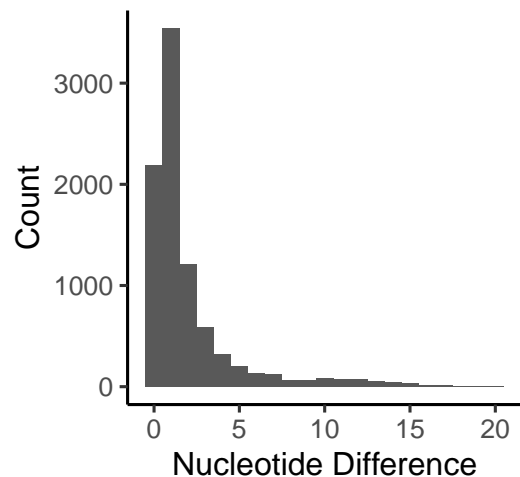


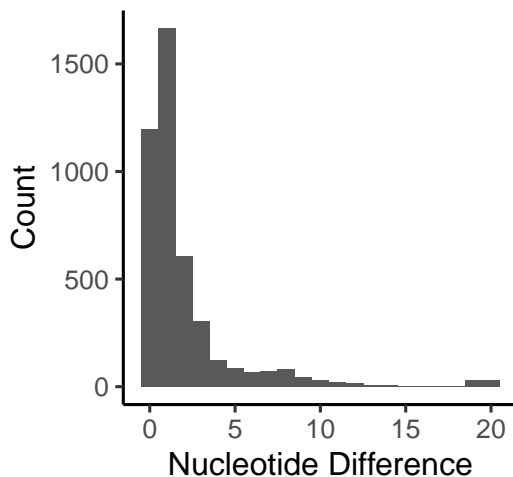
### IGHV1-2\*02

8861 sequences assigned  
2185 (24.7%) exact matches, in which:  
1740 unique CDR3  
7 unique J



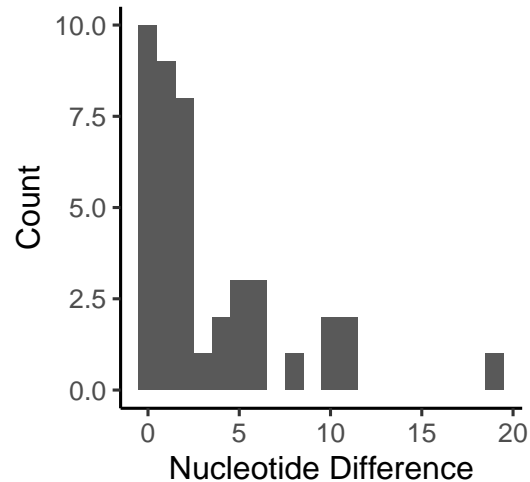
### IGHV1-8\*01

4436 sequences assigned  
1199 (27%) exact matches, in which:  
1005 unique CDR3  
7 unique J



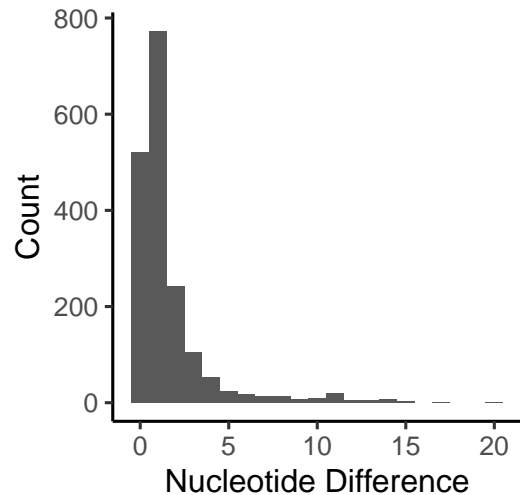
### IGHV1-45\*03

43 sequences assigned  
10 (23.3%) exact matches, in which:  
7 unique CDR3  
4 unique J



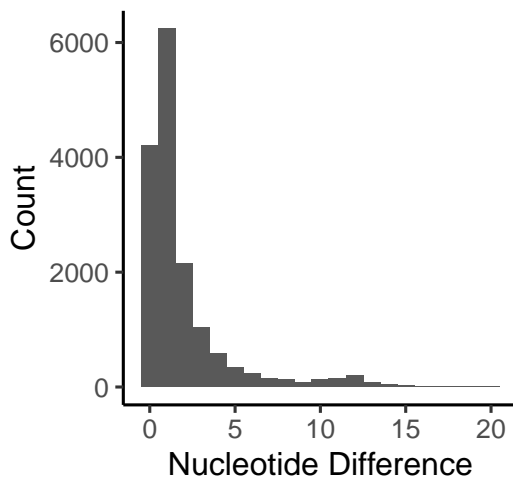
### IGHV1-2\*04

1832 sequences assigned  
520 (28.4%) exact matches, in which:  
431 unique CDR3  
7 unique J



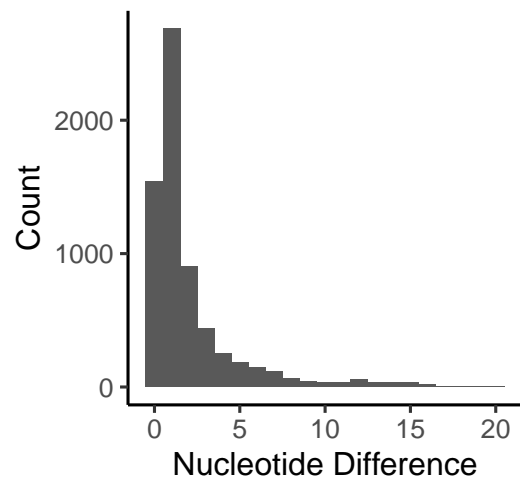
### IGHV1-18\*01

15911 sequences assigned  
4209 (26.5%) exact matches, in which:  
3428 unique CDR3  
7 unique J



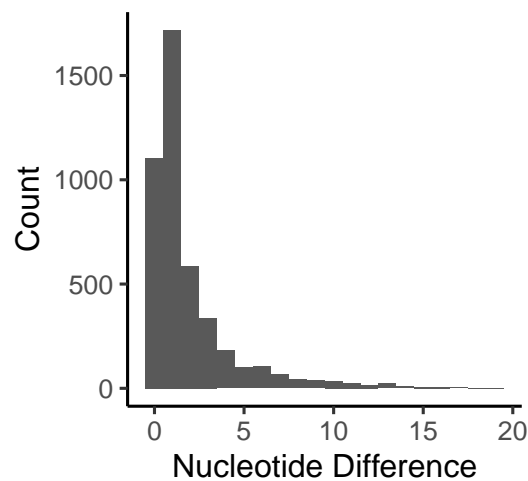
### IGHV1-46\*01

6663 sequences assigned  
1544 (23.2%) exact matches, in which:  
1241 unique CDR3  
7 unique J



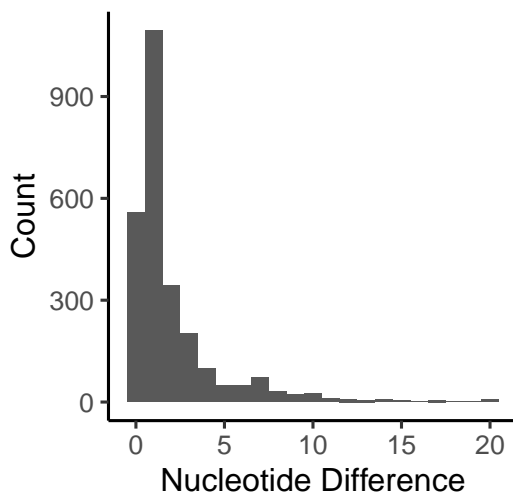
### IGHV1-3\*01

4419 sequences assigned  
1105 (25%) exact matches, in which:  
920 unique CDR3  
7 unique J



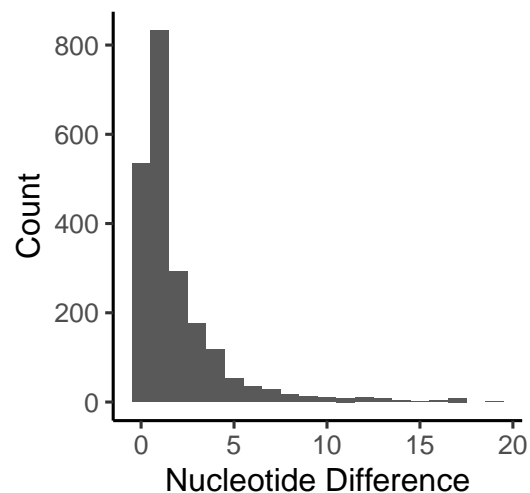
### IGHV1-24\*01

2622 sequences assigned  
559 (21.3%) exact matches, in which:  
428 unique CDR3  
7 unique J



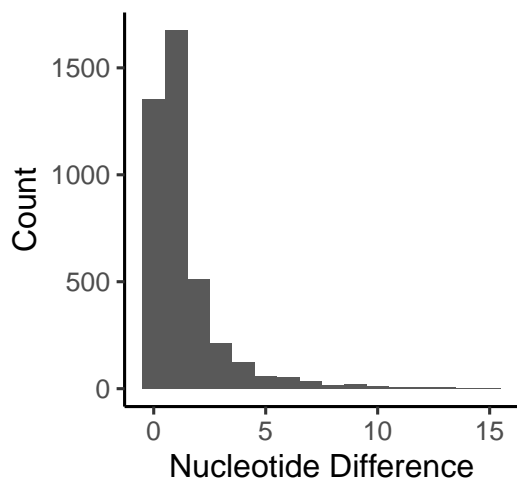
### IGHV1-58\*02

2160 sequences assigned  
534 (24.7%) exact matches, in which:  
423 unique CDR3  
7 unique J



