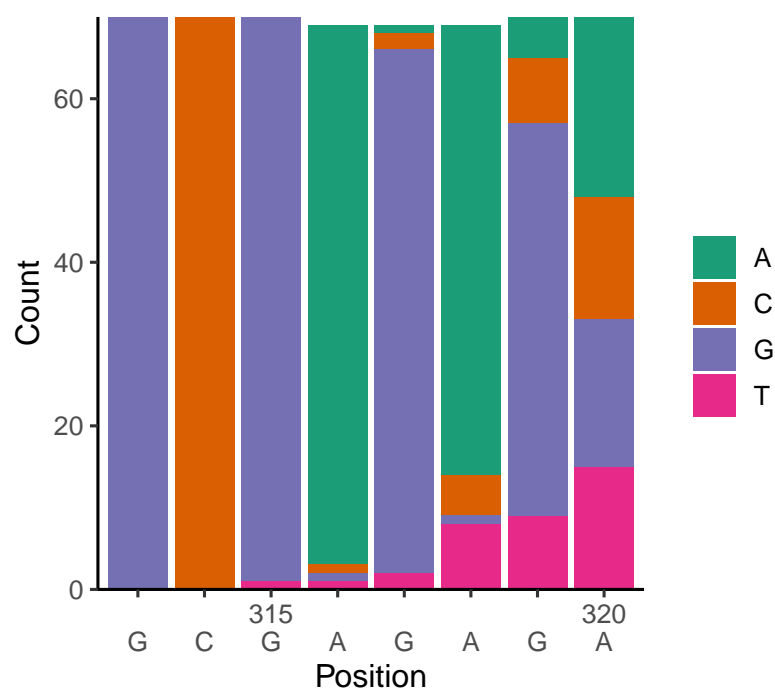
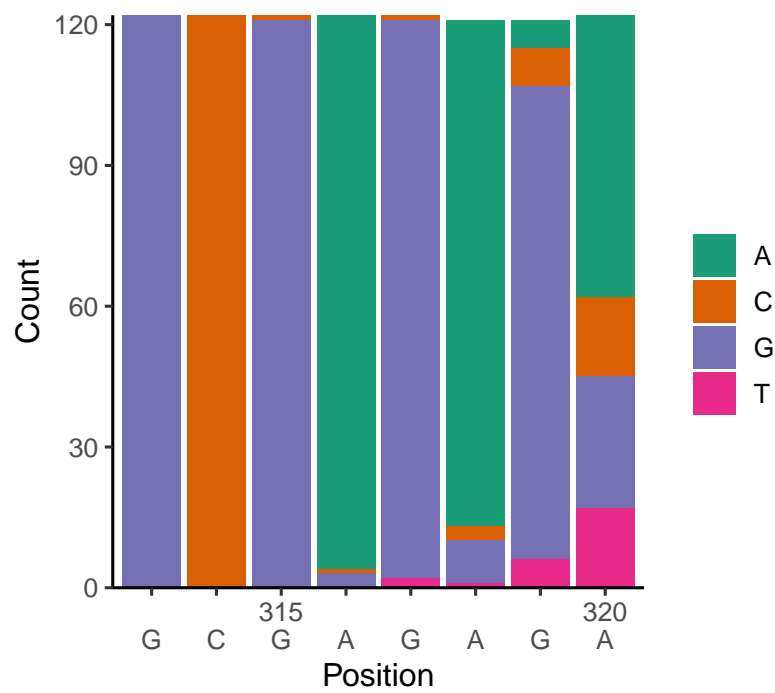


