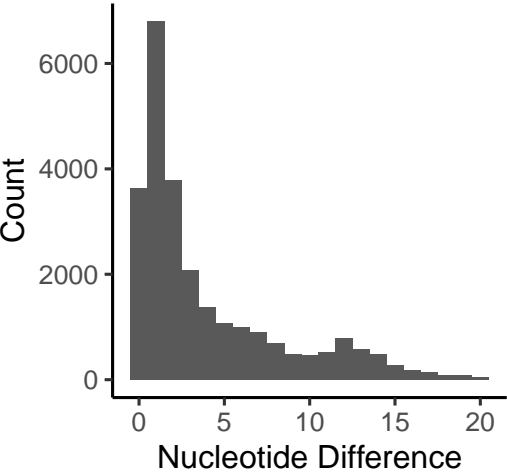


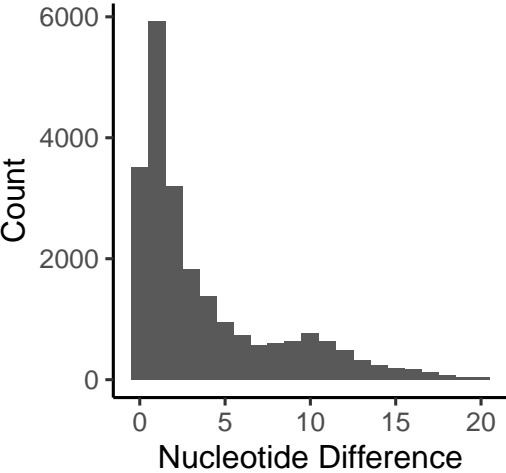
IGHV1-2\*02

25752 sequences assigned  
3642 (14.1%) exact matches, in which:  
2990 unique CDR3  
7 unique J



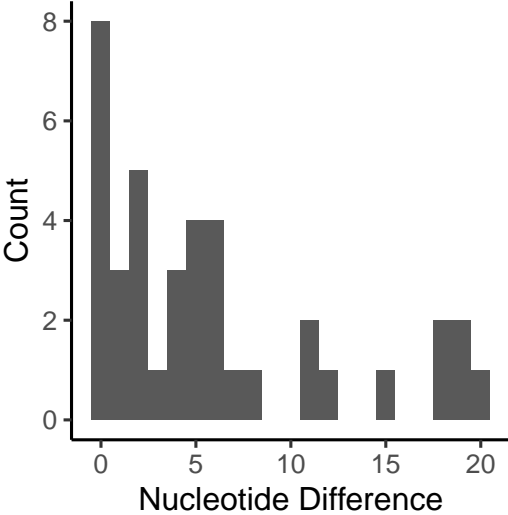
IGHV1-18\*01

22660 sequences assigned  
3510 (15.5%) exact matches, in which:  
2890 unique CDR3  
7 unique J



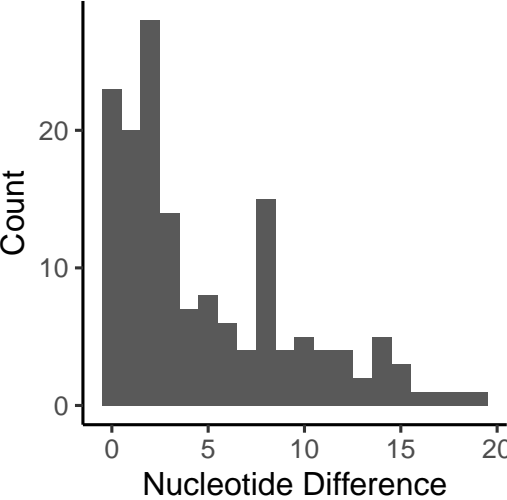
IGHV1-45\*02\_A297G\_A30

40 sequences assigned  
8 (20%) exact matches, in which:  
8 unique CDR3  
3 unique J



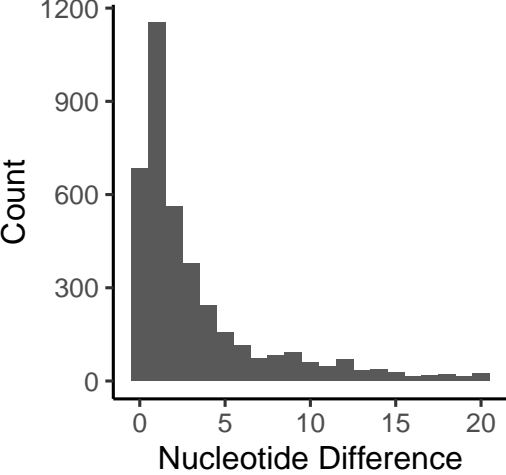
IGHV1-3\*02

161 sequences assigned  
23 (14.3%) exact matches, in which:  
22 unique CDR3  
6 unique J



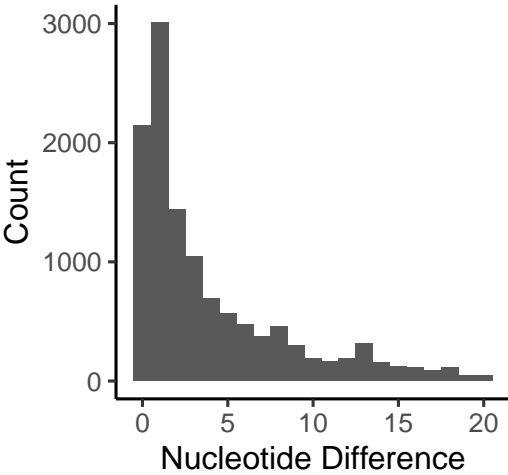
IGHV1-24\*01

4067 sequences assigned  
684 (16.8%) exact matches, in which:  
582 unique CDR3  
7 unique J



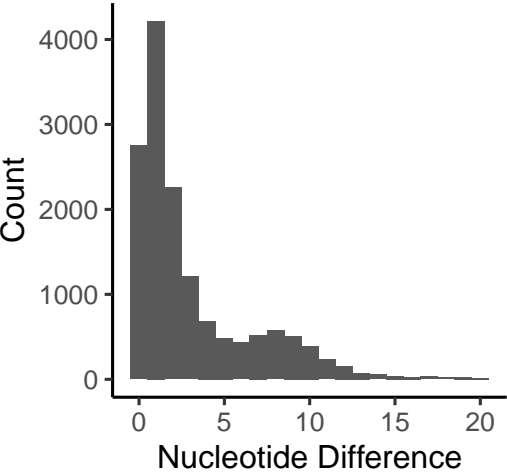
IGHV1-46\*01

12224 sequences assigned  
2143 (17.5%) exact matches, in which:  
1821 unique CDR3  
7 unique J



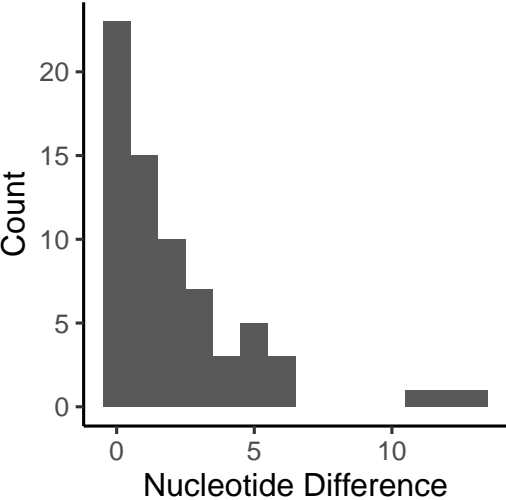
IGHV1-8\*01

14810 sequences assigned  
2754 (18.6%) exact matches, in which:  
2353 unique CDR3  
7 unique J



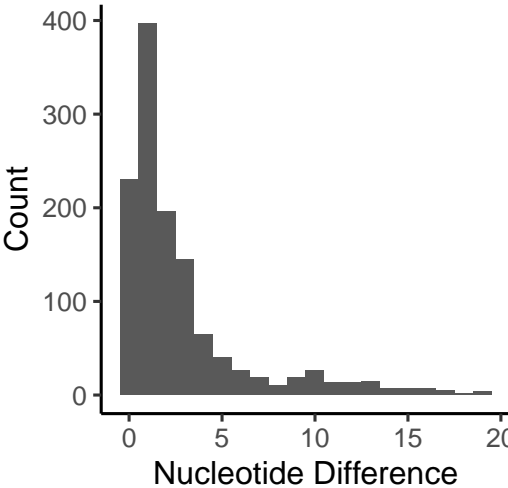
IGHV1-45\*02

70 sequences assigned  
23 (32.9%) exact matches, in which:  
22 unique CDR3  
5 unique J



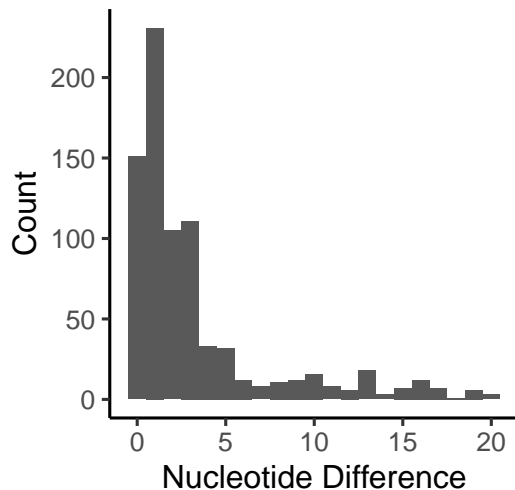
IGHV1-58\*01

1254 sequences assigned  
230 (18.3%) exact matches, in which:  
182 unique CDR3  
7 unique J



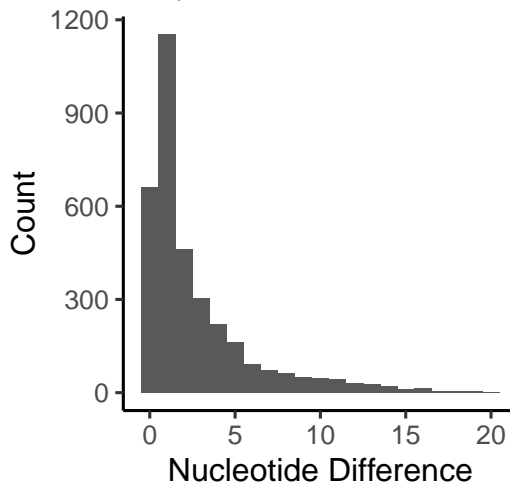
### IGHV1–58\*02

801 sequences assigned  
151 (18.9%) exact matches, in which:  
120 unique CDR3  
6 unique J



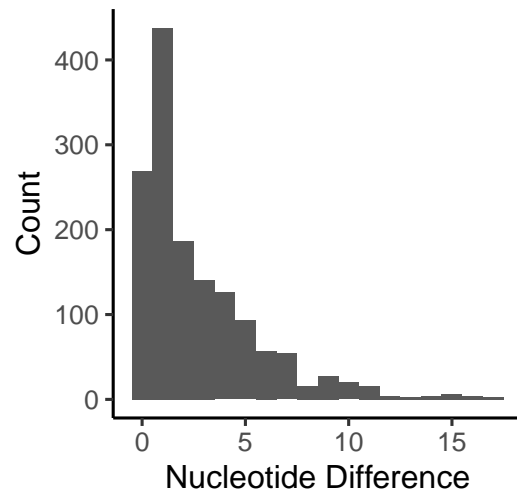
### IGHV2–5\*01

3496 sequences assigned  
660 (18.9%) exact matches, in which:  
535 unique CDR3  
7 unique J



