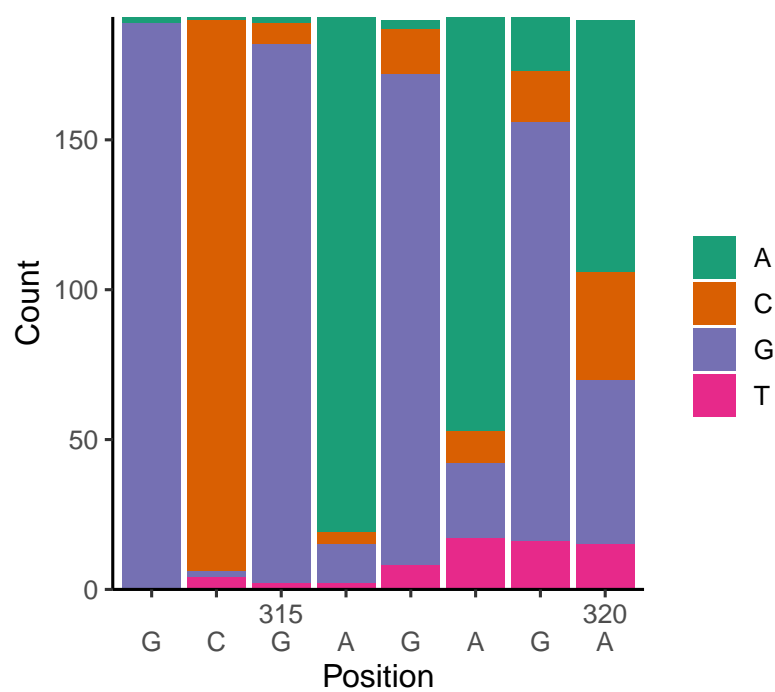
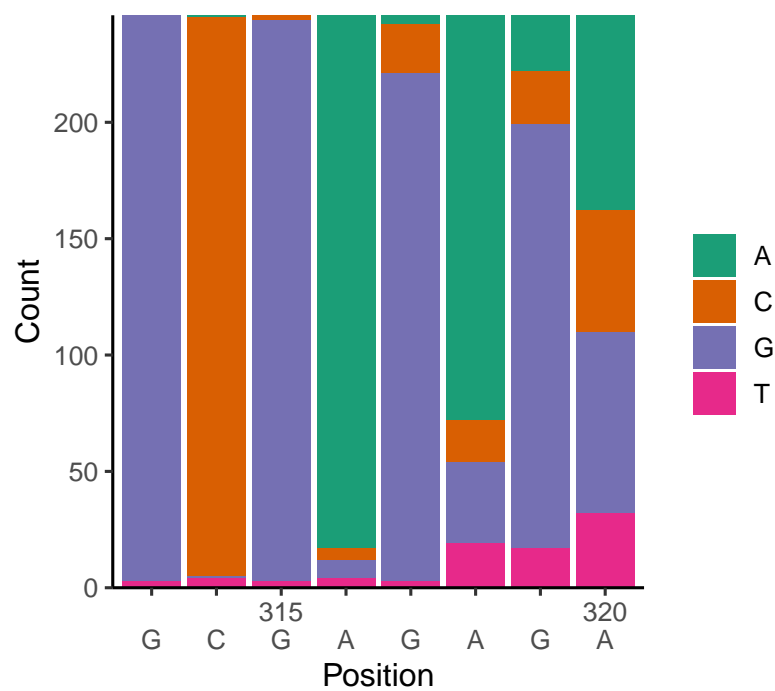