Gene IGHV3-53\*04\_G37A



Gene IGHV4-4\*07\_A70G



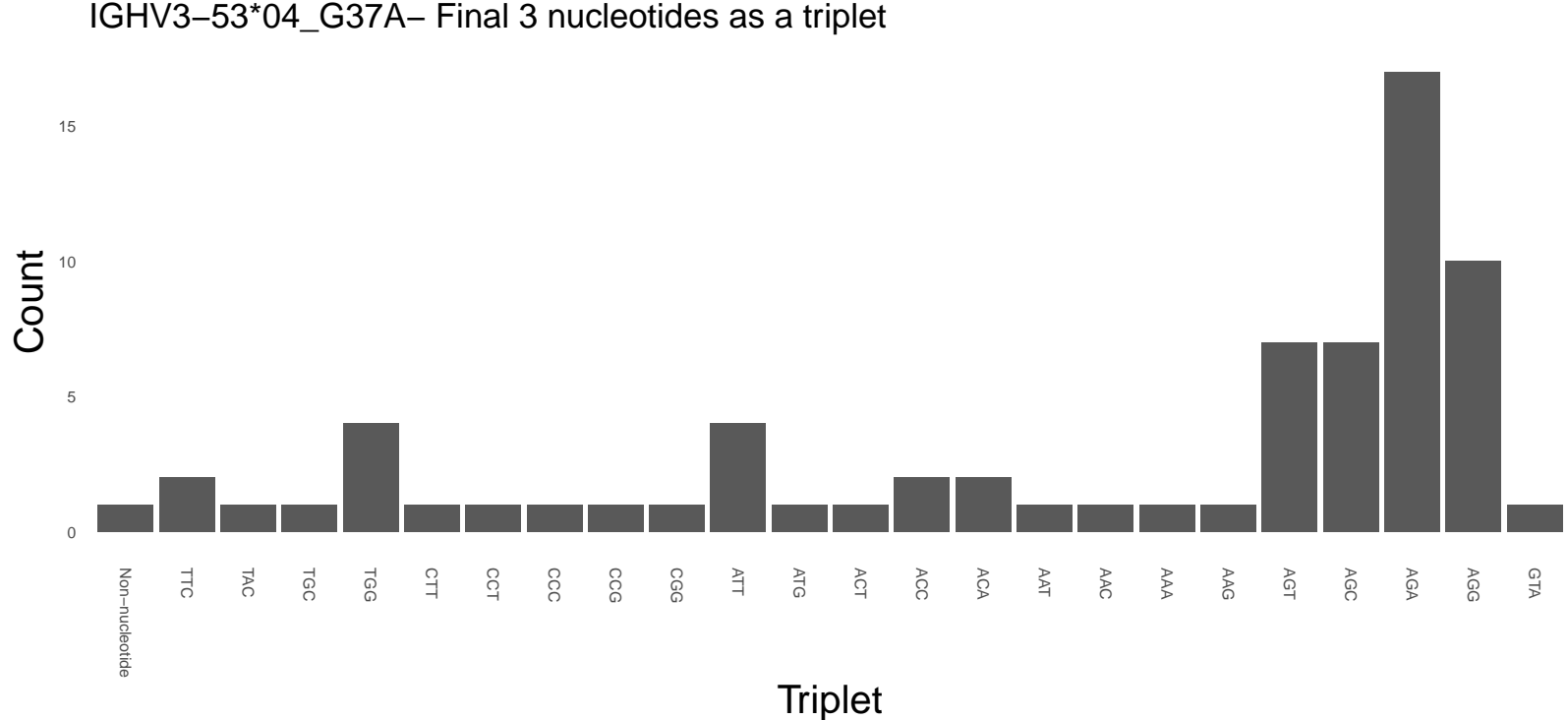
Gene IGHV3-53\*04\_G37A



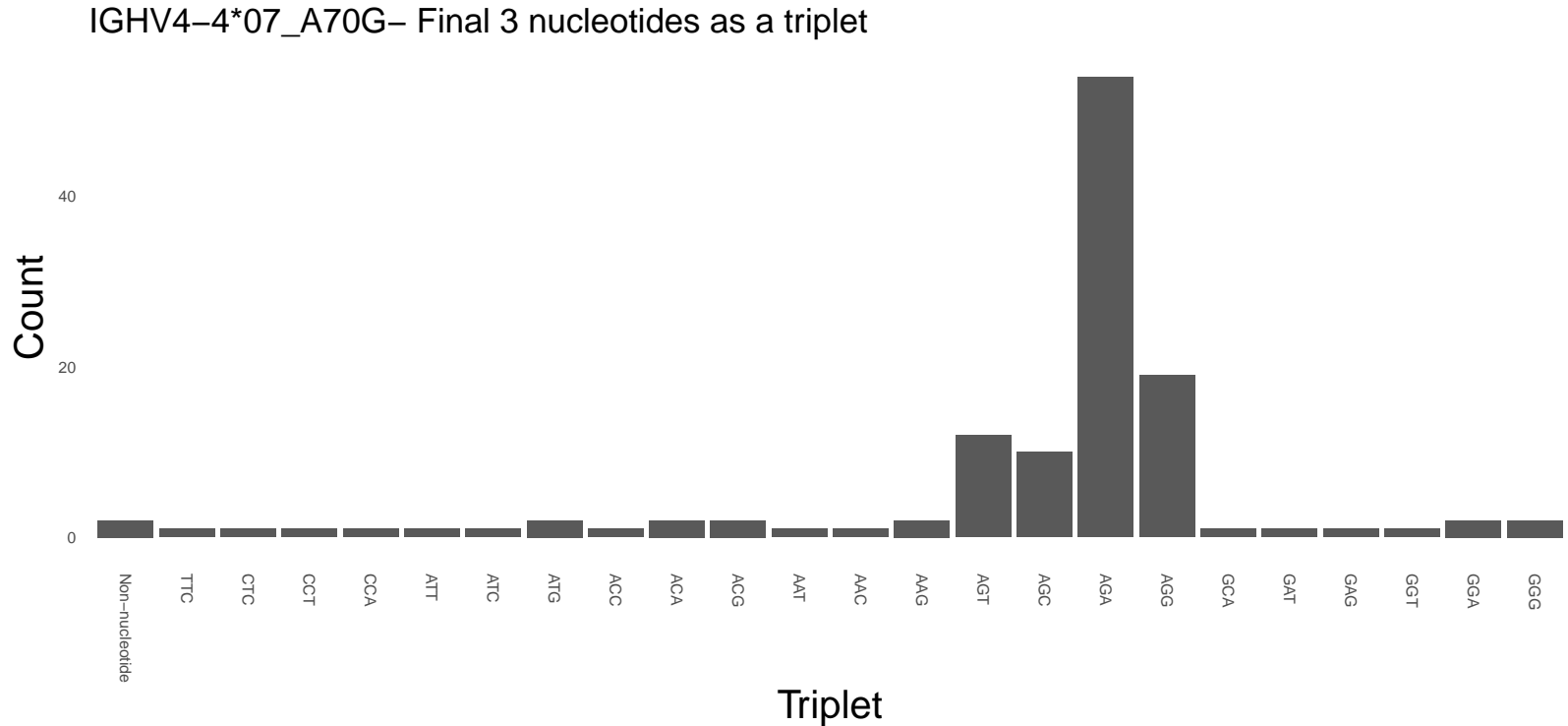
Gene IGHV4-4\*07\_A70G



IGHV3–53\*04\_G37A– Final 3 nucleotides as a triplet

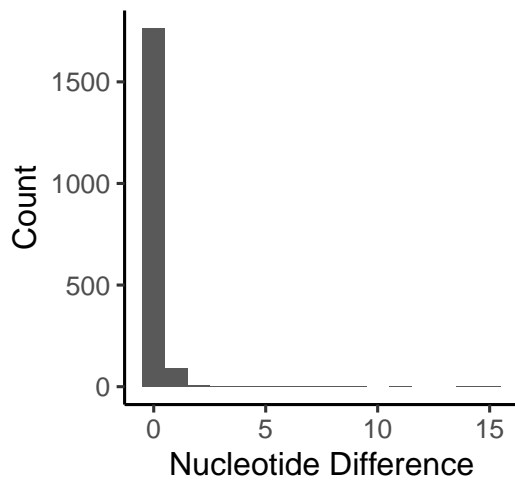


IGHV4–4\*07\_A70G– Final 3 nucleotides as a triplet



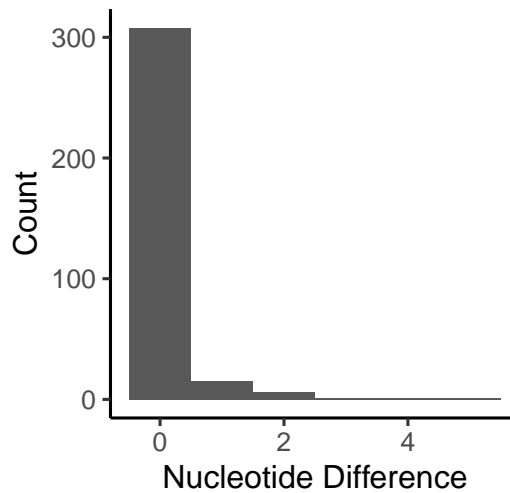
### IGHV1-2\*02

1882 sequences assigned  
1763 (93.7%) exact matches, in which:  
1746 unique CDR3  
7 unique J



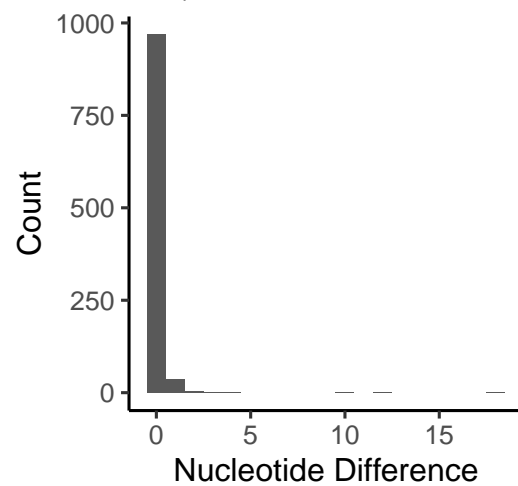
### IGHV1-8\*03

332 sequences assigned  
308 (92.8%) exact matches, in which:  
304 unique CDR3  
6 unique J



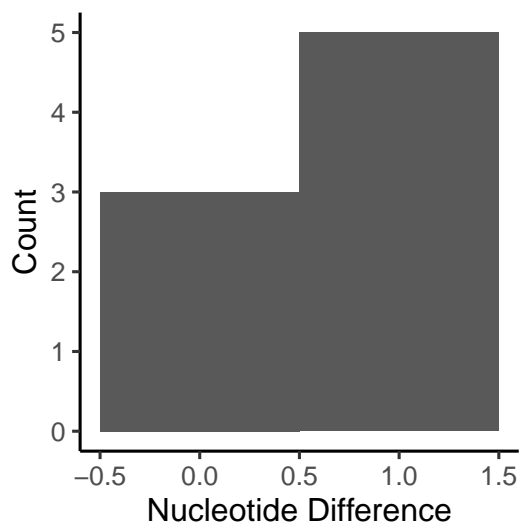
### IGHV1-24\*01

1014 sequences assigned  
969 (95.6%) exact matches, in which:  
949 unique CDR3  
7 unique J



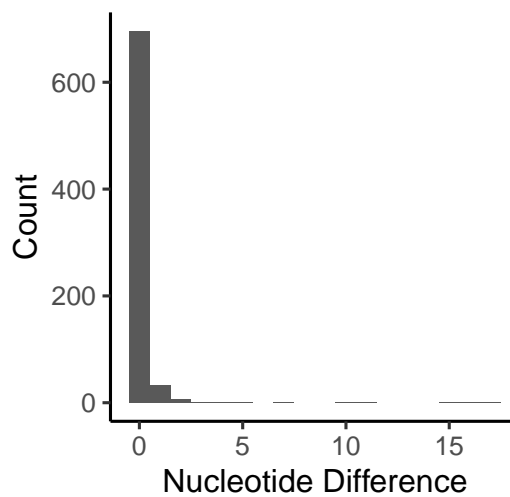
### IGHV1-3\*02

8 sequences assigned  
3 (37.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



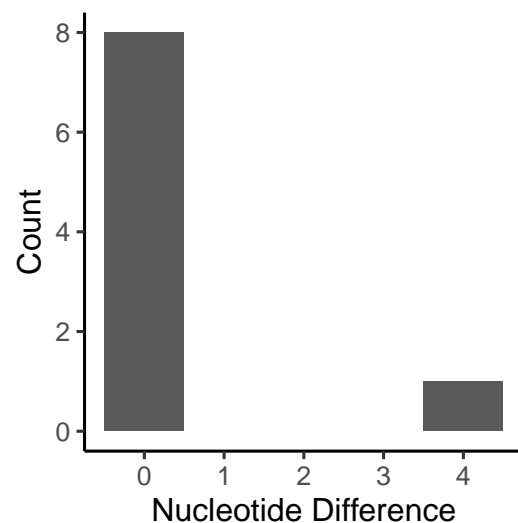
### IGHV1-18\*01

743 sequences assigned  
696 (93.7%) exact matches, in which:  
683 unique CDR3  
7 unique J



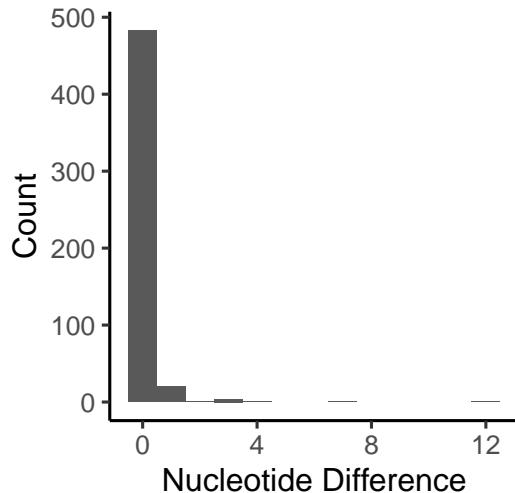
### IGHV1-45\*02

9 sequences assigned  
8 (88.9%) exact matches, in which:  
8 unique CDR3  
5 unique J



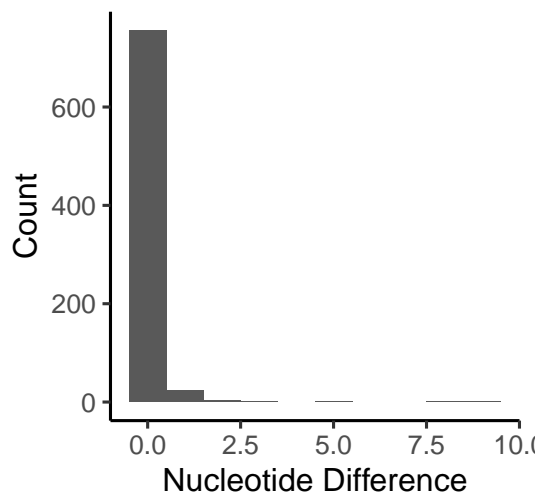
### IGHV1-8\*01

511 sequences assigned  
483 (94.5%) exact matches, in which:  
479 unique CDR3  
7 unique J



