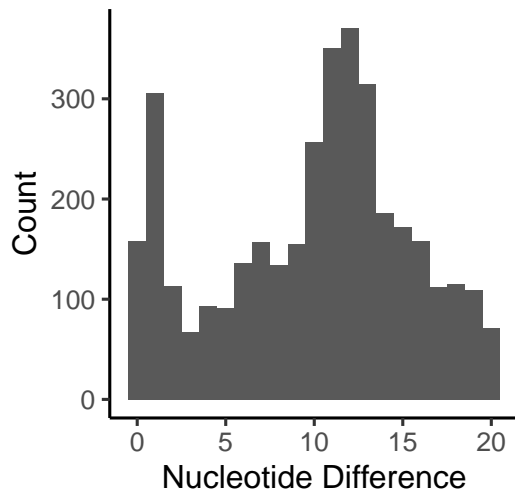


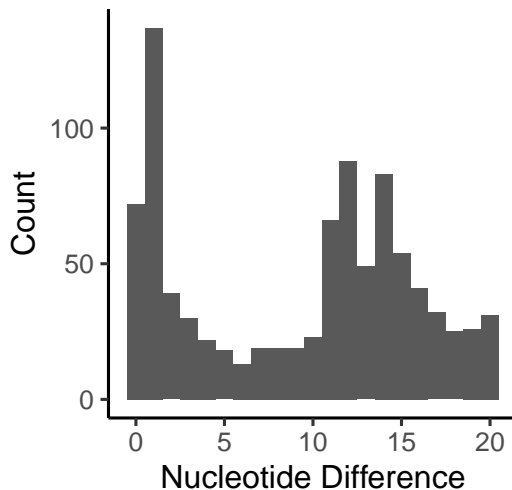
### IGHV1-2\*02

4278 sequences assigned  
158 (3.7%) exact matches, in which:  
121 unique CDR3  
5 unique J



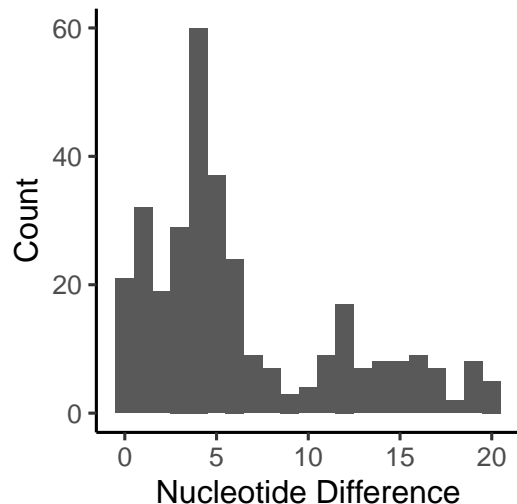
### IGHV1-8\*01

1098 sequences assigned  
72 (6.6%) exact matches, in which:  
52 unique CDR3  
5 unique J



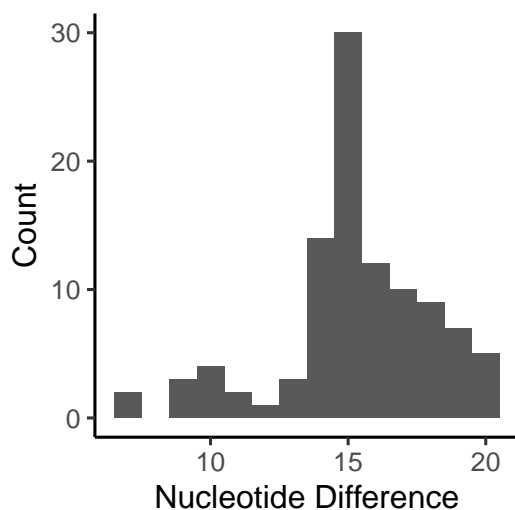
### IGHV1-24\*01

433 sequences assigned  
21 (4.8%) exact matches, in which:  
16 unique CDR3  
4 unique J



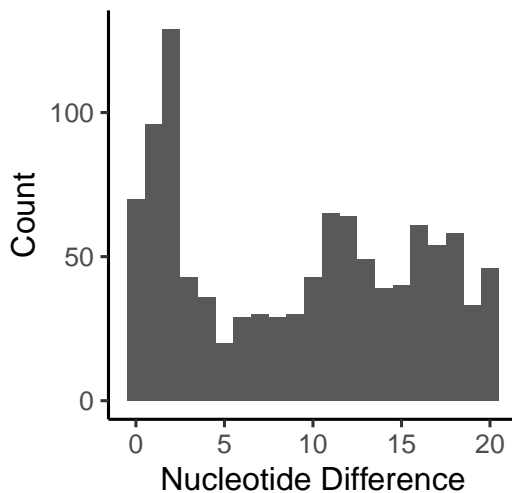
### IGHV1-3\*04

174 sequences assigned  
No exact matches.



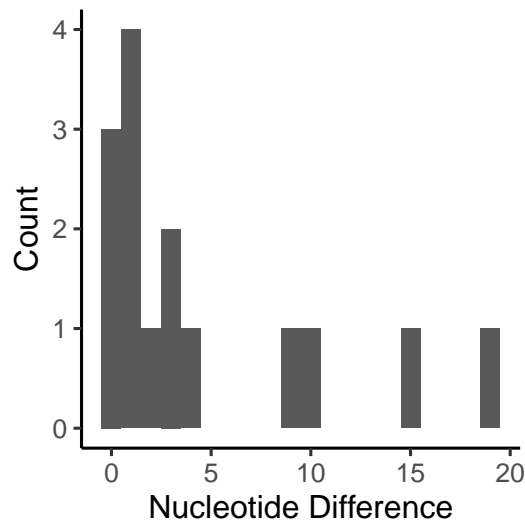
### IGHV1-18\*01

1245 sequences assigned  
70 (5.6%) exact matches, in which:  
55 unique CDR3  
4 unique J



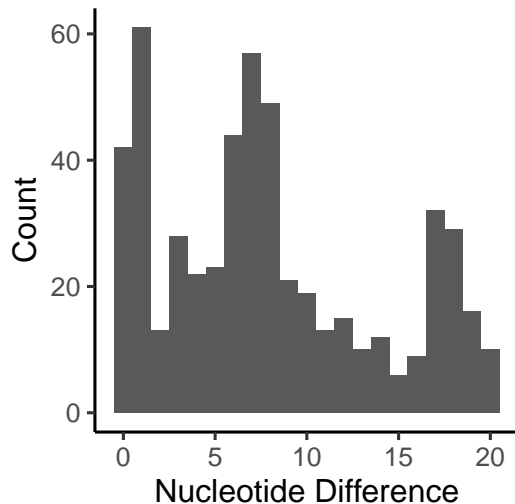
### IGHV1-45\*02

15 sequences assigned  
3 (20%) exact matches, in which:  
2 unique CDR3  
1 unique J



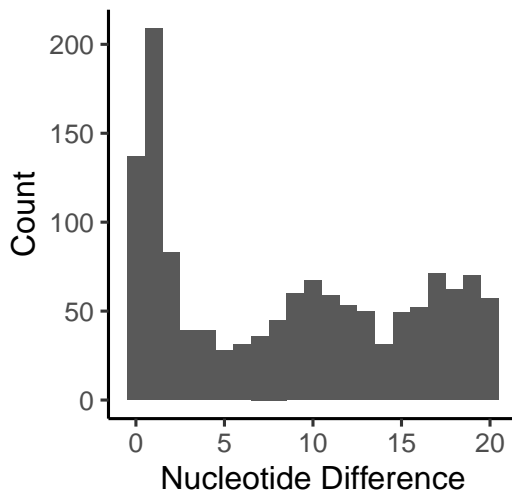
### IGHV1-3\*01\_05

1140 sequences assigned  
42 (3.7%) exact matches, in which:  
31 unique CDR3  
5 unique J



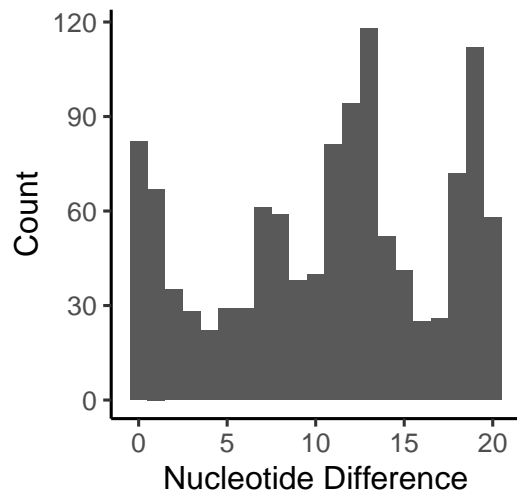
### IGHV1-18\*04

1745 sequences assigned  
137 (7.9%) exact matches, in which:  
105 unique CDR3  
5 unique J



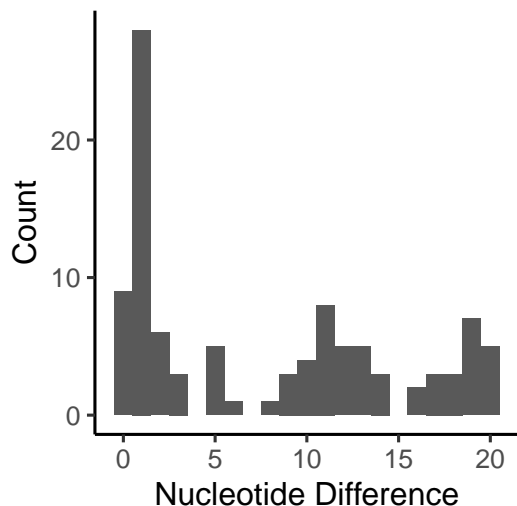
### IGHV1-46\*01

1480 sequences assigned  
82 (5.5%) exact matches, in which:  
73 unique CDR3  
6 unique J



