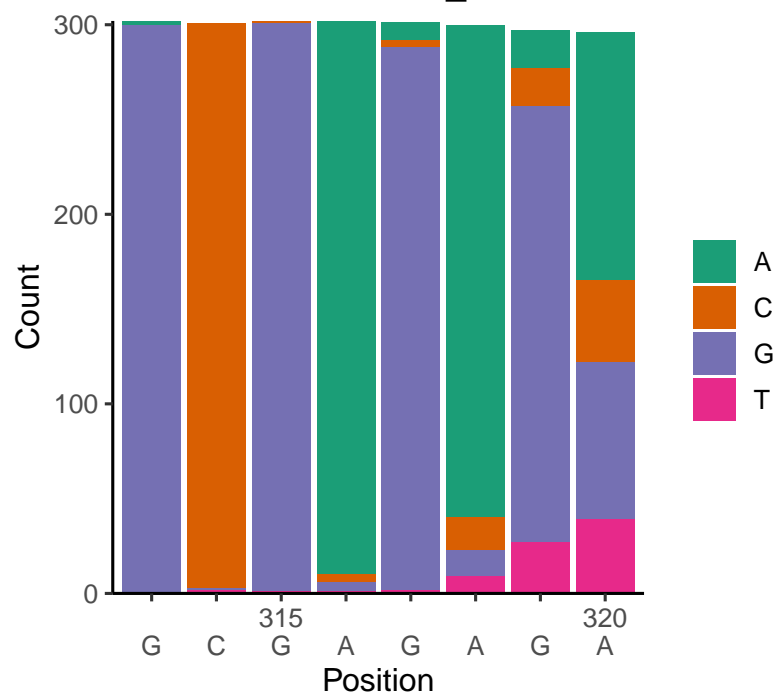
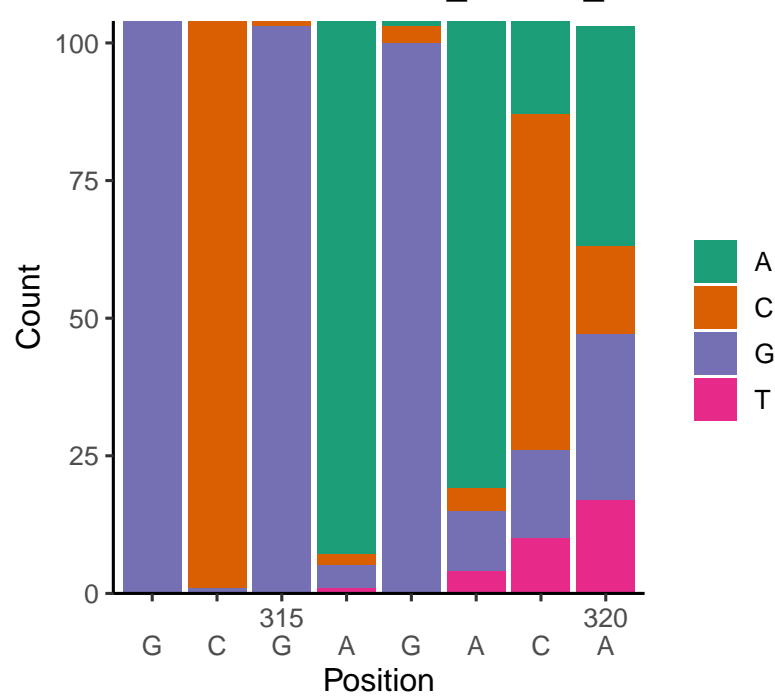