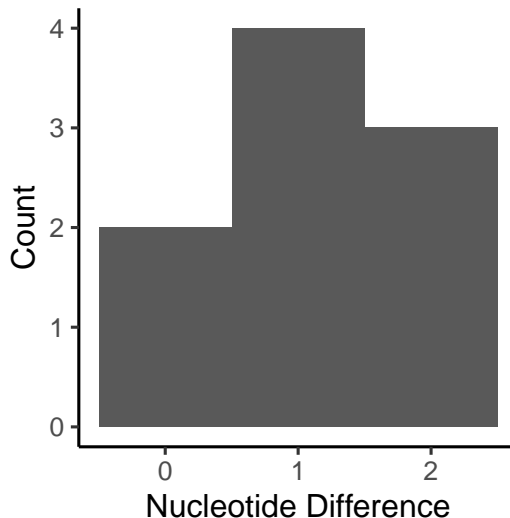
### IGHV1-69\*02

4094 sequences assigned  
1355 (33.1%) exact matches, in which:  
1087 unique CDR3  
7 unique J



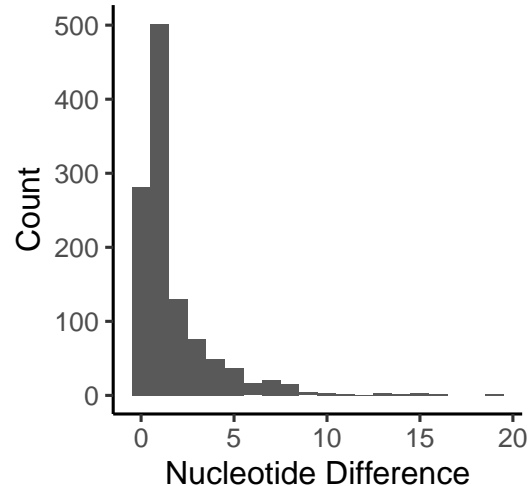
### IGHV1-69D\*01

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



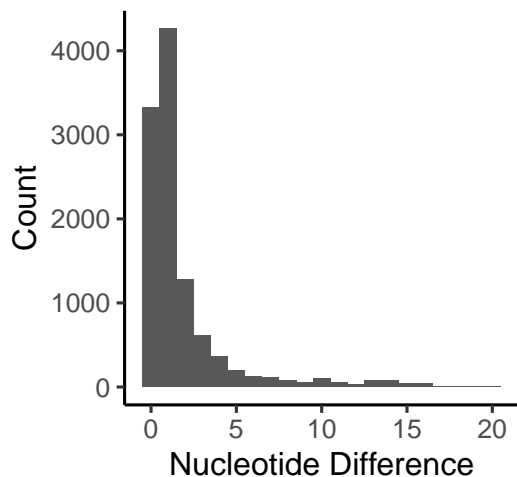
### IGHV2-70\*15

1169 sequences assigned  
281 (24%) exact matches, in which:  
227 unique CDR3  
7 unique J



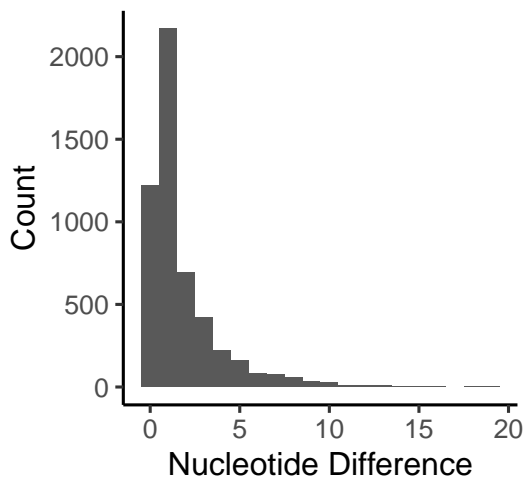
### IGHV1-69\*04

10878 sequences assigned  
3321 (30.5%) exact matches, in which:  
2698 unique CDR3  
7 unique J



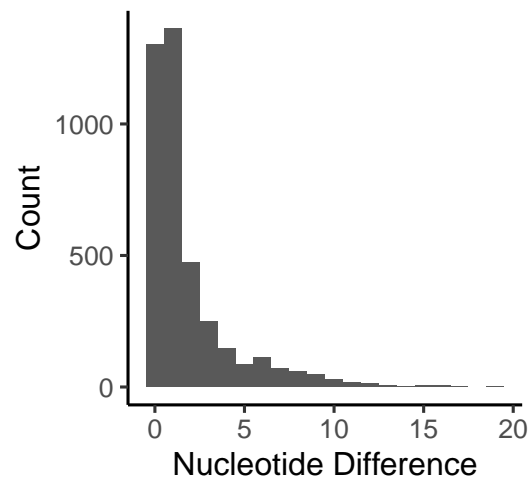
### IGHV2-5\*02

5229 sequences assigned  
1221 (23.4%) exact matches, in which:  
957 unique CDR3  
7 unique J



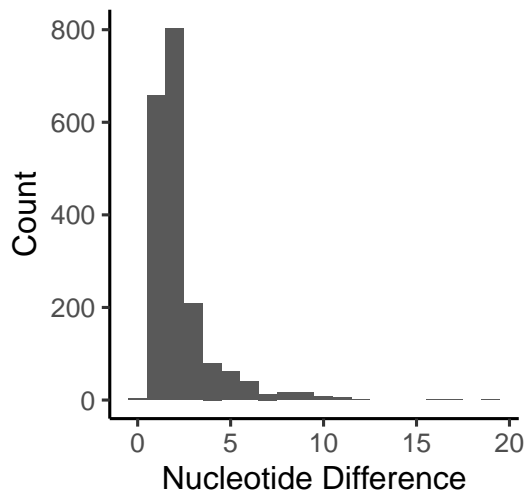
### IGHV3-7\*01

4001 sequences assigned  
1304 (32.6%) exact matches, in which:  
1105 unique CDR3  
7 unique J



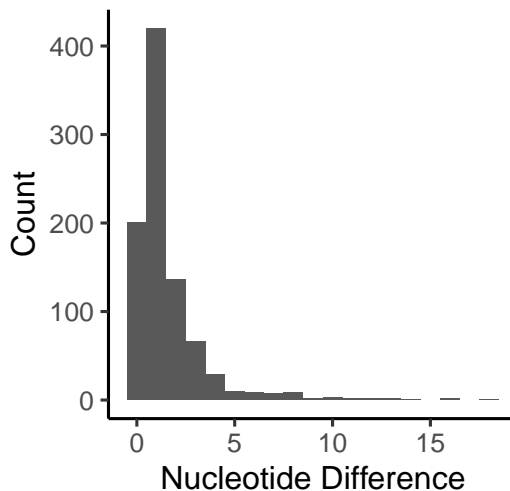
### IGHV1-69\*08

1922 sequences assigned  
4 (0.2%) exact matches, in which:  
4 unique CDR3  
4 unique J



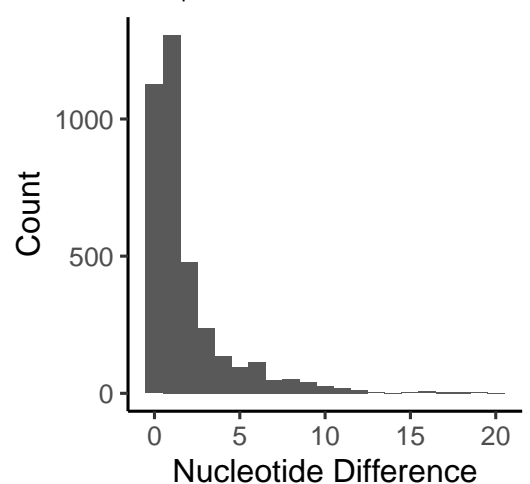
### IGHV2-26\*01

915 sequences assigned  
201 (22%) exact matches, in which:  
153 unique CDR3  
6 unique J



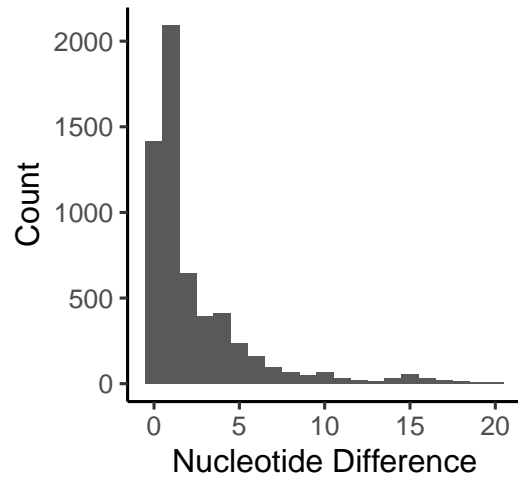
### IGHV3-7\*03

3739 sequences assigned  
1126 (30.1%) exact matches, in which:  
950 unique CDR3  
7 unique J



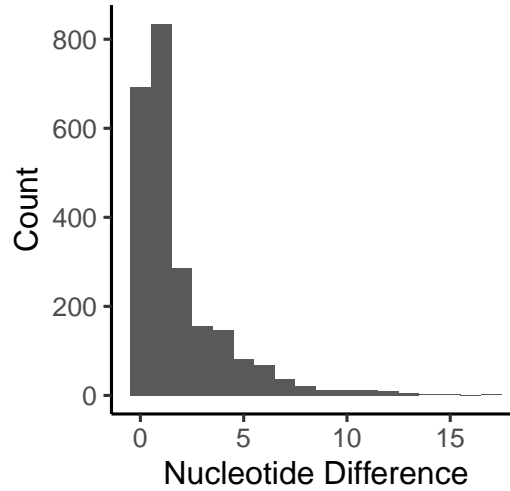
### IGHV3-9\*01

5906 sequences assigned  
1418 (24%) exact matches, in which:  
1099 unique CDR3  
7 unique J



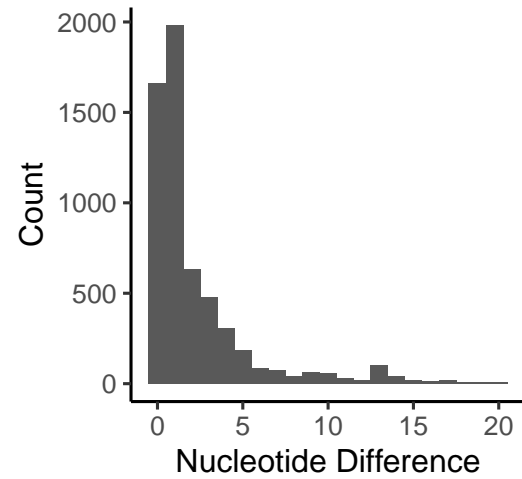
### IGHV3-11\*06

2400 sequences assigned  
693 (28.9%) exact matches, in which:  
539 unique CDR3  
7 unique J