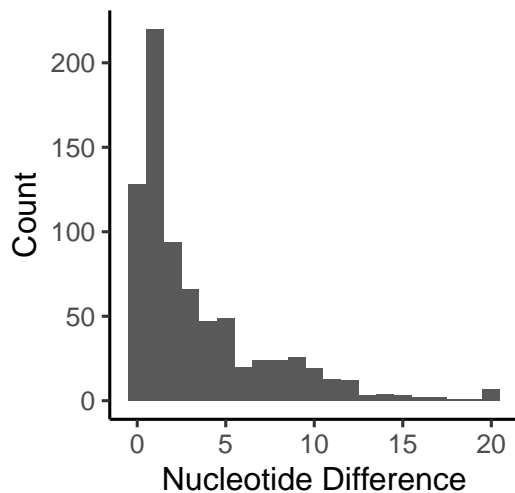
### IGHV2–70\*15

1518 sequences assigned  
269 (17.7%) exact matches, in which:  
216 unique CDR3  
7 unique J



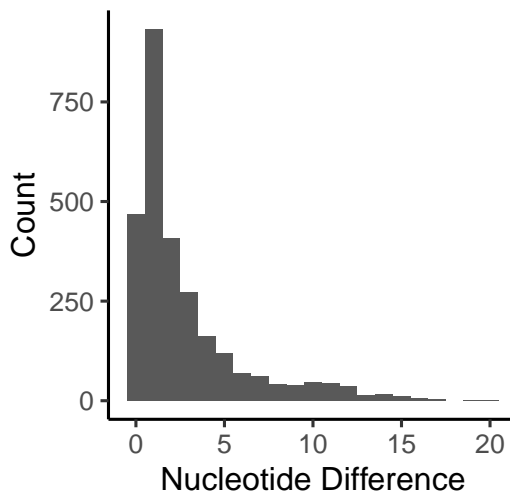
### IGHV1–69–2\*01

795 sequences assigned  
128 (16.1%) exact matches, in which:  
104 unique CDR3  
7 unique J



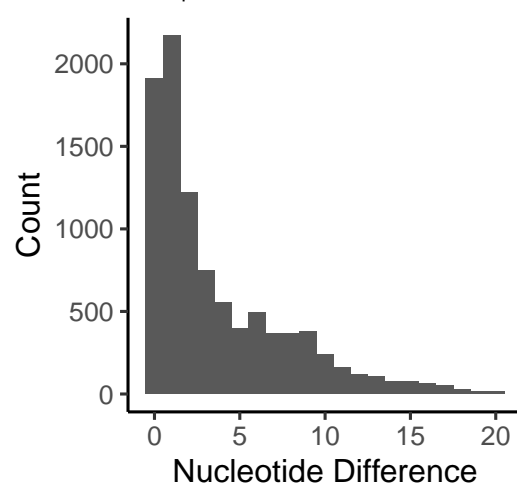
### IGHV2–26\*01

2866 sequences assigned  
468 (16.3%) exact matches, in which:  
378 unique CDR3  
7 unique J



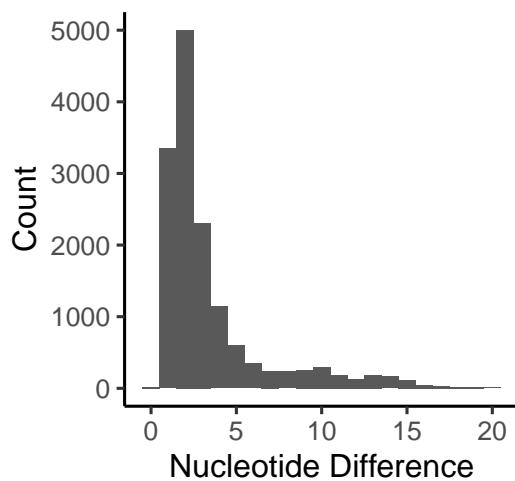
### IGHV3–7\*01

9717 sequences assigned  
1908 (19.6%) exact matches, in which:  
1605 unique CDR3  
7 unique J



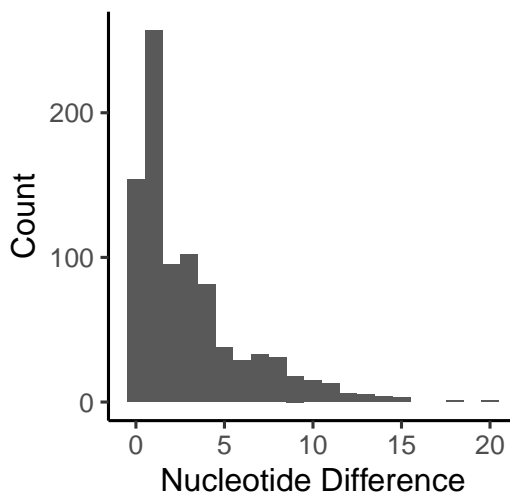
### IGHV1–69\*04

14817 sequences assigned  
21 (0.1%) exact matches, in which:  
21 unique CDR3  
5 unique J



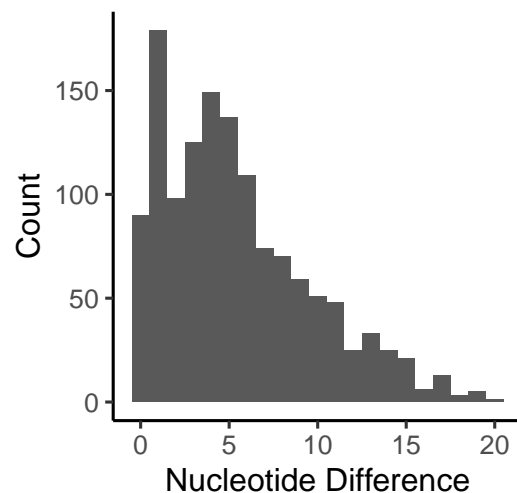
### IGHV2–70\*01

918 sequences assigned  
154 (16.8%) exact matches, in which:  
127 unique CDR3  
6 unique J



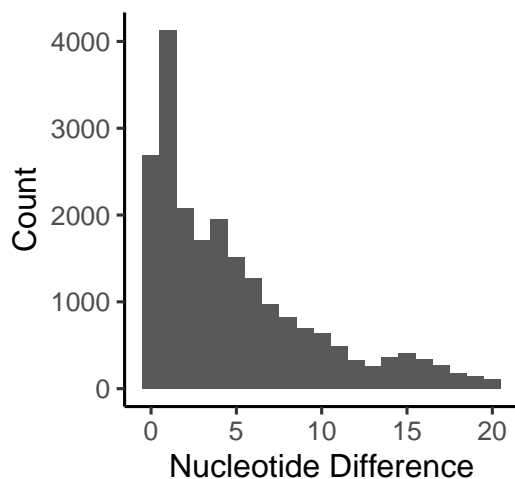
### IGHV3–7\*03

1339 sequences assigned  
90 (6.7%) exact matches, in which:  
89 unique CDR3  
6 unique J



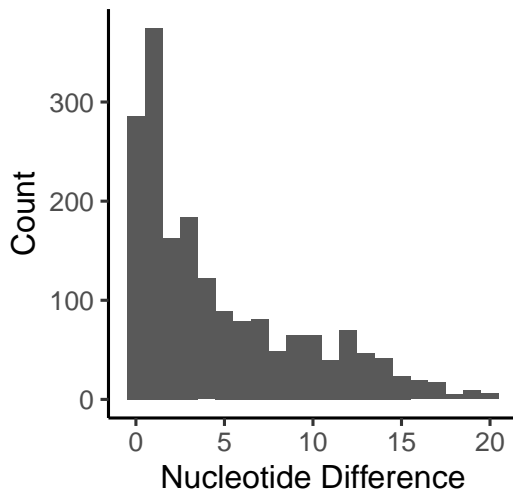
### IGHV3-9\*01

21733 sequences assigned  
2686 (12.4%) exact matches, in which:  
2138 unique CDR3  
7 unique J



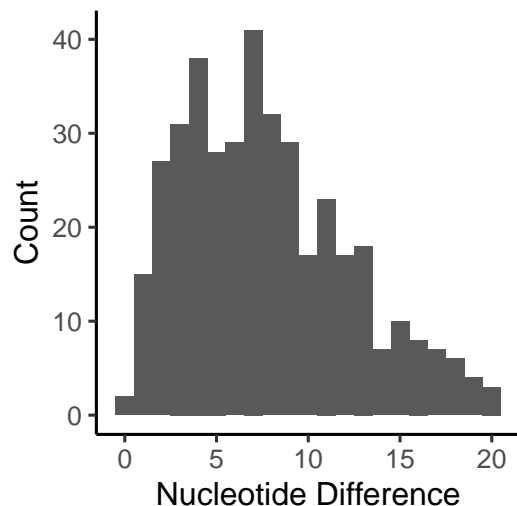
### IGHV3-13\*01

1853 sequences assigned  
286 (15.4%) exact matches, in which:  
223 unique CDR3  
6 unique J



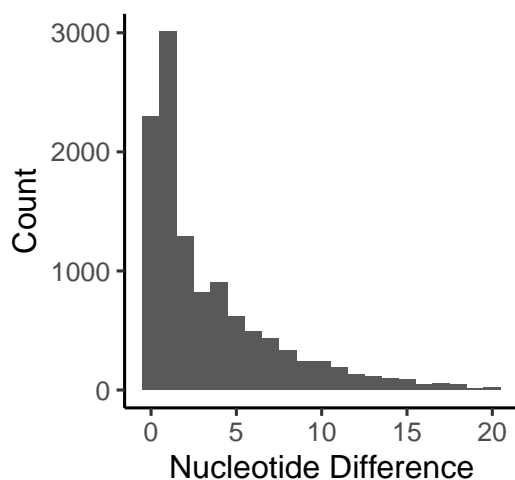
### IGHV3-20\*04

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



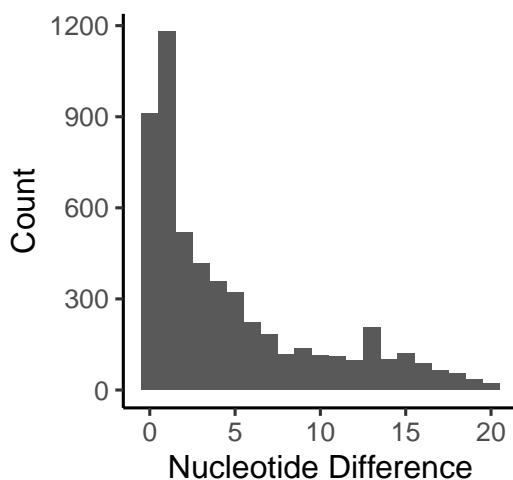
### IGHV3-11\*01

11732 sequences assigned  
2301 (19.6%) exact matches, in which:  
1851 unique CDR3  
7 unique J



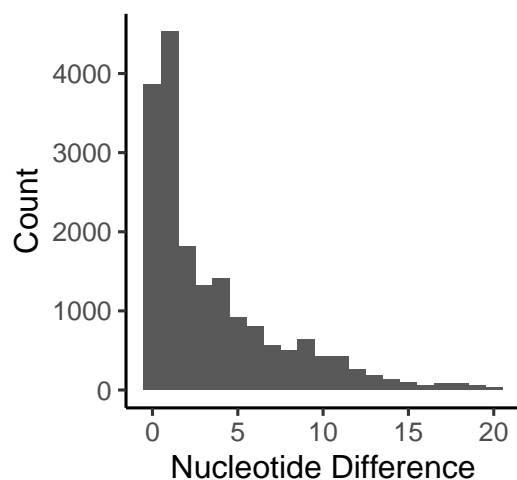
### IGHV3-15\*01

5540 sequences assigned  
912 (16.5%) exact matches, in which:  
734 unique CDR3  
7 unique J



