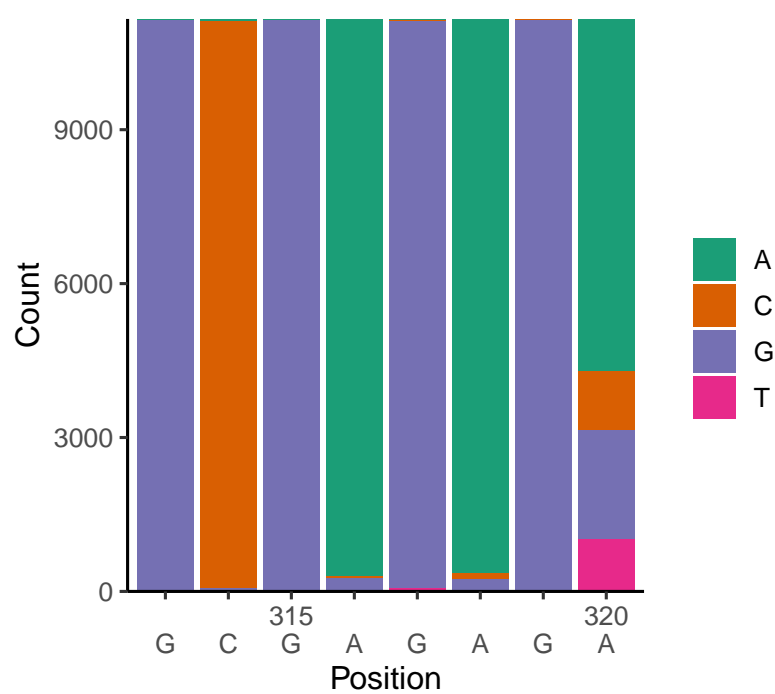
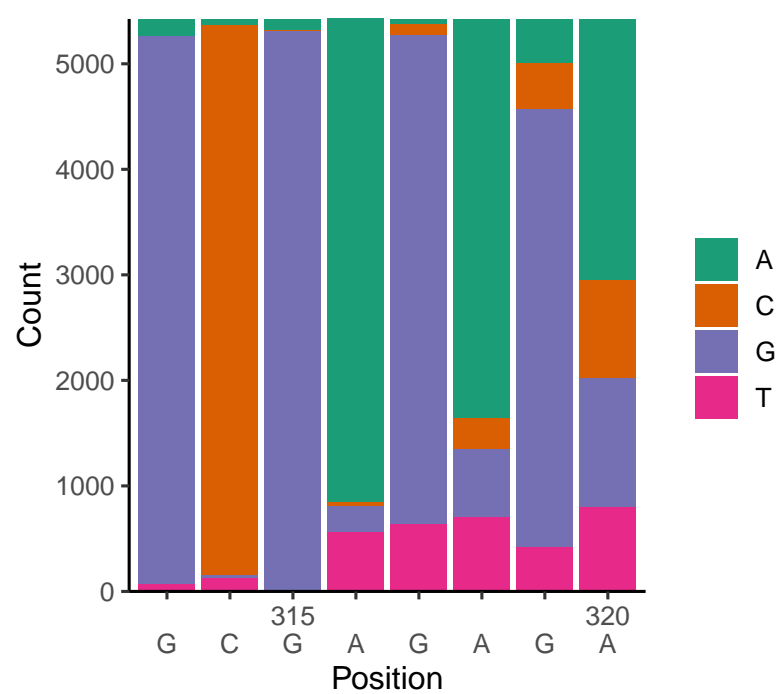