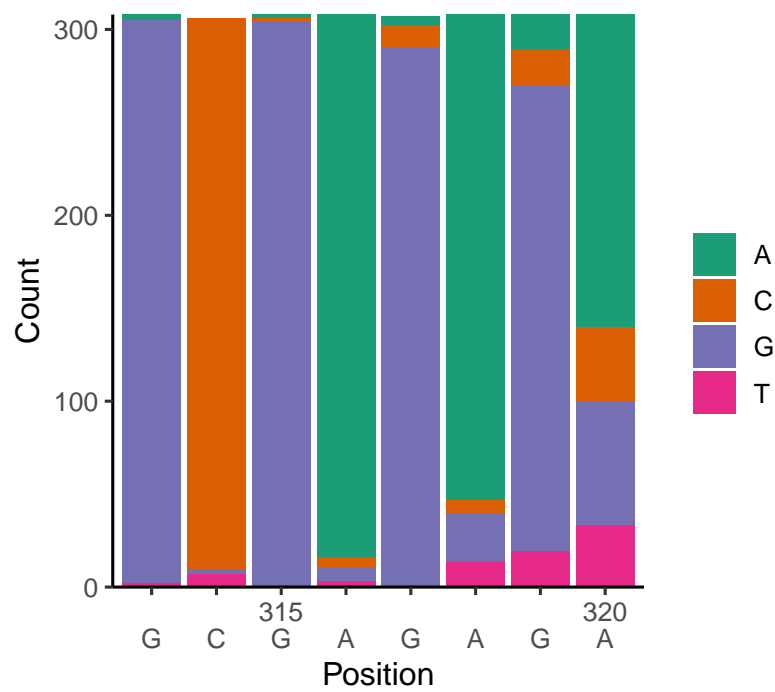
Gene IGHV1-69\*08\_C191T



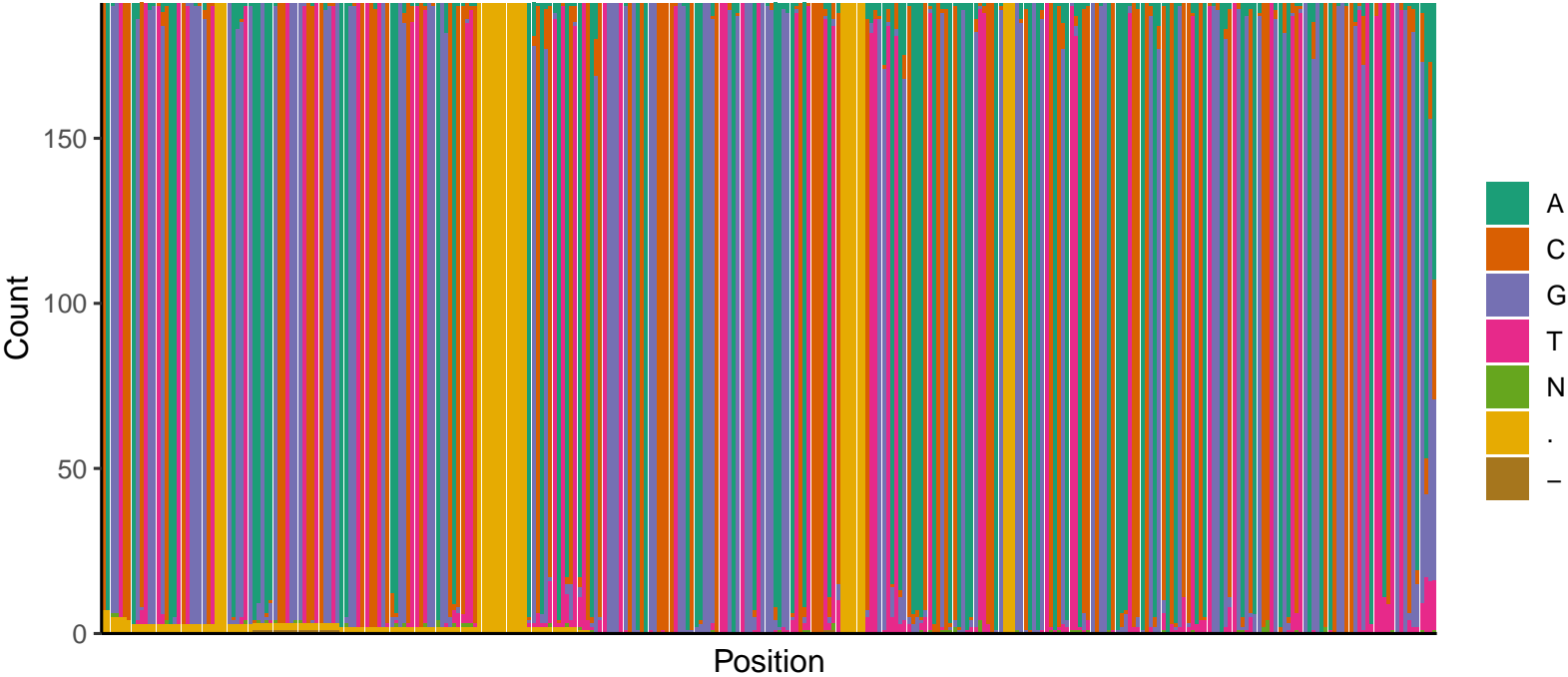
Gene IGHV1-69\*12\_G48A



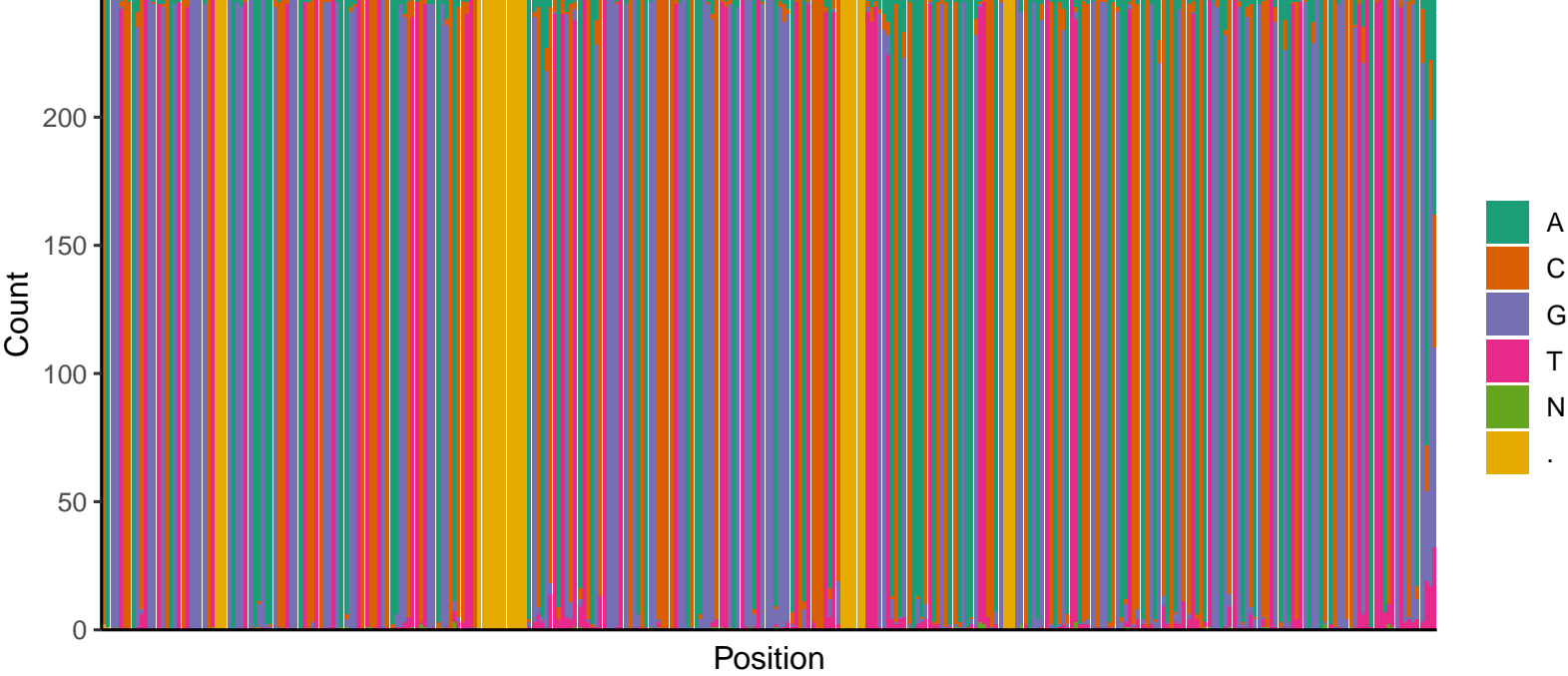
Gene IGHV3-48\*01\_A39C



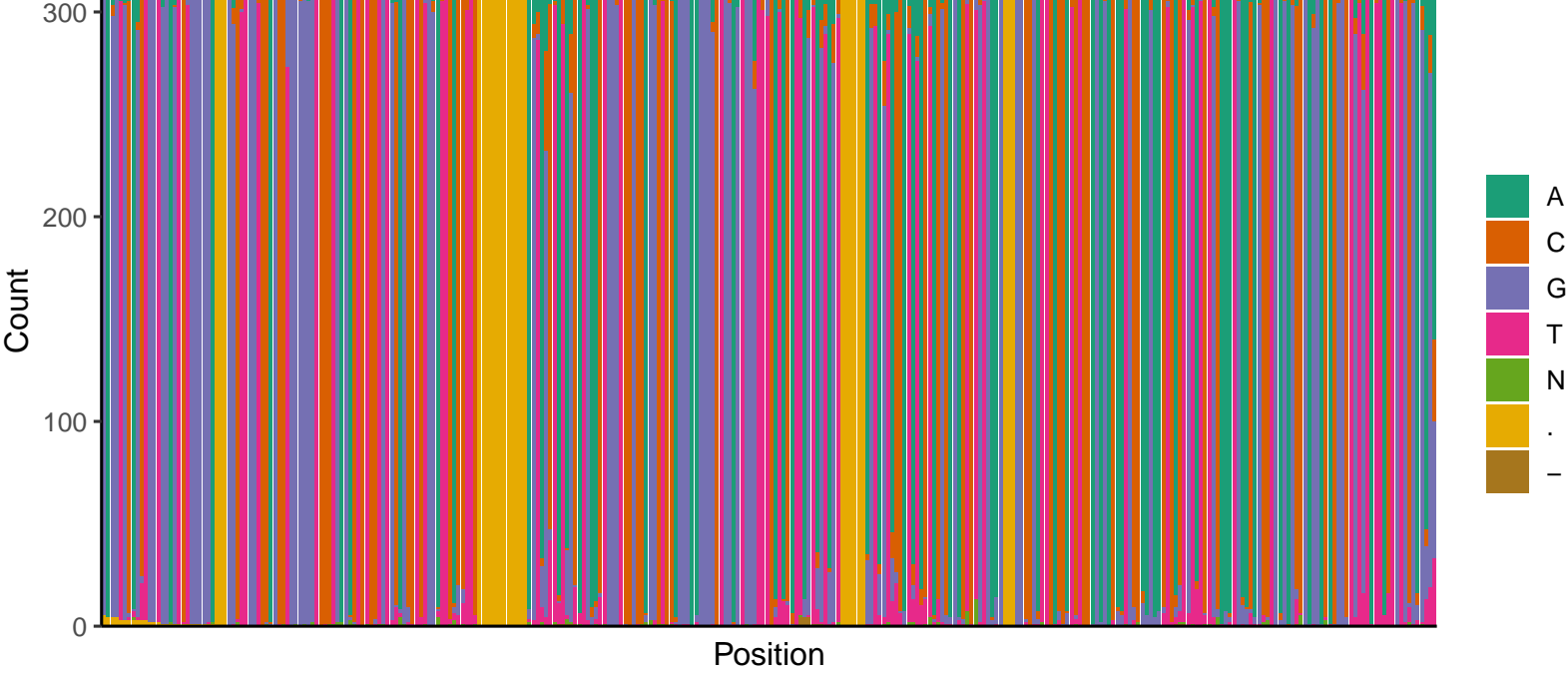
Gene IGHV1-69\*08\_C191T



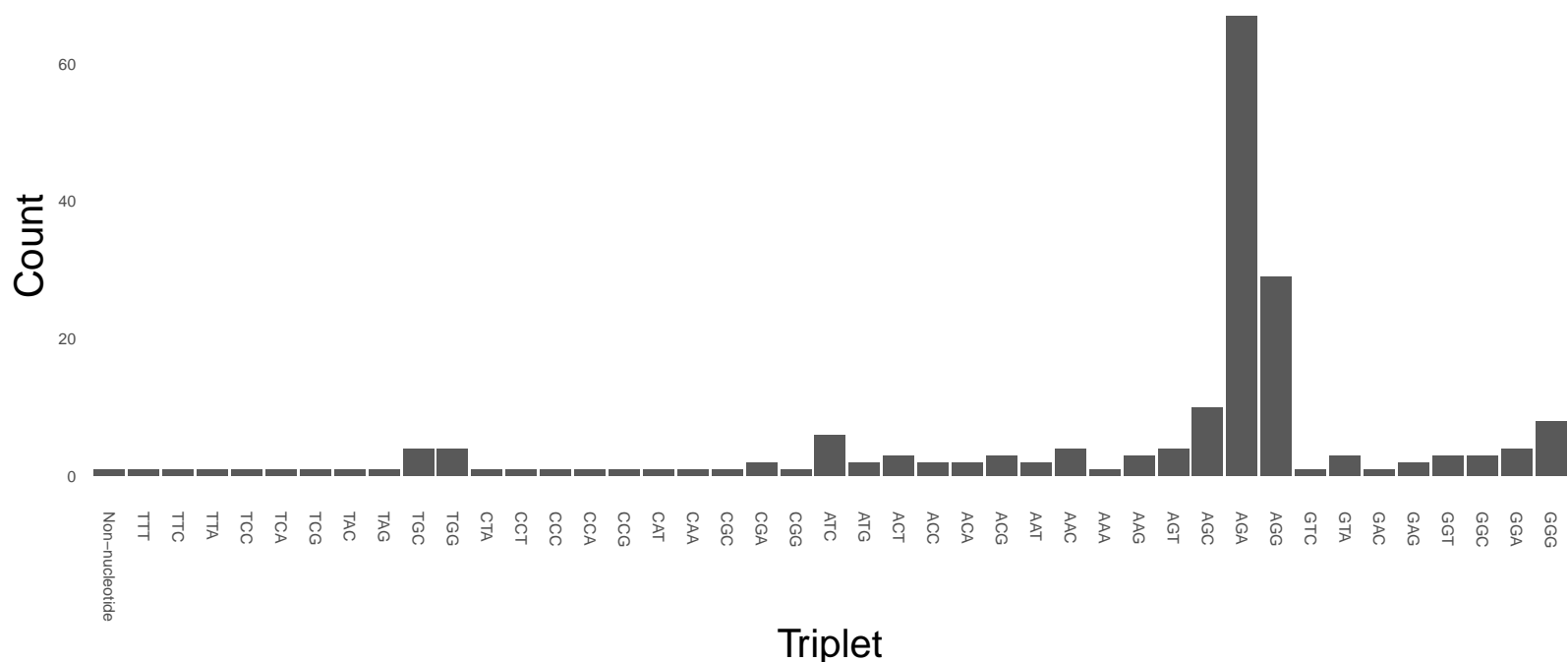
Gene IGHV1-69\*12\_G48A



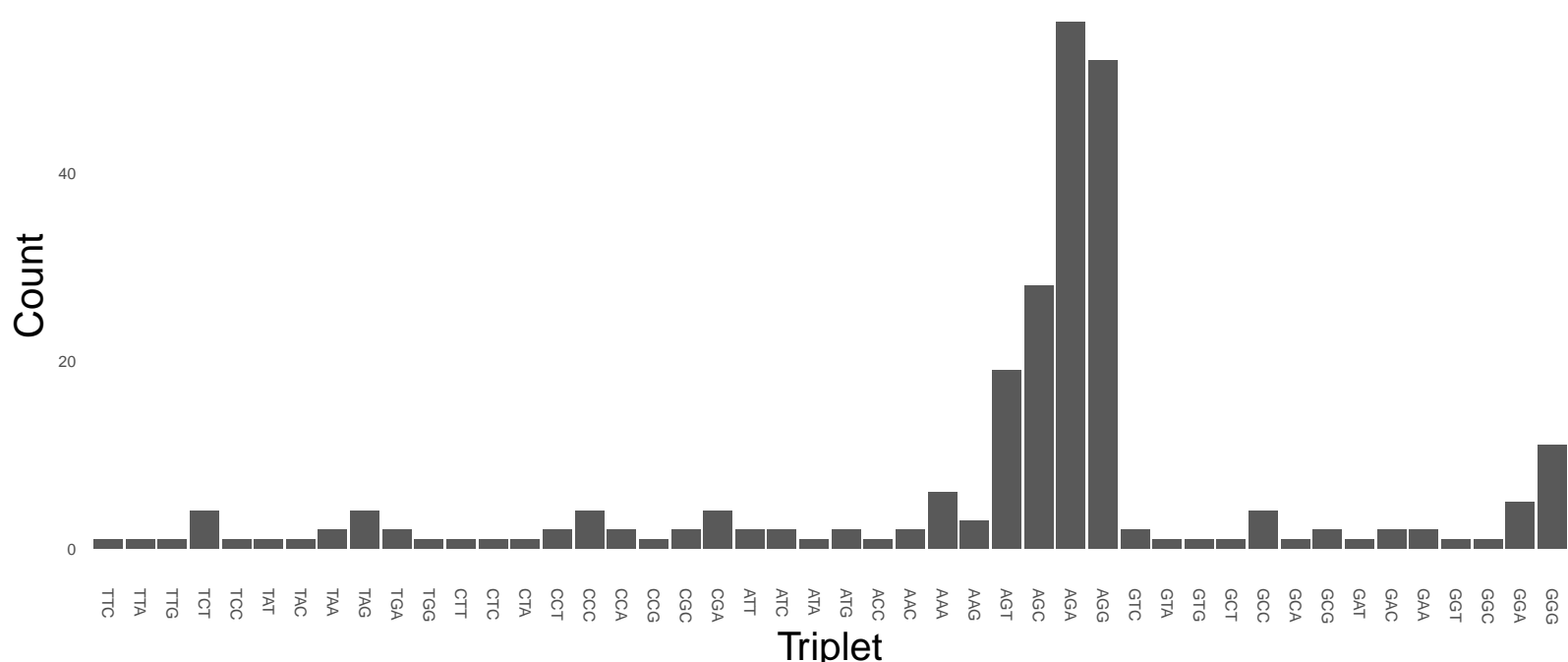
Gene IGHV3-48\*01\_A39C



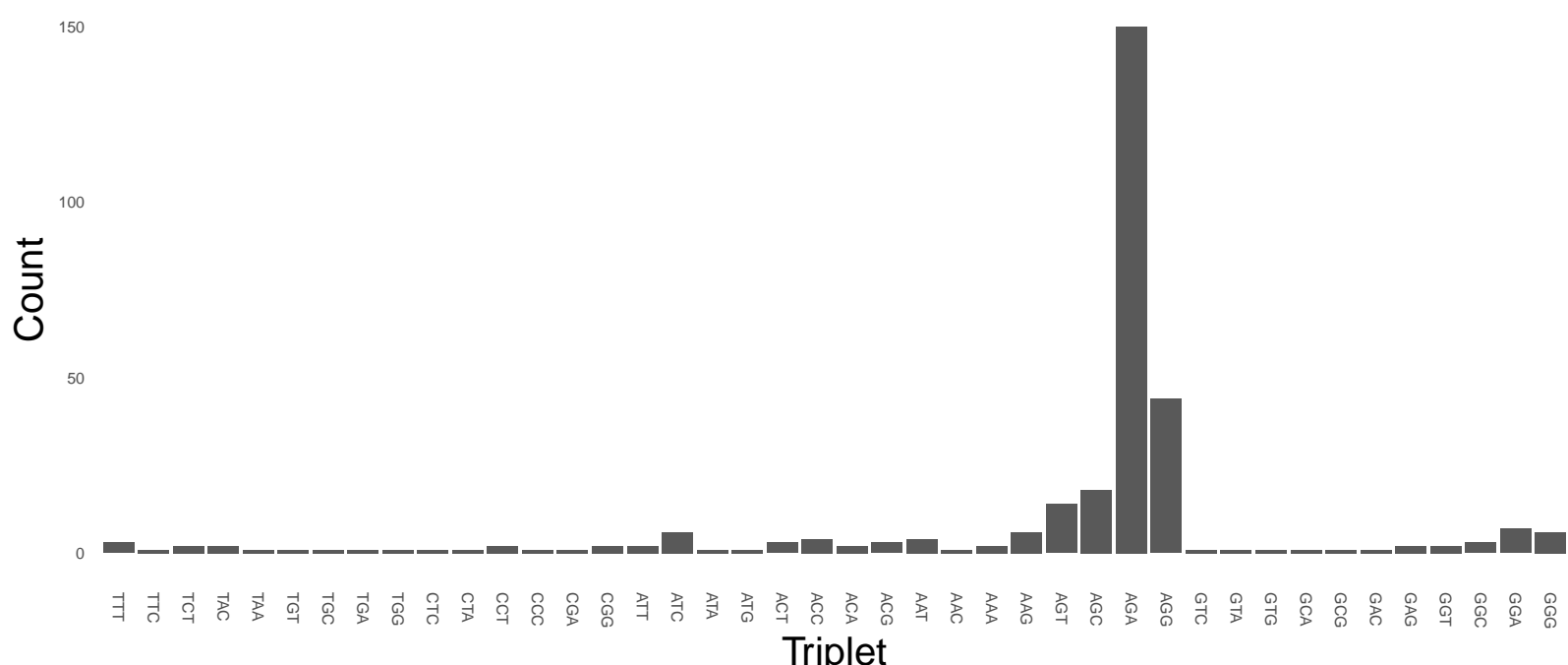
IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet



IGHV1-69\*12\_G48A- Final 3 nucleotides as a triplet

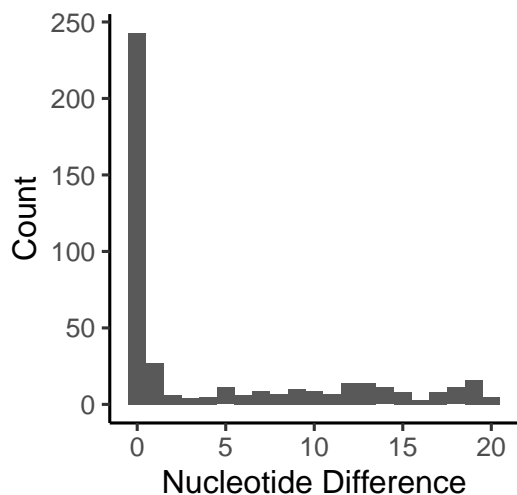


IGHV3-48\*01\_A39C- Final 3 nucleotides as a triplet



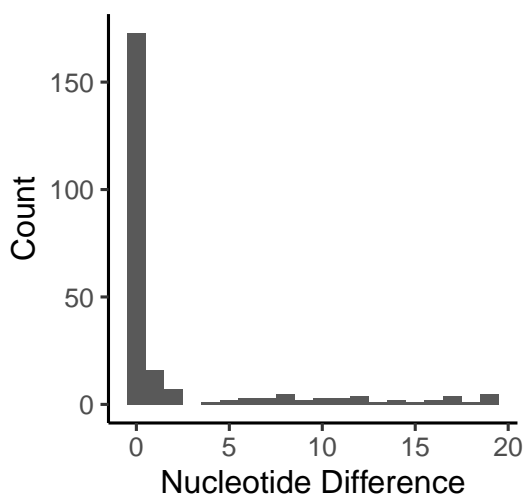
### IGHV1-2\*02

492 sequences assigned  
243 (49.4%) exact matches, in which:  
