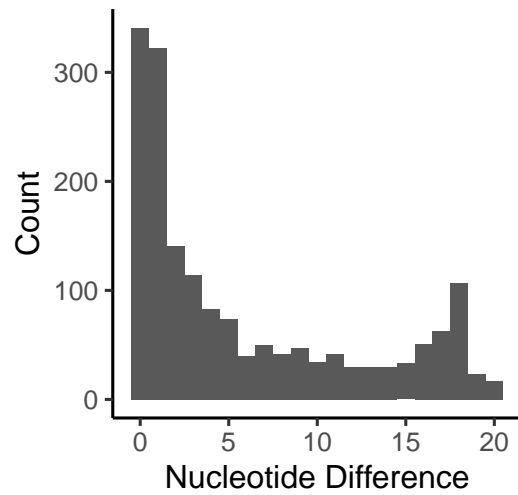


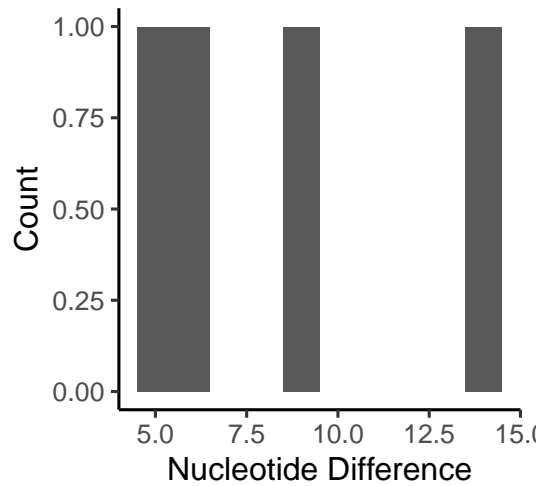
### IGHV1-2\*04

2138 sequences assigned  
341 (15.9%) exact matches, in which:  
301 unique CDR3  
6 unique J



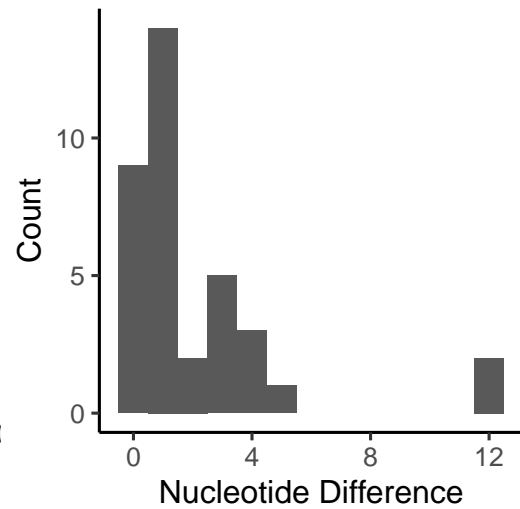
### IGHV1-8\*02

4 sequences assigned  
No exact matches.



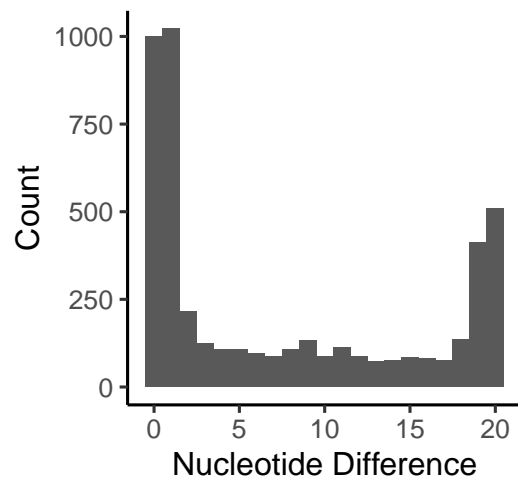
### IGHV1-45\*02

37 sequences assigned  
9 (24.3%) exact matches, in which:  
7 unique CDR3  
1 unique J



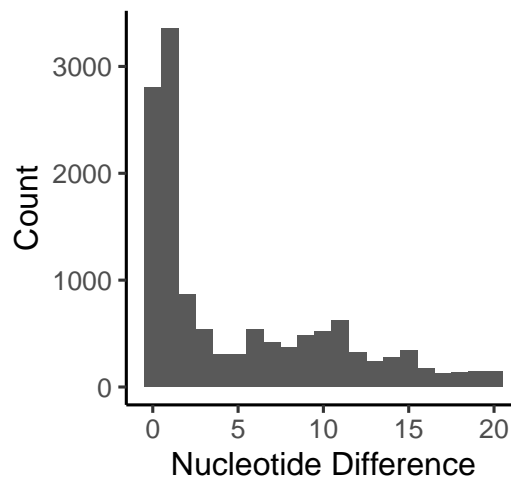
### IGHV1-3\*01\_05

5744 sequences assigned  
1001 (17.4%) exact matches, in which:  
855 unique CDR3  
6 unique J



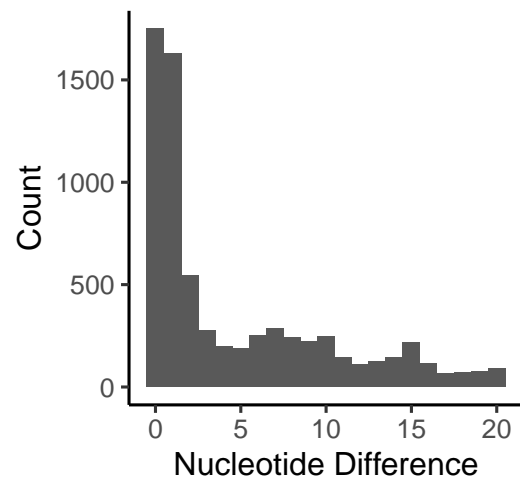
### IGHV1-18\*01

15102 sequences assigned  
2800 (18.5%) exact matches, in which:  
2286 unique CDR3  
6 unique J



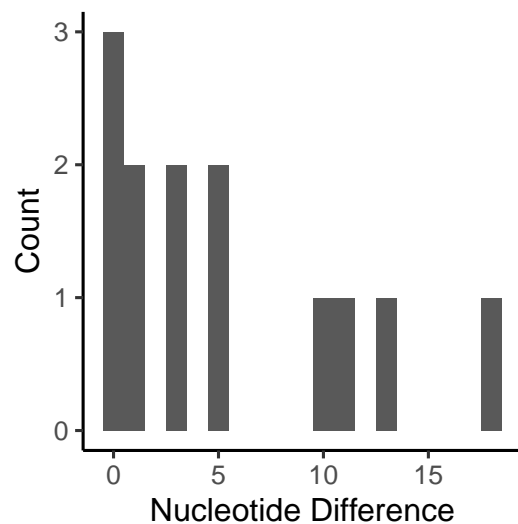
### IGHV1-46\*01

7909 sequences assigned  
1750 (22.1%) exact matches, in which:  
1456 unique CDR3  
6 unique J



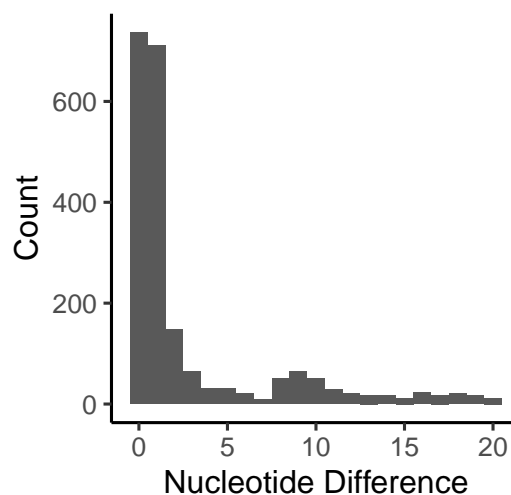
### IGHV1-8\*01

13 sequences assigned  
3 (23.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



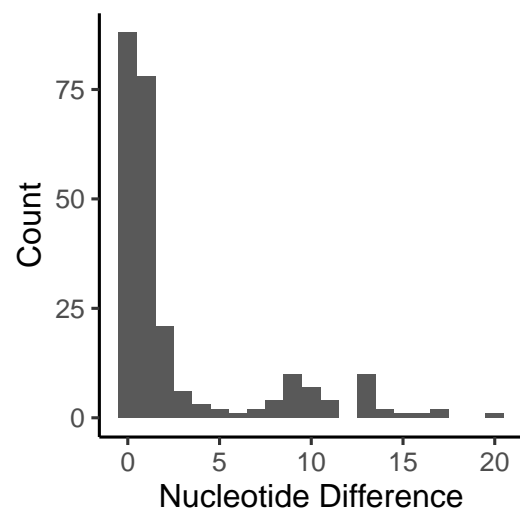
### IGHV1-24\*01

2703 sequences assigned  
737 (27.3%) exact matches, in which:  
643 unique CDR3  
6 unique J



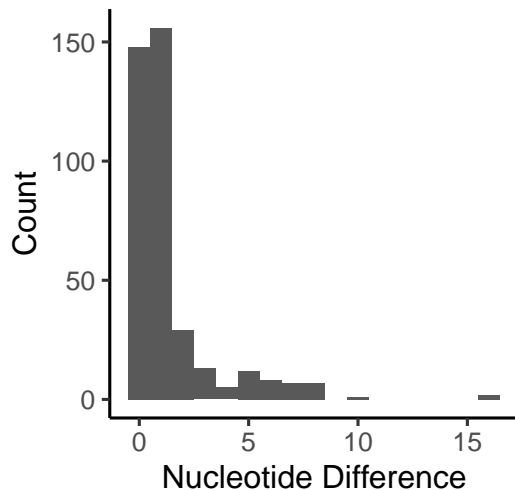
### IGHV1-58\*02

249 sequences assigned  
88 (35.3%) exact matches, in which:  
74 unique CDR3  
5 unique J



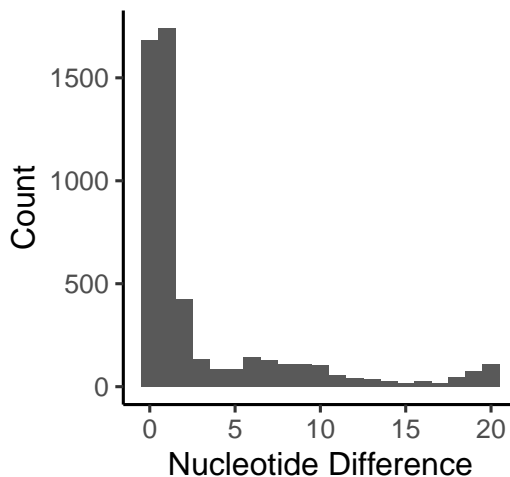
### IGHV1-58\*01\_03

399 sequences assigned  
148 (37.1%) exact matches, in which:  
122 unique CDR3  
5 unique J



