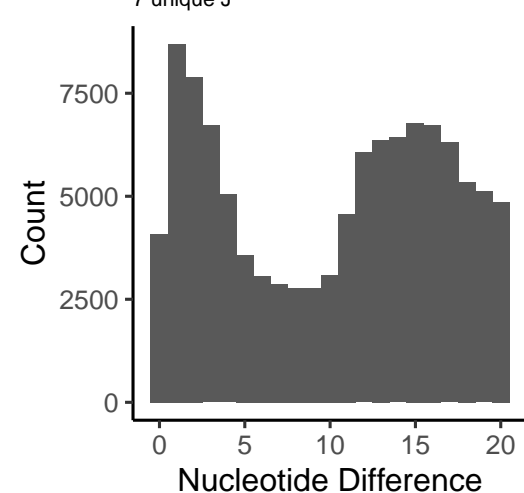
### IGHV3-64D\*06

77 sequences assigned  
No exact matches.



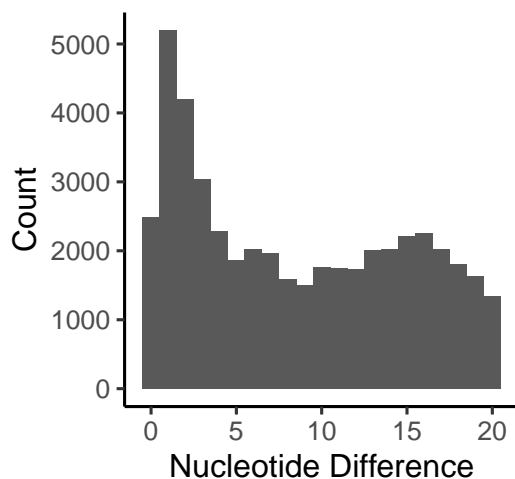
### IGHV4-4\*07

151738 sequences assigned  
4081 (2.7%) exact matches, in which:  
3056 unique CDR3  
7 unique J



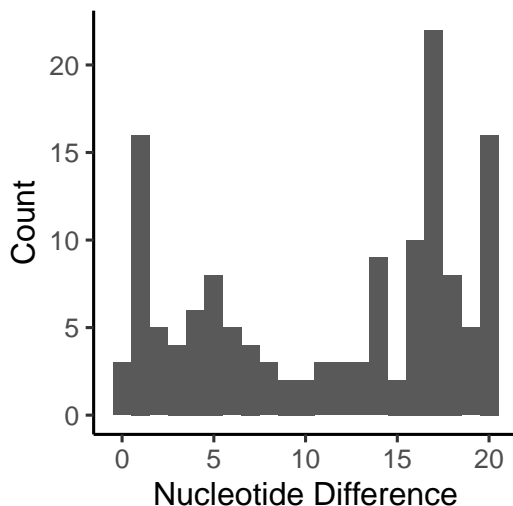
### IGHV4-4\*08

56396 sequences assigned  
2483 (4.4%) exact matches, in which:  
1914 unique CDR3  
7 unique J



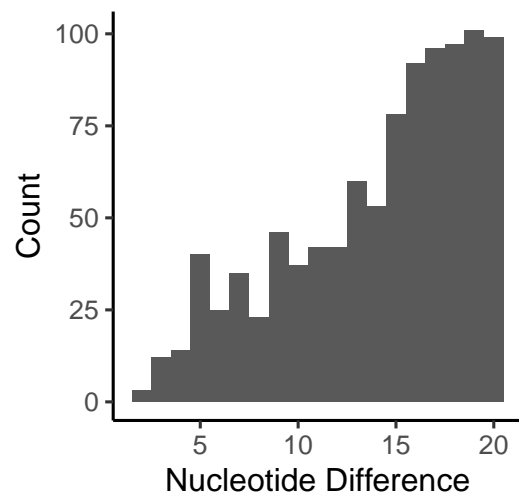
### IGHV4-28\*02\_05

230 sequences assigned  
3 (1.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



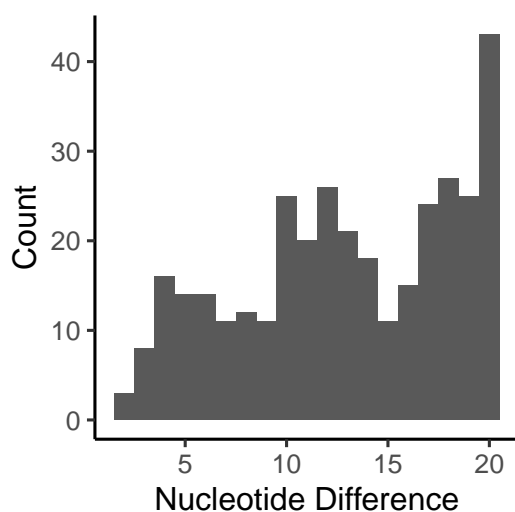
### IGHV4-30-4\*08

1765 sequences assigned  
No exact matches.