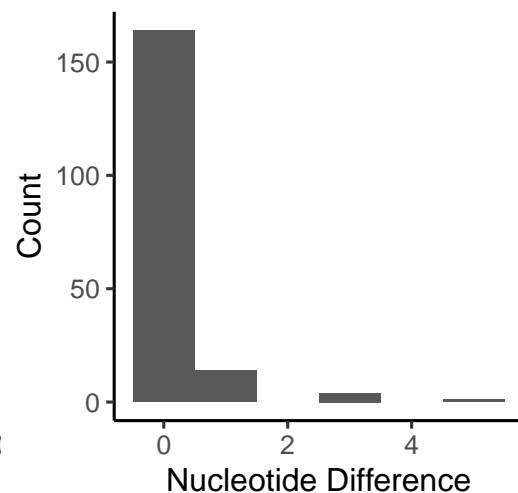
### IGHV1-18\*04

789 sequences assigned  
756 (95.8%) exact matches, in which:  
744 unique CDR3  
7 unique J



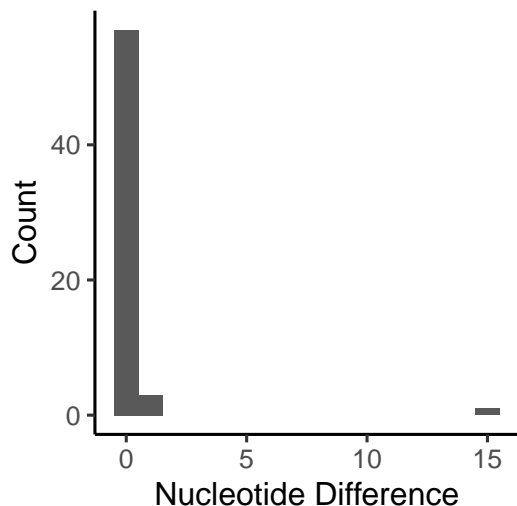
### IGHV1-46\*01

183 sequences assigned  
164 (89.6%) exact matches, in which:  
164 unique CDR3  
6 unique J



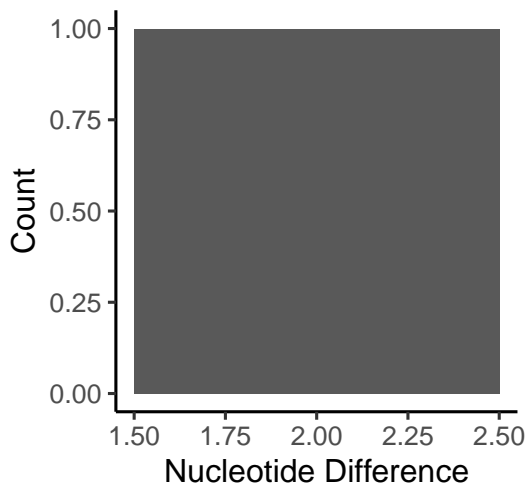
### IGHV1-46\*03

61 sequences assigned  
57 (93.4%) exact matches, in which:  
56 unique CDR3  
6 unique J



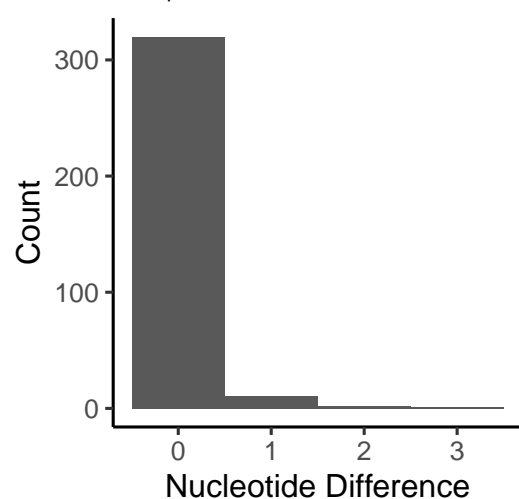
### IGHV1-68\*02

1 sequences assigned  
No exact matches.



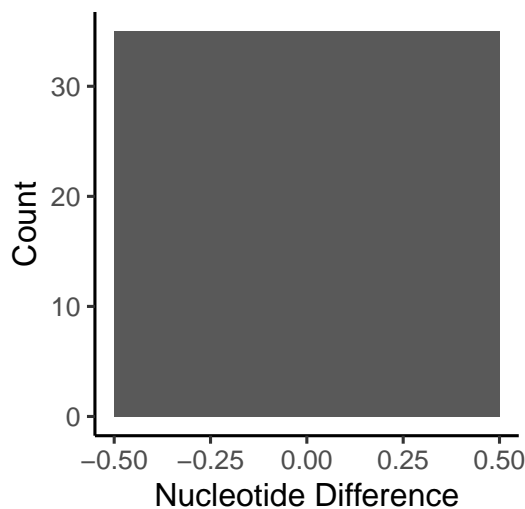
### IGHV2-5\*01

334 sequences assigned  
320 (95.8%) exact matches, in which:  
319 unique CDR3  
6 unique J



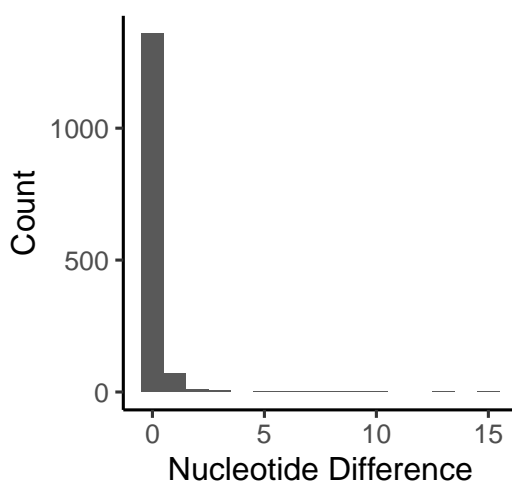
### IGHV1-58\*01

35 sequences assigned  
35 (100%) exact matches, in which:  
35 unique CDR3  
5 unique J



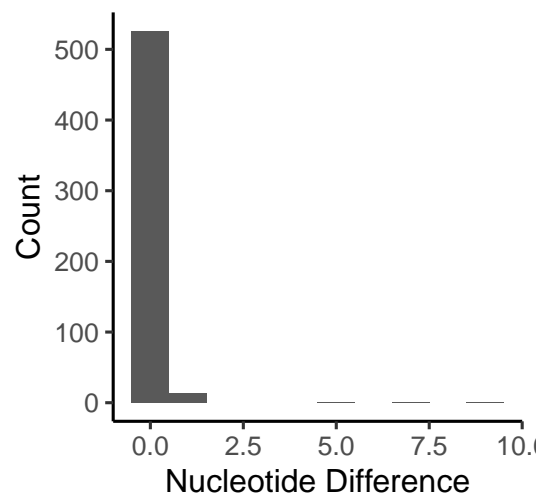
### IGHV1-69\*01

1456 sequences assigned  
1358 (93.3%) exact matches, in which:  
1344 unique CDR3  
7 unique J



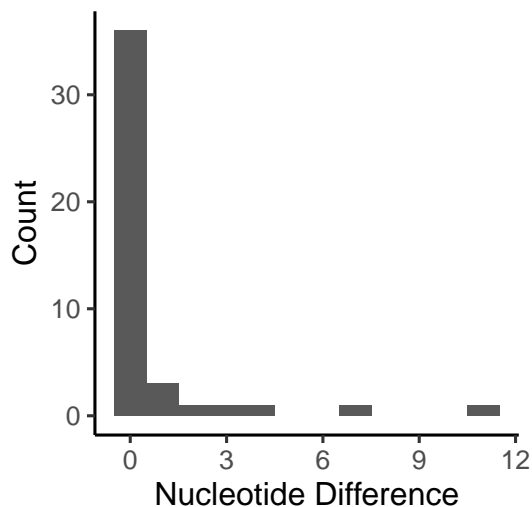
### IGHV2-5\*02

542 sequences assigned  
526 (97%) exact matches, in which:  
526 unique CDR3  
7 unique J



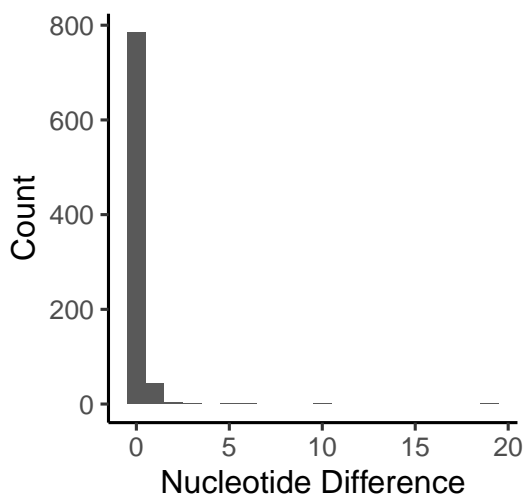
### IGHV1-58\*02

44 sequences assigned  
36 (81.8%) exact matches, in which:  
36 unique CDR3  
5 unique J



