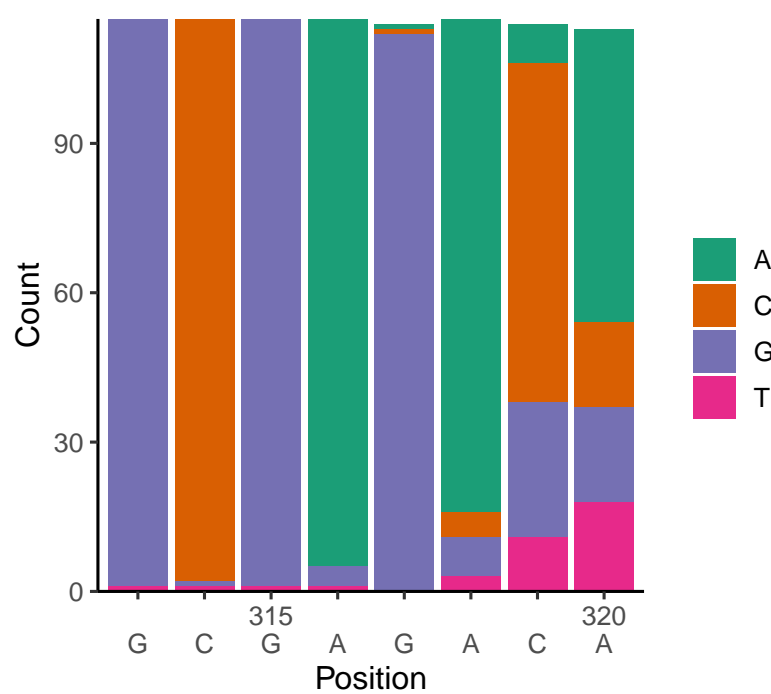
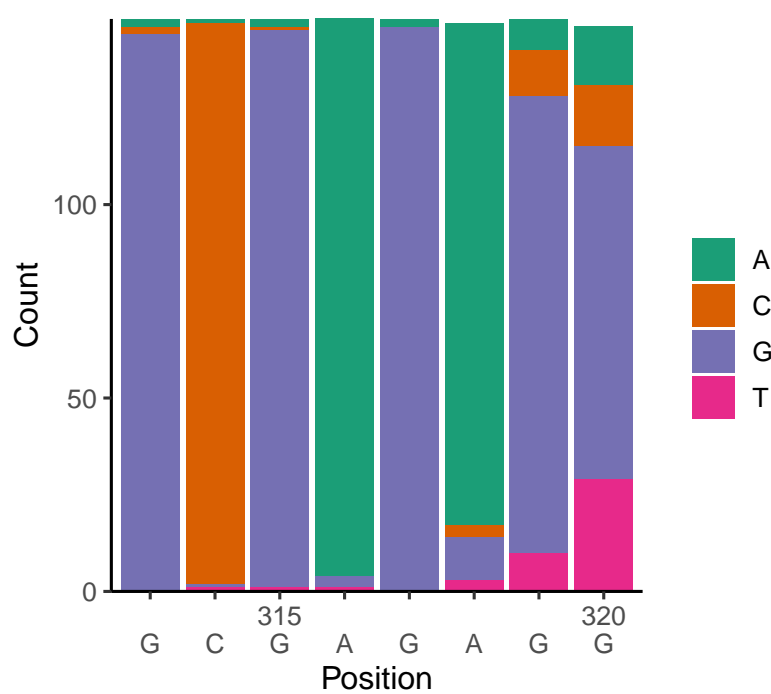