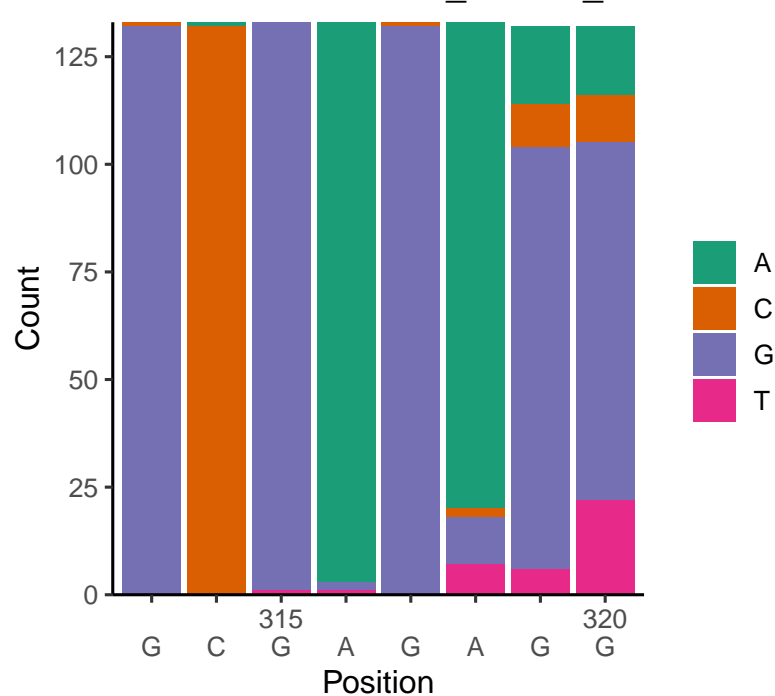
Gene IGHV1-69*01_G54A



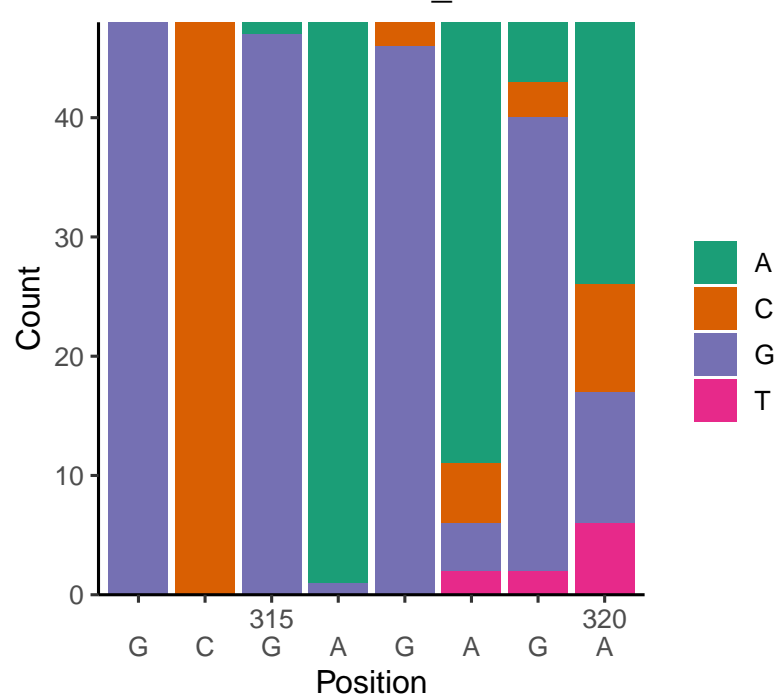
Gene IGHV4-39*01_A220G_A225G



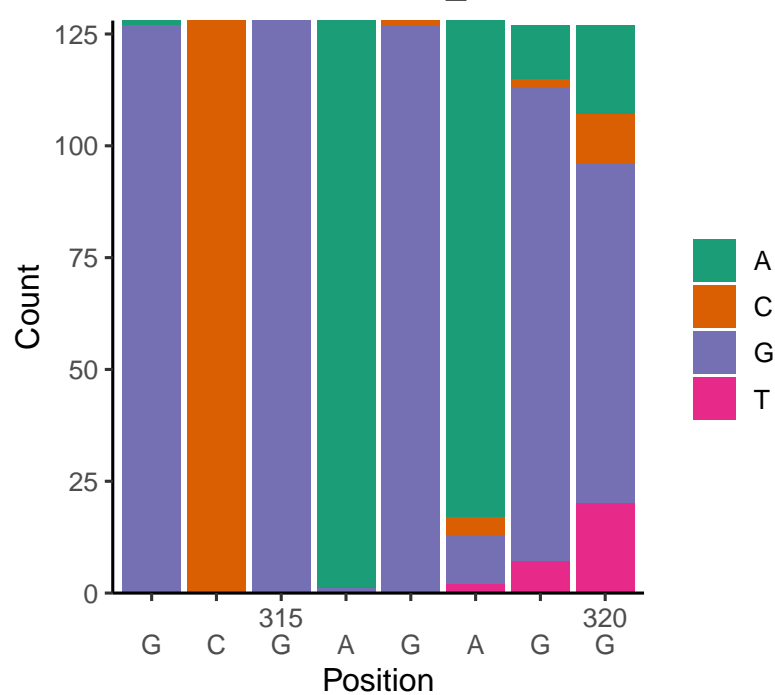
Gene IGHV4-34*01_A220G_A225G



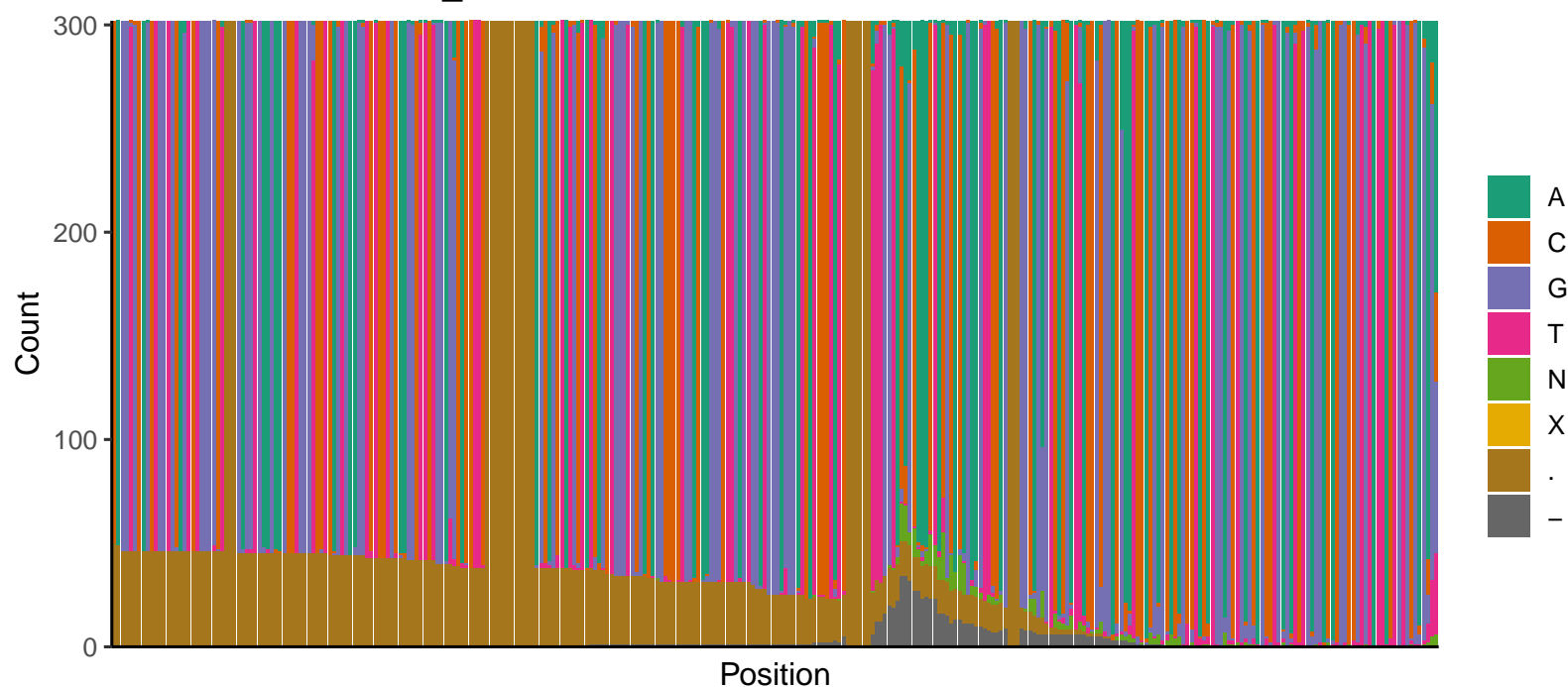
Gene IGHV4-59*01_A220G



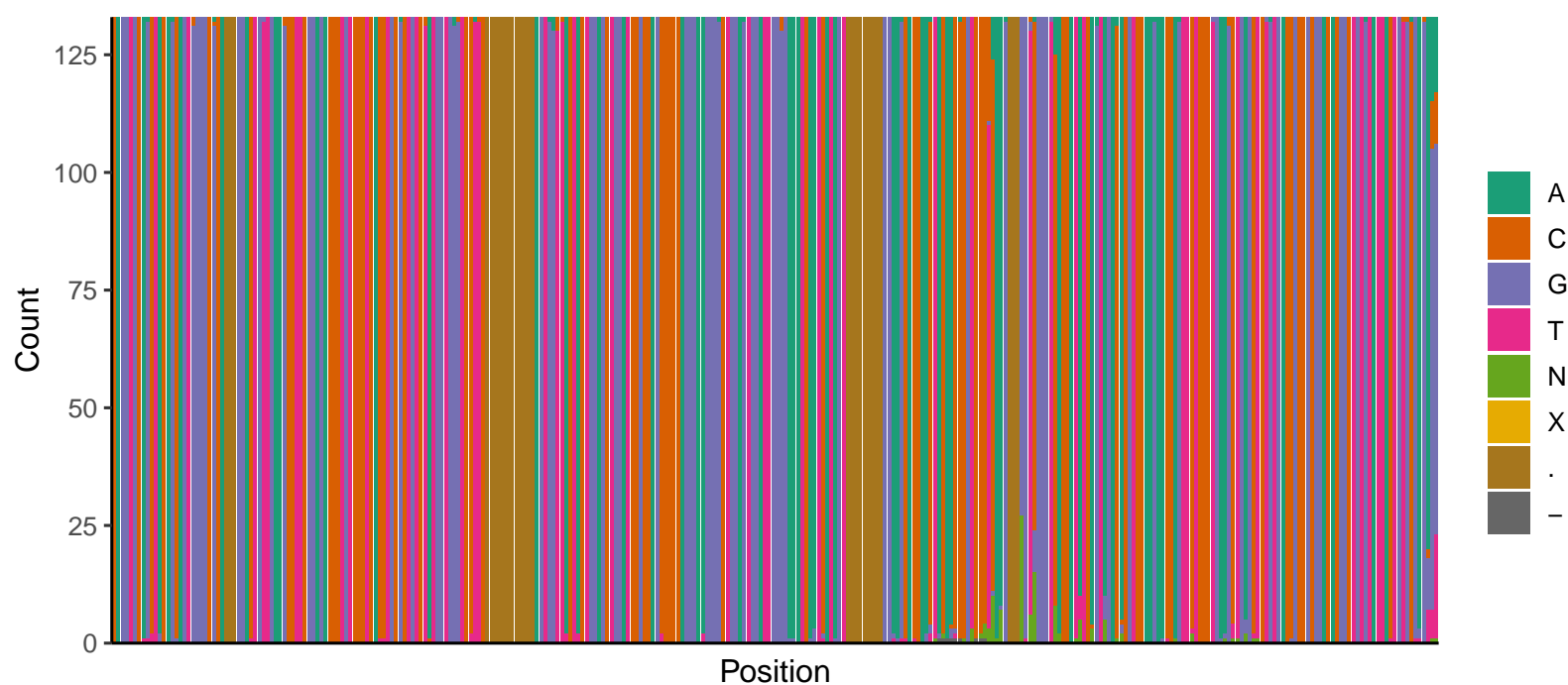
Gene IGHV4-34*01_A220G



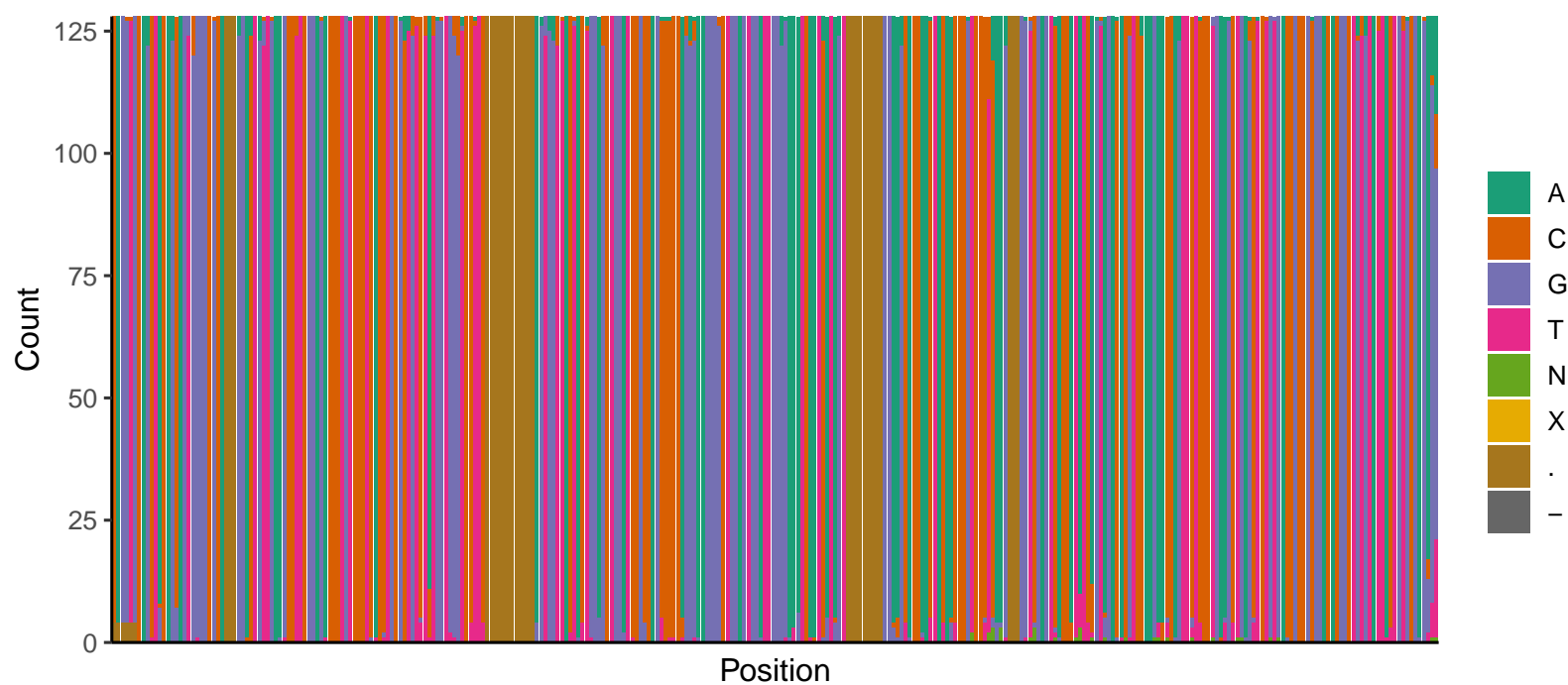
Gene IGHV1-69*01_G54A



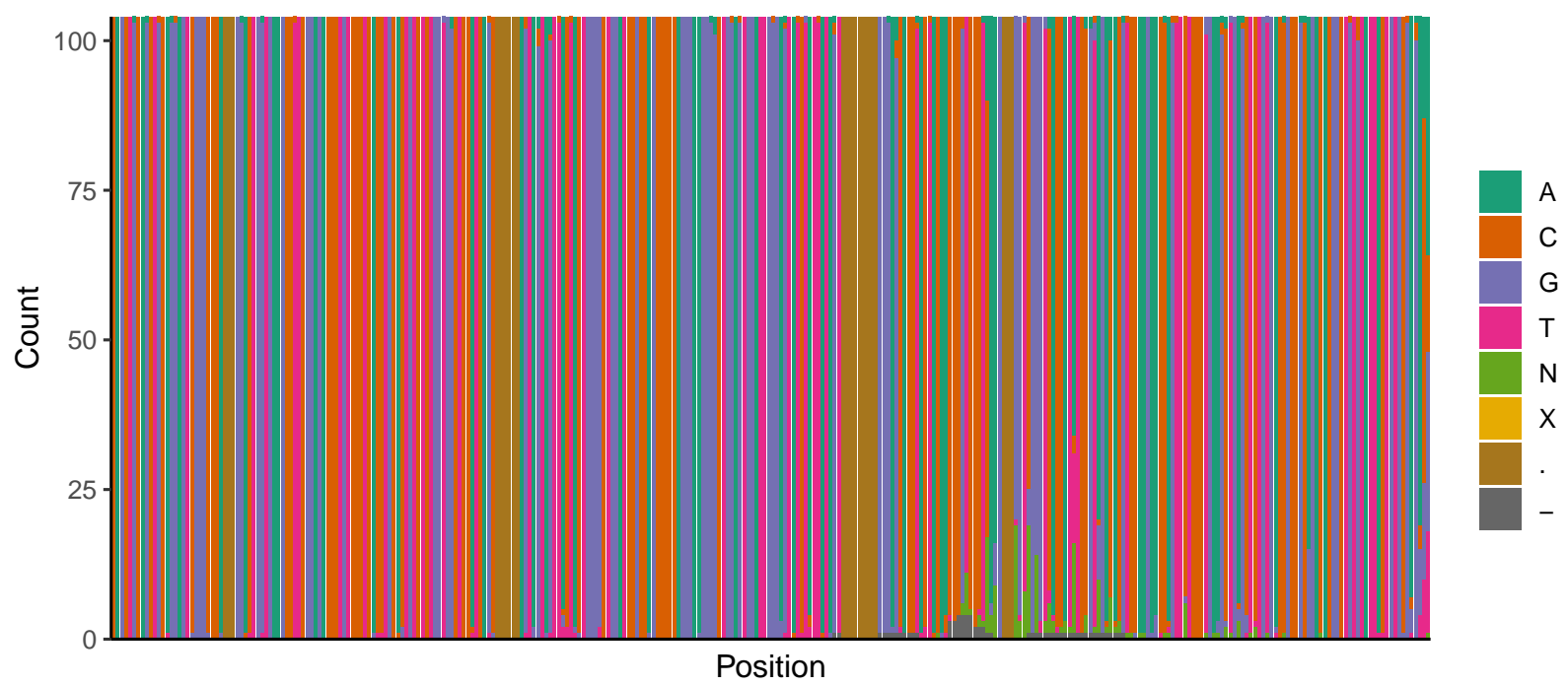
Gene IGHV4-34*01_A220G_A225G



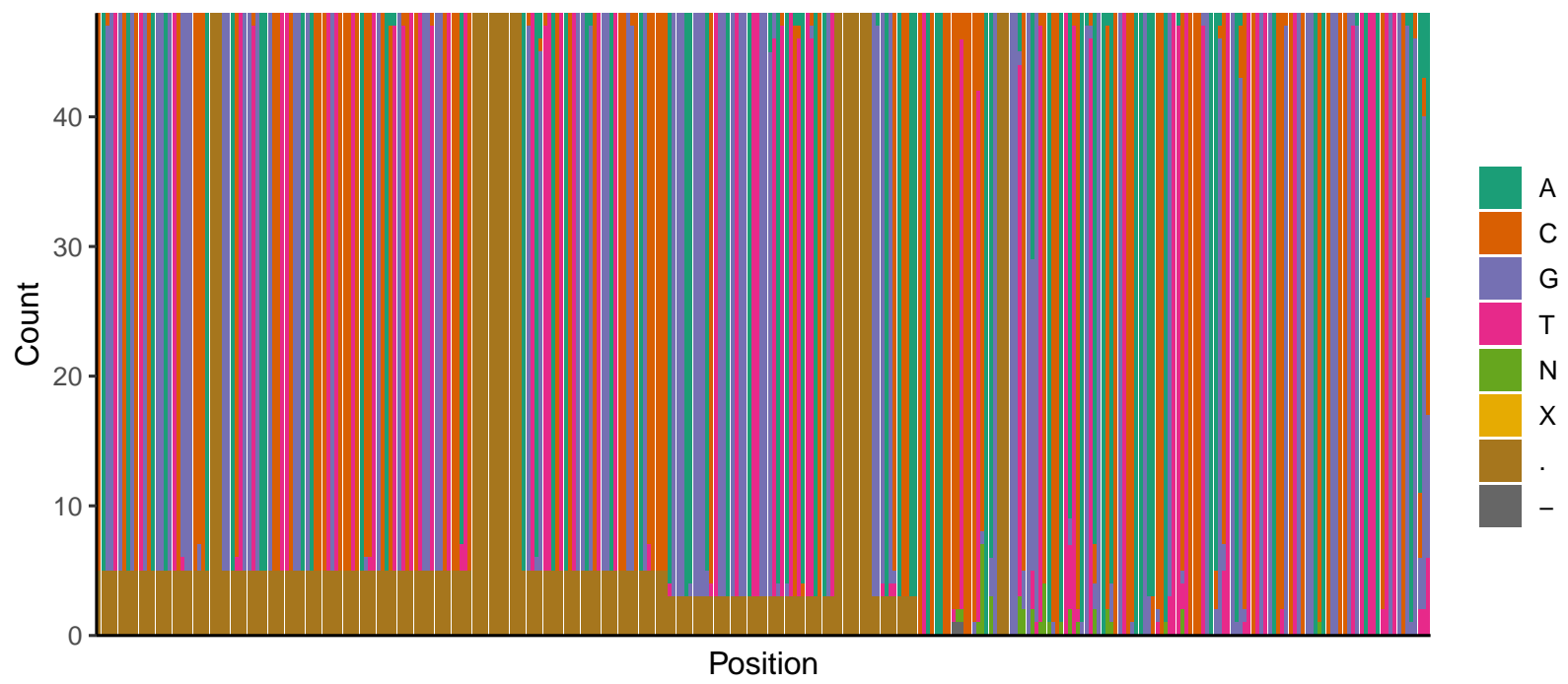
Gene IGHV4-34*01_A220G



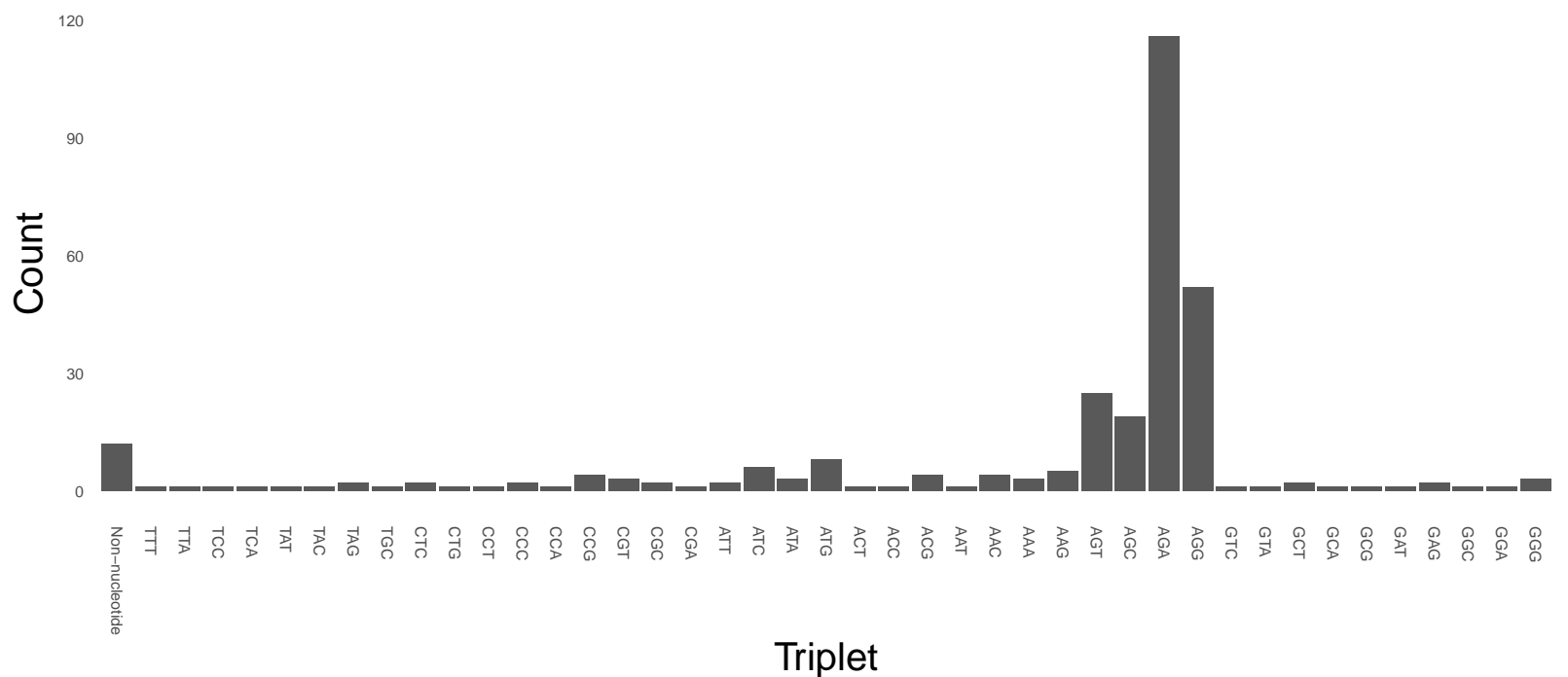
Gene IGHV4-39*01_A220G_A225G



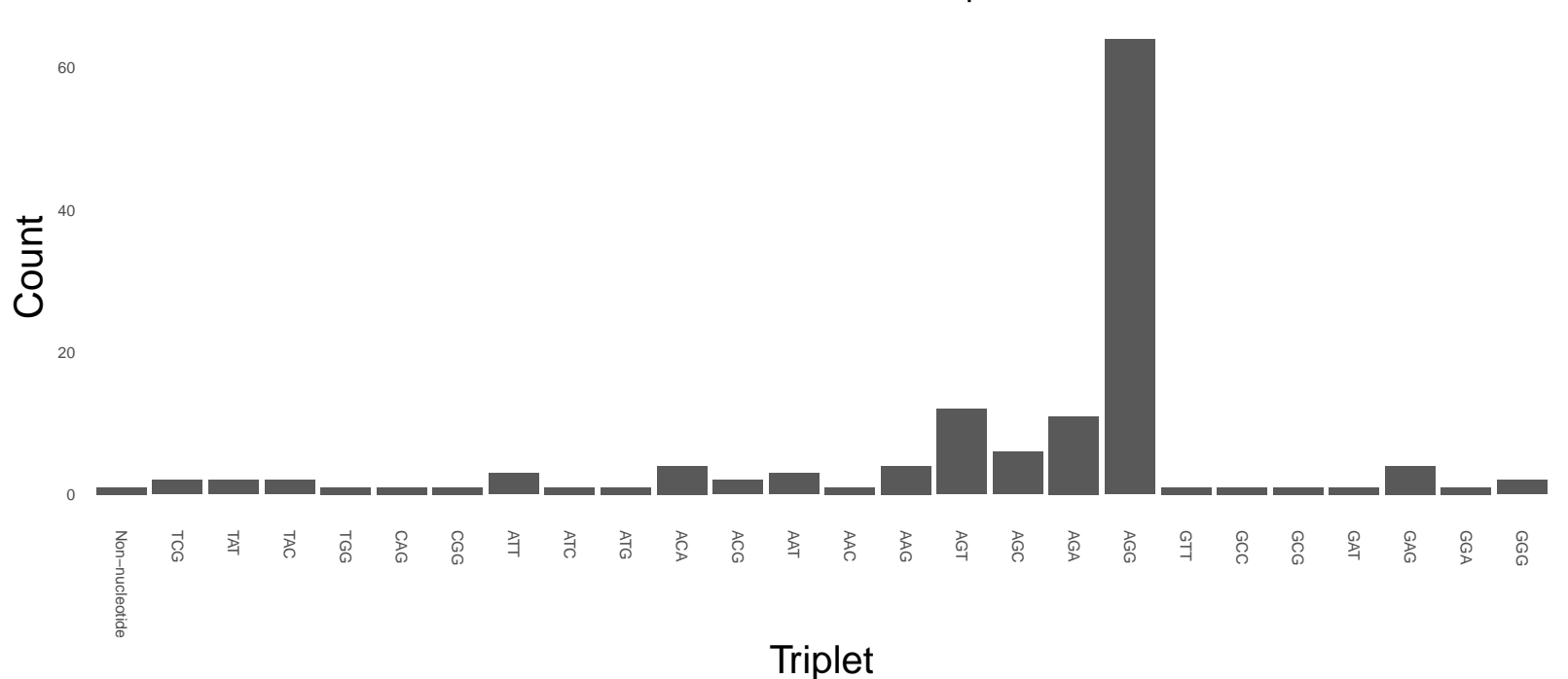
Gene IGHV4-59*01_A220G



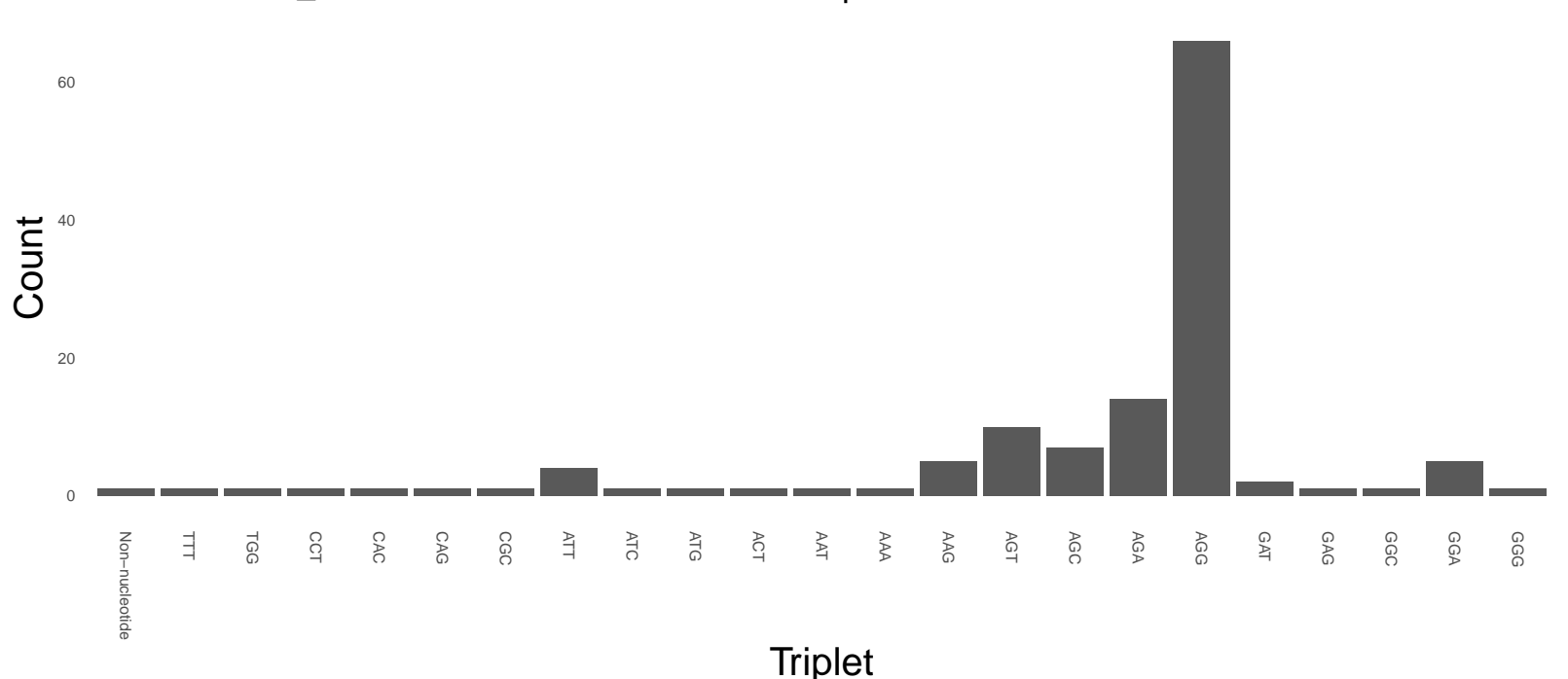
IGHV1-69*01_G54A- Final 3 nucleotides as a triplet



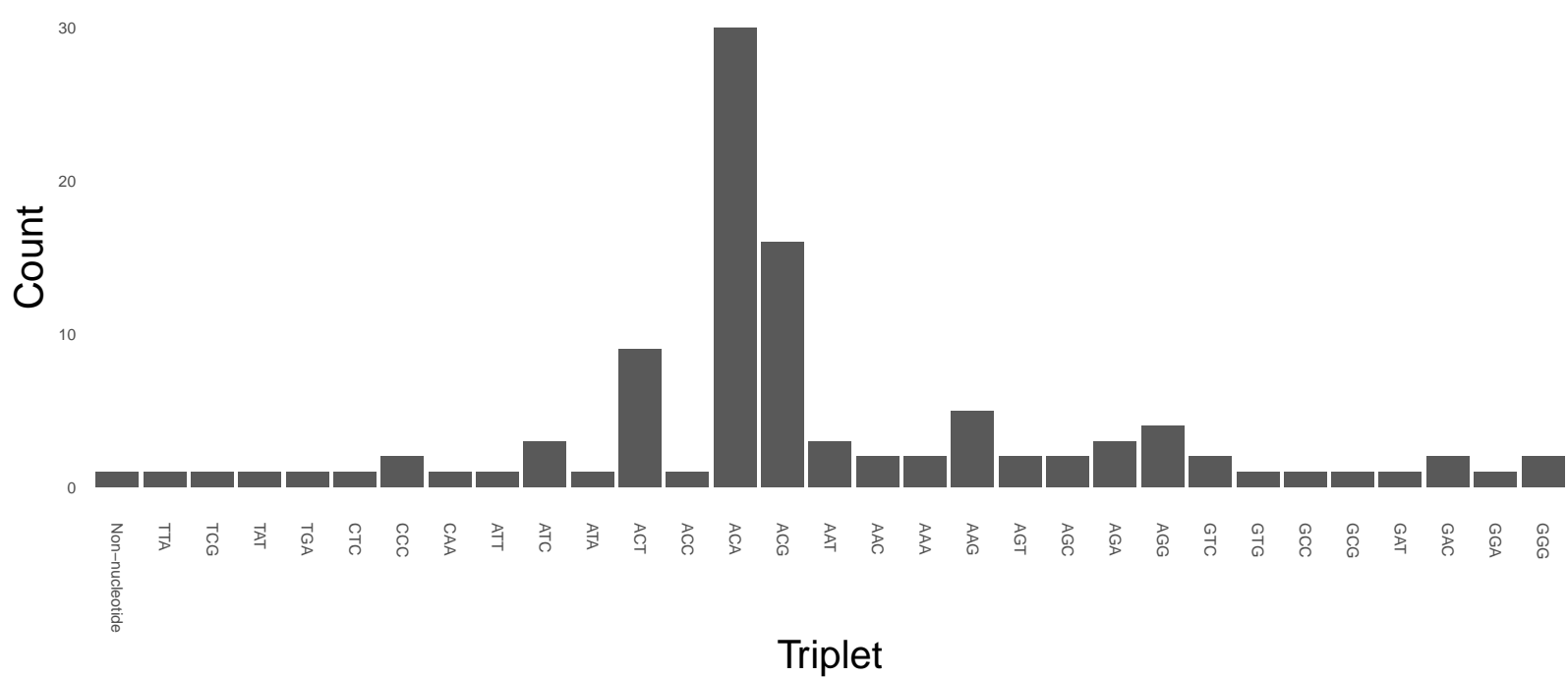
