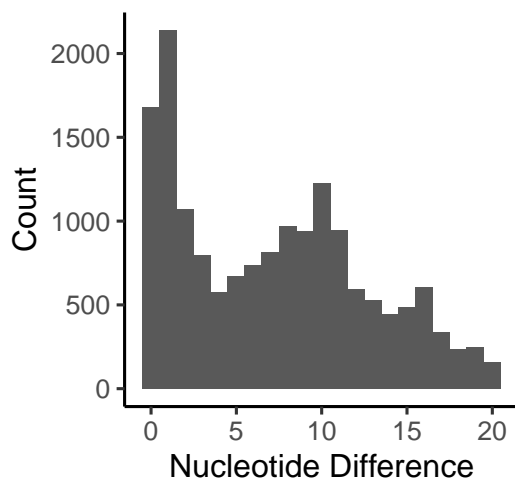


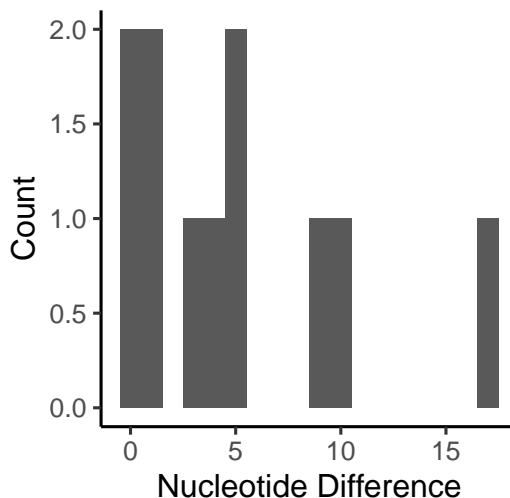
### IGHV1-2\*02

18190 sequences assigned  
1677 (9.2%) exact matches, in which:  
1338 unique CDR3  
6 unique J



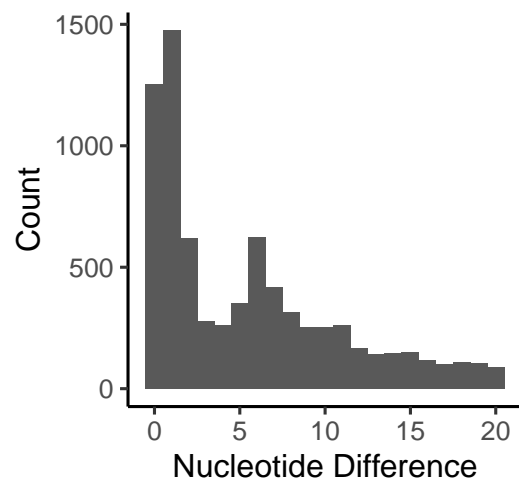
### IGHV1-8\*01

11 sequences assigned  
2 (18.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



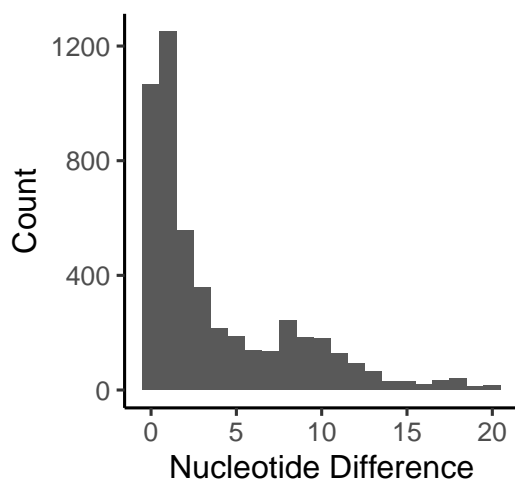
### IGHV1-18\*01

9763 sequences assigned  
1255 (12.9%) exact matches, in which:  
990 unique CDR3  
6 unique J



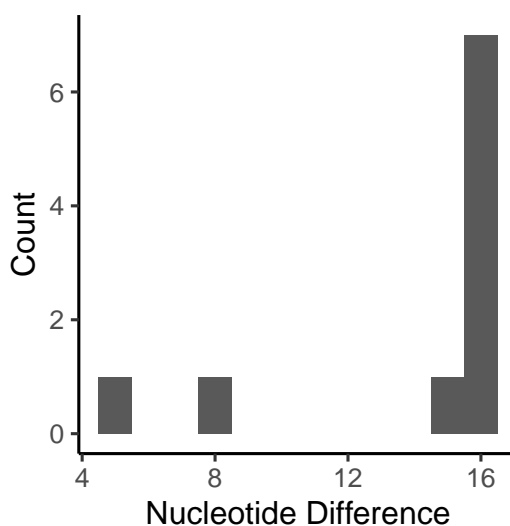
### IGHV1-2\*04

5051 sequences assigned  
1066 (21.1%) exact matches, in which:  
862 unique CDR3  
6 unique J



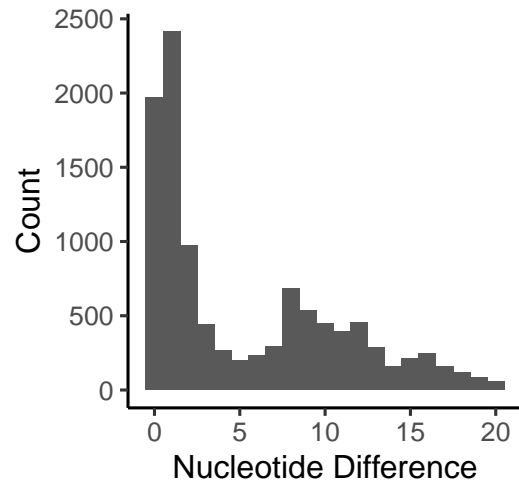
### IGHV1-8\*02

11 sequences assigned  
No exact matches.



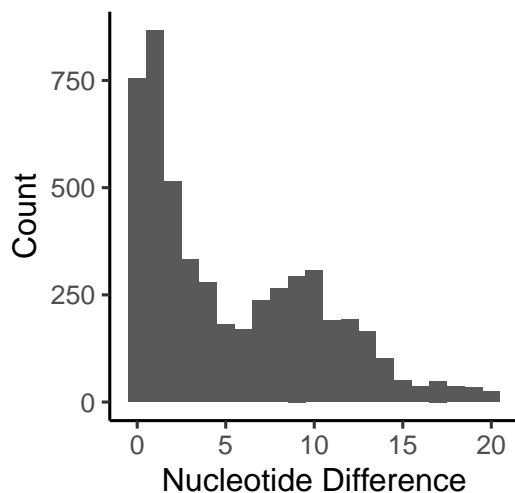
### IGHV1-18\*04

11779 sequences assigned  
1968 (16.7%) exact matches, in which:  
1518 unique CDR3  
6 unique J



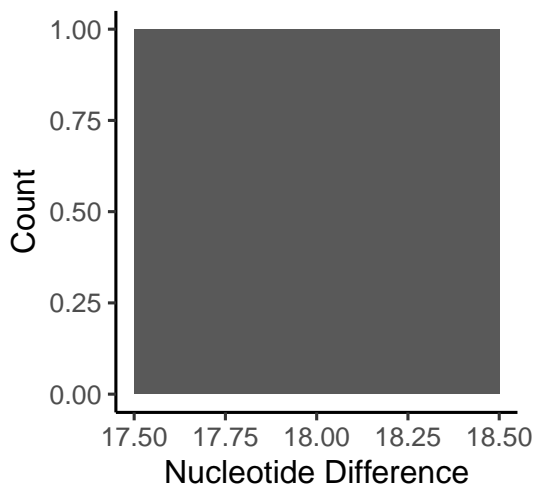
### IGHV1-3\*01\_05

5767 sequences assigned  
755 (13.1%) exact matches, in which:  
575 unique CDR3  
6 unique J



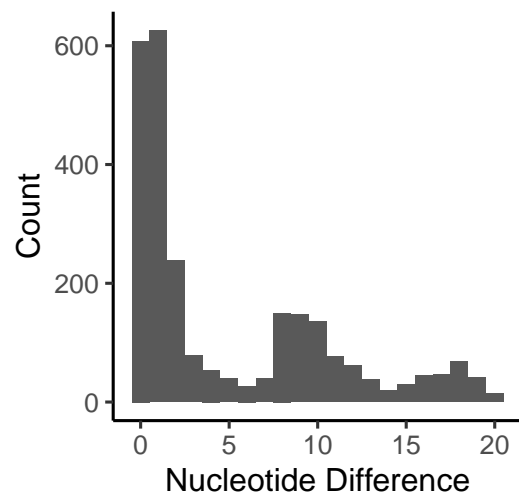
### IGHV1-8\*03

2 sequences assigned  
No exact matches.



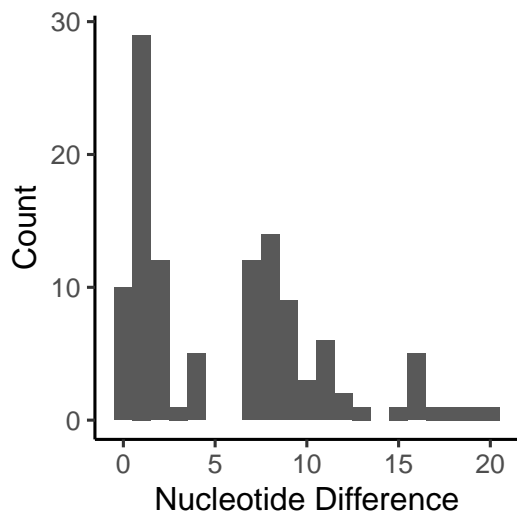
### IGHV1-24\*01

3289 sequences assigned  
608 (18.5%) exact matches, in which:  
505 unique CDR3  
6 unique J



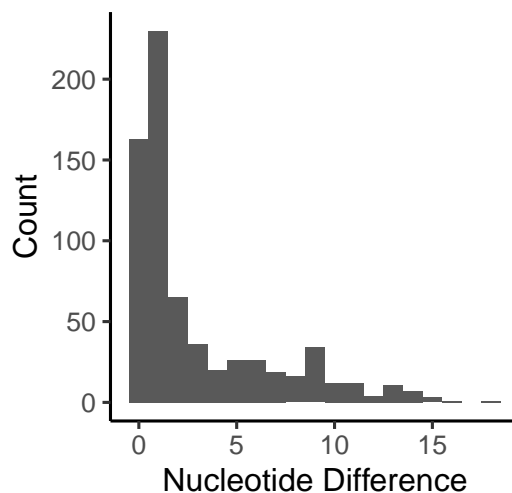
### IGHV1-45\*02

115 sequences assigned  
10 (8.7%) exact matches, in which:  
10 unique CDR3  
3 unique J



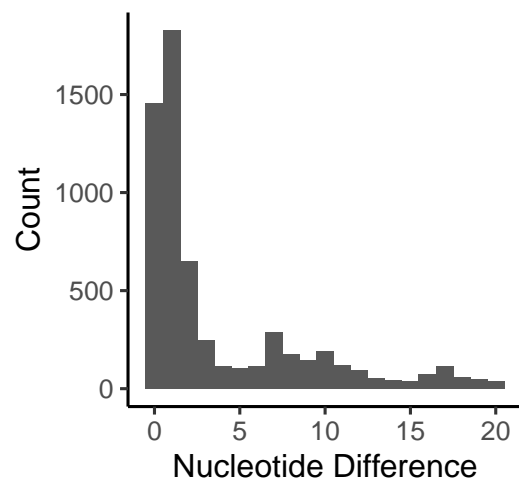
### IGHV1-58\*01\_03

686 sequences assigned  
163 (23.8%) exact matches, in which:  
117 unique CDR3  
6 unique J



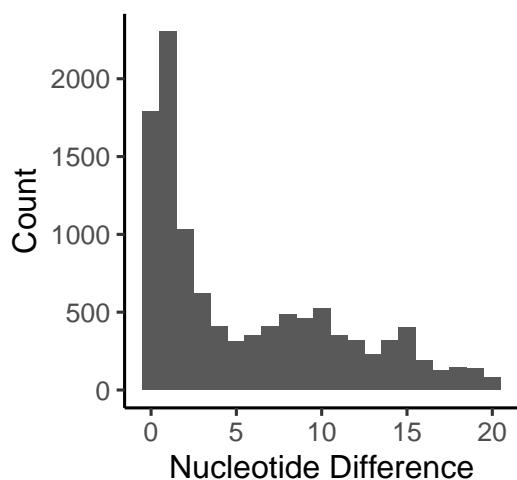
### IGHV1-69\*04\_09

7495 sequences assigned  
1457 (19.4%) exact matches, in which:  
1217 unique CDR3  
6 unique J



