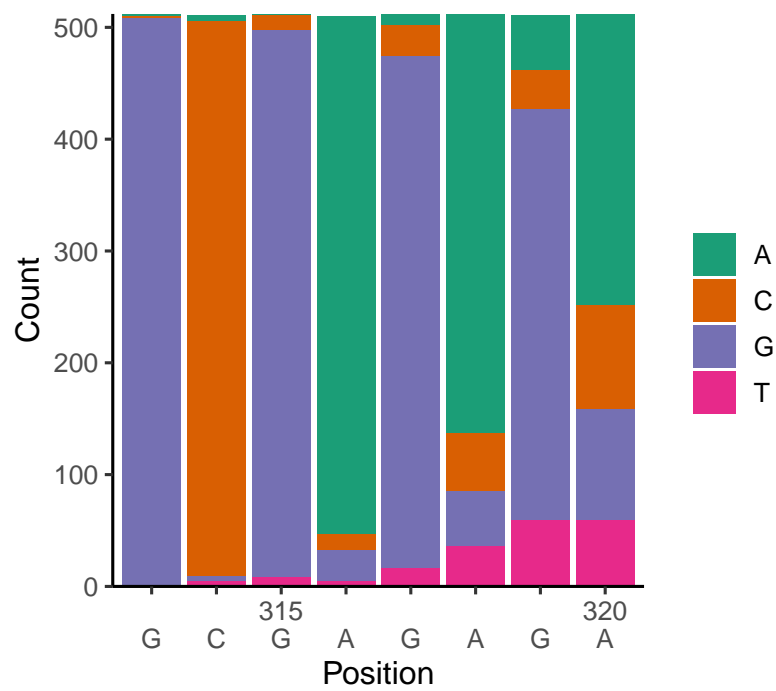
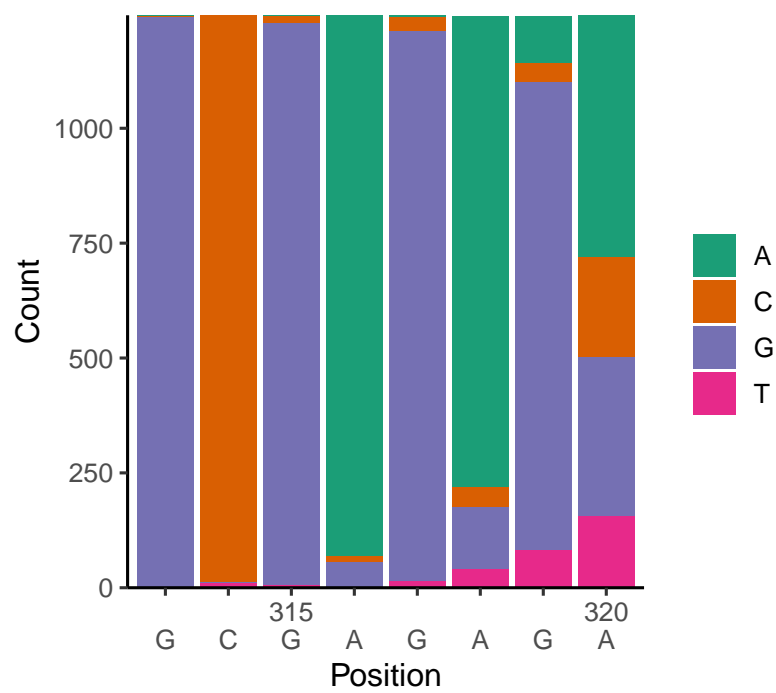