IGHV4-34*01_A220G_A225G- Final 3 nucleotides as a triplet



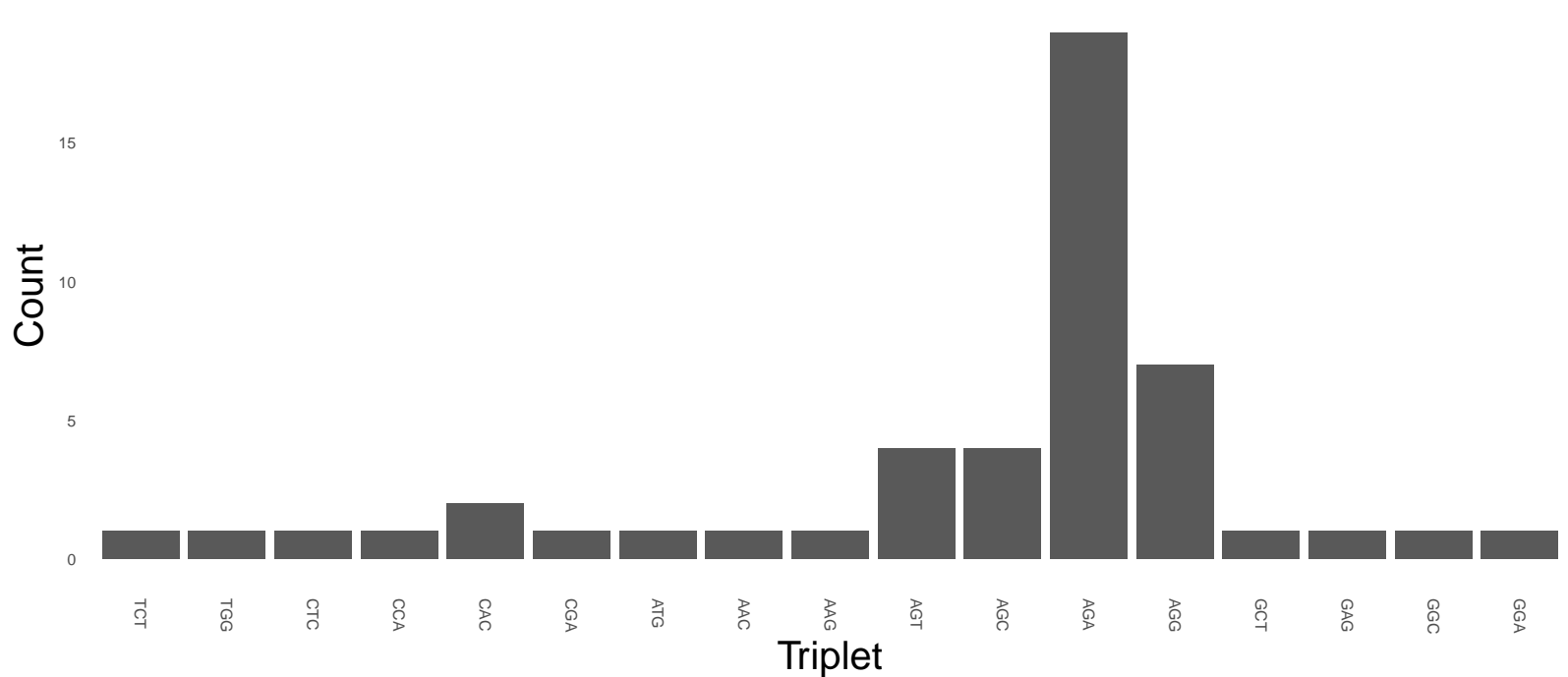
IGHV4-34*01_A220G- Final 3 nucleotides as a triplet



IGHV4–39*01_A220G_A225G– Final 3 nucleotides as a triplet

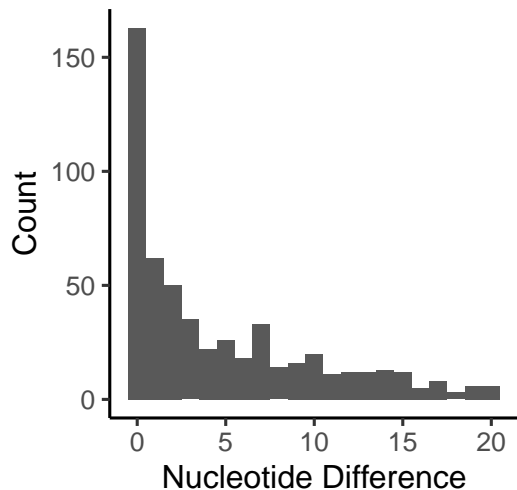


IGHV4–59*01_A220G– Final 3 nucleotides as a triplet



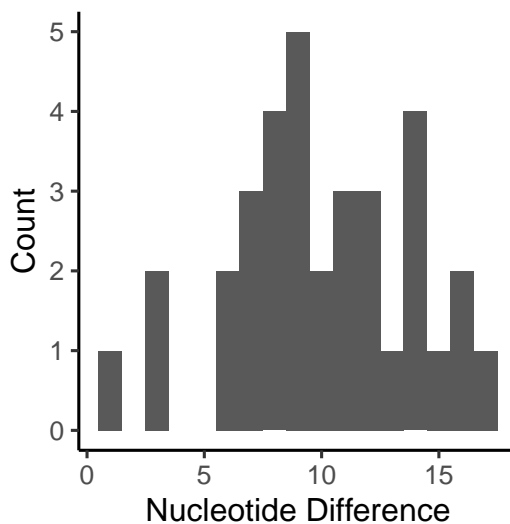
IGHV1-2*02

568 sequences assigned
163 (28.7%) exact matches, in which:
155 unique CDR3
6 unique J



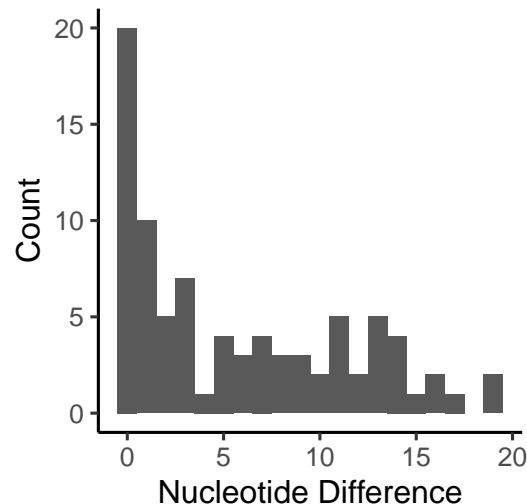
IGHV1-8*02

36 sequences assigned
No exact matches.



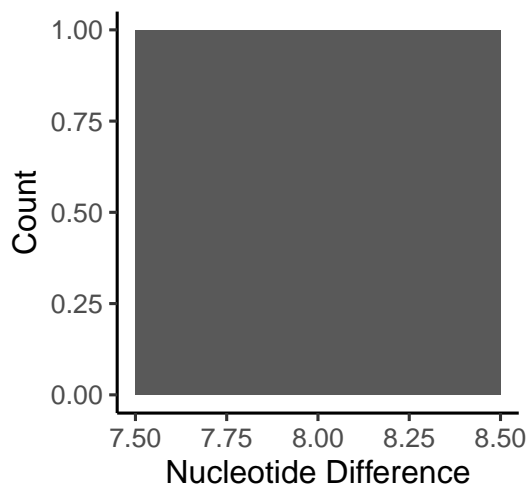
IGHV1-46*01

98 sequences assigned
20 (20.4%) exact matches, in which:
20 unique CDR3
4 unique J



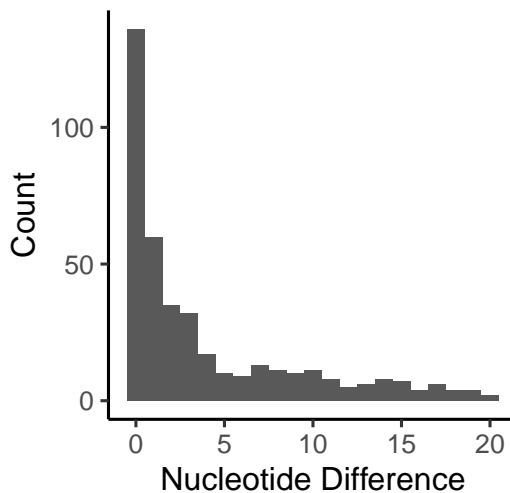
IGHV1-3*01

1 sequences assigned
No exact matches.



