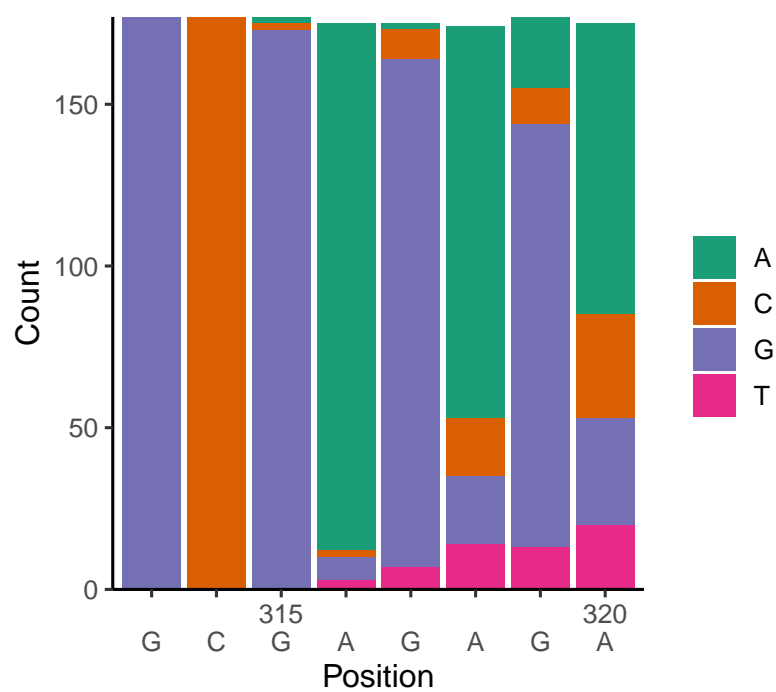
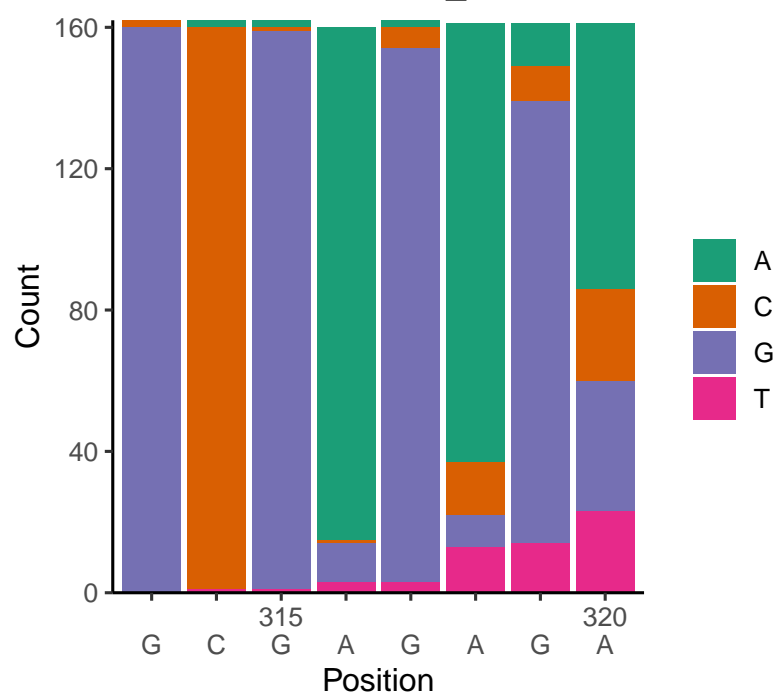