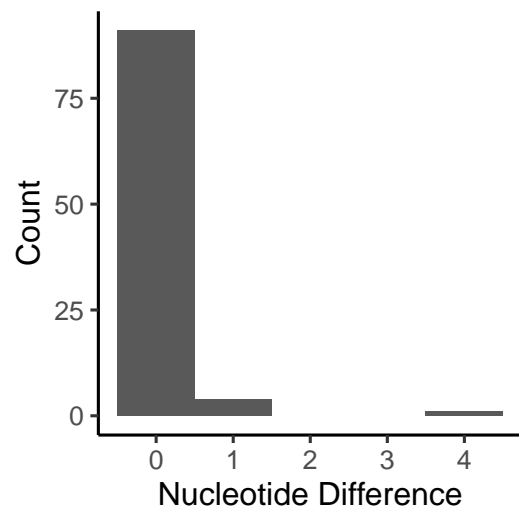
### IGHV1-69\*04

839 sequences assigned  
785 (93.6%) exact matches, in which:  
776 unique CDR3  
7 unique J



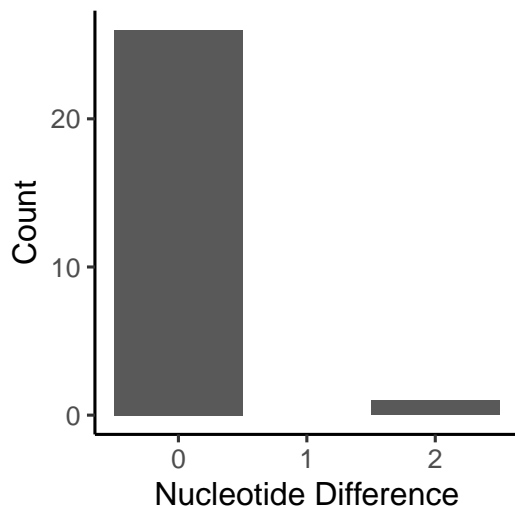
### IGHV2-26\*01

96 sequences assigned  
91 (94.8%) exact matches, in which:  
91 unique CDR3  
5 unique J



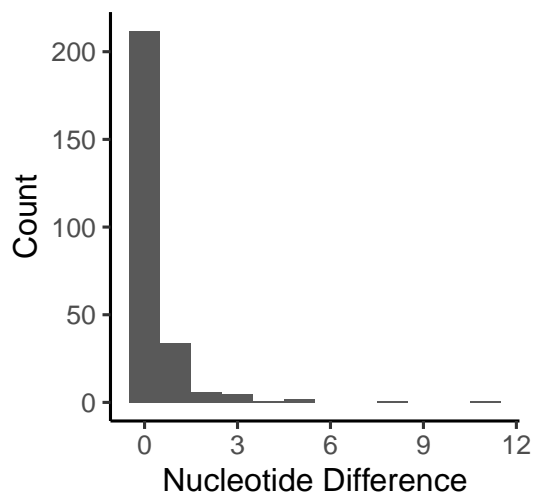
## IGHV2-26\*02

27 sequences assigned  
26 (96.3%) exact matches, in which:  
26 unique CDR3  
5 unique J



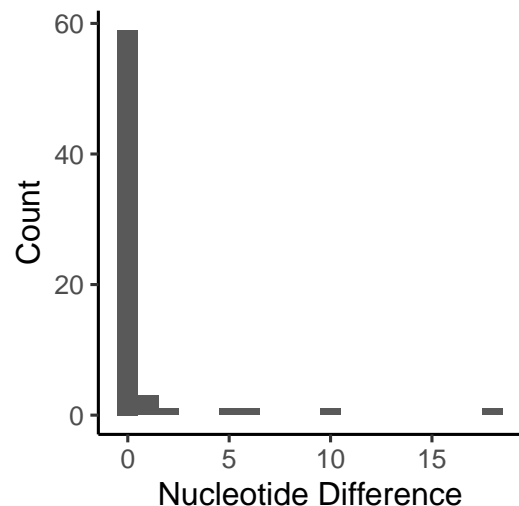
## IGHV3-7\*01

262 sequences assigned  
212 (80.9%) exact matches, in which:  
211 unique CDR3  
7 unique J



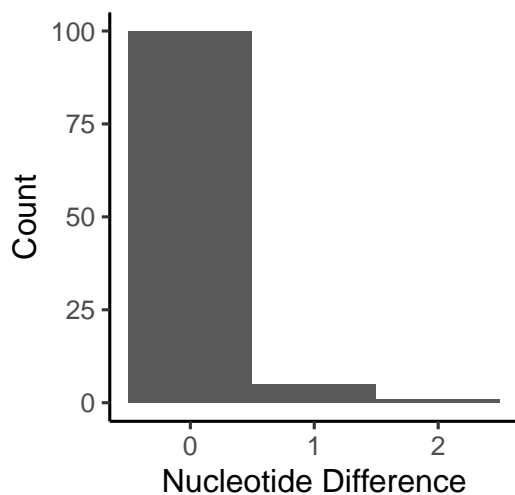
## IGHV3-9\*03

67 sequences assigned  
59 (88.1%) exact matches, in which:  
59 unique CDR3  
6 unique J



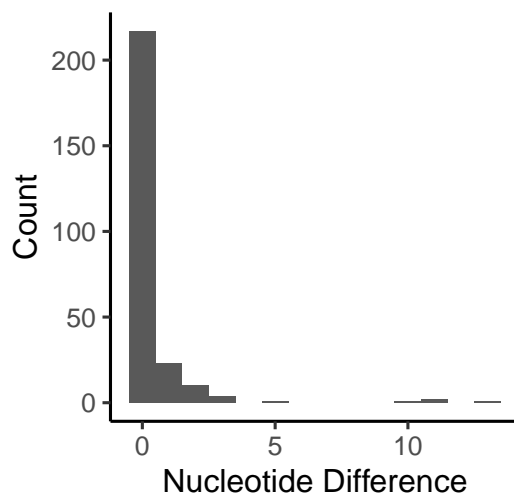
## IGHV2-70\*01

106 sequences assigned  
100 (94.3%) exact matches, in which:  
99 unique CDR3  
6 unique J



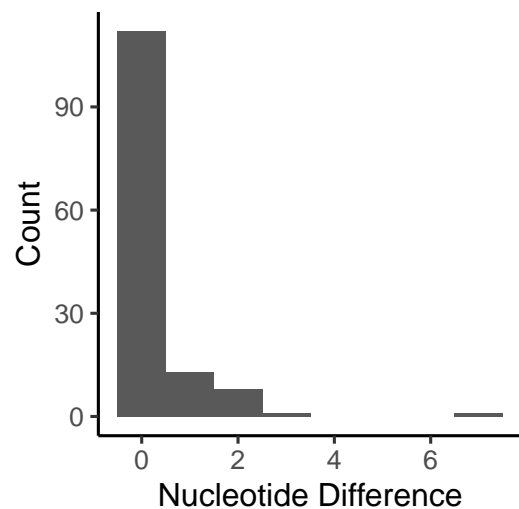
## IGHV3-7\*03

259 sequences assigned  
217 (83.8%) exact matches, in which:  
215 unique CDR3  
7 unique J



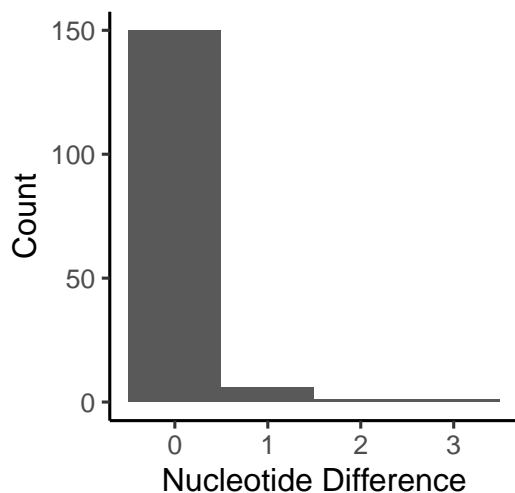
## IGHV3-11\*04

135 sequences assigned  
112 (83%) exact matches, in which:  
112 unique CDR3  
5 unique J



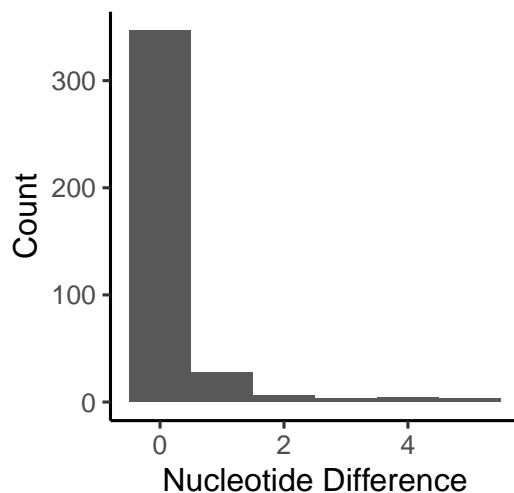
## IGHV2-70\*15

158 sequences assigned  
150 (94.9%) exact matches, in which:  
149 unique CDR3  
6 unique J



