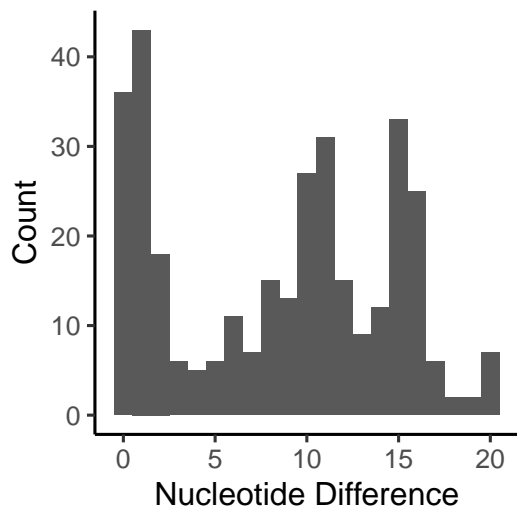


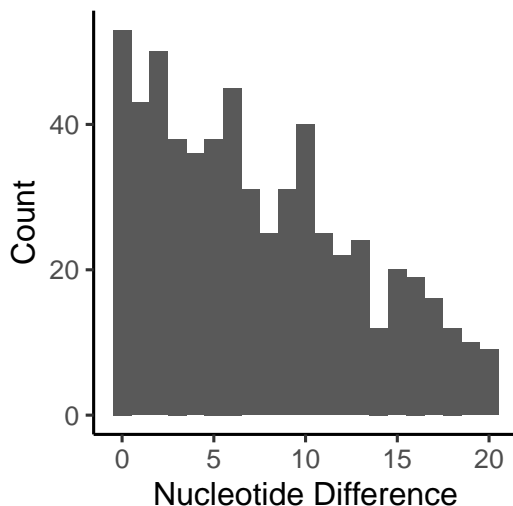
### IGHV1-2\*04

502 sequences assigned  
36 (7.2%) exact matches, in which:  
28 unique CDR3  
5 unique J



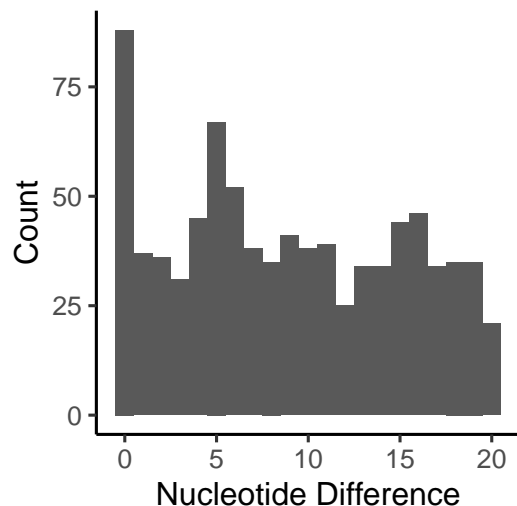
### IGHV1-8\*01

942 sequences assigned  
53 (5.6%) exact matches, in which:  
50 unique CDR3  
6 unique J



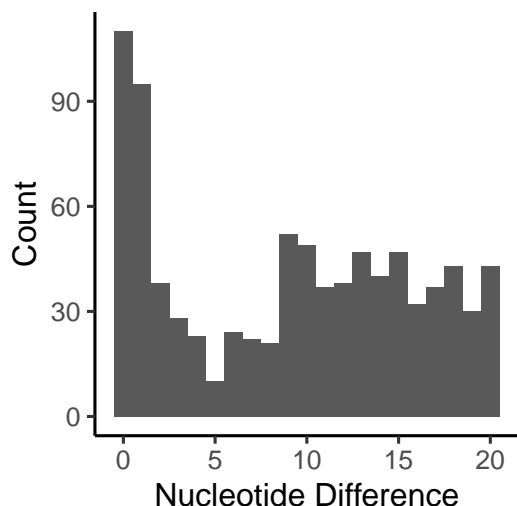
### IGHV1-46\*01

1478 sequences assigned  
88 (6%) exact matches, in which:  
83 unique CDR3  
6 unique J



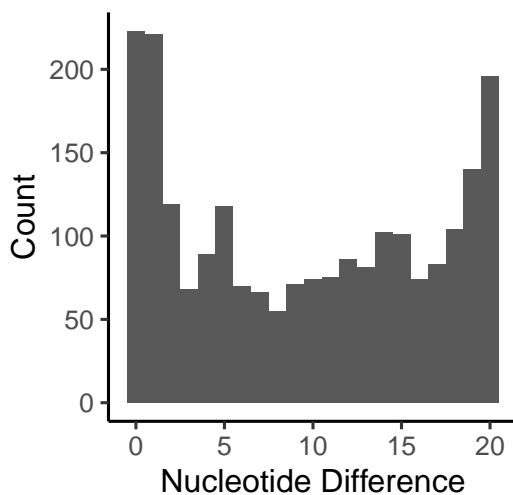
### IGHV1-3\*01

1333 sequences assigned  
110 (8.3%) exact matches, in which:  
101 unique CDR3  
6 unique J



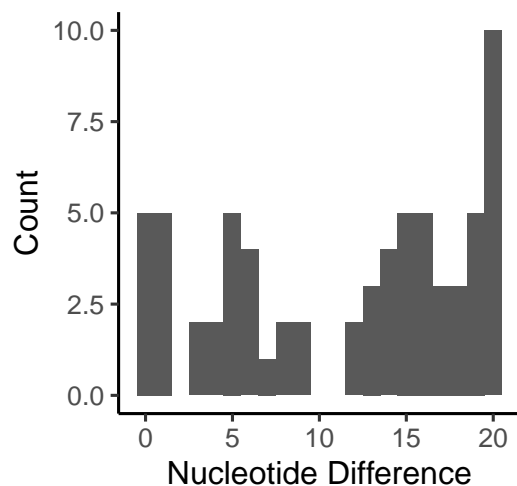
### IGHV1-18\*01

5042 sequences assigned  
223 (4.4%) exact matches, in which:  
197 unique CDR3  
7 unique J



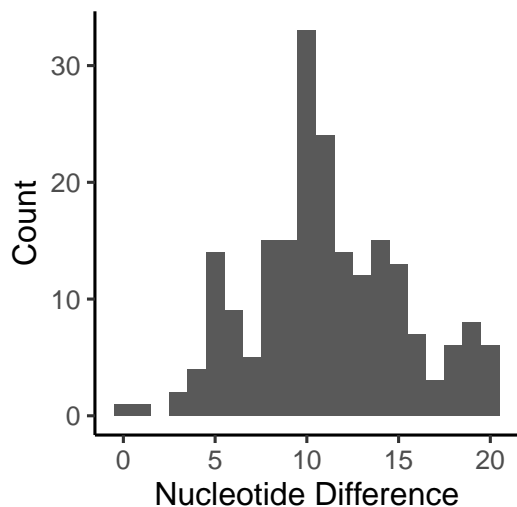
### IGHV1-58\*01

90 sequences assigned  
5 (5.6%) exact matches, in which:  
5 unique CDR3  
3 unique J



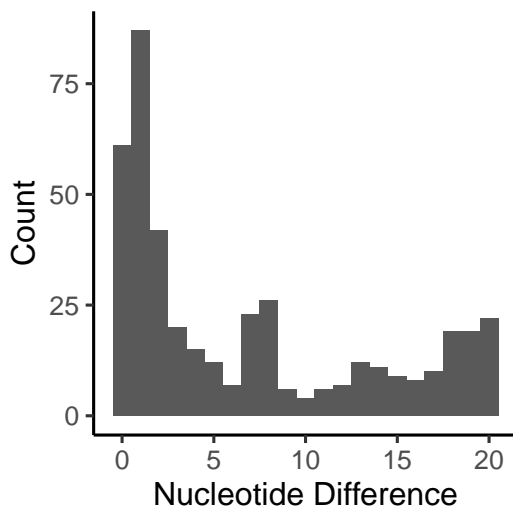
### IGHV1-3\*04

371 sequences assigned  
1 (0.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



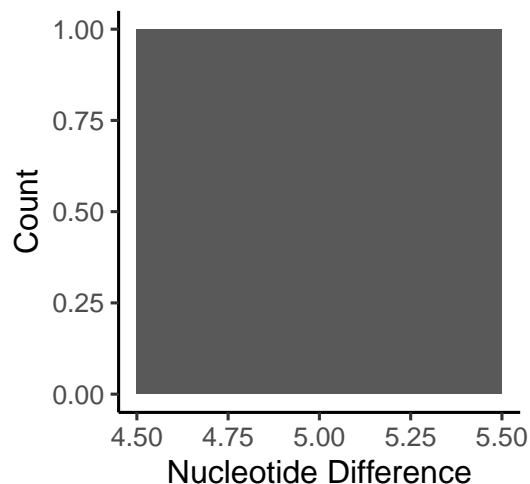
### IGHV1-24\*01

575 sequences assigned  
61 (10.6%) exact matches, in which:  
57 unique CDR3  
7 unique J



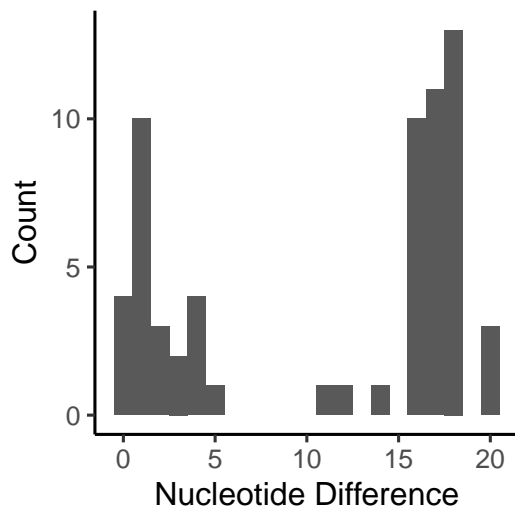
### IGHV1-68\*02

1 sequences assigned  
No exact matches.



