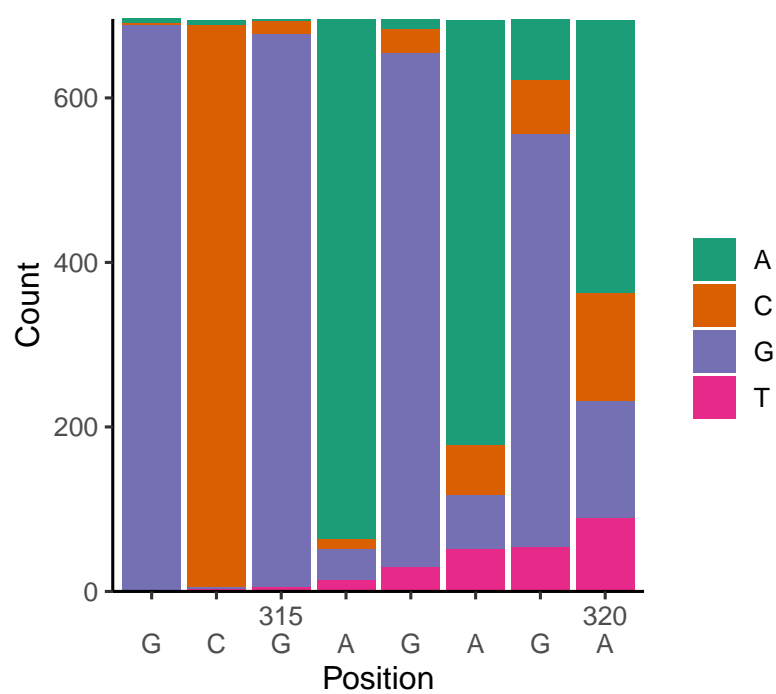
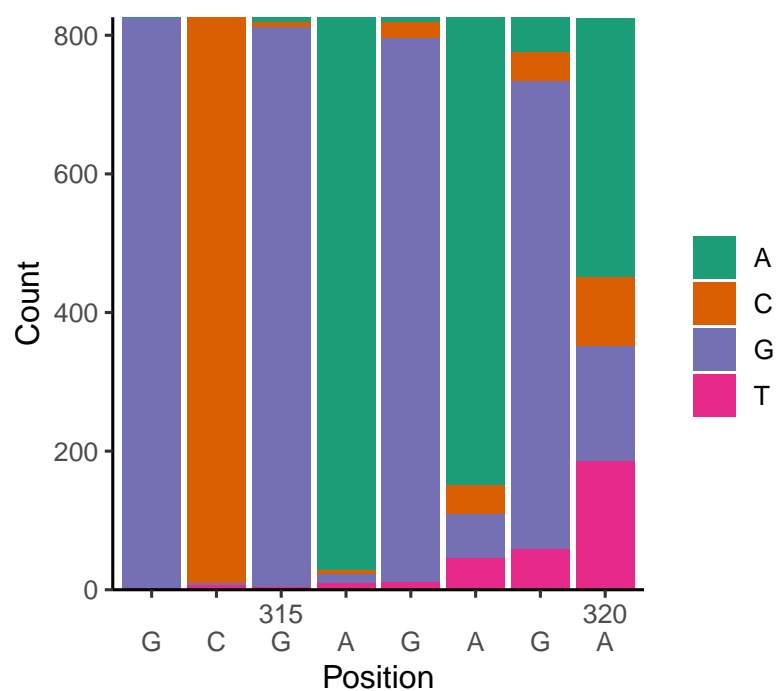