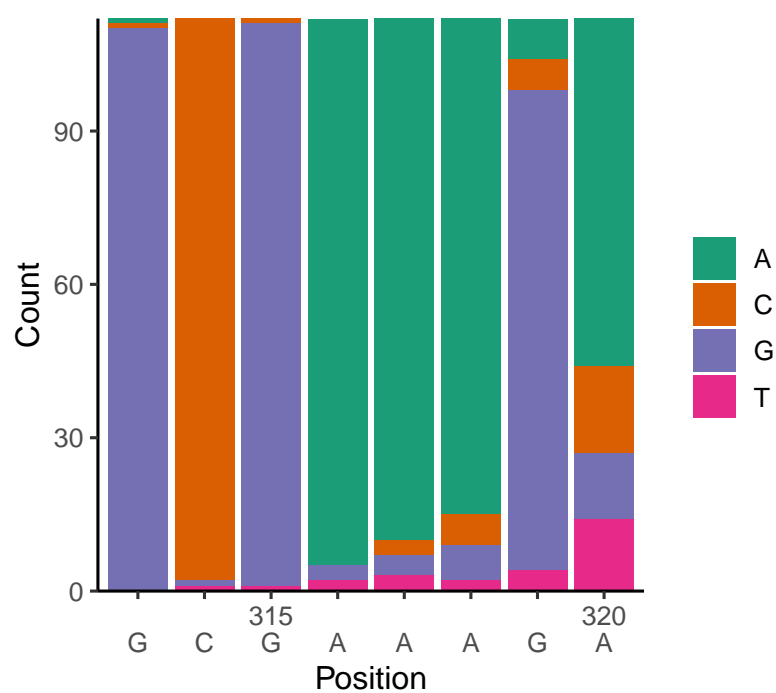
Gene IGHV1-69\*04\_T191C



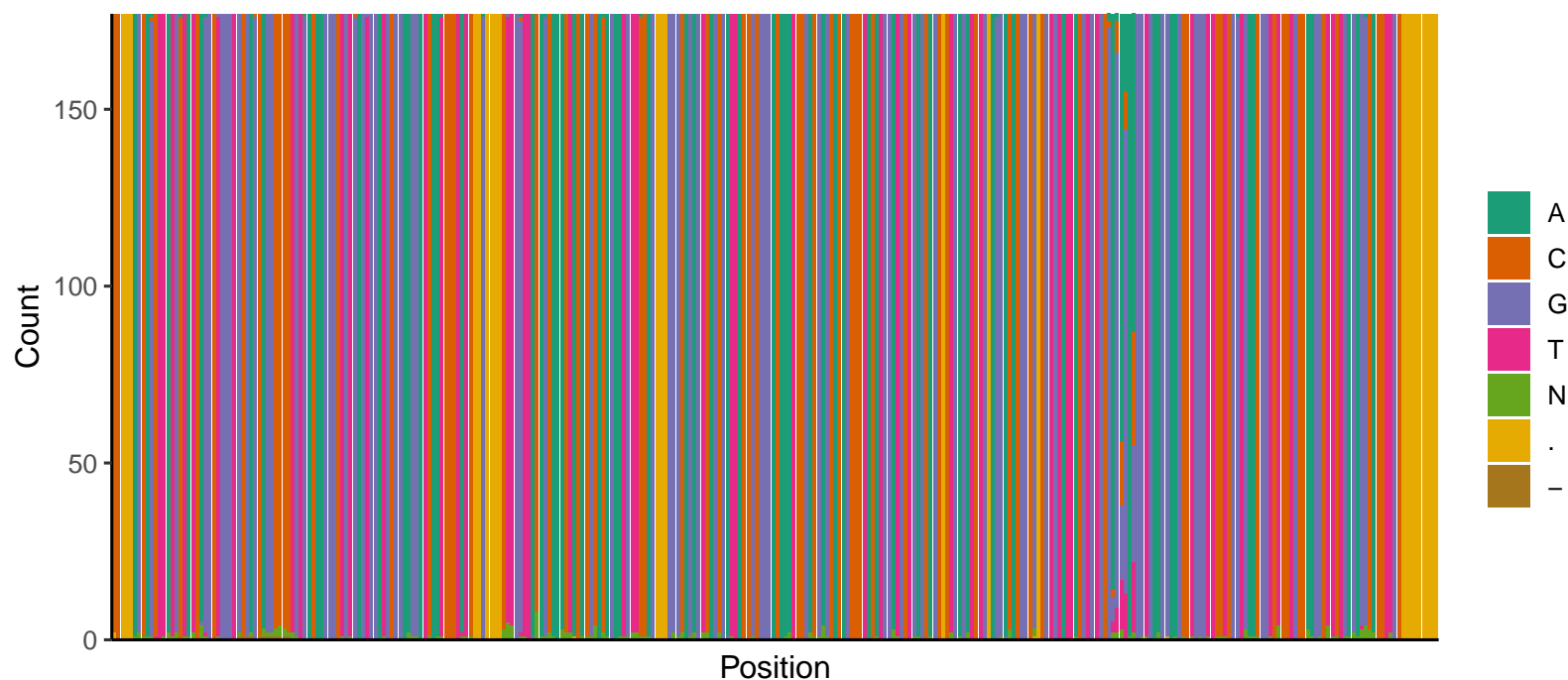
Gene IGHV1-69\*08\_C191T



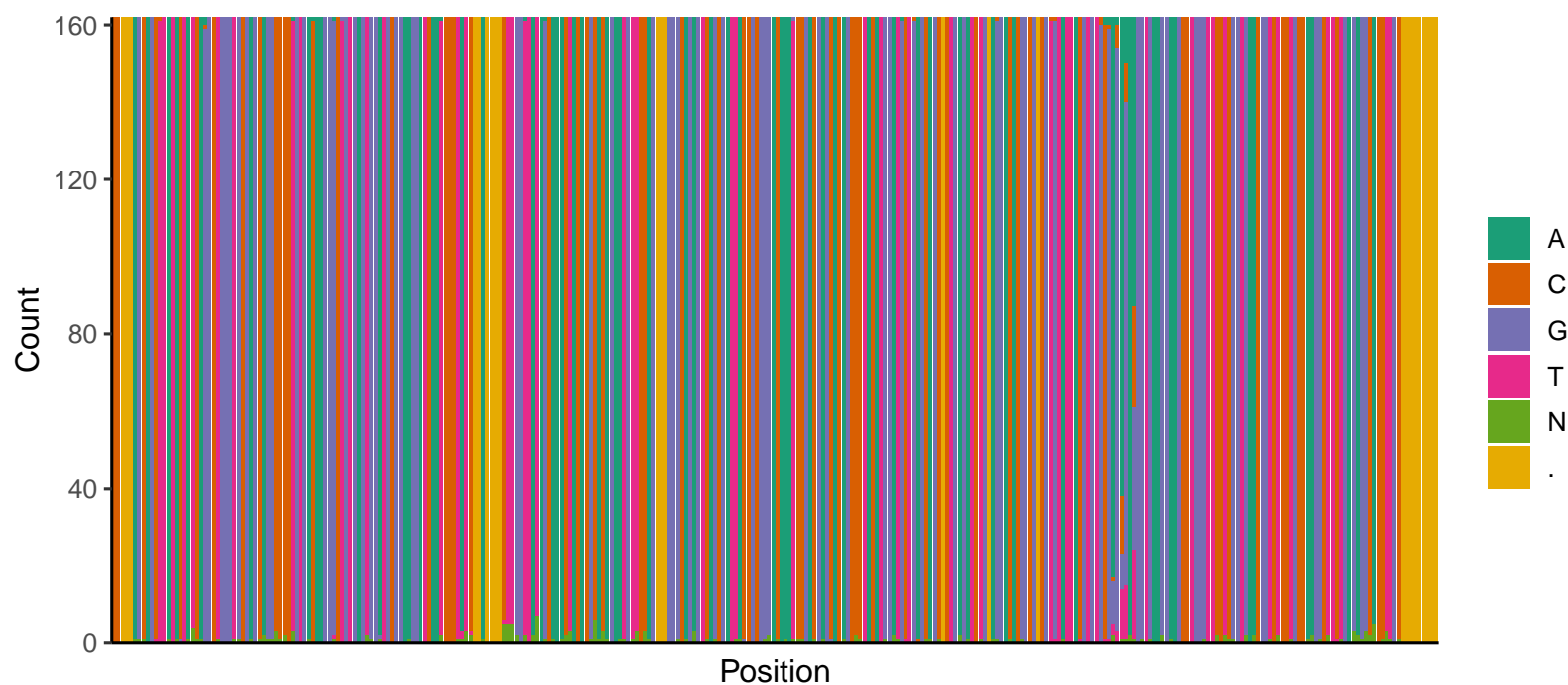
Gene IGHV3-30\*02\_A275G



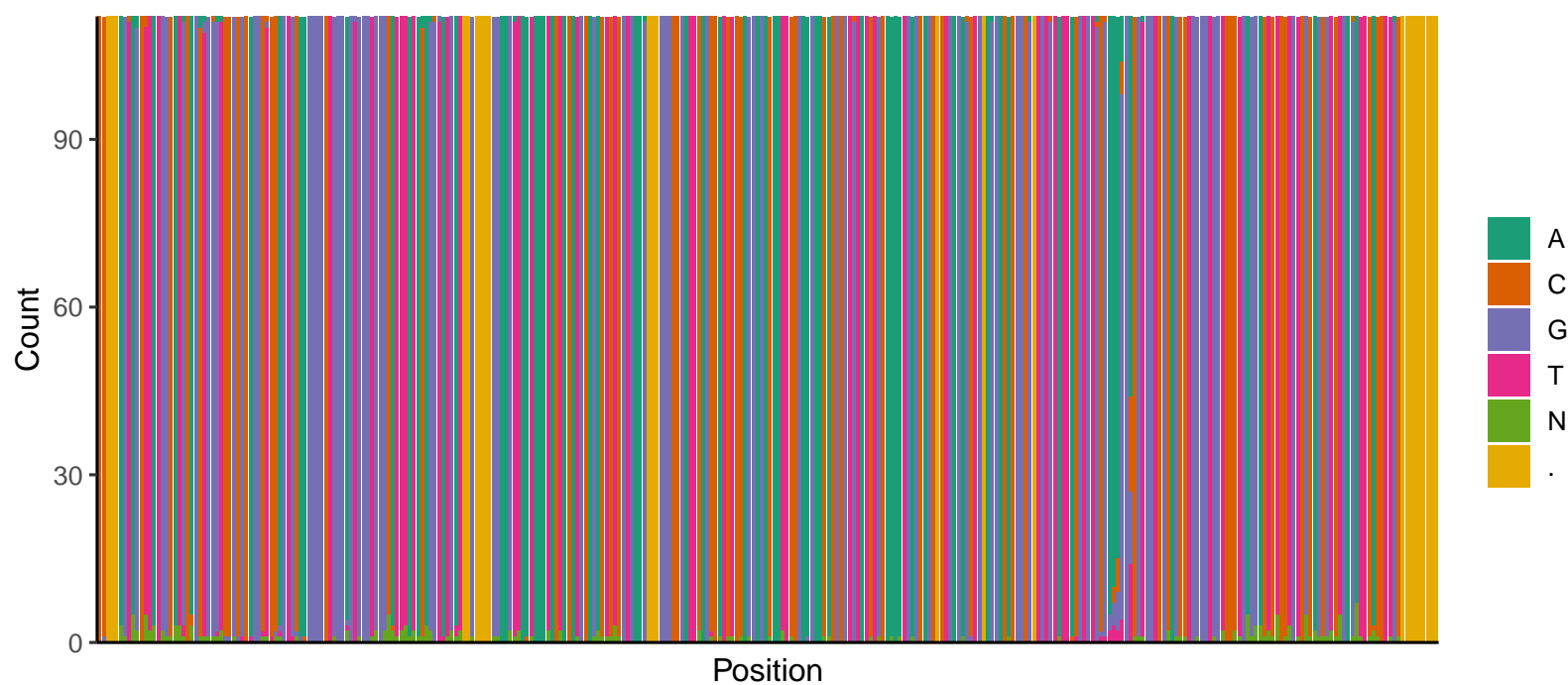
Gene IGHV1-69\*04\_T191C



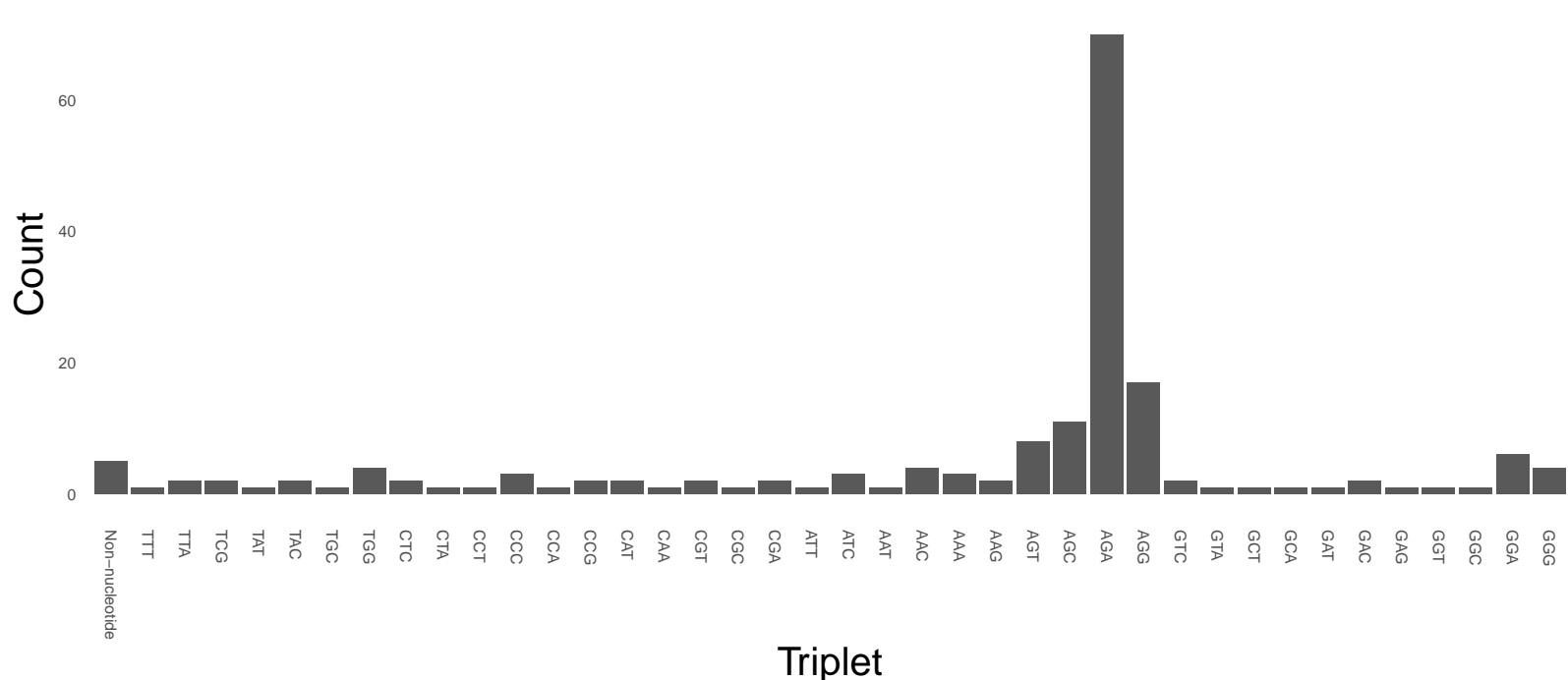
Gene IGHV1-69\*08\_C191T



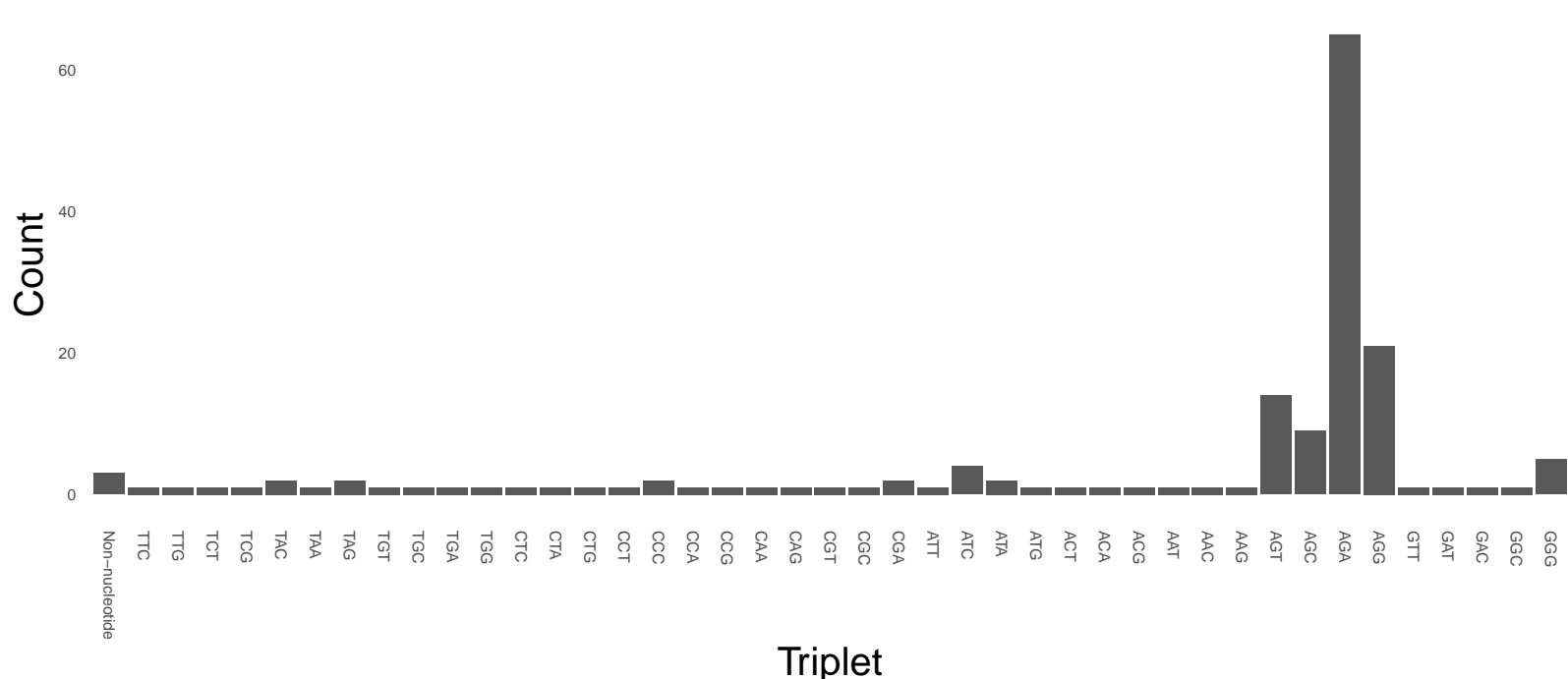
Gene IGHV3-30\*02\_A275G



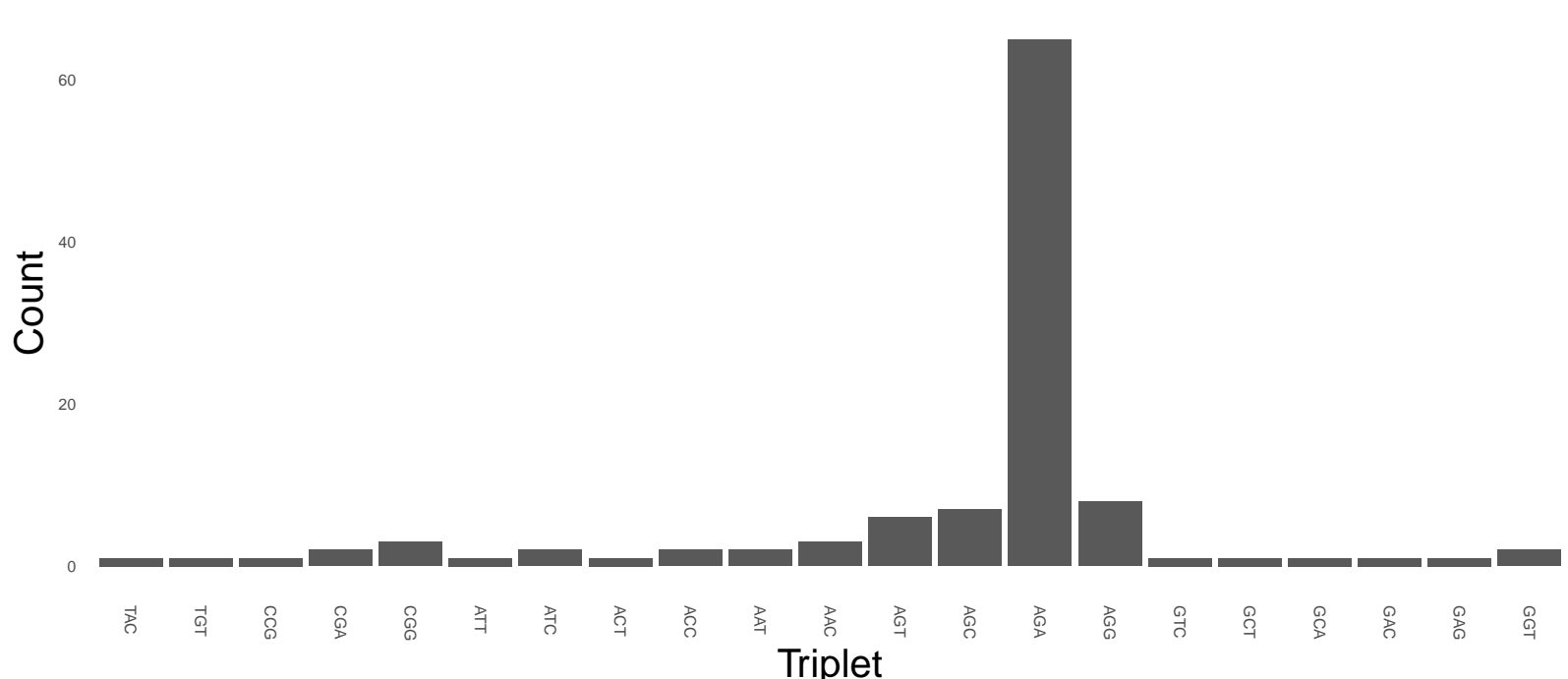
IGHV1-69\*04\_T191C- Final 3 nucleotides as a triplet



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

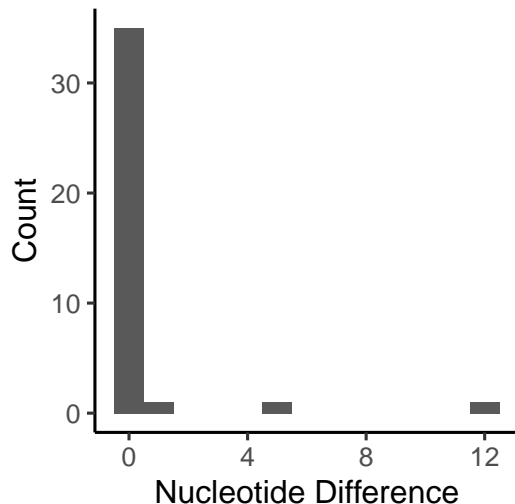


IGHV3-30\*02\_A275G- Final 3 nucleotides as a triplet



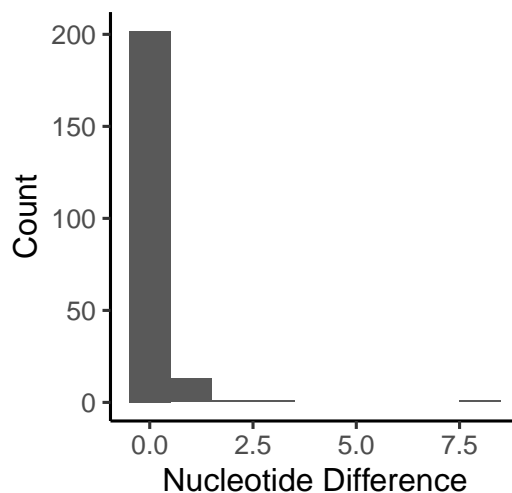
### IGHV1-2\*04

38 sequences assigned  
35 (92.1%) exact matches, in which:  
