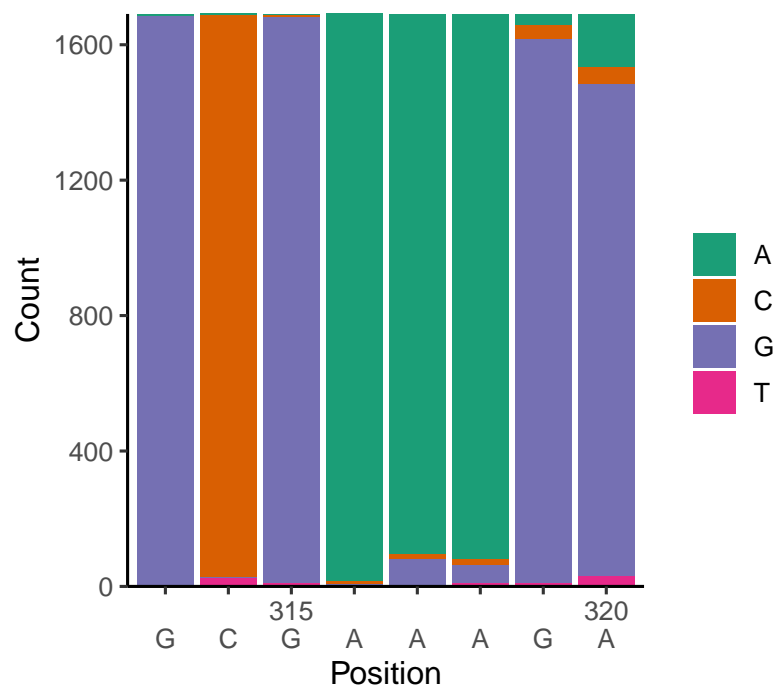
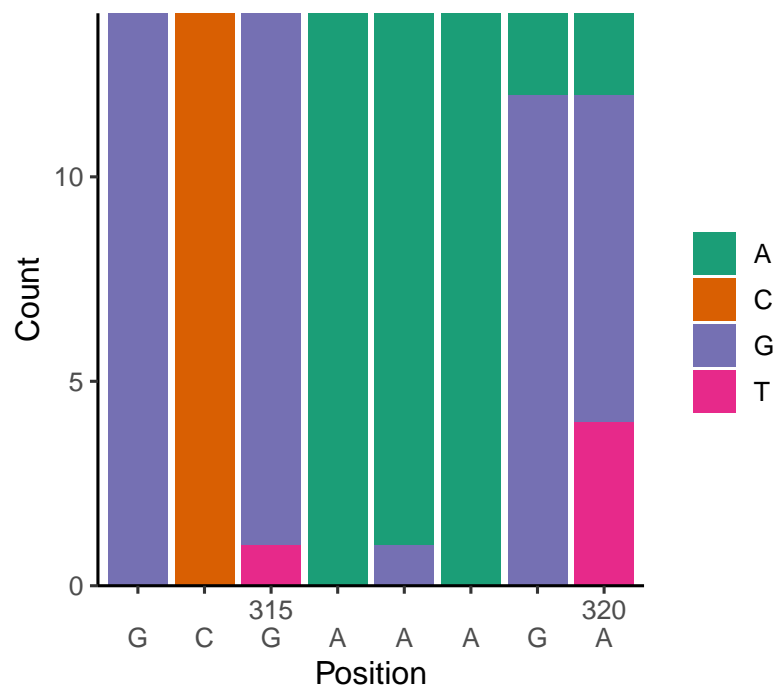