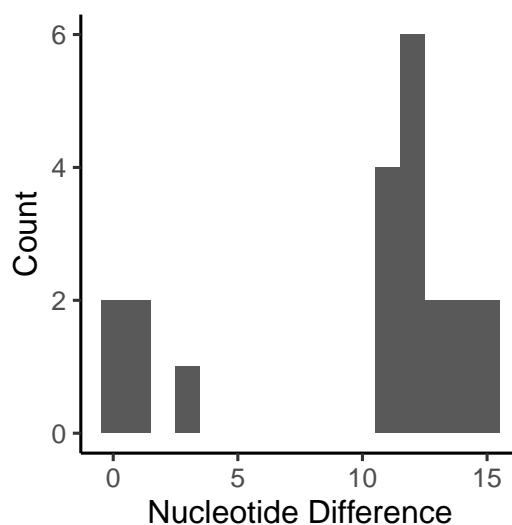
### IGHV1-46\*01

12217 sequences assigned  
1792 (14.7%) exact matches, in which:  
1437 unique CDR3  
6 unique J



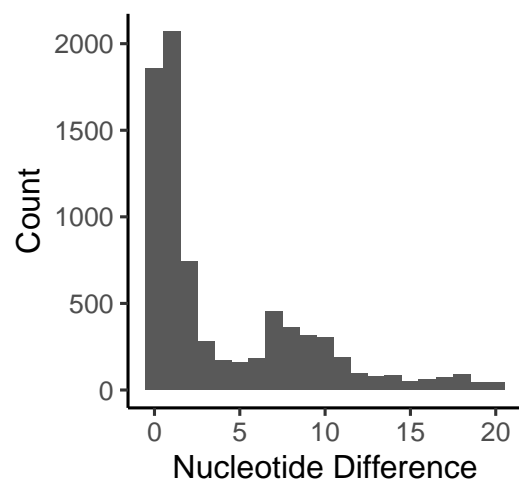
### IGHV1-69-2\*01

24 sequences assigned  
2 (8.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



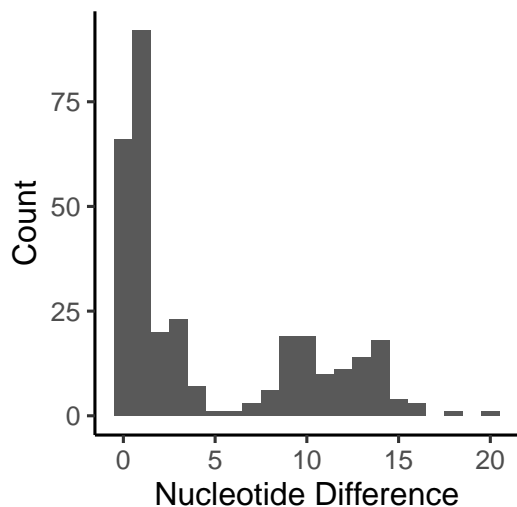
### IGHV1-69\*06\_14

8361 sequences assigned  
1858 (22.2%) exact matches, in which:  
1536 unique CDR3  
6 unique J



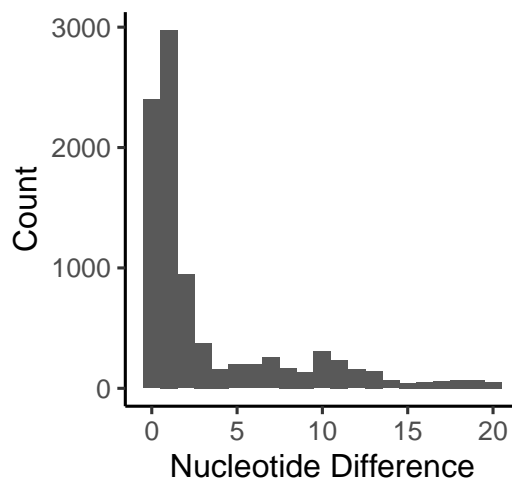
### IGHV1-58\*02

320 sequences assigned  
66 (20.6%) exact matches, in which:  
52 unique CDR3  
5 unique J



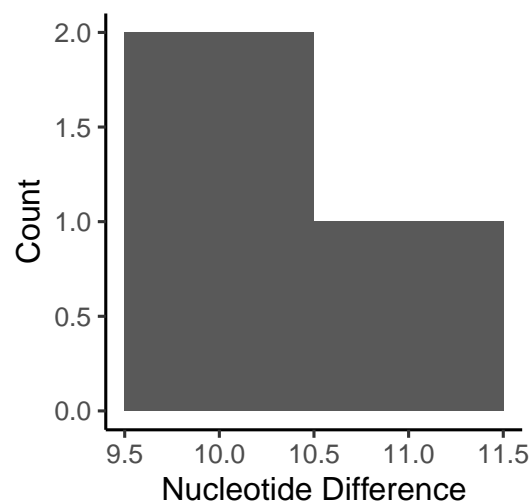
### IGHV1-69\*01\_12\_13

9697 sequences assigned  
2400 (24.7%) exact matches, in which:  
1948 unique CDR3  
6 unique J



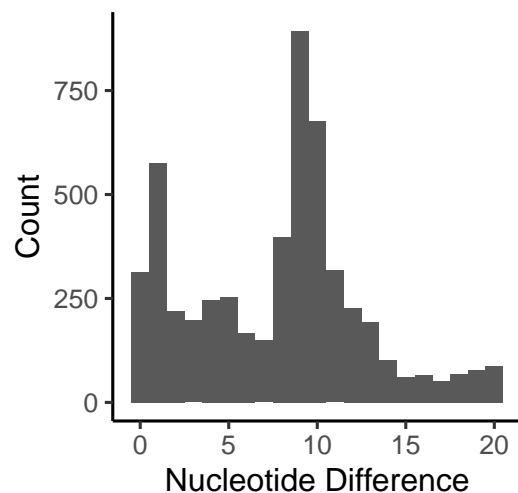
### IGHV1-NL1\*01

3 sequences assigned  
No exact matches.



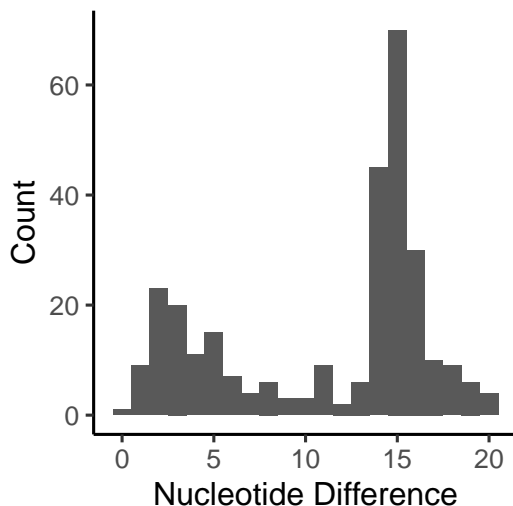
### IGHV2-5\*02

6709 sequences assigned  
314 (4.7%) exact matches, in which:  
220 unique CDR3  
6 unique J



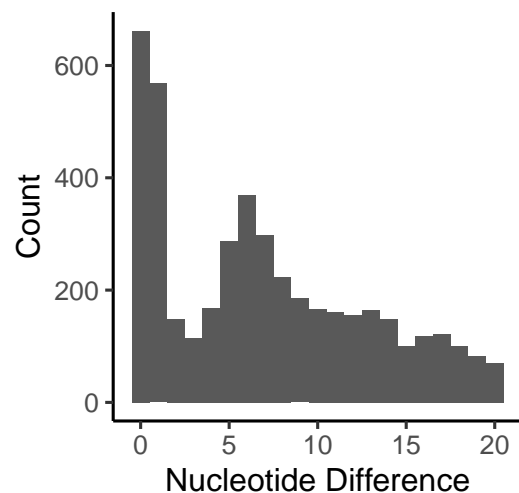
### IGHV2-70\*12

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



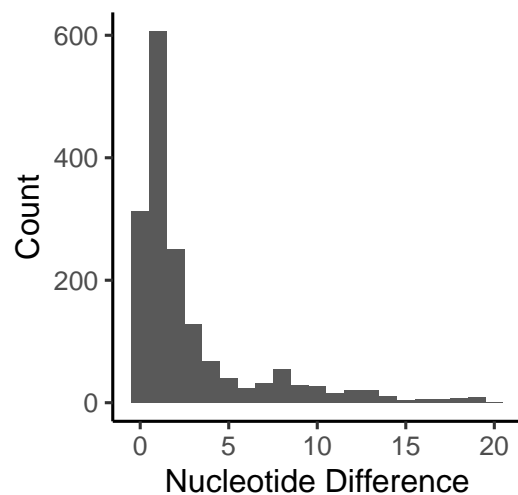
### IGHV3-7\*03

5753 sequences assigned  
662 (11.5%) exact matches, in which:  
426 unique CDR3  
6 unique J



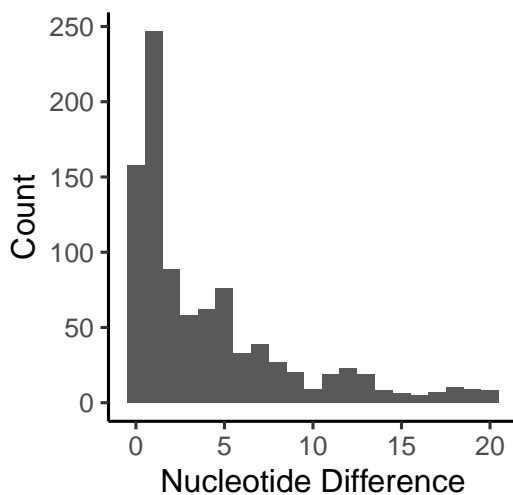
### IGHV2-26\*01

2054 sequences assigned  
312 (15.2%) exact matches, in which:  
203 unique CDR3  
6 unique J



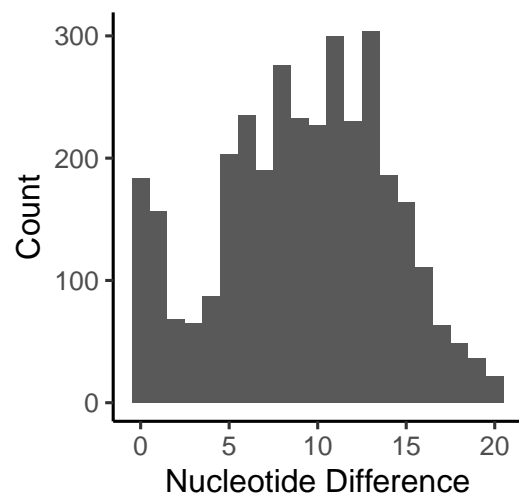
### IGHV2-70\*11\_15

1011 sequences assigned  
158 (15.6%) exact matches, in which:  
111 unique CDR3  
5 unique J



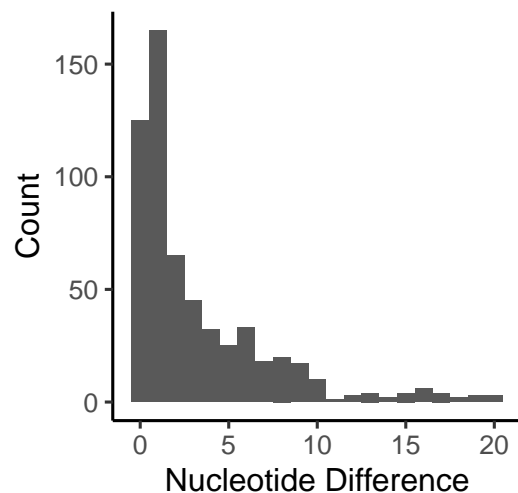
### IGHV3-7\*04

3715 sequences assigned  
184 (5%) exact matches, in which:  
115 unique CDR3  
5 unique J



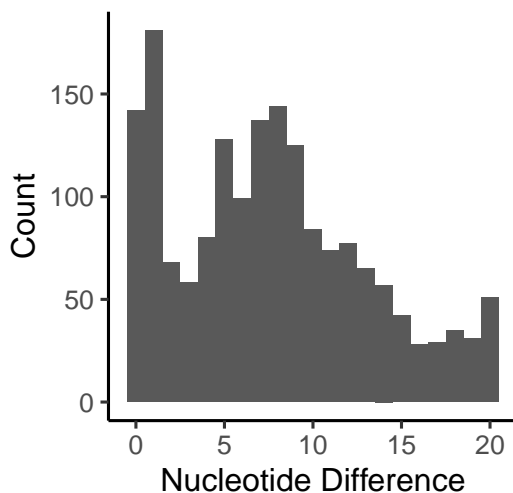
### IGHV2-70\*01

718 sequences assigned  
125 (17.4%) exact matches, in which:  
105 unique CDR3  
6 unique J