243 unique CDR3  
6 unique J



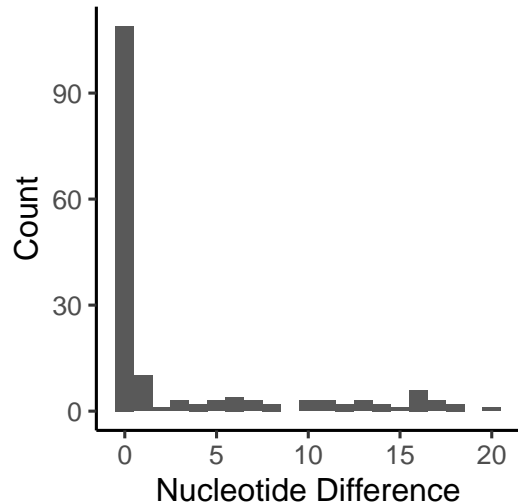
### IGHV1-8\*03

260 sequences assigned  
173 (66.5%) exact matches, in which:  
172 unique CDR3  
5 unique J



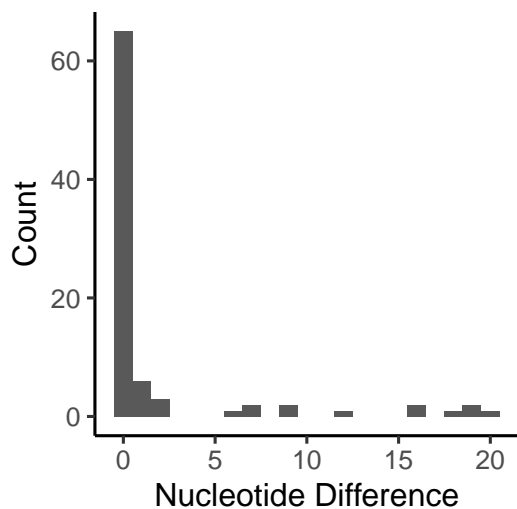
### IGHV1-46\*03

189 sequences assigned  
109 (57.7%) exact matches, in which:  
109 unique CDR3  
5 unique J



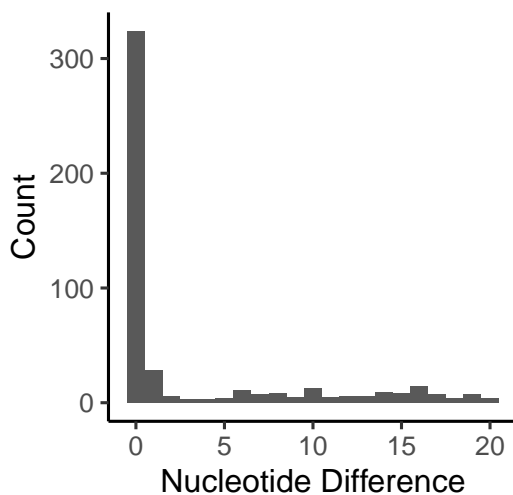
### IGHV1-2\*04

89 sequences assigned  
65 (73%) exact matches, in which:  
65 unique CDR3  
5 unique J



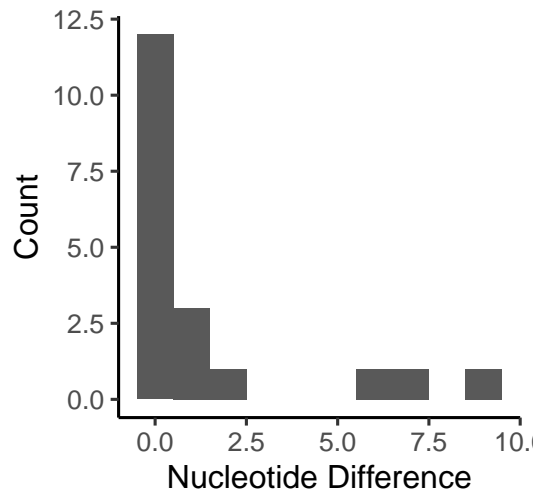
### IGHV1-18\*01

552 sequences assigned  
324 (58.7%) exact matches, in which:  
323 unique CDR3  
6 unique J



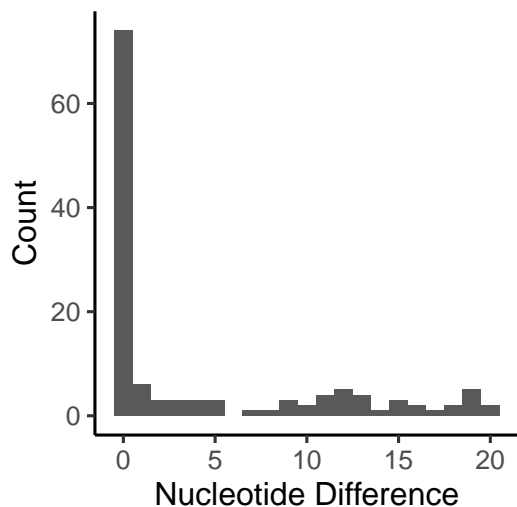
### IGHV1-58\*02

23 sequences assigned  
12 (52.2%) exact matches, in which:  
11 unique CDR3  
4 unique J