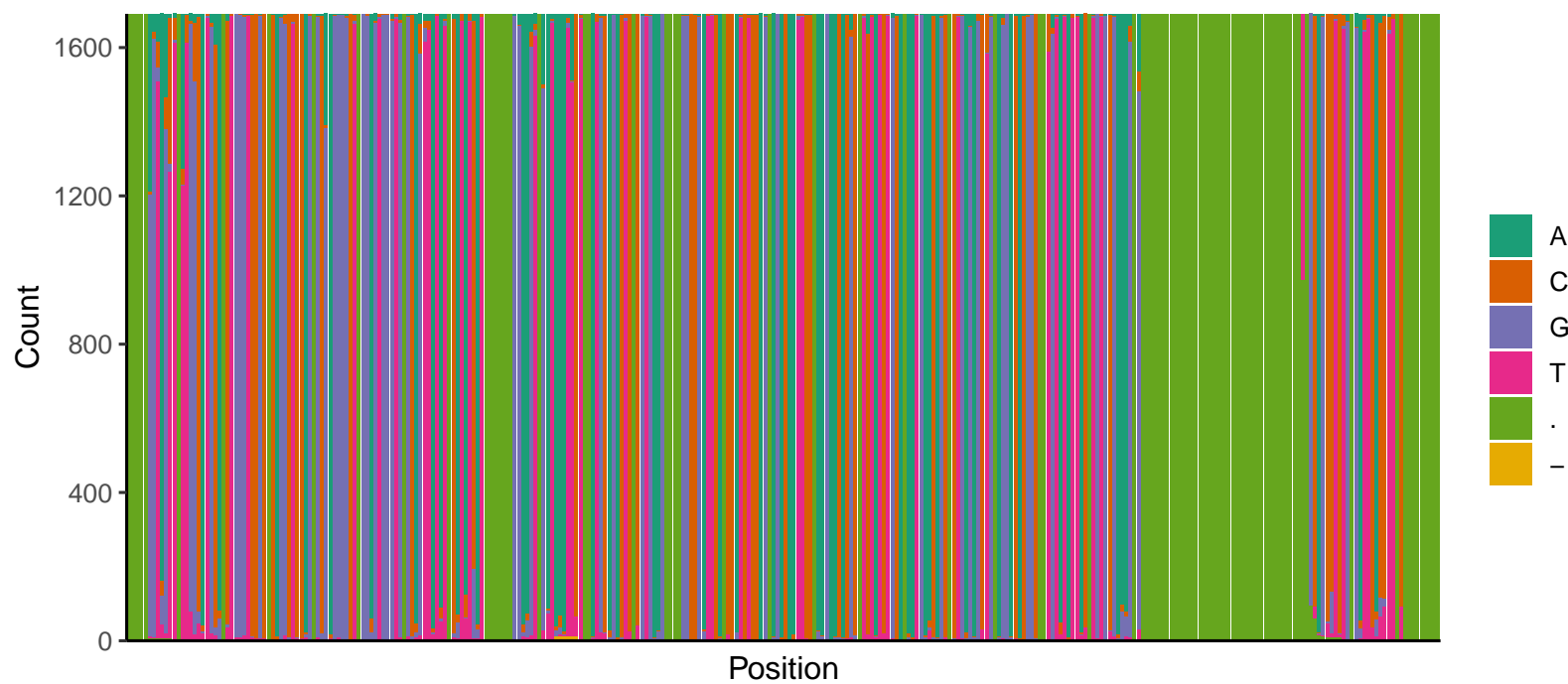
Gene IGHV3-30\*18\_G261C\_G303A



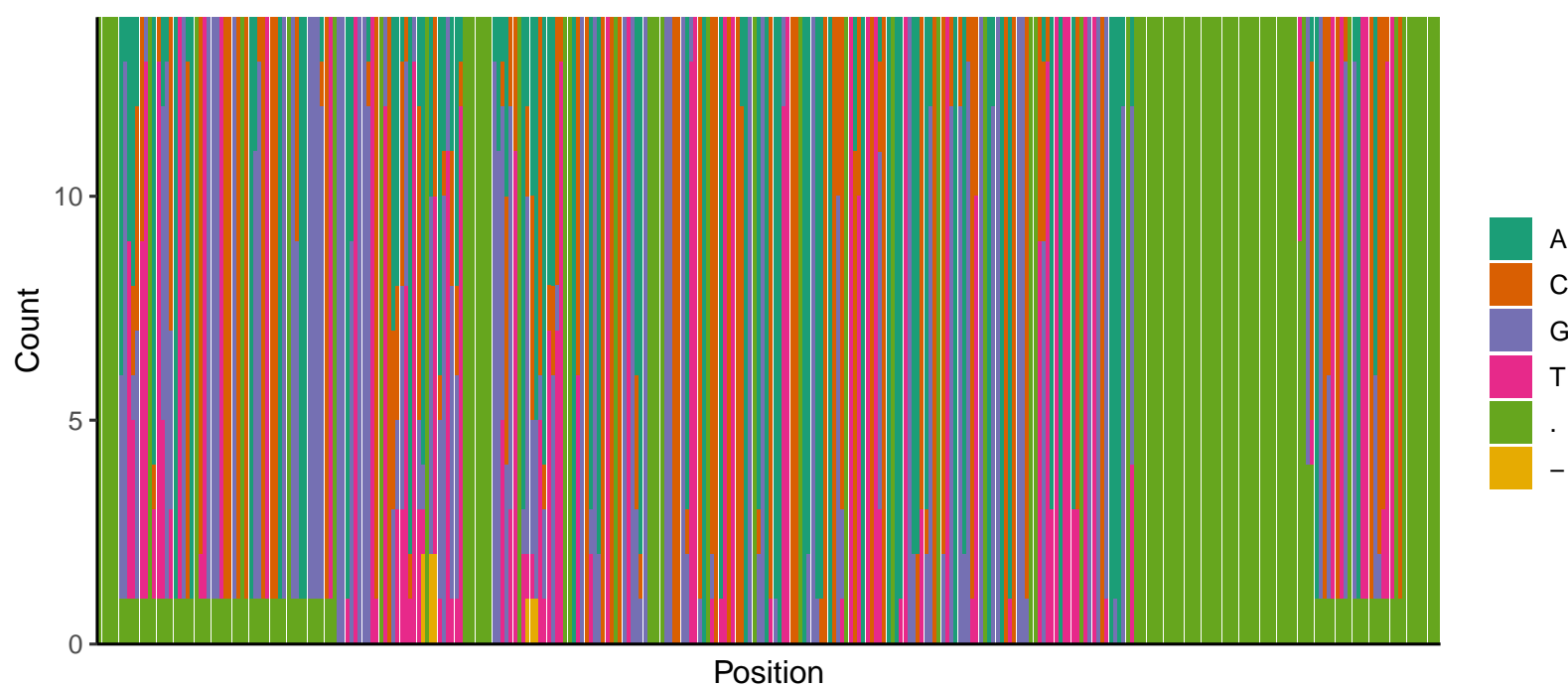
Gene IGHV3-NL1\*01\_G261C\_G303A



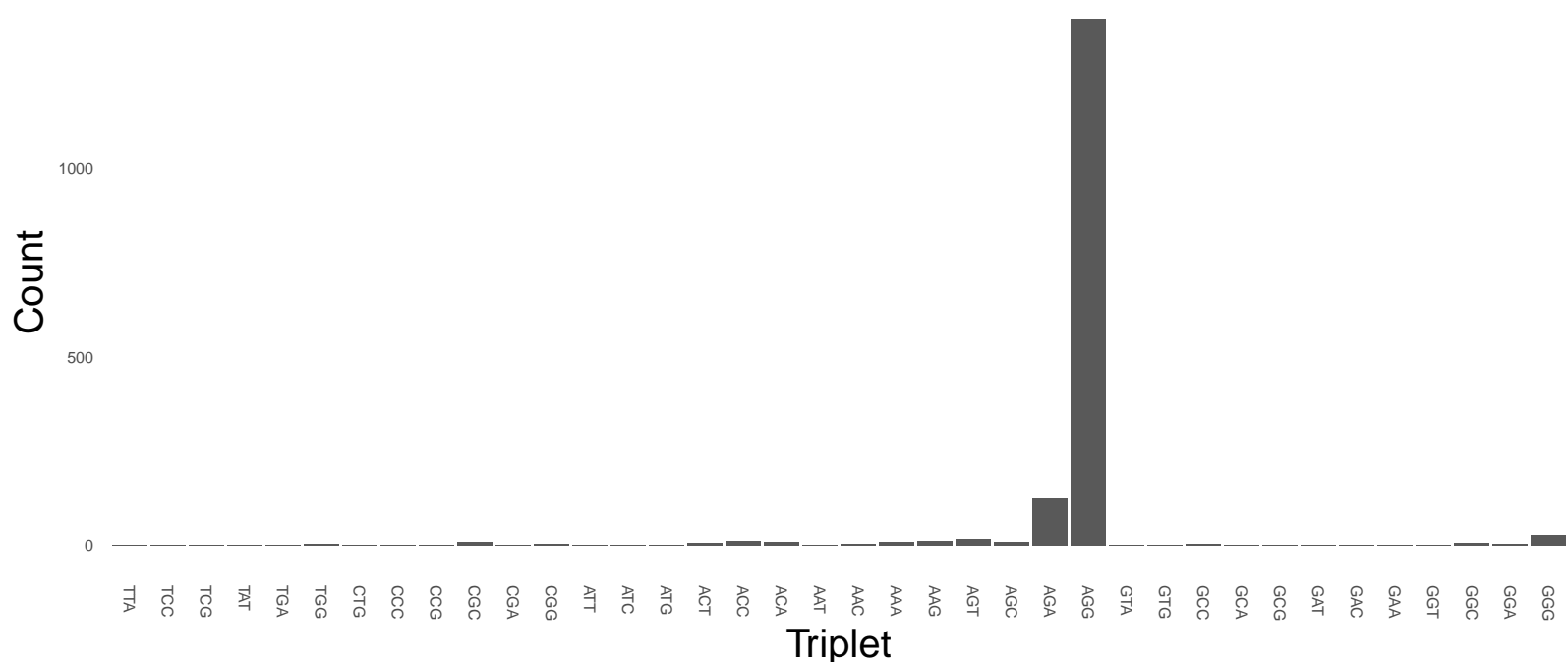
Gene IGHV3-30\*18\_G261C\_G303A



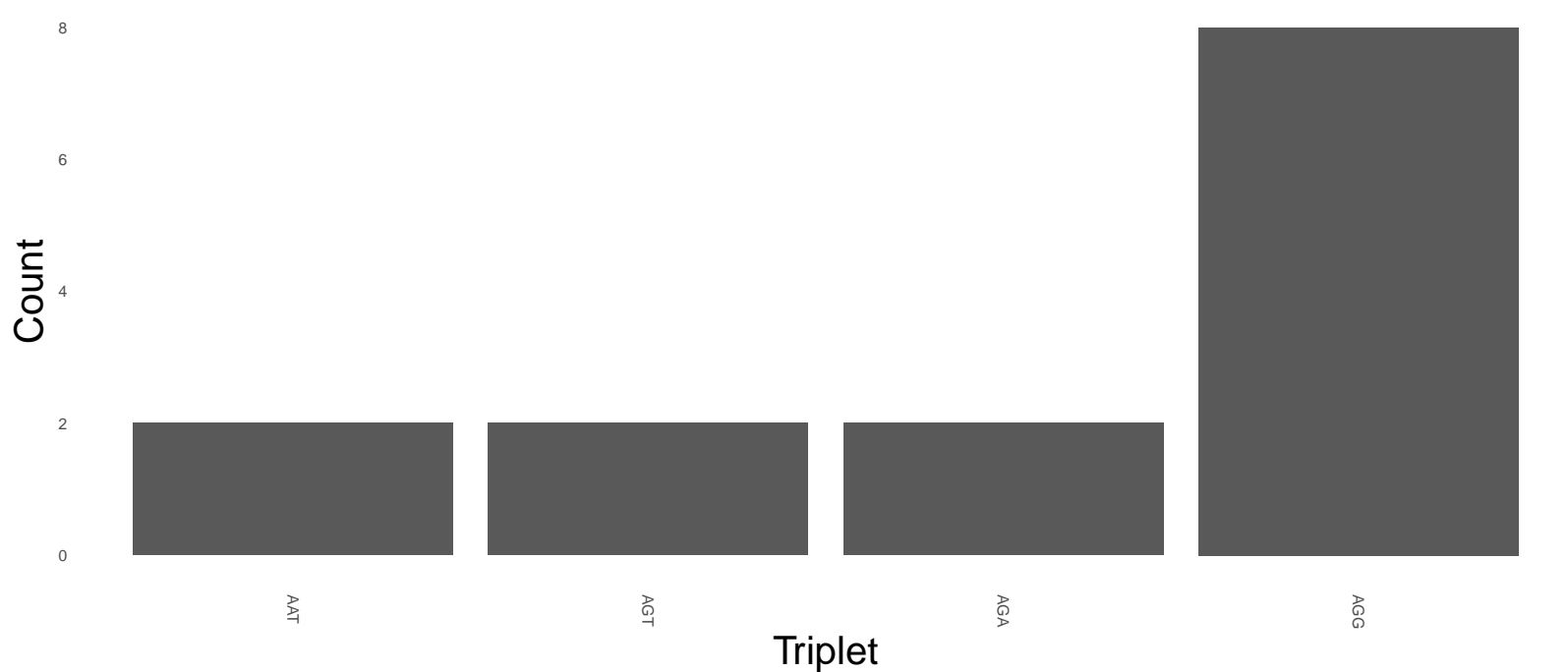
Gene IGHV3-NL1\*01\_G261C\_G303A



IGHV3-30\*18\_G261C\_G303A- Final 3 nucleotides as a triplet

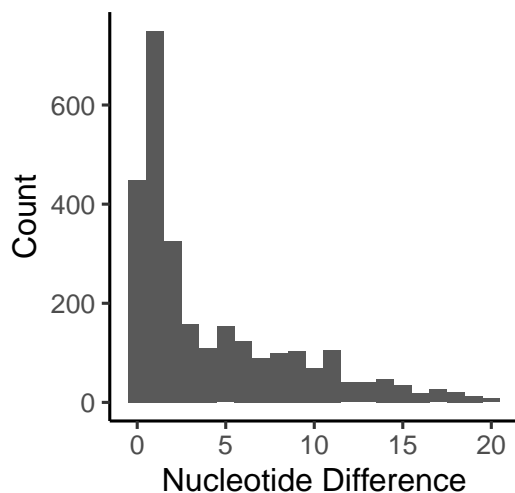


IGHV3-NL1\*01\_G261C\_G303A- Final 3 nucleotides as a triplet



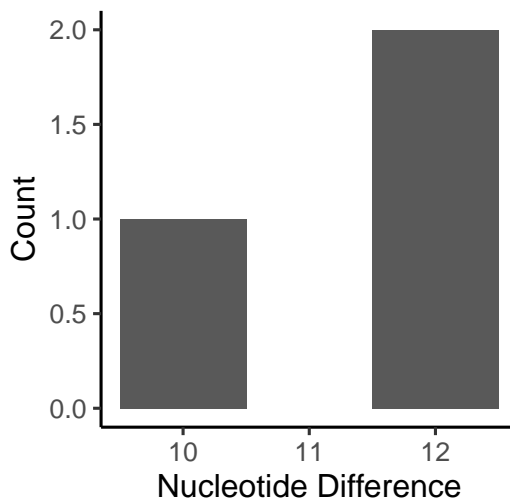
### IGHV1-2\*04

3053 sequences assigned  
448 (14.7%) exact matches, in which:  
354 unique CDR3  
5 unique J



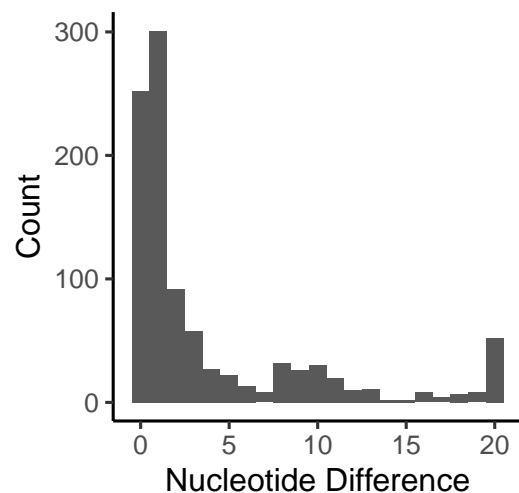
### IGHV1-8\*02

3 sequences assigned  
No exact matches.



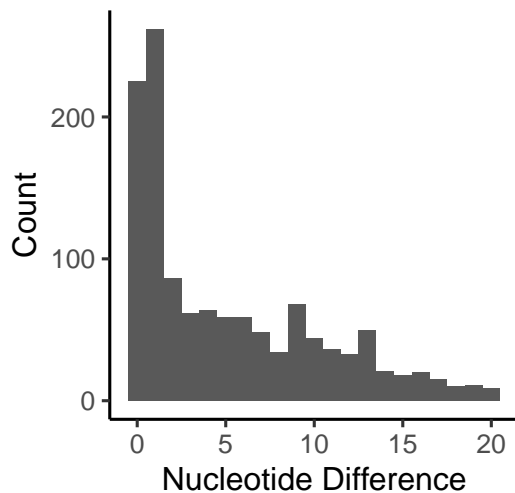
### IGHV1-24\*01

1180 sequences assigned  
252 (21.4%) exact matches, in which:  
189 unique CDR3  
6 unique J



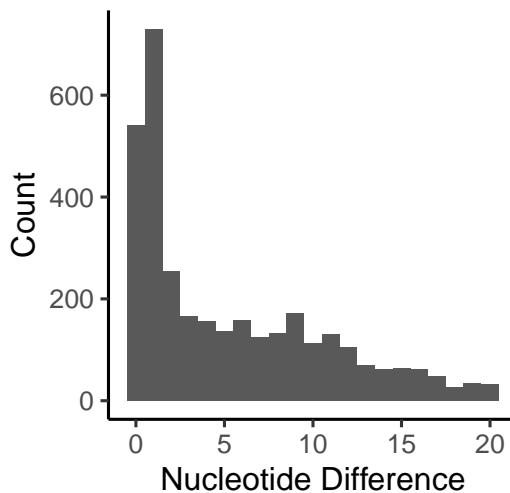
### IGHV1-3\*01\_05

1498 sequences assigned  
225 (15%) exact matches, in which:  
169 unique CDR3  
5 unique J



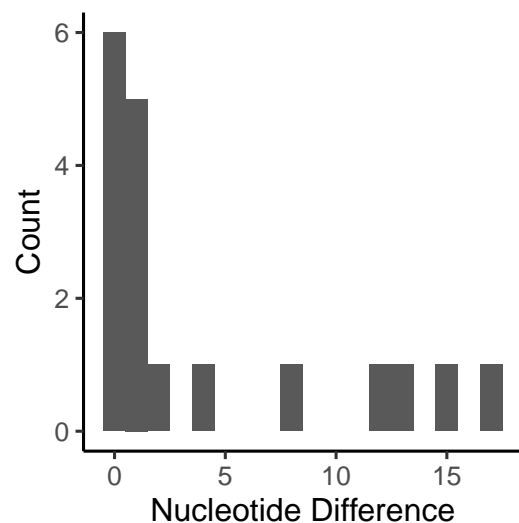
### IGHV1-18\*01

4795 sequences assigned  
541 (11.3%) exact matches, in which:  
428 unique CDR3  
6 unique J



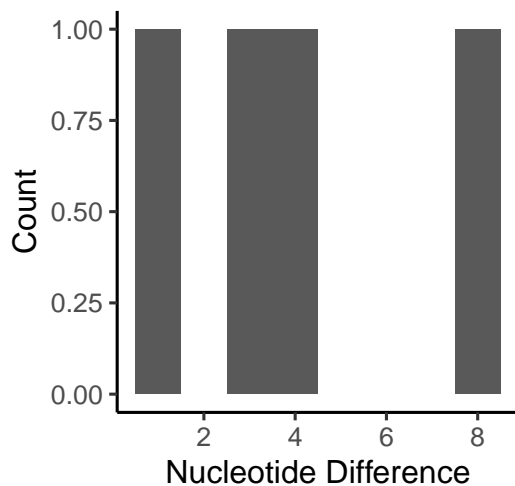
### IGHV1-45\*02

18 sequences assigned  
6 (33.3%) exact matches, in which:  
3 unique CDR3  
2 unique J



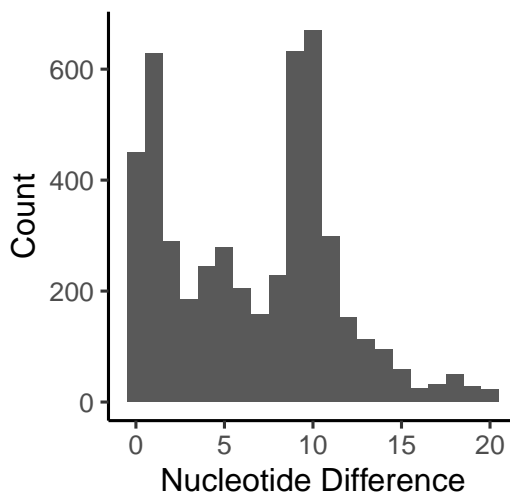
### IGHV1-8\*01

4 sequences assigned  
No exact matches.



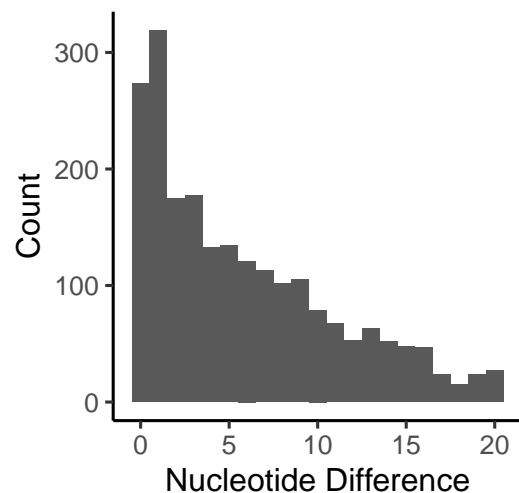
### IGHV1-18\*04

5399 sequences assigned  
450 (8.3%) exact matches, in which:  
368 unique CDR3  
6 unique J



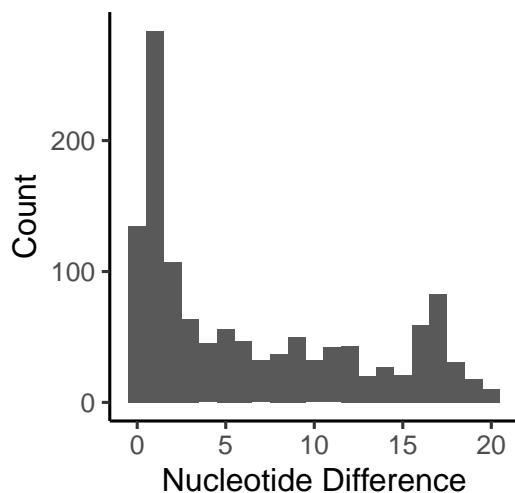
### IGHV1-46\*01

2775 sequences assigned  
273 (9.8%) exact matches, in which:  
216 unique CDR3  
6 unique J



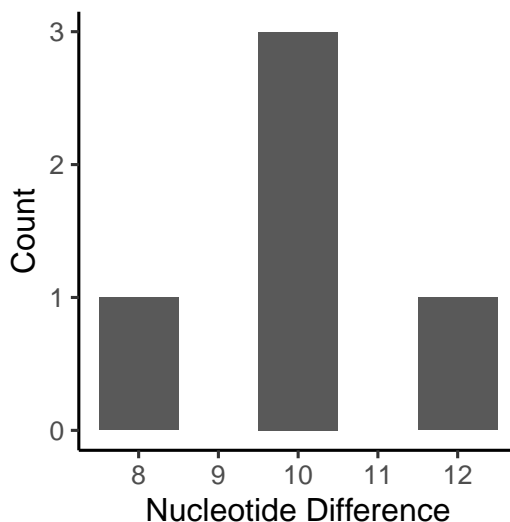
### IGHV1-46\*03

1303 sequences assigned  
135 (10.4%) exact matches, in which:  
101 unique CDR3  
6 unique J



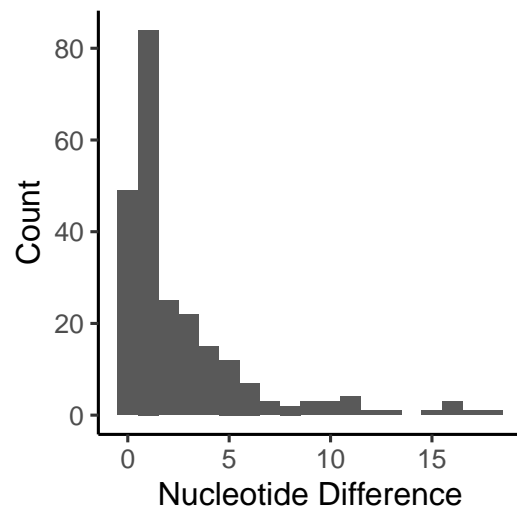
### IGHV1-NL1\*01

5 sequences assigned  
No exact matches.