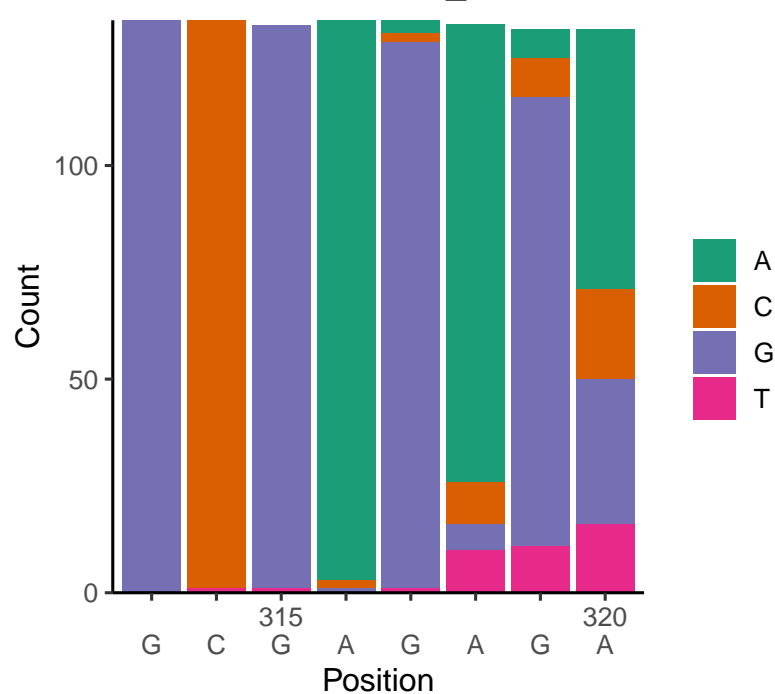
Gene IGHV4-39*01_A220G



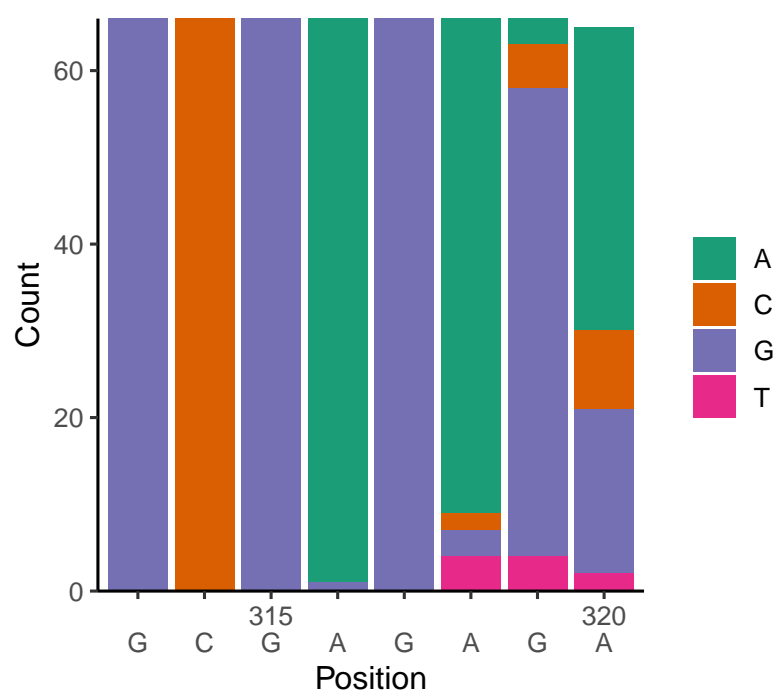
Gene IGHV4-34*01_A220G_A225G



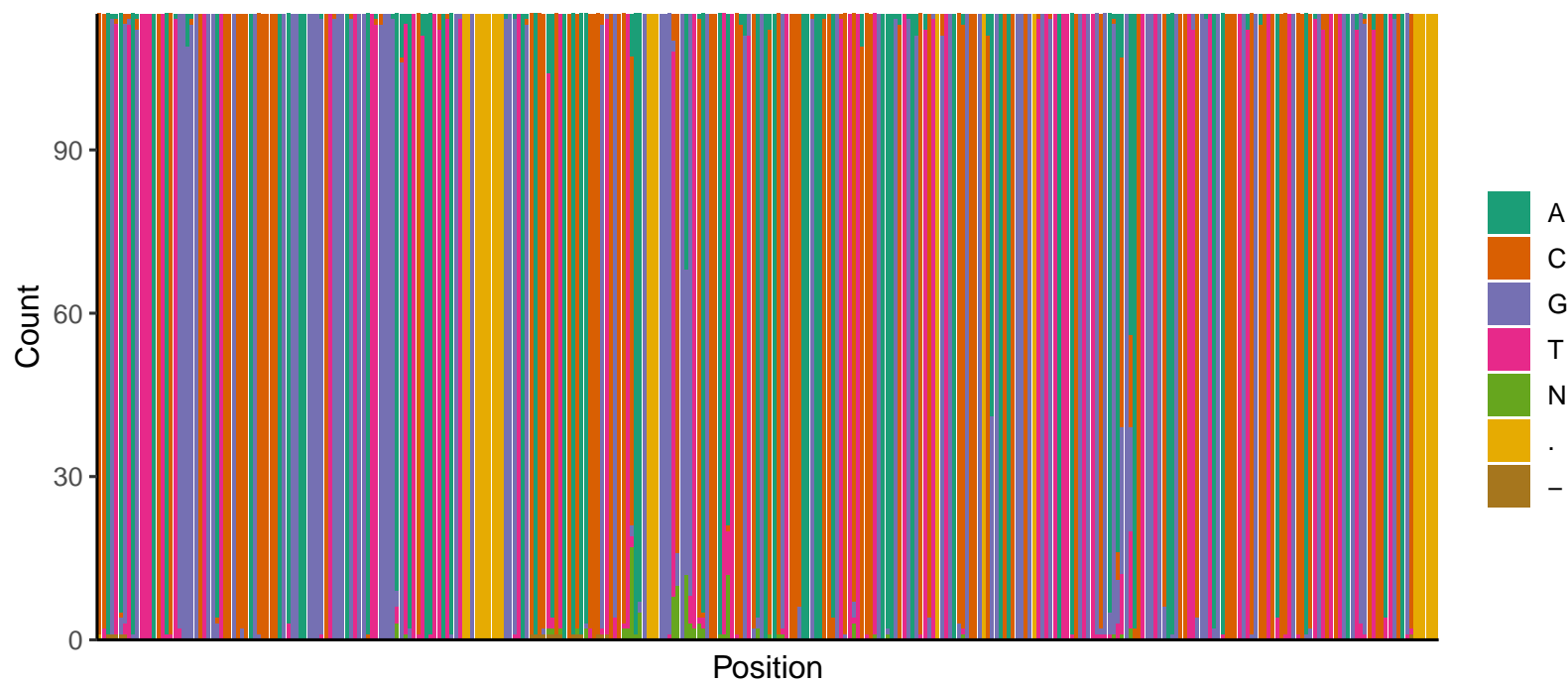
Gene IGHV1-69*01_G54A



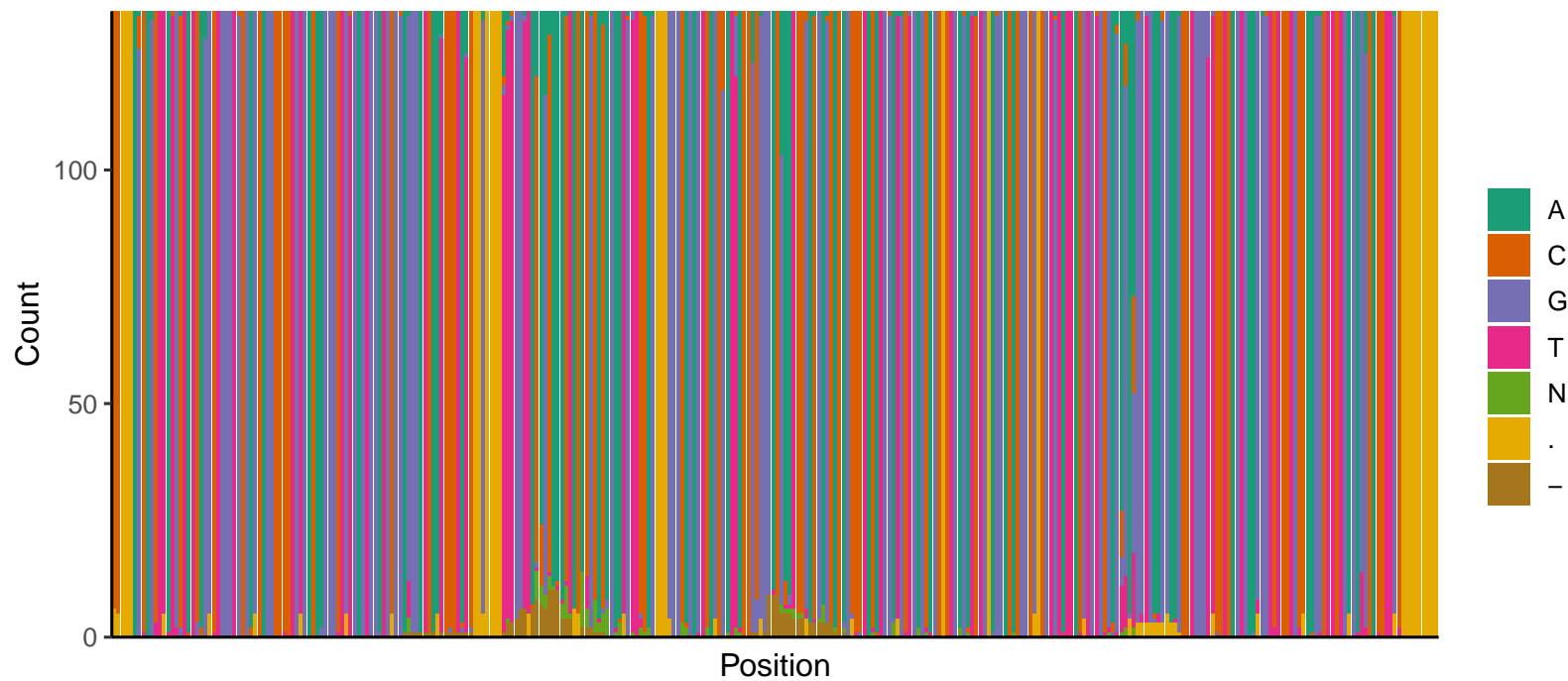
Gene IGHV1-69*01_G54A_A225G



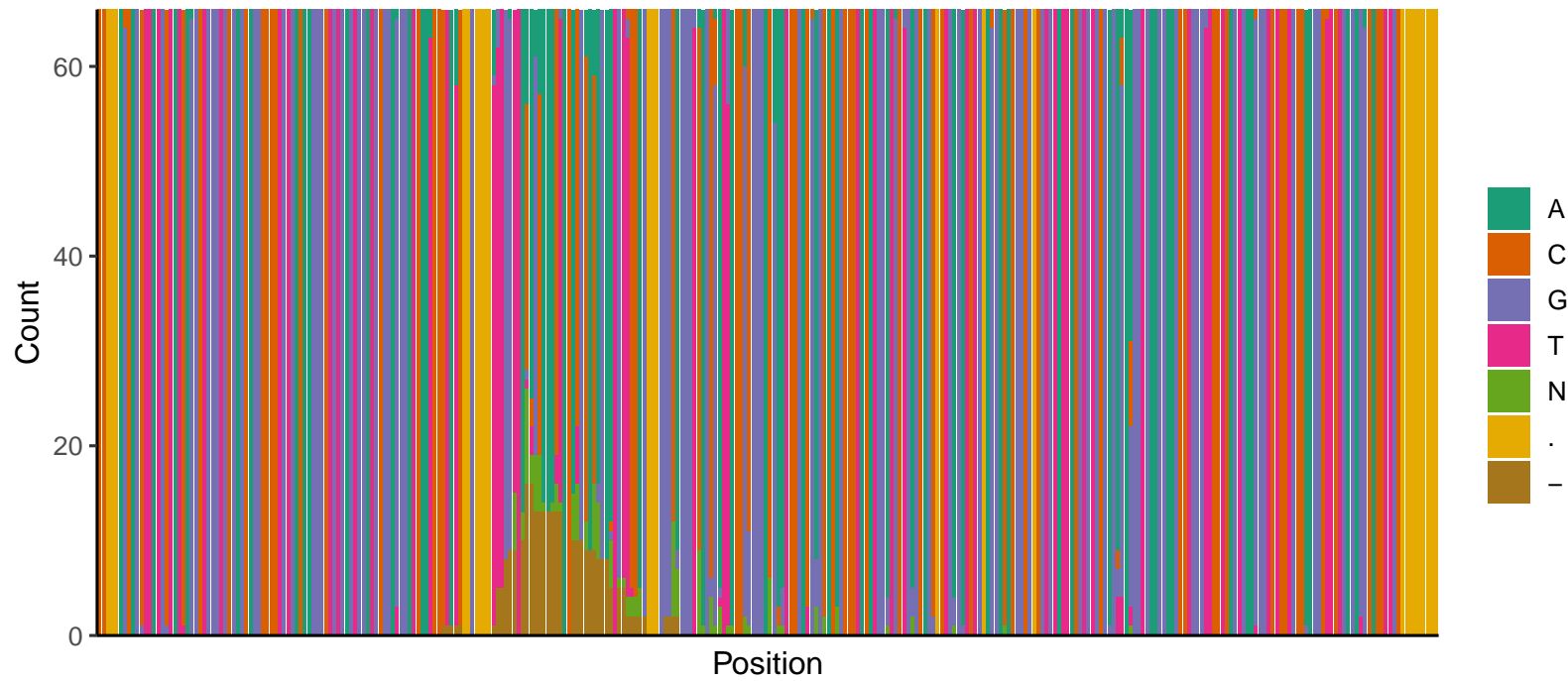
Gene IGHV4-39*01_A220G



Gene IGHV1-69*01_G54A



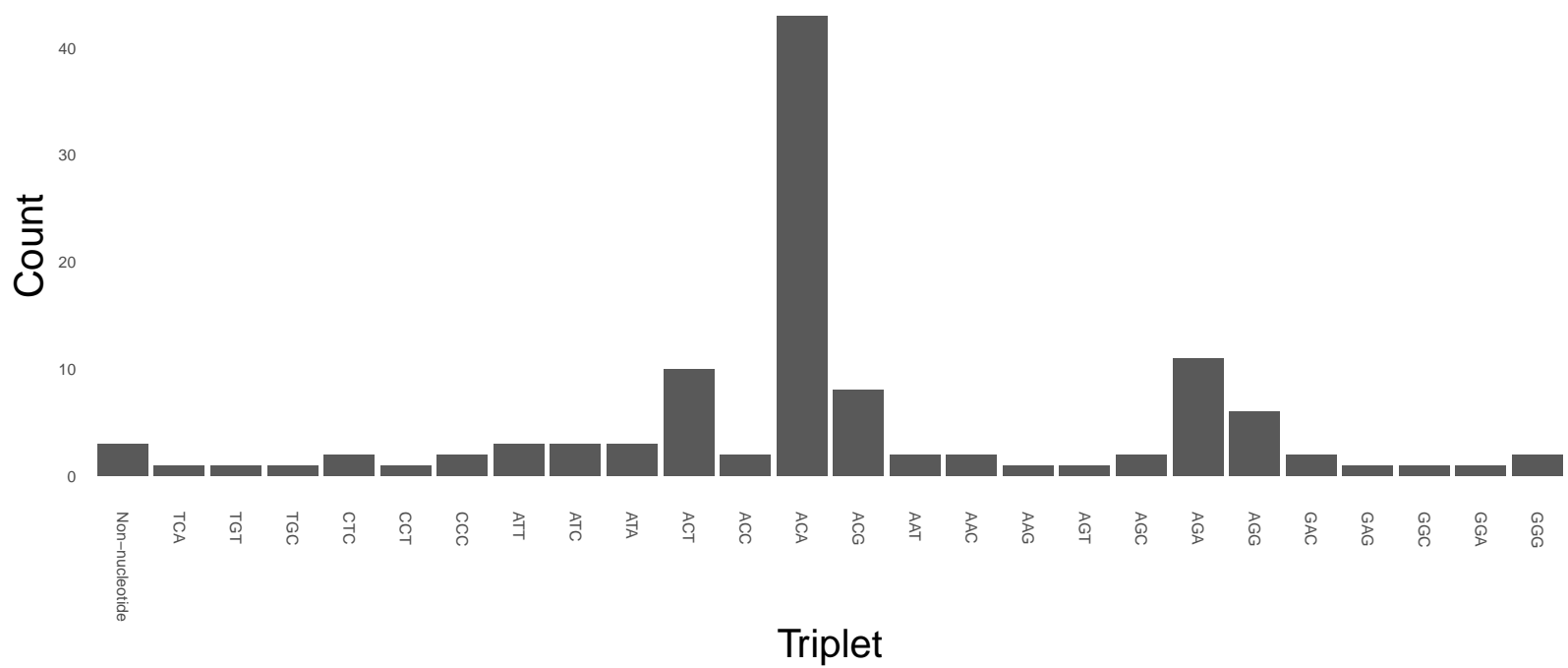
Gene IGHV1-69*01_G54A_A225G



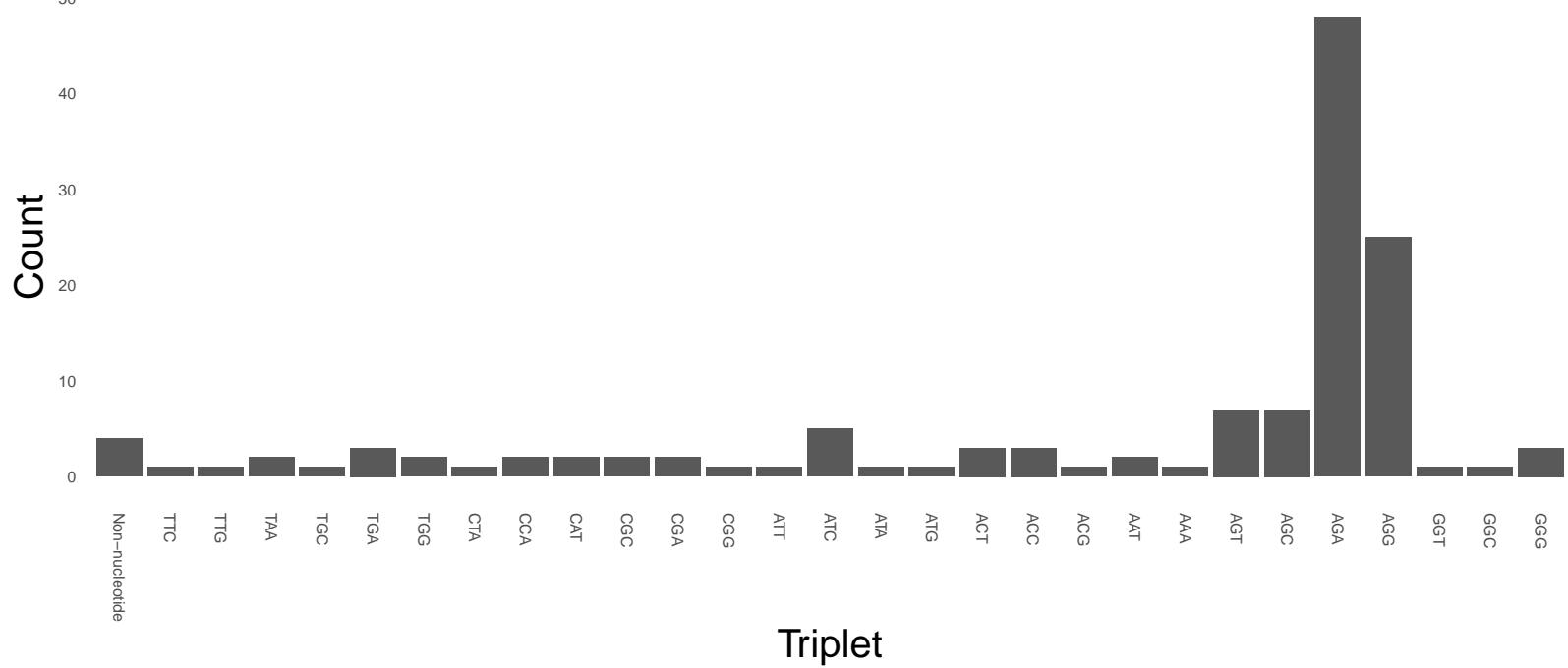
Gene IGHV4-34*01_A220G_A225G



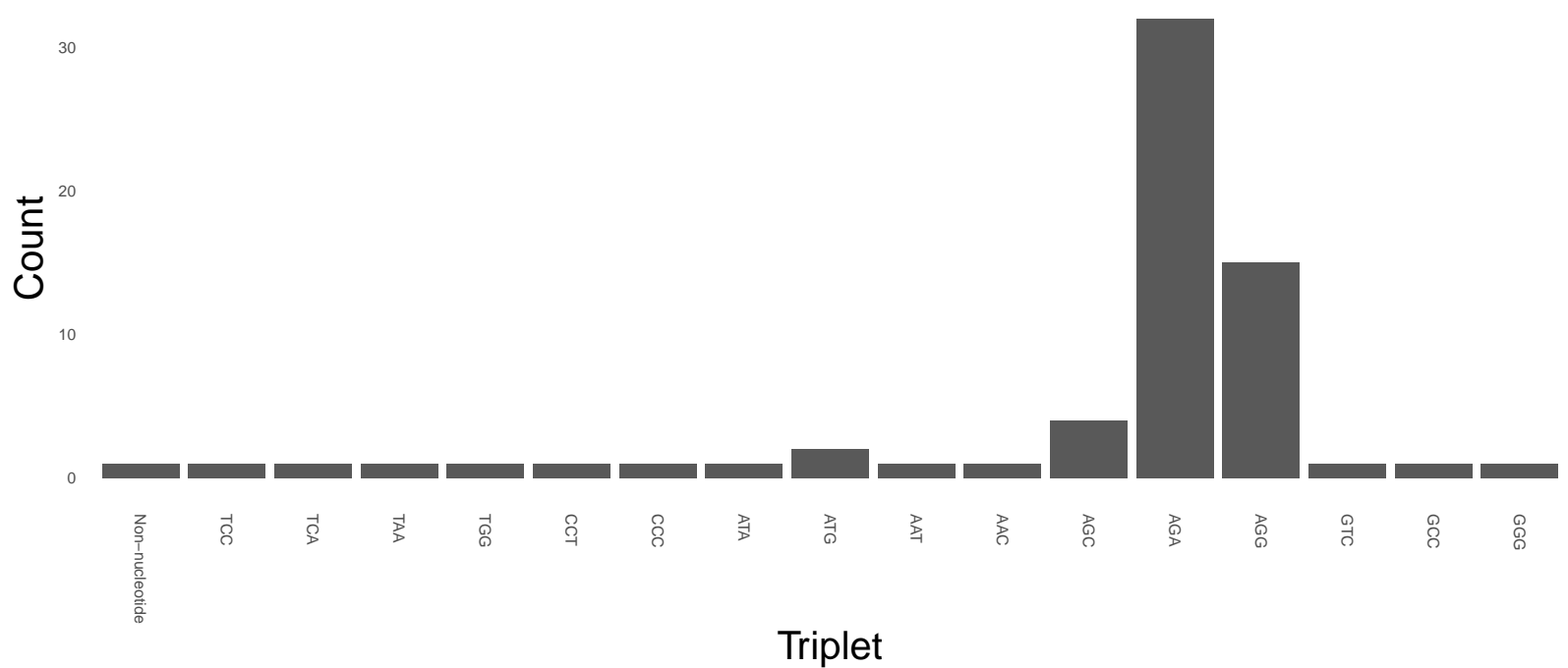
IGHV4–39*01_A220G– Final 3 nucleotides as a triplet



