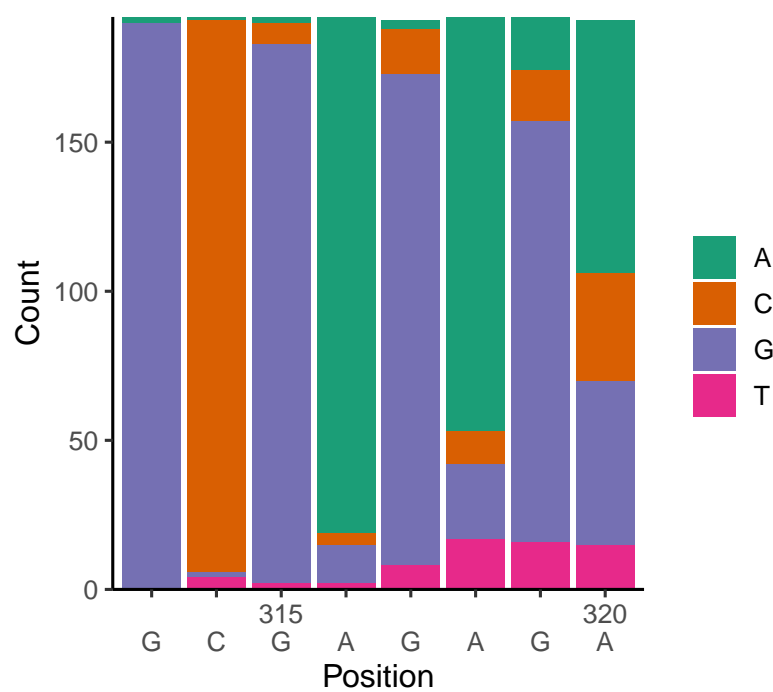
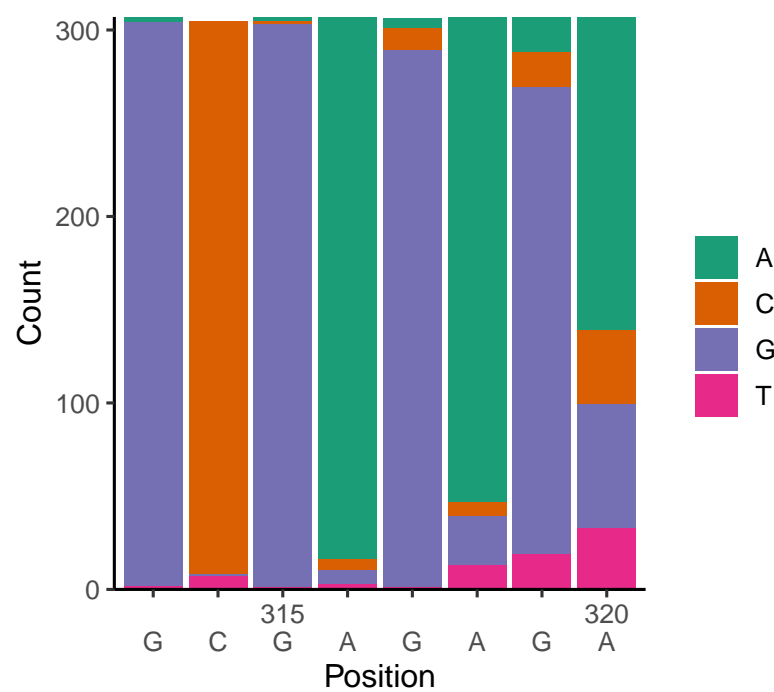


