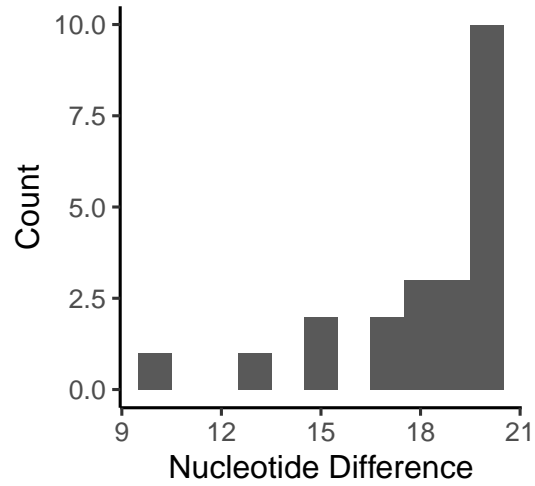


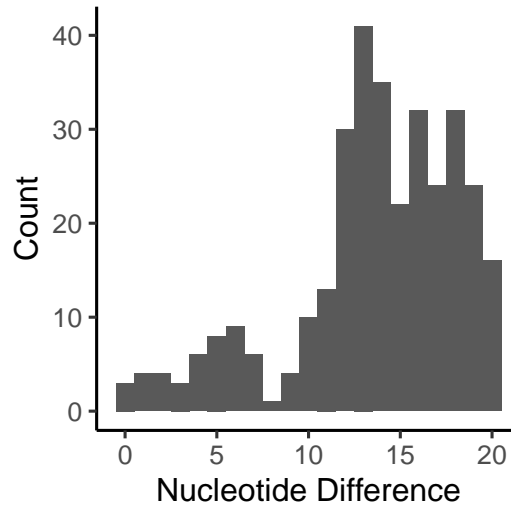
### IGHV1-2\*02

117 sequences assigned  
No exact matches.



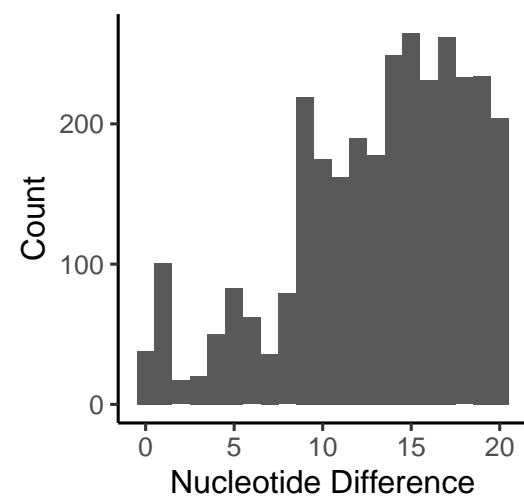
### IGHV1-3\*01\_05

616 sequences assigned  
3 (0.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



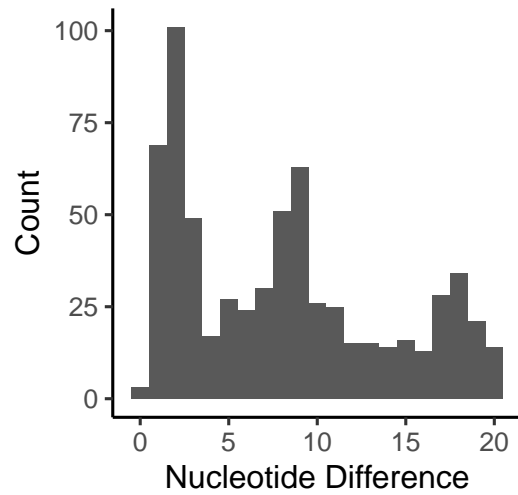
### IGHV1-18\*04

4583 sequences assigned  
38 (0.8%) exact matches, in which:  
23 unique CDR3  
3 unique J



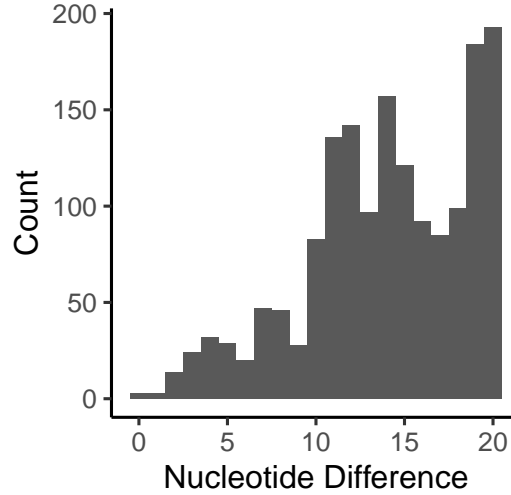
### IGHV1-2\*04

768 sequences assigned  
3 (0.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



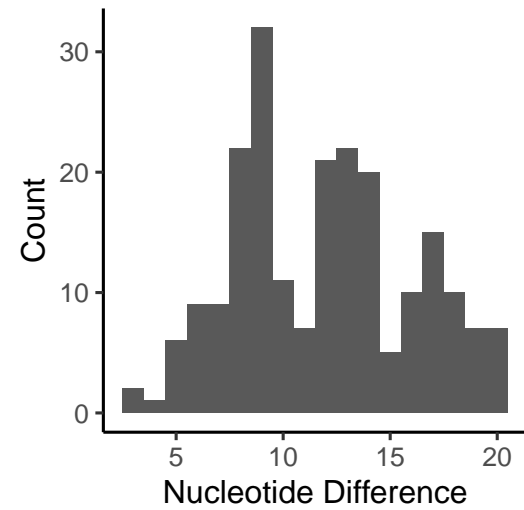
### IGHV1-8\*01

2399 sequences assigned  
3 (0.1%) exact matches, in which:  
3 unique CDR3  
1 unique J



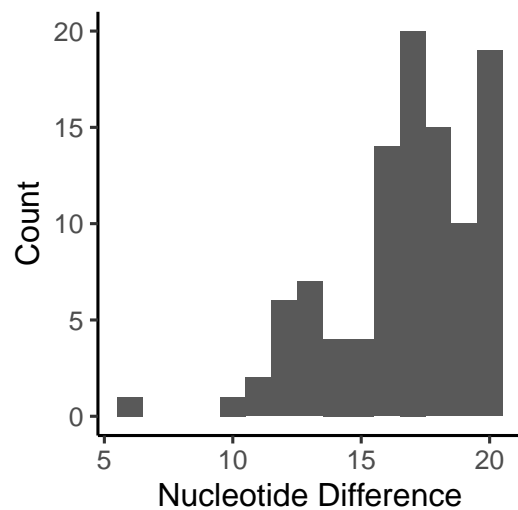
### IGHV1-24\*01

266 sequences assigned  
No exact matches.



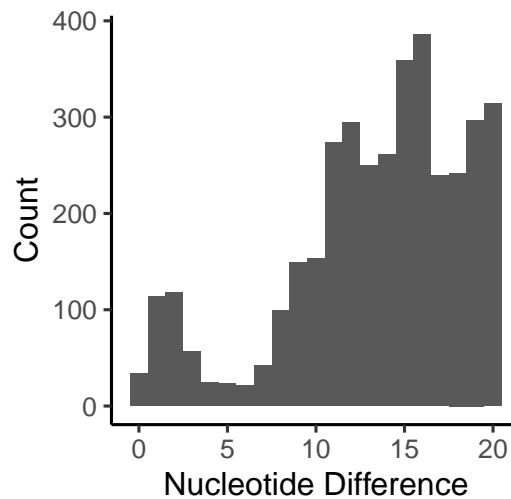
### IGHV1-3\*04

220 sequences assigned  
No exact matches.



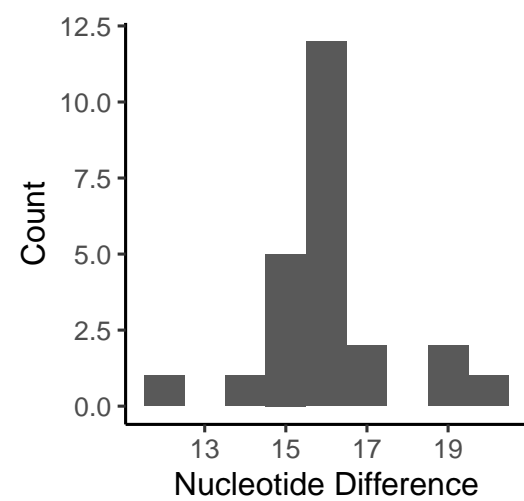
### IGHV1-18\*01

6628 sequences assigned  
34 (0.5%) exact matches, in which:  
24 unique CDR3  
3 unique J



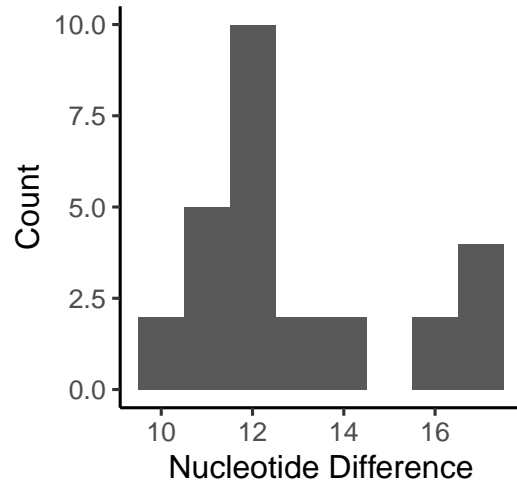
### IGHV1-45\*01

26 sequences assigned  
No exact matches.



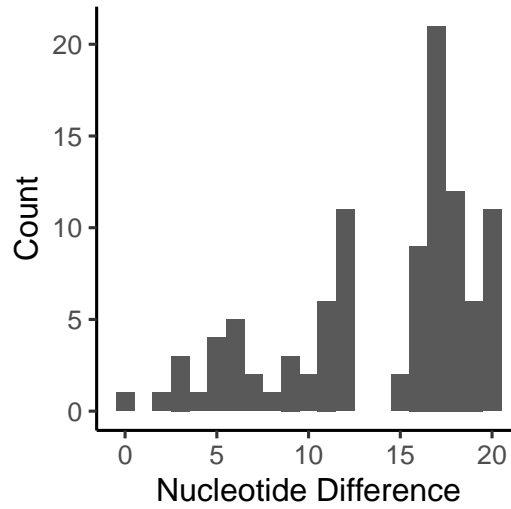
### IGHV1-45\*02

33 sequences assigned  
No exact matches.