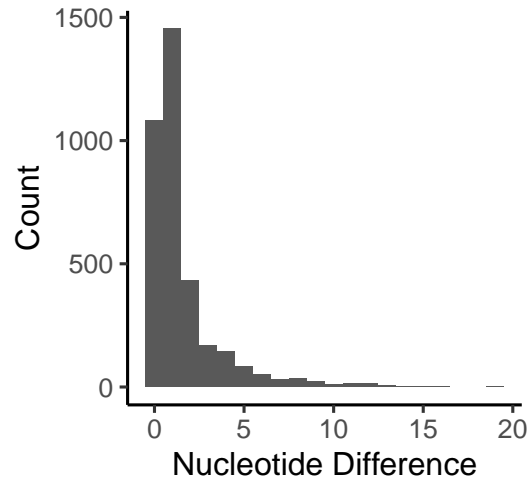
### IGHV3-15\*01

5898 sequences assigned  
1663 (28.2%) exact matches, in which:  
1308 unique CDR3  
7 unique J



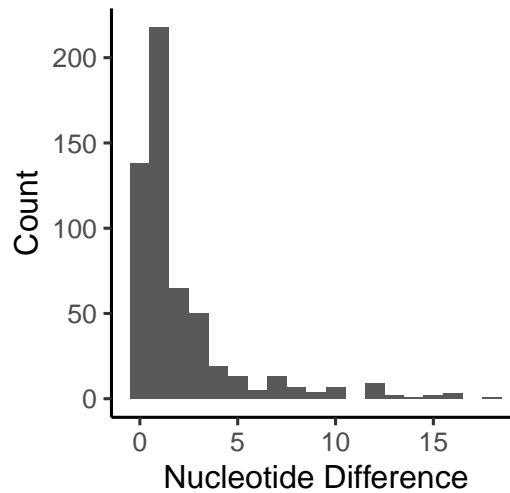
### IGHV3-11\*01

3570 sequences assigned  
1080 (30.3%) exact matches, in which:  
864 unique CDR3  
7 unique J



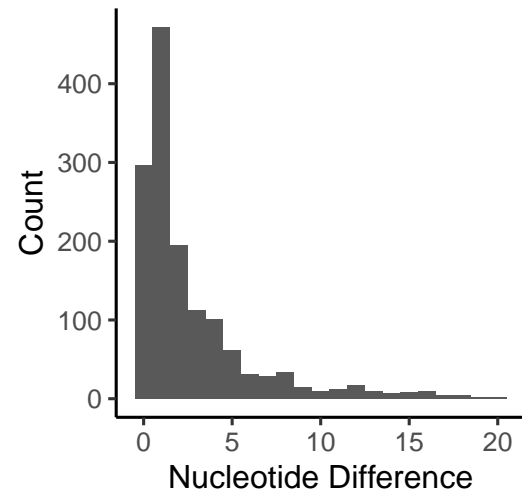
### IGHV3-13\*01

560 sequences assigned  
138 (24.6%) exact matches, in which:  
103 unique CDR3  
6 unique J



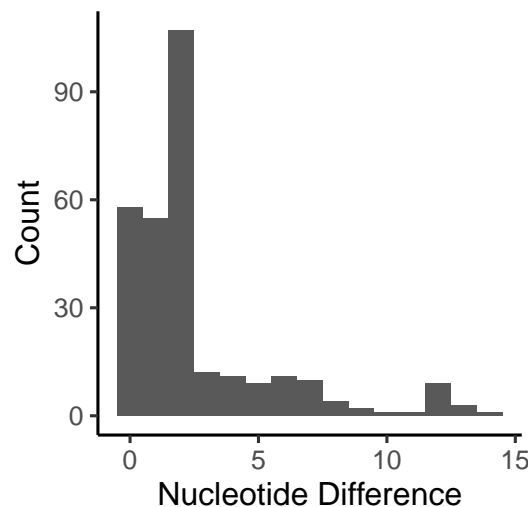
### IGHV3-20\*04

1435 sequences assigned  
296 (20.6%) exact matches, in which:  
245 unique CDR3  
7 unique J



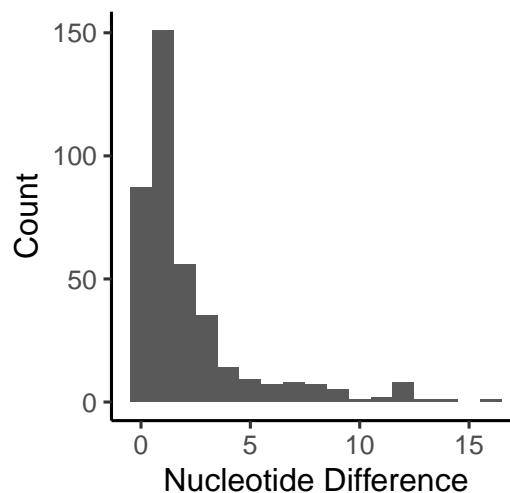
### IGHV3-11\*04

316 sequences assigned  
58 (18.4%) exact matches, in which:  
58 unique CDR3  
7 unique J



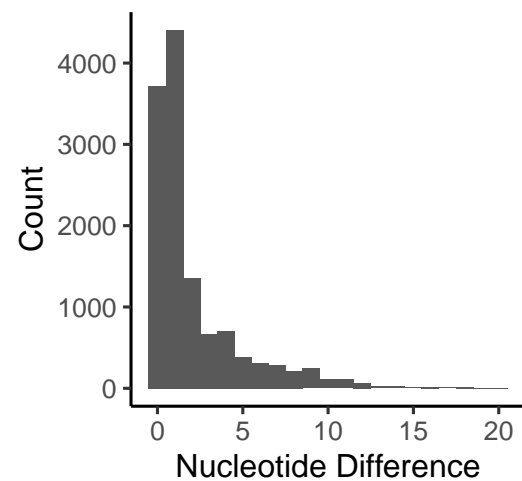
### IGHV3-13\*05

393 sequences assigned  
87 (22.1%) exact matches, in which:  
67 unique CDR3  
5 unique J



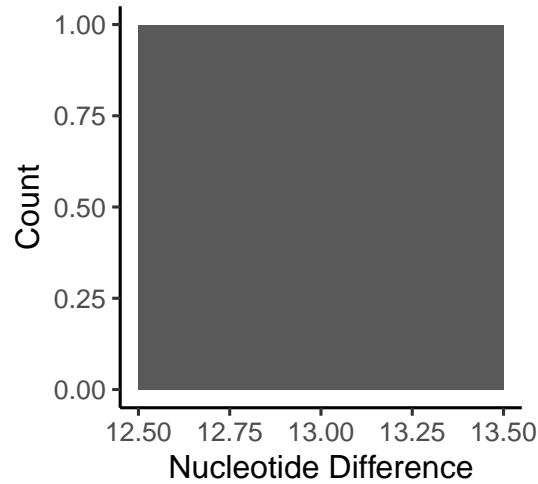
### IGHV3-21\*01

12723 sequences assigned  
3721 (29.2%) exact matches, in which:  
2965 unique CDR3  
7 unique J



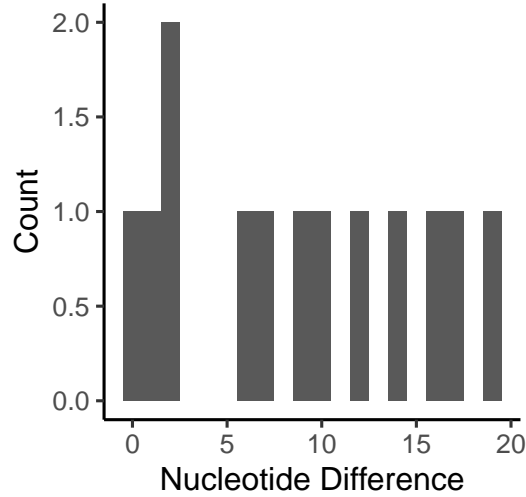
### IGHV3-22\*02

1 sequences assigned  
No exact matches.



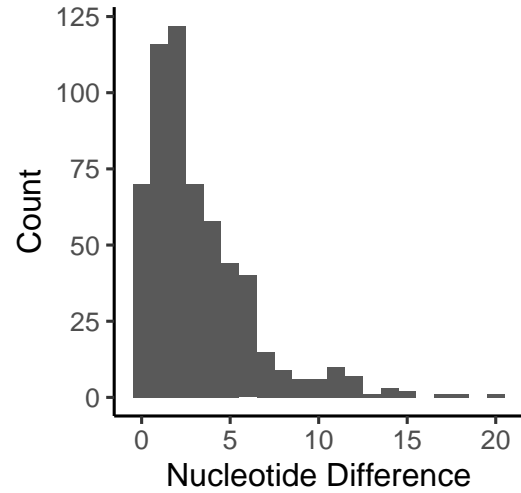
### IGHV3-30-5\*01

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



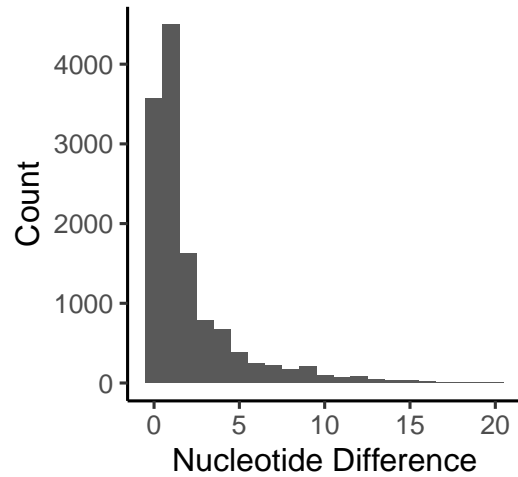
### IGHV3-30\*07

584 sequences assigned  
70 (12%) exact matches, in which:  
70 unique CDR3  
6 unique J