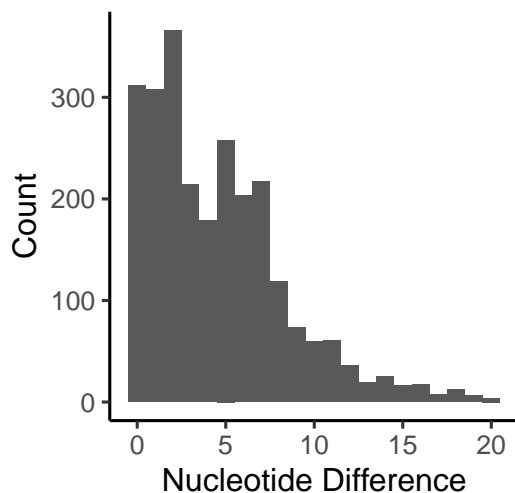
### IGHV3-21\*01

18364 sequences assigned  
3860 (21%) exact matches, in which:  
3162 unique CDR3  
7 unique J



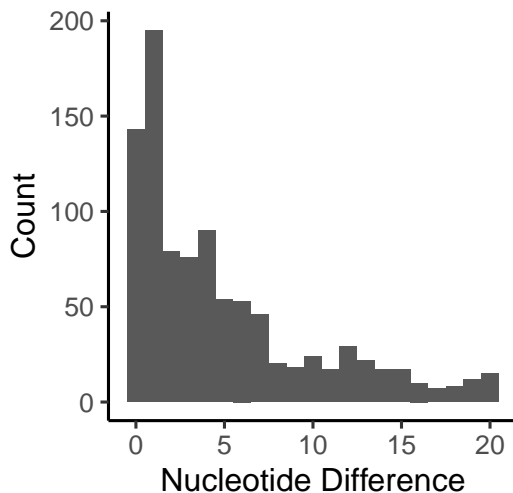
### IGHV3-11\*04

2608 sequences assigned  
312 (12%) exact matches, in which:  
308 unique CDR3  
7 unique J



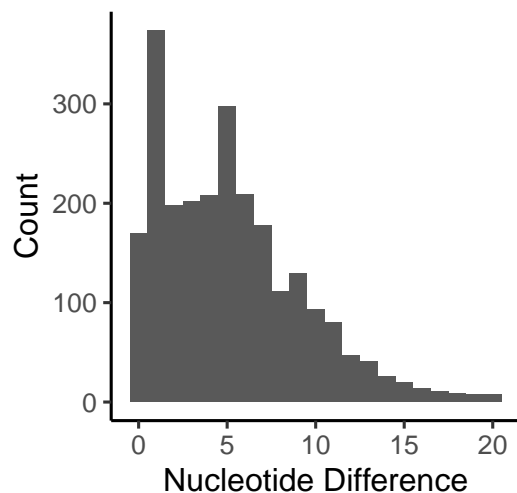
### IGHV3-20\*01

974 sequences assigned  
143 (14.7%) exact matches, in which:  
105 unique CDR3  
6 unique J



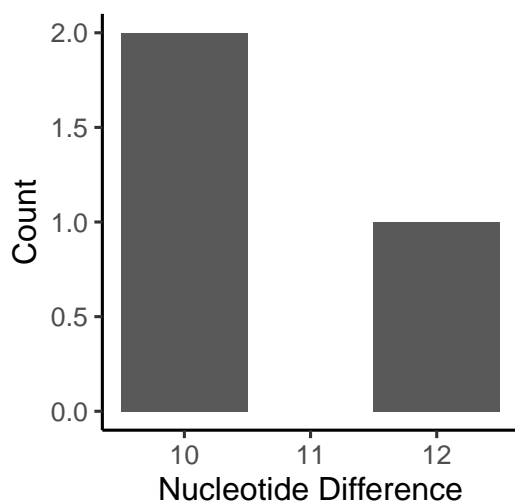
### IGHV3-21\*04

2461 sequences assigned  
170 (6.9%) exact matches, in which:  
168 unique CDR3  
7 unique J



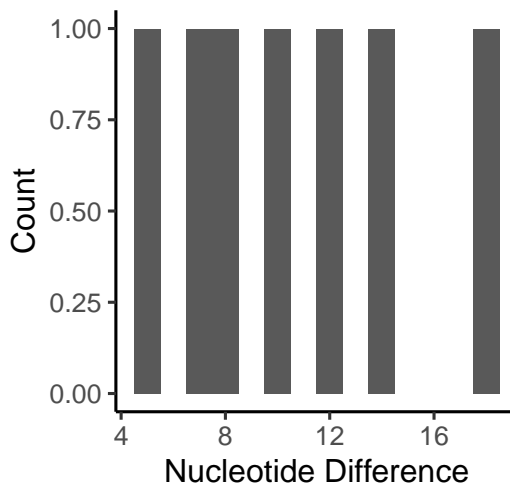
### IGHV3-22\*02

3 sequences assigned  
No exact matches.



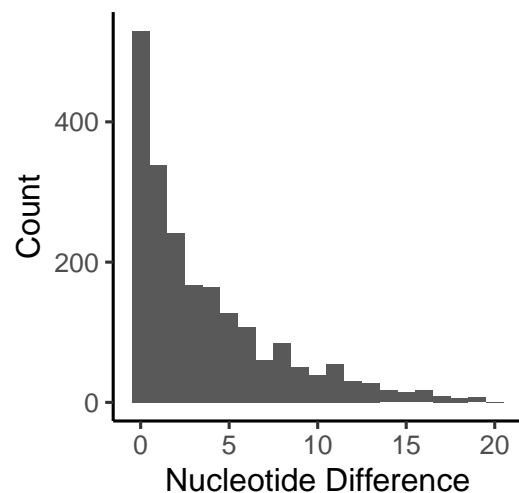
### IGHV3-30-3\*03

9 sequences assigned  
No exact matches.



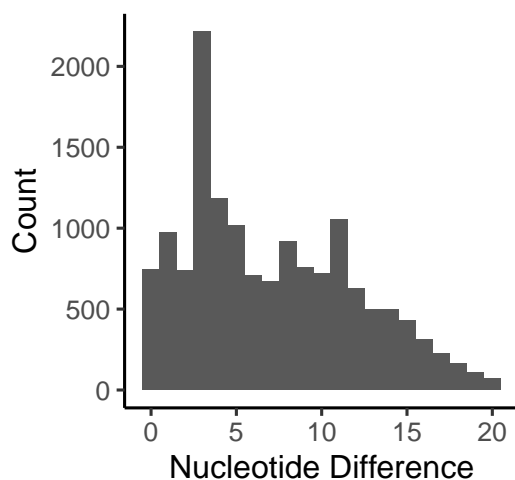
### IGHV3-33\*06\_T300C\_G3

2111 sequences assigned  
530 (25.1%) exact matches, in which:  
522 unique CDR3  
7 unique J



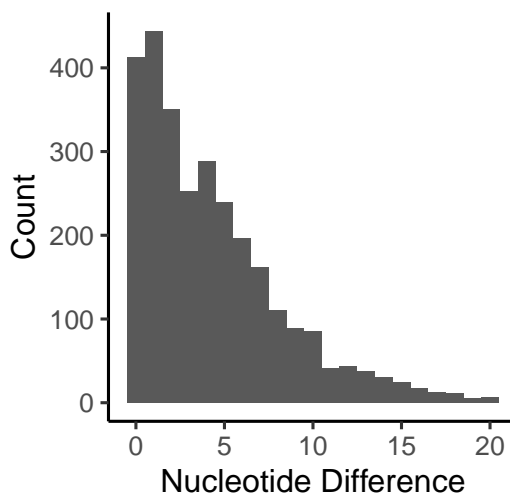
### IGHV3-23\*04

15021 sequences assigned  
742 (4.9%) exact matches, in which:  
682 unique CDR3  
7 unique J



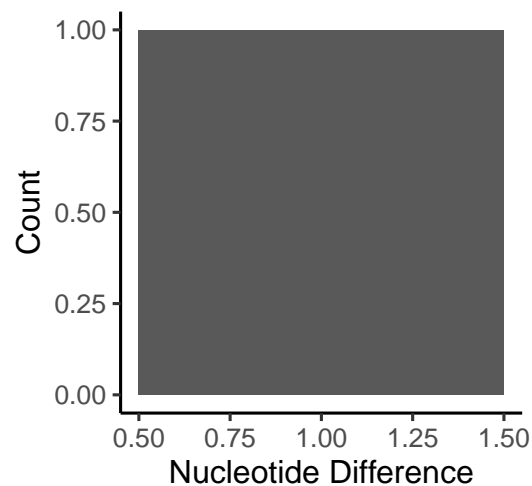
### IGHV3-30\*03\_T288C

2881 sequences assigned  
413 (14.3%) exact matches, in which:  
407 unique CDR3  
7 unique J



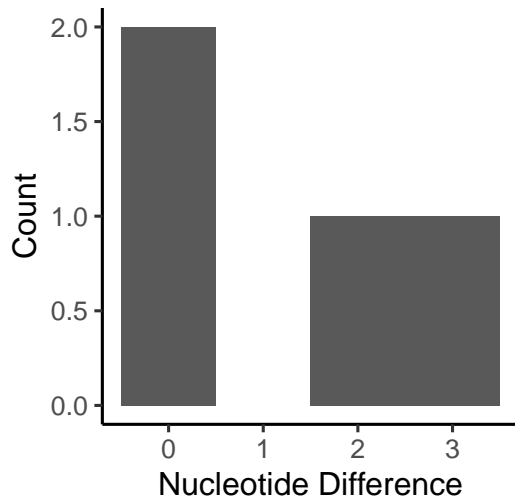
### IGHV3-35\*01

1 sequences assigned  
No exact matches.