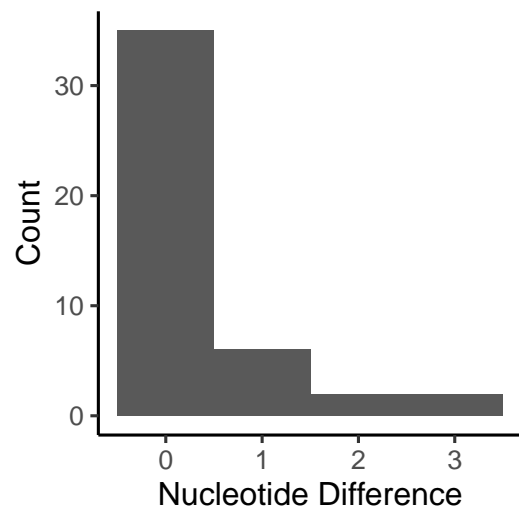
## IGHV3-9\*01

392 sequences assigned  
347 (88.5%) exact matches, in which:  
345 unique CDR3  
7 unique J



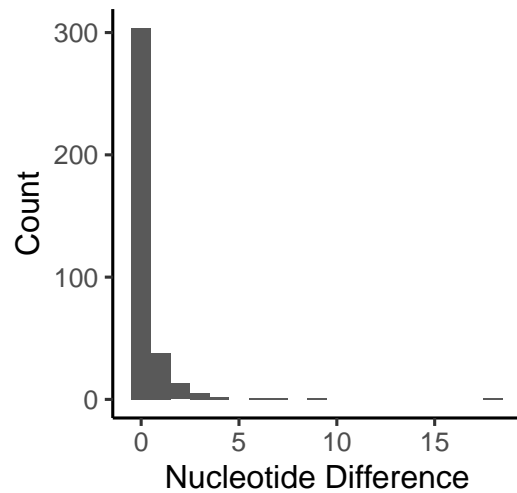
## IGHV3-13\*01

45 sequences assigned  
35 (77.8%) exact matches, in which:  
35 unique CDR3  
5 unique J



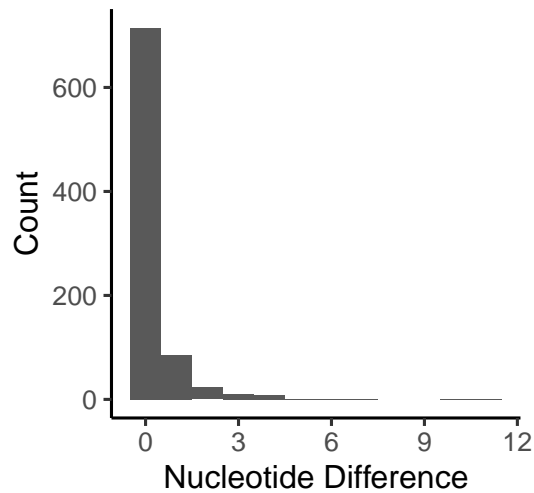
### IGHV3-15\*01

367 sequences assigned  
304 (82.8%) exact matches, in which:  
303 unique CDR3  
7 unique J



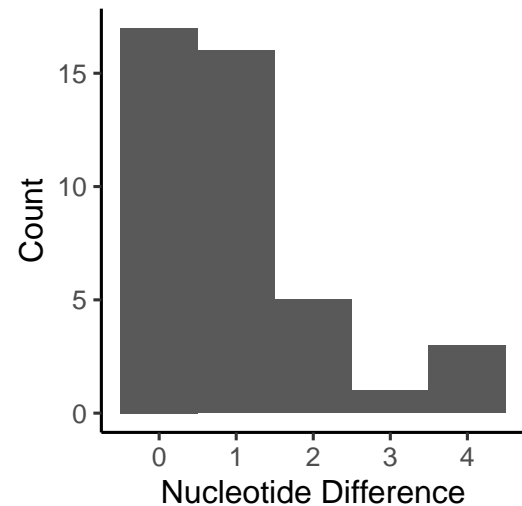
### IGHV3-23\*01

851 sequences assigned  
715 (84%) exact matches, in which:  
710 unique CDR3  
7 unique J



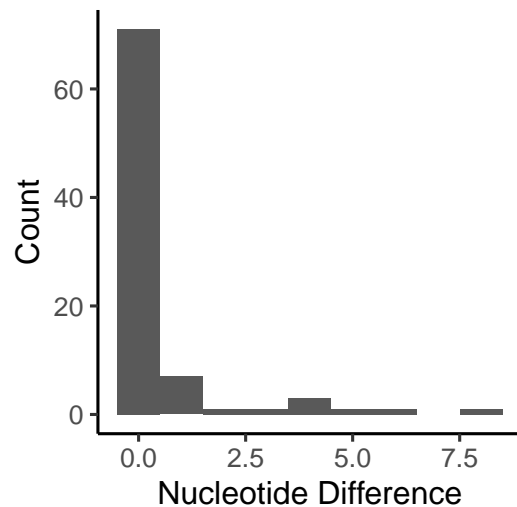
### IGHV3-43\*01

42 sequences assigned  
17 (40.5%) exact matches, in which:  
16 unique CDR3  
4 unique J



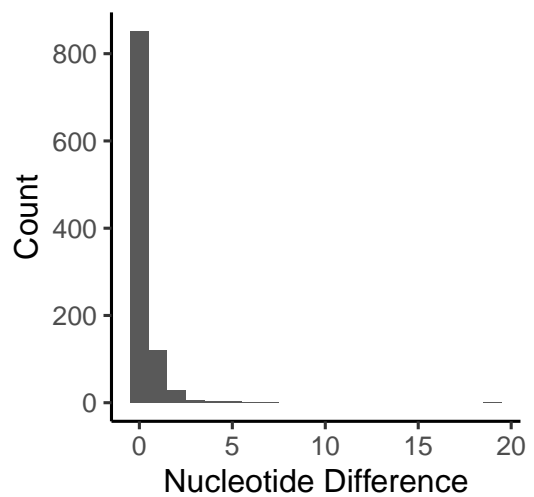
### IGHV3-20\*04

86 sequences assigned  
71 (82.6%) exact matches, in which:  
71 unique CDR3  
6 unique J



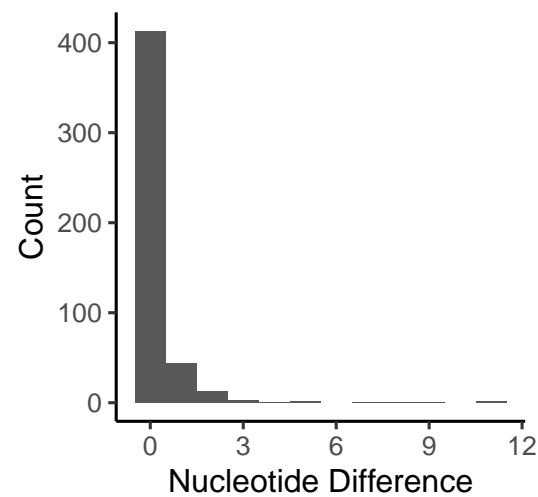
### IGHV3-30\*02

1020 sequences assigned  
852 (83.5%) exact matches, in which:  
846 unique CDR3  
7 unique J



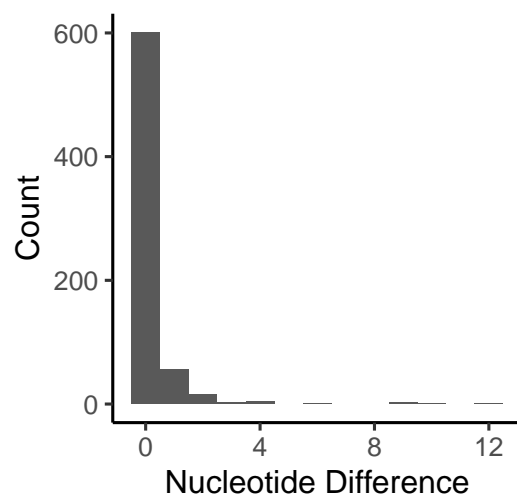
### IGHV3-48\*01

481 sequences assigned  
413 (85.9%) exact matches, in which:  
410 unique CDR3  
7 unique J



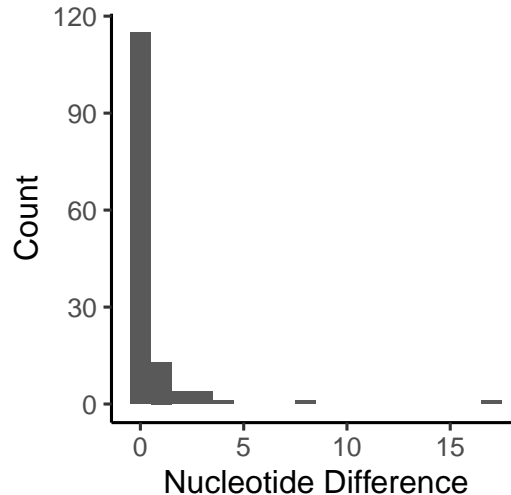
### IGHV3-21\*01

686 sequences assigned  
601 (87.6%) exact matches, in which:  
600 unique CDR3  
7 unique J