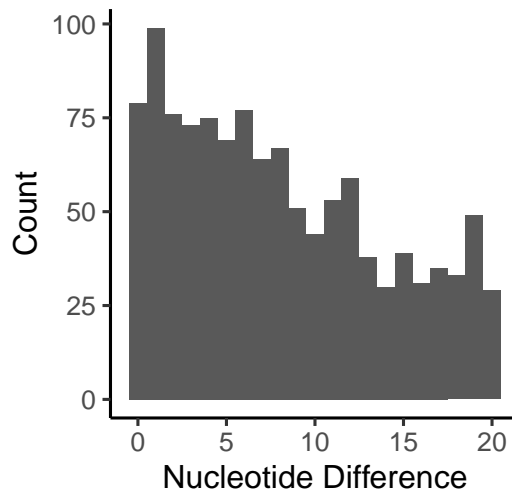
### IGHV1-69-2\*01

127 sequences assigned  
4 (3.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



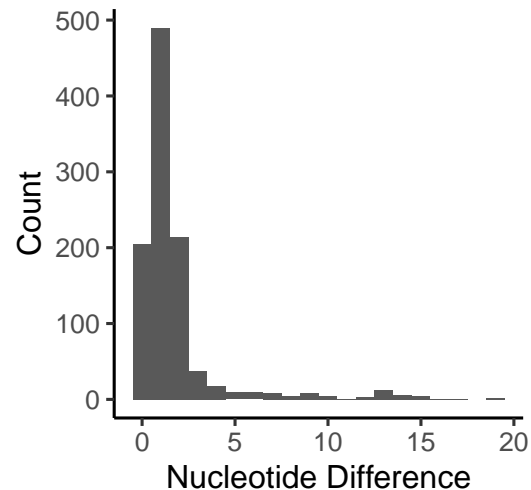
### IGHV2-5\*02

1382 sequences assigned  
79 (5.7%) exact matches, in which:  
74 unique CDR3  
5 unique J



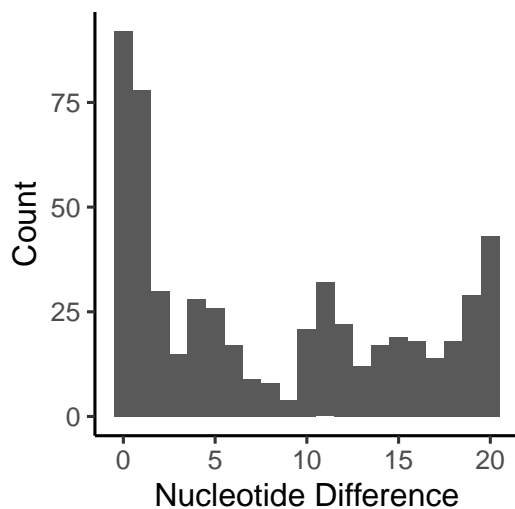
### IGHV2-70\*15

1064 sequences assigned  
205 (19.3%) exact matches, in which:  
76 unique CDR3  
4 unique J



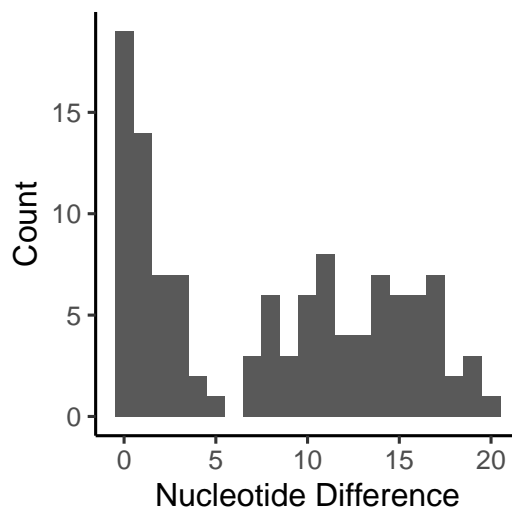
### IGHV1-69\*04

1233 sequences assigned  
92 (7.5%) exact matches, in which:  
89 unique CDR3  
6 unique J



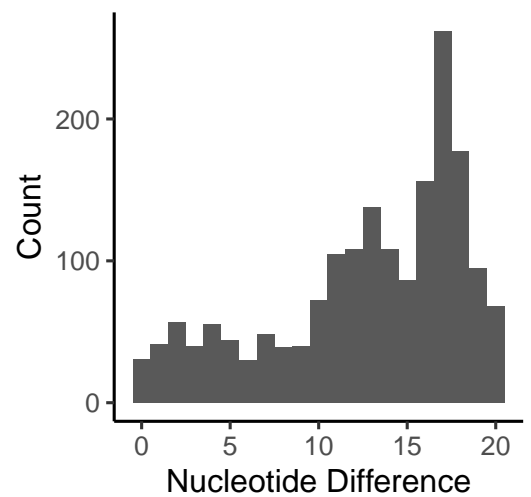
### IGHV2-26\*01

122 sequences assigned  
19 (15.6%) exact matches, in which:  
18 unique CDR3  
6 unique J



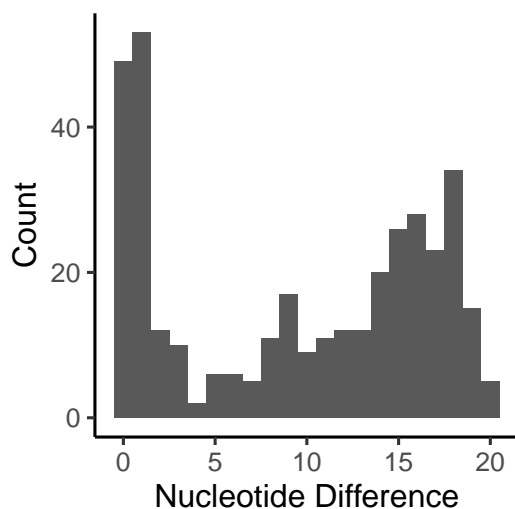
### IGHV3-7\*01

2152 sequences assigned  
31 (1.4%) exact matches, in which:  
31 unique CDR3  
5 unique J



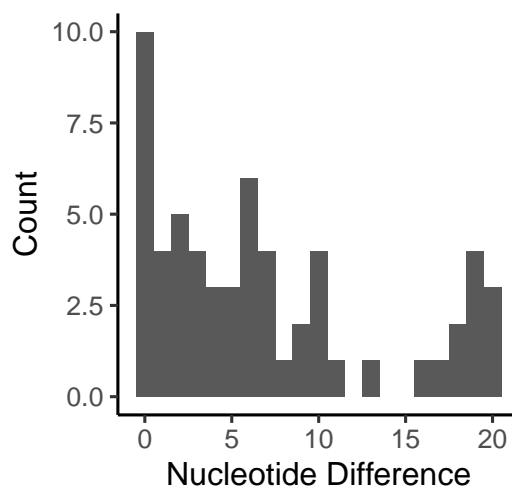
### IGHV1-69\*06

697 sequences assigned  
49 (7%) exact matches, in which:  
40 unique CDR3  
4 unique J



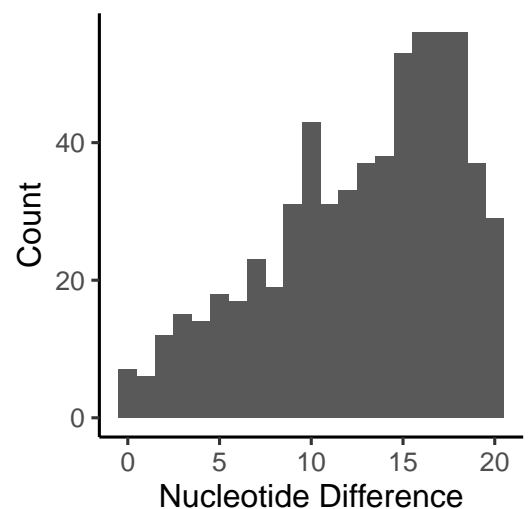
### IGHV2-70\*01

75 sequences assigned  
10 (13.3%) exact matches, in which:  
10 unique CDR3  
4 unique J