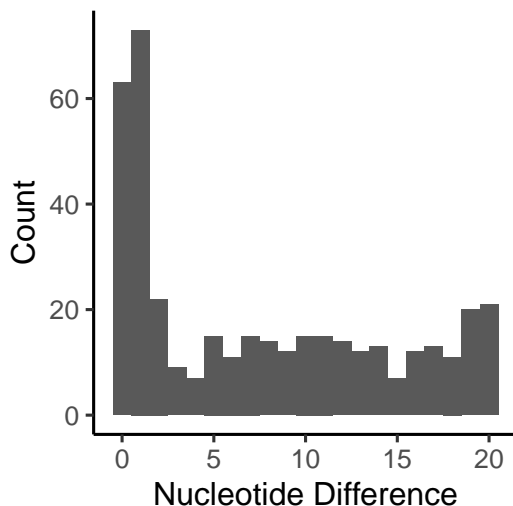
### IGHV1-58\*01\_03

126 sequences assigned  
9 (7.1%) exact matches, in which:  
8 unique CDR3  
4 unique J



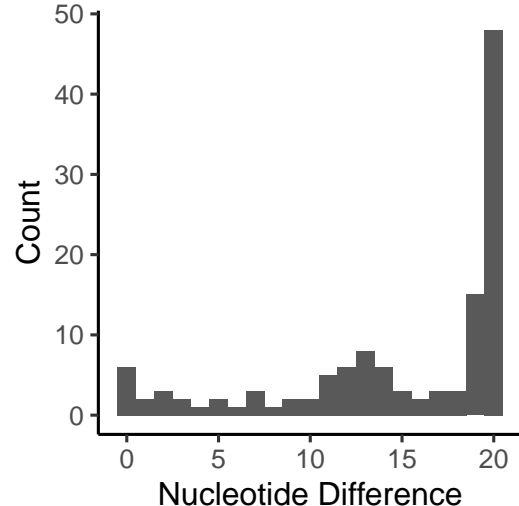
### IGHV1-69\*06\_14

545 sequences assigned  
63 (11.6%) exact matches, in which:  
55 unique CDR3  
5 unique J



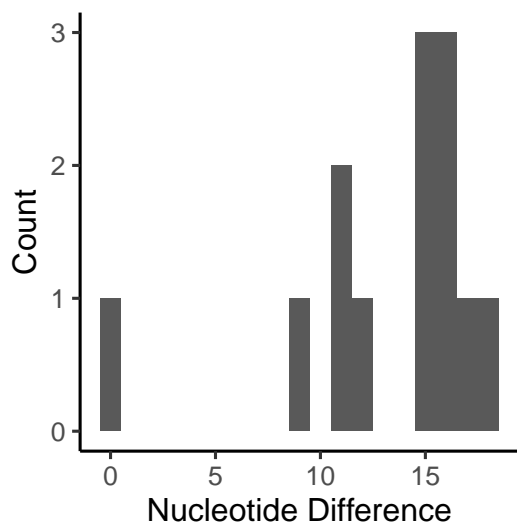
### IGHV2-26\*01

162 sequences assigned  
6 (3.7%) exact matches, in which:  
6 unique CDR3  
4 unique J



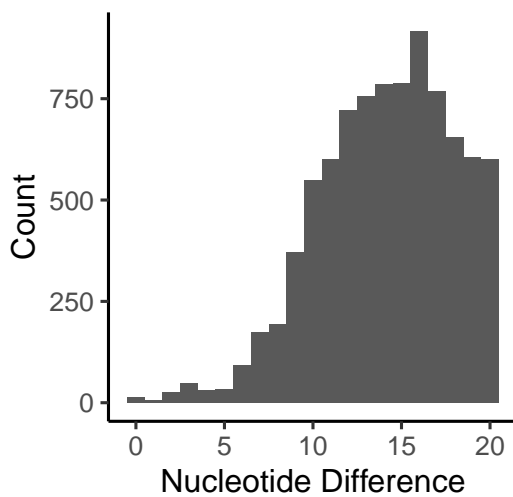
### IGHV1-69-2\*01

14 sequences assigned  
1 (7.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



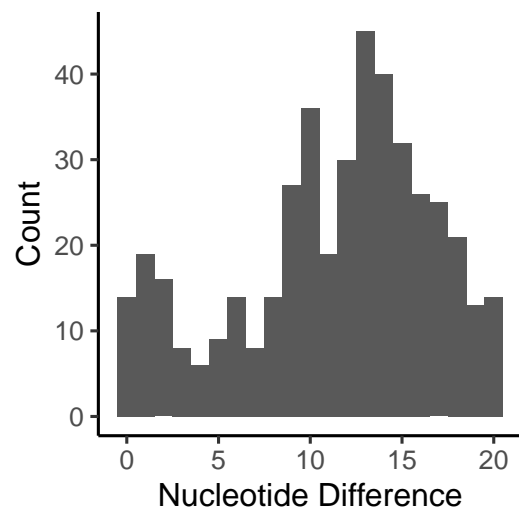
### IGHV2-5\*01

9998 sequences assigned  
13 (0.1%) exact matches, in which:  
11 unique CDR3  
3 unique J



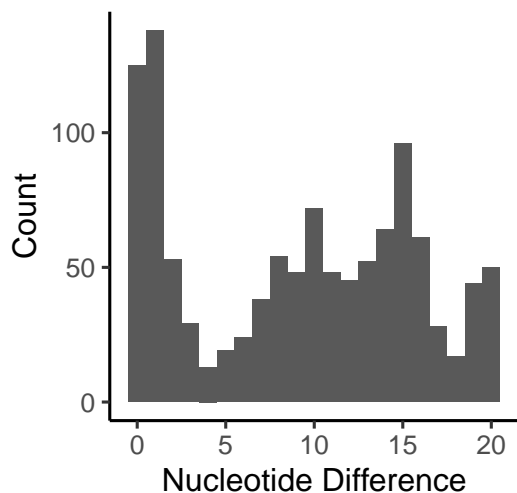
### IGHV2-70\*11\_15

615 sequences assigned  
14 (2.3%) exact matches, in which:  
14 unique CDR3  
3 unique J



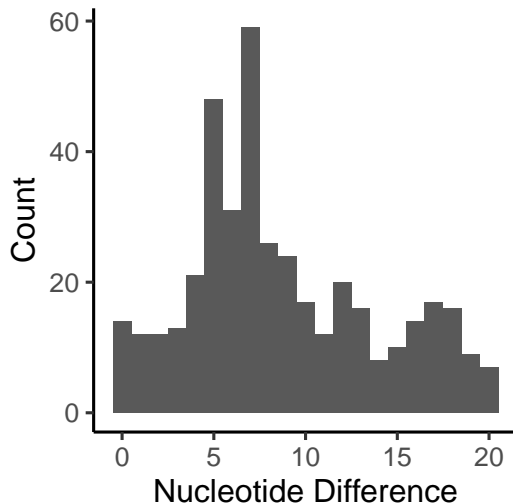
### IGHV1-69\*01\_12\_13

1446 sequences assigned  
125 (8.6%) exact matches, in which:  
110 unique CDR3  
5 unique J



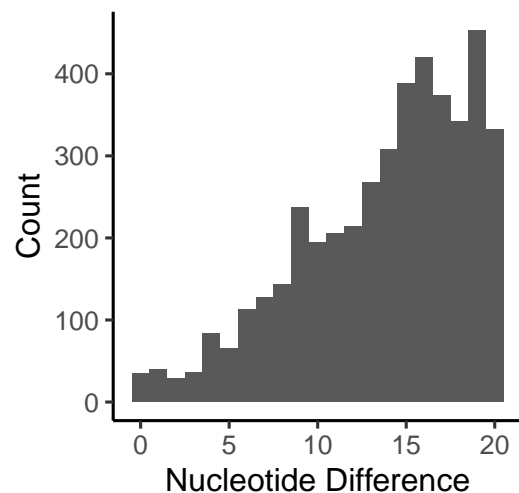
### IGHV2-5\*02

452 sequences assigned  
14 (3.1%) exact matches, in which:  
13 unique CDR3  
3 unique J



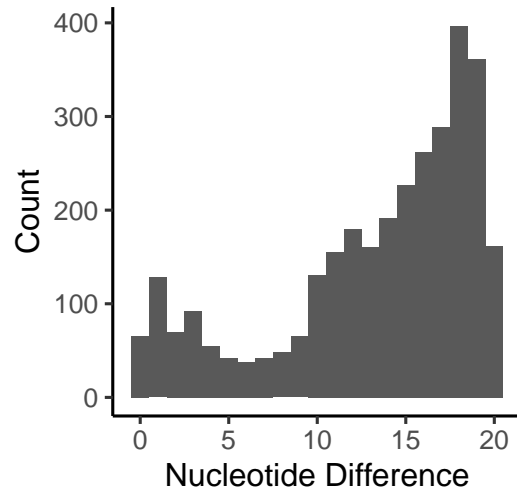
### IGHV3-7\*01

5708 sequences assigned  
35 (0.6%) exact matches, in which:  
32 unique CDR3  
4 unique J



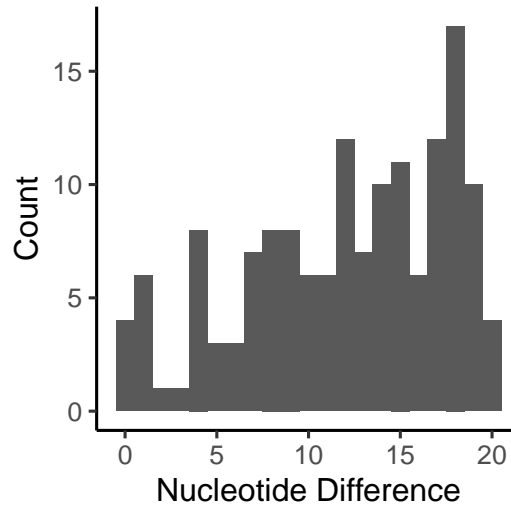
### IGHV3-7\*03

3693 sequences assigned  
66 (1.8%) exact matches, in which:  
46 unique CDR3  
4 unique J