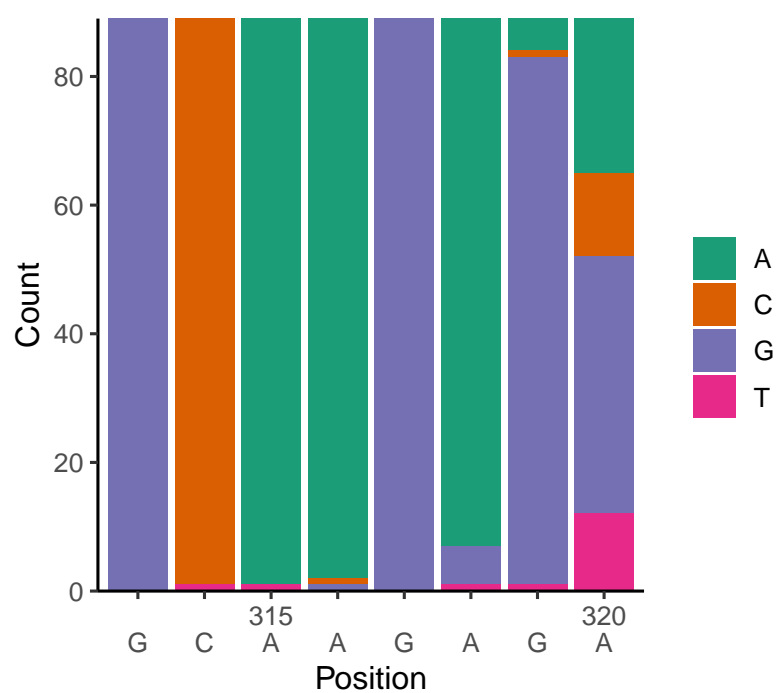
Gene IGHV1-69\*08\_C191T



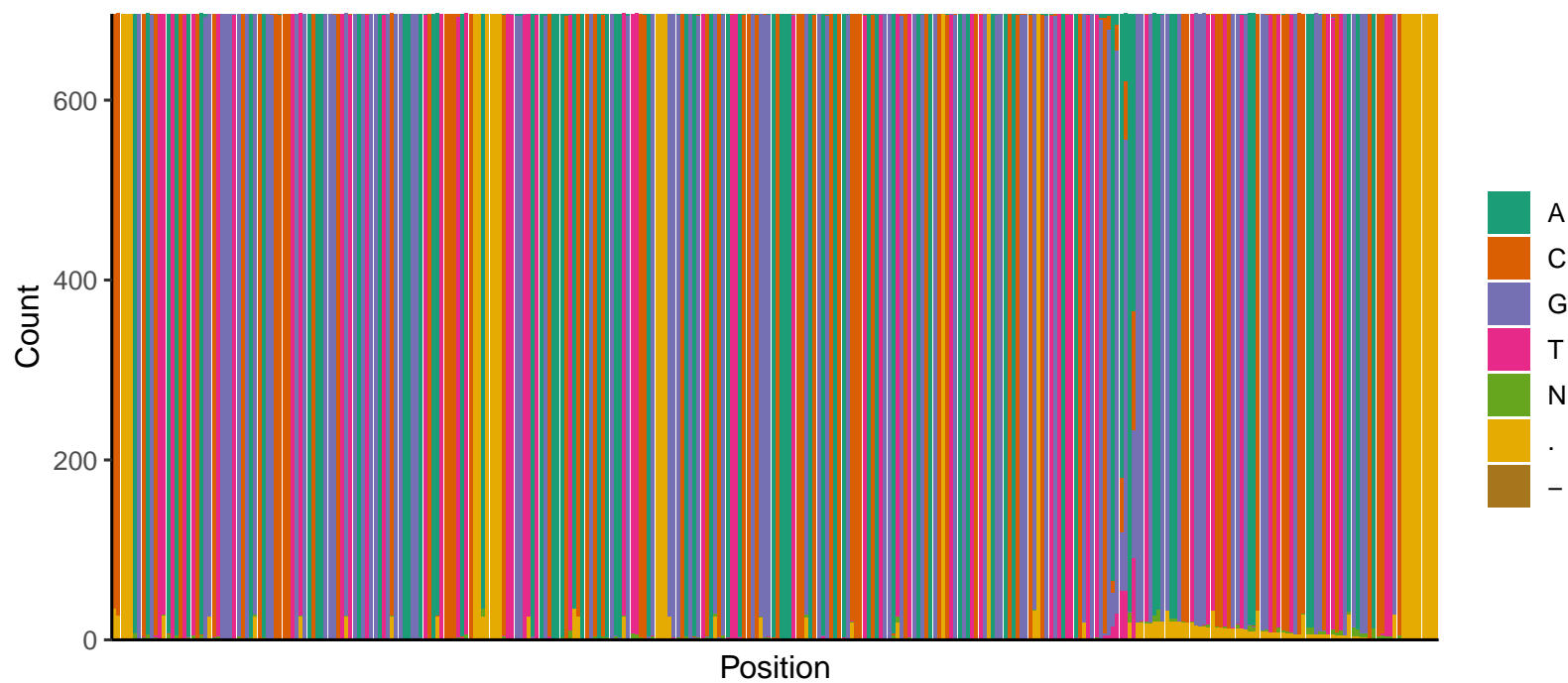
Gene IGHV4-38-2\*02\_A70G



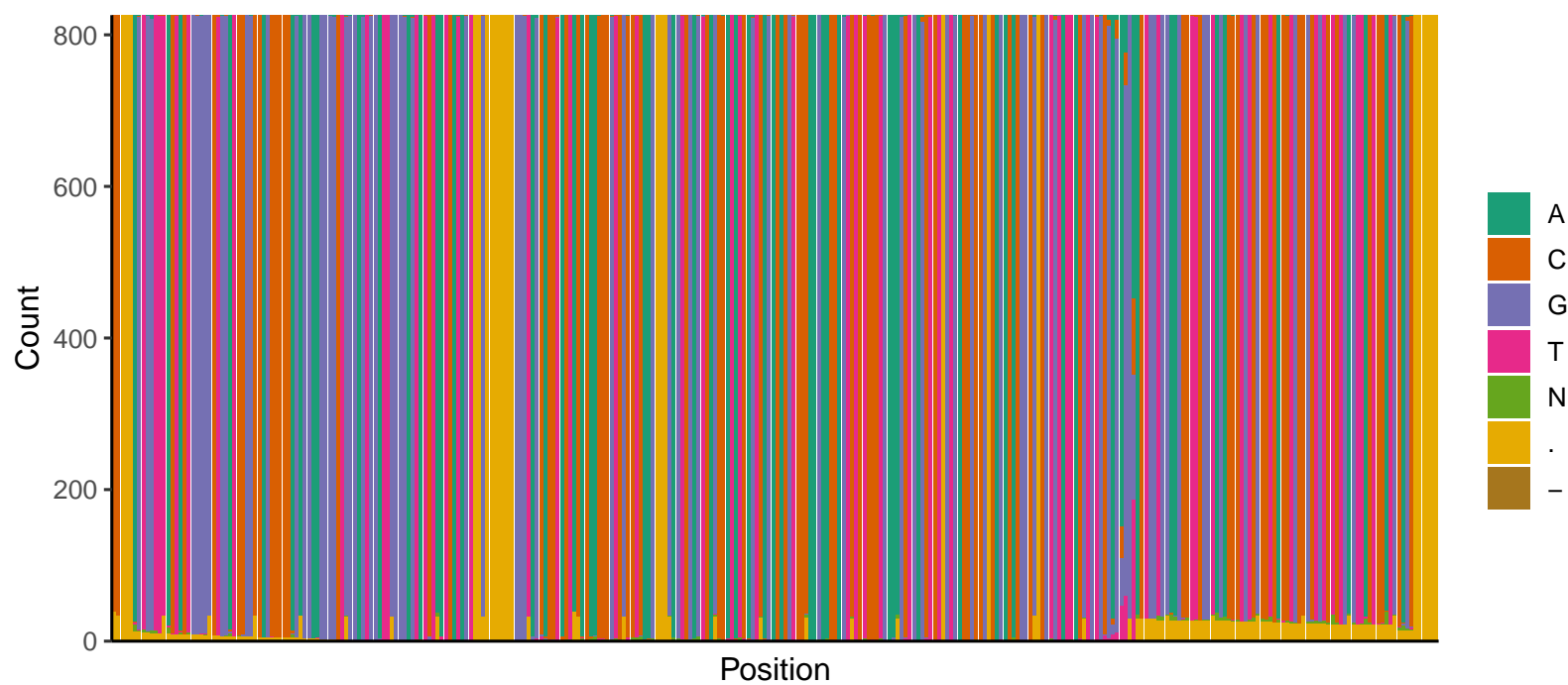
Gene IGHV3-13\*01\_G290A\_T300C



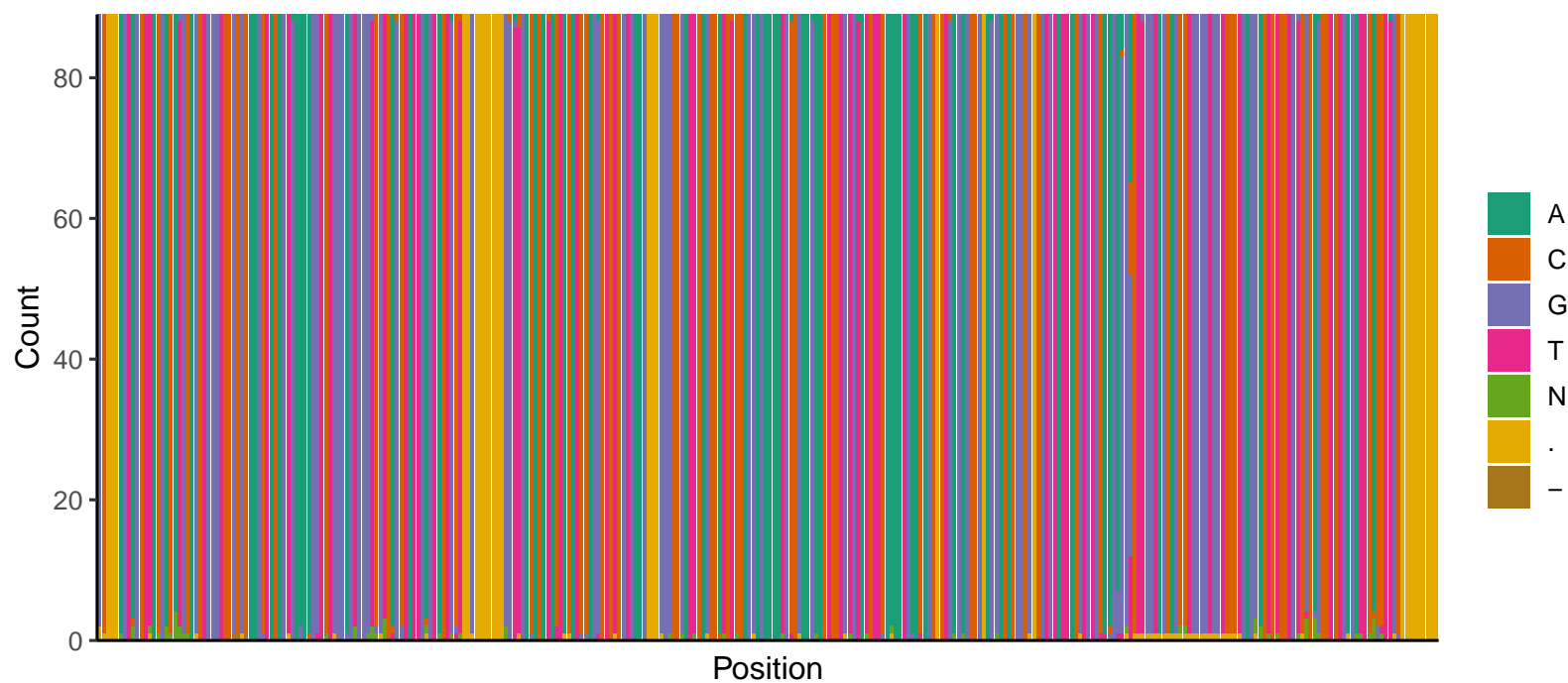
Gene IGHV1-69\*08\_C191T



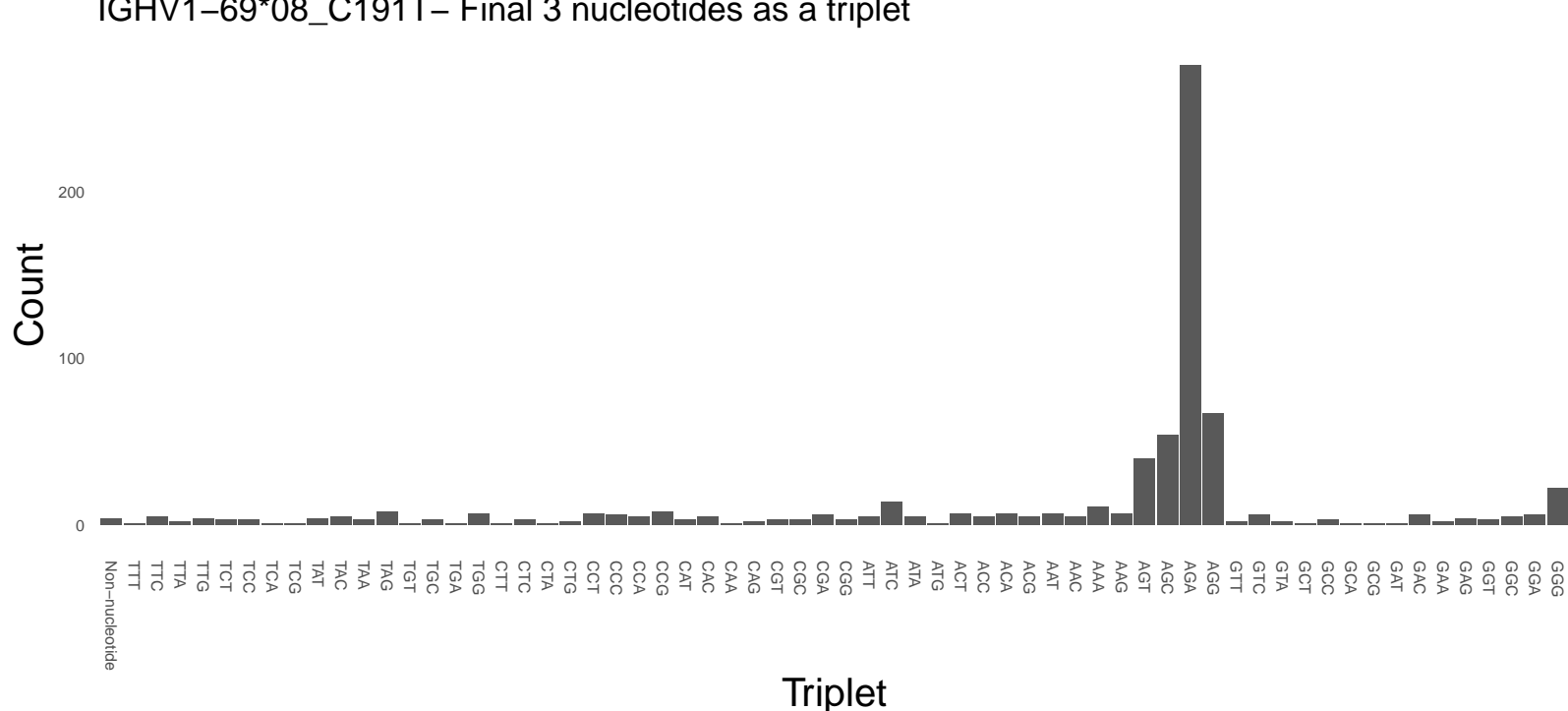
Gene IGHV4-38-2\*02\_A70G



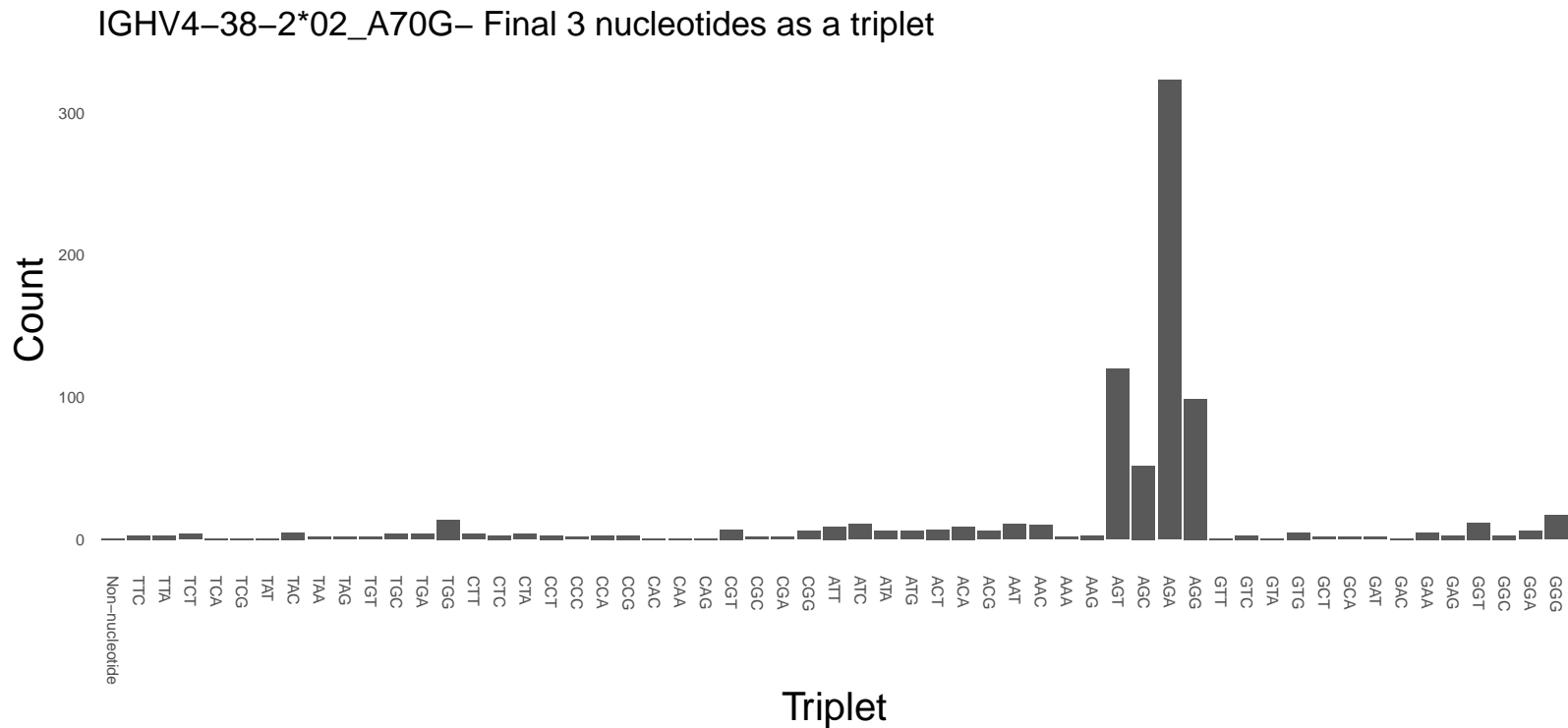
Gene IGHV3-13\*01\_G290A\_T300C



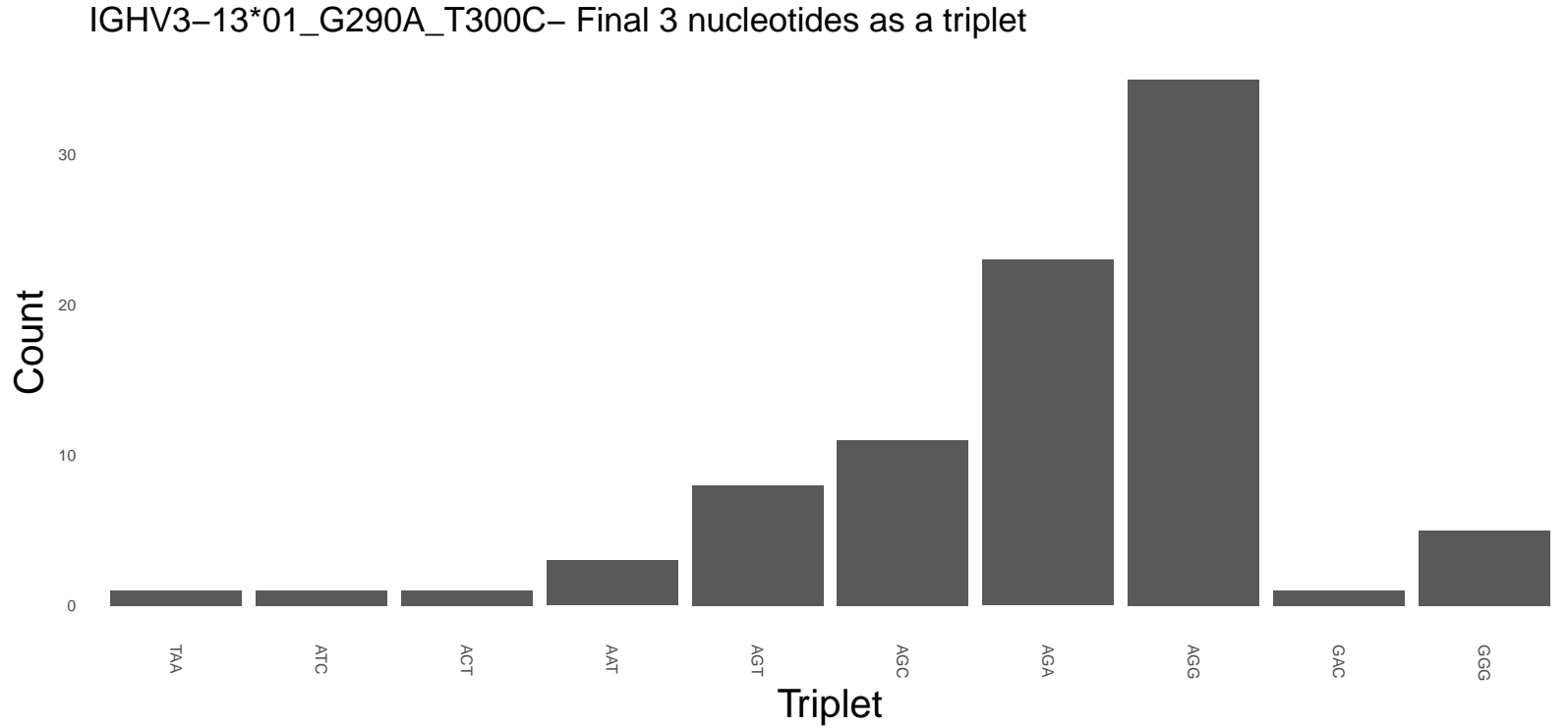
IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet



IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet

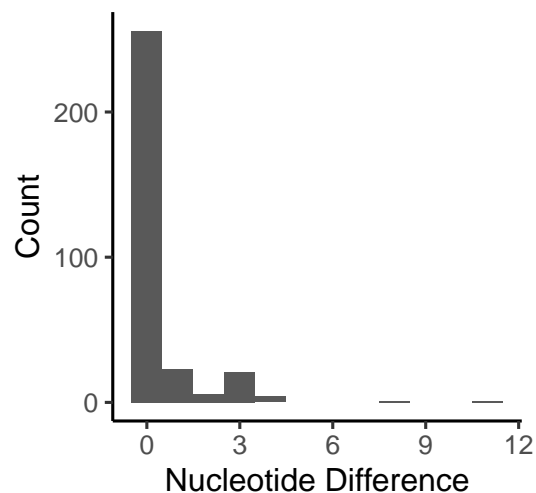


IGHV3-13\*01\_G290A\_T300C- Final 3 nucleotides as a triplet



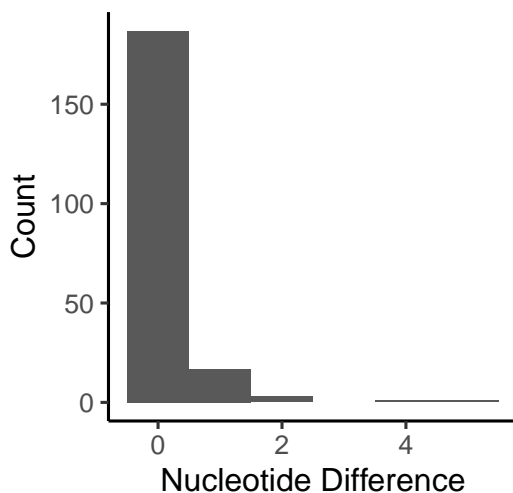
### IGHV1-2\*04

319 sequences assigned  
256 (80.3%) exact matches, in which:  
248 unique CDR3  
7 unique J



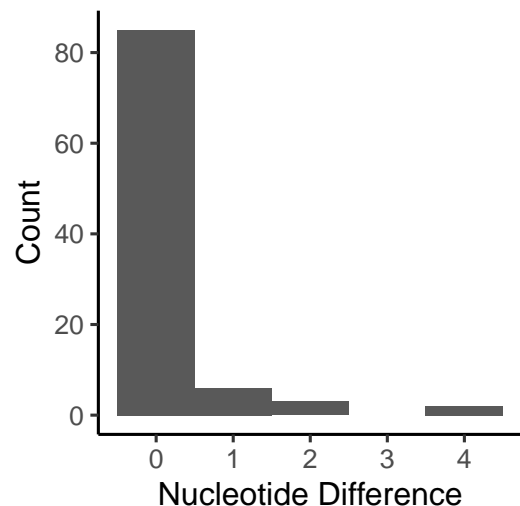