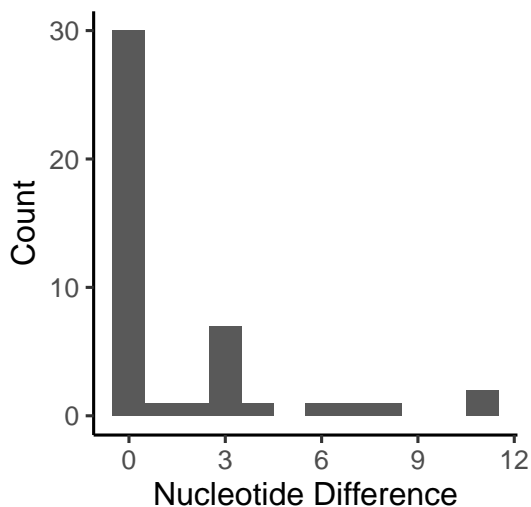
### IGHV1-3\*01

138 sequences assigned  
74 (53.6%) exact matches, in which:  
74 unique CDR3  
5 unique J



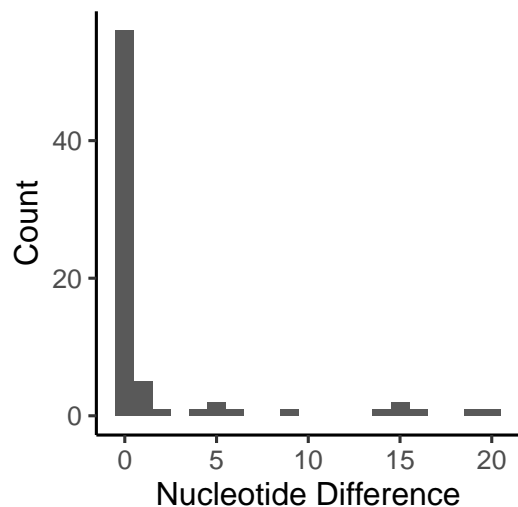
### IGHV1-24\*01

50 sequences assigned  
30 (60%) exact matches, in which:  
30 unique CDR3  
5 unique J



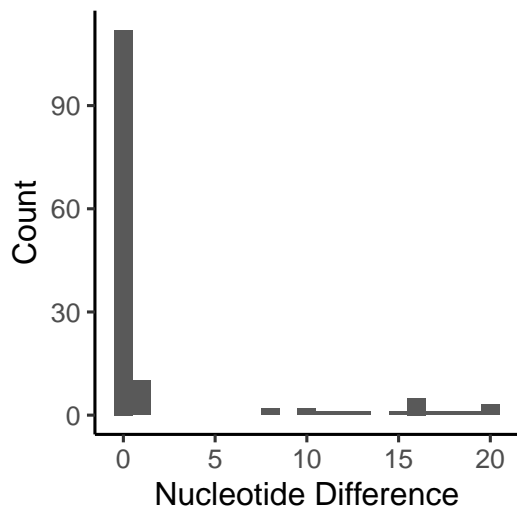
### IGHV1-69-2\*01

91 sequences assigned  
56 (61.5%) exact matches, in which:  
56 unique CDR3  
4 unique J



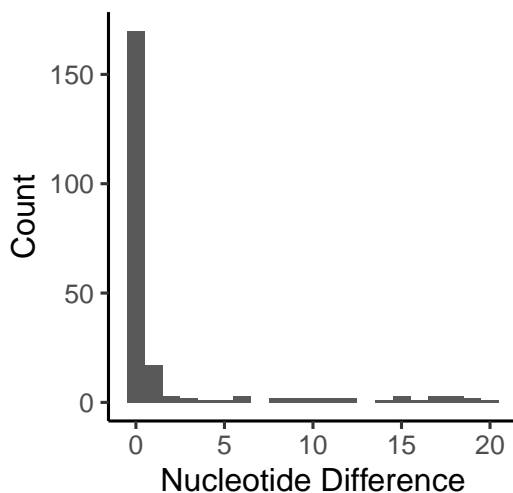
### IGHV1-69\*10

154 sequences assigned  
112 (72.7%) exact matches, in which:  
112 unique CDR3  
6 unique J



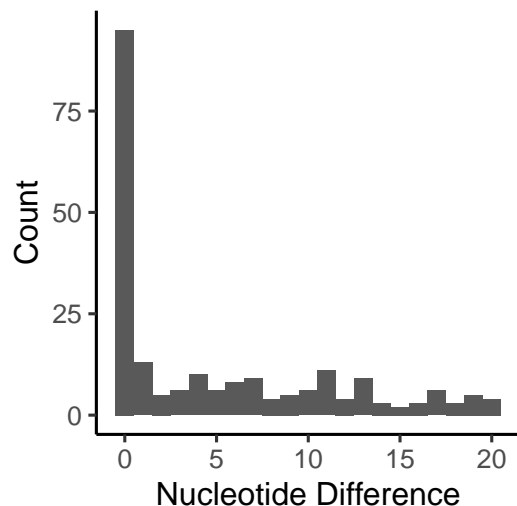
### IGHV1-69\*12\_G48A

246 sequences assigned  
170 (69.1%) exact matches, in which:  
170 unique CDR3  
6 unique J



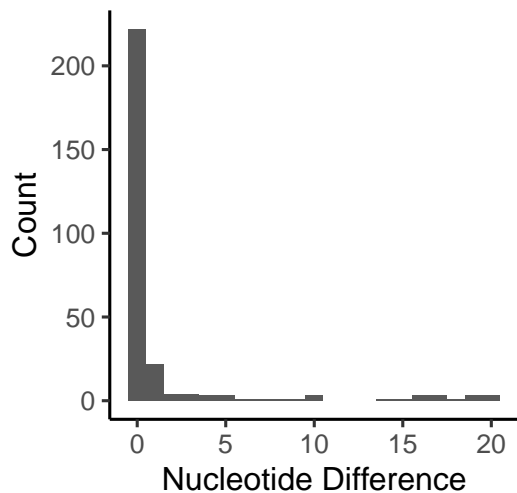
### IGHV2-5\*02

239 sequences assigned  
95 (39.7%) exact matches, in which:  
95 unique CDR3  
5 unique J



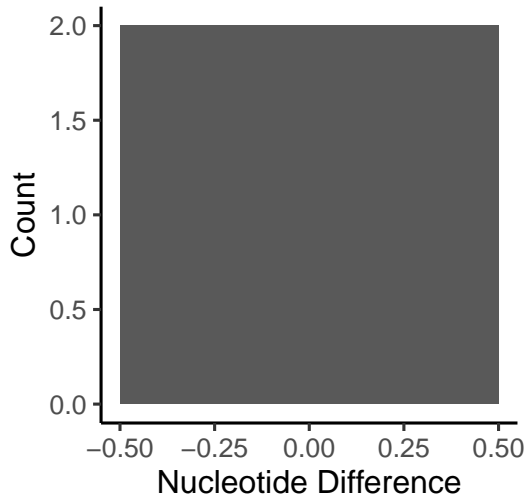
### IGHV1-69\*12

322 sequences assigned  
222 (68.9%) exact matches, in which:  
222 unique CDR3  
6 unique J



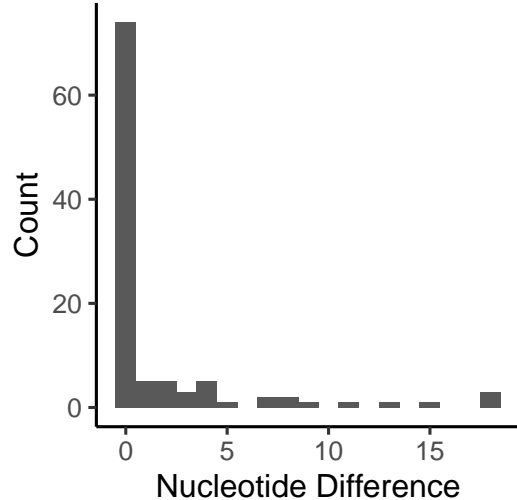
### IGHV1-69D\*01

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



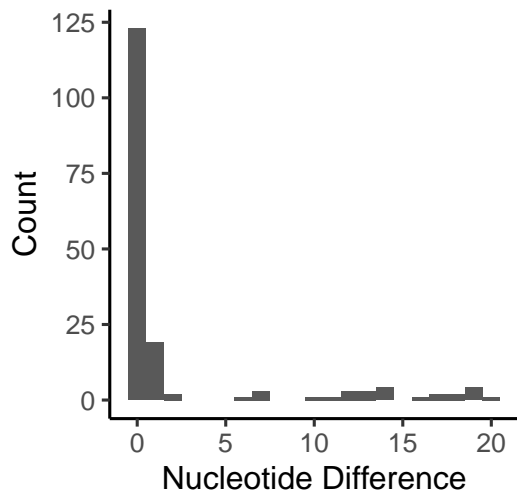
### IGHV2-26\*01

109 sequences assigned  
74 (67.9%) exact matches, in which:  
74 unique CDR3  
5 unique J



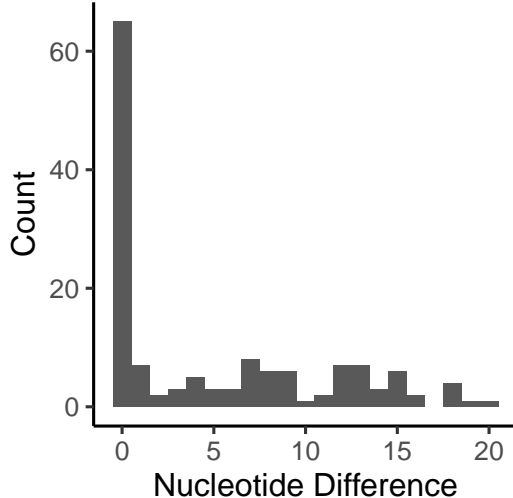
### IGHV1-69\*08\_C191T

191 sequences assigned  
123 (64.4%) exact matches, in which:  
123 unique CDR3  
6 unique J



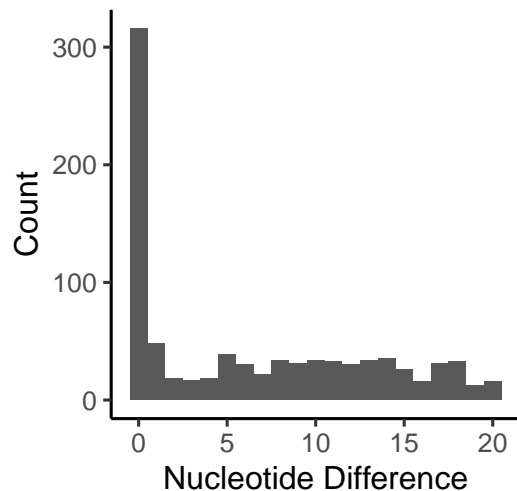
### IGHV2-5\*01

155 sequences assigned  
65 (41.9%) exact matches, in which:  
65 unique CDR3  
5 unique J