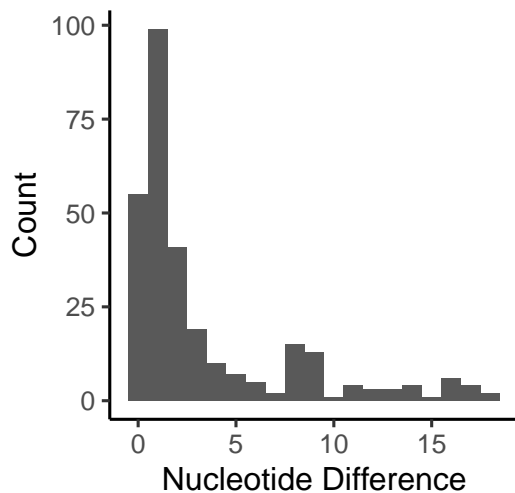
### IGHV2-26\*01

237 sequences assigned  
49 (20.7%) exact matches, in which:  
42 unique CDR3  
5 unique J



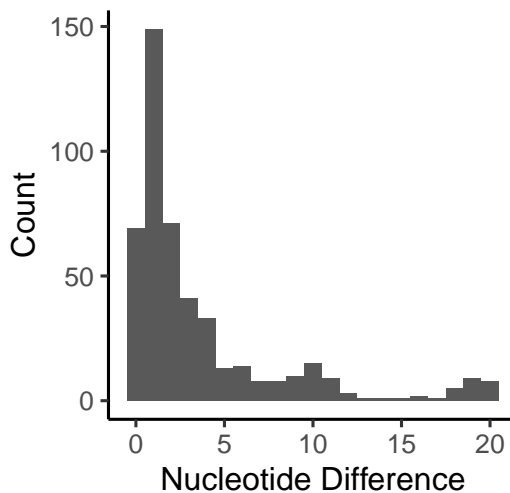
### IGHV1-58\*02

386 sequences assigned  
55 (14.2%) exact matches, in which:  
46 unique CDR3  
5 unique J



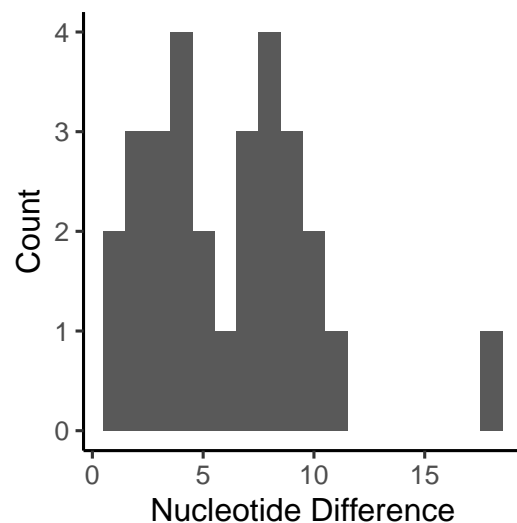
### IGHV2-5\*01

844 sequences assigned  
69 (8.2%) exact matches, in which:  
52 unique CDR3  
6 unique J



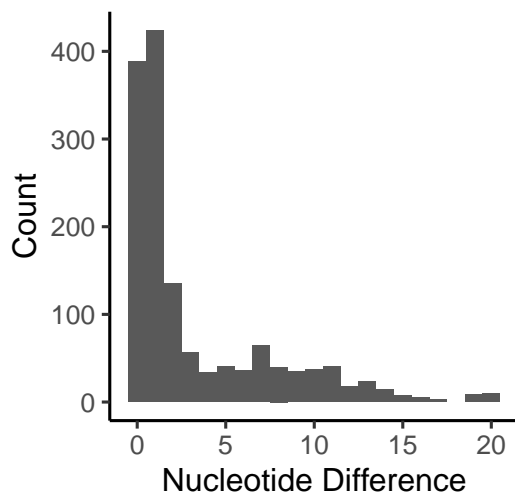
### IGHV2-70\*12

34 sequences assigned  
No exact matches.



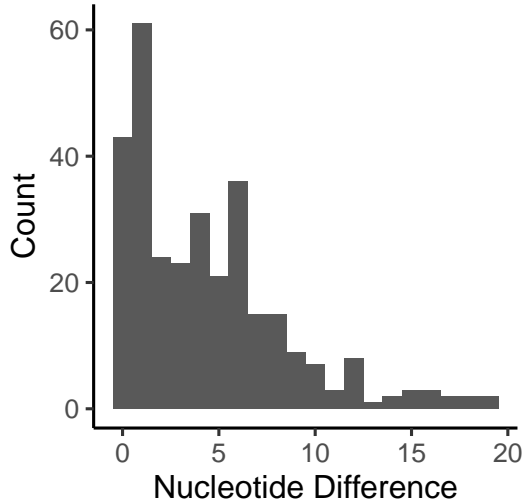
### IGHV1-69\*04\_09

2136 sequences assigned  
388 (18.2%) exact matches, in which:  
322 unique CDR3  
6 unique J



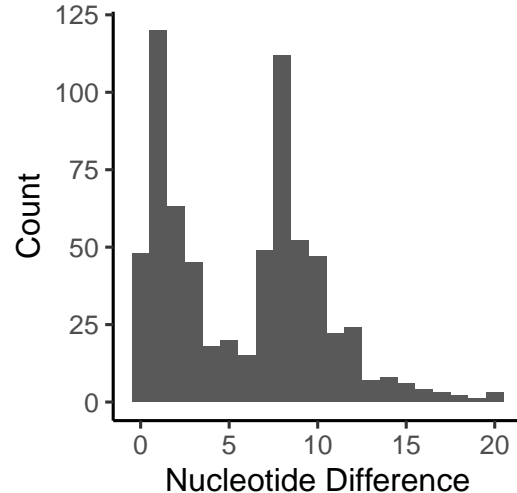
### IGHV2-5\*02

540 sequences assigned  
43 (8%) exact matches, in which:  
30 unique CDR3  
4 unique J



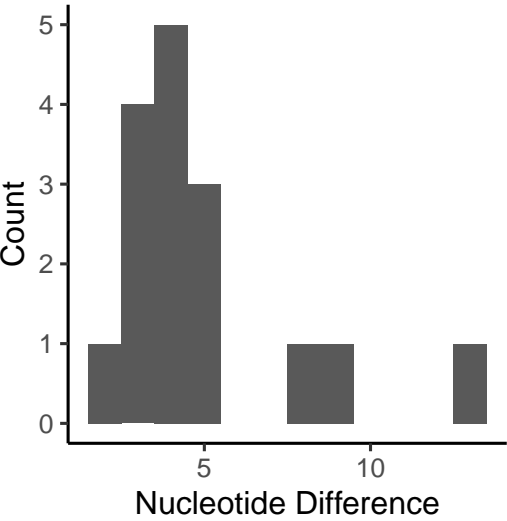
### IGHV2-70\*11\_15

749 sequences assigned  
48 (6.4%) exact matches, in which:  
36 unique CDR3  
4 unique J



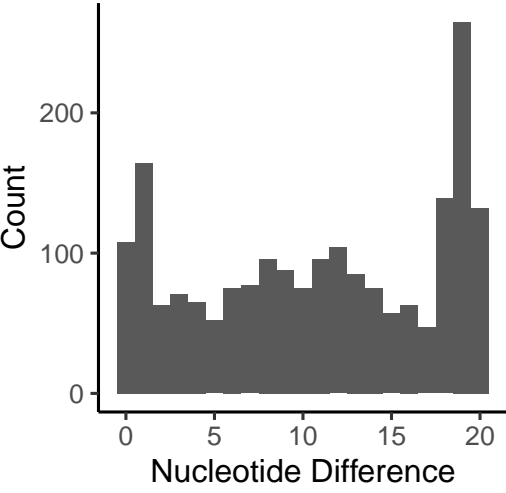
IGHV2-70D\*04

17 sequences assigned  
No exact matches.



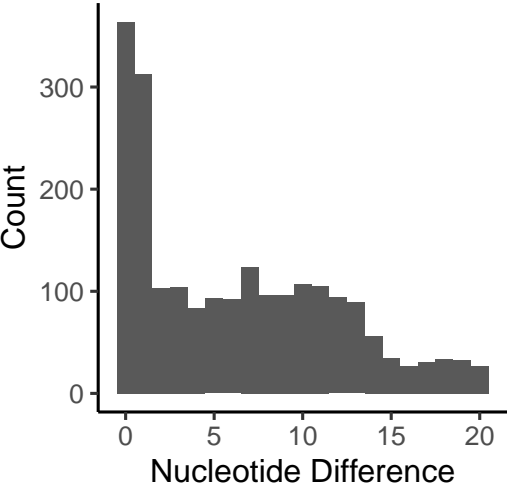
IGHV3-7\*04

4334 sequences assigned  
108 (2.5%) exact matches, in which:  
68 unique CDR3  
5 unique J



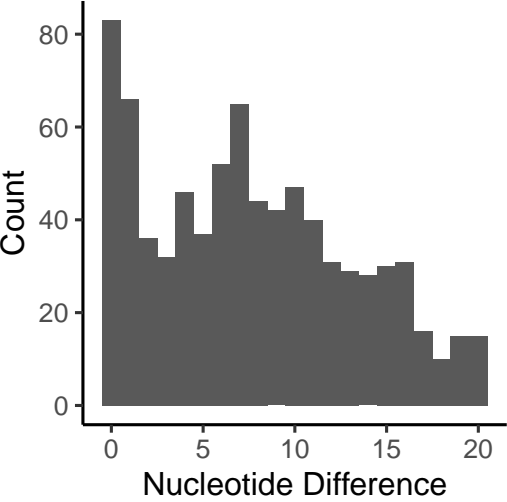
IGHV3-11\*06

2314 sequences assigned  
364 (15.7%) exact matches, in which:  
256 unique CDR3  
5 unique J



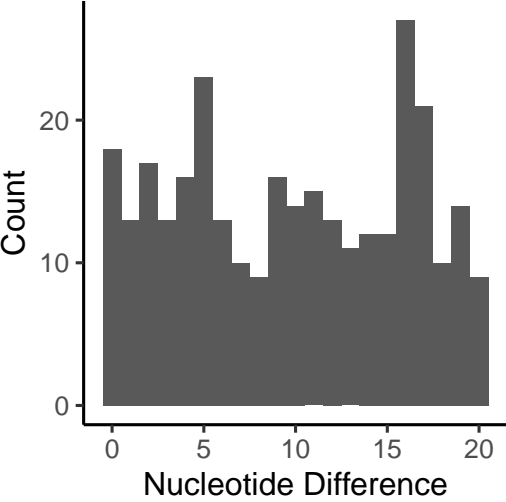
IGHV3-7\*01

946 sequences assigned  
83 (8.8%) exact matches, in which:  
74 unique CDR3  
5 unique J



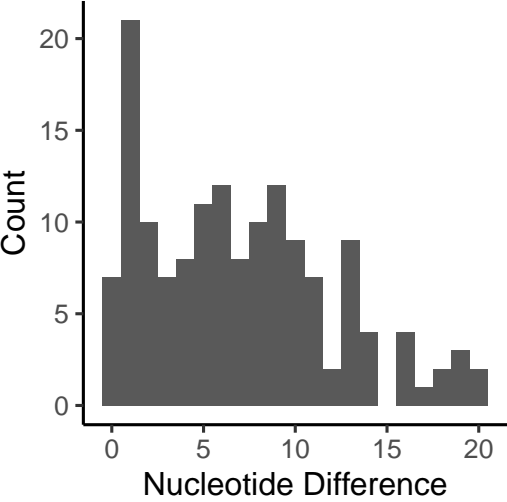
IGHV3-7\*05

443 sequences assigned  
18 (4.1%) exact matches, in which:  
17 unique CDR3  
4 unique J



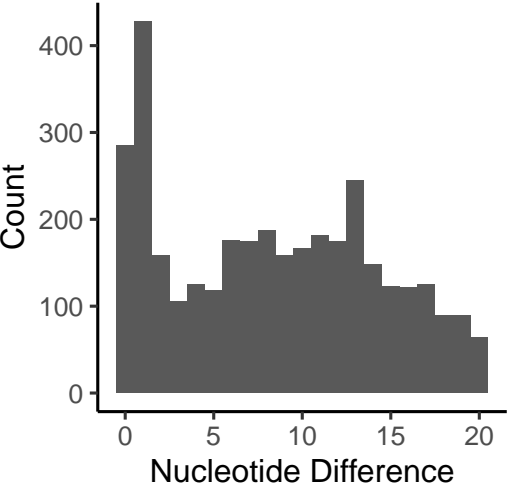
IGHV3-11\*03\_05

167 sequences assigned  
7 (4.2%) exact matches, in which:  
7 unique CDR3  
4 unique J



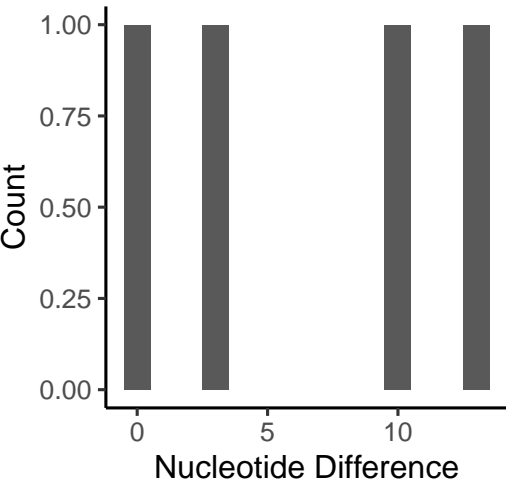
IGHV3-7\*03

4167 sequences assigned  
285 (6.8%) exact matches, in which:  
199 unique CDR3  
5 unique J



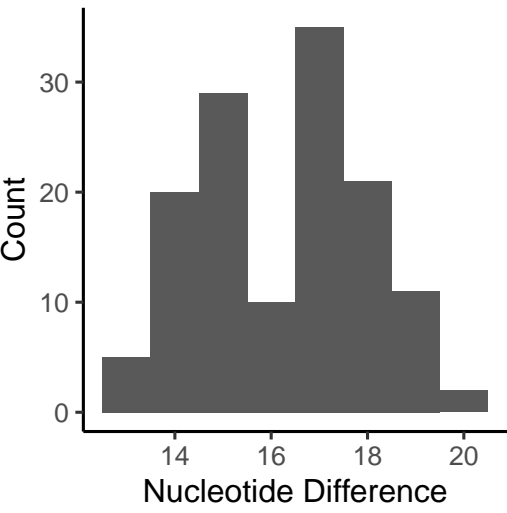
IGHV3-9\*01

6 sequences assigned  
1 (16.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



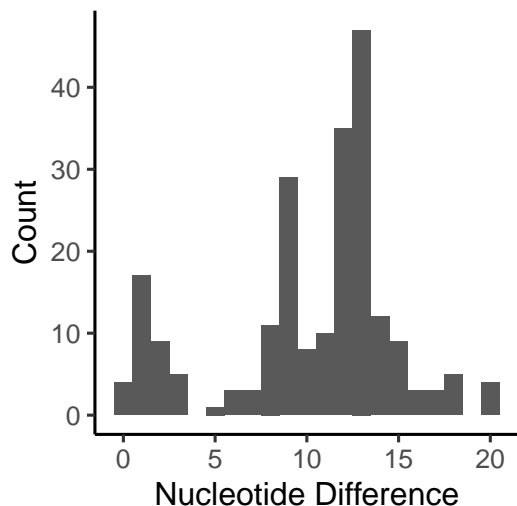
IGHV3-13\*01

156 sequences assigned  
No exact matches.



