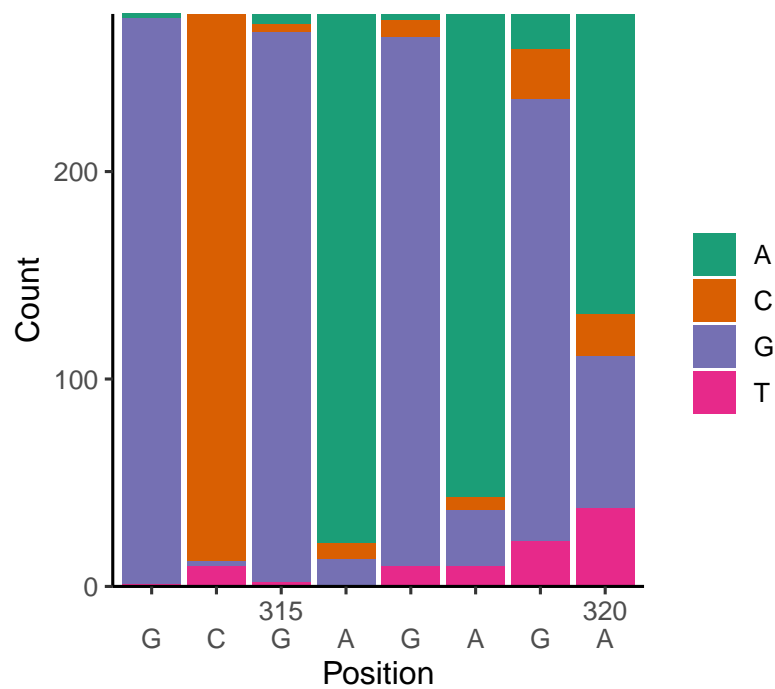
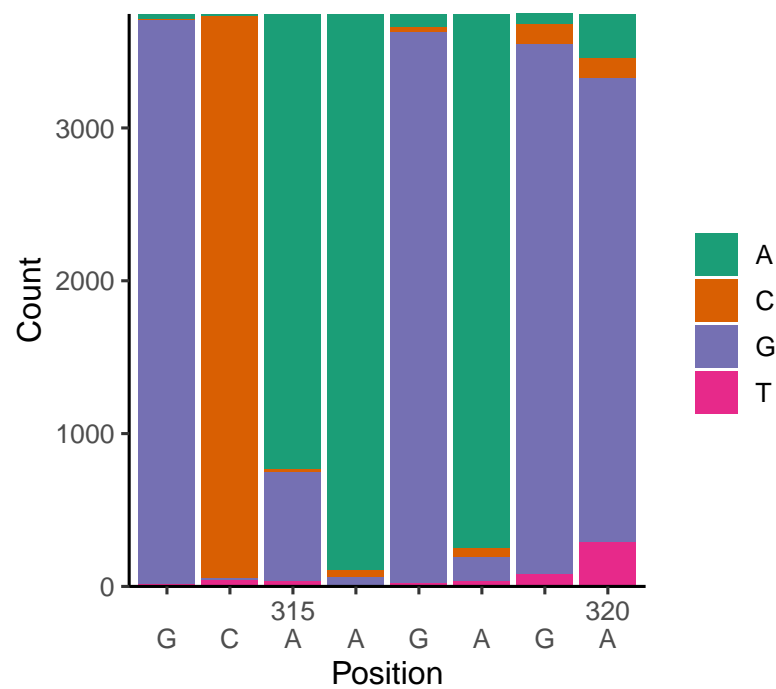


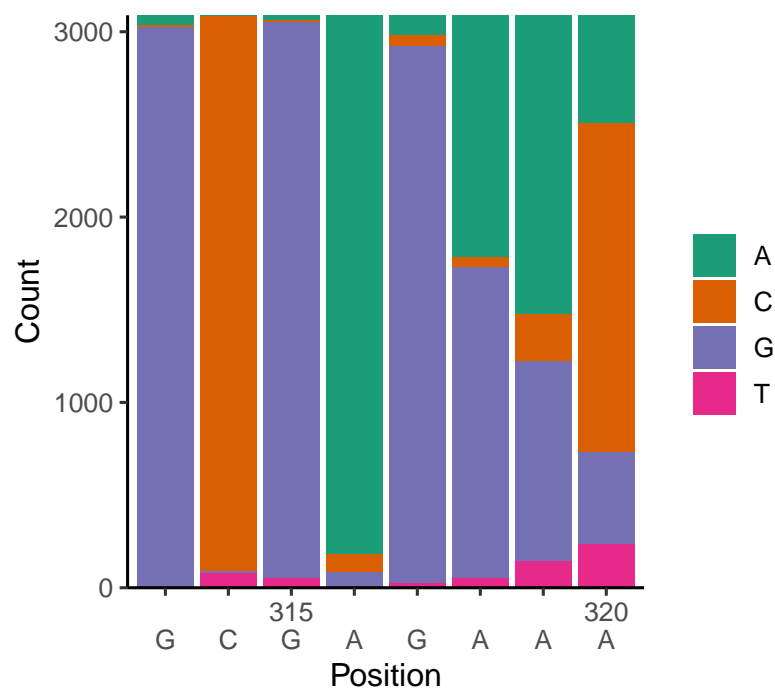
Gene IGHV1-3*01_05_C134A



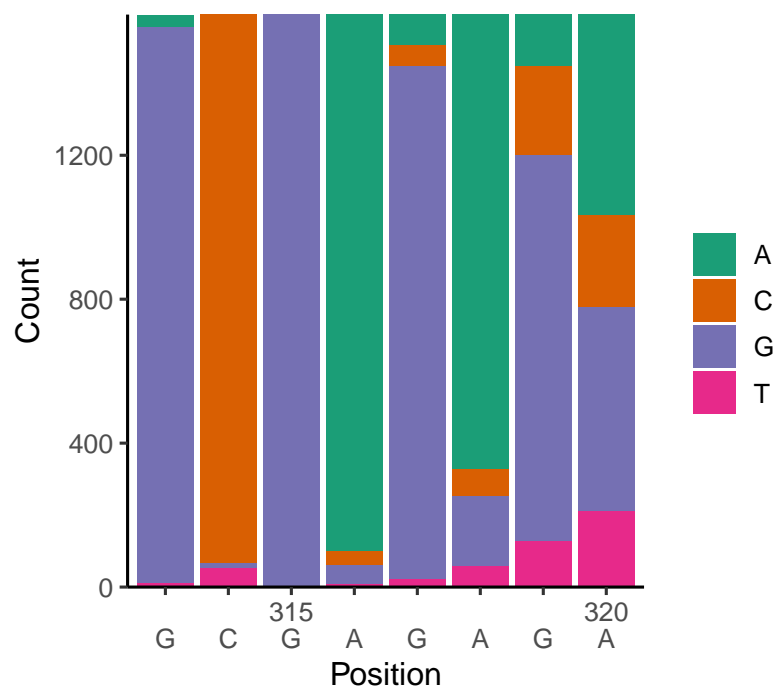
Gene IGHV6-1*01_02_A163C_C174T_C



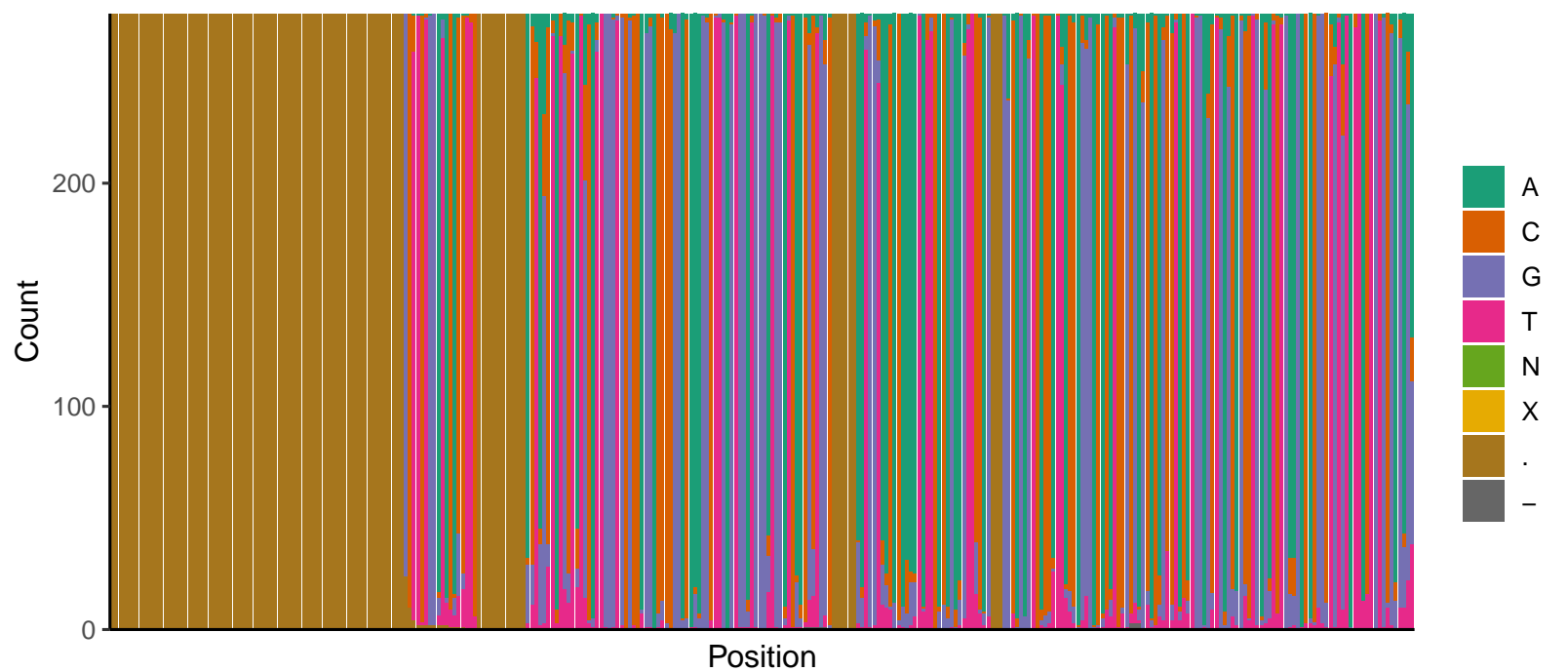
Gene IGHV4-28*02_05_G80T_A109C_G162A_T163C_A175G_G191C_C210A_G238A_