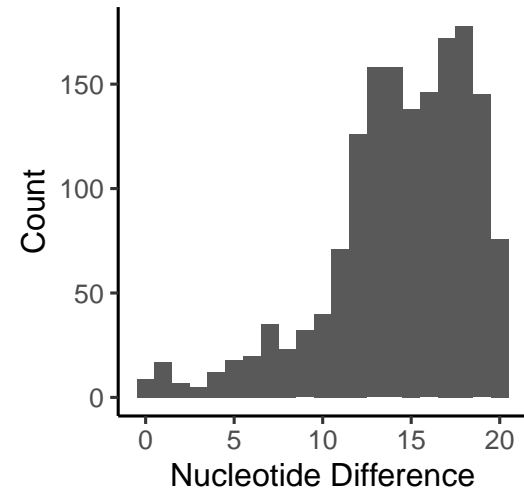
### IGHV3-11\*04

193 sequences assigned  
4 (2.1%) exact matches, in which:  
4 unique CDR3  
1 unique J



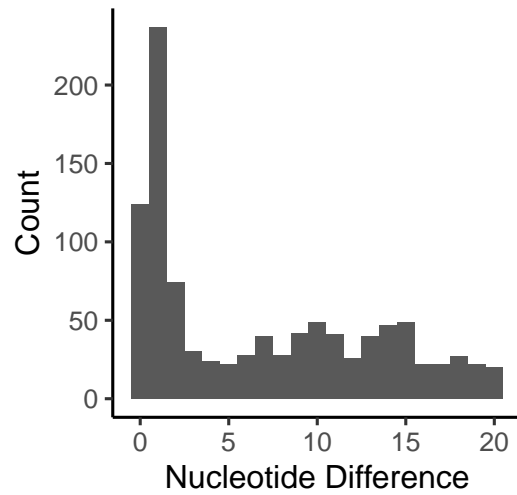
### IGHV3-15\*07

1912 sequences assigned  
9 (0.5%) exact matches, in which:  
8 unique CDR3  
2 unique J



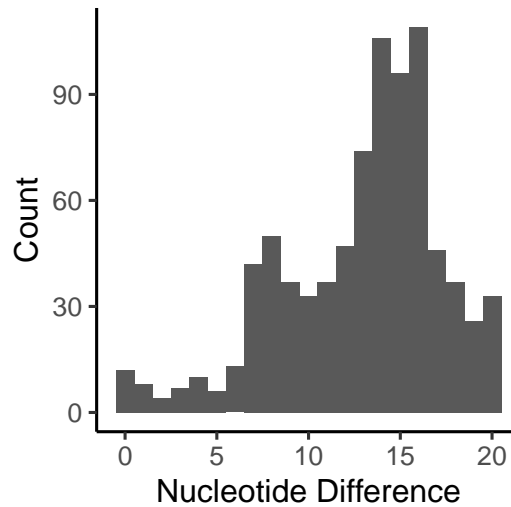
### IGHV3-9\*01

1125 sequences assigned  
124 (11%) exact matches, in which:  
87 unique CDR3  
5 unique J



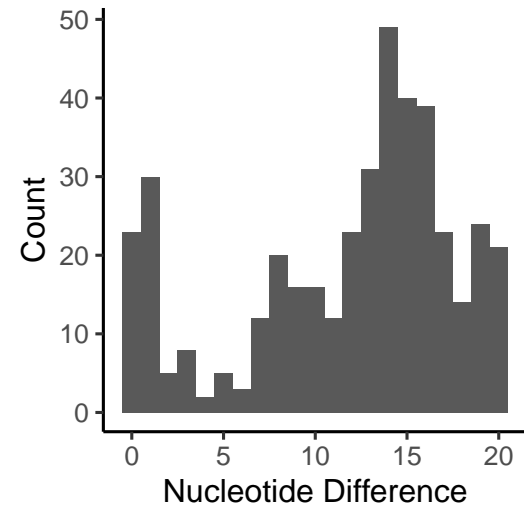
### IGHV3-11\*06

911 sequences assigned  
12 (1.3%) exact matches, in which:  
11 unique CDR3  
4 unique J



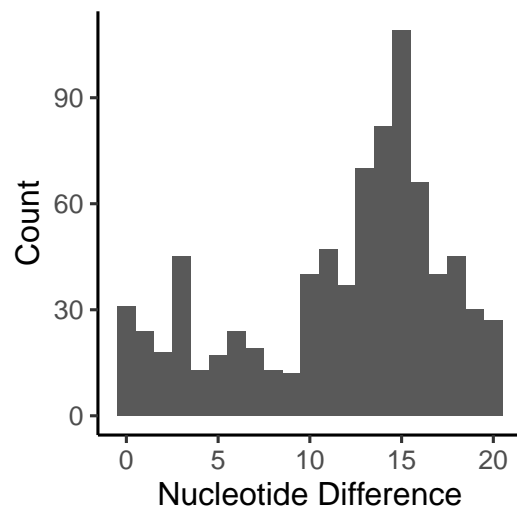
### IGHV3-15\*01\_02

649 sequences assigned  
23 (3.5%) exact matches, in which:  
20 unique CDR3  
4 unique J



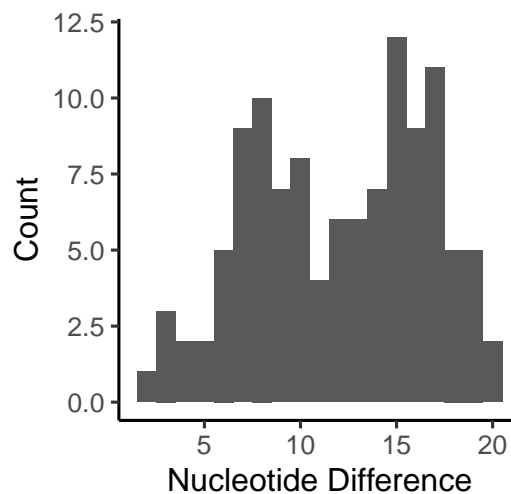
### IGHV3-11\*01

1024 sequences assigned  
31 (3%) exact matches, in which:  
30 unique CDR3  
5 unique J



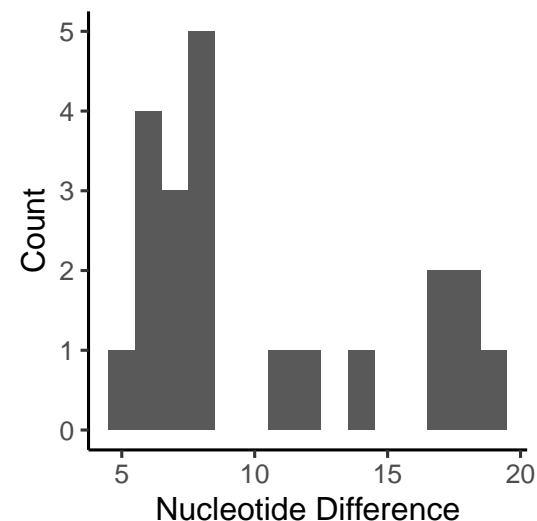
### IGHV3-13\*01

129 sequences assigned  
No exact matches.



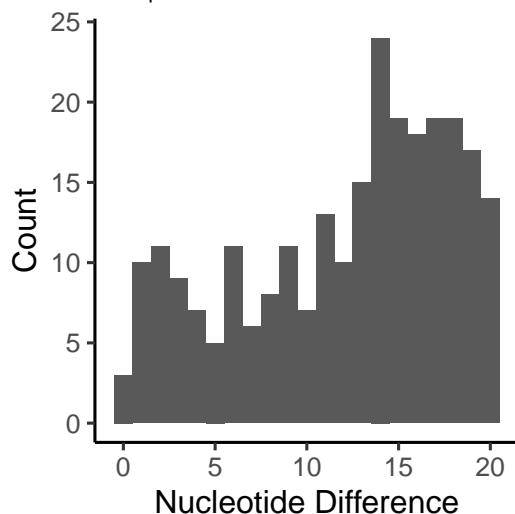
### IGHV3-20\*03\_04

29 sequences assigned  
No exact matches.



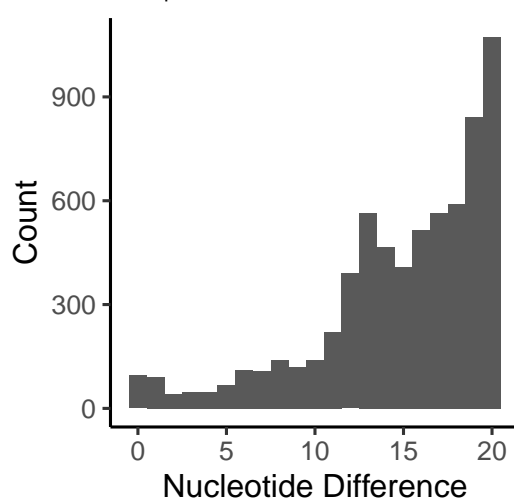
### IGHV3-21\*04

342 sequences assigned  
3 (0.9%) exact matches, in which:  
3 unique CDR3  
1 unique J



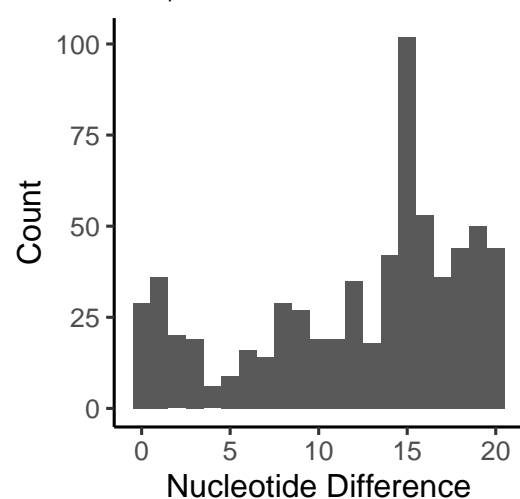
### IGHV3-23\*01\_04

12319 sequences assigned  
95 (0.8%) exact matches, in which:  
88 unique CDR3  
6 unique J