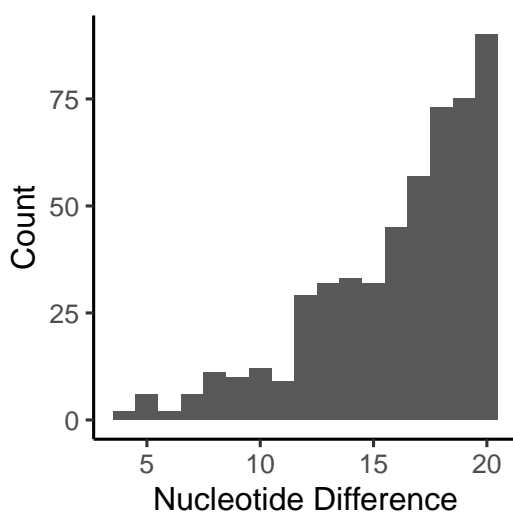
### IGHV4-28\*03

709 sequences assigned  
No exact matches.



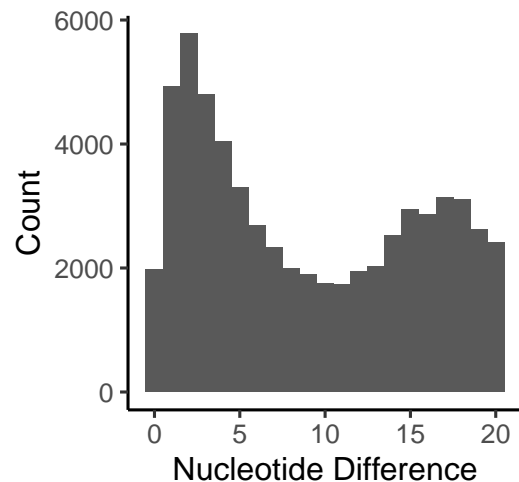
### IGHV4-30-4\*01

1364 sequences assigned  
No exact matches.



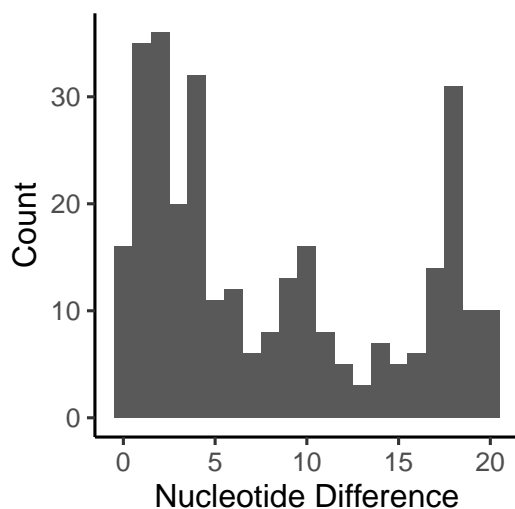
### IGHV4-31\*02

82358 sequences assigned  
1970 (2.4%) exact matches, in which:  
1524 unique CDR3  
7 unique J



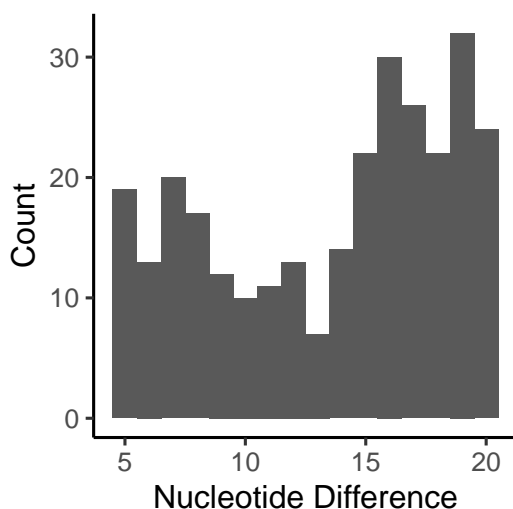
### IGHV4-28\*06

339 sequences assigned  
16 (4.7%) exact matches, in which:  
13 unique CDR3  
3 unique J