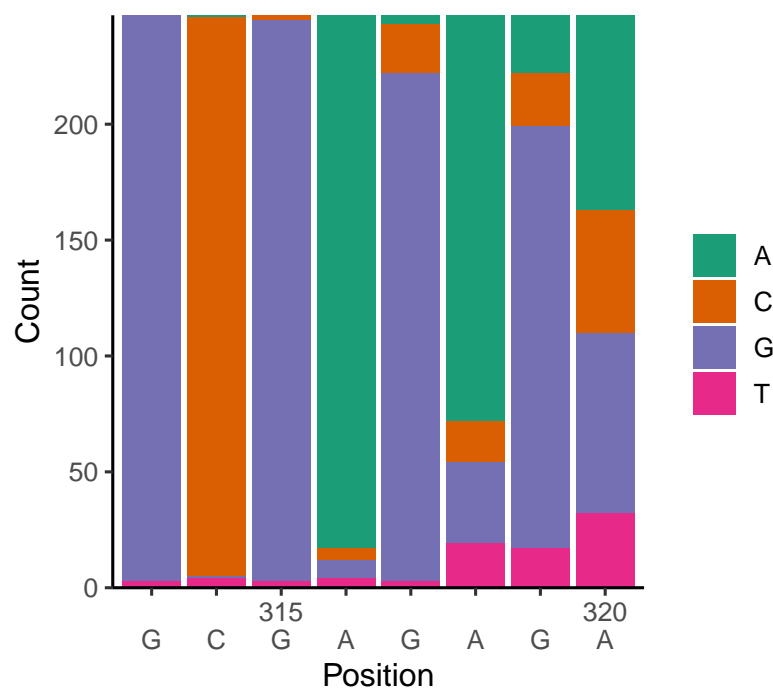
Gene IGHV1-69*08_C191T



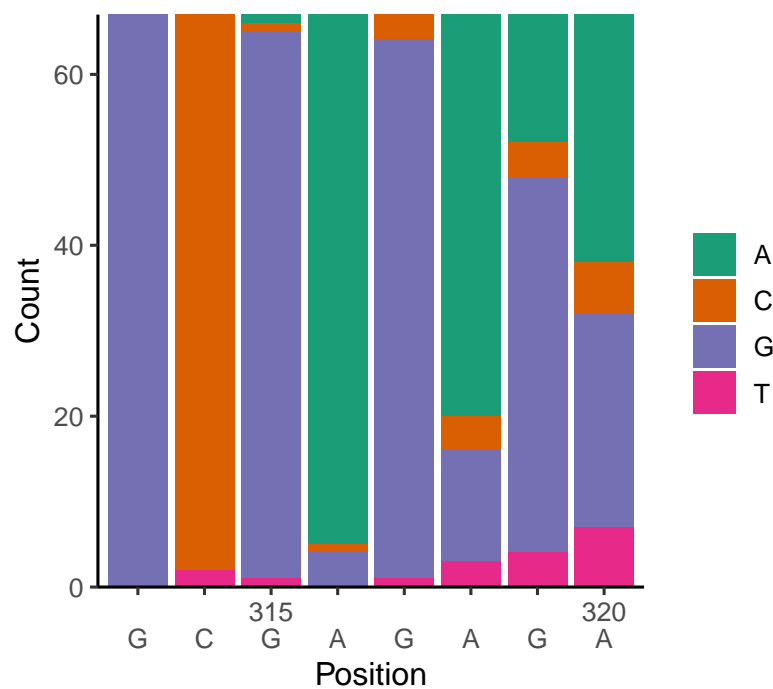
Gene IGHV3-48*01_A39C



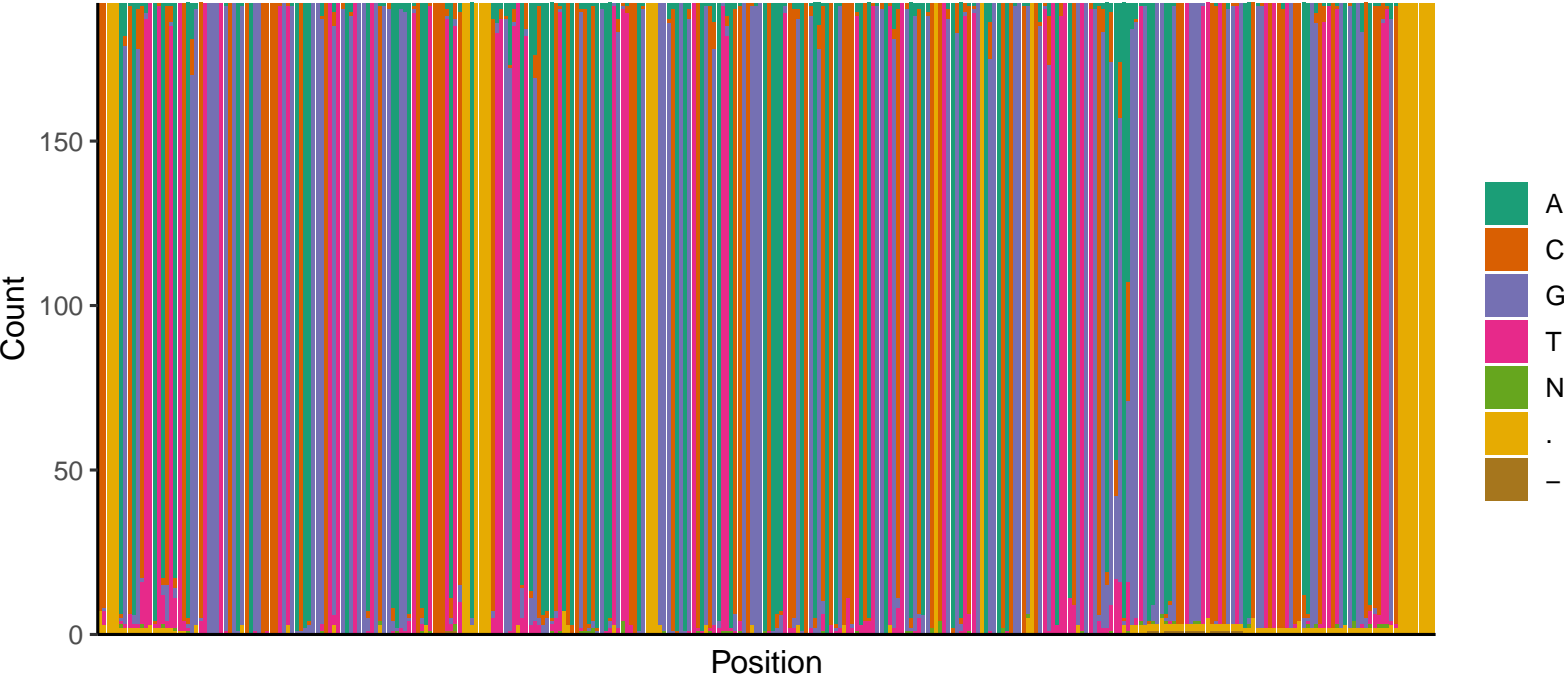
Gene IGHV1-69*12_G48A



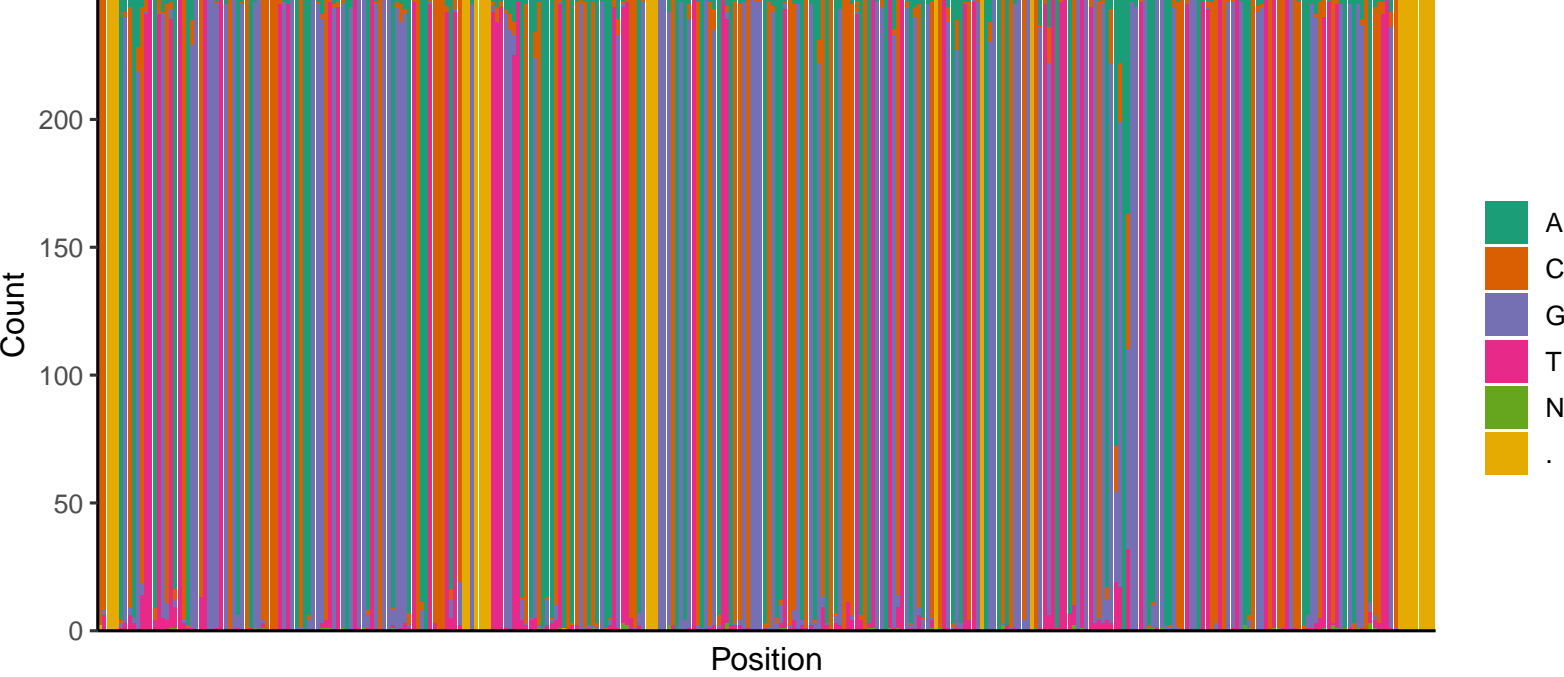
Gene IGHV3-53*04_C241G_G273A_C300T



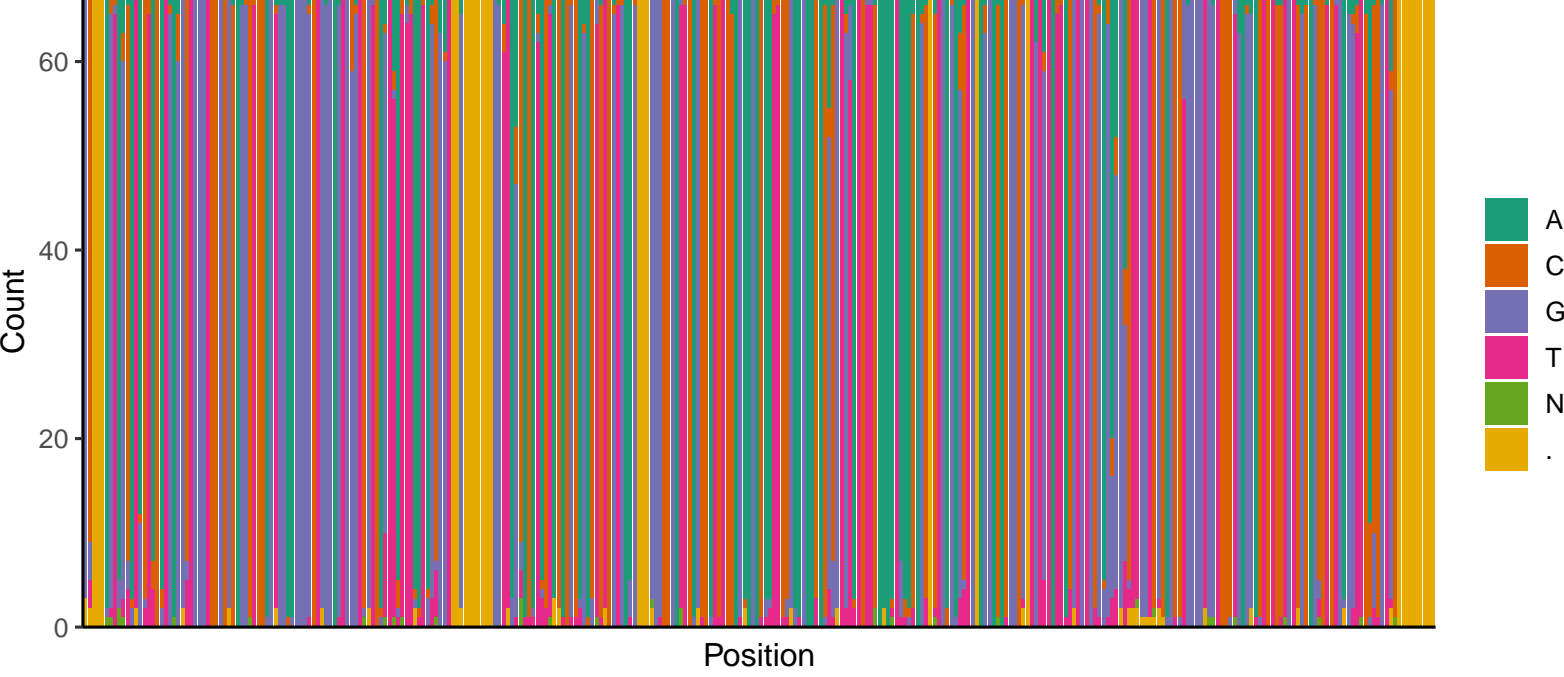
Gene IGHV1-69*08_C191T



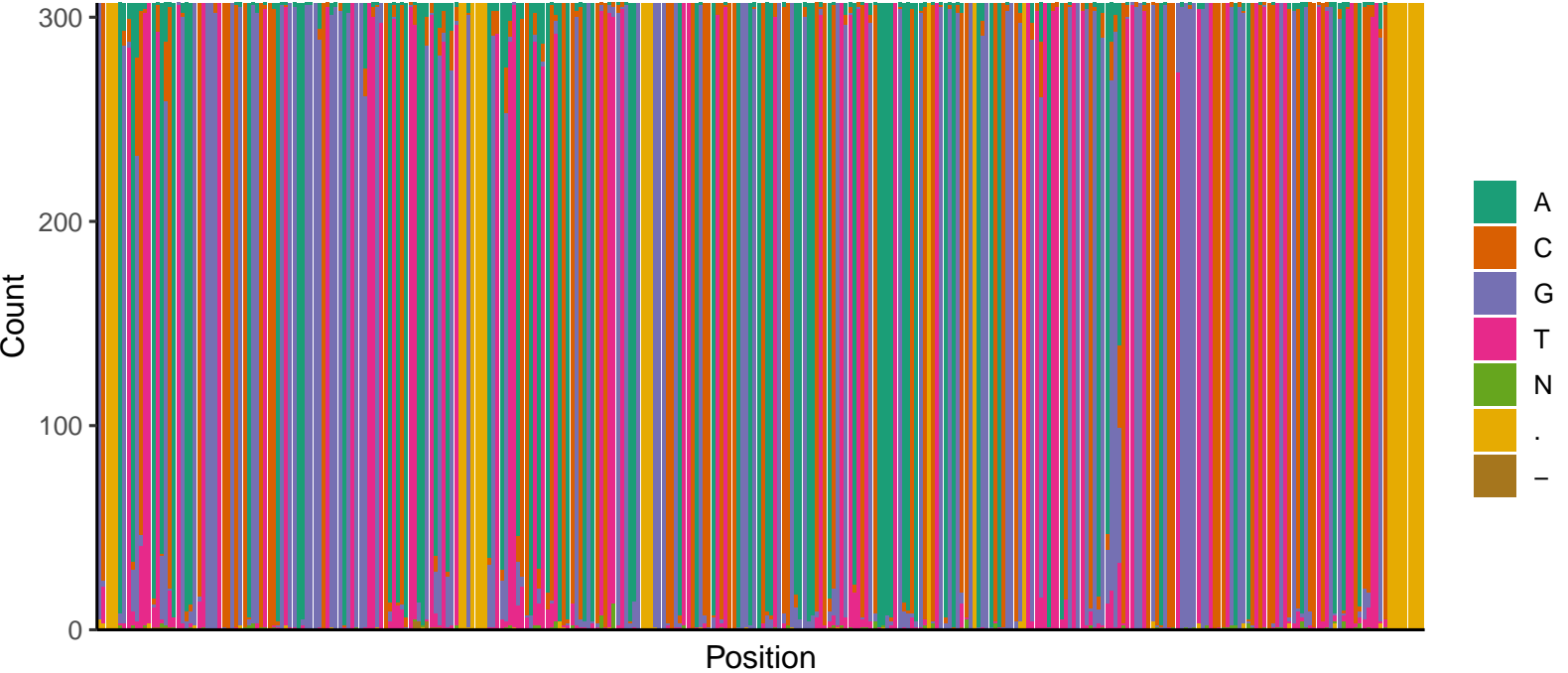
Gene IGHV1-69*12_G48A



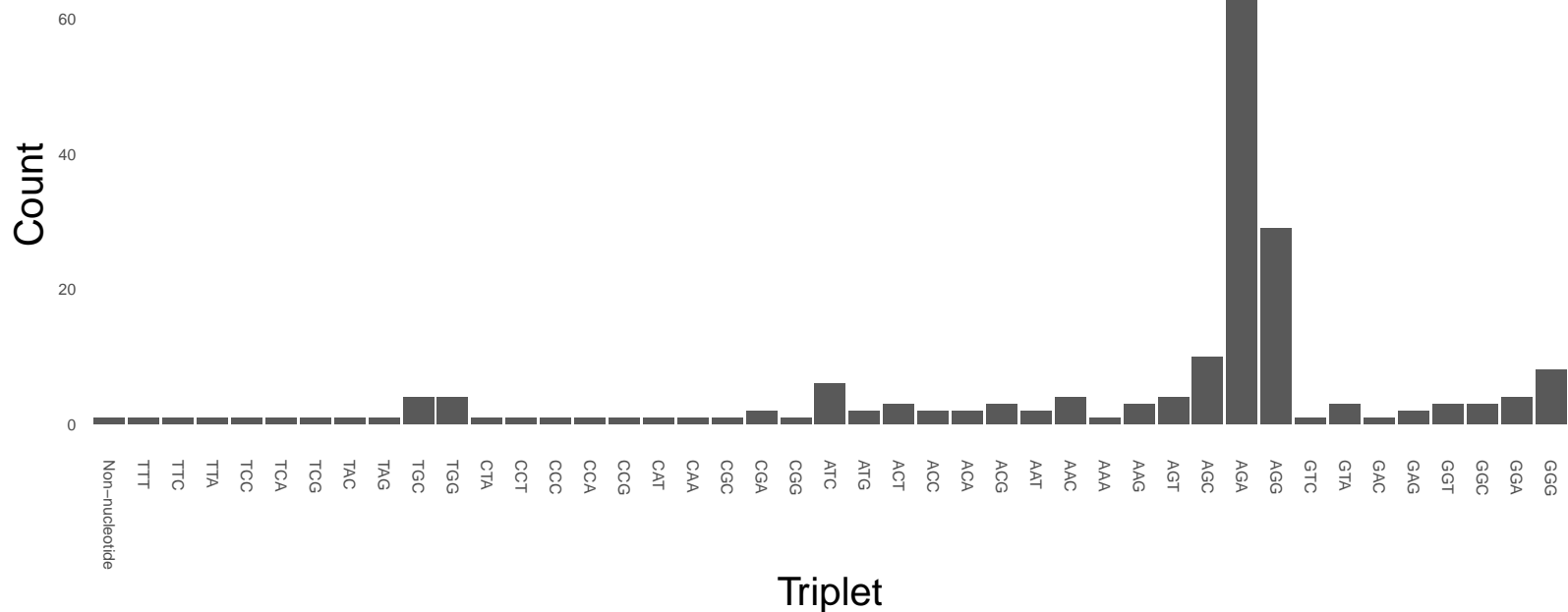
Gene IGHV3-53*04_C241G_G273A_C300T



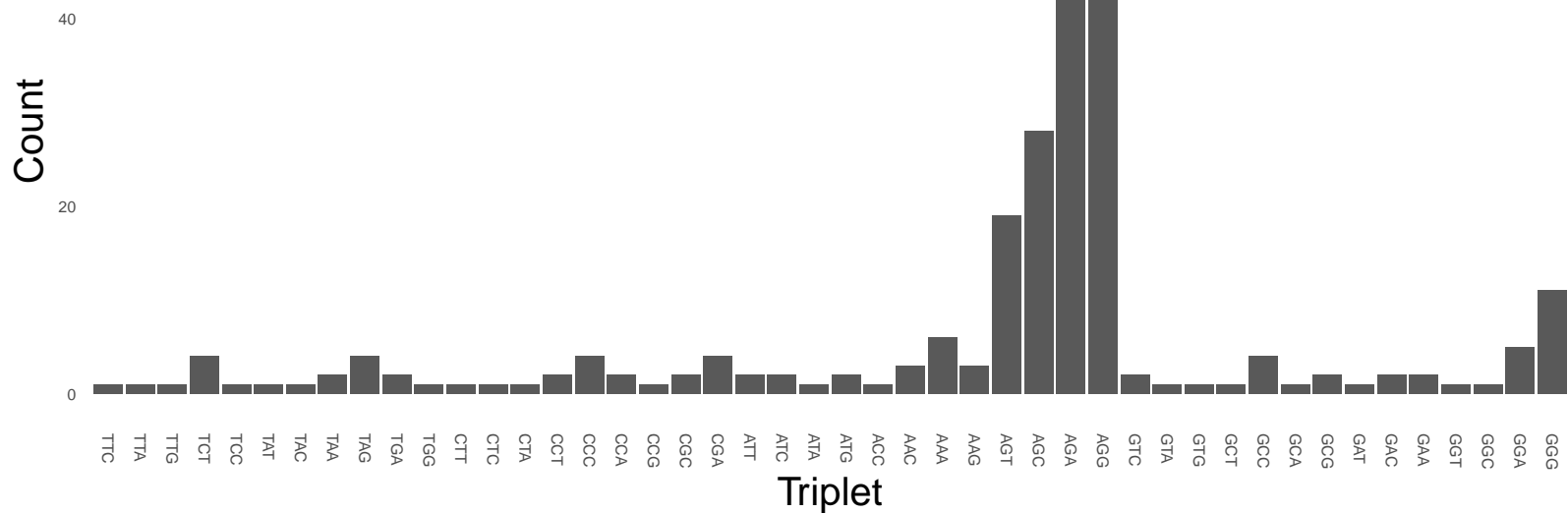