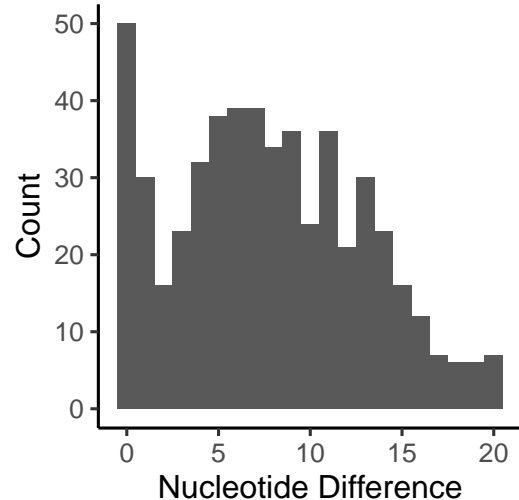
### IGHV3-7\*01

1964 sequences assigned  
142 (7.2%) exact matches, in which:  
122 unique CDR3  
6 unique J



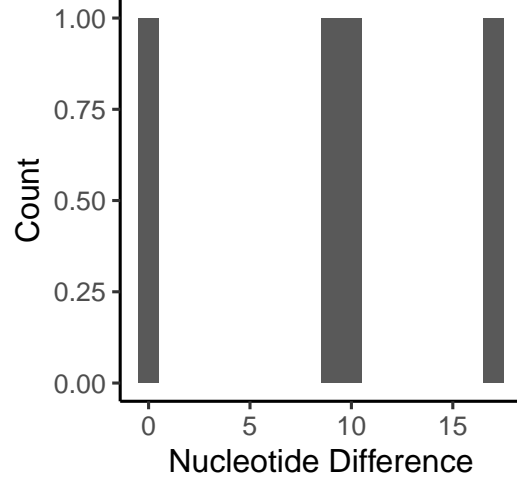
### IGHV3-7\*05

641 sequences assigned  
50 (7.8%) exact matches, in which:  
46 unique CDR3  
6 unique J



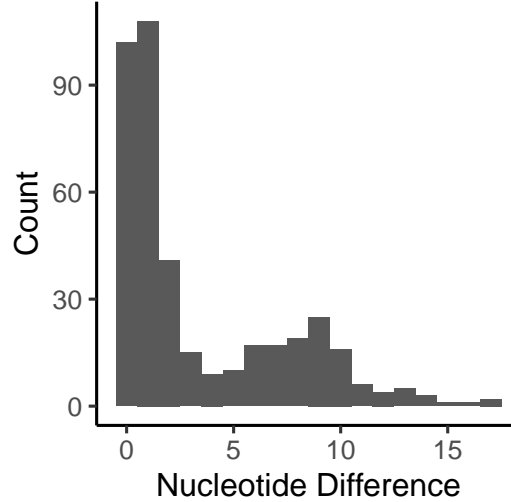
### IGHV3-9\*01

7 sequences assigned  
1 (14.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



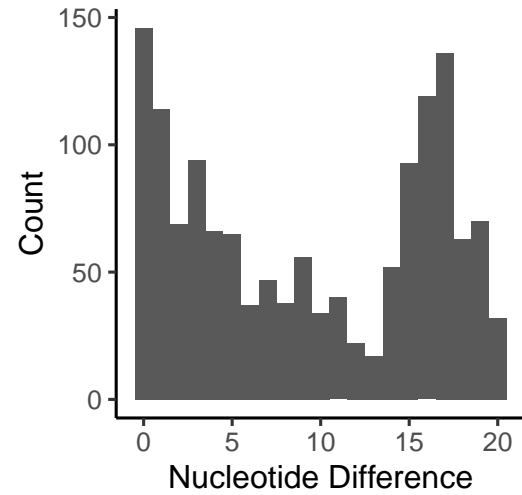
### IGHV3-13\*05

403 sequences assigned  
102 (25.3%) exact matches, in which:  
72 unique CDR3  
6 unique J



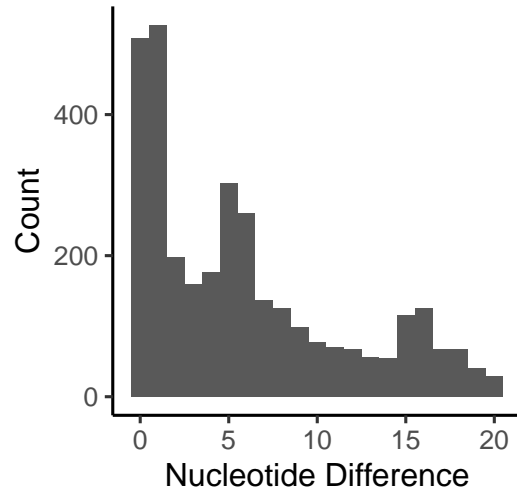
### IGHV3-20\*03\_04

1909 sequences assigned  
146 (7.6%) exact matches, in which:  
88 unique CDR3  
5 unique J



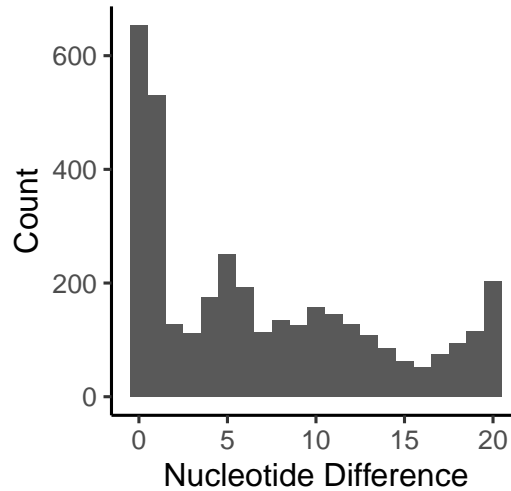
### IGHV3-11\*06

4082 sequences assigned  
508 (12.4%) exact matches, in which:  
368 unique CDR3  
6 unique J



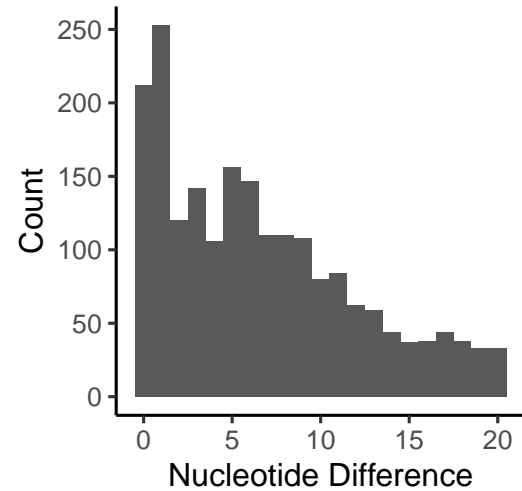
### IGHV3-15\*01\_02

4561 sequences assigned  
654 (14.3%) exact matches, in which:  
368 unique CDR3  
5 unique J



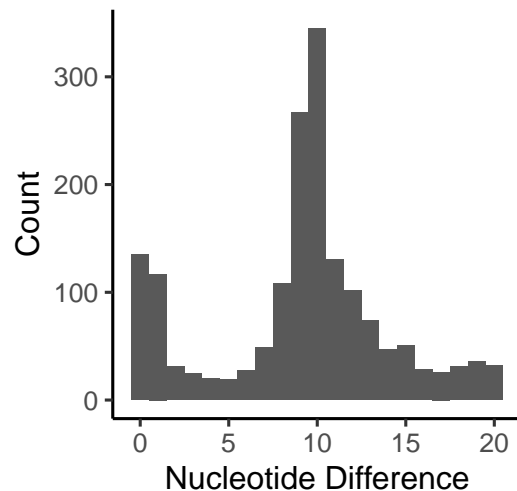
### IGHV3-21\*04

2213 sequences assigned  
212 (9.6%) exact matches, in which:  
184 unique CDR3  
6 unique J



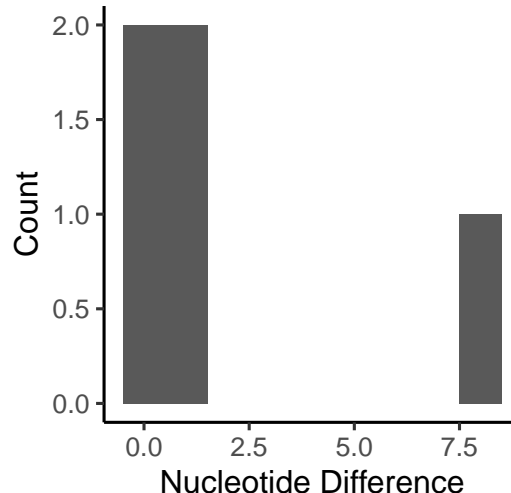
### IGHV3-13\*04

1749 sequences assigned  
135 (7.7%) exact matches, in which:  
89 unique CDR3  
6 unique J



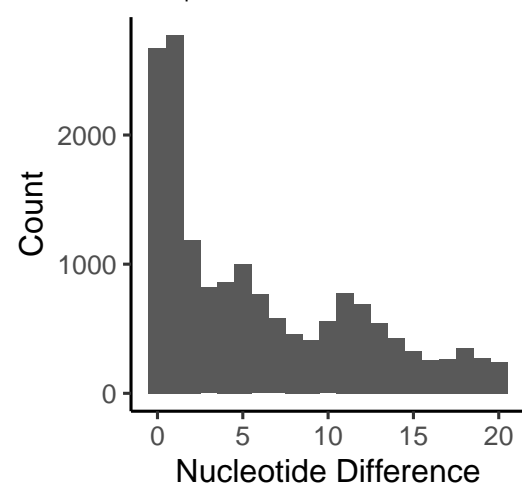
### IGHV3-19\*01

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
2 unique J



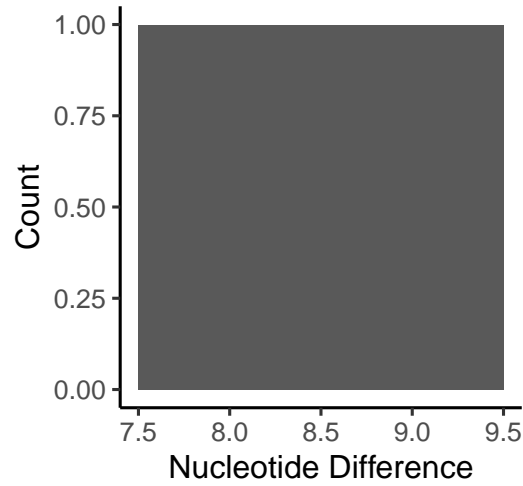
### IGHV3-21\*01\_02

18572 sequences assigned  
2675 (14.4%) exact matches, in which:  
1647 unique CDR3  
6 unique J



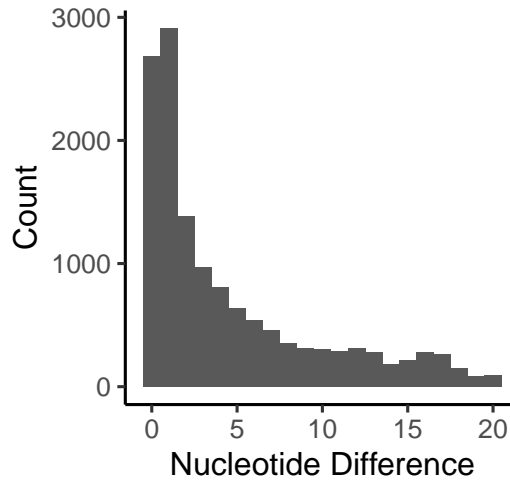
### IGHV3-22\*01\_02

2 sequences assigned  
No exact matches.