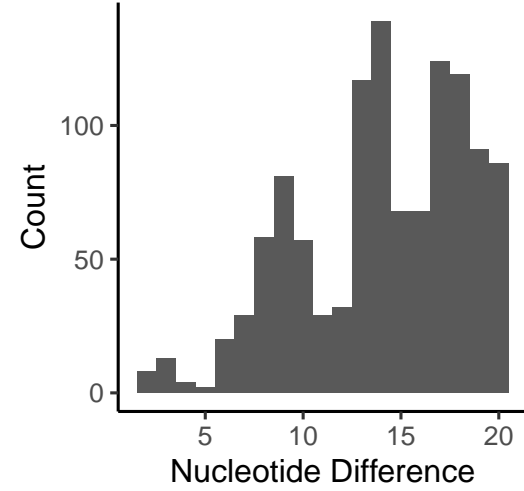
### IGHV1-58\*01\_03

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



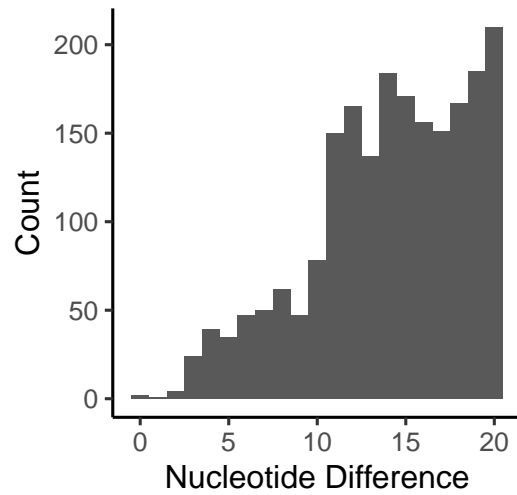
### IGHV1-69\*06\_14

2853 sequences assigned  
No exact matches.



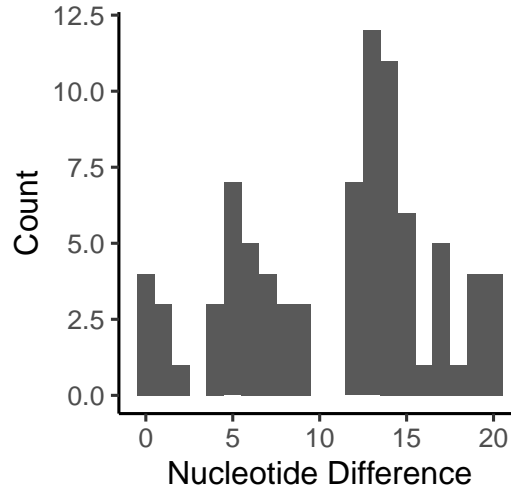
### IGHV1-46\*01

3506 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



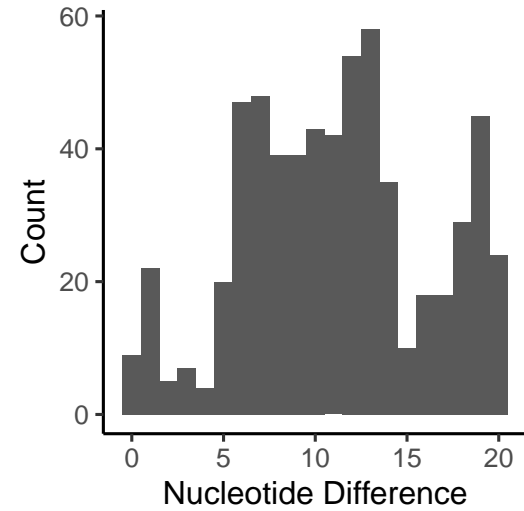
### IGHV1-69-2\*01

118 sequences assigned  
4 (3.4%) exact matches, in which:  
3 unique CDR3  
1 unique J



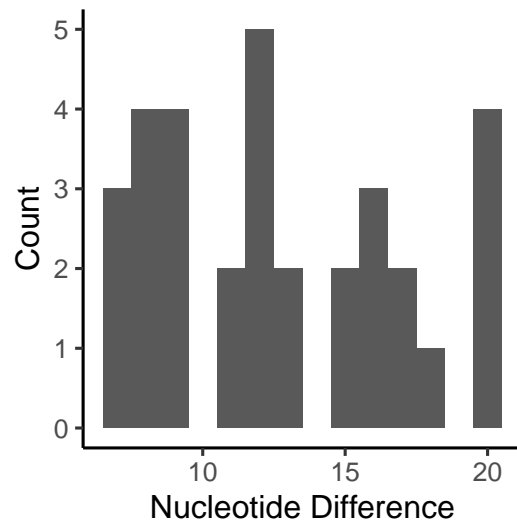
### IGHV2-5\*01

741 sequences assigned  
9 (1.2%) exact matches, in which:  
5 unique CDR3  
2 unique J



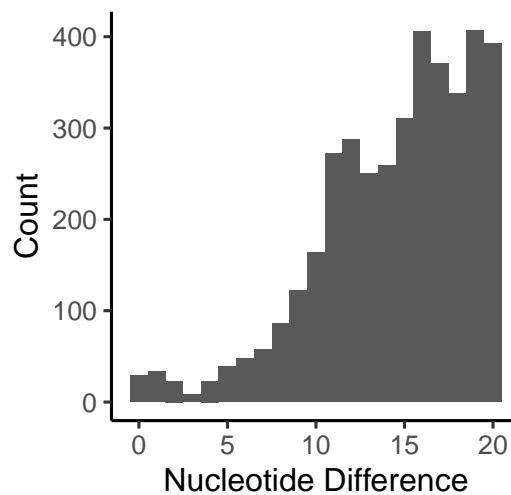
### IGHV1-58\*02

49 sequences assigned  
No exact matches.



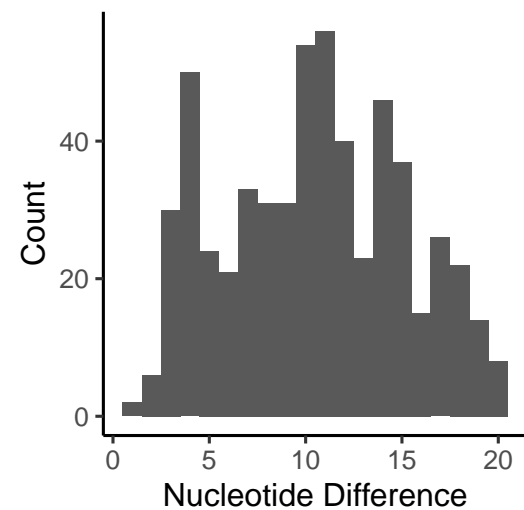
### IGHV1-69\*01\_12\_13

7681 sequences assigned  
29 (0.4%) exact matches, in which:  
24 unique CDR3  
3 unique J



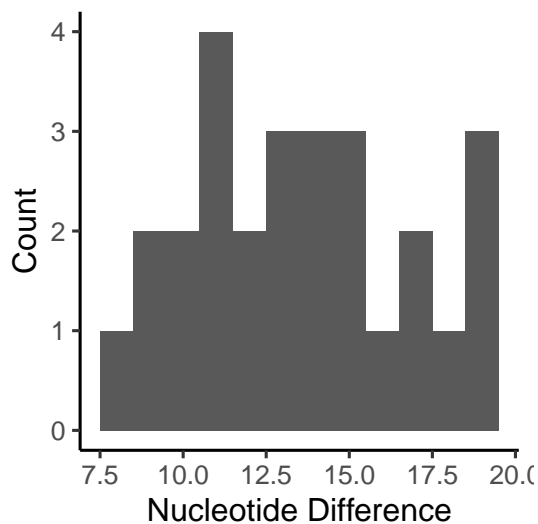
### IGHV2-5\*02

903 sequences assigned  
No exact matches.



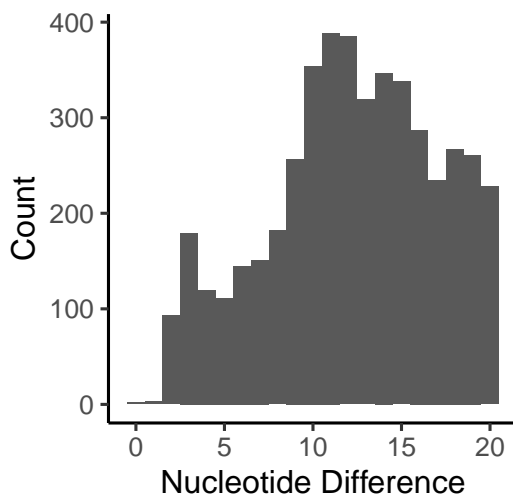
### IGHV2-26\*01

39 sequences assigned  
No exact matches.



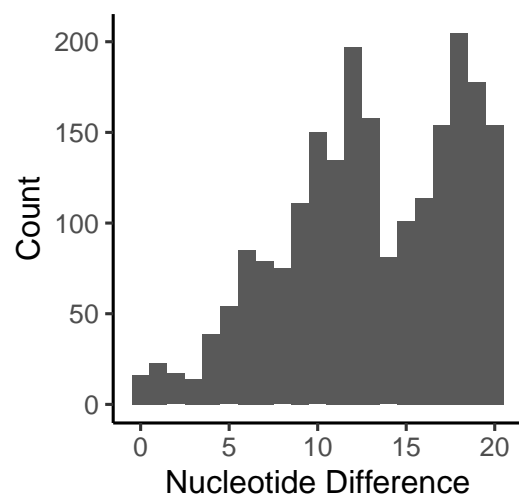
### IGHV3-7\*01

6132 sequences assigned  
2 (0%) exact matches, in which:  
2 unique CDR3  
2 unique J



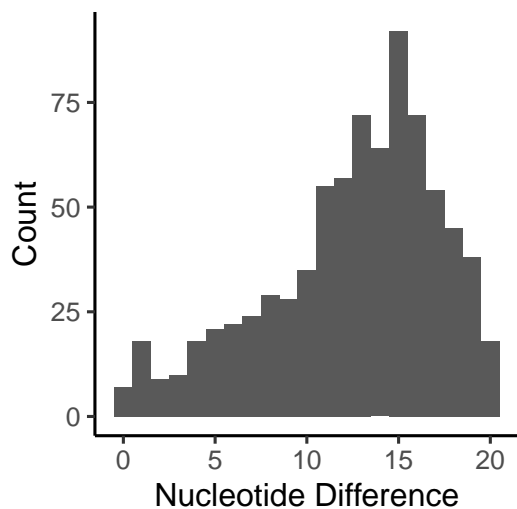
### IGHV3-11\*01

3191 sequences assigned  
16 (0.5%) exact matches, in which:  
11 unique CDR3  
3 unique J



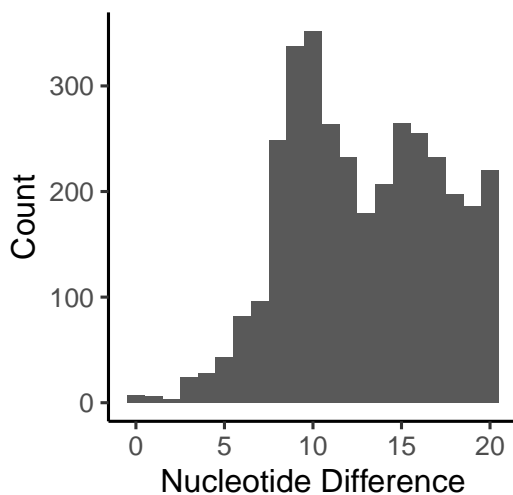
### IGHV2-70\*01

920 sequences assigned  
7 (0.8%) exact matches, in which:  
7 unique CDR3  
2 unique J