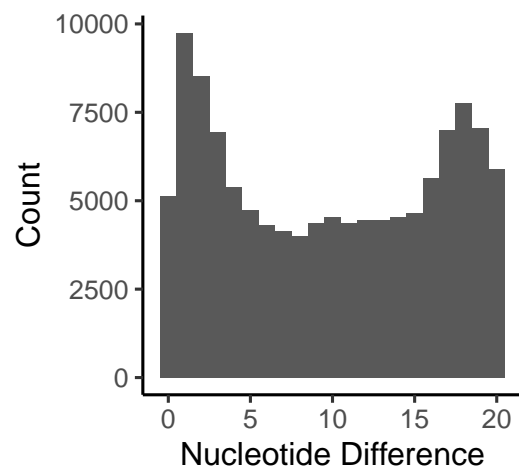
### IGHV4-30-2\*03

504 sequences assigned  
No exact matches.



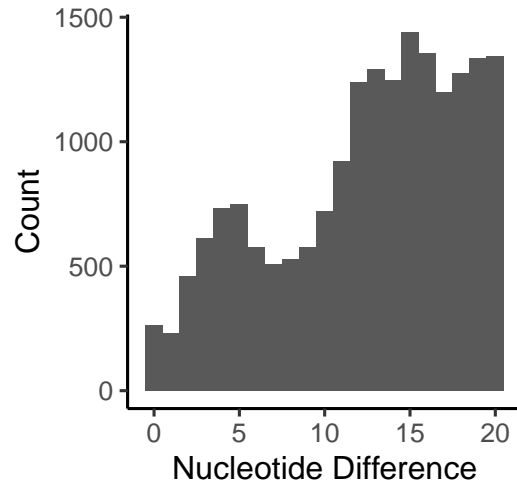
### IGHV4-34\*01\_02

161572 sequences assigned  
5119 (3.2%) exact matches, in which:  
3707 unique CDR3  
7 unique J



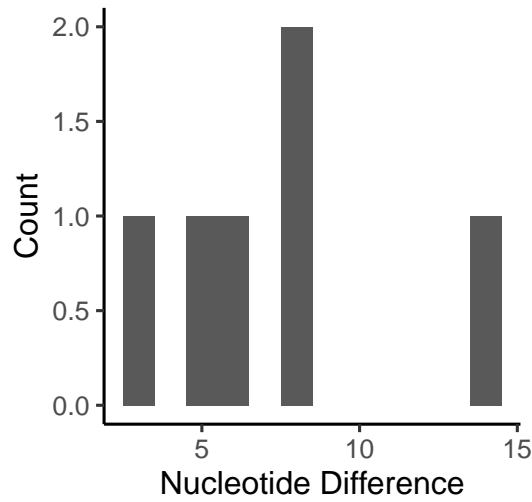
### IGHV4-38-2\*02

27458 sequences assigned  
263 (1%) exact matches, in which:  
252 unique CDR3  
7 unique J



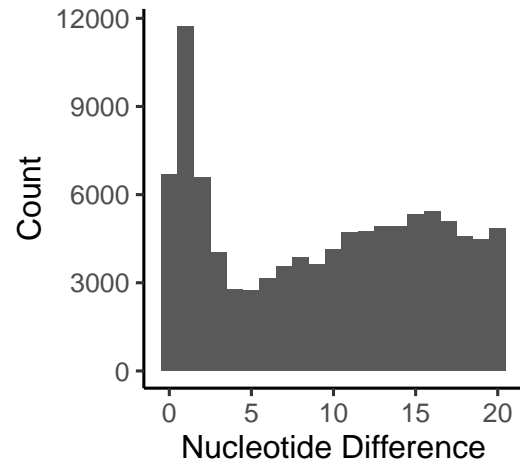
### IGHV4-55\*09

8 sequences assigned  
No exact matches.