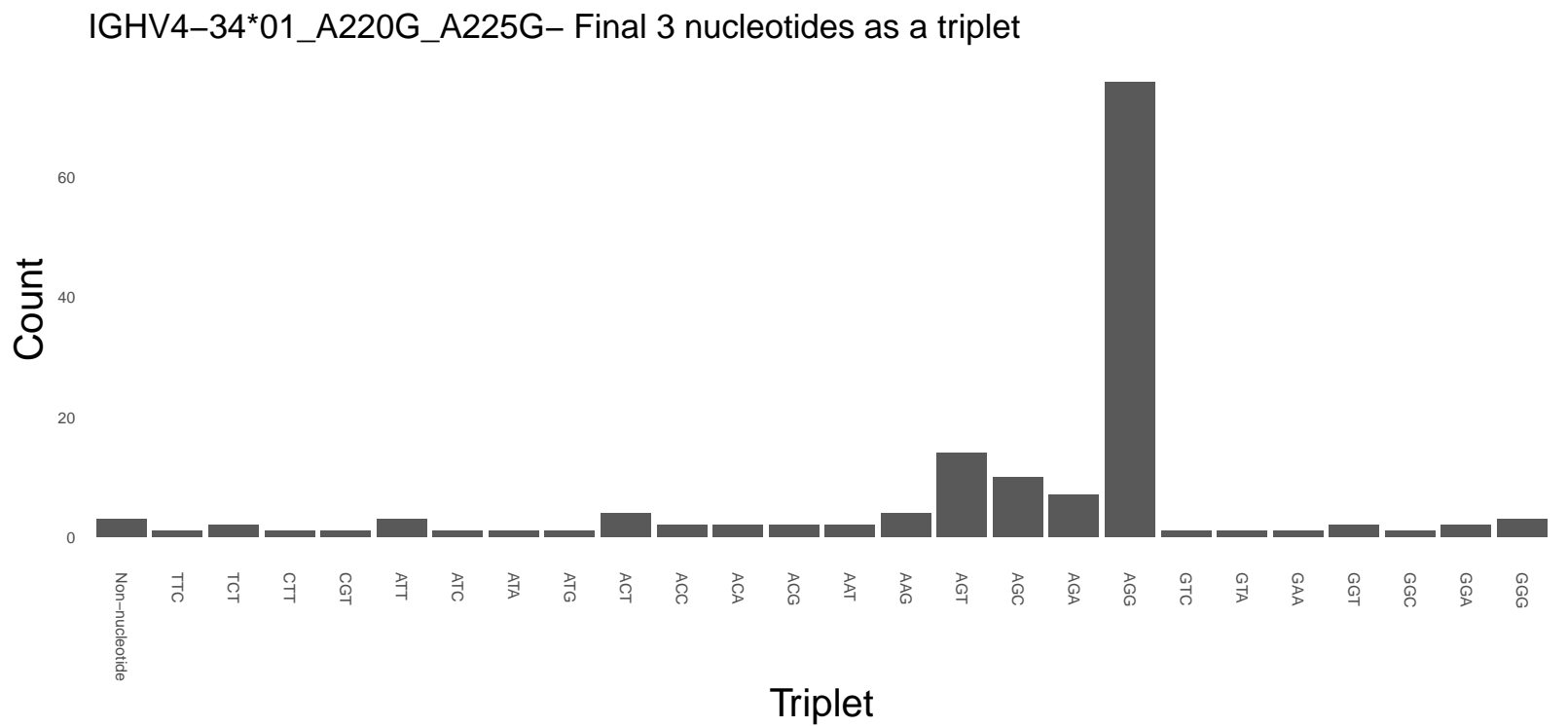
IGHV1–69*01_G54A– Final 3 nucleotides as a triplet



IGHV1–69*01_G54A_A225G– Final 3 nucleotides as a triplet

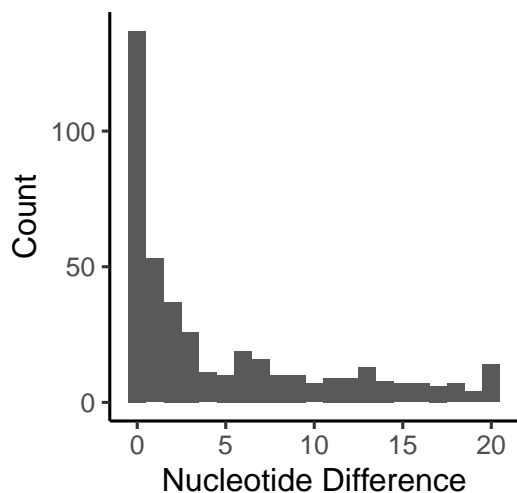


IGHV4-34*01_A220G_A225G- Final 3 nucleotides as a triplet



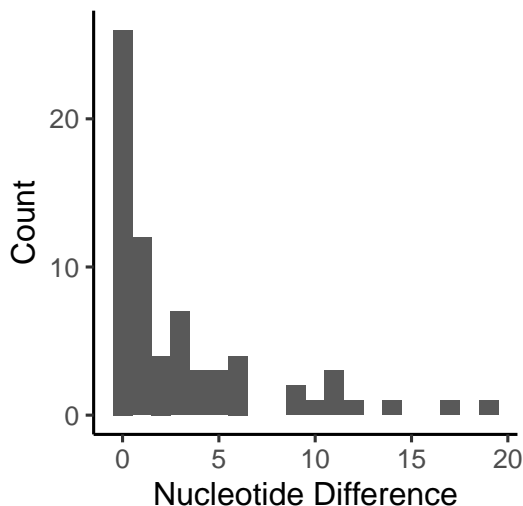
IGHV1-2*02

461 sequences assigned
137 (29.7%) exact matches, in which:
132 unique CDR3
6 unique J



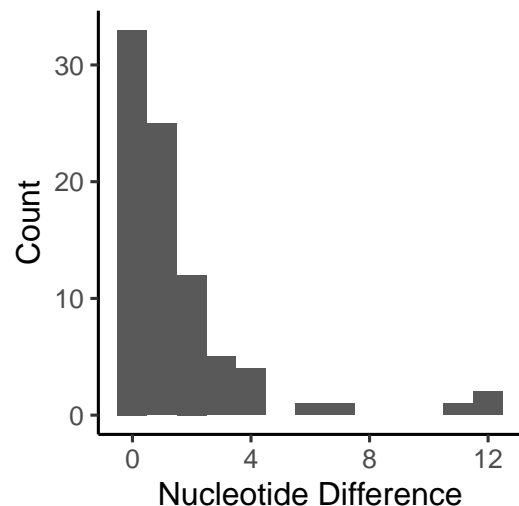
IGHV1-8*01

71 sequences assigned
26 (36.6%) exact matches, in which:
26 unique CDR3
5 unique J



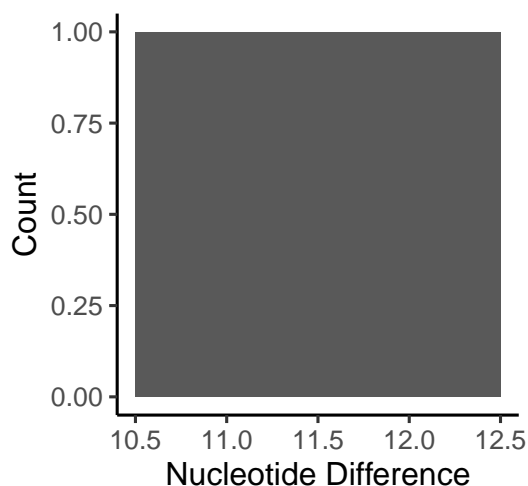
IGHV1-24*01

85 sequences assigned
33 (38.8%) exact matches, in which:
32 unique CDR3
6 unique J



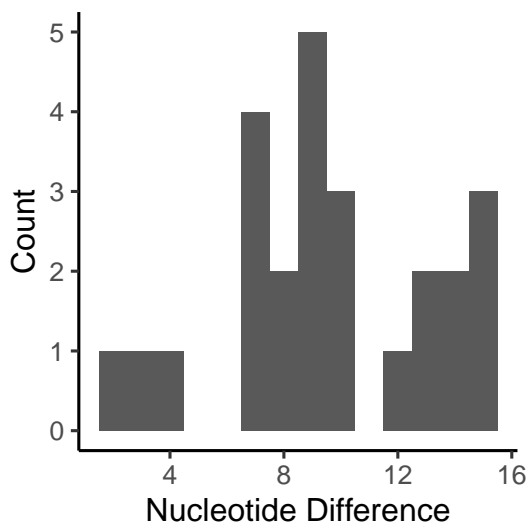
IGHV1-3*01

2 sequences assigned
No exact matches.



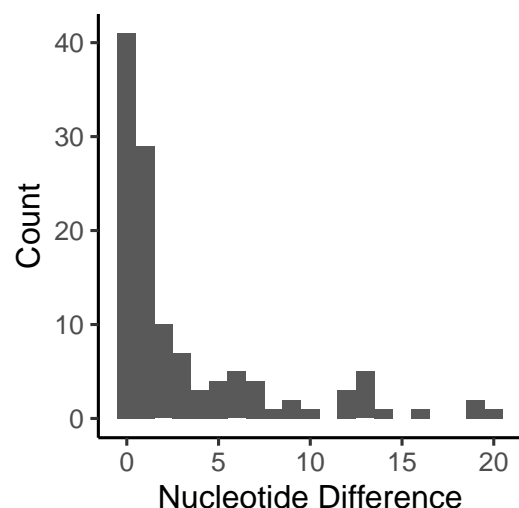
IGHV1-8*02

25 sequences assigned
No exact matches.



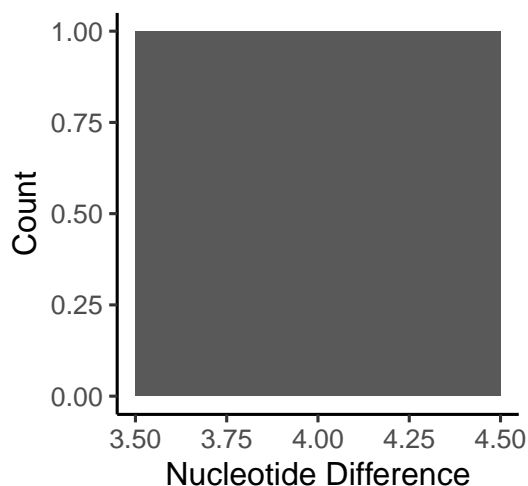
IGHV1-46*01

126 sequences assigned
41 (32.5%) exact matches, in which:
34 unique CDR3
4 unique J



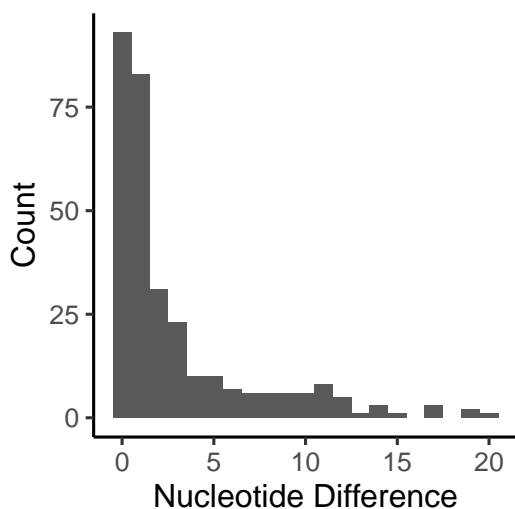
IGHV1-3*02

1 sequences assigned
No exact matches.



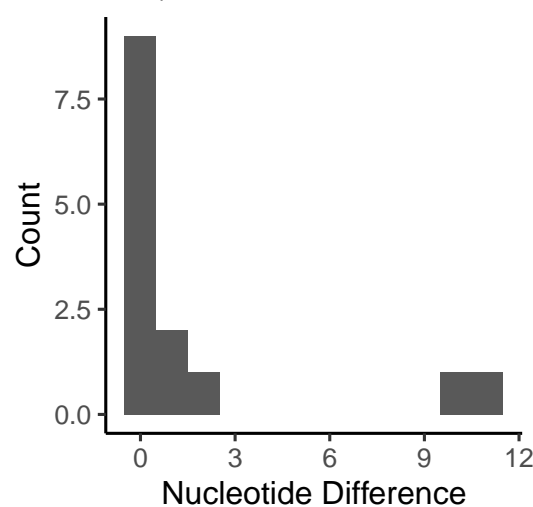
IGHV1-18*01

314 sequences assigned
93 (29.6%) exact matches, in which:
92 unique CDR3
5 unique J



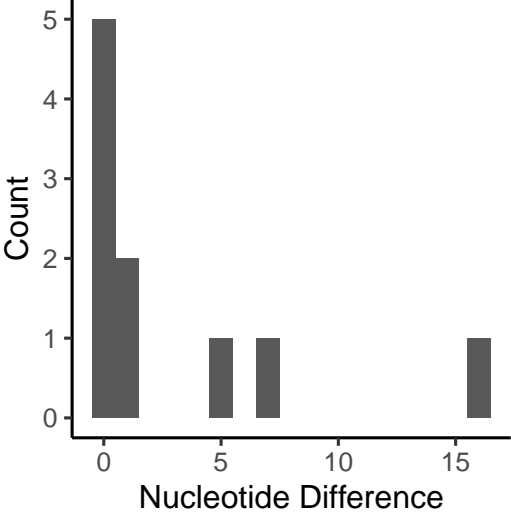
IGHV1-58*01

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



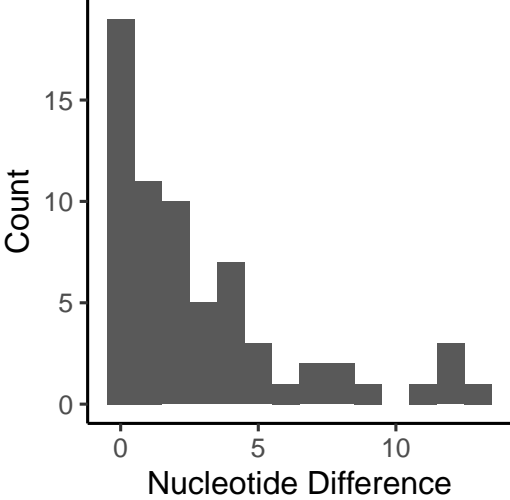
IGHV1-58*02

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



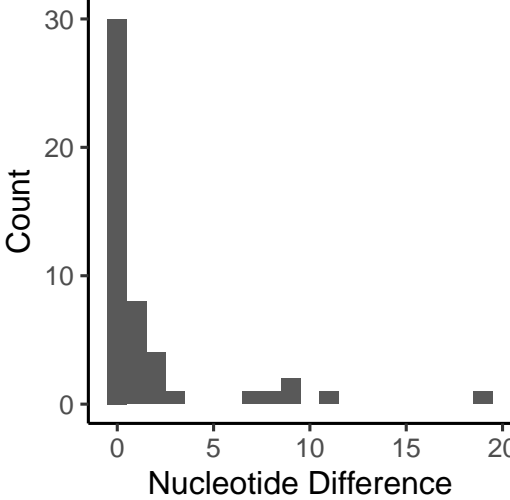
IGHV1-69*01_G54A_A22!