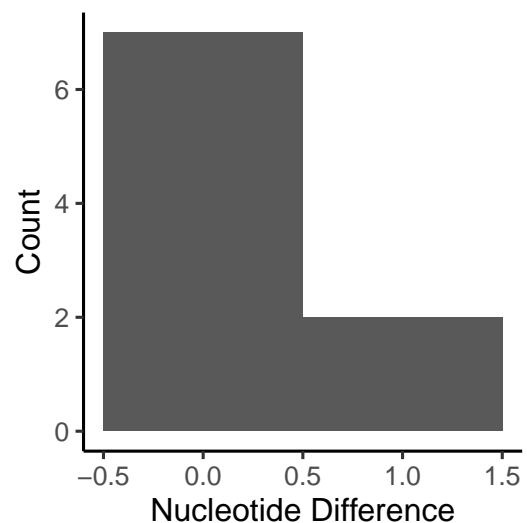
IGHV1-18*01

421 sequences assigned
136 (32.3%) exact matches, in which:
125 unique CDR3
5 unique J



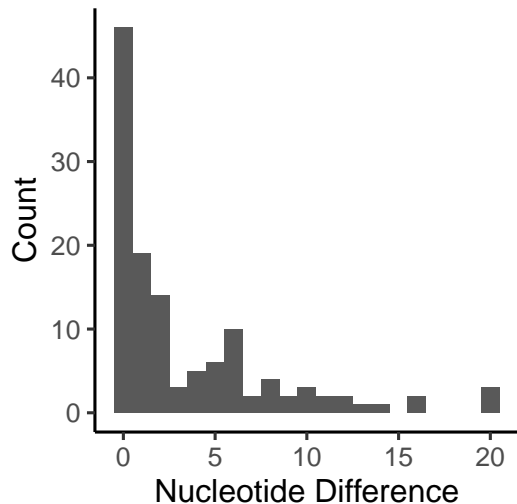
IGHV1-58*01

11 sequences assigned
7 (63.6%) exact matches, in which:
6 unique CDR3
3 unique J



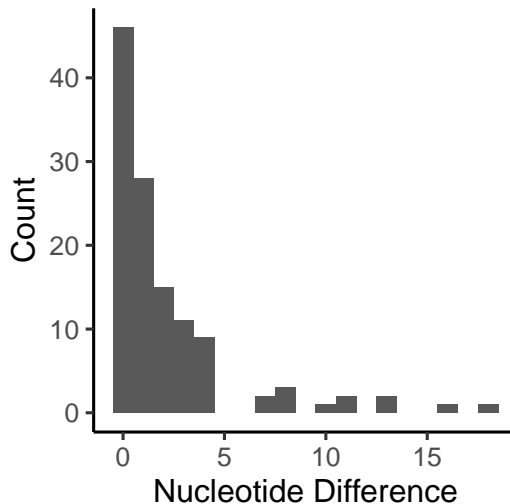
IGHV1-8*01

127 sequences assigned
46 (36.2%) exact matches, in which:
41 unique CDR3
6 unique J



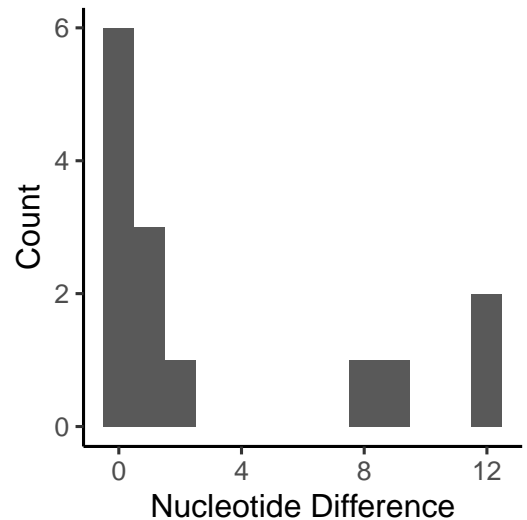
IGHV1-24*01

121 sequences assigned
46 (38%) exact matches, in which:
45 unique CDR3
5 unique J



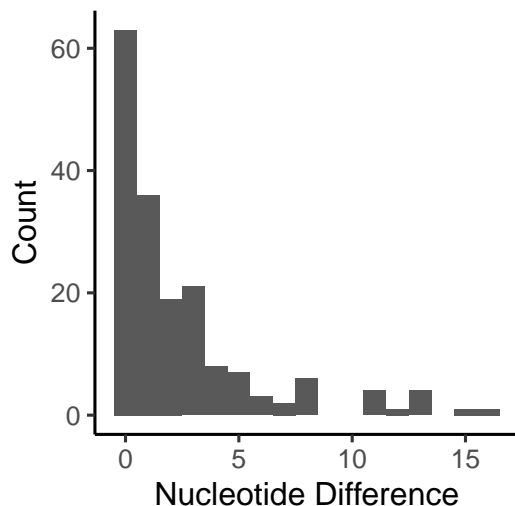
IGHV1-58*02

14 sequences assigned
6 (42.9%) exact matches, in which:
6 unique CDR3
3 unique J



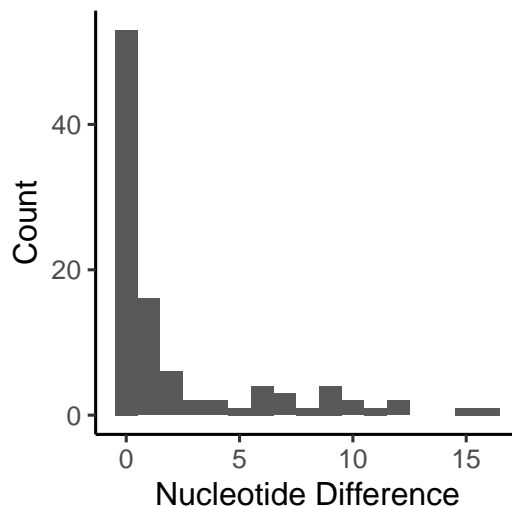
IGHV1-69*04

182 sequences assigned
63 (34.6%) exact matches, in which:
62 unique CDR3
5 unique J



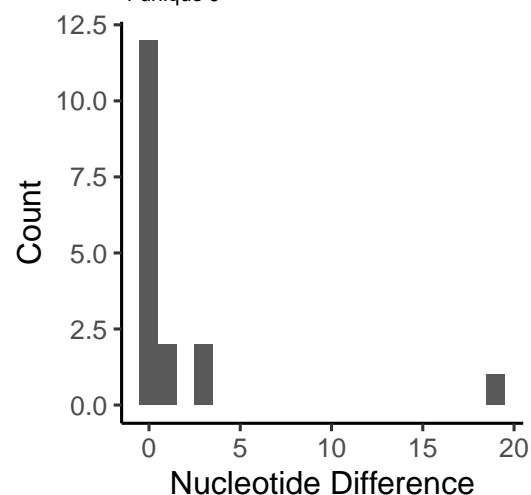
IGHV2-5*01

103 sequences assigned
53 (51.5%) exact matches, in which:
52 unique CDR3
5 unique J



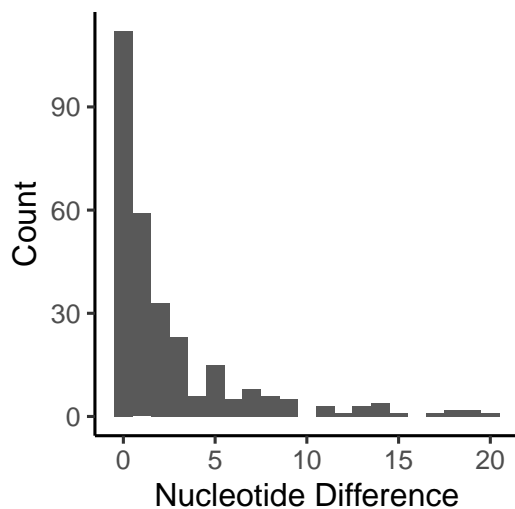
IGHV2-70*01

17 sequences assigned
12 (70.6%) exact matches, in which:
12 unique CDR3
4 unique J



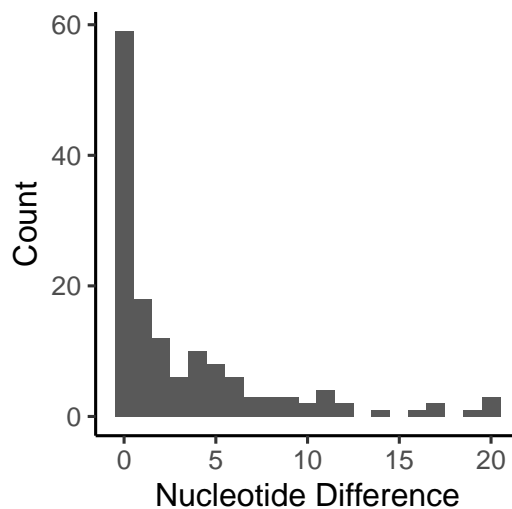
IGHV1-69*01_G54A

302 sequences assigned
112 (37.1%) exact matches, in which:
109 unique CDR3
5 unique J



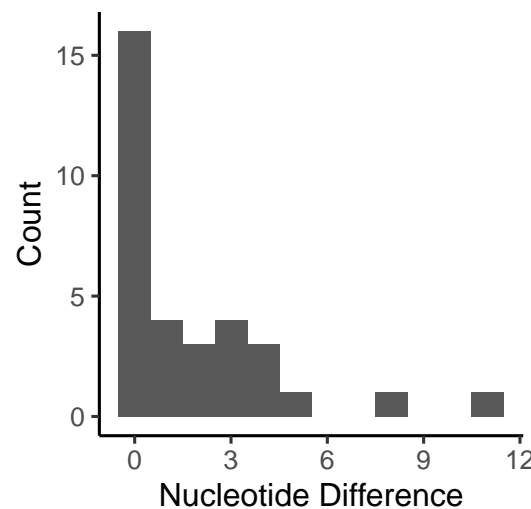
IGHV2-5*02

149 sequences assigned
59 (39.6%) exact matches, in which:
57 unique CDR3
5 unique J



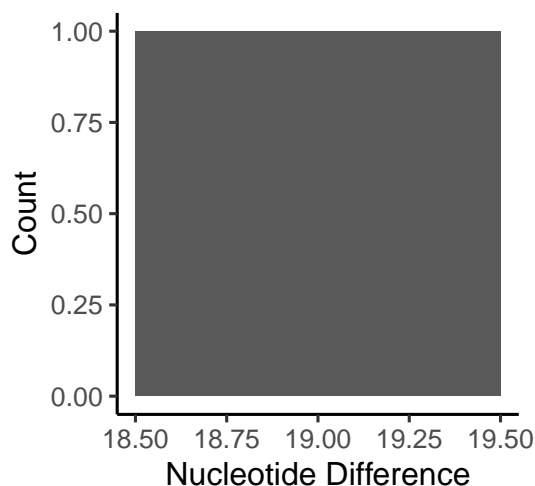
IGHV2-70*15

33 sequences assigned
16 (48.5%) exact matches, in which:
16 unique CDR3
4 unique J



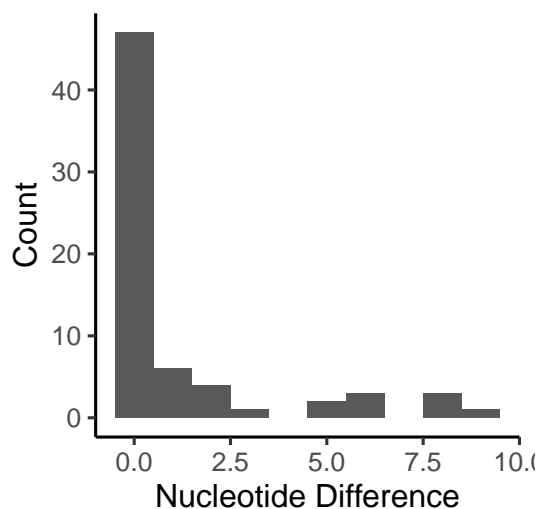
IGHV1-NL1*01

1 sequences assigned
No exact matches.



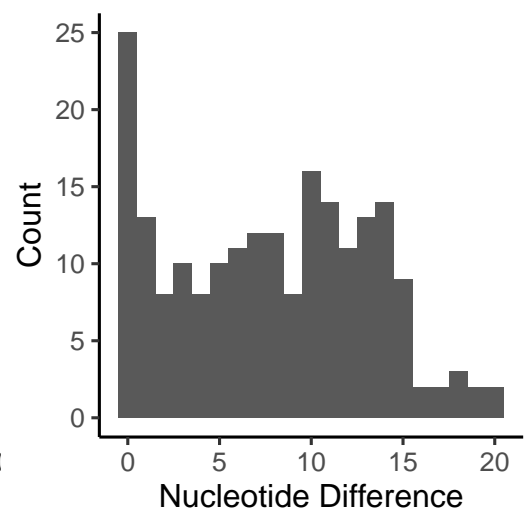
IGHV2-26*01

67 sequences assigned
47 (70.1%) exact matches, in which:
45 unique CDR3
5 unique J



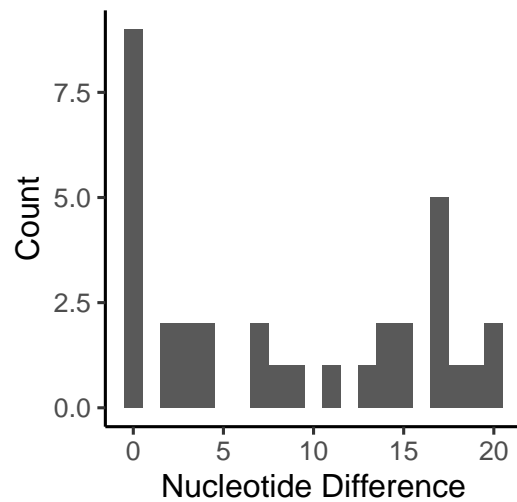
IGHV3-7*01

218 sequences assigned
25 (11.5%) exact matches, in which:
24 unique CDR3
5 unique J



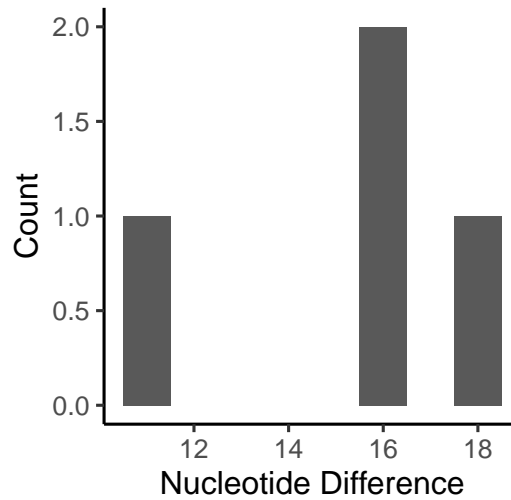
IGHV3-7*05

42 sequences assigned
9 (21.4%) exact matches, in which:
8 unique CDR3
3 unique J



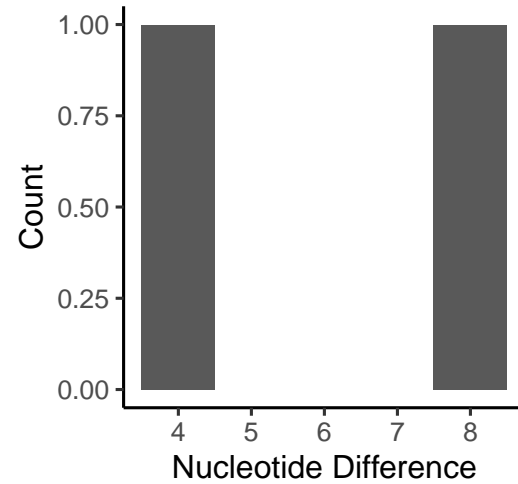
IGHV3-11*04

5 sequences assigned
No exact matches.