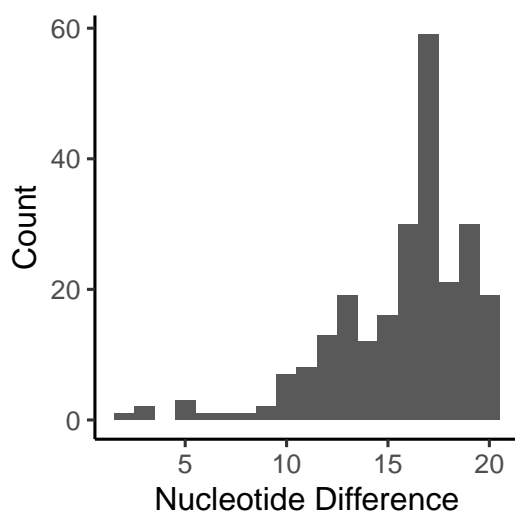
### IGHV3-33\*01

1081 sequences assigned  
29 (2.7%) exact matches, in which:  
28 unique CDR3  
4 unique J



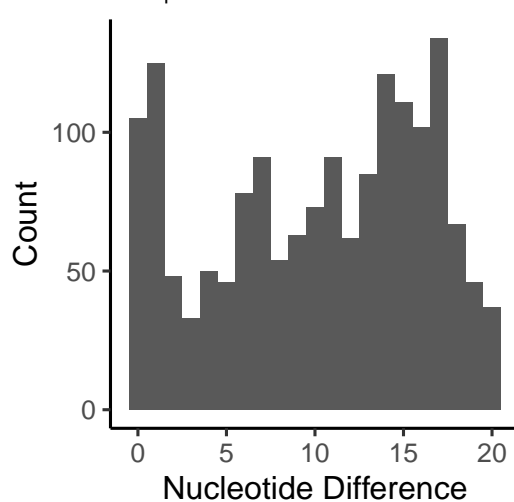
### IGHV3-21\*06

437 sequences assigned  
No exact matches.



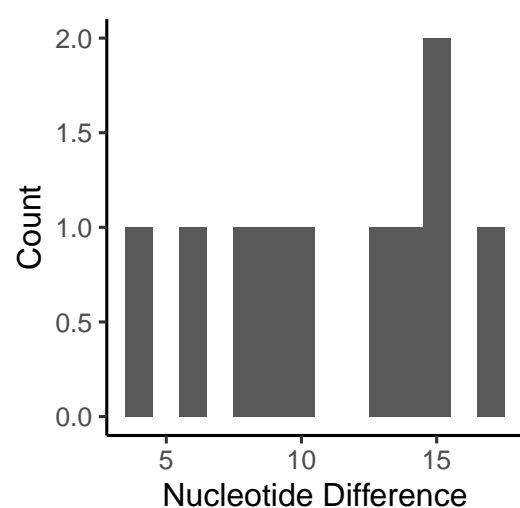
### IGHV3-30-3\*01

1973 sequences assigned  
105 (5.3%) exact matches, in which:  
87 unique CDR3  
4 unique J



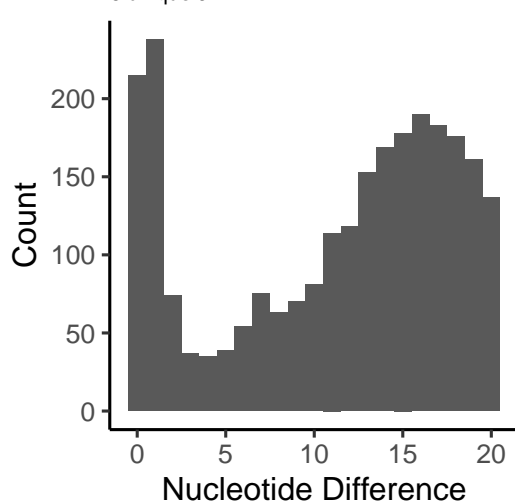
### IGHV3-33\*05

23 sequences assigned  
No exact matches.



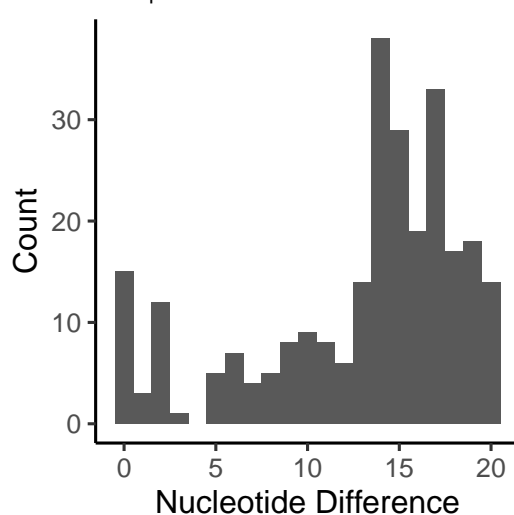
### IGHV3-21\*01\_02

3037 sequences assigned  
215 (7.1%) exact matches, in which:  
178 unique CDR3  
6 unique J



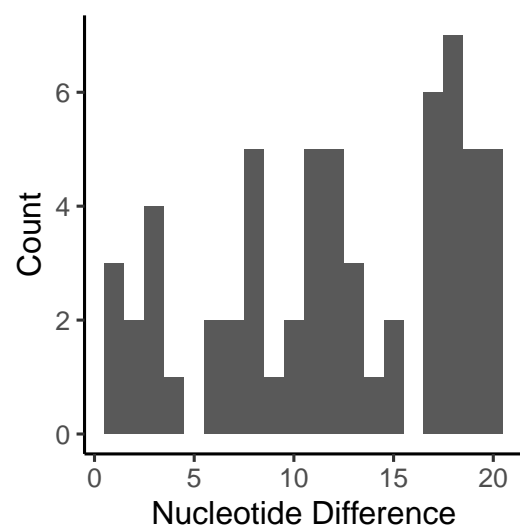
### IGHV3-30\*03

398 sequences assigned  
15 (3.8%) exact matches, in which:  
15 unique CDR3  
3 unique J



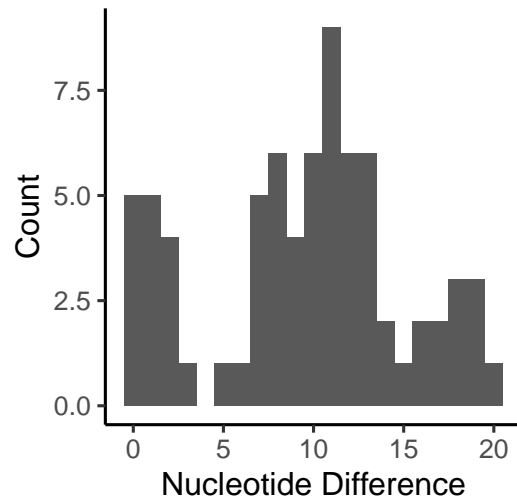
### IGHV3-33\*06

100 sequences assigned  
No exact matches.



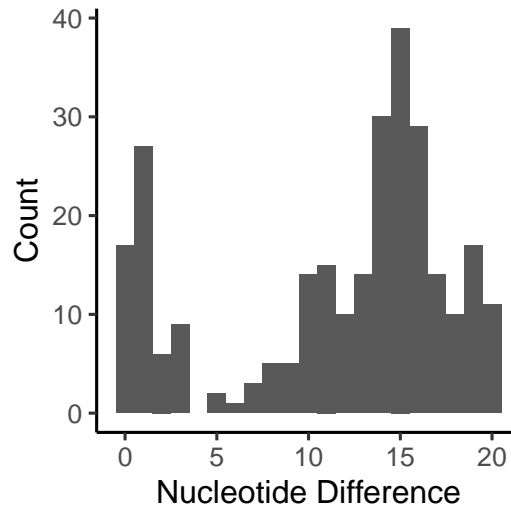
### IGHV3-43\*01

92 sequences assigned  
5 (5.4%) exact matches, in which:  
4 unique CDR3  
1 unique J



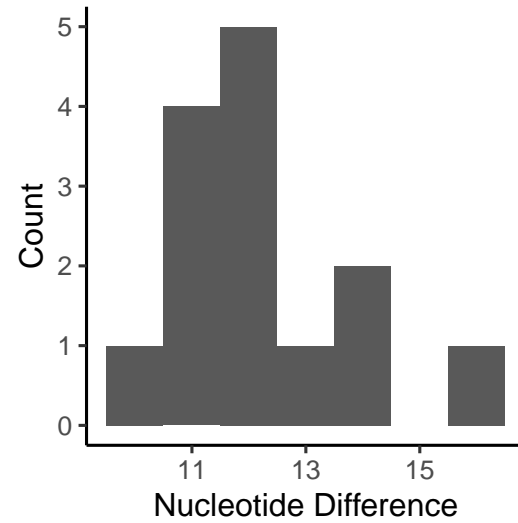
### IGHV3-49\*03\_05

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



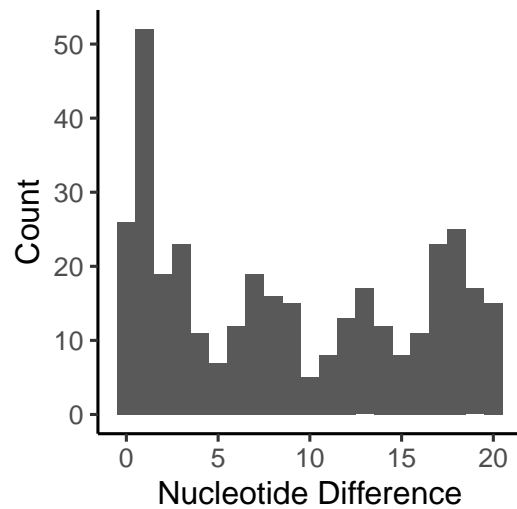
### IGHV3-64\*02\_07

16 sequences assigned  
No exact matches.