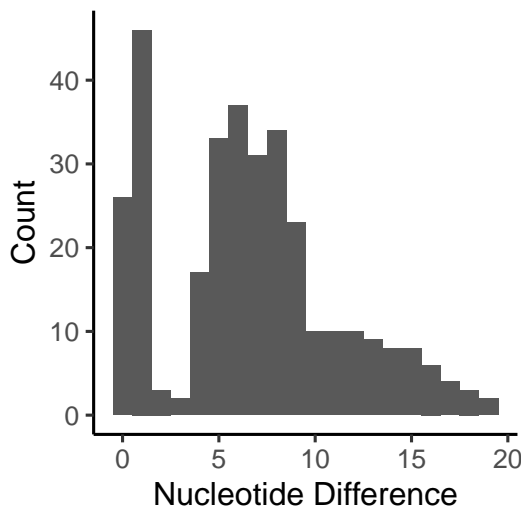
### IGHV3-13\*05

251 sequences assigned  
4 (1.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



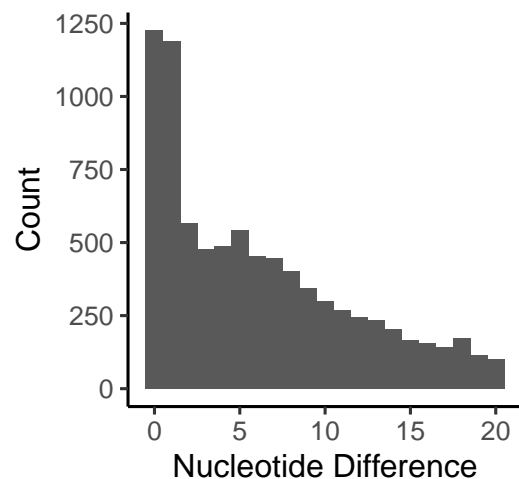
### IGHV3-20\*01\_02

328 sequences assigned  
26 (7.9%) exact matches, in which:  
17 unique CDR3  
3 unique J



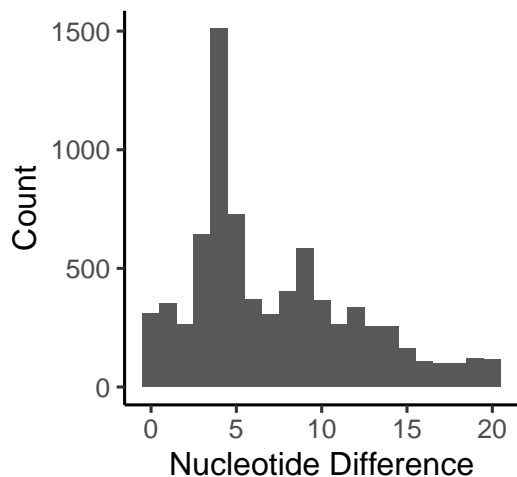
### IGHV3-21\*01\_02

9870 sequences assigned  
1226 (12.4%) exact matches, in which:  
789 unique CDR3  
6 unique J



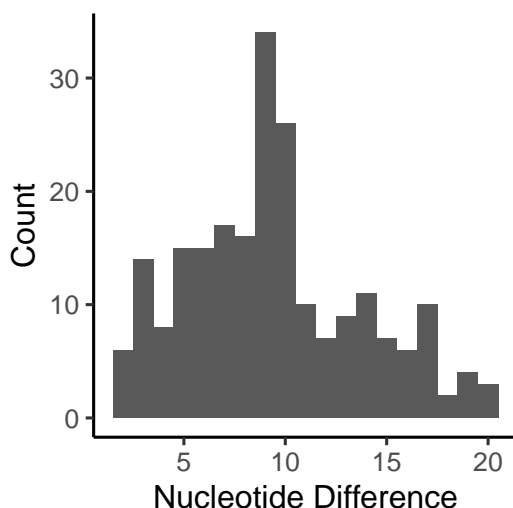
### IGHV3-15\*01\_02

9297 sequences assigned  
309 (3.3%) exact matches, in which:  
189 unique CDR3  
6 unique J



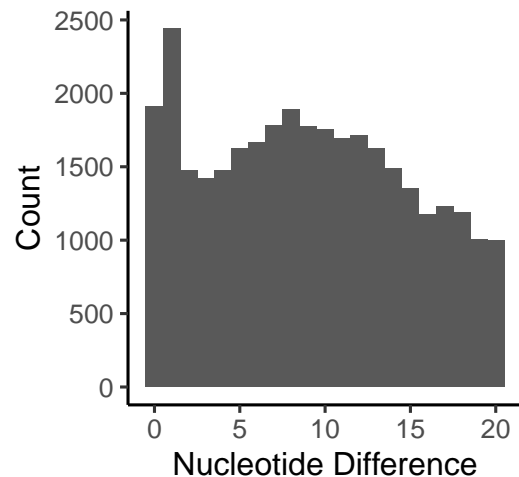
### IGHV3-20\*03\_04

818 sequences assigned  
No exact matches.



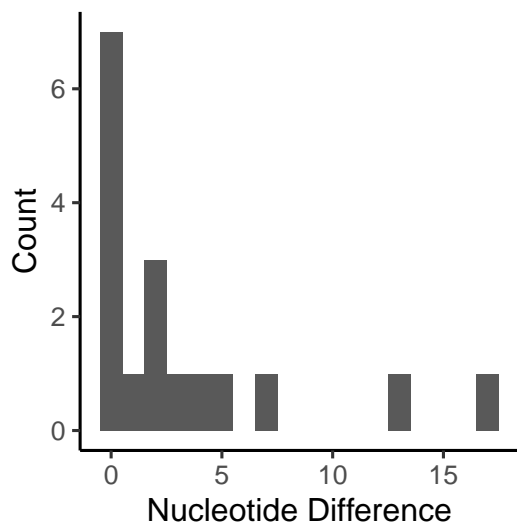
### IGHV3-23\*01\_04

42706 sequences assigned  
1911 (4.5%) exact matches, in which:  
1135 unique CDR3  
6 unique J



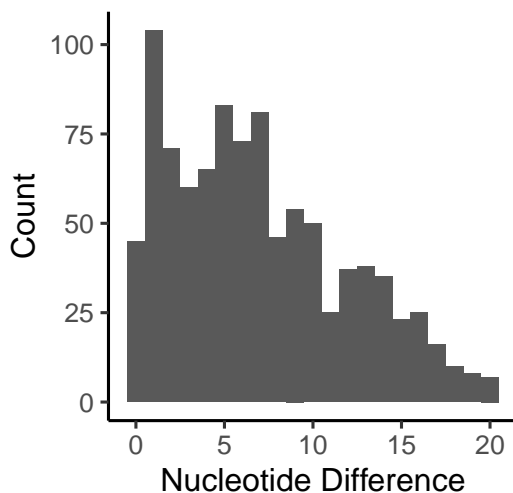
### IGHV3-19\*01

17 sequences assigned  
7 (41.2%) exact matches, in which:  
7 unique CDR3  
3 unique J



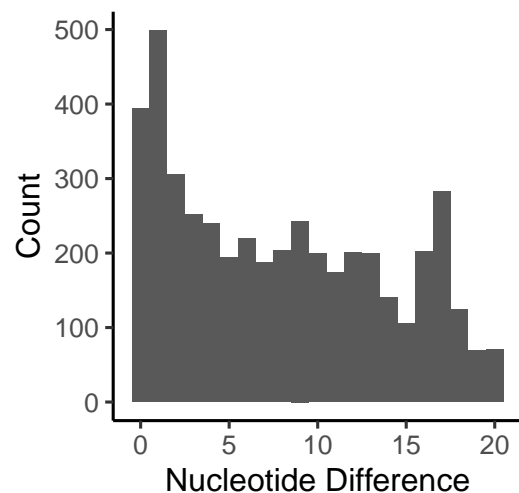
### IGHV3-21\*04

1140 sequences assigned  
45 (3.9%) exact matches, in which:  
40 unique CDR3  
4 unique J



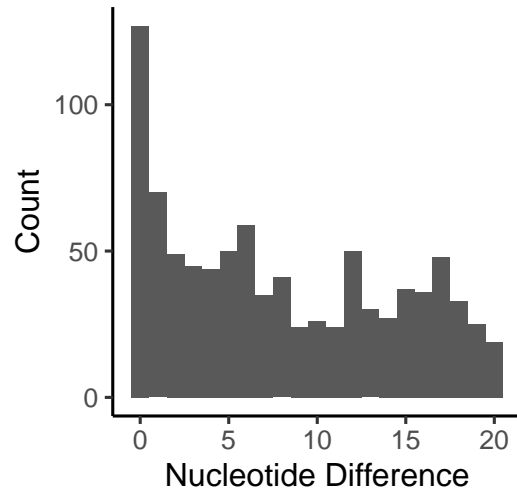
### IGHV3-30-3\*01

6101 sequences assigned  
394 (6.5%) exact matches, in which:  
269 unique CDR3  
6 unique J



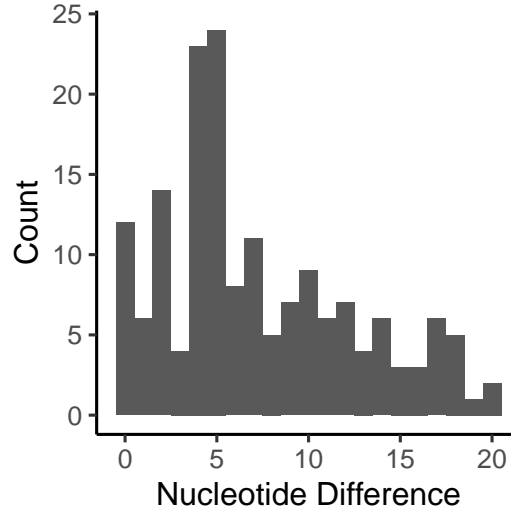
### IGHV3-30\*03

1214 sequences assigned  
127 (10.5%) exact matches, in which:  
117 unique CDR3  
5 unique J



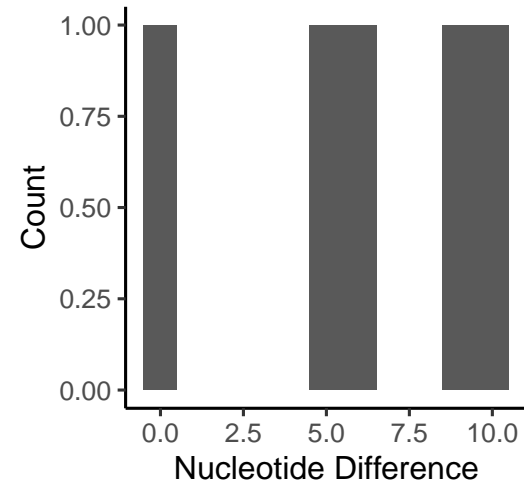
### IGHV3-33\*05

192 sequences assigned  
12 (6.2%) exact matches, in which:  
11 unique CDR3  
2 unique J



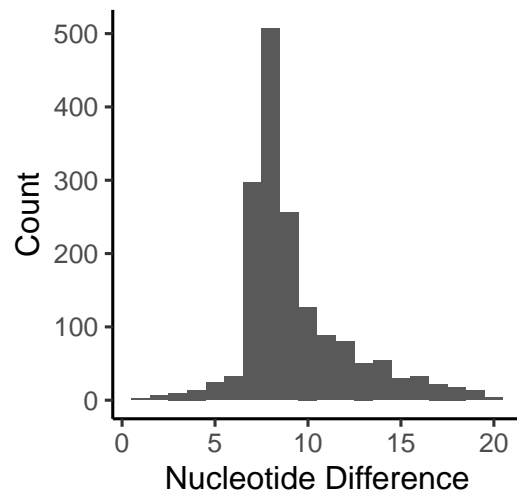
### IGHV3-38\*02

5 sequences assigned  
1 (20%) exact matches, in which:  
1 unique CDR3  
1 unique J



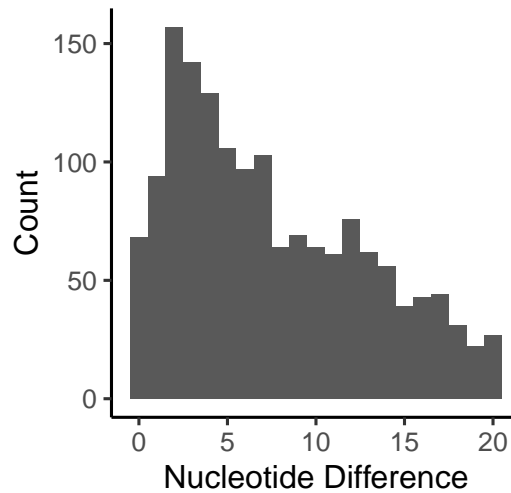
### IGHV3-30\*18\_G261C\_G

1691 sequences assigned  
No exact matches.