35 unique CDR3  
5 unique J



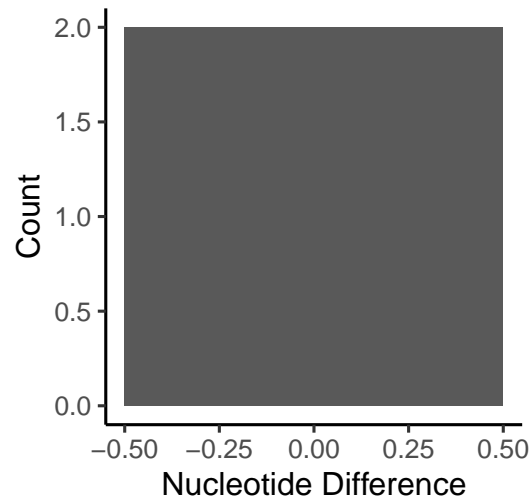
### IGHV1-8\*01

218 sequences assigned  
202 (92.7%) exact matches, in which:  
202 unique CDR3  
7 unique J



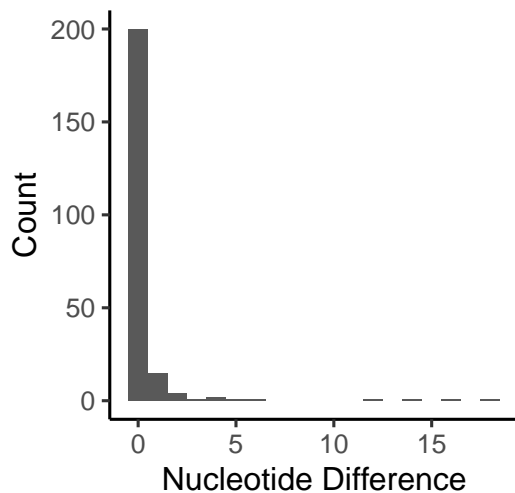
### IGHV1-45\*02

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



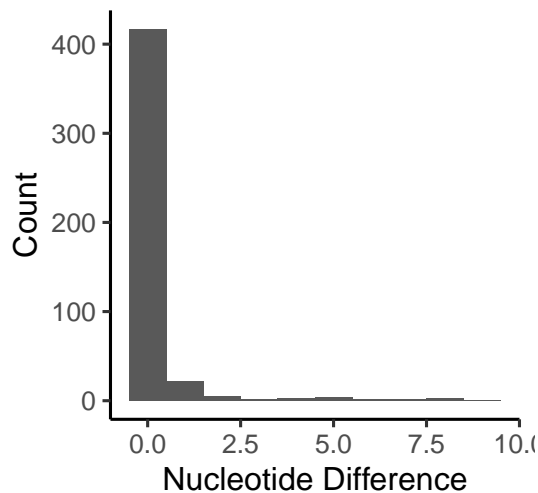
### IGHV1-2\*06

228 sequences assigned  
200 (87.7%) exact matches, in which:  
200 unique CDR3  
7 unique J



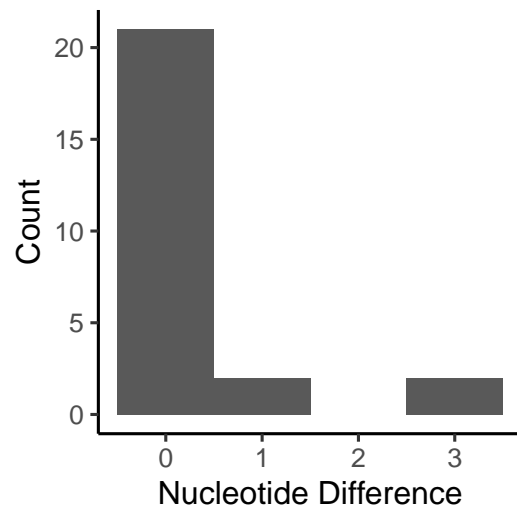
### IGHV1-18\*01

463 sequences assigned  
417 (90.1%) exact matches, in which:  
416 unique CDR3  
7 unique J



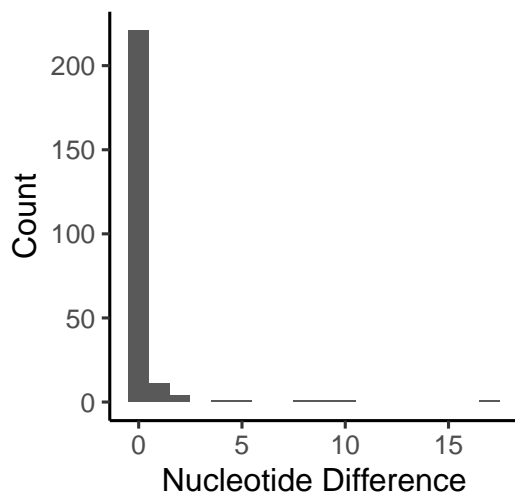
### IGHV1-46\*01

25 sequences assigned  
21 (84%) exact matches, in which:  
21 unique CDR3  
4 unique J