Gene IGHV3-48*01_A39C



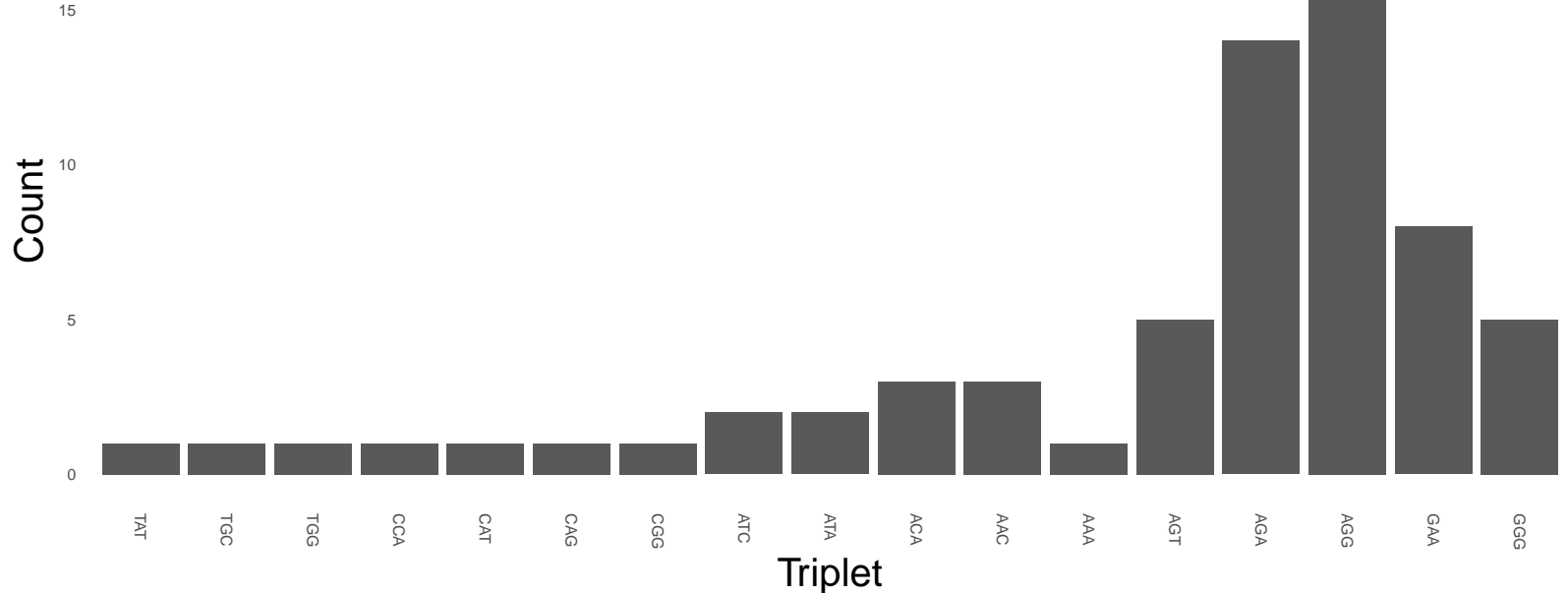
IGHV1-69*08_C191T- Final 3 nucleotides as a triplet



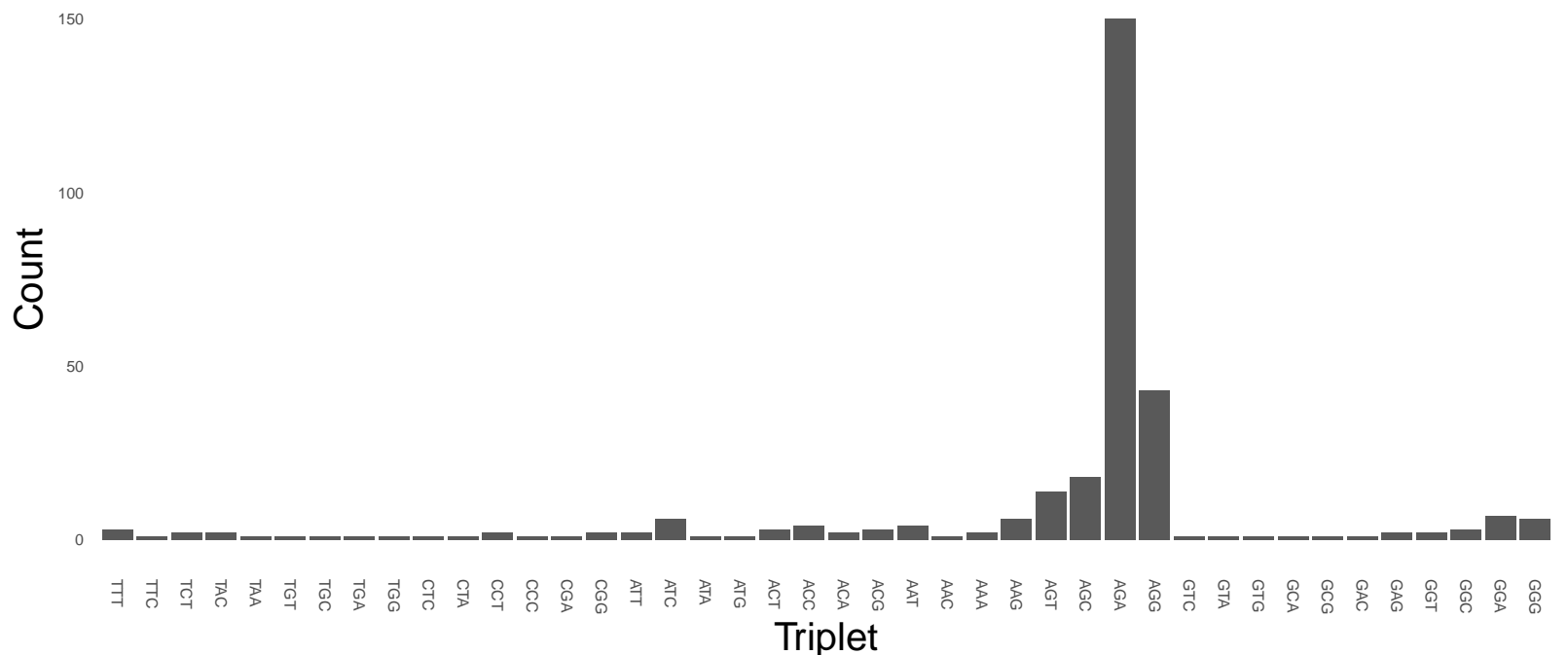
IGHV1-69*12_G48A- Final 3 nucleotides as a triplet



IGHV3-53*04_C241G_G273A_C300T- Final 3 nucleotides as a triplet

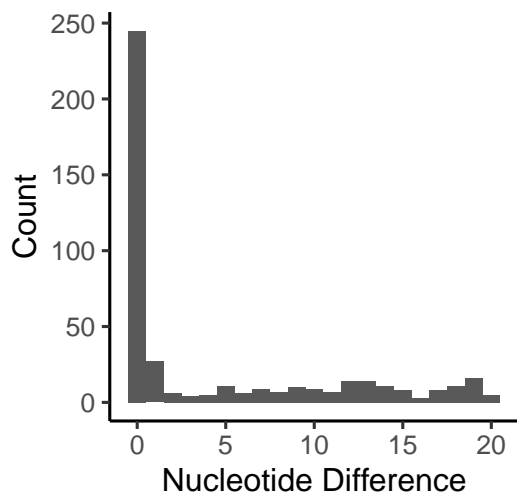


IGHV3-48*01_A39C- Final 3 nucleotides as a triplet



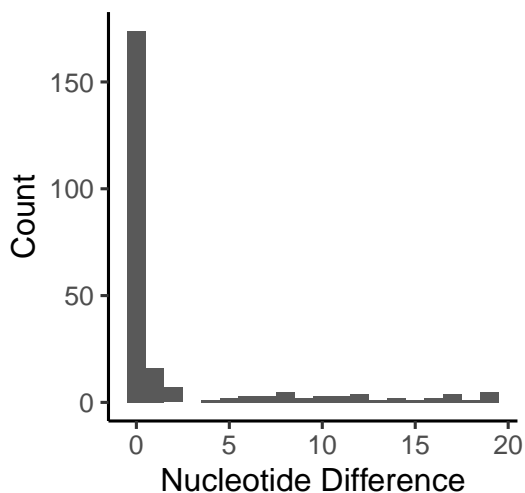
IGHV1-2*02

494 sequences assigned
245 (49.6%) exact matches, in which:
244 unique CDR3
6 unique J



