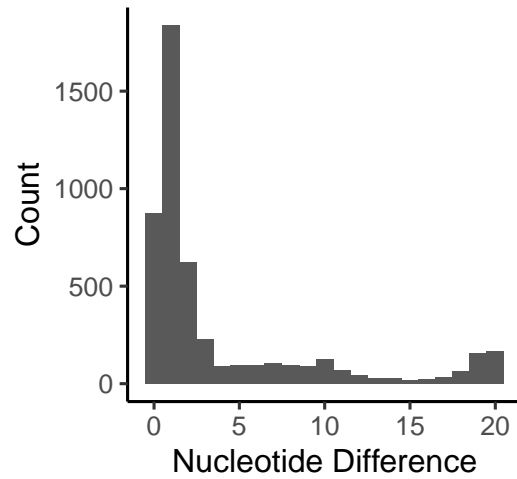


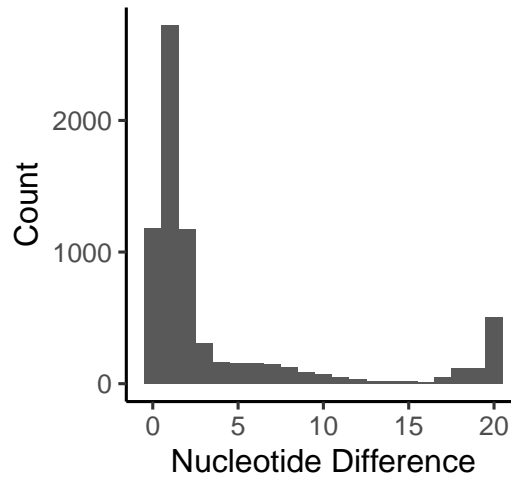
### IGHV1-2\*02

7169 sequences assigned  
874 (12.2%) exact matches, in which:  
633 unique CDR3  
6 unique J



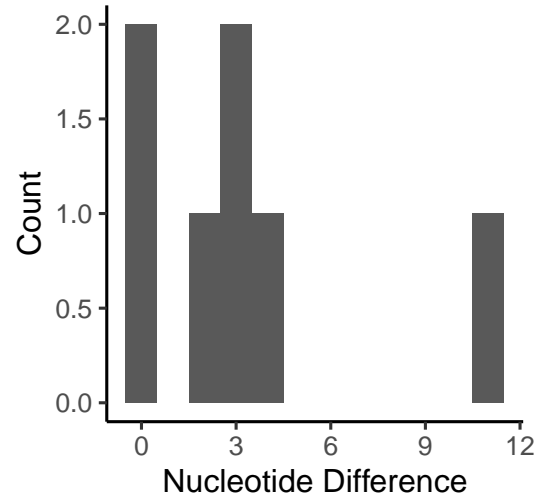
### IGHV1-8\*01

9775 sequences assigned  
1178 (12.1%) exact matches, in which:  
839 unique CDR3  
7 unique J



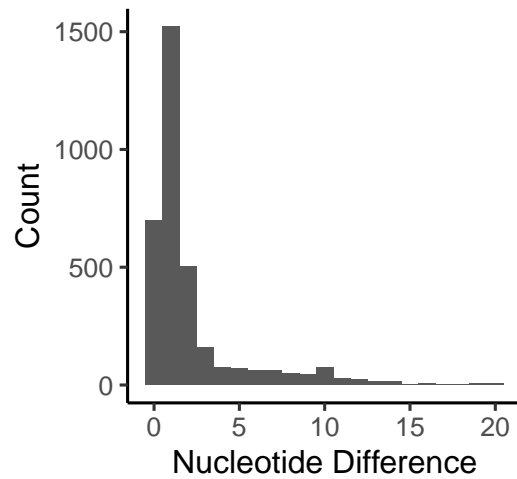
### IGHV1-45\*02

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



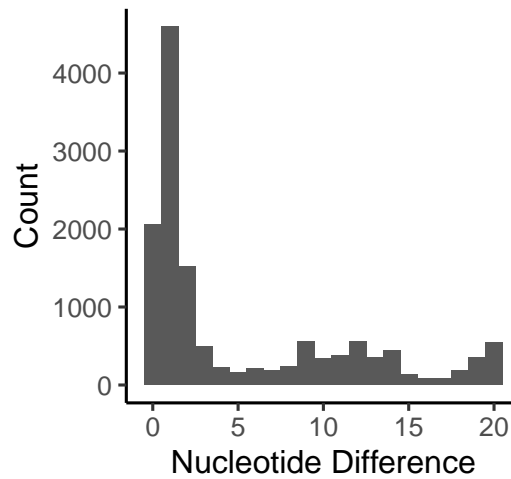
### IGHV1-2\*06

7664 sequences assigned  
697 (9.1%) exact matches, in which:  
479 unique CDR3  
6 unique J



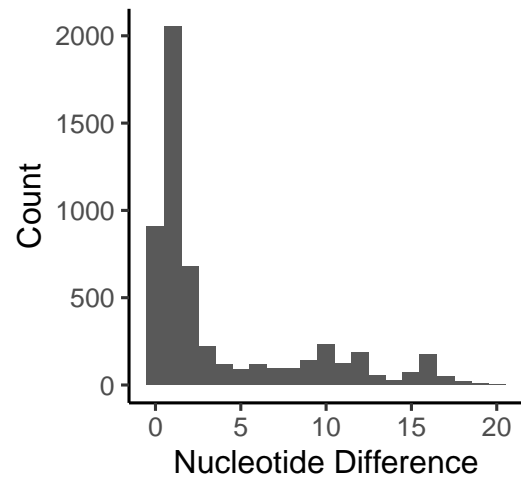
### IGHV1-18\*01

16128 sequences assigned  
2064 (12.8%) exact matches, in which:  
1416 unique CDR3  
7 unique J



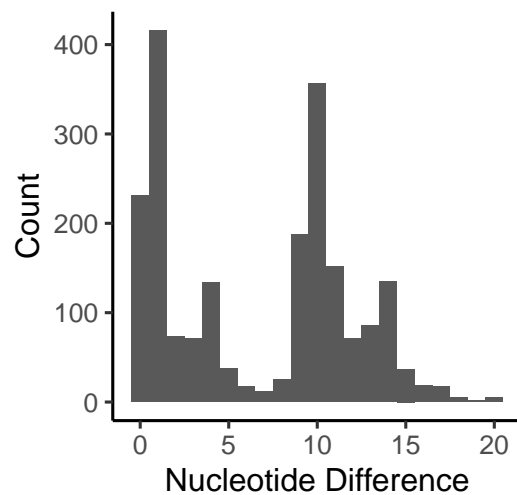
### IGHV1-46\*01

5677 sequences assigned  
906 (16%) exact matches, in which:  
637 unique CDR3  
7 unique J



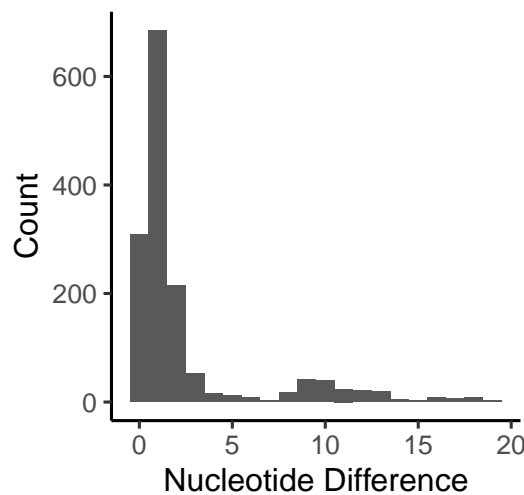
### IGHV1-3\*01\_05

2110 sequences assigned  
231 (10.9%) exact matches, in which:  
172 unique CDR3  
5 unique J



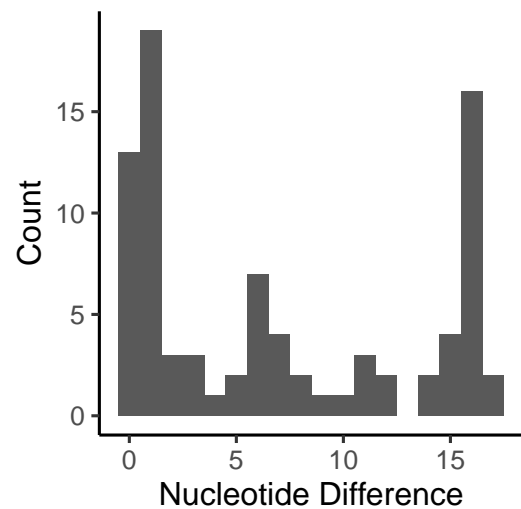
### IGHV1-24\*01

1499 sequences assigned  
309 (20.6%) exact matches, in which:  
209 unique CDR3  
6 unique J



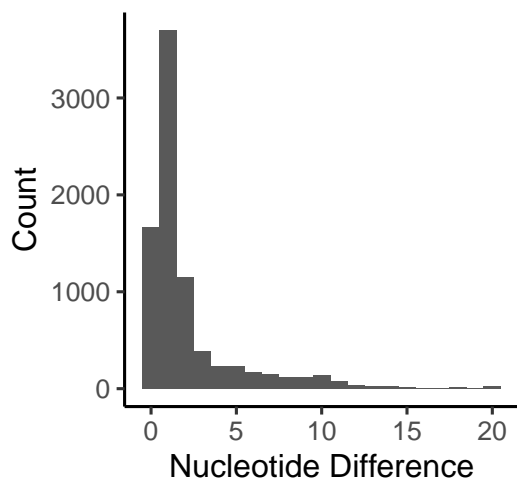
### IGHV1-58\*01\_03

92 sequences assigned  
13 (14.1%) exact matches, in which:  
12 unique CDR3  
5 unique J



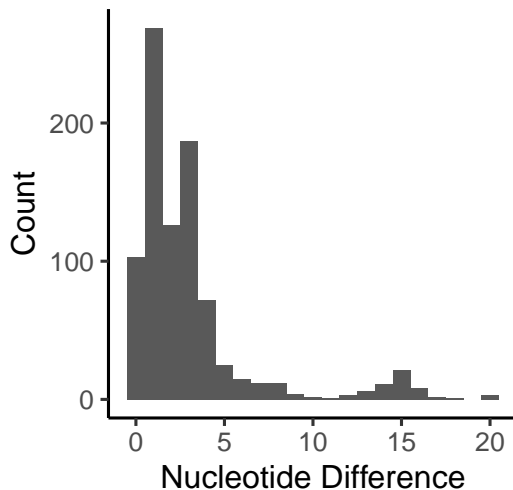
### IGHV1-69\*01\_12\_13

8443 sequences assigned  
1662 (19.7%) exact matches, in which:  
1151 unique CDR3  
7 unique J



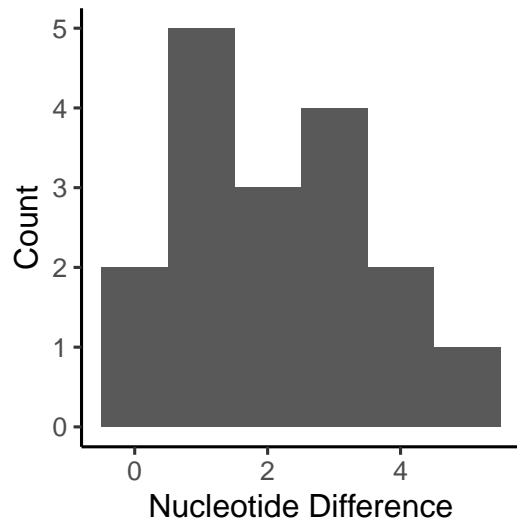
### IGHV2-5\*02

1109 sequences assigned  
103 (9.3%) exact matches, in which:  
76 unique CDR3  
5 unique J