### IGHV1-24\*01

209 sequences assigned  
187 (89.5%) exact matches, in which:  
185 unique CDR3  
6 unique J



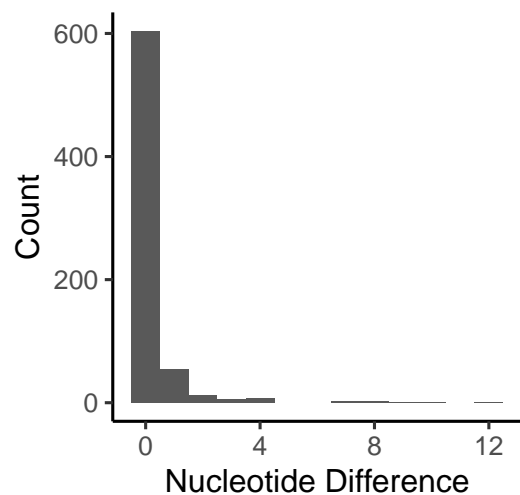
### IGHV1-58\*02

96 sequences assigned  
85 (88.5%) exact matches, in which:  
83 unique CDR3  
7 unique J



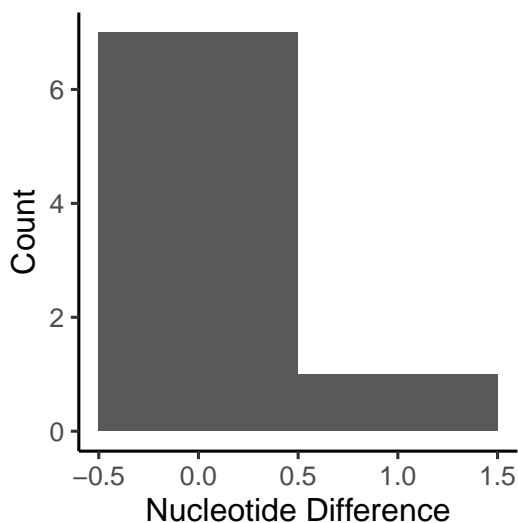
### IGHV1-3\*01

694 sequences assigned  
604 (87%) exact matches, in which:  
587 unique CDR3  
7 unique J



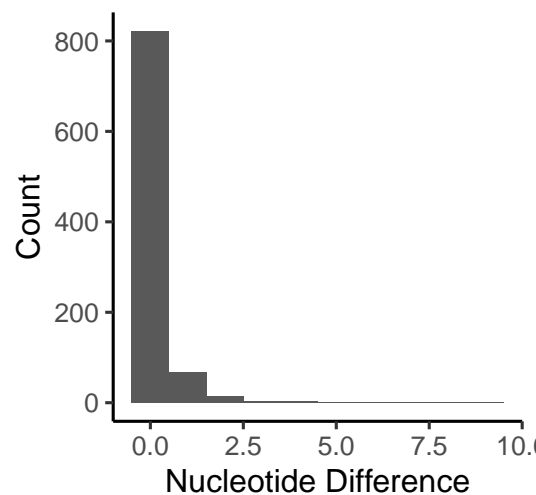
### IGHV1-45\*02

8 sequences assigned  
7 (87.5%) exact matches, in which:  
7 unique CDR3  
5 unique J



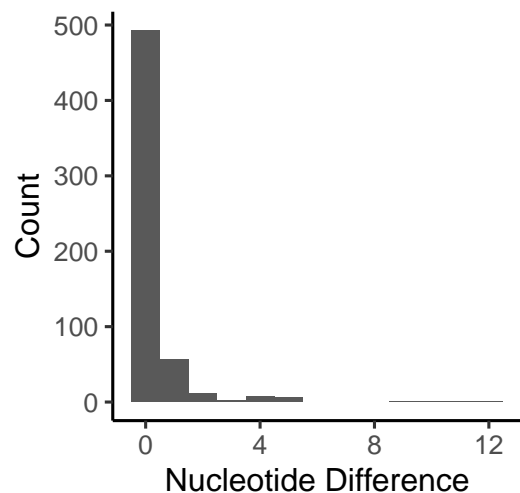
### IGHV1-69\*04

922 sequences assigned  
822 (89.2%) exact matches, in which:  
792 unique CDR3  
7 unique J



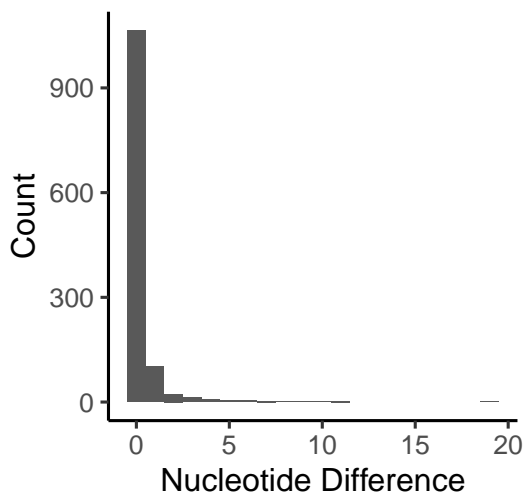
### IGHV1-18\*01

584 sequences assigned  
493 (84.4%) exact matches, in which:  
478 unique CDR3  
6 unique J