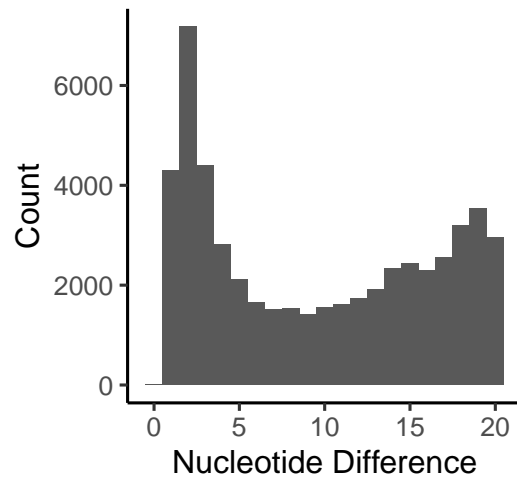
### IGHV4-59\*11

129564 sequences assigned  
6681 (5.2%) exact matches, in which:  
4841 unique CDR3  
7 unique J



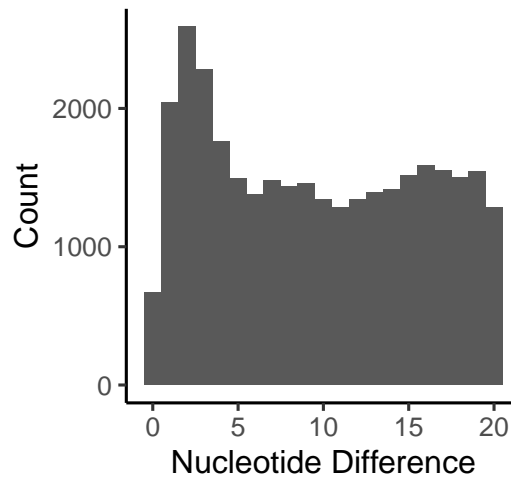
### IGHV4-39\*02

77672 sequences assigned  
3 (0%) exact matches, in which:  
3 unique CDR3  
2 unique J



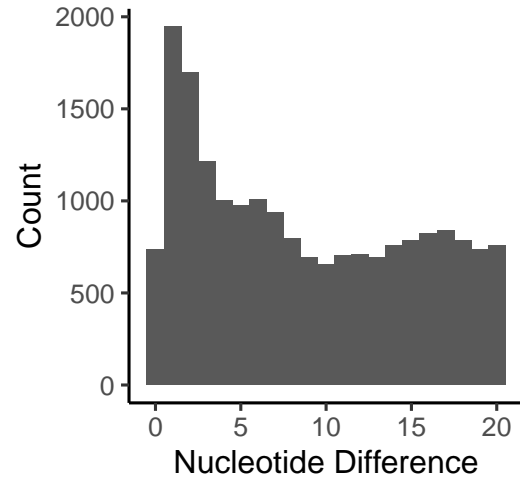
### IGHV4-59\*08

39043 sequences assigned  
666 (1.7%) exact matches, in which:  
604 unique CDR3  
7 unique J



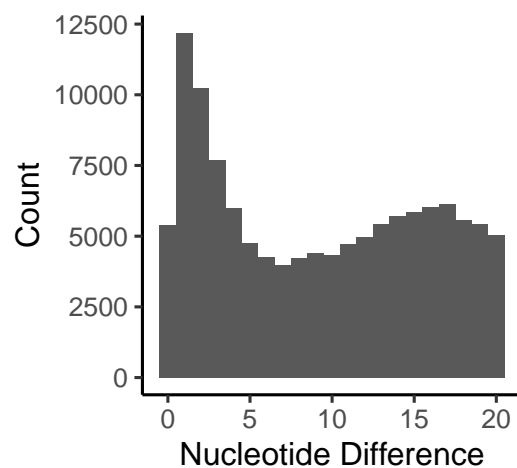
### IGHV4-59\*12

25439 sequences assigned  
737 (2.9%) exact matches, in which:  
677 unique CDR3  
7 unique J



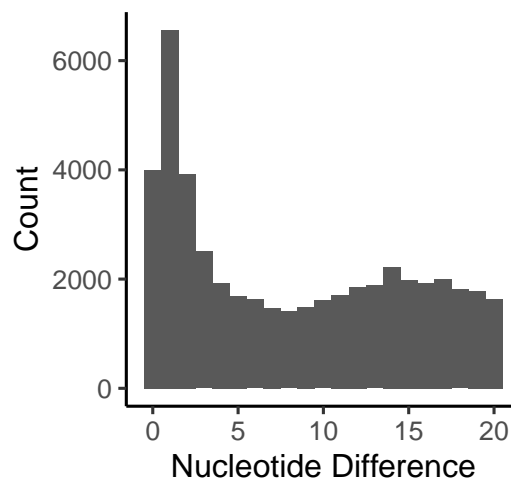
### IGHV4-39\*07

165122 sequences assigned  
5385 (3.3%) exact matches, in which:  
3886 unique CDR3  
7 unique J