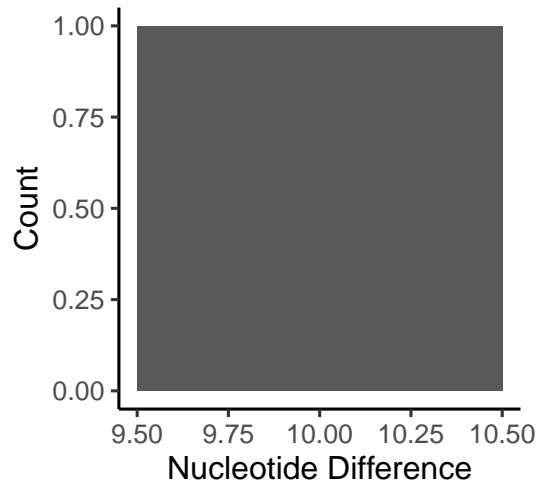
### IGHV3-23\*03

12791 sequences assigned  
3564 (27.9%) exact matches, in which:  
2936 unique CDR3  
7 unique J



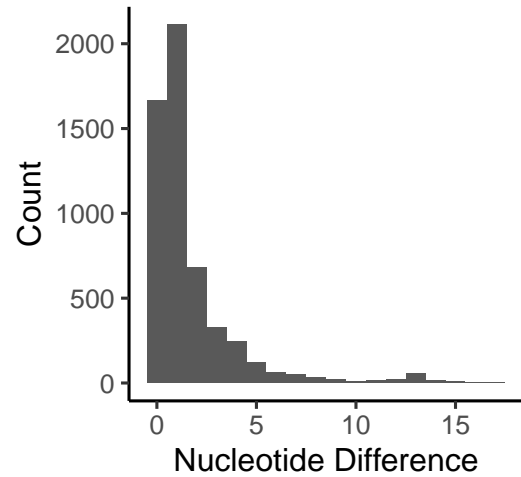
### IGHV3-30-5\*02

1 sequences assigned  
No exact matches.



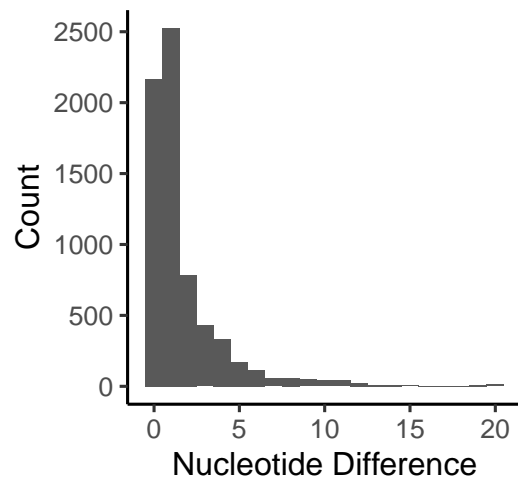
### IGHV3-33\*01

5446 sequences assigned  
1663 (30.5%) exact matches, in which:  
1350 unique CDR3  
7 unique J



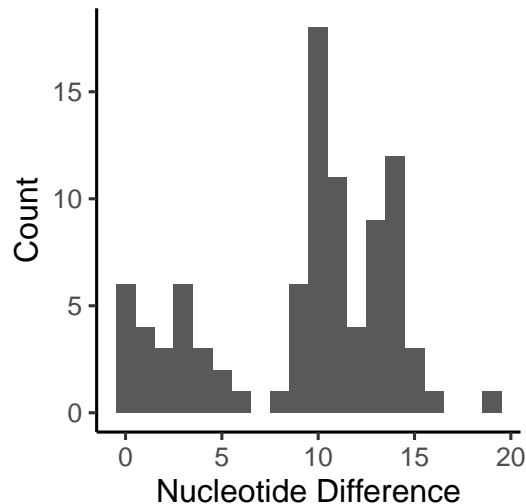
### IGHV3-30\*01

6866 sequences assigned  
2168 (31.6%) exact matches, in which:  
1743 unique CDR3  
7 unique J



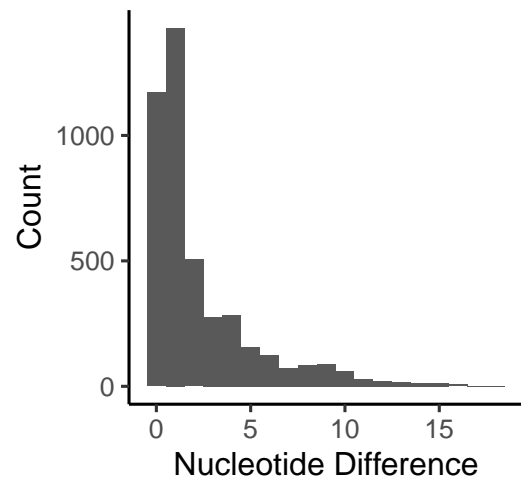
### IGHV3-30-3\*03

91 sequences assigned  
6 (6.6%) exact matches, in which:  
6 unique CDR3  
2 unique J



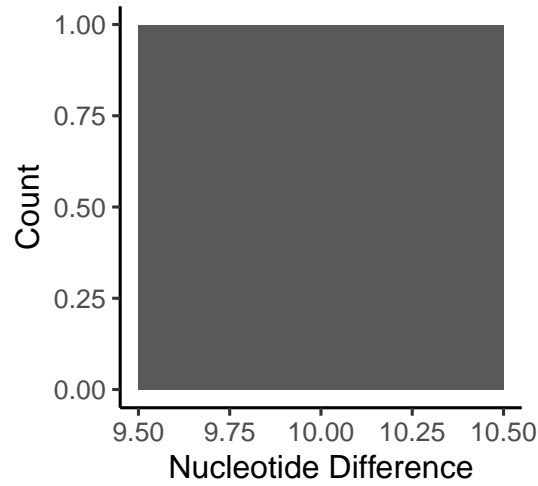
### IGHV3-33\*08

4367 sequences assigned  
1171 (26.8%) exact matches, in which:  
934 unique CDR3  
7 unique J



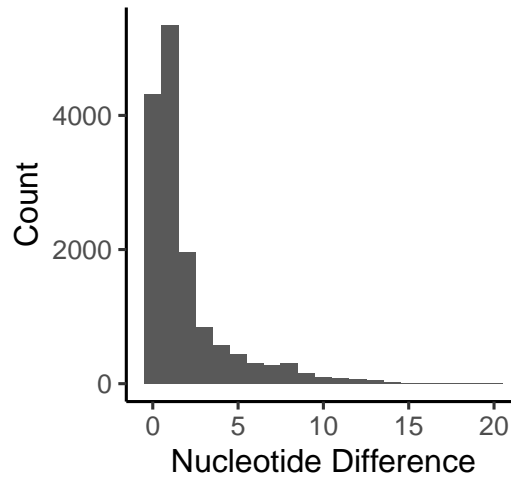
### IGHV3-35\*01

1 sequences assigned  
No exact matches.



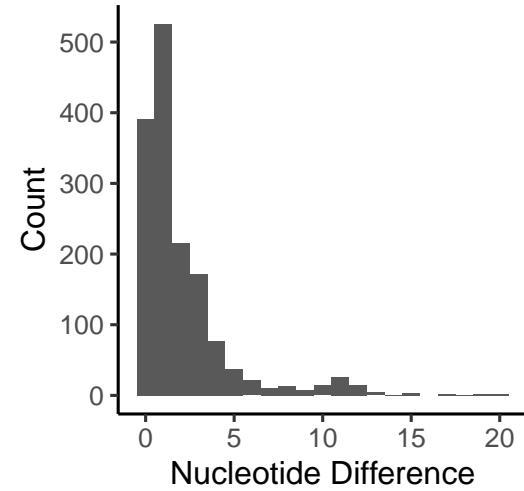
### IGHV3-48\*03

14915 sequences assigned  
4316 (28.9%) exact matches, in which:  
3540 unique CDR3  
7 unique J



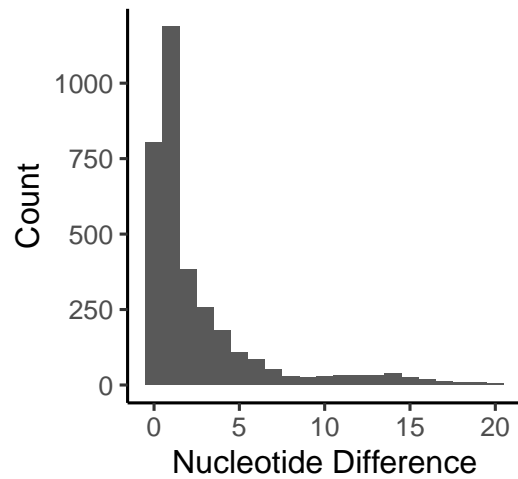
### IGHV3-53\*04

1551 sequences assigned  
391 (25.2%) exact matches, in which:  
305 unique CDR3  
7 unique J



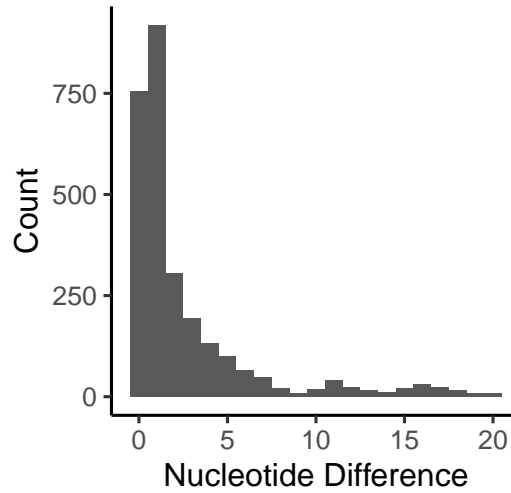
### IGHV3-43\*02

3355 sequences assigned  
804 (24%) exact matches, in which:  
650 unique CDR3  
7 unique J