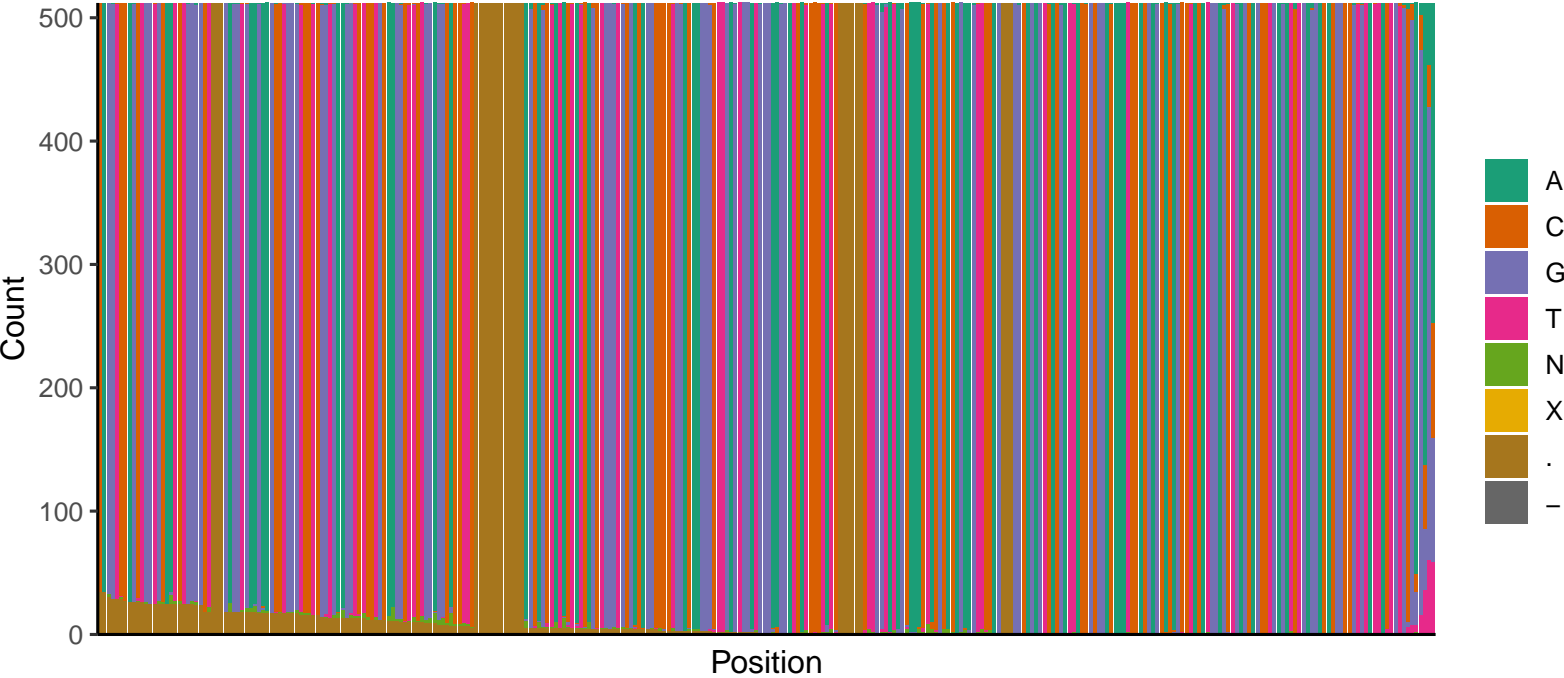
Gene IGHV1-69\*08\_C191T



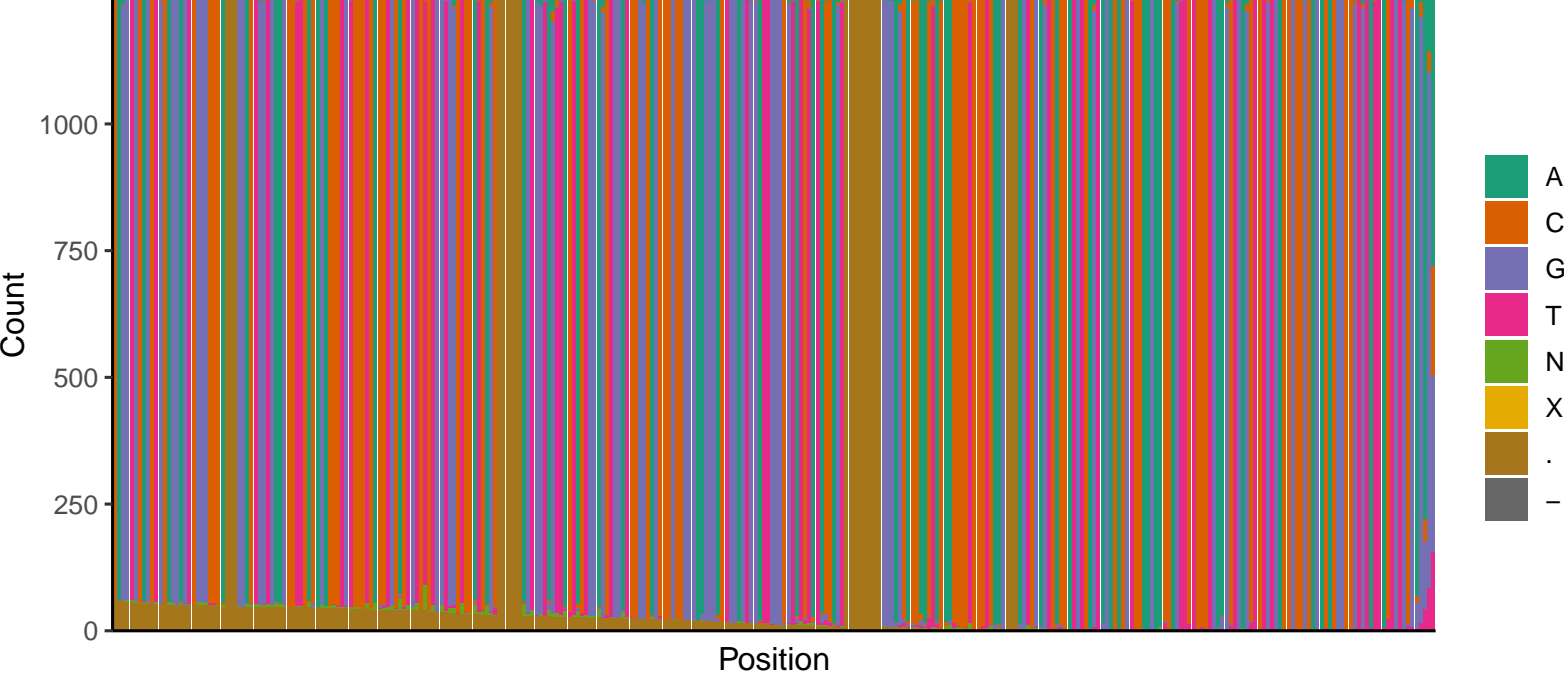
Gene IGHV4-61\*02\_A234G



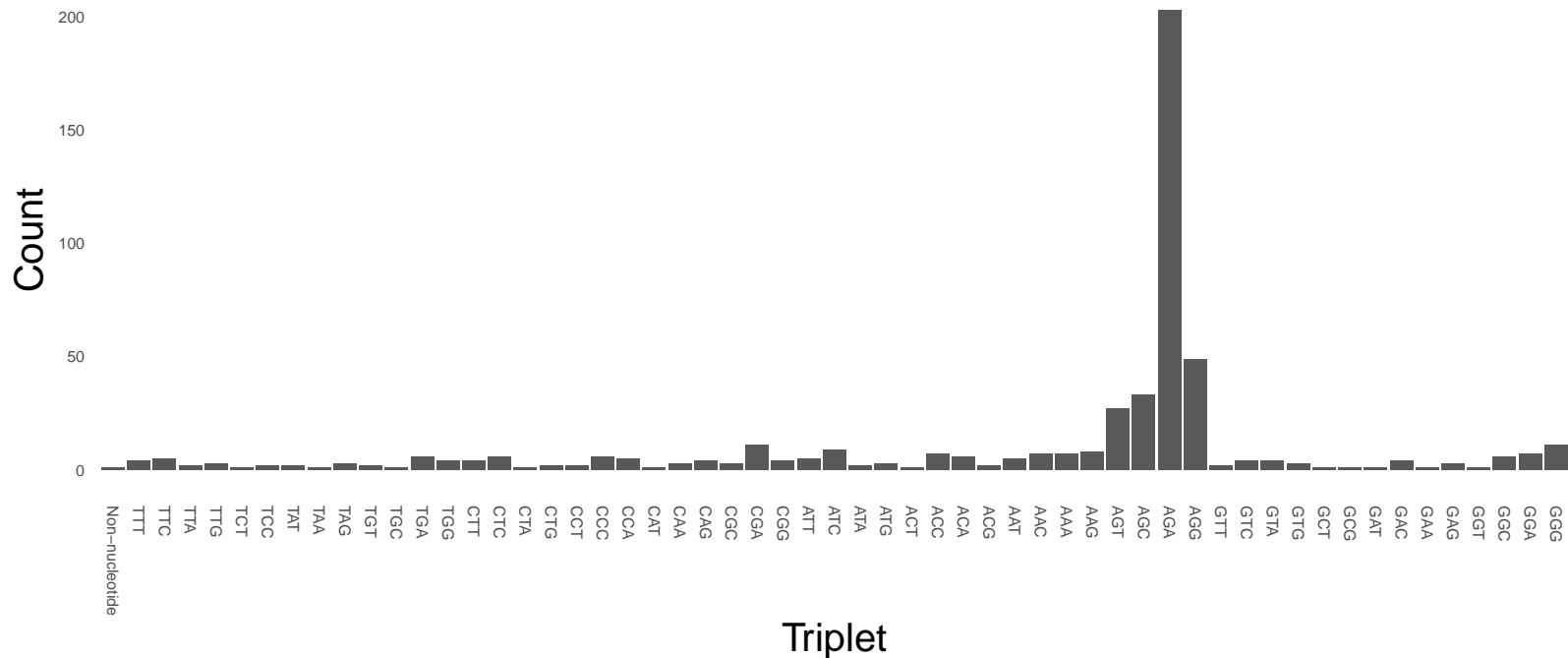
Gene IGHV1-69\*08\_C191T



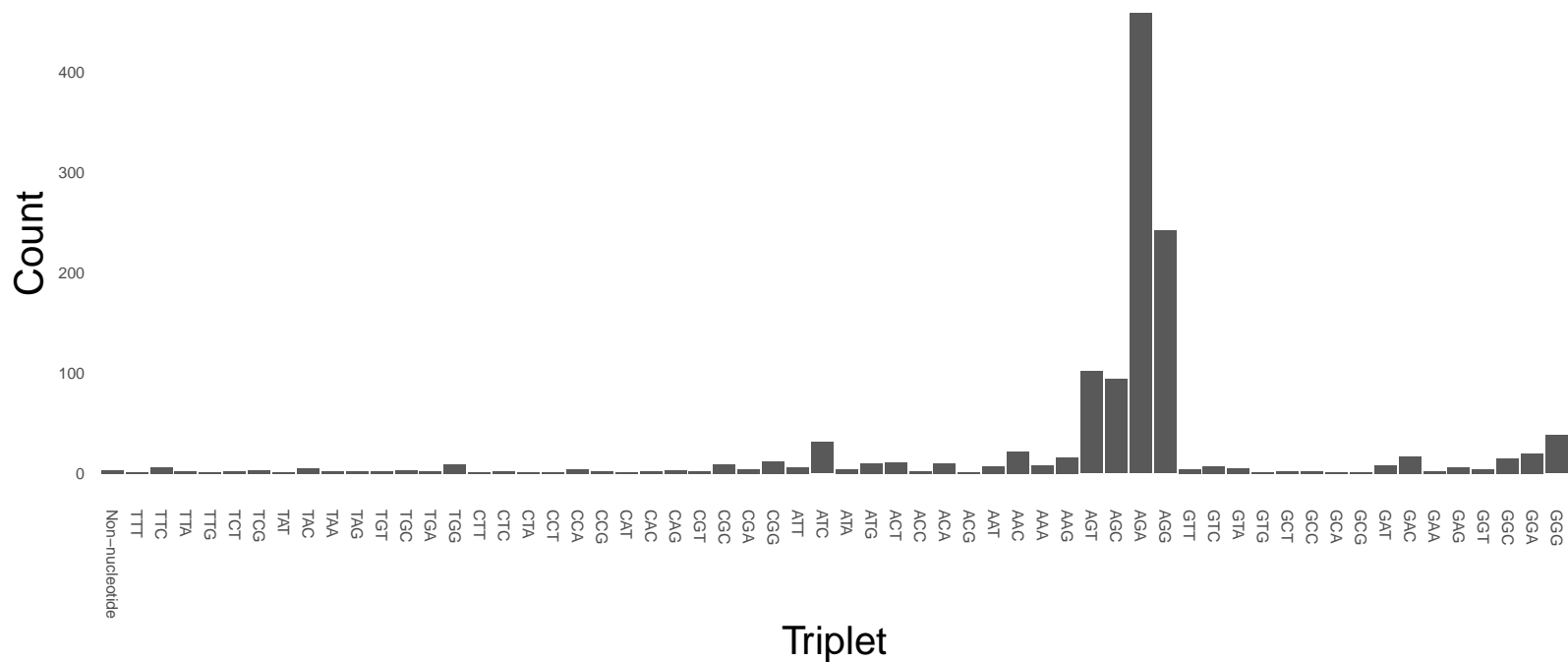
Gene IGHV4-61\*02\_A234G



IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet

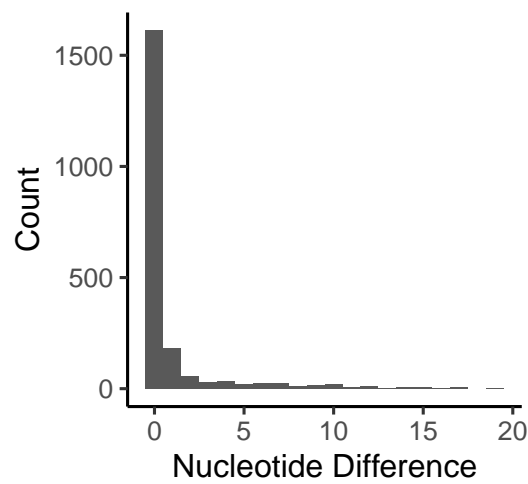


IGHV4-61\*02\_A234G- Final 3 nucleotides as a triplet



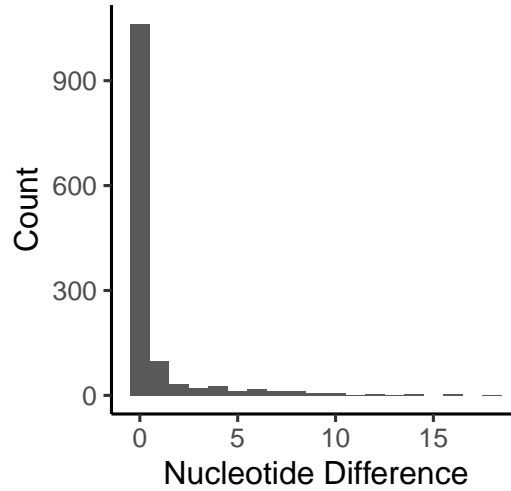
### IGHV1-2\*02

2084 sequences assigned  
1612 (77.4%) exact matches, in which:  
1471 unique CDR3  
6 unique J