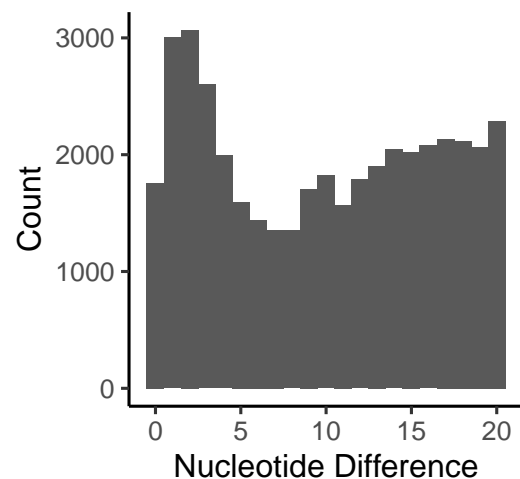
### IGHV4-59\*01\_07

61628 sequences assigned  
4003 (6.5%) exact matches, in which:  
2957 unique CDR3  
7 unique J



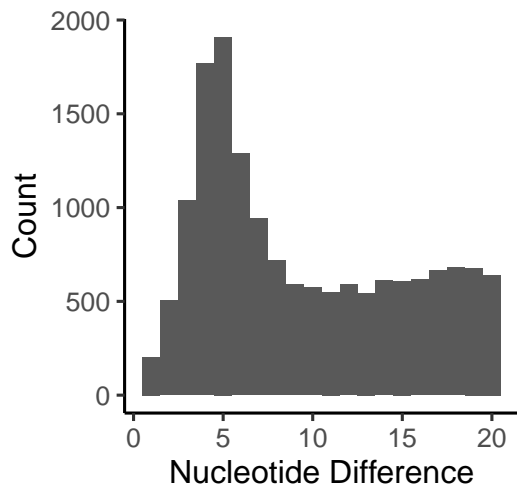
### IGHV4-61\*02

54466 sequences assigned  
1760 (3.2%) exact matches, in which:  
1416 unique CDR3  
7 unique J



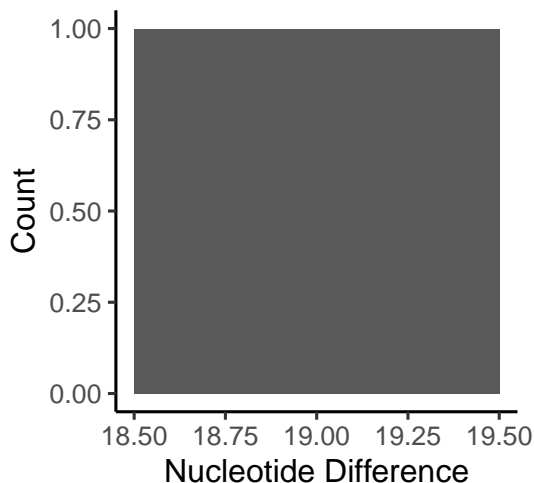
### IGHV4-61\*08

19749 sequences assigned  
No exact matches.



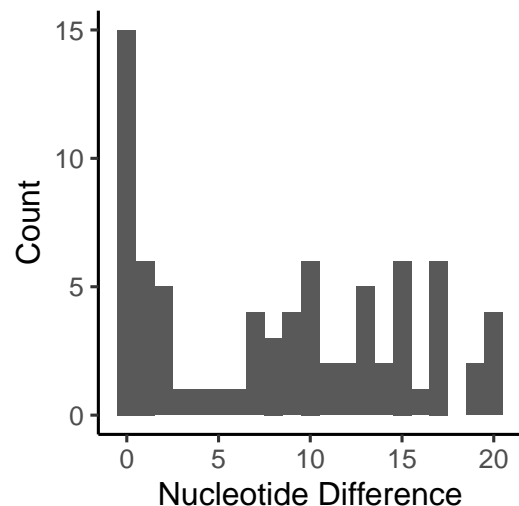
### IGHV1/OR15-3\*02

2 sequences assigned  
No exact matches.