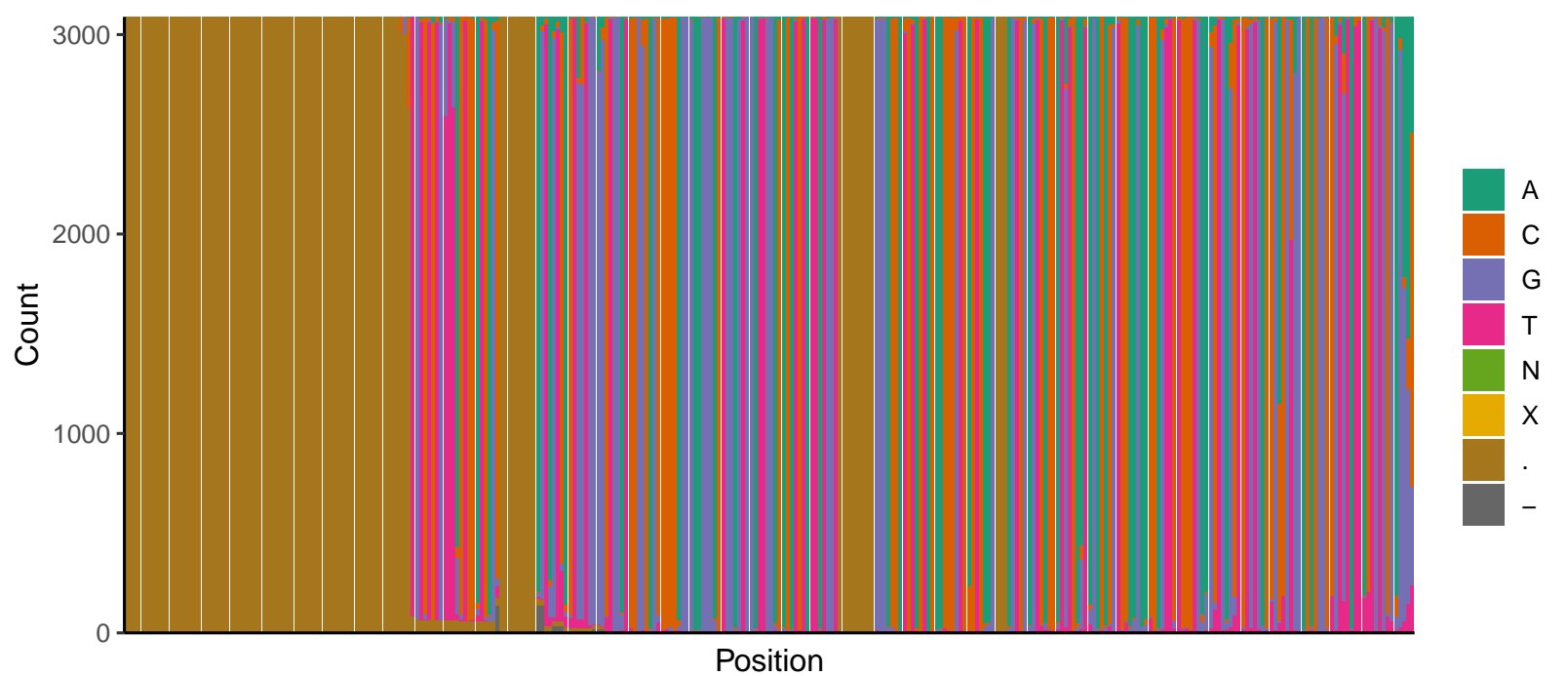
Gene IGHV6-1*01_02_A315G



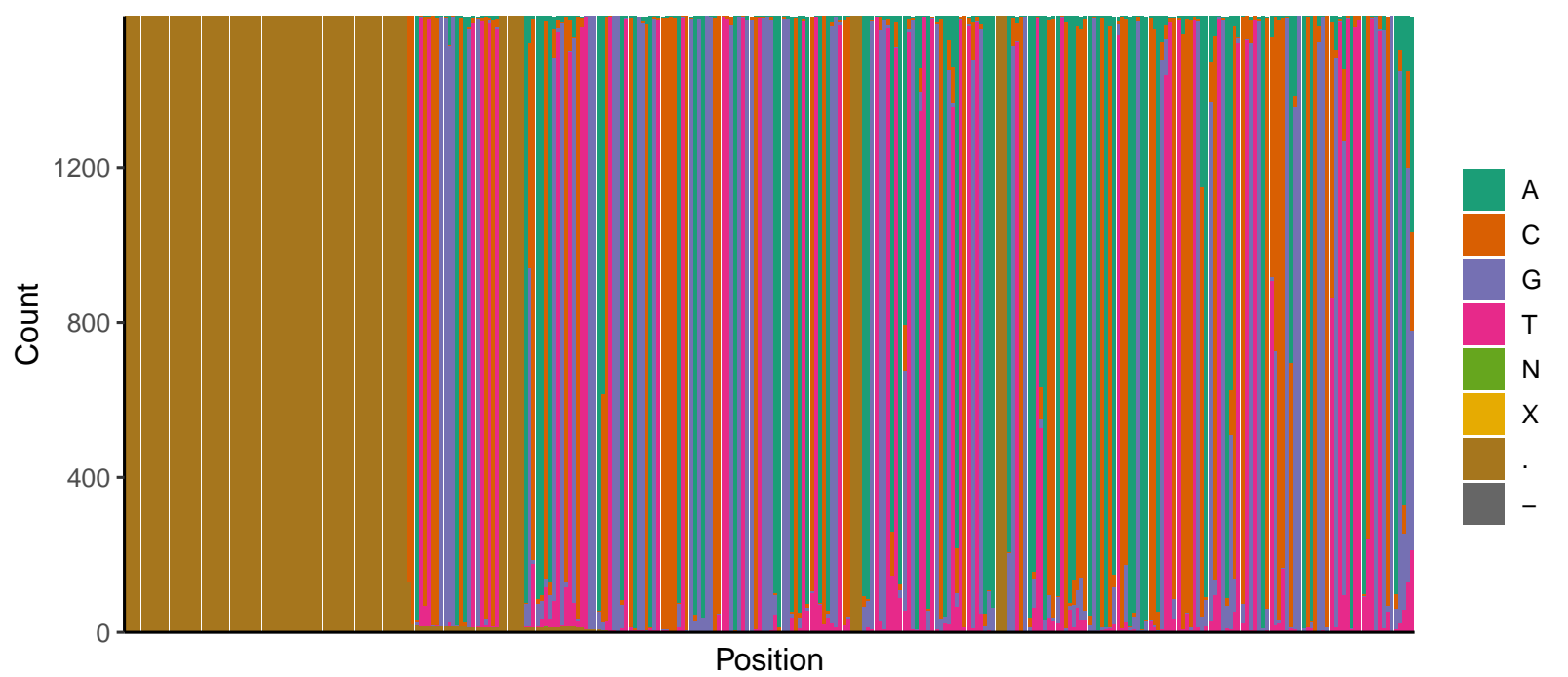
Gene IGHV1-3*01_05_C134A



Gene IGHV4-28*02_05_G80T_A109C_G162A_T163C_A175G_G191C_C210A_G238A



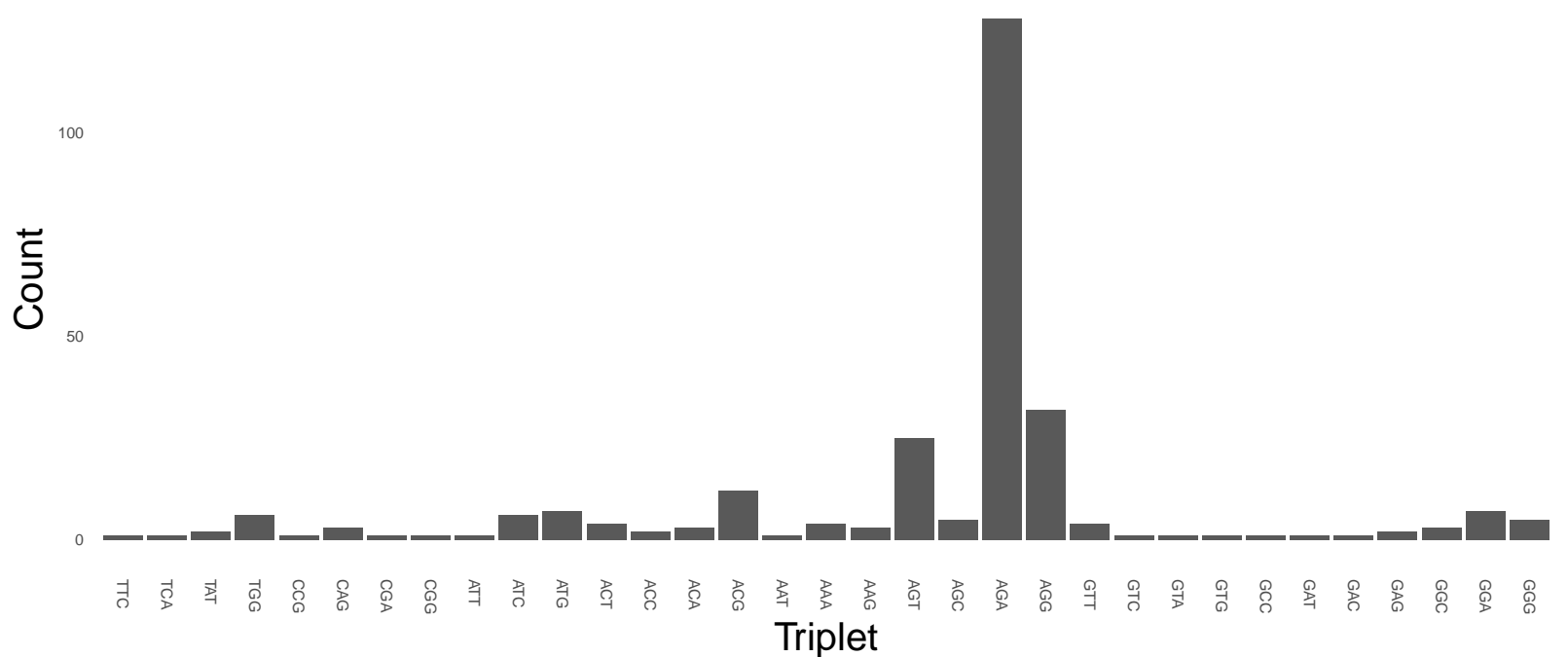
Gene IGHV6-1*01_02_A315G



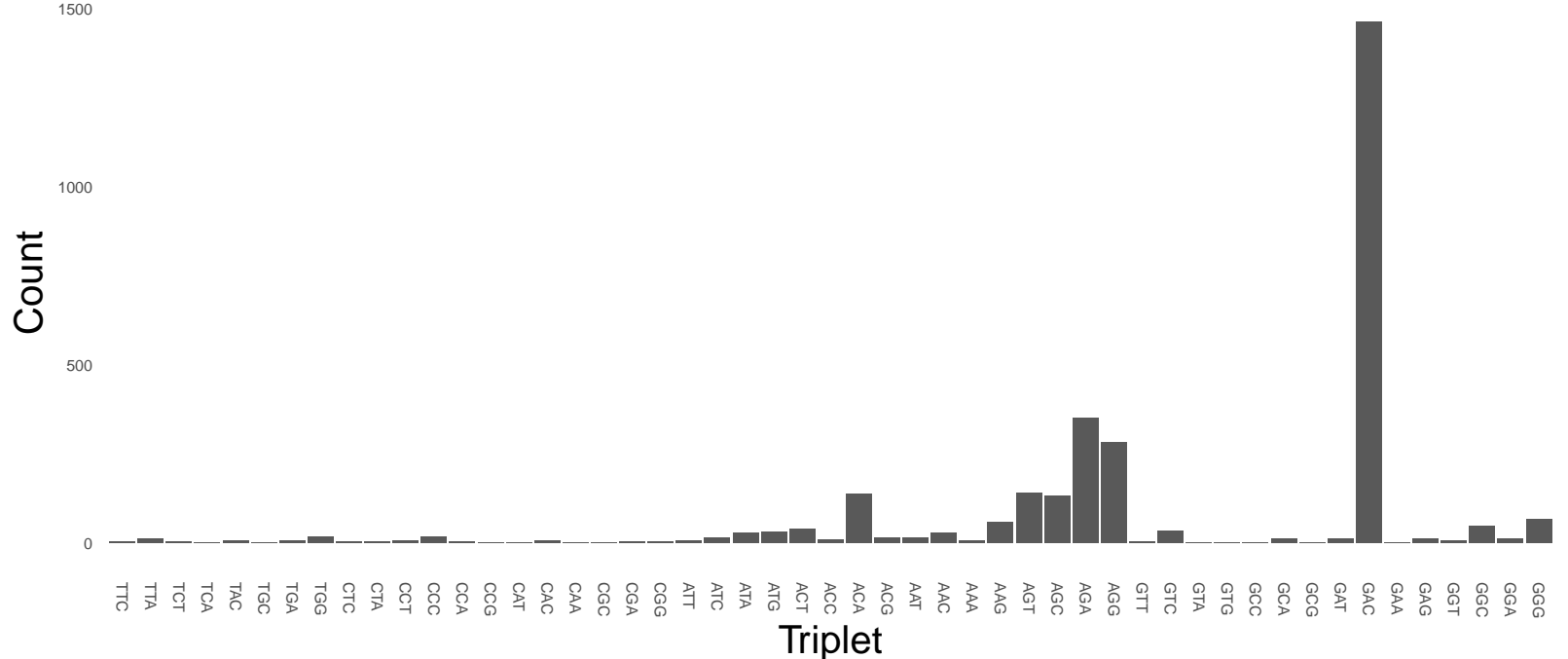
Gene IGHV6-1*01_02_A163C_C174T_G176T_A207C_C230T_A275C



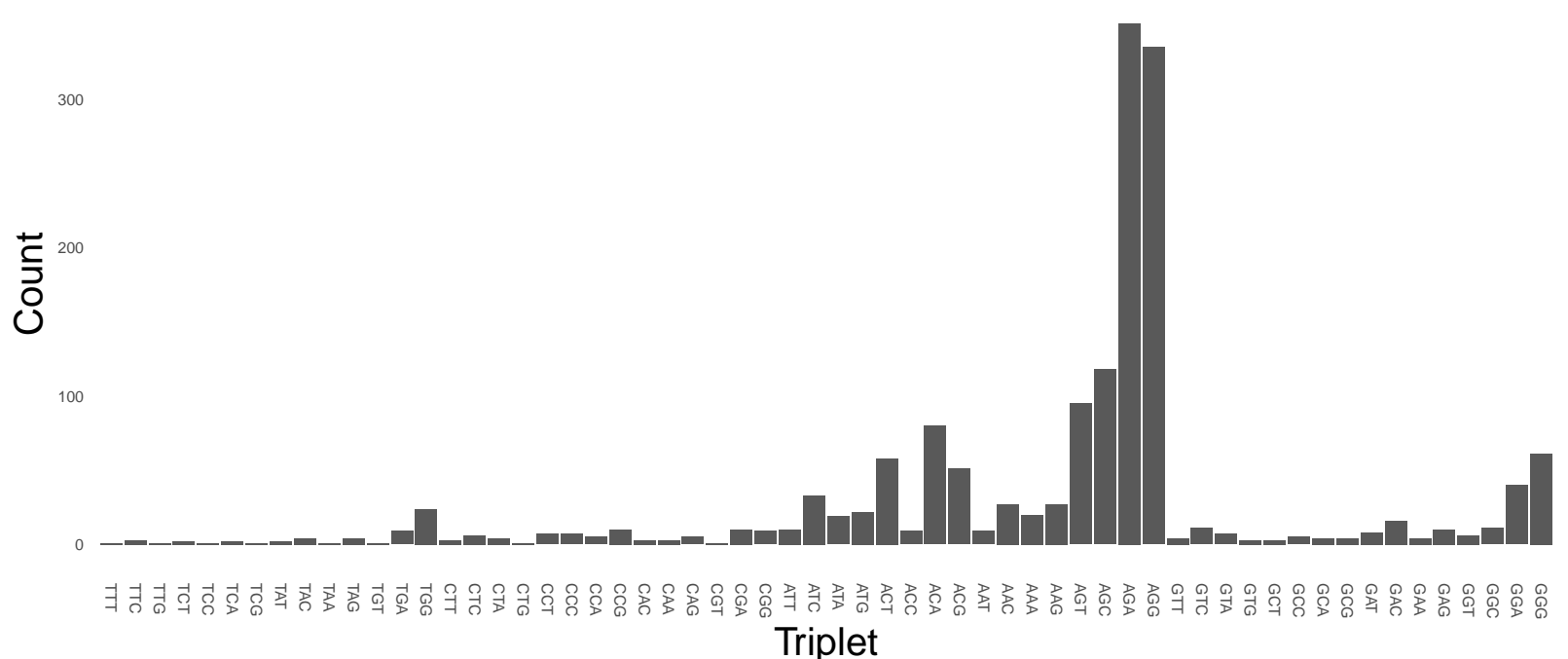
IGHV1-3*01_05_C134A- Final 3 nucleotides as a triplet