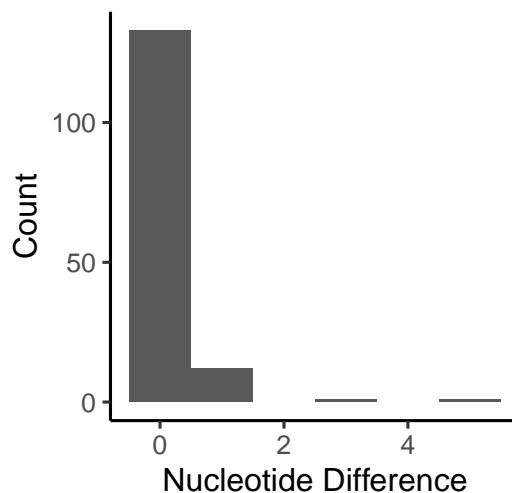
### IGHV1-3\*01

244 sequences assigned  
221 (90.6%) exact matches, in which:  
221 unique CDR3  
7 unique J



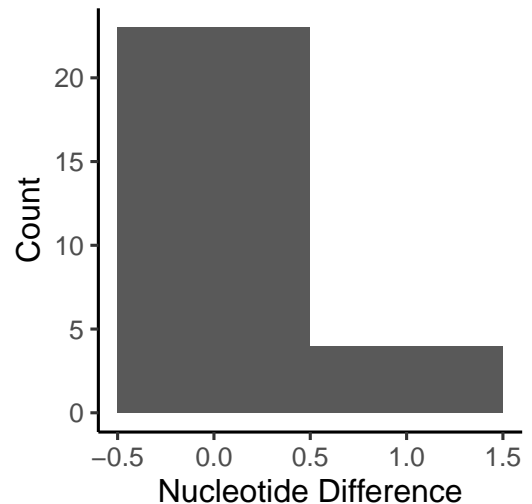
### IGHV1-24\*01

147 sequences assigned  
133 (90.5%) exact matches, in which:  
133 unique CDR3  
6 unique J



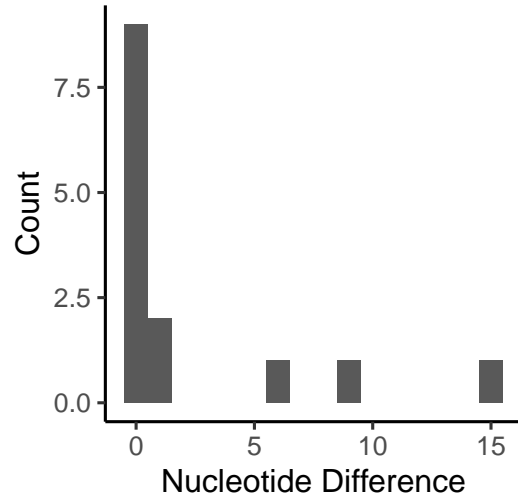
### IGHV1-46\*03

27 sequences assigned  
23 (85.2%) exact matches, in which:  
23 unique CDR3  
6 unique J



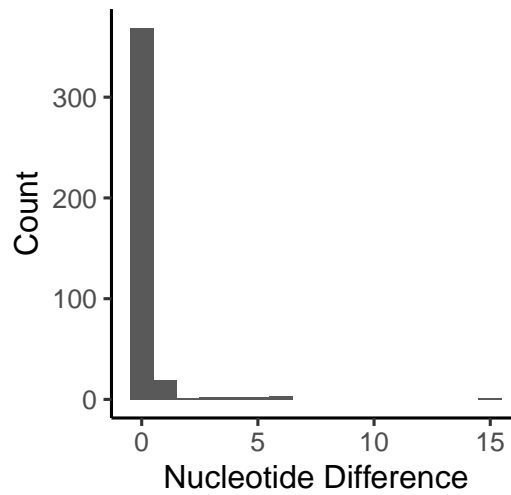
### IGHV1-58\*02

14 sequences assigned  
9 (64.3%) exact matches, in which:  
9 unique CDR3  
2 unique J



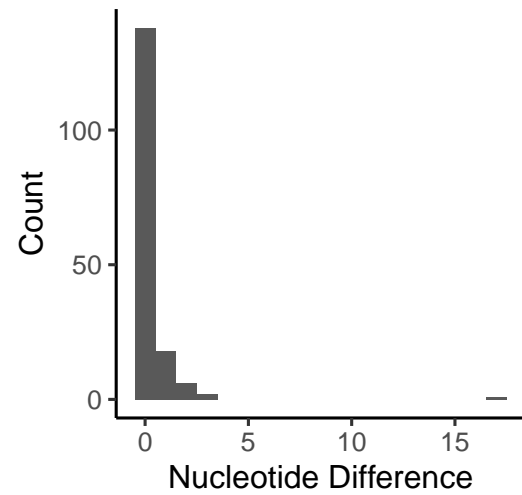
### IGHV2-5\*02

399 sequences assigned  
369 (92.5%) exact matches, in which:  
368 unique CDR3  
7 unique J



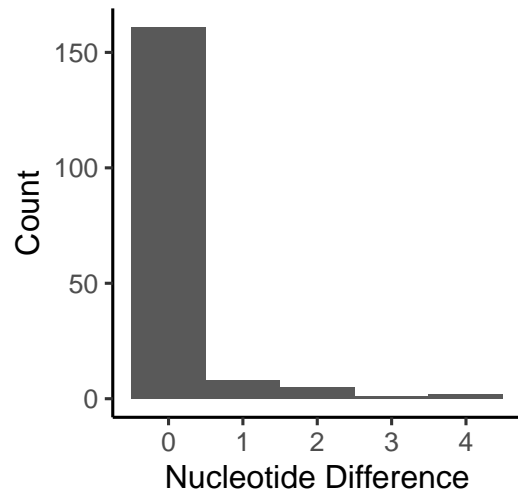
### IGHV3-7\*01

165 sequences assigned  
138 (83.6%) exact matches, in which:  
138 unique CDR3  
6 unique J



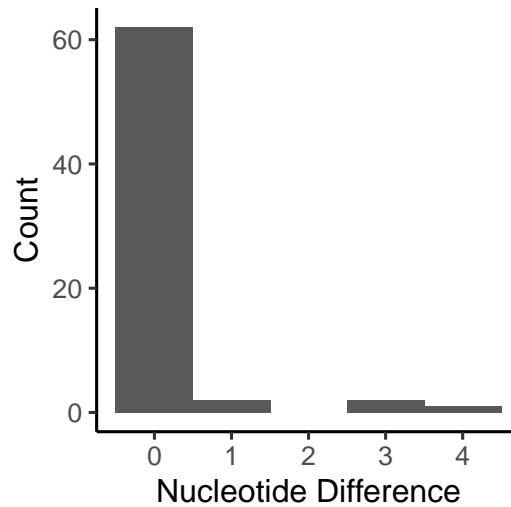
### IGHV1-69\*04\_T191C

177 sequences assigned  
161 (91%) exact matches, in which:  
161 unique CDR3  
6 unique J



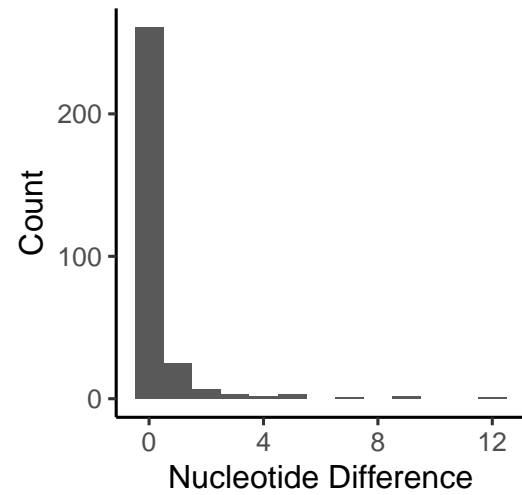
### IGHV2-26\*01

67 sequences assigned  
62 (92.5%) exact matches, in which:  
62 unique CDR3  
6 unique J



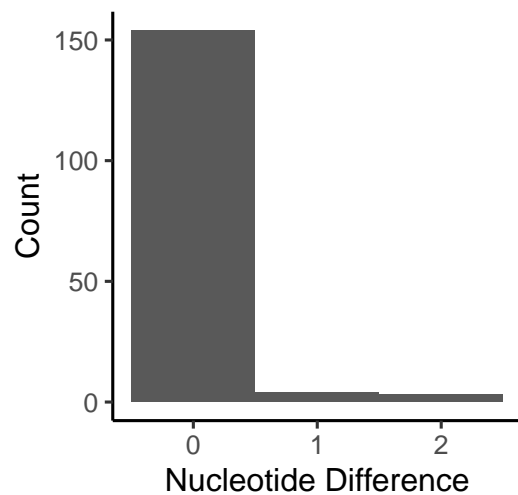
### IGHV3-9\*01

305 sequences assigned  
261 (85.6%) exact matches, in which:  
261 unique CDR3  
7 unique J



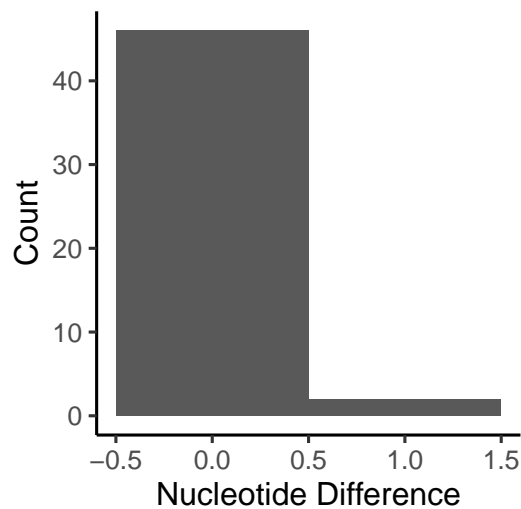
### IGHV1-69\*08\_C191T

162 sequences assigned  
154 (95.1%) exact matches, in which:  
154 unique CDR3  
7 unique J



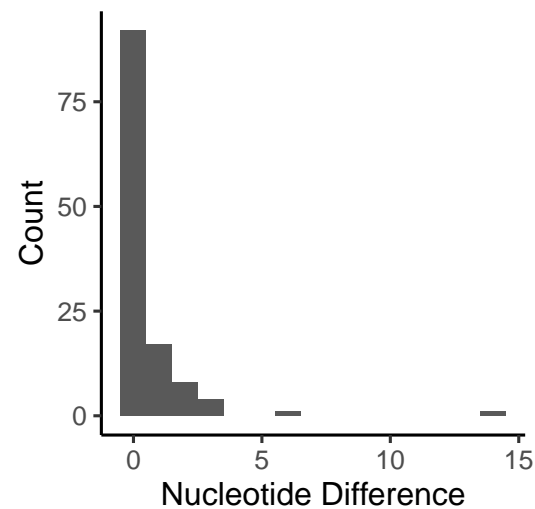
### IGHV2-70\*15

48 sequences assigned  
46 (95.8%) exact matches, in which:  
46 unique CDR3  
6 unique J