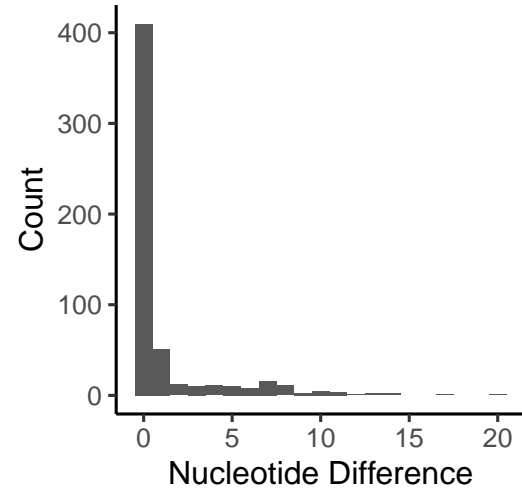
### IGHV1-18\*01

1333 sequences assigned  
1063 (79.7%) exact matches, in which:  
977 unique CDR3  
6 unique J



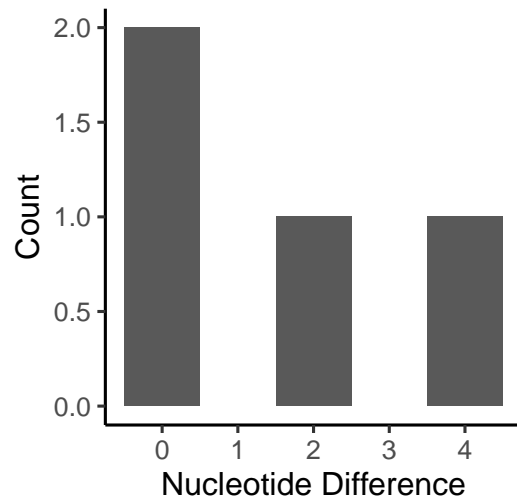
### IGHV1-46\*01

559 sequences assigned  
410 (73.3%) exact matches, in which:  
382 unique CDR3  
6 unique J



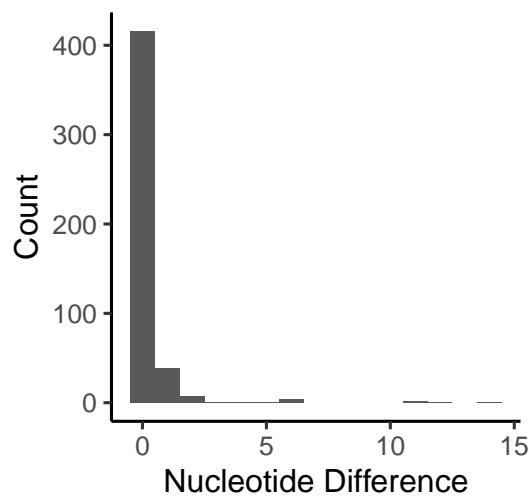
### IGHV1-3\*02

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



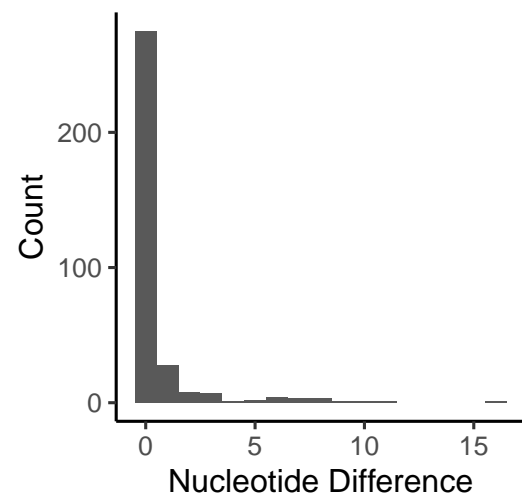
### IGHV1-24\*01

473 sequences assigned  
416 (87.9%) exact matches, in which:  
388 unique CDR3  
6 unique J



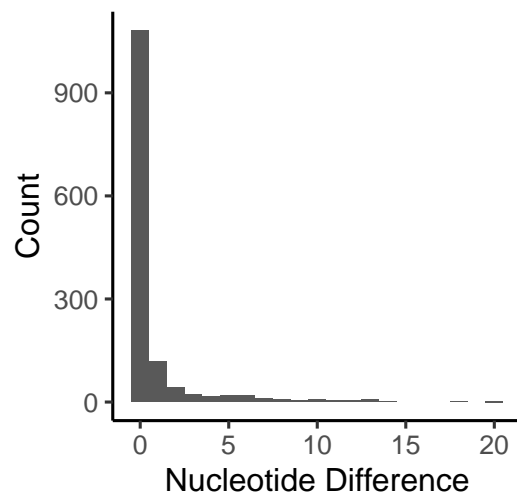
### IGHV1-46\*03

336 sequences assigned  
275 (81.8%) exact matches, in which:  
247 unique CDR3  
6 unique J



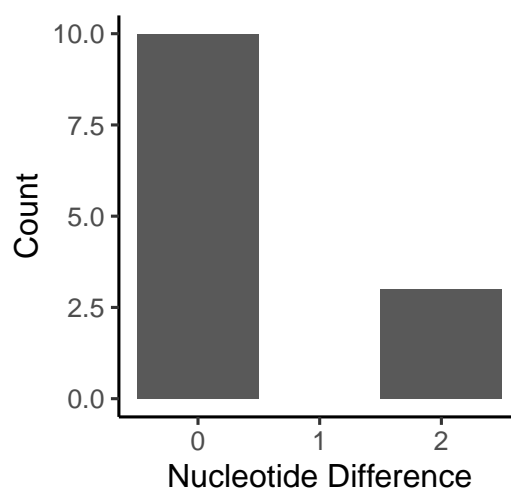
### IGHV1-8\*01

1367 sequences assigned  
1082 (79.2%) exact matches, in which:  
1009 unique CDR3  
6 unique J



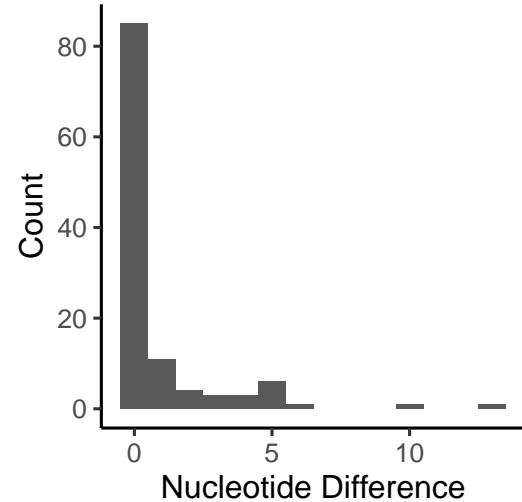
### IGHV1-45\*02

13 sequences assigned  
10 (76.9%) exact matches, in which:  
9 unique CDR3  
3 unique J



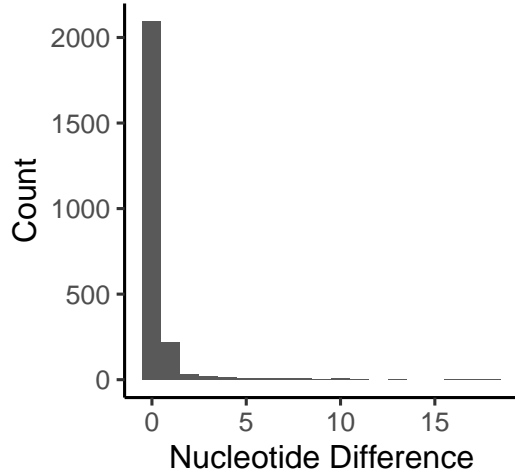
### IGHV1-58\*02

116 sequences assigned  
85 (73.3%) exact matches, in which:  
75 unique CDR3  
5 unique J