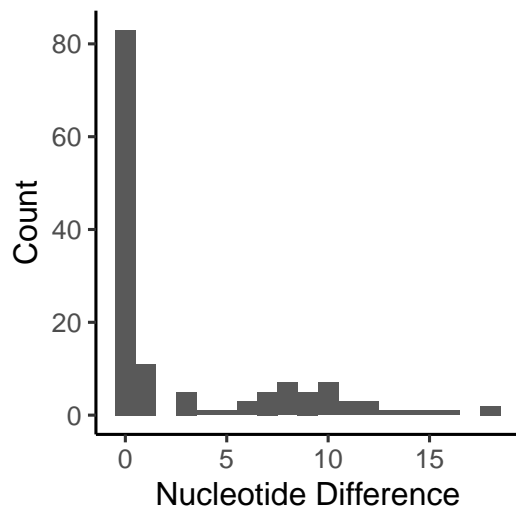
### IGHV3-7\*01

1014 sequences assigned  
316 (31.2%) exact matches, in which:  
316 unique CDR3  
6 unique J



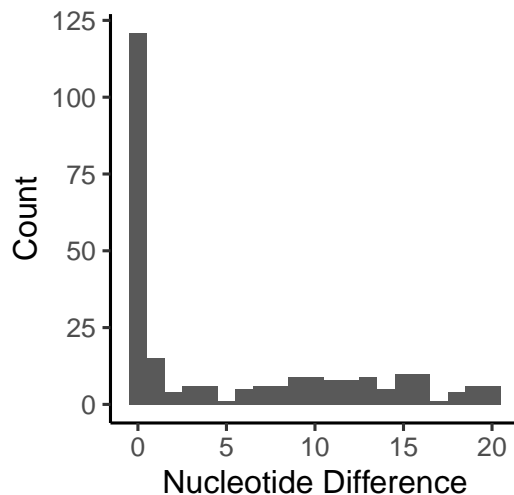
### IGHV3-9\*03

147 sequences assigned  
83 (56.5%) exact matches, in which:  
82 unique CDR3  
4 unique J



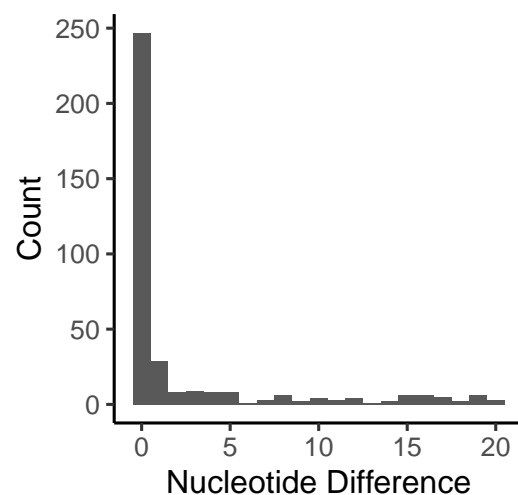
### IGHV3-15\*01

288 sequences assigned  
121 (42%) exact matches, in which:  
121 unique CDR3  
6 unique J



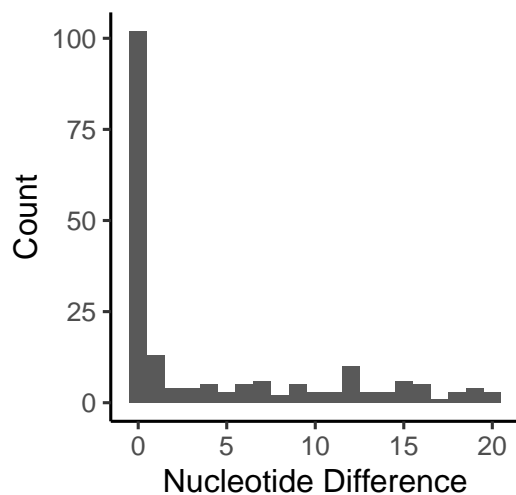
### IGHV3-21\*03

384 sequences assigned  
247 (64.3%) exact matches, in which:  
247 unique CDR3  
6 unique J



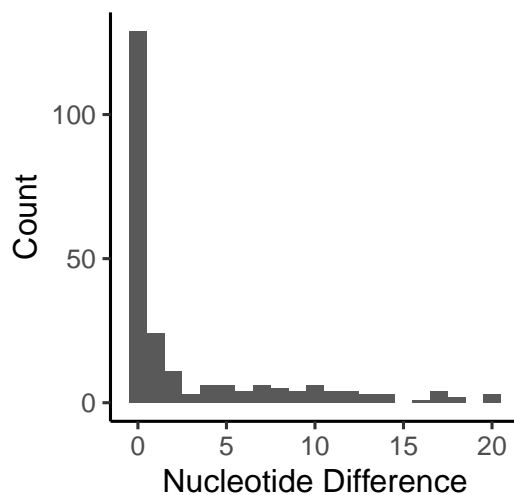
### IGHV3-11\*04

210 sequences assigned  
102 (48.6%) exact matches, in which:  
102 unique CDR3  
6 unique J



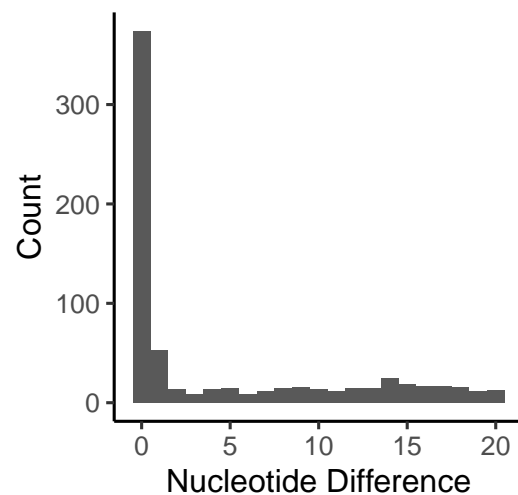
### IGHV3-20\*04

254 sequences assigned  
129 (50.8%) exact matches, in which:  
128 unique CDR3  
6 unique J



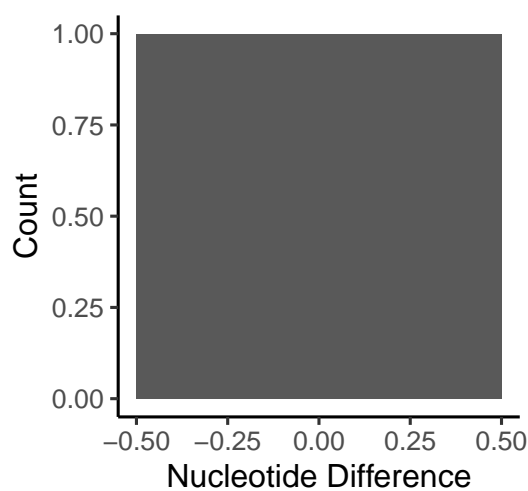
### IGHV3-23\*04

780 sequences assigned  
374 (47.9%) exact matches, in which:  
373 unique CDR3  
6 unique J



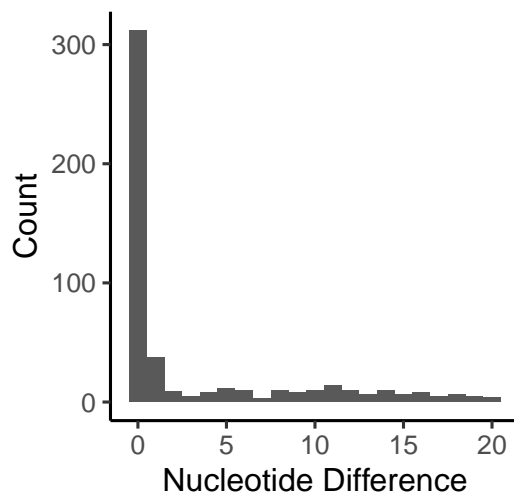
### IGHV3-13\*03

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



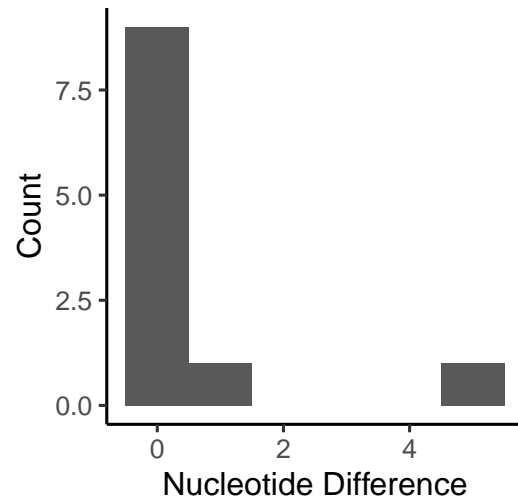
### IGHV3-21\*01

530 sequences assigned  
312 (58.9%) exact matches, in which:  
311 unique CDR3  
6 unique J



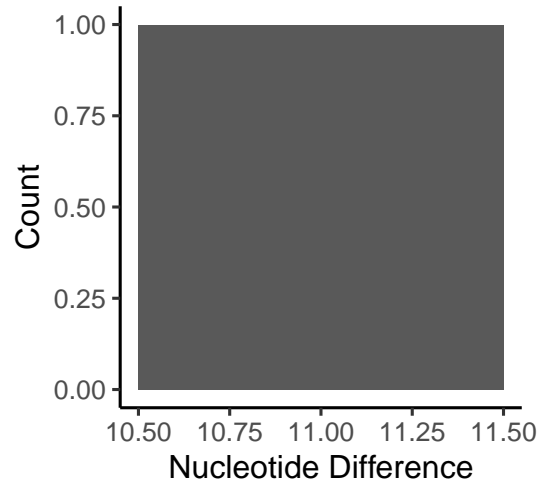
### IGHV3-30-3\*01

11 sequences assigned  
9 (81.8%) exact matches, in which:  
9 unique CDR3  
4 unique J



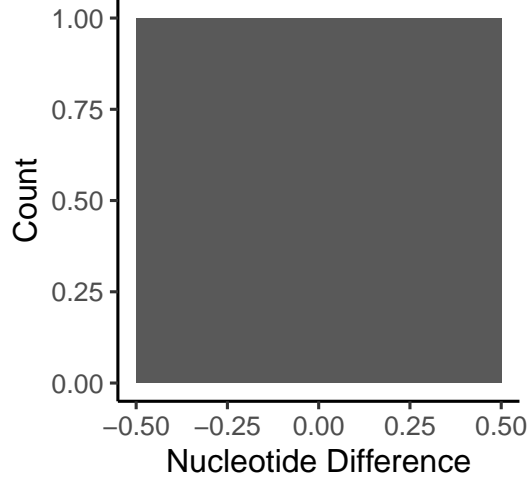
### IGHV3-33\*05

1 sequences assigned  
No exact matches.