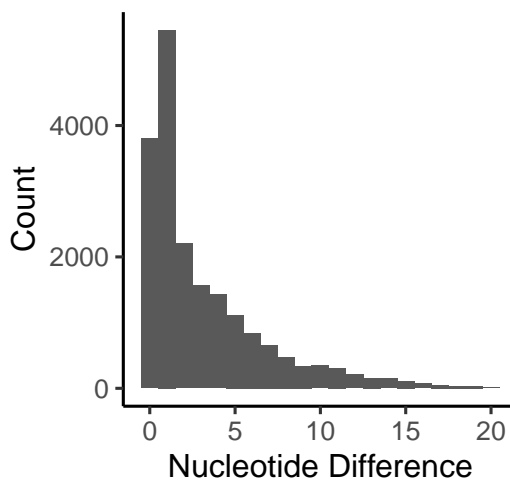
### IGHV3-30-3\*01

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



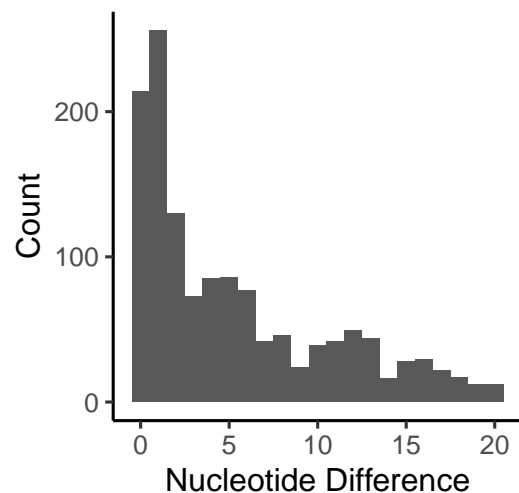
### IGHV3-33\*01

19539 sequences assigned  
3803 (19.5%) exact matches, in which:  
3078 unique CDR3  
7 unique J



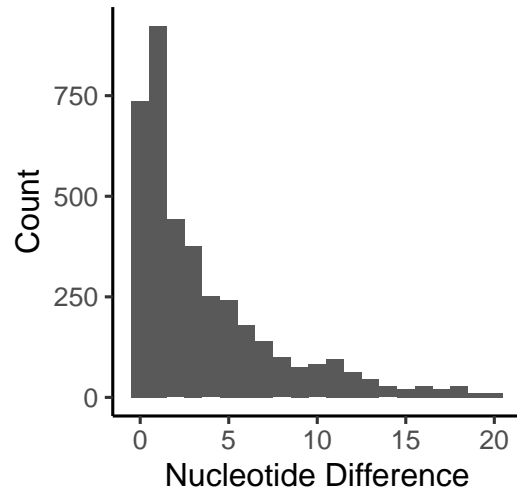
### IGHV3-43\*01

1364 sequences assigned  
214 (15.7%) exact matches, in which:  
183 unique CDR3  
7 unique J



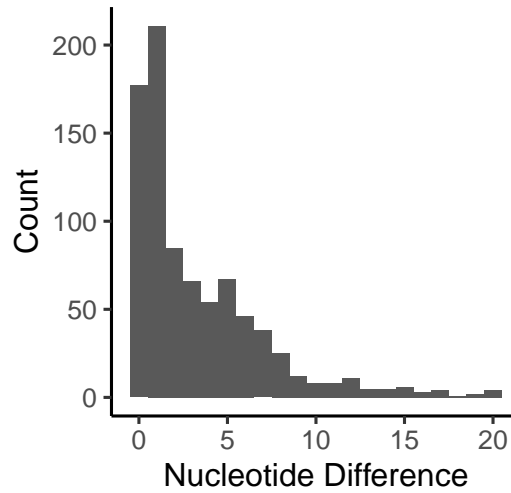
### IGHV3-48\*01

3921 sequences assigned  
736 (18.8%) exact matches, in which:  
610 unique CDR3  
7 unique J



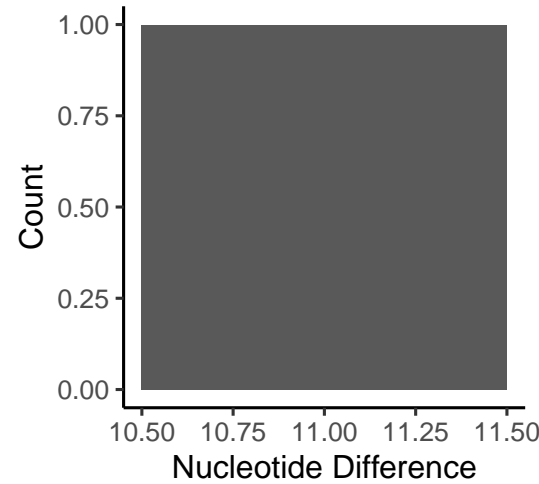
### IGHV3-49\*03

849 sequences assigned  
177 (20.8%) exact matches, in which:  
147 unique CDR3  
6 unique J



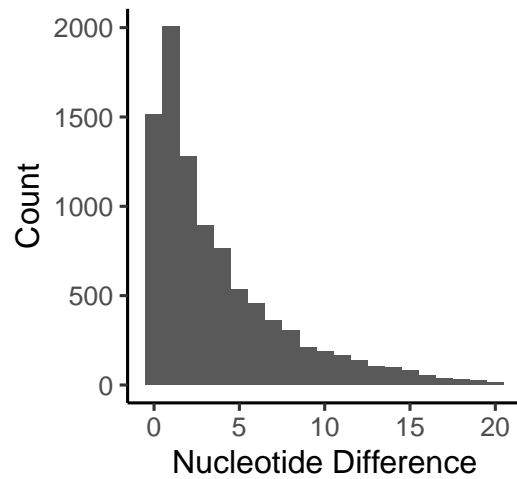
### IGHV3-52\*01

1 sequences assigned  
No exact matches.



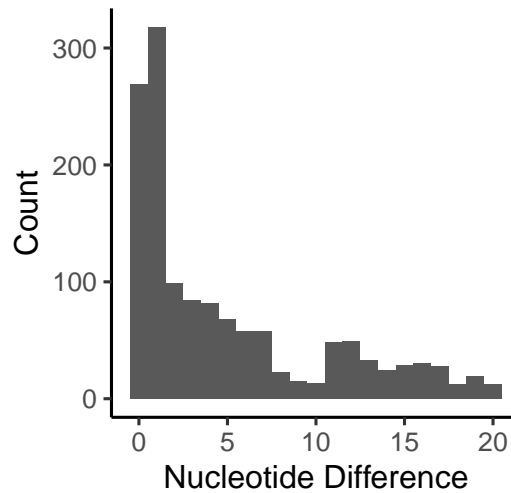
### IGHV3-48\*03

9290 sequences assigned  
1515 (16.3%) exact matches, in which:  
1249 unique CDR3  
7 unique J



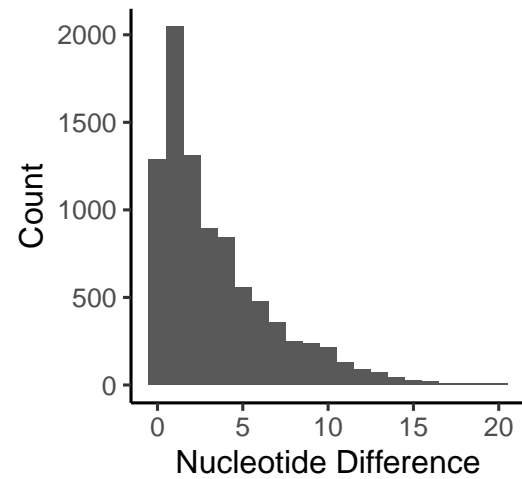
### IGHV3-49\*04

1396 sequences assigned  
269 (19.3%) exact matches, in which:  
216 unique CDR3  
7 unique J



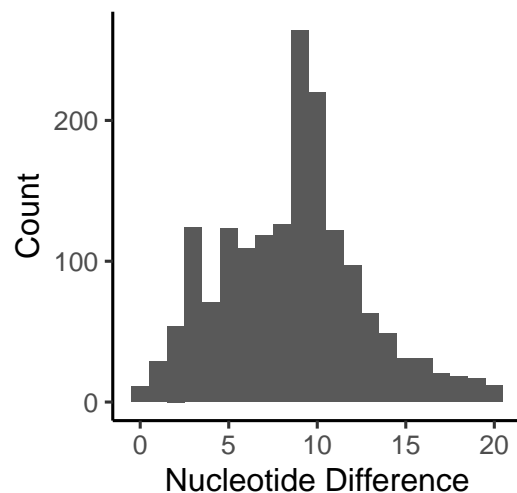
### IGHV3-53\*01

8952 sequences assigned  
1285 (14.4%) exact matches, in which:  
1021 unique CDR3  
7 unique J



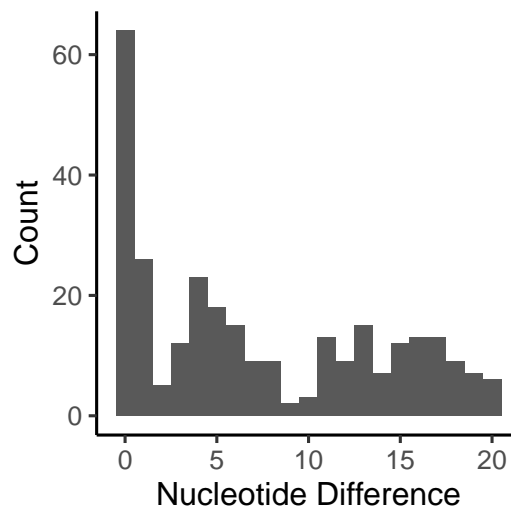
### IGHV3-48\*04

1742 sequences assigned  
11 (0.6%) exact matches, in which:  
11 unique CDR3  
5 unique J



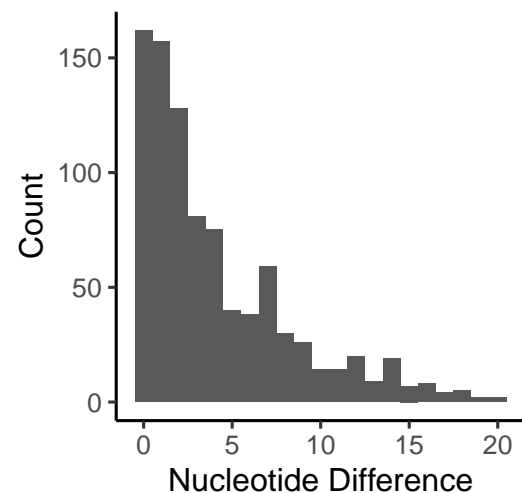
### IGHV3-49\*04\_A313G

303 sequences assigned  
64 (21.1%) exact matches, in which:  
64 unique CDR3  
7 unique J



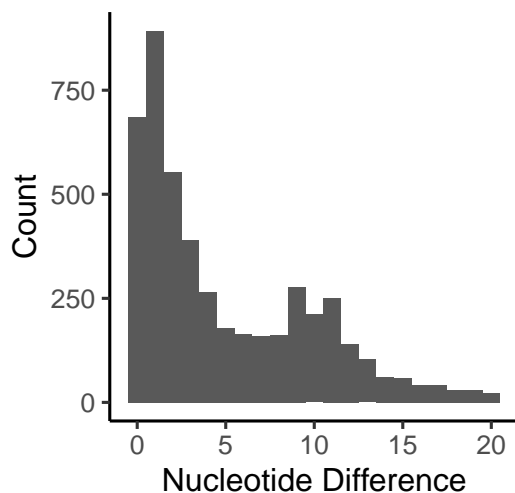
### IGHV3-64\*01

923 sequences assigned  
162 (17.6%) exact matches, in which:  
137 unique CDR3  
6 unique J



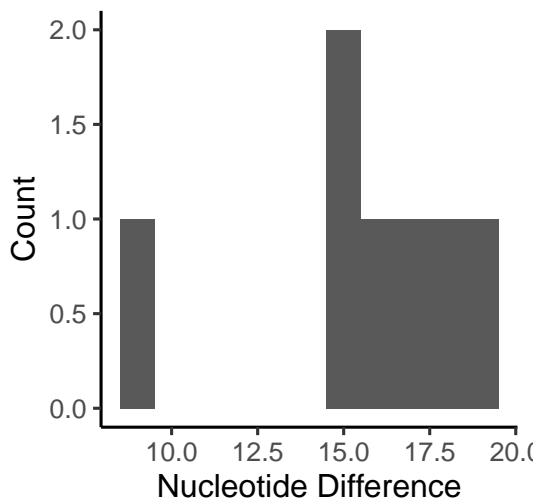
### IGHV3-66\*01

4827 sequences assigned  
686 (14.2%) exact matches, in which:  
555 unique CDR3  
7 unique J



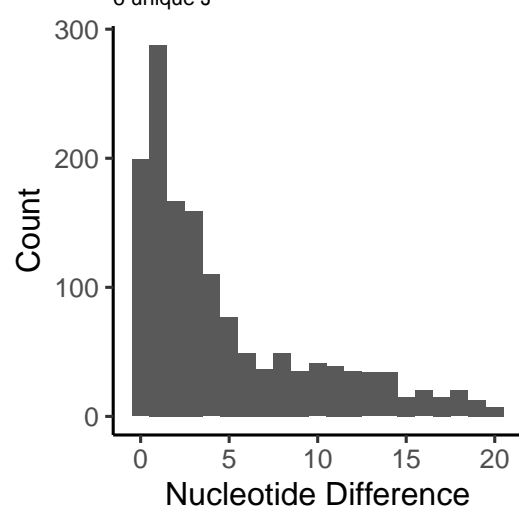
### IGHV3-69-1\*02

7 sequences assigned  
No exact matches.