66 sequences assigned
19 (28.8%) exact matches, in which:
19 unique CDR3
5 unique J



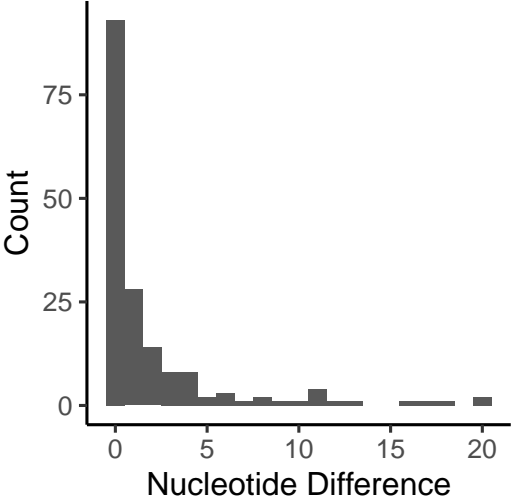
IGHV2-5*01

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



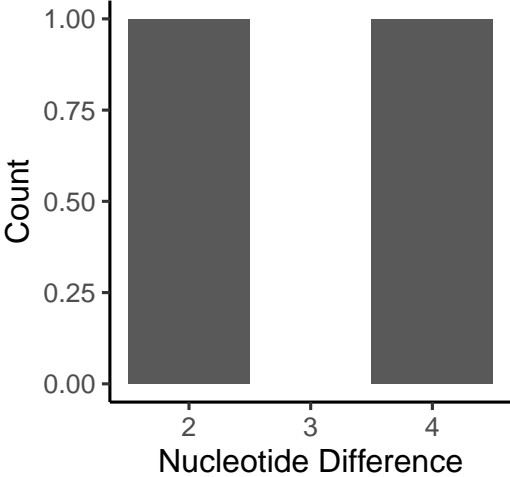
IGHV1-69*04

178 sequences assigned
93 (52.2%) exact matches, in which:
87 unique CDR3
6 unique J



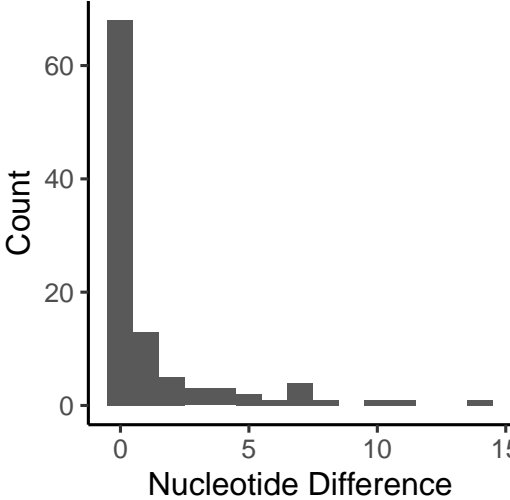
IGHV1-69D*01

2 sequences assigned
No exact matches.



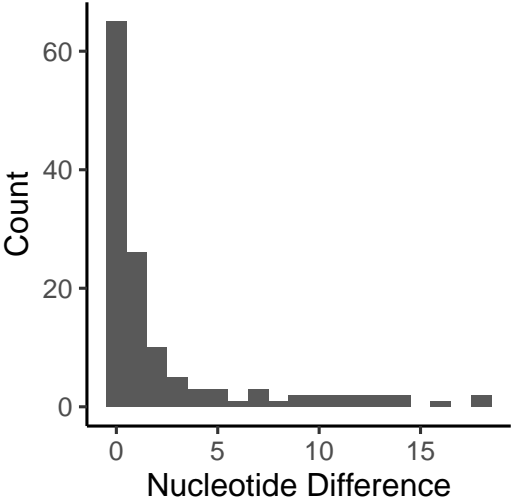
IGHV2-5*02

104 sequences assigned
68 (65.4%) exact matches, in which:
68 unique CDR3
5 unique J



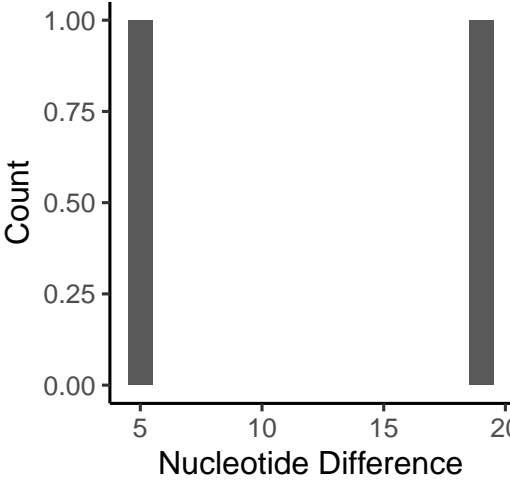
IGHV1-69*01_G54A

134 sequences assigned
65 (48.5%) exact matches, in which:
64 unique CDR3
5 unique J



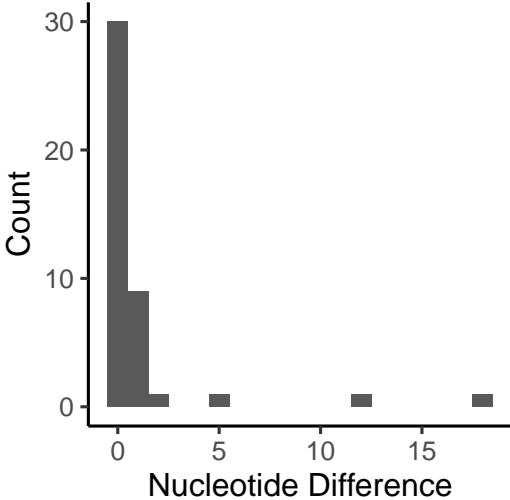
IGHV1-NL1*01

2 sequences assigned
No exact matches.



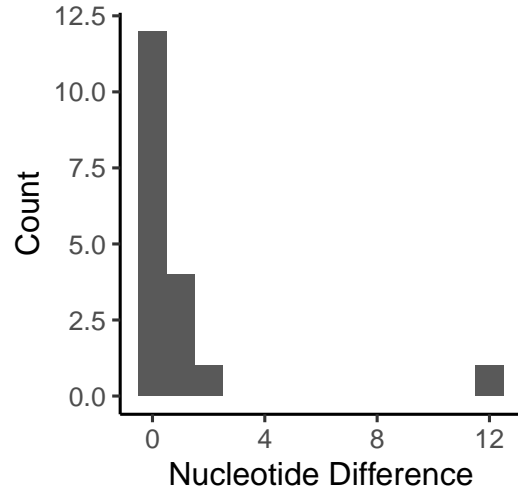
IGHV2-26*01

44 sequences assigned
30 (68.2%) exact matches, in which:
30 unique CDR3
5 unique J



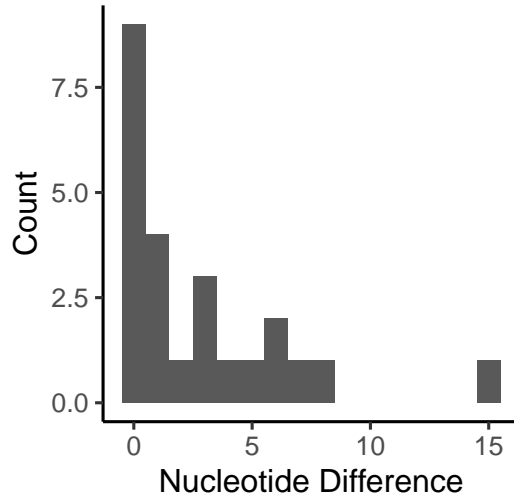
IGHV2-70*01

18 sequences assigned
12 (66.7%) exact matches, in which:
11 unique CDR3
4 unique J



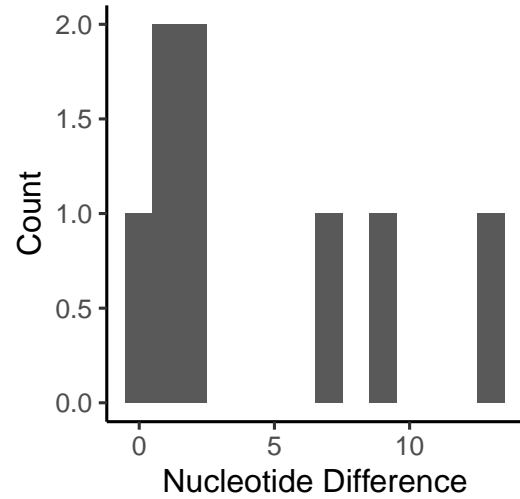
IGHV3-7*05

24 sequences assigned
9 (37.5%) exact matches, in which:
8 unique CDR3
2 unique J



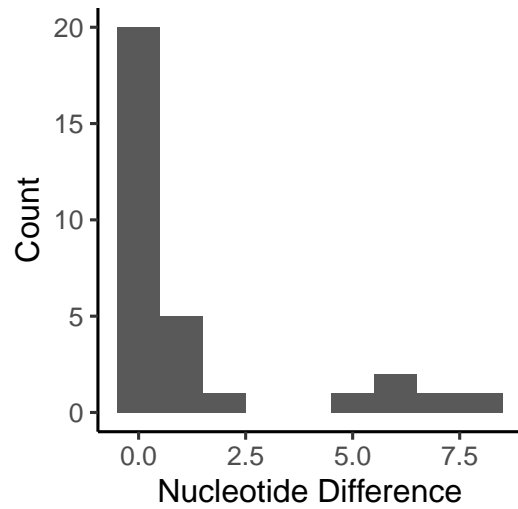
IGHV3-11*04

9 sequences assigned
1 (11.1%) exact matches, in which:
1 unique CDR3
1 unique J



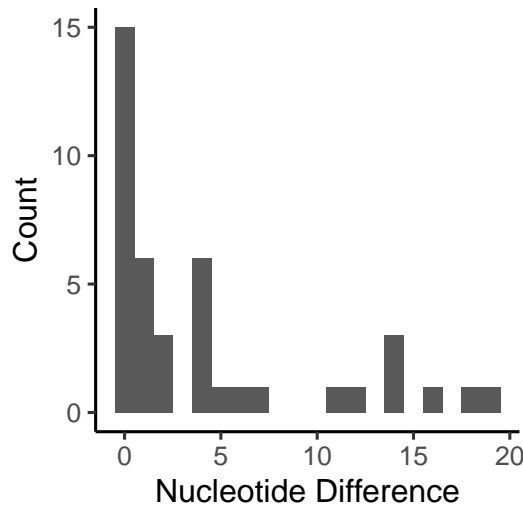
IGHV2-70*15

35 sequences assigned
20 (57.1%) exact matches, in which:
18 unique CDR3
4 unique J



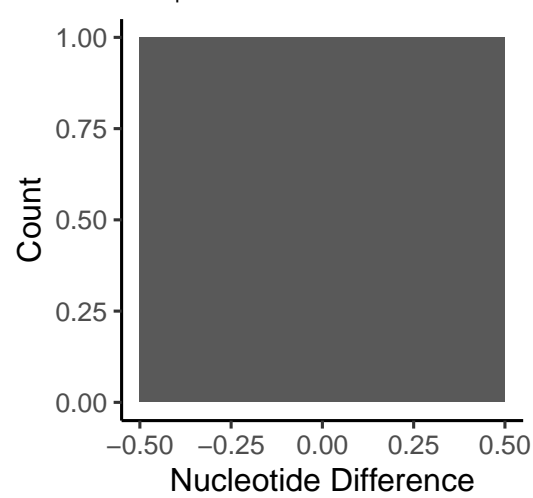
IGHV3-9*01

43 sequences assigned
15 (34.9%) exact matches, in which:
15 unique CDR3
3 unique J