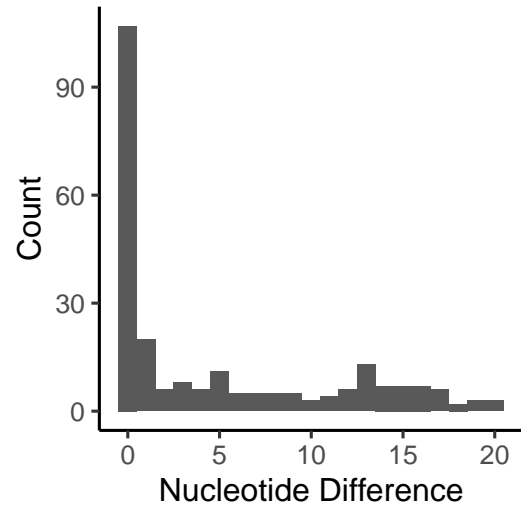
### IGHV3-47\*02

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



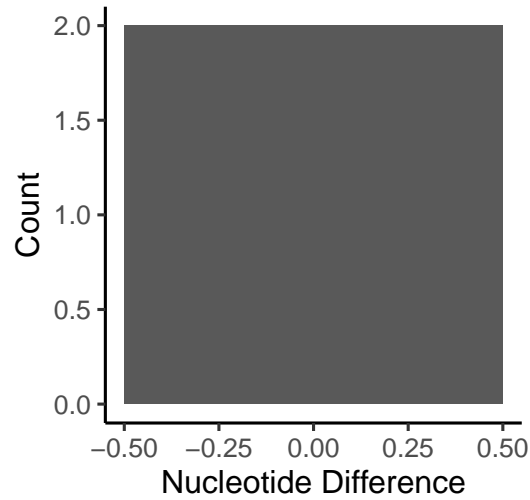
### IGHV3-49\*04

263 sequences assigned  
107 (40.7%) exact matches, in which:  
107 unique CDR3  
5 unique J



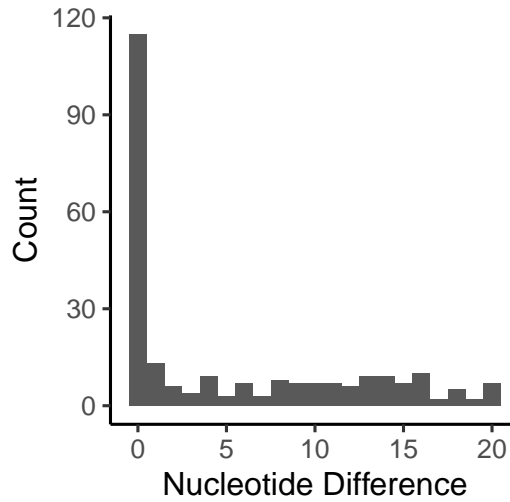
### IGHV3-38-3\*01

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



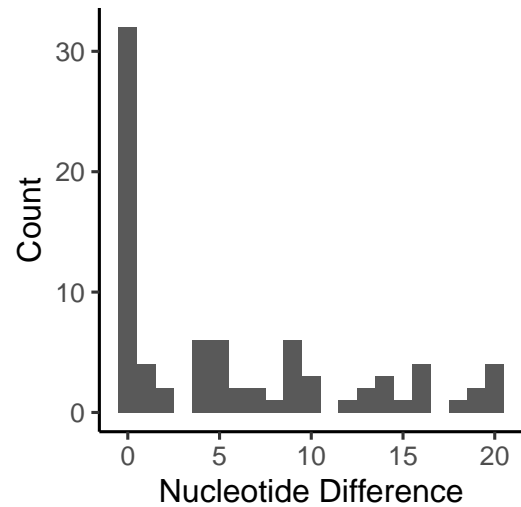
### IGHV3-48\*01

257 sequences assigned  
115 (44.7%) exact matches, in which:  
115 unique CDR3  
5 unique J



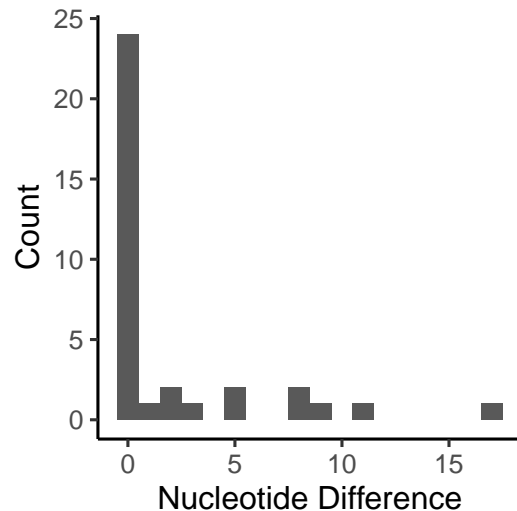
### IGHV3-64\*01

97 sequences assigned  
32 (33%) exact matches, in which:  
32 unique CDR3  
5 unique J



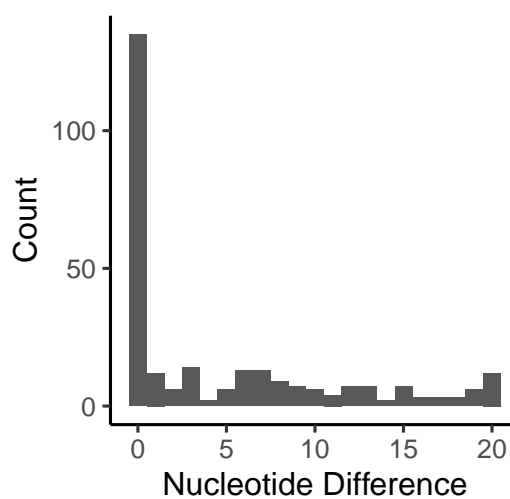
### IGHV3-43\*01

38 sequences assigned  
24 (63.2%) exact matches, in which:  
24 unique CDR3  
5 unique J



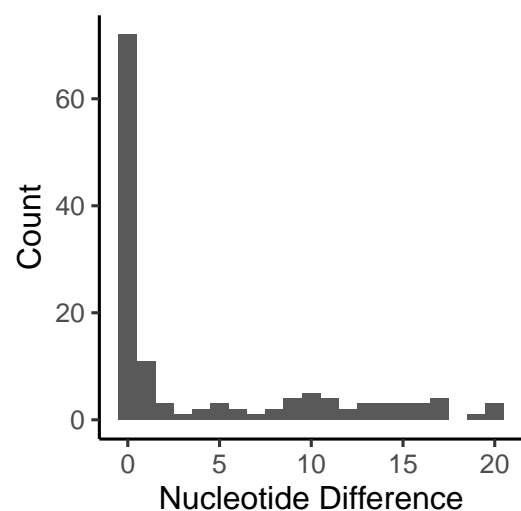
### IGHV3-48\*01\_A39C

308 sequences assigned  
135 (43.8%) exact matches, in which:  
135 unique CDR3  
6 unique J



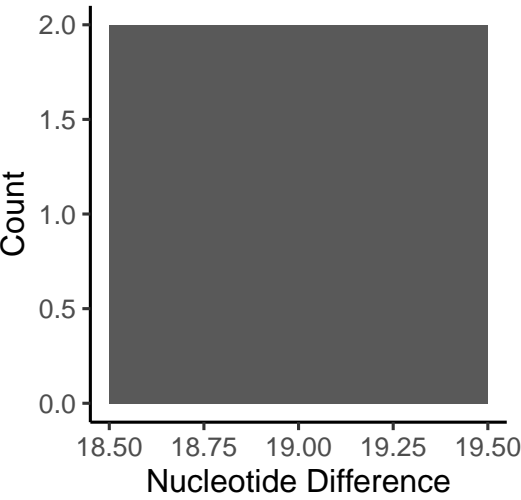
### IGHV3-66\*02

161 sequences assigned  
72 (44.7%) exact matches, in which:  
72 unique CDR3  
5 unique J



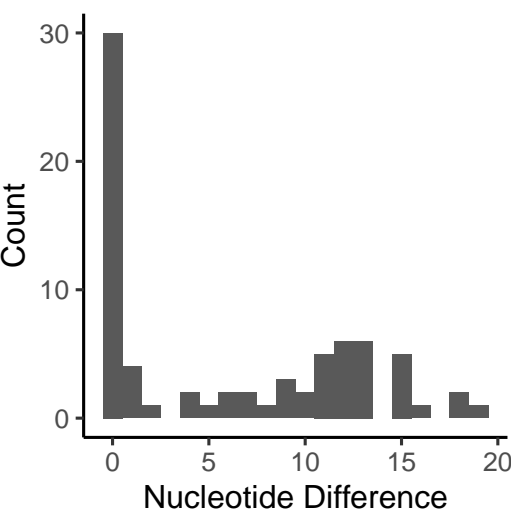
IGHV3-66\*03

4 sequences assigned  
No exact matches.



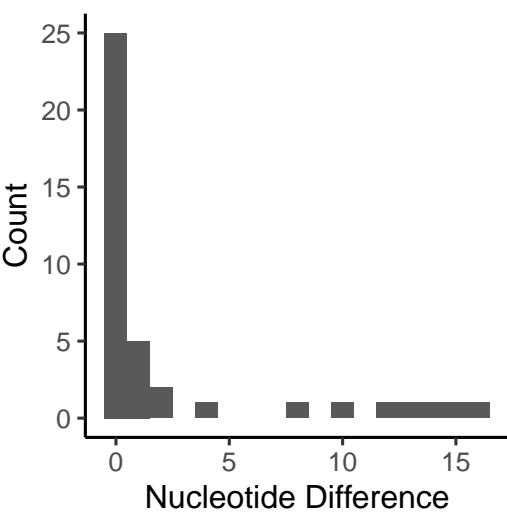
IGHV3-73\*01

74 sequences assigned  
30 (40.5%) exact matches, in which:  
30 unique CDR3  
5 unique J



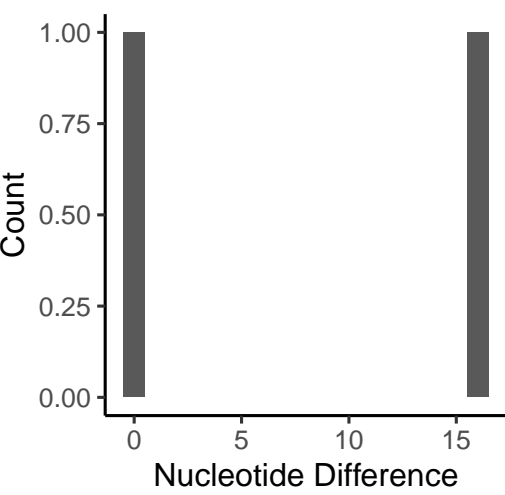
IGHV3-43D\*03

44 sequences assigned  
25 (56.8%) exact matches, in which:  
25 unique CDR3  
5 unique J