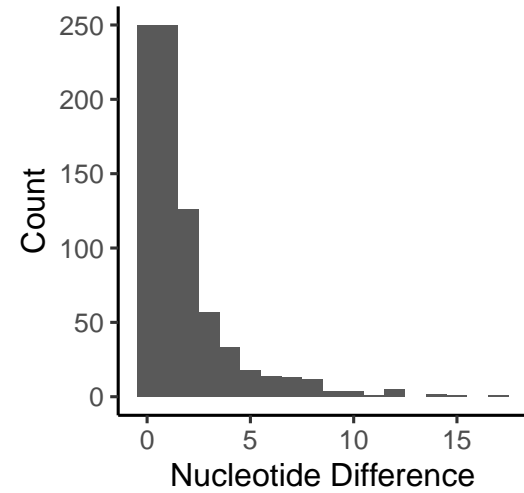
### IGHV3-49\*04

2782 sequences assigned  
756 (27.2%) exact matches, in which:  
596 unique CDR3  
7 unique J



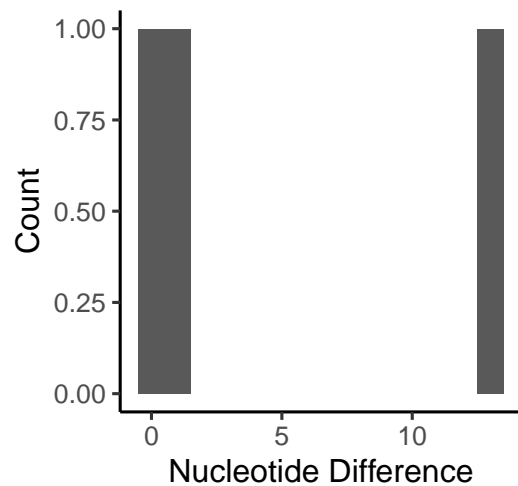
### IGHV3-64\*01

791 sequences assigned  
250 (31.6%) exact matches, in which:  
213 unique CDR3  
7 unique J



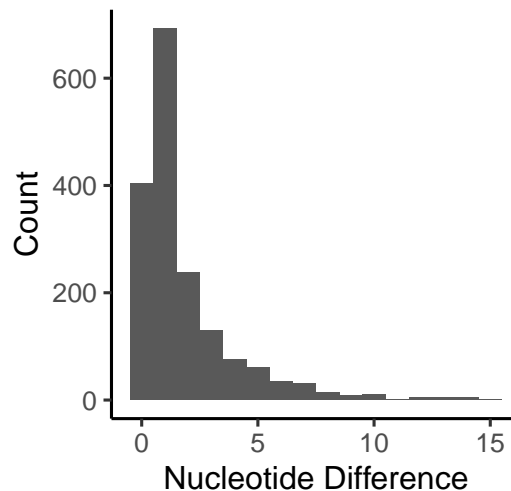
### IGHV3-47\*01

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



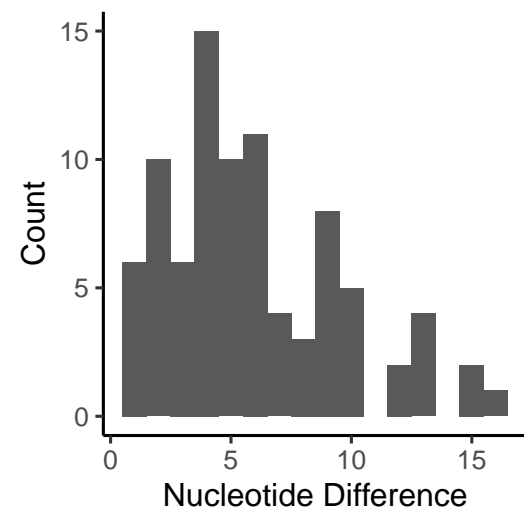
### IGHV3-53\*02

1717 sequences assigned  
404 (23.5%) exact matches, in which:  
316 unique CDR3  
6 unique J



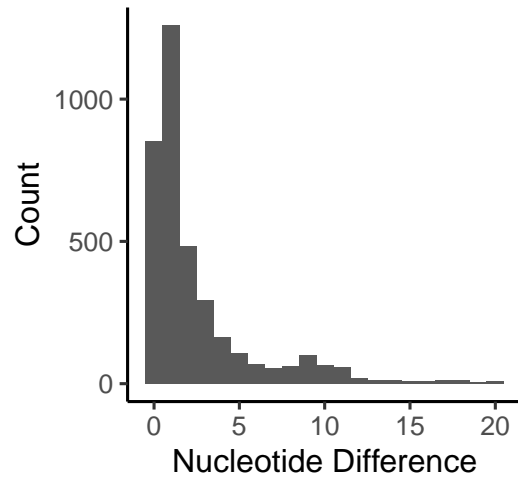
### IGHV3-64\*04

87 sequences assigned  
No exact matches.



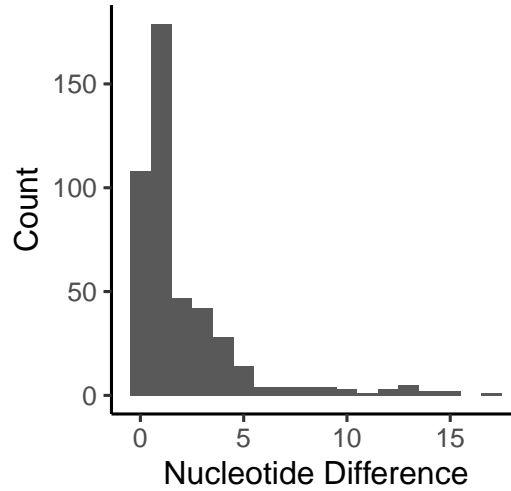
### IGHV3-66\*01

3700 sequences assigned  
852 (23%) exact matches, in which:  
672 unique CDR3  
7 unique J



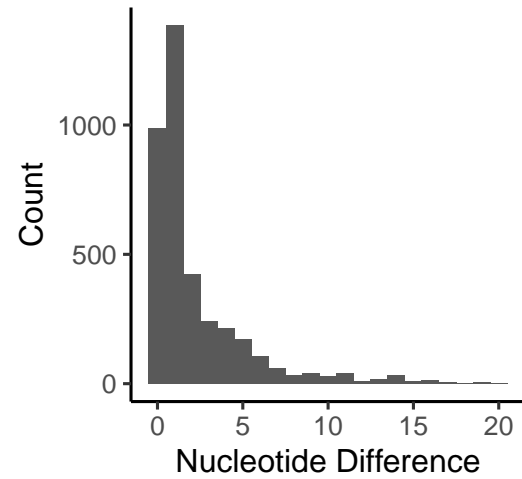
### IGHV3-72\*01

451 sequences assigned  
108 (23.9%) exact matches, in which:  
81 unique CDR3  
6 unique J



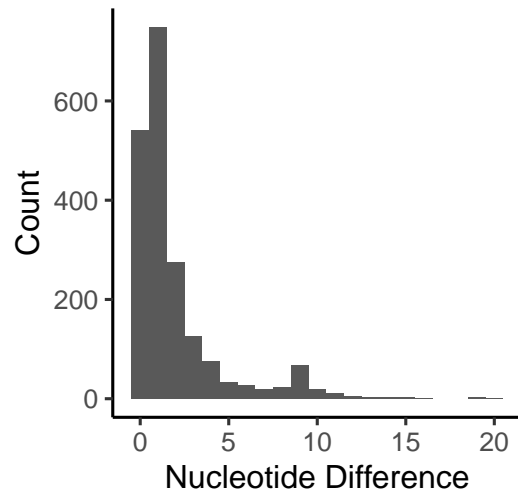
### IGHV3-74\*01

3839 sequences assigned  
988 (25.7%) exact matches, in which:  
809 unique CDR3  
7 unique J



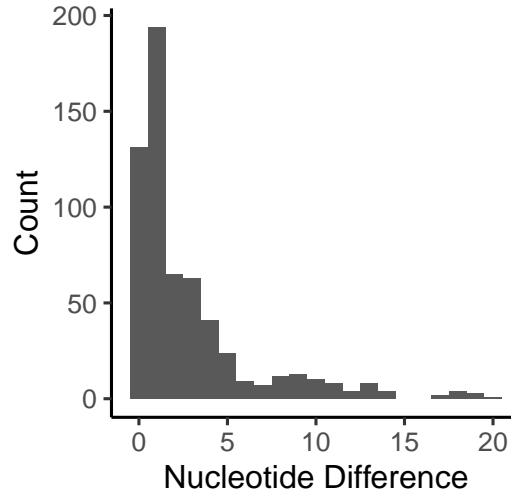
### IGHV3-66\*02

2002 sequences assigned  
541 (27%) exact matches, in which:  
422 unique CDR3  
7 unique J



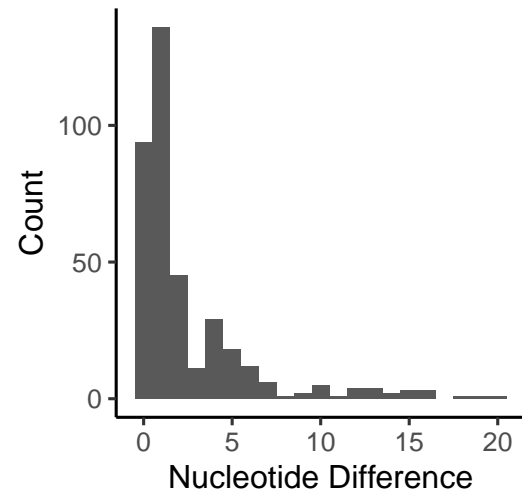
### IGHV3-73\*01

605 sequences assigned  
131 (21.7%) exact matches, in which:  
107 unique CDR3  
6 unique J



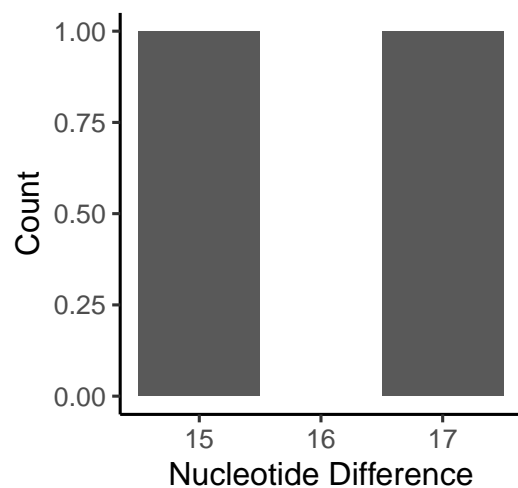
### IGHV3-43D\*04

380 sequences assigned  
94 (24.7%) exact matches, in which:  
81 unique CDR3  
6 unique J



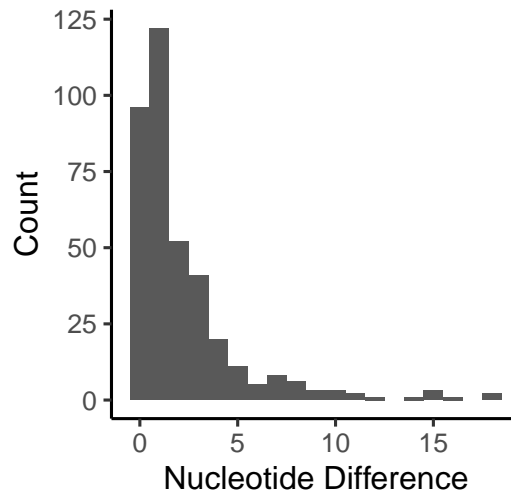
### IGHV3-71\*04

2 sequences assigned  
No exact matches.