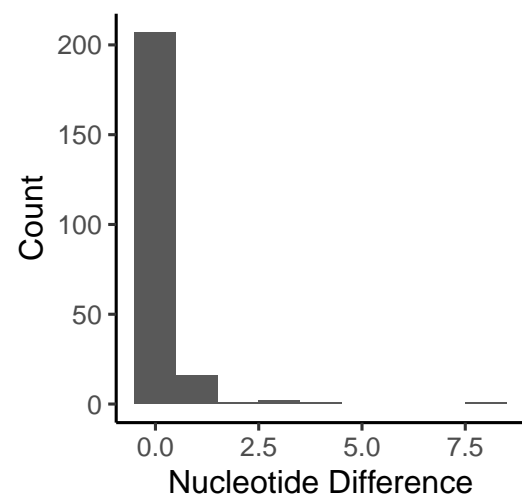
### IGHV3-30\*18

139 sequences assigned  
115 (82.7%) exact matches, in which:  
113 unique CDR3  
6 unique J



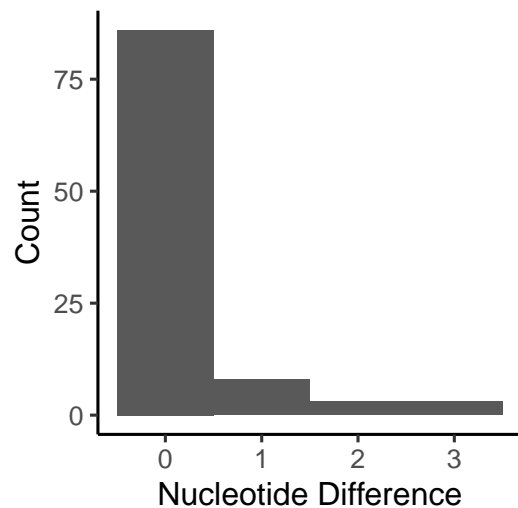
### IGHV3-49\*03

229 sequences assigned  
207 (90.4%) exact matches, in which:  
205 unique CDR3  
7 unique J



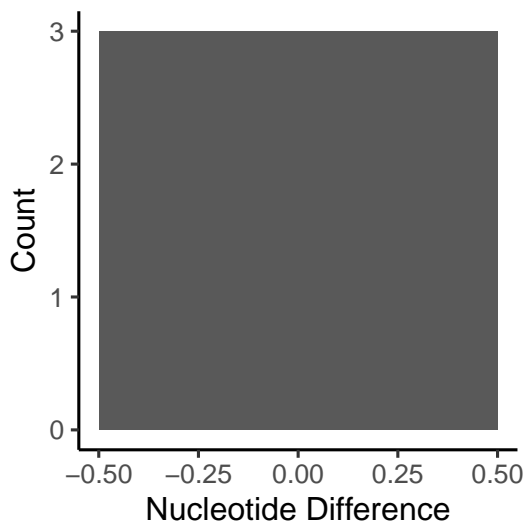
### IGHV3-53\*02

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



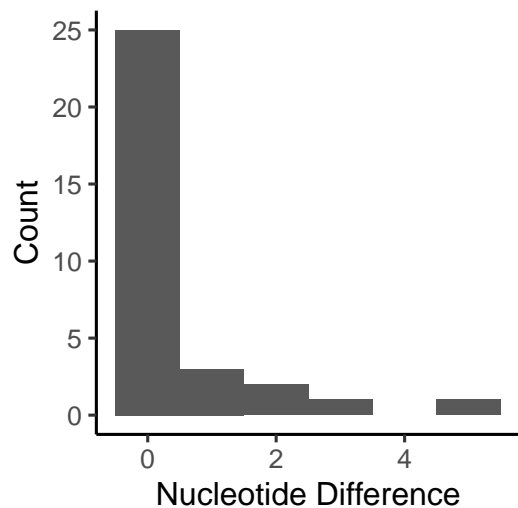
### IGHV3-64\*02

3 sequences assigned  
3 (100%) exact matches, in which:  
3 unique CDR3  
3 unique J



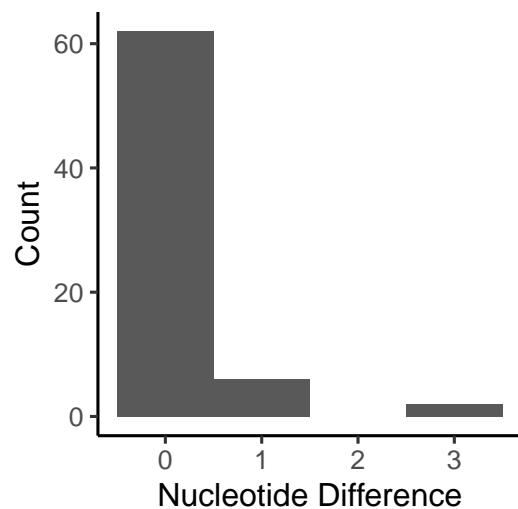
### IGHV3-73\*01

32 sequences assigned  
25 (78.1%) exact matches, in which:  
25 unique CDR3  
5 unique J



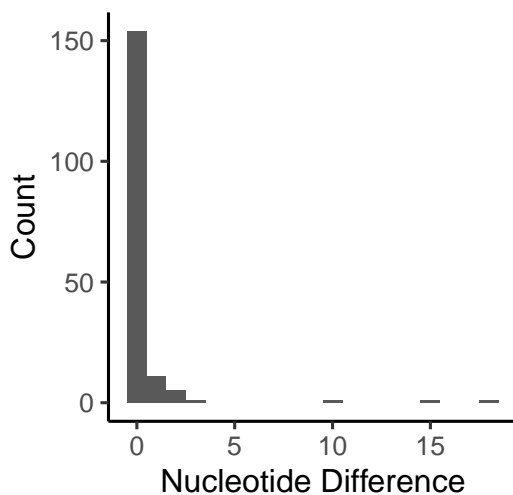
### IGHV3-53\*04\_G37A

70 sequences assigned  
62 (88.6%) exact matches, in which:  
62 unique CDR3  
5 unique J



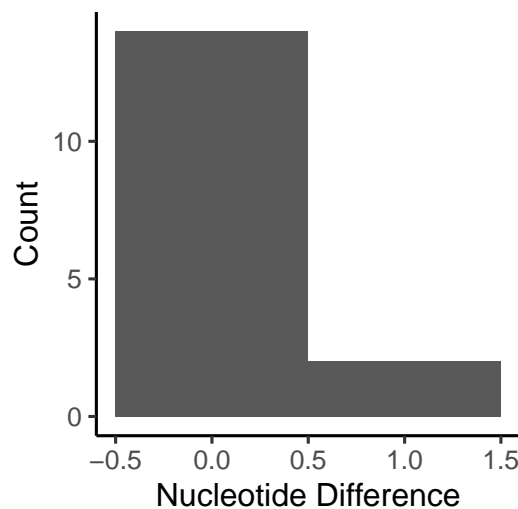
### IGHV3-66\*01

175 sequences assigned  
154 (88%) exact matches, in which:  
153 unique CDR3  
6 unique J



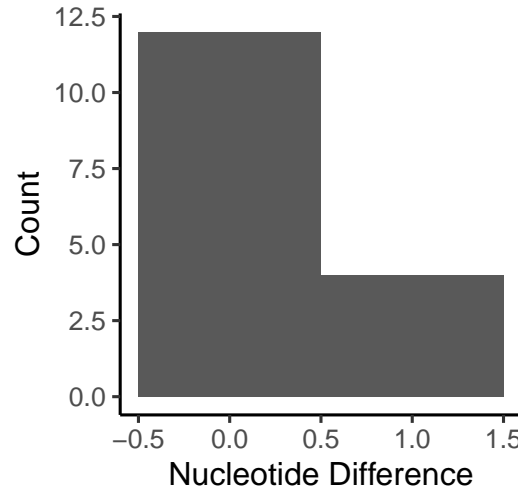
### IGHV3-73\*02

16 sequences assigned  
14 (87.5%) exact matches, in which:  
14 unique CDR3  
3 unique J



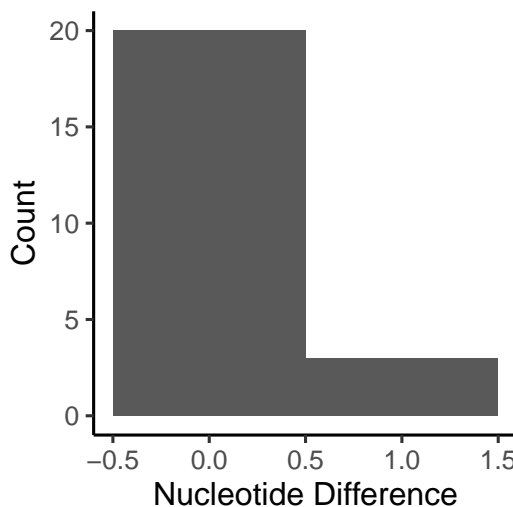
### IGHV3-64\*01

16 sequences assigned  
12 (75%) exact matches, in which:  
12 unique CDR3  
3 unique J