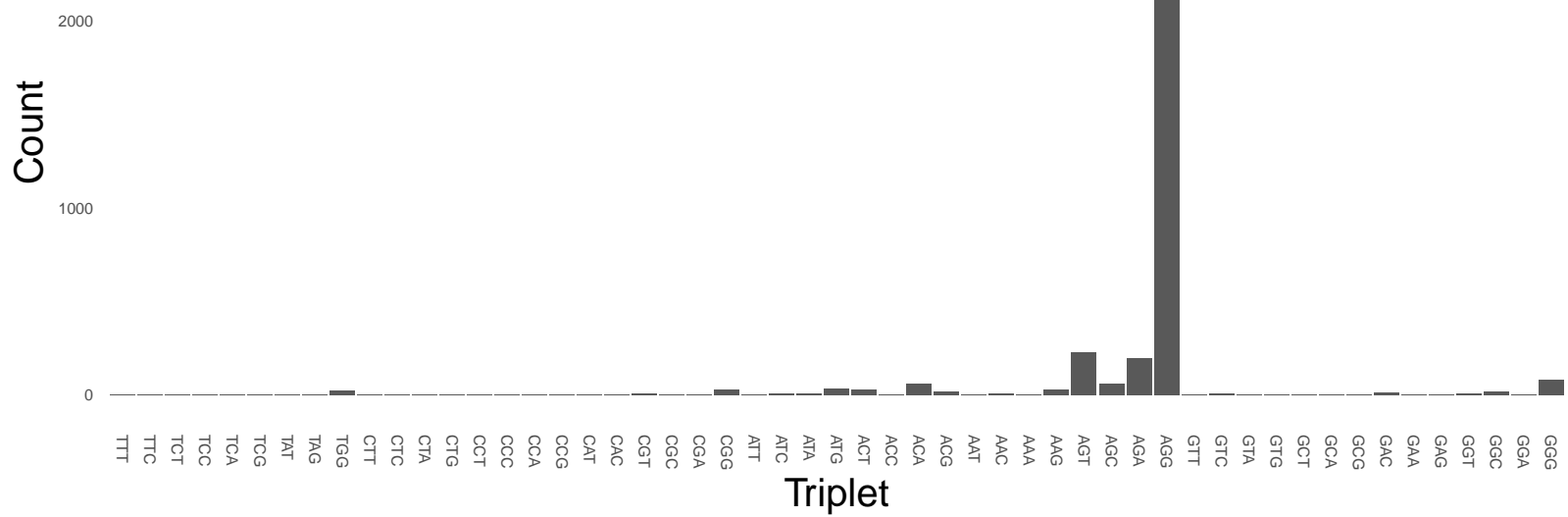
IGHV4-28*02_05_G80T_A109C_G162A_T163C_A175G_G191C_C210A_G238A_C287A- Final



IGHV6-1*01_02_A315G- Final 3 nucleotides as a triplet

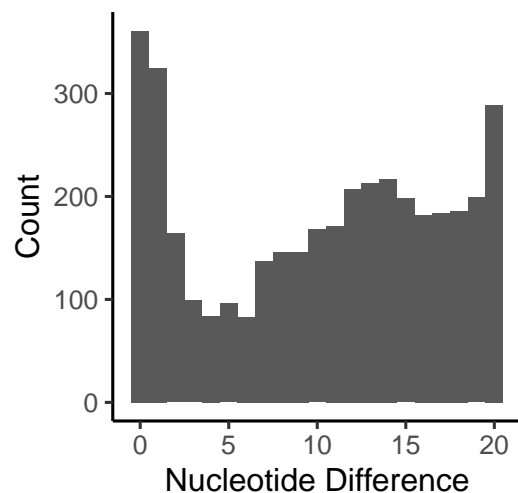


IGHV6-1*01_02_A163C_C174T_G176T_A207C_C230T_A275C- Final 3 nucleotides as a triplet



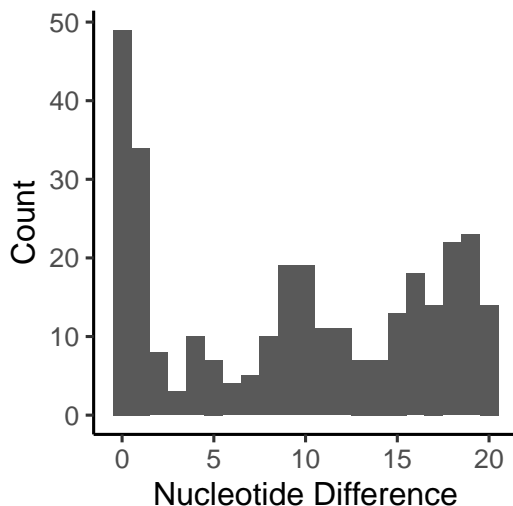
IGHV1-2*02

5582 sequences assigned
361 (6.5%) exact matches, in which:
297 unique CDR3
7 unique J



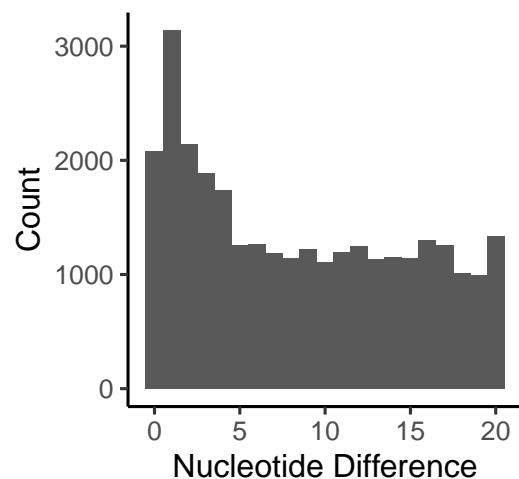
IGHV1-3*01_05

394 sequences assigned
49 (12.4%) exact matches, in which:
41 unique CDR3
6 unique J



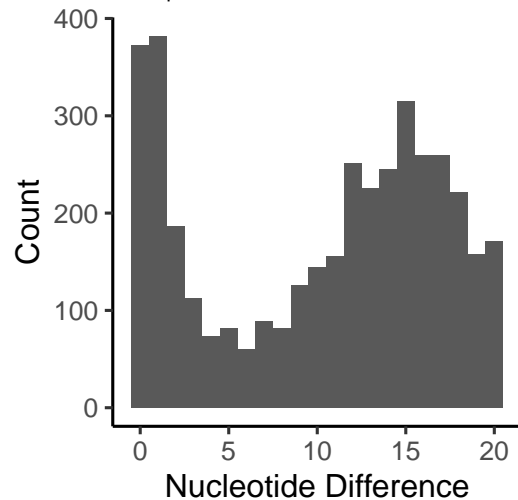
IGHV1-18*01

36457 sequences assigned
2078 (5.7%) exact matches, in which:
1607 unique CDR3
7 unique J



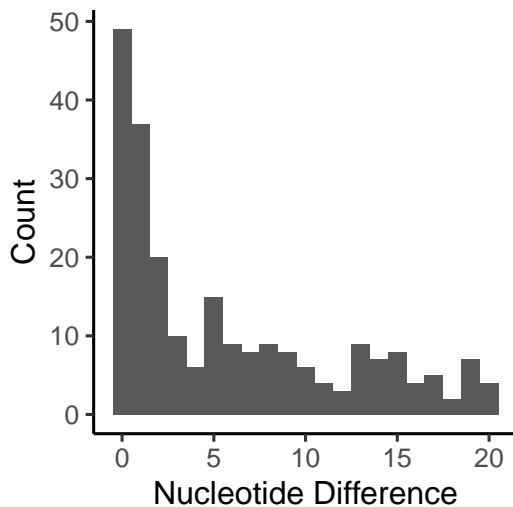
IGHV1-2*06

5038 sequences assigned
373 (7.4%) exact matches, in which:
303 unique CDR3
7 unique J



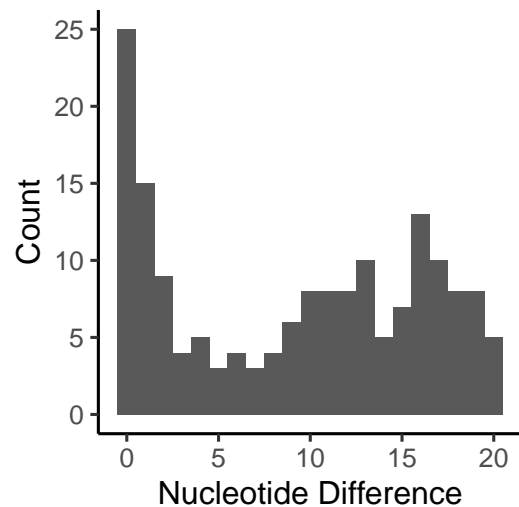
IGHV1-3*01_05_C134A

276 sequences assigned
49 (17.8%) exact matches, in which:
45 unique CDR3
5 unique J



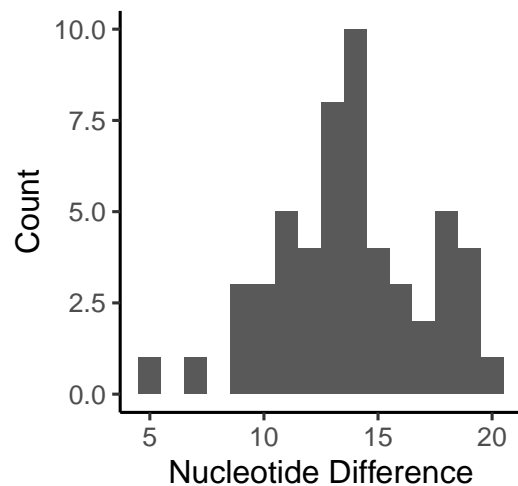
IGHV1-24*01

202 sequences assigned
25 (12.4%) exact matches, in which:
25 unique CDR3
4 unique J



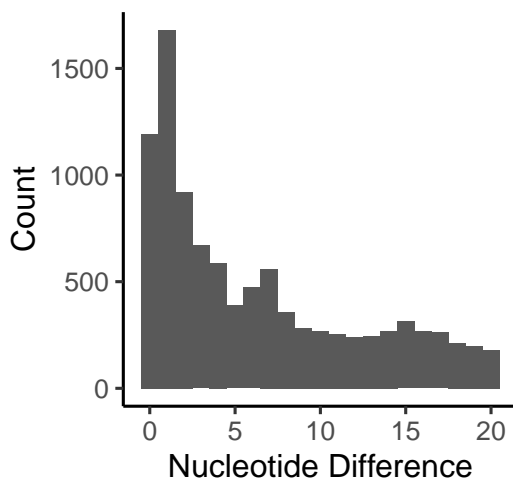
IGHV1-3*04

96 sequences assigned
No exact matches.



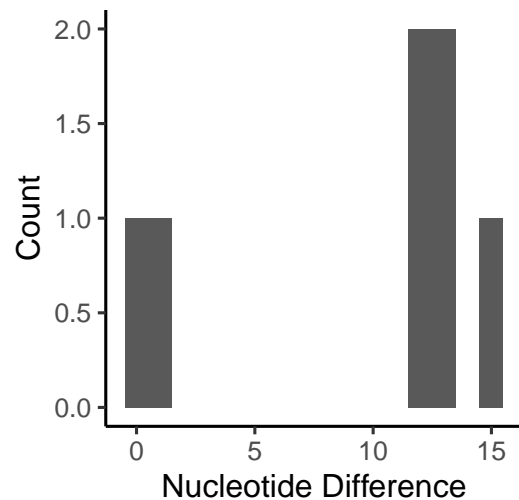
IGHV1-8*01

10917 sequences assigned
1193 (10.9%) exact matches, in which:
870 unique CDR3
7 unique J



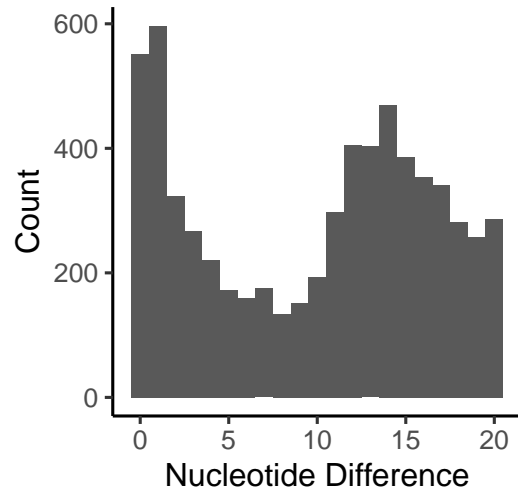
IGHV1-45*02

17 sequences assigned
1 (5.9%) exact matches, in which:
1 unique CDR3
1 unique J



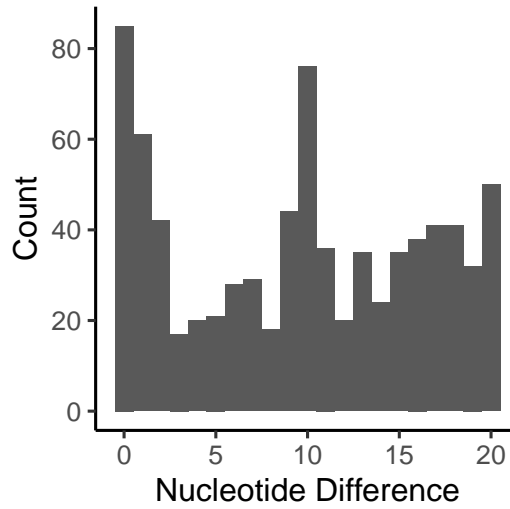
IGHV1-46*01

8670 sequences assigned
551 (6.4%) exact matches, in which:
445 unique CDR3
7 unique J