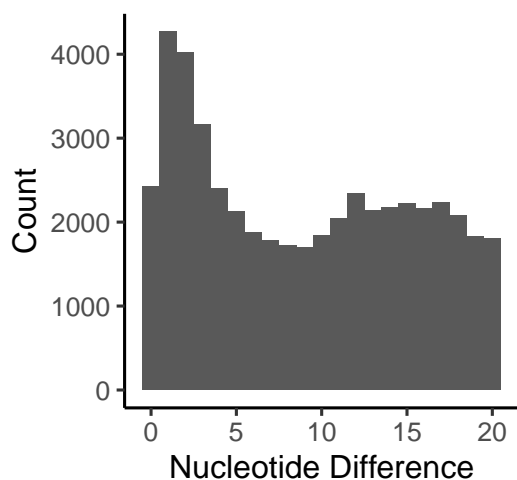
### IGHV5-51\*04

103 sequences assigned  
15 (14.6%) exact matches, in which:  
15 unique CDR3  
3 unique J



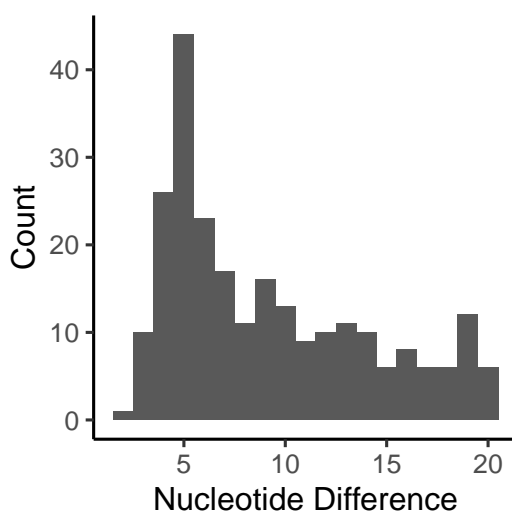
### IGHV4-61\*09

62280 sequences assigned  
2425 (3.9%) exact matches, in which:  
1908 unique CDR3  
7 unique J



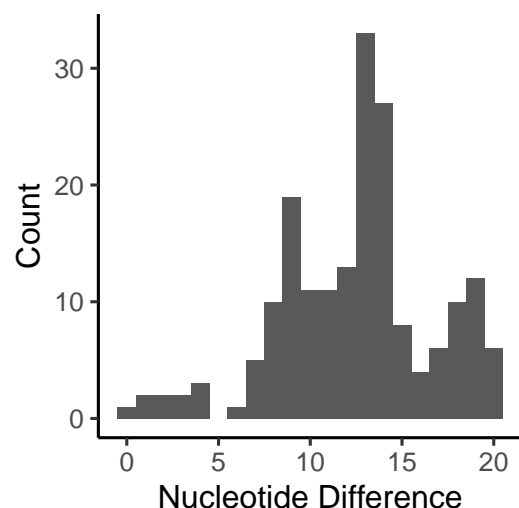
### IGHV4/OR15-8\*01

324 sequences assigned  
No exact matches.



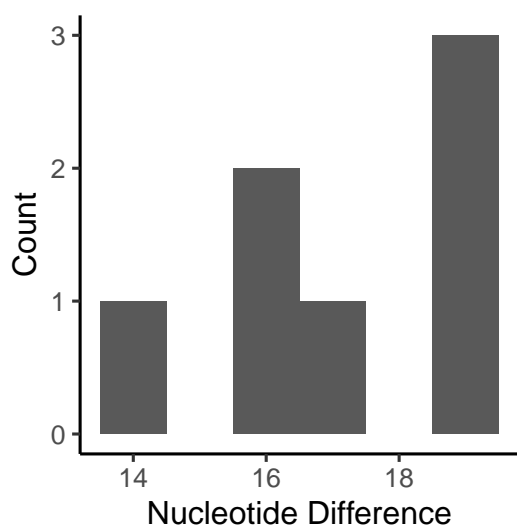
### IGHV5-51\*06

211 sequences assigned  
1 (0.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



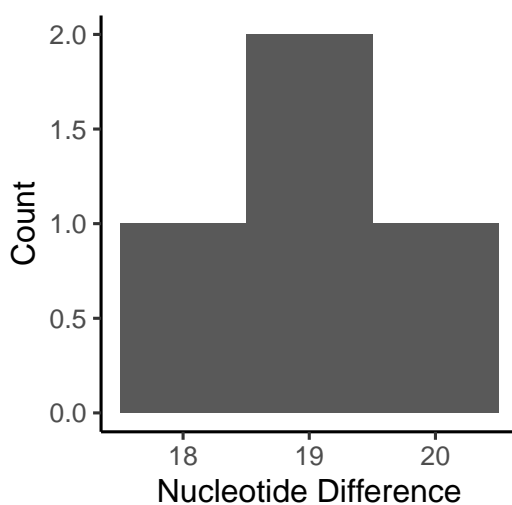
### IGHV1/OR15-2\*02\_03

14 sequences assigned  
No exact matches.