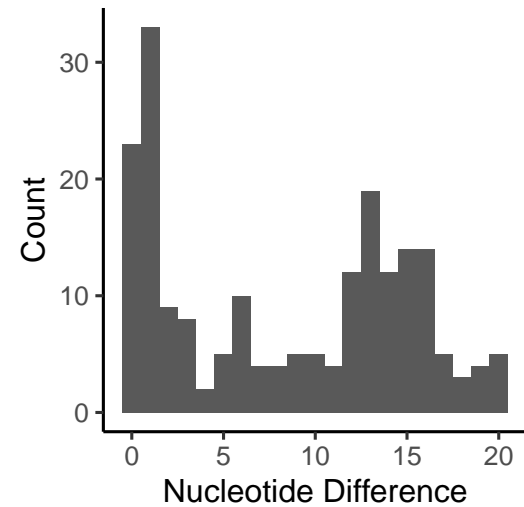
### IGHV3-33\*06

1652 sequences assigned  
68 (4.1%) exact matches, in which:  
64 unique CDR3  
6 unique J



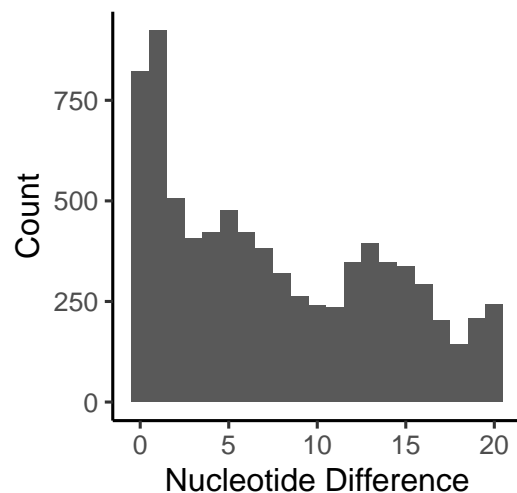
### IGHV3-43\*01

344 sequences assigned  
23 (6.7%) exact matches, in which:  
13 unique CDR3  
3 unique J



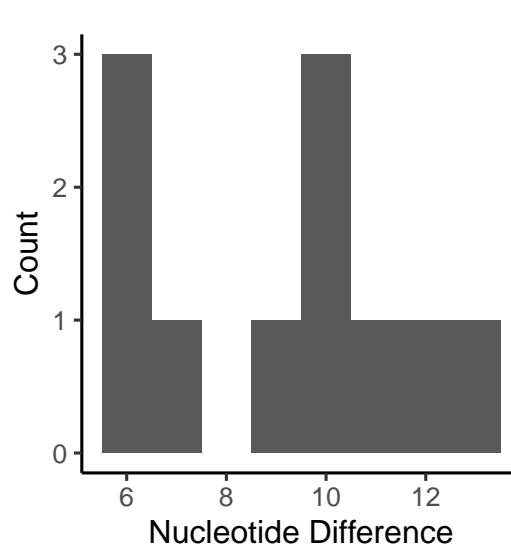
### IGHV3-33\*01

8869 sequences assigned  
821 (9.3%) exact matches, in which:  
541 unique CDR3  
6 unique J



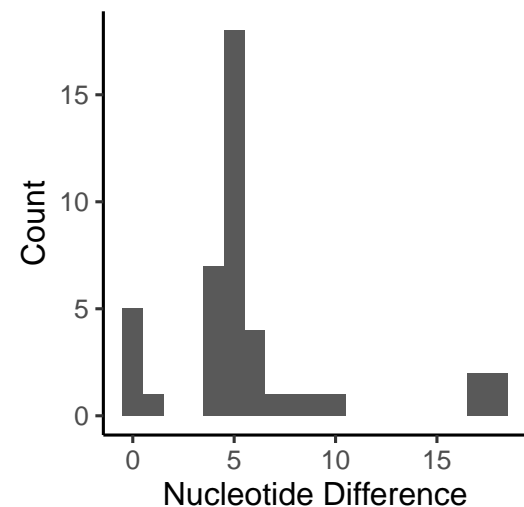
### IGHV3-35\*01

11 sequences assigned  
No exact matches.



### IGHV3-47\*02

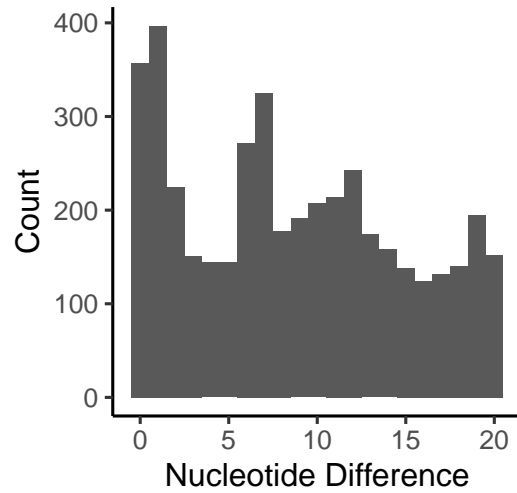
43 sequences assigned  
5 (11.6%) exact matches, in which:  
3 unique CDR3  
1 unique J





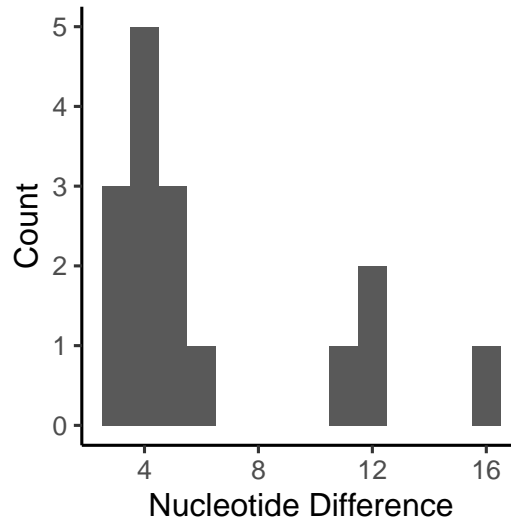
### IGHV3-48\*01

5651 sequences assigned  
357 (6.3%) exact matches, in which:  
256 unique CDR3  
6 unique J



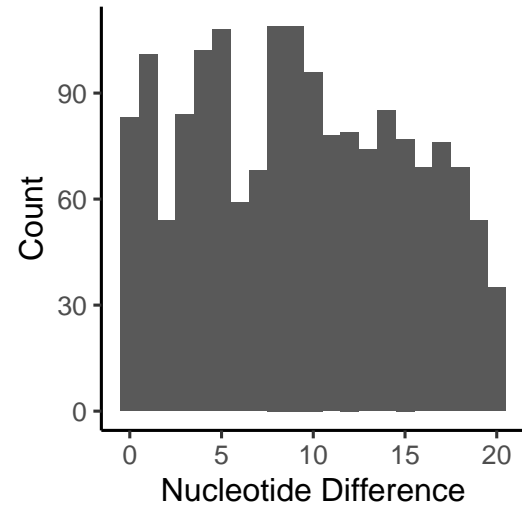
### IGHV3-52\*01\_03

16 sequences assigned  
No exact matches.



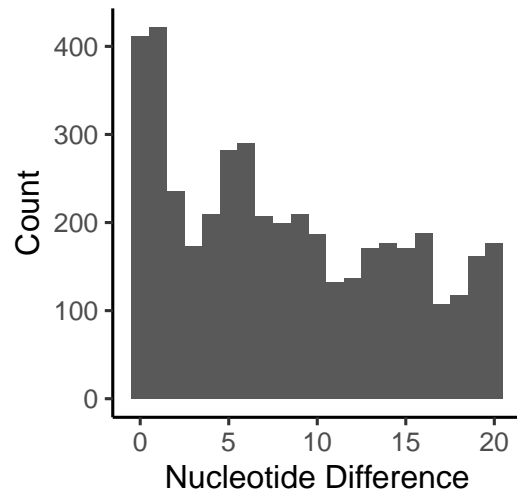
### IGHV3-53\*01\_02

1883 sequences assigned  
83 (4.4%) exact matches, in which:  
60 unique CDR3  
5 unique J



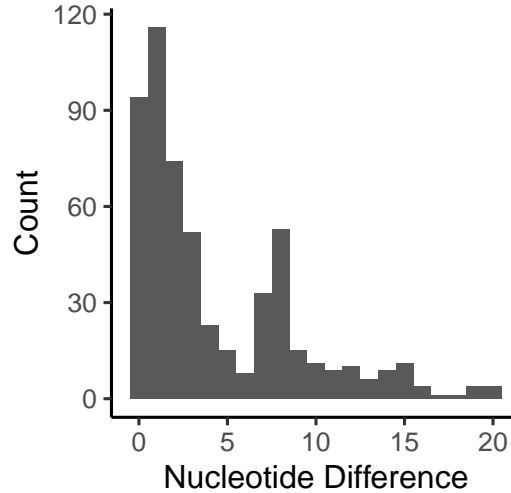
### IGHV3-48\*04

7070 sequences assigned  
412 (5.8%) exact matches, in which:  
302 unique CDR3  
6 unique J



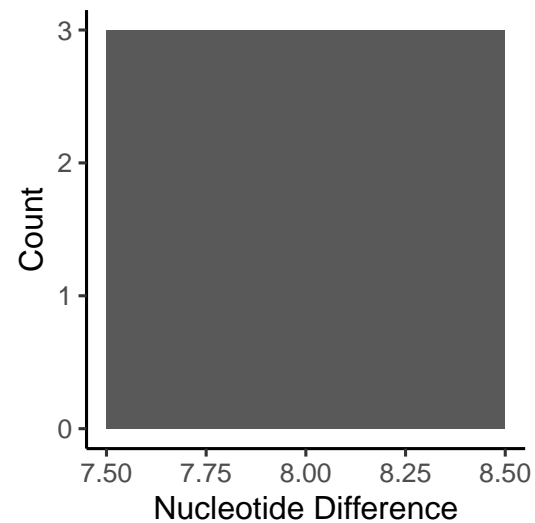
### IGHV3-53\*04

1100 sequences assigned  
94 (8.5%) exact matches, in which:  
60 unique CDR3  
5 unique J



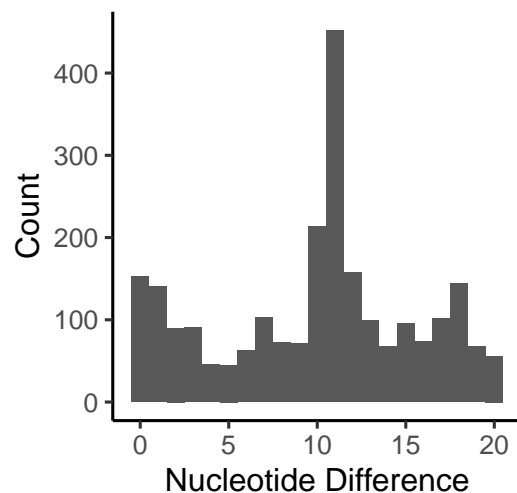
### IGHV3-62\*03

3 sequences assigned  
No exact matches.



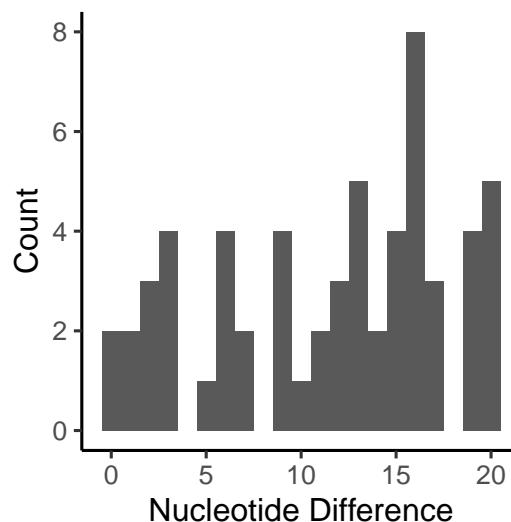
### IGHV3-49\*03\_05

2962 sequences assigned  
153 (5.2%) exact matches, in which:  
84 unique CDR3  
5 unique J



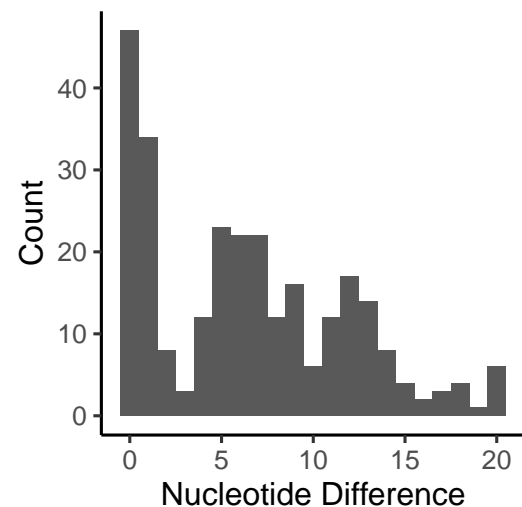
### IGHV3-53\*05

65 sequences assigned  
2 (3.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



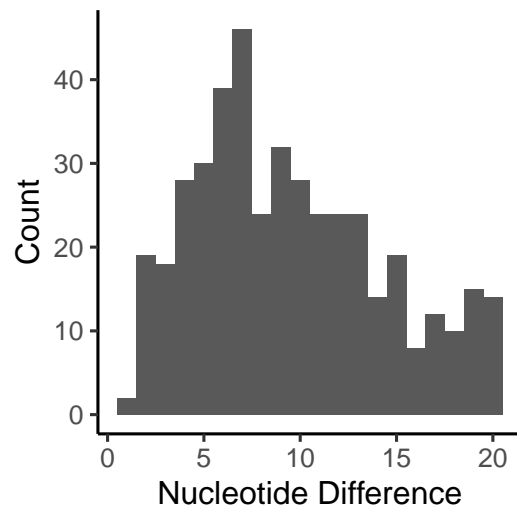
### IGHV3-64\*01

299 sequences assigned  
47 (15.7%) exact matches, in which:  
30 unique CDR3  
6 unique J



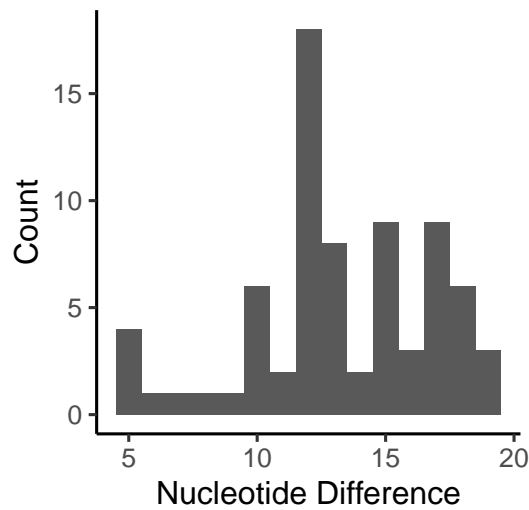
### IGHV3-64\*04

492 sequences assigned  
No exact matches.