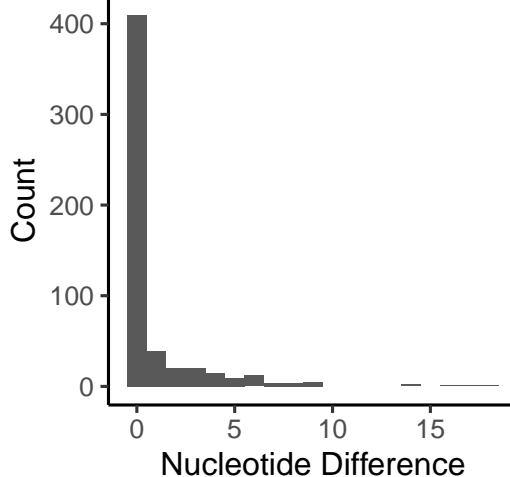
### IGHV1-69\*01

2437 sequences assigned  
2094 (85.9%) exact matches, in which:  
1866 unique CDR3  
6 unique J



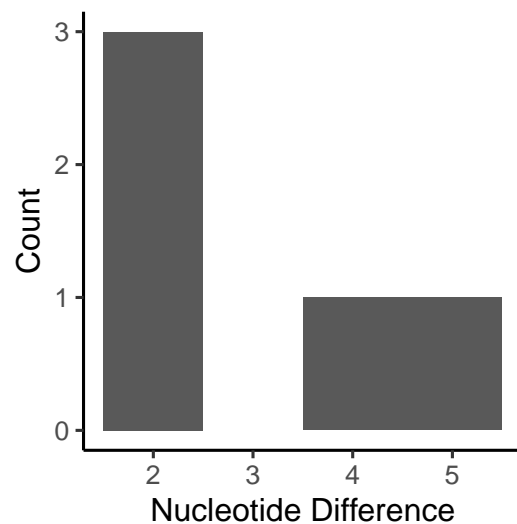
### IGHV2-5\*02

544 sequences assigned  
410 (75.4%) exact matches, in which:  
385 unique CDR3  
6 unique J



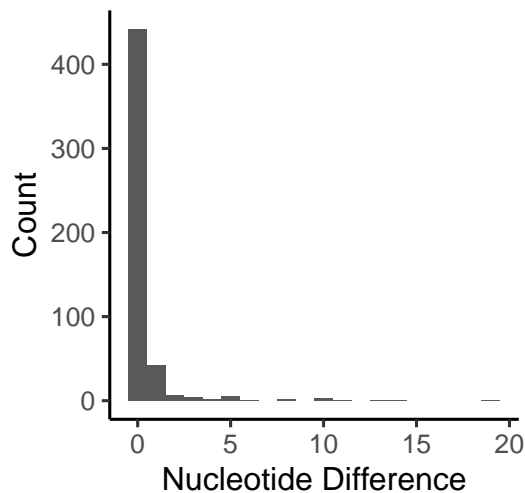
### IGHV2-70D\*14

5 sequences assigned  
No exact matches.



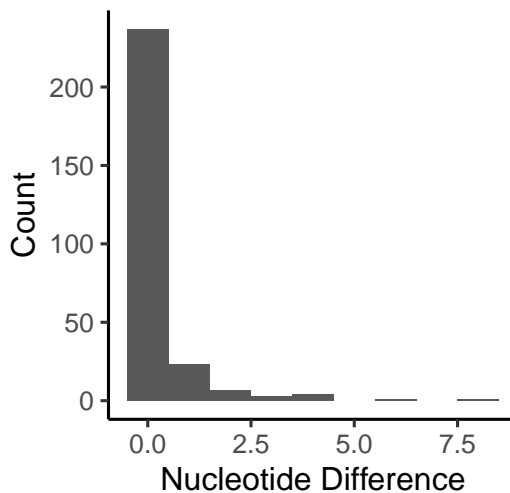
### IGHV1-69\*08\_C191T

512 sequences assigned  
442 (86.3%) exact matches, in which:  
400 unique CDR3  
6 unique J



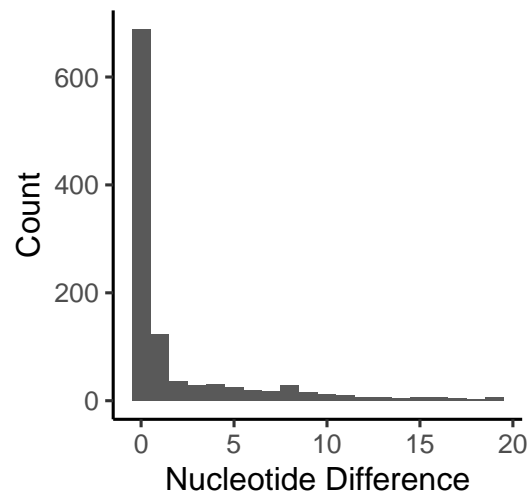
### IGHV2-26\*01

276 sequences assigned  
237 (85.9%) exact matches, in which:  
225 unique CDR3  
5 unique J



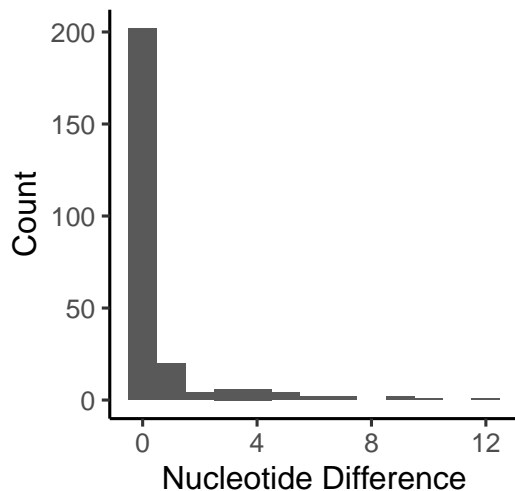
### IGHV3-7\*01

1087 sequences assigned  
689 (63.4%) exact matches, in which:  
614 unique CDR3  
6 unique J



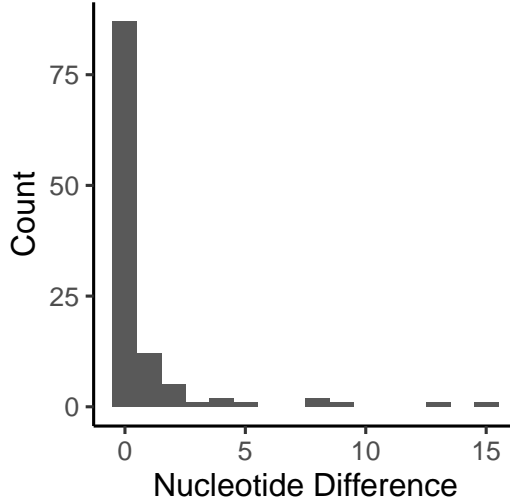
### IGHV2-5\*01

253 sequences assigned  
202 (79.8%) exact matches, in which:  
188 unique CDR3  
6 unique J



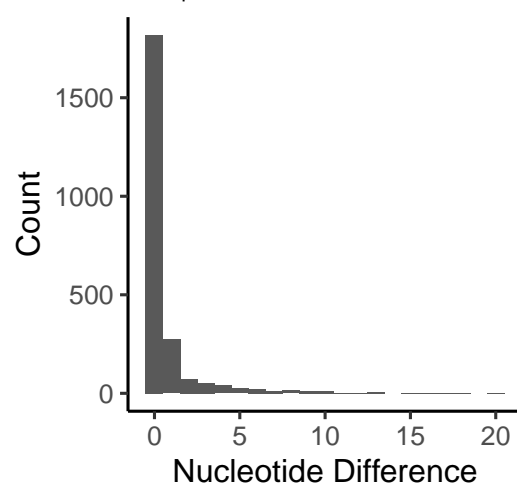
### IGHV2-70\*01

113 sequences assigned  
87 (77%) exact matches, in which:  
84 unique CDR3  
5 unique J



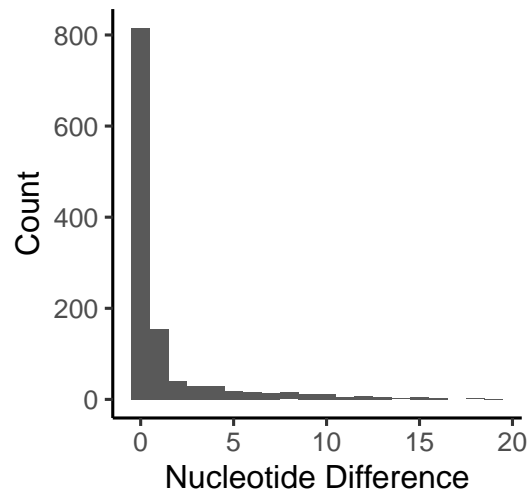
### IGHV3-9\*01

2378 sequences assigned  
1818 (76.5%) exact matches, in which:  
1556 unique CDR3  
6 unique J