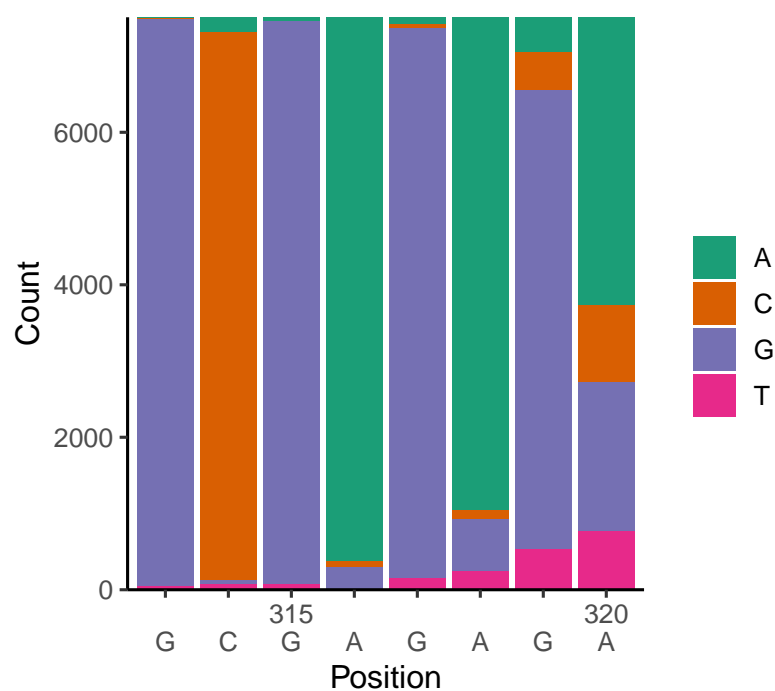
Gene IGHV1-69\*08\_S0647



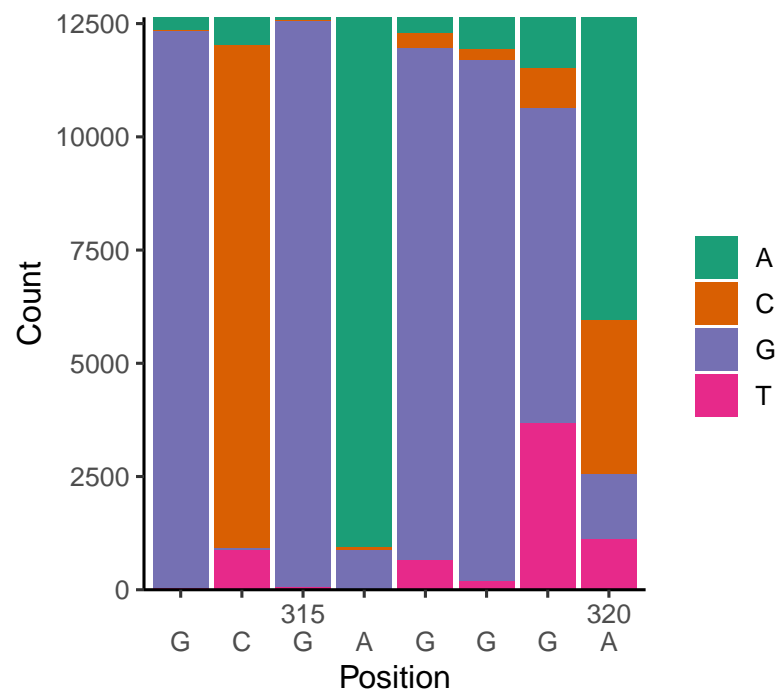
Gene IGHV3-53\*02\_S0744



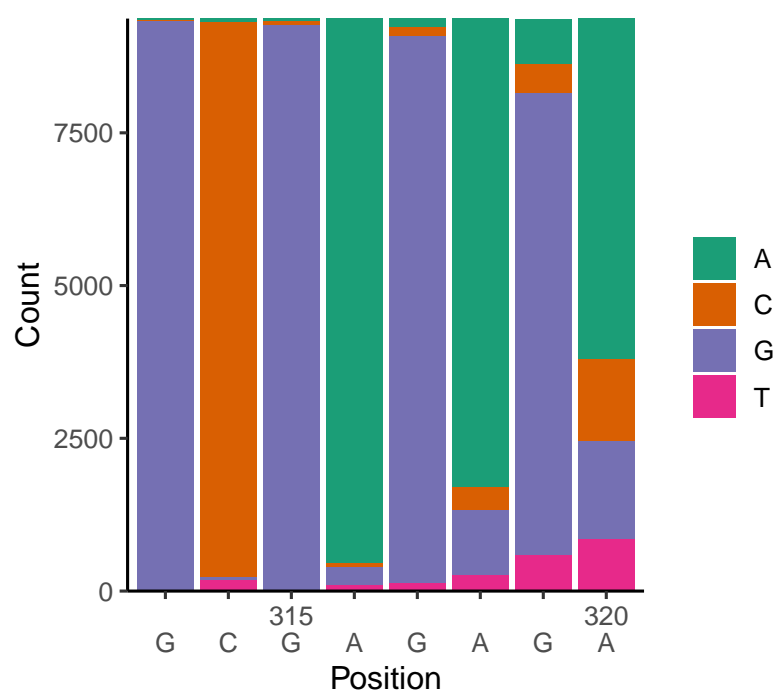
Gene IGHV3-20\*01\_S2478



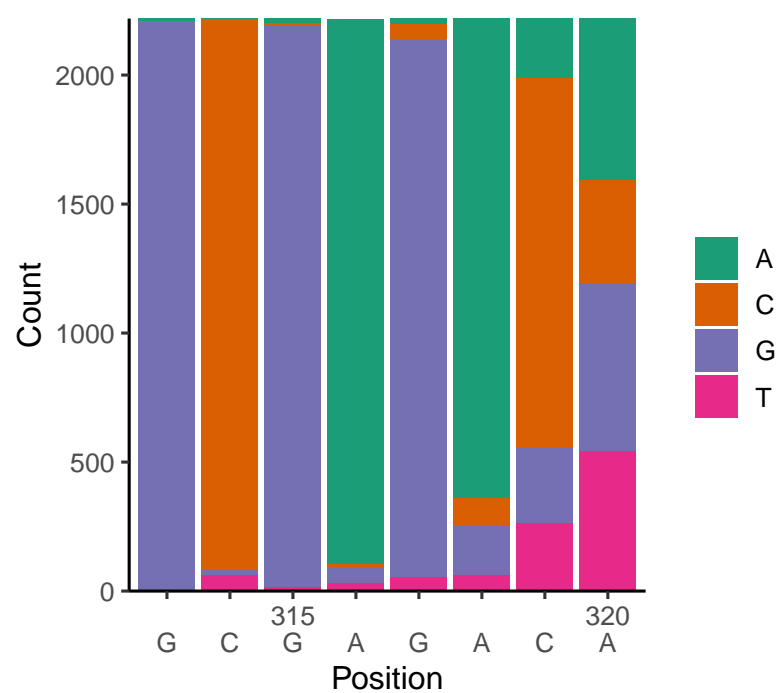
Gene IGHV3-7\*02\_A318G



Gene IGHV3-21\*01\_S5868



Gene IGHV5-51\*01\_S7082



Gene IGHV1-69\*08\_S0647



Gene IGHV3-20\*01\_S2478



Gene IGHV3-21\*01\_S5868



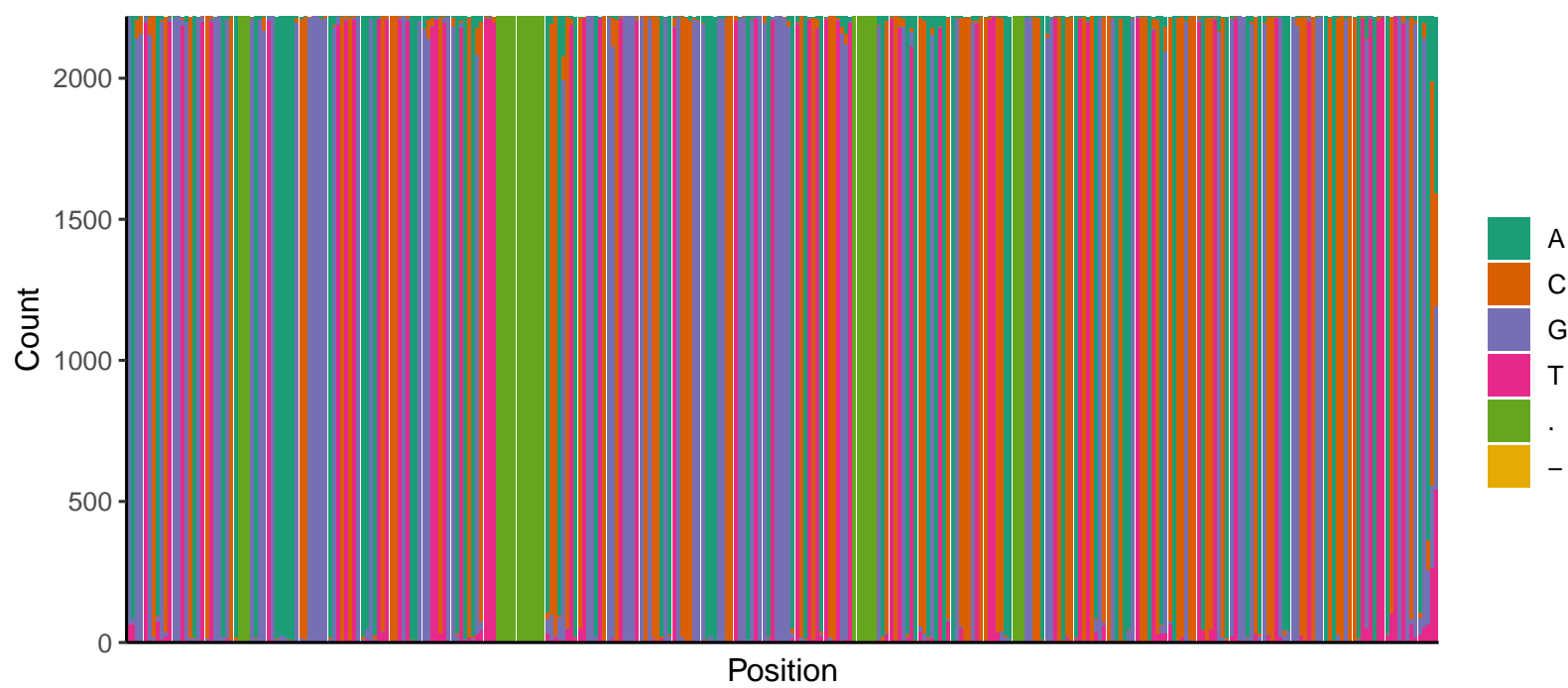
Gene IGHV3-53\*02\_S0744



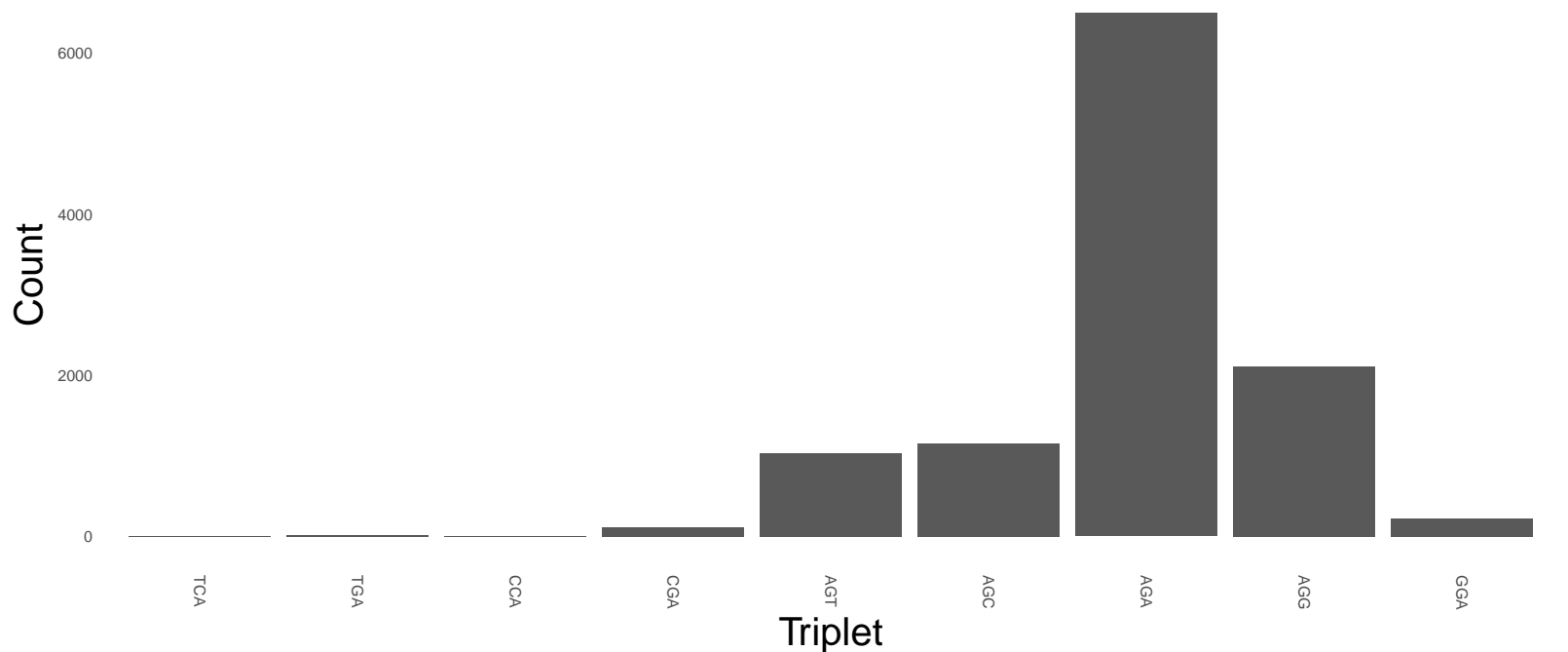