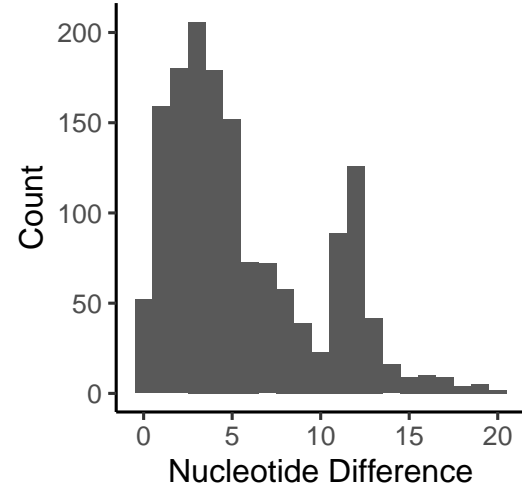
### IGHV3-30-3\*01

14802 sequences assigned  
2682 (18.1%) exact matches, in which:  
1692 unique CDR3  
6 unique J



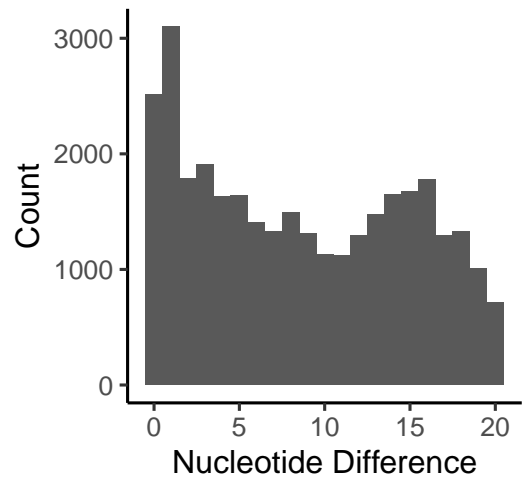
### IGHV3-33\*05

1522 sequences assigned  
52 (3.4%) exact matches, in which:  
38 unique CDR3  
5 unique J



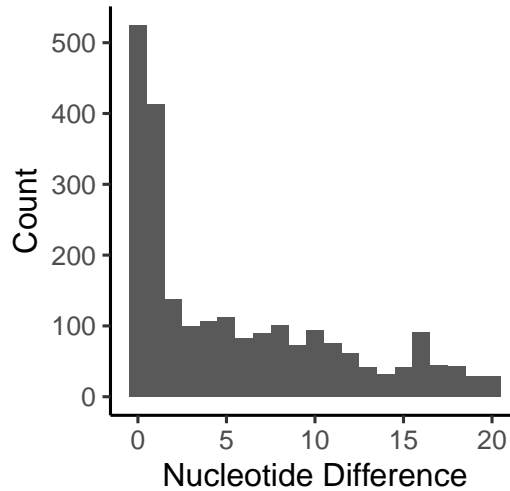
### IGHV3-23\*01\_04

39567 sequences assigned  
2518 (6.4%) exact matches, in which:  
1368 unique CDR3  
6 unique J



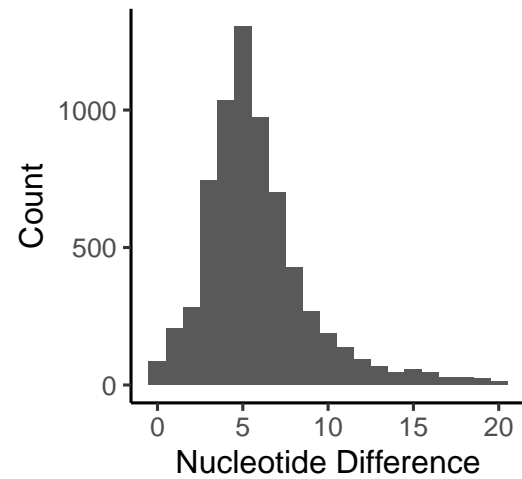
### IGHV3-30\*03

2980 sequences assigned  
525 (17.6%) exact matches, in which:  
441 unique CDR3  
6 unique J



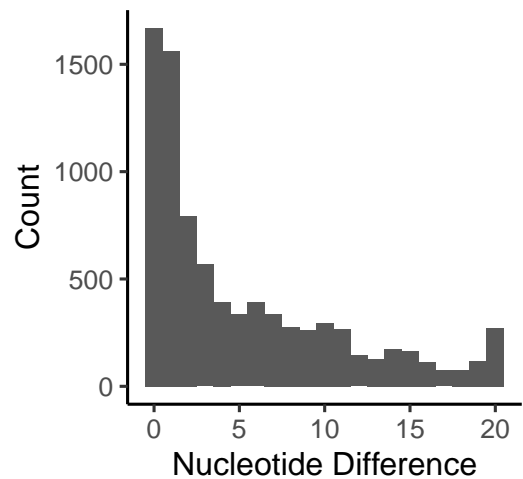
### IGHV3-33\*06

6838 sequences assigned  
84 (1.2%) exact matches, in which:  
77 unique CDR3  
5 unique J



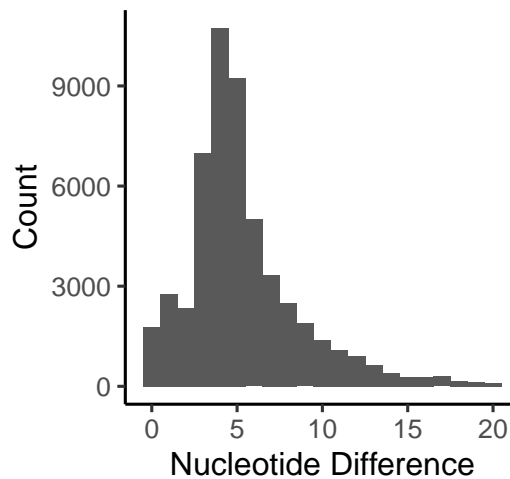
### IGHV3-30\*01

9968 sequences assigned  
1669 (16.7%) exact matches, in which:  
1102 unique CDR3  
6 unique J



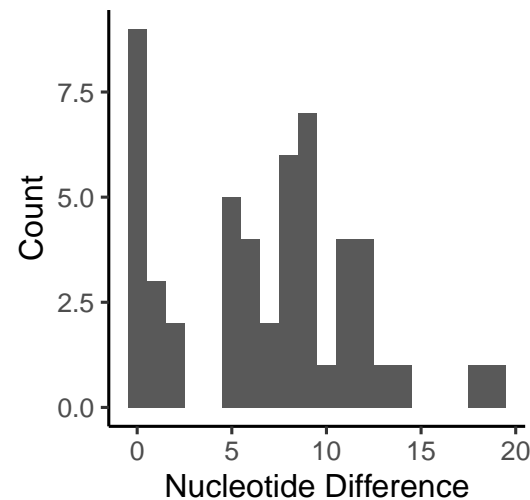
### IGHV3-33\*01

54261 sequences assigned  
1773 (3.3%) exact matches, in which:  
1106 unique CDR3  
6 unique J



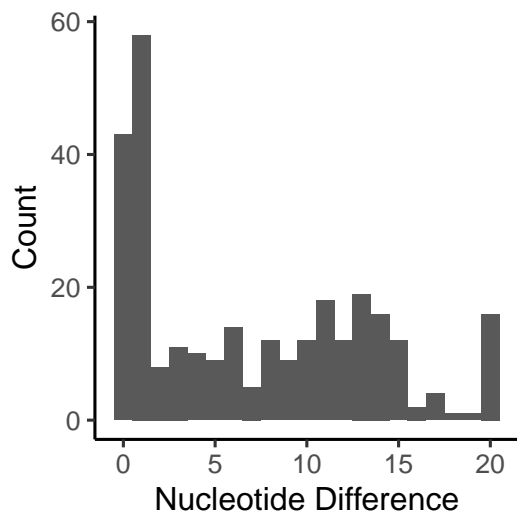
### IGHV3-35\*01

51 sequences assigned  
9 (17.6%) exact matches, in which:  
9 unique CDR3  
3 unique J



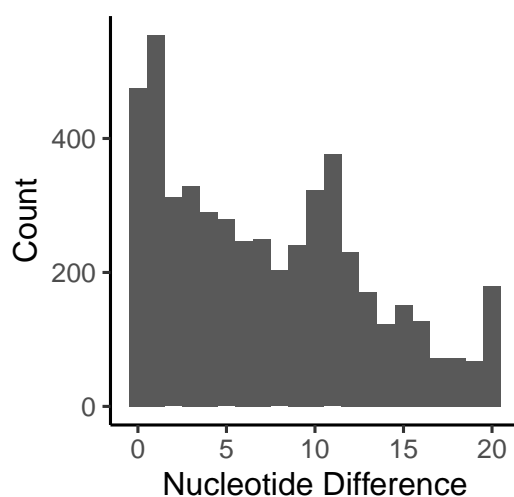
### IGHV3-43\*01

1093 sequences assigned  
43 (3.9%) exact matches, in which:  
21 unique CDR3  
3 unique J



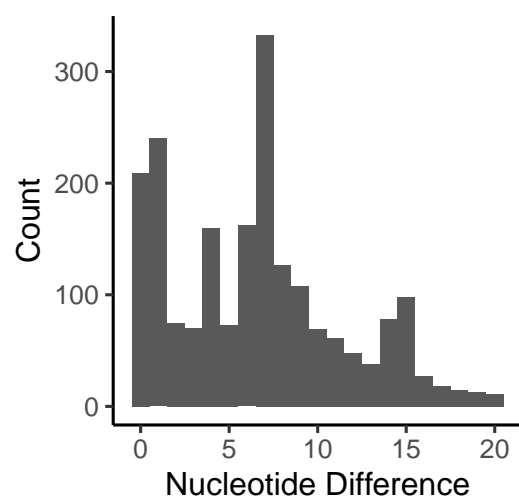
### IGHV3-48\*01

6283 sequences assigned  
475 (7.6%) exact matches, in which:  
304 unique CDR3  
6 unique J



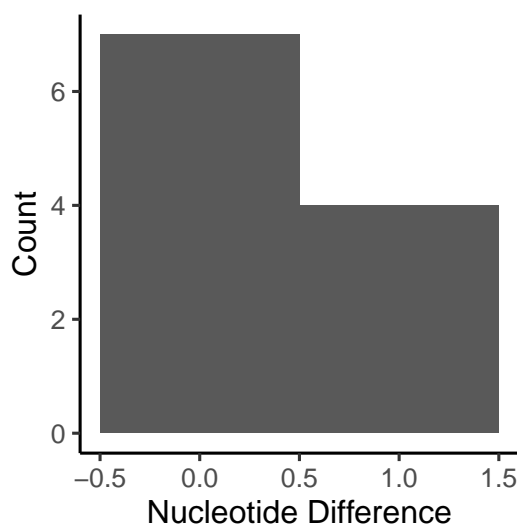
### IGHV3-49\*03\_05

2135 sequences assigned  
209 (9.8%) exact matches, in which:  
120 unique CDR3  
6 unique J



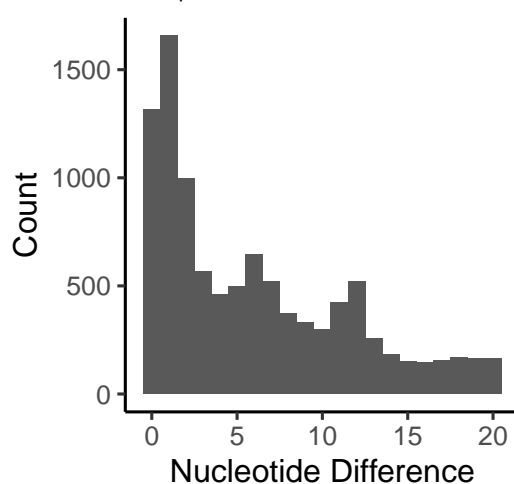
### IGHV3-47\*01

11 sequences assigned  
7 (63.6%) exact matches, in which:  
5 unique CDR3  
1 unique J



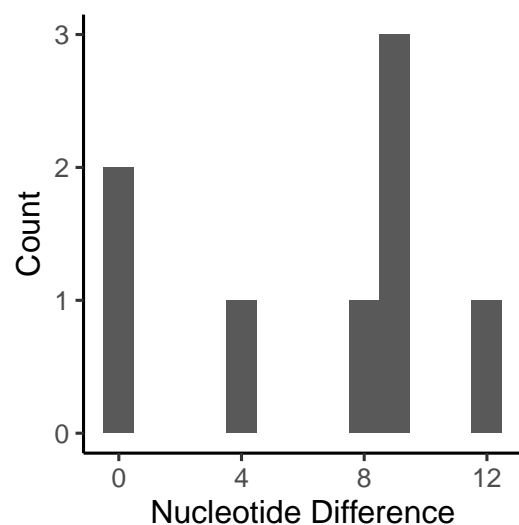
### IGHV3-48\*03

12604 sequences assigned  
1316 (10.4%) exact matches, in which:  
769 unique CDR3  
6 unique J



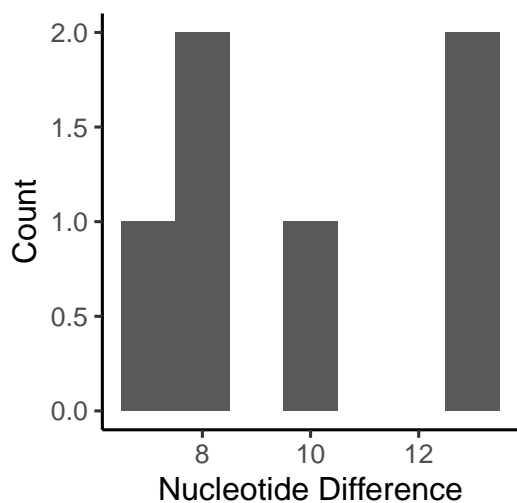
### IGHV3-52\*02

8 sequences assigned  
2 (25%) exact matches, in which:  
2 unique CDR3  
2 unique J



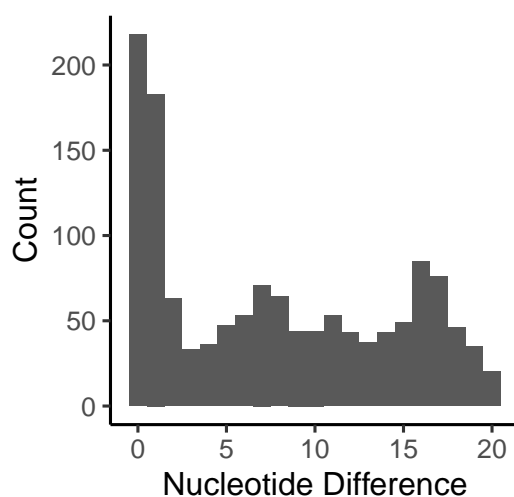
### IGHV3-47\*02

6 sequences assigned  
No exact matches.