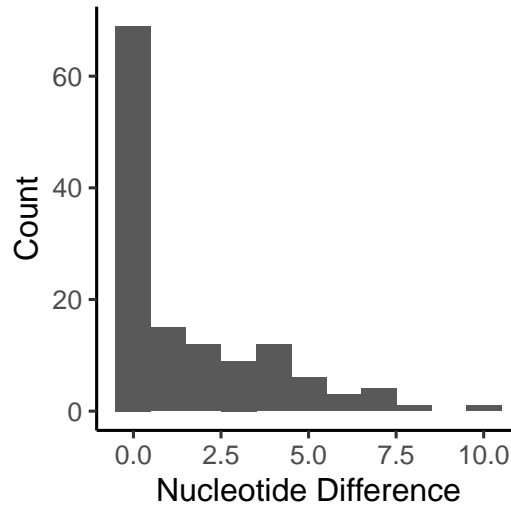
### IGHV3-11\*01

1189 sequences assigned  
816 (68.6%) exact matches, in which:  
723 unique CDR3  
6 unique J



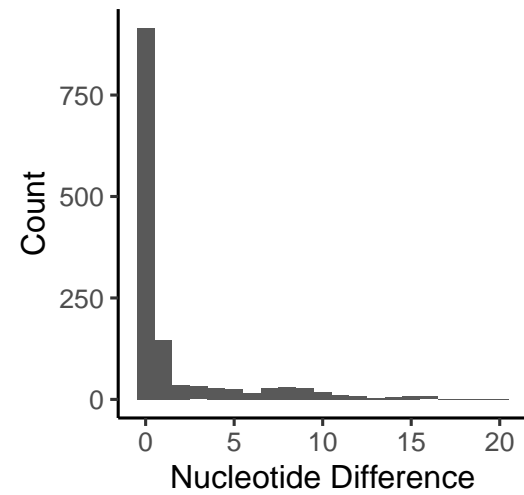
### IGHV3-20\*01

132 sequences assigned  
69 (52.3%) exact matches, in which:  
63 unique CDR3  
5 unique J



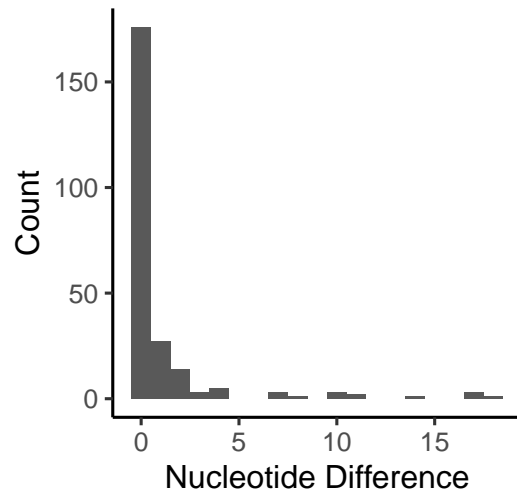
### IGHV3-23\*04

1360 sequences assigned  
916 (67.4%) exact matches, in which:  
815 unique CDR3  
6 unique J



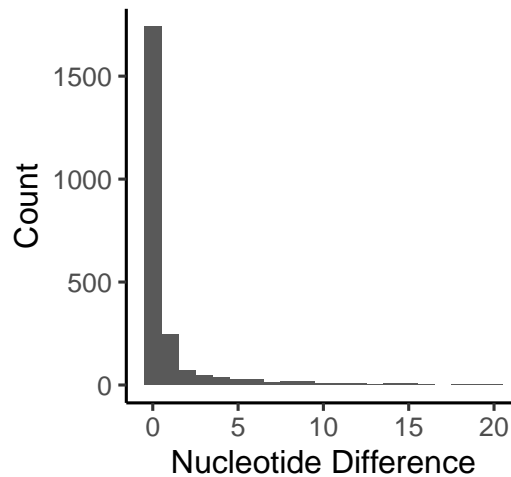
### IGHV3-13\*01

239 sequences assigned  
176 (73.6%) exact matches, in which:  
156 unique CDR3  
5 unique J



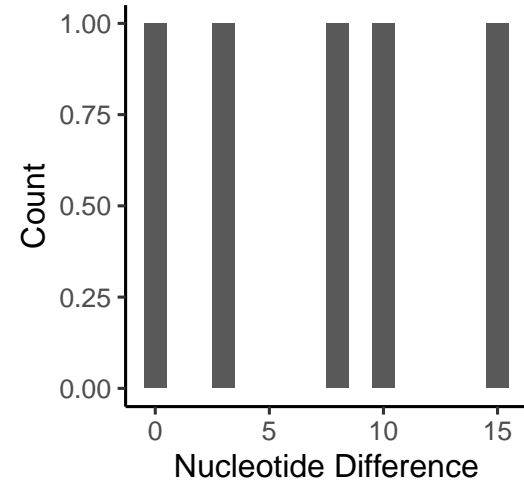
### IGHV3-21\*01

2297 sequences assigned  
1740 (75.8%) exact matches, in which:  
1509 unique CDR3  
6 unique J



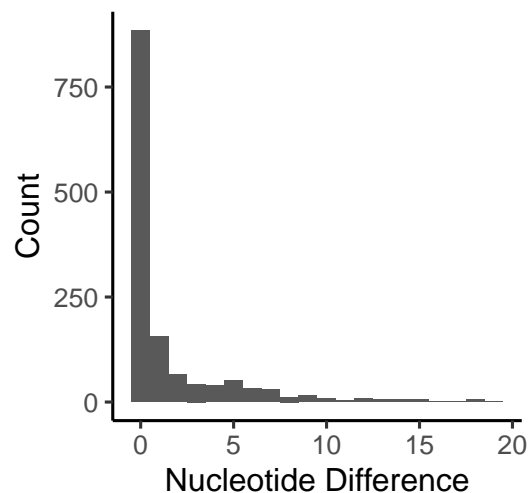
### IGHV3-30-3\*01

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



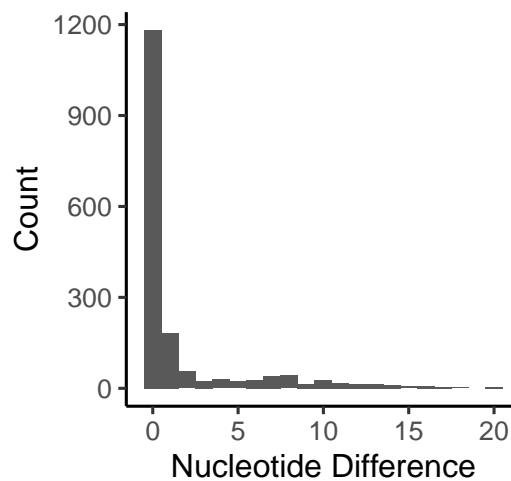
### IGHV3-15\*01

1379 sequences assigned  
885 (64.2%) exact matches, in which:  
795 unique CDR3  
6 unique J



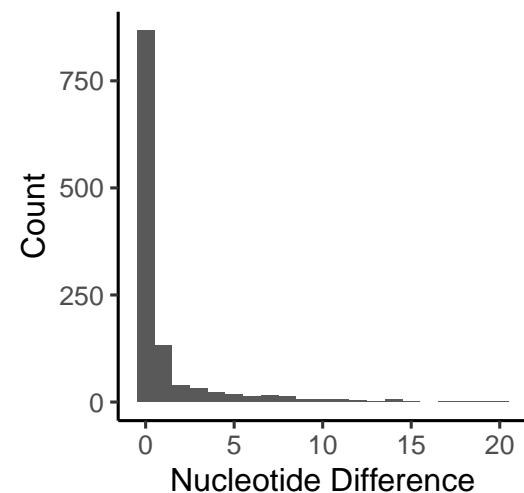
### IGHV3-23\*01

1738 sequences assigned  
1182 (68%) exact matches, in which:  
1047 unique CDR3  
6 unique J



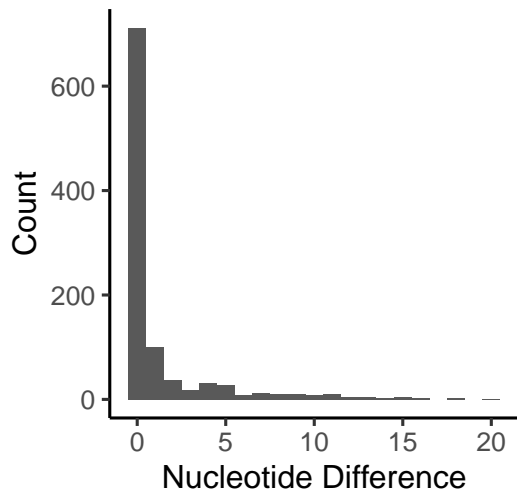
### IGHV3-30\*04

1189 sequences assigned  
868 (73%) exact matches, in which:  
790 unique CDR3  
6 unique J



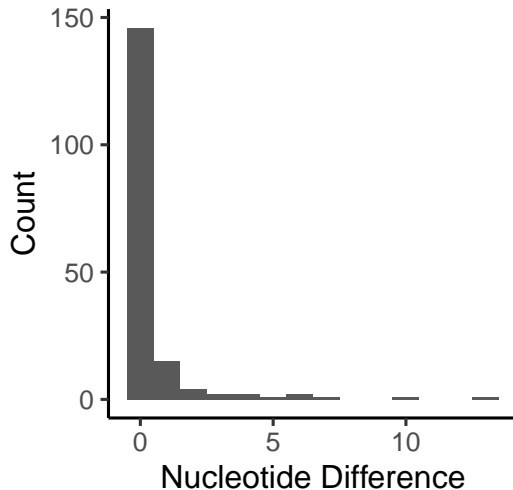
### IGHV3–30\*18

1022 sequences assigned  
712 (69.7%) exact matches, in which:  
619 unique CDR3  
6 unique J