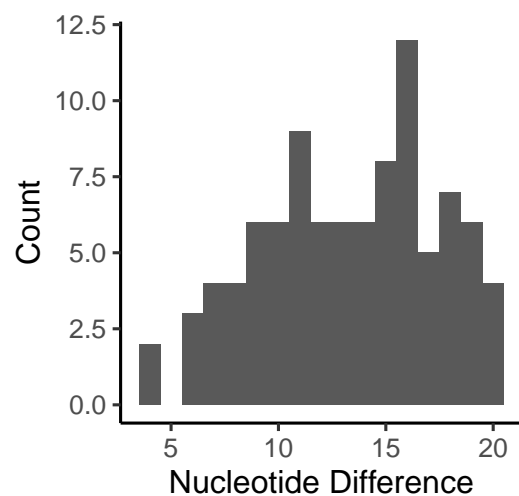
### IGHV3-7\*03

4756 sequences assigned  
7 (0.1%) exact matches, in which:  
6 unique CDR3  
2 unique J



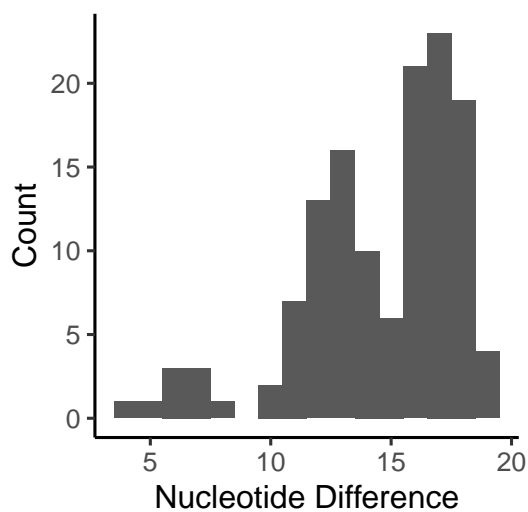
### IGHV3-11\*04

138 sequences assigned  
No exact matches.



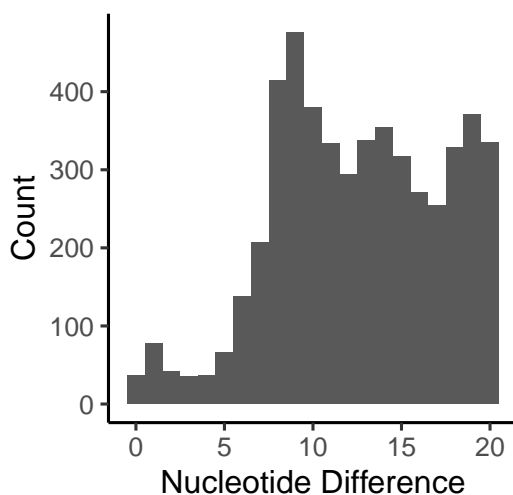
### IGHV2-70\*13

170 sequences assigned  
No exact matches.



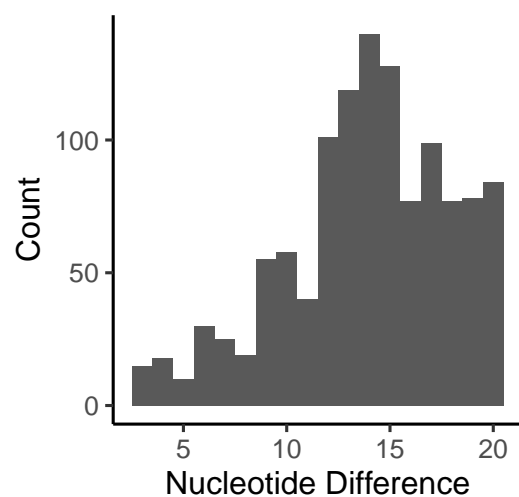
### IGHV3-9\*01

6494 sequences assigned  
36 (0.6%) exact matches, in which:  
24 unique CDR3  
4 unique J



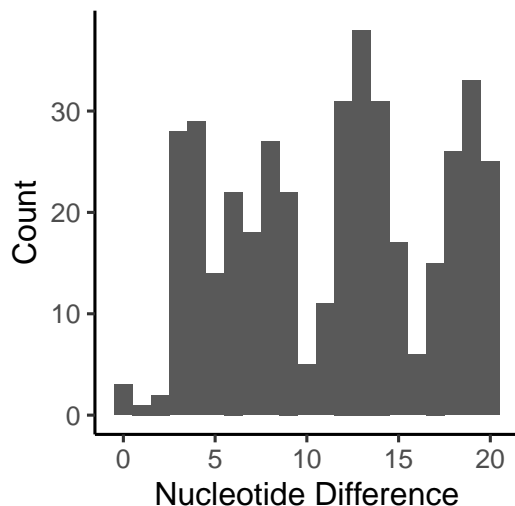
### IGHV3-11\*06

1647 sequences assigned  
No exact matches.



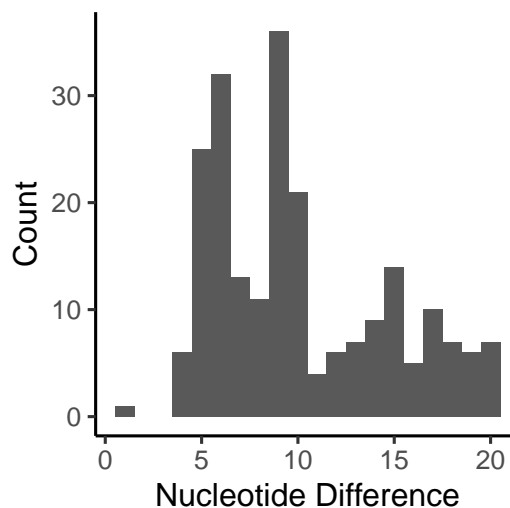
### IGHV3-13\*01

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



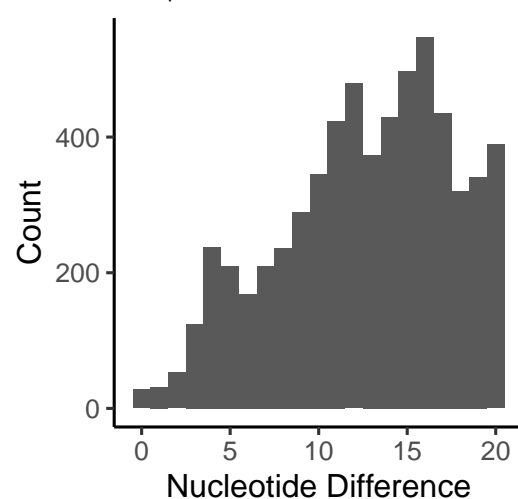
### IGHV3-20\*01\_02

241 sequences assigned  
No exact matches.



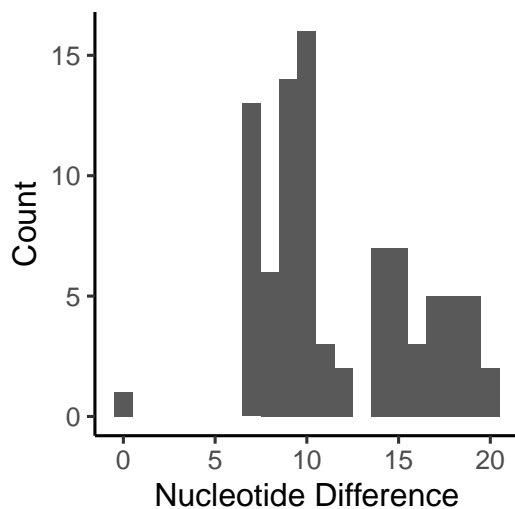
### IGHV3-21\*01\_02

8923 sequences assigned  
28 (0.3%) exact matches, in which:  
21 unique CDR3  
5 unique J



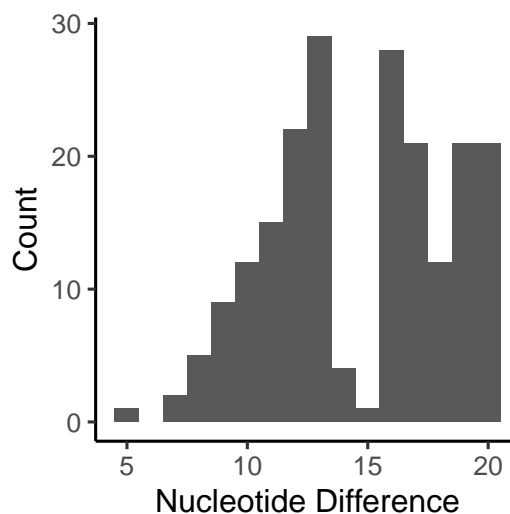
### IGHV3-13\*05

117 sequences assigned  
1 (0.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



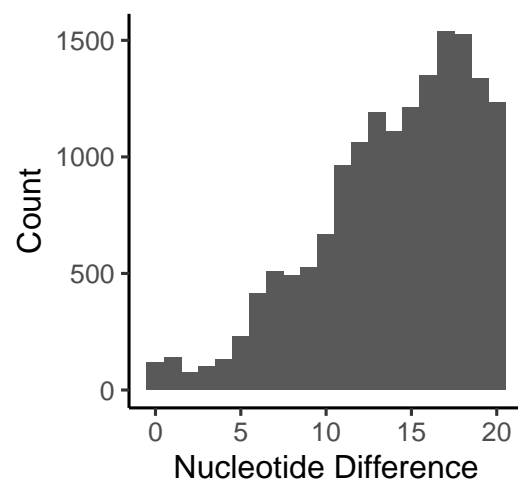
### IGHV3-20\*03\_04

322 sequences assigned  
No exact matches.