Gene IGHV3-7\*02\_A318G



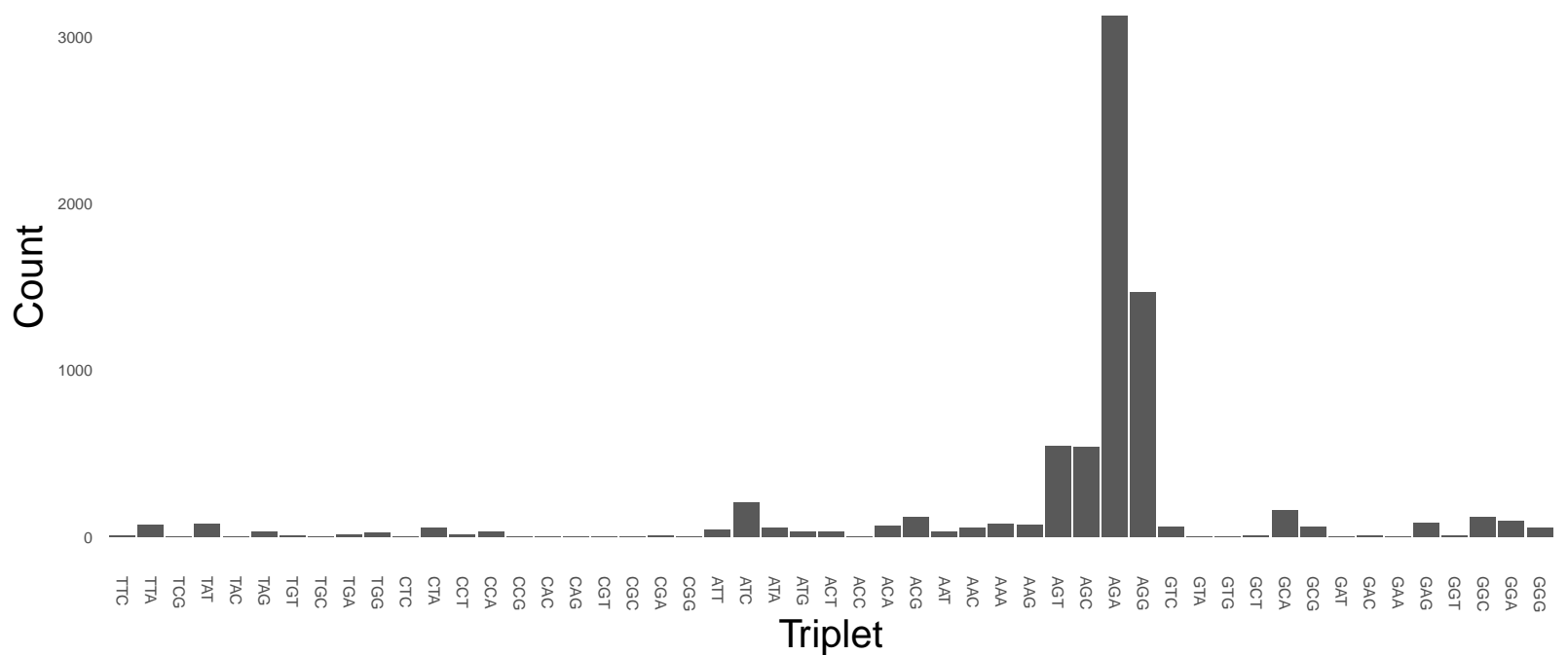
Gene IGHV5-51\*01\_S7082



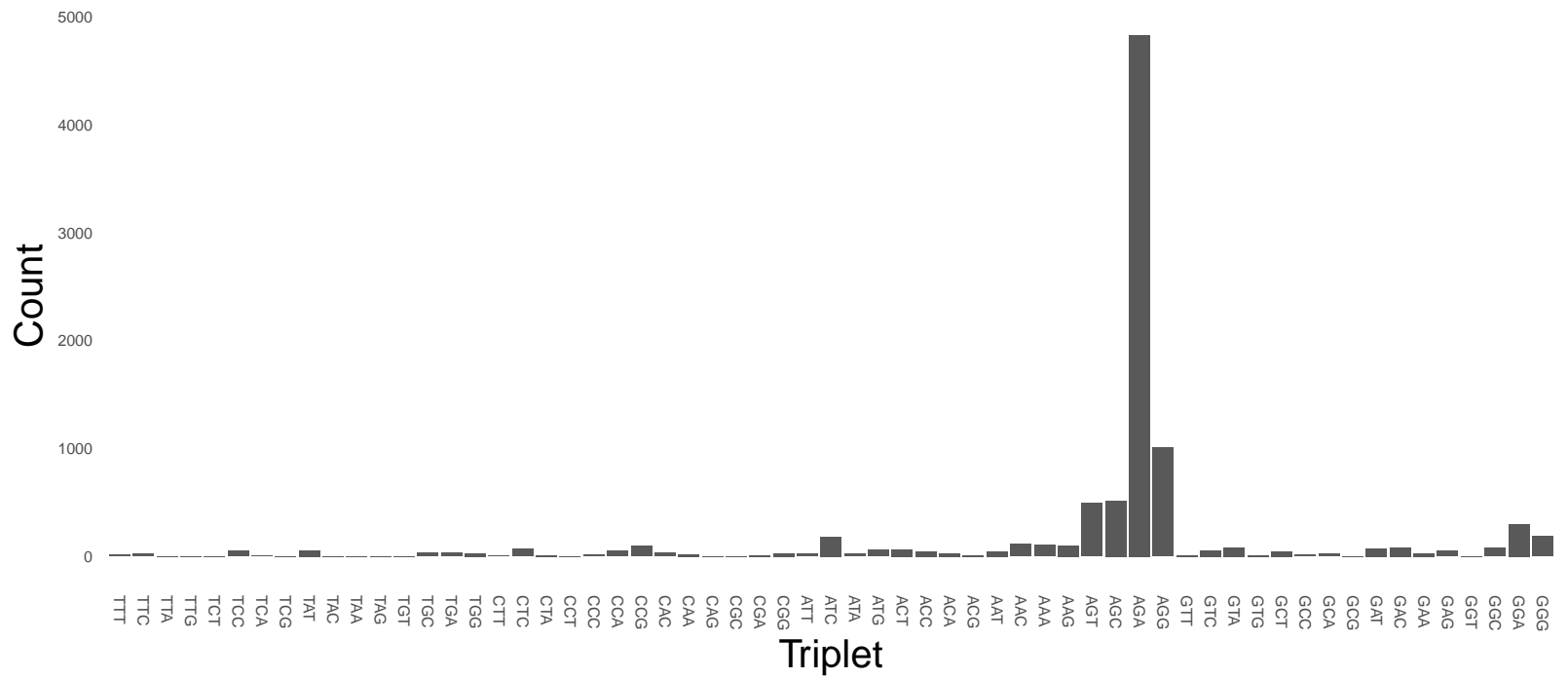
IGHV1-69\*08\_S0647- Final 3 nucleotides as a triplet



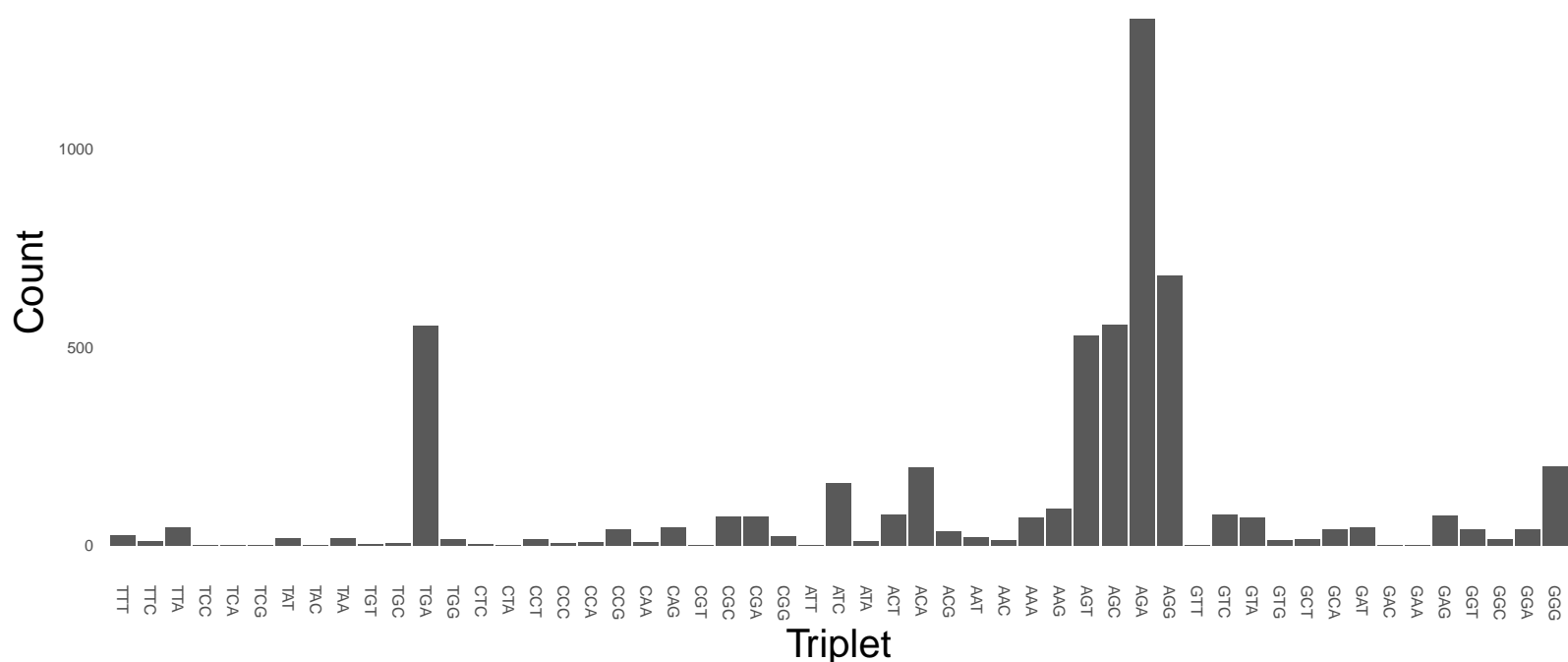
IGHV3-20\*01\_S2478- Final 3 nucleotides as a triplet



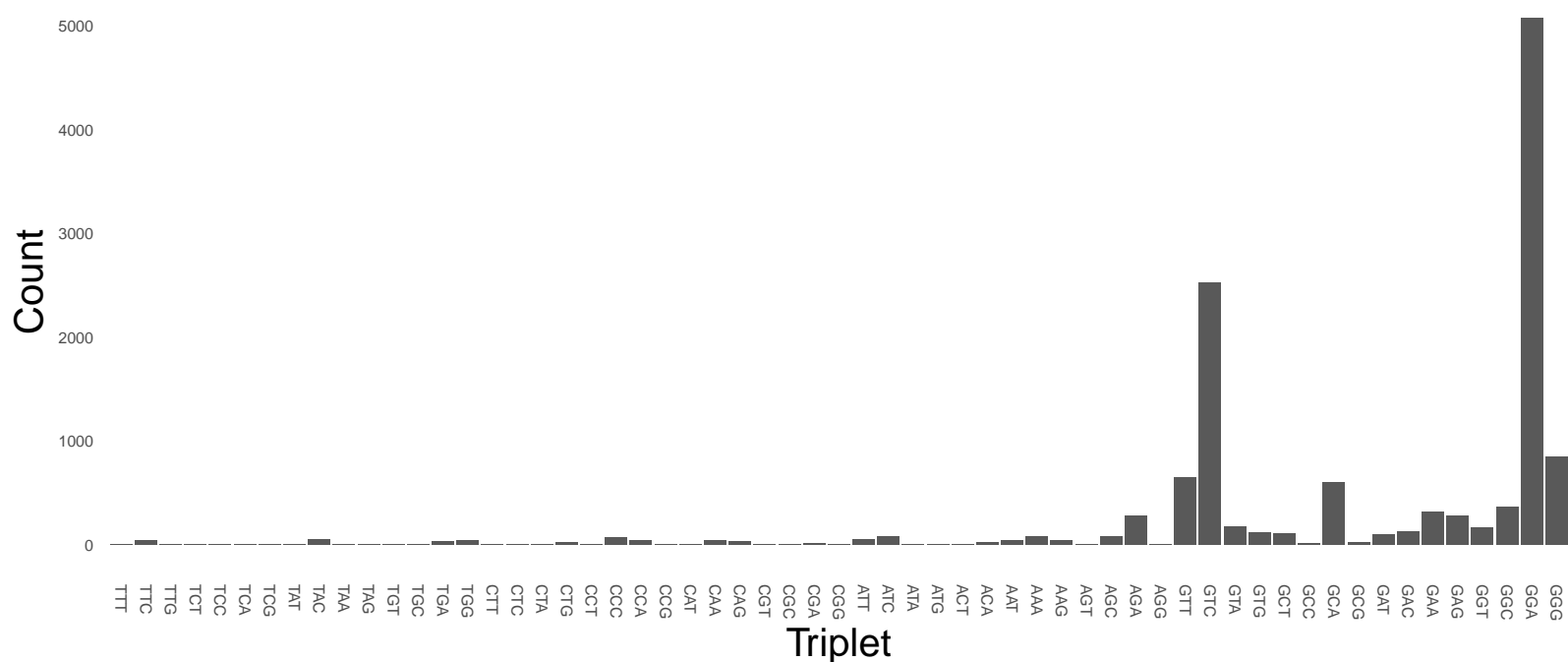
IGHV3-21\*01\_S5868- Final 3 nucleotides as a triplet



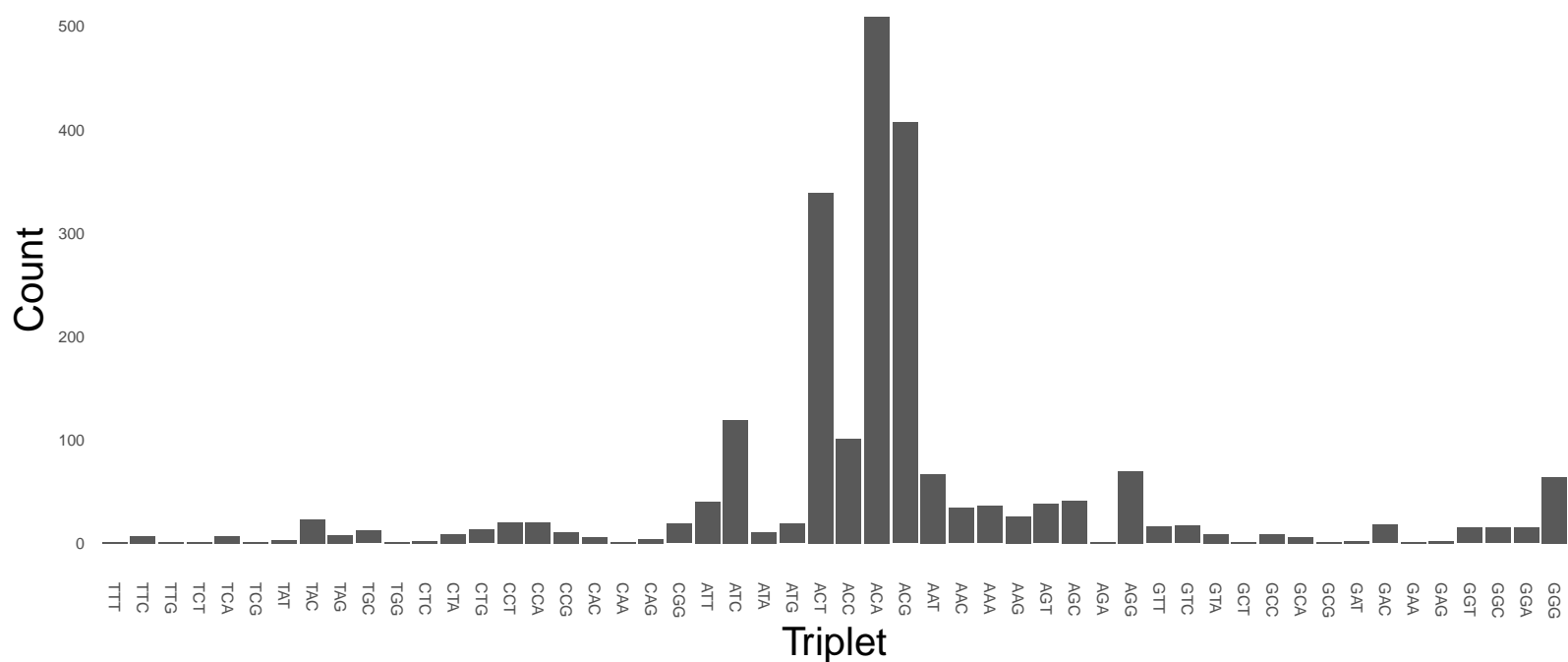
IGHV3-53\*02\_S0744- Final 3 nucleotides as a triplet