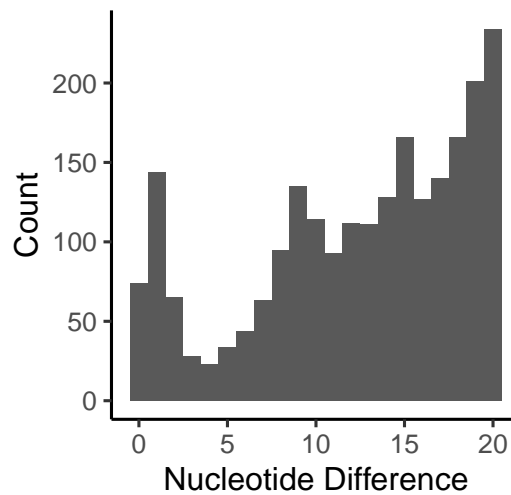
### IGHV3-48\*02

760 sequences assigned  
26 (3.4%) exact matches, in which:  
18 unique CDR3  
3 unique J



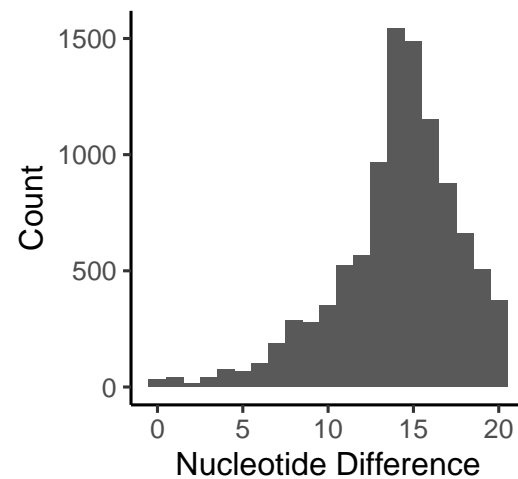
### IGHV3-53\*01\_02

6651 sequences assigned  
74 (1.1%) exact matches, in which:  
59 unique CDR3  
5 unique J



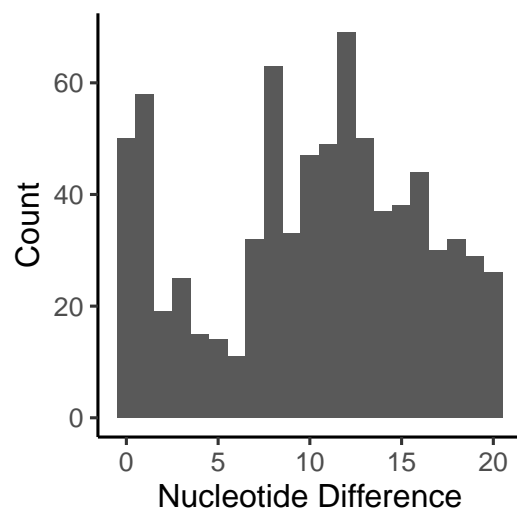
### IGHV3-66\*01

11294 sequences assigned  
31 (0.3%) exact matches, in which:  
27 unique CDR3  
4 unique J



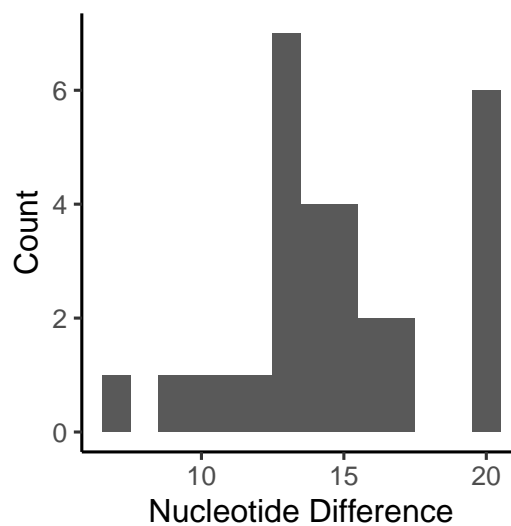
### IGHV3-48\*04

1020 sequences assigned  
50 (4.9%) exact matches, in which:  
34 unique CDR3  
5 unique J



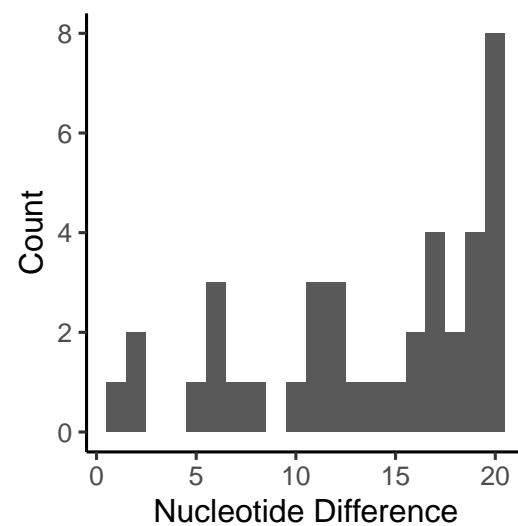
### IGHV3-64\*04

37 sequences assigned  
No exact matches.



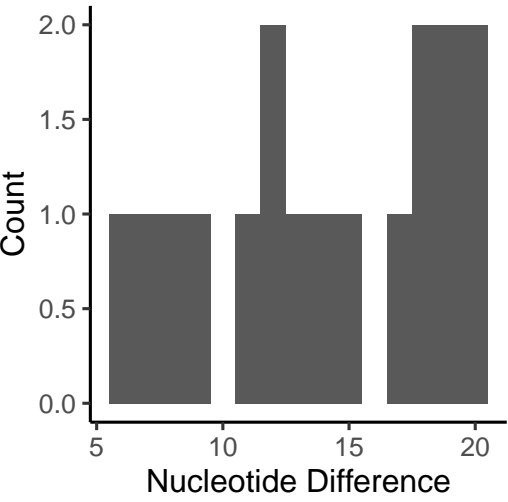
### IGHV3-66\*03

58 sequences assigned  
No exact matches.



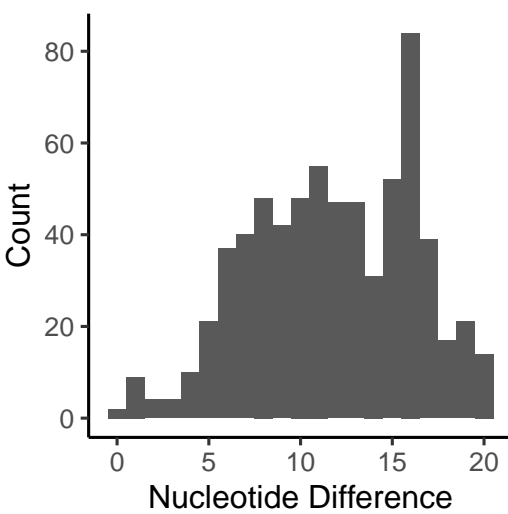
IGHV3-69-1\*01

33 sequences assigned  
No exact matches.



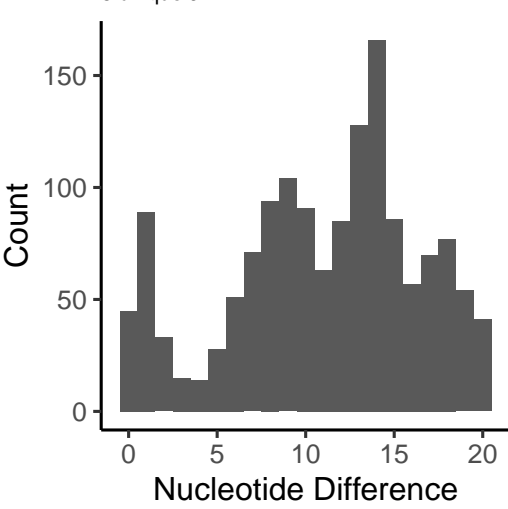
IGHV3-72\*01

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



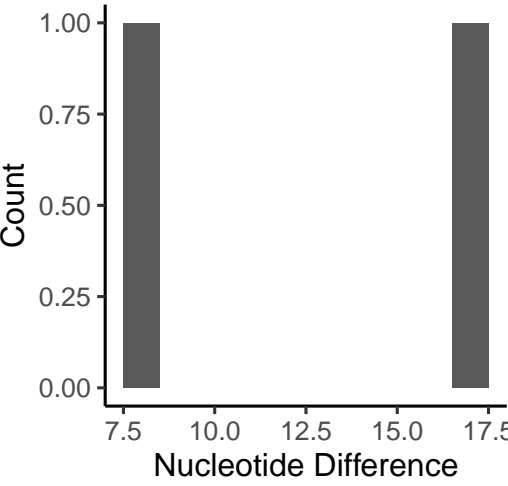
IGHV3-74\*01\_02

1634 sequences assigned  
45 (2.8%) exact matches, in which:  
38 unique CDR3  
5 unique J



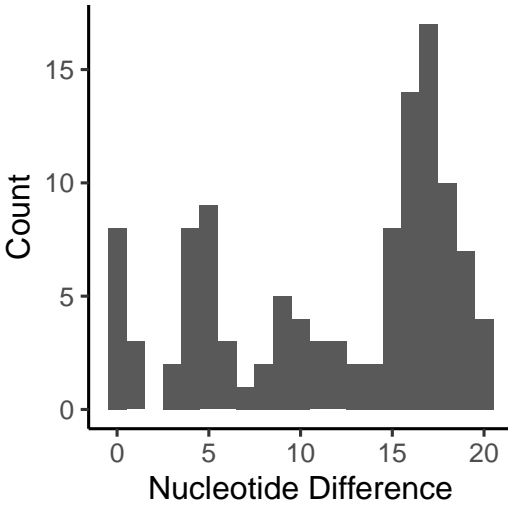
IGHV3-69-1\*02

17 sequences assigned  
No exact matches.