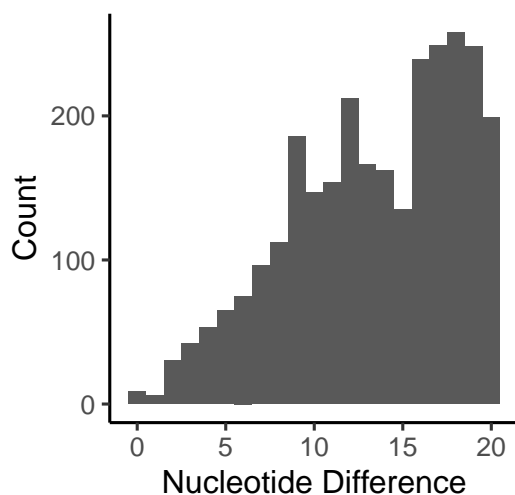
### IGHV3-23\*01\_04

28360 sequences assigned  
117 (0.4%) exact matches, in which:  
81 unique CDR3  
4 unique J



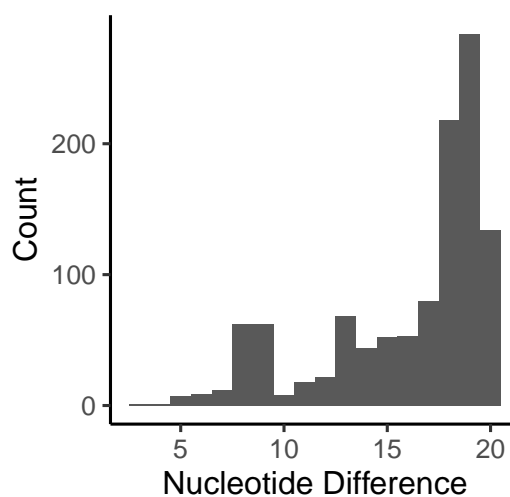
### IGHV3-15\*01\_02

4478 sequences assigned  
9 (0.2%) exact matches, in which:  
6 unique CDR3  
4 unique J



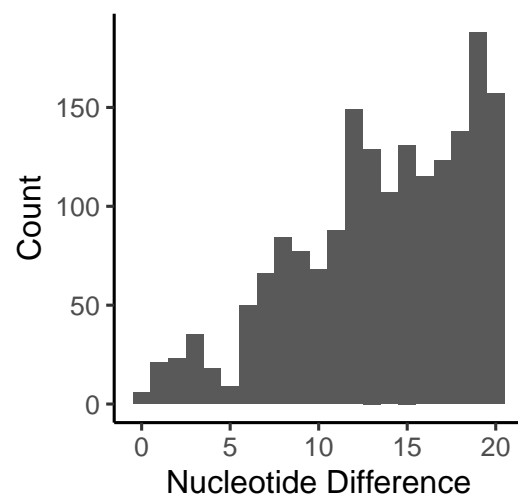
### IGHV3-21\*06

2040 sequences assigned  
No exact matches.



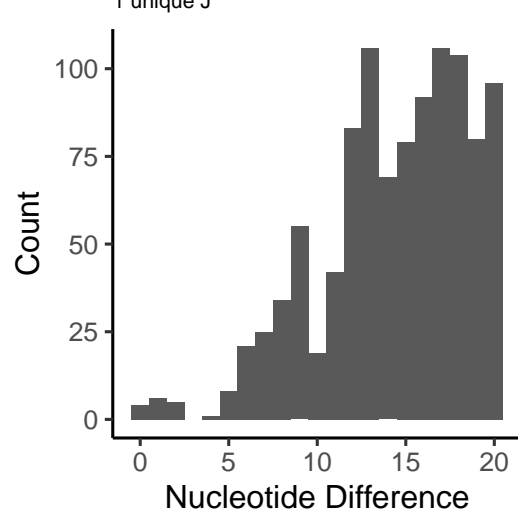
### IGHV3-30-3\*01

2779 sequences assigned  
6 (0.2%) exact matches, in which:  
6 unique CDR3  
3 unique J



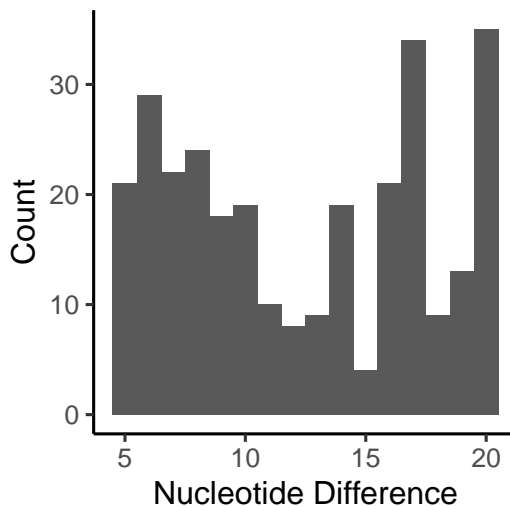
### IGHV3-30\*03

1688 sequences assigned  
4 (0.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



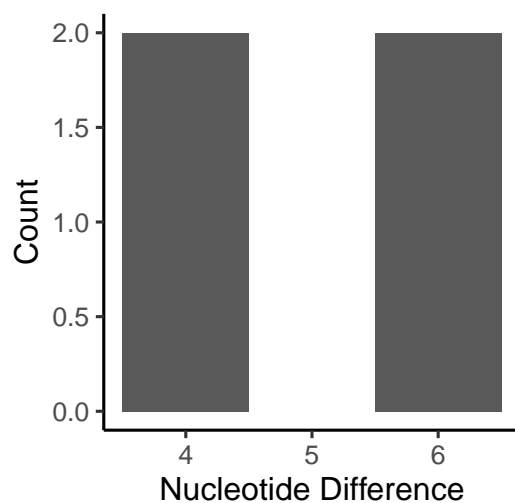
### IGHV3-43\*01

451 sequences assigned  
No exact matches.



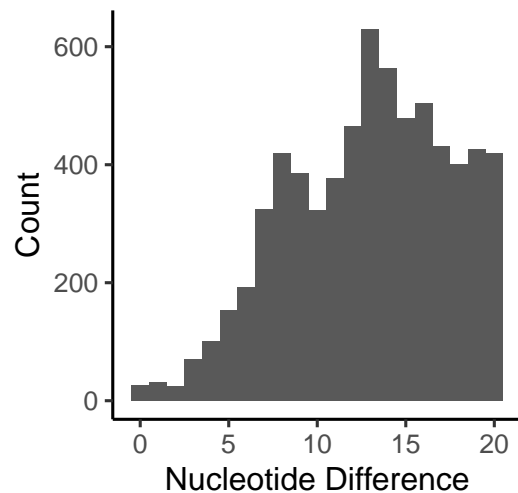
### IGHV3-52\*01\_03

4 sequences assigned  
No exact matches.



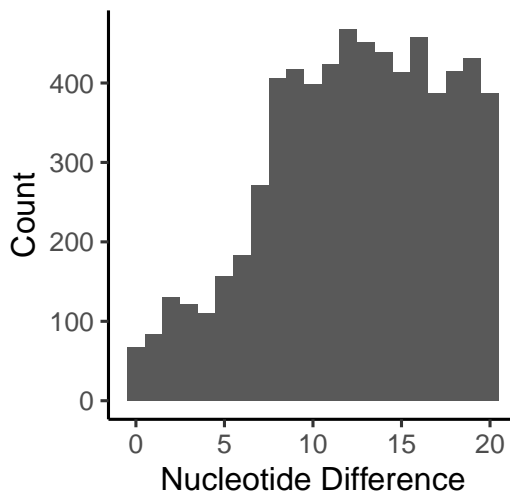
### IGHV3-33\*01

9178 sequences assigned  
27 (0.3%) exact matches, in which:  
16 unique CDR3  
4 unique J



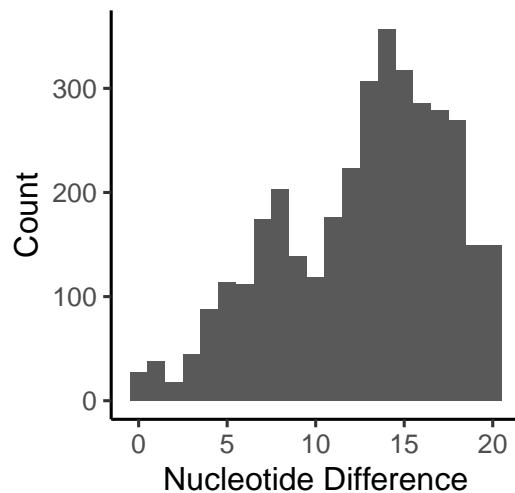
### IGHV3-48\*03

9371 sequences assigned  
67 (0.7%) exact matches, in which:  
48 unique CDR3  
6 unique J



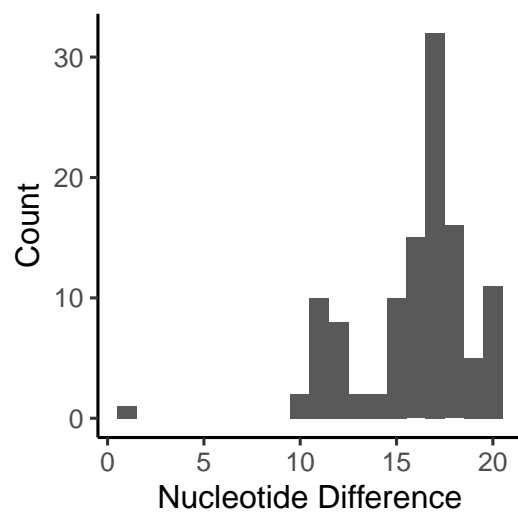
### IGHV3-53\*01\_02

6258 sequences assigned  
27 (0.4%) exact matches, in which:  
20 unique CDR3  
2 unique J



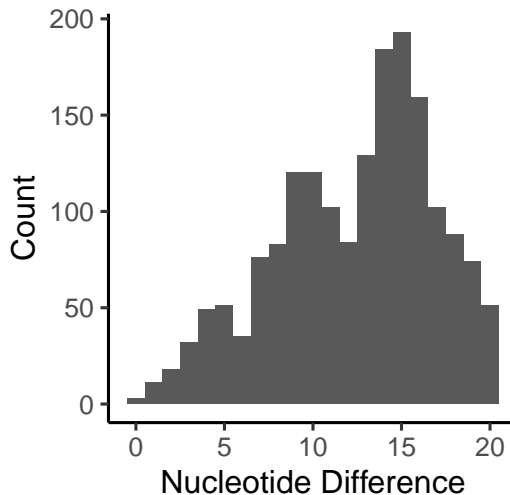
### IGHV3-33\*05

242 sequences assigned  
No exact matches.