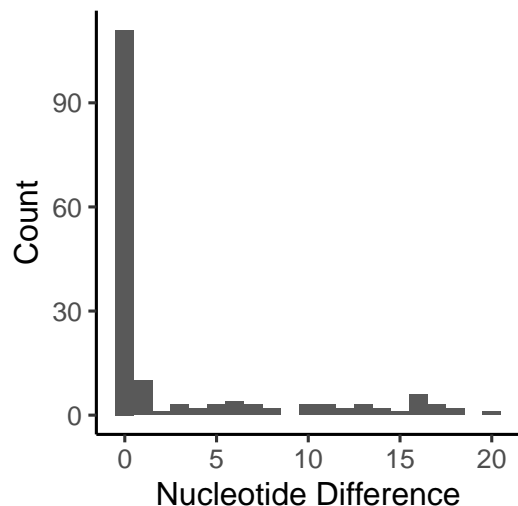
IGHV1-8*03

262 sequences assigned
174 (66.4%) exact matches, in which:
173 unique CDR3
5 unique J



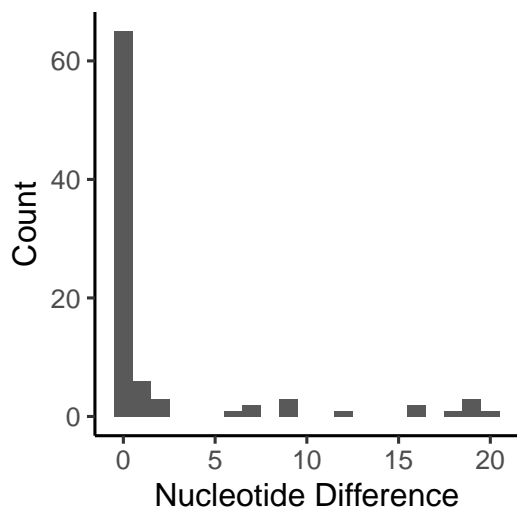
IGHV1-46*03

191 sequences assigned
111 (58.1%) exact matches, in which:
110 unique CDR3
5 unique J



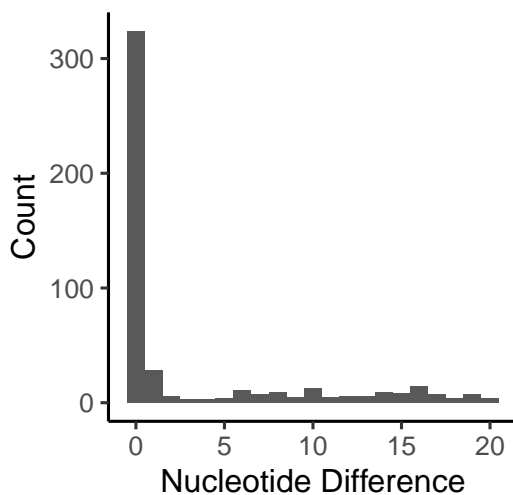
IGHV1-2*04

91 sequences assigned
65 (71.4%) exact matches, in which:
65 unique CDR3
5 unique J



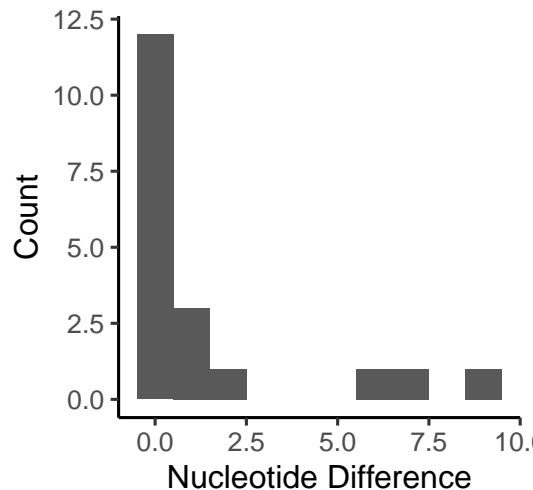
IGHV1-18*01

553 sequences assigned
324 (58.6%) exact matches, in which:
323 unique CDR3
6 unique J



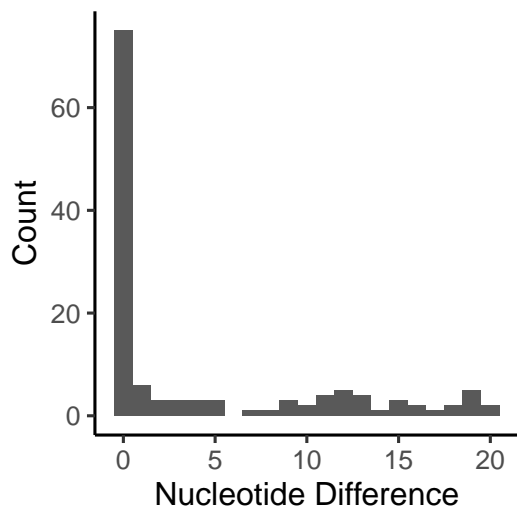
IGHV1-58*02

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



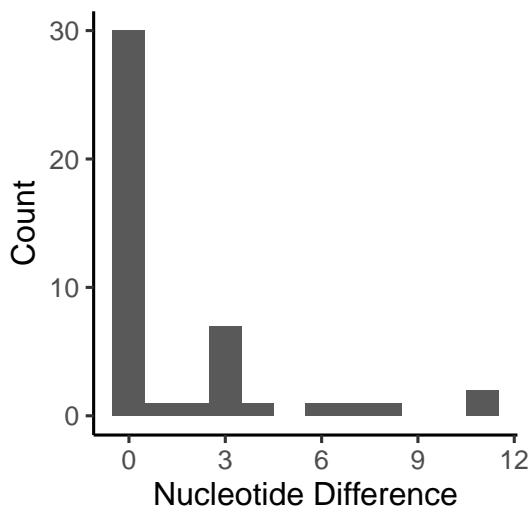
IGHV1-3*01

139 sequences assigned
75 (54%) exact matches, in which:
75 unique CDR3
5 unique J



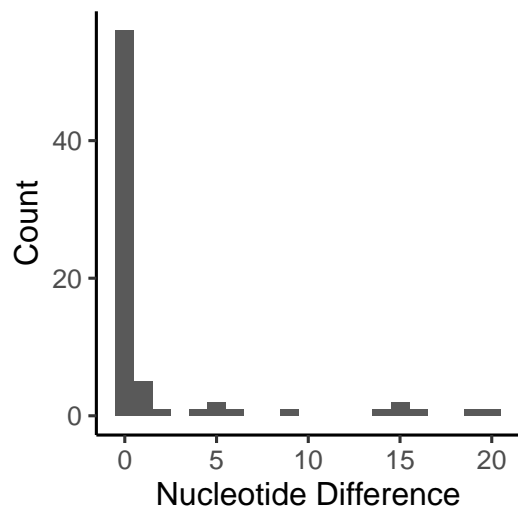
IGHV1-24*01

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



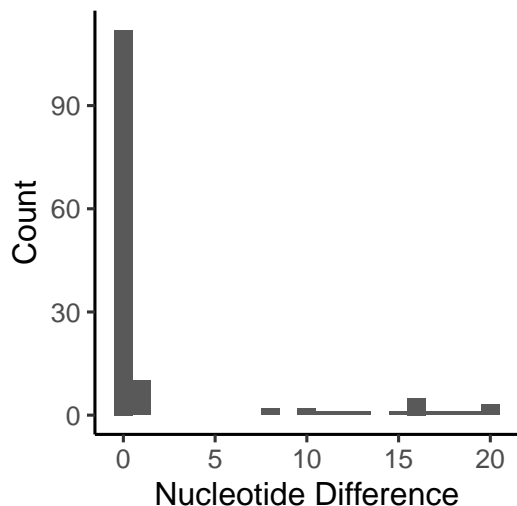
IGHV1-69-2*01

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



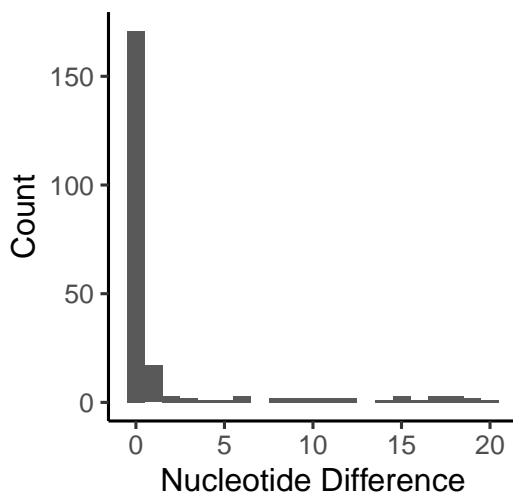
IGHV1-69*10

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



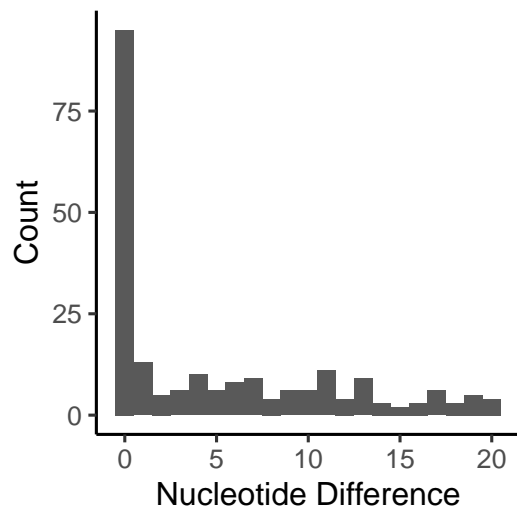
IGHV1-69*12_G48A

247 sequences assigned
171 (69.2%) exact matches, in which:
170 unique CDR3
6 unique J



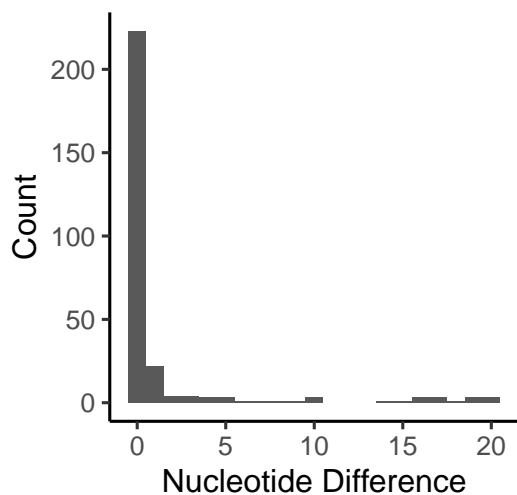
IGHV2-5*02

240 sequences assigned
95 (39.6%) exact matches, in which:
95 unique CDR3
5 unique J



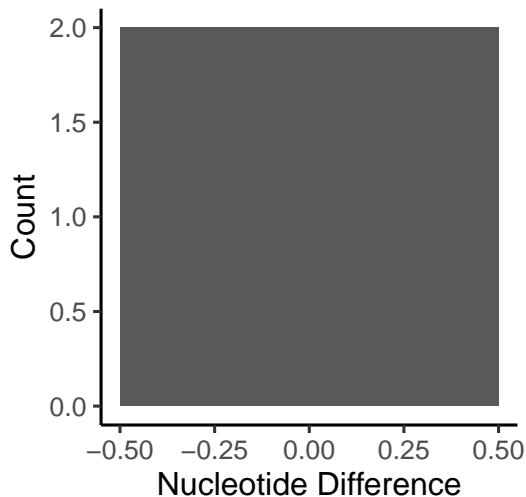
IGHV1-69*12

323 sequences assigned
223 (69%) exact matches, in which:
223 unique CDR3
6 unique J