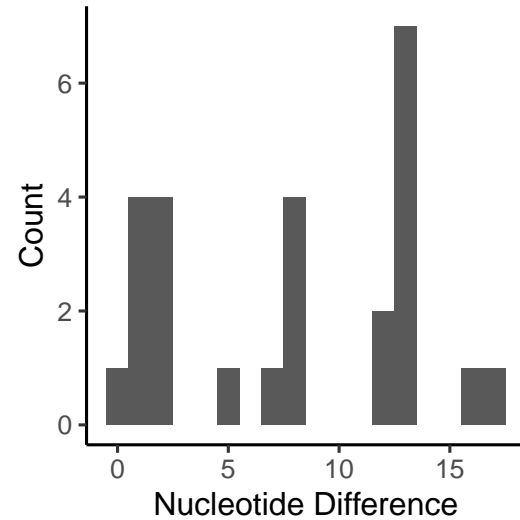
IGHV1-69*02

1158 sequences assigned
85 (7.3%) exact matches, in which:
74 unique CDR3
7 unique J



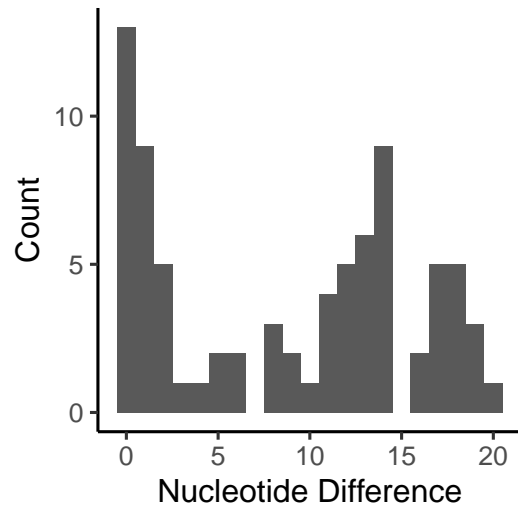
IGHV2-5*01

28 sequences assigned
1 (3.6%) exact matches, in which:
1 unique CDR3
1 unique J



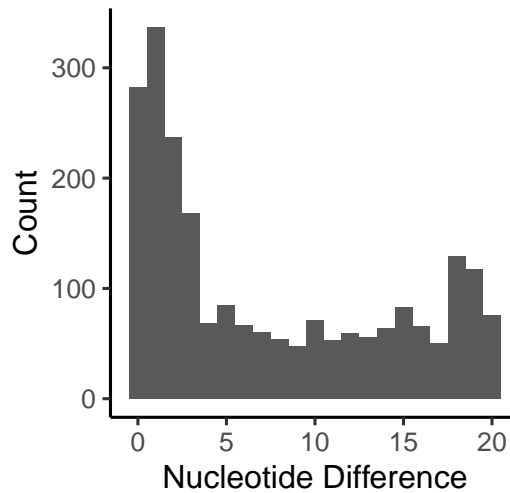
IGHV1-58*02

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



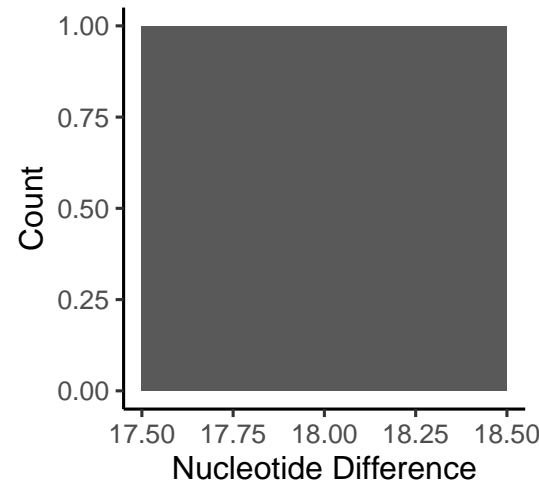
IGHV1-69*05

3083 sequences assigned
282 (9.1%) exact matches, in which:
220 unique CDR3
7 unique J



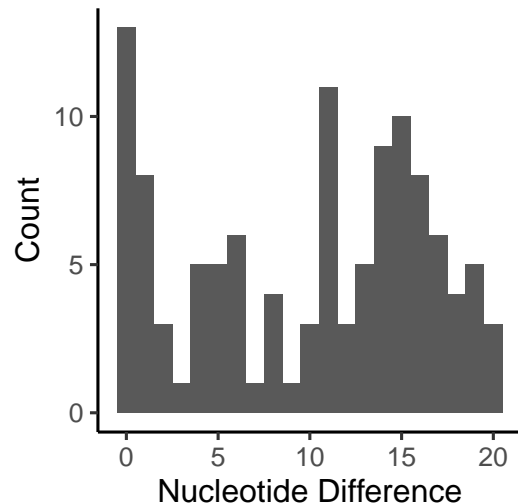
IGHV2-26*02

1 sequences assigned
No exact matches.



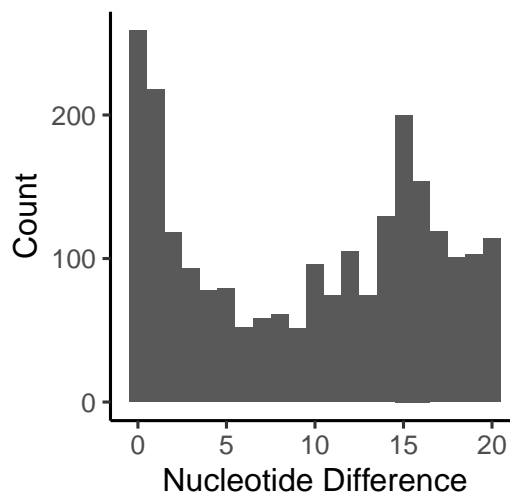
IGHV1-69-2*01

143 sequences assigned
13 (9.1%) exact matches, in which:
11 unique CDR3
3 unique J



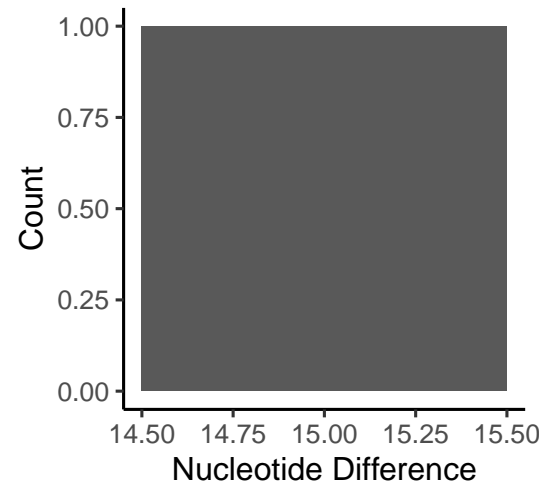
IGHV1-69*01_12_13

3079 sequences assigned
259 (8.4%) exact matches, in which:
225 unique CDR3
7 unique J



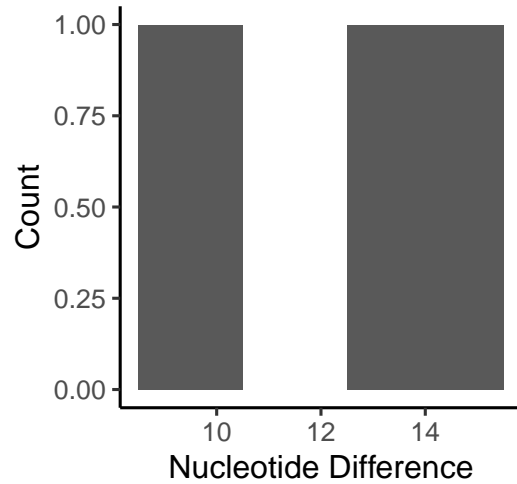
IGHV2-70*13

1 sequences assigned
No exact matches.



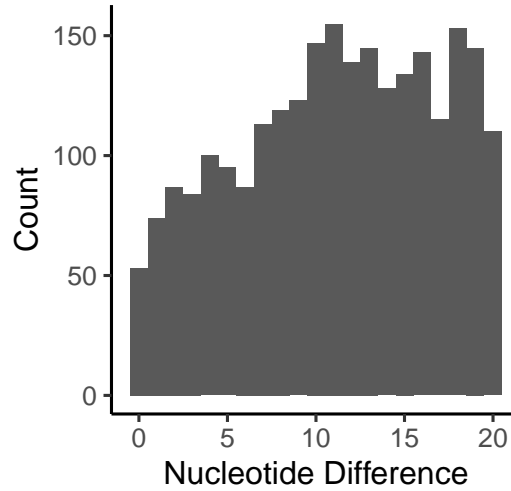
IGHV2-70*20

8 sequences assigned
No exact matches.



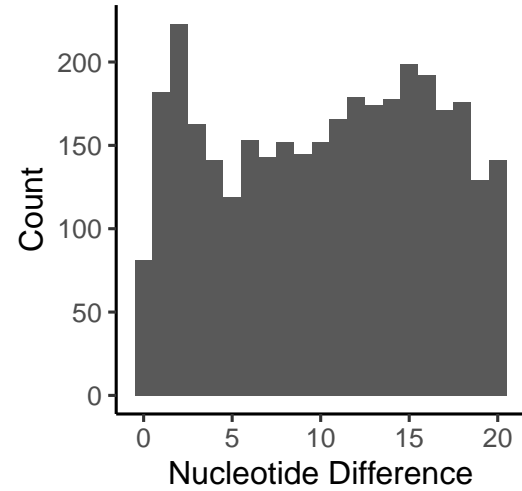
IGHV3-7*03

3183 sequences assigned
53 (1.7%) exact matches, in which:
52 unique CDR3
7 unique J



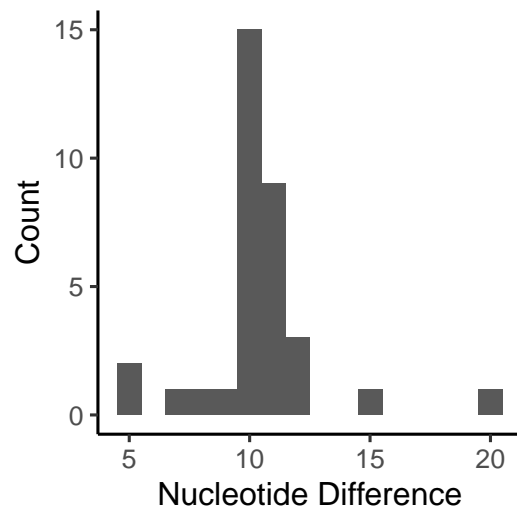
IGHV3-11*04

4038 sequences assigned
81 (2%) exact matches, in which:
79 unique CDR3
7 unique J



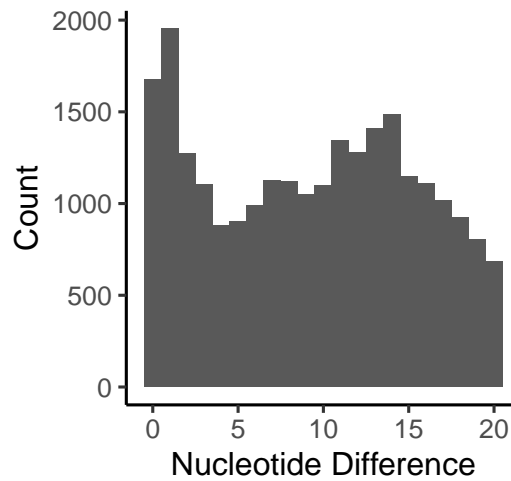
IGHV2-70*11_15

35 sequences assigned
No exact matches.