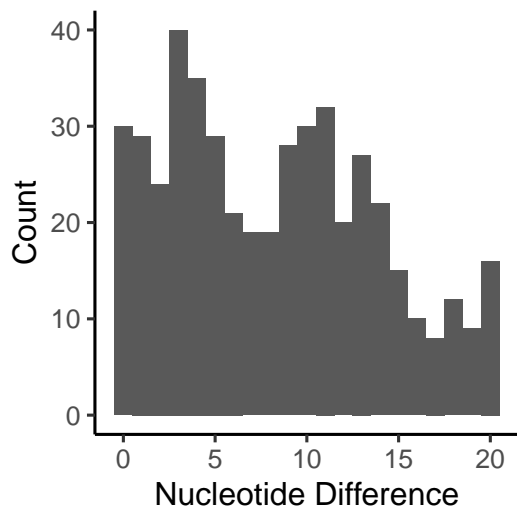
### IGHV3-7\*04

1093 sequences assigned  
7 (0.6%) exact matches, in which:  
7 unique CDR3  
3 unique J



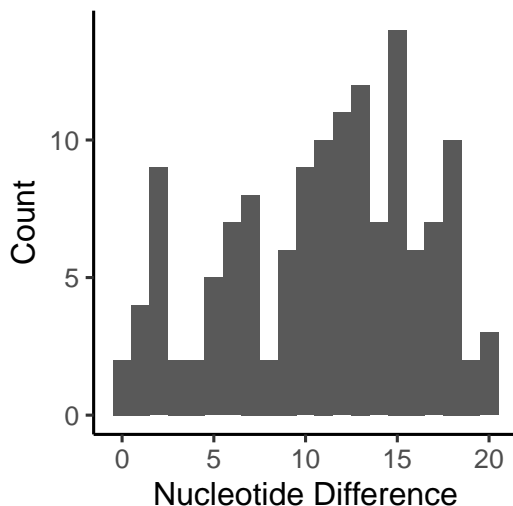
### IGHV3-9\*01

639 sequences assigned  
30 (4.7%) exact matches, in which:  
28 unique CDR3  
5 unique J



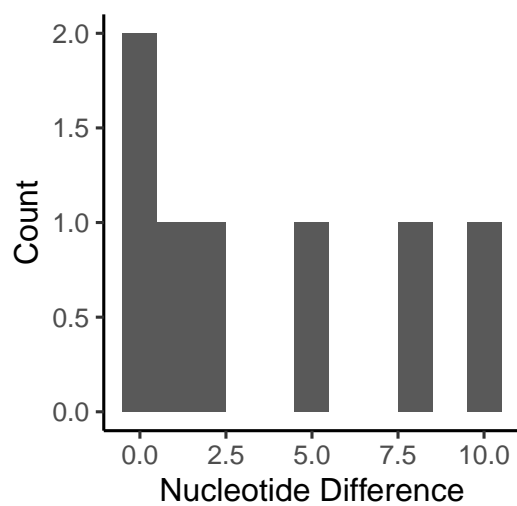
### IGHV3-13\*01

226 sequences assigned  
2 (0.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



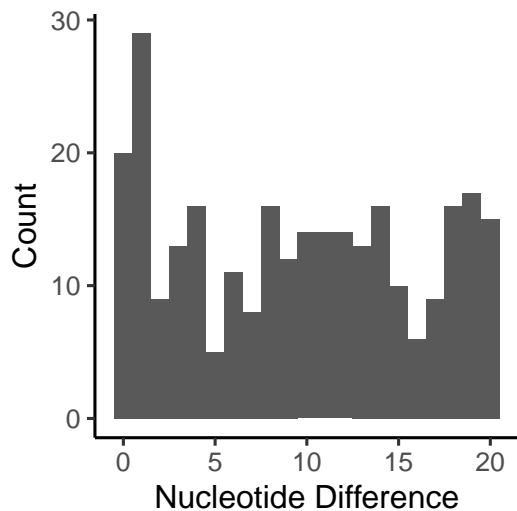
### IGHV3-20\*01

7 sequences assigned  
2 (28.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



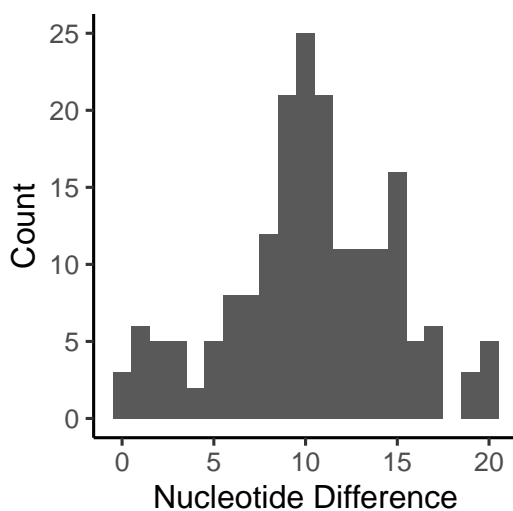
### IGHV3-11\*01

426 sequences assigned  
20 (4.7%) exact matches, in which:  
19 unique CDR3  
4 unique J



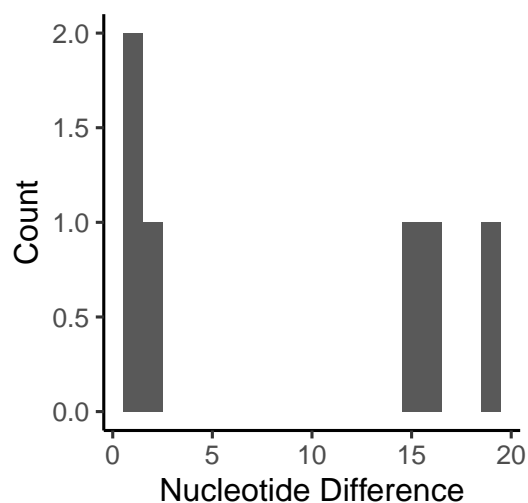
### IGHV3-15\*01

274 sequences assigned  
3 (1.1%) exact matches, in which:  
3 unique CDR3  
3 unique J



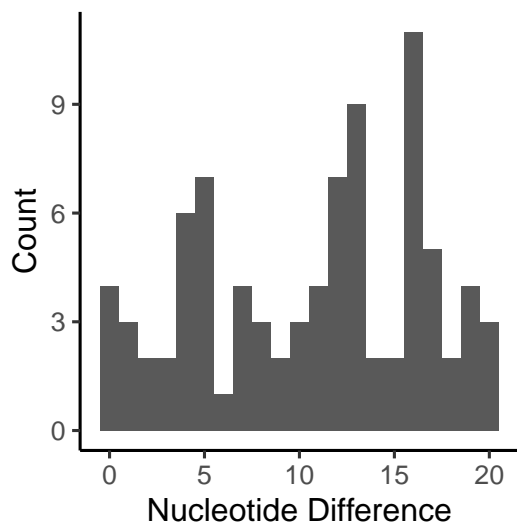
### IGHV3-20\*04

12 sequences assigned  
No exact matches.



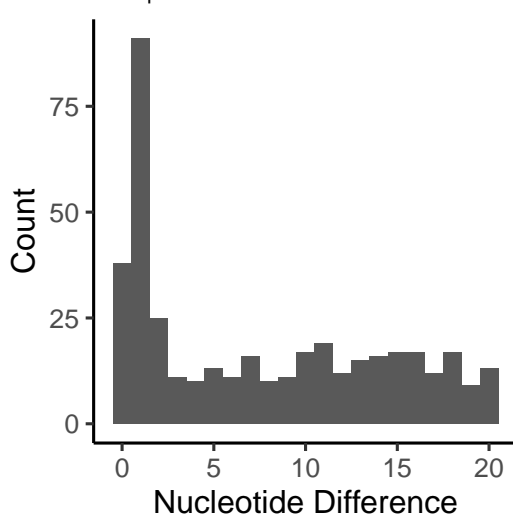
### IGHV3-11\*06

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



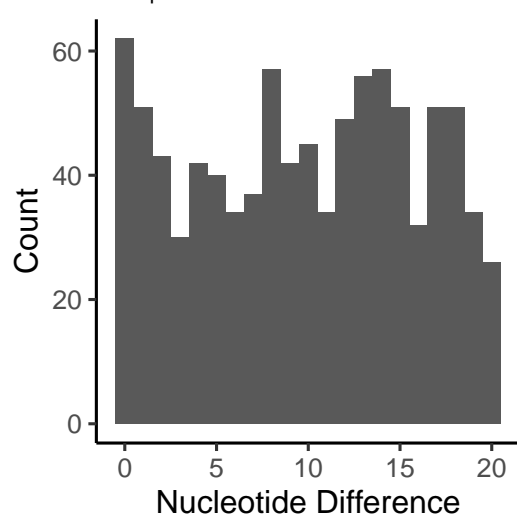
### IGHV3-15\*07

566 sequences assigned  
38 (6.7%) exact matches, in which:  
24 unique CDR3  
3 unique J