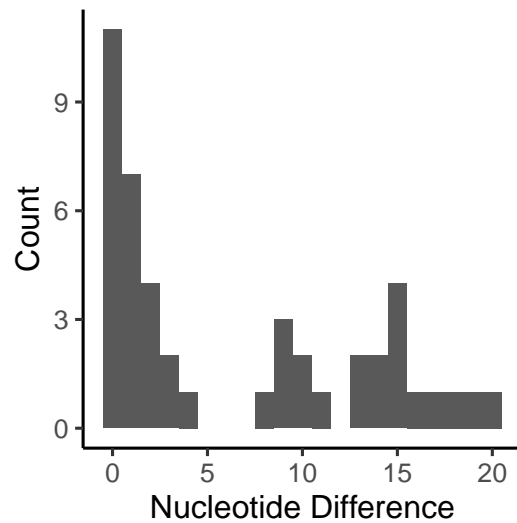
IGHV3-13*05

2 sequences assigned
No exact matches.



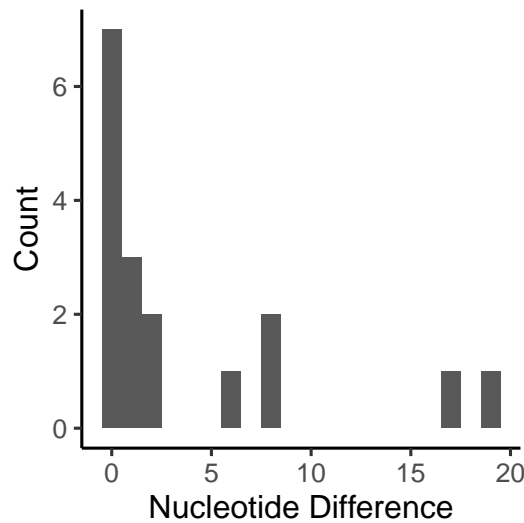
IGHV3-9*01

50 sequences assigned
11 (22%) exact matches, in which:
11 unique CDR3
4 unique J



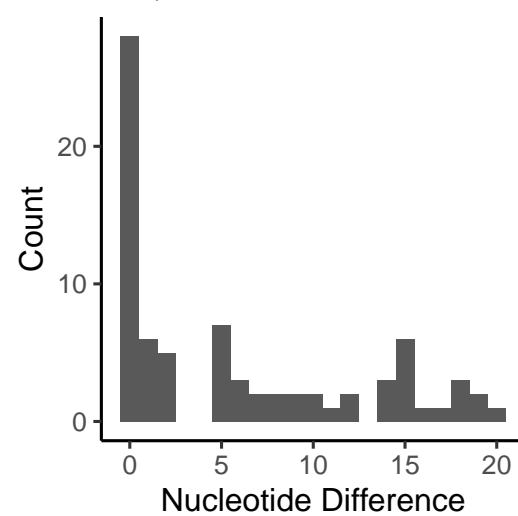
IGHV3-11*06

17 sequences assigned
7 (41.2%) exact matches, in which:
7 unique CDR3
4 unique J



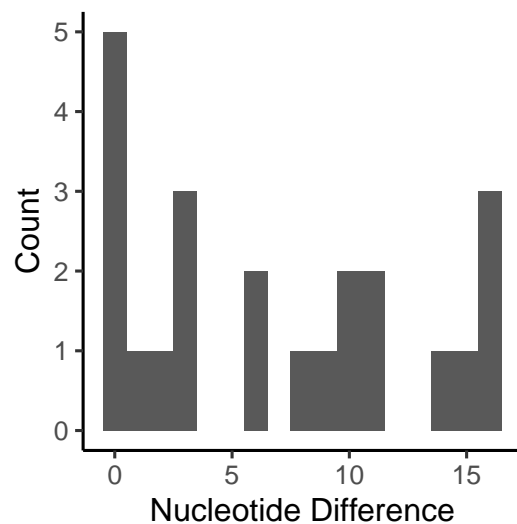
IGHV3-15*01

96 sequences assigned
28 (29.2%) exact matches, in which:
26 unique CDR3
5 unique J



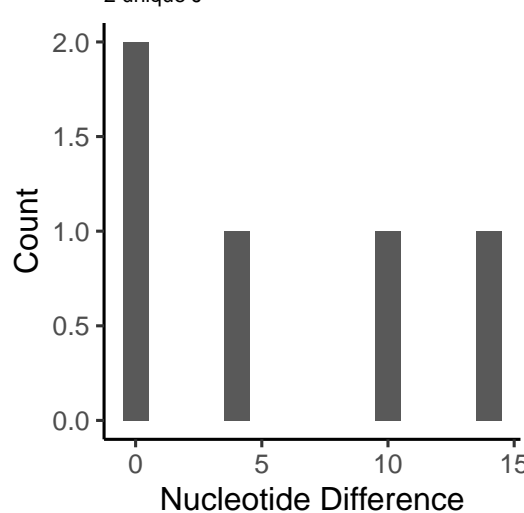
IGHV3-11*01

24 sequences assigned
5 (20.8%) exact matches, in which:
5 unique CDR3
3 unique J



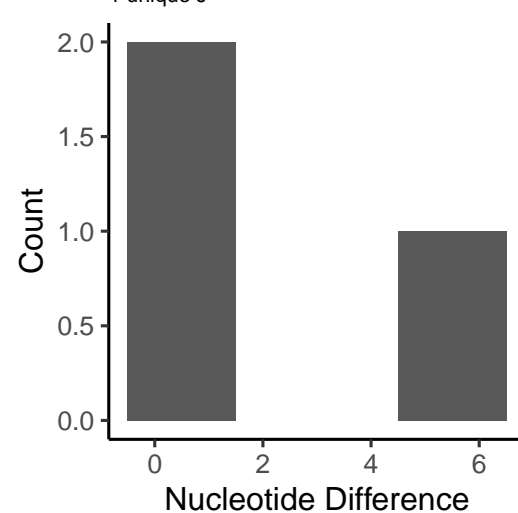
IGHV3-13*01

6 sequences assigned
2 (33.3%) exact matches, in which:
2 unique CDR3
2 unique J



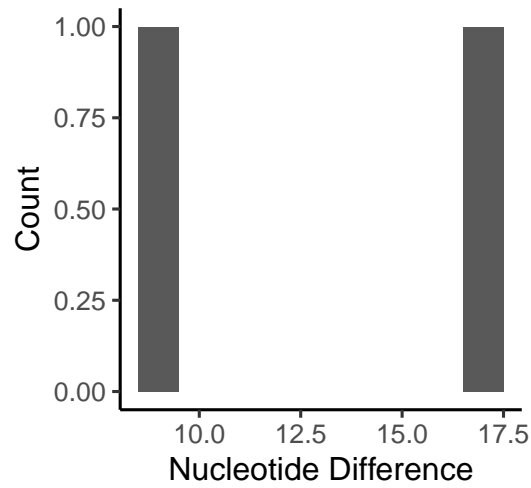
IGHV3-20*01

6 sequences assigned
2 (33.3%) exact matches, in which:
2 unique CDR3
1 unique J



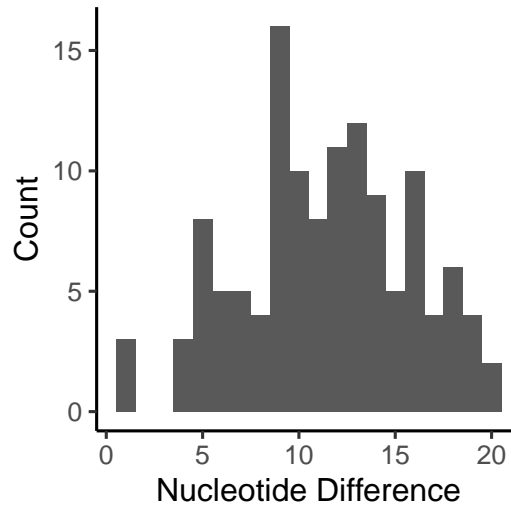
IGHV3-20*04

3 sequences assigned
No exact matches.



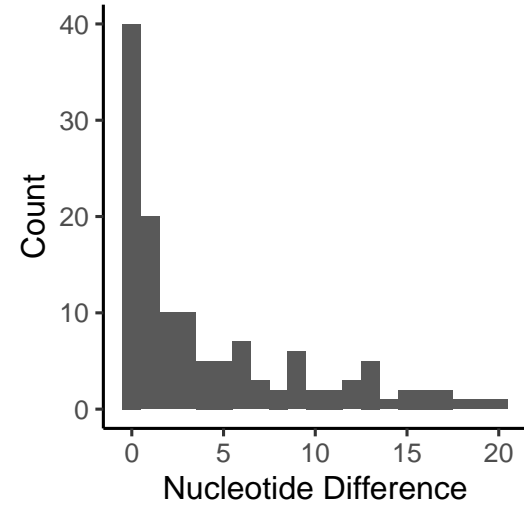
IGHV3-23*04

135 sequences assigned
No exact matches.



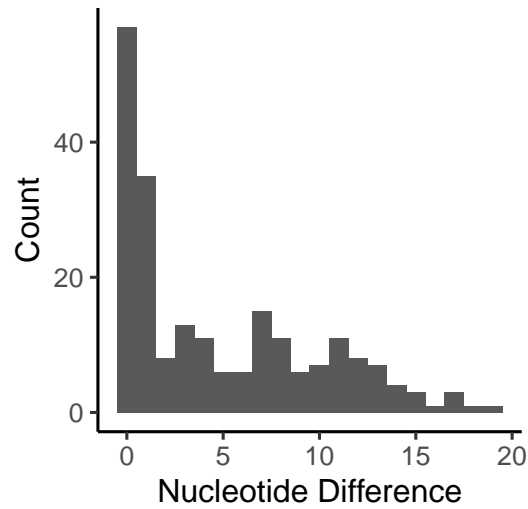
IGHV3-30*04

134 sequences assigned
40 (29.9%) exact matches, in which:
40 unique CDR3
5 unique J



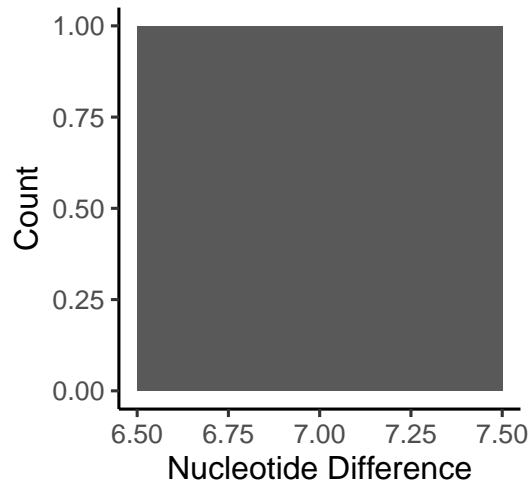
IGHV3-21*01

218 sequences assigned
57 (26.1%) exact matches, in which:
56 unique CDR3
4 unique J



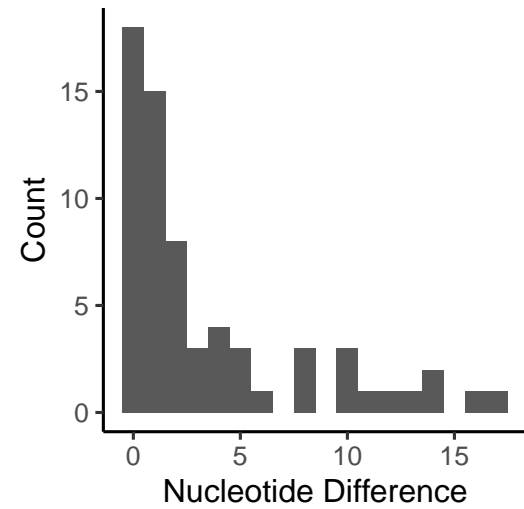
IGHV3-30-3*01

4 sequences assigned
No exact matches.



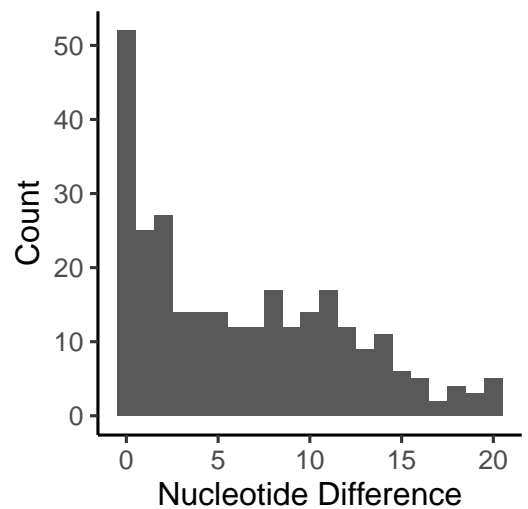
IGHV3-30*18

67 sequences assigned
18 (26.9%) exact matches, in which:
18 unique CDR3
4 unique J



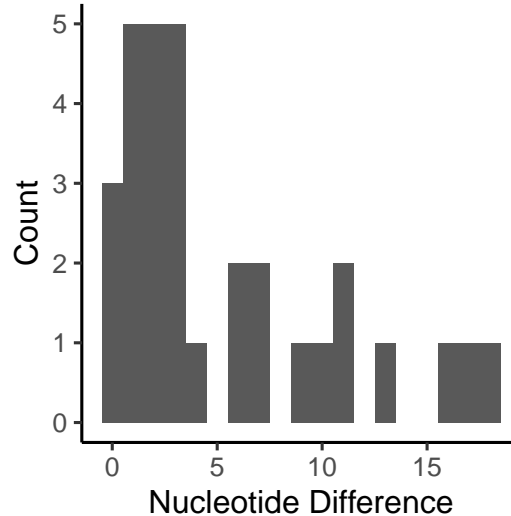
IGHV3-23*01

302 sequences assigned
52 (17.2%) exact matches, in which:
52 unique CDR3
5 unique J



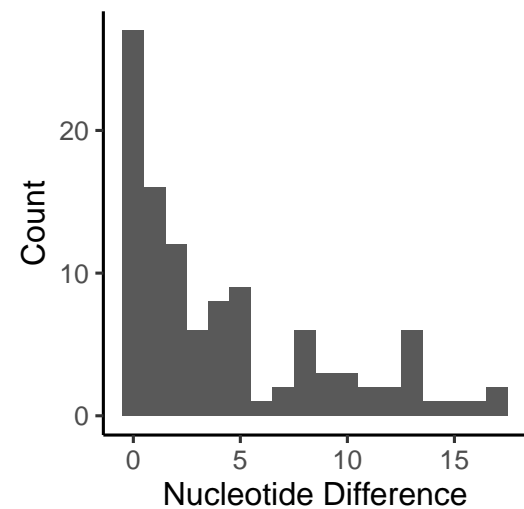
IGHV3-30*03

33 sequences assigned
3 (9.1%) exact matches, in which:
3 unique CDR3
1 unique J



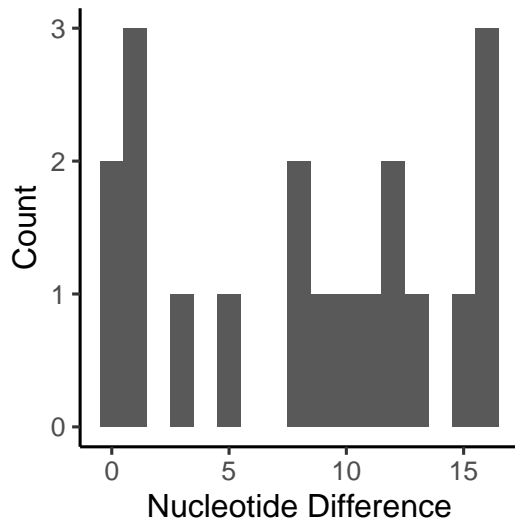
IGHV3-33*01

110 sequences assigned
27 (24.5%) exact matches, in which:
26 unique CDR3
5 unique J