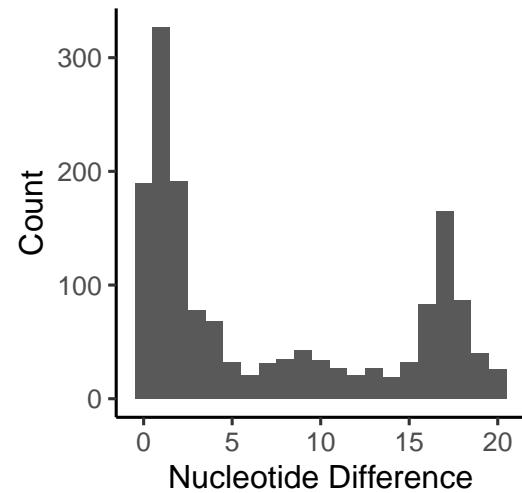
IGHV3-9*01

27968 sequences assigned
1678 (6%) exact matches, in which:
1195 unique CDR3
7 unique J



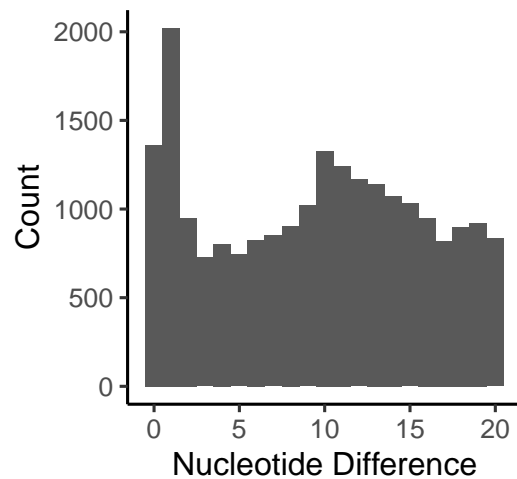
IGHV3-13*01

1740 sequences assigned
190 (10.9%) exact matches, in which:
118 unique CDR3
5 unique J



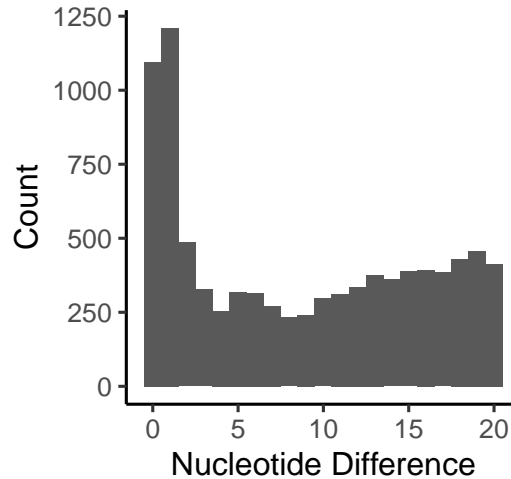
IGHV3-7*01

25896 sequences assigned
1363 (5.3%) exact matches, in which:
1046 unique CDR3
7 unique J



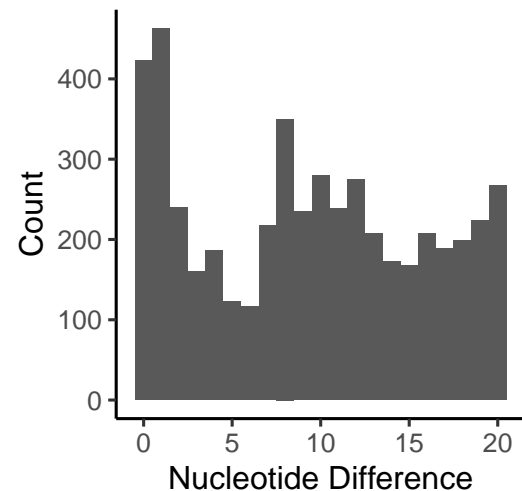
IGHV3-11*01

10931 sequences assigned
1096 (10%) exact matches, in which:
846 unique CDR3
7 unique J



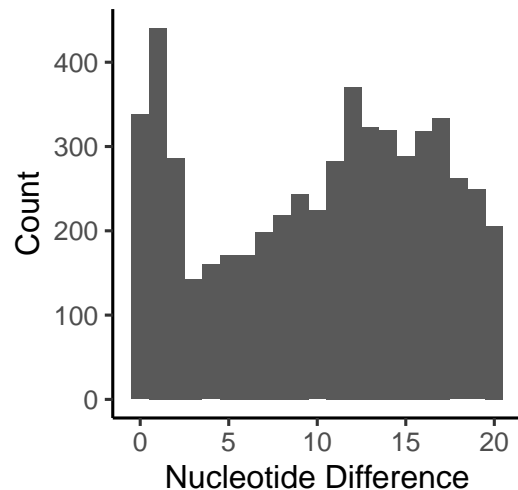
IGHV3-15*01_02

6615 sequences assigned
423 (6.4%) exact matches, in which:
339 unique CDR3
7 unique J



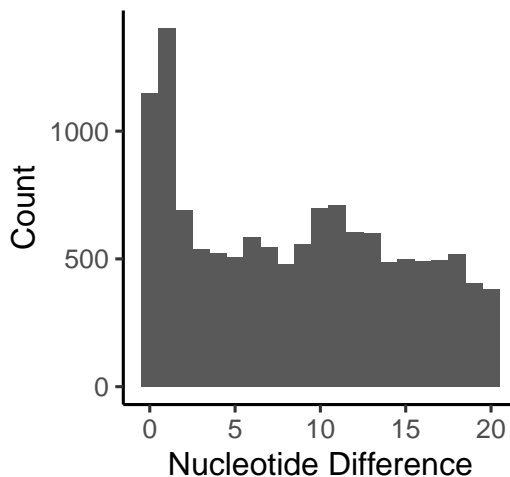
IGHV3-20*03_04

6934 sequences assigned
338 (4.9%) exact matches, in which:
227 unique CDR3
7 unique J



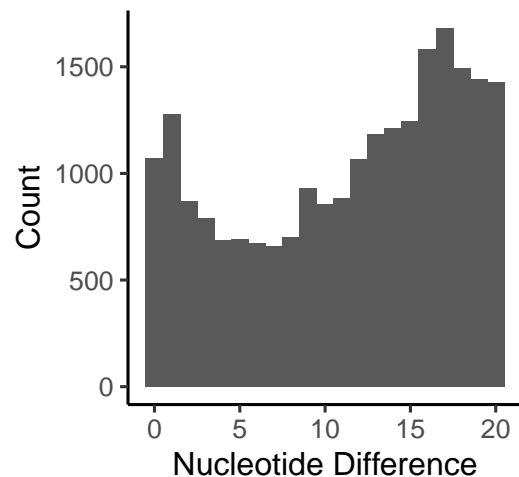
IGHV3-21*01_02

14688 sequences assigned
1147 (7.8%) exact matches, in which:
893 unique CDR3
7 unique J



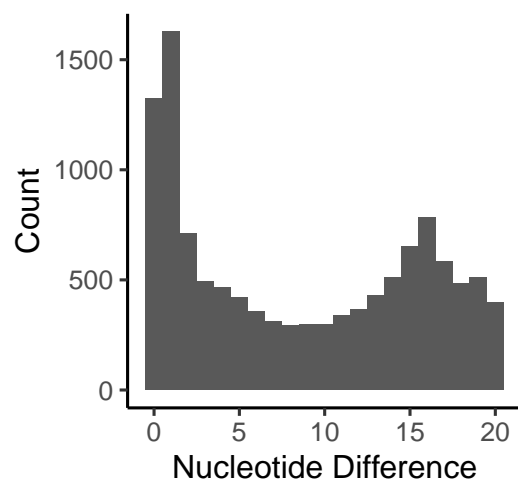
IGHV3-23*01_04

30730 sequences assigned
1071 (3.5%) exact matches, in which:
842 unique CDR3
7 unique J



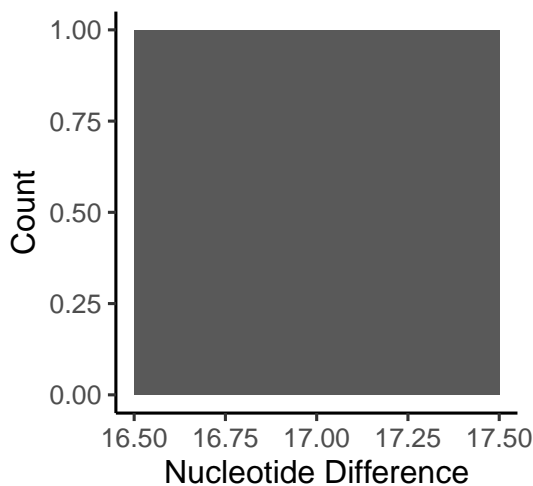
IGHV3-21*03

13816 sequences assigned
1326 (9.6%) exact matches, in which:
946 unique CDR3
7 unique J



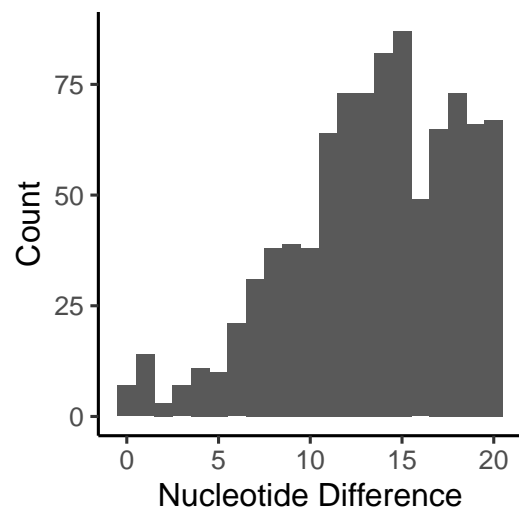
IGHV3-22*01_02

1 sequences assigned
No exact matches.



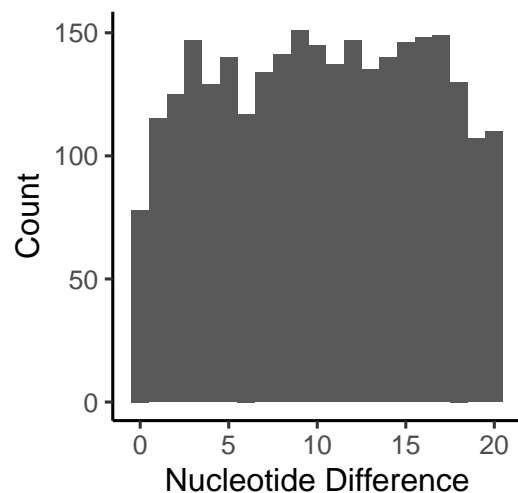
IGHV3-30-3*01

1710 sequences assigned
7 (0.4%) exact matches, in which:
7 unique CDR3
4 unique J



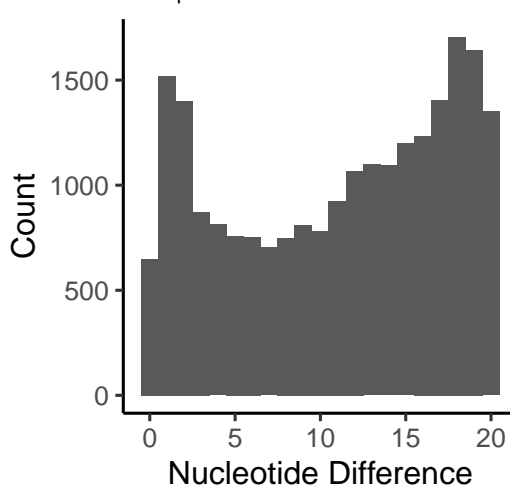
IGHV3-21*04

3497 sequences assigned
78 (2.2%) exact matches, in which:
74 unique CDR3
7 unique J



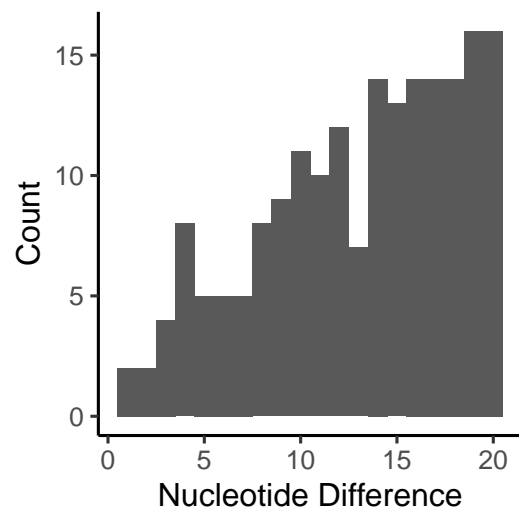
IGHV3-23*03

31264 sequences assigned
648 (2.1%) exact matches, in which:
498 unique CDR3
7 unique J



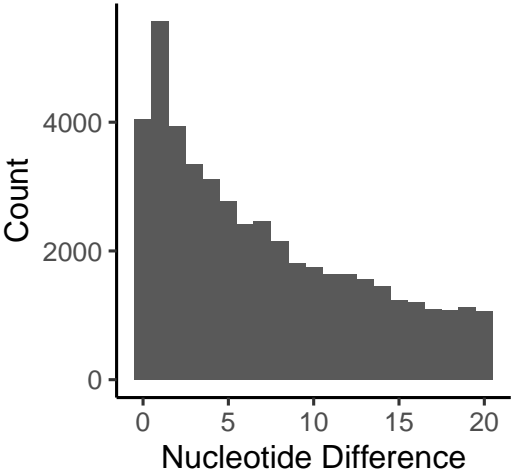
IGHV3-30-3*02

299 sequences assigned
No exact matches.