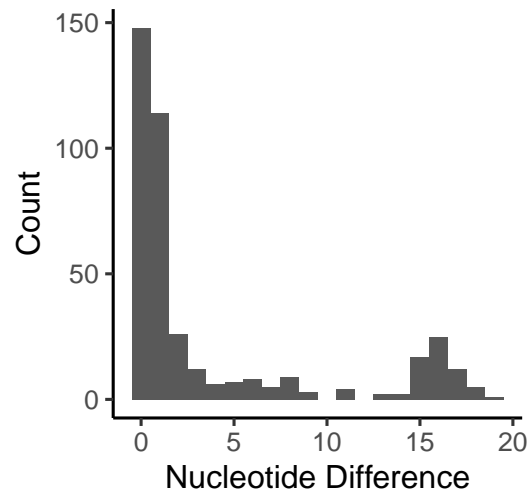
### IGHV1-69\*04\_09

5719 sequences assigned  
1684 (29.4%) exact matches, in which:  
1459 unique CDR3  
6 unique J



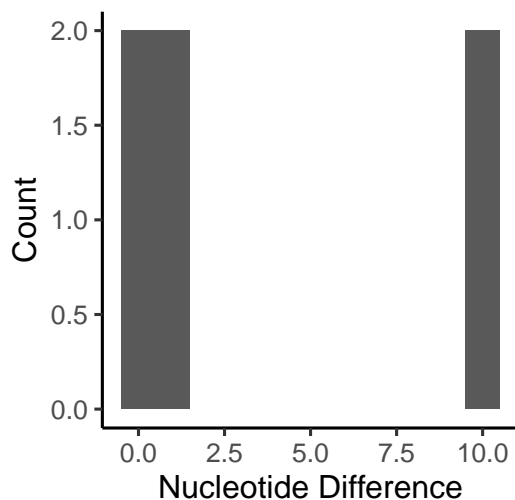
### IGHV2-26\*01

406 sequences assigned  
148 (36.5%) exact matches, in which:  
123 unique CDR3  
5 unique J



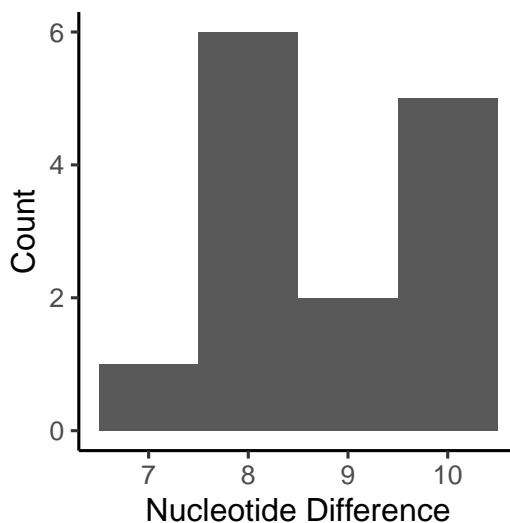
### IGHV1-68\*01

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



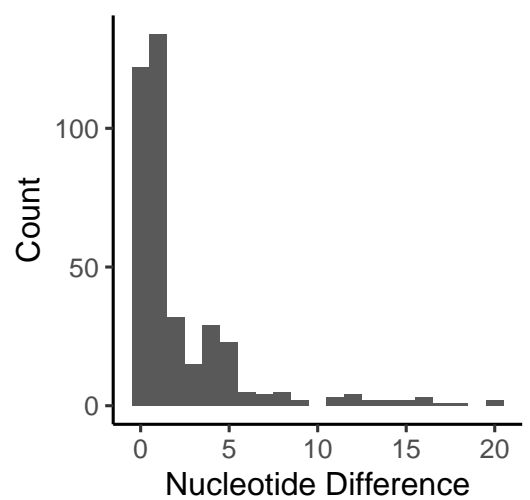
### IGHV1-NL1\*01

14 sequences assigned  
No exact matches.



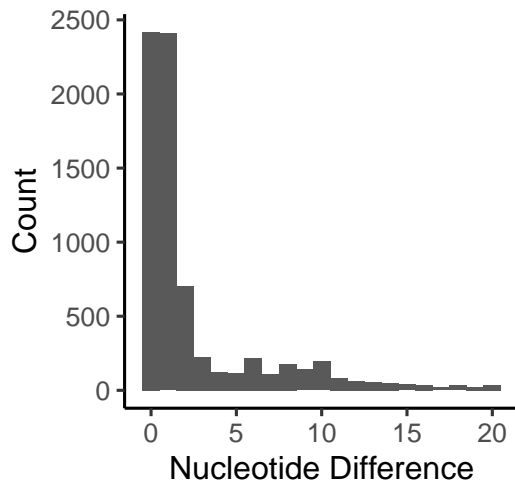
### IGHV2-70\*01

454 sequences assigned  
122 (26.9%) exact matches, in which:  
103 unique CDR3  
5 unique J



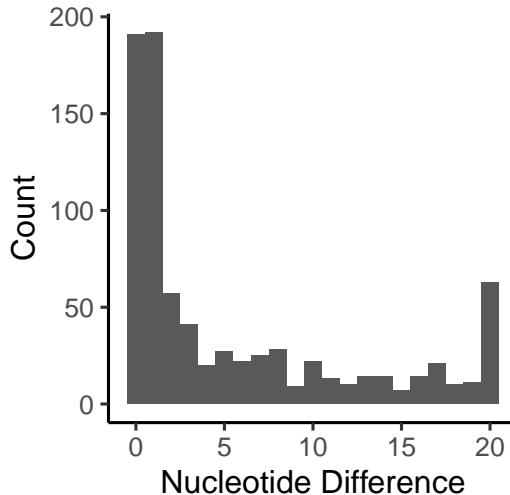
### IGHV1-69\*01\_12\_13

8048 sequences assigned  
2418 (30%) exact matches, in which:  
2114 unique CDR3  
6 unique J



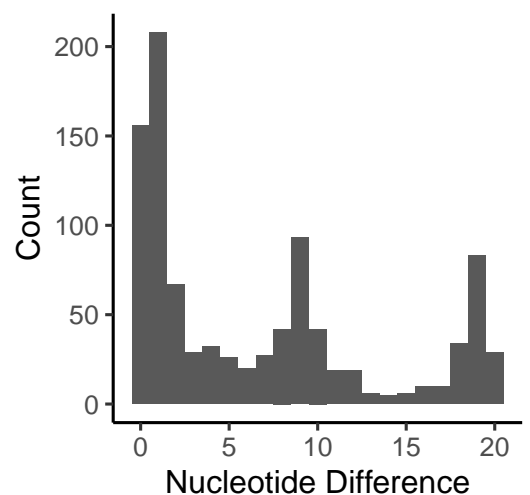
### IGHV2-5\*02

1553 sequences assigned  
191 (12.3%) exact matches, in which:  
166 unique CDR3  
6 unique J



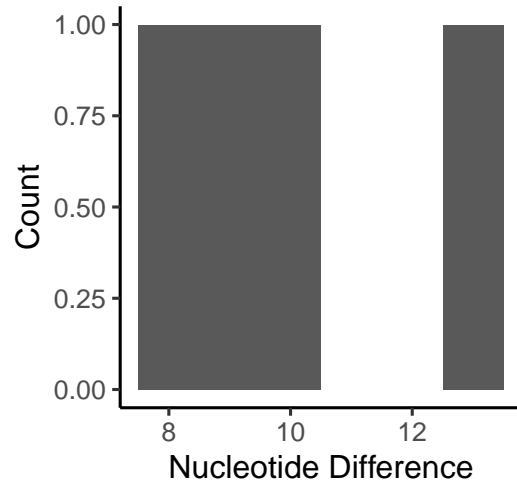
### IGHV2-70\*11\_15

989 sequences assigned  
156 (15.8%) exact matches, in which:  
134 unique CDR3  
5 unique J



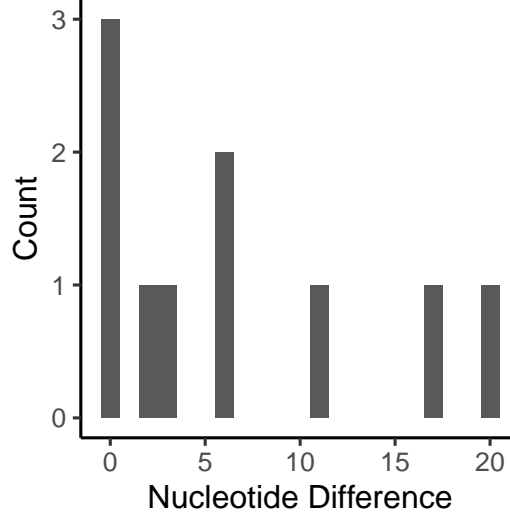
### IGHV2-70D\*04

4 sequences assigned  
No exact matches.



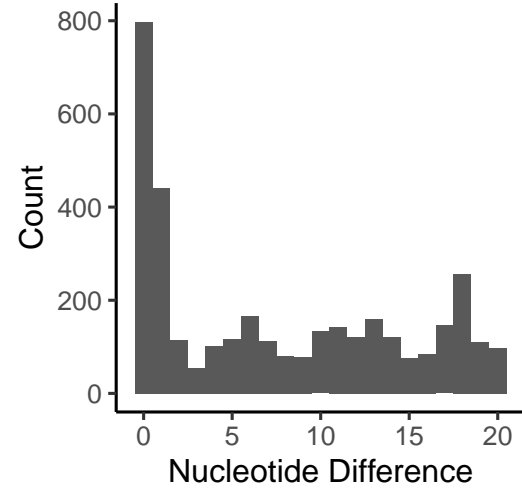
### IGHV3-9\*01

14 sequences assigned  
3 (21.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



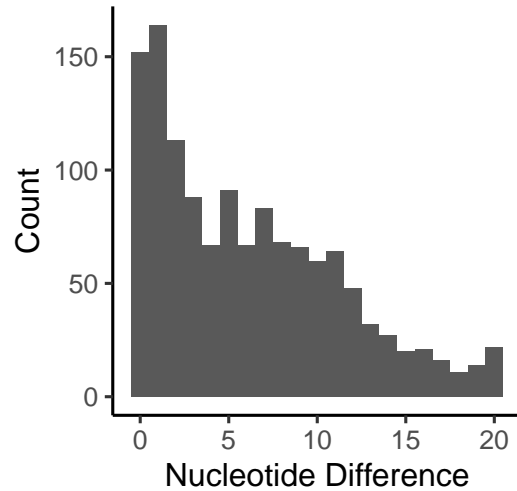
### IGHV3-15\*01\_02

4681 sequences assigned  
798 (17%) exact matches, in which:  
480 unique CDR3  
6 unique J



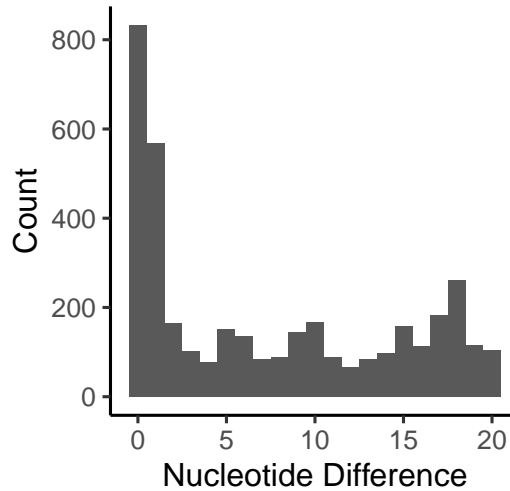
### IGHV3-7\*01

1356 sequences assigned  
152 (11.2%) exact matches, in which:  
146 unique CDR3  
5 unique J