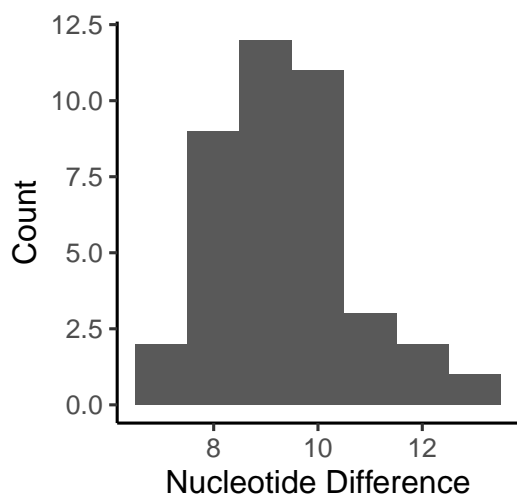
### IGHV2-70\*12

19 sequences assigned  
2 (10.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



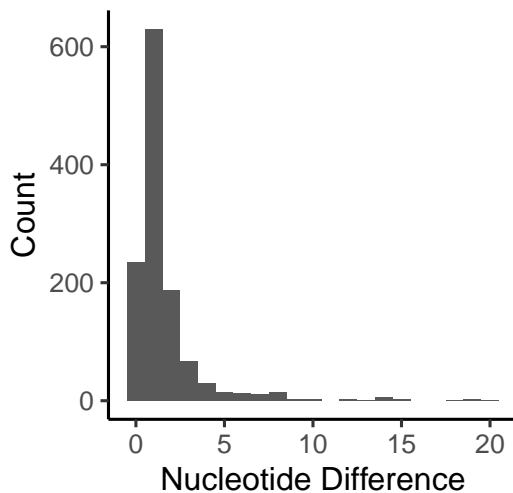
### IGHV1-NL1\*01

40 sequences assigned  
No exact matches.



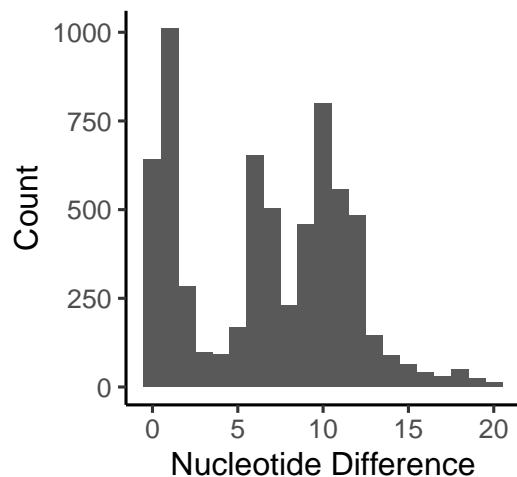
### IGHV2-26\*01

1226 sequences assigned  
234 (19.1%) exact matches, in which:  
151 unique CDR3  
6 unique J



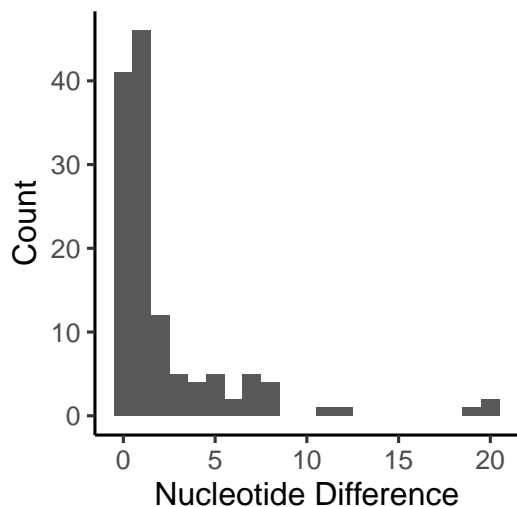
### IGHV3-7\*01

6669 sequences assigned  
641 (9.6%) exact matches, in which:  
409 unique CDR3  
7 unique J



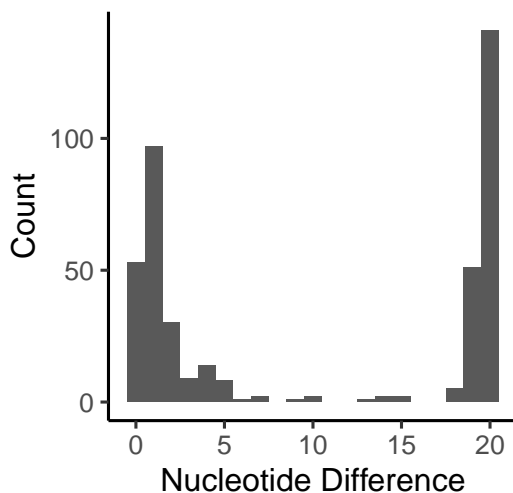
### IGHV2-5\*01

144 sequences assigned  
41 (28.5%) exact matches, in which:  
40 unique CDR3  
5 unique J



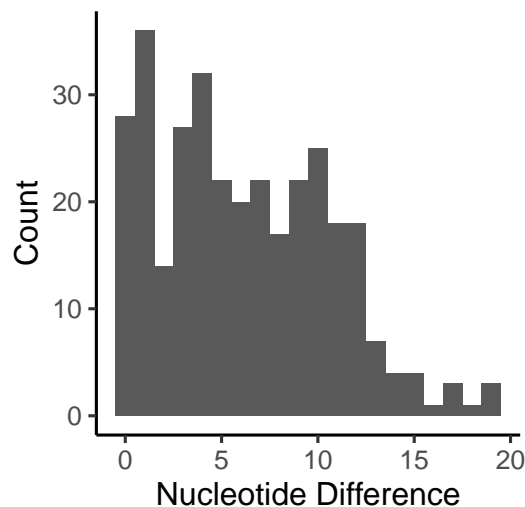
### IGHV2-70\*01

559 sequences assigned  
53 (9.5%) exact matches, in which:  
44 unique CDR3  
4 unique J



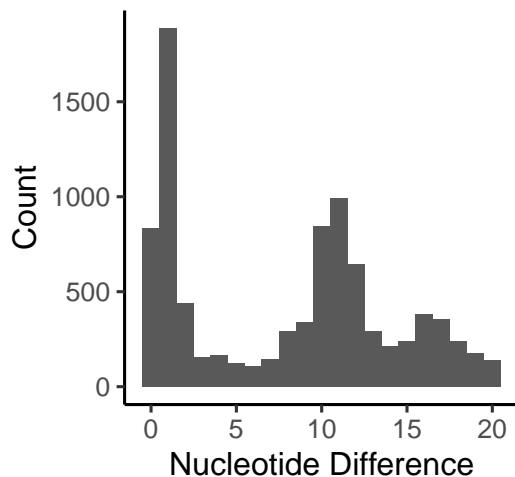
### IGHV3-7\*03

352 sequences assigned  
28 (8%) exact matches, in which:  
23 unique CDR3  
4 unique J



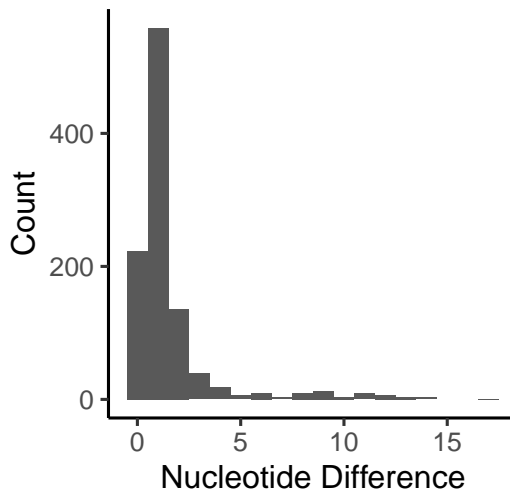
### IGHV3-9\*01

10531 sequences assigned  
832 (7.9%) exact matches, in which:  
434 unique CDR3  
7 unique J



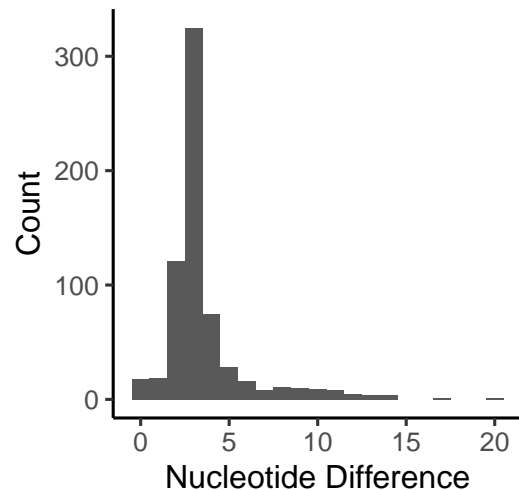
### IGHV3-13\*01

1045 sequences assigned  
223 (21.3%) exact matches, in which:  
87 unique CDR3  
5 unique J



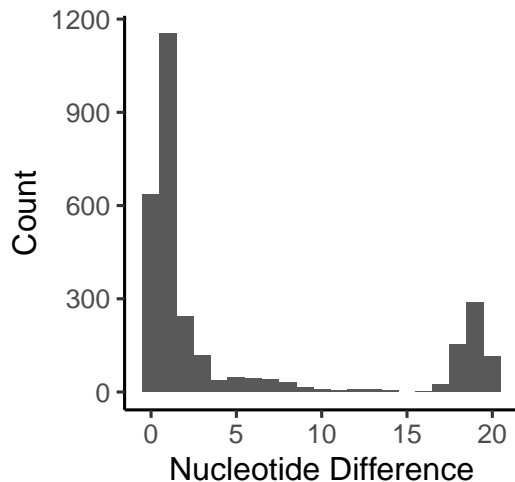
### IGHV3-20\*01\_02

663 sequences assigned  
18 (2.7%) exact matches, in which:  
10 unique CDR3  
4 unique J



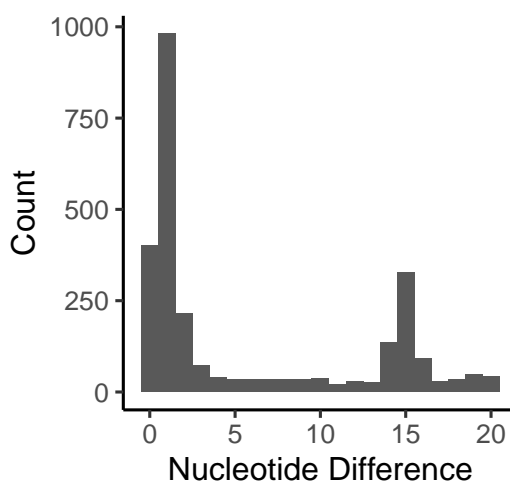
### IGHV3-11\*01

3686 sequences assigned  
636 (17.3%) exact matches, in which:  
372 unique CDR3  
7 unique J