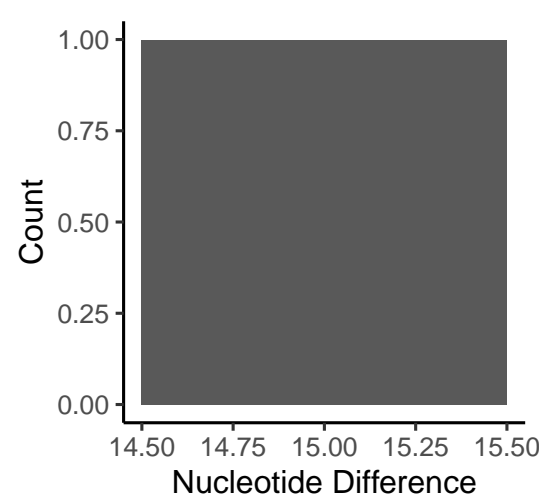
### IGHV3-66\*03

100 sequences assigned  
No exact matches.



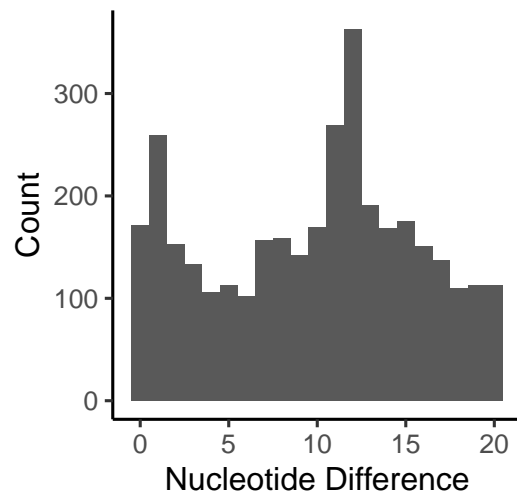
### IGHV3-71\*01\_04

1 sequences assigned  
No exact matches.



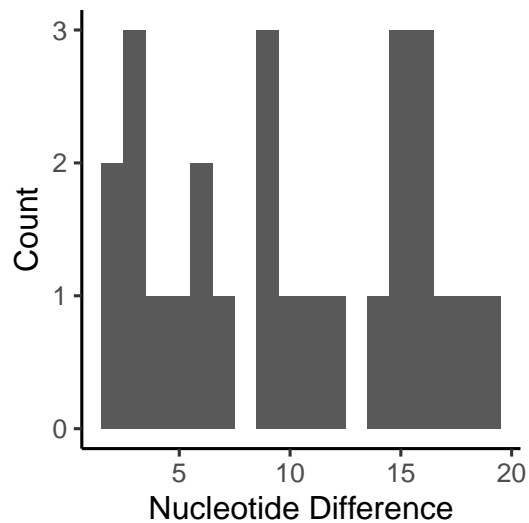
### IGHV3-66\*01

5291 sequences assigned  
171 (3.2%) exact matches, in which:  
118 unique CDR3  
6 unique J



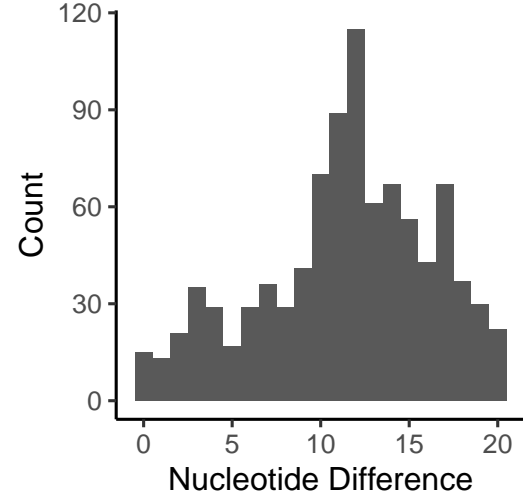
### IGHV3-69-1\*01

54 sequences assigned  
No exact matches.



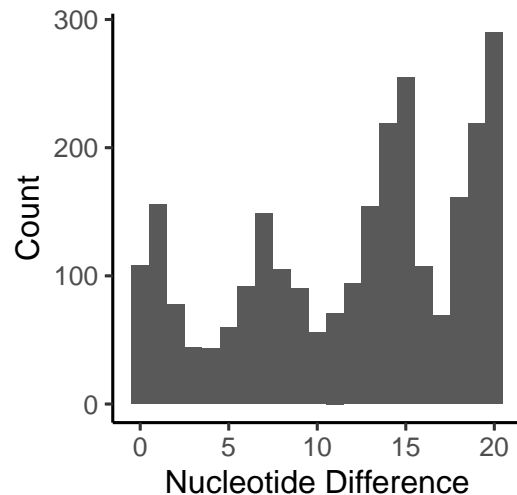
### IGHV3-72\*01

1660 sequences assigned  
15 (0.9%) exact matches, in which:  
11 unique CDR3  
3 unique J



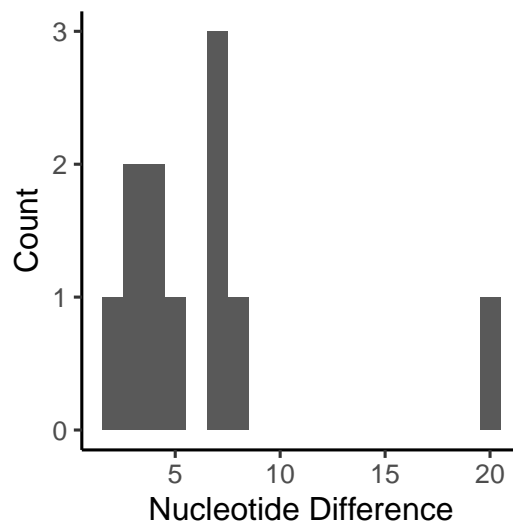
### IGHV3-66\*02

4067 sequences assigned  
108 (2.7%) exact matches, in which:  
74 unique CDR3  
5 unique J



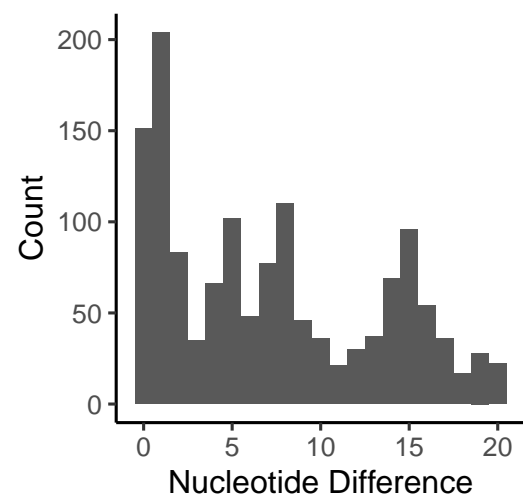
### IGHV3-69-1\*02

19 sequences assigned  
No exact matches.



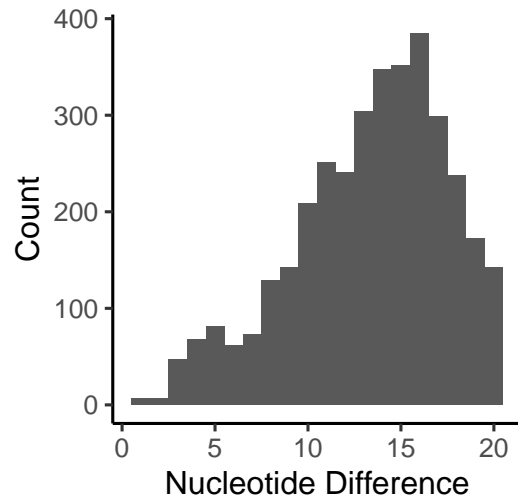
### IGHV3-73\*01\_02

1518 sequences assigned  
151 (9.9%) exact matches, in which:  
92 unique CDR3  
5 unique J



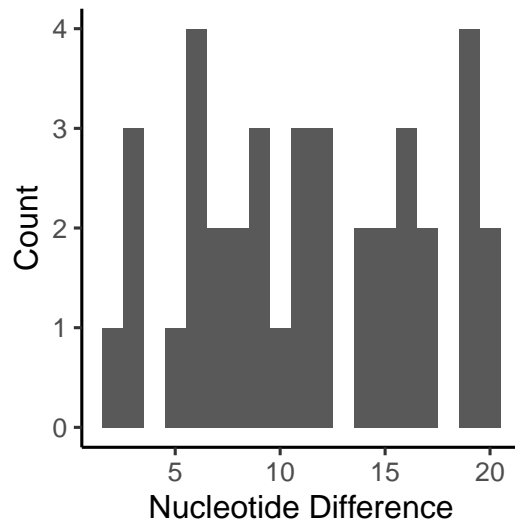
### IGHV3-74\*03

4992 sequences assigned  
No exact matches.



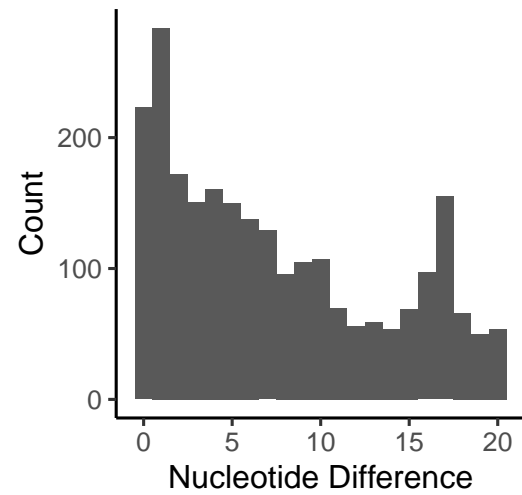
### IGHV3-NL1\*01

81 sequences assigned  
No exact matches.



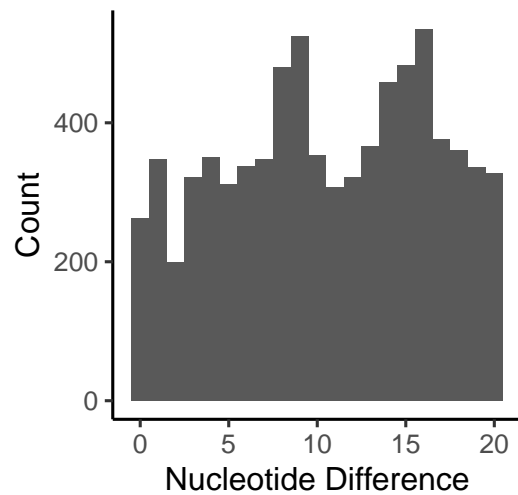
### IGHV4-4\*02\_03

2894 sequences assigned  
223 (7.7%) exact matches, in which:  
163 unique CDR3  
5 unique J



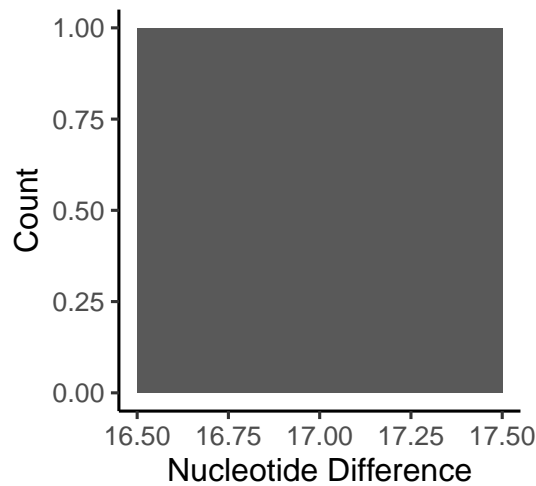
### IGHV3-74\*01\_02

8650 sequences assigned  
262 (3%) exact matches, in which:  
178 unique CDR3  
6 unique J



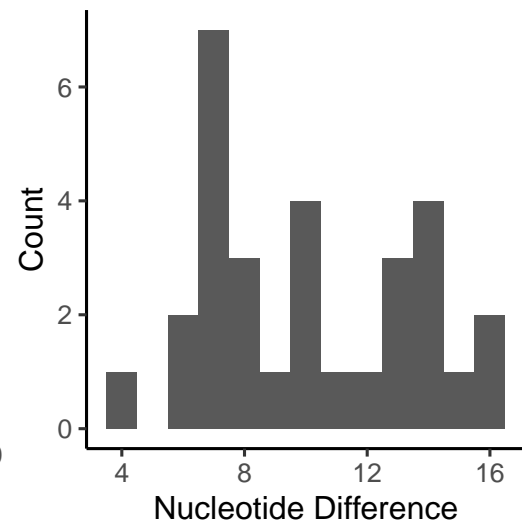
### IGHV3-NL1\*01\_G261C\_

14 sequences assigned  
No exact matches.