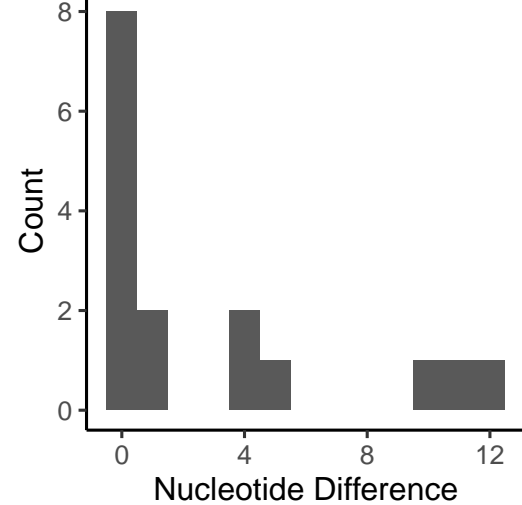
### IGHV3-11\*06

5630 sequences assigned  
833 (14.8%) exact matches, in which:  
522 unique CDR3  
6 unique J



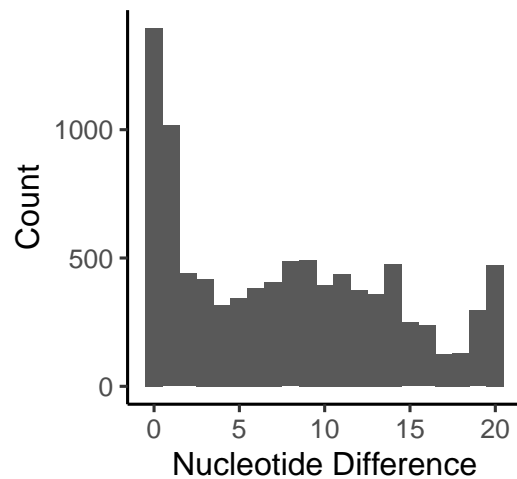
### IGHV3-19\*01

16 sequences assigned  
8 (50%) exact matches, in which:  
7 unique CDR3  
3 unique J



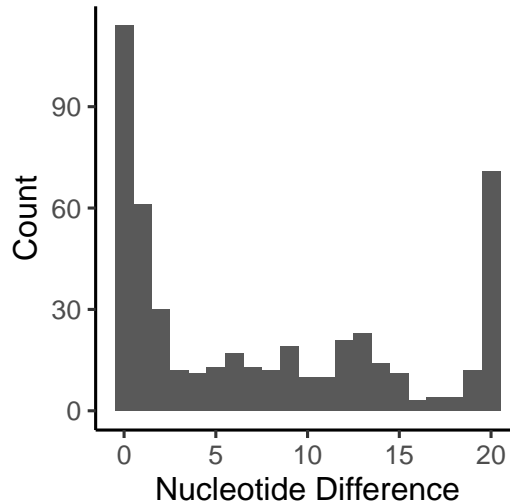
### IGHV3-7\*03

10755 sequences assigned  
1396 (13%) exact matches, in which:  
864 unique CDR3  
6 unique J



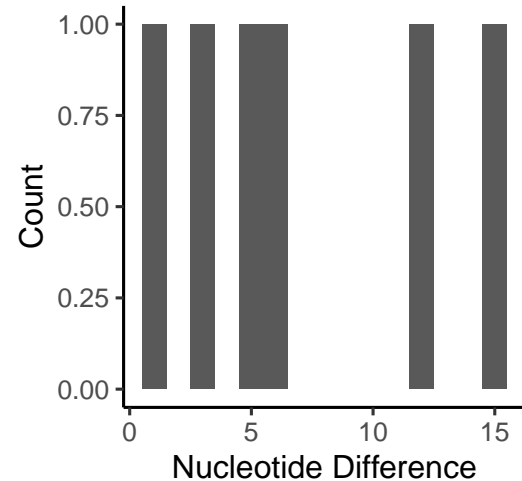
### IGHV3-13\*05

706 sequences assigned  
114 (16.1%) exact matches, in which:  
80 unique CDR3  
5 unique J



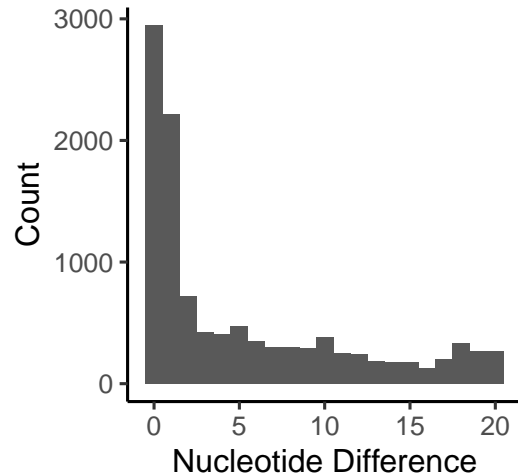
### IGHV3-20\*03\_04

12 sequences assigned  
No exact matches.



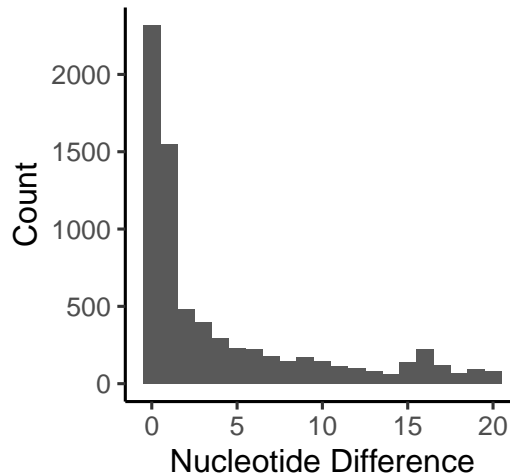
### IGHV3-21\*01\_02

13712 sequences assigned  
2946 (21.5%) exact matches, in which:  
1766 unique CDR3  
6 unique J



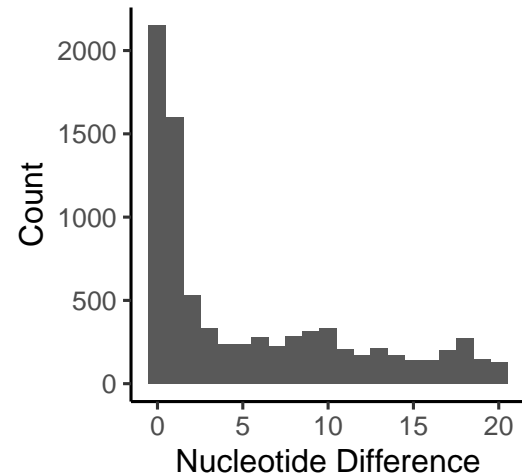
### IGHV3-30-3\*01

8386 sequences assigned  
2317 (27.6%) exact matches, in which:  
1475 unique CDR3  
6 unique J



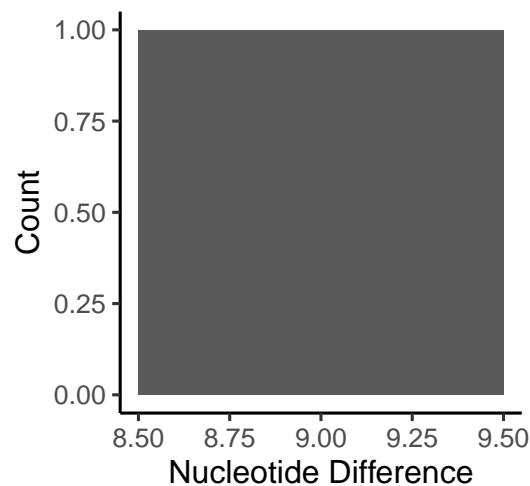
### IGHV3-33\*01

9997 sequences assigned  
2151 (21.5%) exact matches, in which:  
1336 unique CDR3  
6 unique J



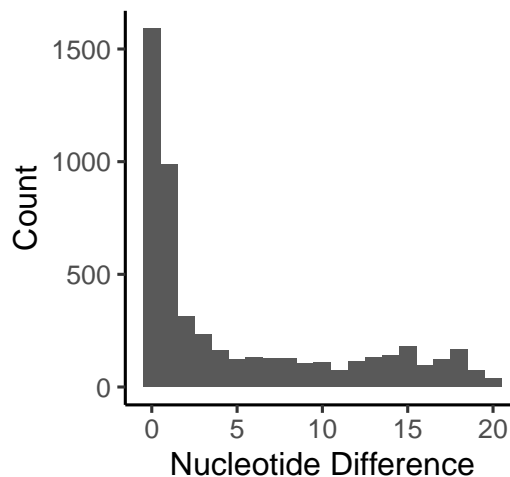
### IGHV3-22\*01\_02

1 sequences assigned  
No exact matches.



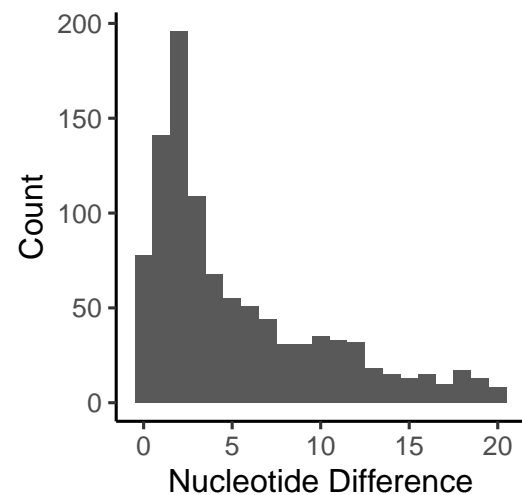
### IGHV3-30\*01

5931 sequences assigned  
1590 (26.8%) exact matches, in which:  
1035 unique CDR3  
6 unique J



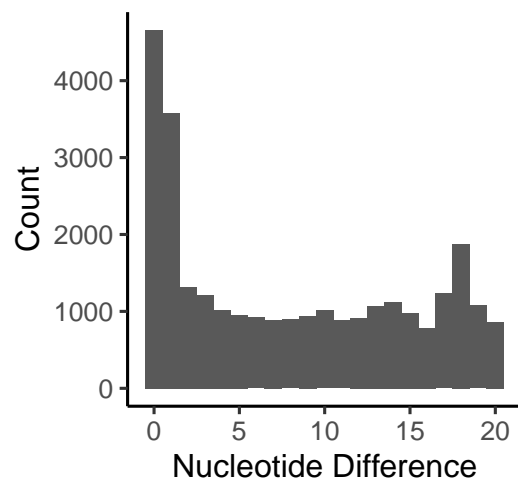
### IGHV3-33\*06

1062 sequences assigned  
78 (7.3%) exact matches, in which:  
73 unique CDR3  
6 unique J