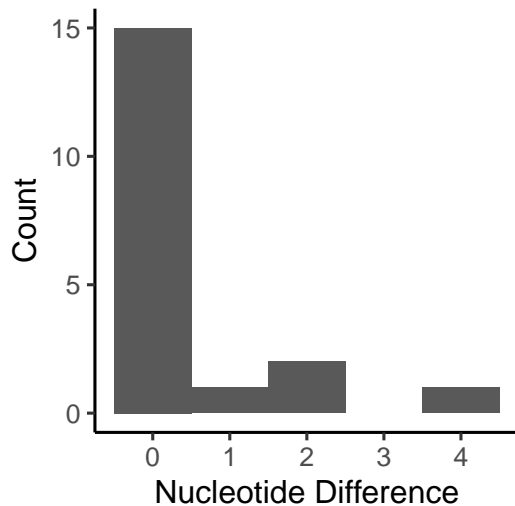
### IGHV3-11\*01

123 sequences assigned  
92 (74.8%) exact matches, in which:  
91 unique CDR3  
6 unique J



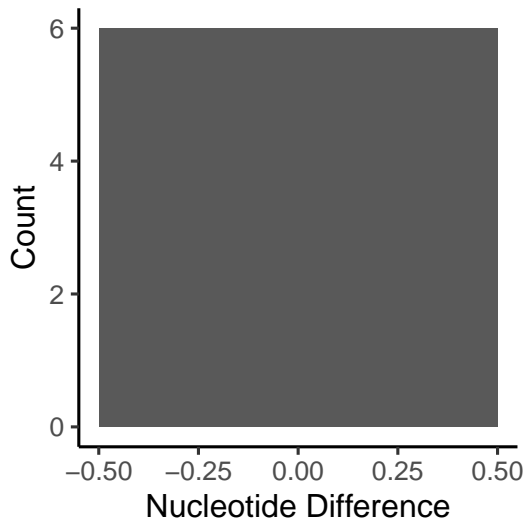
### IGHV3-13\*01

20 sequences assigned  
15 (75%) exact matches, in which:  
15 unique CDR3  
5 unique J



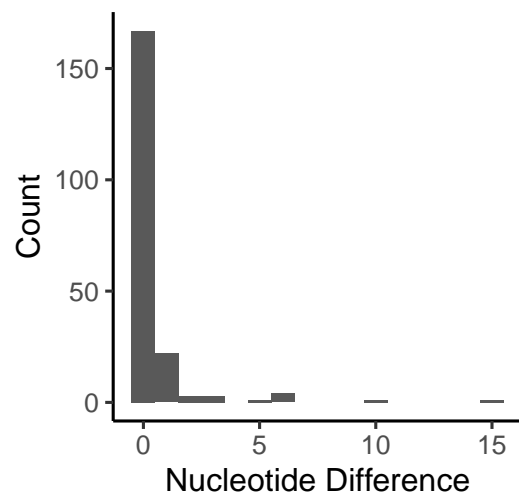
### IGHV3-20\*01

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



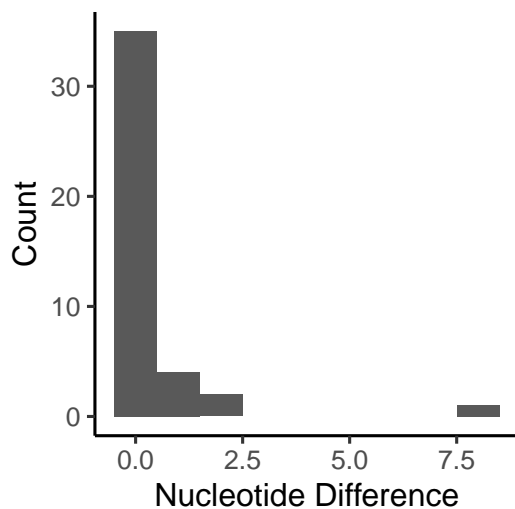
### IGHV3-30-3\*01

202 sequences assigned  
167 (82.7%) exact matches, in which:  
167 unique CDR3  
7 unique J



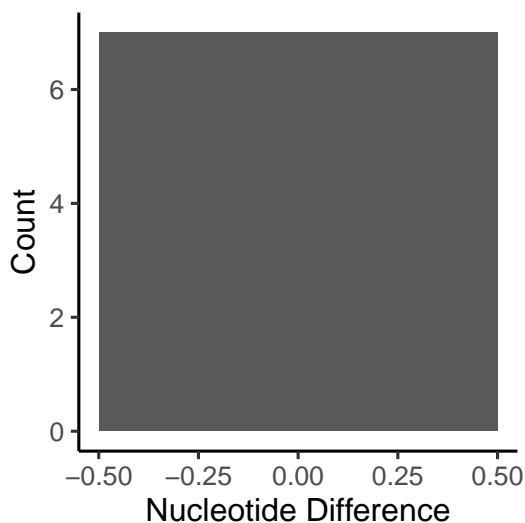
### IGHV3-15\*01

42 sequences assigned  
35 (83.3%) exact matches, in which:  
35 unique CDR3  
5 unique J



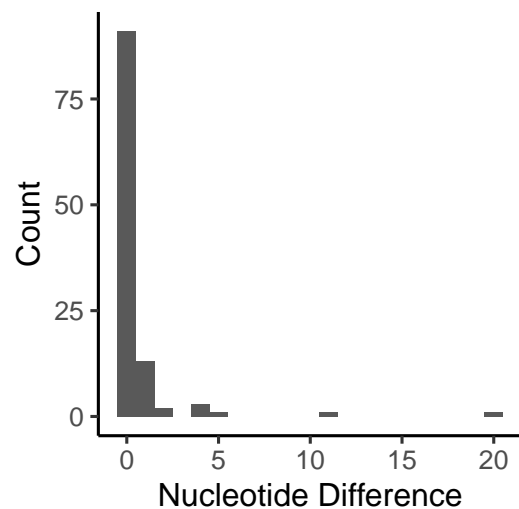
### IGHV3-20\*04

7 sequences assigned  
7 (100%) exact matches, in which:  
7 unique CDR3  
2 unique J



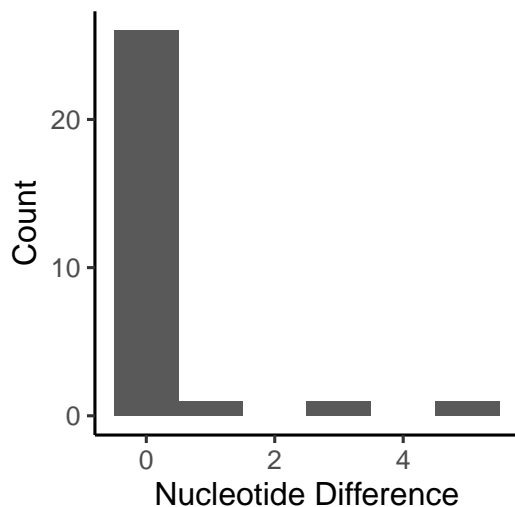
### IGHV3-30\*02\_A275G

112 sequences assigned  
91 (81.2%) exact matches, in which:  
91 unique CDR3  
7 unique J



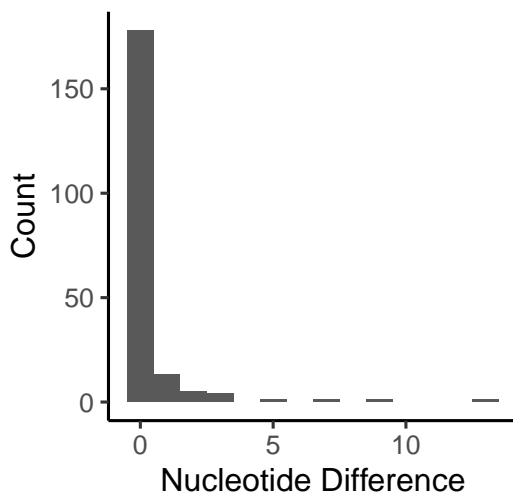
### IGHV3-15\*07

29 sequences assigned  
26 (89.7%) exact matches, in which:  
26 unique CDR3  
5 unique J



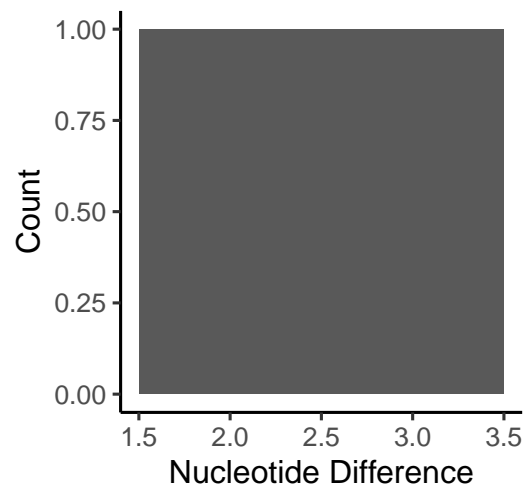
### IGHV3-21\*01

204 sequences assigned  
178 (87.3%) exact matches, in which:  
178 unique CDR3  
7 unique J



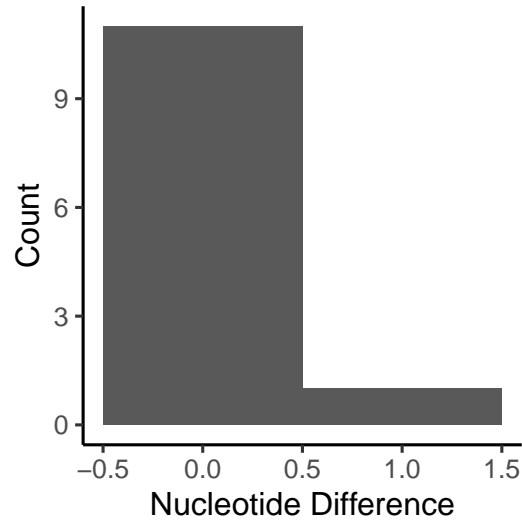
### IGHV3-38-3\*01

2 sequences assigned  
No exact matches.