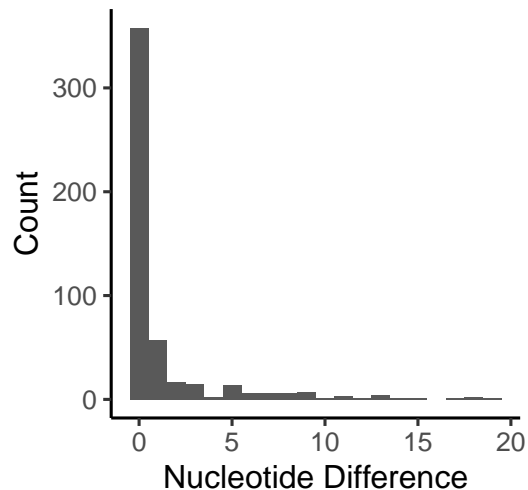
### IGHV3–43\*01

175 sequences assigned  
146 (83.4%) exact matches, in which:  
116 unique CDR3  
6 unique J



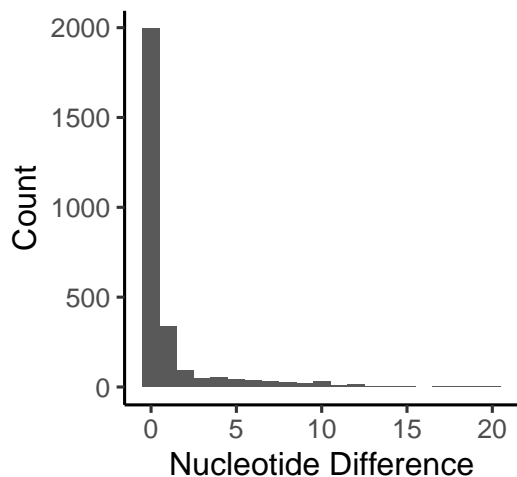
### IGHV3–49\*03

504 sequences assigned  
358 (71%) exact matches, in which:  
305 unique CDR3  
5 unique J



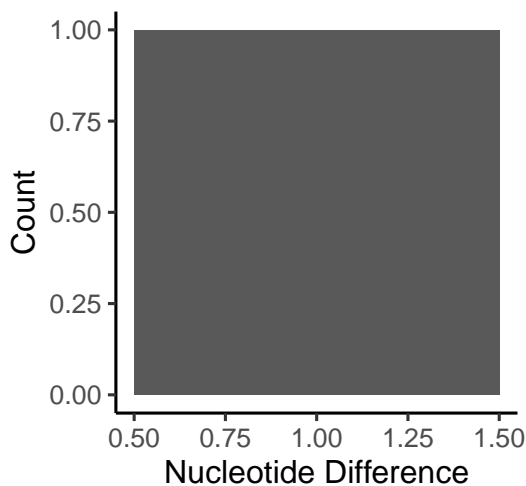
### IGHV3–33\*01

2752 sequences assigned  
1994 (72.5%) exact matches, in which:  
1741 unique CDR3  
6 unique J



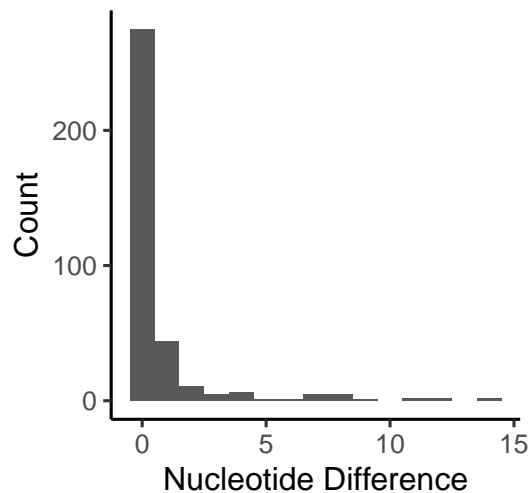
### IGHV3–47\*02

1 sequences assigned  
No exact matches.



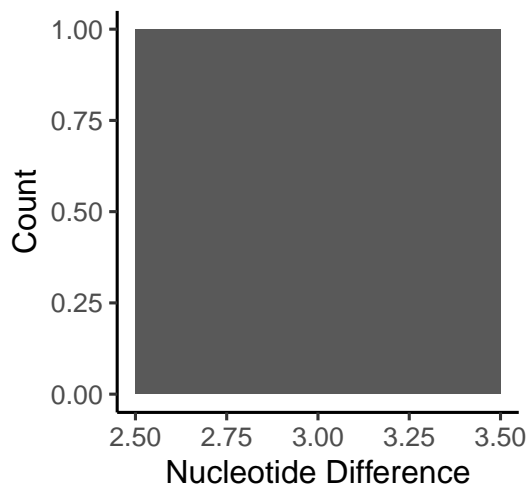
### IGHV3–53\*02

364 sequences assigned  
275 (75.5%) exact matches, in which:  
253 unique CDR3  
5 unique J



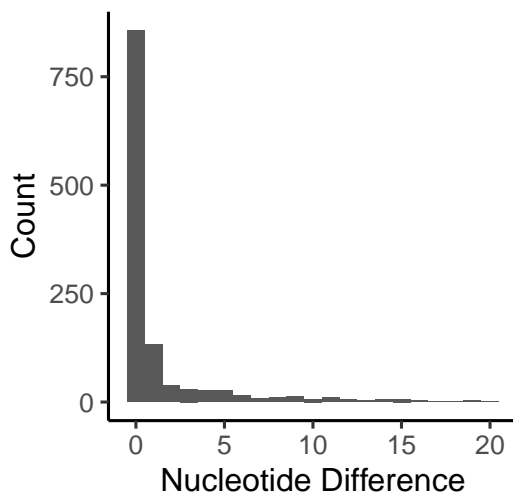
### IGHV3–41\*02

1 sequences assigned  
No exact matches.



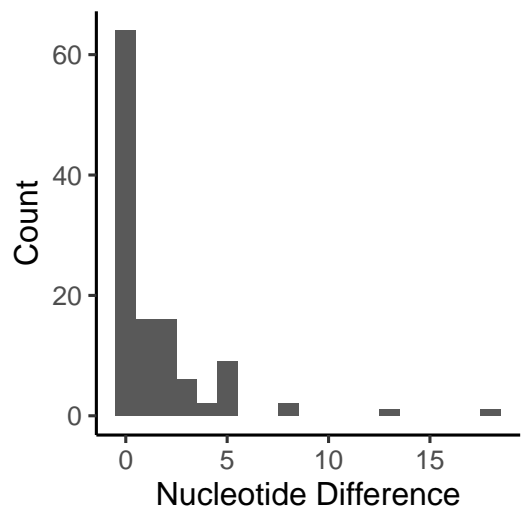
### IGHV3–48\*01

1209 sequences assigned  
857 (70.9%) exact matches, in which:  
747 unique CDR3  
6 unique J



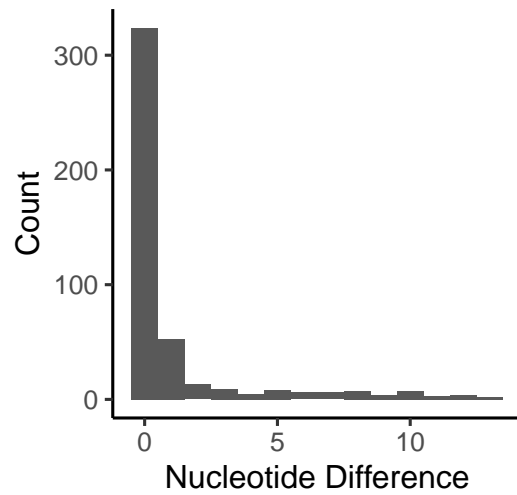
### IGHV3–64\*01

117 sequences assigned  
64 (54.7%) exact matches, in which:  
61 unique CDR3  
5 unique J



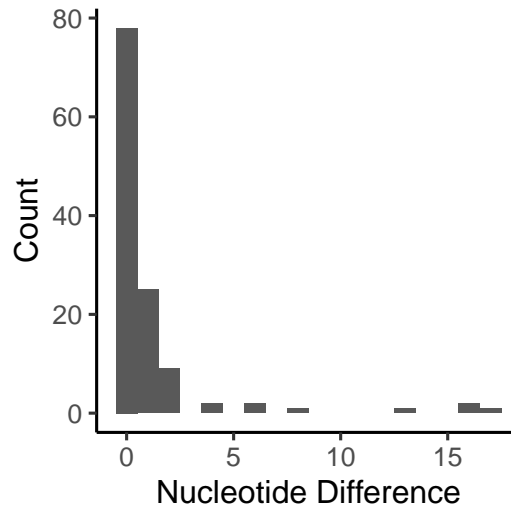
### IGHV3-66\*02

452 sequences assigned  
324 (71.7%) exact matches, in which:  
279 unique CDR3  
6 unique J