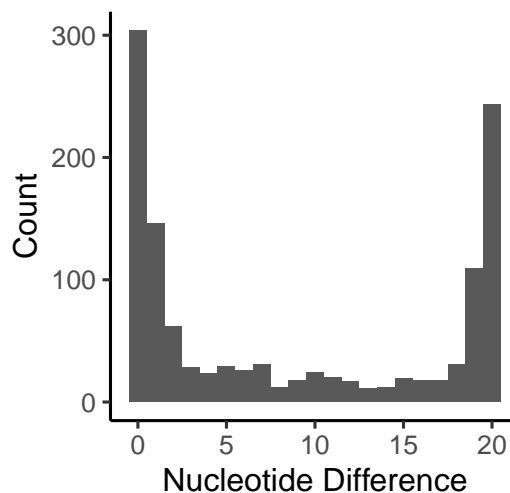
### IGHV3-23\*01\_04

40001 sequences assigned  
4658 (11.6%) exact matches, in which:  
2656 unique CDR3  
6 unique J



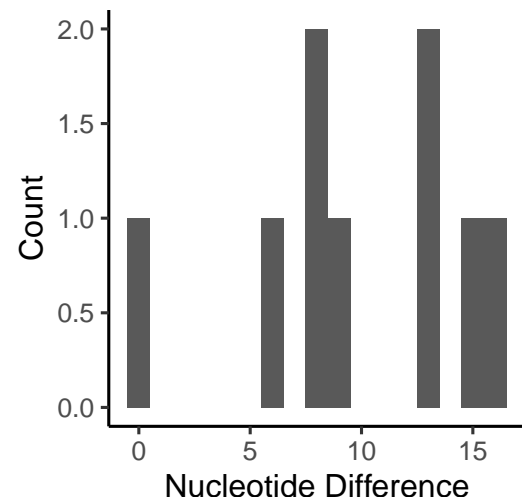
### IGHV3-30\*03

1589 sequences assigned  
304 (19.1%) exact matches, in which:  
292 unique CDR3  
6 unique J



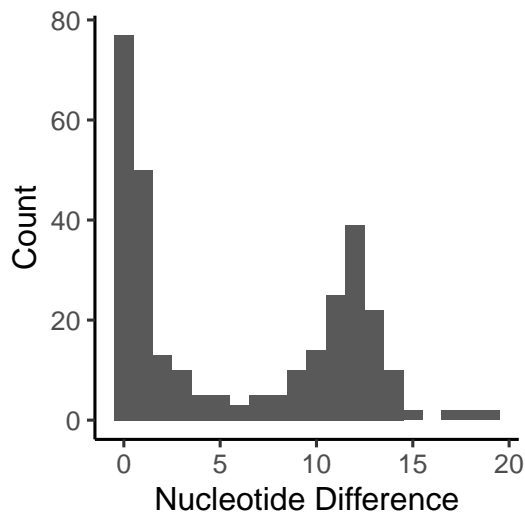
### IGHV3-35\*01

9 sequences assigned  
1 (11.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



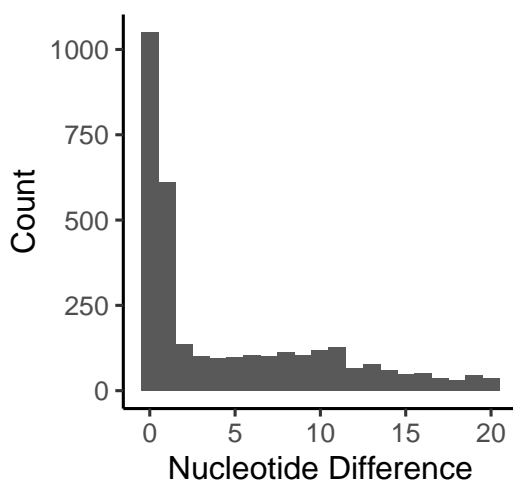
### IGHV3-43\*01

394 sequences assigned  
77 (19.5%) exact matches, in which:  
45 unique CDR3  
5 unique J



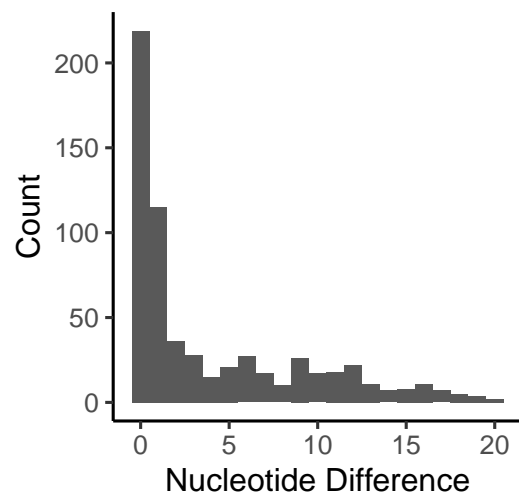
### IGHV3-48\*03

4692 sequences assigned  
1050 (22.4%) exact matches, in which:  
637 unique CDR3  
6 unique J



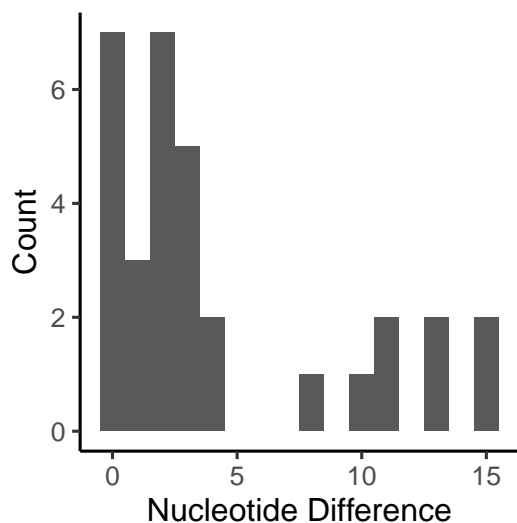
### IGHV3-49\*03\_05

689 sequences assigned  
219 (31.8%) exact matches, in which:  
127 unique CDR3  
6 unique J



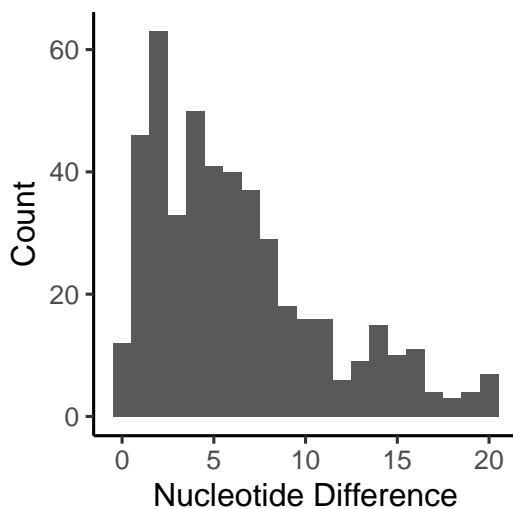
### IGHV3-47\*02

32 sequences assigned  
7 (21.9%) exact matches, in which:  
4 unique CDR3  
2 unique J



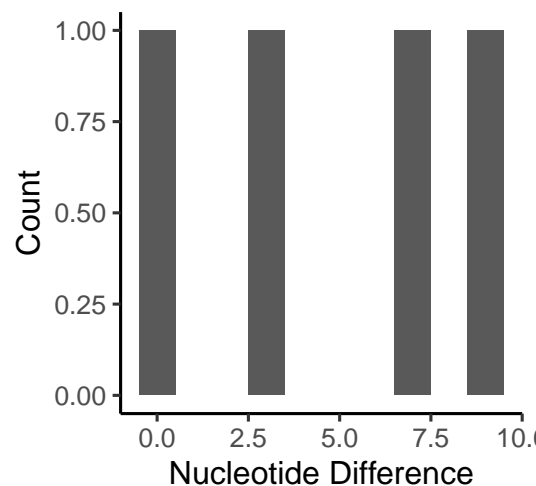
### IGHV3-48\*04

668 sequences assigned  
12 (1.8%) exact matches, in which:  
12 unique CDR3  
5 unique J



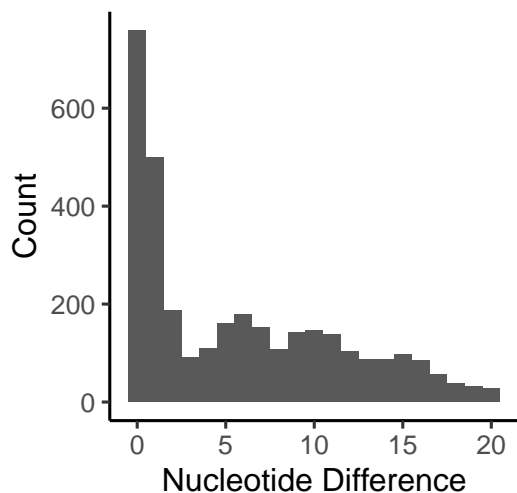
### IGHV3-52\*02

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



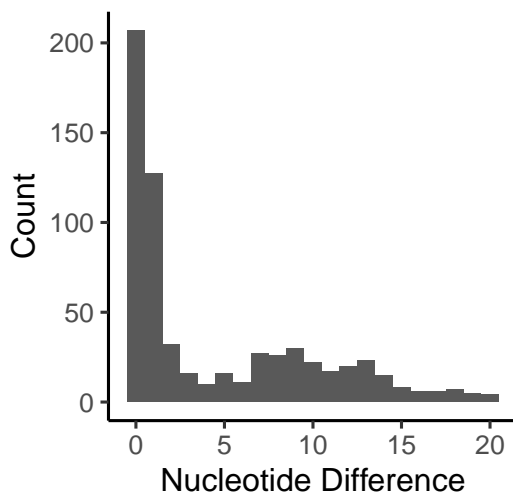
### IGHV3-48\*01

4068 sequences assigned  
759 (18.7%) exact matches, in which:  
463 unique CDR3  
6 unique J



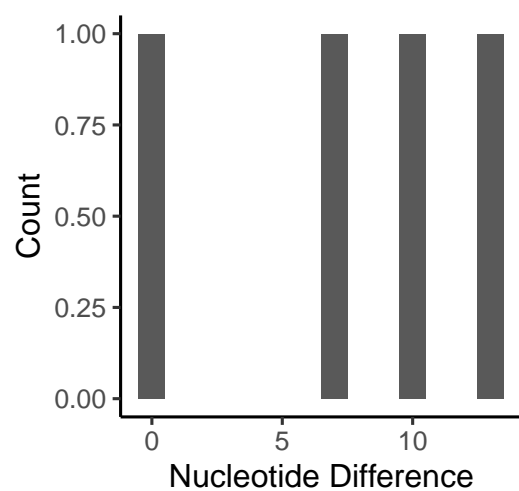
### IGHV3-49\*04

661 sequences assigned  
207 (31.3%) exact matches, in which:  
120 unique CDR3  
6 unique J