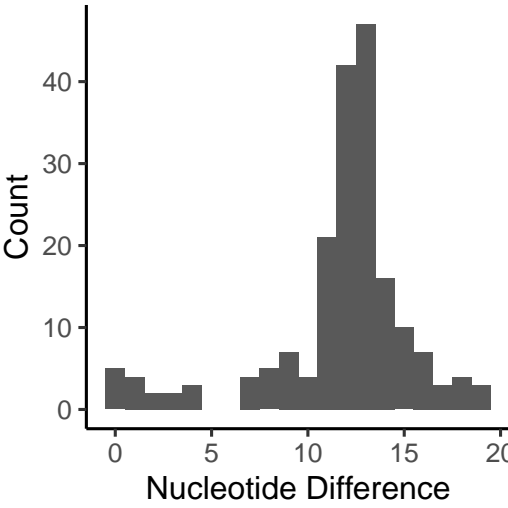
IGHV3-73\*01\_02

154 sequences assigned  
8 (5.2%) exact matches, in which:  
8 unique CDR3  
2 unique J



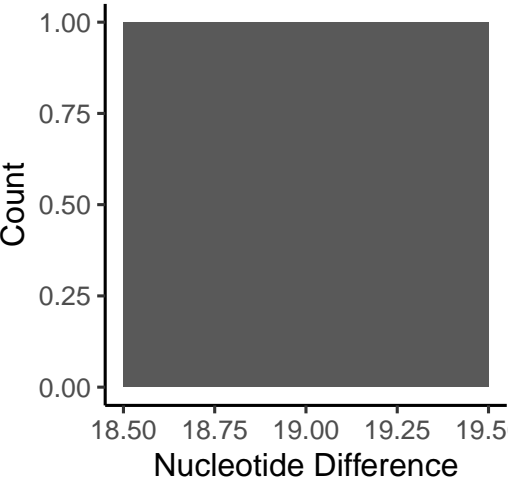
IGHV3-43D\*03

210 sequences assigned  
5 (2.4%) exact matches, in which:  
5 unique CDR3  
2 unique J



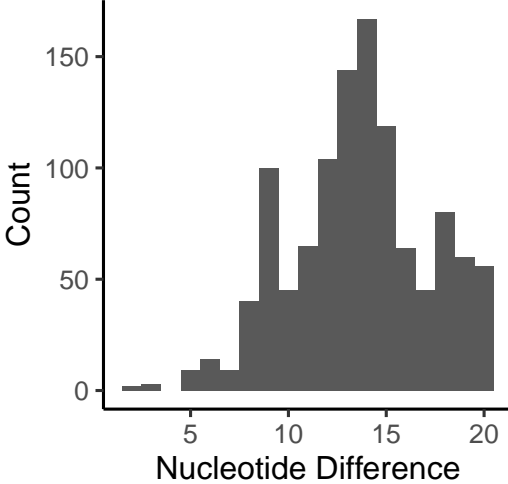
IGHV3-71\*01\_04

6 sequences assigned  
No exact matches.



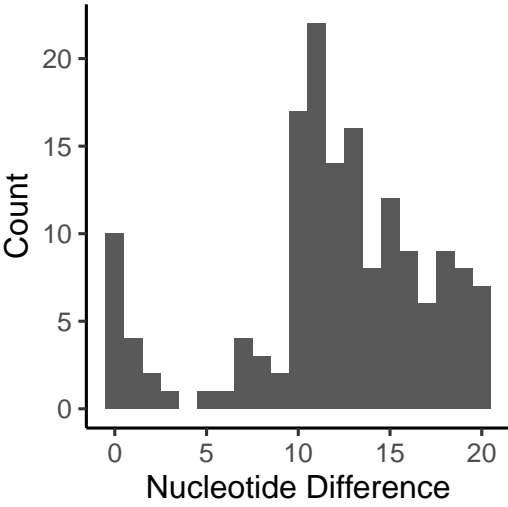
IGHV3-74\*03

1381 sequences assigned  
No exact matches.



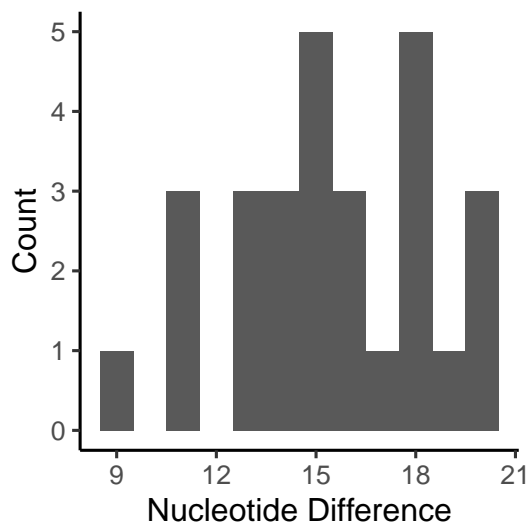
IGHV3-64D\*09

216 sequences assigned  
10 (4.6%) exact matches, in which:  
9 unique CDR3  
3 unique J



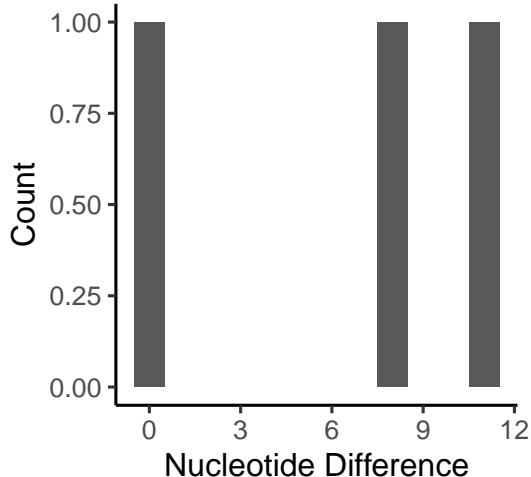
### IGHV3–NL1\*01

49 sequences assigned  
No exact matches.



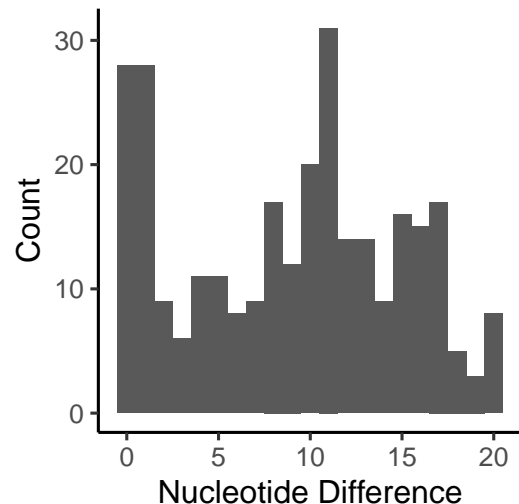
### IGHV4–28\*03

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



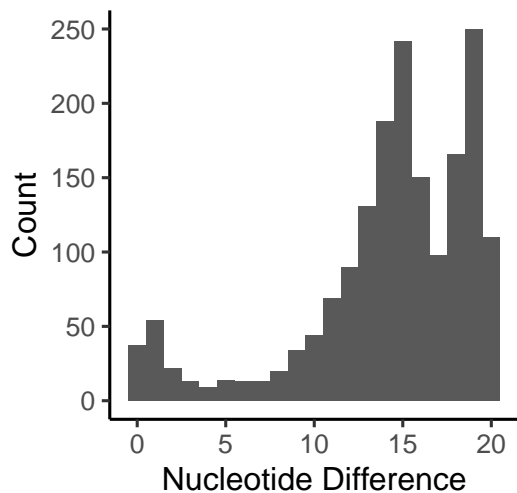
### IGHV4–31\*02

373 sequences assigned  
28 (7.5%) exact matches, in which:  
24 unique CDR3  
6 unique J



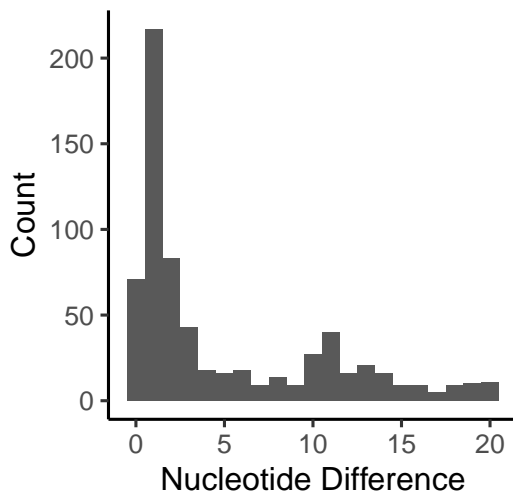
### IGHV4–4\*07

2054 sequences assigned  
37 (1.8%) exact matches, in which:  
26 unique CDR3  
3 unique J



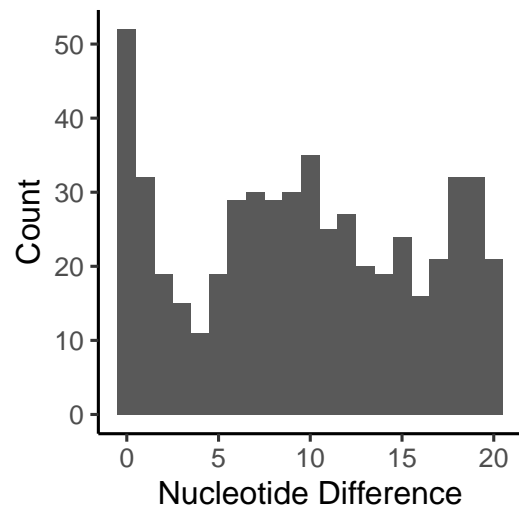
### IGHV4–30–2\*01

802 sequences assigned  
71 (8.9%) exact matches, in which:  
51 unique CDR3  
6 unique J