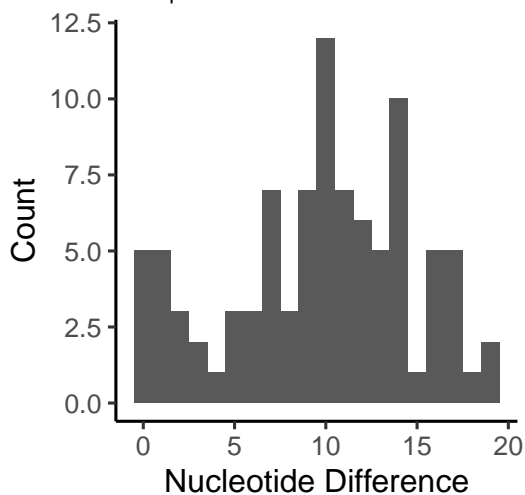
IGHV3–33*05

19 sequences assigned
2 (10.5%) exact matches, in which:
2 unique CDR3
1 unique J



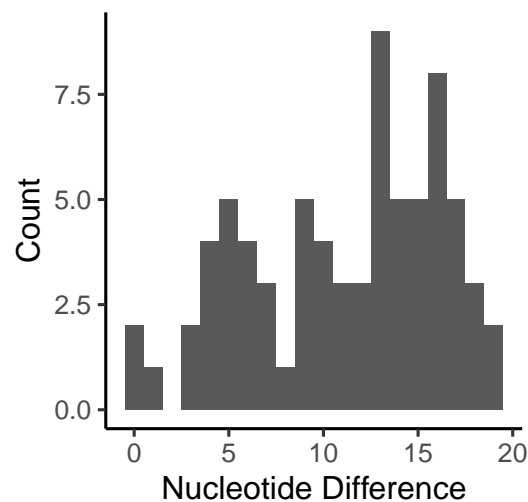
IGHV3–48*01

105 sequences assigned
5 (4.8%) exact matches, in which:
5 unique CDR3
2 unique J



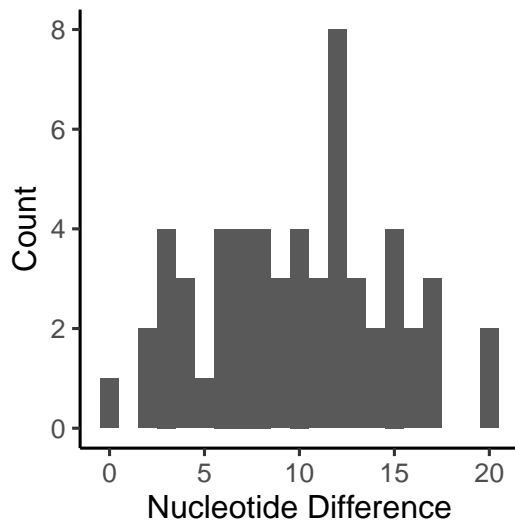
IGHV3–48*04

82 sequences assigned
2 (2.4%) exact matches, in which:
2 unique CDR3
2 unique J



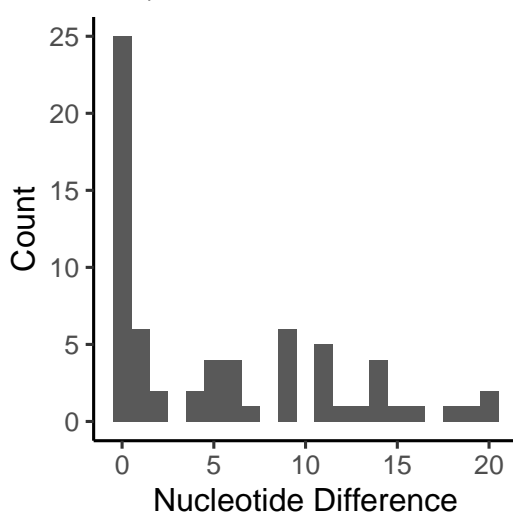
IGHV3–33*08

59 sequences assigned
1 (1.7%) exact matches, in which:
1 unique CDR3
1 unique J



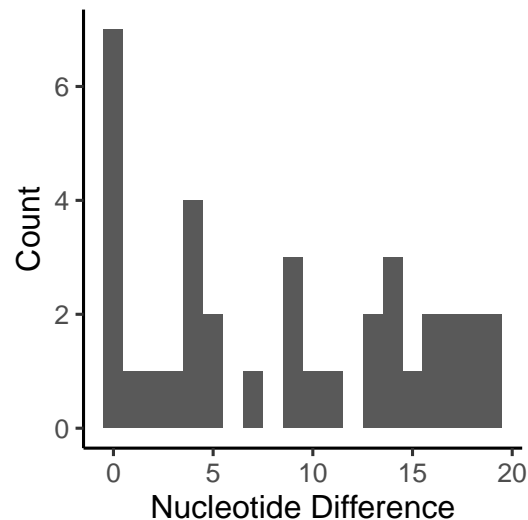
IGHV3–48*02

70 sequences assigned
25 (35.7%) exact matches, in which:
25 unique CDR3
5 unique J



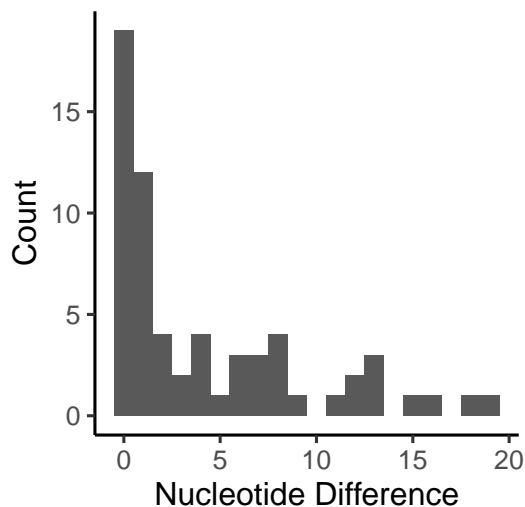
IGHV3–49*04

44 sequences assigned
7 (15.9%) exact matches, in which:
7 unique CDR3
4 unique J



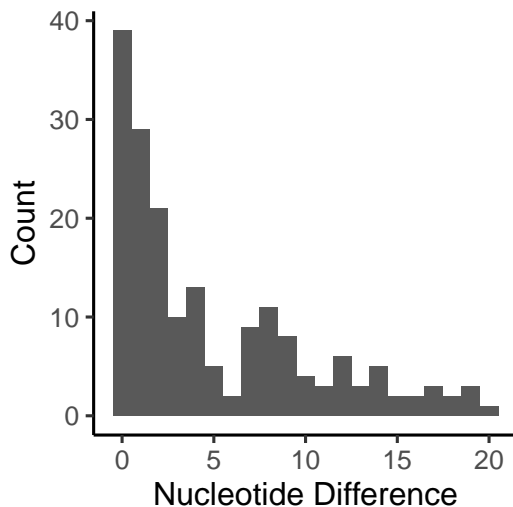
IGHV3–43*02

65 sequences assigned
19 (29.2%) exact matches, in which:
19 unique CDR3
4 unique J



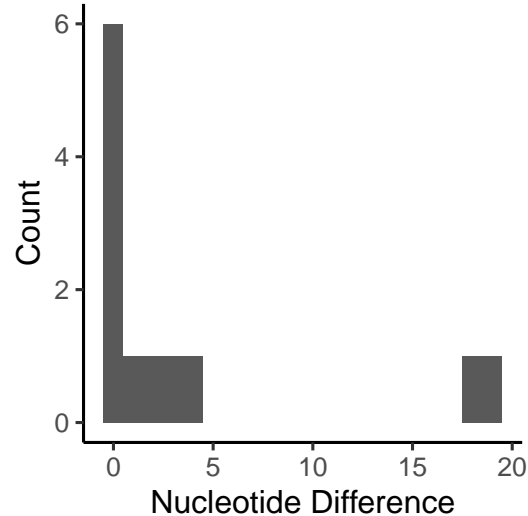
IGHV3–48*03

190 sequences assigned
39 (20.5%) exact matches, in which:
37 unique CDR3
5 unique J



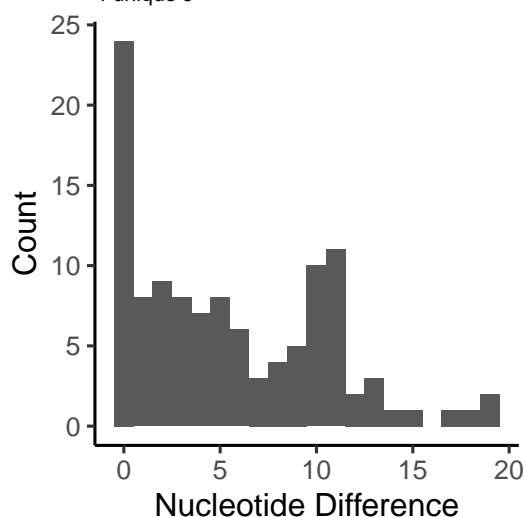
IGHV3–49*05

15 sequences assigned
6 (40%) exact matches, in which:
6 unique CDR3
4 unique J



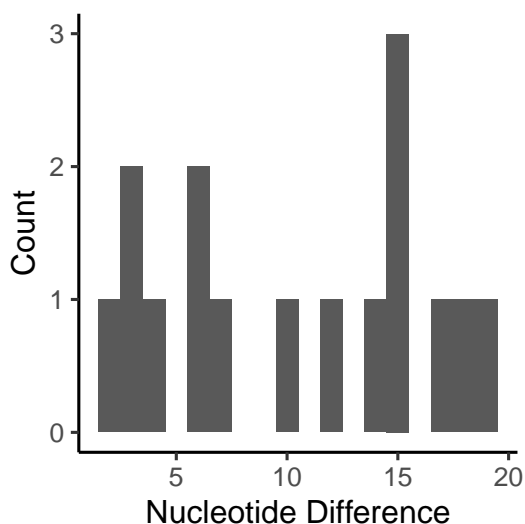
IGHV3-53*01

119 sequences assigned
24 (20.2%) exact matches, in which:
22 unique CDR3
4 unique J



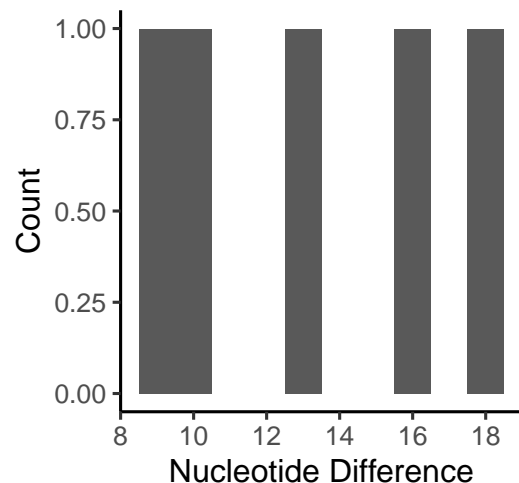
IGHV3-64*04

17 sequences assigned
No exact matches.



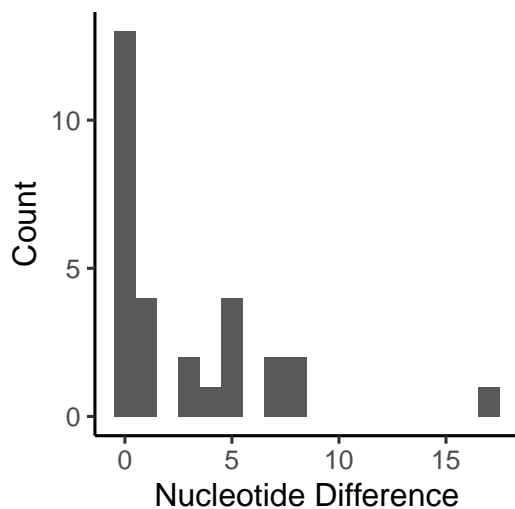
IGHV3-69-1*01

7 sequences assigned
No exact matches.



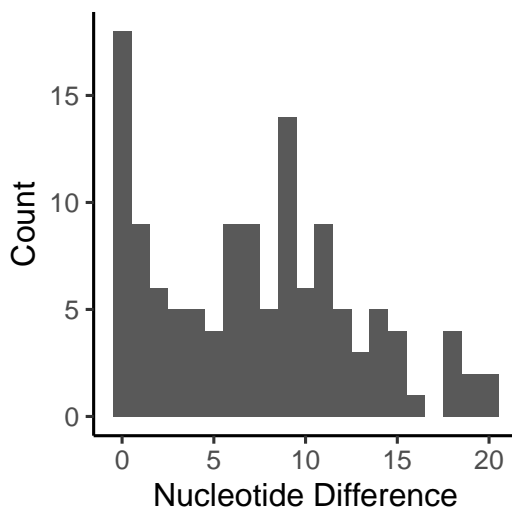
IGHV3-53*04

29 sequences assigned
13 (44.8%) exact matches, in which:
13 unique CDR3
4 unique J



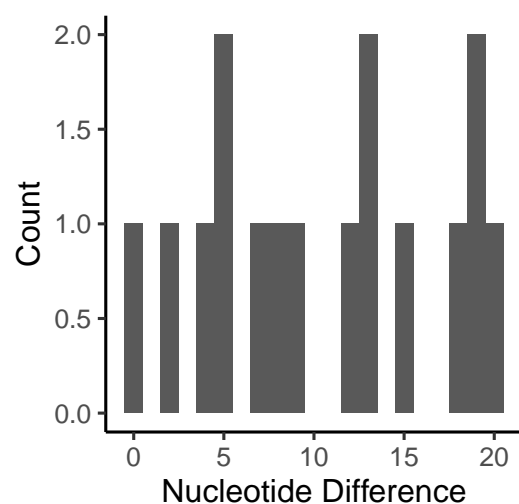
IGHV3-66*01

135 sequences assigned
18 (13.3%) exact matches, in which:
16 unique CDR3
4 unique J