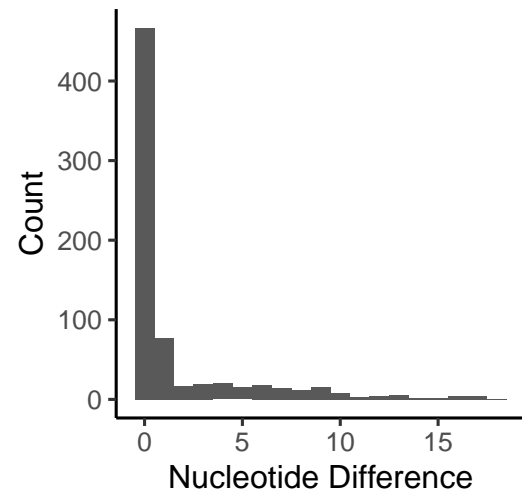
### IGHV3-73\*01

121 sequences assigned  
78 (64.5%) exact matches, in which:  
72 unique CDR3  
4 unique J



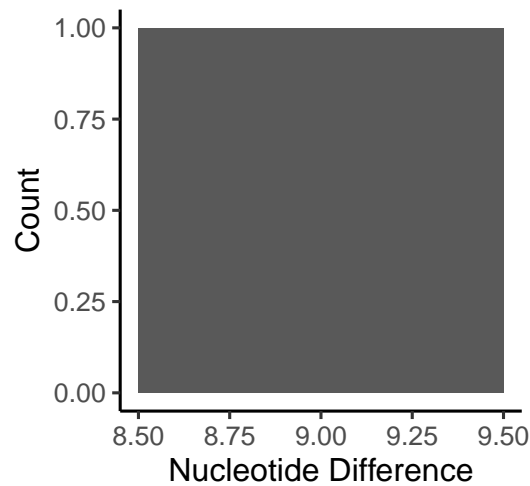
### IGHV4-4\*07

715 sequences assigned  
467 (65.3%) exact matches, in which:  
428 unique CDR3  
6 unique J



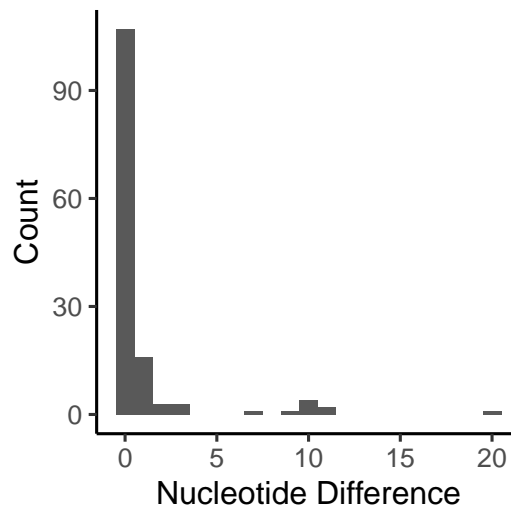
### IGHV3-71\*01

1 sequences assigned  
No exact matches.



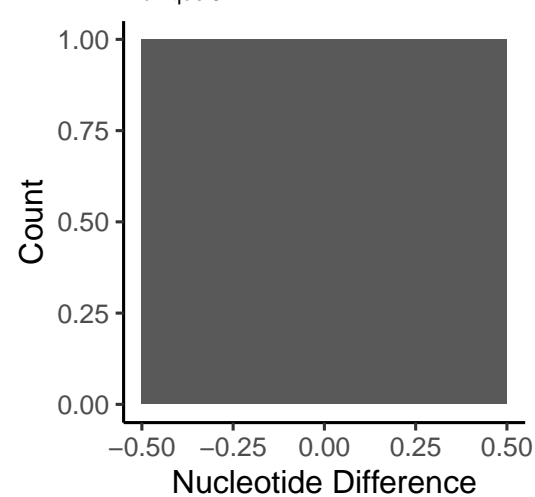
### IGHV3-73\*02

139 sequences assigned  
107 (77%) exact matches, in which:  
91 unique CDR3  
6 unique J



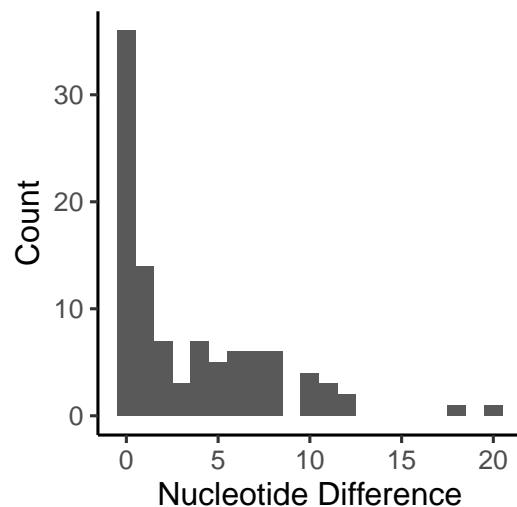
### IGHV4-28\*05

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



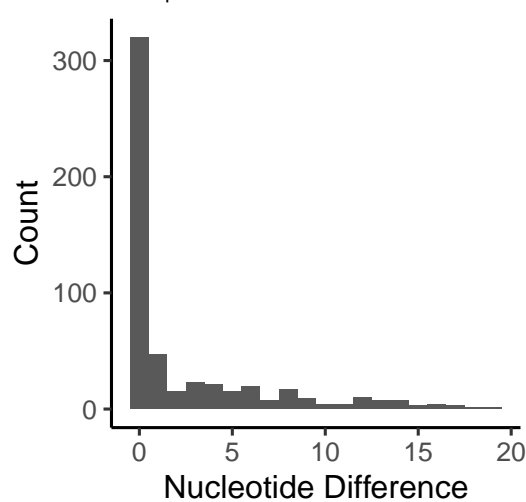
### IGHV3-72\*01

104 sequences assigned  
36 (34.6%) exact matches, in which:  
32 unique CDR3  
4 unique J



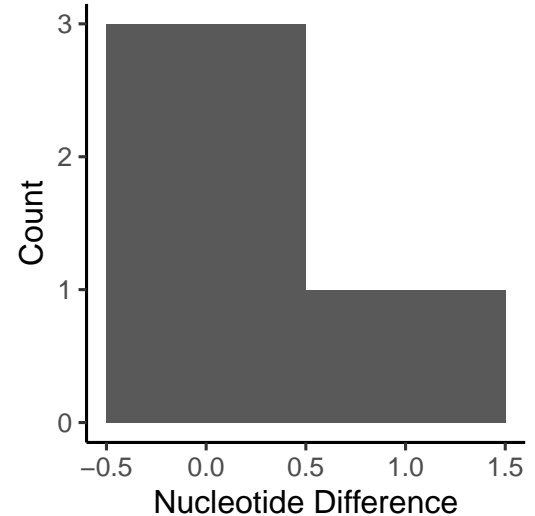
### IGHV3-74\*01

539 sequences assigned  
320 (59.4%) exact matches, in which:  
298 unique CDR3  
6 unique J



### IGHV4-28\*07

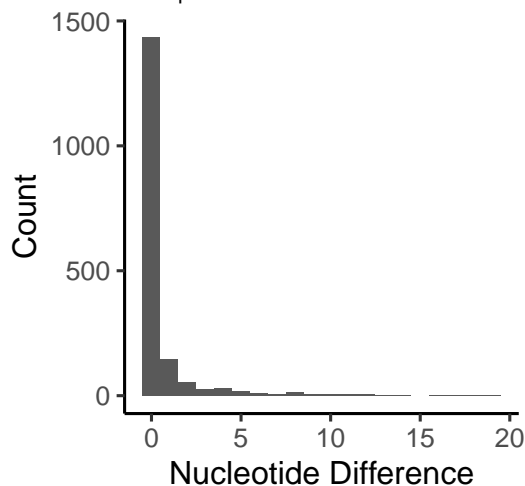
4 sequences assigned  
3 (75%) exact matches, in which:  
2 unique CDR3  
2 unique J





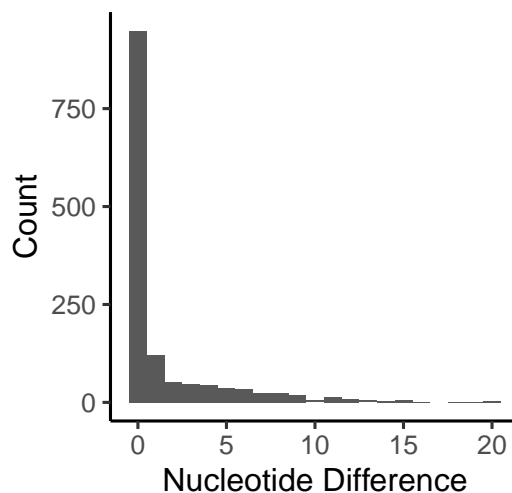
### IGHV4-31\*03

1787 sequences assigned  
1434 (80.2%) exact matches, in which:  
1310 unique CDR3  
6 unique J