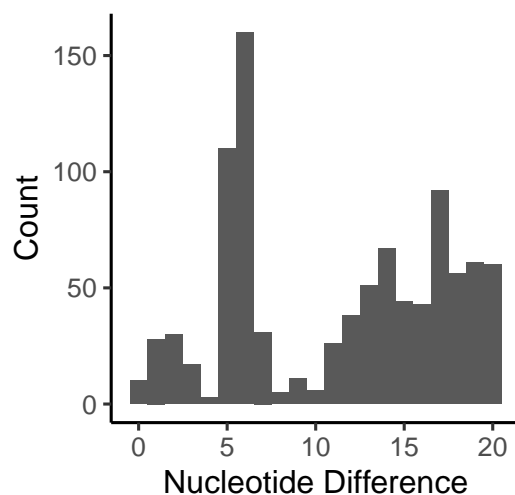
### IGHV3-49\*04

2441 sequences assigned  
3 (0.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



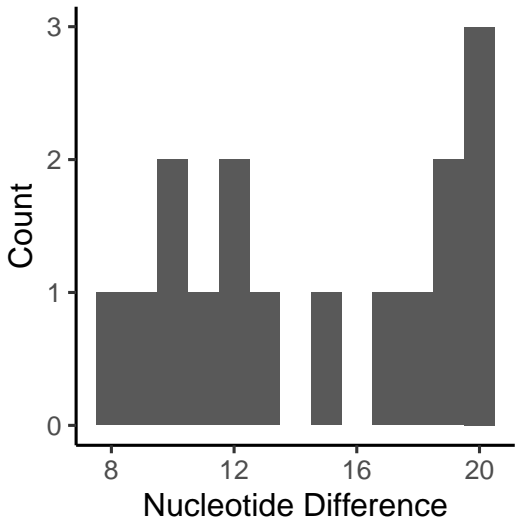
### IGHV3-64\*01

1098 sequences assigned  
10 (0.9%) exact matches, in which:  
7 unique CDR3  
1 unique J



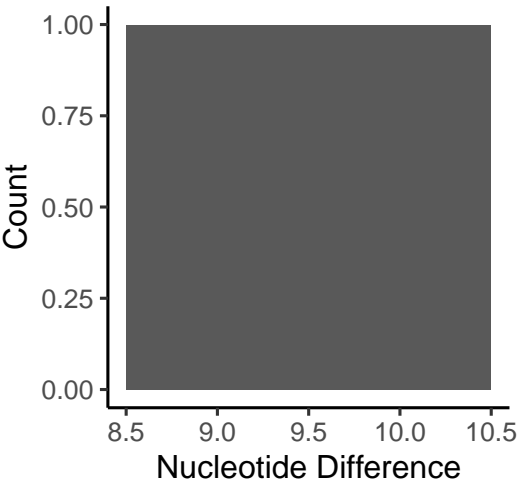
IGHV3-64\*04

82 sequences assigned  
No exact matches.



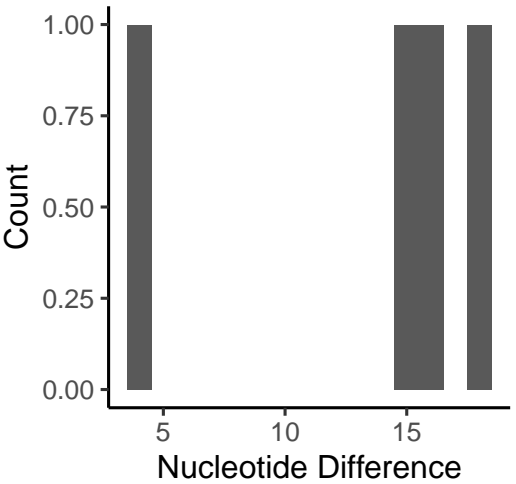
IGHV3-66\*02

7 sequences assigned  
No exact matches.



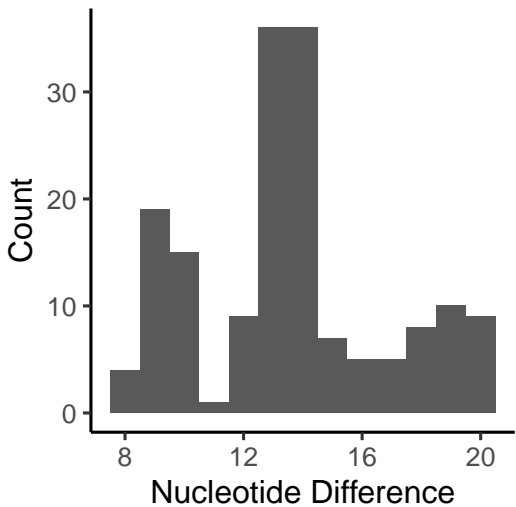
IGHV3-69-1\*01

14 sequences assigned  
No exact matches.



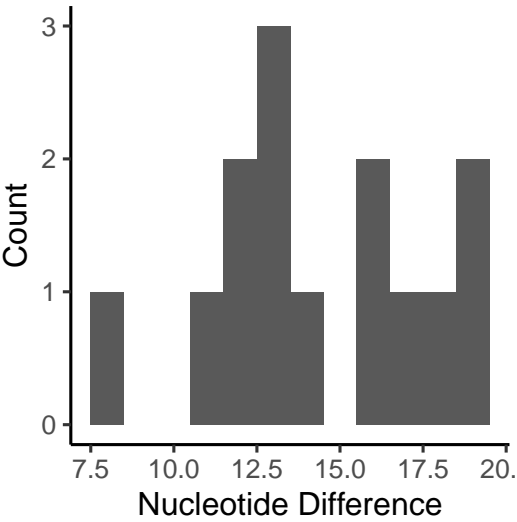
IGHV3-64\*02\_07

276 sequences assigned  
No exact matches.



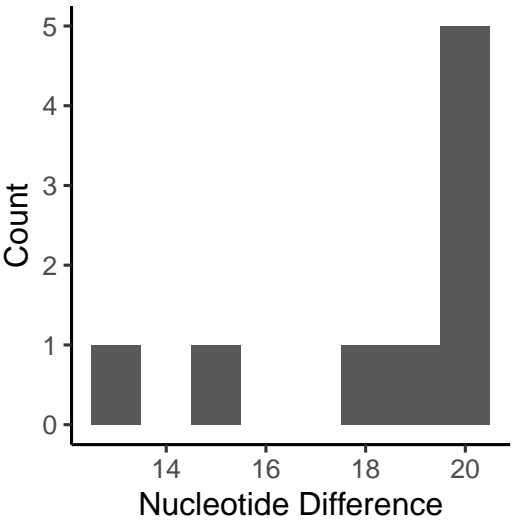
IGHV3-66\*03

21 sequences assigned  
No exact matches.



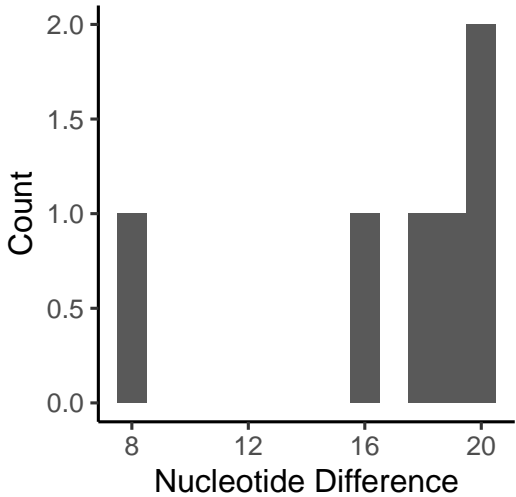
IGHV3-69-1\*02

48 sequences assigned  
No exact matches.



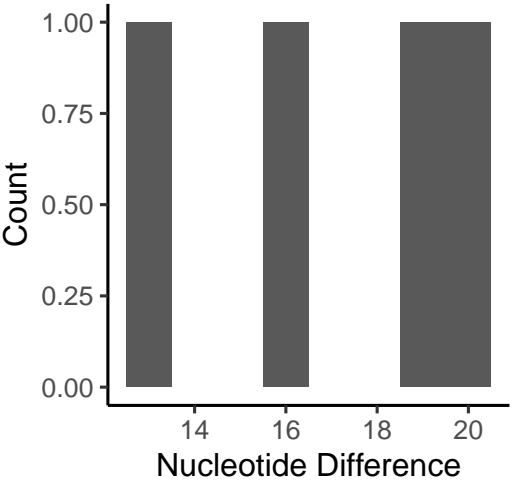
IGHV3-66\*01

21 sequences assigned  
No exact matches.



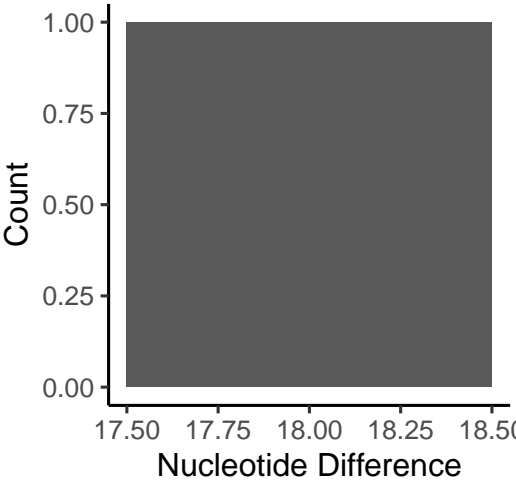
IGHV3-66\*04

42 sequences assigned  
No exact matches.



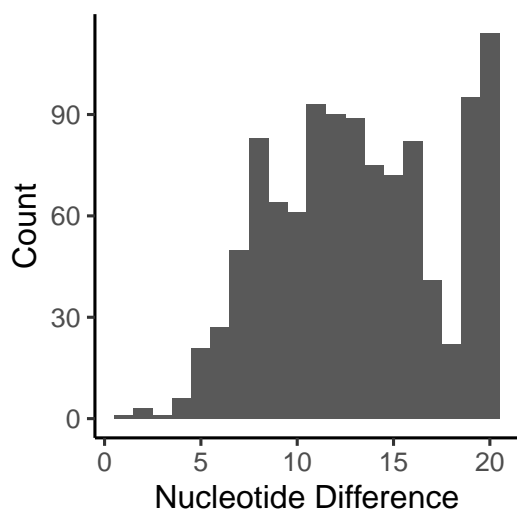
IGHV3-71\*01\_04

2 sequences assigned  
No exact matches.



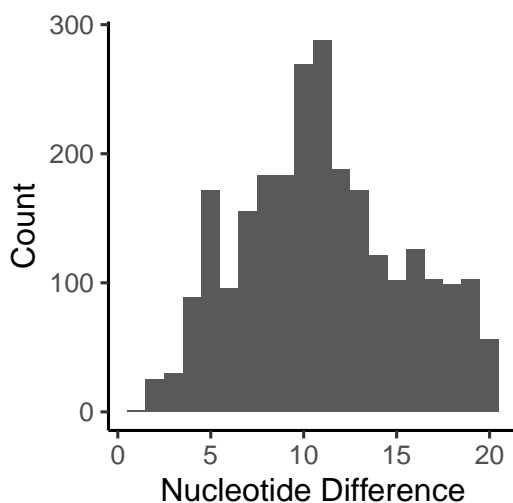
### IGHV3-72\*01

1277 sequences assigned  
No exact matches.



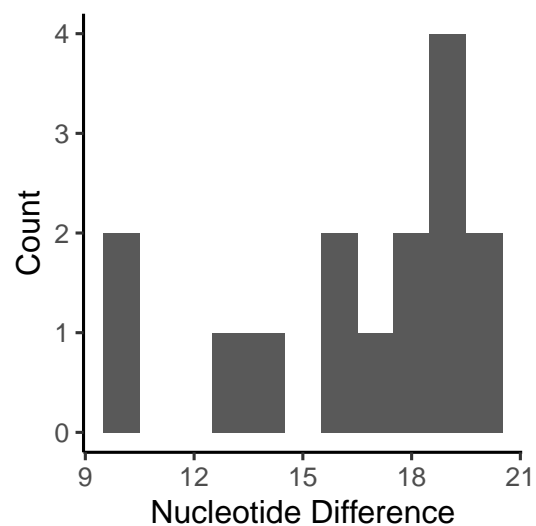
### IGHV3-74\*01\_02

3322 sequences assigned  
No exact matches.