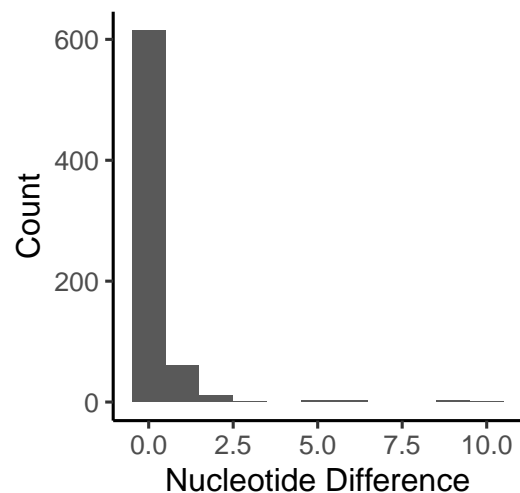
### IGHV1-46\*01

1232 sequences assigned  
1065 (86.4%) exact matches, in which:  
1019 unique CDR3  
7 unique J



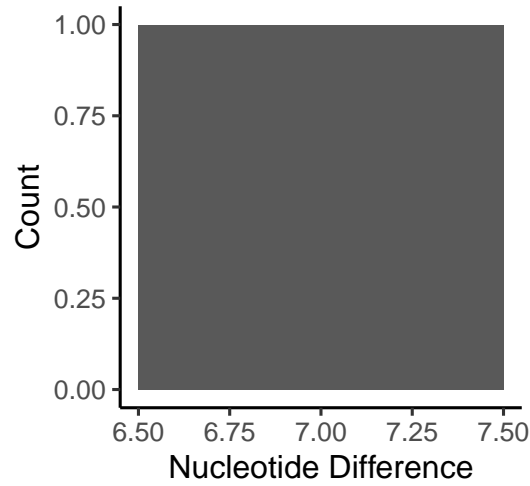
### IGHV1-69\*08\_C191T

696 sequences assigned  
615 (88.4%) exact matches, in which:  
590 unique CDR3  
7 unique J



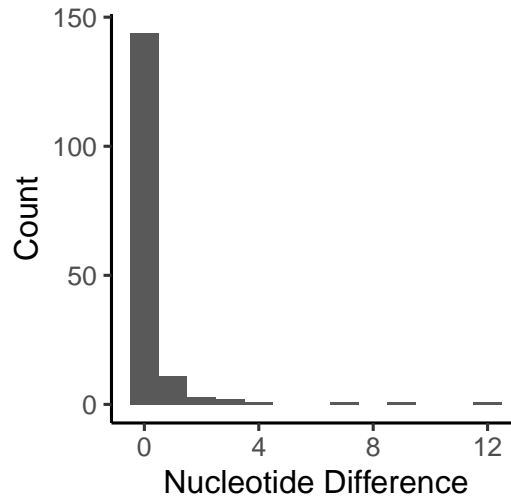
### IGHV1-69D\*01

1 sequences assigned  
No exact matches.



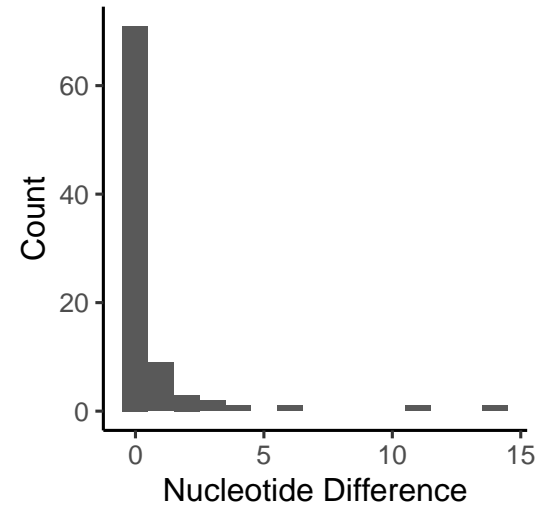
### IGHV2-70\*15

165 sequences assigned  
144 (87.3%) exact matches, in which:  
144 unique CDR3  
6 unique J



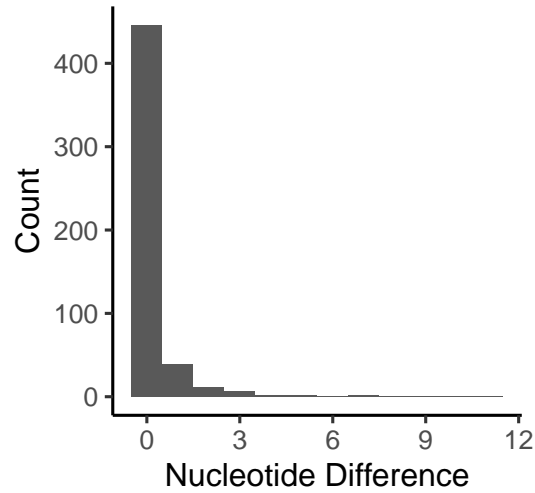
### IGHV3-13\*01\_G290A\_T3

89 sequences assigned  
71 (79.8%) exact matches, in which:  
68 unique CDR3  
5 unique J



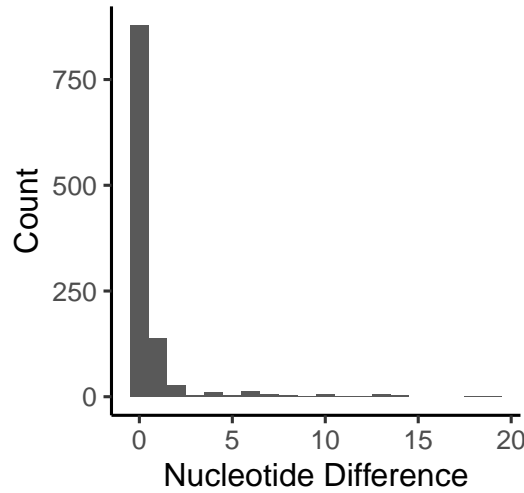
### IGHV2-5\*02

513 sequences assigned  
446 (86.9%) exact matches, in which:  
432 unique CDR3  
7 unique J



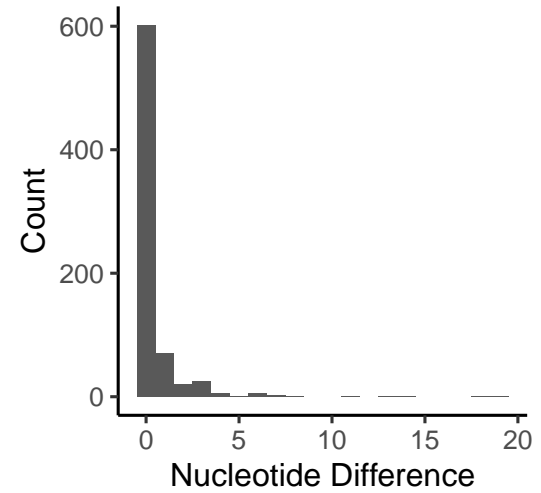
### IGHV3-7\*03

1127 sequences assigned  
879 (78%) exact matches, in which:  
838 unique CDR3  
7 unique J



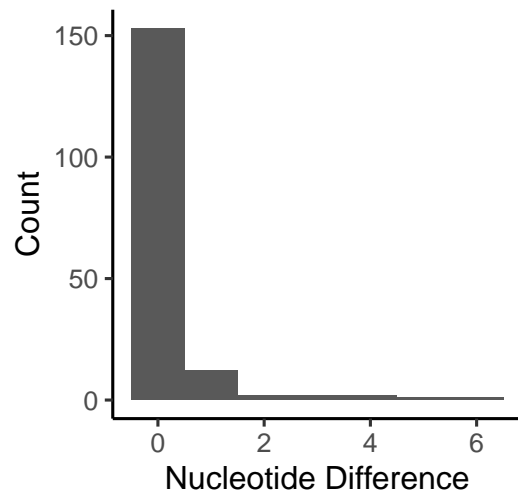
### IGHV3-15\*07

740 sequences assigned  
602 (81.4%) exact matches, in which:  
575 unique CDR3  
6 unique J



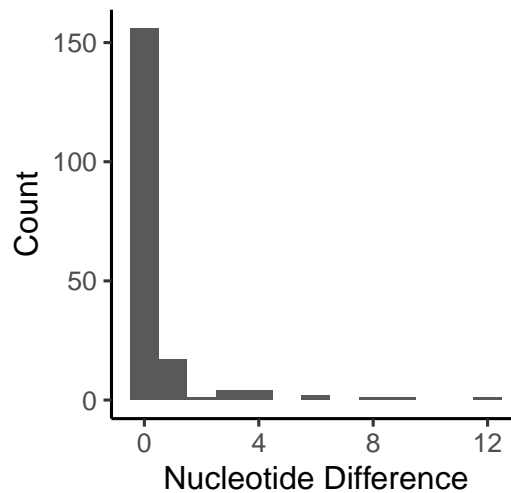
### IGHV2-26\*01

173 sequences assigned  
153 (88.4%) exact matches, in which:  
151 unique CDR3  
5 unique J



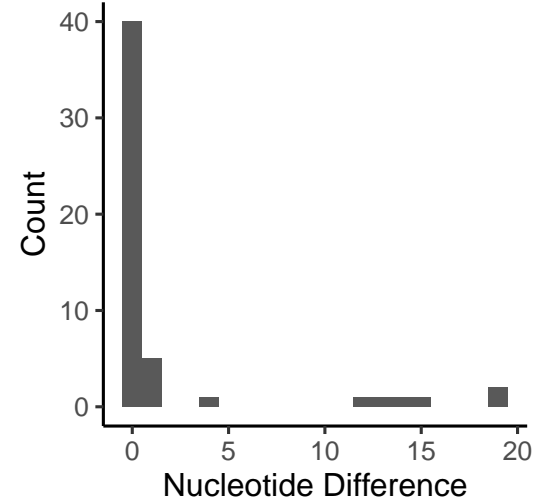
### IGHV3-11\*06

187 sequences assigned  
156 (83.4%) exact matches, in which:  
151 unique CDR3  
6 unique J



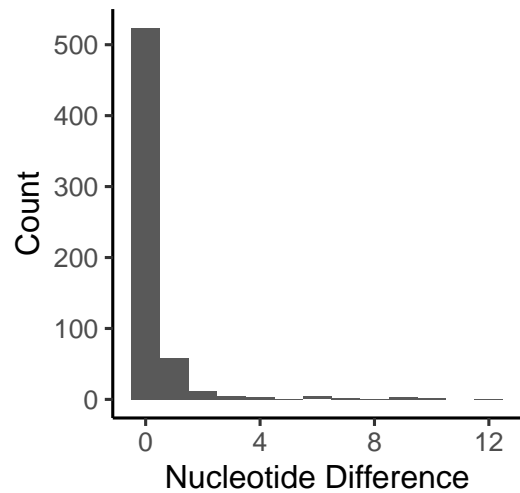
### IGHV3-20\*04

54 sequences assigned  
40 (74.1%) exact matches, in which:  
40 unique CDR3  
5 unique J



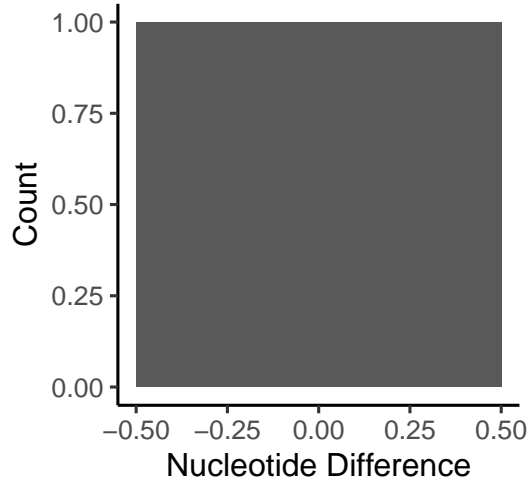
### IGHV3–21\*01

621 sequences assigned  
524 (84.4%) exact matches, in which:  
493 unique CDR3  
6 unique J