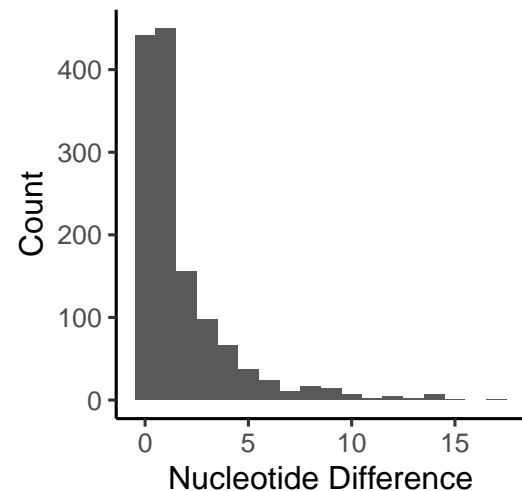
### IGHV3-73\*02

377 sequences assigned  
96 (25.5%) exact matches, in which:  
83 unique CDR3  
6 unique J



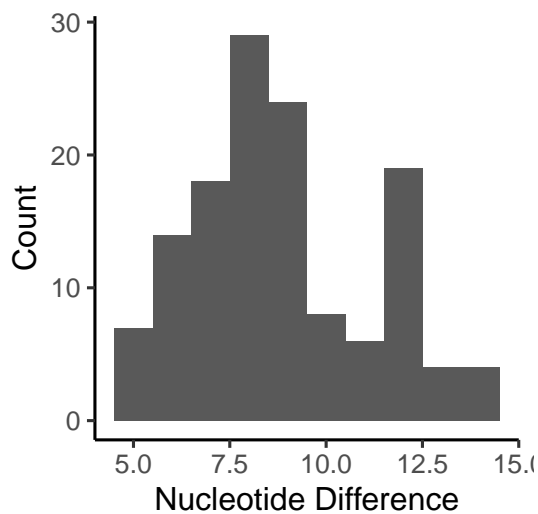
### IGHV3-64D\*06

1340 sequences assigned  
441 (32.9%) exact matches, in which:  
370 unique CDR3  
7 unique J



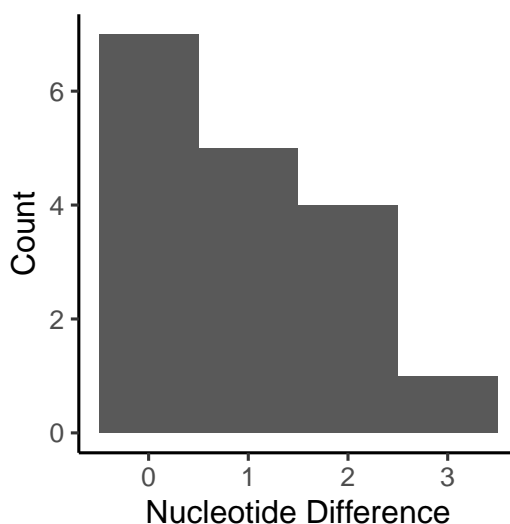
### IGHV3–NL1\*01

134 sequences assigned  
No exact matches.



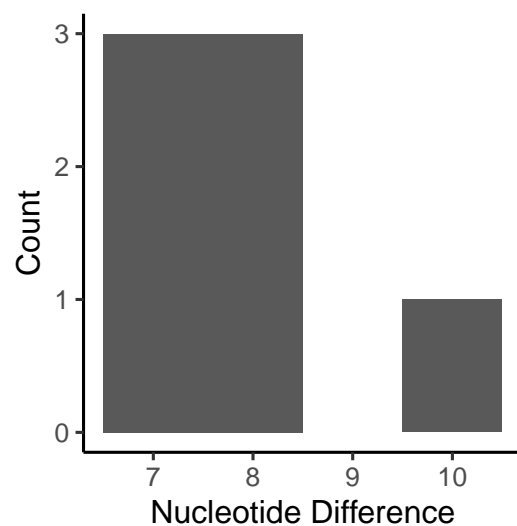
### IGHV4–28\*02

17 sequences assigned  
7 (41.2%) exact matches, in which:  
6 unique CDR3  
1 unique J



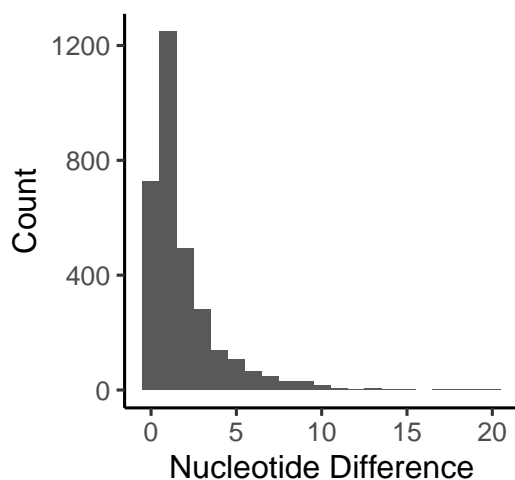
### IGHV4–30–4\*07

9 sequences assigned  
No exact matches.



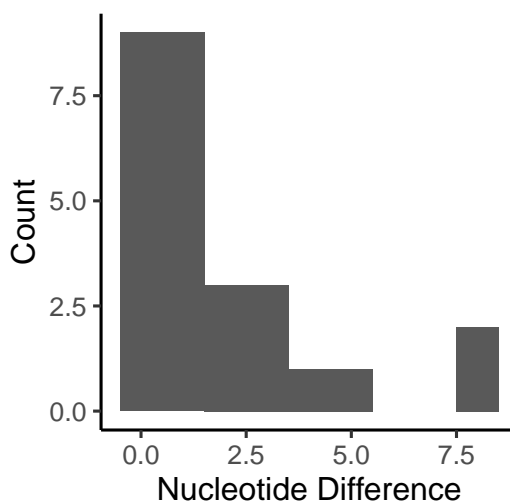
### IGHV4–4\*02

3221 sequences assigned  
726 (22.5%) exact matches, in which:  
582 unique CDR3  
7 unique J



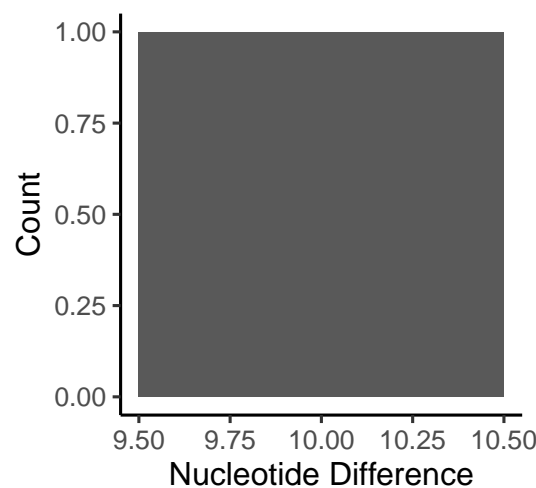
### IGHV4–28\*07

28 sequences assigned  
9 (32.1%) exact matches, in which:  
6 unique CDR3  
1 unique J



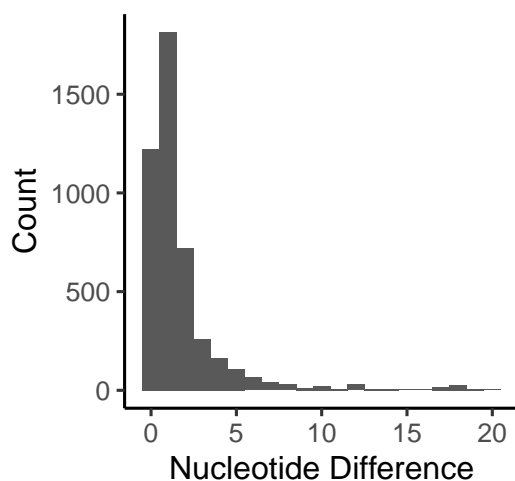
### IGHV4–30–4\*08

1 sequences assigned  
No exact matches.