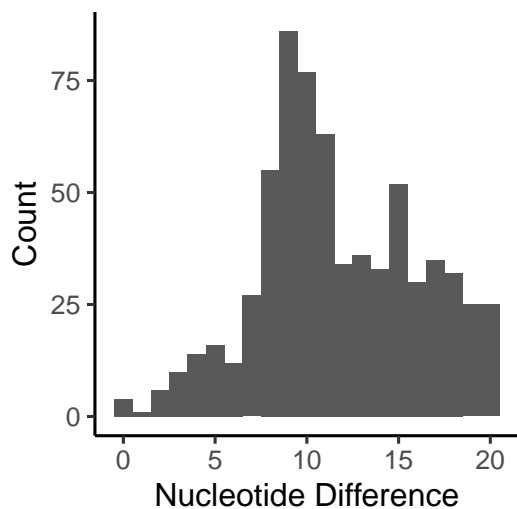
### IGHV3-NL1\*01

35 sequences assigned  
No exact matches.



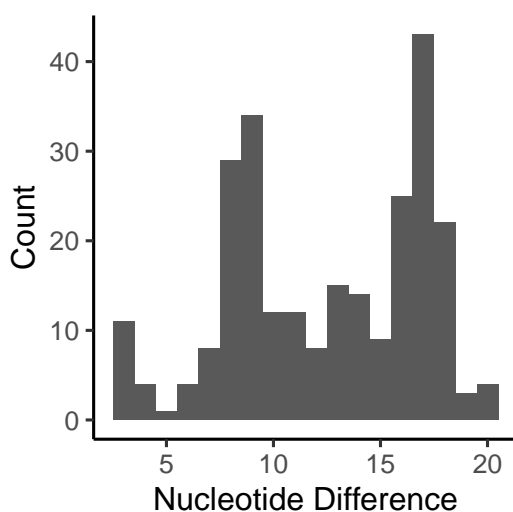
### IGHV3-73\*01\_02

1333 sequences assigned  
4 (0.3%) exact matches, in which:  
3 unique CDR3  
2 unique J



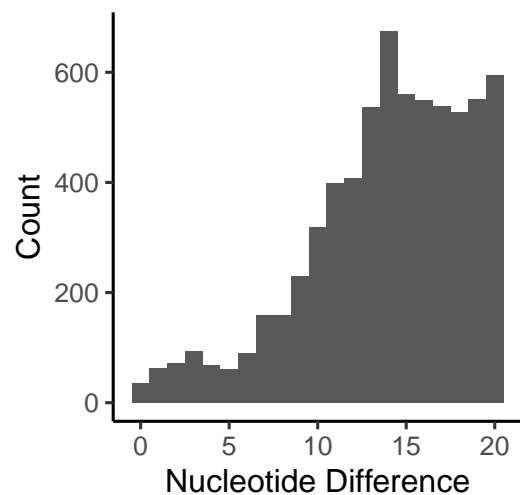
### IGHV3-43D\*04

324 sequences assigned  
No exact matches.



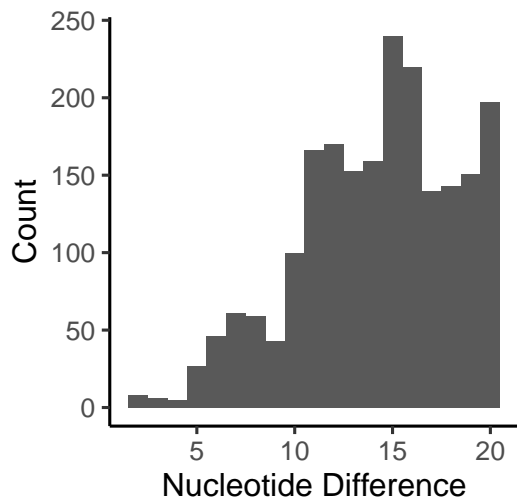
### IGHV4-4\*02\_03

13290 sequences assigned  
36 (0.3%) exact matches, in which:  
24 unique CDR3  
3 unique J



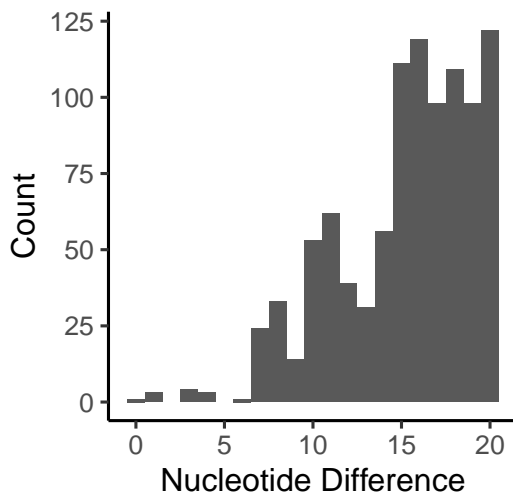
### IGHV3-74\*03

3456 sequences assigned  
No exact matches.



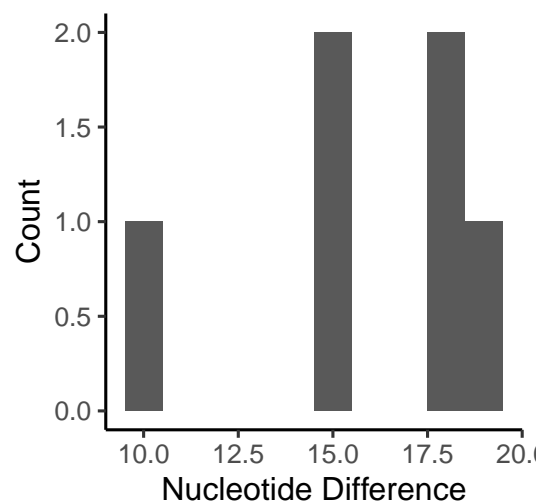
### IGHV3-64D\*09

1859 sequences assigned  
1 (0.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



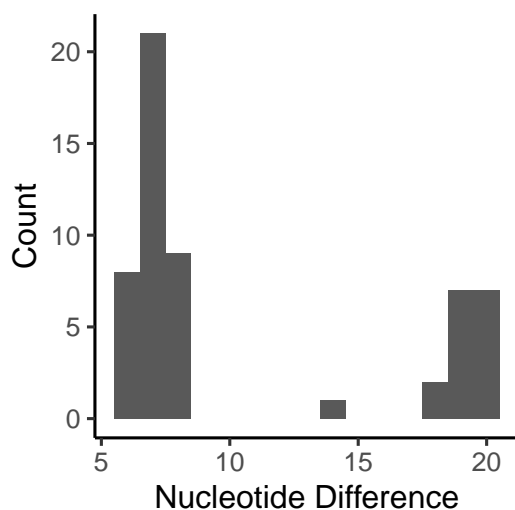
### IGHV4-28\*03

49 sequences assigned  
No exact matches.



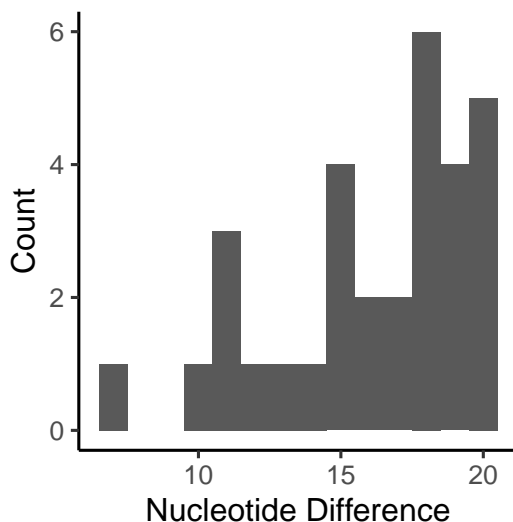
### IGHV4-28\*01\_07

59 sequences assigned  
No exact matches.



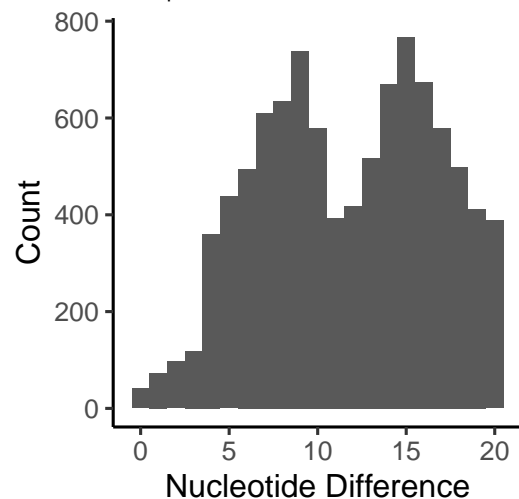
### IGHV4-30-2\*03

65 sequences assigned  
No exact matches.



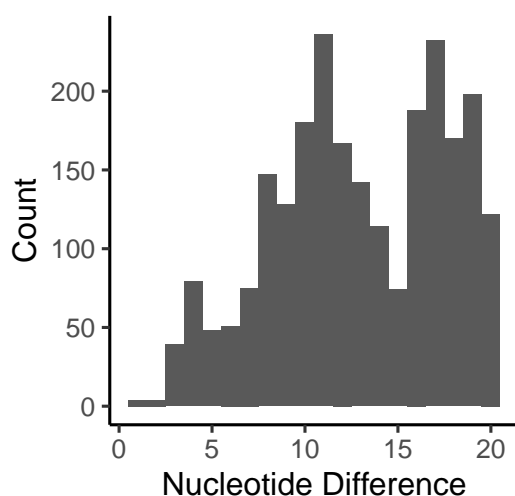
### IGHV4-31\*02

14107 sequences assigned  
41 (0.3%) exact matches, in which:  
34 unique CDR3  
3 unique J



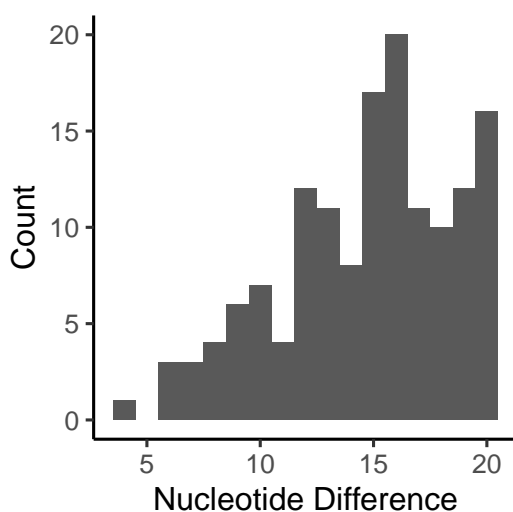
### IGHV4-30-4\*01

4263 sequences assigned  
No exact matches.