IGHV3-7\*02\_A318G- Final 3 nucleotides as a triplet

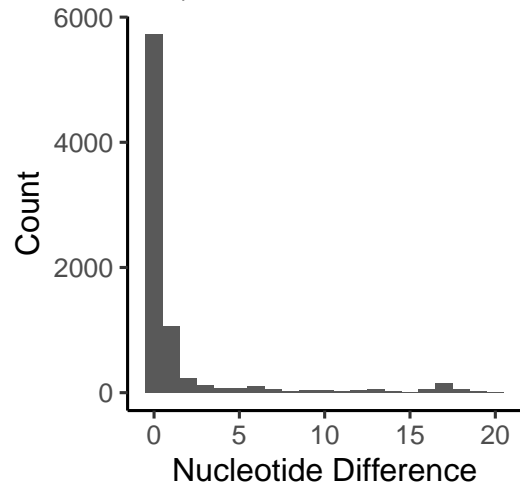


IGHV5-51\*01\_S7082- Final 3 nucleotides as a triplet



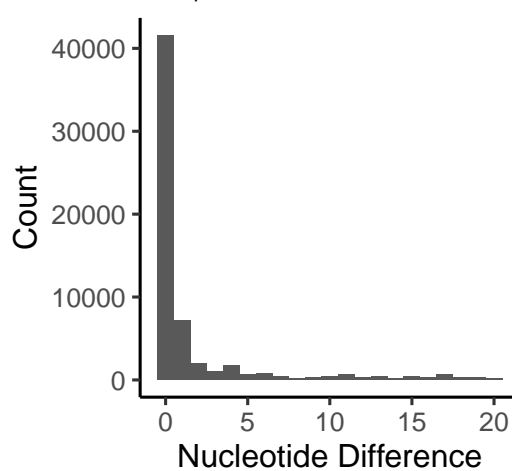
### IGHV1-2\*04

8205 sequences assigned  
5724 (69.8%) exact matches, in which:  
717 unique CDR3  
7 unique J



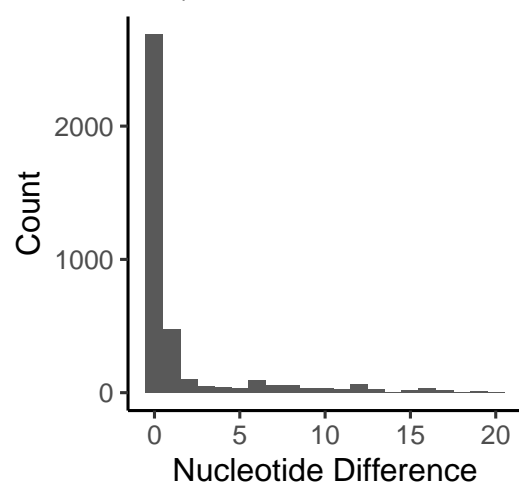
### IGHV1-18\*01

61871 sequences assigned  
41594 (67.2%) exact matches, in which:  
5158 unique CDR3  
7 unique J



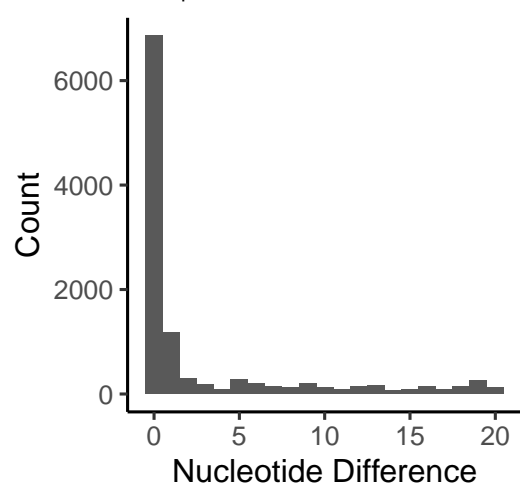
### IGHV1-46\*03

3978 sequences assigned  
2688 (67.6%) exact matches, in which:  
427 unique CDR3  
6 unique J



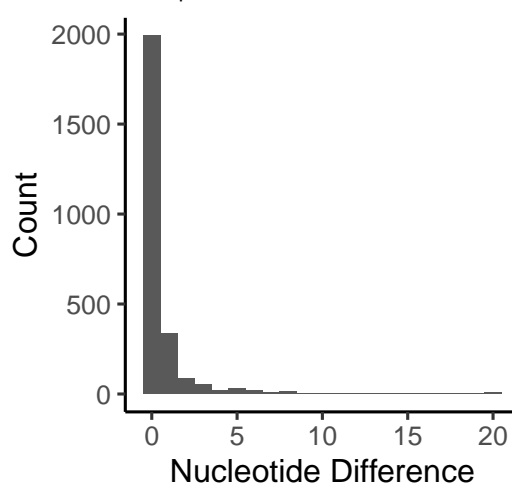
### IGHV1-3\*01

12461 sequences assigned  
6859 (55%) exact matches, in which:  
686 unique CDR3  
7 unique J



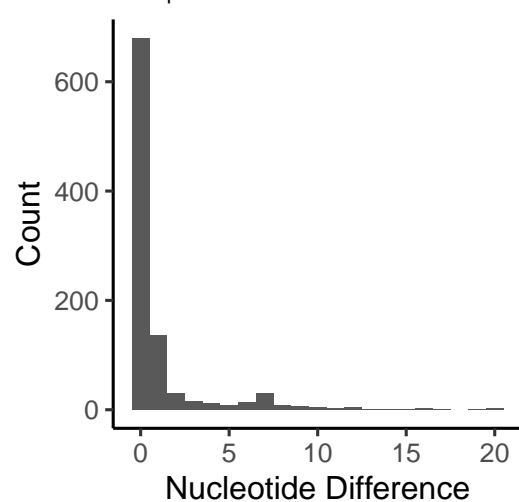
### IGHV1-24\*01

2637 sequences assigned  
1991 (75.5%) exact matches, in which:  
311 unique CDR3  
7 unique J



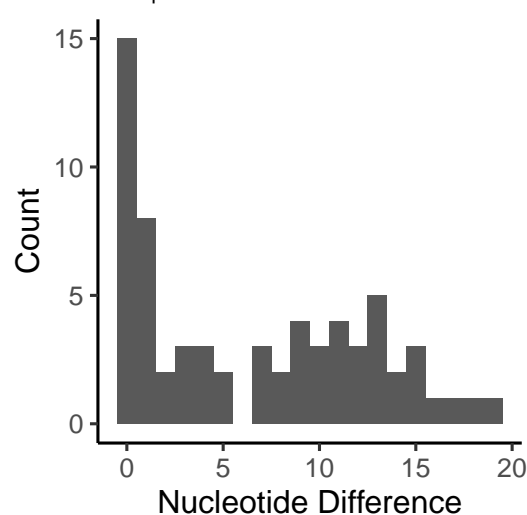
### IGHV1-58\*02

979 sequences assigned  
680 (69.5%) exact matches, in which:  
103 unique CDR3  
6 unique J



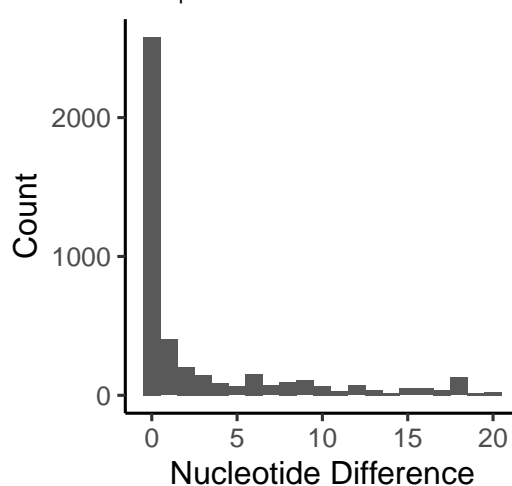
### IGHV1-8\*01

77 sequences assigned  
15 (19.5%) exact matches, in which:  
15 unique CDR3  
4 unique J



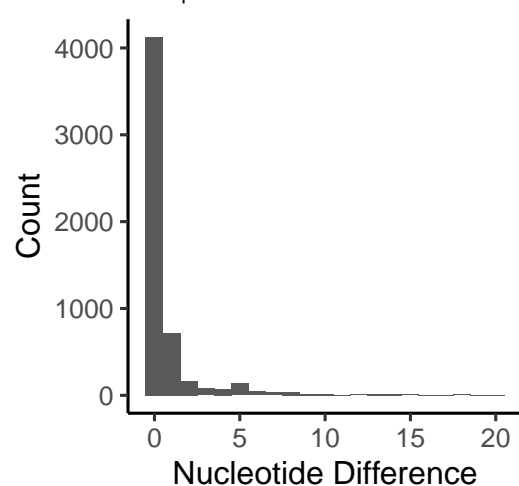
### IGHV1-46\*01

4843 sequences assigned  
2580 (53.3%) exact matches, in which:  
427 unique CDR3  
7 unique J



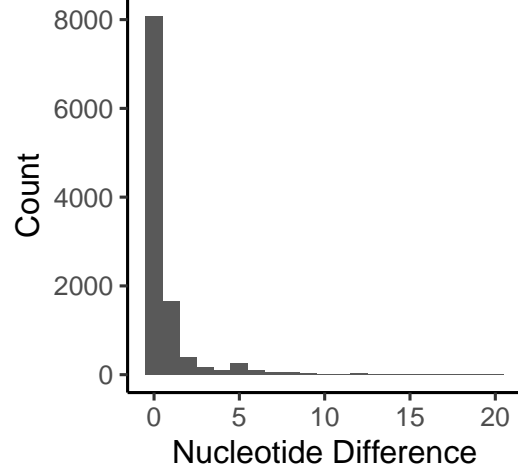
### IGHV1-69\*02

5590 sequences assigned  
4126 (73.8%) exact matches, in which:  
526 unique CDR3  
7 unique J



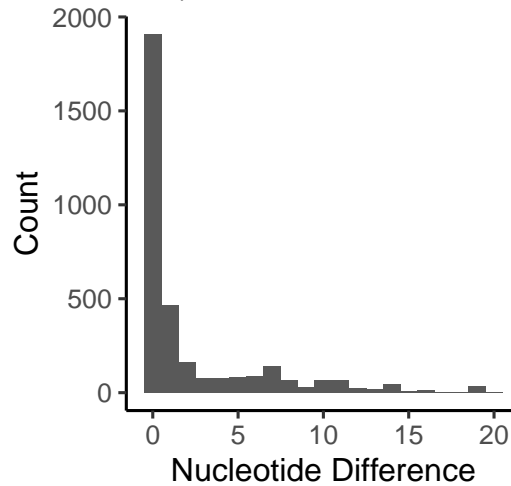
### IGHV1-69\*08\_S0647

11159 sequences assigned  
8072 (72.3%) exact matches, in which:  
1082 unique CDR3  
7 unique J