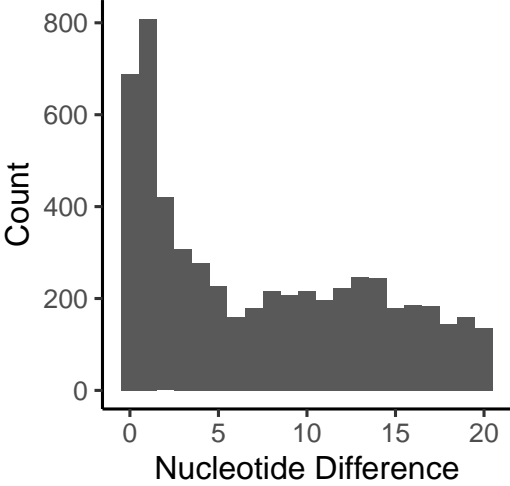
IGHV3-30*04

51910 sequences assigned
4054 (7.8%) exact matches, in which:
3102 unique CDR3
7 unique J



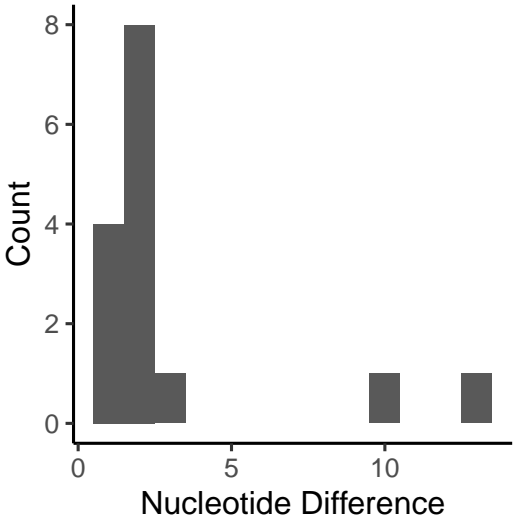
IGHV3-33*06

6292 sequences assigned
688 (10.9%) exact matches, in which:
435 unique CDR3
7 unique J



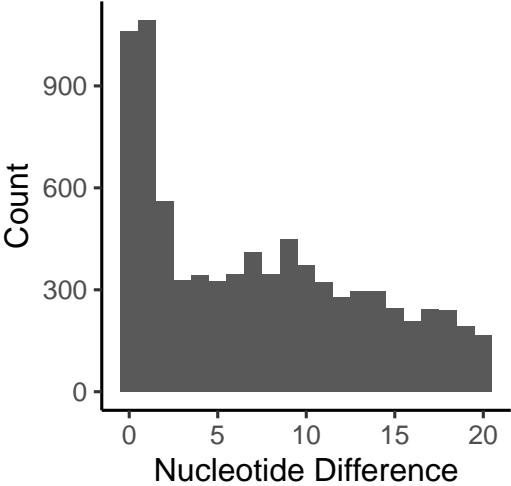
IGHV3-35*02

17 sequences assigned
No exact matches.



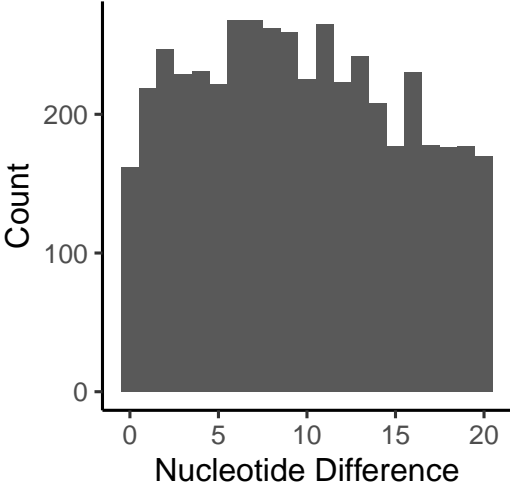
IGHV3-33*01

9159 sequences assigned
1061 (11.6%) exact matches, in which:
825 unique CDR3
7 unique J



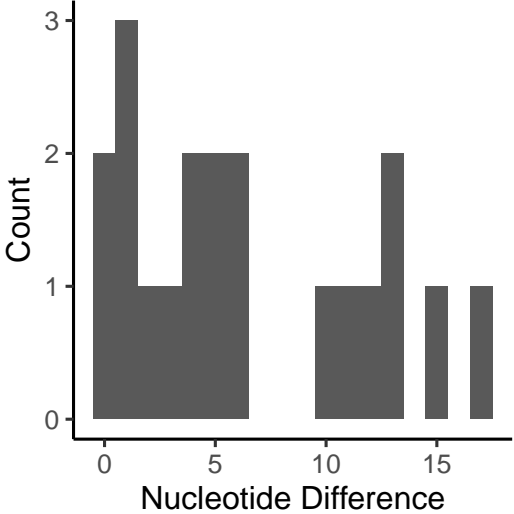
IGHV3-33*08

5588 sequences assigned
162 (2.9%) exact matches, in which:
153 unique CDR3
7 unique J



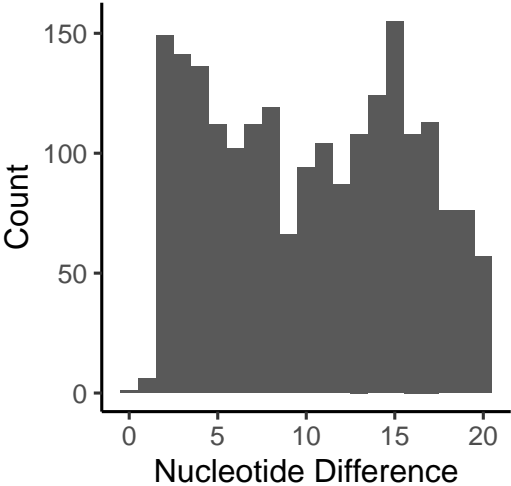
IGHV3-38-3*01

21 sequences assigned
2 (9.5%) exact matches, in which:
2 unique CDR3
1 unique J



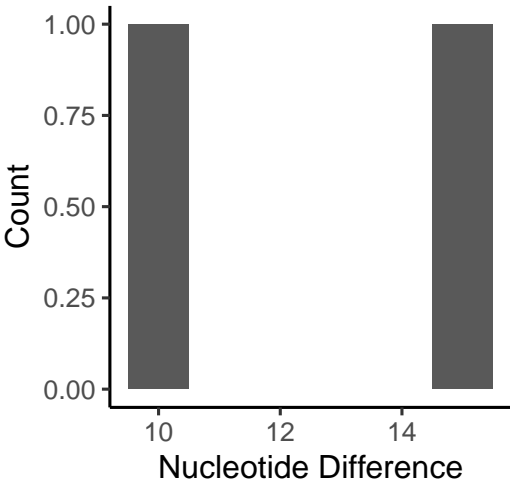
IGHV3-33*05

2508 sequences assigned
1 (0%) exact matches, in which:
1 unique CDR3
1 unique J



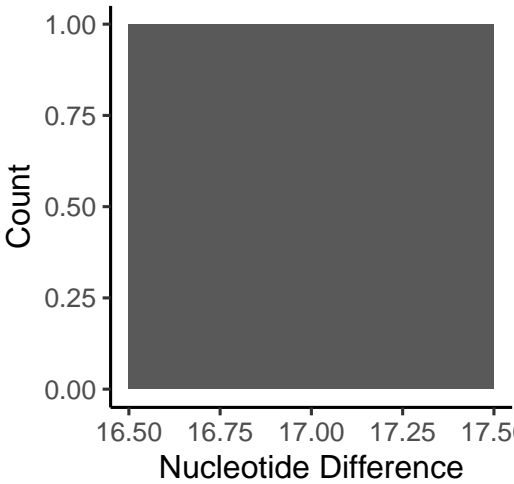
IGHV3-35*01

2 sequences assigned
No exact matches.



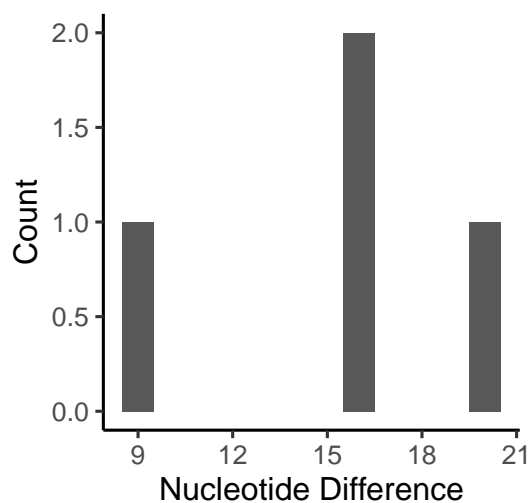
IGHV3-38*02

1 sequences assigned
No exact matches.



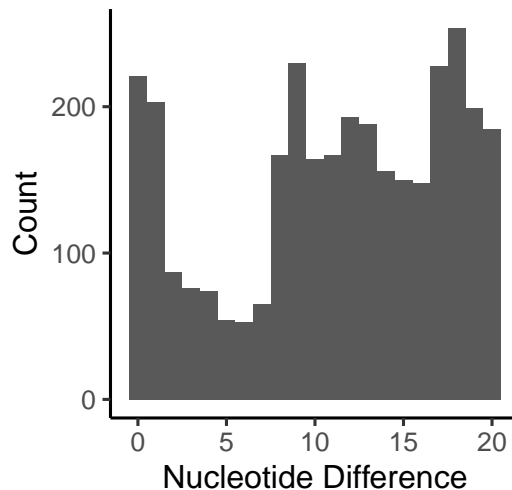
IGHV3–38*03

5 sequences assigned
No exact matches.



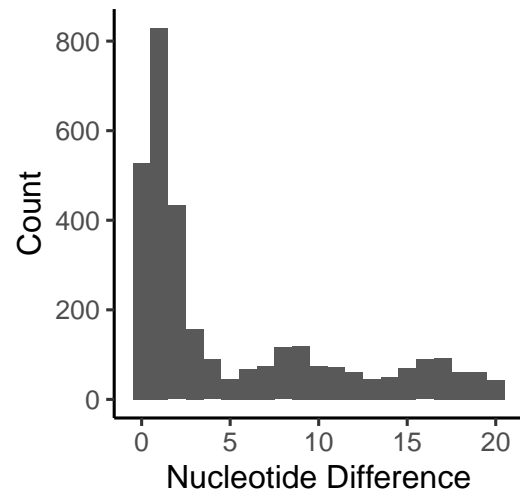
IGHV3–49*04

4907 sequences assigned
221 (4.5%) exact matches, in which:
165 unique CDR3
7 unique J



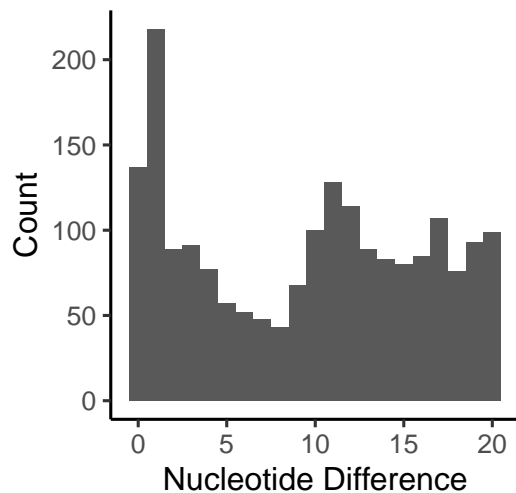
IGHV3–53*04

3504 sequences assigned
528 (15.1%) exact matches, in which:
362 unique CDR3
7 unique J



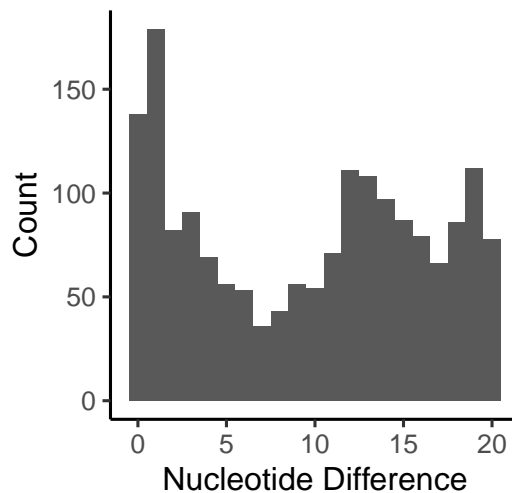
IGHV3–43*01

2515 sequences assigned
137 (5.4%) exact matches, in which:
90 unique CDR3
7 unique J



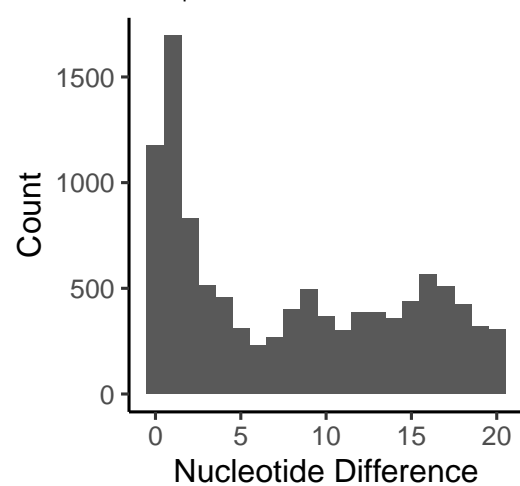
IGHV3–49*03_05

2245 sequences assigned
138 (6.1%) exact matches, in which:
99 unique CDR3
6 unique J



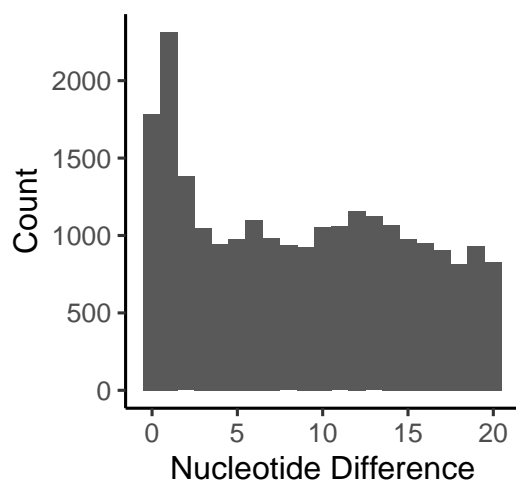
IGHV3–53*05

13265 sequences assigned
1174 (8.9%) exact matches, in which:
862 unique CDR3
7 unique J



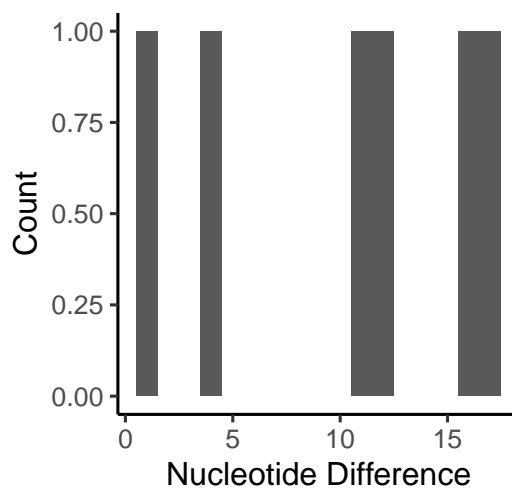
IGHV3–48*03

27770 sequences assigned
1786 (6.4%) exact matches, in which:
1377 unique CDR3
7 unique J



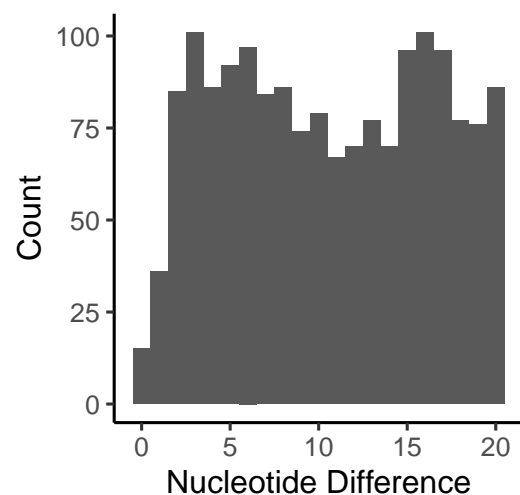
IGHV3–52*01_03

6 sequences assigned
No exact matches.