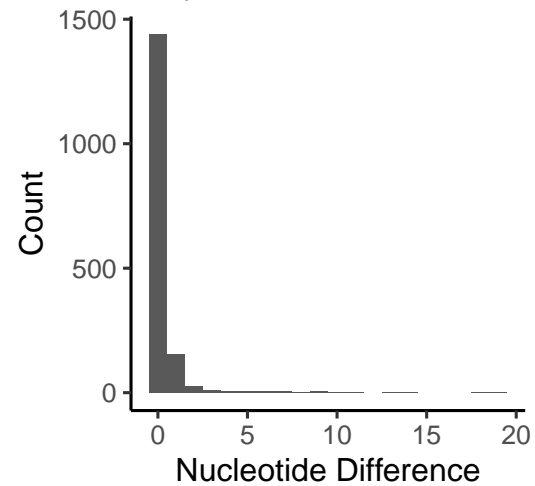
### IGHV3–35\*01

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



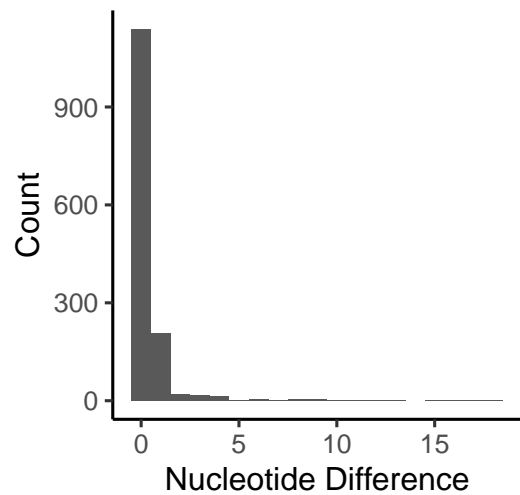
### IGHV3–48\*03

1680 sequences assigned  
1439 (85.7%) exact matches, in which:  
1375 unique CDR3  
7 unique J



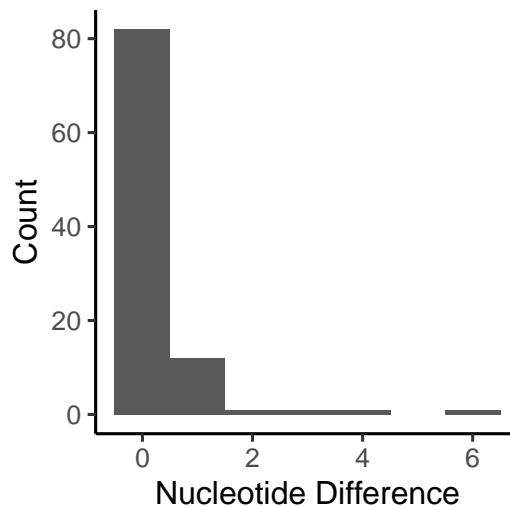
### IGHV3–30–3\*01

1429 sequences assigned  
1139 (79.7%) exact matches, in which:  
1097 unique CDR3  
7 unique J



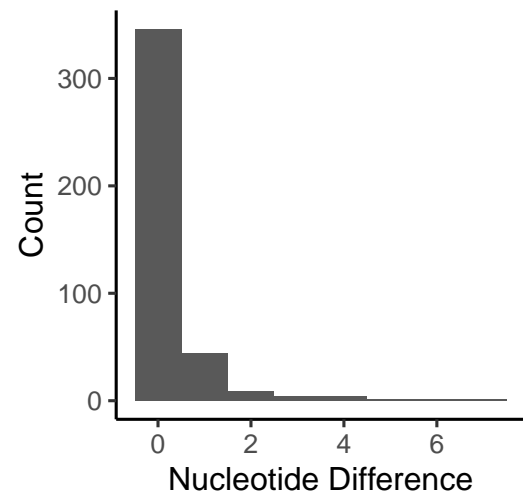
### IGHV3–43\*01

98 sequences assigned  
82 (83.7%) exact matches, in which:  
78 unique CDR3  
6 unique J



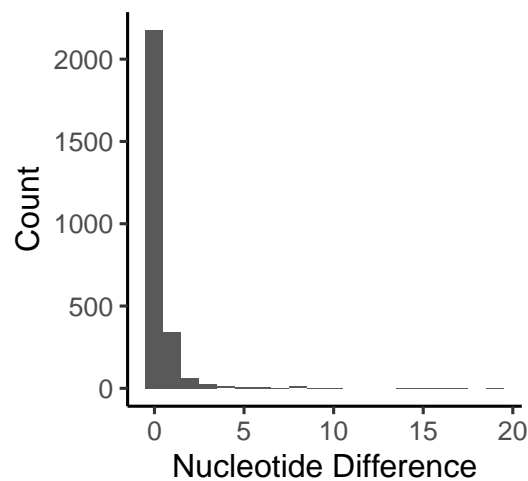
### IGHV3–49\*04

412 sequences assigned  
346 (84%) exact matches, in which:  
325 unique CDR3  
7 unique J



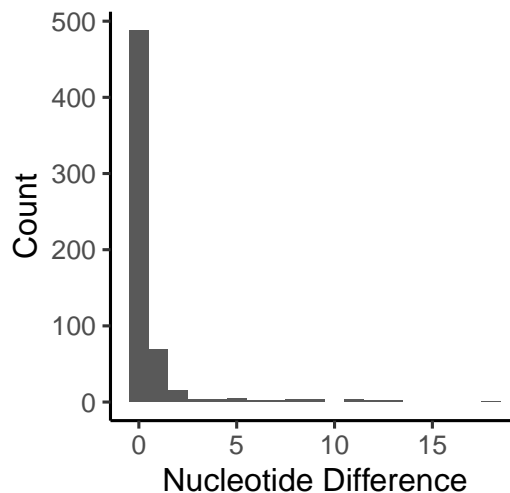
### IGHV3–33\*01

2679 sequences assigned  
2177 (81.3%) exact matches, in which:  
2059 unique CDR3  
7 unique J



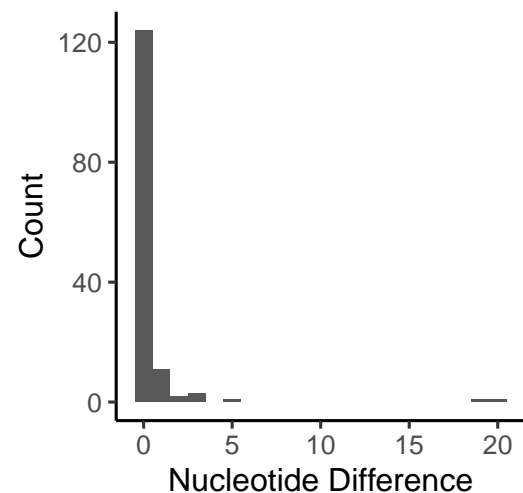
### IGHV3–48\*02

601 sequences assigned  
488 (81.2%) exact matches, in which:  
464 unique CDR3  
6 unique J



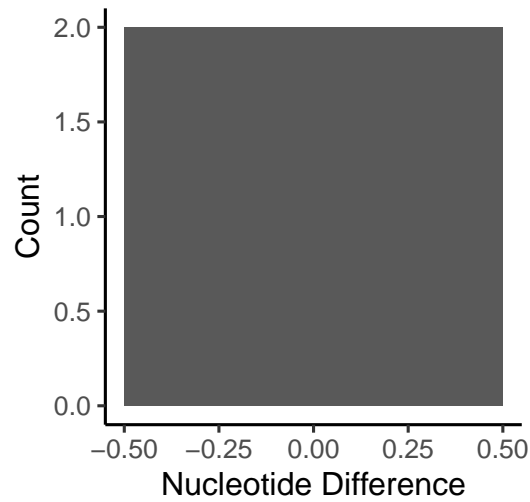
### IGHV3–49\*05

143 sequences assigned  
124 (86.7%) exact matches, in which:  
121 unique CDR3  
6 unique J



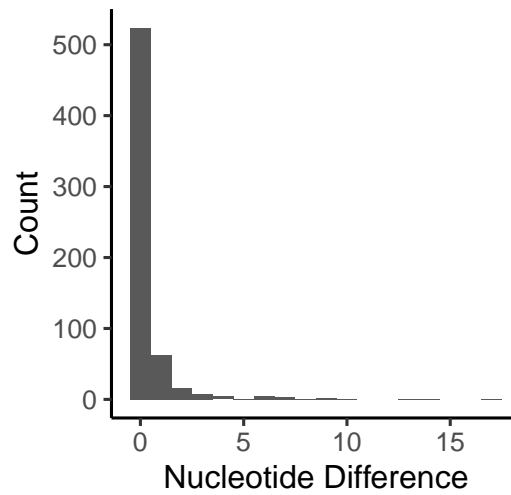
### IGHV3-52\*01

2 sequences assigned  
2 (100%) exact matches, in which:  
2 unique CDR3  
1 unique J



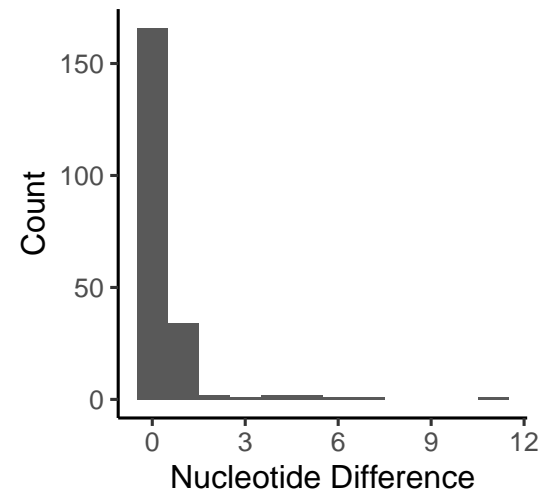
### IGHV3-66\*01

632 sequences assigned  
524 (82.9%) exact matches, in which:  
485 unique CDR3  
7 unique J



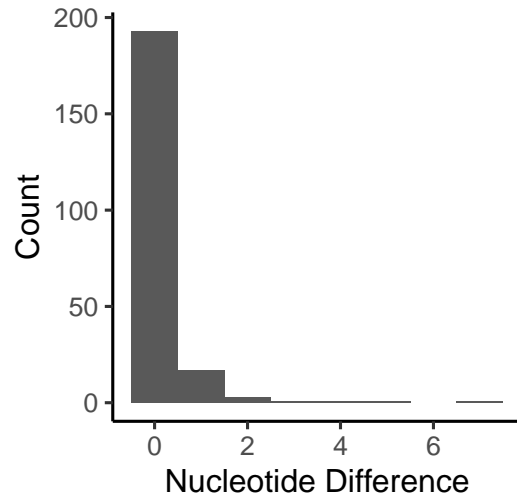
### IGHV3-73\*01

210 sequences assigned  
166 (79%) exact matches, in which:  
160 unique CDR3  
6 unique J