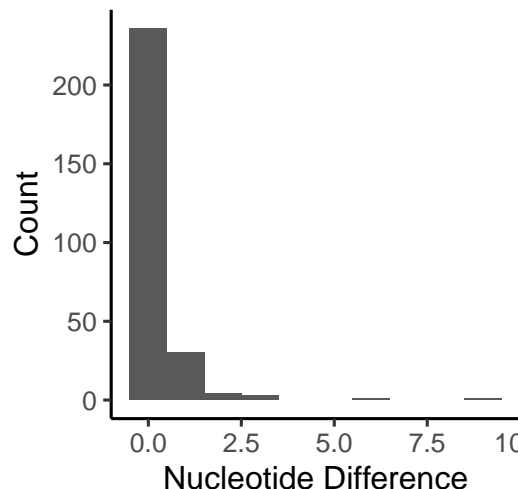
### IGHV3-72\*01

23 sequences assigned  
20 (87%) exact matches, in which:  
19 unique CDR3  
5 unique J



### IGHV3-74\*01

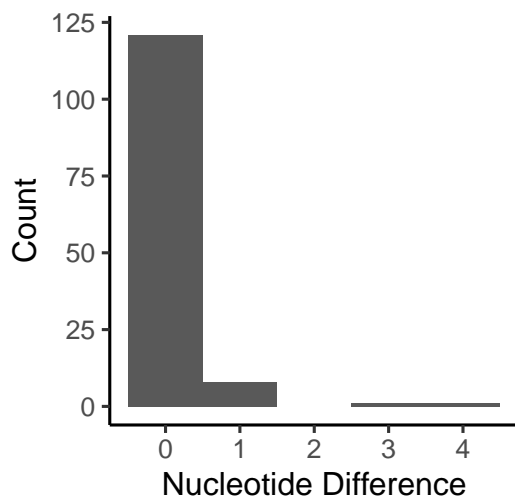
275 sequences assigned  
236 (85.8%) exact matches, in which:  
234 unique CDR3  
7 unique J





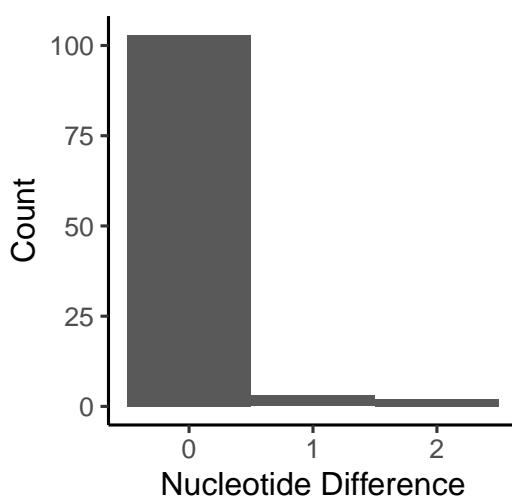
### IGHV4-4\*07

131 sequences assigned  
121 (92.4%) exact matches, in which:  
121 unique CDR3  
5 unique J



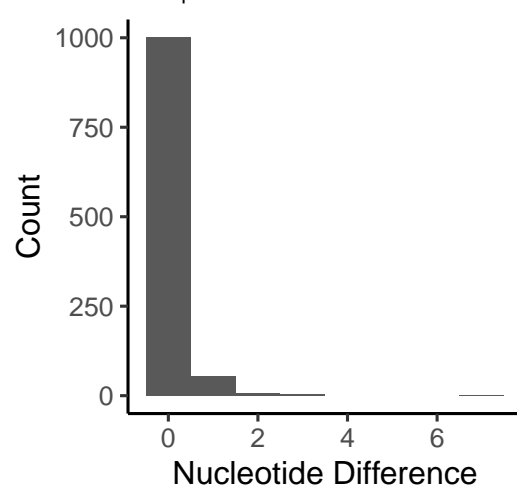
### IGHV4-30-2\*01

108 sequences assigned  
103 (95.4%) exact matches, in which:  
103 unique CDR3  
7 unique J



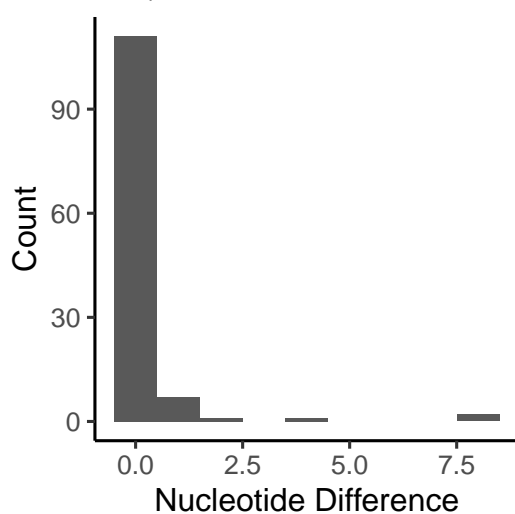
### IGHV4-39\*07

1070 sequences assigned  
1001 (93.6%) exact matches, in which:  
994 unique CDR3  
7 unique J



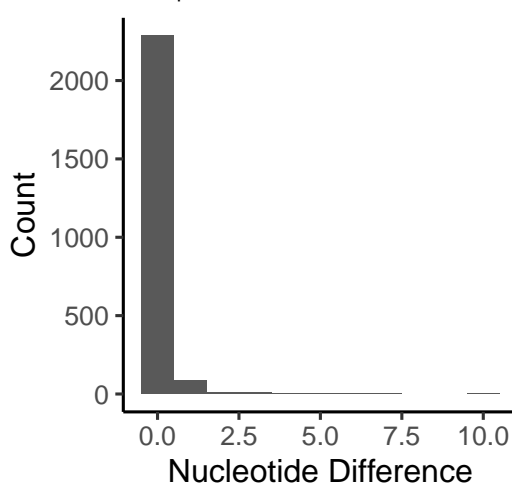
### IGHV4-4\*07\_A70G

122 sequences assigned  
111 (91%) exact matches, in which:  
111 unique CDR3  
5 unique J



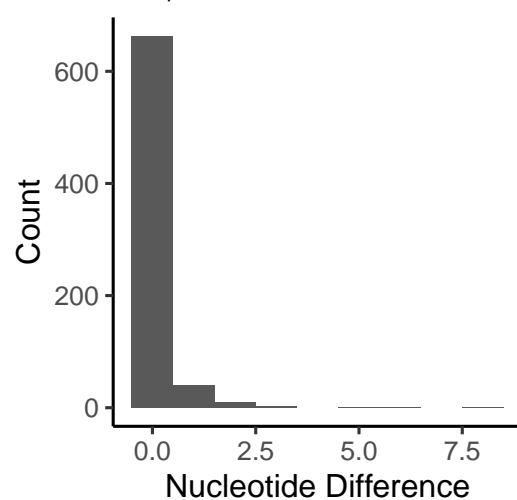
### IGHV4-34\*01

2397 sequences assigned  
2286 (95.4%) exact matches, in which:  
2266 unique CDR3  
7 unique J



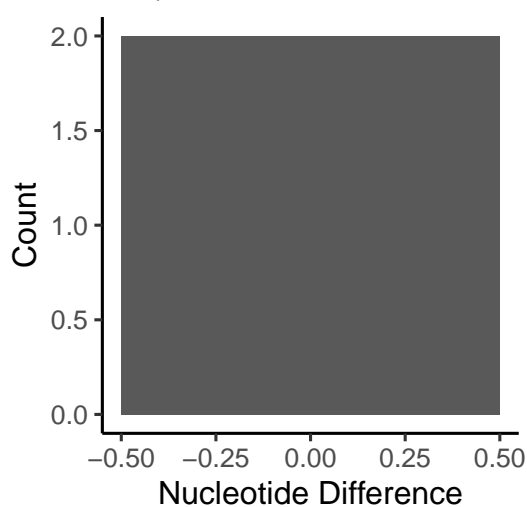
### IGHV4-59\*01

718 sequences assigned  
663 (92.3%) exact matches, in which:  
658 unique CDR3  
7 unique J



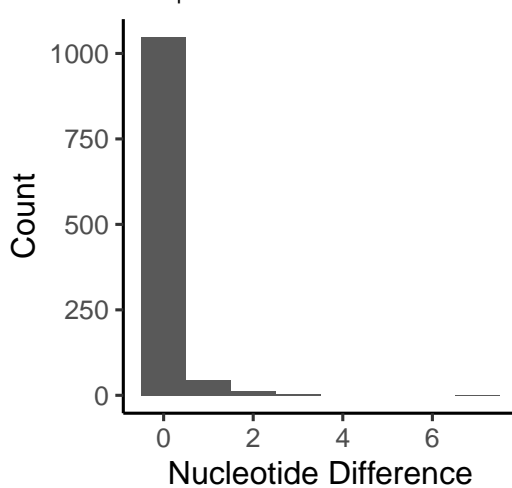
### IGHV4-28\*01

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



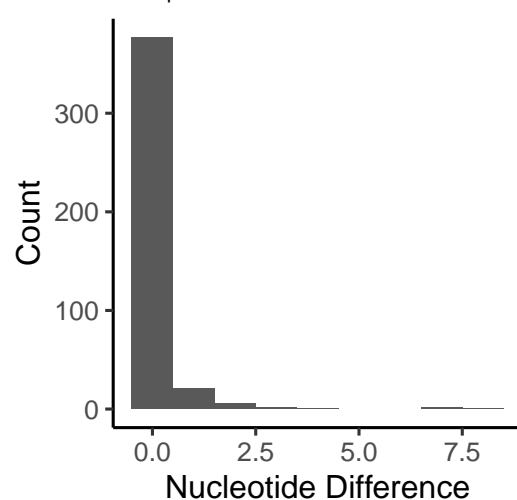
### IGHV4-39\*01

1109 sequences assigned  
1048 (94.5%) exact matches, in which:  
1035 unique CDR3  
7 unique J