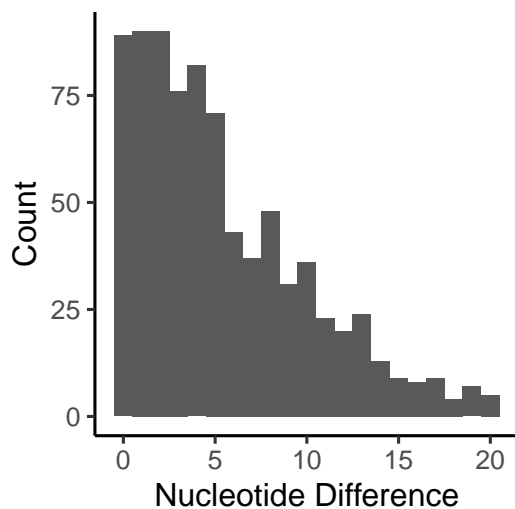
### IGHV3-73\*01

1468 sequences assigned  
199 (13.6%) exact matches, in which:  
154 unique CDR3  
6 unique J



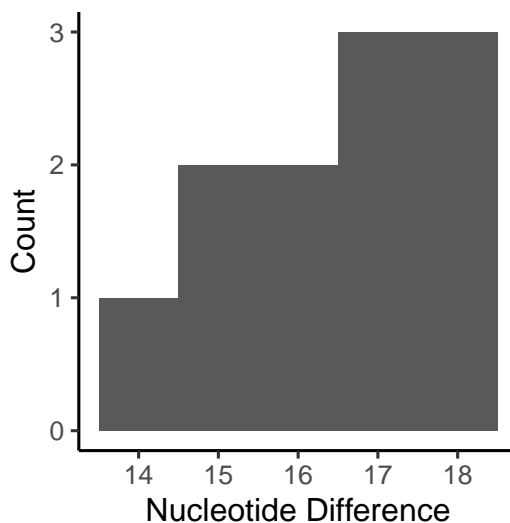
### IGHV3-66\*01\_T267G\_T30C

833 sequences assigned  
89 (10.7%) exact matches, in which:  
89 unique CDR3  
7 unique J



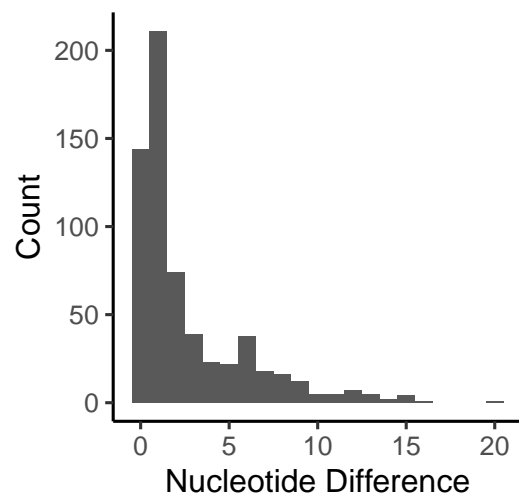
### IGHV3-71\*04

13 sequences assigned  
No exact matches.



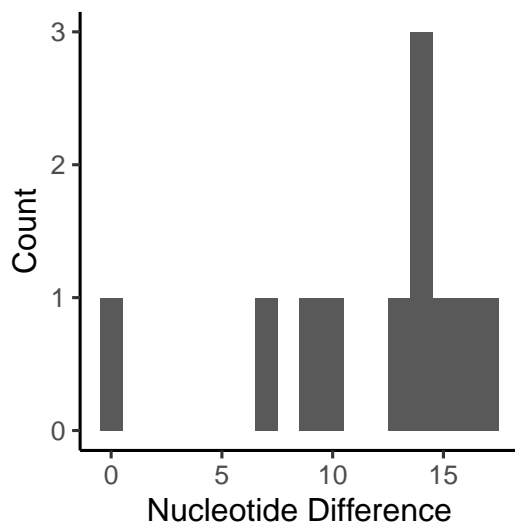
### IGHV3-73\*02

631 sequences assigned  
144 (22.8%) exact matches, in which:  
122 unique CDR3  
7 unique J



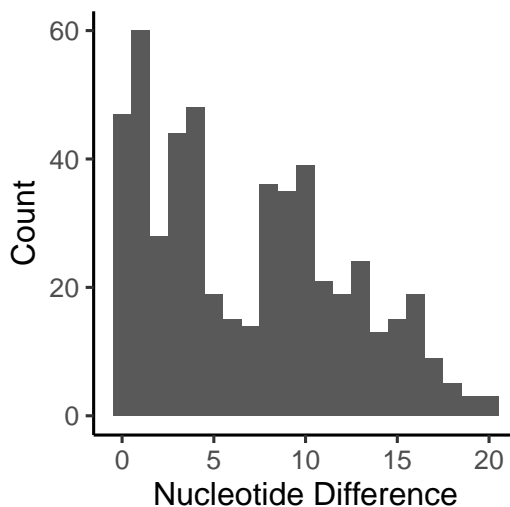
### IGHV3-69-1\*01

16 sequences assigned  
1 (6.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



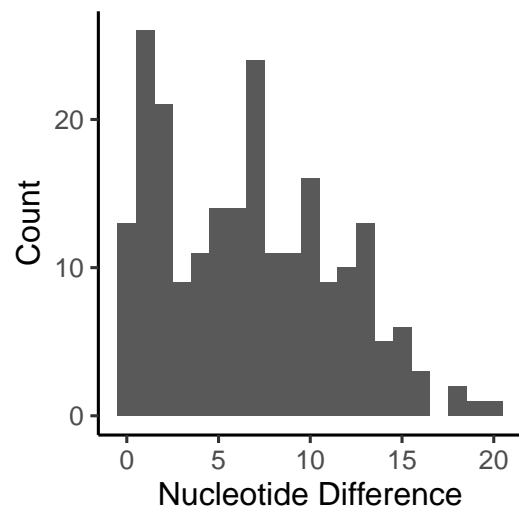
### IGHV3-72\*01

533 sequences assigned  
47 (8.8%) exact matches, in which:  
34 unique CDR3  
4 unique J



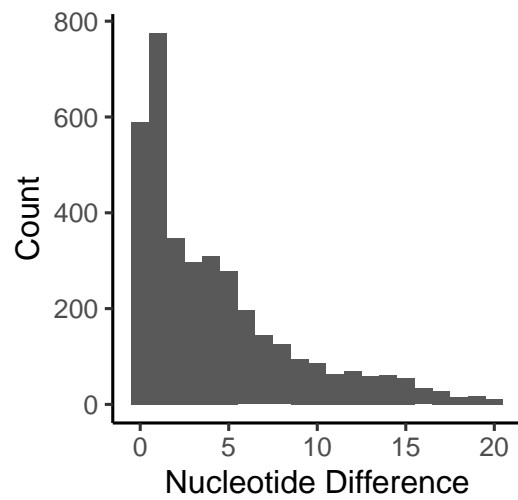
### IGHV3-73\*01\_A284G\_A284V

233 sequences assigned  
13 (5.6%) exact matches, in which:  
13 unique CDR3  
5 unique J



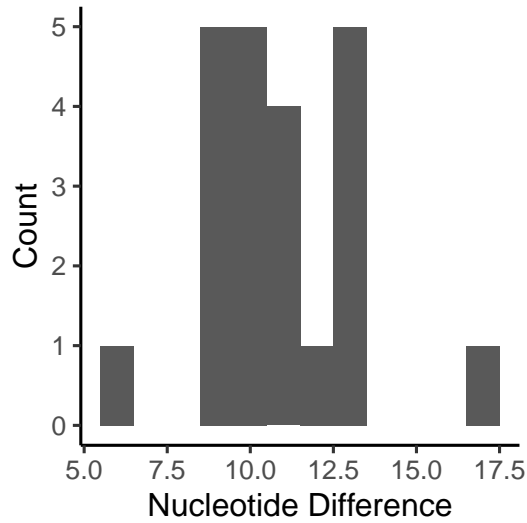
### IGHV3-74\*01

3698 sequences assigned  
589 (15.9%) exact matches, in which:  
504 unique CDR3  
7 unique J



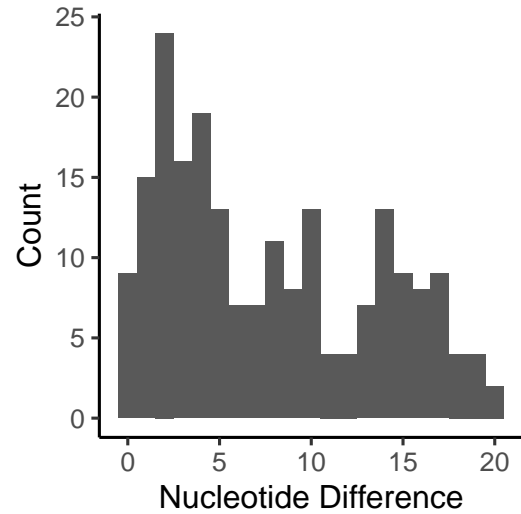
### IGHV3-64D\*06

23 sequences assigned  
No exact matches.