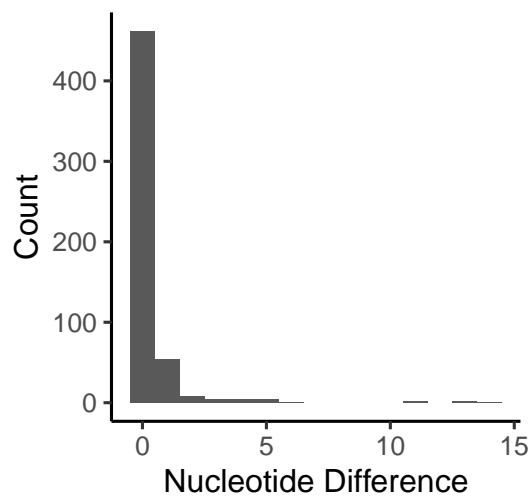
### IGHV3-53\*02

217 sequences assigned  
193 (88.9%) exact matches, in which:  
183 unique CDR3  
6 unique J



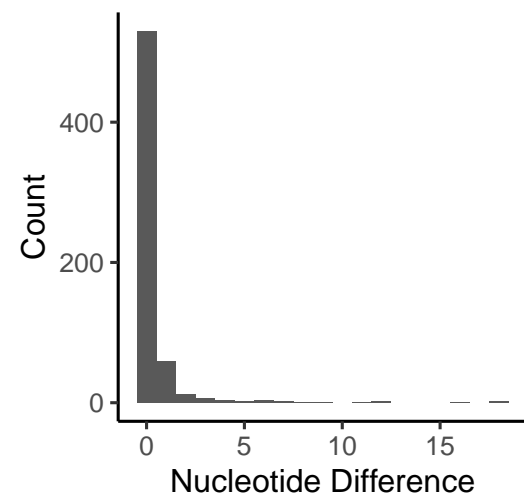
### IGHV3-66\*02

544 sequences assigned  
462 (84.9%) exact matches, in which:  
427 unique CDR3  
7 unique J



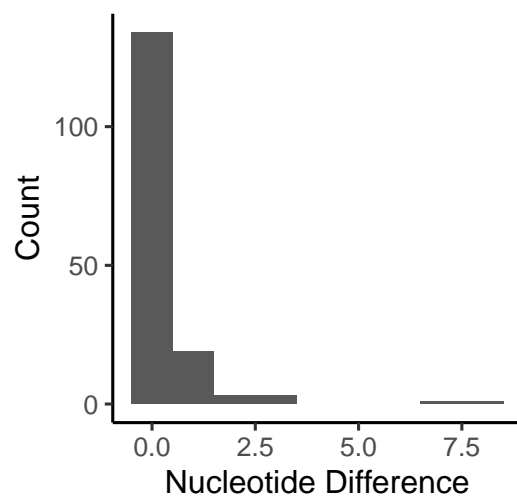
### IGHV3-74\*01

635 sequences assigned  
530 (83.5%) exact matches, in which:  
505 unique CDR3  
7 unique J



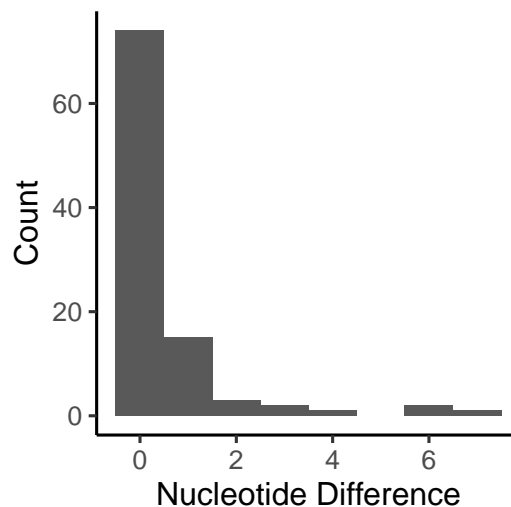
### IGHV3-64\*01

162 sequences assigned  
134 (82.7%) exact matches, in which:  
131 unique CDR3  
7 unique J



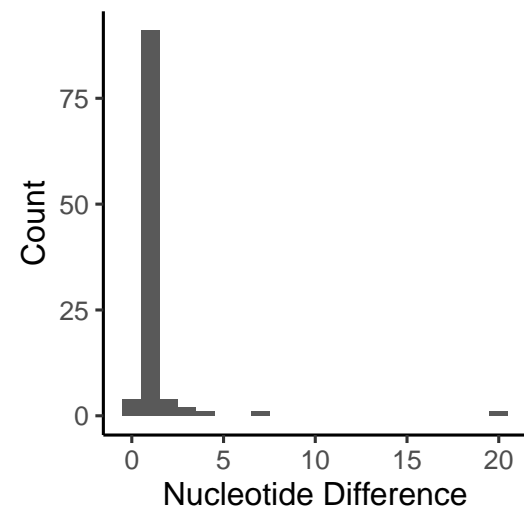
### IGHV3-72\*01

98 sequences assigned  
74 (75.5%) exact matches, in which:  
69 unique CDR3  
6 unique J



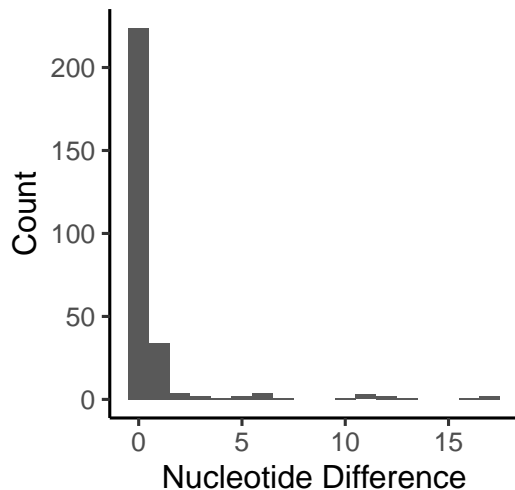
### IGHV3-43D\*04

104 sequences assigned  
4 (3.8%) exact matches, in which:  
4 unique CDR3  
2 unique J



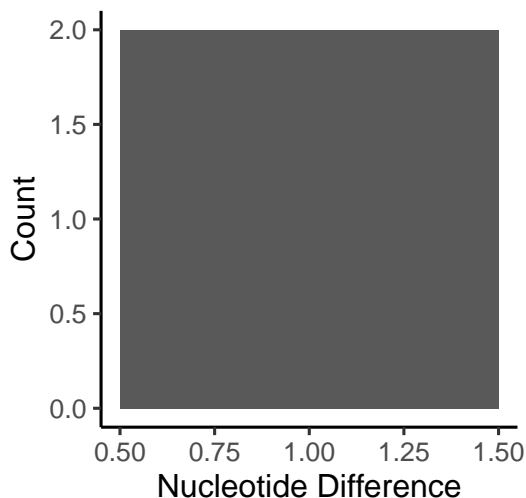
### IGHV3-64D\*06

284 sequences assigned  
224 (78.9%) exact matches, in which:  
212 unique CDR3  
7 unique J



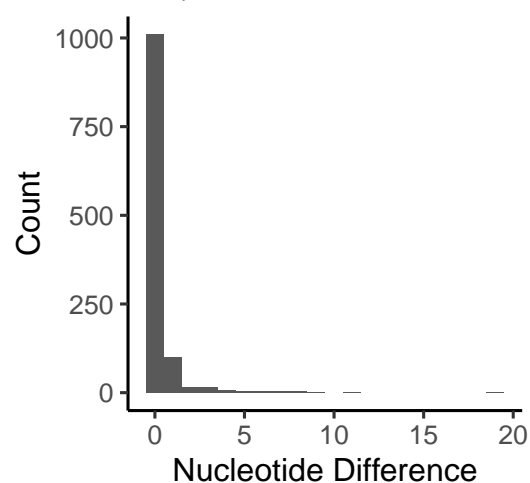
### IGHV4-28\*04

2 sequences assigned  
No exact matches.



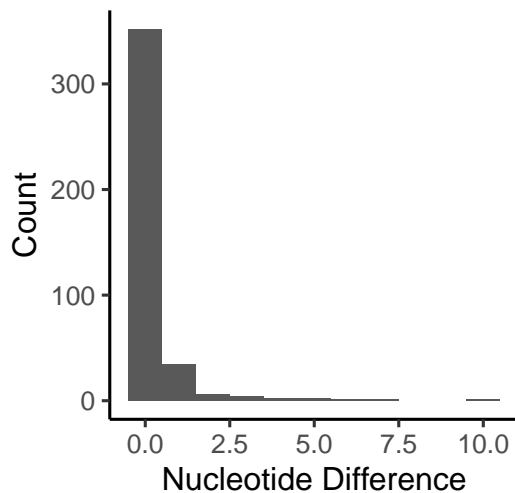
### IGHV4-31\*03

1171 sequences assigned  
1010 (86.3%) exact matches, in which:  
974 unique CDR3  
7 unique J



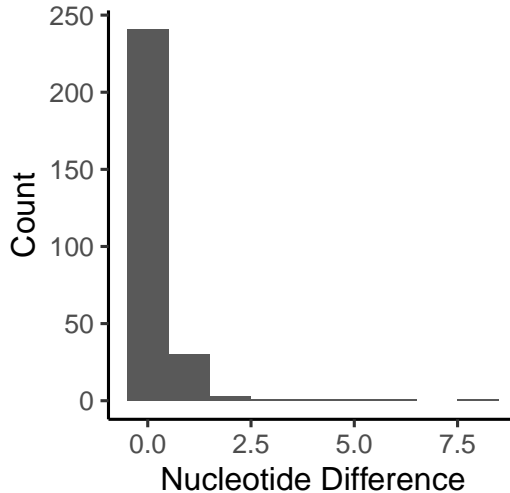
### IGHV4-4\*02

405 sequences assigned  
352 (86.9%) exact matches, in which:  
343 unique CDR3  
6 unique J



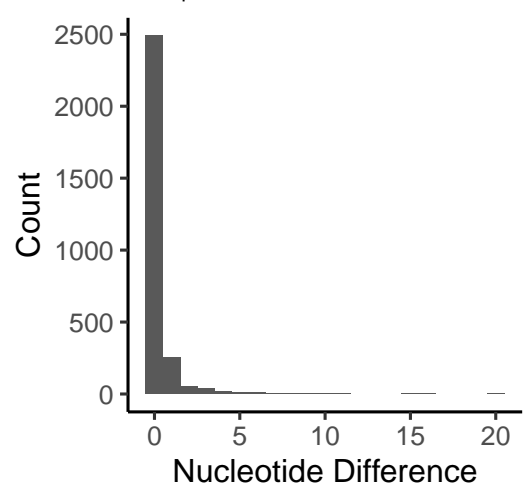
### IGHV4-30-2\*01

284 sequences assigned  
241 (84.9%) exact matches, in which:  
230 unique CDR3  
7 unique J



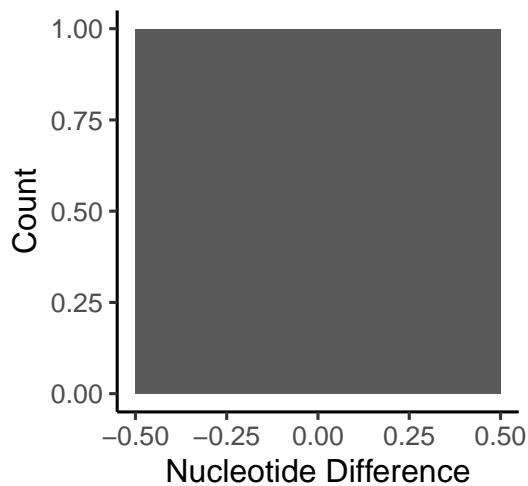
### IGHV4-34\*01

2893 sequences assigned  
2490 (86.1%) exact matches, in which:  
2357 unique CDR3  
7 unique J