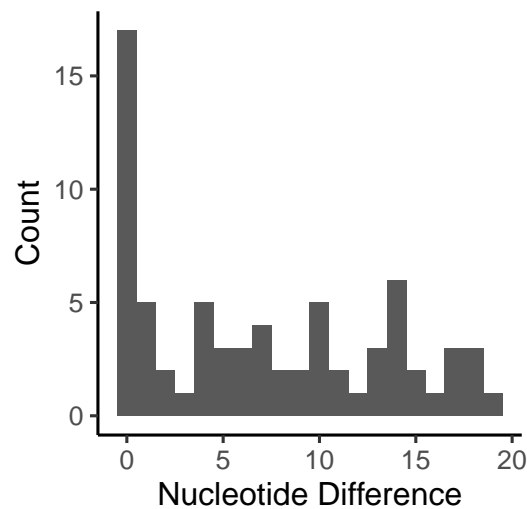
IGHV3-11*05

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



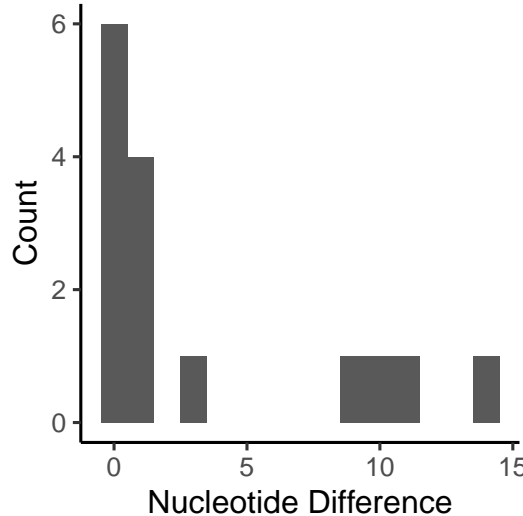
IGHV3-7*01

85 sequences assigned
17 (20%) exact matches, in which:
16 unique CDR3
4 unique J



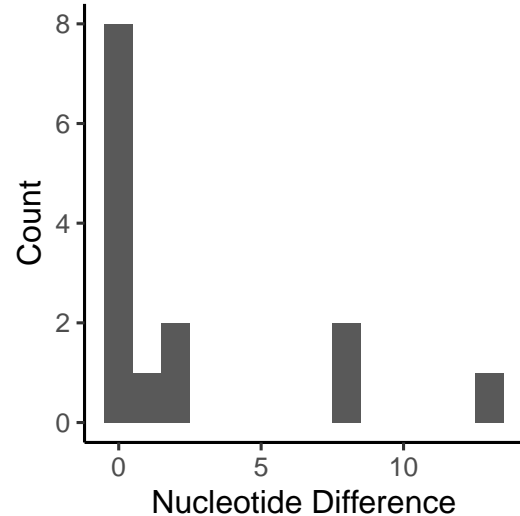
IGHV3-11*01

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



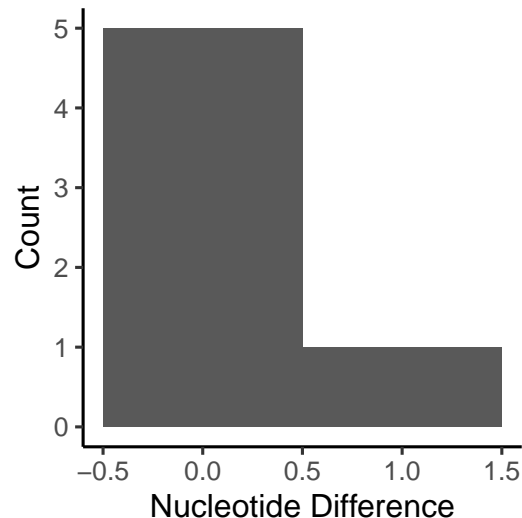
IGHV3-11*06

14 sequences assigned
8 (57.1%) exact matches, in which:
8 unique CDR3
3 unique J



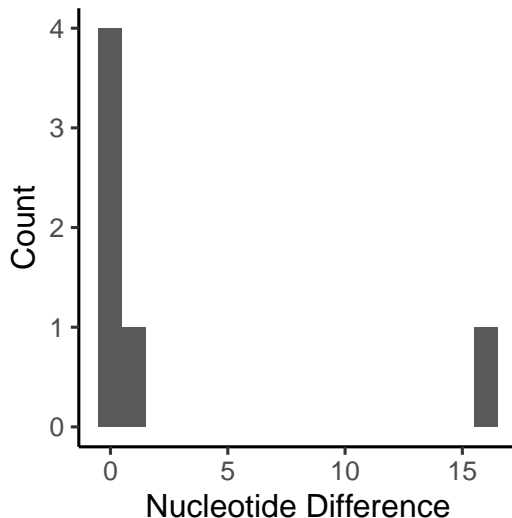
IGHV3-13*01

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



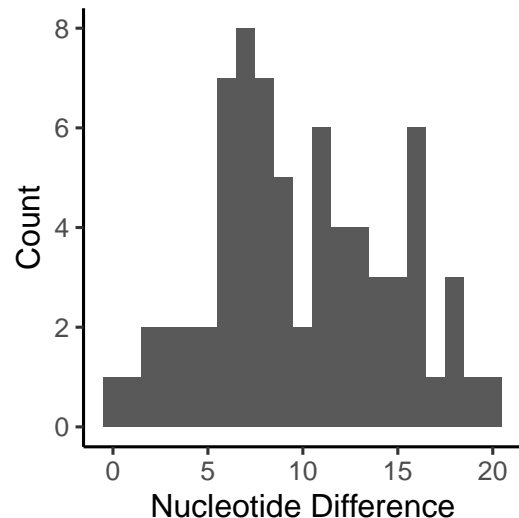
IGHV3-20*01

6 sequences assigned
4 (66.7%) exact matches, in which:
3 unique CDR3
2 unique J



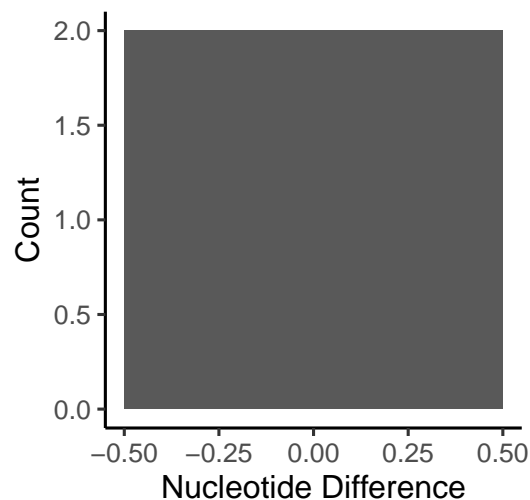
IGHV3-23*04

75 sequences assigned
1 (1.3%) exact matches, in which:
1 unique CDR3
1 unique J



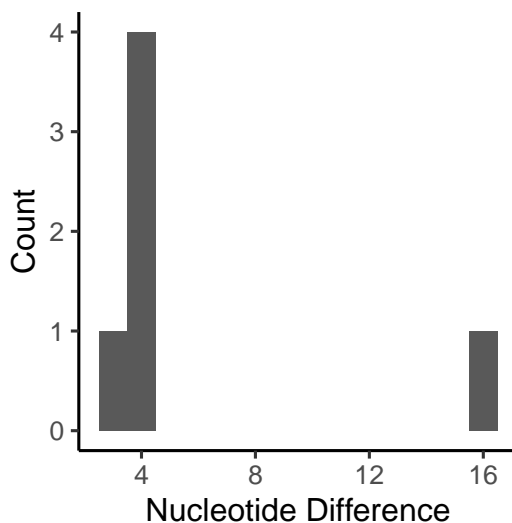
IGHV3-13*05

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



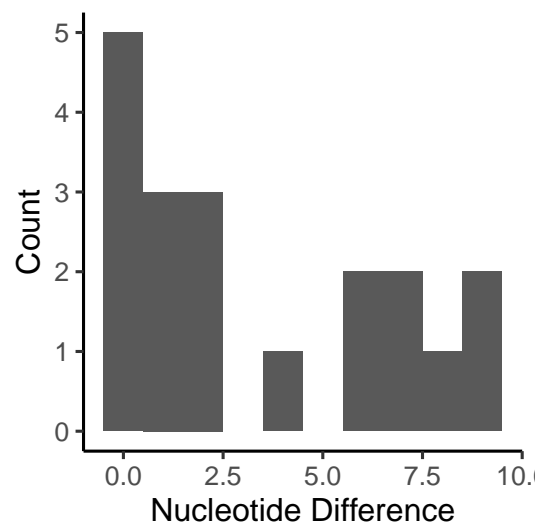
IGHV3-20*04

10 sequences assigned
No exact matches.



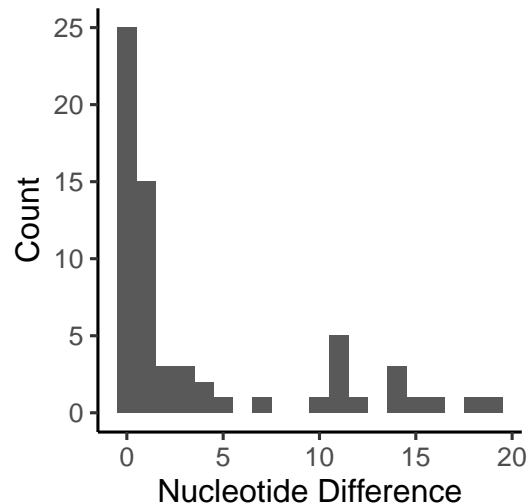
IGHV3-30*03

21 sequences assigned
5 (23.8%) exact matches, in which:
5 unique CDR3
2 unique J



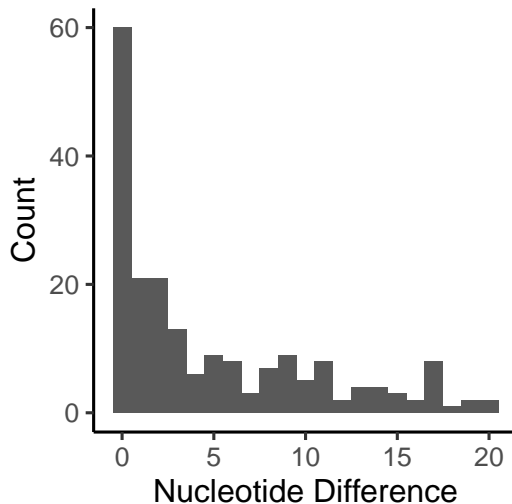
IGHV3-15*01

69 sequences assigned
25 (36.2%) exact matches, in which:
20 unique CDR3
6 unique J



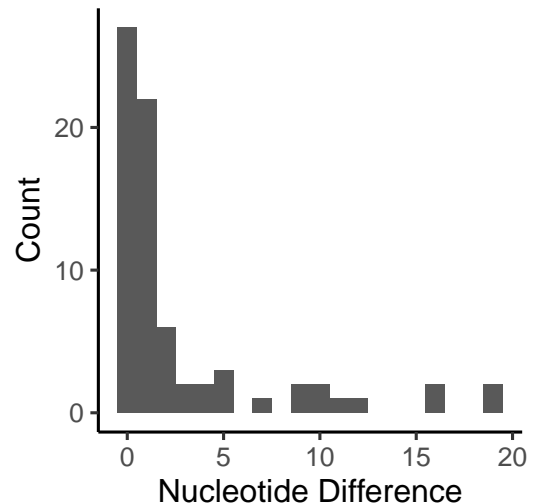
IGHV3-21*01

205 sequences assigned
60 (29.3%) exact matches, in which:
60 unique CDR3
5 unique J



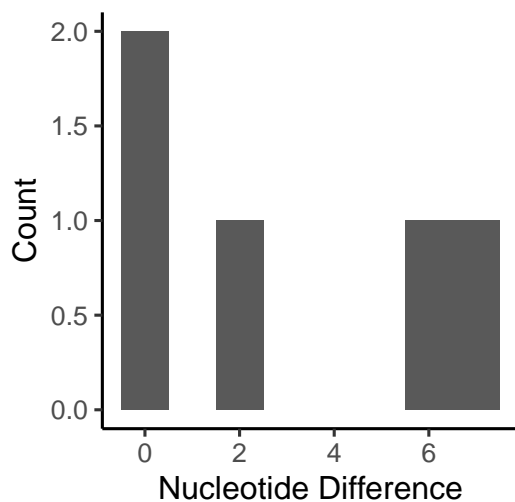
IGHV3-33*01

73 sequences assigned
27 (37%) exact matches, in which:
24 unique CDR3
5 unique J