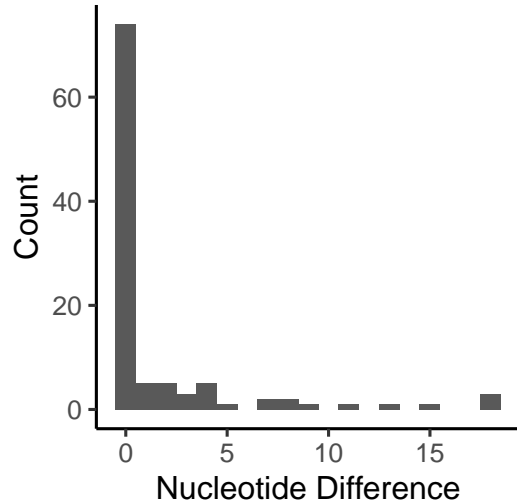
IGHV1-69D*01

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



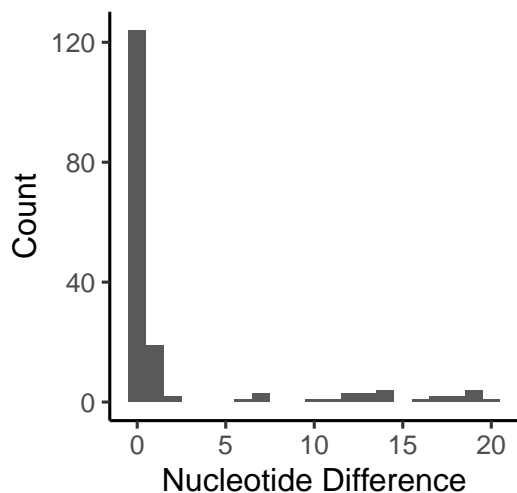
IGHV2-26*01

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



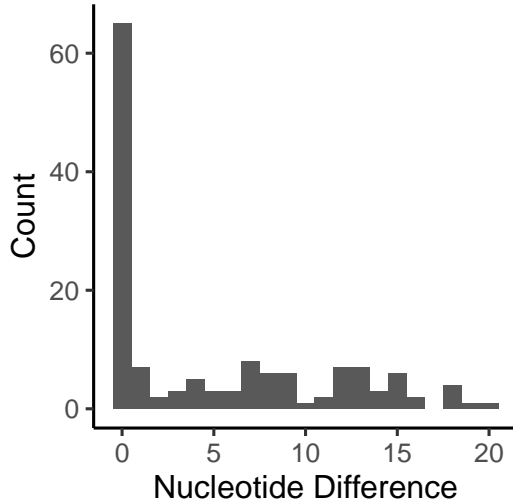
IGHV1-69*08_C191T

192 sequences assigned
124 (64.6%) exact matches, in which:
123 unique CDR3
6 unique J



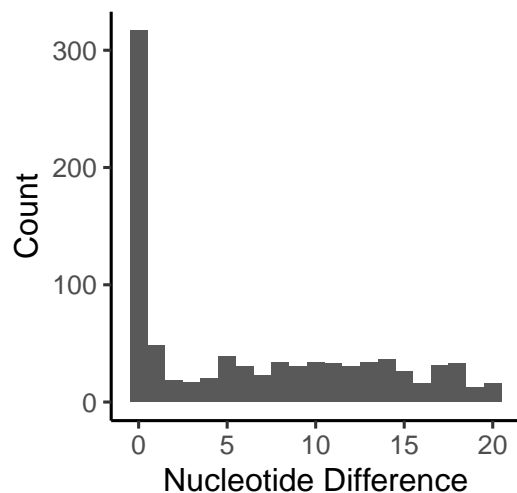
IGHV2-5*01

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



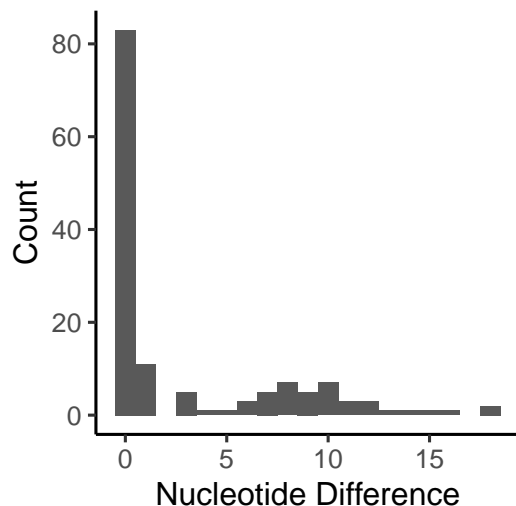
IGHV3-7*01

1018 sequences assigned
317 (31.1%) exact matches, in which:
317 unique CDR3
6 unique J



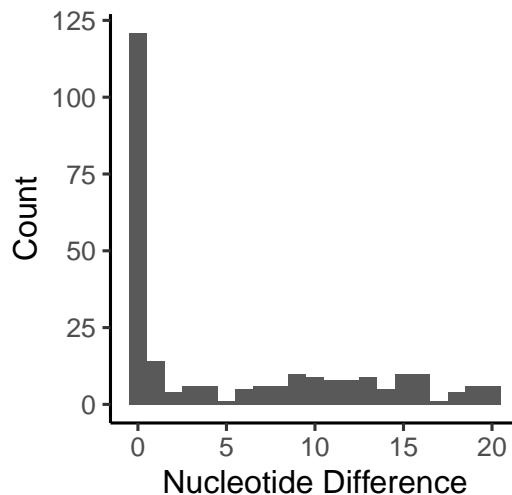
IGHV3-9*03

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



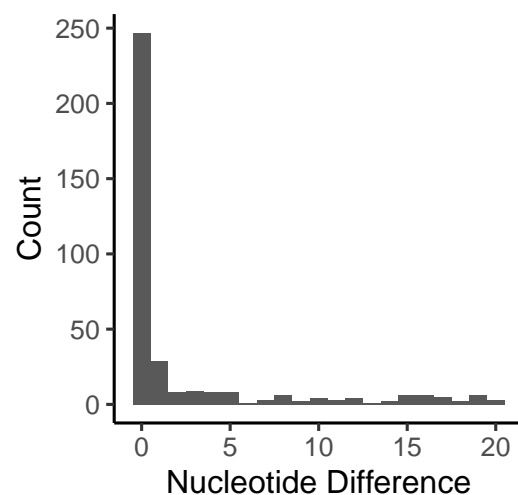
IGHV3-15*01

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



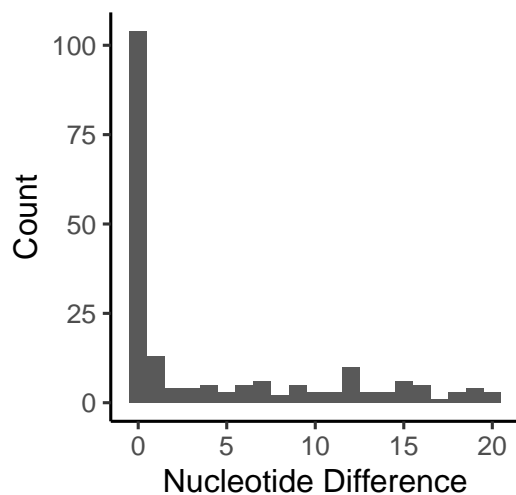
IGHV3-21*03

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



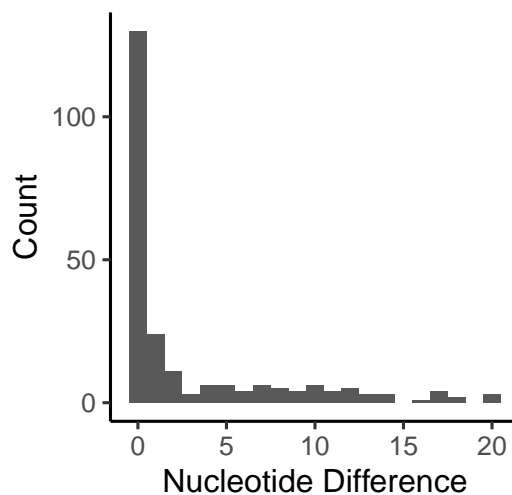
IGHV3-11*04

212 sequences assigned
104 (49.1%) exact matches, in which:
104 unique CDR3
6 unique J



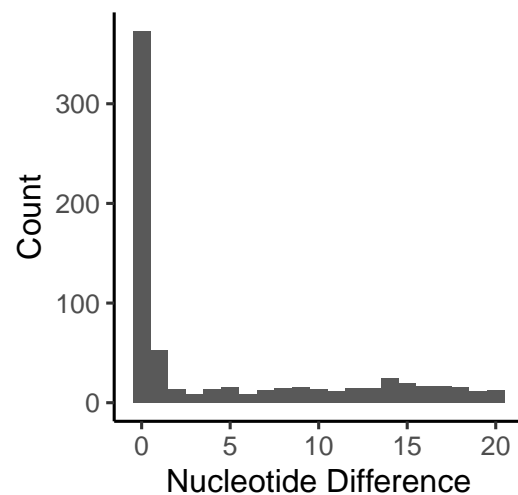
IGHV3-20*04

256 sequences assigned
130 (50.8%) exact matches, in which:
129 unique CDR3
6 unique J



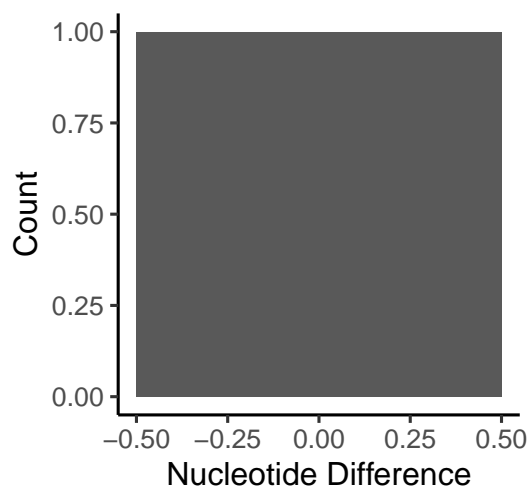
IGHV3-23*04

782 sequences assigned
373 (47.7%) exact matches, in which:
371 unique CDR3
6 unique J



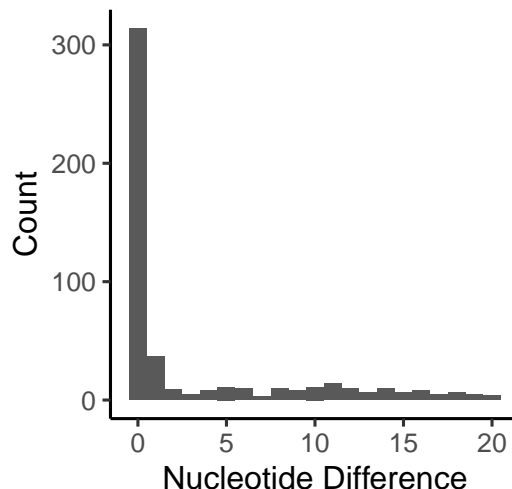
IGHV3-13*03

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



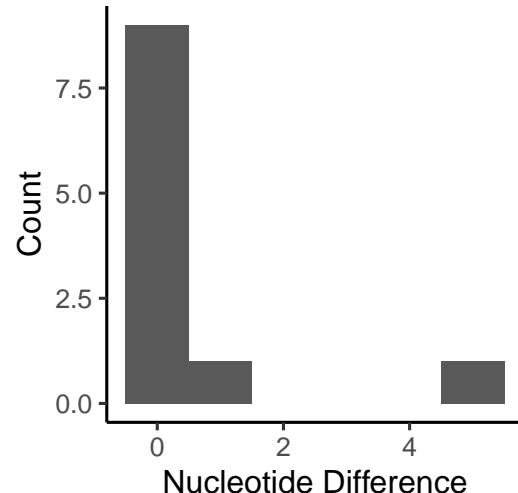
IGHV3-21*01

532 sequences assigned
314 (59%) exact matches, in which:
312 unique CDR3
6 unique J