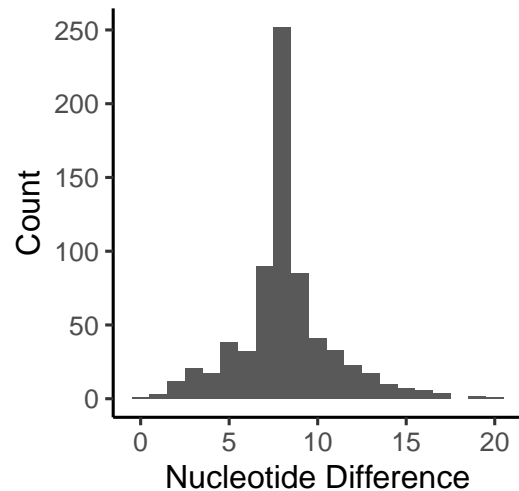
### IGHV3-15\*01\_02

2959 sequences assigned  
402 (13.6%) exact matches, in which:  
218 unique CDR3  
7 unique J



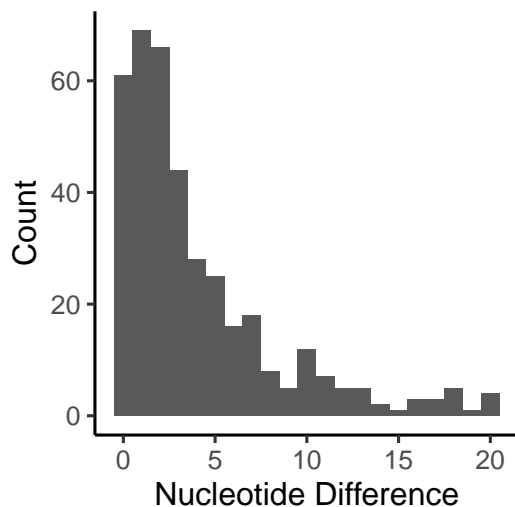
### IGHV3-20\*03\_04

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



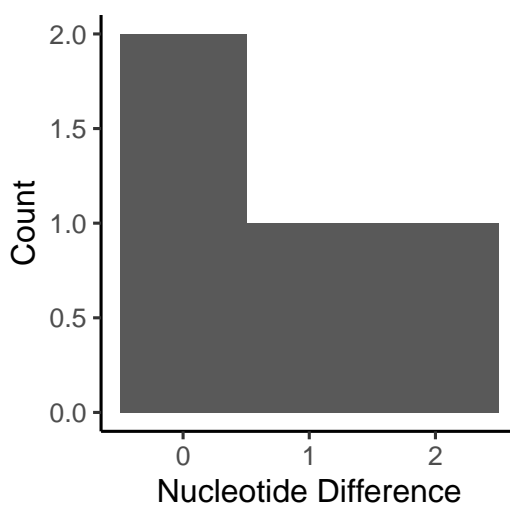
### IGHV3-11\*04

404 sequences assigned  
61 (15.1%) exact matches, in which:  
50 unique CDR3  
6 unique J



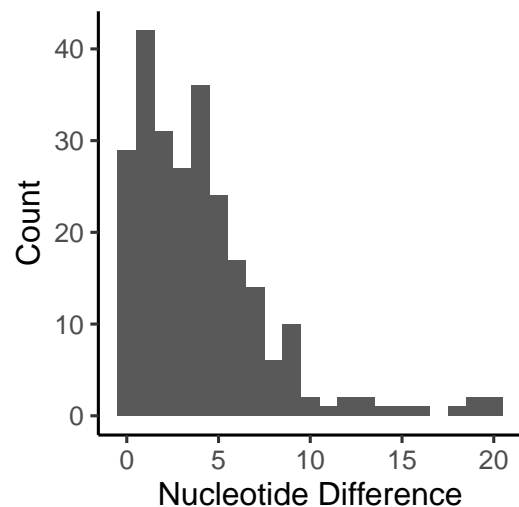
### IGHV3-19\*01

4 sequences assigned  
2 (50%) exact matches, in which:  
2 unique CDR3  
2 unique J



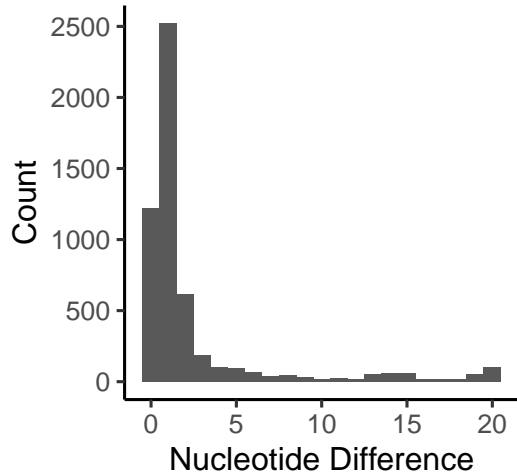
### IGHV3-21\*04

270 sequences assigned  
29 (10.7%) exact matches, in which:  
24 unique CDR3  
5 unique J



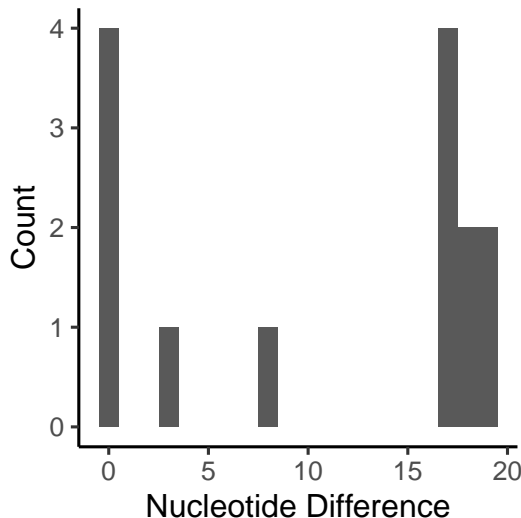
### IGHV3-21\*01\_02

5645 sequences assigned  
1222 (21.6%) exact matches, in which:  
682 unique CDR3  
7 unique J



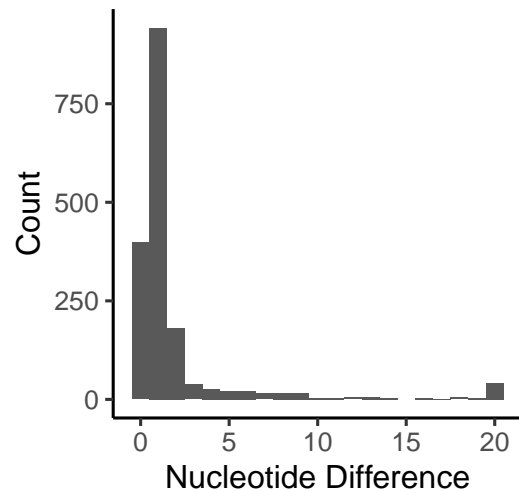
### IGHV3-30-3\*01

29 sequences assigned  
4 (13.8%) exact matches, in which:  
3 unique CDR3  
3 unique J



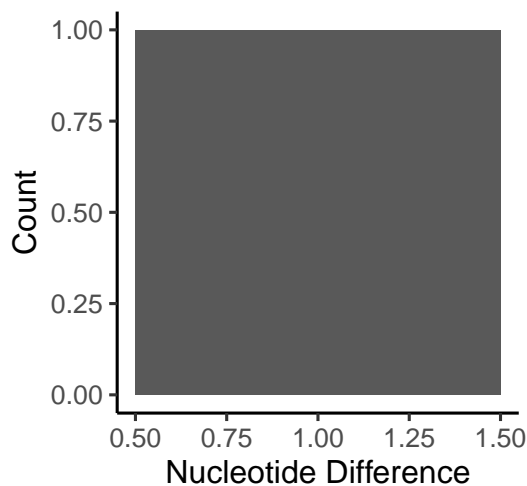
### IGHV3-30\*18

1933 sequences assigned  
398 (20.6%) exact matches, in which:  
197 unique CDR3  
5 unique J



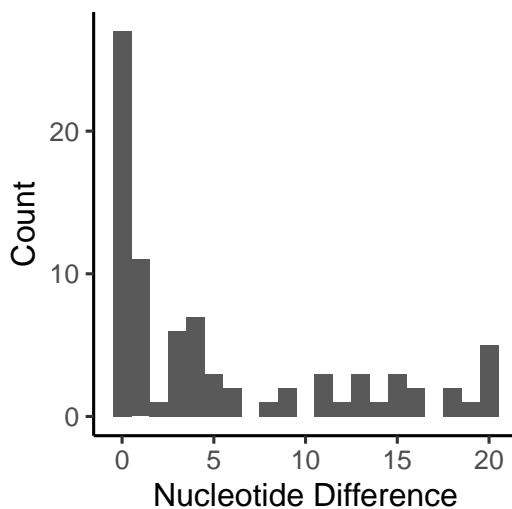
### IGHV3-22\*01\_02

1 sequences assigned  
No exact matches.



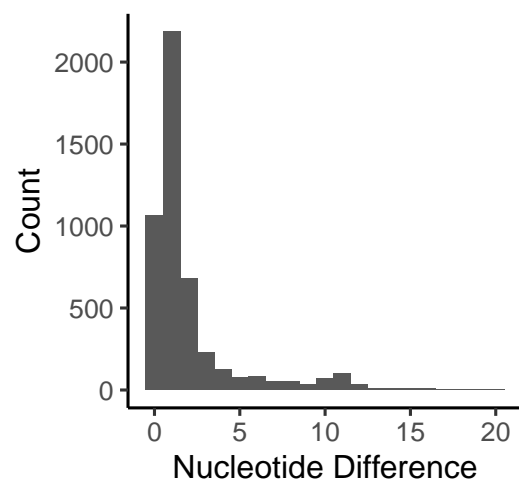
### IGHV3-30\*03

108 sequences assigned  
27 (25%) exact matches, in which:  
26 unique CDR3  
6 unique J



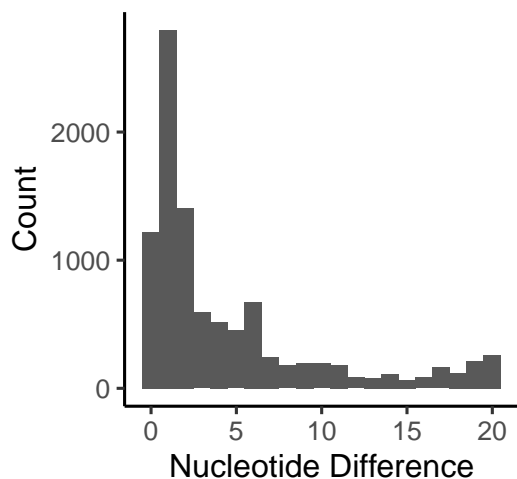
### IGHV3-33\*01

5019 sequences assigned  
1063 (21.2%) exact matches, in which:  
595 unique CDR3  
6 unique J



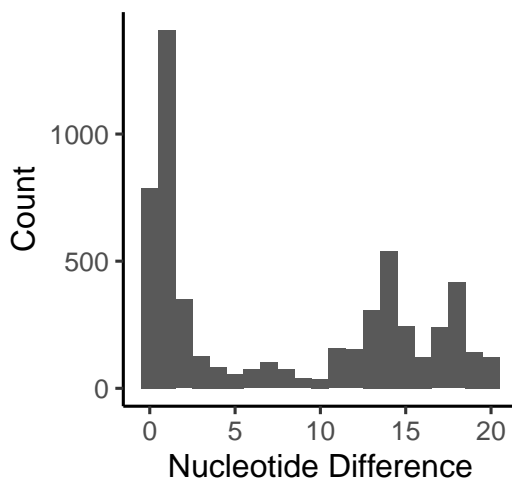
### IGHV3-23\*01\_04

20635 sequences assigned  
1219 (5.9%) exact matches, in which:  
698 unique CDR3  
7 unique J