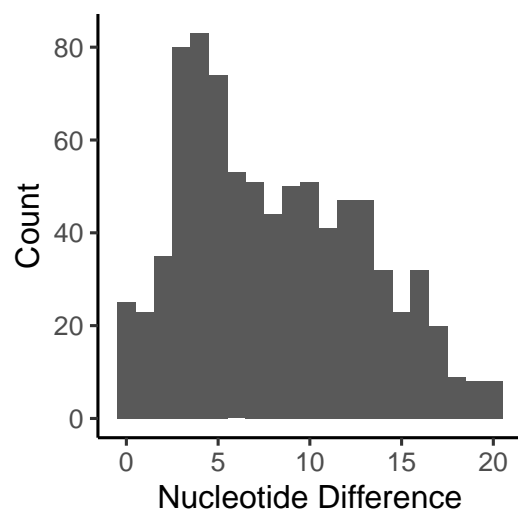
### IGHV3-NL1\*01\_G49A\_G7

210 sequences assigned  
9 (4.3%) exact matches, in which:  
9 unique CDR3  
4 unique J



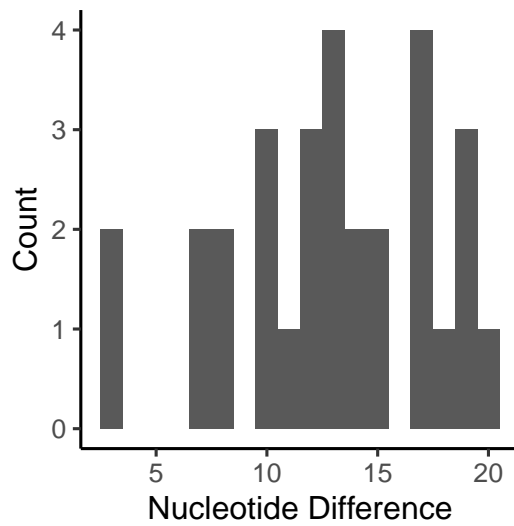
### IGHV3-74\*02

853 sequences assigned  
25 (2.9%) exact matches, in which:  
22 unique CDR3  
6 unique J



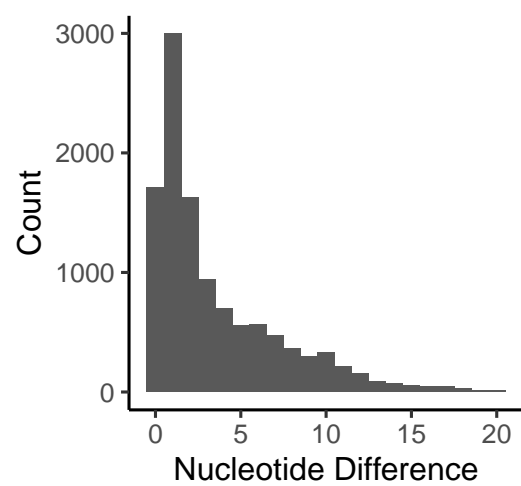
### IGHV3-NL1\*01

40 sequences assigned  
No exact matches.



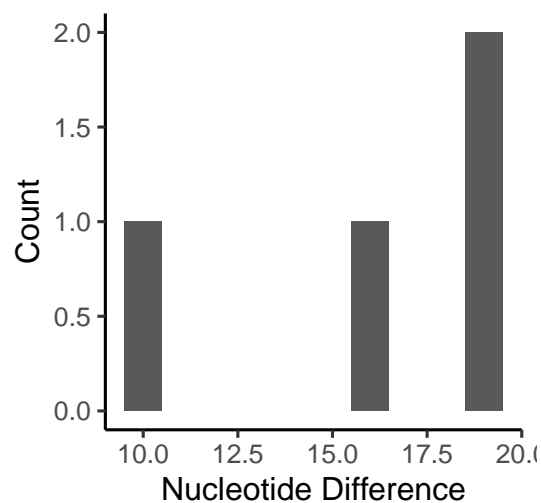
### IGHV4-4\*07

11336 sequences assigned  
1710 (15.1%) exact matches, in which:  
1445 unique CDR3  
7 unique J



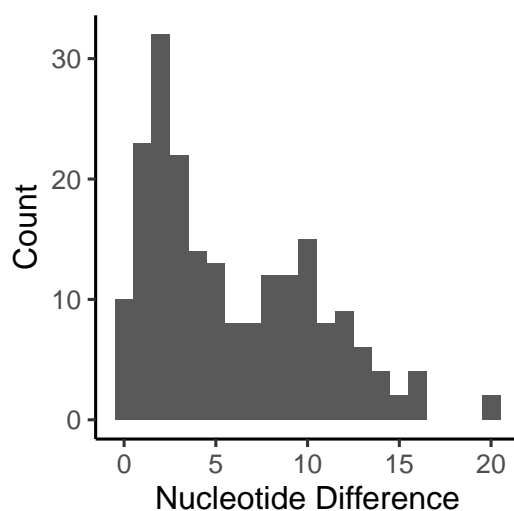
### IGHV3-43D\*04

4 sequences assigned  
No exact matches.



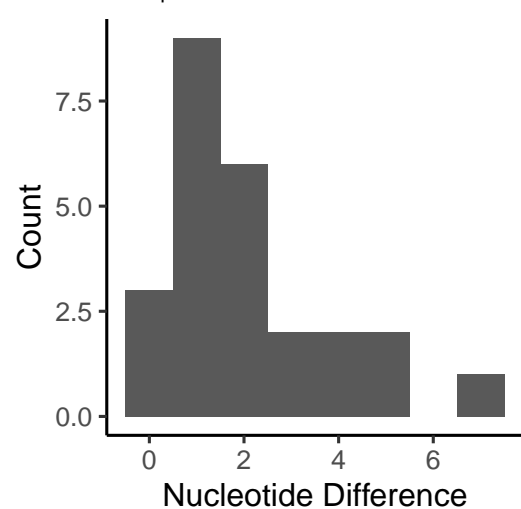
### IGHV3-NL1\*01\_G49A\_C1

206 sequences assigned  
10 (4.9%) exact matches, in which:  
10 unique CDR3  
3 unique J



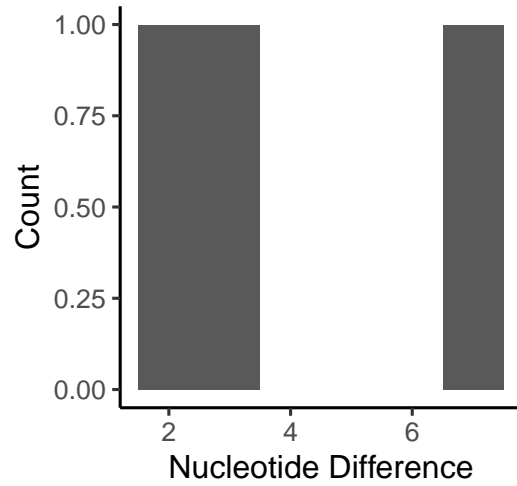
### IGHV4-28\*01

25 sequences assigned  
3 (12%) exact matches, in which:  
2 unique CDR3  
1 unique J



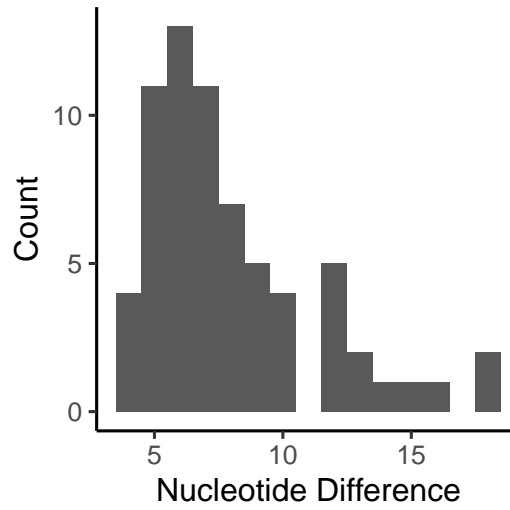
### IGHV4-28\*03

3 sequences assigned  
No exact matches.



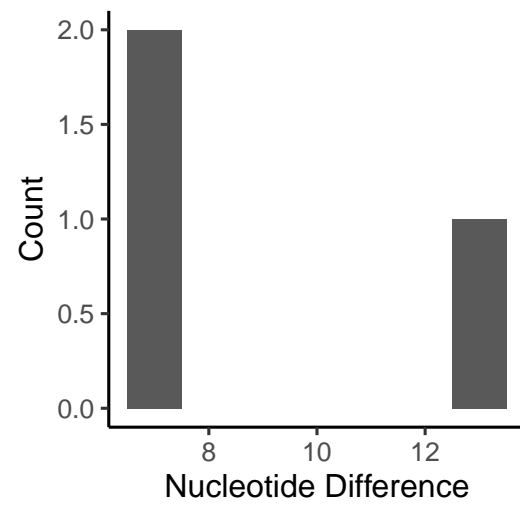
### IGHV4-30-4\*08

69 sequences assigned  
No exact matches.



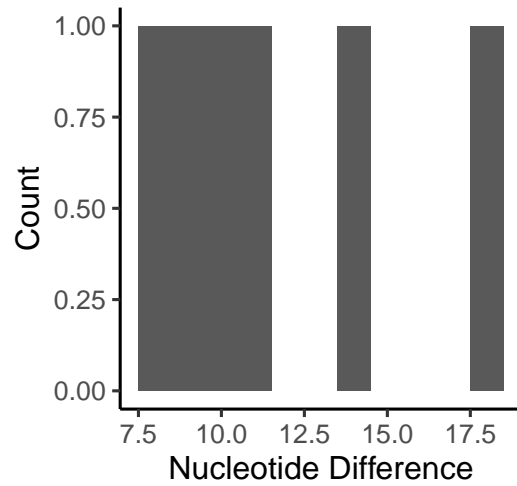
### IGHV4-38-2\*01

74 sequences assigned  
No exact matches.



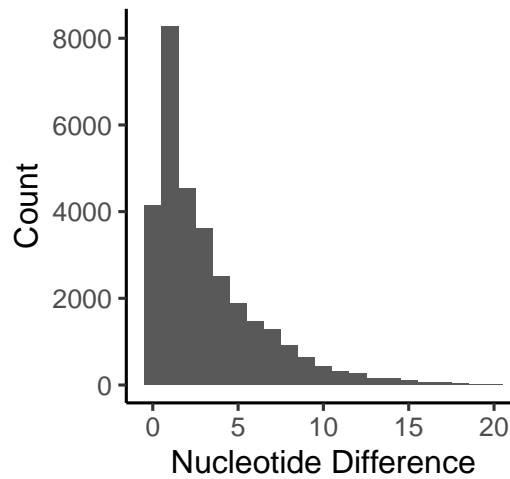
### IGHV4-30-4\*01

8 sequences assigned  
No exact matches.



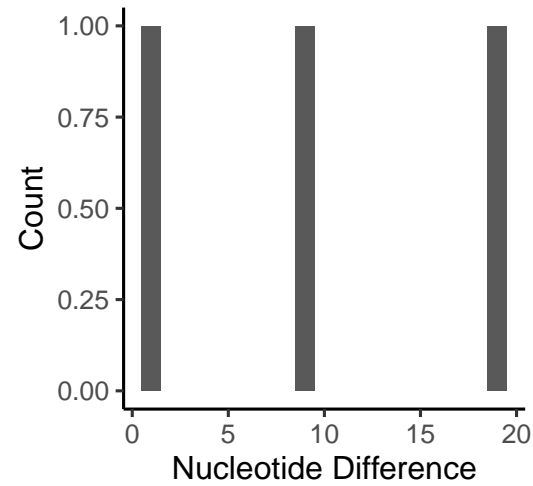
### IGHV4-31\*03

31106 sequences assigned  
4137 (13.3%) exact matches, in which:  
3396 unique CDR3  
7 unique J



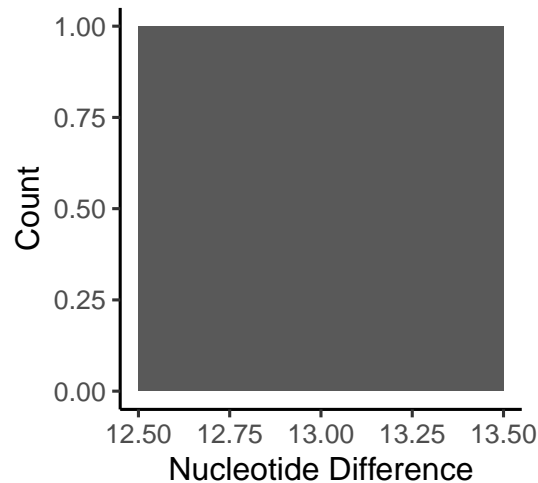
### IGHV4-38-2\*02

13 sequences assigned  
No exact matches.