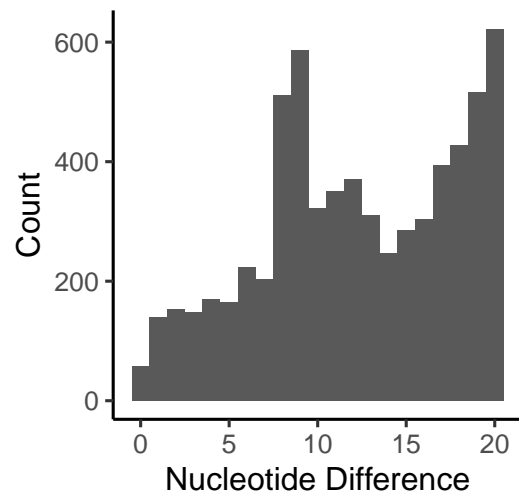
### IGHV4-30-4\*08

280 sequences assigned  
No exact matches.



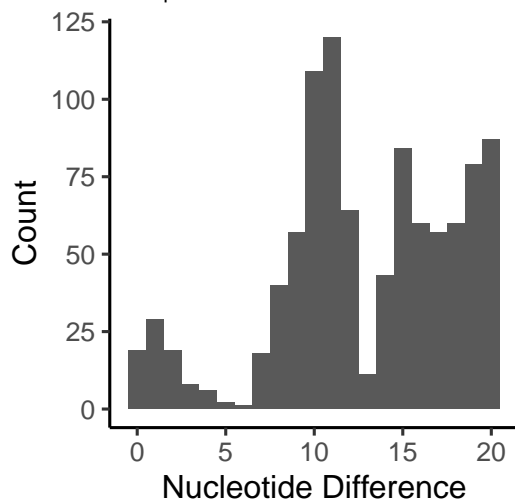
### IGHV4-34\*01\_02

13578 sequences assigned  
58 (0.4%) exact matches, in which:  
41 unique CDR3  
6 unique J



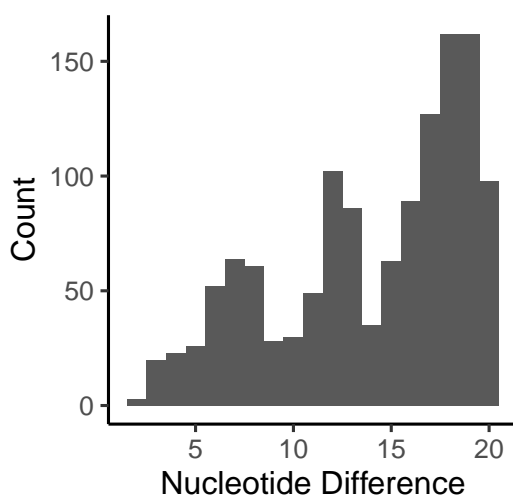
### IGHV4-30-2\*01

2229 sequences assigned  
19 (0.9%) exact matches, in which:  
13 unique CDR3  
1 unique J



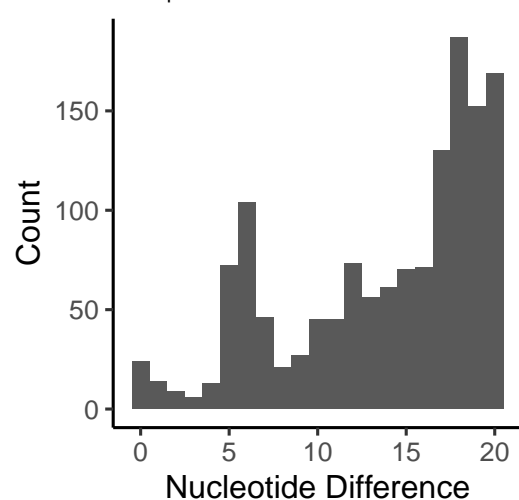
### IGHV4-31\*01

2198 sequences assigned  
No exact matches.



### IGHV4-38-2\*01

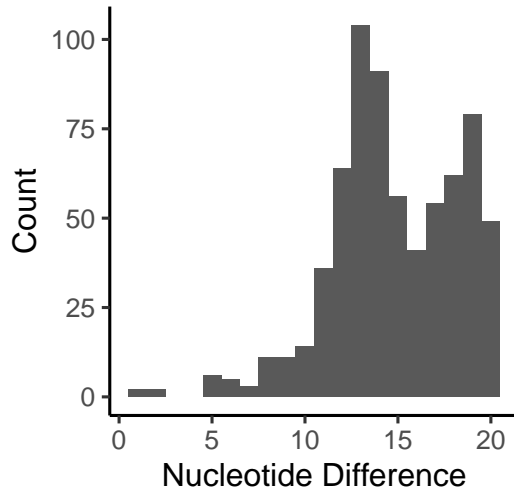
2449 sequences assigned  
24 (1%) exact matches, in which:  
14 unique CDR3  
3 unique J





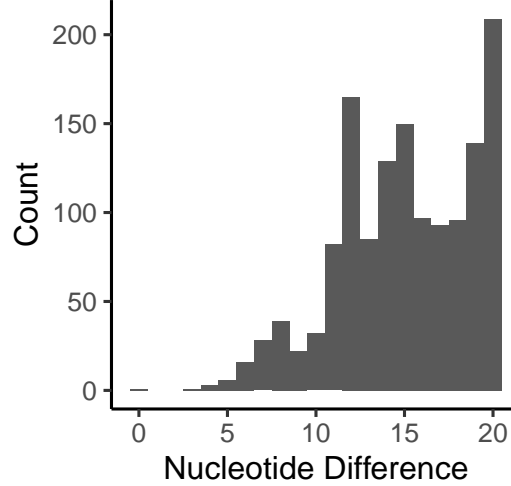
### IGHV4-38-2\*02

1389 sequences assigned  
No exact matches.



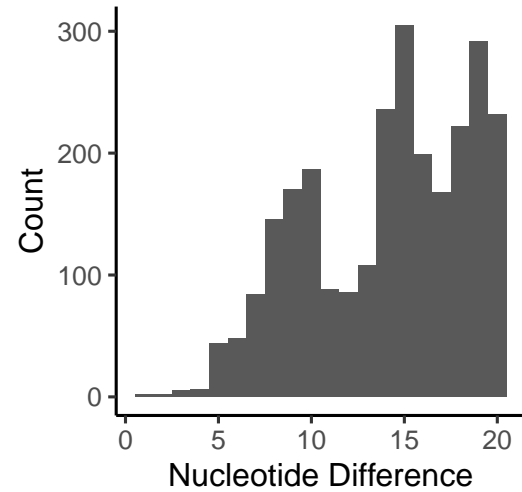
### IGHV4-39\*01\_05

3036 sequences assigned  
1 (0%) exact matches, in which:  
1 unique CDR3  
1 unique J



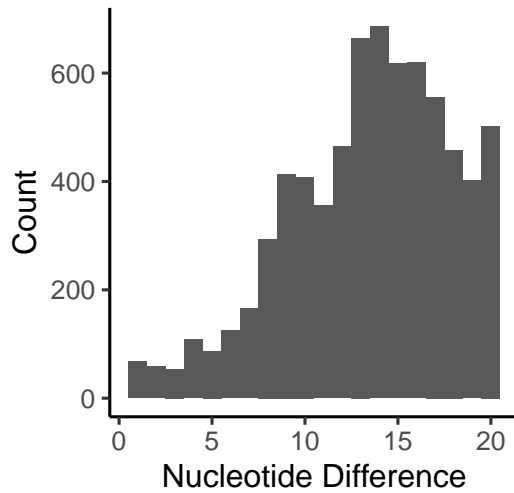
### IGHV4-59\*11

4989 sequences assigned  
No exact matches.



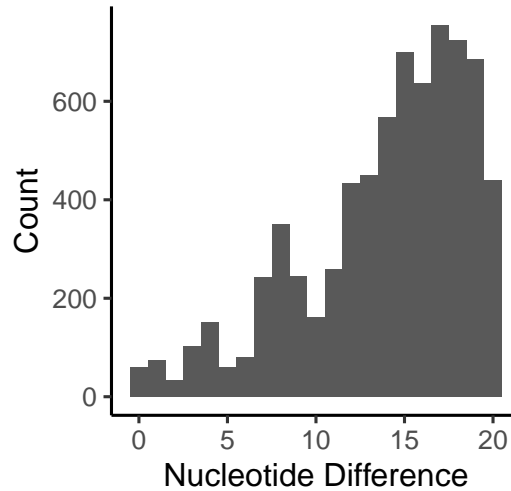
### IGHV4-39\*02

11298 sequences assigned  
No exact matches.



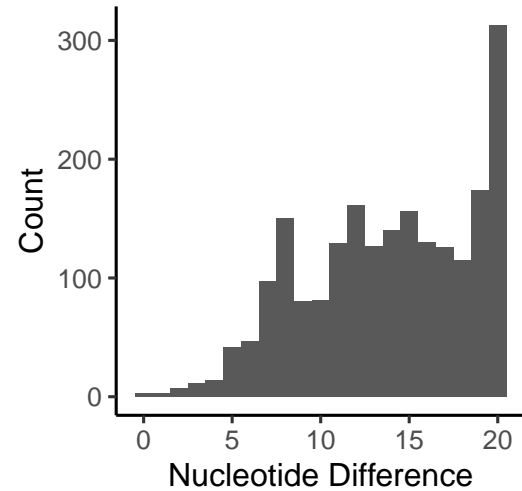
### IGHV4-59\*08

12284 sequences assigned  
60 (0.5%) exact matches, in which:  
37 unique CDR3  
4 unique J



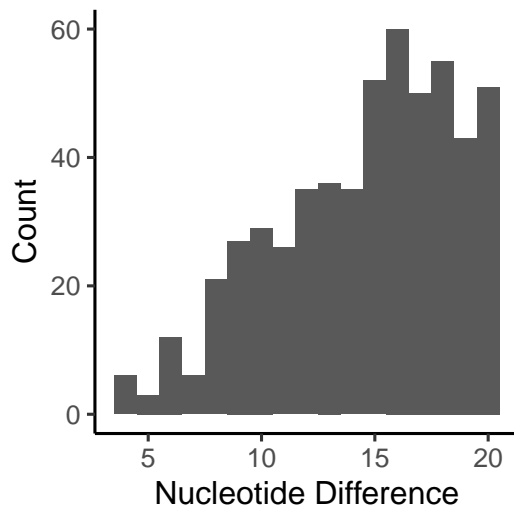
### IGHV4-59\*12

3849 sequences assigned  
3 (0.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



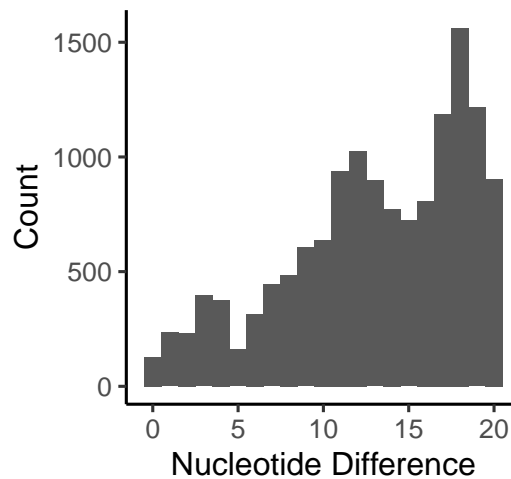
### IGHV4-39\*07

983 sequences assigned  
No exact matches.