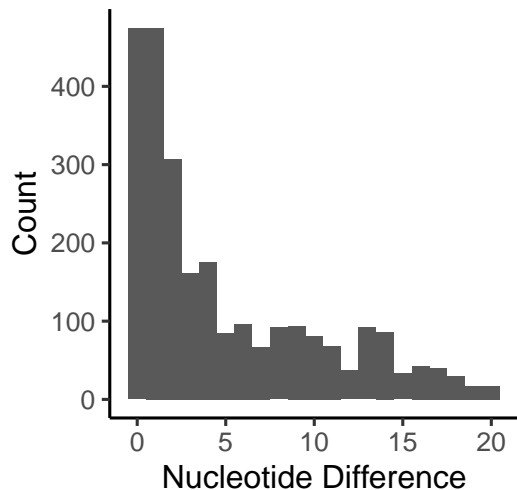
### IGHV3-52\*01\_03

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



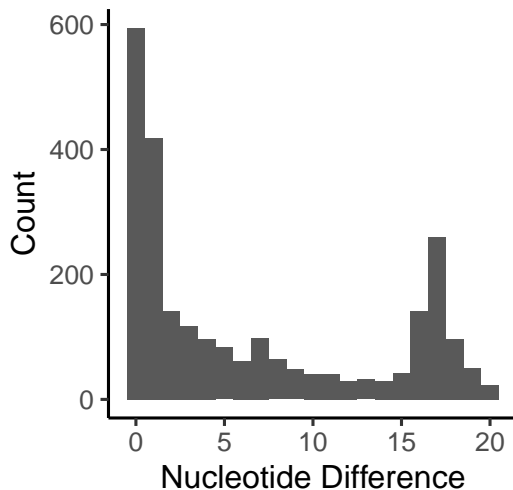
### IGHV3-53\*01\_02

2933 sequences assigned  
474 (16.2%) exact matches, in which:  
292 unique CDR3  
6 unique J



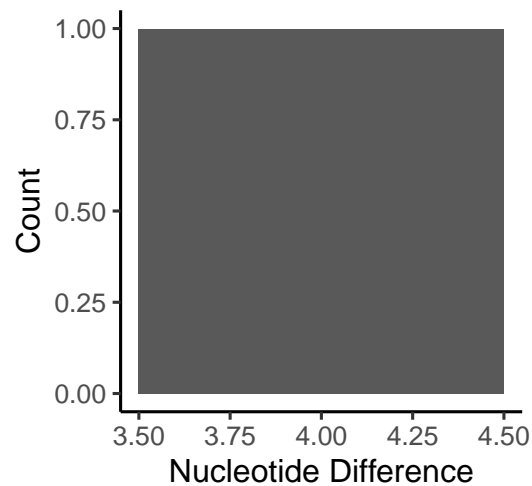
### IGHV3-66\*01

2797 sequences assigned  
595 (21.3%) exact matches, in which:  
384 unique CDR3  
6 unique J



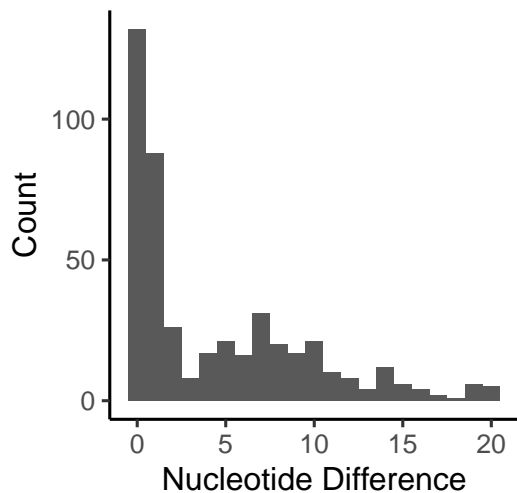
### IGHV3-71\*01\_04

2 sequences assigned  
No exact matches.



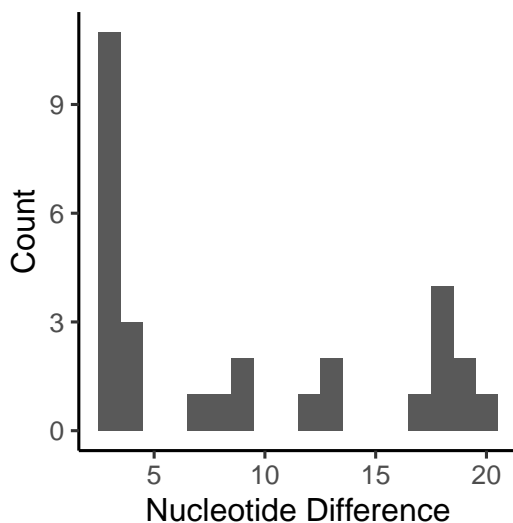
### IGHV3-64\*01

810 sequences assigned  
132 (16.3%) exact matches, in which:  
83 unique CDR3  
5 unique J



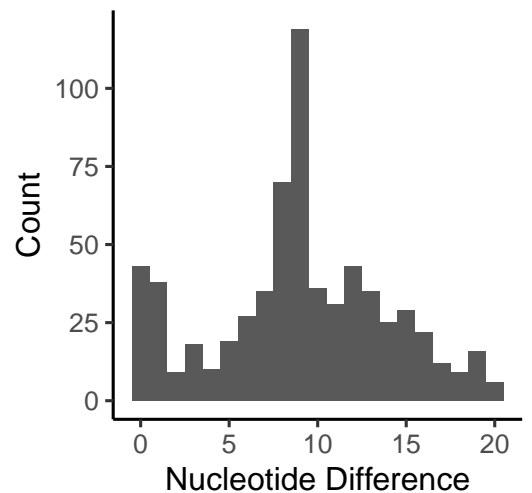
### IGHV3-69-1\*01

552 sequences assigned  
No exact matches.



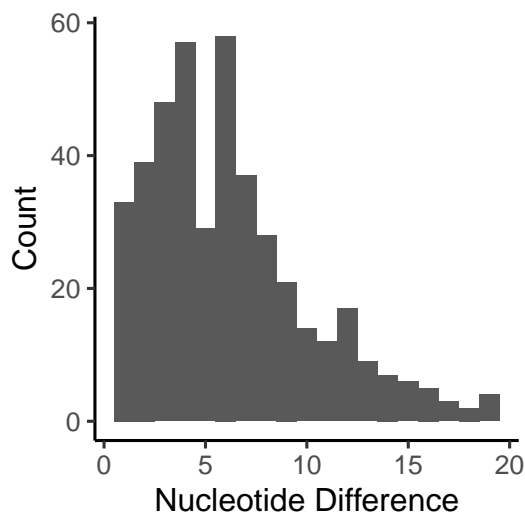
### IGHV3-72\*01

763 sequences assigned  
43 (5.6%) exact matches, in which:  
24 unique CDR3  
5 unique J



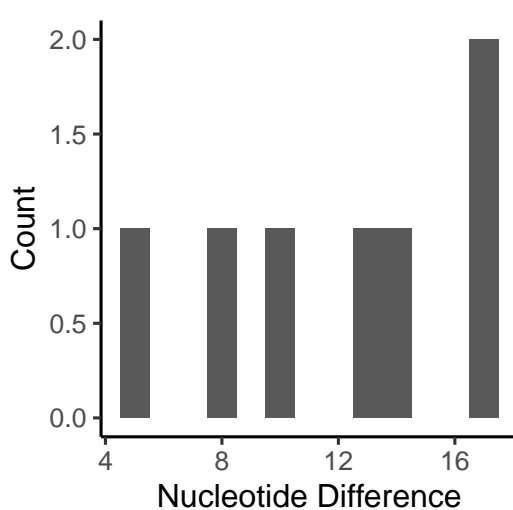
### IGHV3-64\*04

447 sequences assigned  
No exact matches.



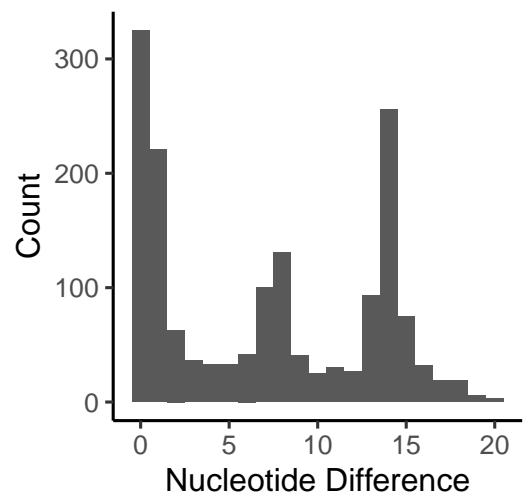
### IGHV3-69-1\*02

20 sequences assigned  
No exact matches.



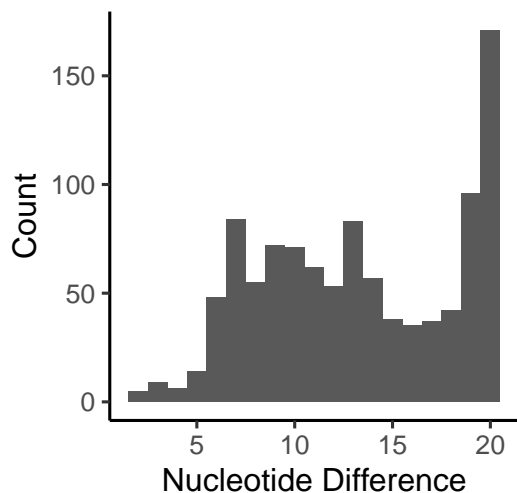
### IGHV3-73\*01\_02

2329 sequences assigned  
325 (14%) exact matches, in which:  
195 unique CDR3  
6 unique J



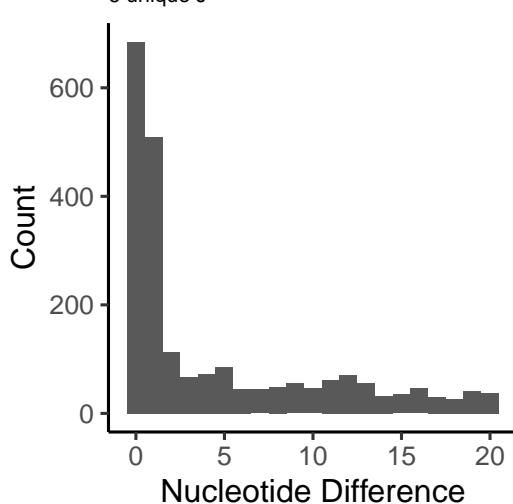
### IGHV3-74\*03

2125 sequences assigned  
No exact matches.



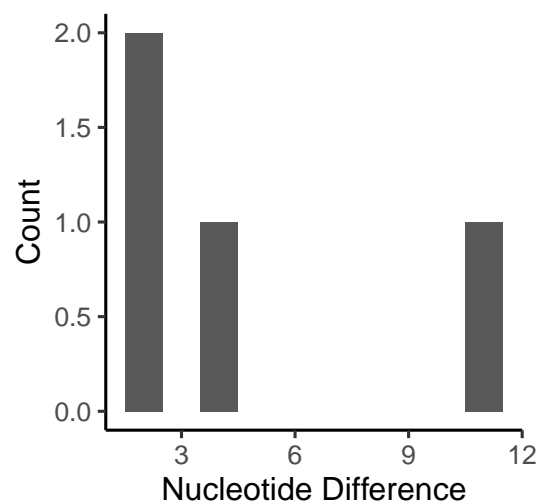
### IGHV3-64D\*06

3022 sequences assigned  
685 (22.7%) exact matches, in which:  
381 unique CDR3  
6 unique J



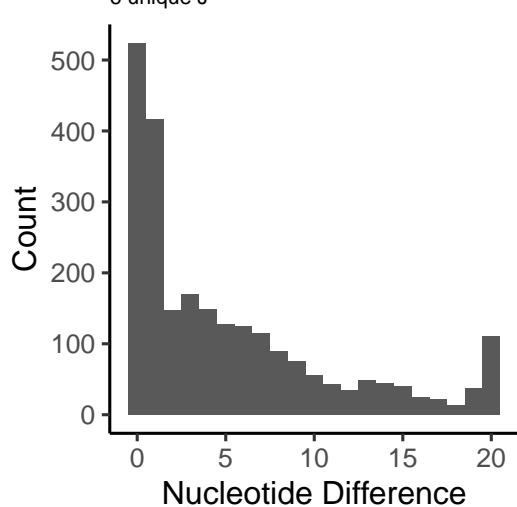
### IGHV4-28\*03

4 sequences assigned  
No exact matches.