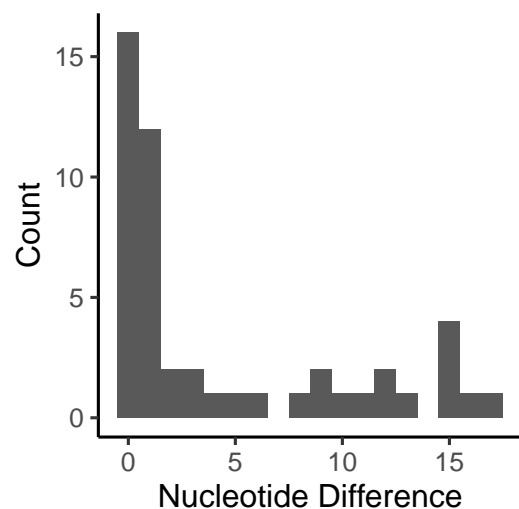
### IGHV4/OR15-8\*02

43 sequences assigned  
No exact matches.



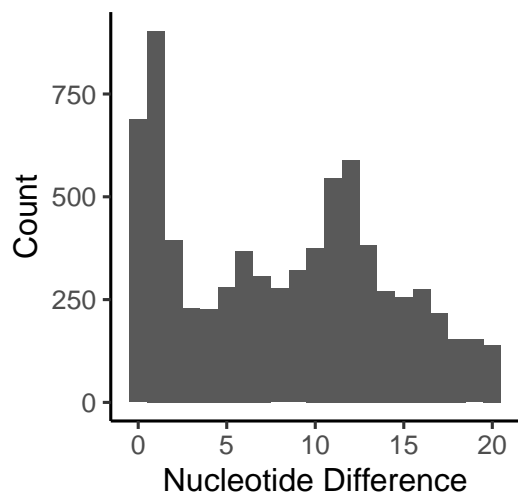
### IGHV5-51\*07

58 sequences assigned  
16 (27.6%) exact matches, in which:  
13 unique CDR3  
4 unique J



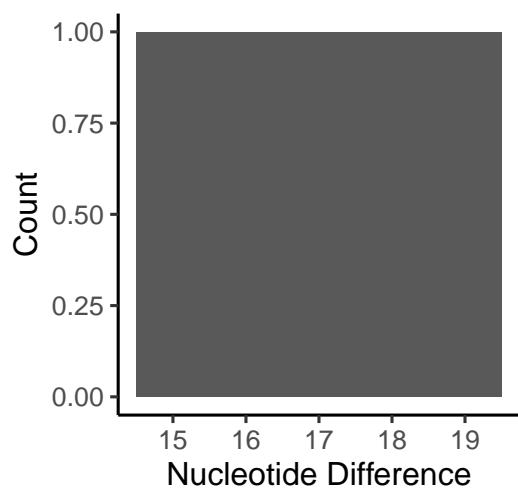
## IGHV6-1\*01\_02

8014 sequences assigned  
688 (8.6%) exact matches, in which:  
511 unique CDR3  
7 unique J



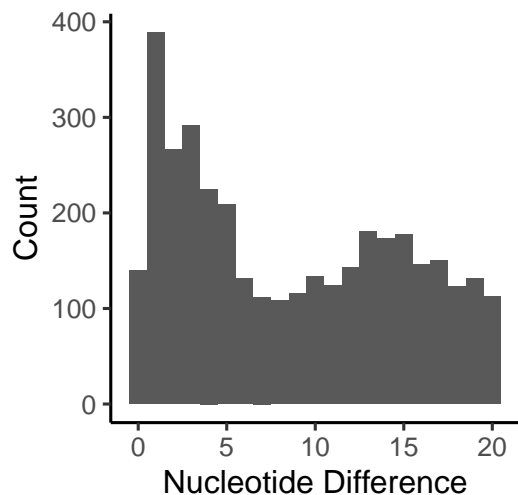
## IGHV3/OR16-13\*01

9 sequences assigned  
No exact matches.