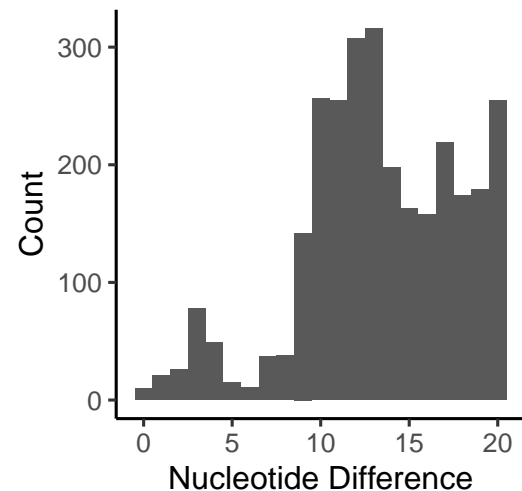
### IGHV4-59\*01\_07

20378 sequences assigned  
127 (0.6%) exact matches, in which:  
90 unique CDR3  
5 unique J



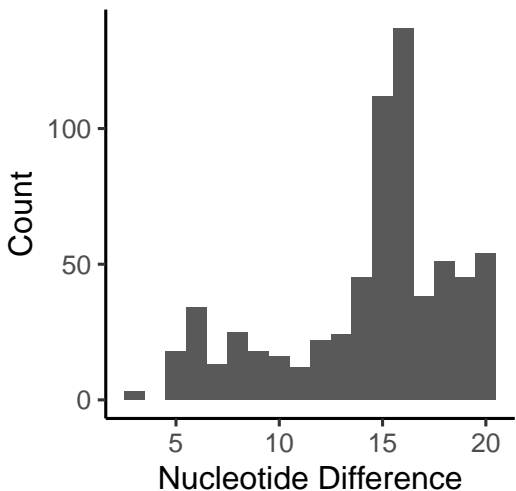
### IGHV4-61\*01

4241 sequences assigned  
10 (0.2%) exact matches, in which:  
6 unique CDR3  
2 unique J



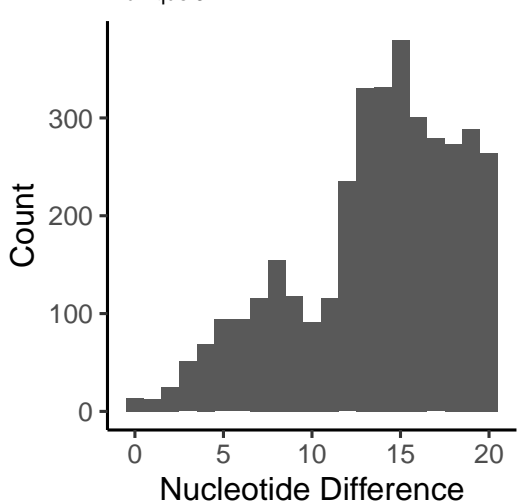
### IGHV4–61\*08

1362 sequences assigned  
No exact matches.



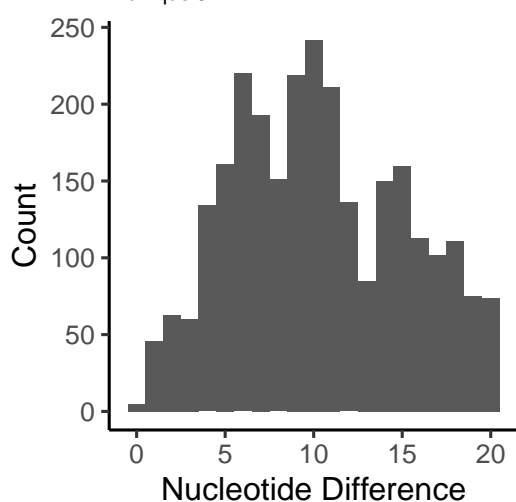
### IGHV5–10–1\*01\_03

4950 sequences assigned  
14 (0.3%) exact matches, in which:  
11 unique CDR3  
4 unique J



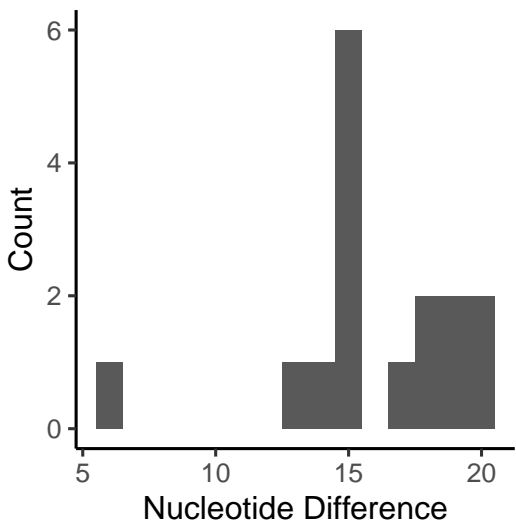
### IGHV6–1\*01\_02

3343 sequences assigned  
5 (0.1%) exact matches, in which:  
4 unique CDR3  
2 unique J



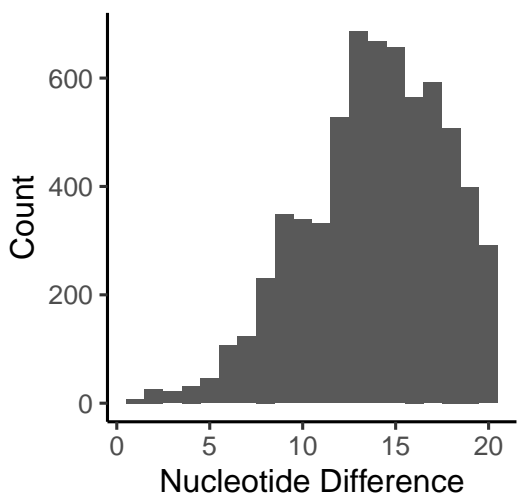
### IGHV4/OR15–8\*01

45 sequences assigned  
No exact matches.



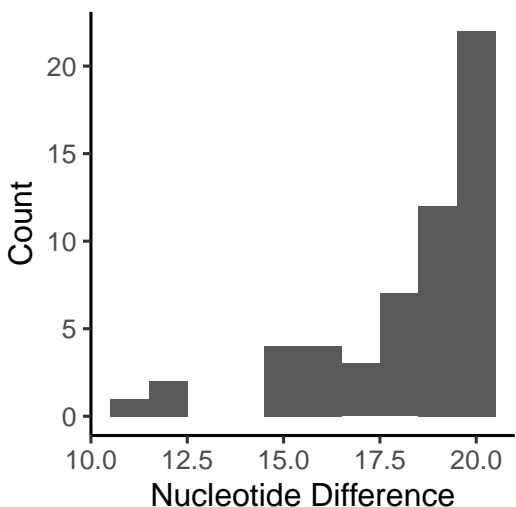
### IGHV5–51\*07

7860 sequences assigned  
No exact matches.



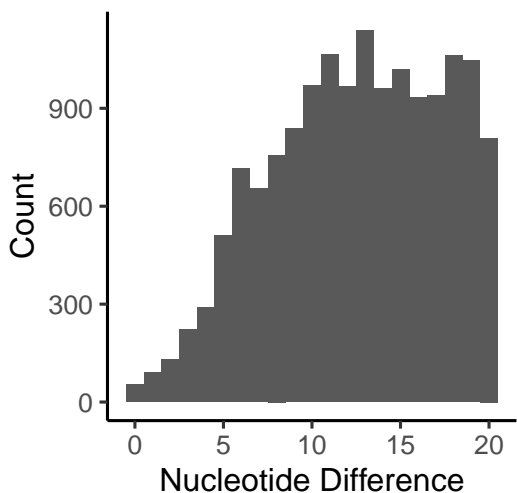
### IGHV4/OR15–8\*02

122 sequences assigned  
No exact matches.

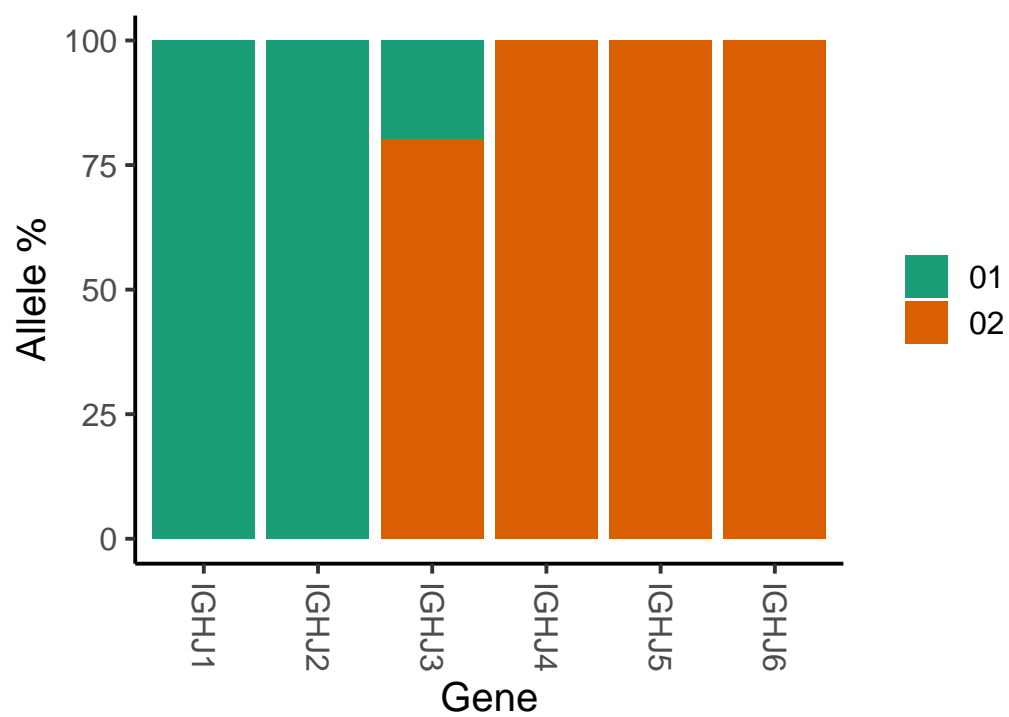


### IGHV5–51\*01\_03

20754 sequences assigned  
53 (0.3%) exact matches, in which:  
38 unique CDR3  
3 unique J



Allele Usage



Warning – no inferred sequences found.