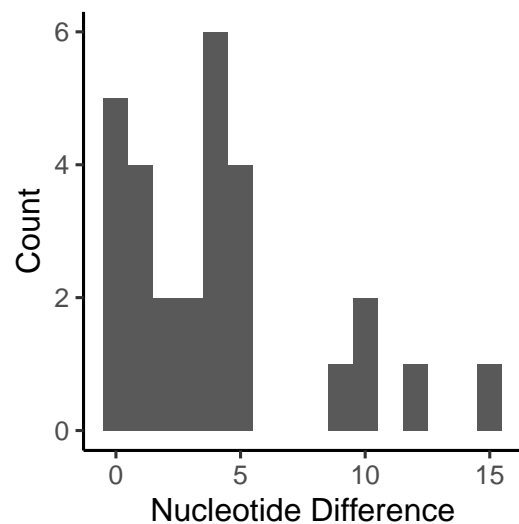
### IGHV3-30\*04

7167 sequences assigned  
787 (11%) exact matches, in which:  
448 unique CDR3  
7 unique J



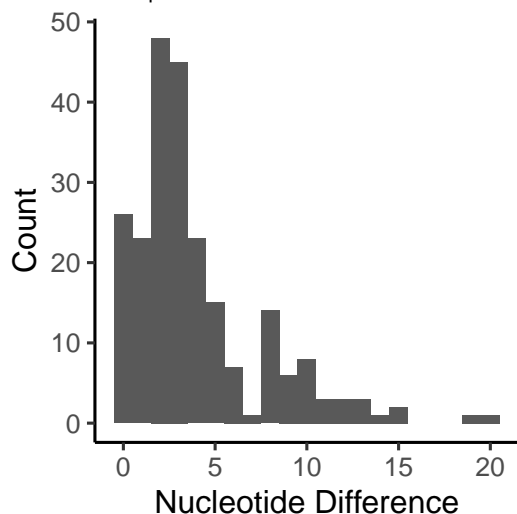
### IGHV3-33\*05

29 sequences assigned  
5 (17.2%) exact matches, in which:  
5 unique CDR3  
2 unique J



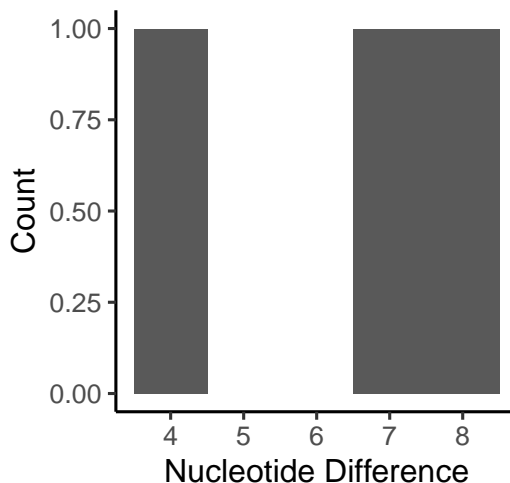
### IGHV3-33\*06

232 sequences assigned  
26 (11.2%) exact matches, in which:  
23 unique CDR3  
7 unique J



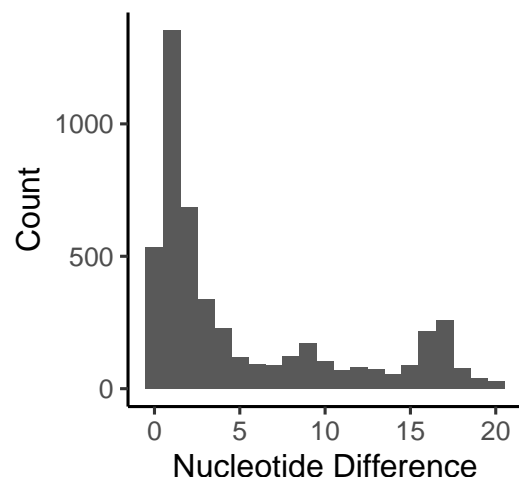
### IGHV3-47\*02

3 sequences assigned  
No exact matches.



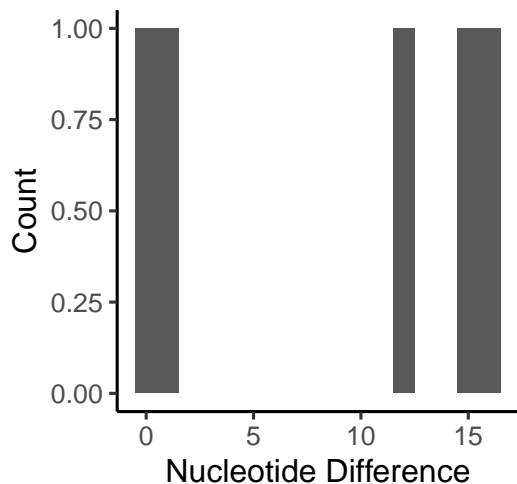
### IGHV3-48\*03

5432 sequences assigned  
535 (9.8%) exact matches, in which:  
248 unique CDR3  
5 unique J



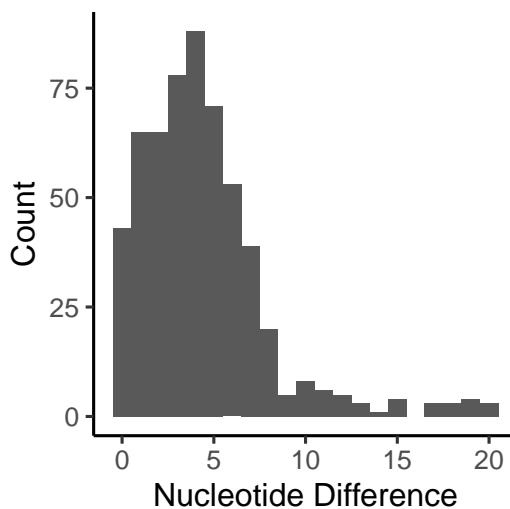
### IGHV3-35\*01

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



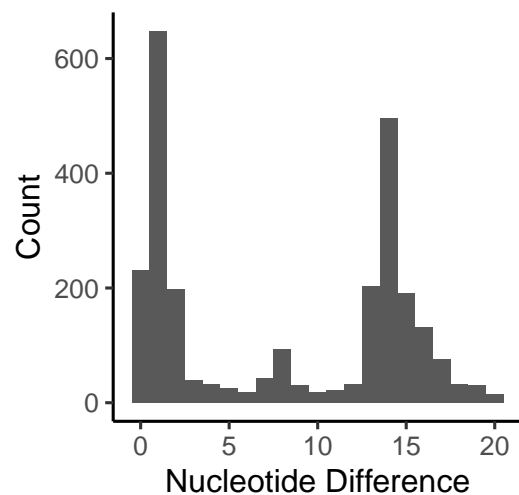
### IGHV3-48\*01

574 sequences assigned  
43 (7.5%) exact matches, in which:  
30 unique CDR3  
6 unique J



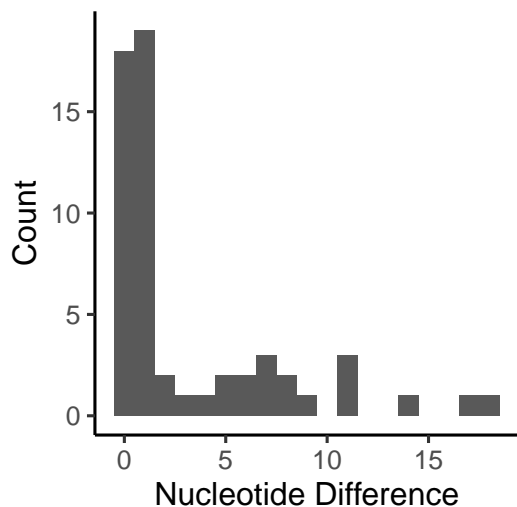
### IGHV3-49\*04

2843 sequences assigned  
231 (8.1%) exact matches, in which:  
109 unique CDR3  
6 unique J



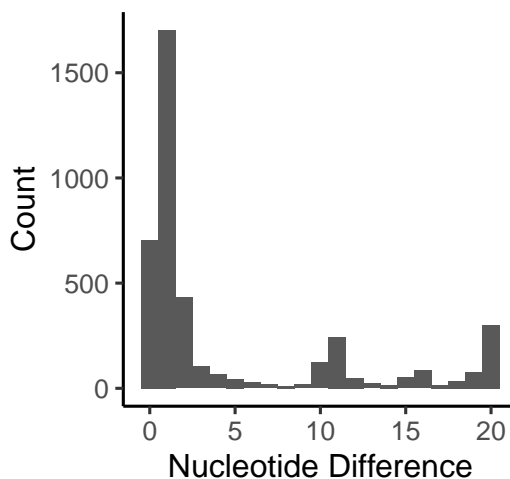
### IGHV3-43\*01

59 sequences assigned  
18 (30.5%) exact matches, in which:  
14 unique CDR3  
4 unique J



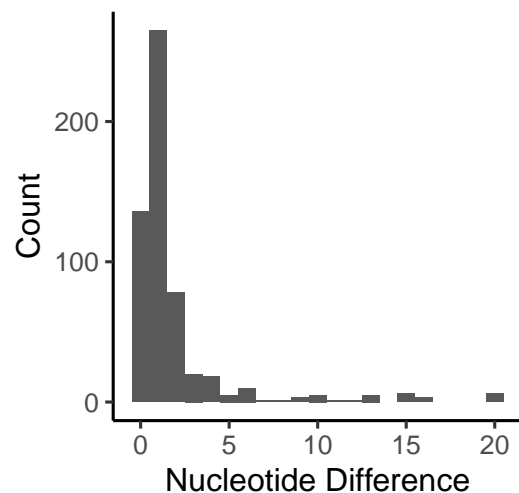
### IGHV3-48\*02

4588 sequences assigned  
705 (15.4%) exact matches, in which:  
334 unique CDR3  
7 unique J



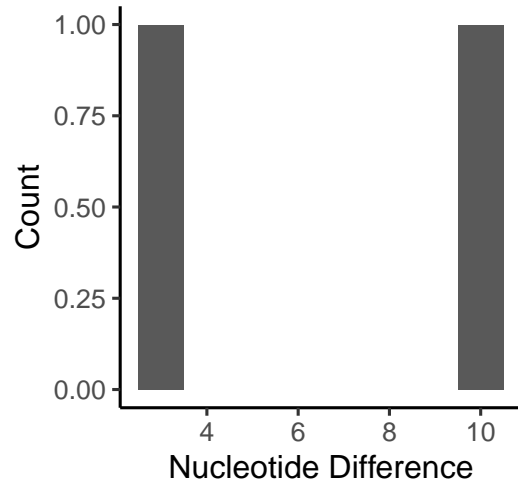
### IGHV3-49\*03\_05

801 sequences assigned  
136 (17%) exact matches, in which:  
76 unique CDR3  
6 unique J



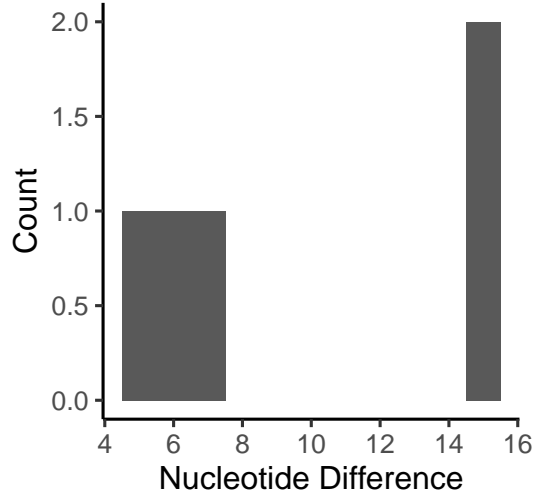
### IGHV3-52\*01\_03

2 sequences assigned  
No exact matches.