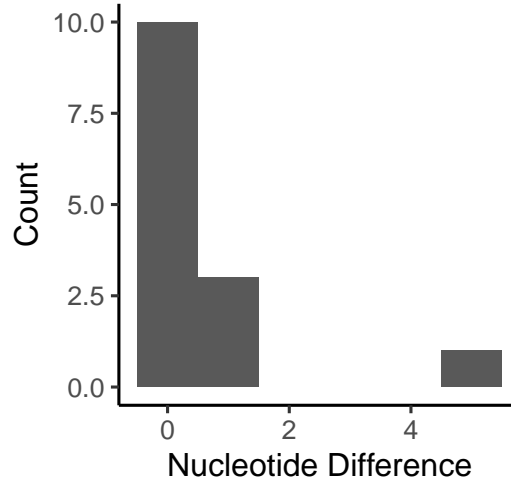
### IGHV3-43\*01

12 sequences assigned  
11 (91.7%) exact matches, in which:  
11 unique CDR3  
5 unique J



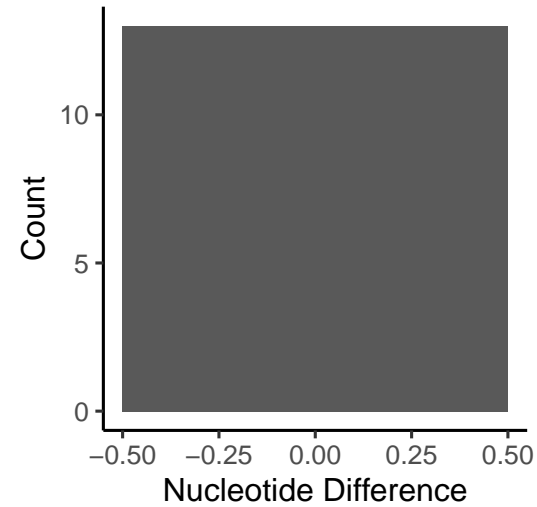
### IGHV3-49\*03

14 sequences assigned  
10 (71.4%) exact matches, in which:  
10 unique CDR3  
4 unique J



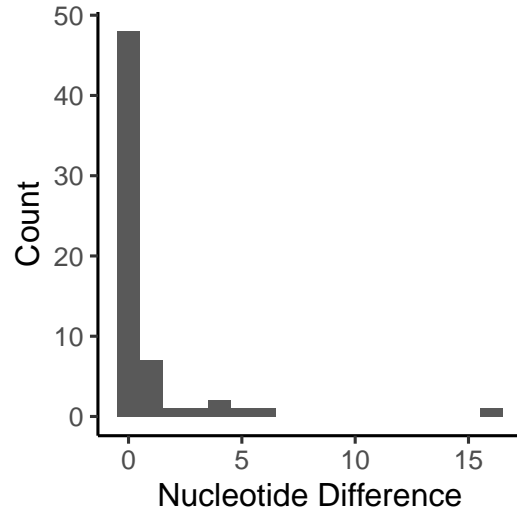
### IGHV3-64\*01

13 sequences assigned  
13 (100%) exact matches, in which:  
13 unique CDR3  
5 unique J



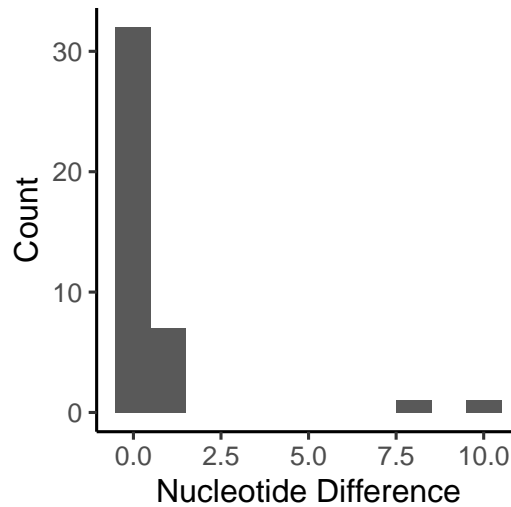
### IGHV3-48\*02

62 sequences assigned  
48 (77.4%) exact matches, in which:  
48 unique CDR3  
5 unique J



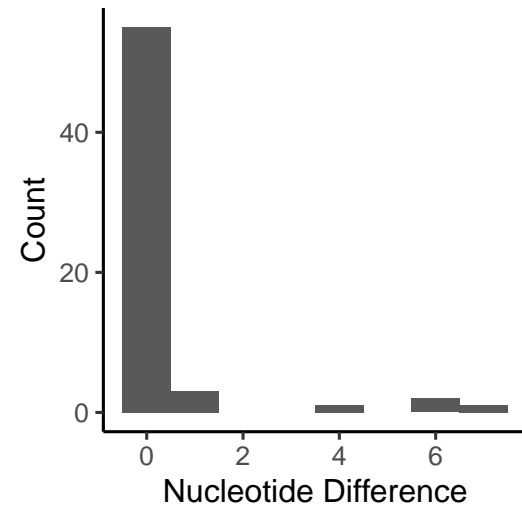
### IGHV3-49\*04

41 sequences assigned  
32 (78%) exact matches, in which:  
32 unique CDR3  
5 unique J



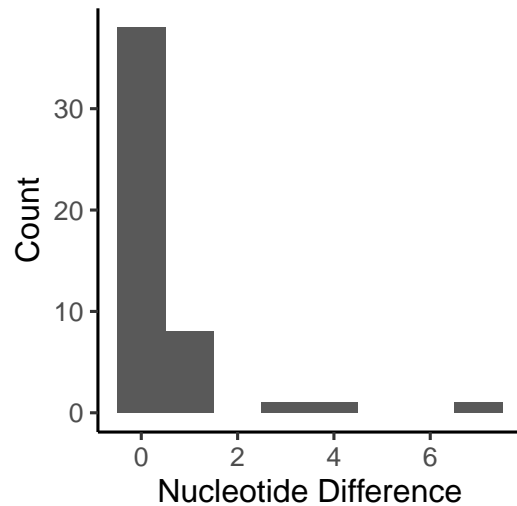
### IGHV3-66\*01

63 sequences assigned  
55 (87.3%) exact matches, in which:  
55 unique CDR3  
6 unique J



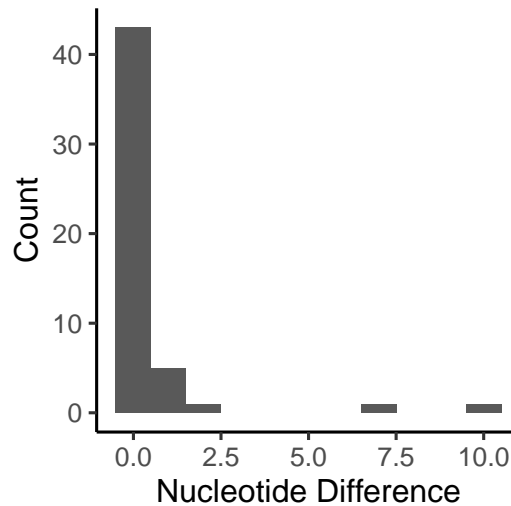
### IGHV3-48\*04

49 sequences assigned  
38 (77.6%) exact matches, in which:  
38 unique CDR3  
5 unique J



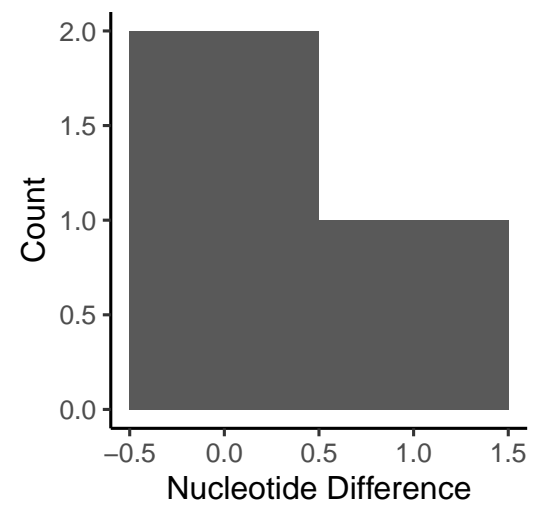
### IGHV3-53\*04

51 sequences assigned  
43 (84.3%) exact matches, in which:  
43 unique CDR3  
6 unique J



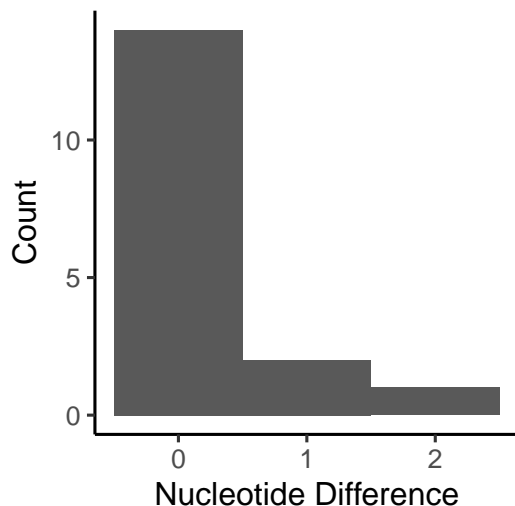
### IGHV3-72\*01

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



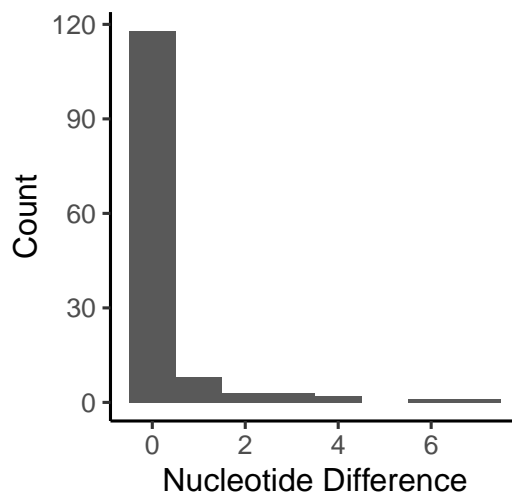
### IGHV3-73\*01

17 sequences assigned  
14 (82.4%) exact matches, in which:  
14 unique CDR3  
4 unique J



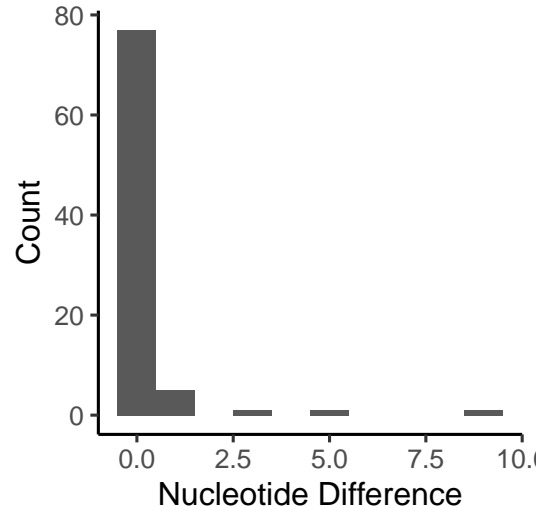
### IGHV4-4\*02

136 sequences assigned  
118 (86.8%) exact matches, in which:  
118 unique CDR3  
7 unique J



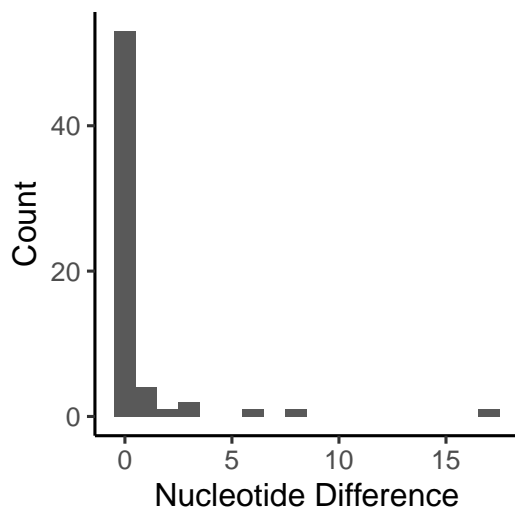
### IGHV4-30-2\*01

85 sequences assigned  
77 (90.6%) exact matches, in which:  
77 unique CDR3  
6 unique J