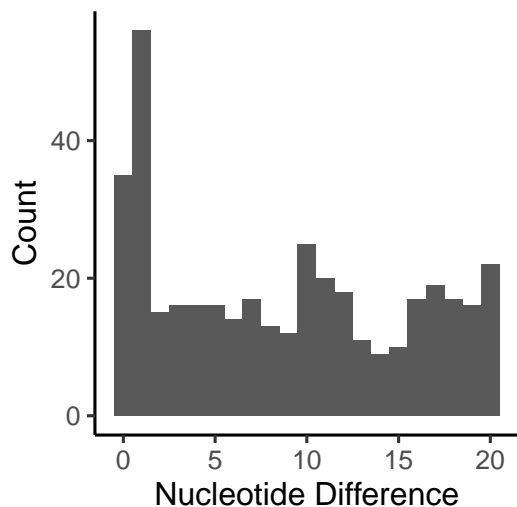
### IGHV4–34\*01\_02

749 sequences assigned  
52 (6.9%) exact matches, in which:  
49 unique CDR3  
6 unique J



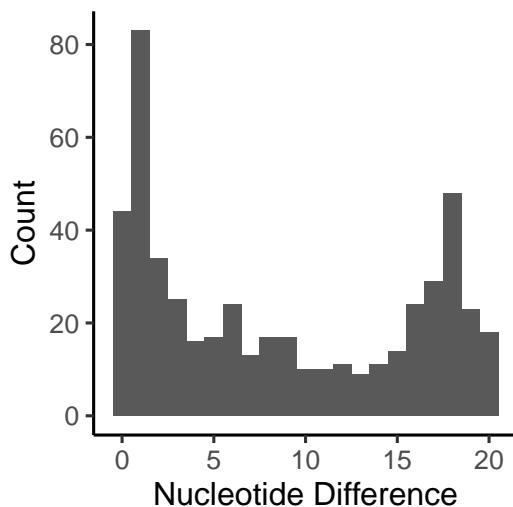
### IGHV4–4\*02\_03

514 sequences assigned  
35 (6.8%) exact matches, in which:  
25 unique CDR3  
5 unique J



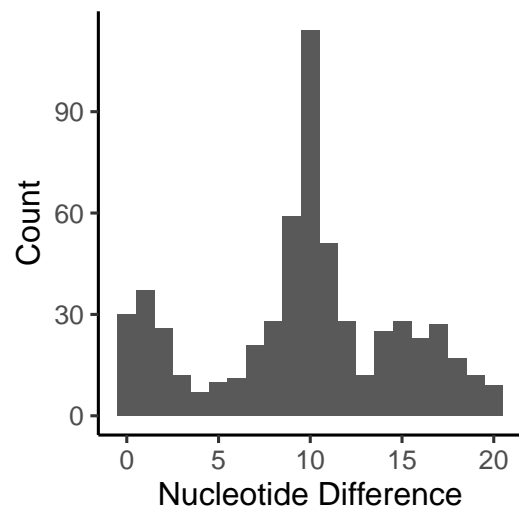
### IGHV4–30–4\*01

553 sequences assigned  
44 (8%) exact matches, in which:  
38 unique CDR3  
5 unique J



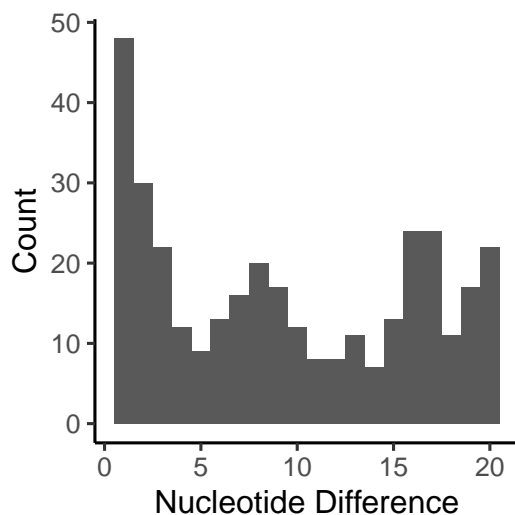
### IGHV4–38–2\*02

690 sequences assigned  
30 (4.3%) exact matches, in which:  
26 unique CDR3  
6 unique J



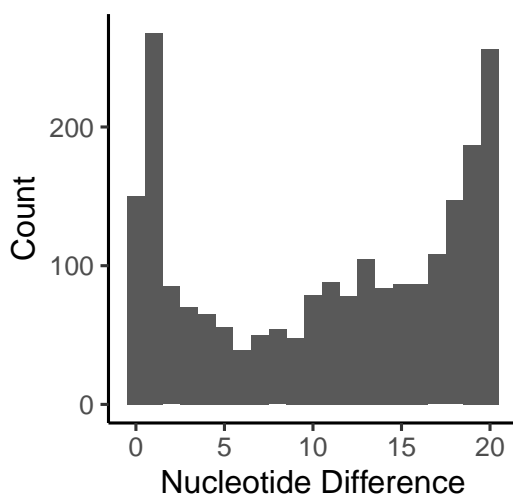
### IGHV4-39\*02

539 sequences assigned  
No exact matches.



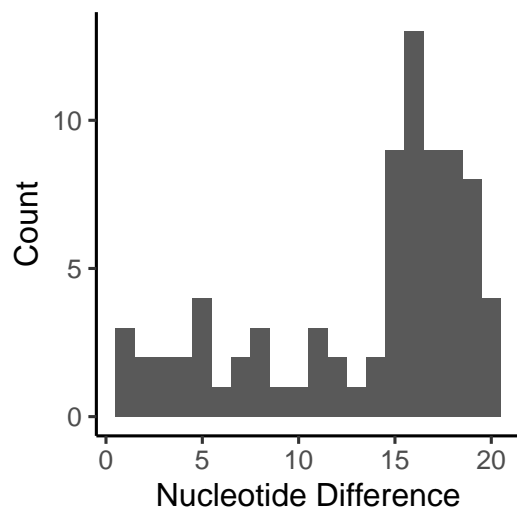
### IGHV4-59\*01\_07

3802 sequences assigned  
150 (3.9%) exact matches, in which:  
109 unique CDR3  
6 unique J



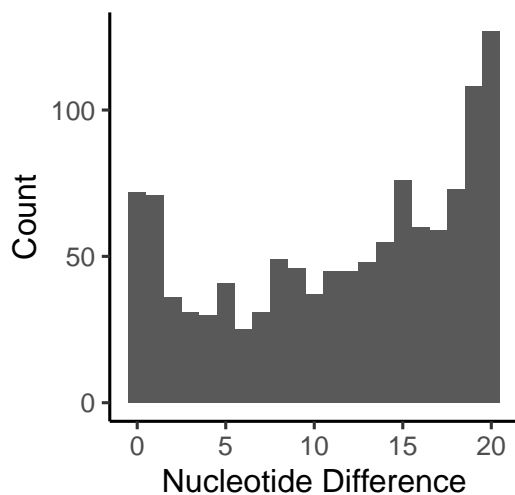
### IGHV4-61\*08

155 sequences assigned  
No exact matches.



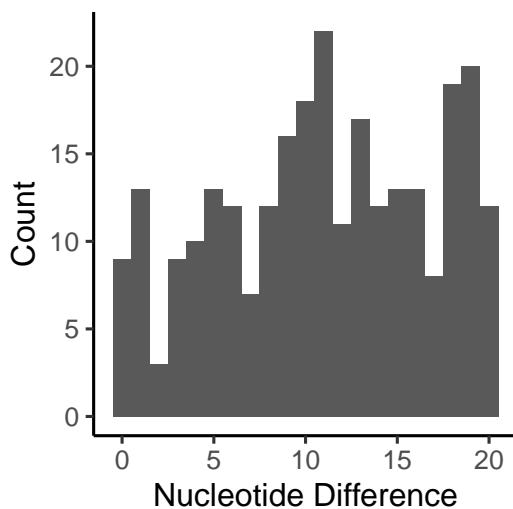
### IGHV4-39\*07

1834 sequences assigned  
72 (3.9%) exact matches, in which:  
60 unique CDR3  
5 unique J



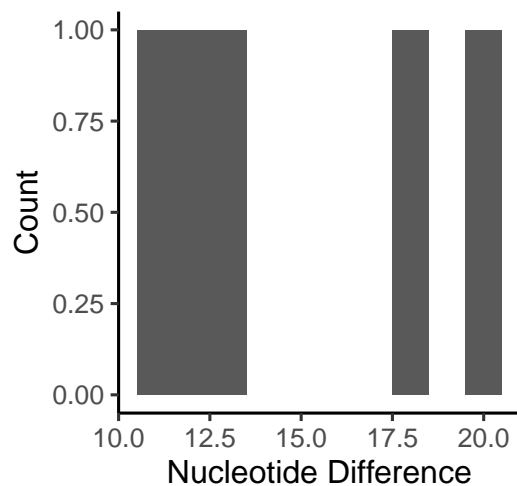
### IGHV4-59\*12

400 sequences assigned  
9 (2.2%) exact matches, in which:  
9 unique CDR3  
3 unique J



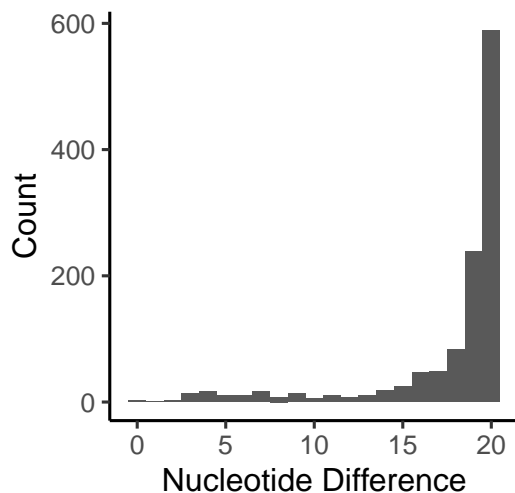
### IGHV1/OR15-3\*02

11 sequences assigned  
No exact matches.