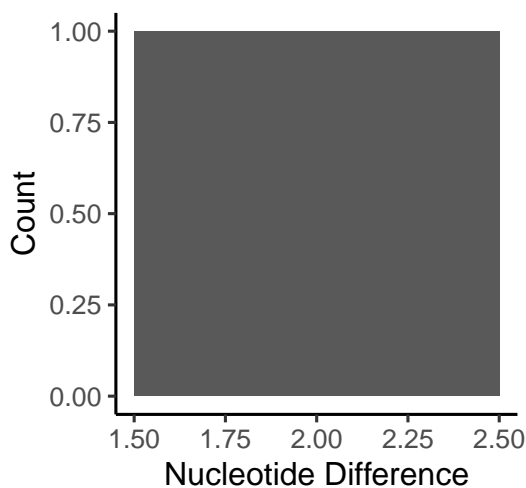
### IGHV4–4\*07

4583 sequences assigned  
1223 (26.7%) exact matches, in which:  
993 unique CDR3  
7 unique J



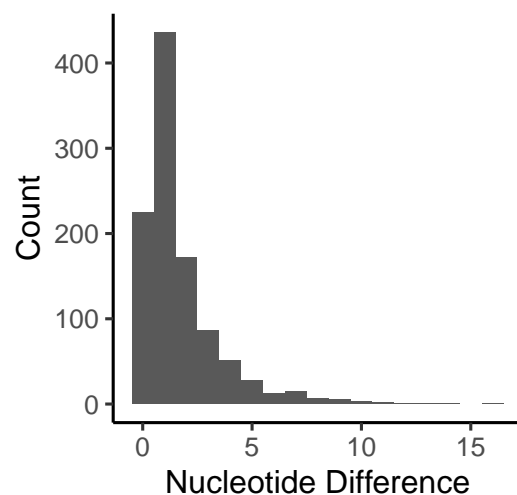
### IGHV4–30–2\*01

1 sequences assigned  
No exact matches.



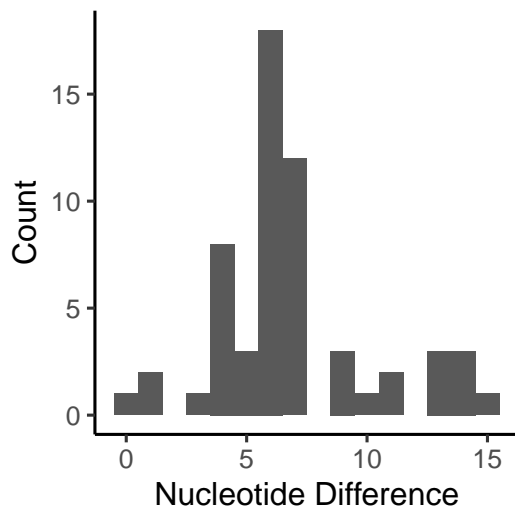
### IGHV4–31\*01

1053 sequences assigned  
225 (21.4%) exact matches, in which:  
183 unique CDR3  
6 unique J



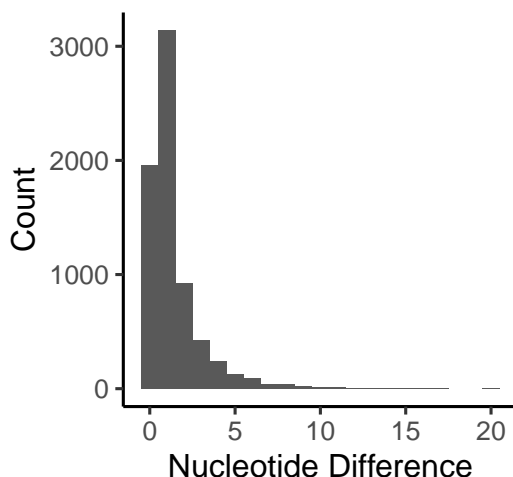
## IGHV4-31\*03

58 sequences assigned  
1 (1.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



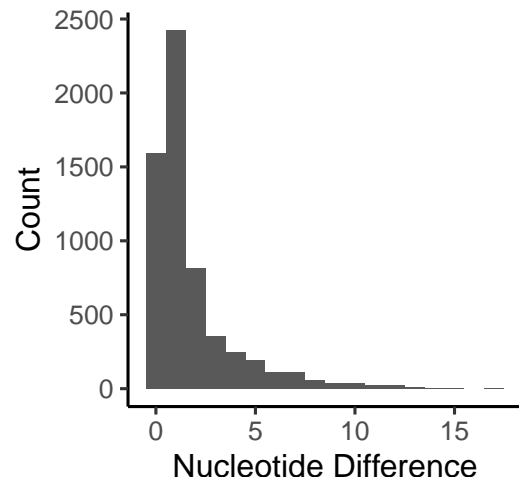
## IGHV4-39\*01

7063 sequences assigned  
1960 (27.8%) exact matches, in which:  
1585 unique CDR3  
7 unique J



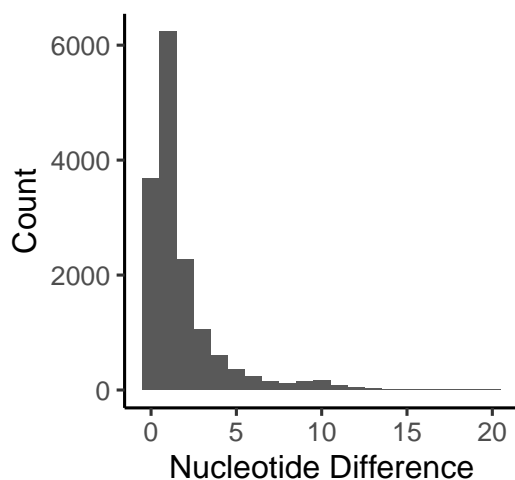
## IGHV4-59\*08

6063 sequences assigned  
1592 (26.3%) exact matches, in which:  
1281 unique CDR3  
7 unique J



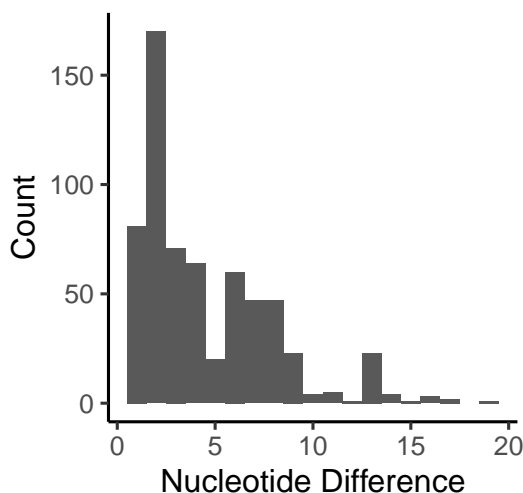
## IGHV4-34\*01

15263 sequences assigned  
3682 (24.1%) exact matches, in which:  
2927 unique CDR3  
7 unique J



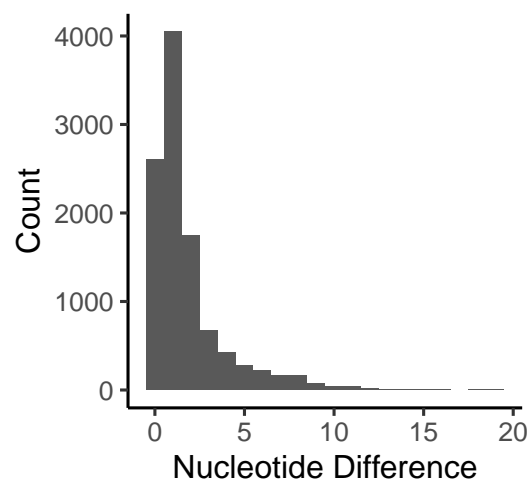
## IGHV4-39\*07

634 sequences assigned  
No exact matches.



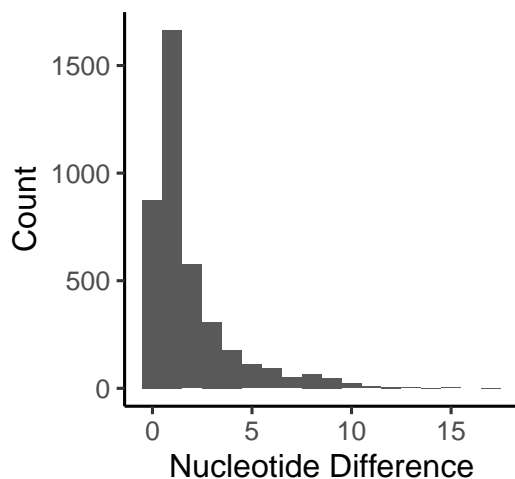
## IGHV4-61\*02

10483 sequences assigned  
2602 (24.8%) exact matches, in which:  
2115 unique CDR3  
7 unique J



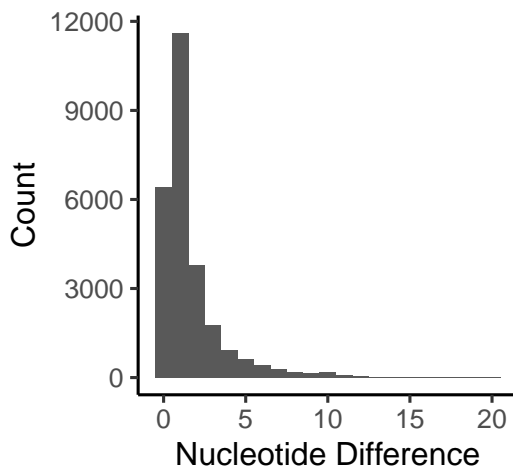
## IGHV4-38-2\*02\_A70G

4041 sequences assigned  
875 (21.7%) exact matches, in which:  
706 unique CDR3  
7 unique J



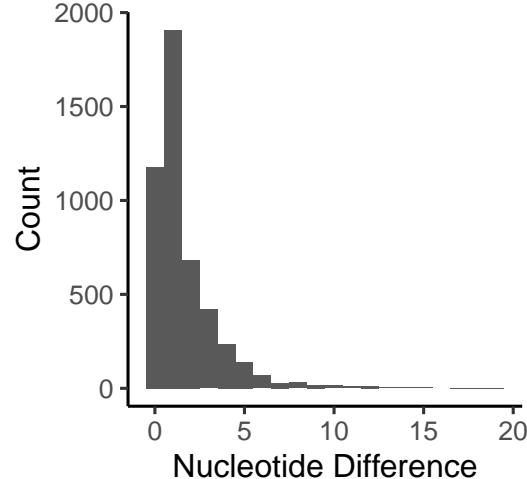
## IGHV4-59\*01

26636 sequences assigned  
6427 (24.1%) exact matches, in which:  
4911 unique CDR3  
7 unique J