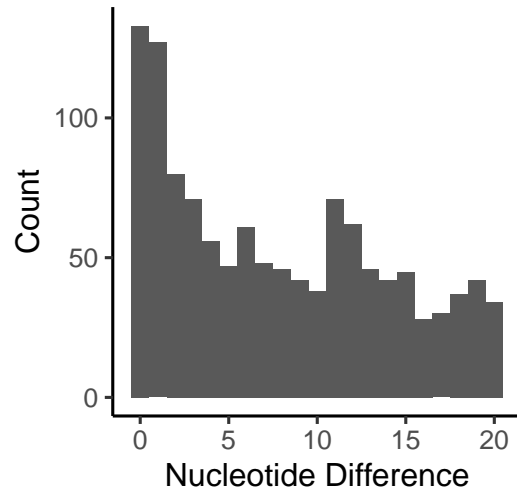
### IGHV3-21\*01

1564 sequences assigned  
62 (4%) exact matches, in which:  
53 unique CDR3  
7 unique J



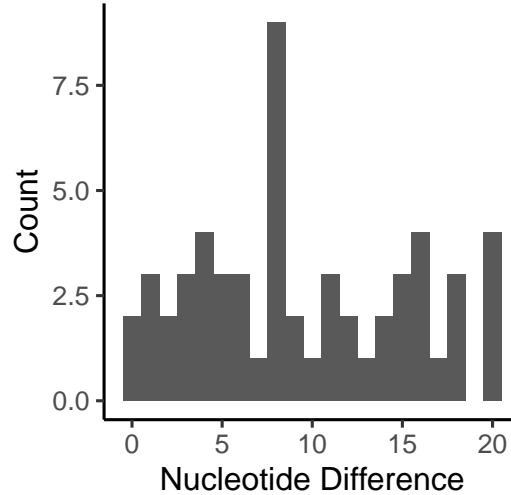
### IGHV3-30-3\*01

1712 sequences assigned  
133 (7.8%) exact matches, in which:  
117 unique CDR3  
7 unique J



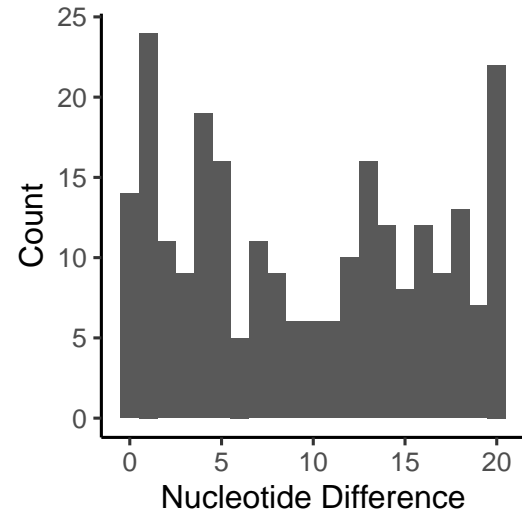
### IGHV3-43\*01

93 sequences assigned  
2 (2.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



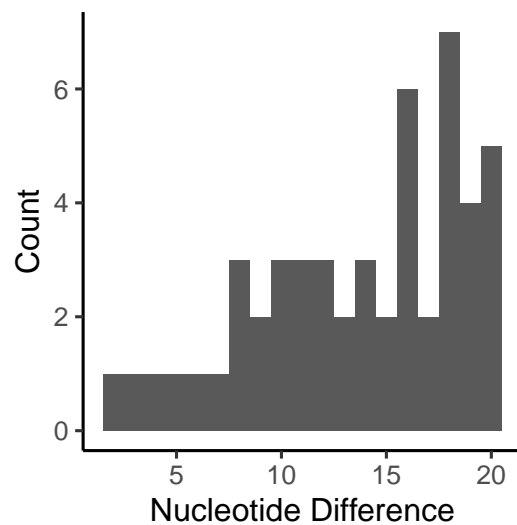
### IGHV3-49\*03

324 sequences assigned  
14 (4.3%) exact matches, in which:  
11 unique CDR3  
2 unique J



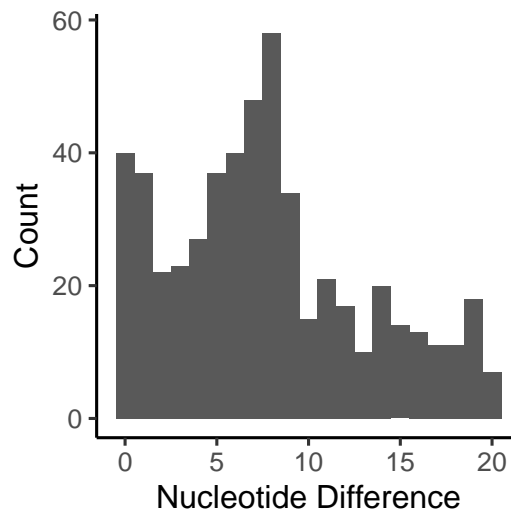
### IGHV3-30\*04

151 sequences assigned  
No exact matches.



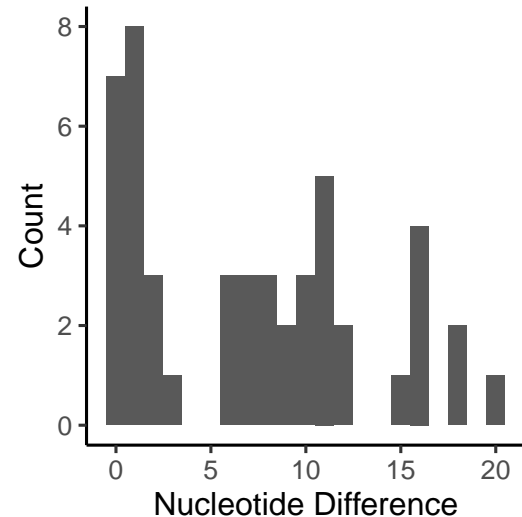
### IGHV3-48\*01

719 sequences assigned  
40 (5.6%) exact matches, in which:  
34 unique CDR3  
4 unique J



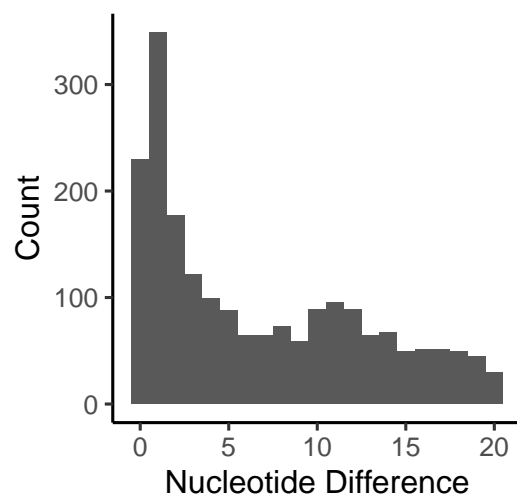
### IGHV3-49\*05

84 sequences assigned  
7 (8.3%) exact matches, in which:  
7 unique CDR3  
3 unique J



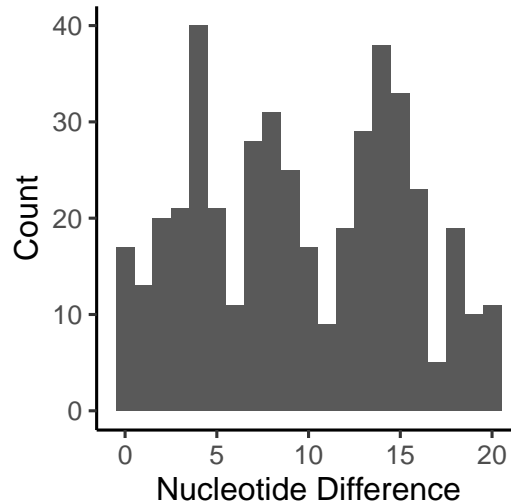
### IGHV3-33\*01

2523 sequences assigned  
230 (9.1%) exact matches, in which:  
159 unique CDR3  
6 unique J