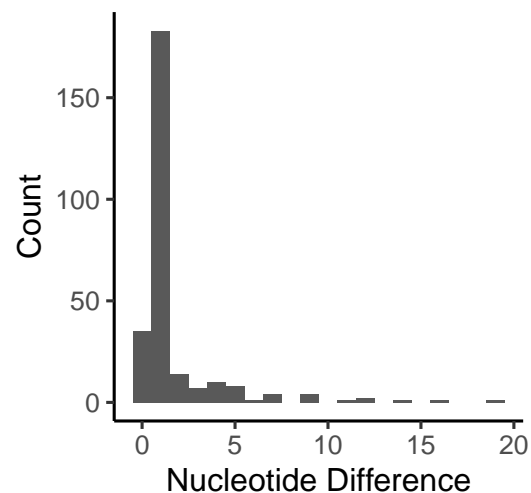
### IGHV4-59\*01

1407 sequences assigned  
949 (67.4%) exact matches, in which:  
892 unique CDR3  
6 unique J



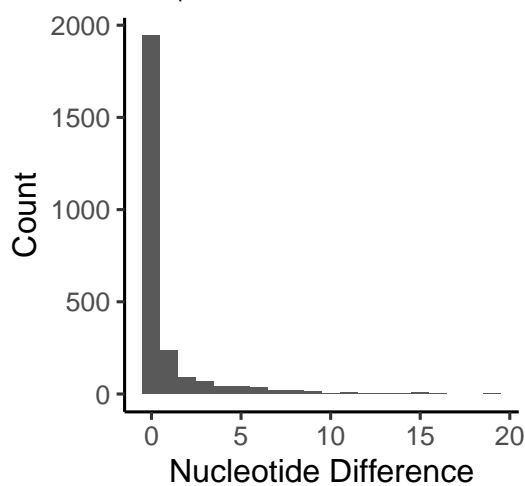
### IGHV5-51\*01

272 sequences assigned  
35 (12.9%) exact matches, in which:  
35 unique CDR3  
5 unique J



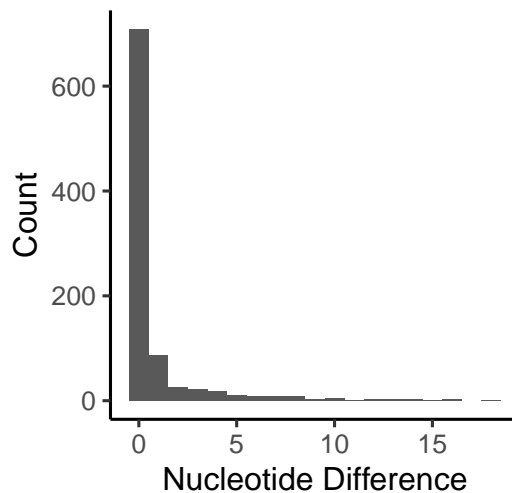
### IGHV4-34\*01

2534 sequences assigned  
1943 (76.7%) exact matches, in which:  
1708 unique CDR3  
6 unique J



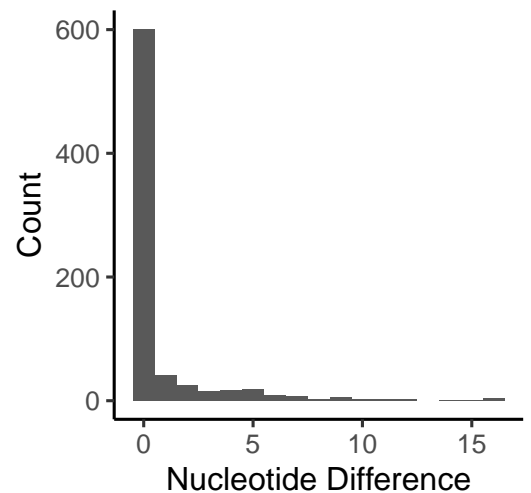
### IGHV4-61\*02

919 sequences assigned  
709 (77.1%) exact matches, in which:  
662 unique CDR3  
6 unique J



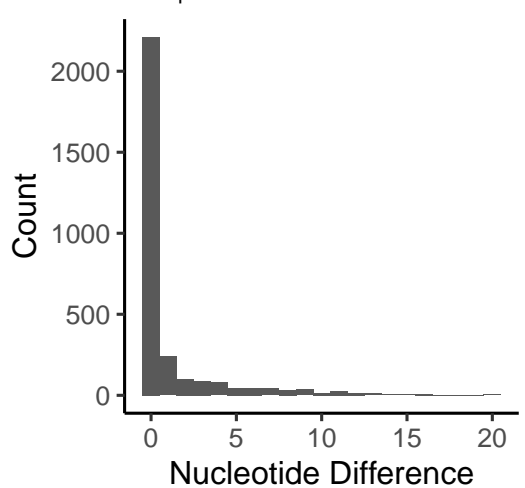
### IGHV5-51\*03

758 sequences assigned  
601 (79.3%) exact matches, in which:  
561 unique CDR3  
6 unique J



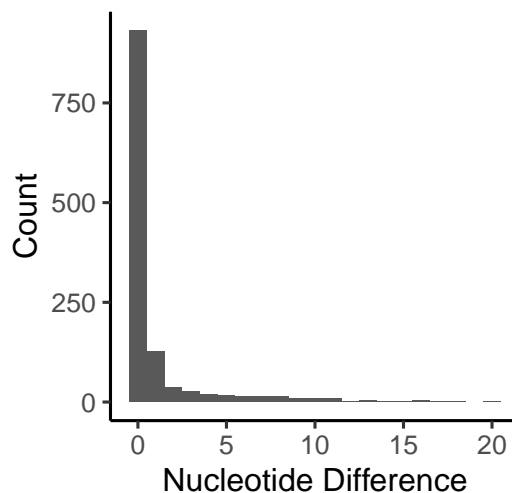
### IGHV4-39\*01

3014 sequences assigned  
2211 (73.4%) exact matches, in which:  
1985 unique CDR3  
6 unique J



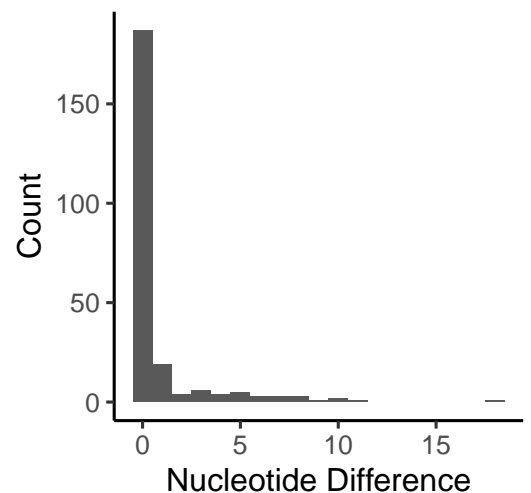
### IGHV4-61\*02\_A234G

1246 sequences assigned  
932 (74.8%) exact matches, in which:  
866 unique CDR3  
6 unique J



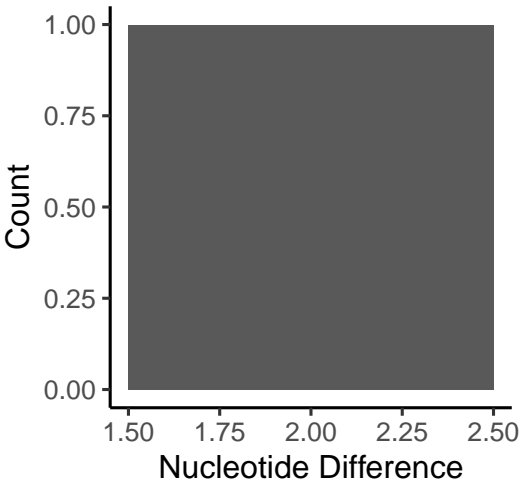
### IGHV6-1\*01

239 sequences assigned  
187 (78.2%) exact matches, in which:  
162 unique CDR3  
6 unique J

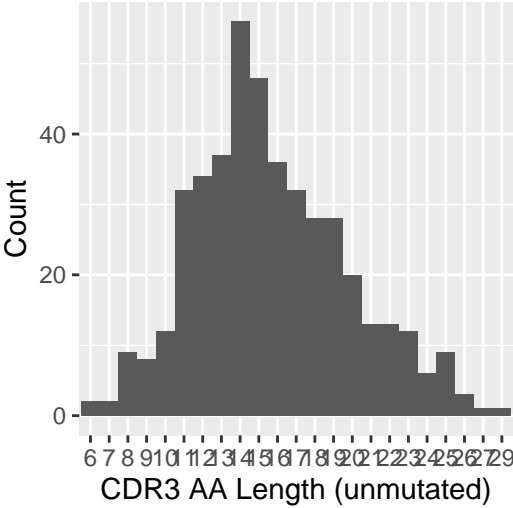


# IGHV3/OR16-12\*01

1 sequences assigned  
No exact matches.



IGHV1-69\*08\_C191T



IGHV4-61\*02\_A234G