## IGHV5-10-1\*03

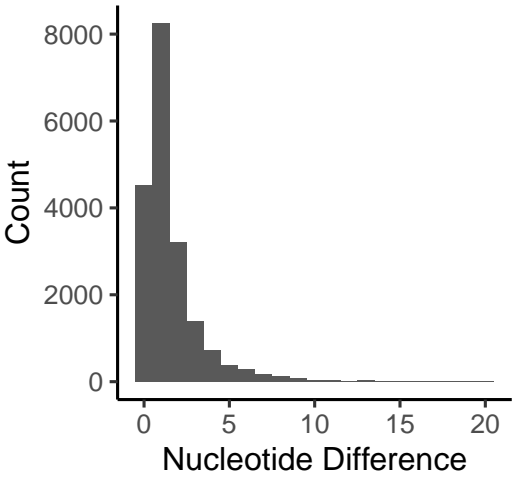
4792 sequences assigned  
1177 (24.6%) exact matches, in which:  
951 unique CDR3  
7 unique J





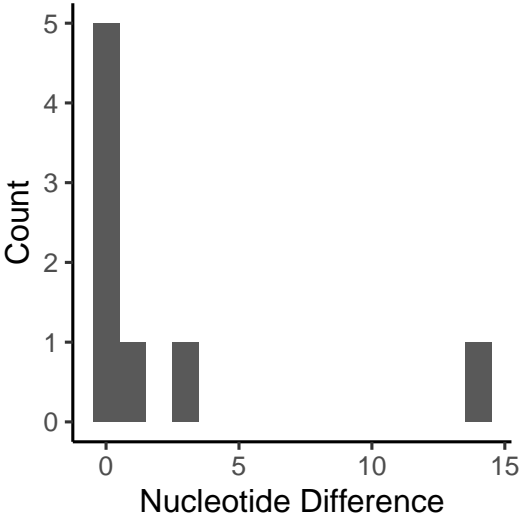
IGHV5-51\*01

19385 sequences assigned  
4531 (23.4%) exact matches, in which:  
3482 unique CDR3  
7 unique J



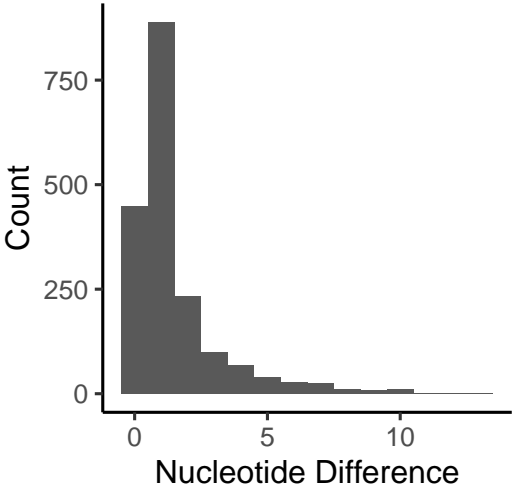
IGHV7-4-1\*01

9 sequences assigned  
5 (55.6%) exact matches, in which:  
5 unique CDR3  
1 unique J



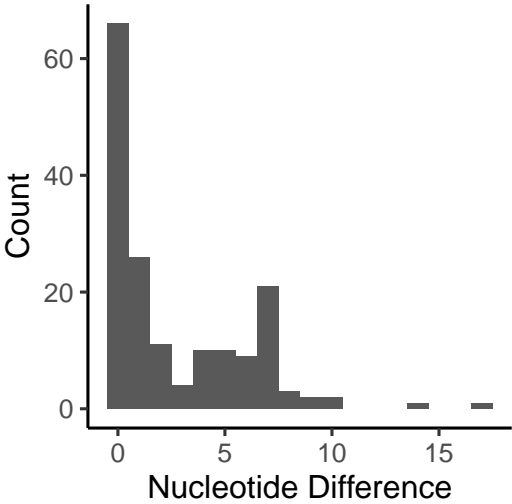
IGHV6-1\*01

1871 sequences assigned  
449 (24%) exact matches, in which:  
326 unique CDR3  
6 unique J

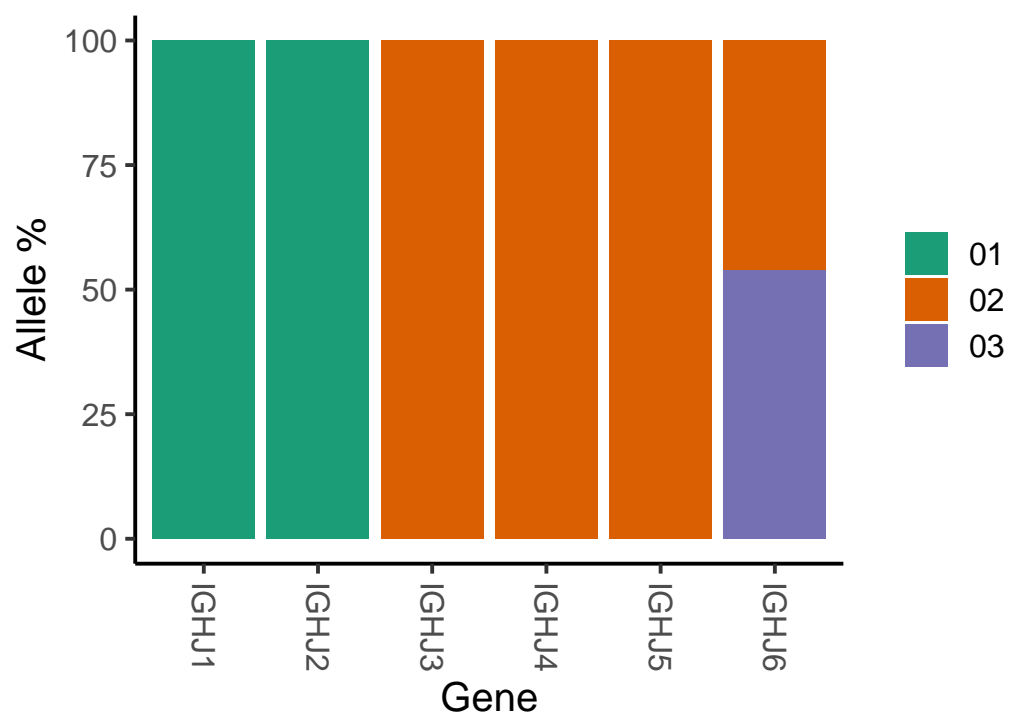


IGHV6-1\*01\_A315G

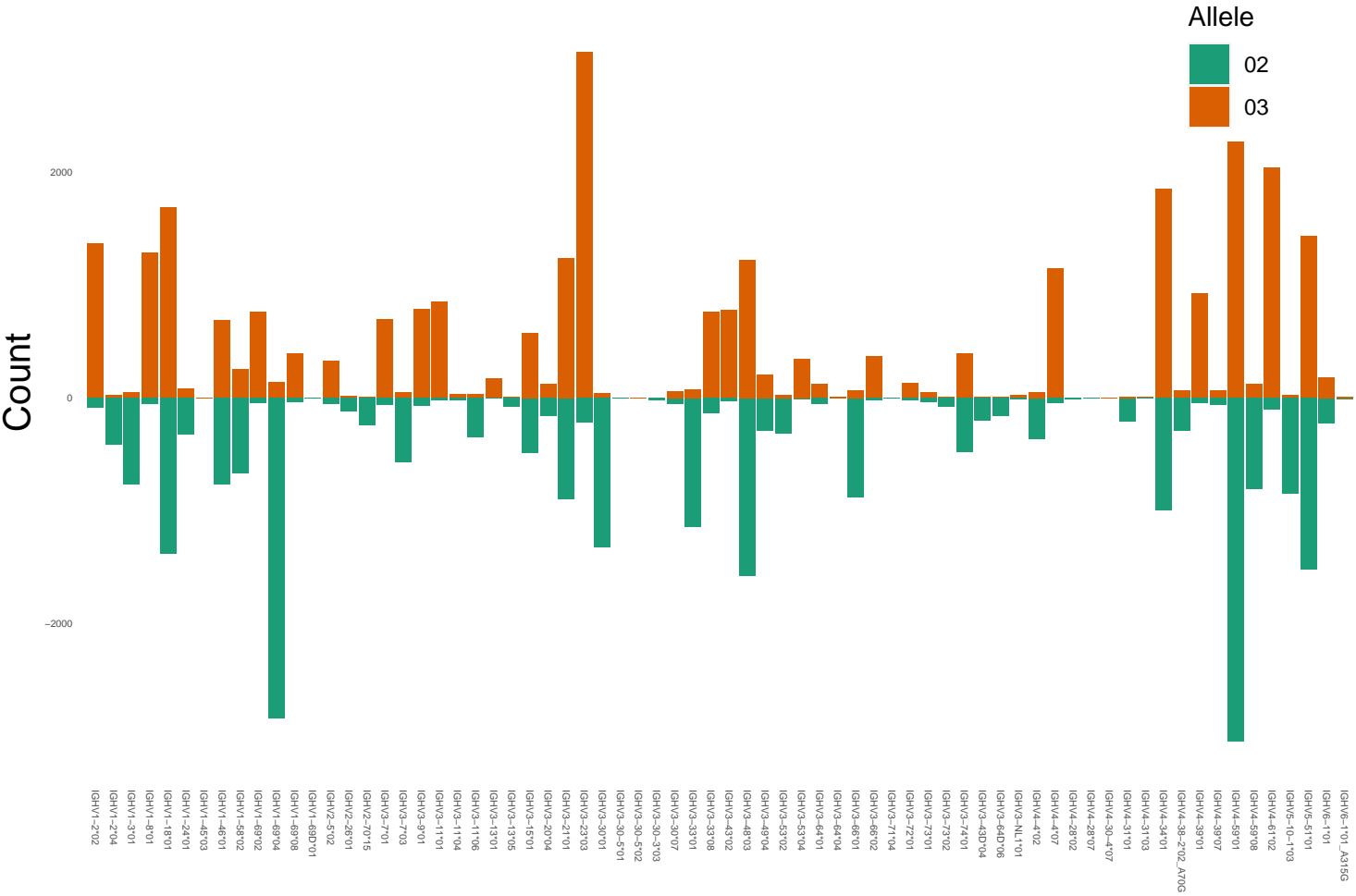
166 sequences assigned  
66 (39.8%) exact matches, in which:  
65 unique CDR3  
6 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.