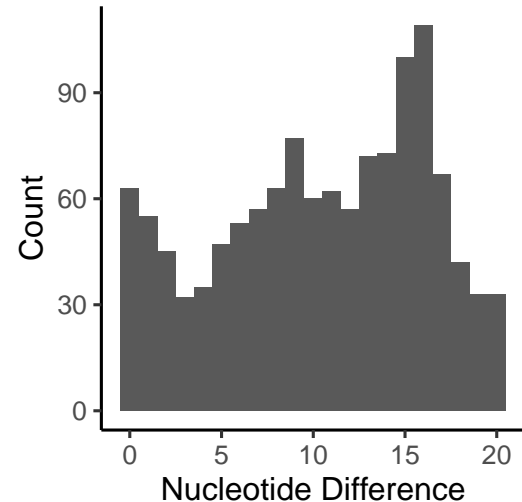
### IGHV3-48\*02

645 sequences assigned  
17 (2.6%) exact matches, in which:  
14 unique CDR3  
4 unique J



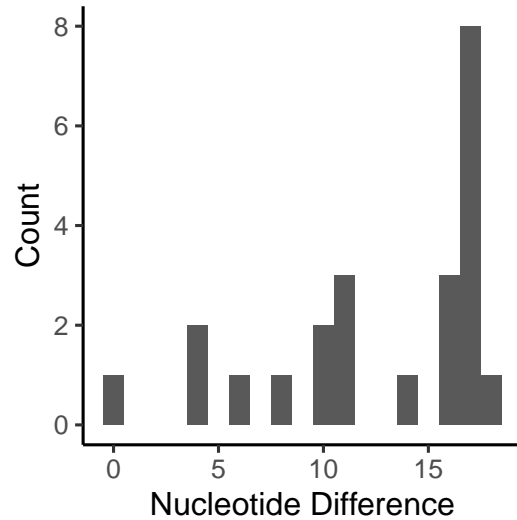
### IGHV3-53\*01

1927 sequences assigned  
63 (3.3%) exact matches, in which:  
62 unique CDR3  
6 unique J



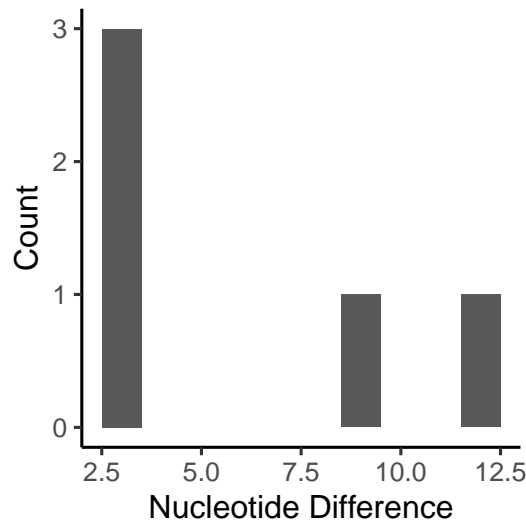
### IGHV3-64\*02

26 sequences assigned  
1 (3.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



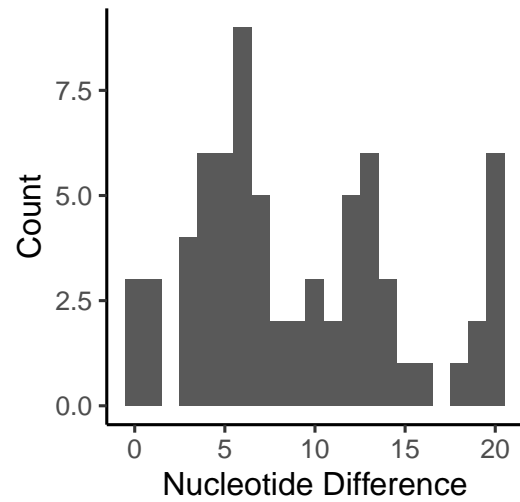
### IGHV3-69-1\*01

10 sequences assigned  
No exact matches.



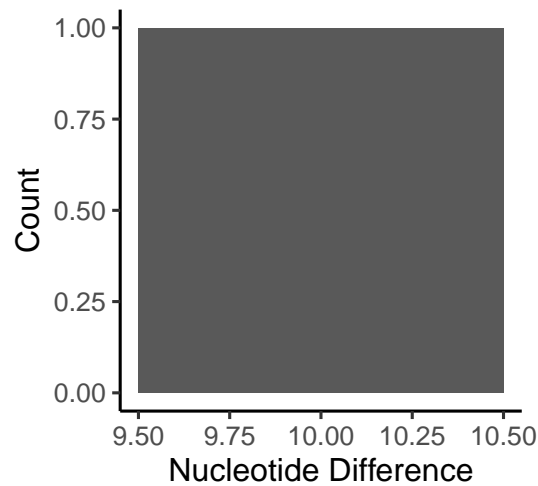
### IGHV3-73\*01

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



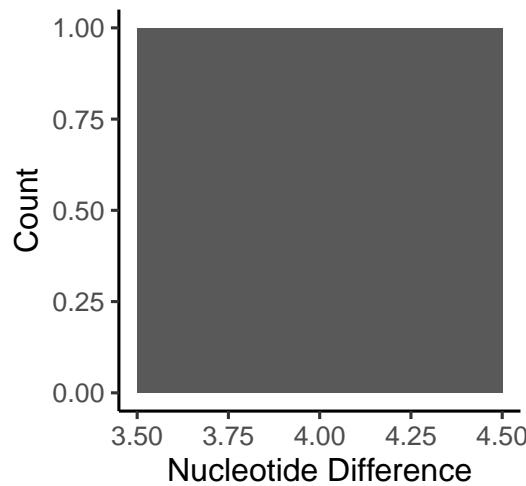
### IGHV3-64\*04

1 sequences assigned  
No exact matches.



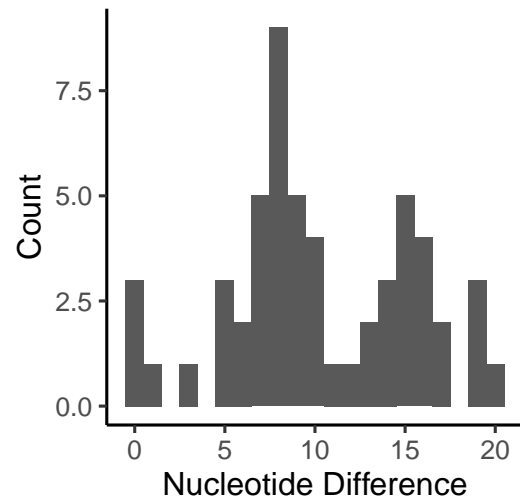
### IGHV3-69-1\*02

9 sequences assigned  
No exact matches.



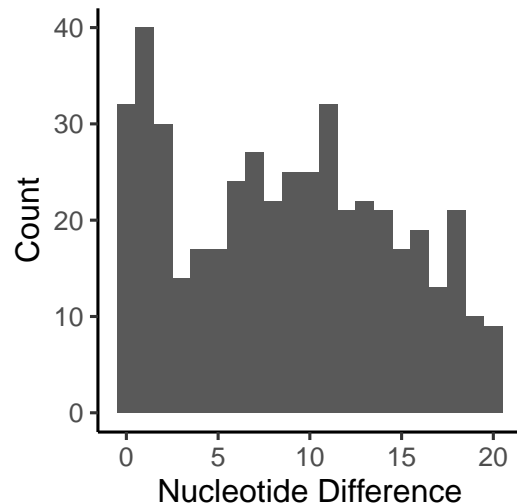
### IGHV3-73\*02

105 sequences assigned  
3 (2.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



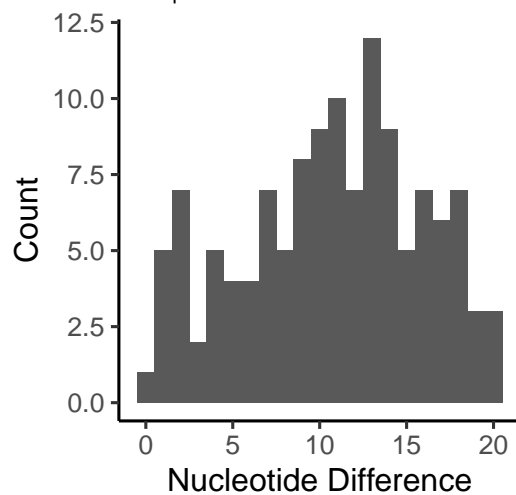
### IGHV3-66\*01

561 sequences assigned  
32 (5.7%) exact matches, in which:  
29 unique CDR3  
4 unique J



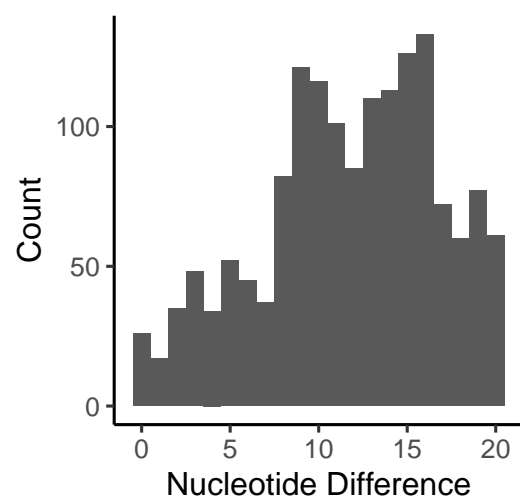
### IGHV3-72\*01

166 sequences assigned  
1 (0.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