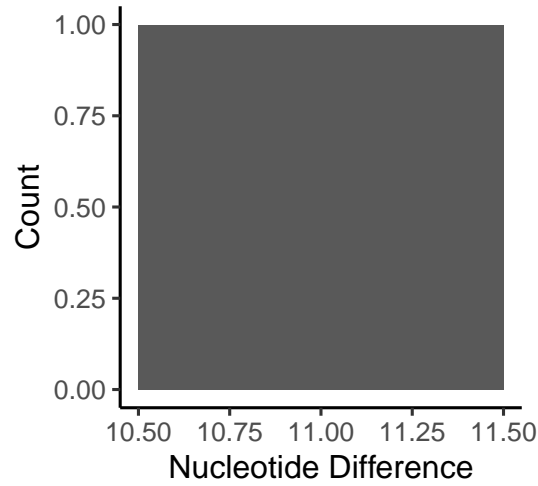
IGHV3-30-3*01

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



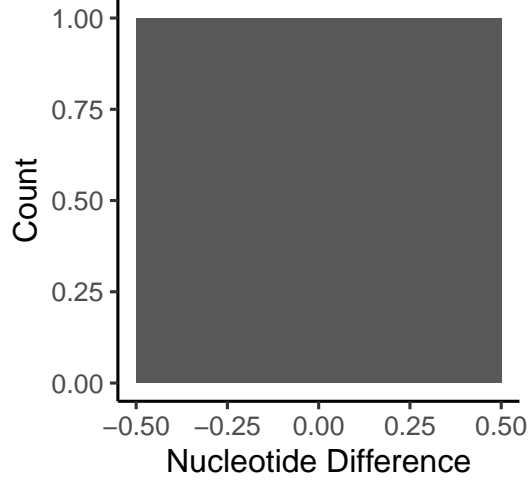
IGHV3-33*05

1 sequences assigned
No exact matches.



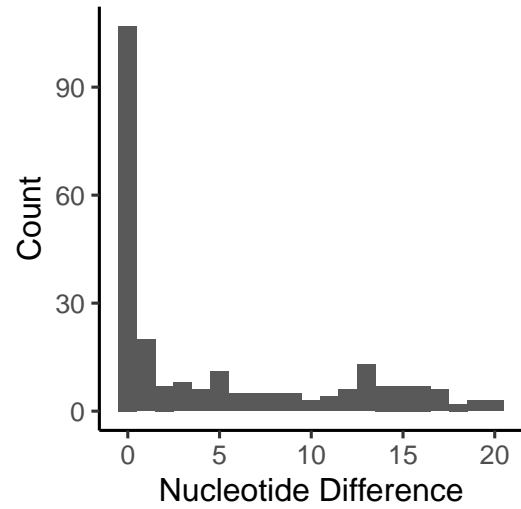
IGHV3-47*02

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



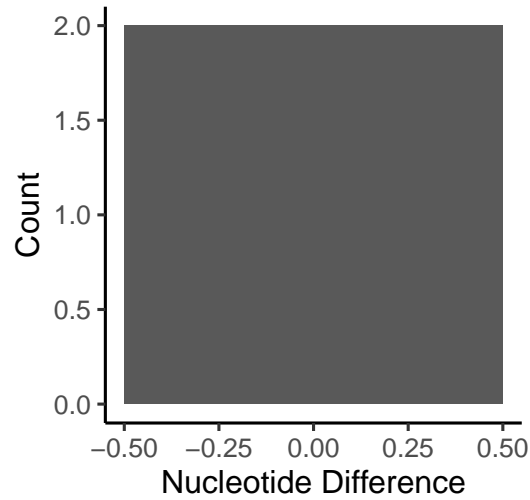
IGHV3-49*04

264 sequences assigned
107 (40.5%) exact matches, in which:
107 unique CDR3
5 unique J



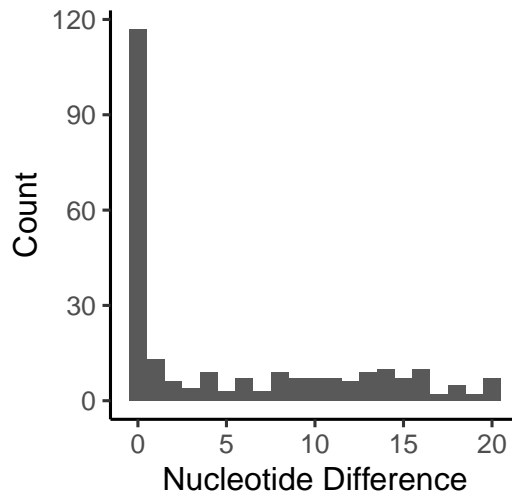
IGHV3-38-3*01

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



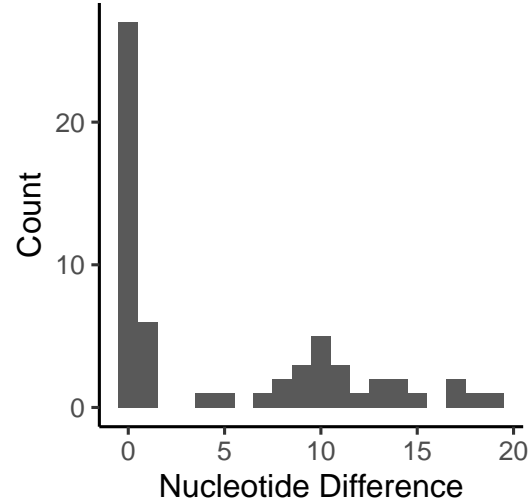
IGHV3-48*01

262 sequences assigned
117 (44.7%) exact matches, in which:
115 unique CDR3
5 unique J



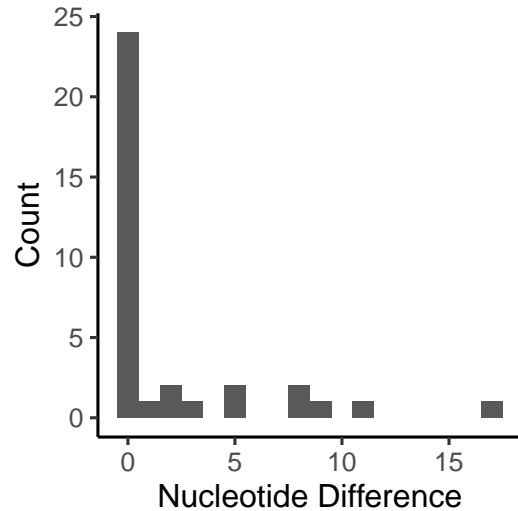
IGHV3-53*04_C241G_G2

67 sequences assigned
27 (40.3%) exact matches, in which:
27 unique CDR3
5 unique J



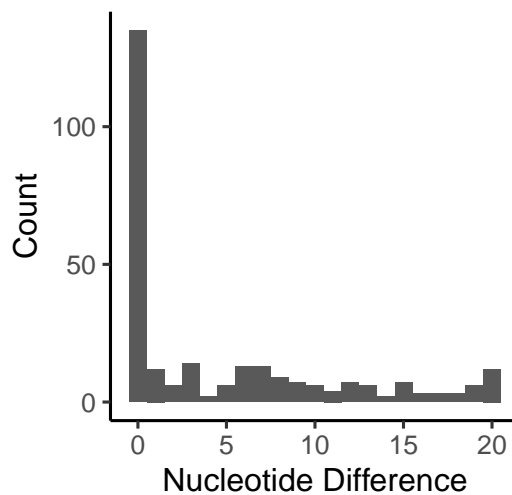
IGHV3-43*01

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



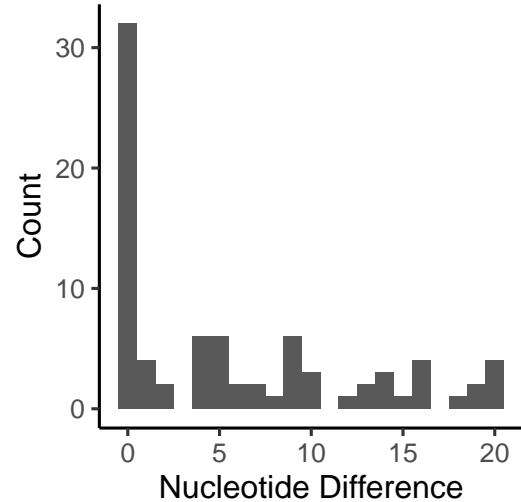
IGHV3-48*01_A39C

307 sequences assigned
135 (44%) exact matches, in which:
135 unique CDR3
6 unique J



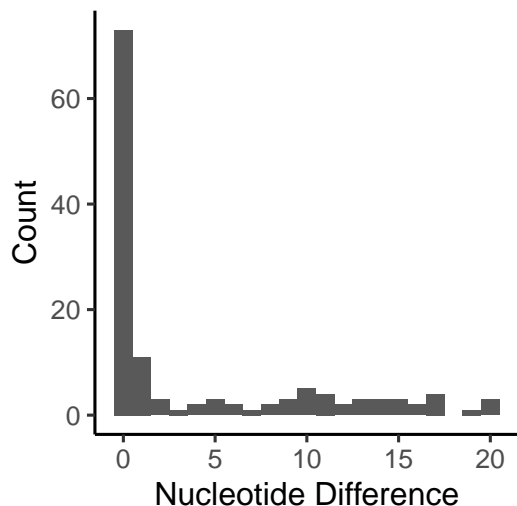
IGHV3-64*01

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



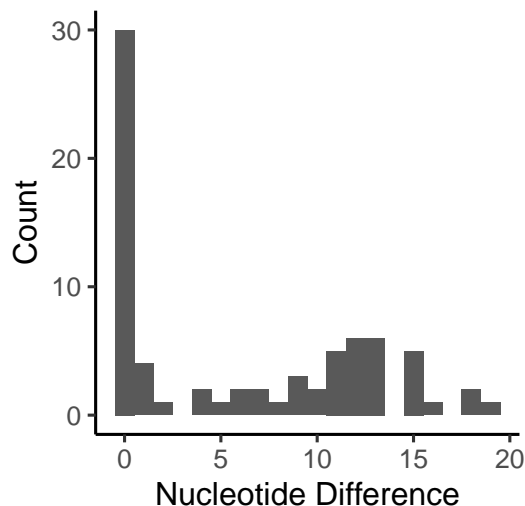
IGHV3-66*02

156 sequences assigned
73 (46.8%) exact matches, in which:
73 unique CDR3
5 unique J