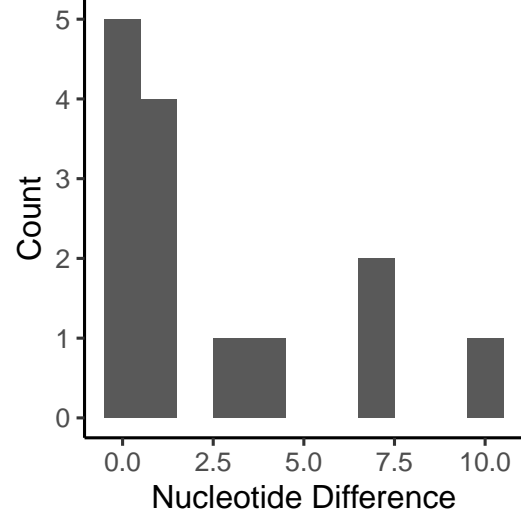
### IGHV3-64\*04

10 sequences assigned  
No exact matches.



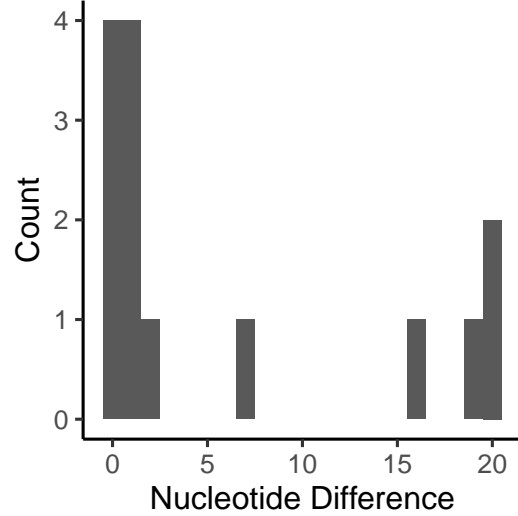
### IGHV3-66\*03

14 sequences assigned  
5 (35.7%) exact matches, in which:  
5 unique CDR3  
2 unique J



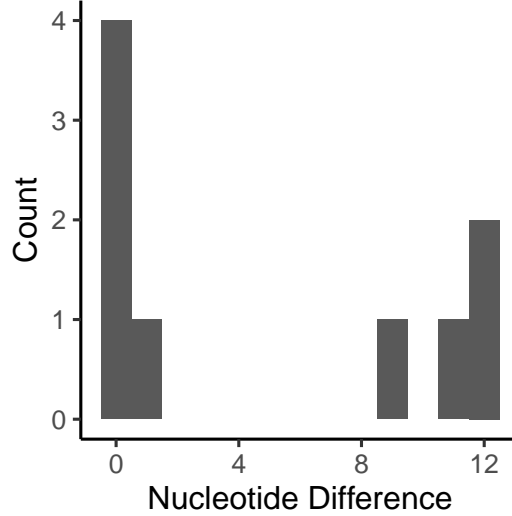
### IGHV3-53\*05

22 sequences assigned  
4 (18.2%) exact matches, in which:  
3 unique CDR3  
1 unique J



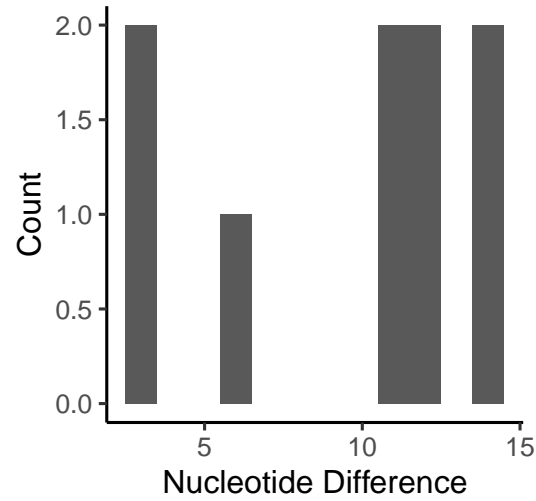
### IGHV3-64\*02\_07

15 sequences assigned  
4 (26.7%) exact matches, in which:  
4 unique CDR3  
2 unique J



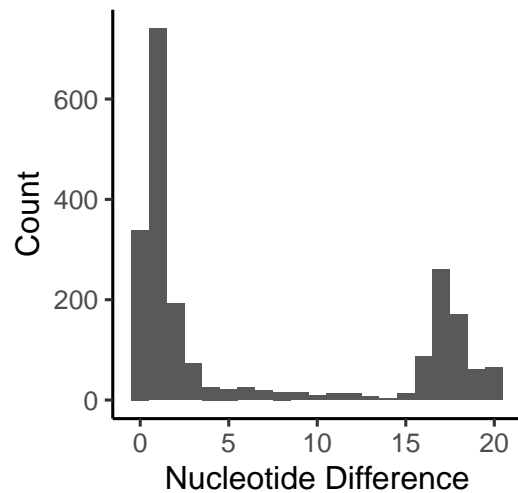
### IGHV3-69-1\*01

9 sequences assigned  
No exact matches.



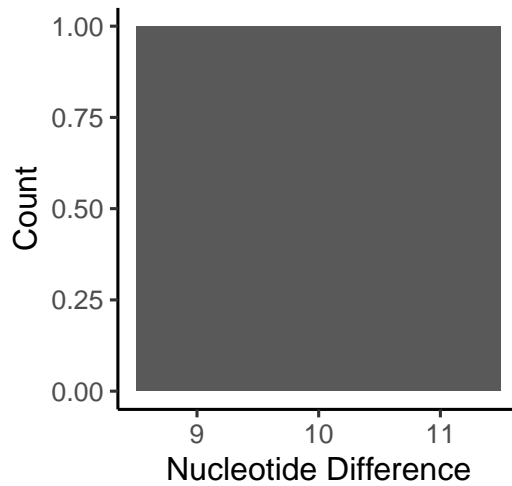
### IGHV3-53\*01\_02

2678 sequences assigned  
339 (12.7%) exact matches, in which:  
194 unique CDR3  
7 unique J



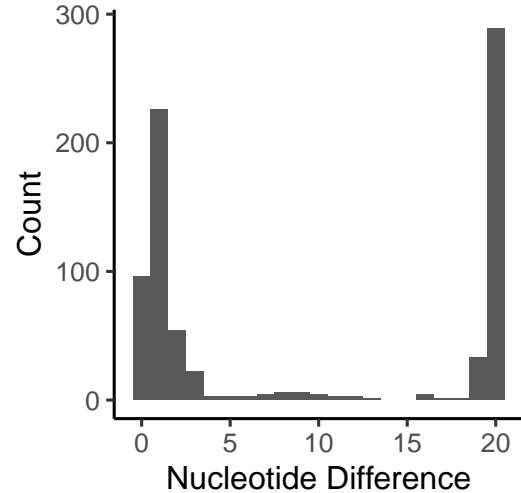
### IGHV3-66\*01

4 sequences assigned  
No exact matches.



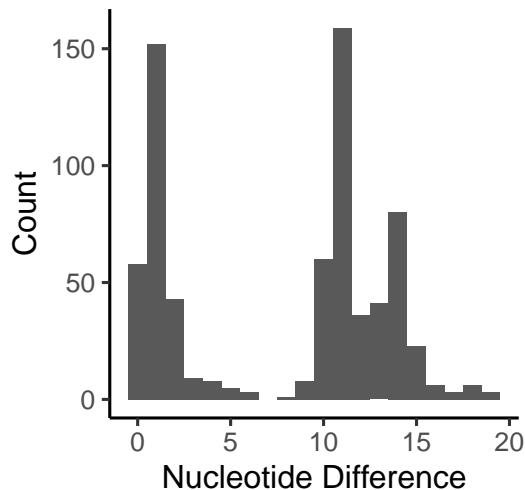
### IGHV3-72\*01

2437 sequences assigned  
96 (3.9%) exact matches, in which:  
49 unique CDR3  
2 unique J



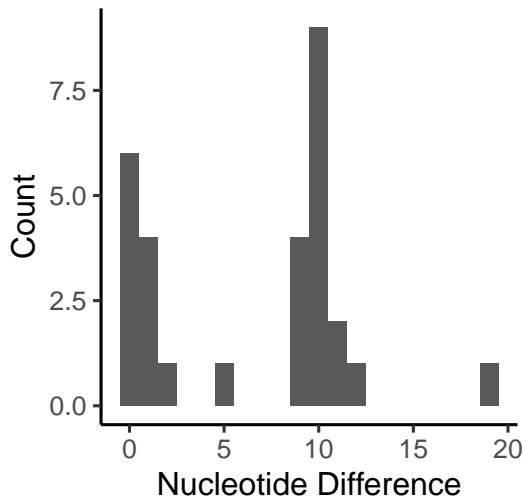
### IGHV3-73\*01\_02

1318 sequences assigned  
58 (4.4%) exact matches, in which:  
27 unique CDR3  
4 unique J



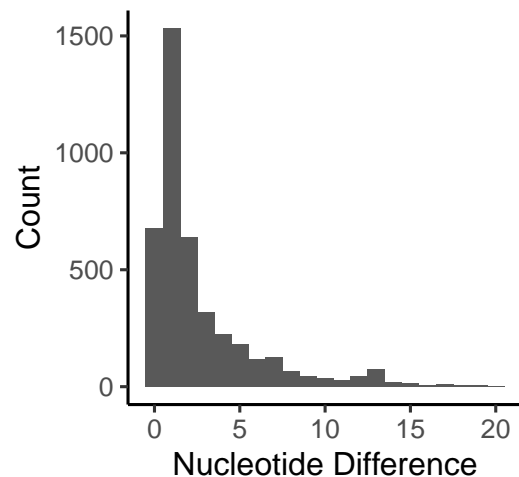
### IGHV3-43D\*04

30 sequences assigned  
6 (20%) exact matches, in which:  
5 unique CDR3  
1 unique J



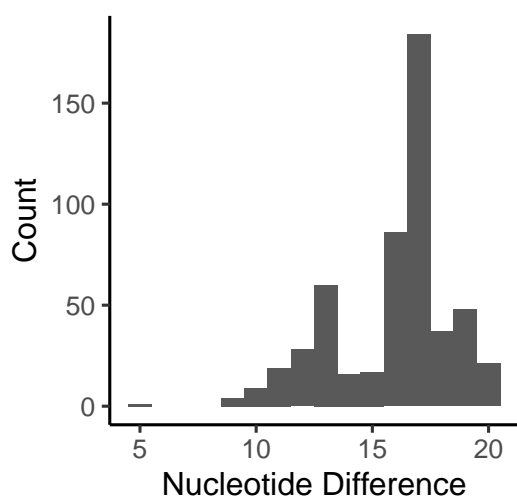
### IGHV4-4\*02\_03

4786 sequences assigned  
677 (14.1%) exact matches, in which:  
453 unique CDR3  
7 unique J



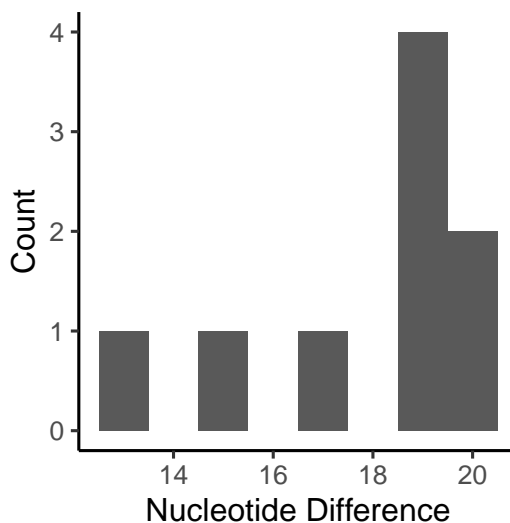
### IGHV3-74\*03

1710 sequences assigned  
No exact matches.