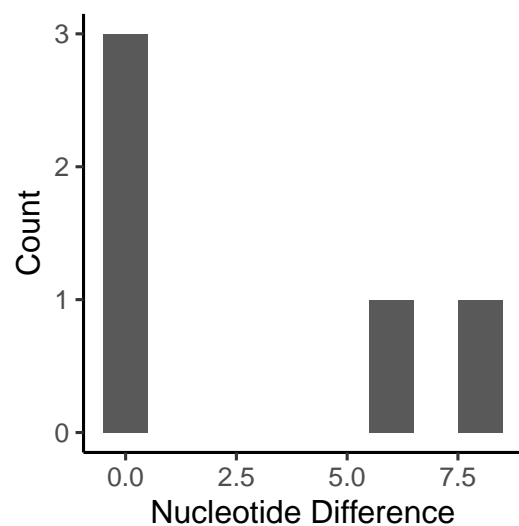
### IGHV3-49\*04

1432 sequences assigned  
218 (15.2%) exact matches, in which:  
132 unique CDR3  
6 unique J



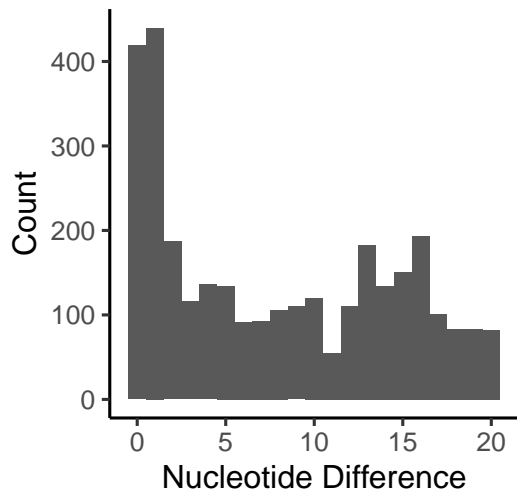
### IGHV3-52\*01\_03

5 sequences assigned  
3 (60%) exact matches, in which:  
3 unique CDR3  
2 unique J



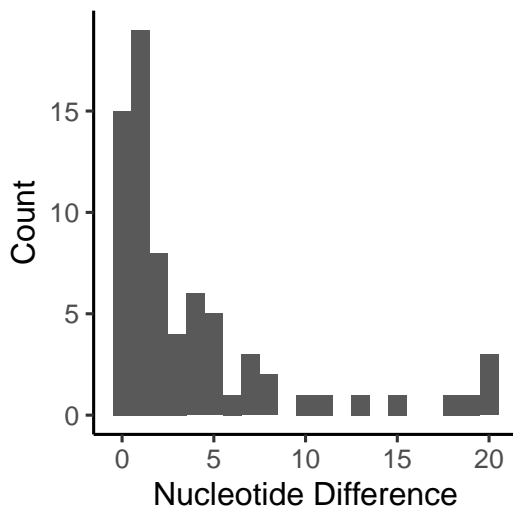
### IGHV3-53\*01\_02

3525 sequences assigned  
419 (11.9%) exact matches, in which:  
276 unique CDR3  
6 unique J



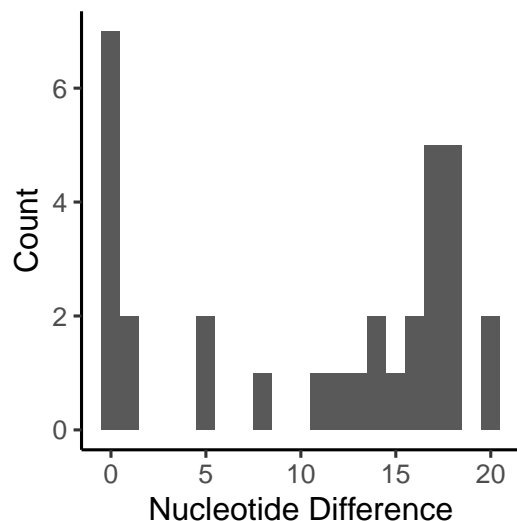
### IGHV3-64\*02\_07

74 sequences assigned  
15 (20.3%) exact matches, in which:  
9 unique CDR3  
3 unique J



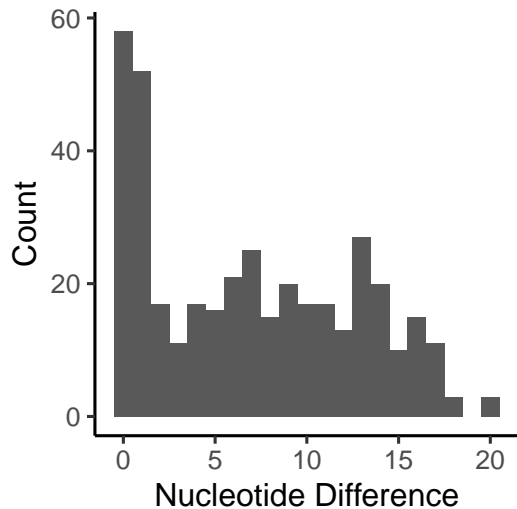
### IGHV3-69-1\*02

68 sequences assigned  
7 (10.3%) exact matches, in which:  
7 unique CDR3  
3 unique J



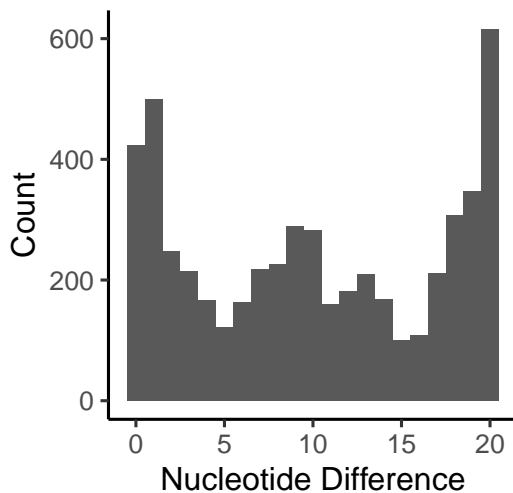
### IGHV3-64\*01

395 sequences assigned  
58 (14.7%) exact matches, in which:  
34 unique CDR3  
6 unique J



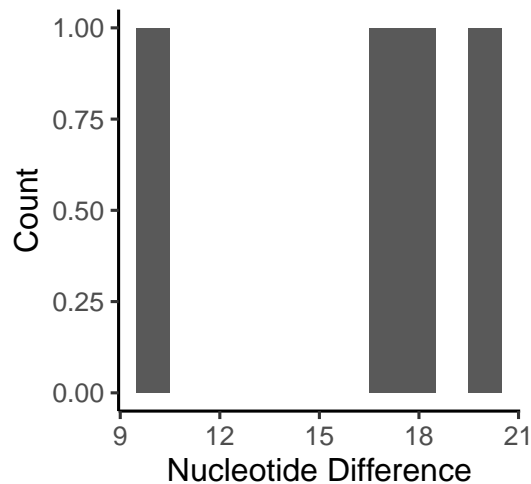
### IGHV3-66\*01

8082 sequences assigned  
424 (5.2%) exact matches, in which:  
293 unique CDR3  
6 unique J



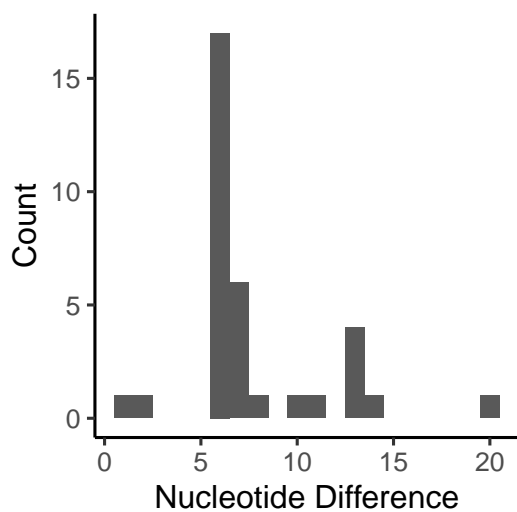
### IGHV3-71\*01\_04

4 sequences assigned  
No exact matches.



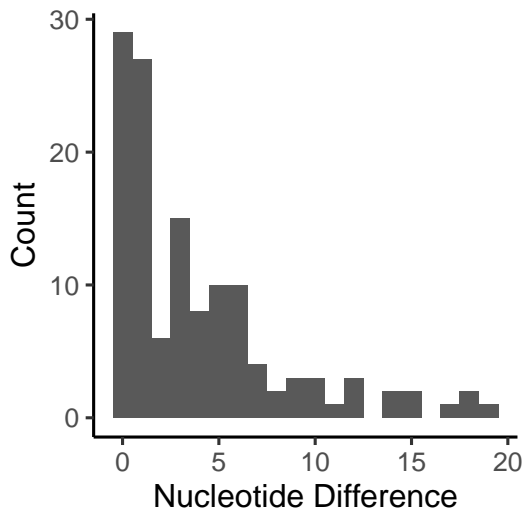
### IGHV3-64\*04

36 sequences assigned  
No exact matches.