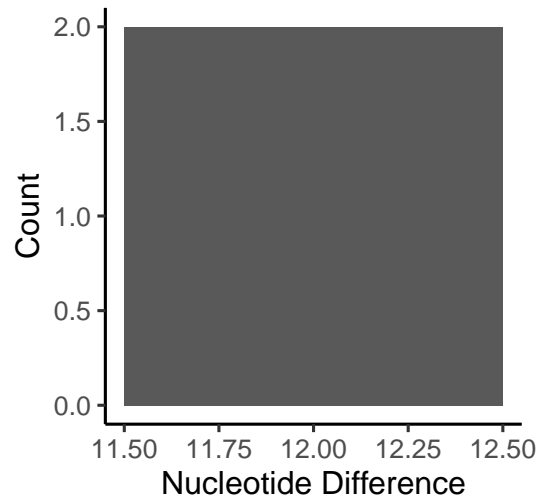
### IGHV3-74\*01

2493 sequences assigned  
26 (1%) exact matches, in which:  
21 unique CDR3  
5 unique J



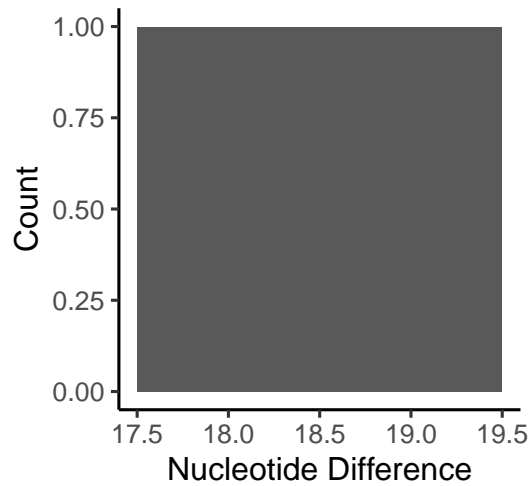
### IGHV3-43D\*04

9 sequences assigned  
No exact matches.



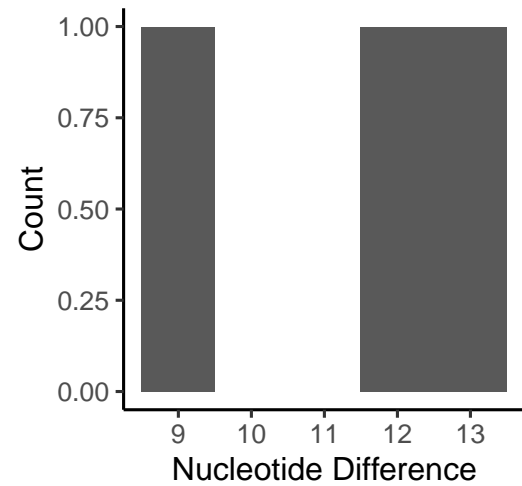
### IGHV3-NL1\*01

2 sequences assigned  
No exact matches.



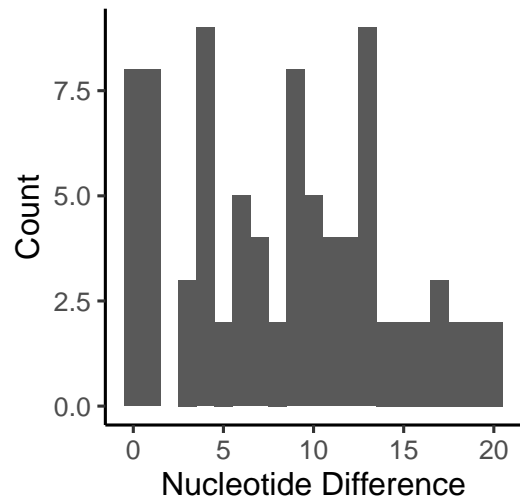
### IGHV4-28\*07

3 sequences assigned  
No exact matches.



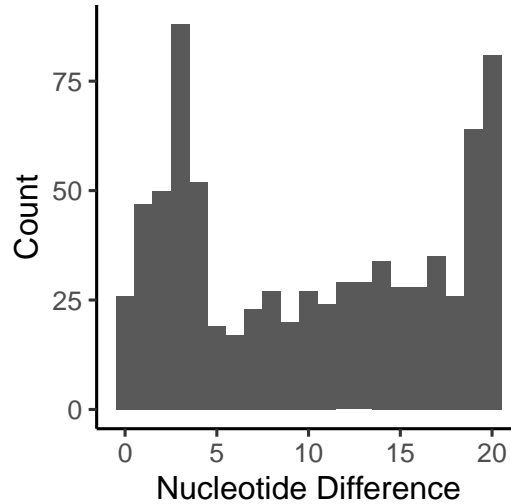
### IGHV3-64D\*06

91 sequences assigned  
8 (8.8%) exact matches, in which:  
7 unique CDR3  
1 unique J



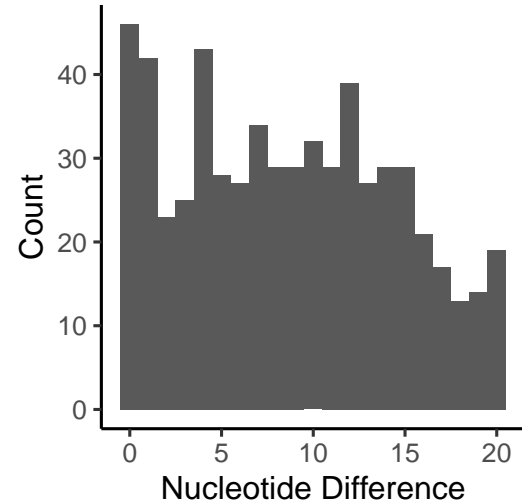
### IGHV4-4\*02

1238 sequences assigned  
26 (2.1%) exact matches, in which:  
22 unique CDR3  
7 unique J



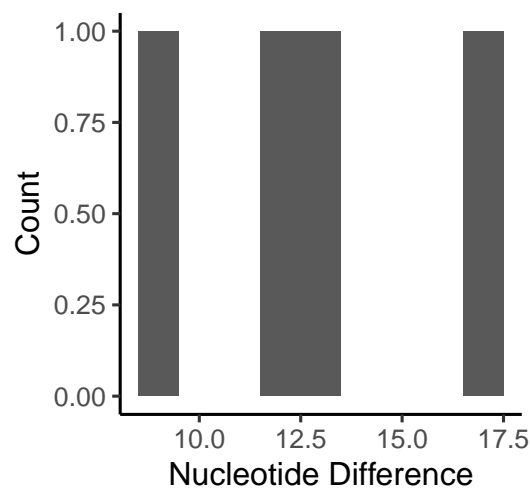
### IGHV4-30-4\*01

837 sequences assigned  
46 (5.5%) exact matches, in which:  
43 unique CDR3  
6 unique J



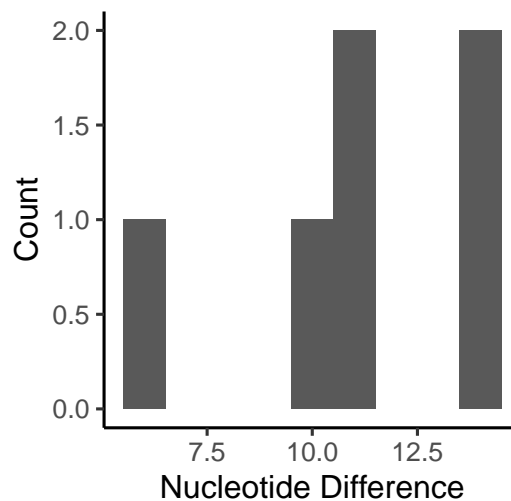
### IGHV3-64D\*08

8 sequences assigned  
No exact matches.



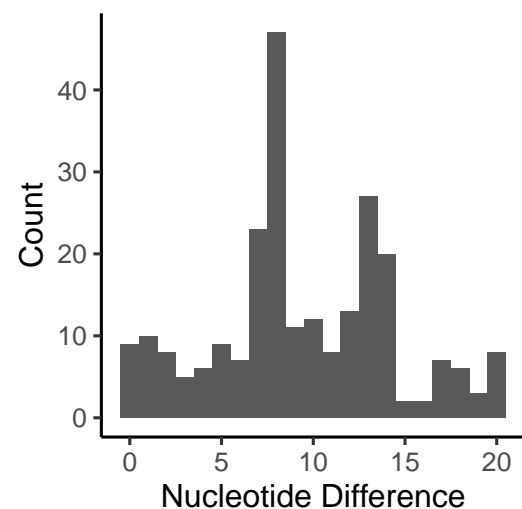
### IGHV4-28\*01

6 sequences assigned  
No exact matches.