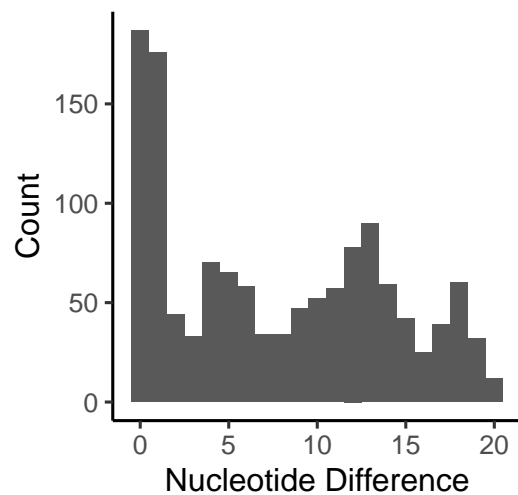
### IGHV4-28\*03

33 sequences assigned  
No exact matches.



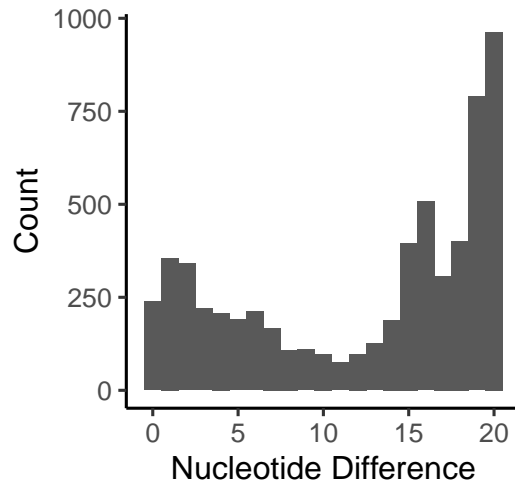
### IGHV3-64D\*06

1747 sequences assigned  
187 (10.7%) exact matches, in which:  
115 unique CDR3  
6 unique J



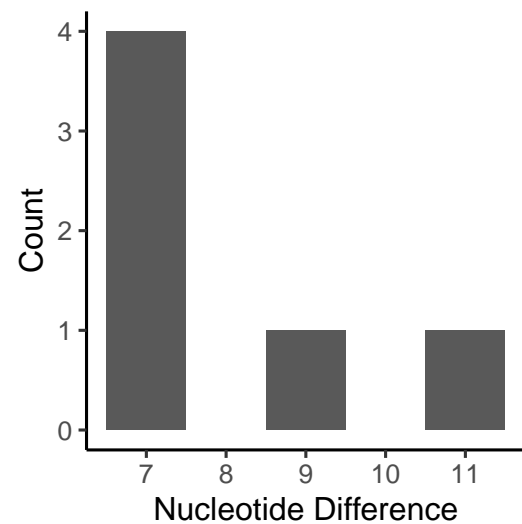
### IGHV4-4\*07

8792 sequences assigned  
239 (2.7%) exact matches, in which:  
190 unique CDR3  
6 unique J



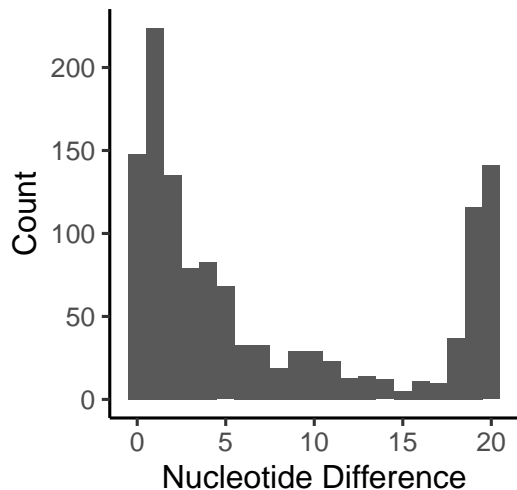
### IGHV4-28\*01\_07

23 sequences assigned  
No exact matches.



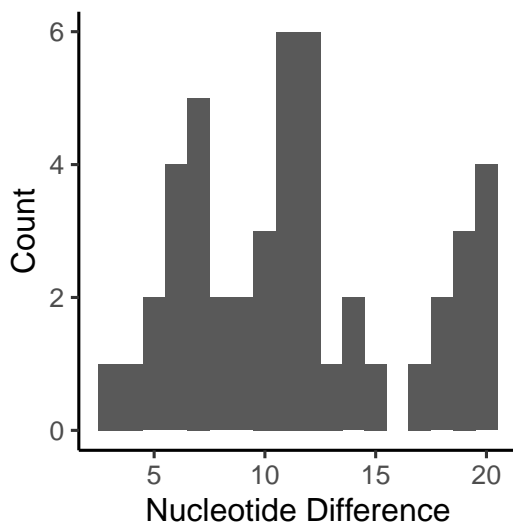
### IGHV4-30-2\*01

1428 sequences assigned  
148 (10.4%) exact matches, in which:  
105 unique CDR3  
6 unique J



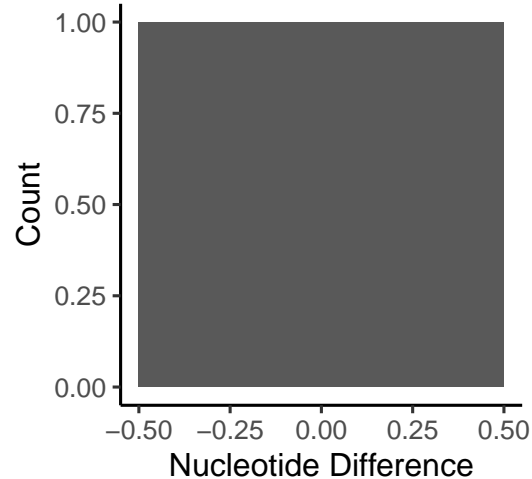
### IGHV4-30-4\*08

65 sequences assigned  
No exact matches.



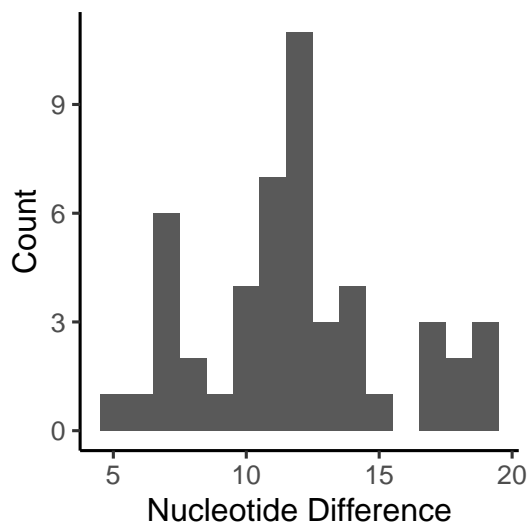
### IGHV4-38-2\*01

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



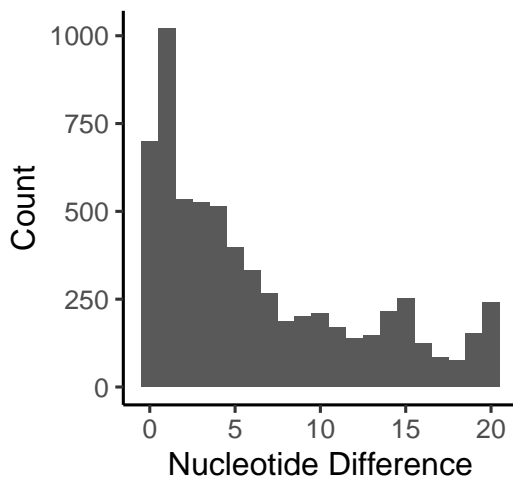
### IGHV4-30-4\*01

80 sequences assigned  
No exact matches.



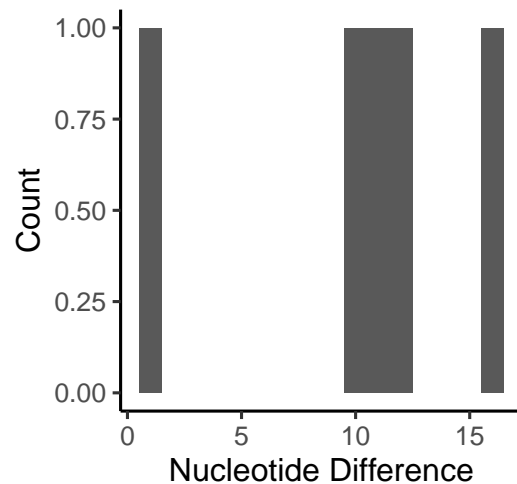
### IGHV4-31\*02

7928 sequences assigned  
700 (8.8%) exact matches, in which:  
555 unique CDR3  
6 unique J



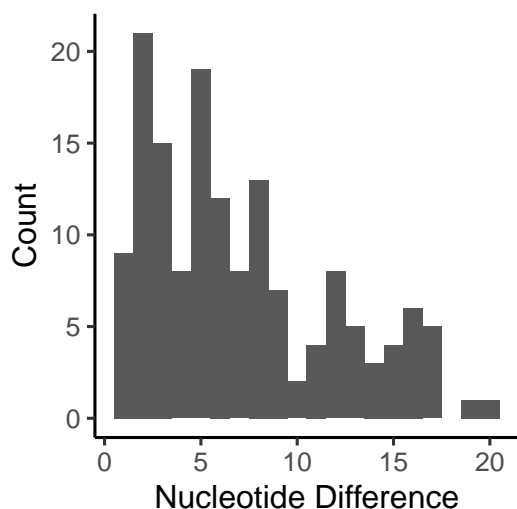
### IGHV4-38-2\*02

8 sequences assigned  
No exact matches.



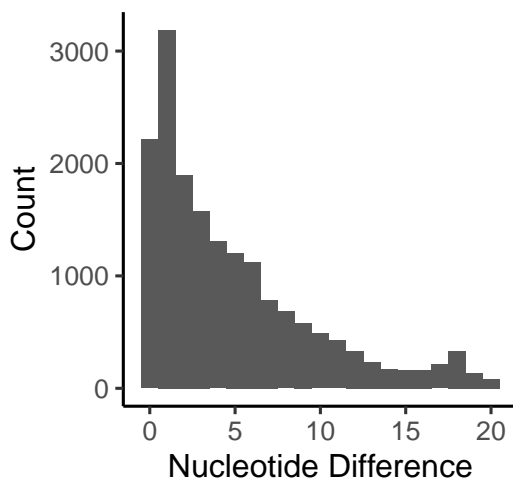
### IGHV4-30-2\*03

185 sequences assigned  
No exact matches.



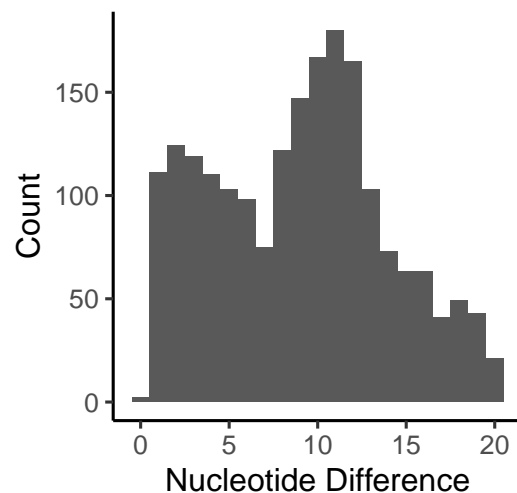
### IGHV4-34\*01\_02

18390 sequences assigned  
2215 (12%) exact matches, in which:  
1476 unique CDR3  
6 unique J



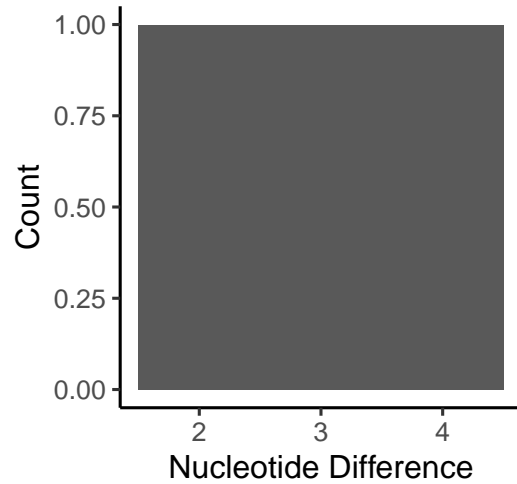
### IGHV4-39\*07

2230 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



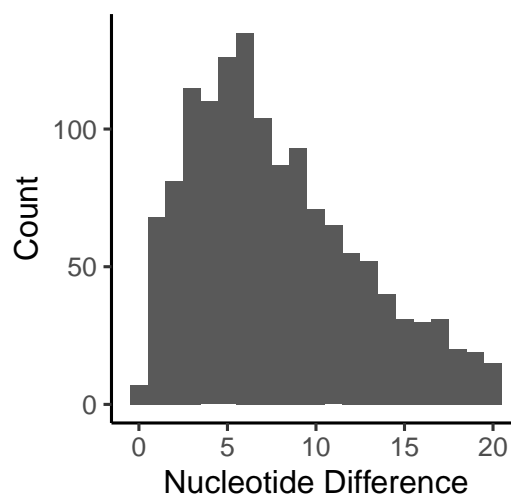
### IGHV4-55\*09

5 sequences assigned  
No exact matches.