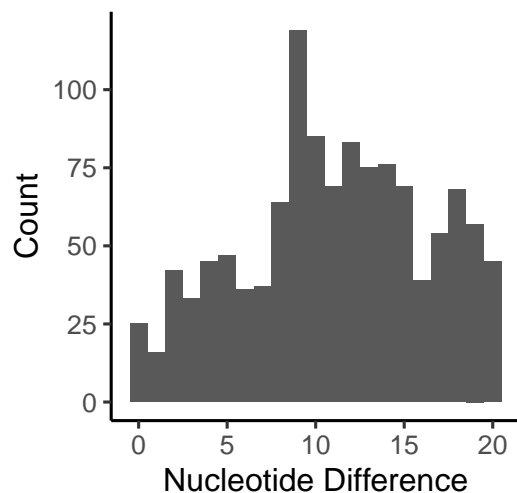
### IGHV3-69-1\*01

134 sequences assigned  
29 (21.6%) exact matches, in which:  
21 unique CDR3  
3 unique J



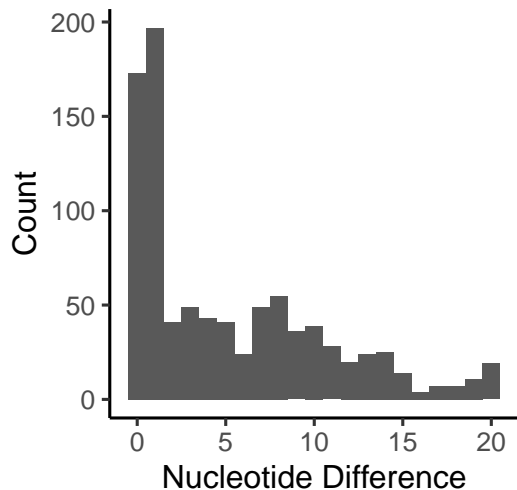
### IGHV3-72\*01

1289 sequences assigned  
25 (1.9%) exact matches, in which:  
17 unique CDR3  
5 unique J



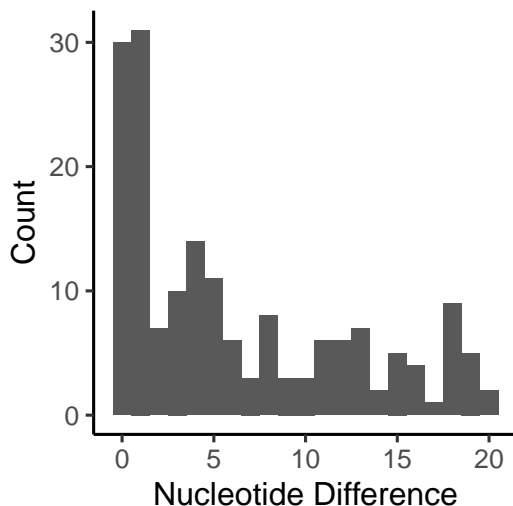
### IGHV3-73\*01\_02

1061 sequences assigned  
173 (16.3%) exact matches, in which:  
107 unique CDR3  
6 unique J



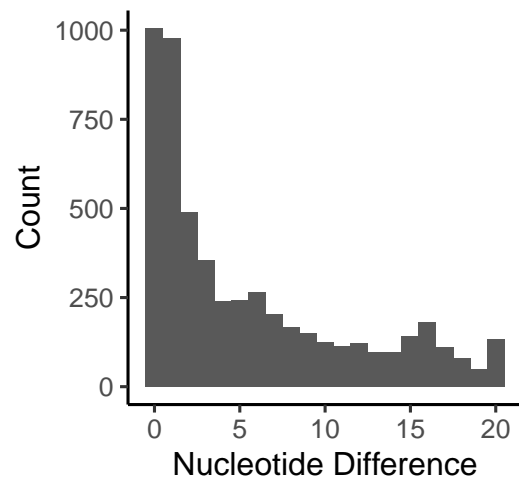
### IGHV3-43D\*04

302 sequences assigned  
30 (9.9%) exact matches, in which:  
14 unique CDR3  
3 unique J



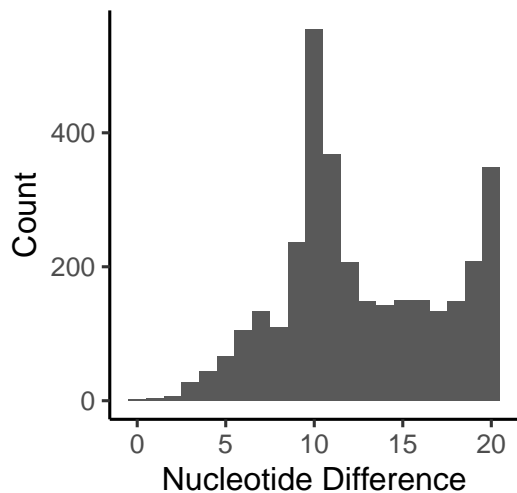
### IGHV4-4\*02\_03

6319 sequences assigned  
1005 (15.9%) exact matches, in which:  
753 unique CDR3  
6 unique J



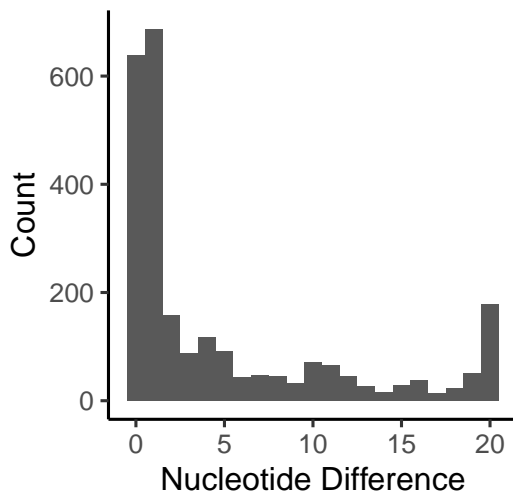
### IGHV3-74\*03

5329 sequences assigned  
3 (0.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



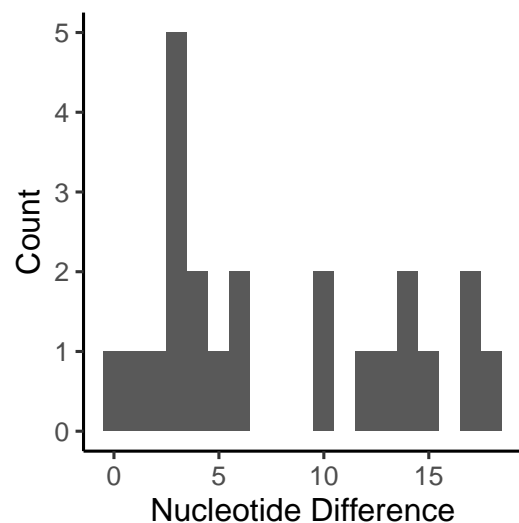
### IGHV3-64D\*06

3315 sequences assigned  
639 (19.3%) exact matches, in which:  
294 unique CDR3  
6 unique J



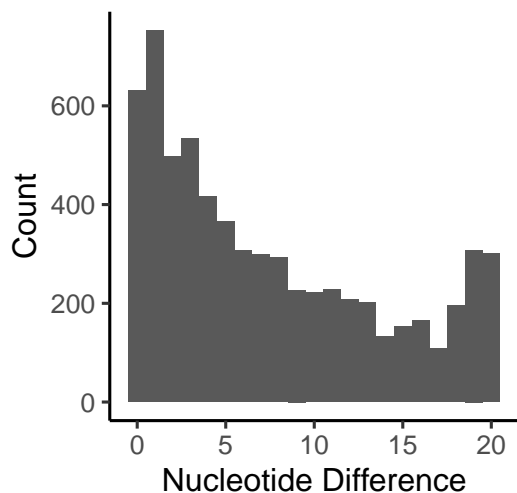
### IGHV4-28\*03

36 sequences assigned  
1 (2.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



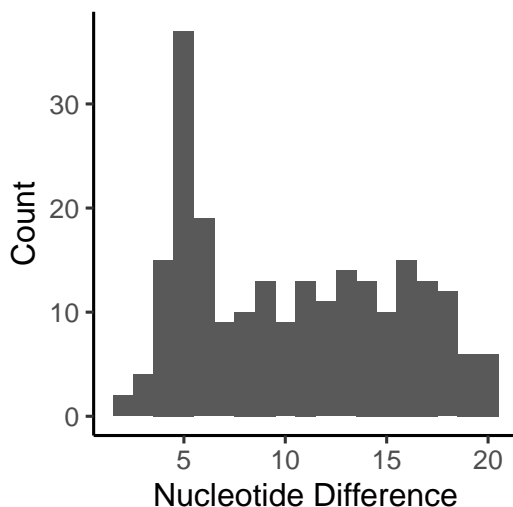
### IGHV3-74\*01\_02

9216 sequences assigned  
632 (6.9%) exact matches, in which:  
406 unique CDR3  
6 unique J



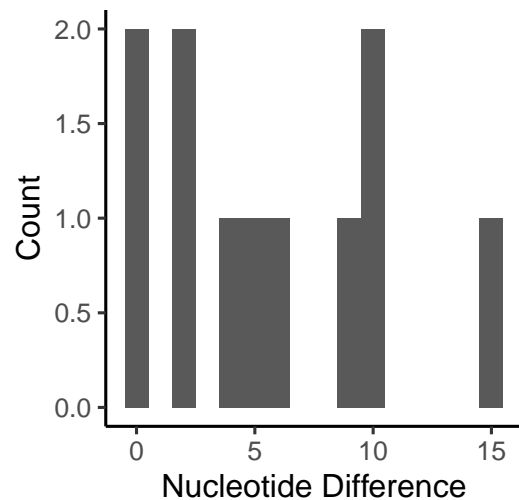
### IGHV3-NL1\*01

258 sequences assigned  
No exact matches.



### IGHV4-28\*01\_07

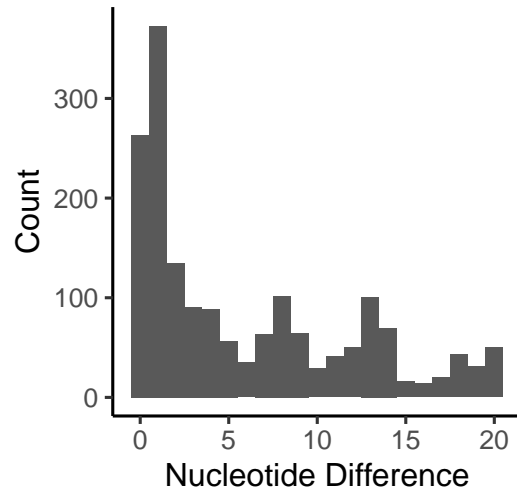
12 sequences assigned  
2 (16.7%) exact matches, in which:  
1 unique CDR3  
1 unique J





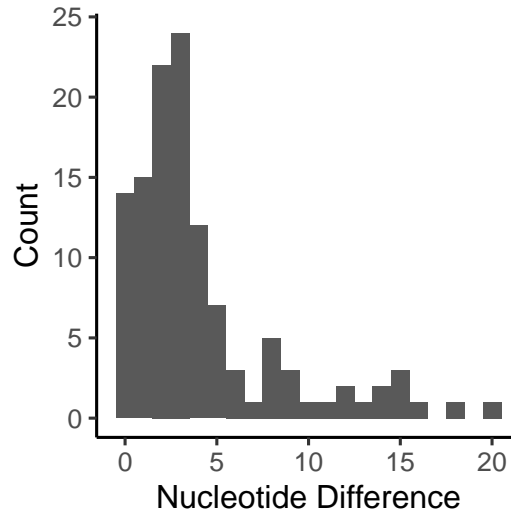
### IGHV4-30-2\*01

2414 sequences assigned  
263 (10.9%) exact matches, in which:  
153 unique CDR3  
6 unique J



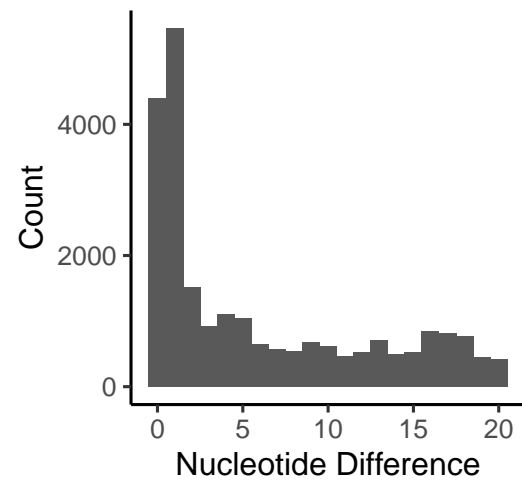
### IGHV4-30-2\*05

130 sequences assigned  
14 (10.8%) exact matches, in which:  
13 unique CDR3  
6 unique J



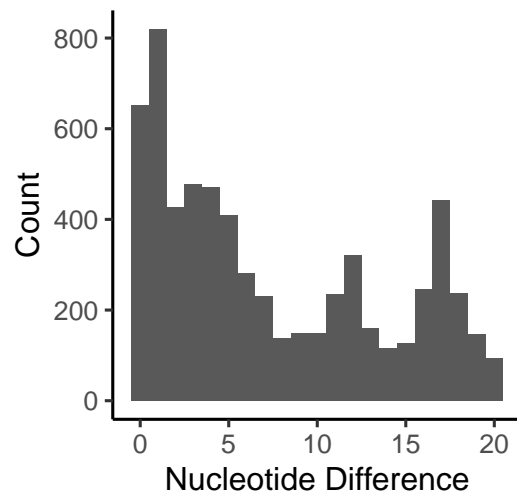
### IGHV4-34\*01\_02

26218 sequences assigned  
4402 (16.8%) exact matches, in which:  
2870 unique CDR3  
6 unique J



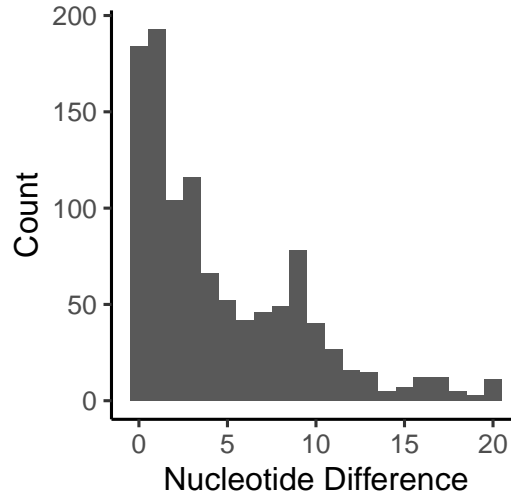
### IGHV4-30-4\*01

6657 sequences assigned  
652 (9.8%) exact matches, in which:  
487 unique CDR3  
6 unique J