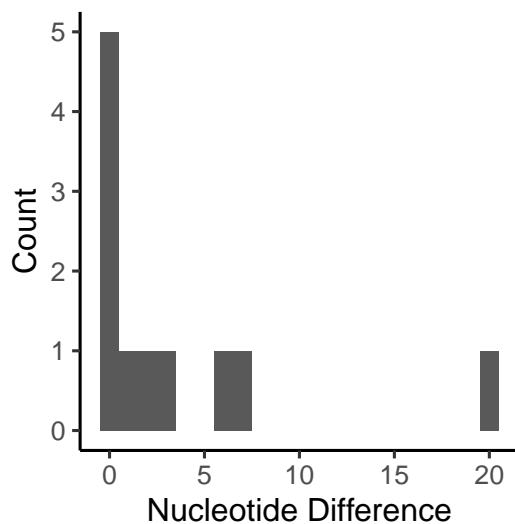
IGHV3-72*01

18 sequences assigned
1 (5.6%) exact matches, in which:
1 unique CDR3
1 unique J



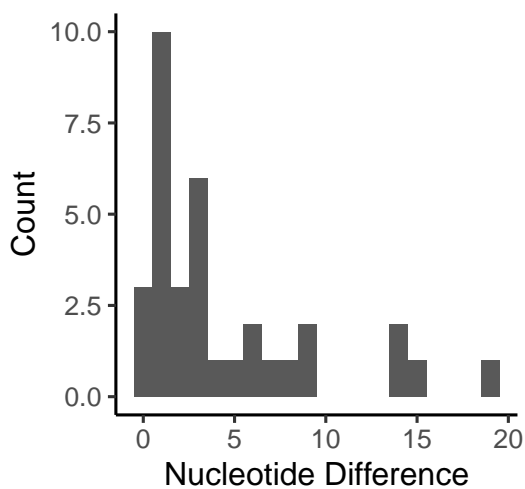
IGHV3-64*01

12 sequences assigned
5 (41.7%) exact matches, in which:
5 unique CDR3
3 unique J



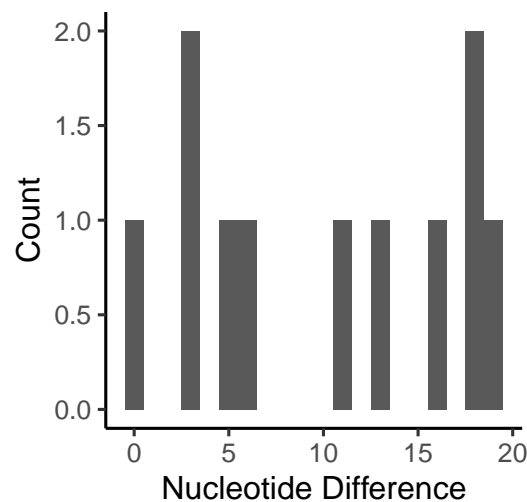
IGHV3-66*03

35 sequences assigned
3 (8.6%) exact matches, in which:
3 unique CDR3
2 unique J



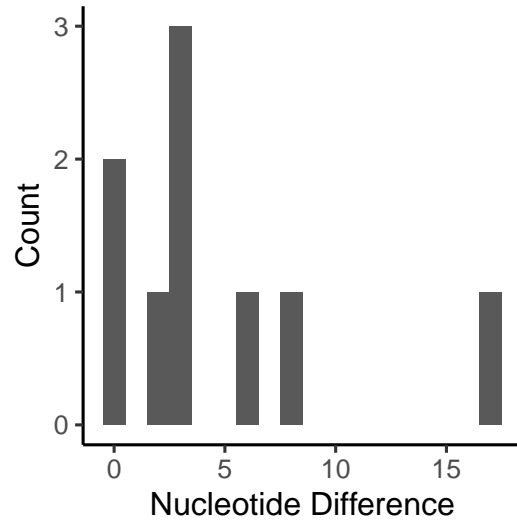
IGHV3-73*01

15 sequences assigned
1 (6.7%) exact matches, in which:
1 unique CDR3
1 unique J



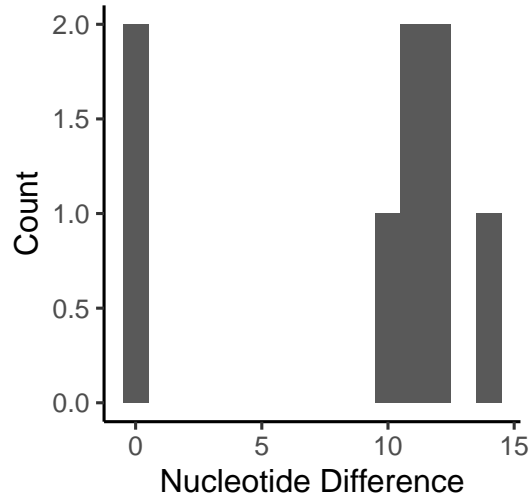
IGHV3-73*02

10 sequences assigned
2 (20%) exact matches, in which:
2 unique CDR3
2 unique J



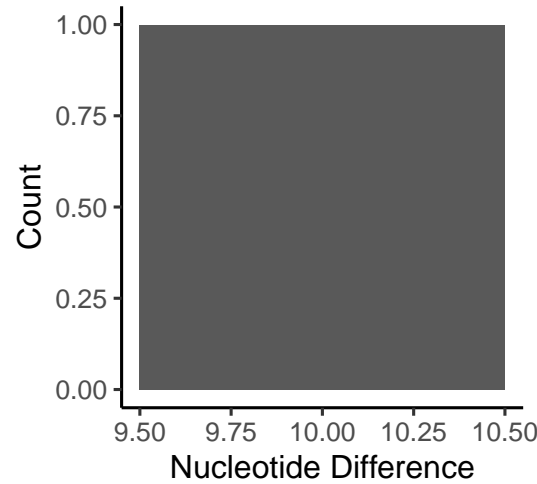
IGHV3-64D*09

10 sequences assigned
2 (20%) exact matches, in which:
2 unique CDR3
1 unique J



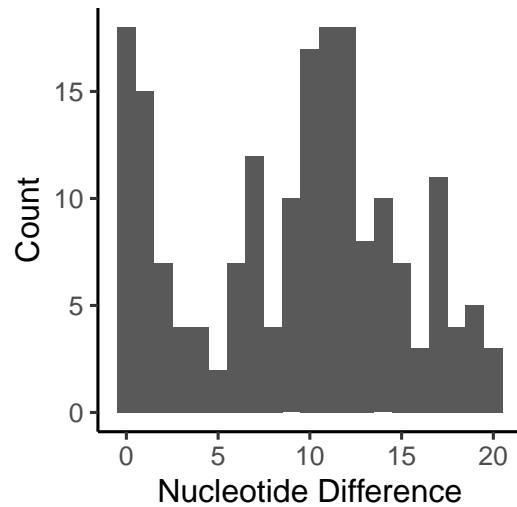
IGHV4-30-4*07

1 sequences assigned
No exact matches.



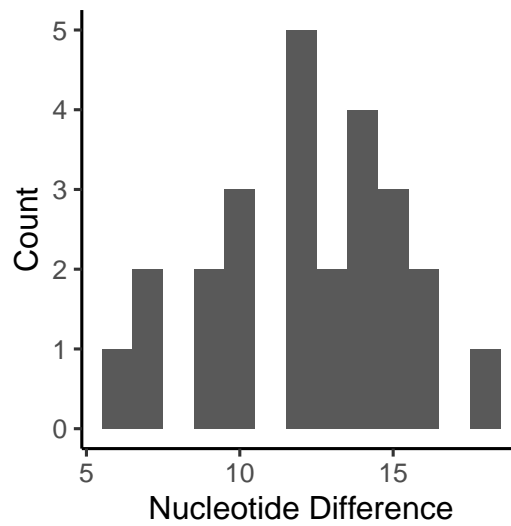
IGHV3-74*01

200 sequences assigned
18 (9%) exact matches, in which:
18 unique CDR3
5 unique J



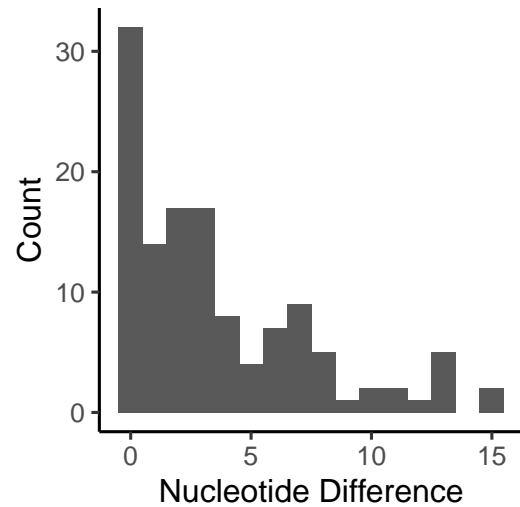
IGHV3-NL1*01

28 sequences assigned
No exact matches.



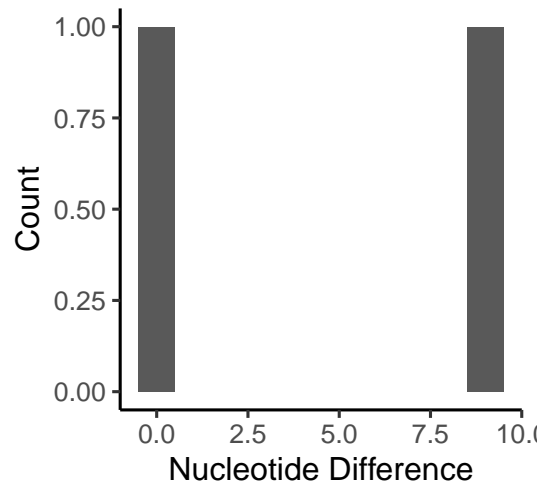
IGHV4-31*03

132 sequences assigned
32 (24.2%) exact matches, in which:
31 unique CDR3
5 unique J



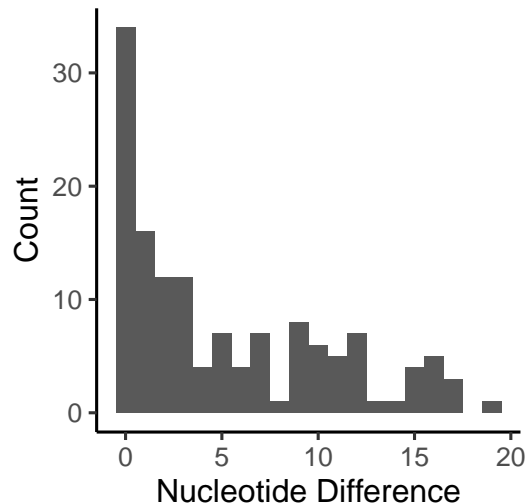
IGHV3-64D*06

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



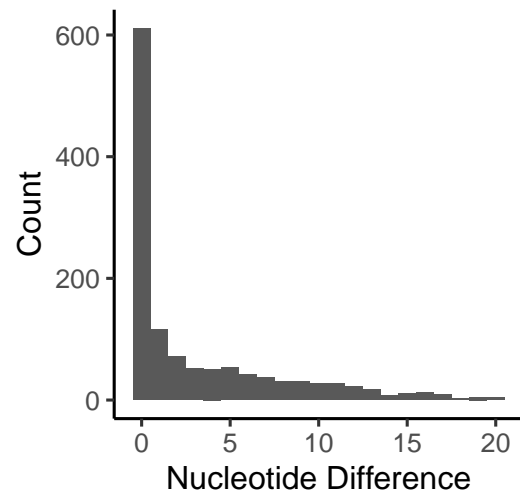
IGHV4-4*07

154 sequences assigned
34 (22.1%) exact matches, in which:
33 unique CDR3
5 unique J



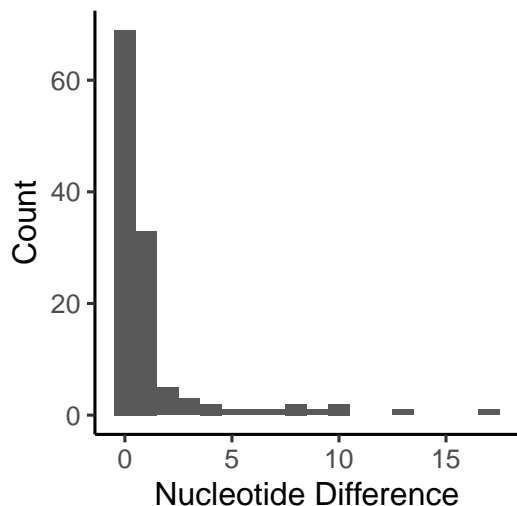
IGHV4-34*01

1285 sequences assigned
611 (47.5%) exact matches, in which:
600 unique CDR3
6 unique J



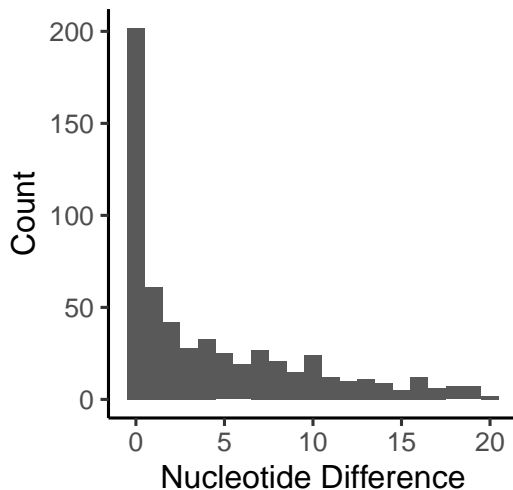
IGHV4-34*01_A220G

128 sequences assigned
69 (53.9%) exact matches, in which:
69 unique CDR3
5 unique J



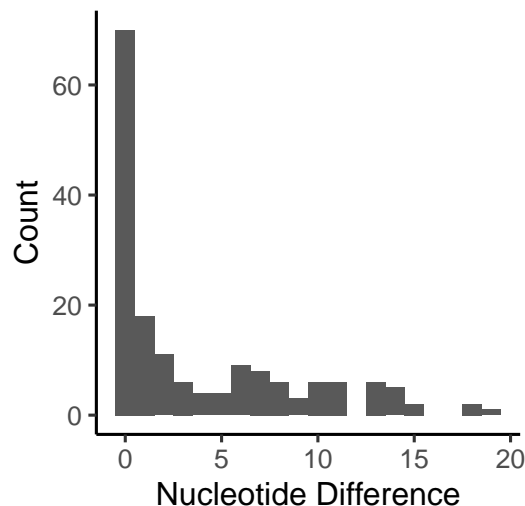
IGHV4-39*01

613 sequences assigned
202 (33%) exact matches, in which:
195 unique CDR3
5 unique J



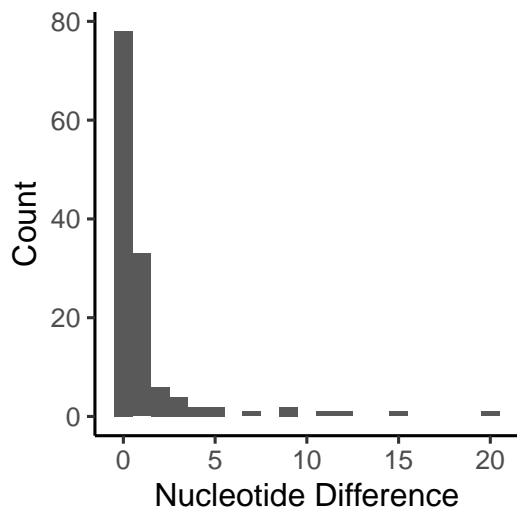
IGHV4-59*01

170 sequences assigned
70 (41.2%) exact matches, in which:
69 unique CDR3
6 unique J



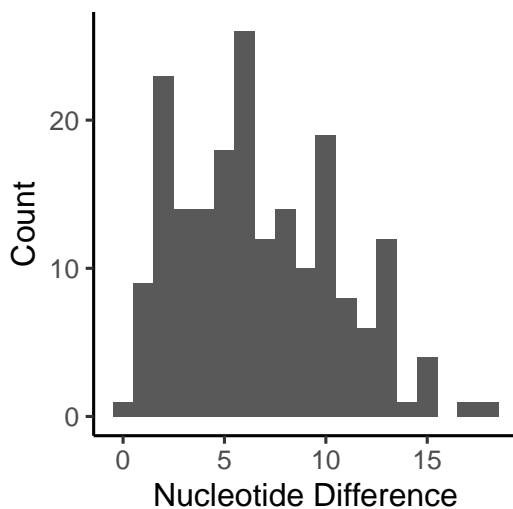
IGHV4-34*01_A220G_A220G

133 sequences assigned
78 (58.6%) exact matches, in which:
78 unique CDR3
6 unique J