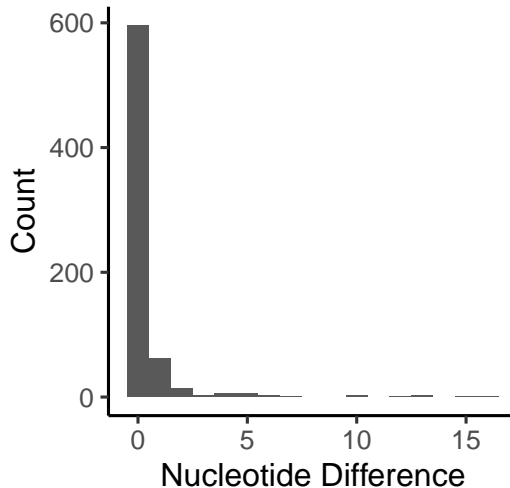
### IGHV4-28\*01

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



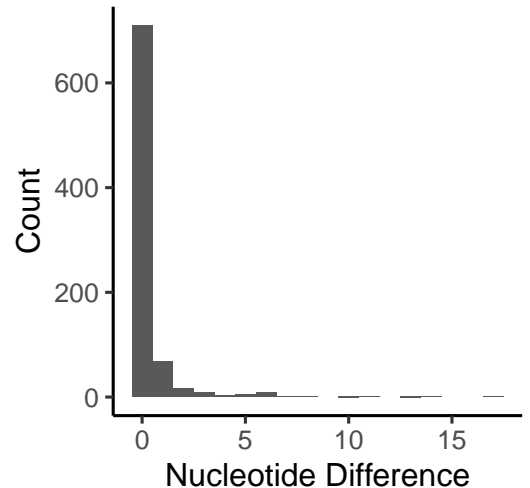
### IGHV4-30-4\*01

702 sequences assigned  
596 (84.9%) exact matches, in which:  
576 unique CDR3  
7 unique J



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

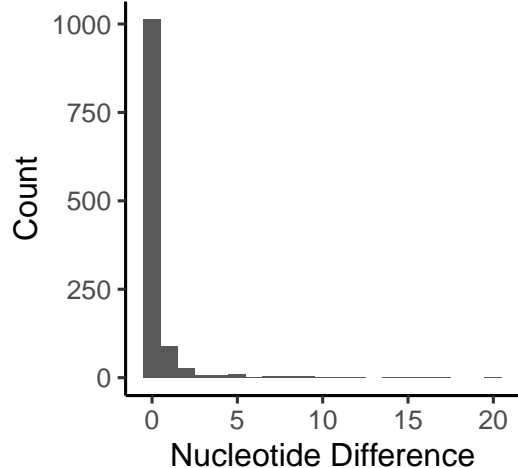
826 sequences assigned  
710 (86%) exact matches, in which:  
669 unique CDR3  
6 unique J





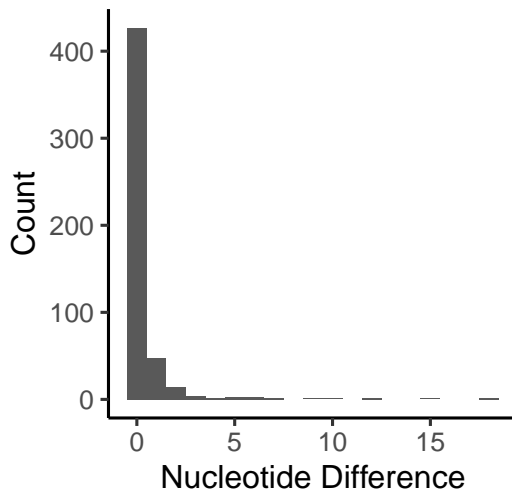
### IGHV4–39\*01

1195 sequences assigned  
1013 (84.8%) exact matches, in which:  
969 unique CDR3  
7 unique J



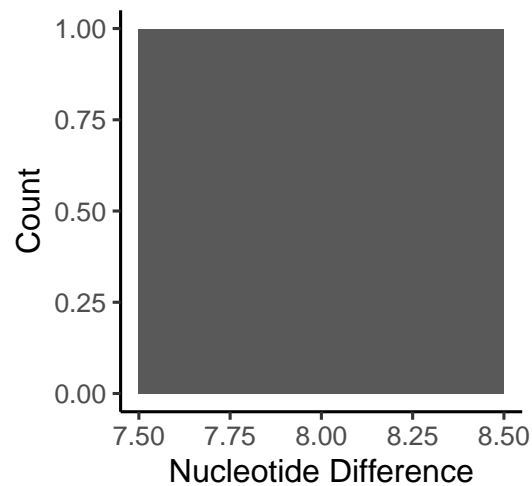
### IGHV4–59\*08

516 sequences assigned  
427 (82.8%) exact matches, in which:  
423 unique CDR3  
6 unique J



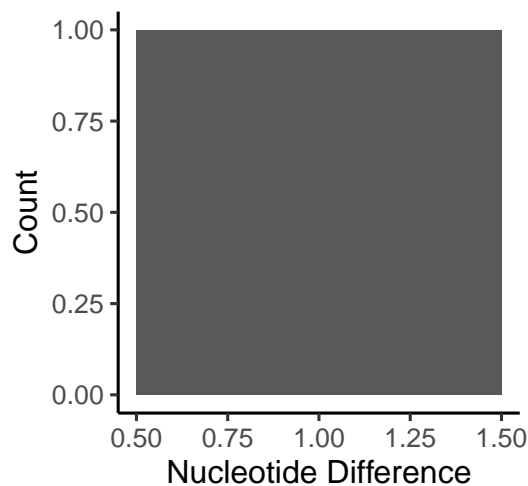
### IGHV4/OR15–8\*02

1 sequences assigned  
No exact matches.



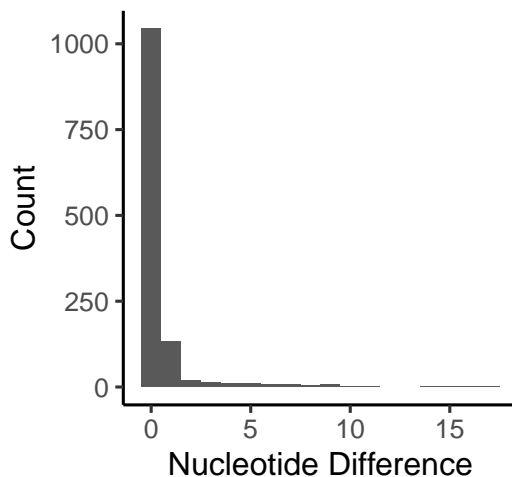
### IGHV4–55\*08

1 sequences assigned  
No exact matches.



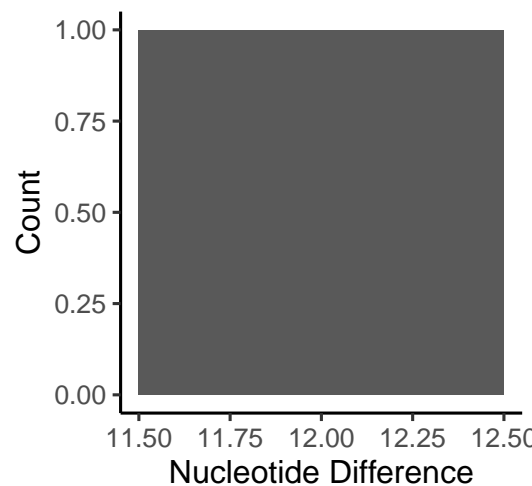
### IGHV4–61\*02

1269 sequences assigned  
1044 (82.3%) exact matches, in which:  
1021 unique CDR3  
6 unique J



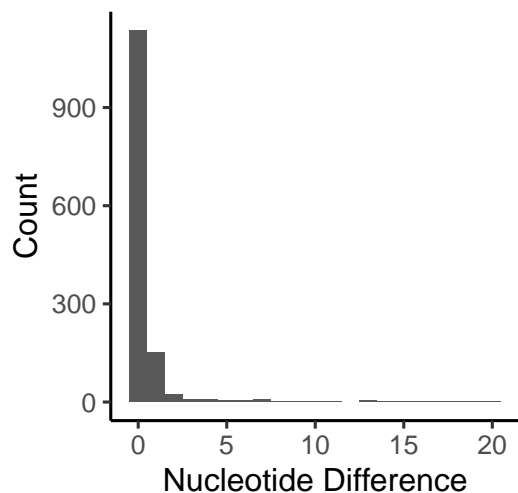
### IGHV1/OR15–9\*01

1 sequences assigned  
No exact matches.



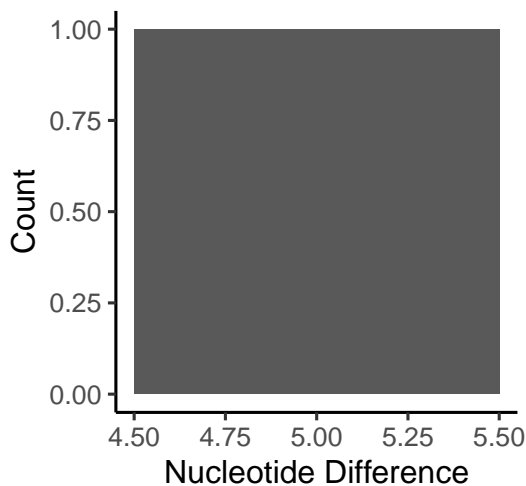
### IGHV4–59\*01

1378 sequences assigned  
1136 (82.4%) exact matches, in which:  
1114 unique CDR3  
7 unique J



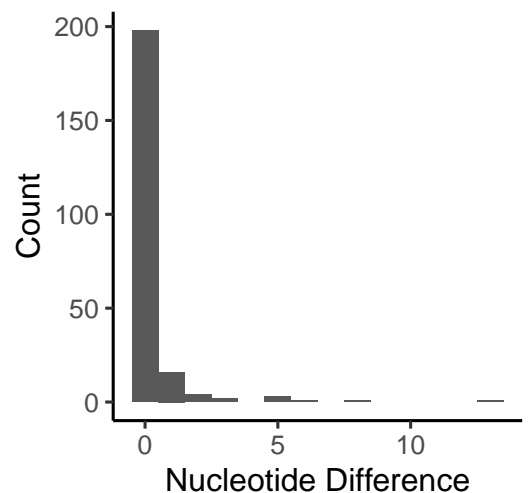
### IGHV1/OR15–4\*01

1 sequences assigned  
No exact matches.