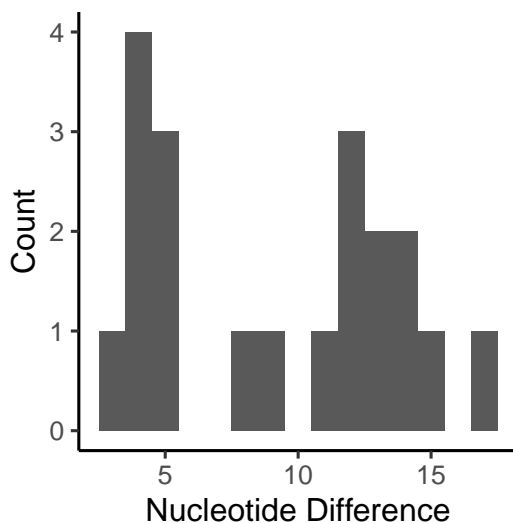
### IGHV3-74\*01\_02

2937 sequences assigned  
524 (17.8%) exact matches, in which:  
325 unique CDR3  
6 unique J



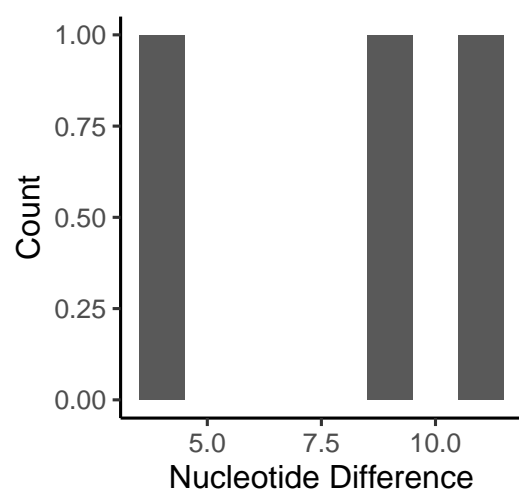
### IGHV3-NL1\*01

30 sequences assigned  
No exact matches.



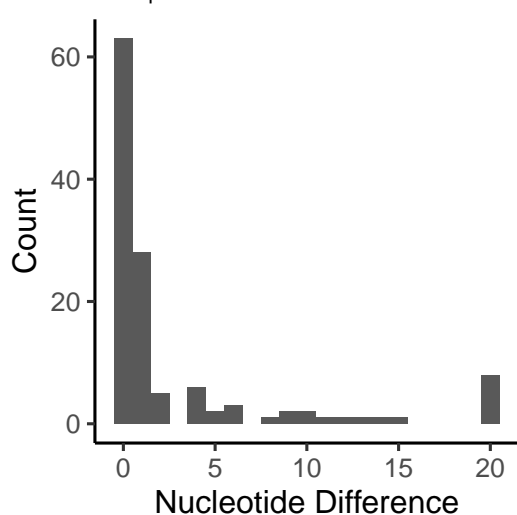
### IGHV4-28\*01\_07

3 sequences assigned  
No exact matches.



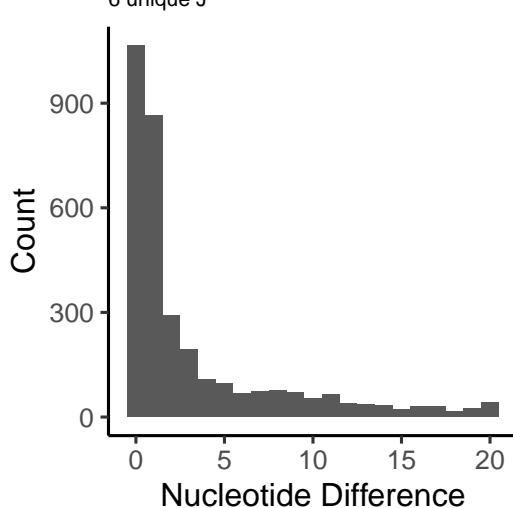
### IGHV3-43D\*04

143 sequences assigned  
63 (44.1%) exact matches, in which:  
35 unique CDR3  
3 unique J



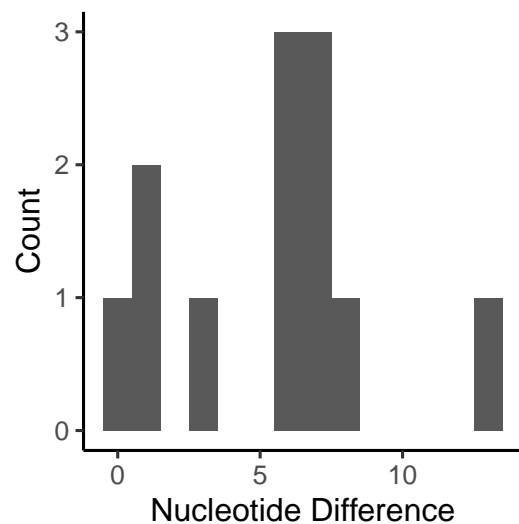
### IGHV4-4\*02\_03

5105 sequences assigned  
1066 (20.9%) exact matches, in which:  
870 unique CDR3  
6 unique J



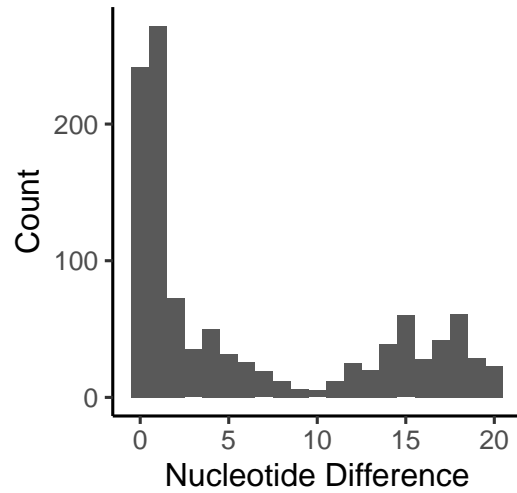
### IGHV4-28\*02\_05

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



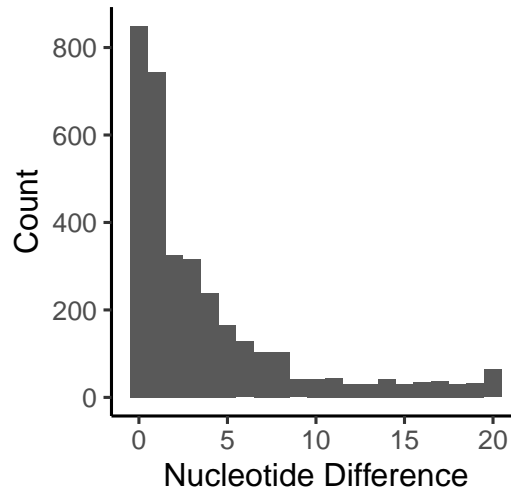
### IGHV4-30-2\*01

1679 sequences assigned  
242 (14.4%) exact matches, in which:  
174 unique CDR3  
6 unique J



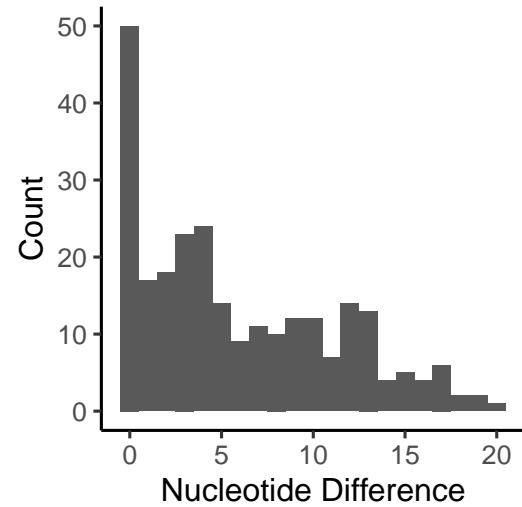
### IGHV4-31\*02

4064 sequences assigned  
850 (20.9%) exact matches, in which:  
732 unique CDR3  
6 unique J



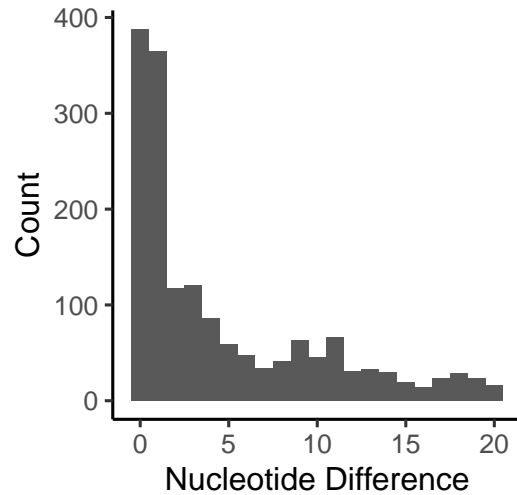
### IGHV4-38-2\*02

366 sequences assigned  
50 (13.7%) exact matches, in which:  
41 unique CDR3  
5 unique J



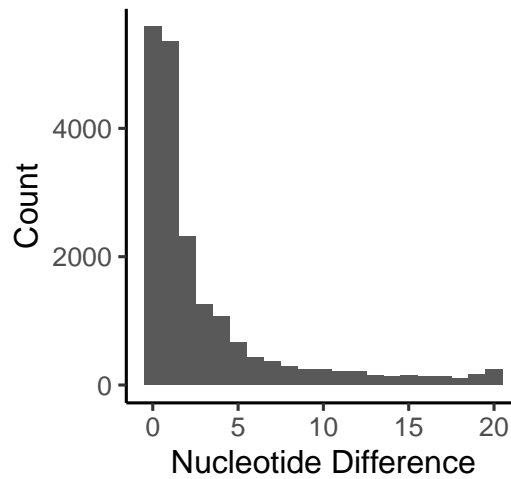
### IGHV4-30-4\*01

1996 sequences assigned  
388 (19.4%) exact matches, in which:  
319 unique CDR3  
6 unique J