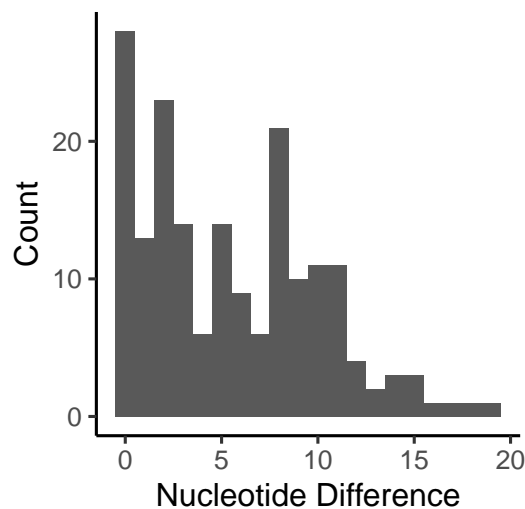
IGHV4-39*07

196 sequences assigned
1 (0.5%) exact matches, in which:
1 unique CDR3
1 unique J



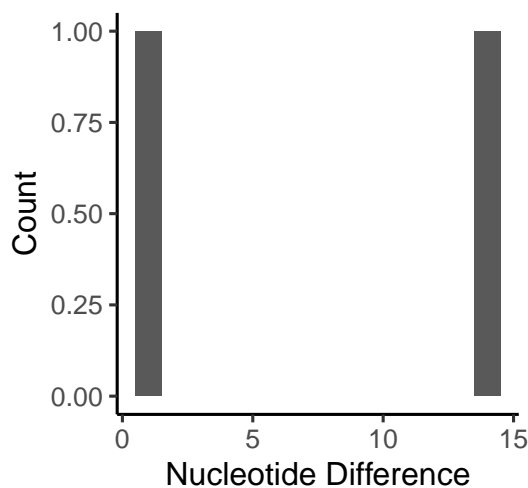
IGHV4-59*08

191 sequences assigned
28 (14.7%) exact matches, in which:
28 unique CDR3
6 unique J



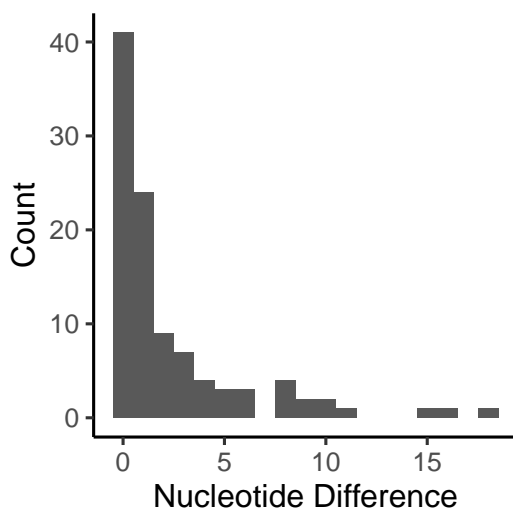
IGHV4-38-2*02

2 sequences assigned
No exact matches.



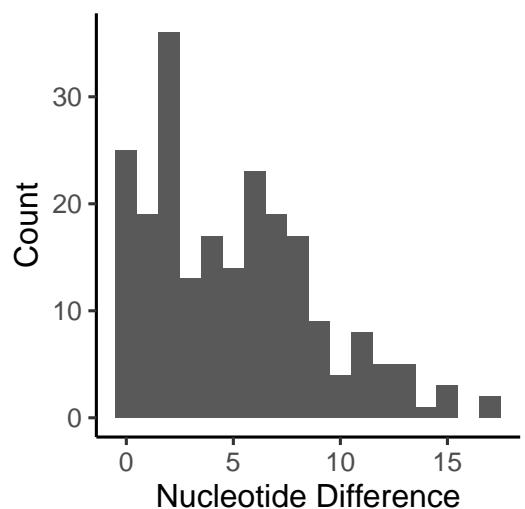
IGHV4-39*01_A220G_A220G

104 sequences assigned
41 (39.4%) exact matches, in which:
41 unique CDR3
5 unique J



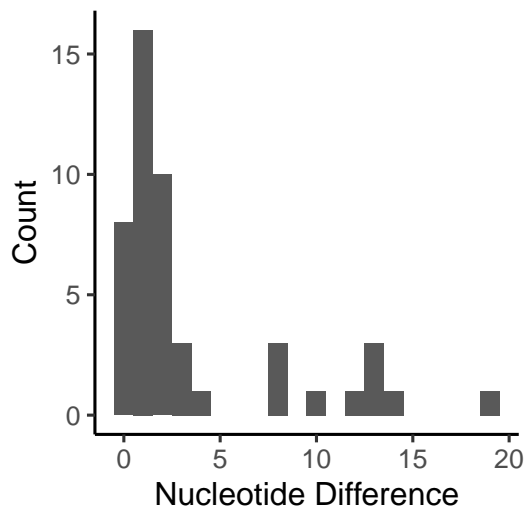
IGHV4-59*12

226 sequences assigned
25 (11.1%) exact matches, in which:
25 unique CDR3
4 unique J



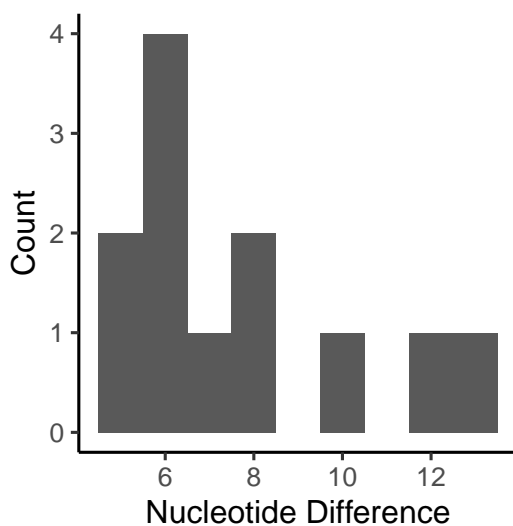
IGHV4-59*01_A220G

48 sequences assigned
8 (16.7%) exact matches, in which:
8 unique CDR3
3 unique J



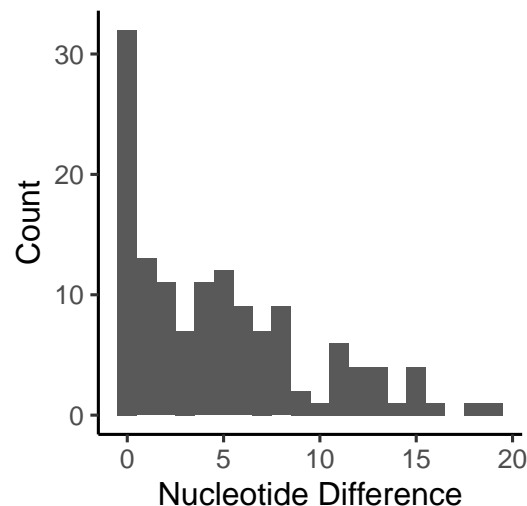
IGHV4-61*08

13 sequences assigned
No exact matches.



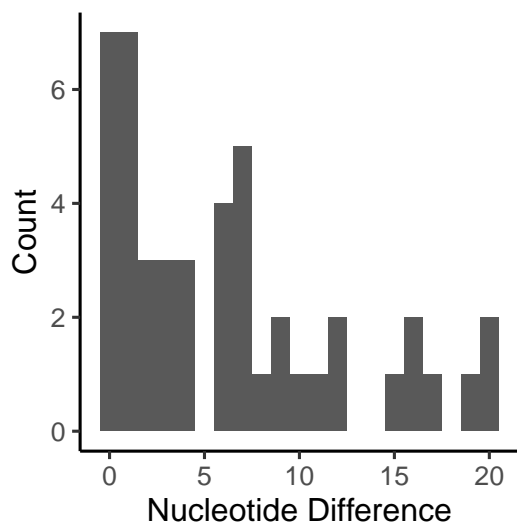
IGHV6-1*01

144 sequences assigned
32 (22.2%) exact matches, in which:
32 unique CDR3
4 unique J



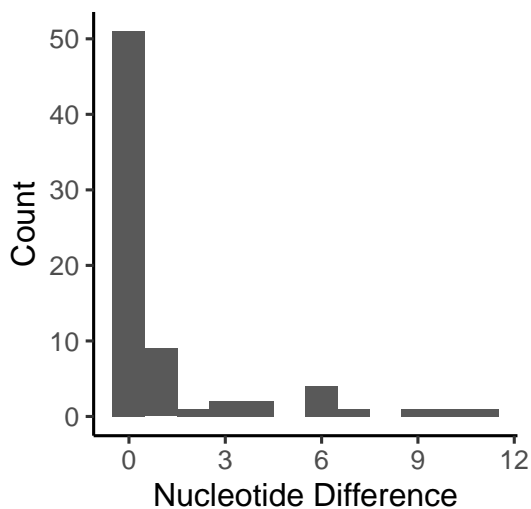
IGHV4-61*01

52 sequences assigned
7 (13.5%) exact matches, in which:
7 unique CDR3
3 unique J



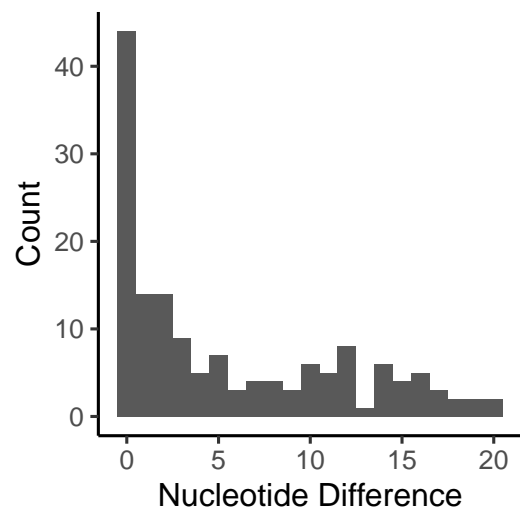
IGHV5-10-1*03

81 sequences assigned
51 (63%) exact matches, in which:
49 unique CDR3
5 unique J



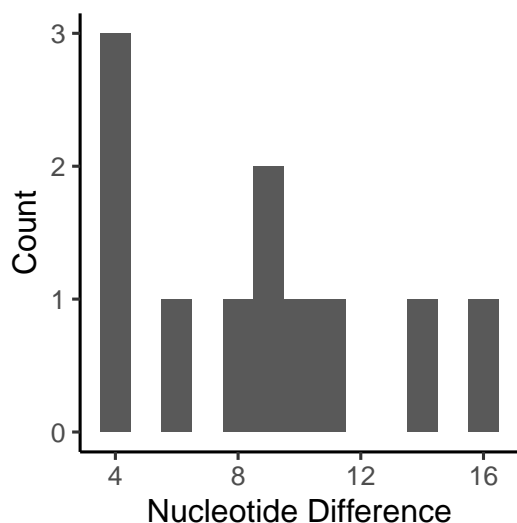
IGHV7-4-1*02

156 sequences assigned
44 (28.2%) exact matches, in which:
44 unique CDR3
4 unique J



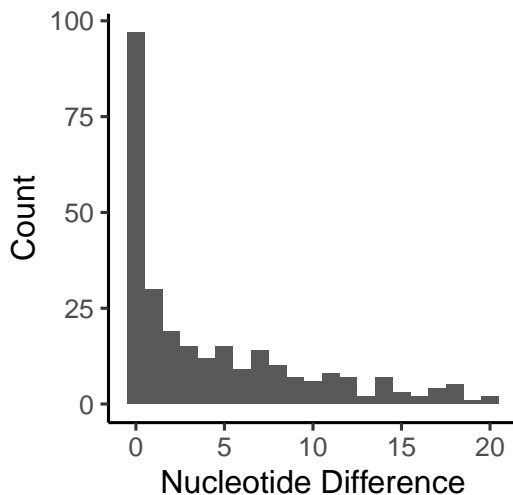
IGHV4-61*05

11 sequences assigned
No exact matches.

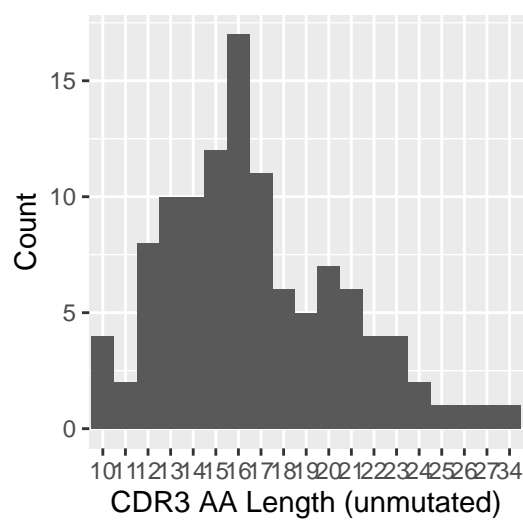


IGHV5-51*01

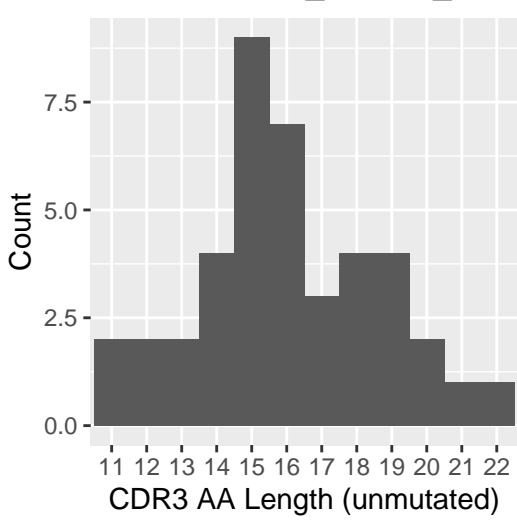
286 sequences assigned
97 (33.9%) exact matches, in which:
97 unique CDR3
6 unique J



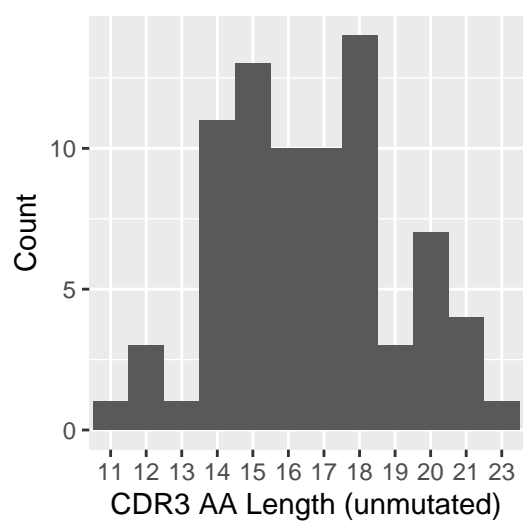
IGHV1-69*01_G54A



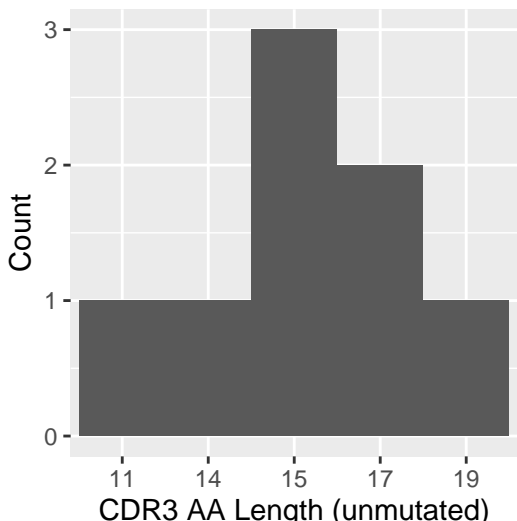
IGHV4-39*01_A220G_A225G



IGHV4-34*01_A220G_A225G



IGHV4-59*01_A220G



IGHV4-34*01_A220G