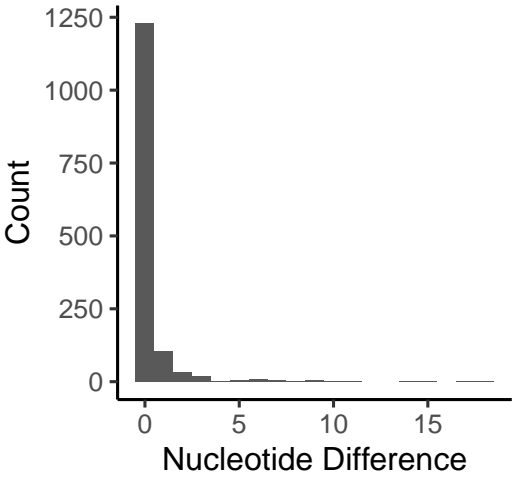
### IGHV5–10–1\*03

226 sequences assigned  
198 (87.6%) exact matches, in which:  
194 unique CDR3  
7 unique J



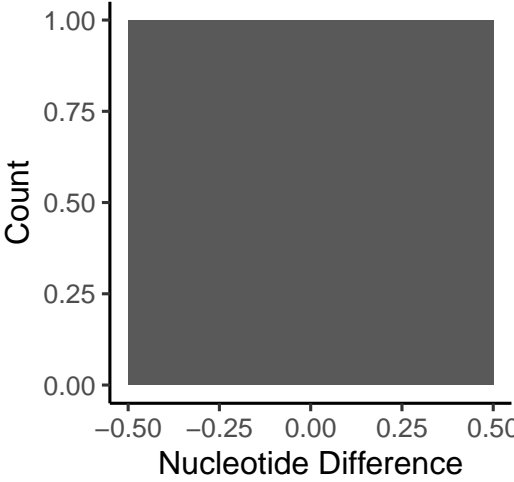
IGHV5-51\*01

1422 sequences assigned  
1229 (86.4%) exact matches, in which:  
1190 unique CDR3  
7 unique J



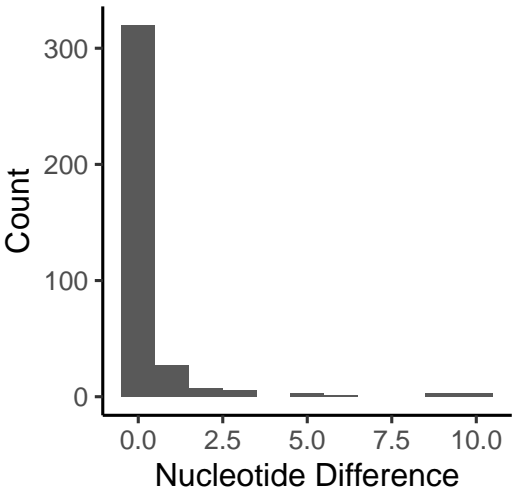
IGHV7-81\*01

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



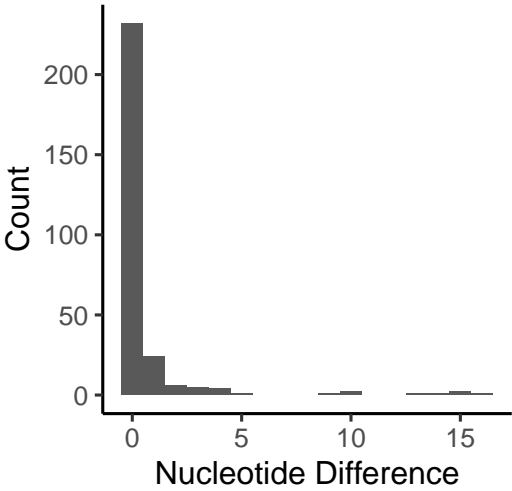
IGHV6-1\*01

372 sequences assigned  
320 (86%) exact matches, in which:  
312 unique CDR3  
7 unique J

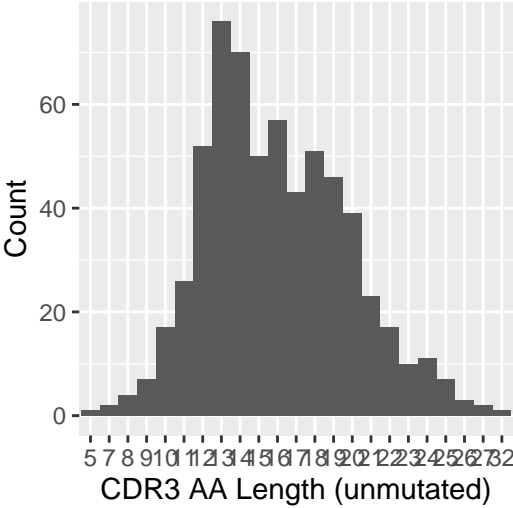


IGHV7-4-1\*02

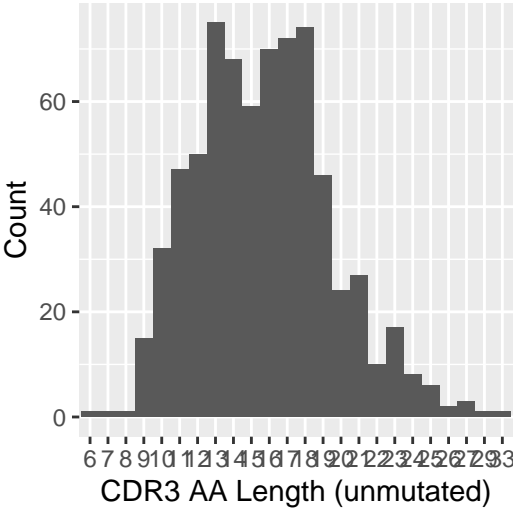
280 sequences assigned  
232 (82.9%) exact matches, in which:  
220 unique CDR3  
6 unique J



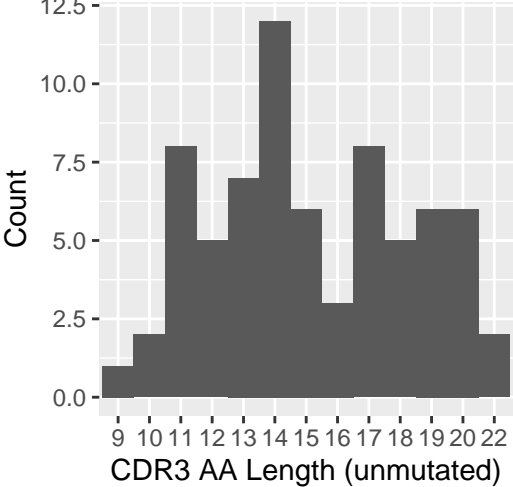
IGHV1-69\*08\_C191T



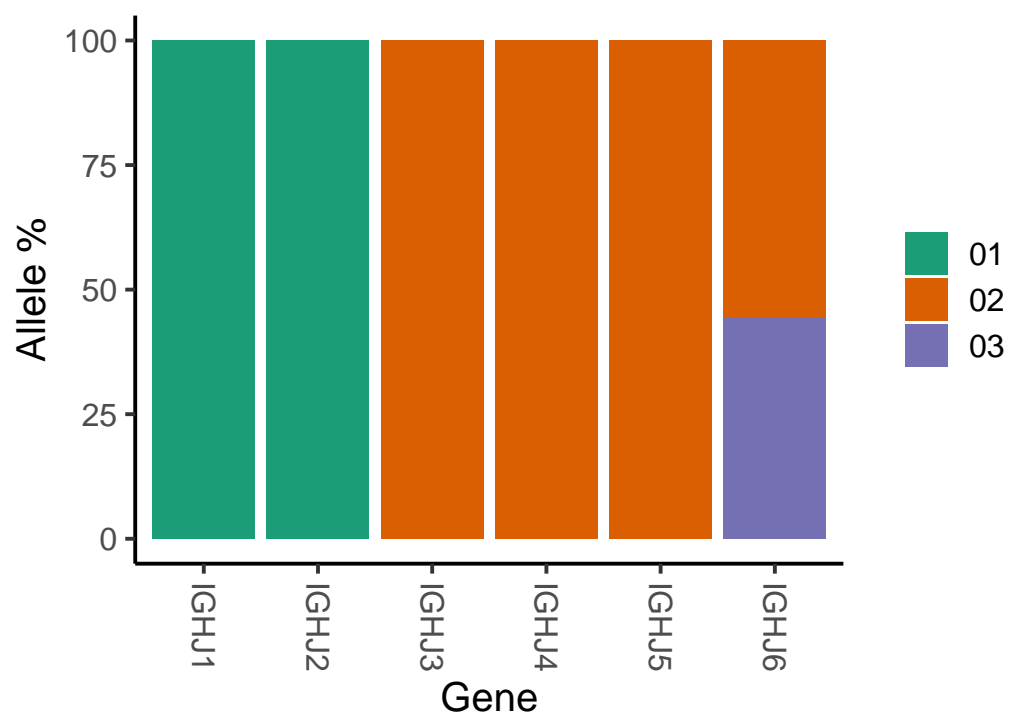
IGHV4-38-2\*02\_A70G



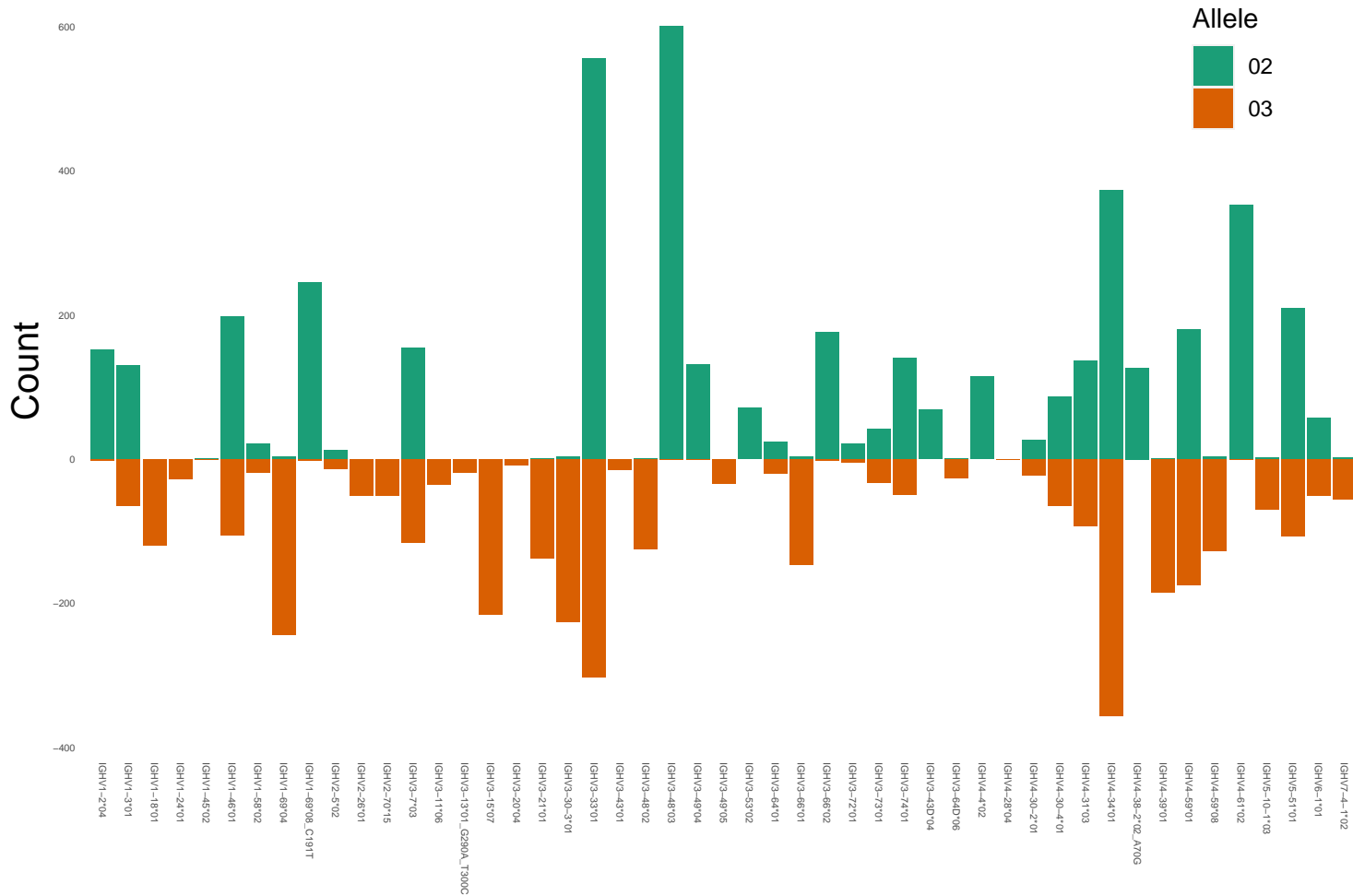
IGHV3-13\*01\_G290A\_T300C



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.