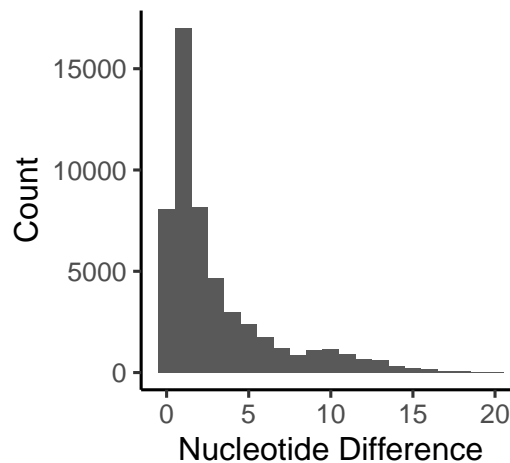
### IGHV4-30-2\*03

7 sequences assigned  
No exact matches.



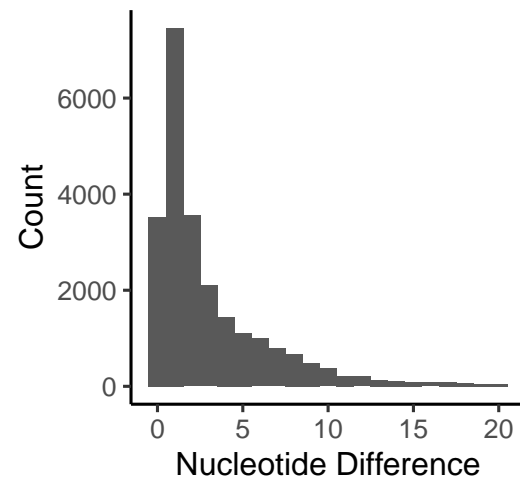
### IGHV4-34\*01

53171 sequences assigned  
8062 (15.2%) exact matches, in which:  
6521 unique CDR3  
7 unique J



### IGHV4-39\*01

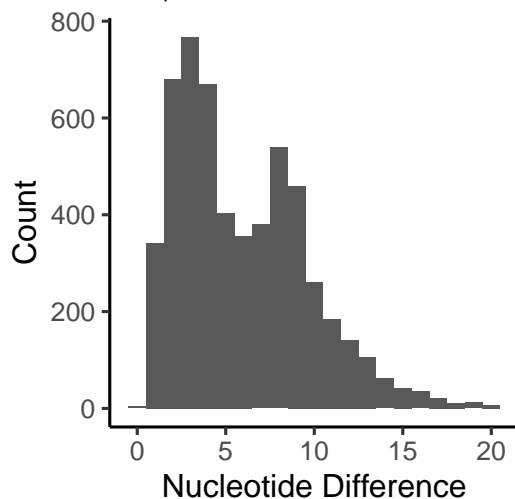
23832 sequences assigned  
3521 (14.8%) exact matches, in which:  
2963 unique CDR3  
7 unique J





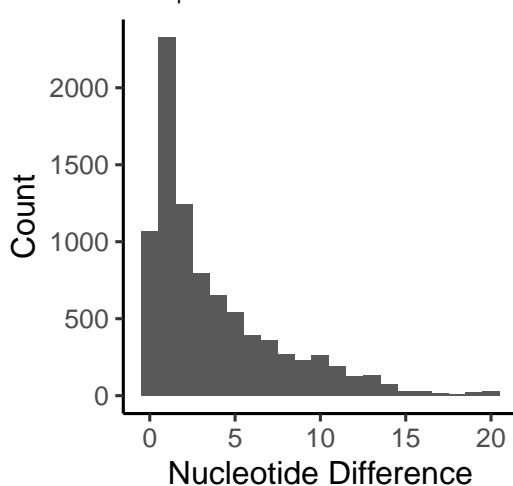
### IGHV4-39\*07

5517 sequences assigned  
4 (0.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



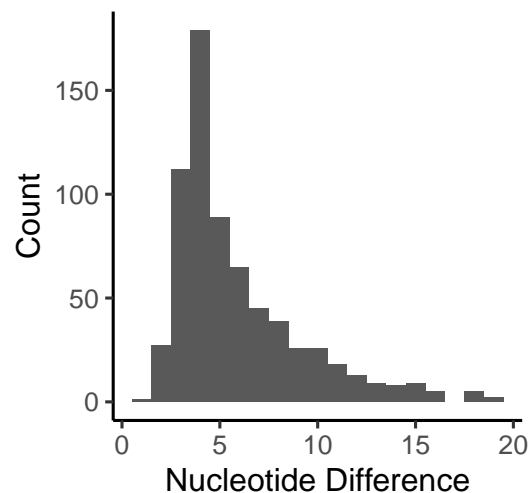
### IGHV4-59\*08

8879 sequences assigned  
1071 (12.1%) exact matches, in which:  
873 unique CDR3  
7 unique J



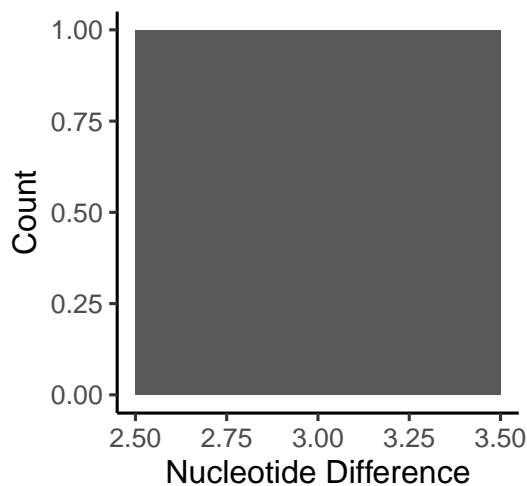
### IGHV4-61\*05

683 sequences assigned  
No exact matches.



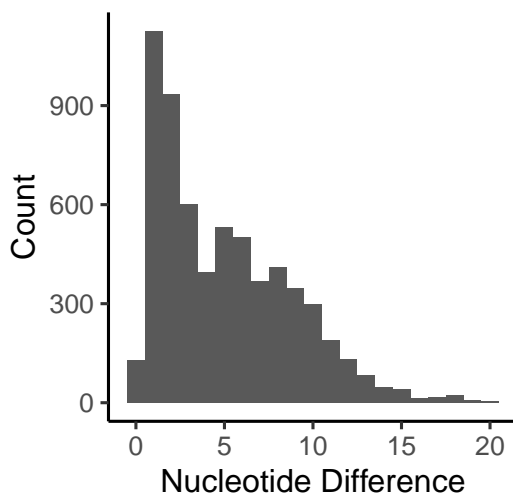
### IGHV4-55\*01

1 sequences assigned  
No exact matches.



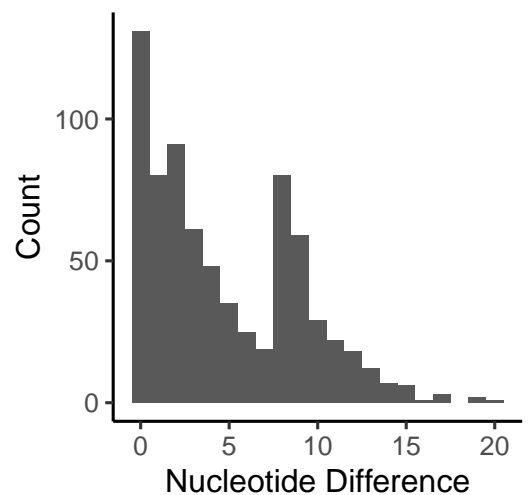
### IGHV4-59\*12

6267 sequences assigned  
130 (2.1%) exact matches, in which:  
130 unique CDR3  
7 unique J



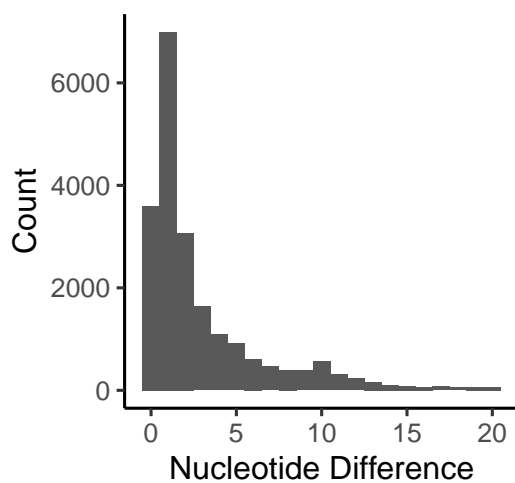
### IGHV4-61\*08\_G48A\_G49A

740 sequences assigned  
131 (17.7%) exact matches, in which:  
130 unique CDR3  
6 unique J



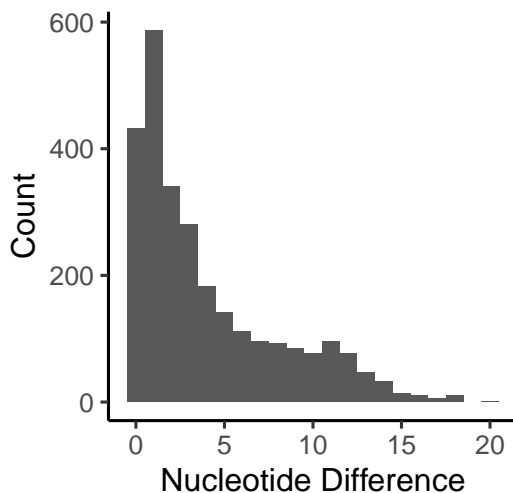
### IGHV4-59\*01

21146 sequences assigned  
3603 (17%) exact matches, in which:  
2963 unique CDR3  
7 unique J



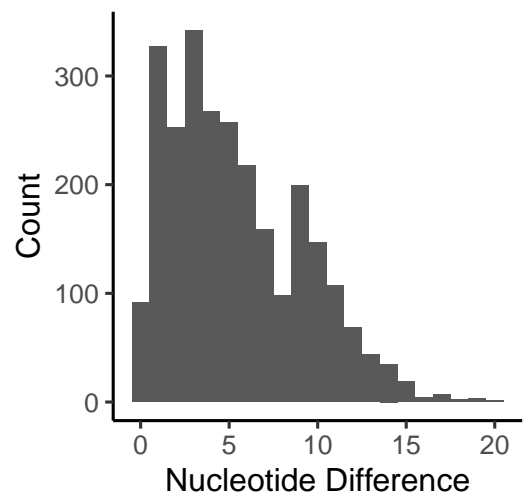
### IGHV4-61\*01

2724 sequences assigned  
432 (15.9%) exact matches, in which:  
391 unique CDR3  
7 unique J



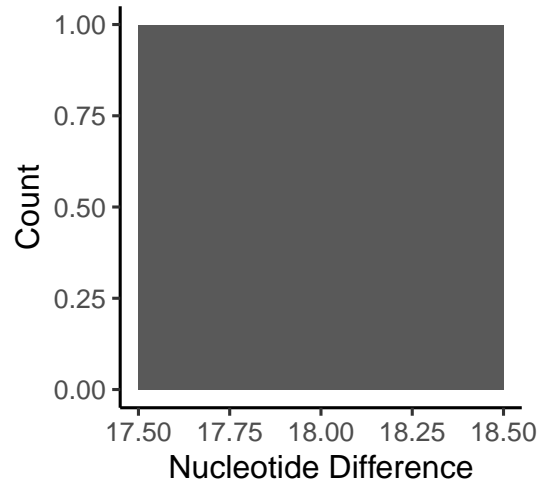
### IGHV4-61\*08\_G48A\_G49A

2655 sequences assigned  
92 (3.5%) exact matches, in which:  
92 unique CDR3  
7 unique J



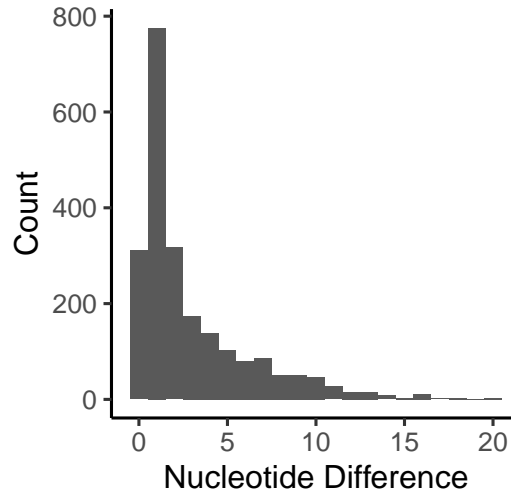
### IGHV1/OR15-2\*02

3 sequences assigned  
No exact matches.