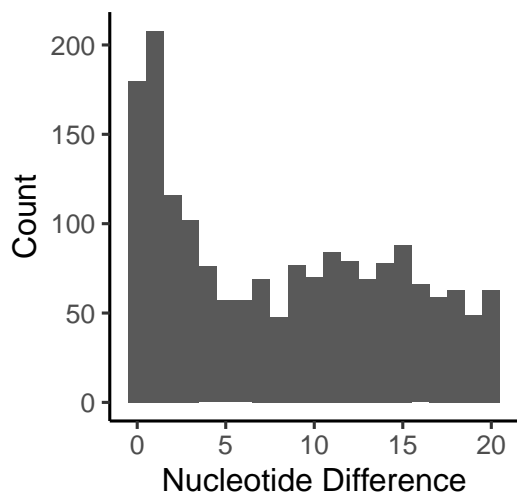
IGHV3–53*01_02

2330 sequences assigned
15 (0.6%) exact matches, in which:
15 unique CDR3
4 unique J



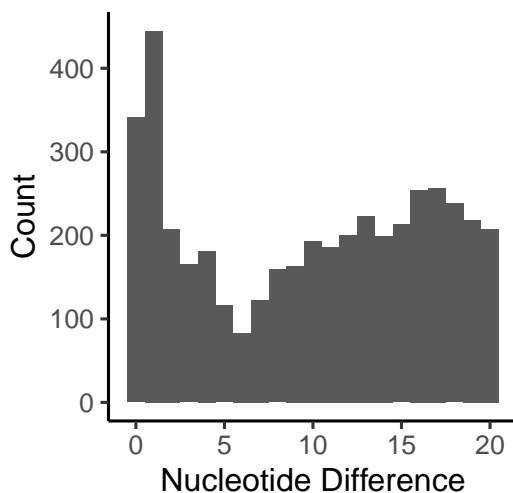
IGHV3-64*01

2063 sequences assigned
180 (8.7%) exact matches, in which:
130 unique CDR3
7 unique J



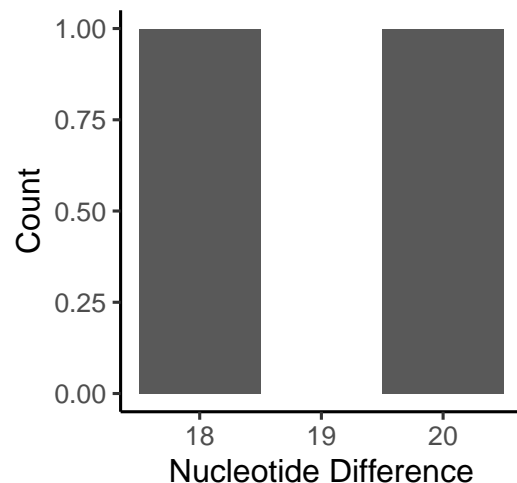
IGHV3-66*02

5515 sequences assigned
341 (6.2%) exact matches, in which:
256 unique CDR3
7 unique J



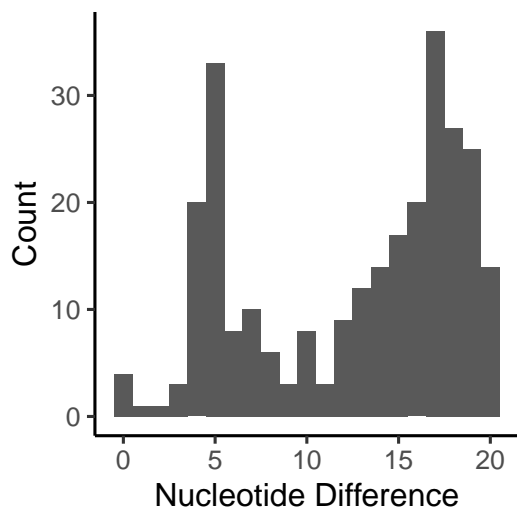
IGHV3-71*01_04

38 sequences assigned
No exact matches.



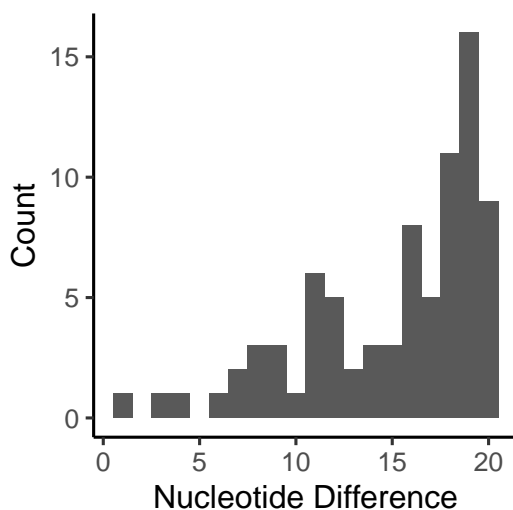
IGHV3-64*02_07

530 sequences assigned
4 (0.8%) exact matches, in which:
3 unique CDR3
3 unique J



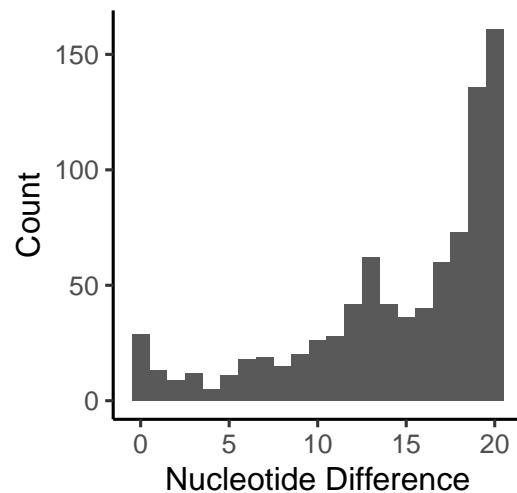
IGHV3-69-1*01

226 sequences assigned
No exact matches.



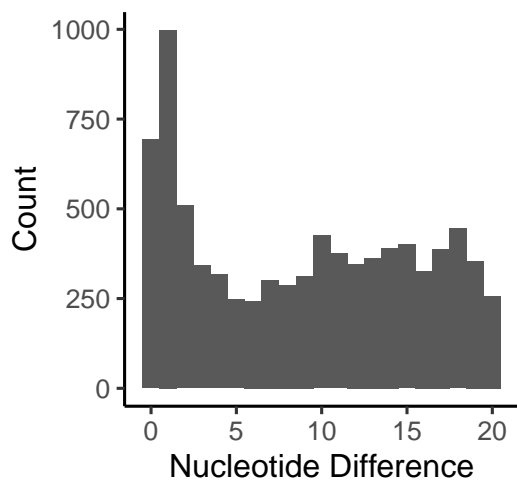
IGHV3-72*01

1327 sequences assigned
29 (2.2%) exact matches, in which:
24 unique CDR3
5 unique J



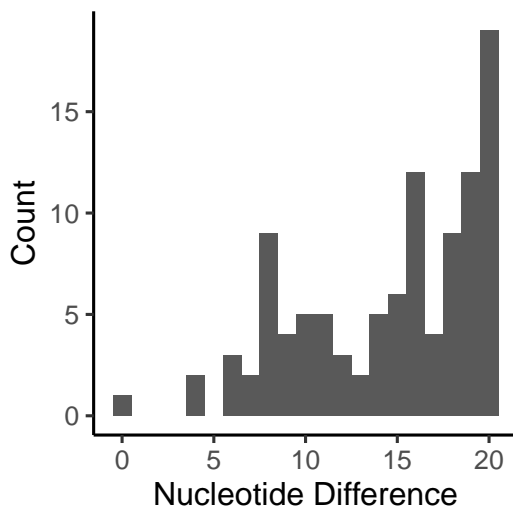
IGHV3-66*01

11204 sequences assigned
693 (6.2%) exact matches, in which:
512 unique CDR3
7 unique J



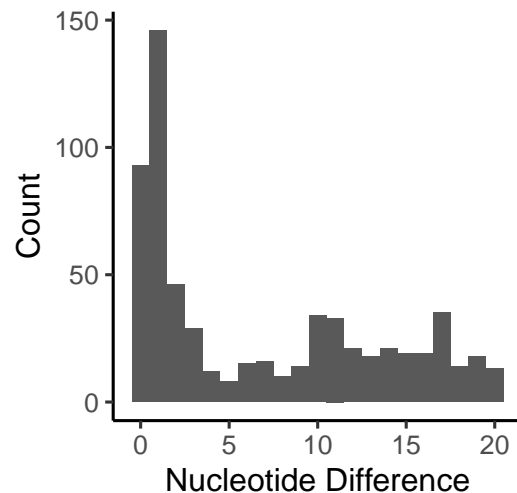
IGHV3-69-1*02

498 sequences assigned
1 (0.2%) exact matches, in which:
1 unique CDR3
1 unique J



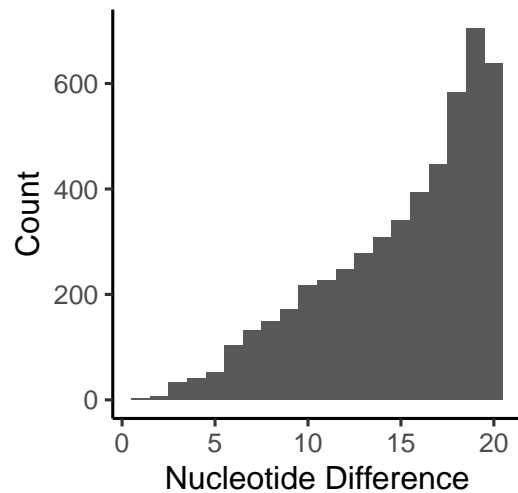
IGHV3-73*01_02

731 sequences assigned
93 (12.7%) exact matches, in which:
70 unique CDR3
7 unique J



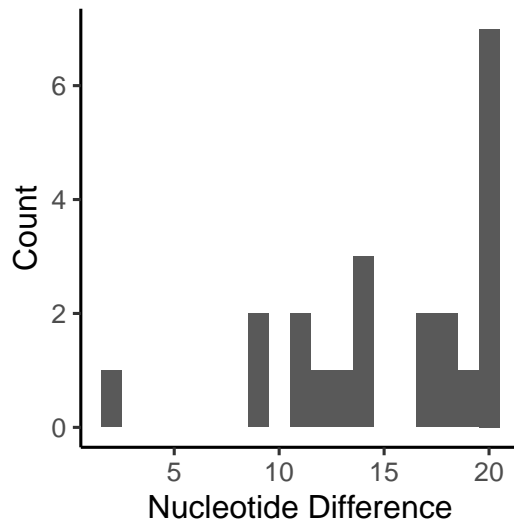
IGHV3-74*03

8435 sequences assigned
No exact matches.



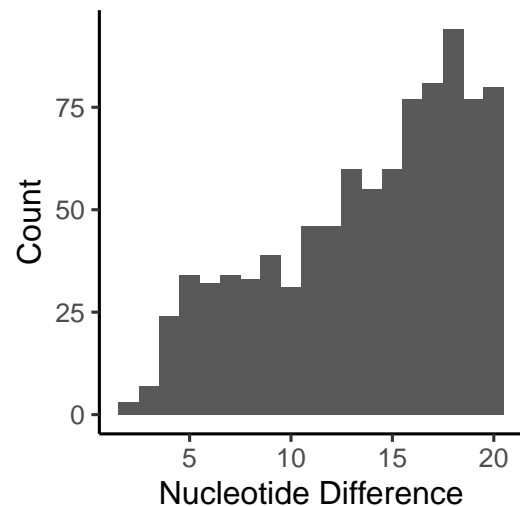
IGHV3-43D*04

53 sequences assigned
No exact matches.