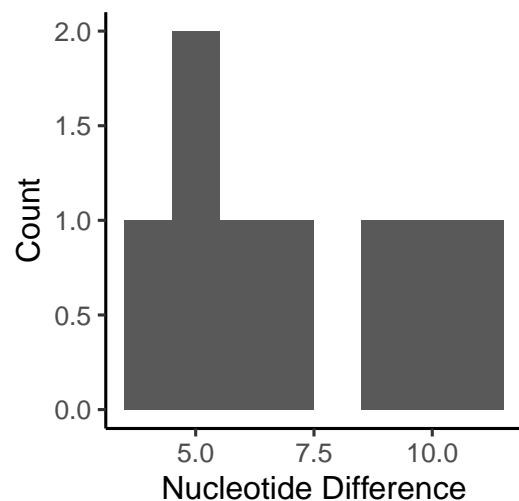
### IGHV3-NL1\*01

13 sequences assigned  
No exact matches.



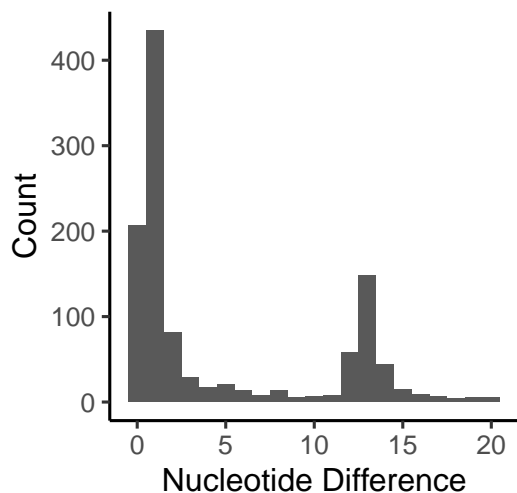
### IGHV4-28\*03

8 sequences assigned  
No exact matches.



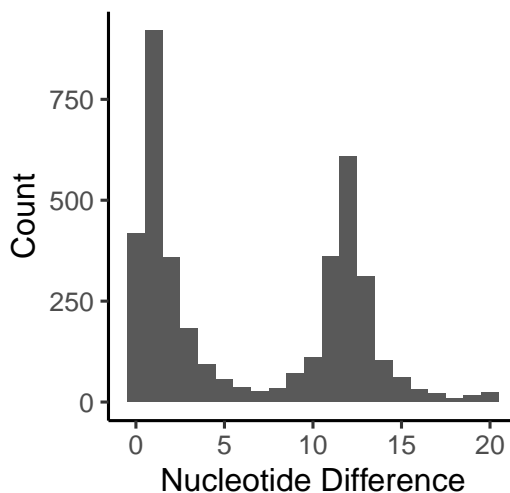
### IGHV3-74\*01\_02

1511 sequences assigned  
207 (13.7%) exact matches, in which:  
109 unique CDR3  
6 unique J



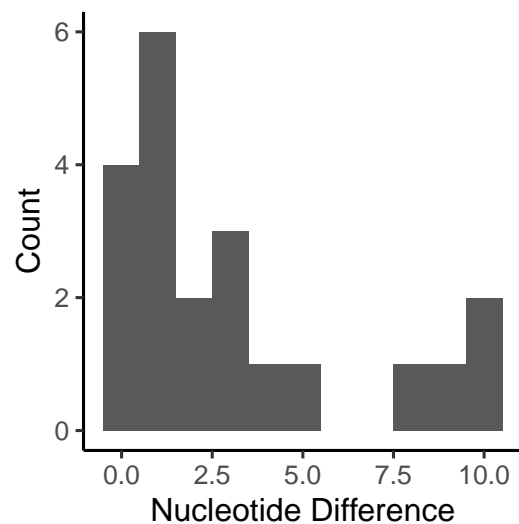
### IGHV4-4\*07

3892 sequences assigned  
417 (10.7%) exact matches, in which:  
282 unique CDR3  
6 unique J



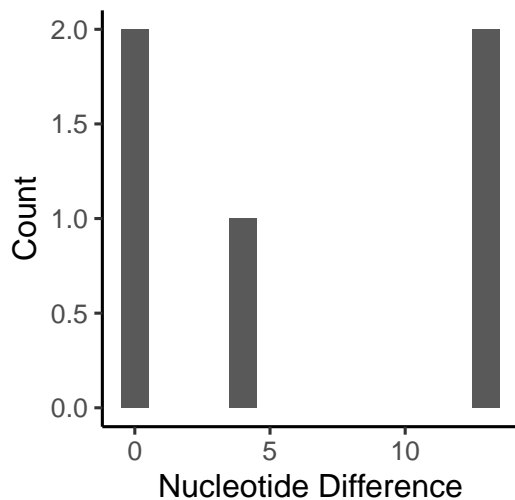
### IGHV4-28\*02\_05

21 sequences assigned  
4 (19%) exact matches, in which:  
3 unique CDR3  
3 unique J



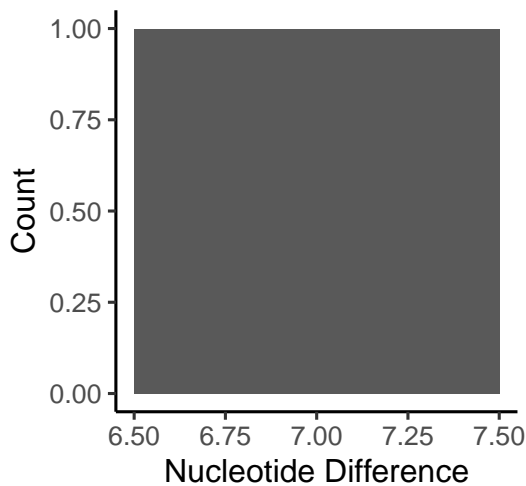
### IGHV4-30-2\*01

9 sequences assigned  
2 (22.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



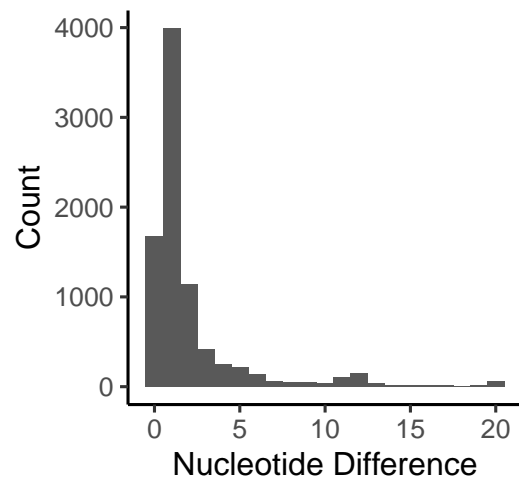
### IGHV4-30-2\*04

1 sequences assigned  
No exact matches.



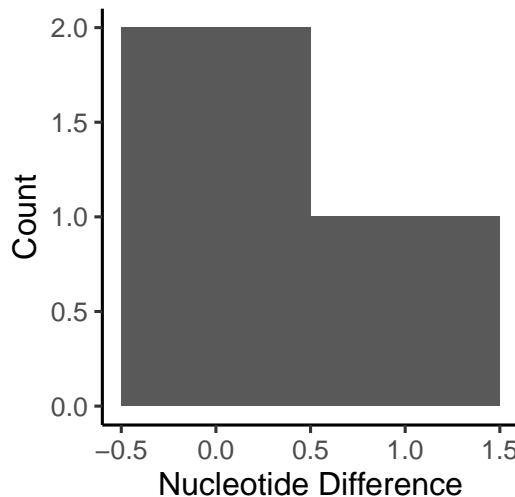
### IGHV4-34\*01\_02

9088 sequences assigned  
1672 (18.4%) exact matches, in which:  
1016 unique CDR3  
7 unique J



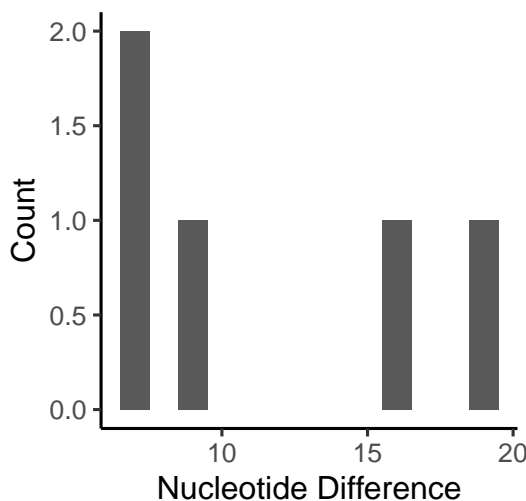
### IGHV4-30-4\*01

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



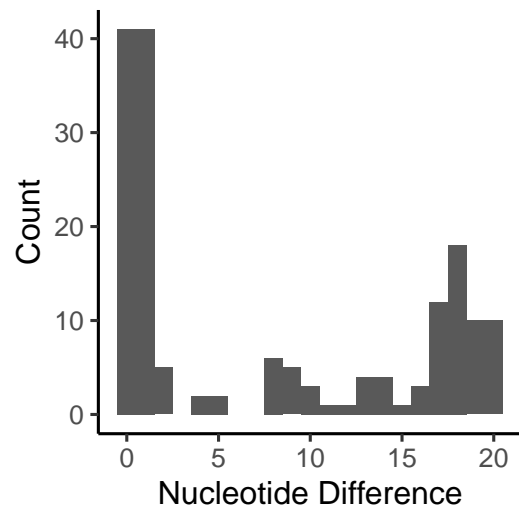
### IGHV4-30-4\*08

6 sequences assigned  
No exact matches.