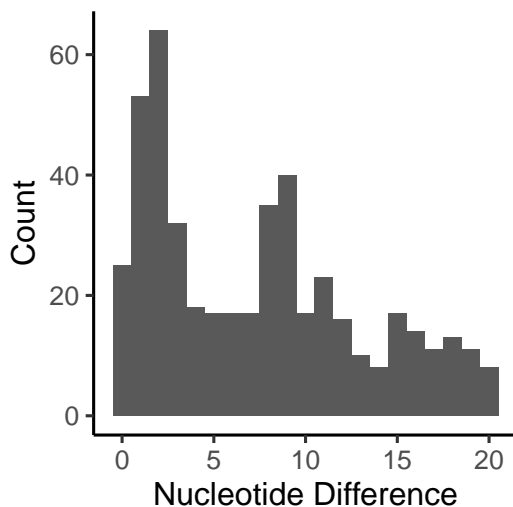
### IGHV4-59\*02

15663 sequences assigned  
2 (0%) exact matches, in which:  
2 unique CDR3  
2 unique J



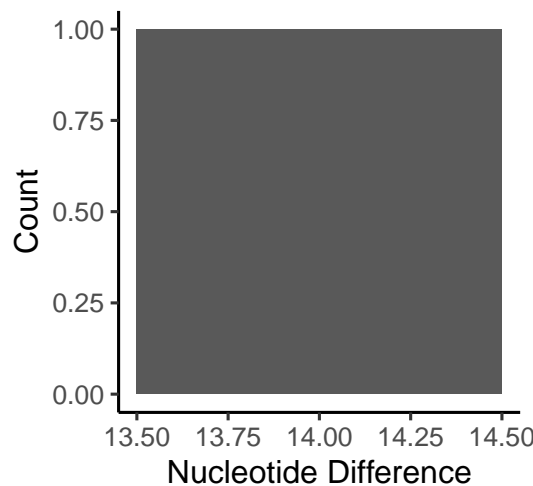
### IGHV4-61\*01

697 sequences assigned  
25 (3.6%) exact matches, in which:  
25 unique CDR3  
4 unique J



### IGHV4/OR15-8\*01

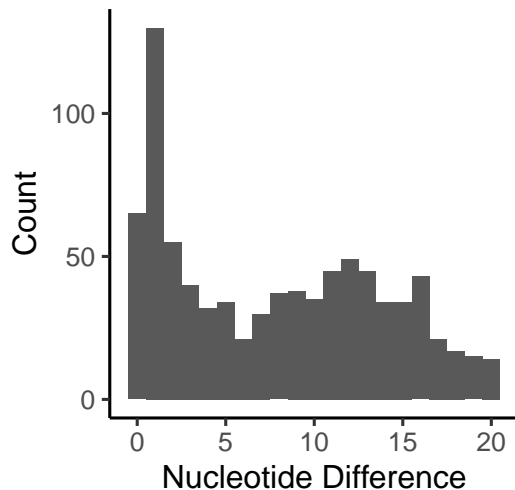
6 sequences assigned  
No exact matches.





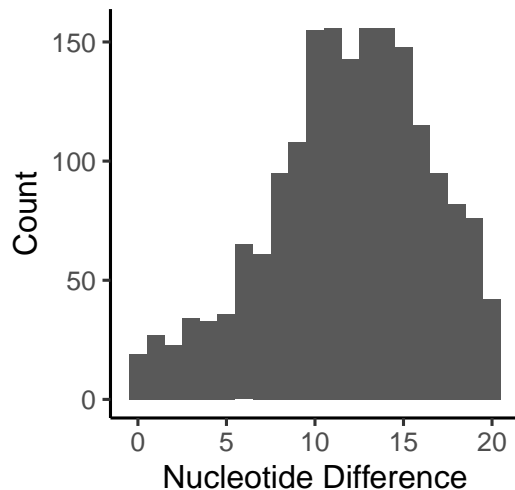
### IGHV5-10-1\*01\_03

1096 sequences assigned  
65 (5.9%) exact matches, in which:  
52 unique CDR3  
5 unique J



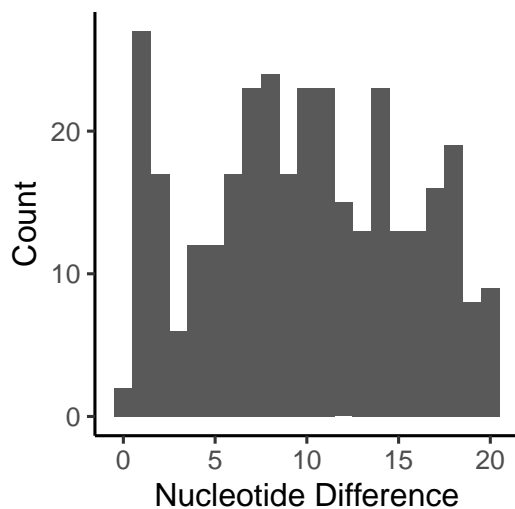
### IGHV6-1\*01\_02

2103 sequences assigned  
19 (0.9%) exact matches, in which:  
17 unique CDR3  
3 unique J



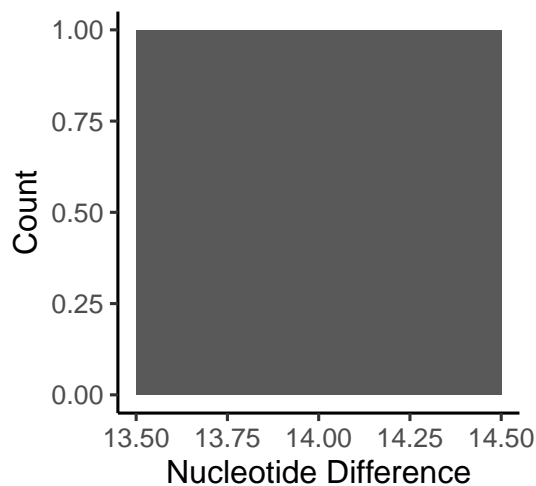
### IGHV5-51\*07

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



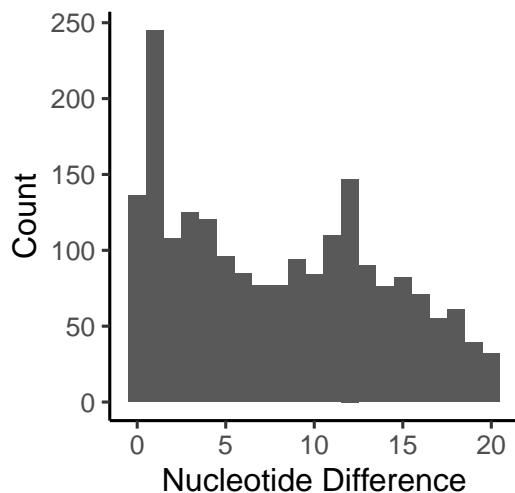
### IGHV3/OR16-9\*01

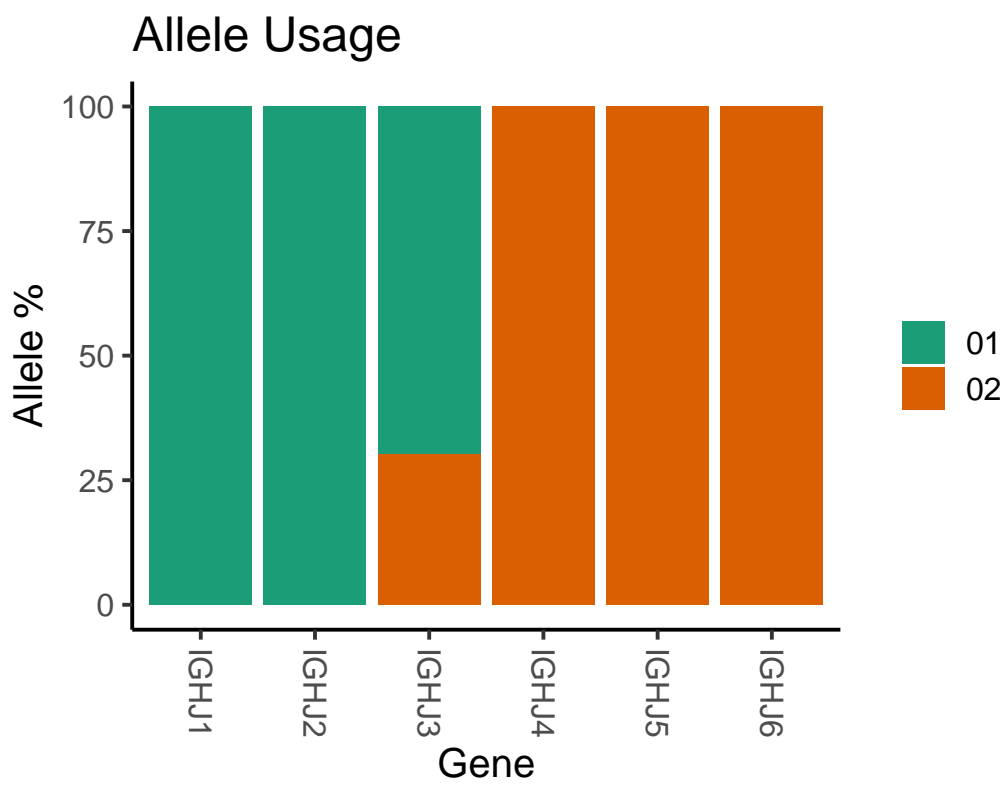
1 sequences assigned  
No exact matches.



### IGHV5-51\*01\_03

2220 sequences assigned  
136 (6.1%) exact matches, in which:  
102 unique CDR3  
6 unique J





Sequence Count by IGHJ3 allele usage