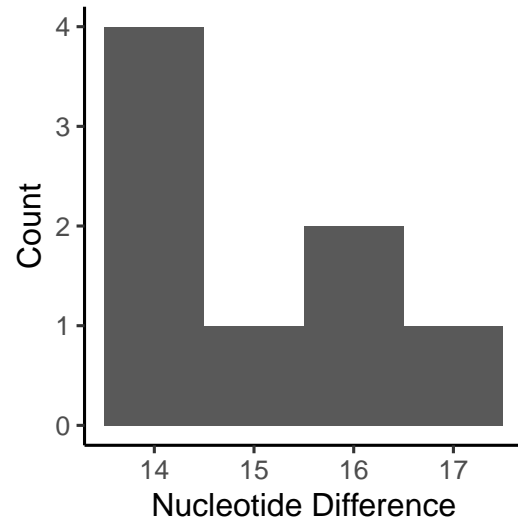
### IGHV4-61\*01

1542 sequences assigned  
7 (0.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



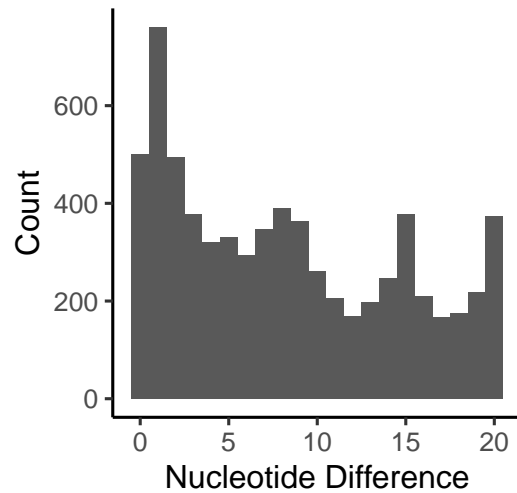
### IGHV4/OR15-8\*02

34 sequences assigned  
No exact matches.



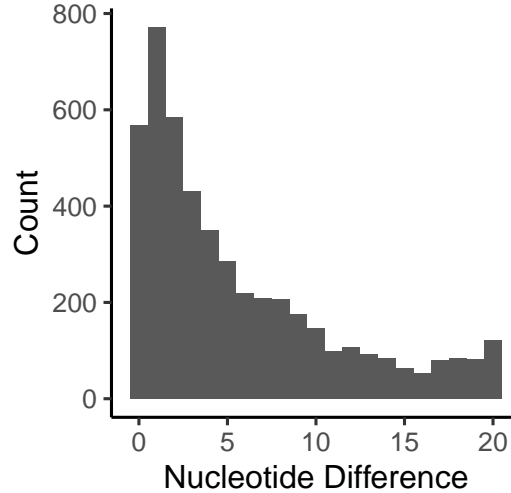
### IGHV4-59\*08

7426 sequences assigned  
501 (6.7%) exact matches, in which:  
375 unique CDR3  
6 unique J



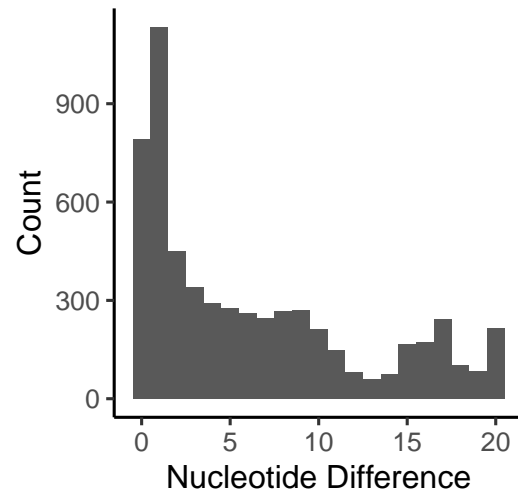
### IGHV4-61\*02

6882 sequences assigned  
568 (8.3%) exact matches, in which:  
452 unique CDR3  
6 unique J



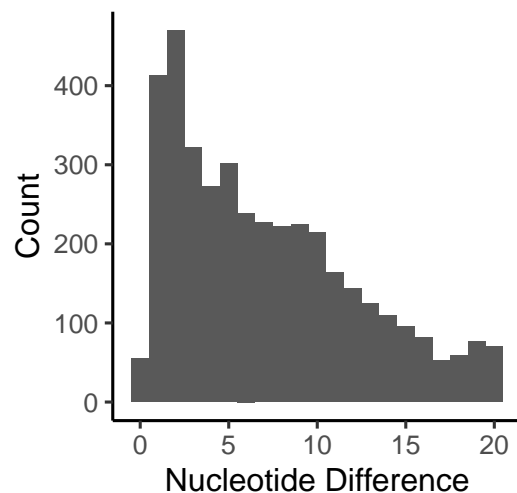
### IGHV5-10-1\*01\_03

7694 sequences assigned  
792 (10.3%) exact matches, in which:  
470 unique CDR3  
6 unique J



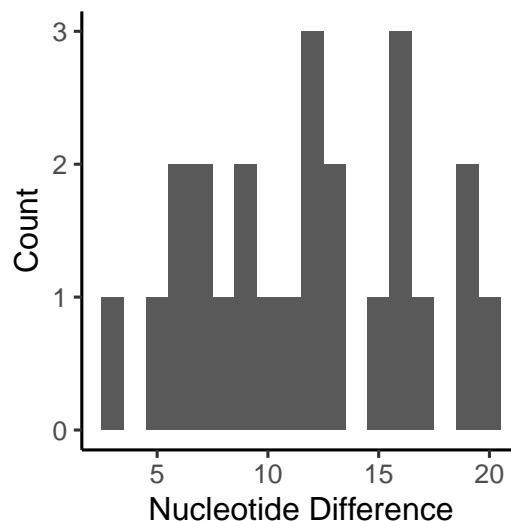
### IGHV4-59\*12

5298 sequences assigned  
55 (1%) exact matches, in which:  
54 unique CDR3  
4 unique J



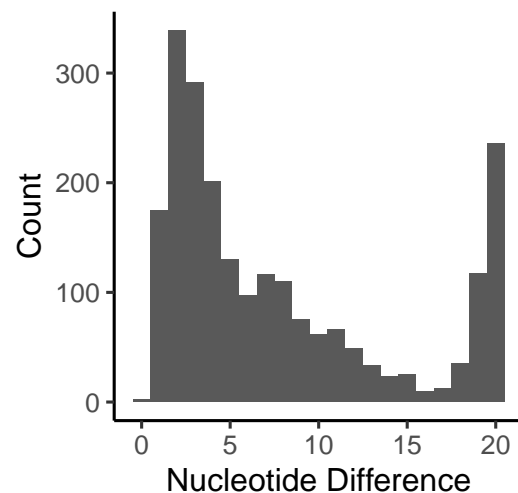
### IGHV4/OR15-8\*01

29 sequences assigned  
No exact matches.



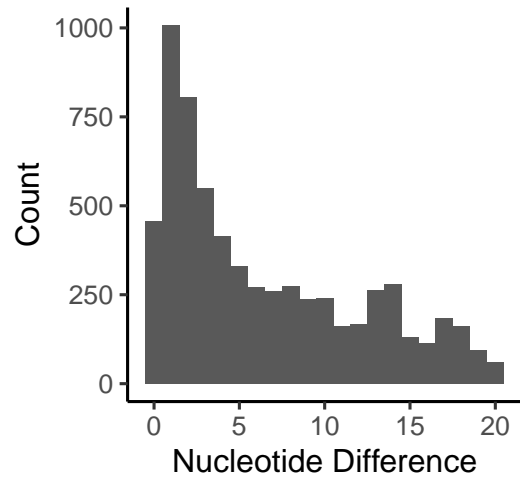
### IGHV5-51\*07

2601 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



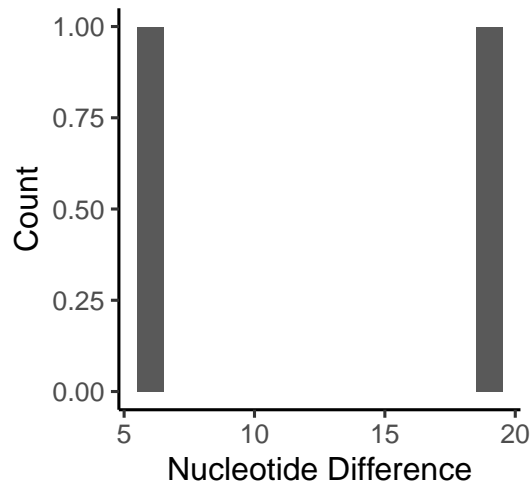
### IGHV5–51\*01\_03

7716 sequences assigned  
457 (5.9%) exact matches, in which:  
258 unique CDR3  
6 unique J



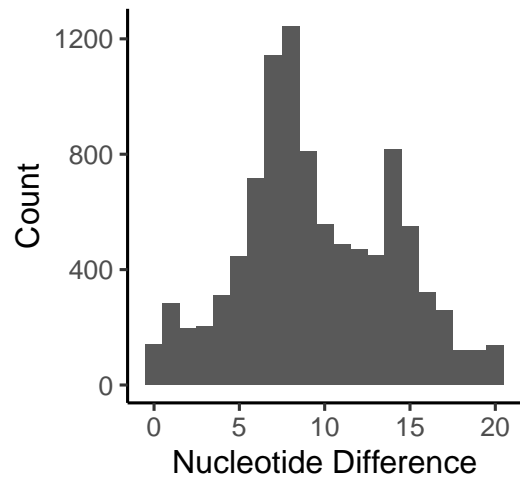
### IGHV3/OR16–10\*01\_03

2 sequences assigned  
No exact matches.



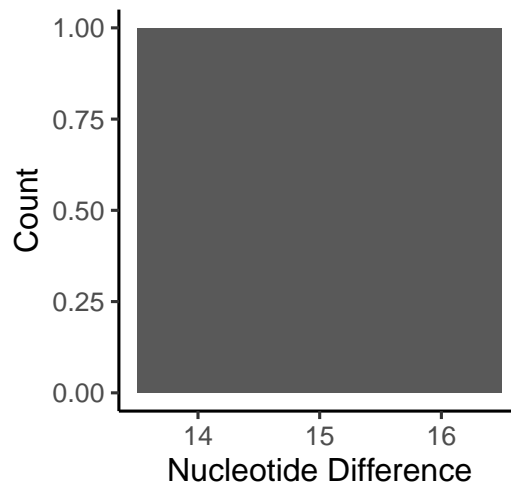
### IGHV6–1\*01\_02

10020 sequences assigned  
141 (1.4%) exact matches, in which:  
112 unique CDR3  
5 unique J



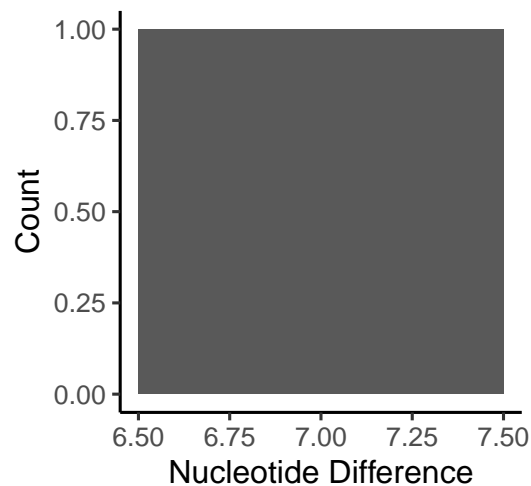
### IGHV3/OR16–13\*01

3 sequences assigned  
No exact matches.



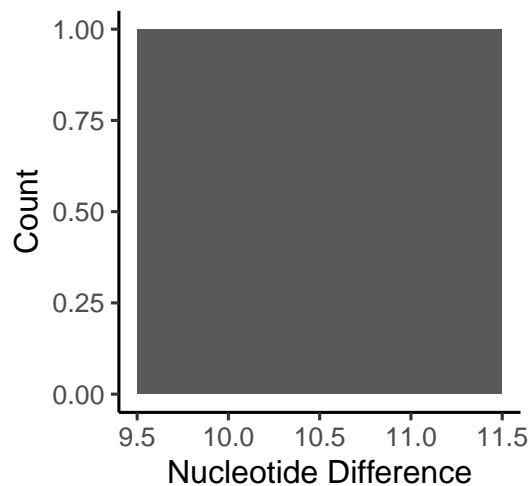
### IGHV3/OR16–9\*01

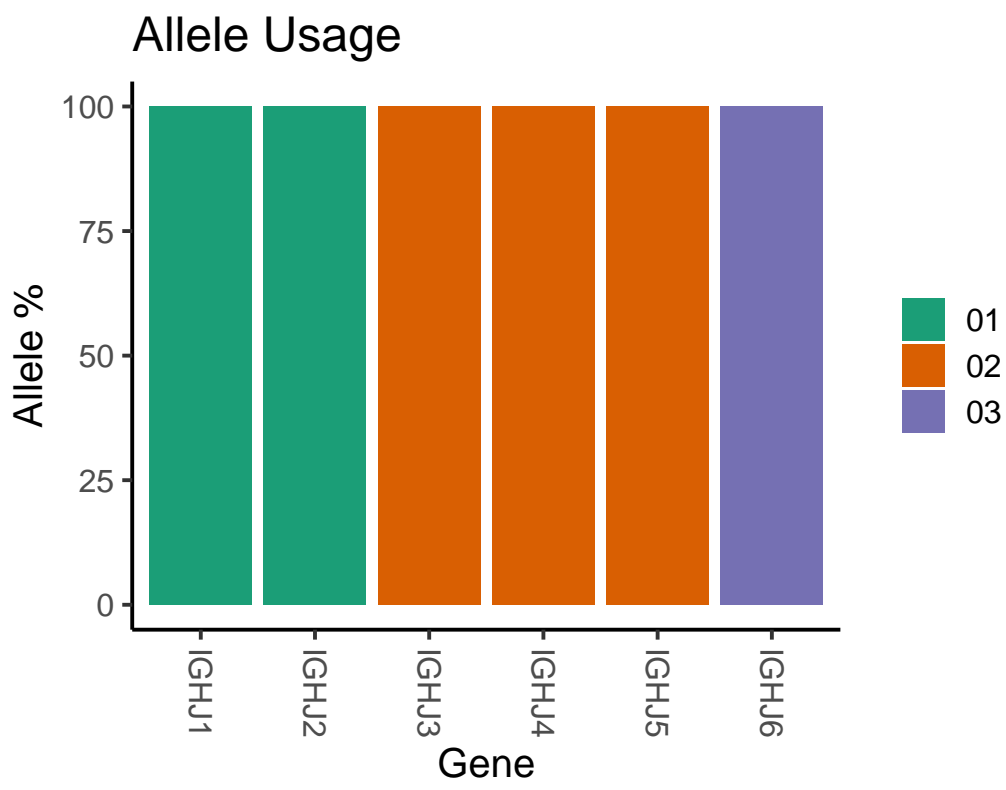
1 sequences assigned  
No exact matches.



### IGHV7–4–1\*02

2 sequences assigned  
No exact matches.





[illegible]