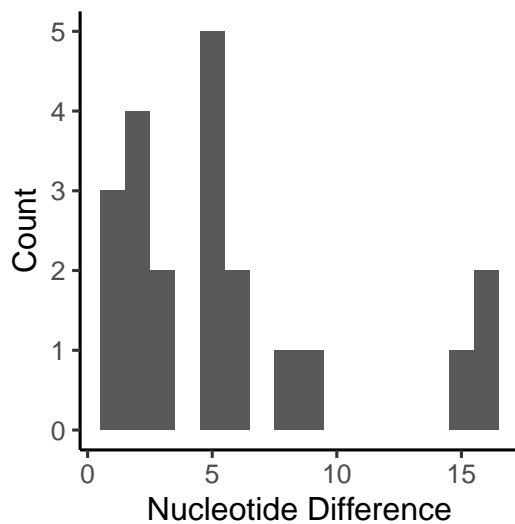
### IGHV4-38-2\*01

971 sequences assigned  
41 (4.2%) exact matches, in which:  
39 unique CDR3  
6 unique J



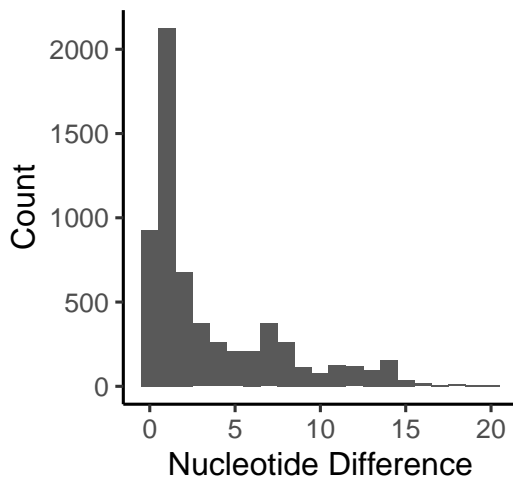
### IGHV4-30-2\*03

101 sequences assigned  
No exact matches.



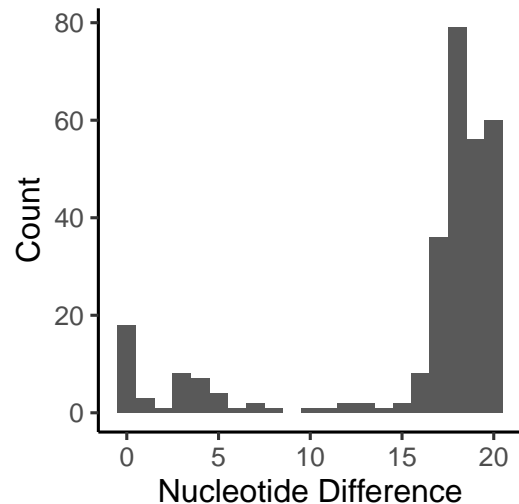
### IGHV4-31\*02

6473 sequences assigned  
927 (14.3%) exact matches, in which:  
609 unique CDR3  
7 unique J



### IGHV4-38-2\*02

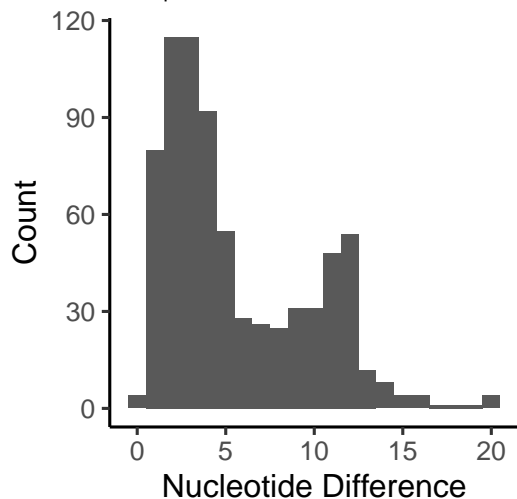
364 sequences assigned  
18 (4.9%) exact matches, in which:  
15 unique CDR3  
5 unique J





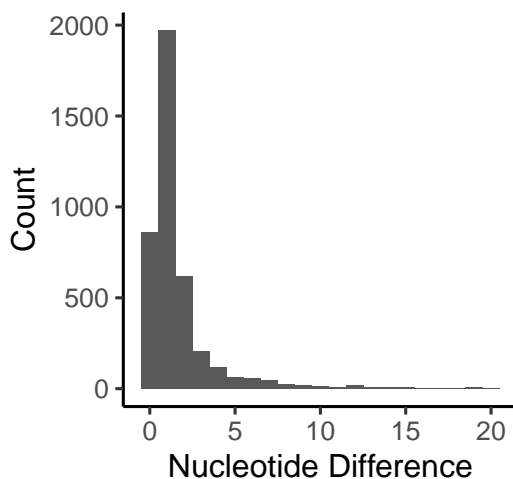
### IGHV4–39\*07

761 sequences assigned  
4 (0.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



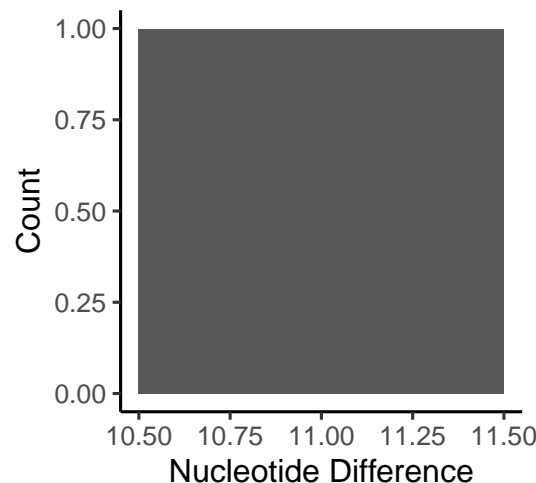
### IGHV4–59\*01\_07

4132 sequences assigned  
862 (20.9%) exact matches, in which:  
576 unique CDR3  
7 unique J



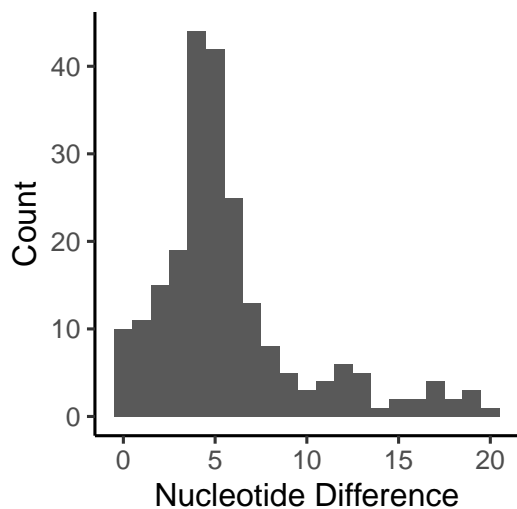
### IGHV1/OR15–3\*02

1 sequences assigned  
No exact matches.



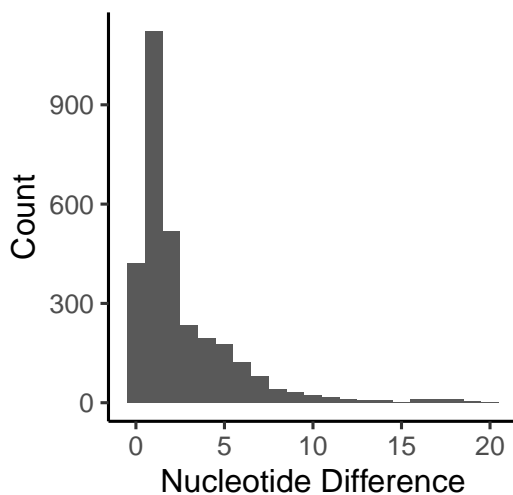
### IGHV4–59\*02

602 sequences assigned  
10 (1.7%) exact matches, in which:  
10 unique CDR3  
4 unique J



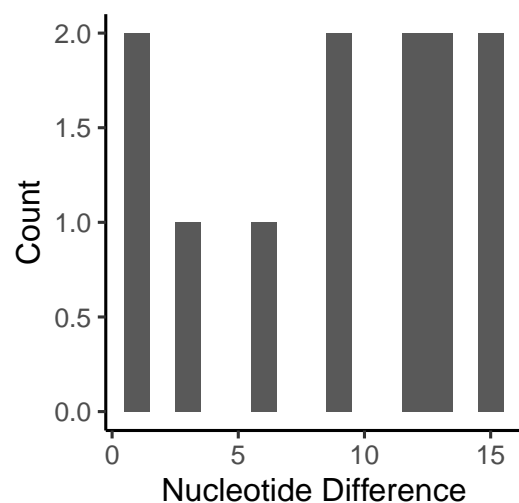
### IGHV4–61\*01

4848 sequences assigned  
420 (8.7%) exact matches, in which:  
271 unique CDR3  
6 unique J



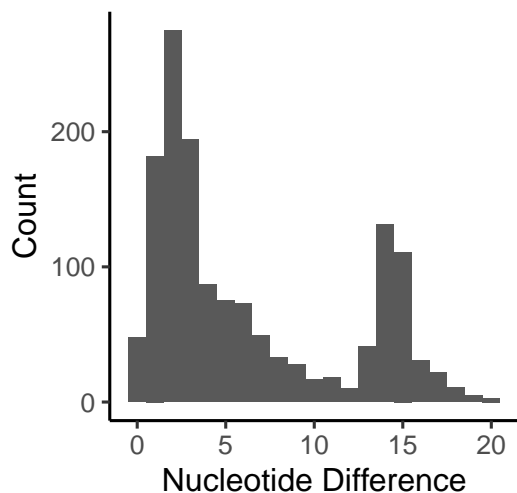
### IGHV4/OR15–8\*01

12 sequences assigned  
No exact matches.



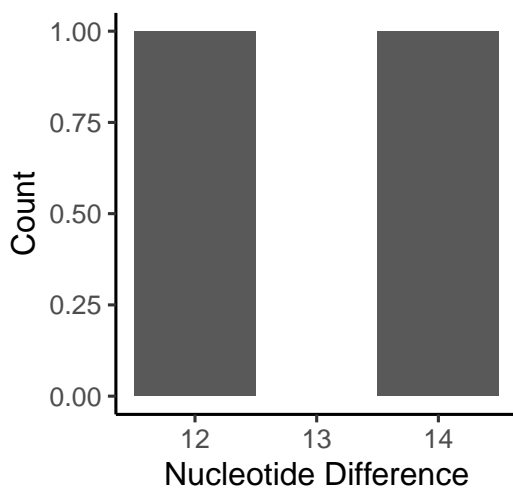
### IGHV4–59\*12

1479 sequences assigned  
48 (3.2%) exact matches, in which:  
43 unique CDR3  
7 unique J



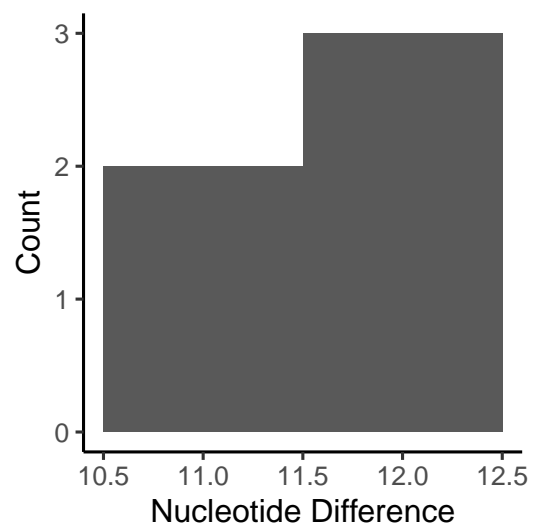
### IGHV1/OR15–2\*02\_03

2 sequences assigned  
No exact matches.