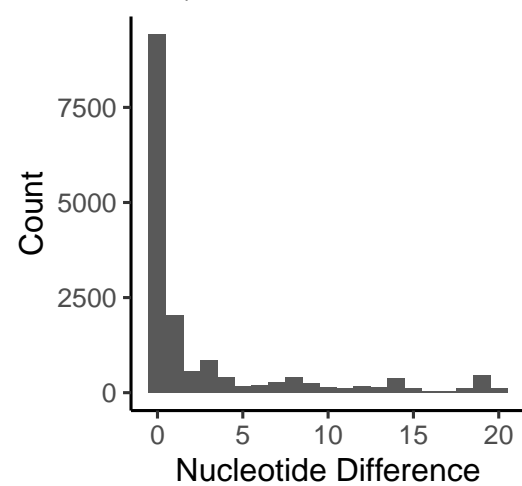
### IGHV2-70\*15

3413 sequences assigned  
1907 (55.9%) exact matches, in which:  
232 unique CDR3  
6 unique J



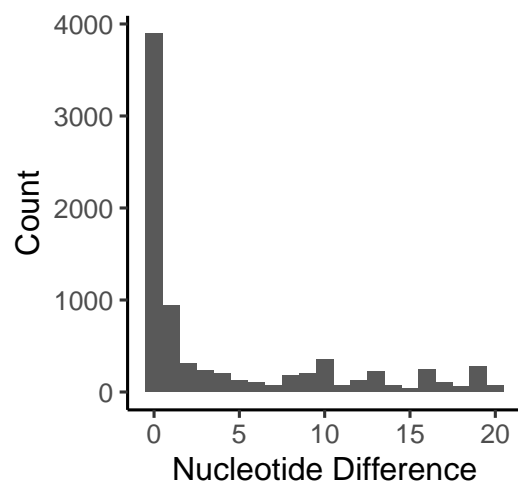
### IGHV3-11\*05

17872 sequences assigned  
9419 (52.7%) exact matches, in which:  
891 unique CDR3  
7 unique J



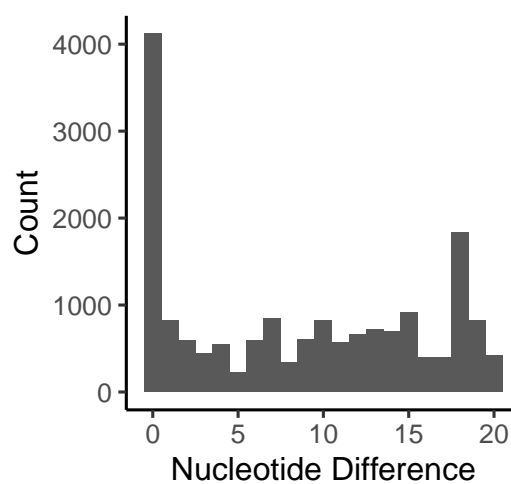
### IGHV2-5\*02

8100 sequences assigned  
3894 (48.1%) exact matches, in which:  
555 unique CDR3  
7 unique J



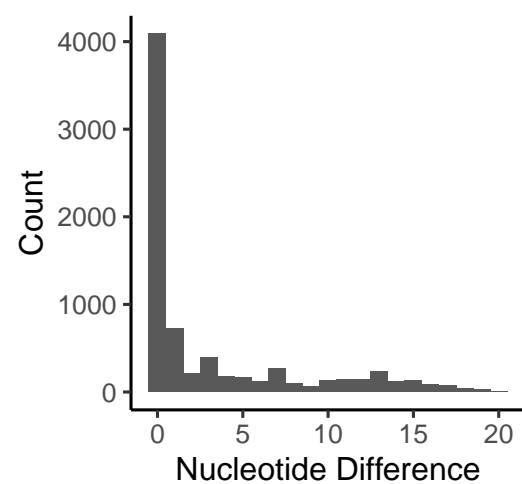
### IGHV3-7\*03

21677 sequences assigned  
4120 (19%) exact matches, in which:  
487 unique CDR3  
6 unique J



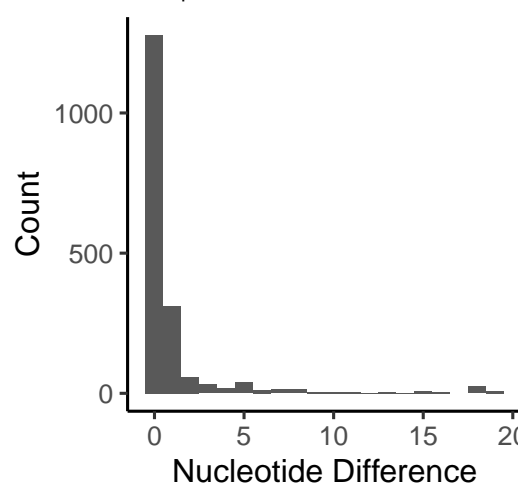
### IGHV3-11\*06

7680 sequences assigned  
4090 (53.3%) exact matches, in which:  
381 unique CDR3  
7 unique J



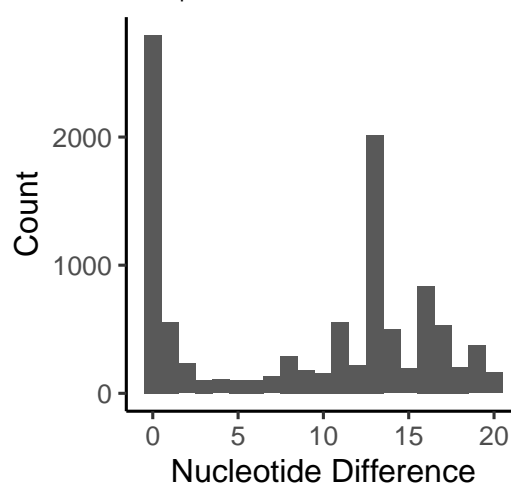
### IGHV2-26\*01

1871 sequences assigned  
1278 (68.3%) exact matches, in which:  
150 unique CDR3  
6 unique J



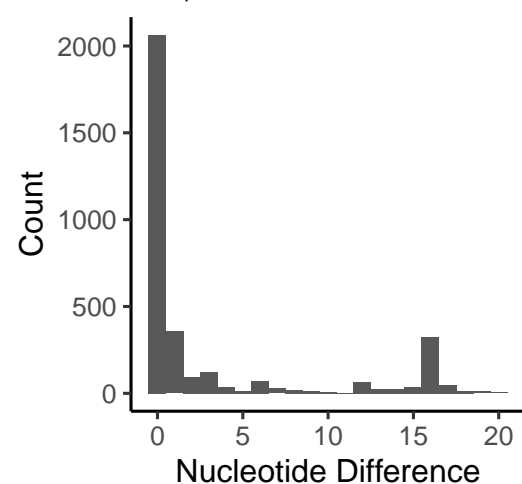
### IGHV3-7\*02\_A318G

12640 sequences assigned  
2796 (22.1%) exact matches, in which:  
269 unique CDR3  
6 unique J



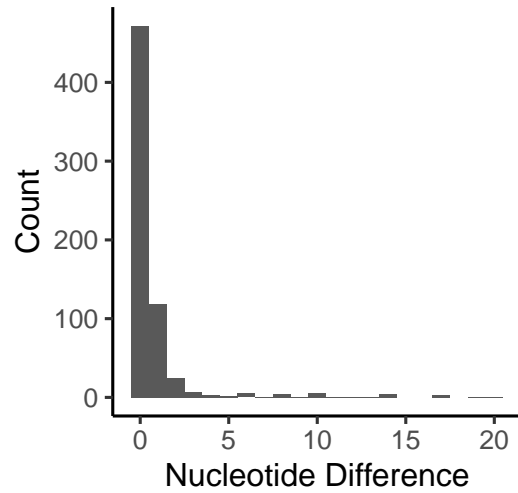
### IGHV3-13\*04

3435 sequences assigned  
2063 (60.1%) exact matches, in which:  
207 unique CDR3  
6 unique J



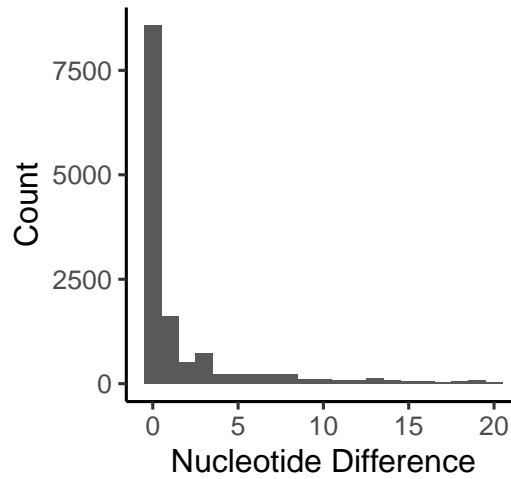
### IGHV3-13\*05

666 sequences assigned  
472 (70.9%) exact matches, in which:  
38 unique CDR3  
5 unique J



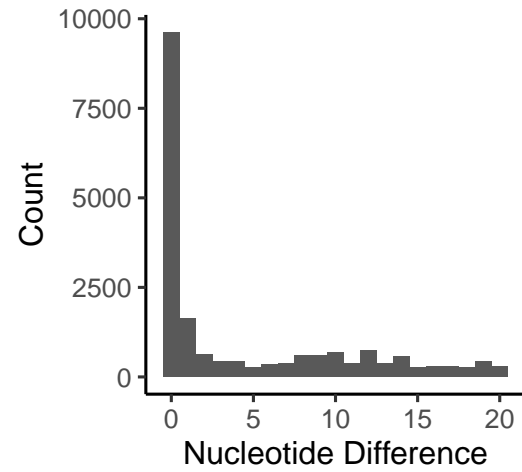
### IGHV3-21\*01

13799 sequences assigned  
8576 (62.1%) exact matches, in which:  
1066 unique CDR3  
7 unique J



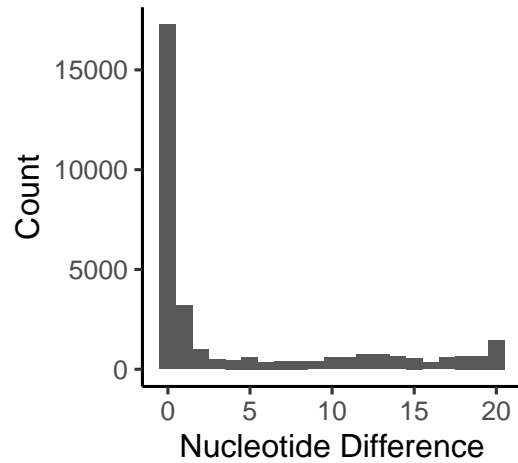
### IGHV3-23\*04

22704 sequences assigned  
9626 (42.4%) exact matches, in which:  
1122 unique CDR3  
7 unique J