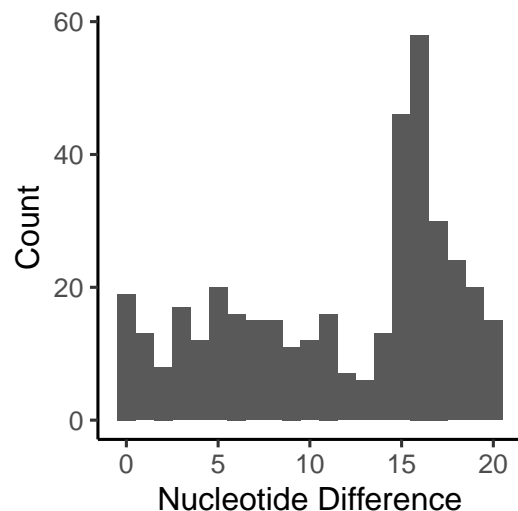
### IGHV4-30-2\*01

463 sequences assigned  
9 (1.9%) exact matches, in which:  
8 unique CDR3  
4 unique J



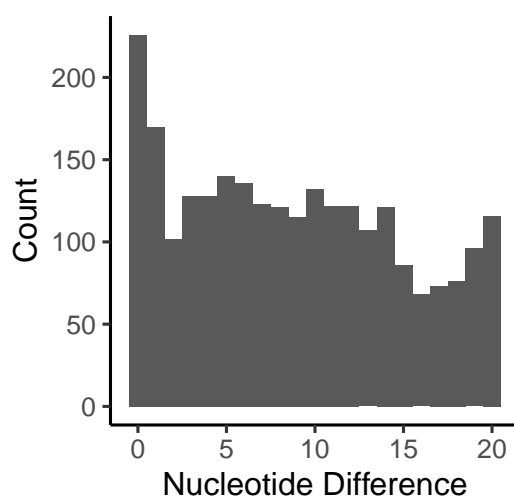
### IGHV4-31\*03

663 sequences assigned  
19 (2.9%) exact matches, in which:  
17 unique CDR3  
6 unique J



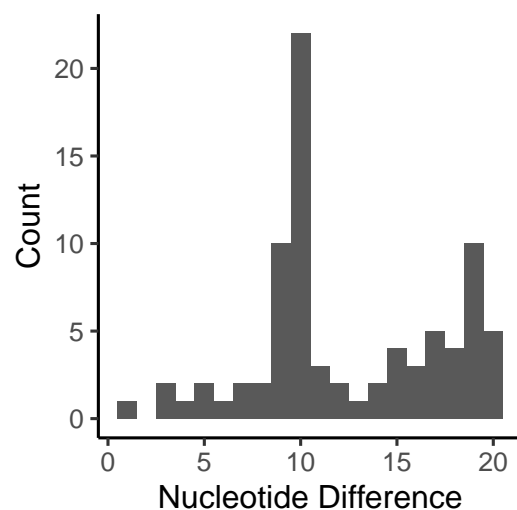
### IGHV4-39\*01

4353 sequences assigned  
226 (5.2%) exact matches, in which:  
202 unique CDR3  
7 unique J



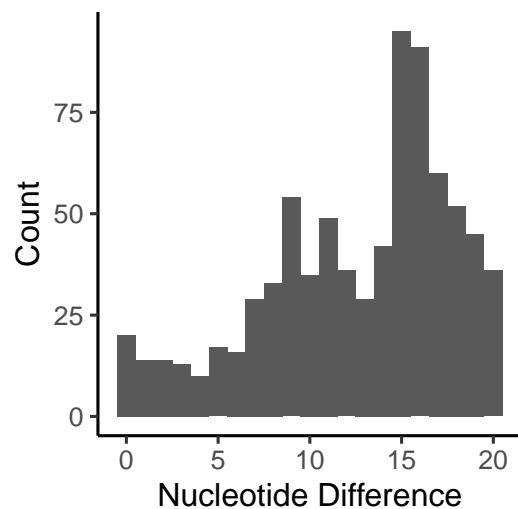
### IGHV4-61\*08

109 sequences assigned  
No exact matches.



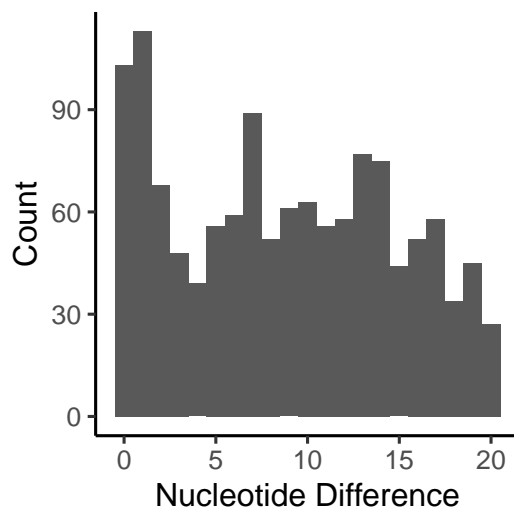
### IGHV4-34\*01

1100 sequences assigned  
20 (1.8%) exact matches, in which:  
16 unique CDR3  
6 unique J



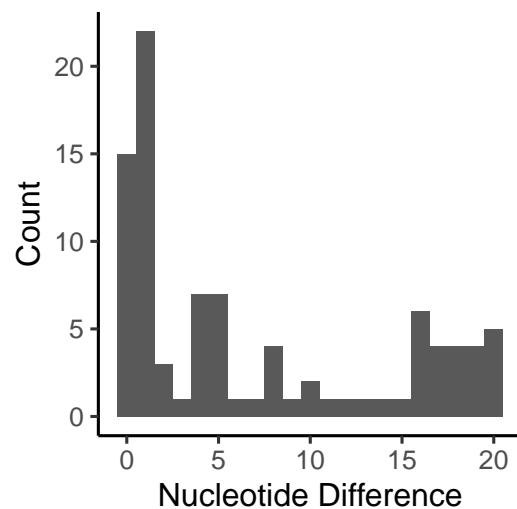
### IGHV4-59\*01

2053 sequences assigned  
103 (5%) exact matches, in which:  
77 unique CDR3  
7 unique J



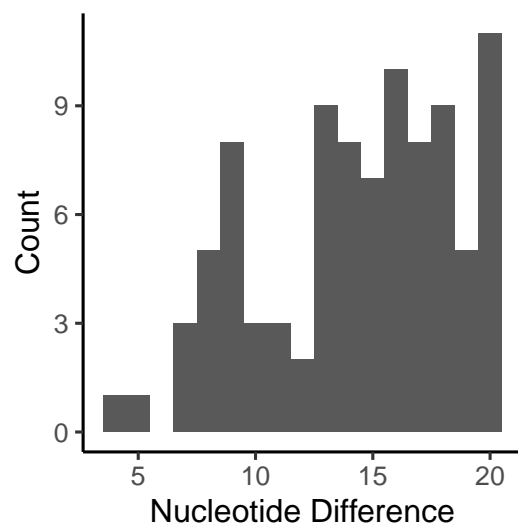
### IGHV5-10-1\*03

140 sequences assigned  
15 (10.7%) exact matches, in which:  
10 unique CDR3  
3 unique J



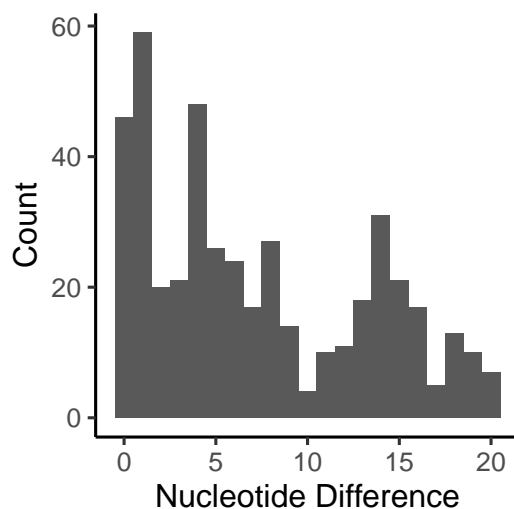
### IGHV4-34\*02

174 sequences assigned  
No exact matches.