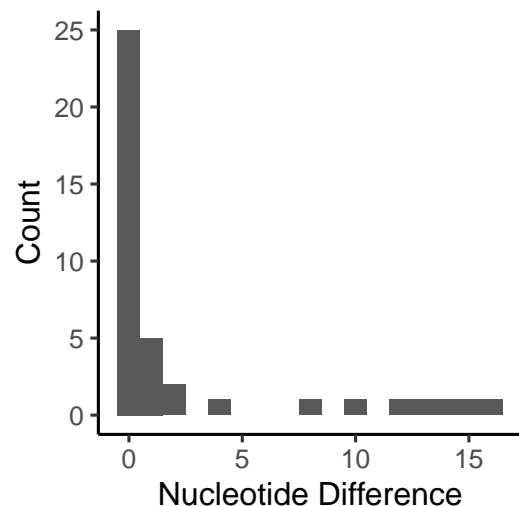
IGHV3-73*01

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



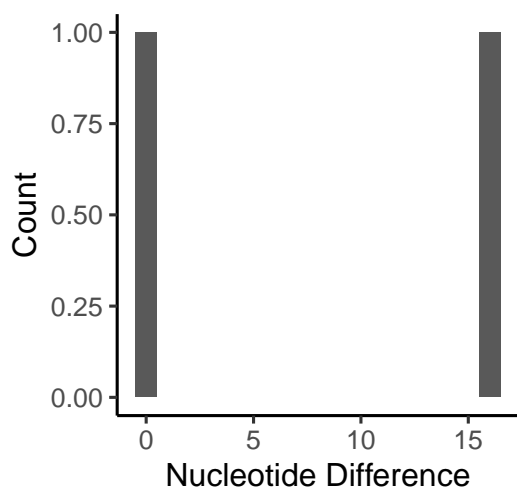
IGHV3-43D*03

45 sequences assigned
25 (55.6%) exact matches, in which:
25 unique CDR3
5 unique J



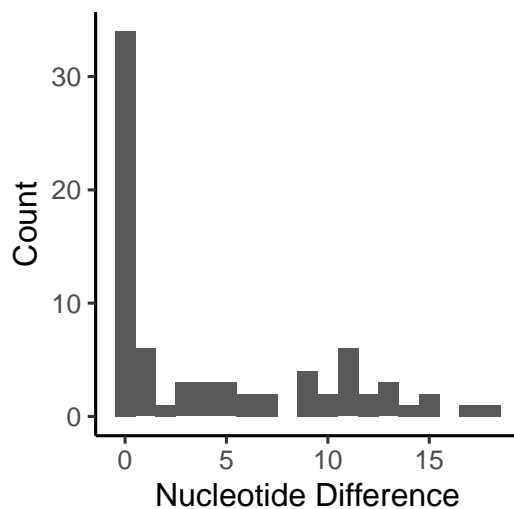
IGHV3-69-1*02

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



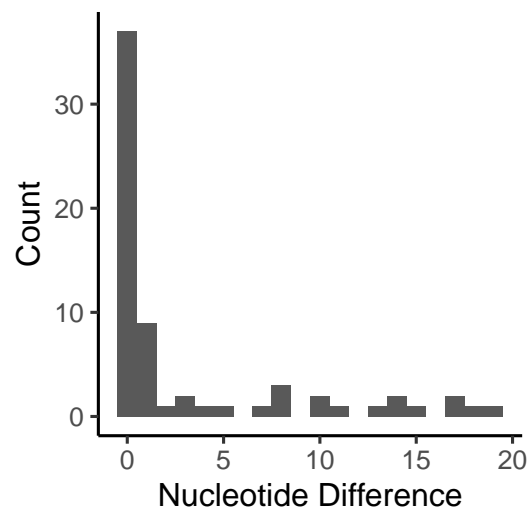
IGHV3-73*02

83 sequences assigned
34 (41%) exact matches, in which:
34 unique CDR3
4 unique J



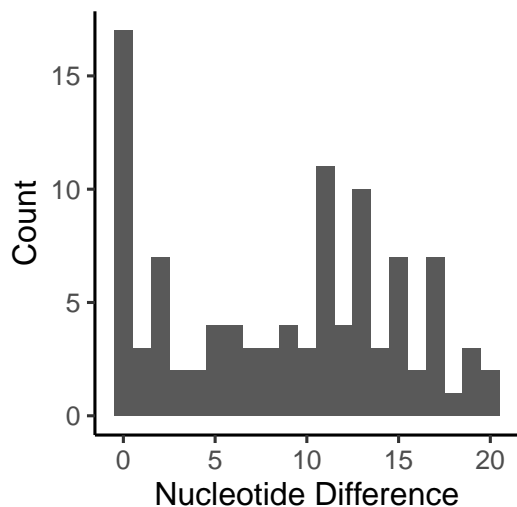
IGHV3-43D*04

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



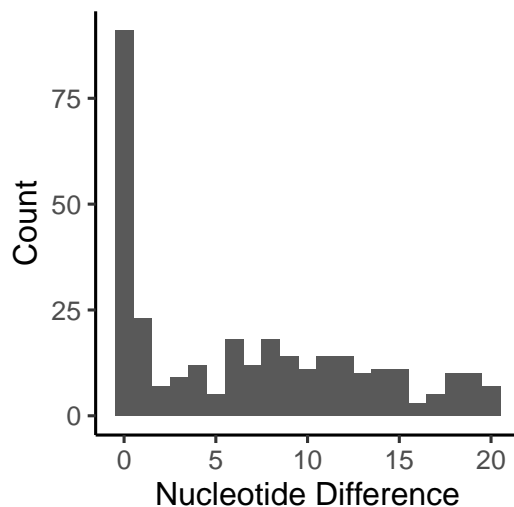
IGHV3-72*01

111 sequences assigned
17 (15.3%) exact matches, in which:
17 unique CDR3
3 unique J



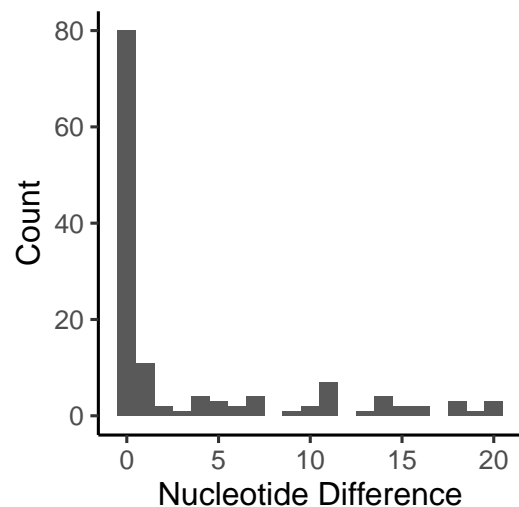
IGHV3-74*01

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



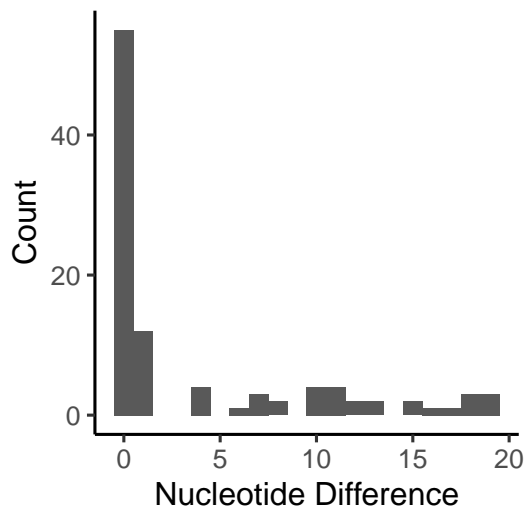
IGHV4-4*02

145 sequences assigned
80 (55.2%) exact matches, in which:
80 unique CDR3
5 unique J



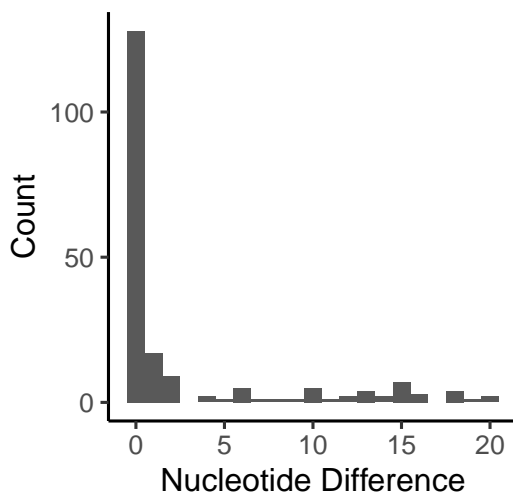
IGHV4-4*07

113 sequences assigned
55 (48.7%) exact matches, in which:
55 unique CDR3
5 unique J



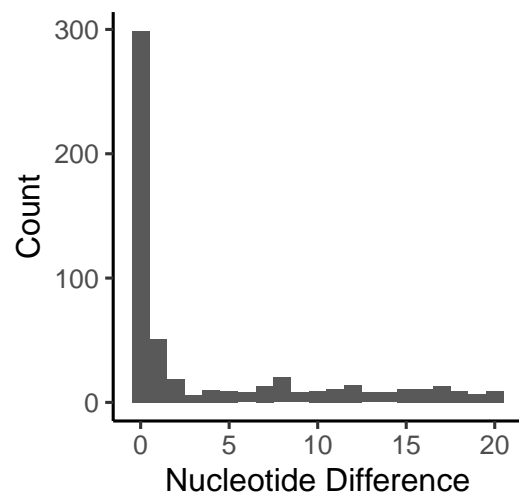
IGHV4-30-4*08

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



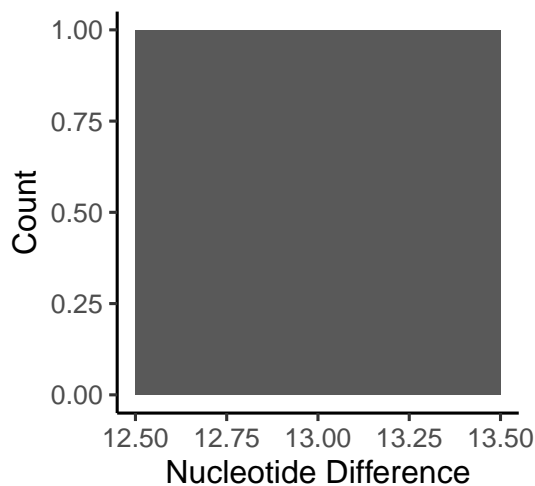
IGHV4-38-2*02

622 sequences assigned
299 (48.1%) exact matches, in which:
297 unique CDR3
6 unique J



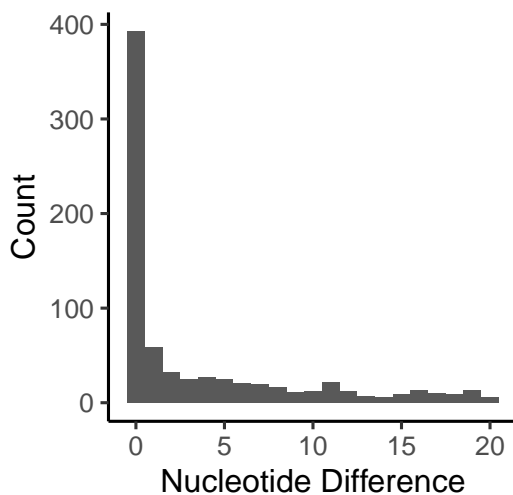
IGHV4-28*05

1 sequences assigned
No exact matches.