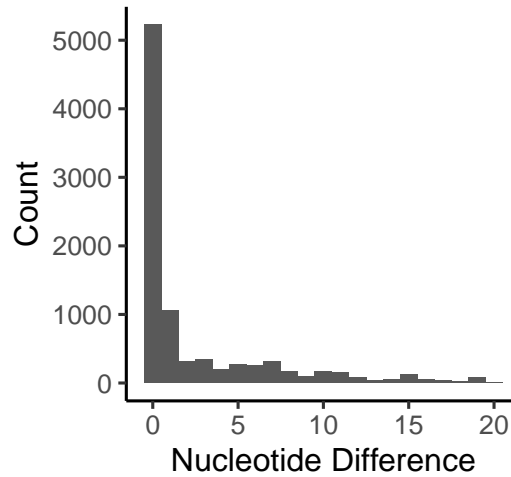
### IGHV3-15\*01

40033 sequences assigned  
17276 (43.2%) exact matches, in which:  
1695 unique CDR3  
7 unique J



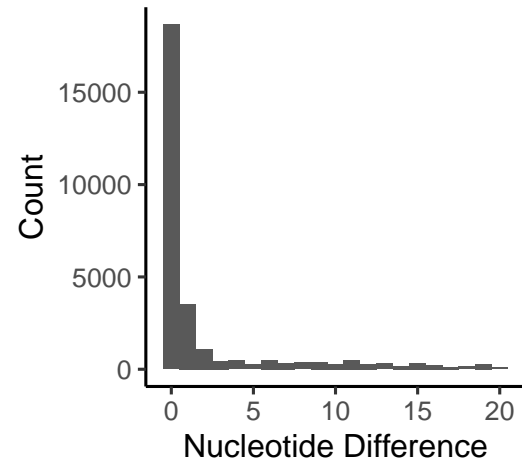
### IGHV3-21\*01\_S5868

9370 sequences assigned  
5226 (55.8%) exact matches, in which:  
628 unique CDR3  
7 unique J



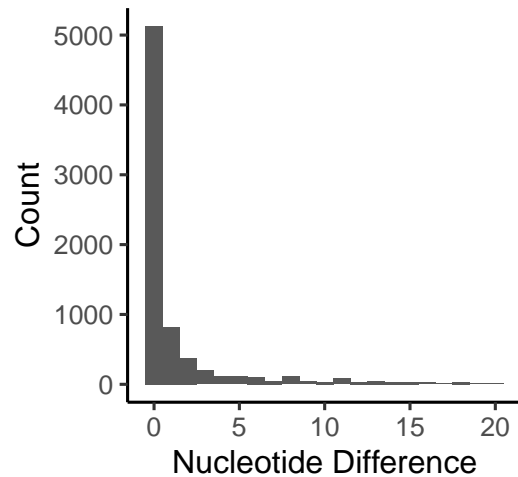
### IGHV3-30\*01

29600 sequences assigned  
18672 (63.1%) exact matches, in which:  
1898 unique CDR3  
7 unique J



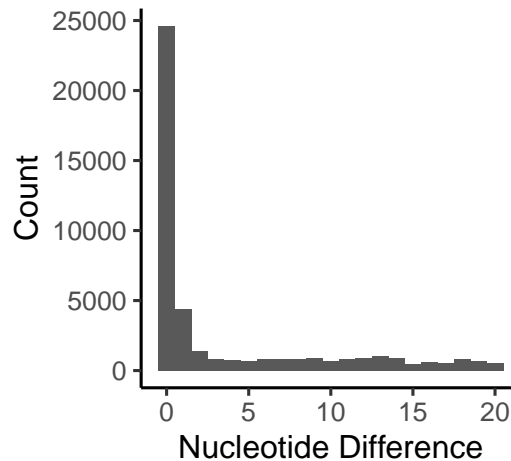
### IGHV3-20\*01\_S2478

7509 sequences assigned  
5129 (68.3%) exact matches, in which:  
468 unique CDR3  
7 unique J



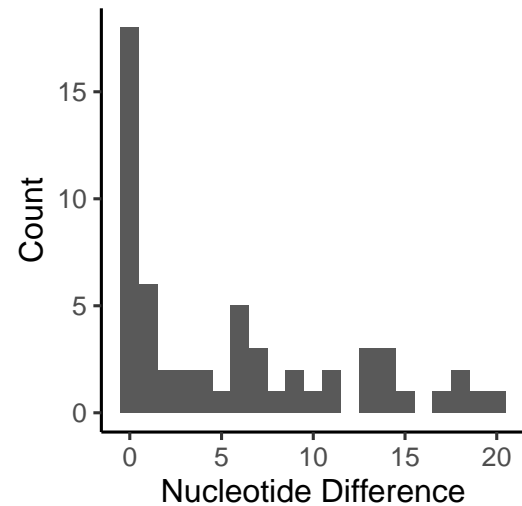
### IGHV3-23\*01

48765 sequences assigned  
24623 (50.5%) exact matches, in which:  
2837 unique CDR3  
7 unique J



### IGHV3-30-3\*01

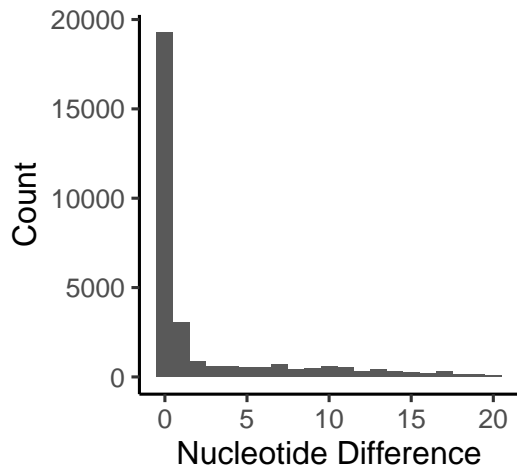
174 sequences assigned  
18 (10.3%) exact matches, in which:  
18 unique CDR3  
5 unique J





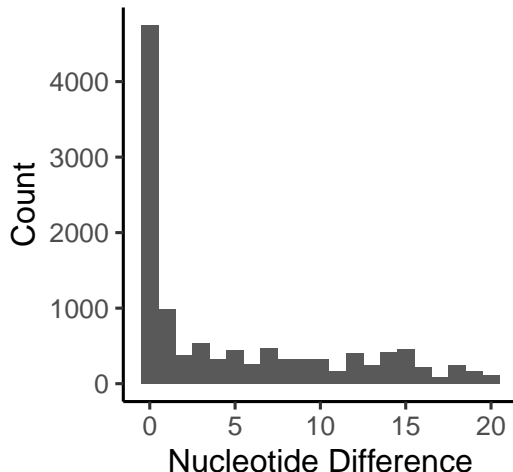
### IGHV3–30\*18

31498 sequences assigned  
19293 (61.3%) exact matches, in which:  
1985 unique CDR3  
7 unique J



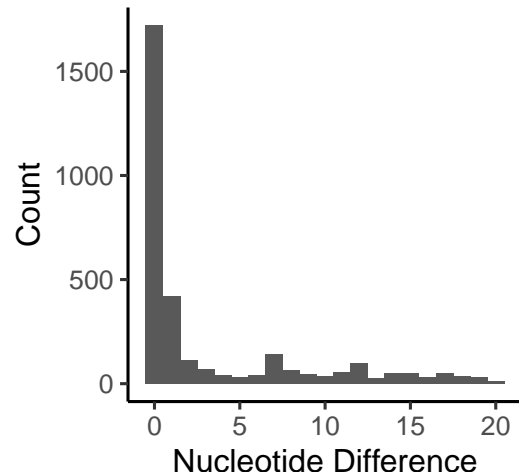
### IGHV3–48\*01

14193 sequences assigned  
4744 (33.4%) exact matches, in which:  
646 unique CDR3  
7 unique J



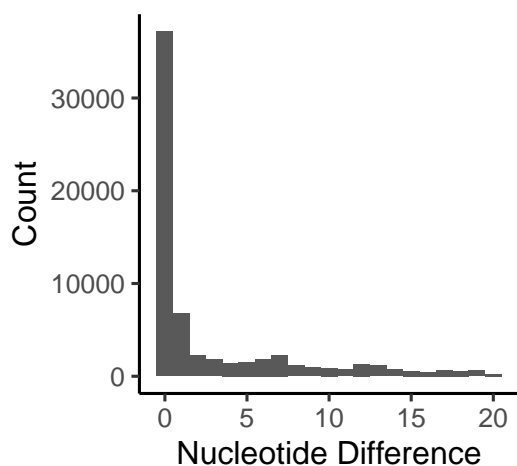
### IGHV3–49\*04

3562 sequences assigned  
1721 (48.3%) exact matches, in which:  
280 unique CDR3  
6 unique J



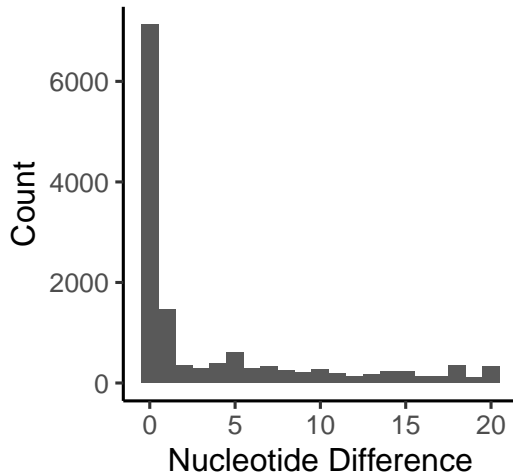
### IGHV3–33\*01

68835 sequences assigned  
37173 (54%) exact matches, in which:  
3774 unique CDR3  
7 unique J



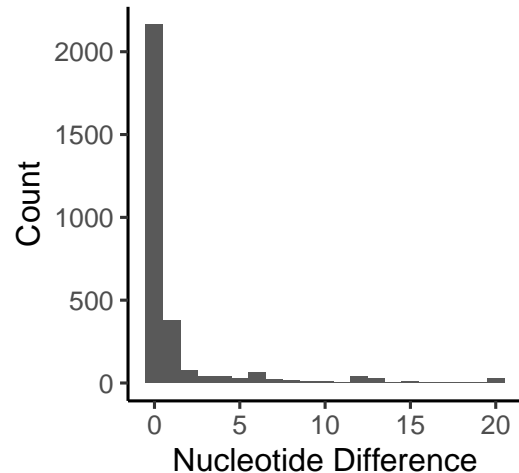
### IGHV3–48\*03

14311 sequences assigned  
7127 (49.8%) exact matches, in which:  
926 unique CDR3  
7 unique J



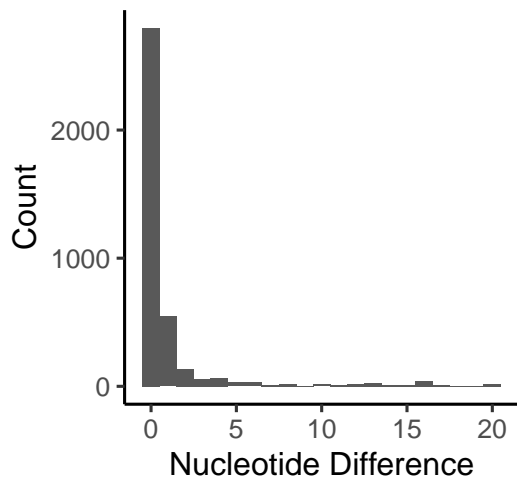
### IGHV3–53\*04

3551 sequences assigned  
2163 (60.9%) exact matches, in which:  
235 unique CDR3  
6 unique J