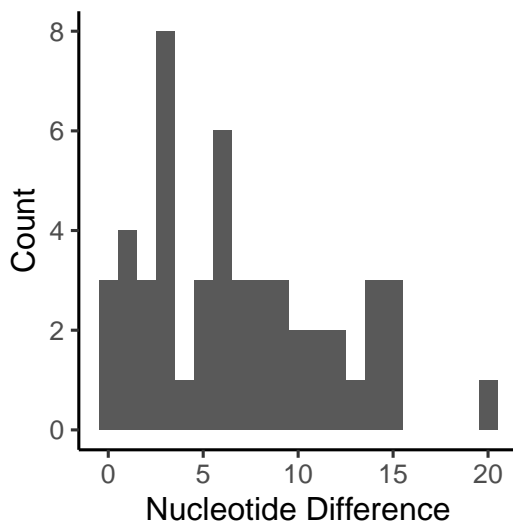
IGHV3–33*05

5 sequences assigned
2 (40%) exact matches, in which:
2 unique CDR3
2 unique J



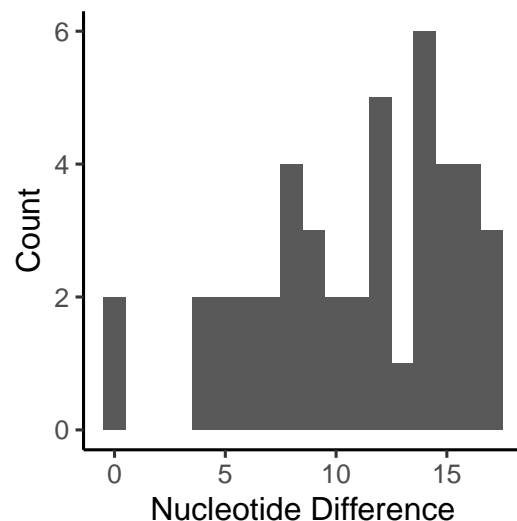
IGHV3–48*01

52 sequences assigned
3 (5.8%) exact matches, in which:
3 unique CDR3
1 unique J



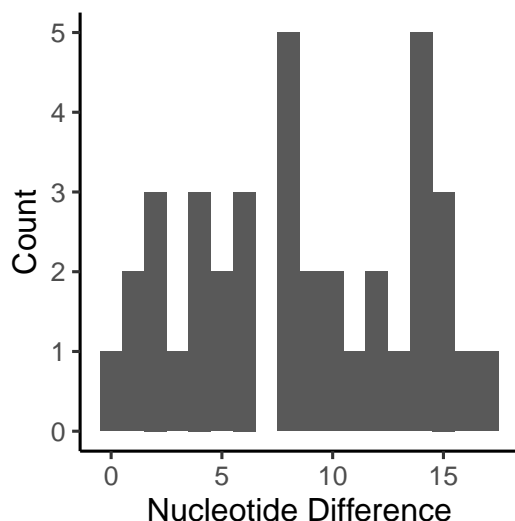
IGHV3–48*04

47 sequences assigned
2 (4.3%) exact matches, in which:
2 unique CDR3
2 unique J



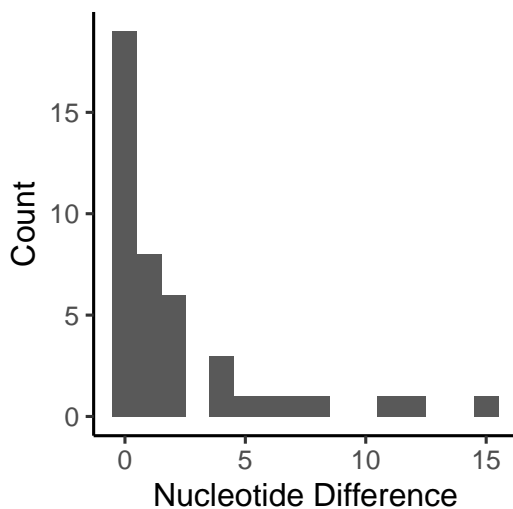
IGHV3–33*08

39 sequences assigned
1 (2.6%) exact matches, in which:
1 unique CDR3
1 unique J



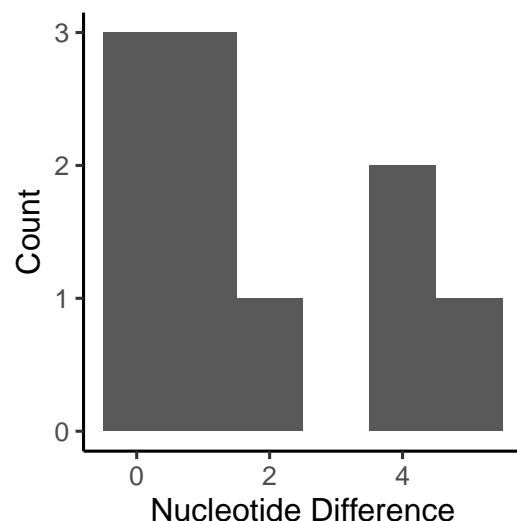
IGHV3–48*02

43 sequences assigned
19 (44.2%) exact matches, in which:
19 unique CDR3
3 unique J



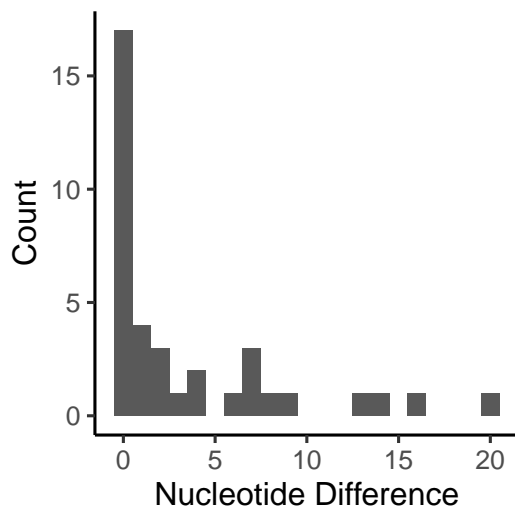
IGHV3–49*04

12 sequences assigned
3 (25%) exact matches, in which:
3 unique CDR3
3 unique J



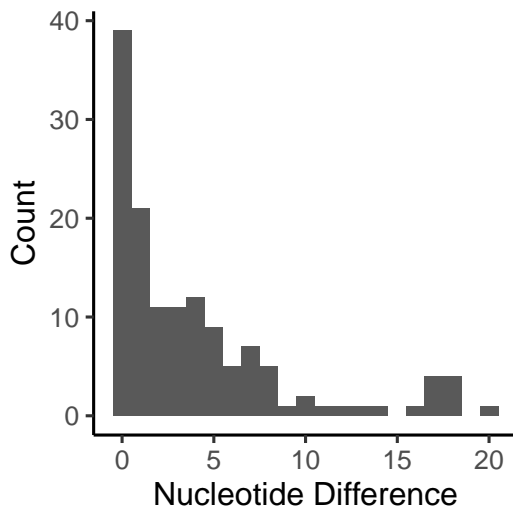
IGHV3–43*02

38 sequences assigned
17 (44.7%) exact matches, in which:
16 unique CDR3
5 unique J



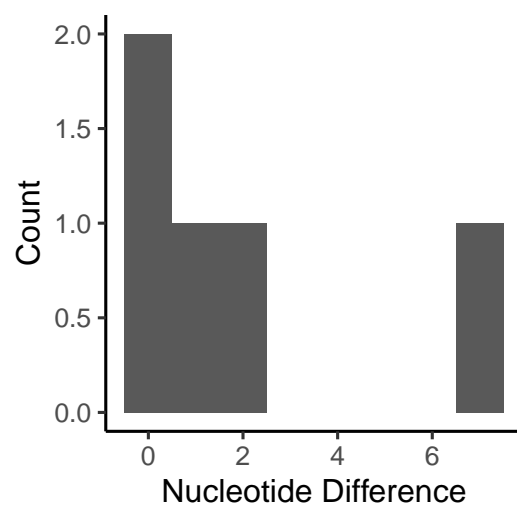
IGHV3–48*03

143 sequences assigned
39 (27.3%) exact matches, in which:
38 unique CDR3
5 unique J



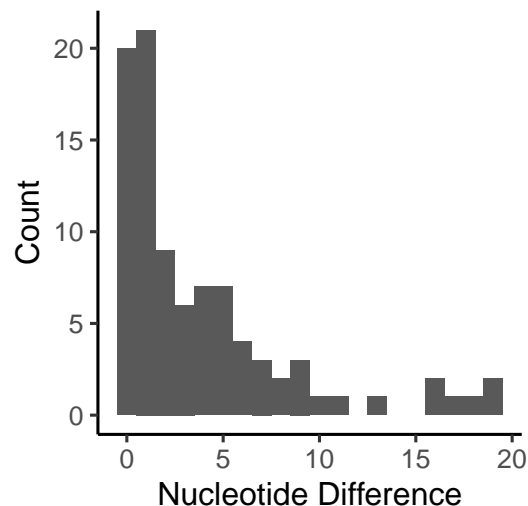
IGHV3–49*05

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



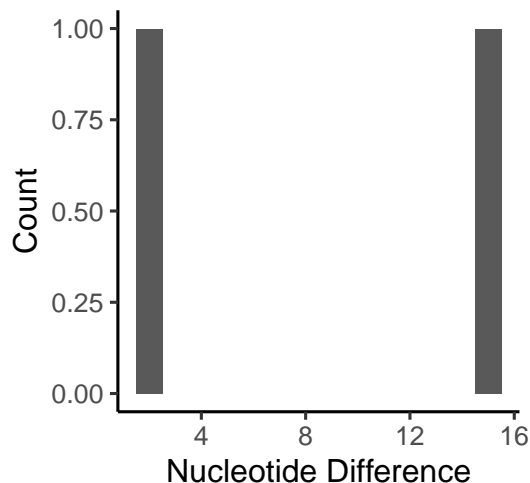
IGHV3-53*01

93 sequences assigned
20 (21.5%) exact matches, in which:
18 unique CDR3
4 unique J



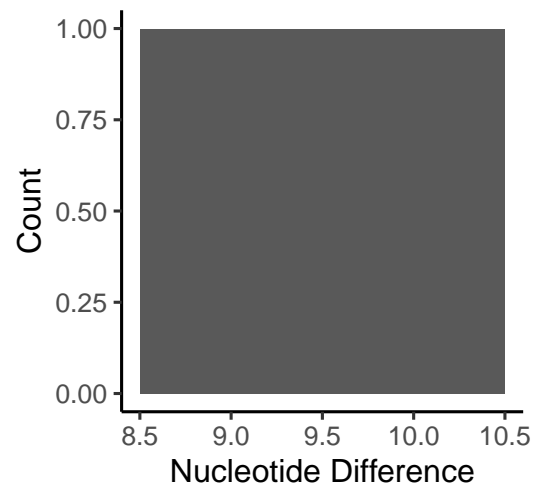
IGHV3-64*04

3 sequences assigned
No exact matches.



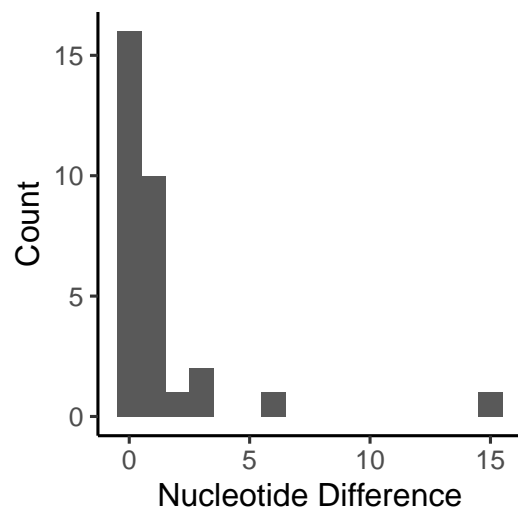
IGHV3-69-1*01

3 sequences assigned
No exact matches.



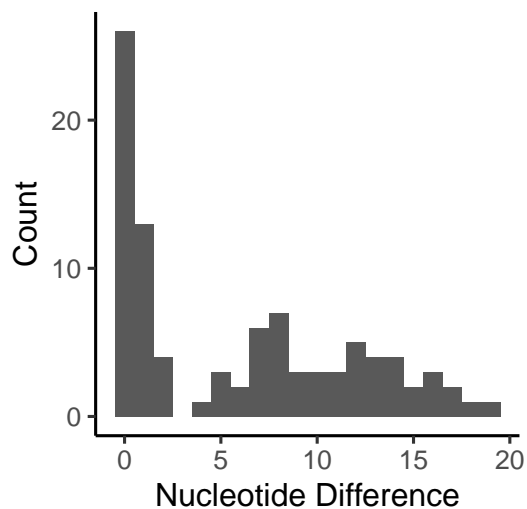
IGHV3-53*04

32 sequences assigned
16 (50%) exact matches, in which:
13 unique CDR3
4 unique J



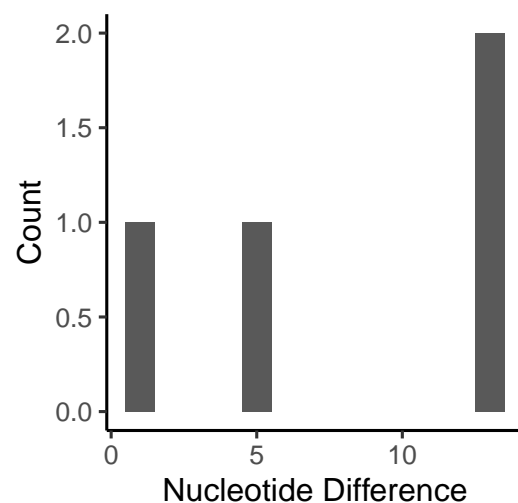
IGHV3-66*01

108 sequences assigned
26 (24.1%) exact matches, in which:
23 unique CDR3
4 unique J



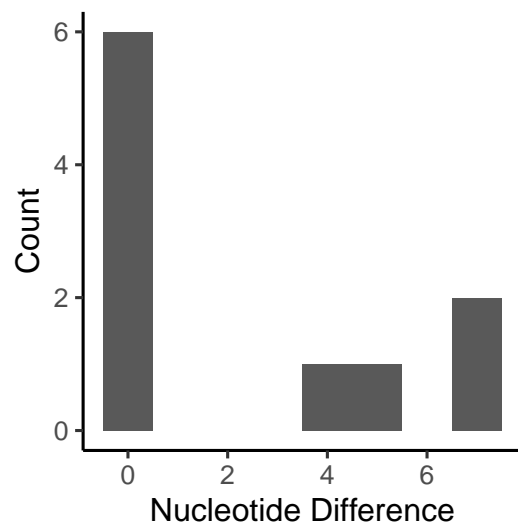
IGHV3-72*01

5 sequences assigned
No exact matches.