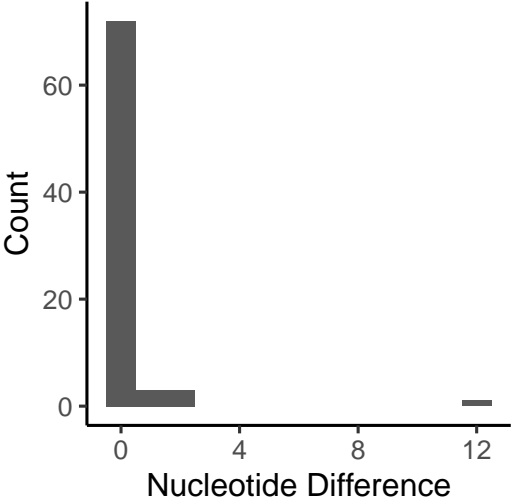
### IGHV4-59\*08

410 sequences assigned  
377 (92%) exact matches, in which:  
376 unique CDR3  
7 unique J



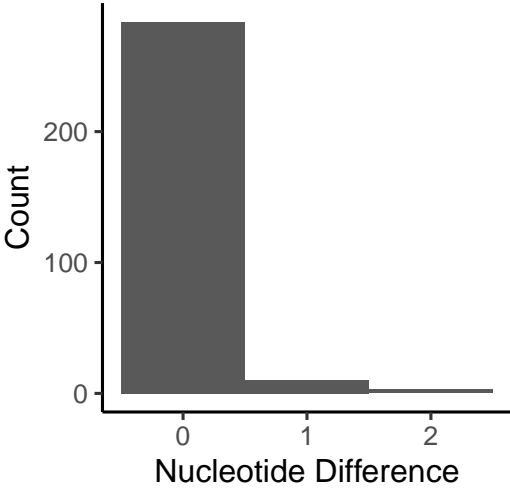
IGHV4-61\*01

79 sequences assigned  
72 (91.1%) exact matches, in which:  
72 unique CDR3  
6 unique J



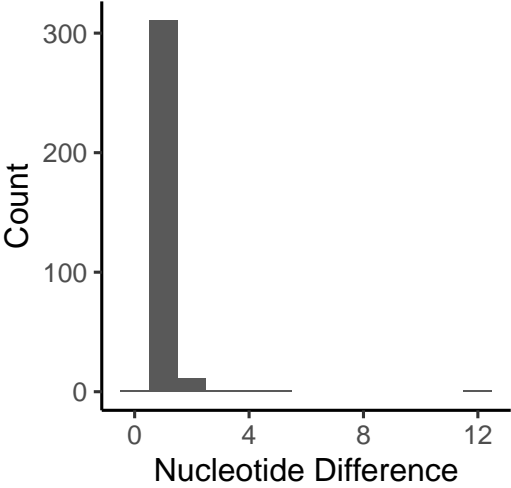
IGHV6-1\*01

297 sequences assigned  
284 (95.6%) exact matches, in which:  
280 unique CDR3  
7 unique J



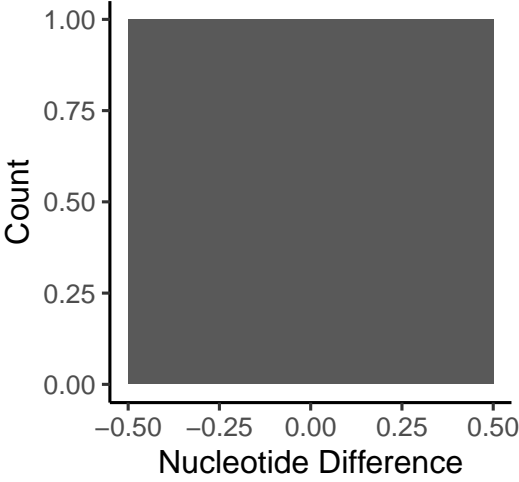
IGHV5-51\*01

327 sequences assigned  
1 (0.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



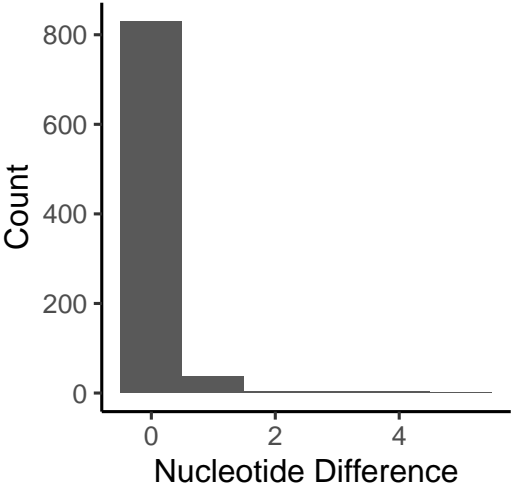
IGHV7-81\*01

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

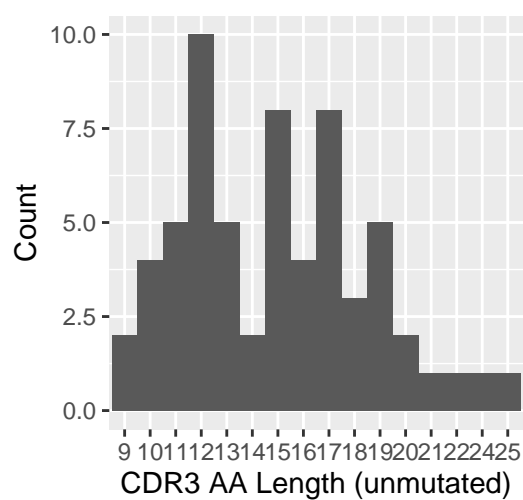


IGHV5-51\*03

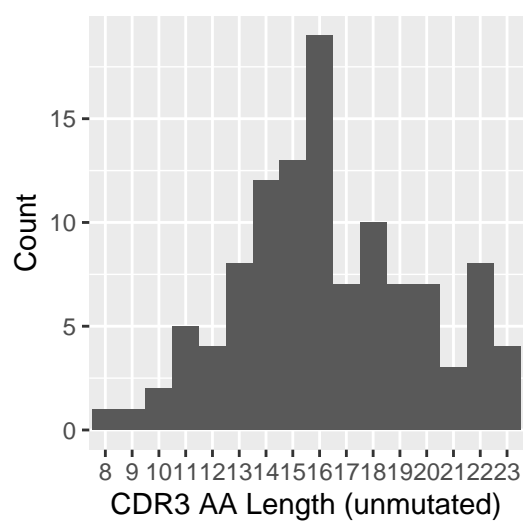
878 sequences assigned  
830 (94.5%) exact matches, in which:  
824 unique CDR3  
7 unique J



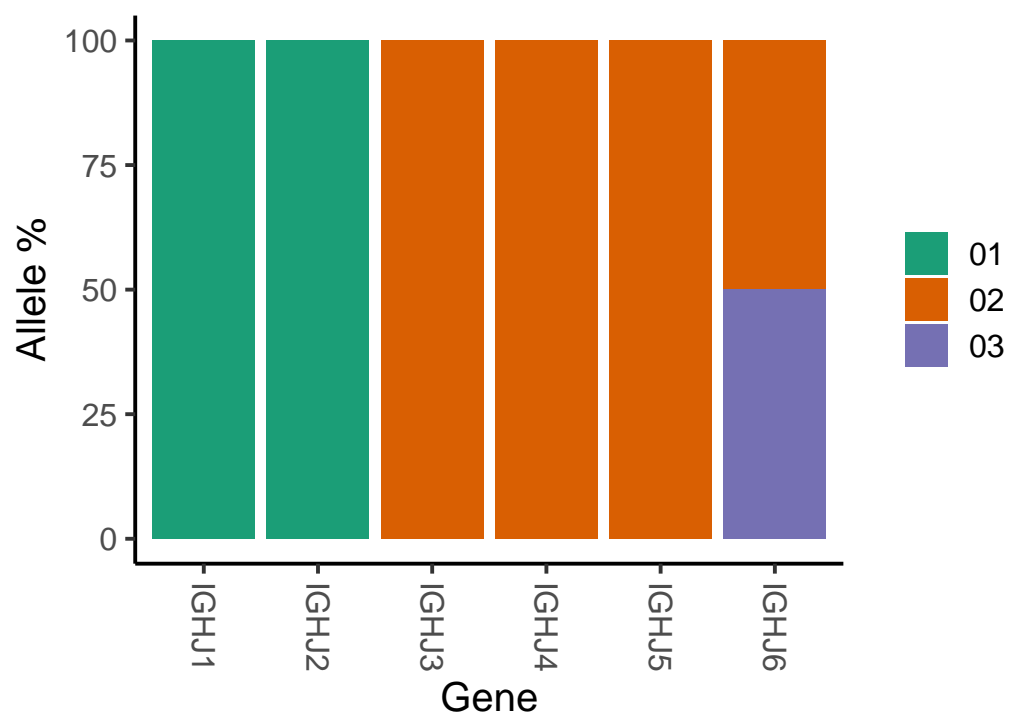
IGHV3-53\*04\_G37A



IGHV4-4\*07\_A70G



Allele Usage



Sequence Count by IGHJ6 allele usage