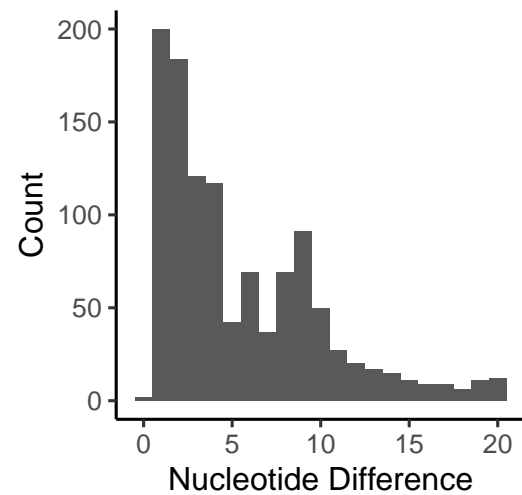
### IGHV4-34\*01\_02

22022 sequences assigned  
5584 (25.4%) exact matches, in which:  
4450 unique CDR3  
6 unique J



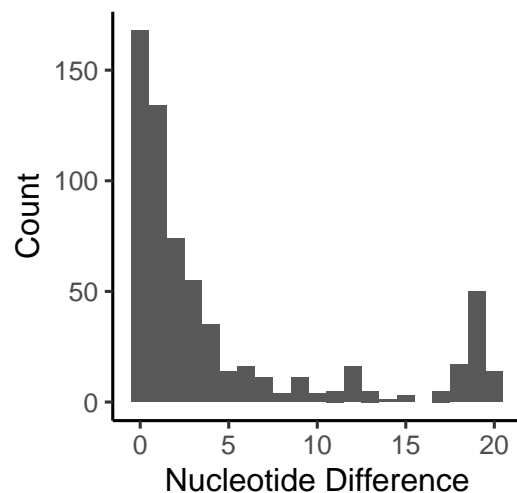
### IGHV4-39\*07

1768 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



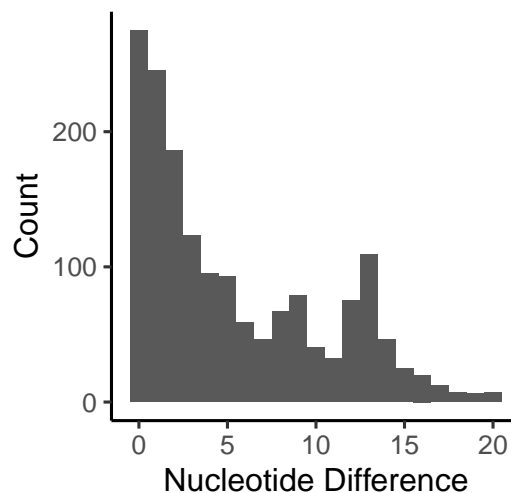
### IGHV4-31\*01

667 sequences assigned  
168 (25.2%) exact matches, in which:  
142 unique CDR3  
5 unique J



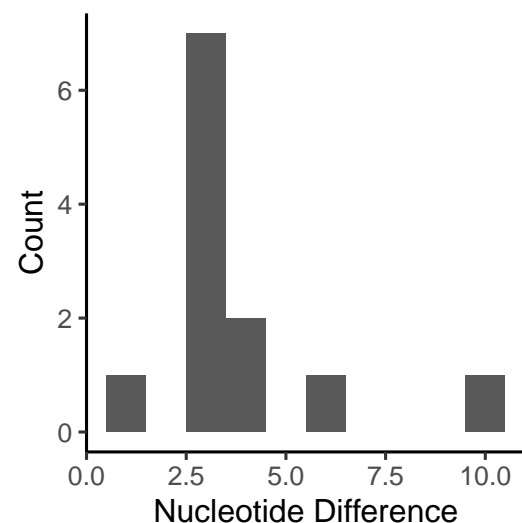
### IGHV4-38-2\*01

2946 sequences assigned  
275 (9.3%) exact matches, in which:  
249 unique CDR3  
6 unique J



### IGHV4-55\*09

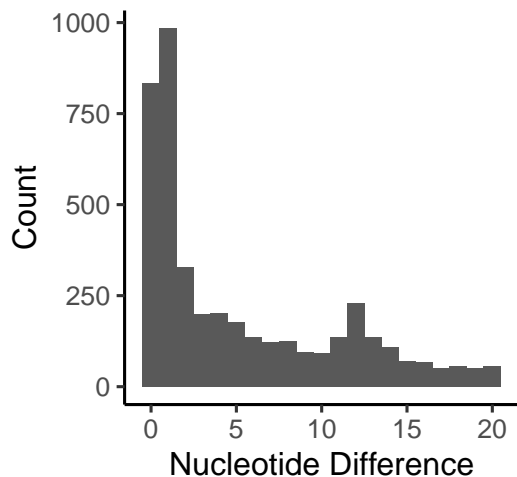
12 sequences assigned  
No exact matches.





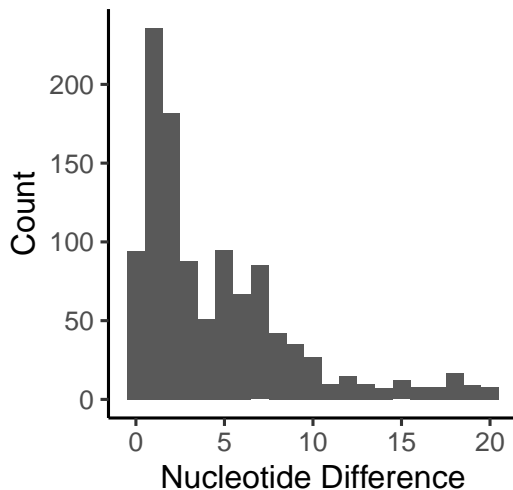
### IGHV4-59\*08

6848 sequences assigned  
835 (12.2%) exact matches, in which:  
691 unique CDR3  
6 unique J



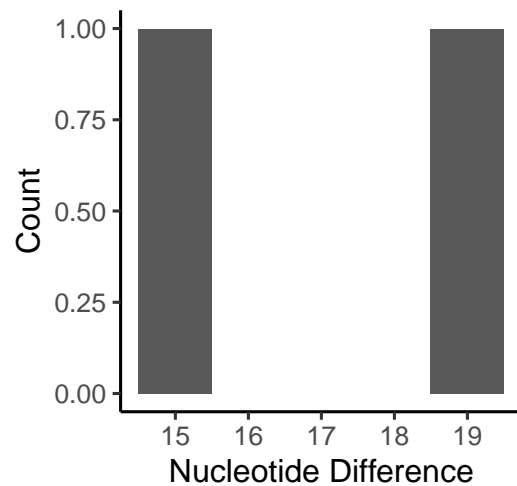
### IGHV4-59\*12

1329 sequences assigned  
94 (7.1%) exact matches, in which:  
94 unique CDR3  
5 unique J



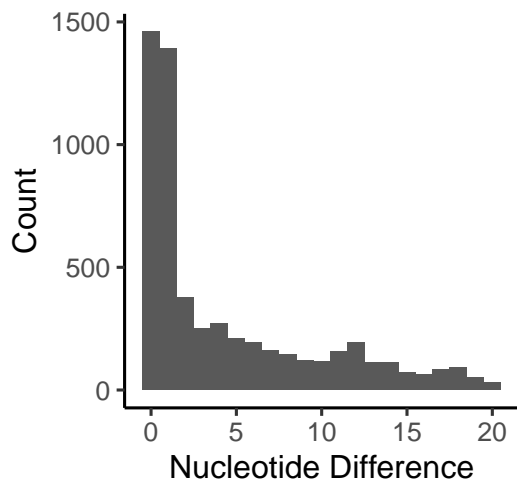
### IGHV1/OR15-1\*04

2 sequences assigned  
No exact matches.



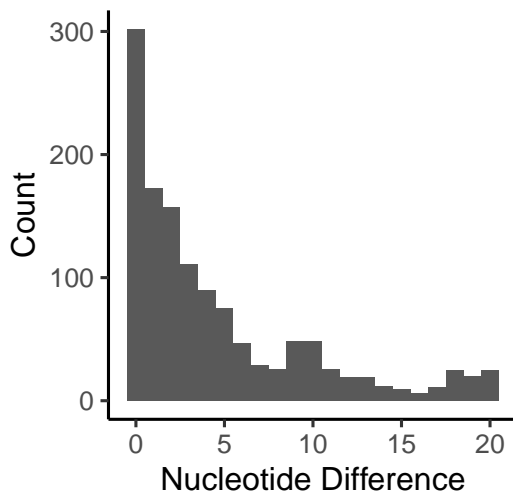
### IGHV4-59\*01\_07

6854 sequences assigned  
1460 (21.3%) exact matches, in which:  
1216 unique CDR3  
6 unique J



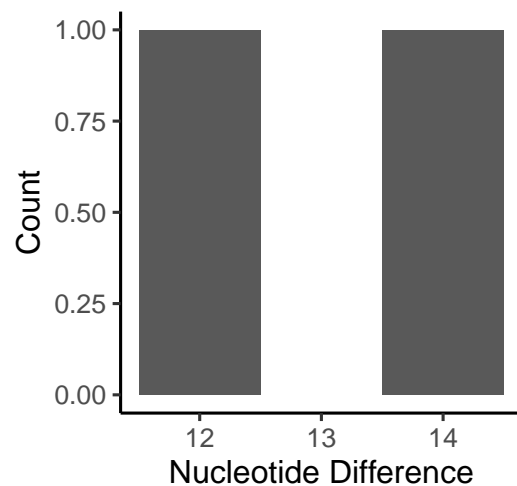
### IGHV4-61\*01

1381 sequences assigned  
302 (21.9%) exact matches, in which:  
258 unique CDR3  
6 unique J



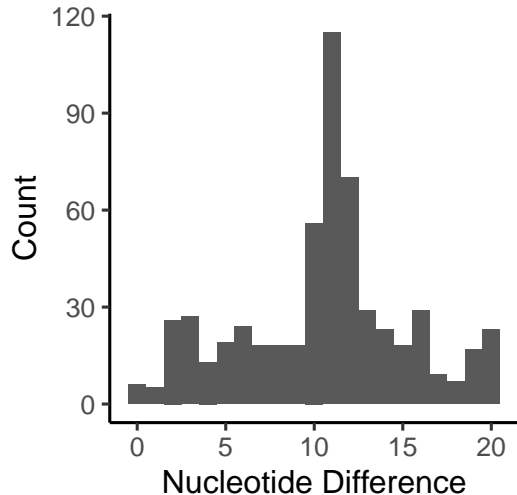
### IGHV1/OR15-2\*02\_03

6 sequences assigned  
No exact matches.