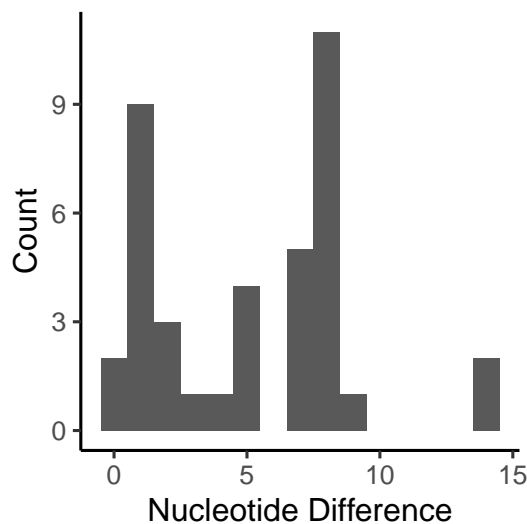
IGHV3-64*01

10 sequences assigned
6 (60%) exact matches, in which:
6 unique CDR3
3 unique J



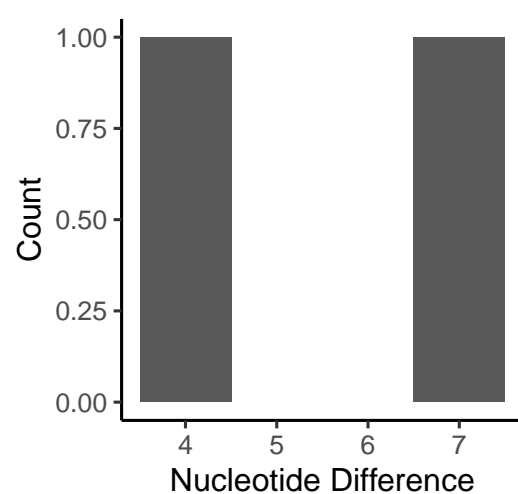
IGHV3-66*03

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



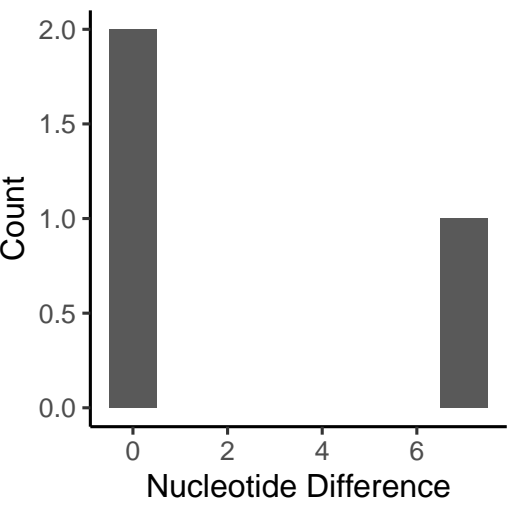
IGHV3-73*01

3 sequences assigned
No exact matches.



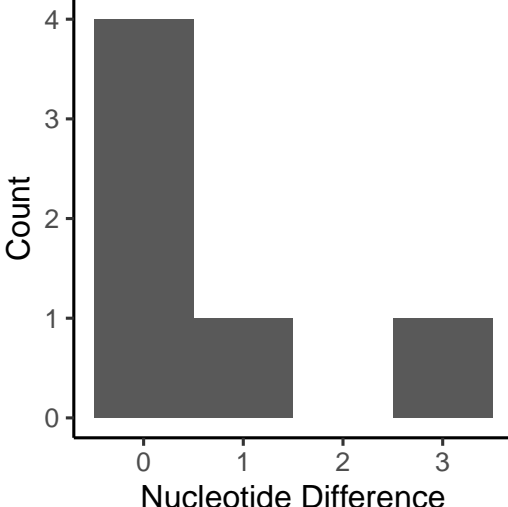
IGHV3-73*02

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



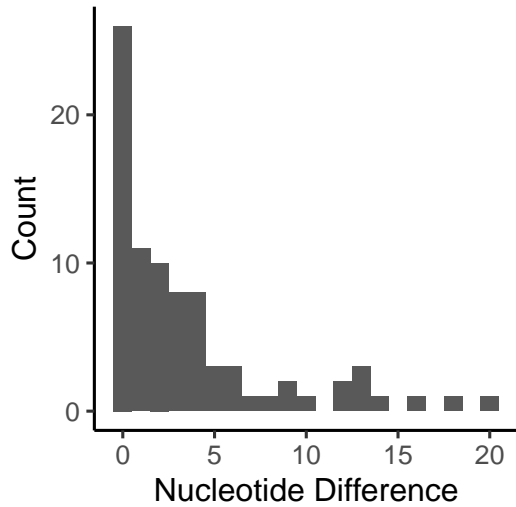
IGHV3-64D*09

6 sequences assigned
4 (66.7%) exact matches, in which:
4 unique CDR3
2 unique J



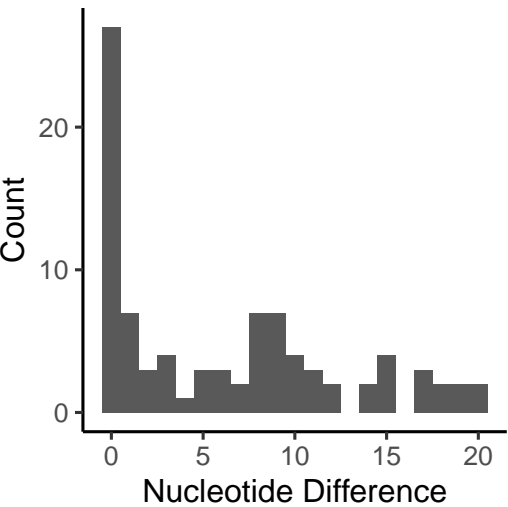
IGHV4-31*03

84 sequences assigned
26 (31%) exact matches, in which:
25 unique CDR3
5 unique J



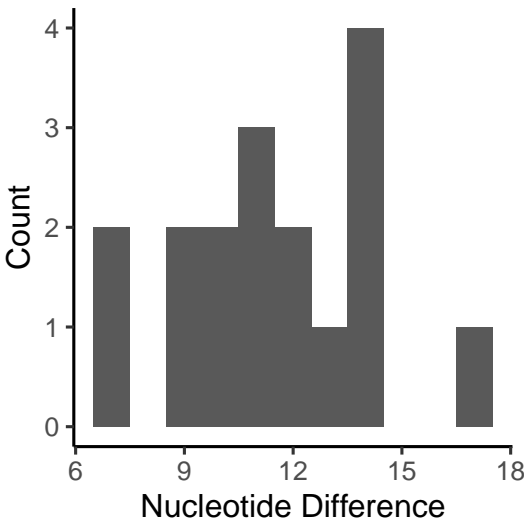
IGHV3-74*01

93 sequences assigned
27 (29%) exact matches, in which:
26 unique CDR3
4 unique J



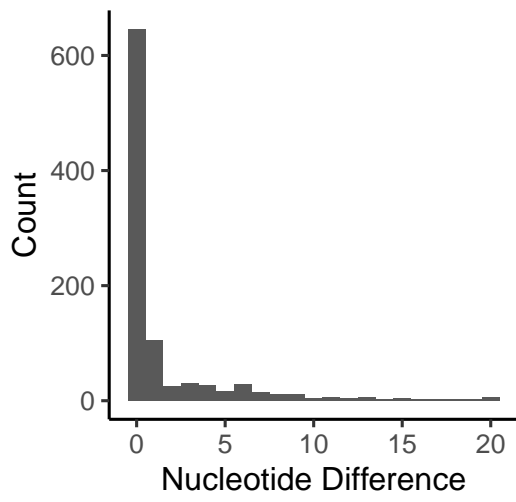
IGHV3-NL1*01

18 sequences assigned
No exact matches.



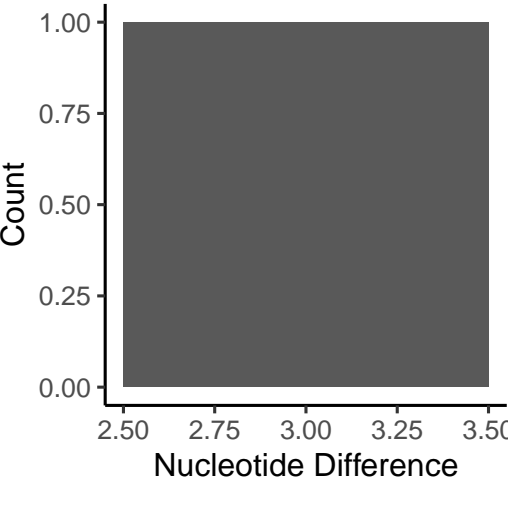
IGHV4-34*01

981 sequences assigned
646 (65.9%) exact matches, in which:
623 unique CDR3
6 unique J



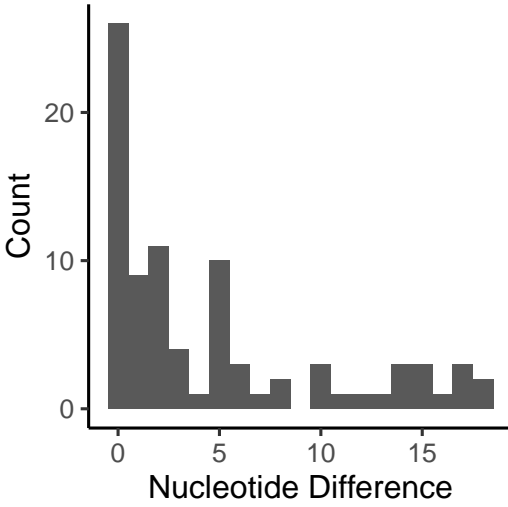
IGHV3-64D*06

1 sequences assigned
No exact matches.



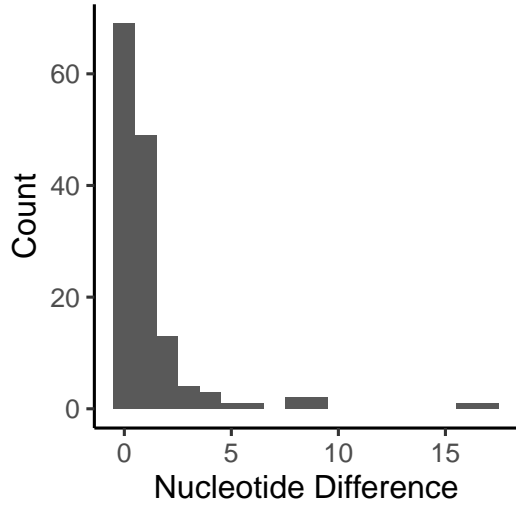
IGHV4-4*07

85 sequences assigned
26 (30.6%) exact matches, in which:
25 unique CDR3
5 unique J



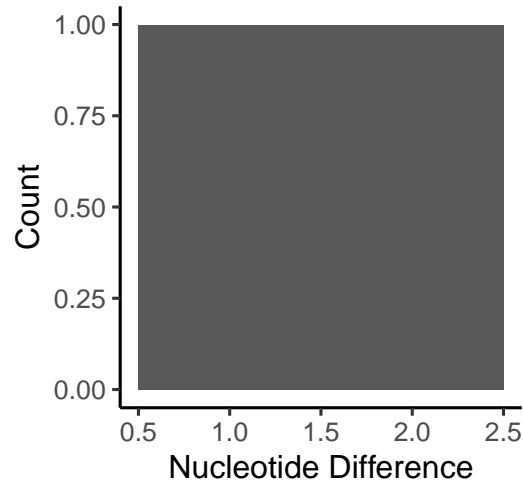
IGHV4-34*01_A220G_A2

148 sequences assigned
69 (46.6%) exact matches, in which:
68 unique CDR3
6 unique J



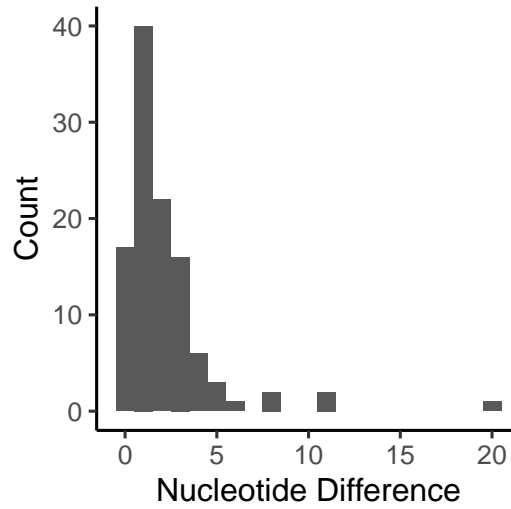
IGHV4-38-2*02

2 sequences assigned
No exact matches.