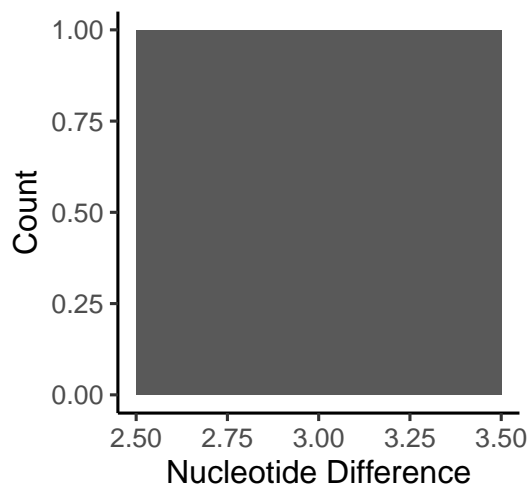
### IGHV3-74\*01

65 sequences assigned  
53 (81.5%) exact matches, in which:  
53 unique CDR3  
7 unique J



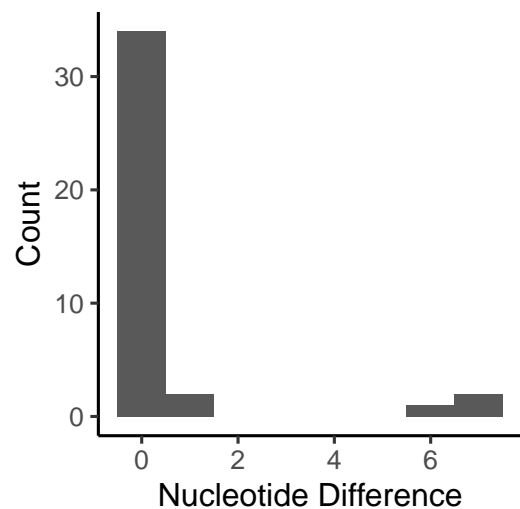
### IGHV4-28\*01

1 sequences assigned  
No exact matches.



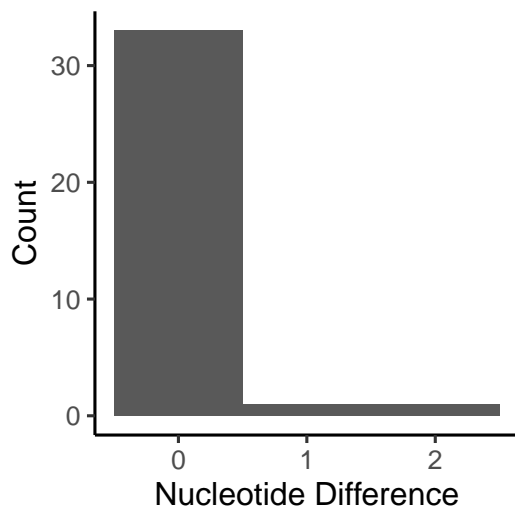
### IGHV4-30-4\*07

39 sequences assigned  
34 (87.2%) exact matches, in which:  
34 unique CDR3  
5 unique J



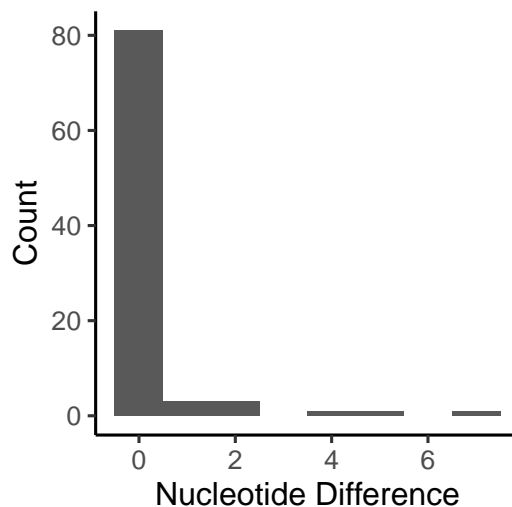
### IGHV3-43D\*03

35 sequences assigned  
33 (94.3%) exact matches, in which:  
33 unique CDR3  
6 unique J



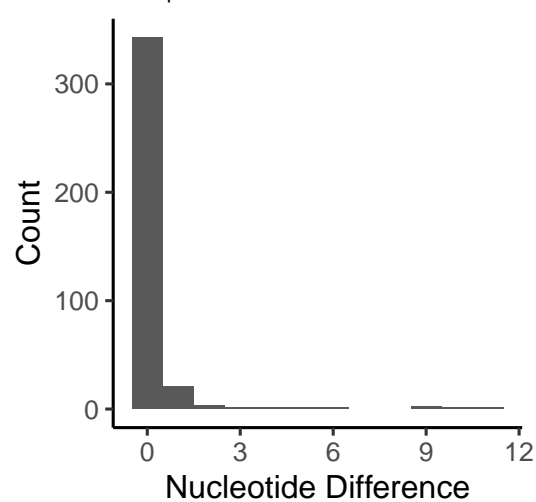
### IGHV4-30-4\*01

90 sequences assigned  
81 (90%) exact matches, in which:  
80 unique CDR3  
6 unique J



### IGHV4-34\*01

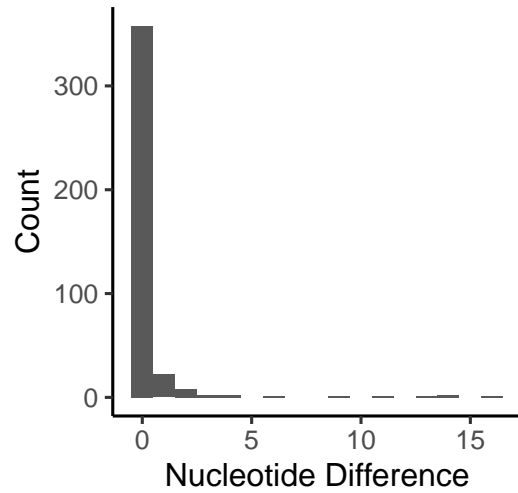
375 sequences assigned  
343 (91.5%) exact matches, in which:  
342 unique CDR3  
7 unique J





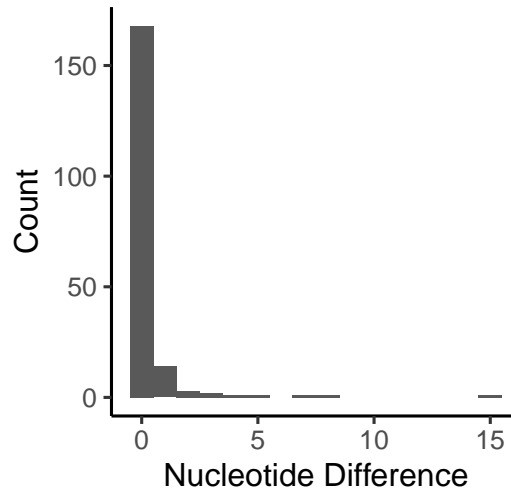
### IGHV4-38-2\*02

399 sequences assigned  
358 (89.7%) exact matches, in which:  
357 unique CDR3  
7 unique J



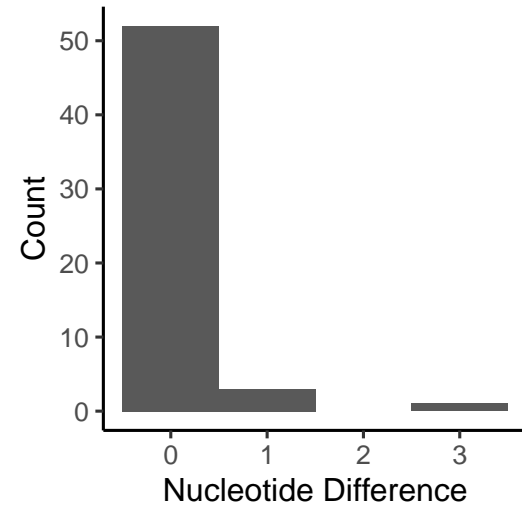
### IGHV4-59\*01

192 sequences assigned  
168 (87.5%) exact matches, in which:  
168 unique CDR3  
7 unique J



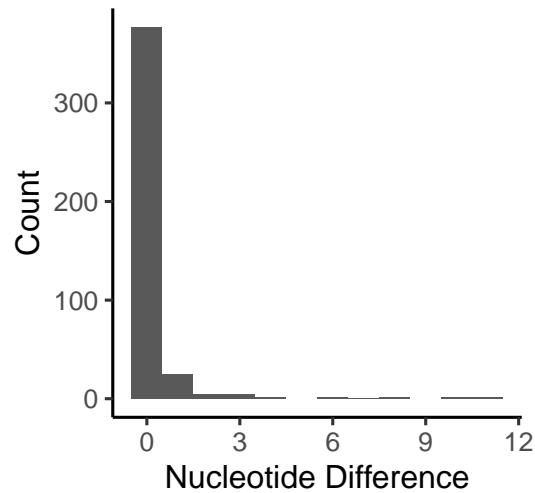
### IGHV6-1\*01

56 sequences assigned  
52 (92.9%) exact matches, in which:  
52 unique CDR3  
6 unique J



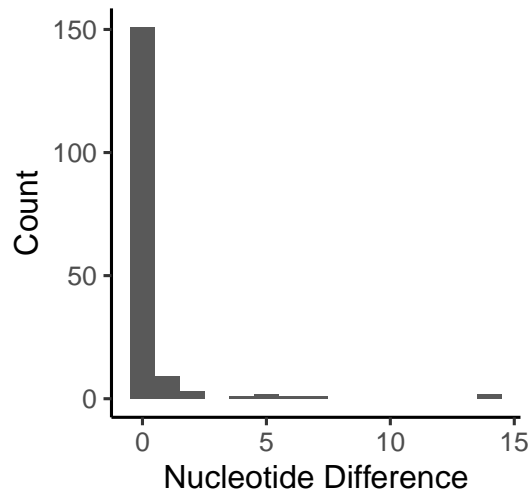
### IGHV4-39\*01

423 sequences assigned  
377 (89.1%) exact matches, in which:  
376 unique CDR3  
7 unique J



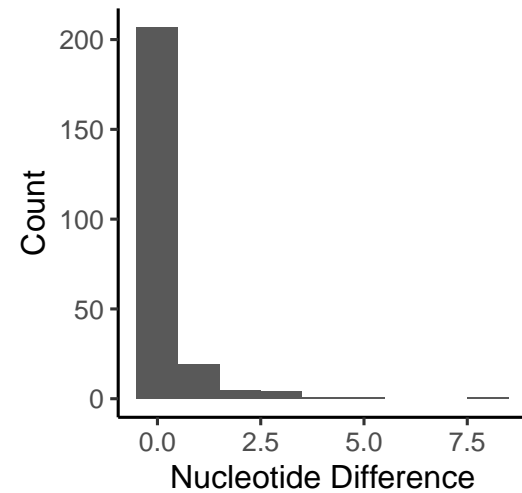
### IGHV4-59\*08

170 sequences assigned  
151 (88.8%) exact matches, in which:  
151 unique CDR3  
7 unique J