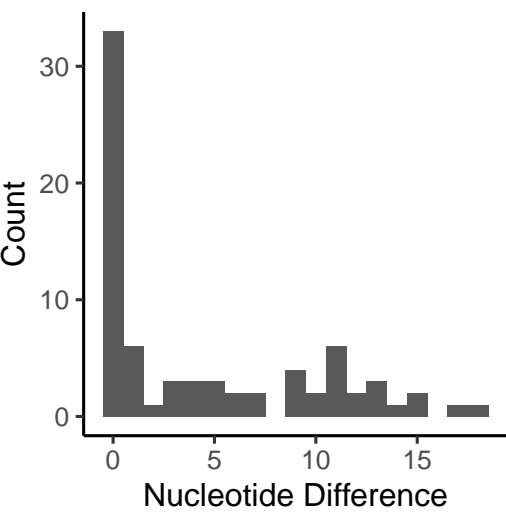
IGHV3-69-1\*02

2 sequences assigned  
1 (50%) exact matches, in which:  
1 unique CDR3  
0 unique J



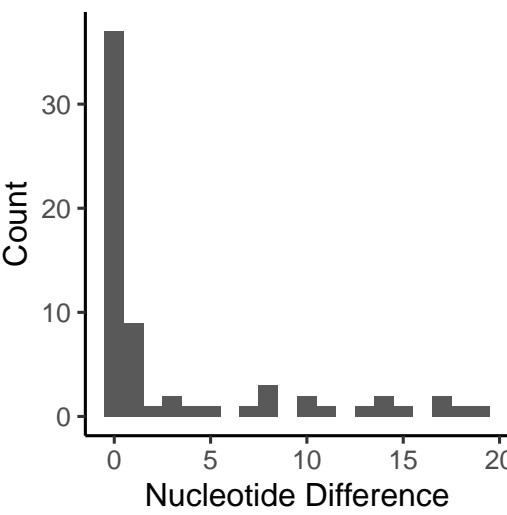
IGHV3-73\*02

82 sequences assigned  
33 (40.2%) exact matches, in which:  
33 unique CDR3  
4 unique J



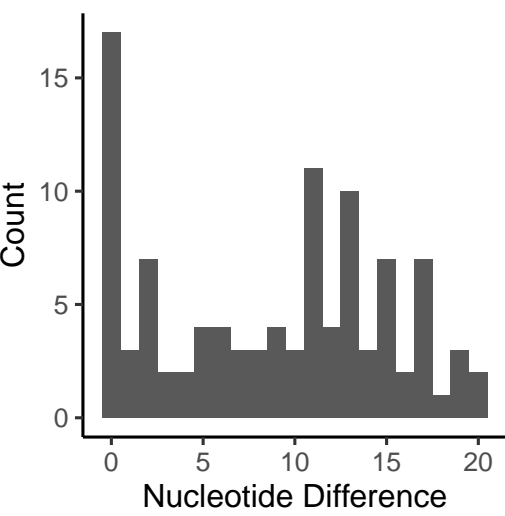
IGHV3-43D\*04

68 sequences assigned  
37 (54.4%) exact matches, in which:  
37 unique CDR3  
6 unique J



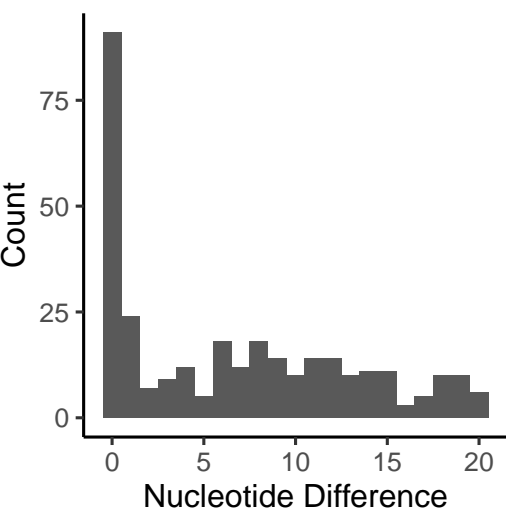
IGHV3-72\*01

110 sequences assigned  
17 (15.5%) exact matches, in which:  
17 unique CDR3  
3 unique J



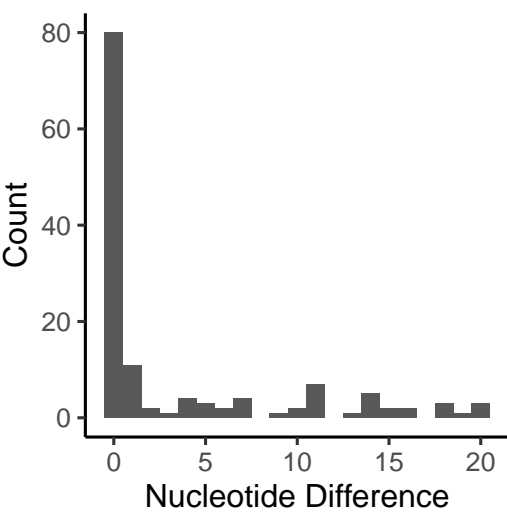
IGHV3-74\*01

353 sequences assigned  
91 (25.8%) exact matches, in which:  
91 unique CDR3  
6 unique J



IGHV4-4\*02

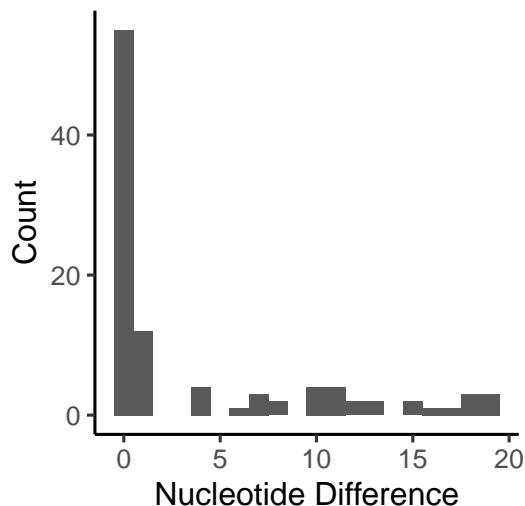
146 sequences assigned  
80 (54.8%) exact matches, in which:  
80 unique CDR3  
5 unique J





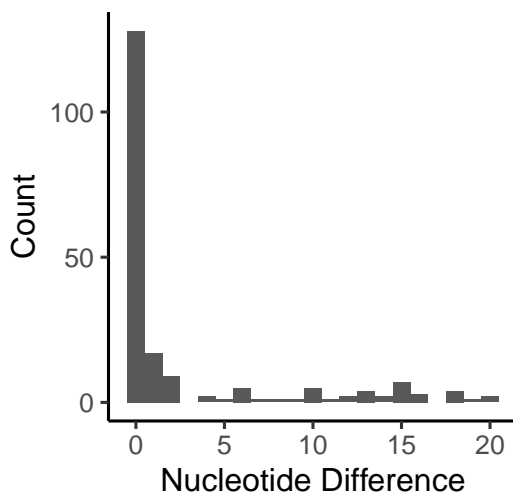
### IGHV4-4\*07

112 sequences assigned  
55 (49.1%) exact matches, in which:  
55 unique CDR3  
5 unique J



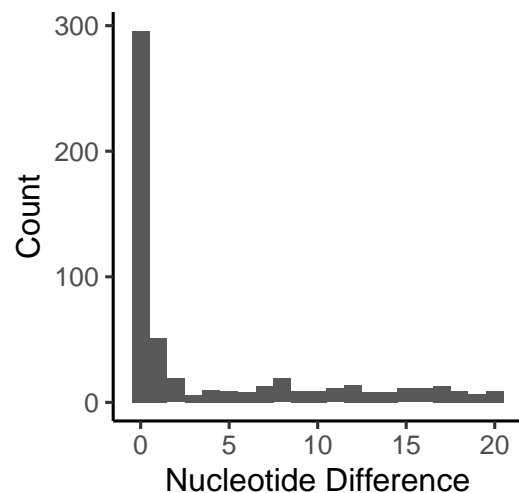
### IGHV4-30-4\*08

215 sequences assigned  
128 (59.5%) exact matches, in which:  
128 unique CDR3  
6 unique J



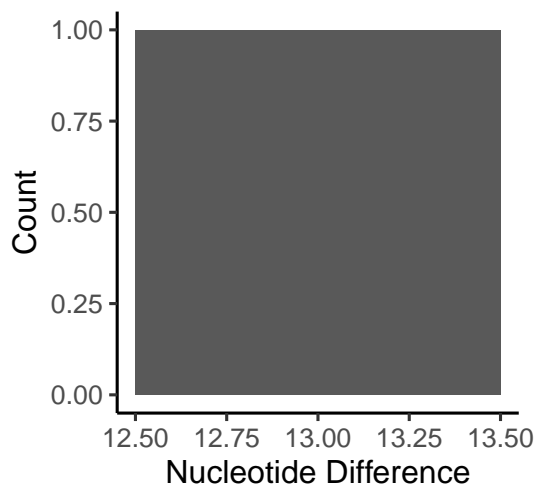
### IGHV4-38-2\*02

618 sequences assigned  
296 (47.9%) exact matches, in which:  
294 unique CDR3  
6 unique J



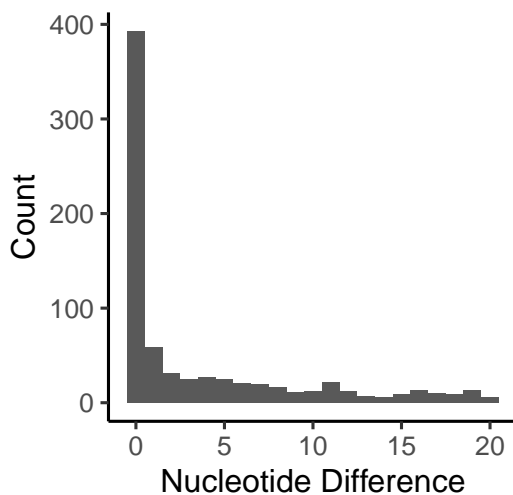
### IGHV4-28\*05

1 sequences assigned  
No exact matches.