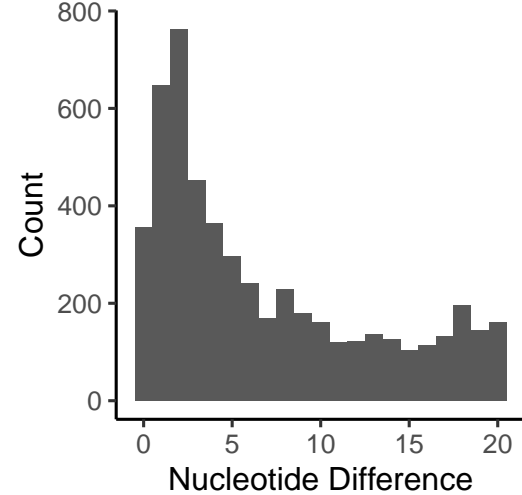
### IGHV4-31\*01

1129 sequences assigned  
184 (16.3%) exact matches, in which:  
149 unique CDR3  
6 unique J



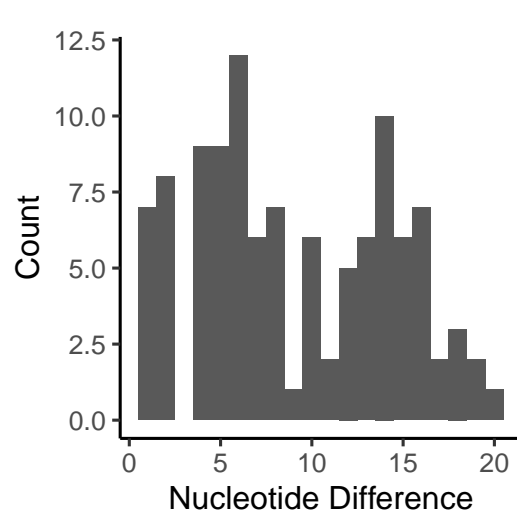
### IGHV4-38-2\*01

6298 sequences assigned  
356 (5.7%) exact matches, in which:  
300 unique CDR3  
6 unique J



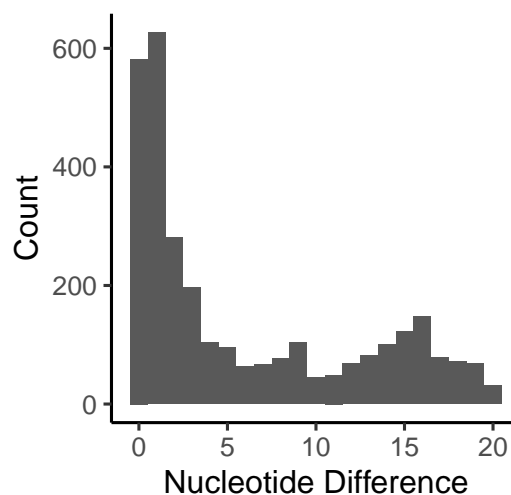
### IGHV4-30-2\*03

132 sequences assigned  
No exact matches.



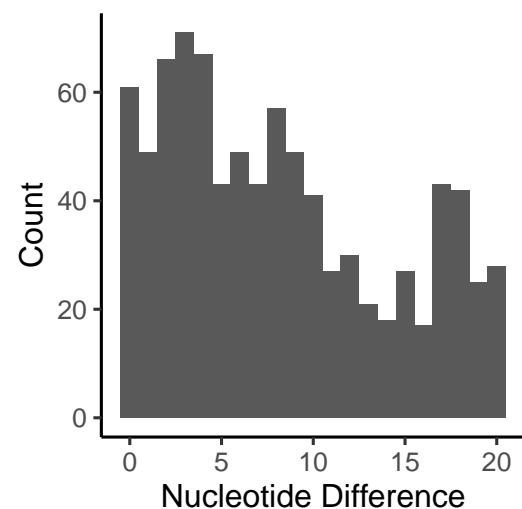
### IGHV4-31\*02

3399 sequences assigned  
582 (17.1%) exact matches, in which:  
453 unique CDR3  
6 unique J



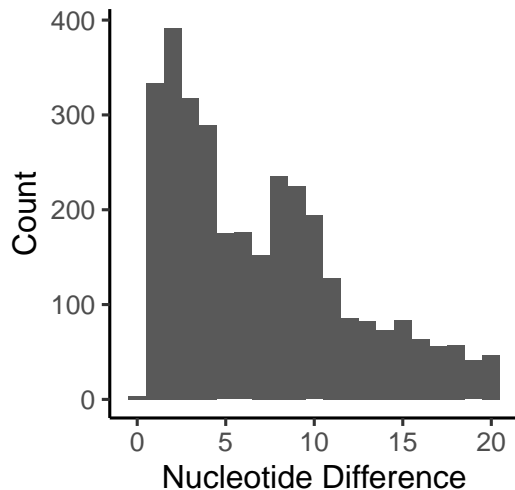
### IGHV4-38-2\*02

1554 sequences assigned  
61 (3.9%) exact matches, in which:  
52 unique CDR3  
4 unique J



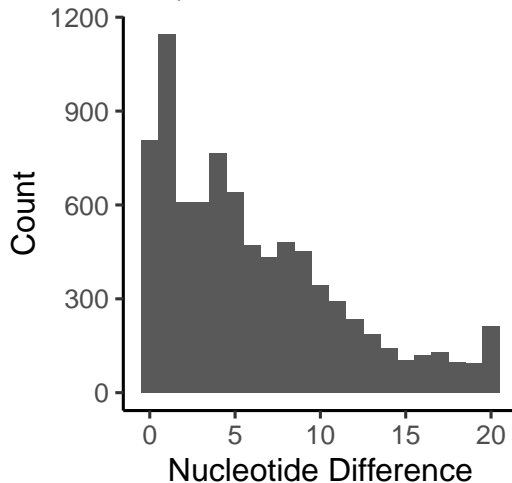
### IGHV4-39\*07

3680 sequences assigned  
4 (0.1%) exact matches, in which:  
4 unique CDR3  
2 unique J



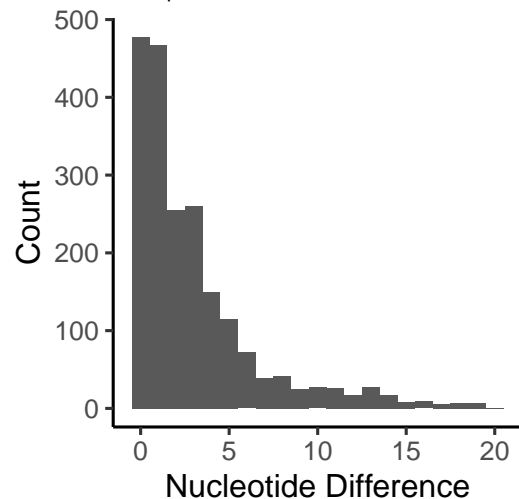
### IGHV4-59\*08

10409 sequences assigned  
807 (7.8%) exact matches, in which:  
656 unique CDR3  
6 unique J



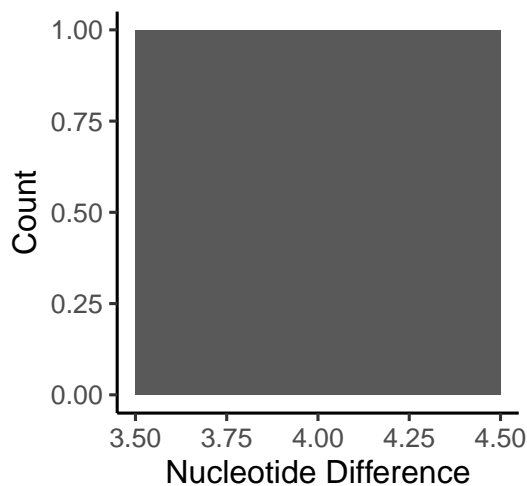
### IGHV4-61\*01

2419 sequences assigned  
478 (19.8%) exact matches, in which:  
405 unique CDR3  
6 unique J



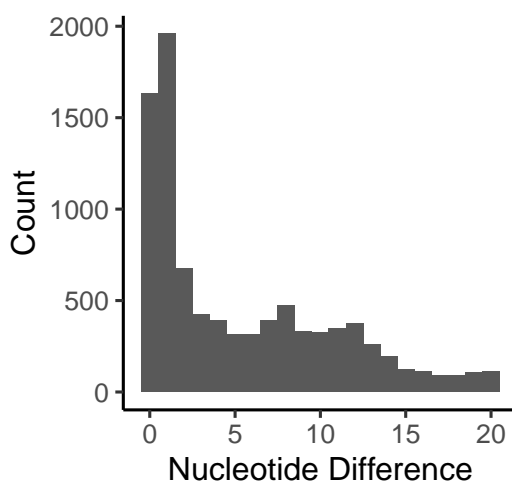
### IGHV4-55\*09

2 sequences assigned  
No exact matches.



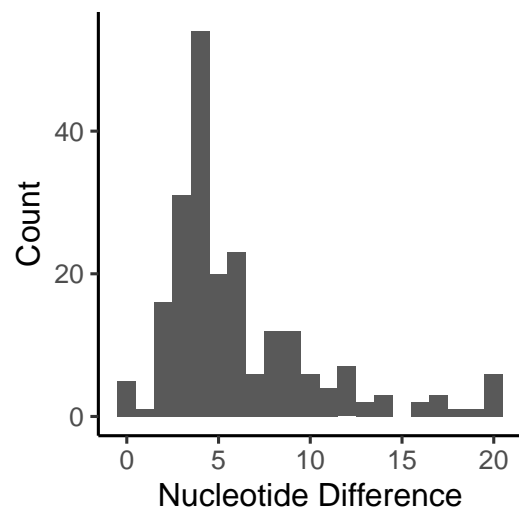
### IGHV4-59\*01\_07

11492 sequences assigned  
1633 (14.2%) exact matches, in which:  
1256 unique CDR3  
6 unique J



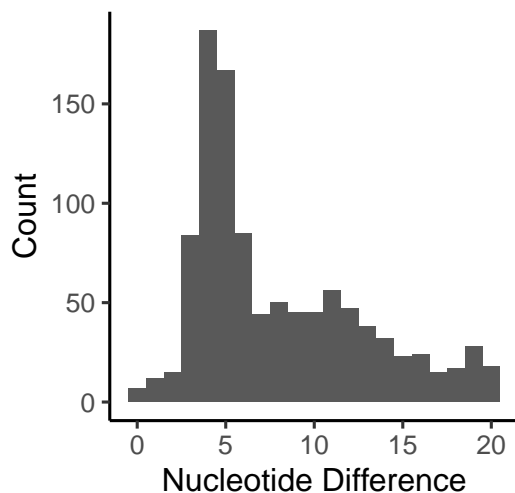
### IGHV4-61\*05

238 sequences assigned  
5 (2.1%) exact matches, in which:  
4 unique CDR3  
2 unique J



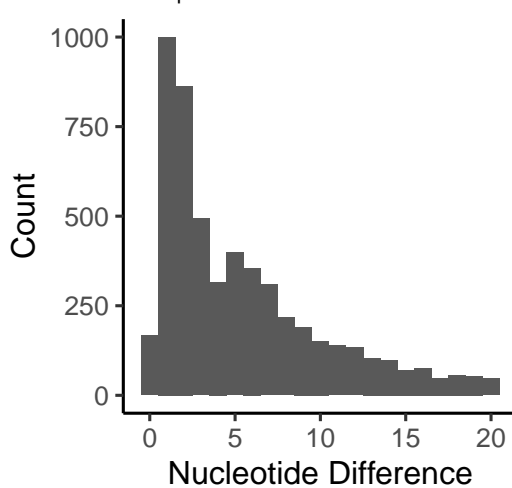
### IGHV4-59\*02

2730 sequences assigned  
7 (0.3%) exact matches, in which:  
6 unique CDR3  
4 unique J