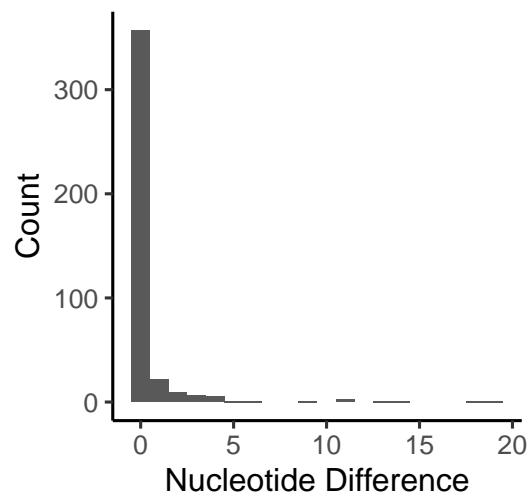
### IGHV7-4-1\*02

238 sequences assigned  
207 (87%) exact matches, in which:  
207 unique CDR3  
7 unique J



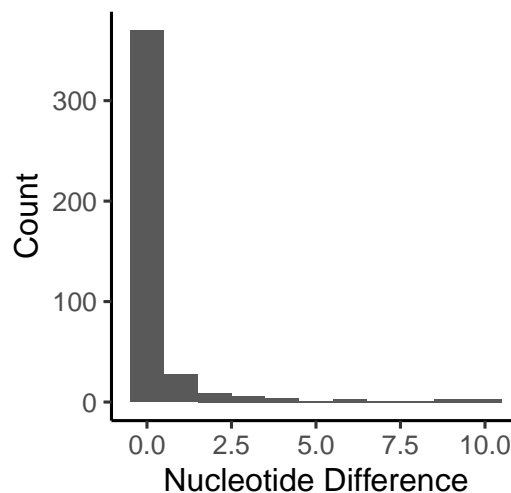
### IGHV4-39\*07

408 sequences assigned  
357 (87.5%) exact matches, in which:  
356 unique CDR3  
6 unique J

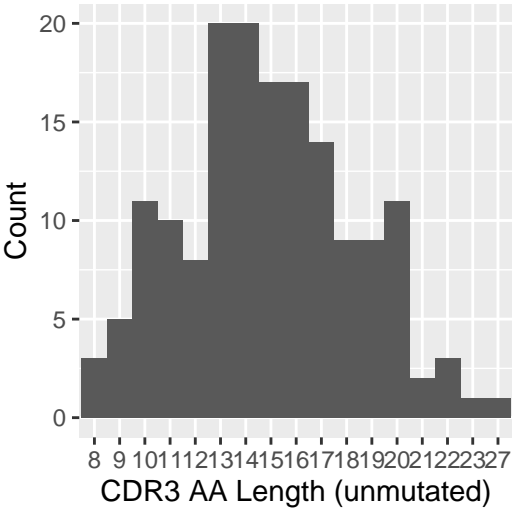


### IGHV5-51\*01

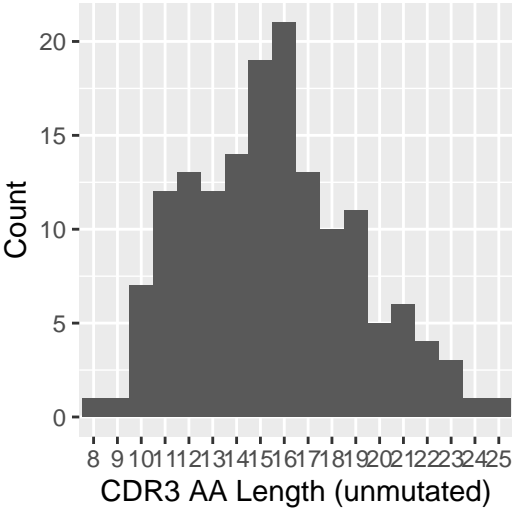
428 sequences assigned  
370 (86.4%) exact matches, in which:  
370 unique CDR3  
7 unique J



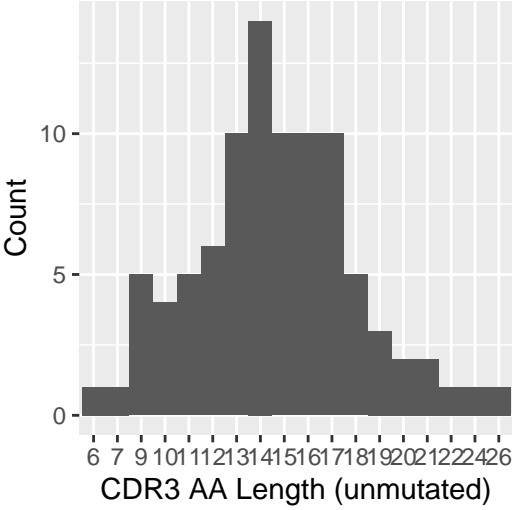
IGHV1-69\*04\_T191C



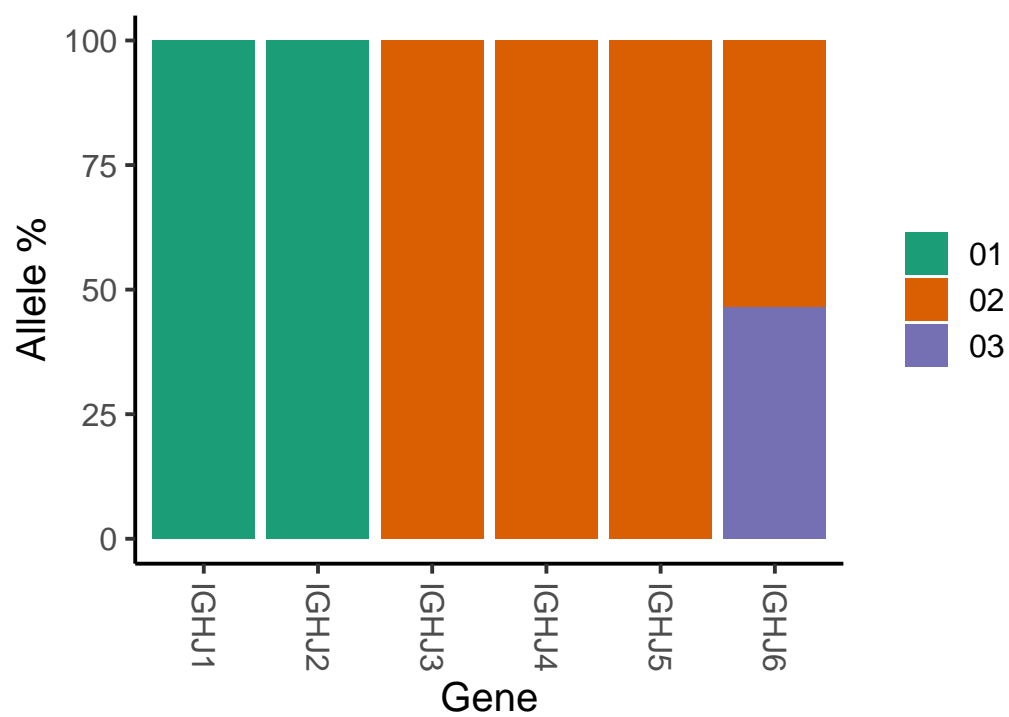
IGHV1-69\*08\_C191T



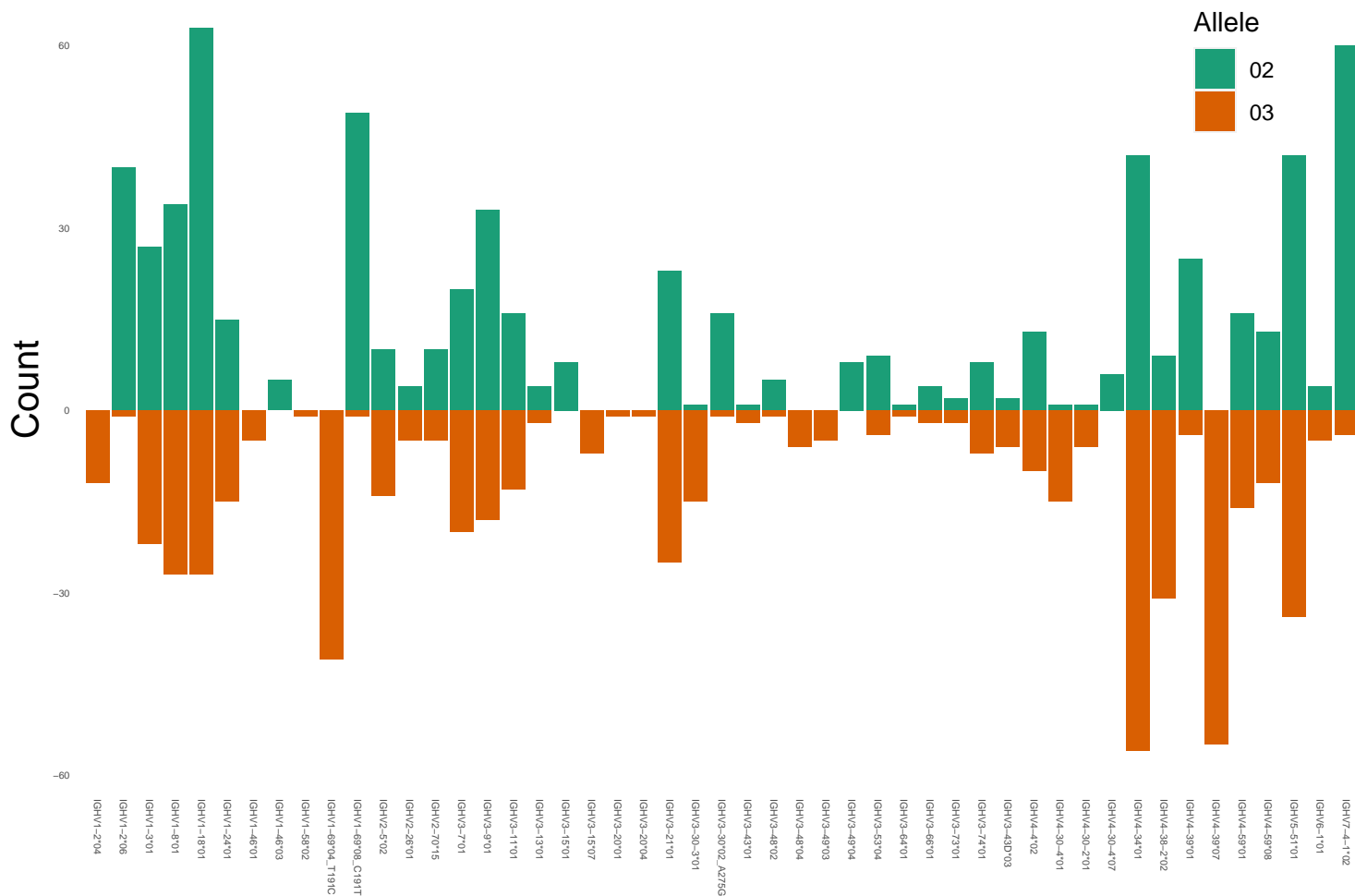
IGHV3-30\*02\_A275G



Allele Usage



Sequence Count by IGHJ6 allele usage



[illegible]