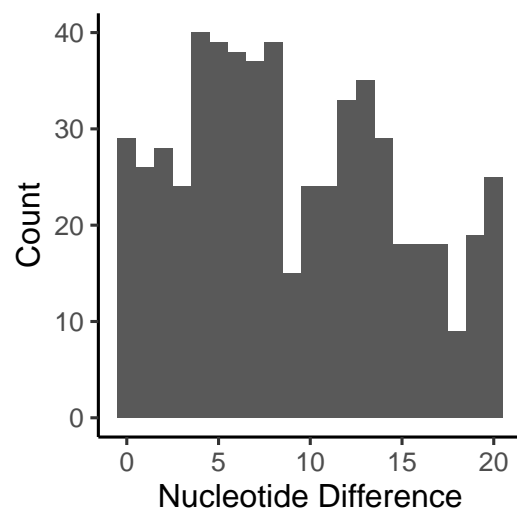
### IGHV4-61\*01

571 sequences assigned  
46 (8.1%) exact matches, in which:  
28 unique CDR3  
6 unique J



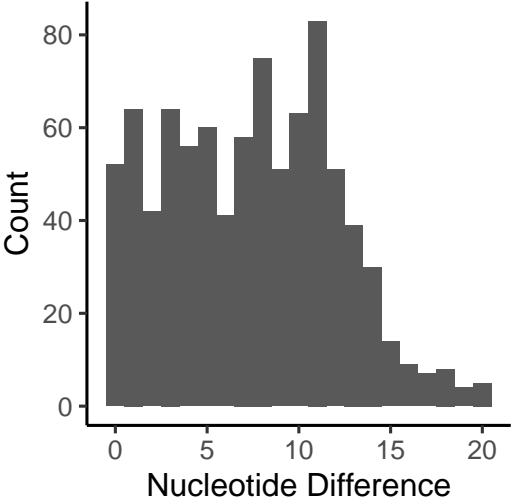
### IGHV5-51\*01

970 sequences assigned  
29 (3%) exact matches, in which:  
27 unique CDR3  
5 unique J



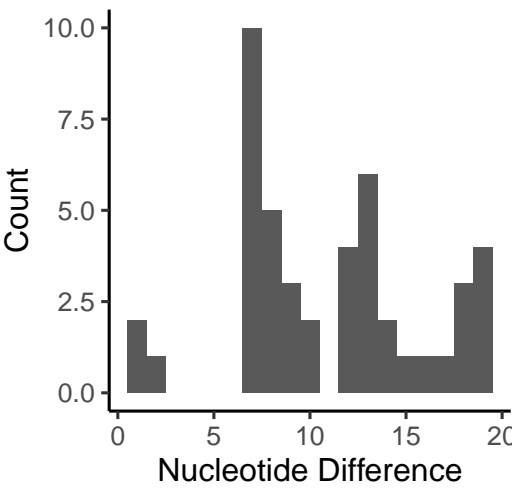
IGHV6-1\*01

942 sequences assigned  
52 (5.5%) exact matches, in which:  
48 unique CDR3  
5 unique J

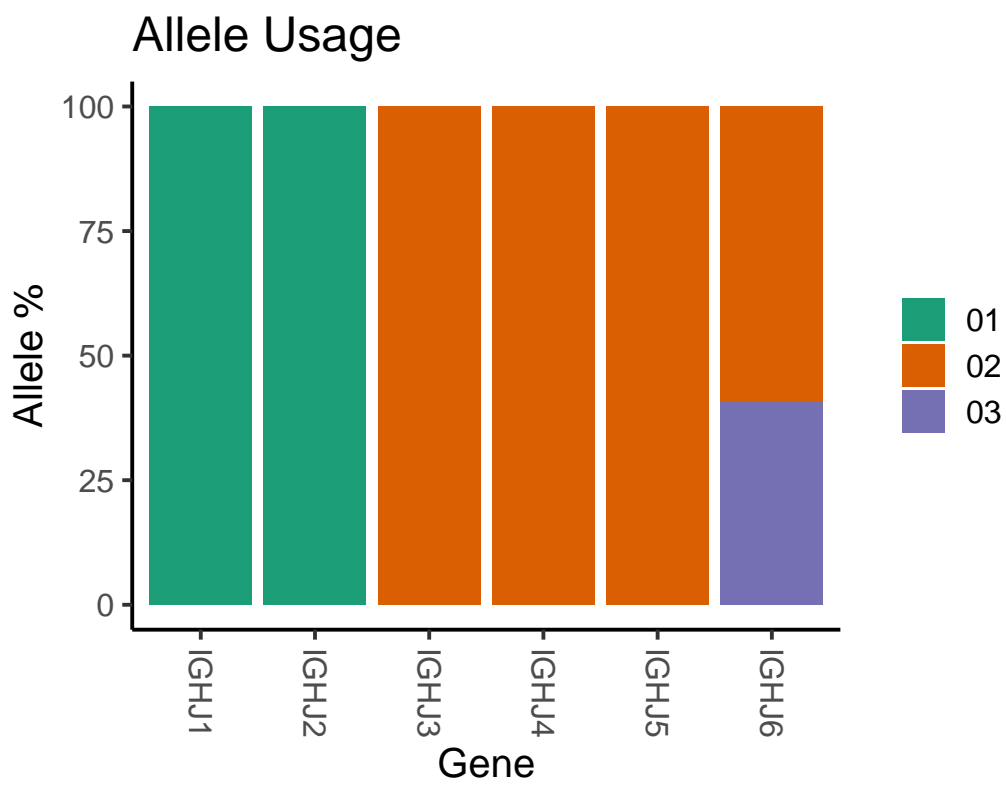


IGHV7-4-1\*01

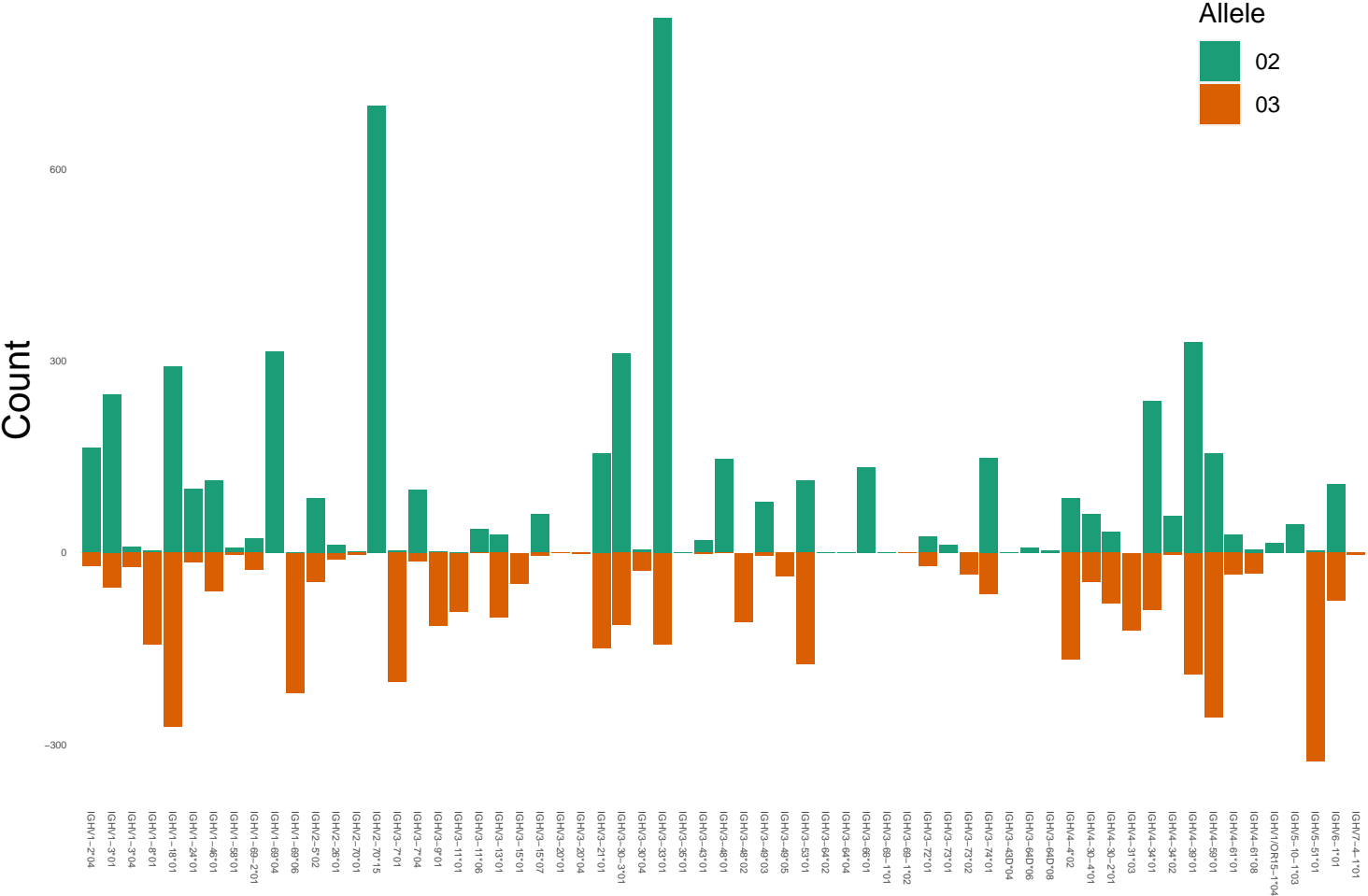
80 sequences assigned  
No exact matches.







Sequence Count by IGHJ6 allele usage



[illegible]