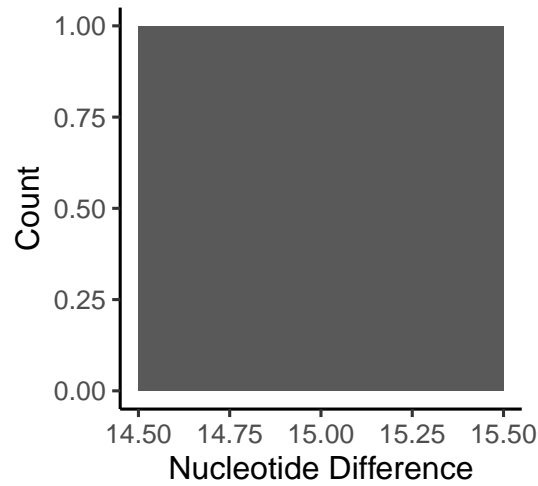
### IGHV6-1\*01

2232 sequences assigned  
311 (13.9%) exact matches, in which:  
243 unique CDR3  
7 unique J



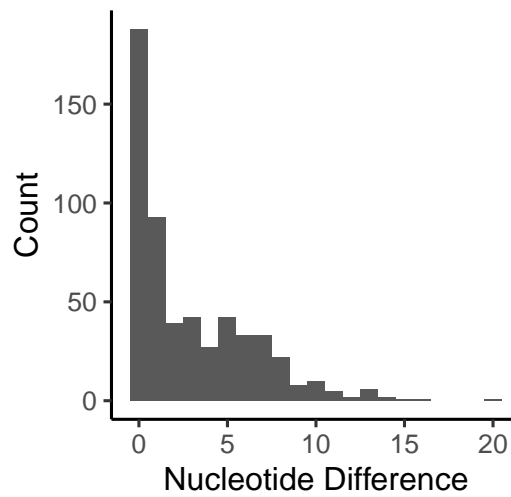
### IGHV4/OR15-8\*01

9 sequences assigned  
No exact matches.



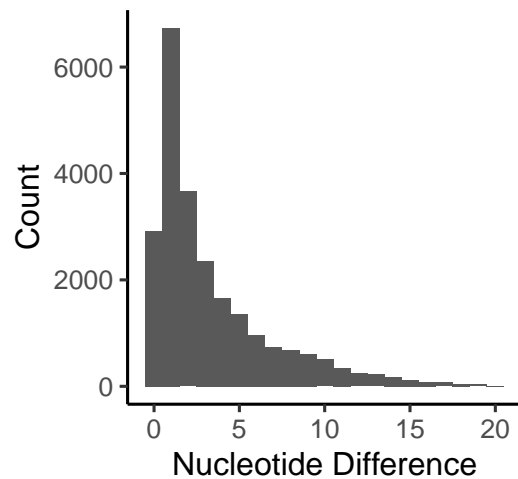
### IGHV6-1\*01\_A315G

556 sequences assigned  
188 (33.8%) exact matches, in which:  
188 unique CDR3  
7 unique J



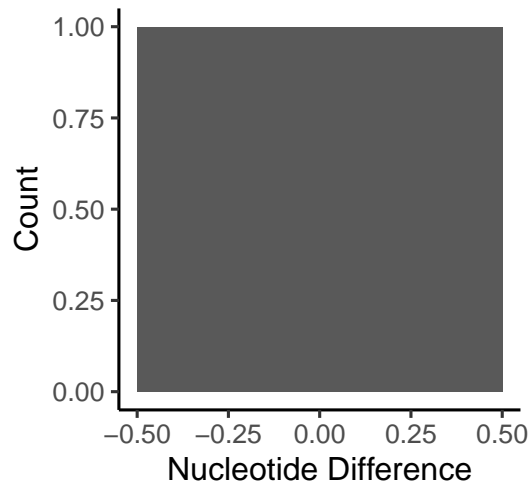
### IGHV5-51\*01

23780 sequences assigned  
2920 (12.3%) exact matches, in which:  
2044 unique CDR3  
7 unique J

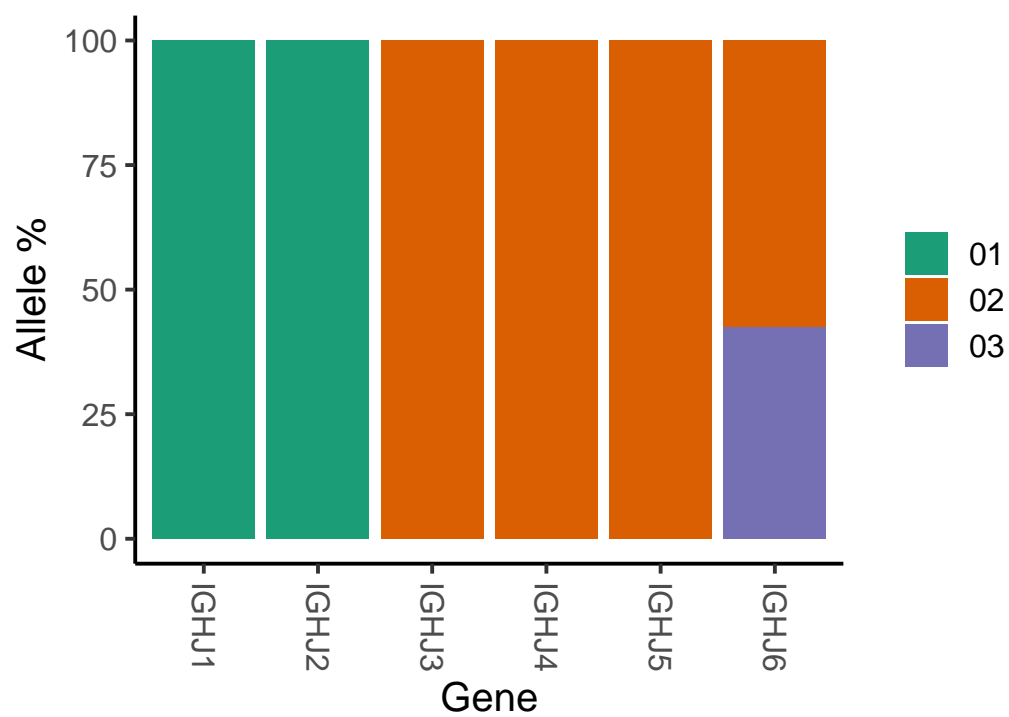


### IGHV7-81\*01

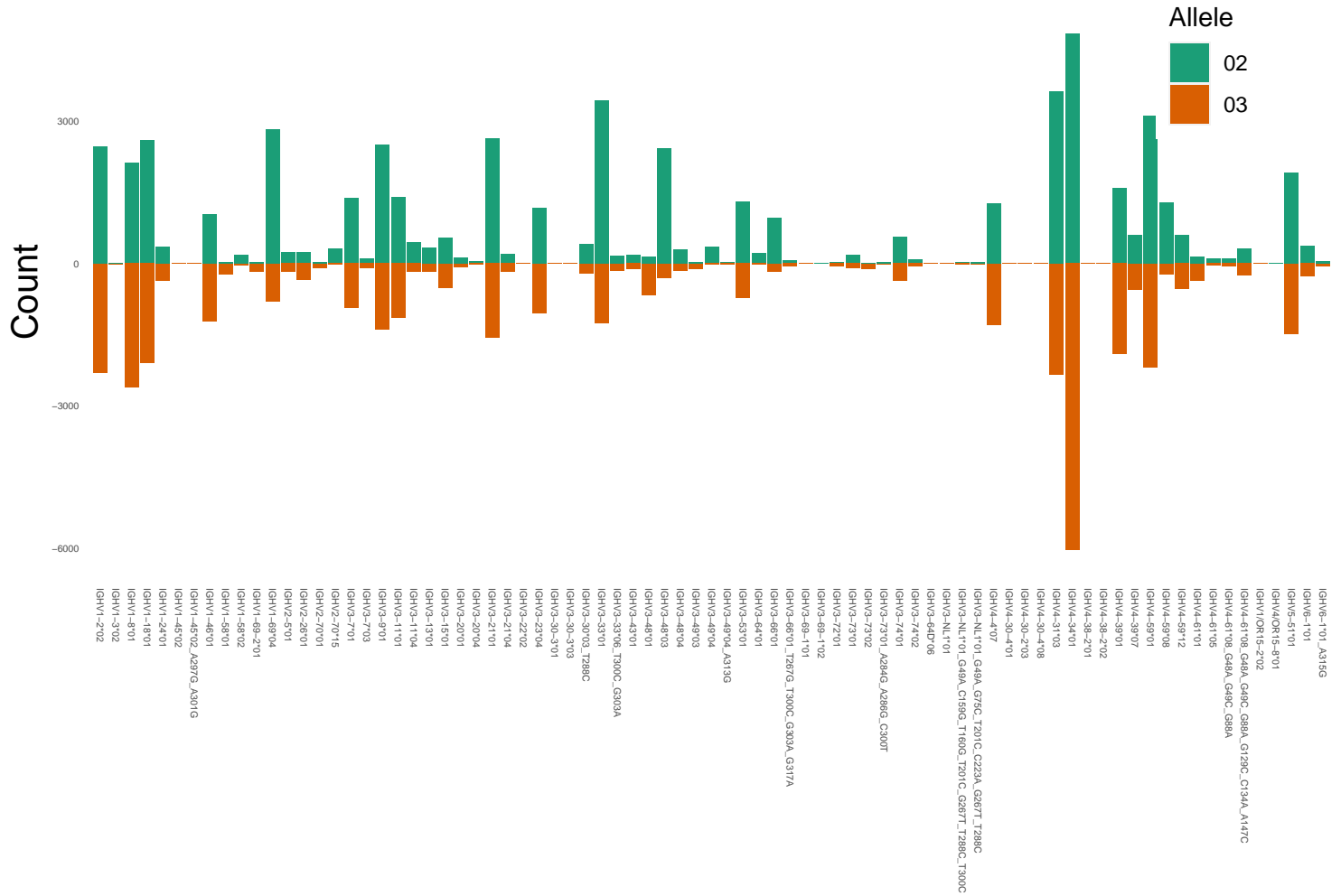
1 sequences assigned  
1 (100%) exact matches, in which:  
1 unique CDR3  
1 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.