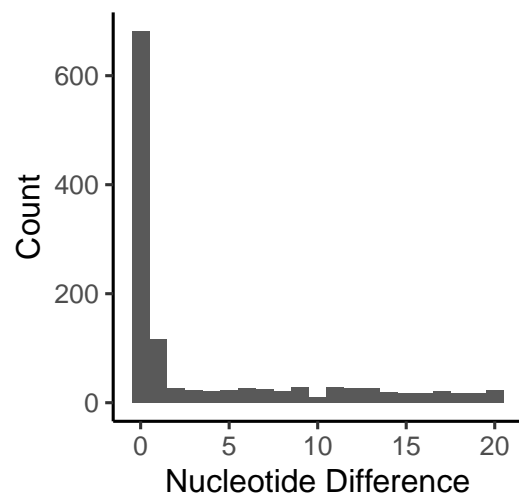
IGHV4-34*01

808 sequences assigned
393 (48.6%) exact matches, in which:
389 unique CDR3
6 unique J



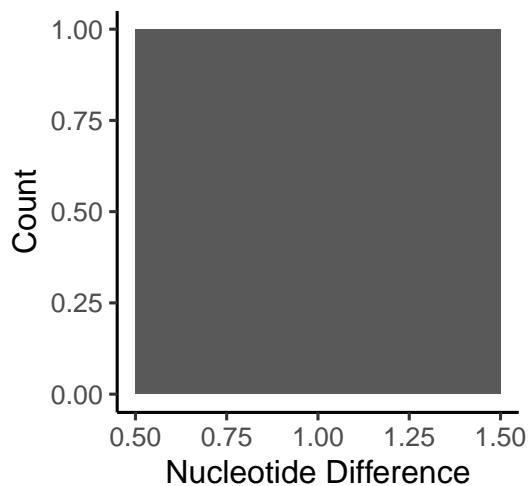
IGHV4-39*01

1414 sequences assigned
682 (48.2%) exact matches, in which:
680 unique CDR3
6 unique J



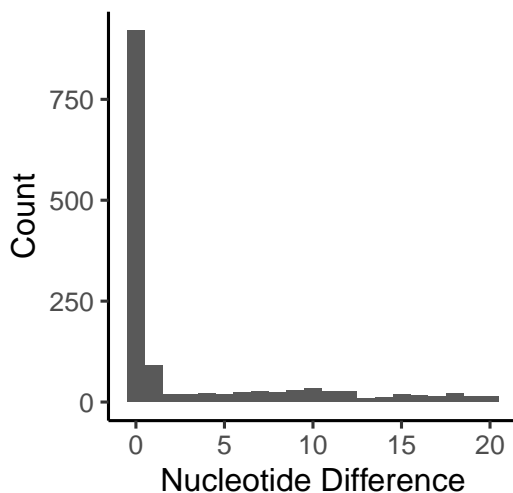
IGHV4-30-2*05

1 sequences assigned
No exact matches.



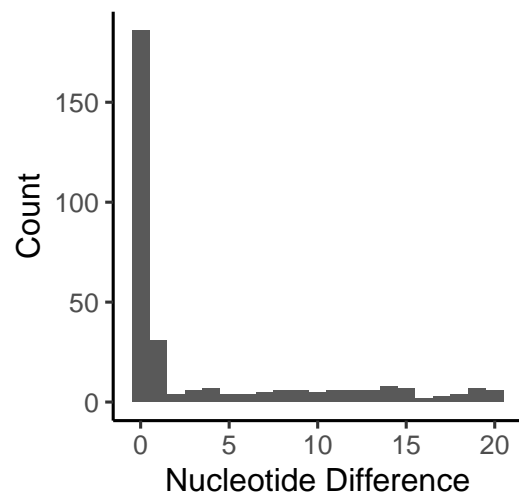
IGHV4-38-2*01

1501 sequences assigned
921 (61.4%) exact matches, in which:
919 unique CDR3
6 unique J



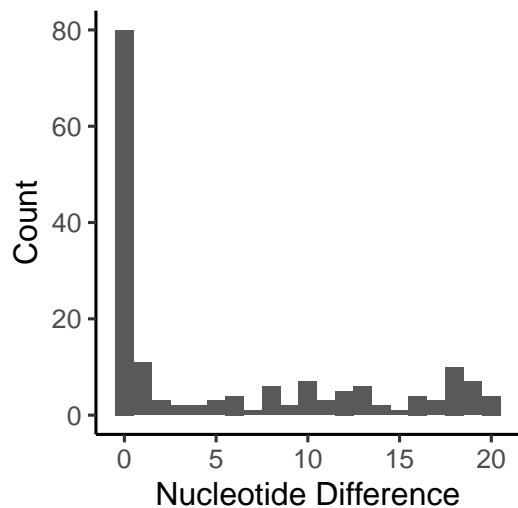
IGHV4-59*01

365 sequences assigned
186 (51%) exact matches, in which:
184 unique CDR3
6 unique J



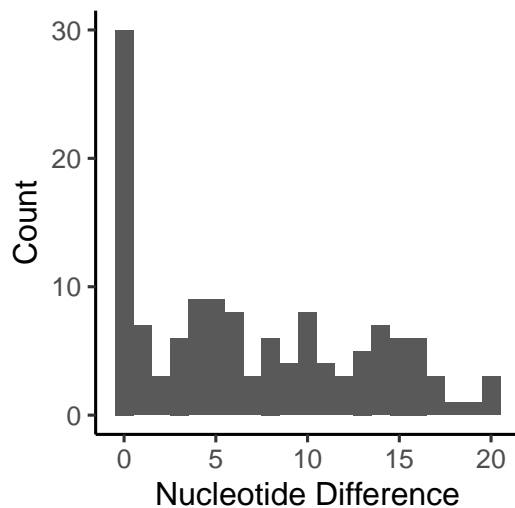
IGHV4-59*08

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



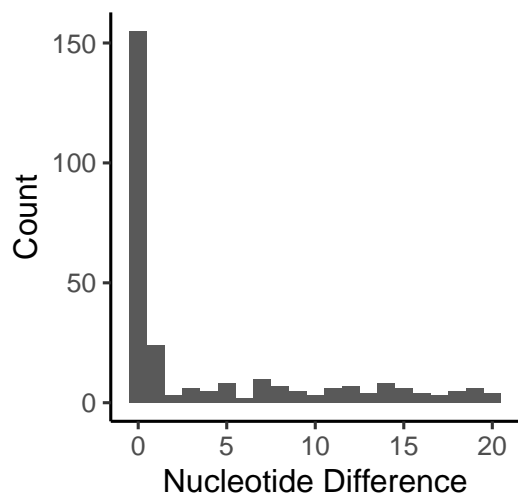
IGHV6-1*01

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



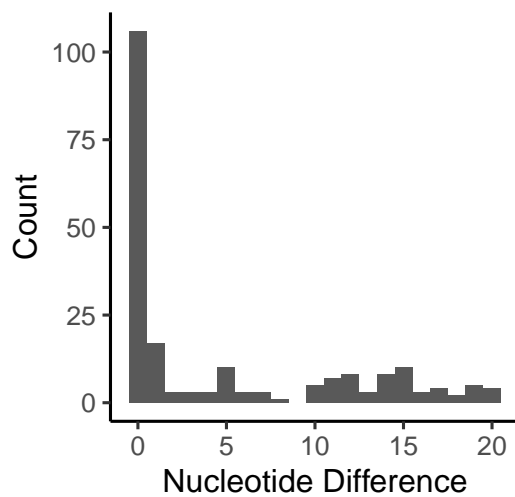
IGHV4-61*02

314 sequences assigned
155 (49.4%) exact matches, in which:
154 unique CDR3
6 unique J



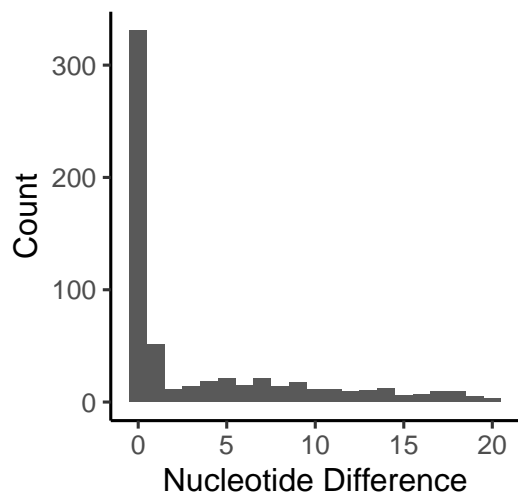
IGHV7-4-1*02

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

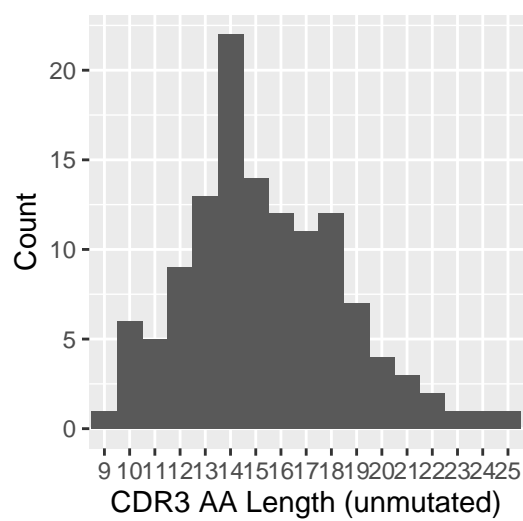


IGHV5-51*01

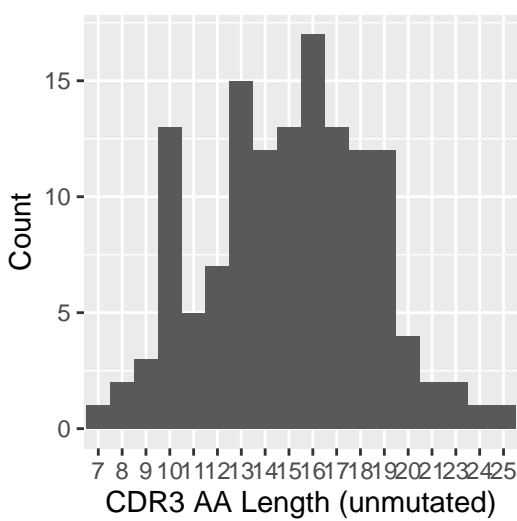
658 sequences assigned
331 (50.3%) exact matches, in which:
331 unique CDR3
6 unique J



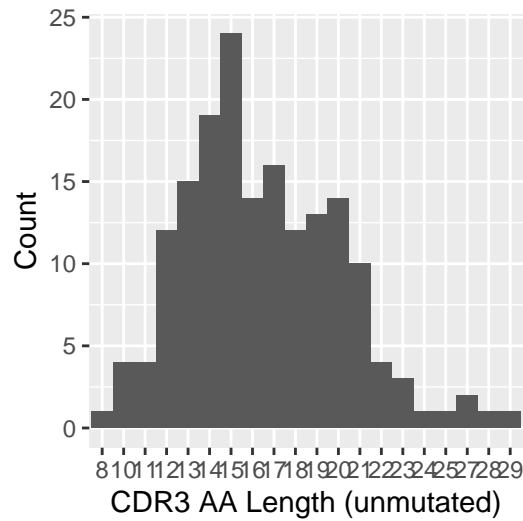
IGHV1-69*08_C191T



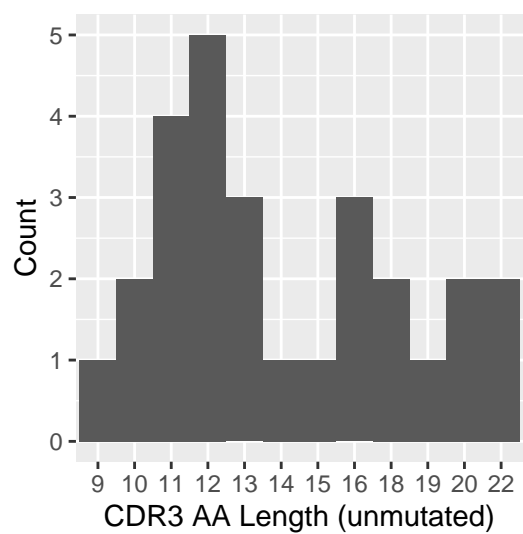
IGHV3-48*01_A39C



IGHV1-69*12_G48A



IGHV3-53*04_C241G_G273A_C300T



Allele Usage