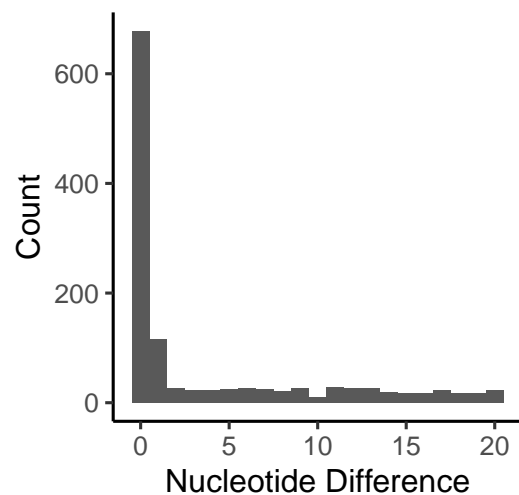
### IGHV4-34\*01

807 sequences assigned  
393 (48.7%) exact matches, in which:  
390 unique CDR3  
6 unique J



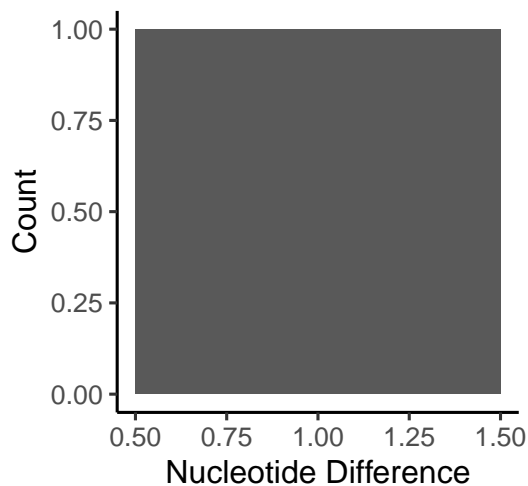
### IGHV4-39\*01

1408 sequences assigned  
678 (48.2%) exact matches, in which:  
677 unique CDR3  
6 unique J



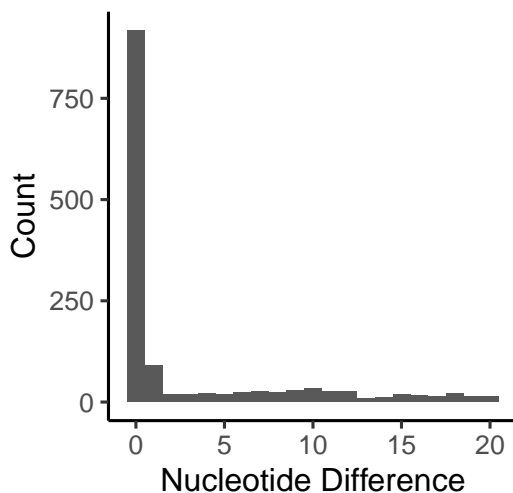
### IGHV4-30-2\*05

1 sequences assigned  
No exact matches.



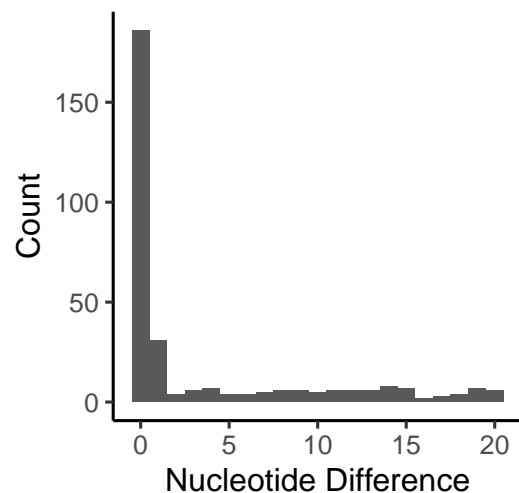
### IGHV4-38-2\*01

1496 sequences assigned  
918 (61.4%) exact matches, in which:  
918 unique CDR3  
6 unique J



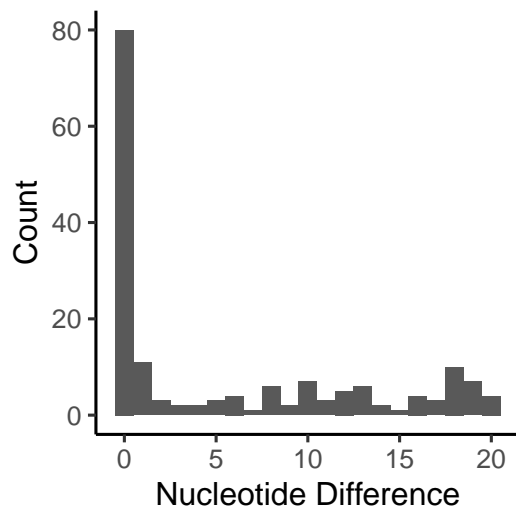
### IGHV4-59\*01

364 sequences assigned  
186 (51.1%) exact matches, in which:  
184 unique CDR3  
6 unique J



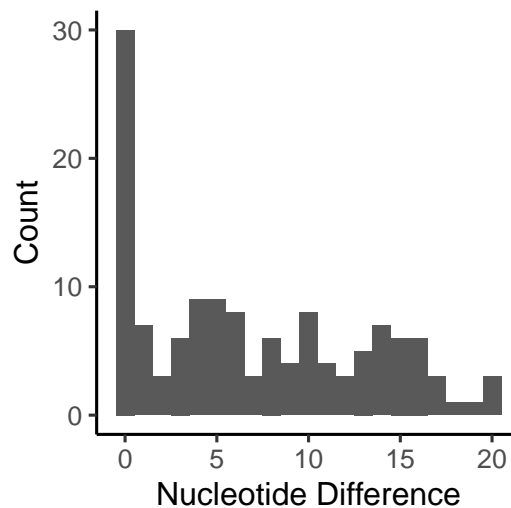
## IGHV4-59\*08

184 sequences assigned  
80 (43.5%) exact matches, in which:  
80 unique CDR3  
6 unique J



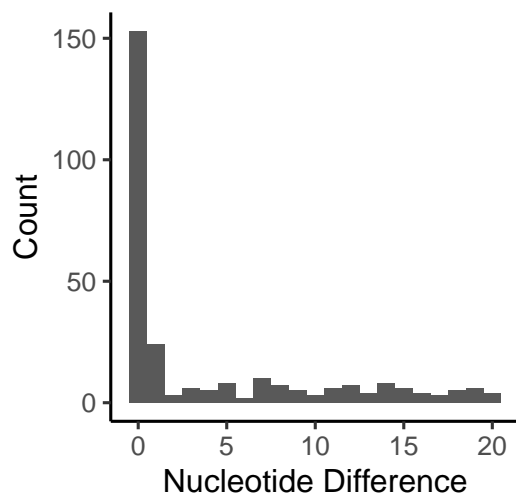
## IGHV6-1\*01

137 sequences assigned  
30 (21.9%) exact matches, in which:  
30 unique CDR3  
4 unique J



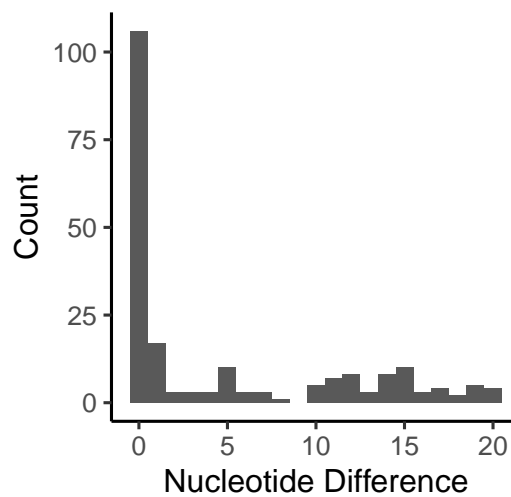
## IGHV4-61\*02

312 sequences assigned  
153 (49%) exact matches, in which:  
153 unique CDR3  
6 unique J



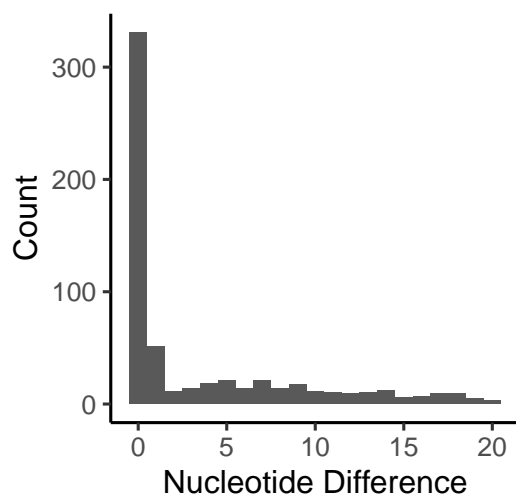
## IGHV7-4-1\*02

224 sequences assigned  
106 (47.3%) exact matches, in which:  
106 unique CDR3  
6 unique J

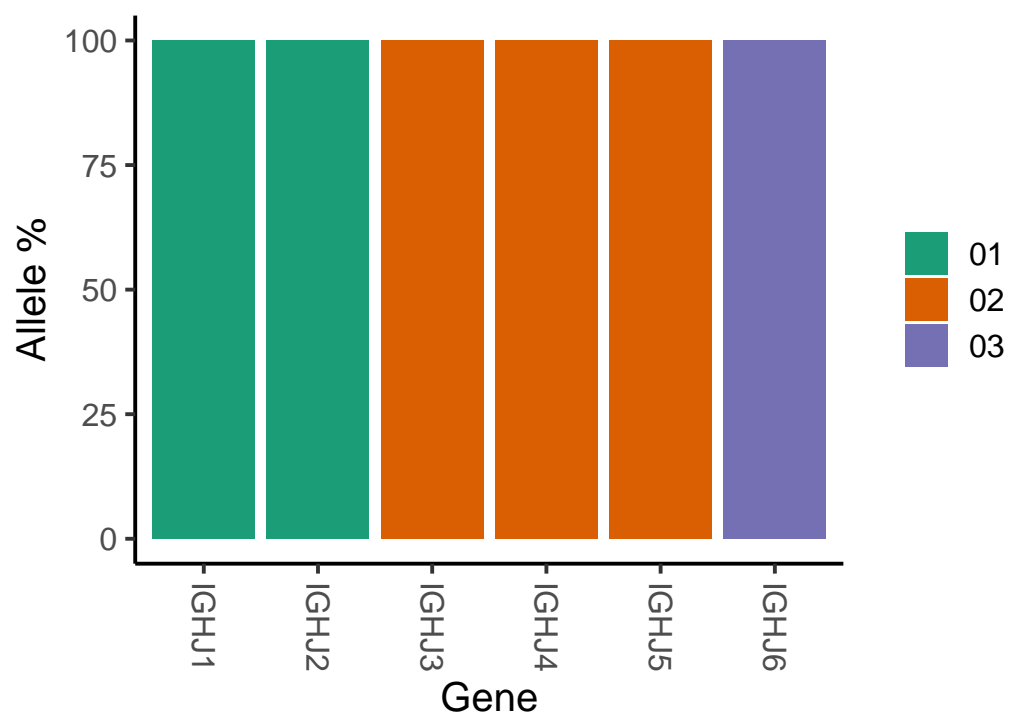


## IGHV5-51\*01

655 sequences assigned  
331 (50.5%) exact matches, in which:  
331 unique CDR3  
6 unique J



Allele Usage



Warning – no inferred sequences found.

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