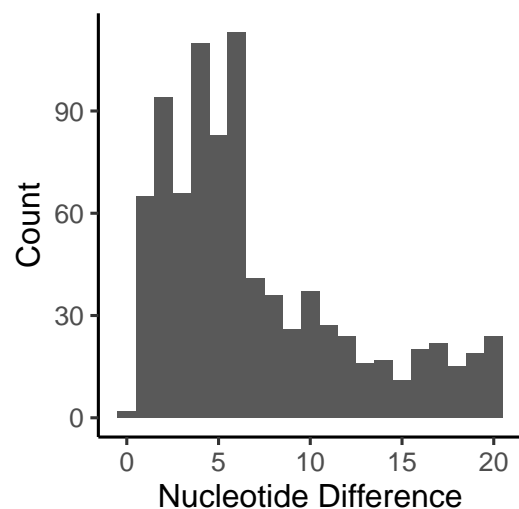
### IGHV4-59\*12

5769 sequences assigned  
167 (2.9%) exact matches, in which:  
160 unique CDR3  
6 unique J



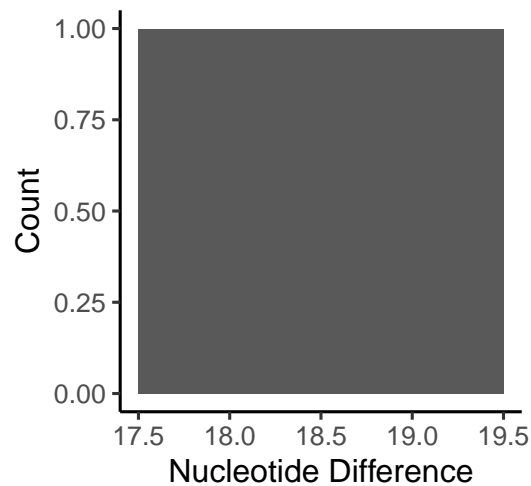
### IGHV4-61\*08

1185 sequences assigned  
2 (0.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



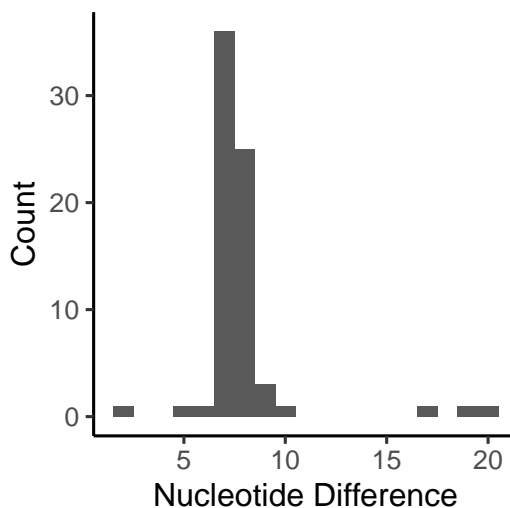
### IGHV1/OR15-2\*02\_03

3 sequences assigned  
No exact matches.



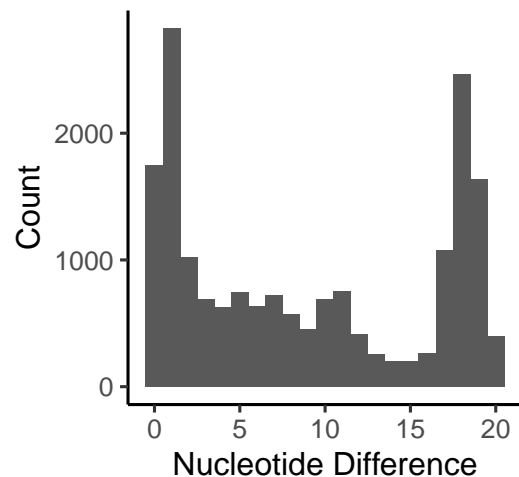
### IGHV4/OR15-8\*02

173 sequences assigned  
No exact matches.



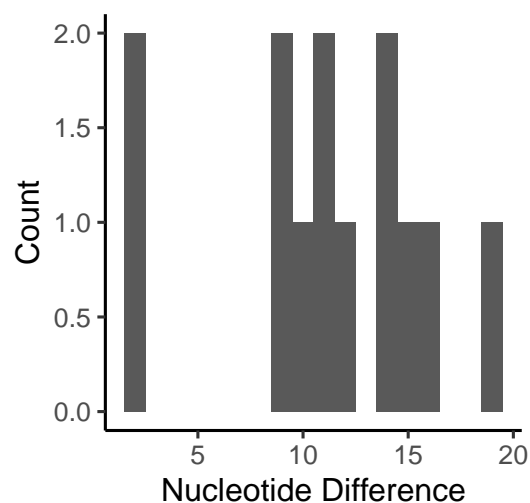
### IGHV5-51\*01\_03

19234 sequences assigned  
1744 (9.1%) exact matches, in which:  
909 unique CDR3  
6 unique J



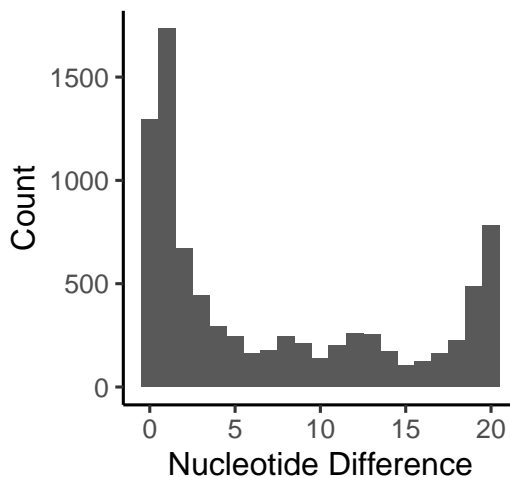
### IGHV1/OR15-3\*02

14 sequences assigned  
No exact matches.



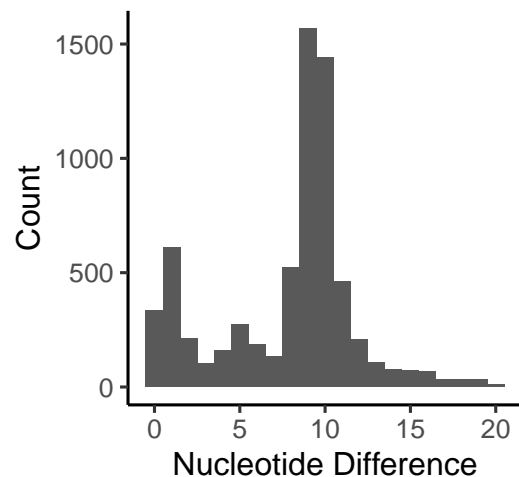
### IGHV5-10-1\*01\_03

11575 sequences assigned  
1296 (11.2%) exact matches, in which:  
737 unique CDR3  
6 unique J



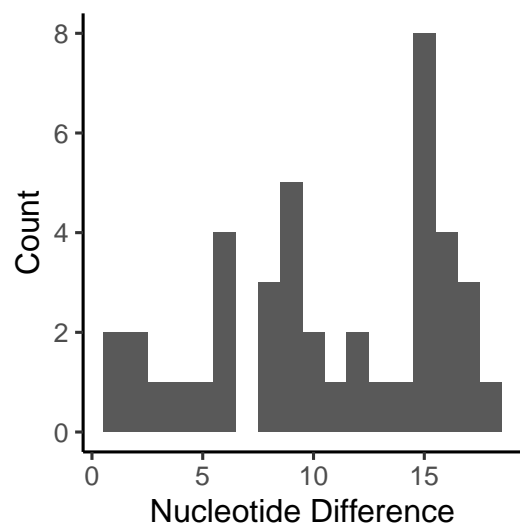
### IGHV6-1\*01\_02

6668 sequences assigned  
335 (5%) exact matches, in which:  
255 unique CDR3  
6 unique J



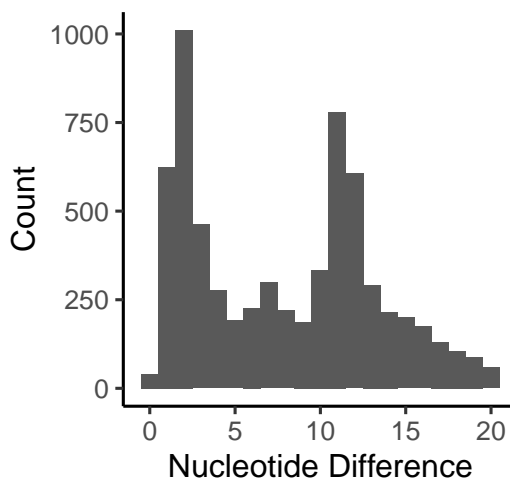
### IGHV4/OR15-8\*01

61 sequences assigned  
No exact matches.



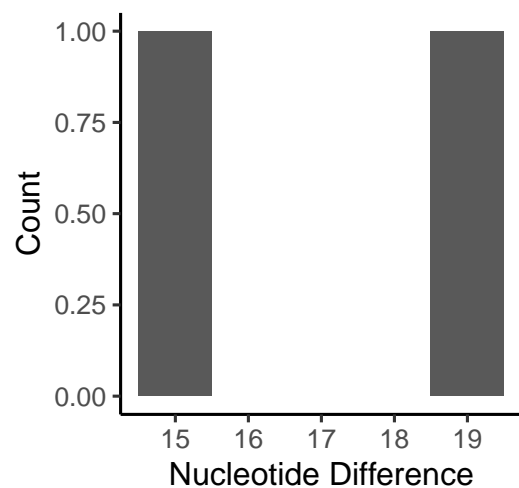
### IGHV5-51\*07

6695 sequences assigned  
41 (0.6%) exact matches, in which:  
31 unique CDR3  
4 unique J



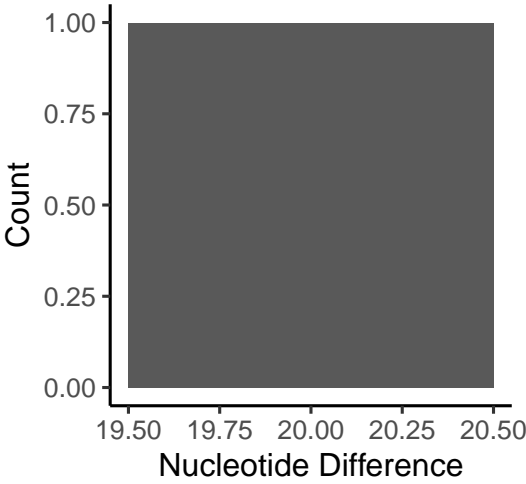
### IGHV3/OR16-6\*02

3 sequences assigned  
No exact matches.



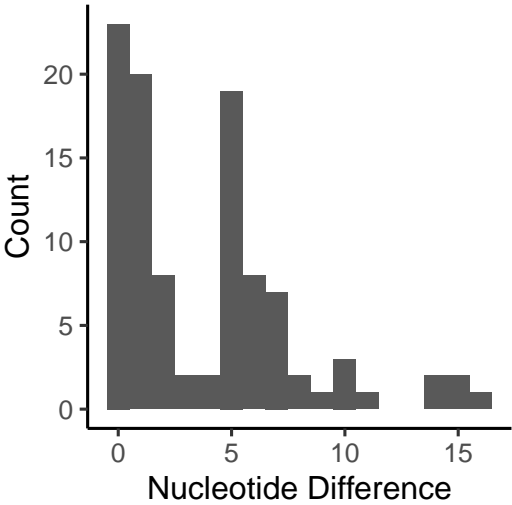
IGHV3/OR16-8\*01

1 sequences assigned  
No exact matches.



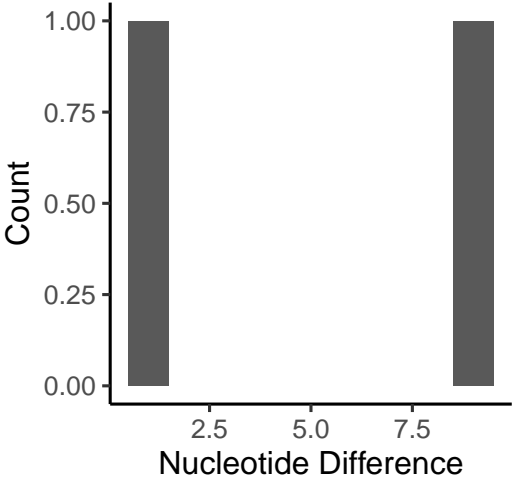
IGHV7-4-1\*01

101 sequences assigned  
23 (22.8%) exact matches, in which:  
21 unique CDR3  
3 unique J



IGHV3/OR16-9\*01

2 sequences assigned  
No exact matches.



IGHV3/OR16-10\*01\_03

1 sequences assigned  
No exact matches.