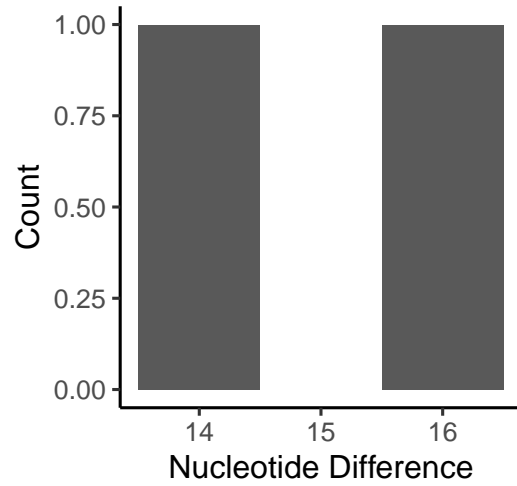
### IGHV1/OR15–9\*01

5 sequences assigned  
No exact matches.



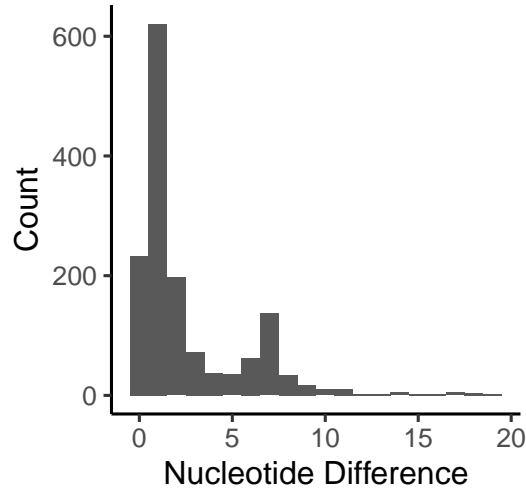
### IGHV5-10-1\*01\_03

2 sequences assigned  
No exact matches.



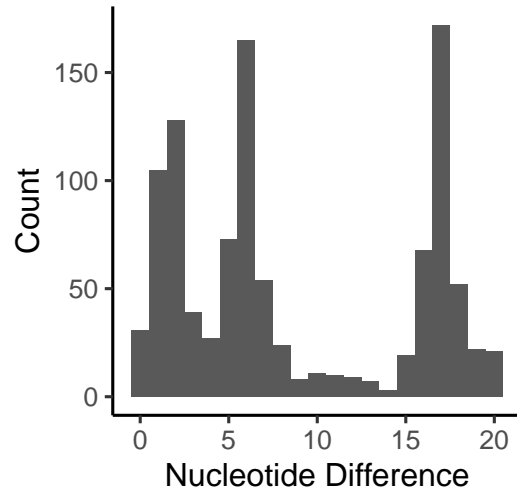
### IGHV6-1\*01\_02

1497 sequences assigned  
233 (15.6%) exact matches, in which:  
162 unique CDR3  
5 unique J



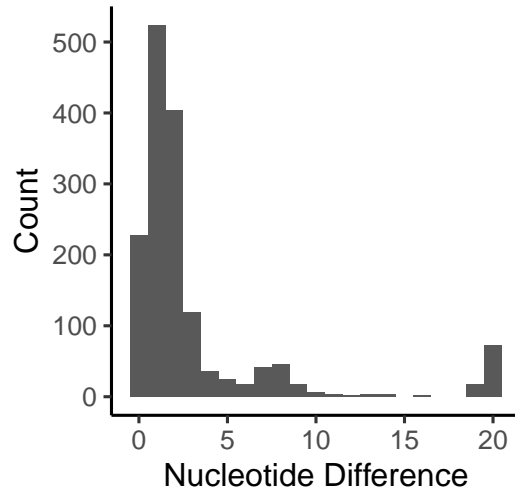
### IGHV5-51\*07

1297 sequences assigned  
31 (2.4%) exact matches, in which:  
23 unique CDR3  
5 unique J



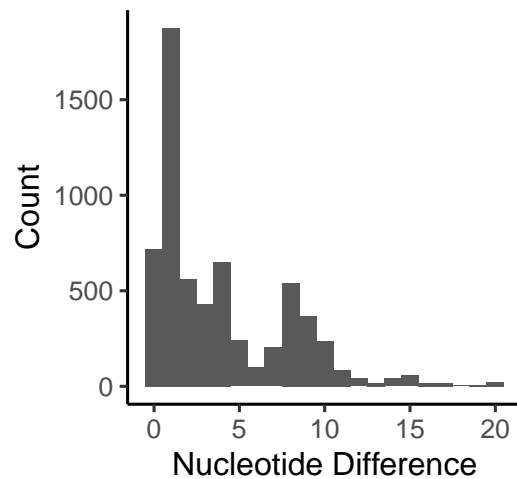
### IGHV7-4-1\*02

1870 sequences assigned  
228 (12.2%) exact matches, in which:  
161 unique CDR3  
7 unique J

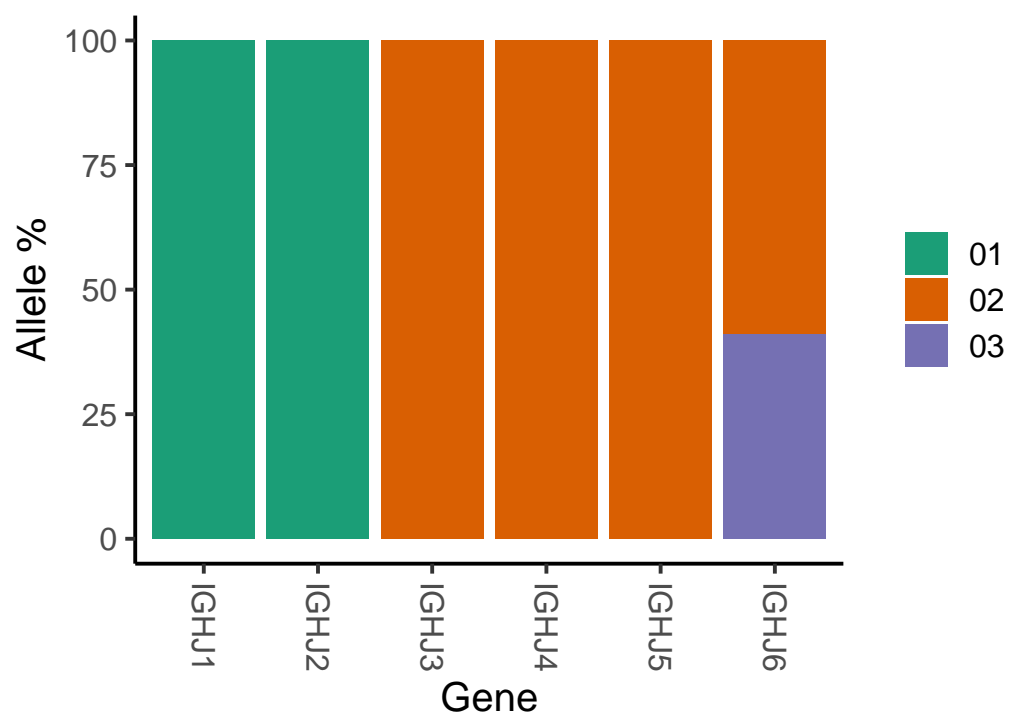


### IGHV5-51\*01\_03

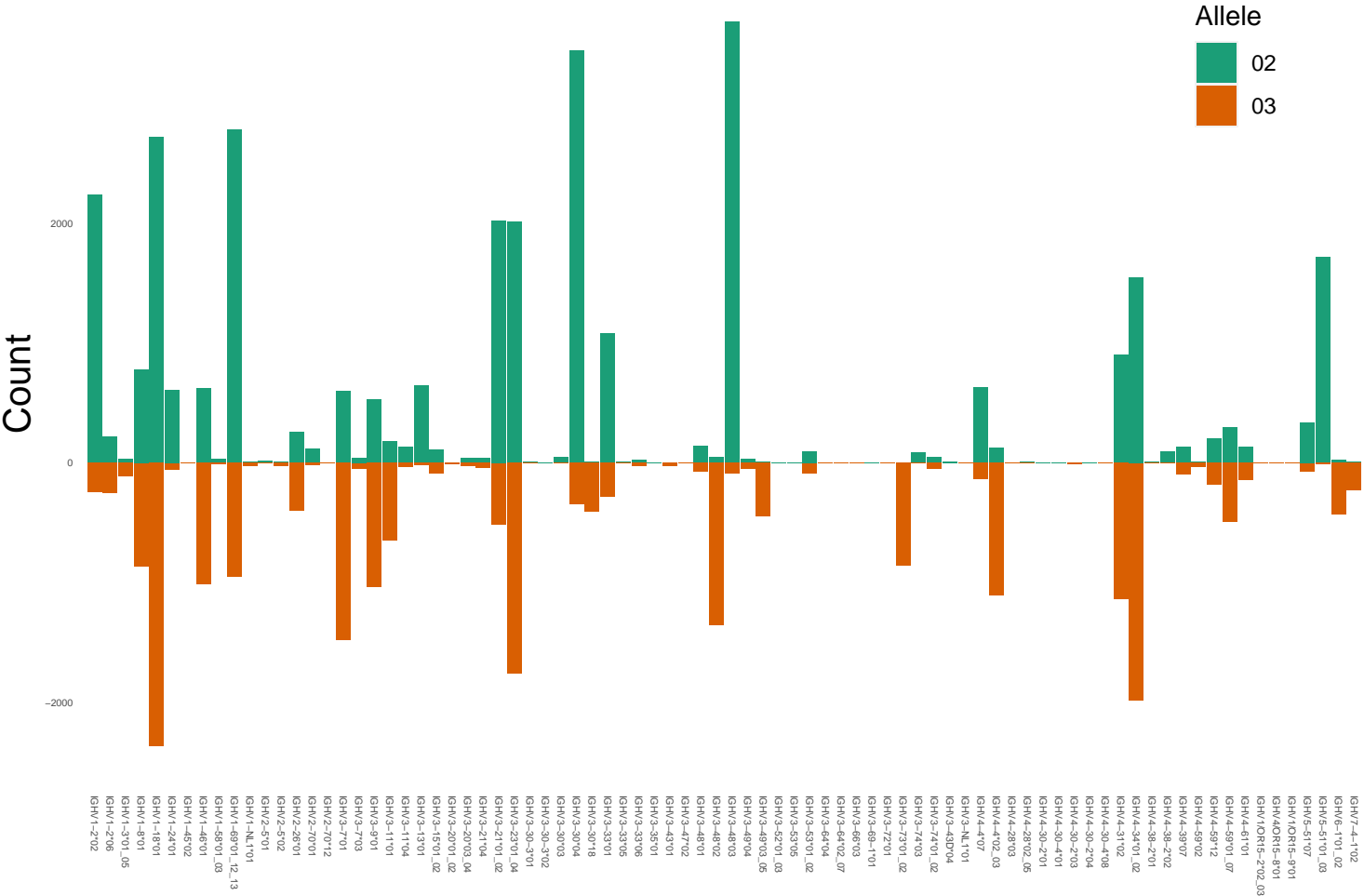
6336 sequences assigned  
718 (11.3%) exact matches, in which:  
386 unique CDR3  
5 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.