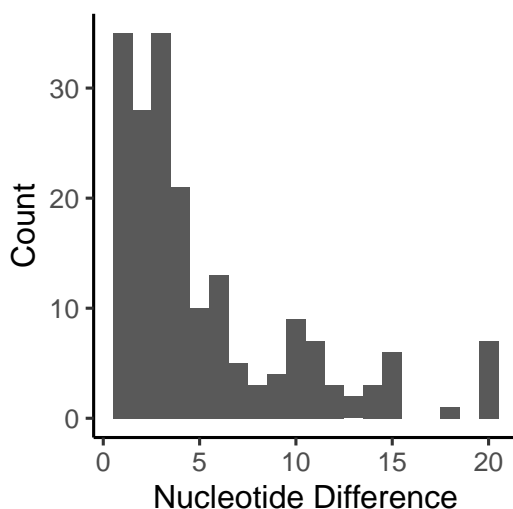
### IGHV4-59\*11

751 sequences assigned  
6 (0.8%) exact matches, in which:  
6 unique CDR3  
3 unique J



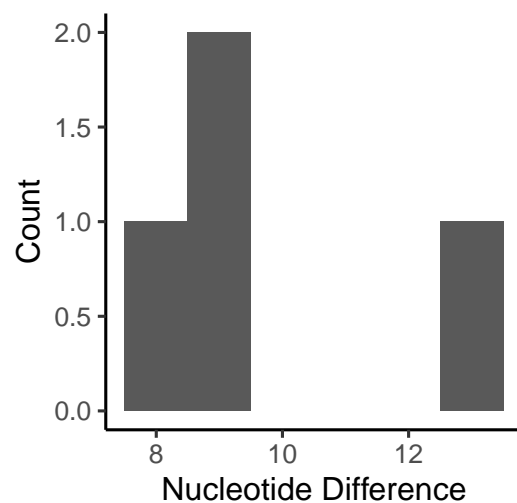
### IGHV4-61\*08

210 sequences assigned  
No exact matches.



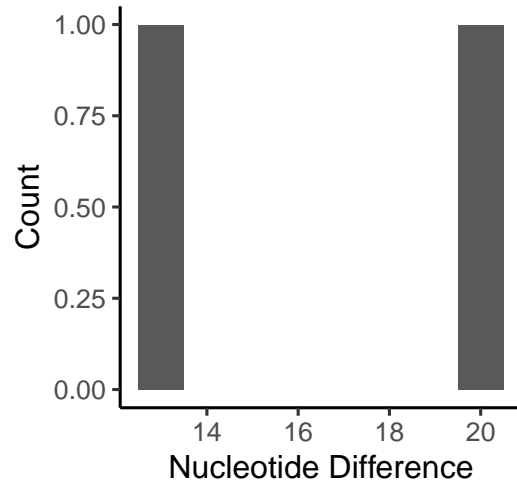
### IGHV1/OR15-3\*02

5 sequences assigned  
No exact matches.



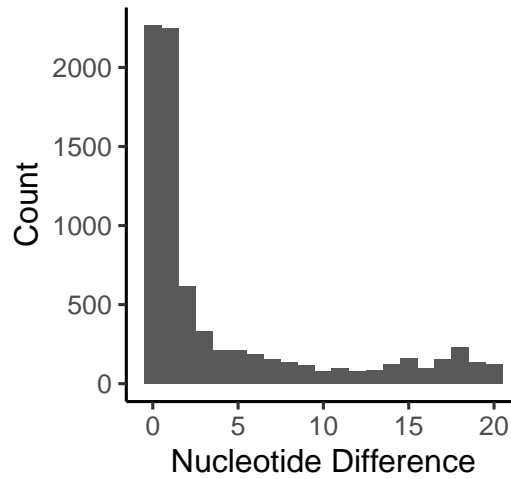
### IGHV1/OR15-4\*01

2 sequences assigned  
No exact matches.



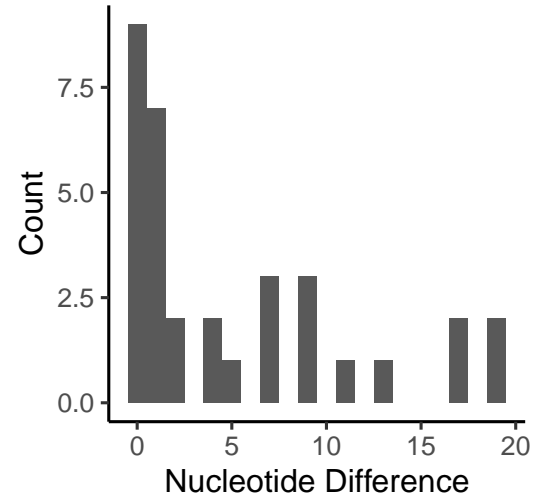
### IGHV5-10-1\*01\_03

9422 sequences assigned  
2266 (24.1%) exact matches, in which:  
1582 unique CDR3  
6 unique J



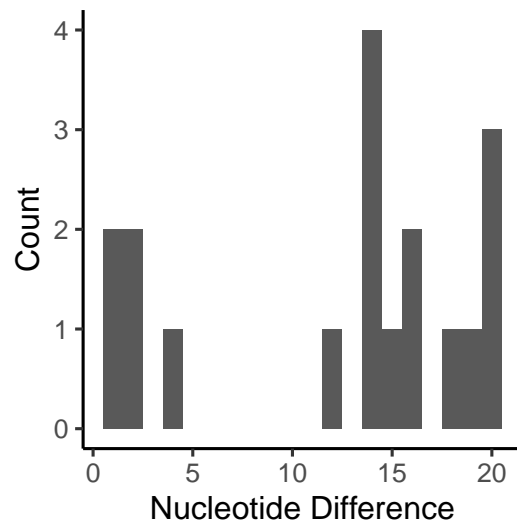
### IGHV5-51\*07

41 sequences assigned  
9 (22%) exact matches, in which:  
9 unique CDR3  
4 unique J



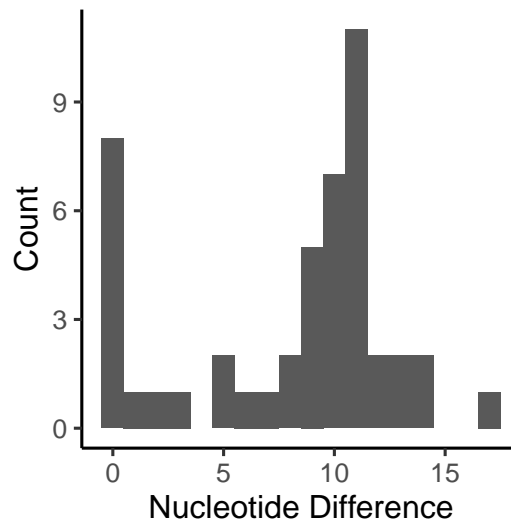
### IGHV4/OR15-8\*01

50 sequences assigned  
No exact matches.



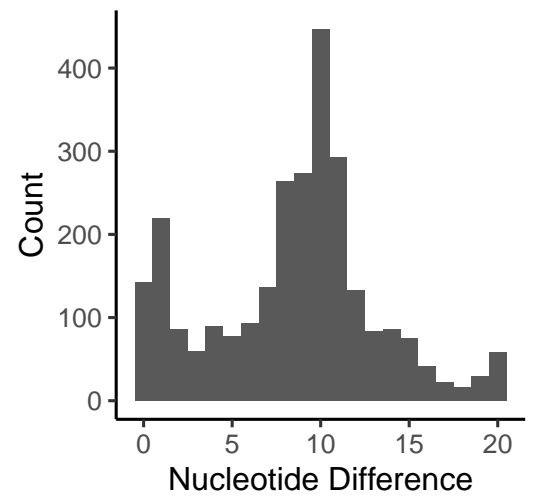
### IGHV5-51\*04

74 sequences assigned  
8 (10.8%) exact matches, in which:  
8 unique CDR3  
3 unique J



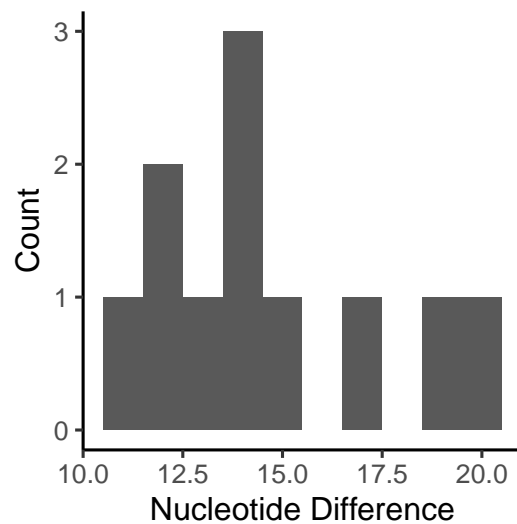
### IGHV6-1\*01\_02

3003 sequences assigned  
142 (4.7%) exact matches, in which:  
121 unique CDR3  
5 unique J



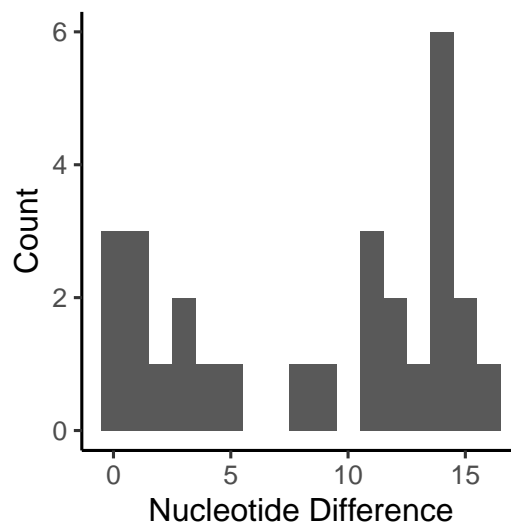
### IGHV4/OR15-8\*02

50 sequences assigned  
No exact matches.



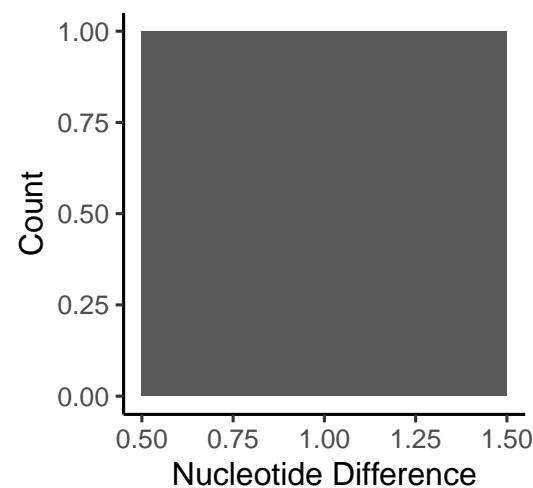
### IGHV5-51\*06

35 sequences assigned  
3 (8.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



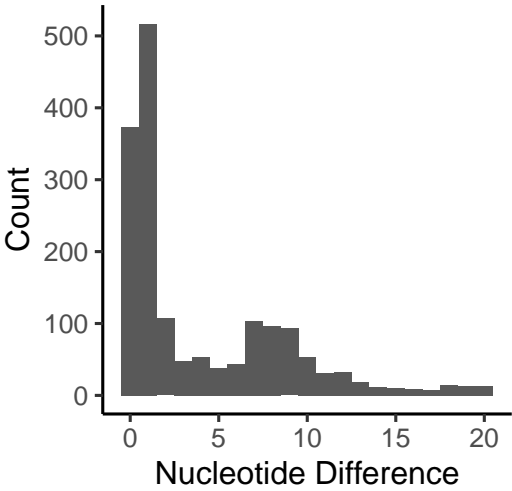
### IGHV3/OR16-9\*01

1 sequences assigned  
No exact matches.



IGHV7-4-1\*02

1836 sequences assigned  
373 (20.3%) exact matches, in which:  
313 unique CDR3  
5 unique J



IGHV7-81\*01

3 sequences assigned  
1 (33.3%) exact matches, in which:  
1 unique CDR3  
1 unique J