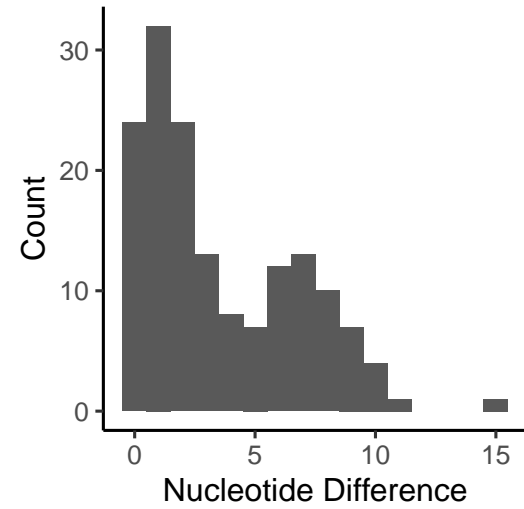
IGHV4-39*01_A220G

115 sequences assigned
17 (14.8%) exact matches, in which:
17 unique CDR3
5 unique J



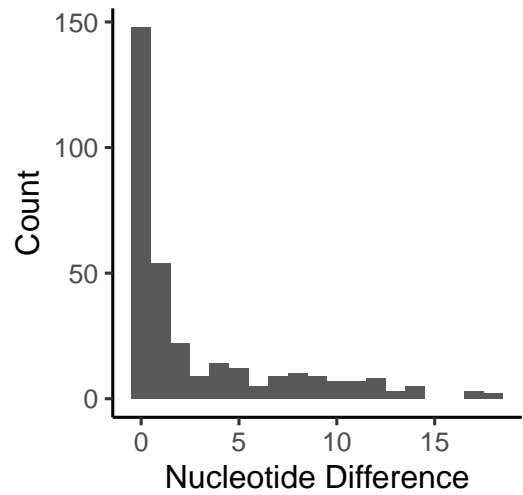
IGHV4-59*12

157 sequences assigned
24 (15.3%) exact matches, in which:
24 unique CDR3
4 unique J



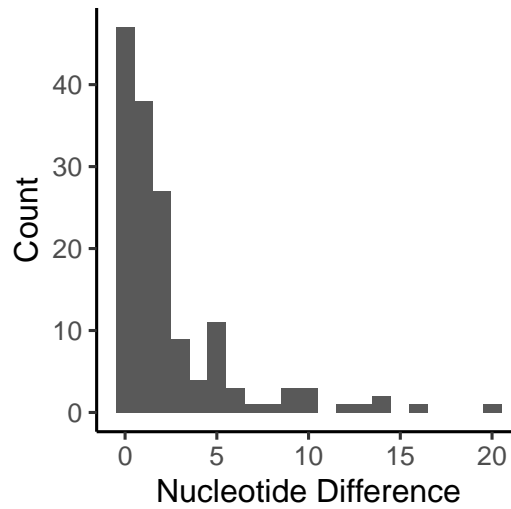
IGHV4-39*01

340 sequences assigned
148 (43.5%) exact matches, in which:
143 unique CDR3
6 unique J



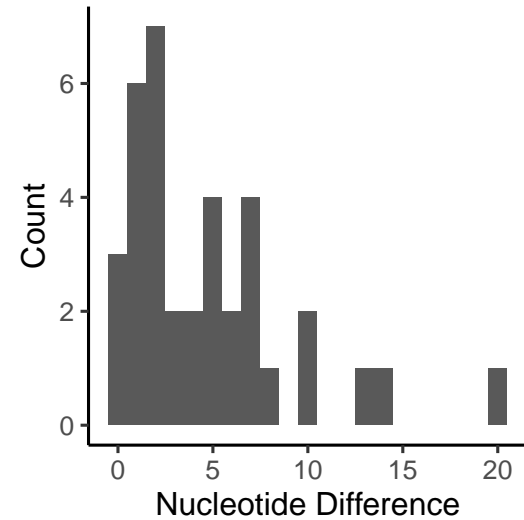
IGHV4-59*01

153 sequences assigned
47 (30.7%) exact matches, in which:
47 unique CDR3
6 unique J



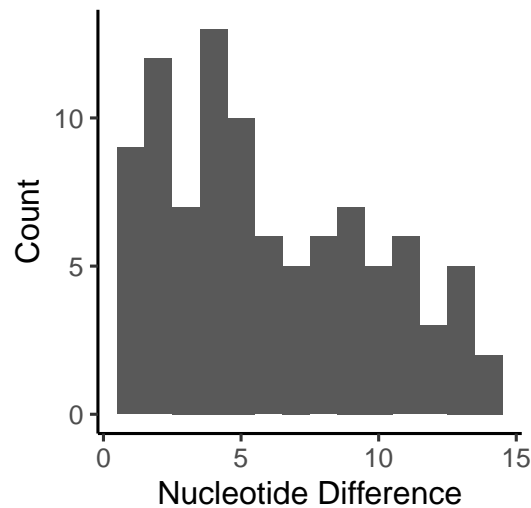
IGHV4-61*01

36 sequences assigned
3 (8.3%) exact matches, in which:
3 unique CDR3
2 unique J



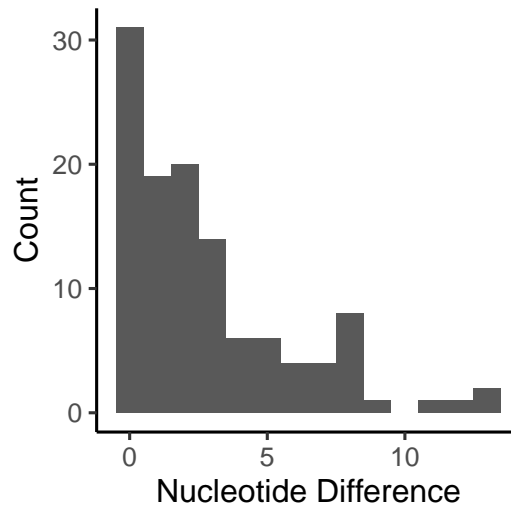
IGHV4-39*07

98 sequences assigned
No exact matches.



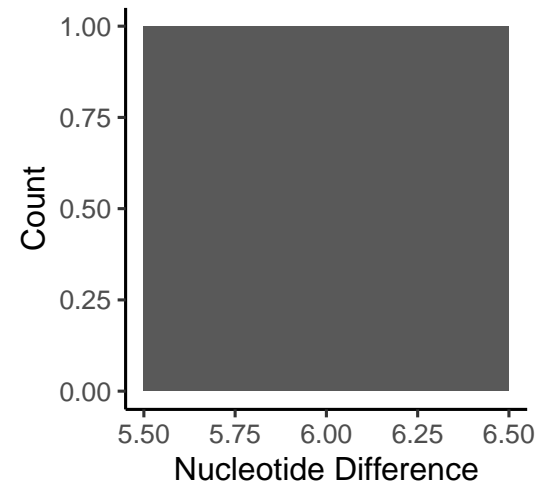
IGHV4-59*08

121 sequences assigned
31 (25.6%) exact matches, in which:
31 unique CDR3
5 unique J



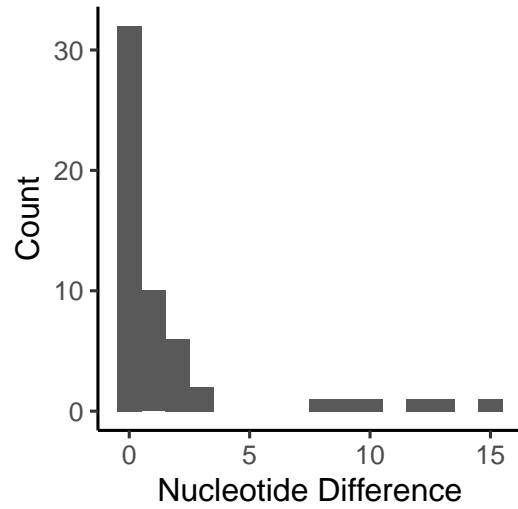
IGHV4/OR15-8*01

1 sequences assigned
No exact matches.



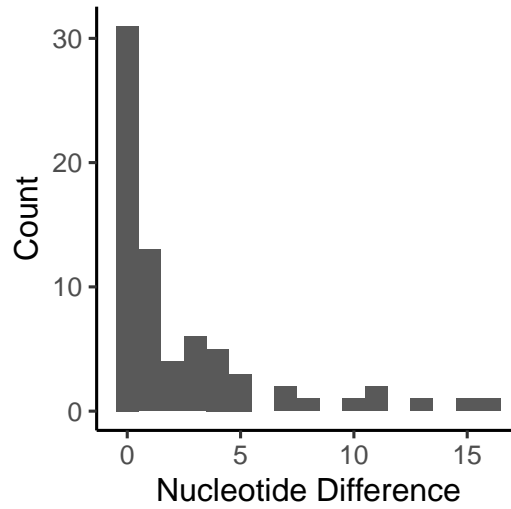
IGHV5-10-1*03

56 sequences assigned
32 (57.1%) exact matches, in which:
31 unique CDR3
4 unique J



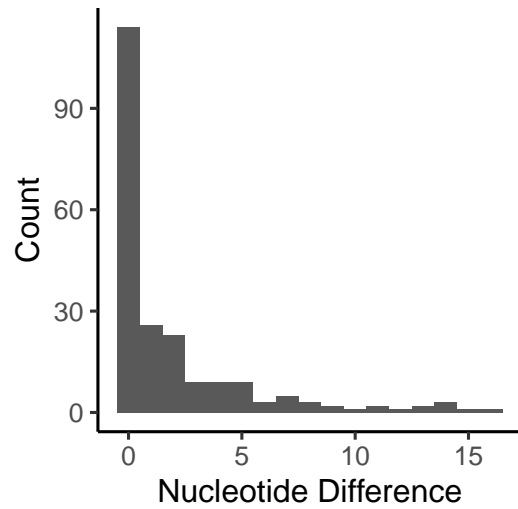
IGHV7-4-1*02

73 sequences assigned
31 (42.5%) exact matches, in which:
30 unique CDR3
5 unique J



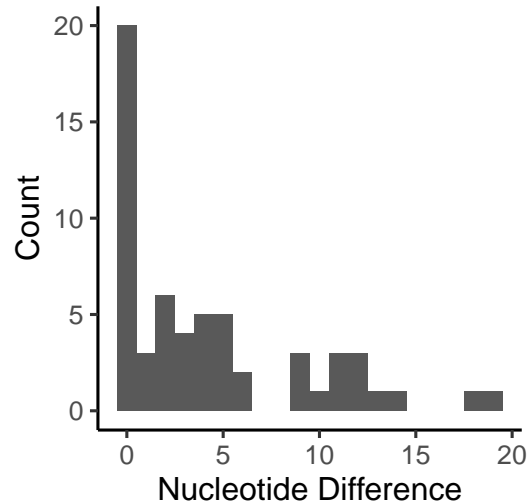
IGHV5-51*01

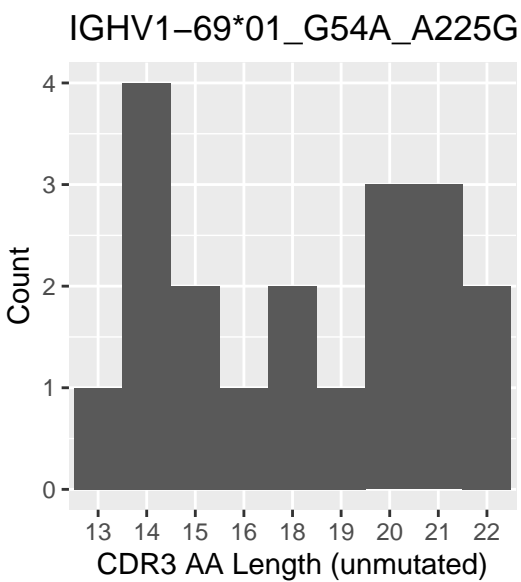
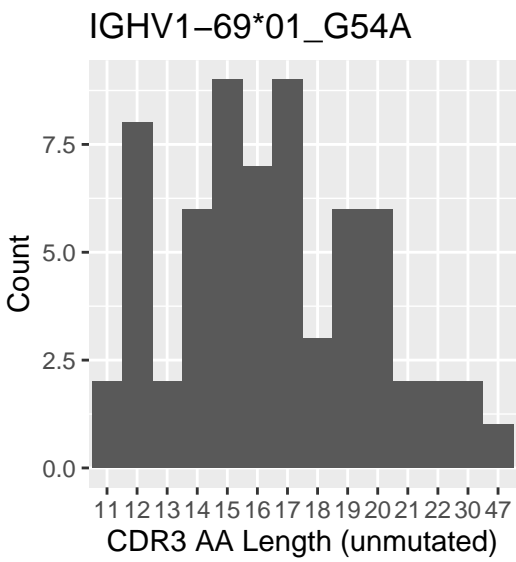
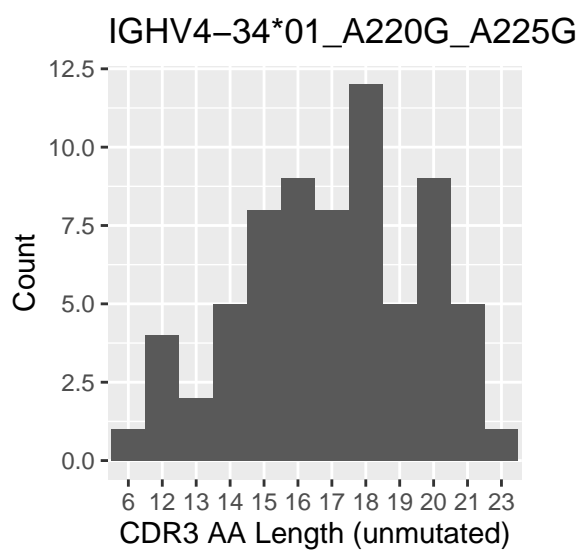
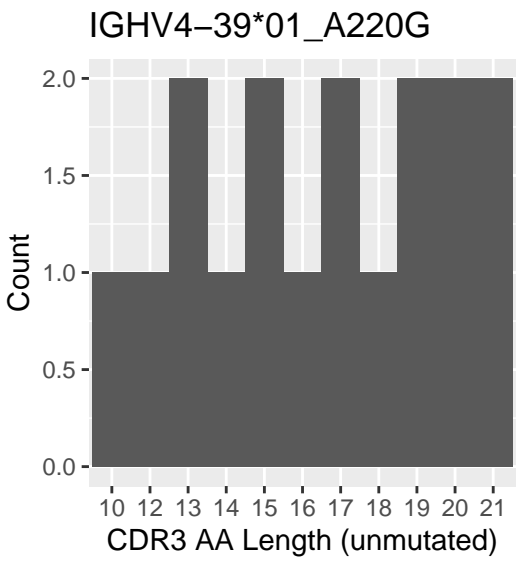
216 sequences assigned
114 (52.8%) exact matches, in which:
106 unique CDR3
6 unique J



IGHV6-1*01

61 sequences assigned
20 (32.8%) exact matches, in which:
20 unique CDR3
5 unique J







[illegible]