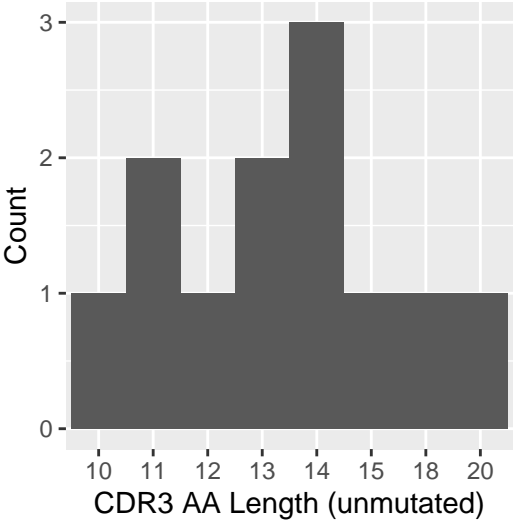


## IGHV7-4-1\*02

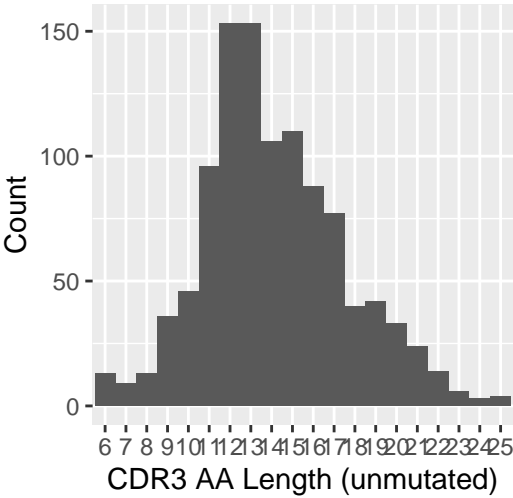
4570 sequences assigned  
140 (3.1%) exact matches, in which:  
128 unique CDR3  
6 unique J

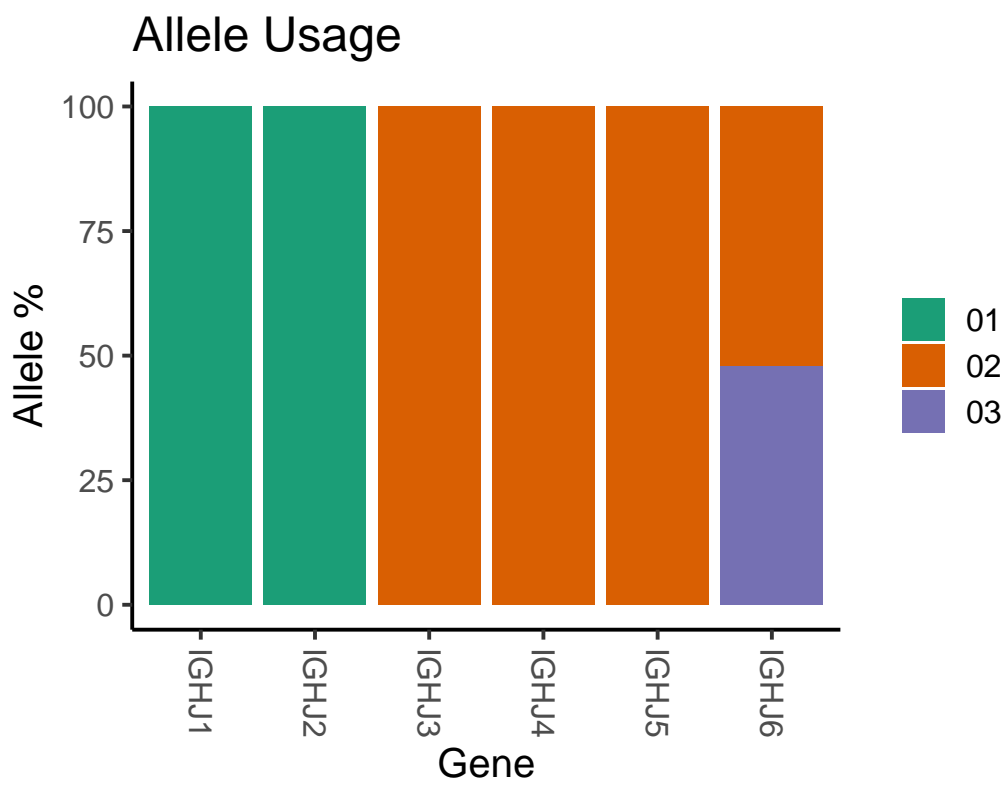


IGHV3-NL1\*01\_T201C\_G267T\_T288C\_T300C



IGHV1-8\*02\_A250G







## Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.