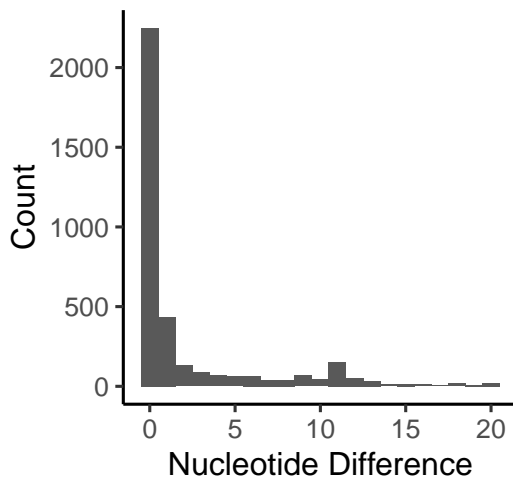
### IGHV3–43\*02

6889 sequences assigned  
2796 (40.6%) exact matches, in which:  
360 unique CDR3  
6 unique J



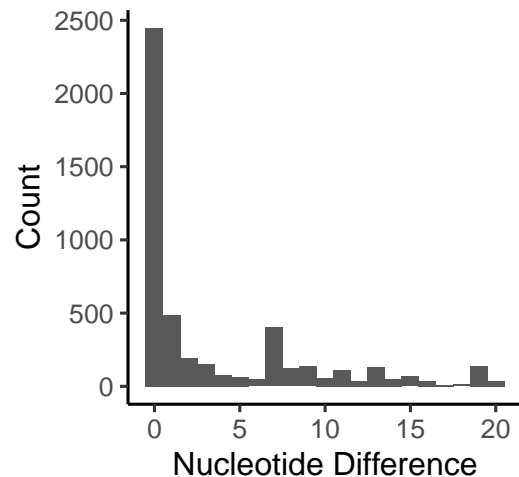
### IGHV3–49\*03

3949 sequences assigned  
2248 (56.9%) exact matches, in which:  
326 unique CDR3  
7 unique J



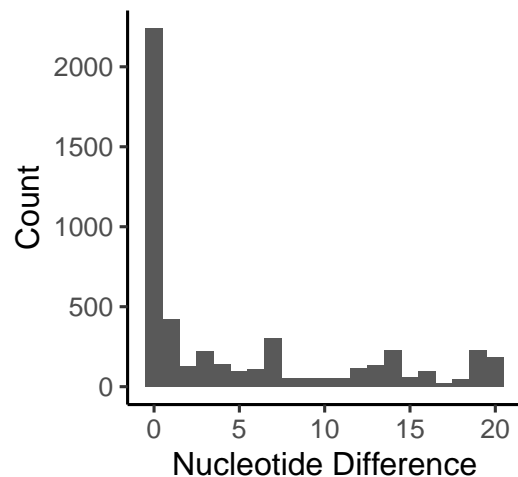
### IGHV3–53\*02\_S0744

5425 sequences assigned  
2447 (45.1%) exact matches, in which:  
300 unique CDR3  
7 unique J



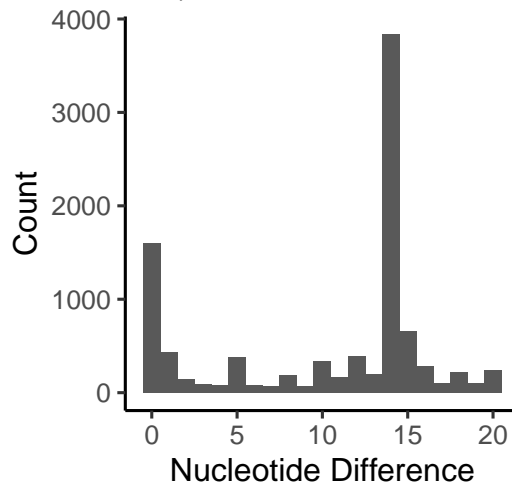
### IGHV3-64\*01

7763 sequences assigned  
2240 (28.9%) exact matches, in which:  
284 unique CDR3  
7 unique J



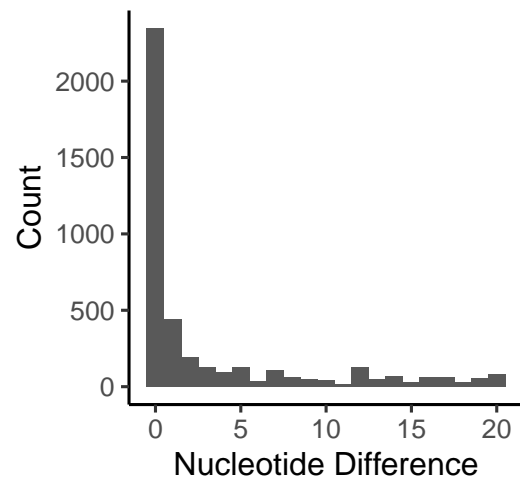
### IGHV3-73\*01

10183 sequences assigned  
1599 (15.7%) exact matches, in which:  
150 unique CDR3  
6 unique J



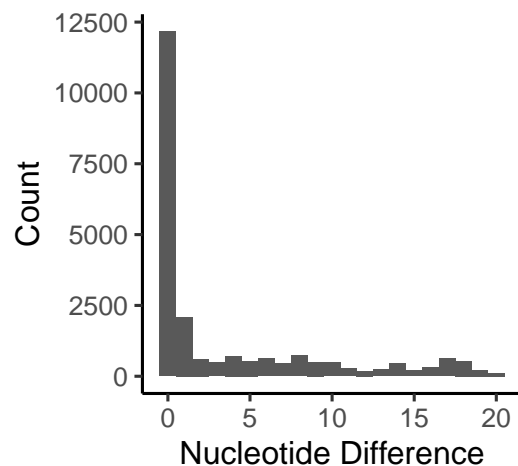
### IGHV4-4\*02

5064 sequences assigned  
2345 (46.3%) exact matches, in which:  
439 unique CDR3  
7 unique J



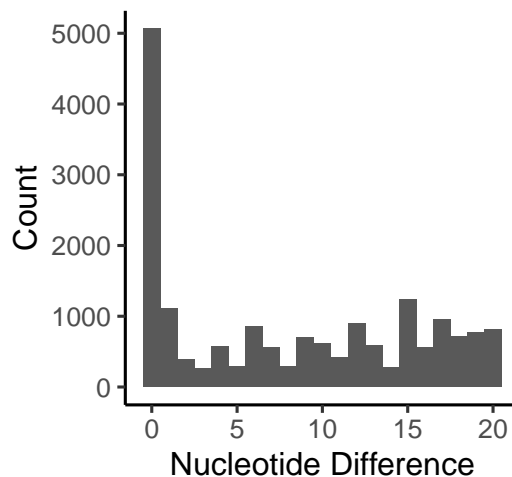
### IGHV3-66\*01

28158 sequences assigned  
12169 (43.2%) exact matches, in which:  
1156 unique CDR3  
7 unique J



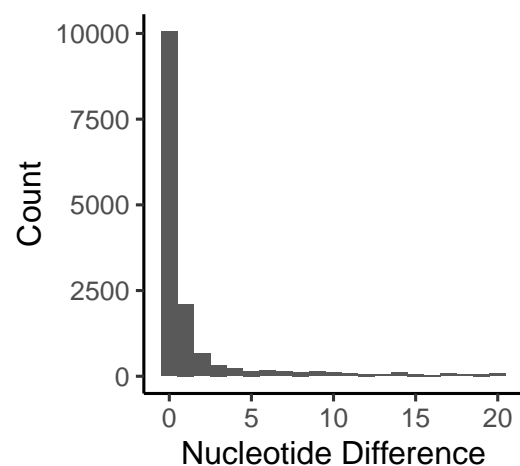
### IGHV3-74\*01

22479 sequences assigned  
5064 (22.5%) exact matches, in which:  
467 unique CDR3  
7 unique J



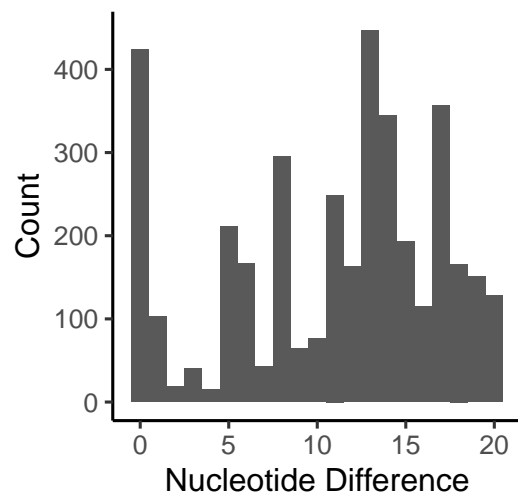
### IGHV4-31\*03

15344 sequences assigned  
10058 (65.6%) exact matches, in which:  
1589 unique CDR3  
7 unique J



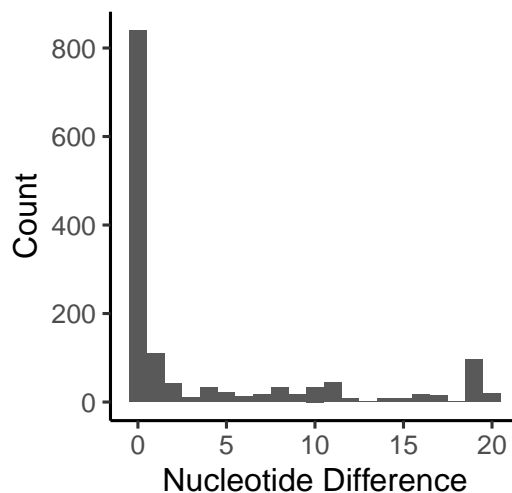
### IGHV3-72\*01

4638 sequences assigned  
424 (9.1%) exact matches, in which:  
53 unique CDR3  
6 unique J



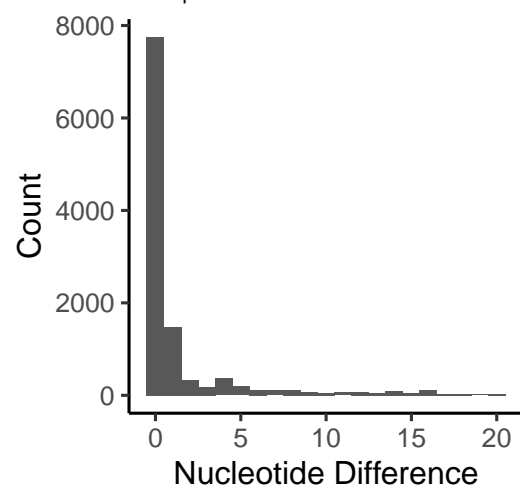
### IGHV3-64D\*06

2085 sequences assigned  
840 (40.3%) exact matches, in which:  
150 unique CDR3  
7 unique J



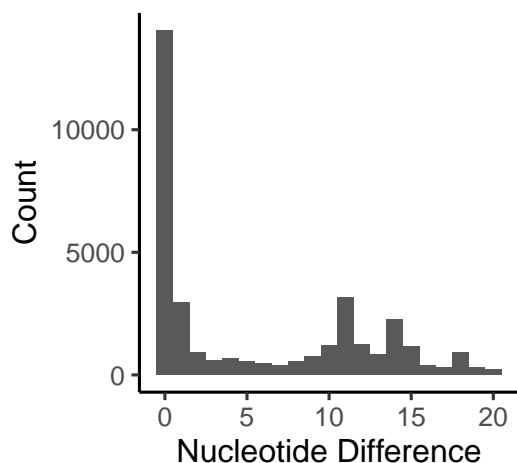
### IGHV4-34\*01

11386 sequences assigned  
7751 (68.1%) exact matches, in which:  
1466 unique CDR3  
7 unique J



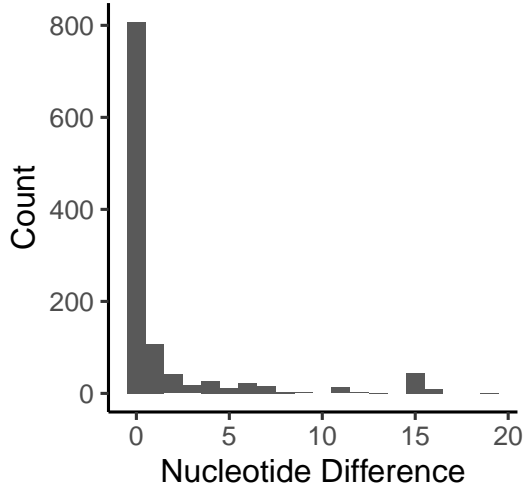
### IGHV4-39\*01

36179 sequences assigned  
14059 (38.9%) exact matches, in which:  
2080 unique CDR3  
7 unique J



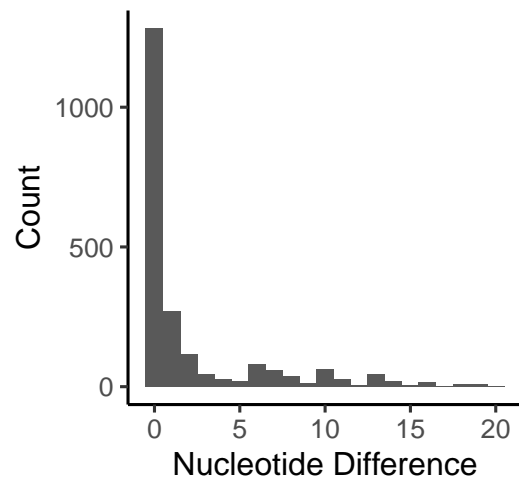
### IGHV5-10-1\*01

1143 sequences assigned  
808 (70.7%) exact matches, in which:  
219 unique CDR3  
5 unique J



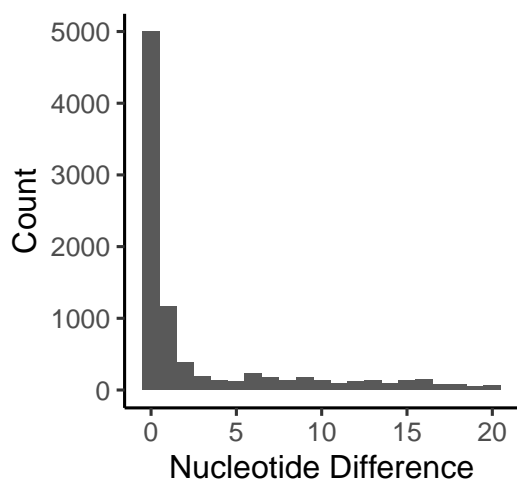
### IGHV5-51\*01\_S7082

2219 sequences assigned  
1282 (57.8%) exact matches, in which:  
374 unique CDR3  
6 unique J



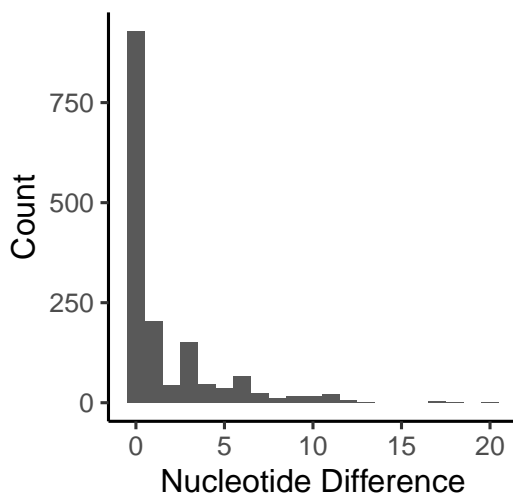
### IGHV4-59\*01

9281 sequences assigned  
4997 (53.8%) exact matches, in which:  
1235 unique CDR3  
7 unique J



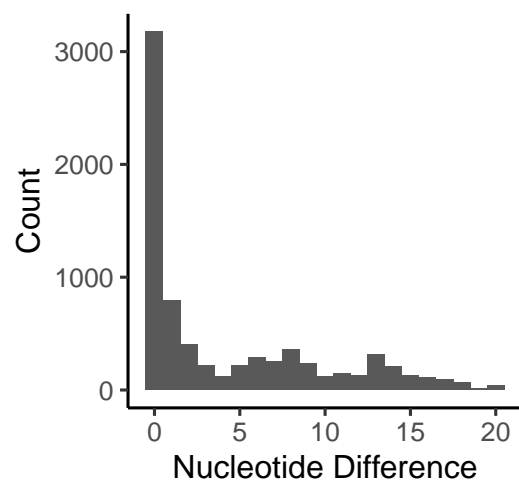
### IGHV5-10-1\*03

1584 sequences assigned  
929 (58.6%) exact matches, in which:  
262 unique CDR3  
6 unique J



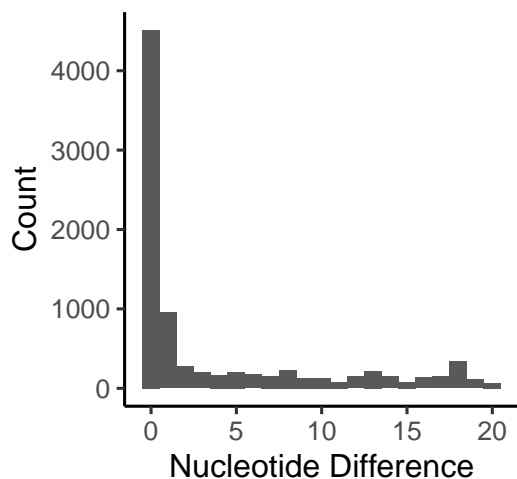
### IGHV6-1\*01

8561 sequences assigned  
3176 (37.1%) exact matches, in which:  
414 unique CDR3  
7 unique J



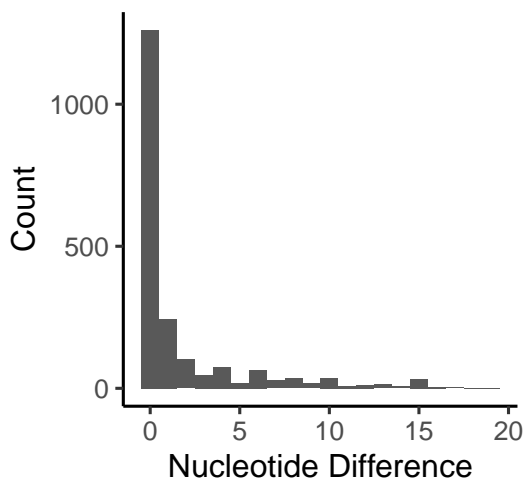
### IGHV4-59\*08

9349 sequences assigned  
4512 (48.3%) exact matches, in which:  
1136 unique CDR3  
7 unique J



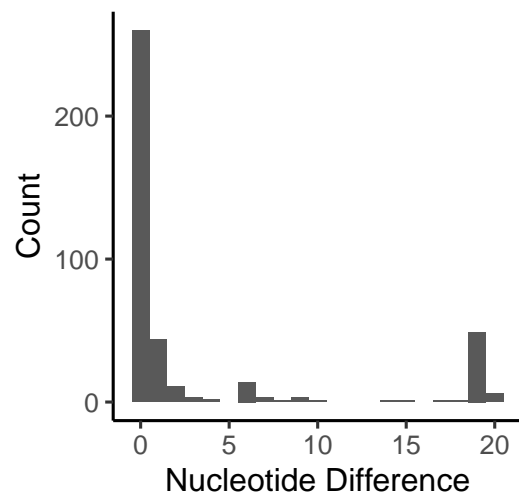
### IGHV5-51\*01

2046 sequences assigned  
1261 (61.6%) exact matches, in which:  
349 unique CDR3  
7 unique J

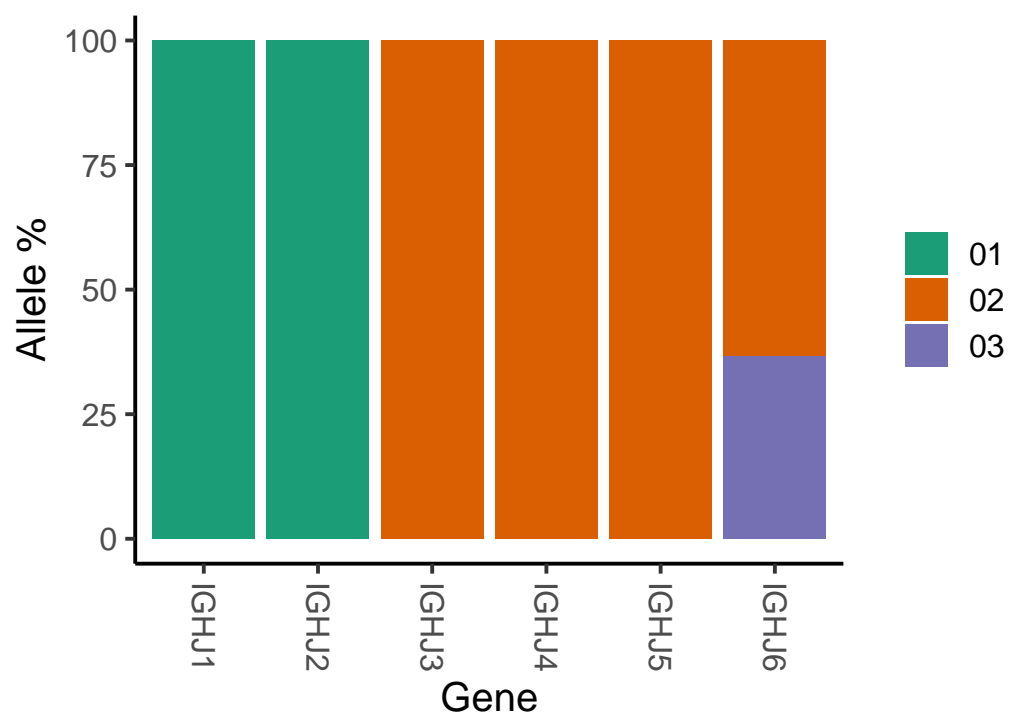


### IGHV7-4-1\*01

409 sequences assigned  
260 (63.6%) exact matches, in which:  
30 unique CDR3  
6 unique J



Allele Usage



### Sequence Count by IGHJ6 allele usage