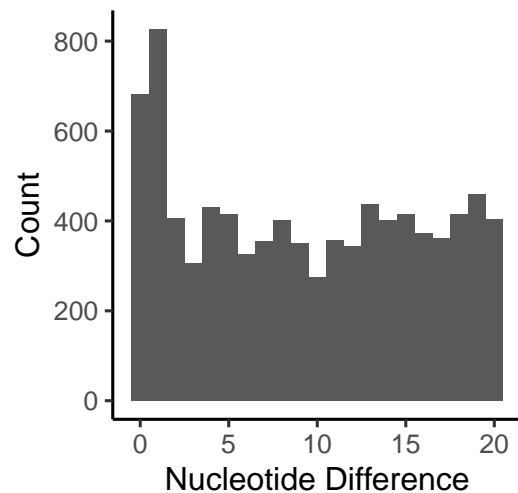
IGHV3-NL1*01

1363 sequences assigned
No exact matches.



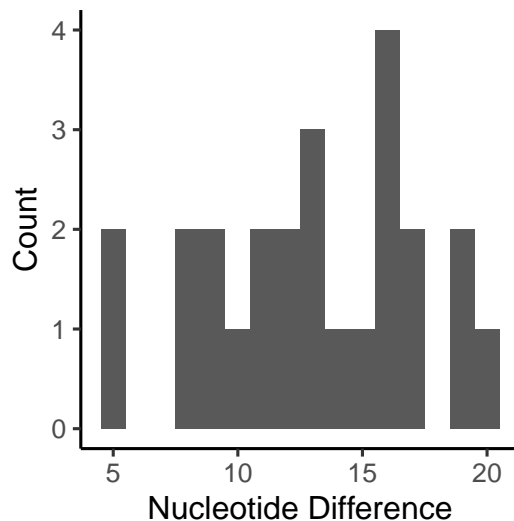
IGHV3-74*01_02

10859 sequences assigned
682 (6.3%) exact matches, in which:
534 unique CDR3
7 unique J



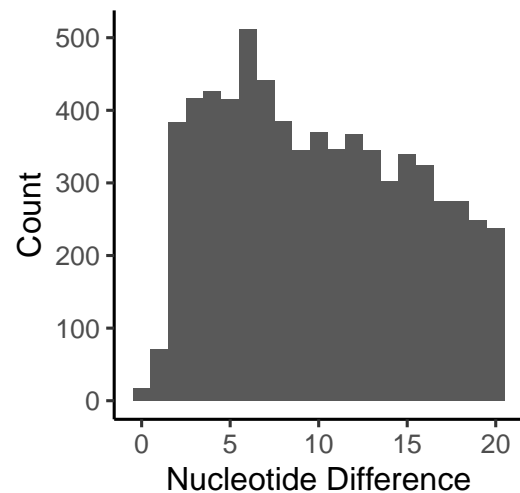
IGHV3-64D*06

32 sequences assigned
No exact matches.



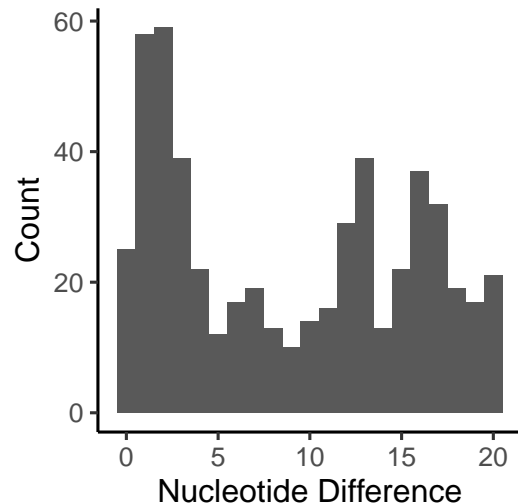
IGHV4-4*07

8194 sequences assigned
17 (0.2%) exact matches, in which:
17 unique CDR3
5 unique J



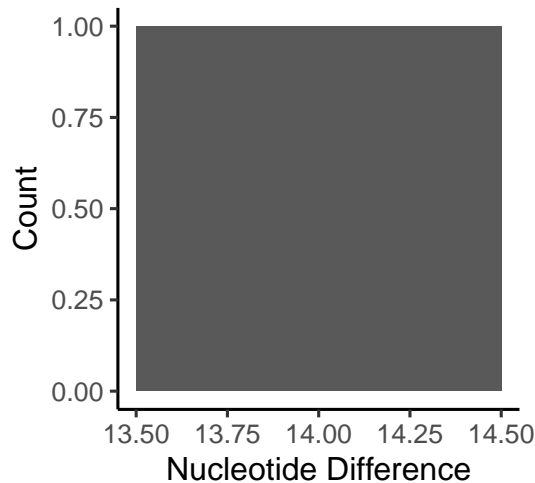
IGHV3-43D*03

660 sequences assigned
25 (3.8%) exact matches, in which:
21 unique CDR3
3 unique J



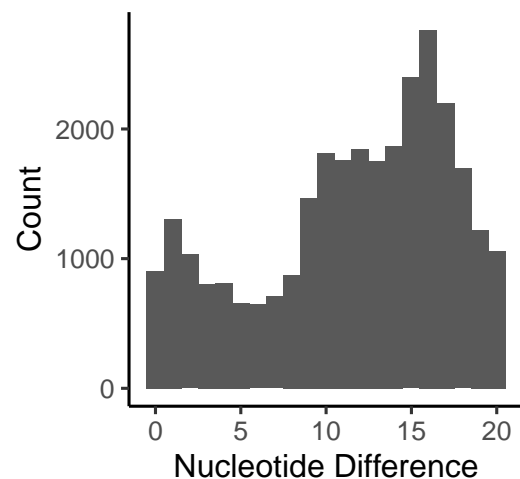
IGHV3-64D*09

4 sequences assigned
No exact matches.



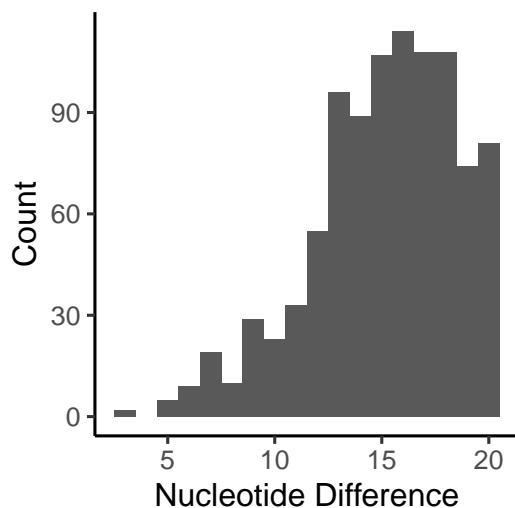
IGHV4-4*02_03

36015 sequences assigned
903 (2.5%) exact matches, in which:
645 unique CDR3
7 unique J



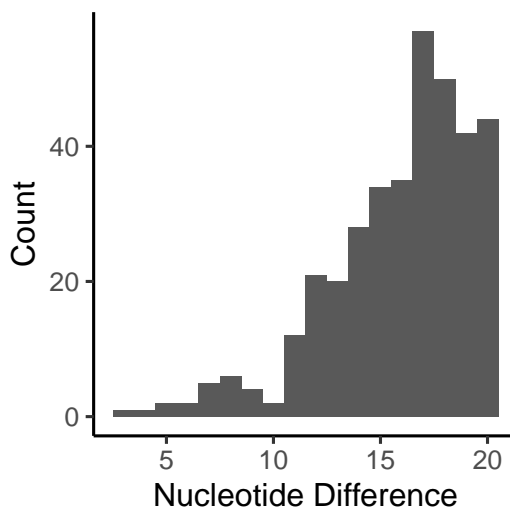
IGHV4-28*03

1271 sequences assigned
No exact matches.



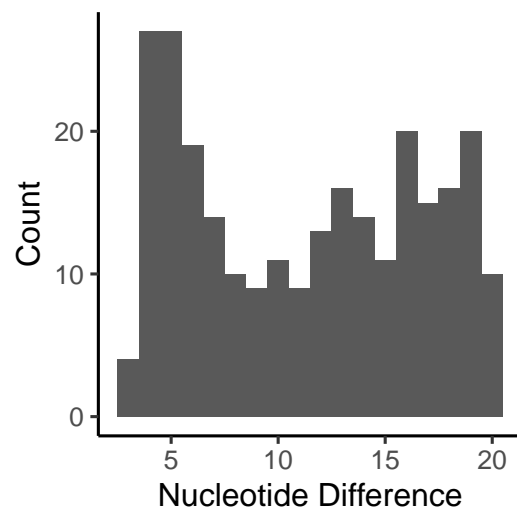
IGHV4-30-4*01

585 sequences assigned
No exact matches.



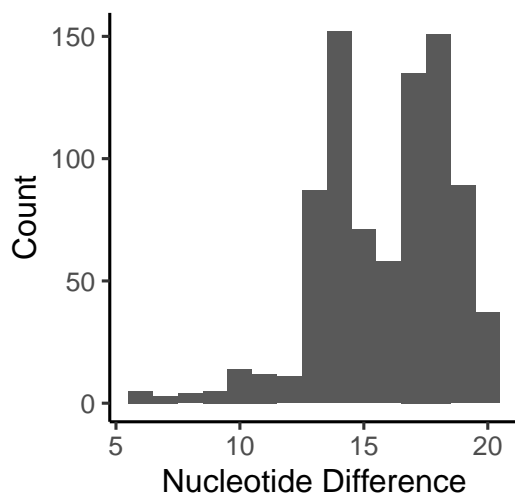
IGHV4-30-2*03

376 sequences assigned
No exact matches.



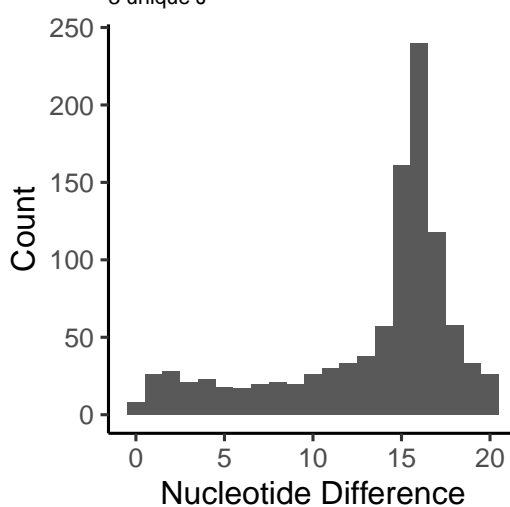
IGHV4-28*01_07

961 sequences assigned
No exact matches.



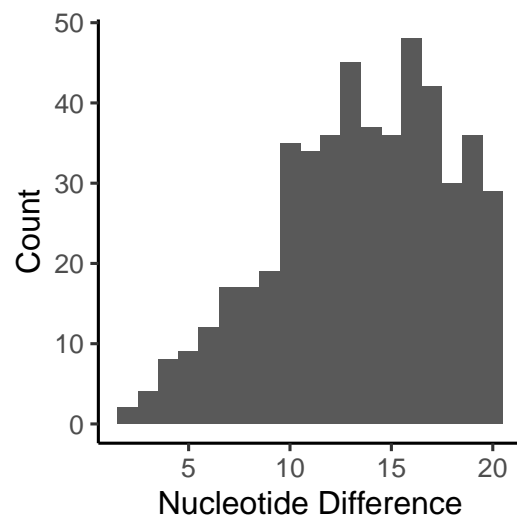
IGHV4-30-2*01

1132 sequences assigned
8 (0.7%) exact matches, in which:
7 unique CDR3
3 unique J



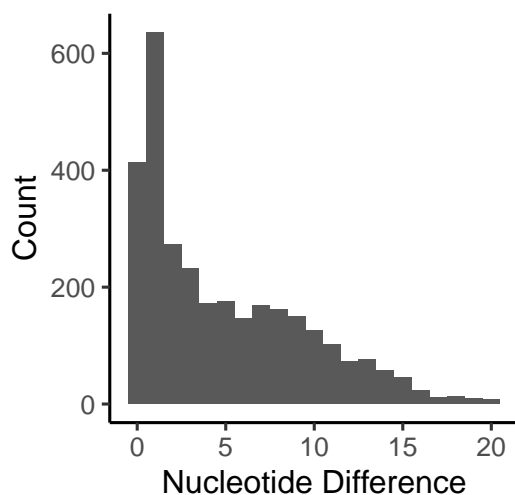
IGHV4-30-2*06

615 sequences assigned
No exact matches.



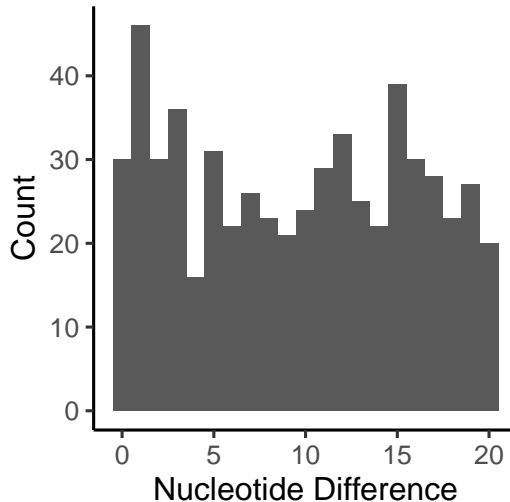
IGHV4-28*02_05_G80T_

3089 sequences assigned
414 (13.4%) exact matches, in which:
262 unique CDR3
7 unique J



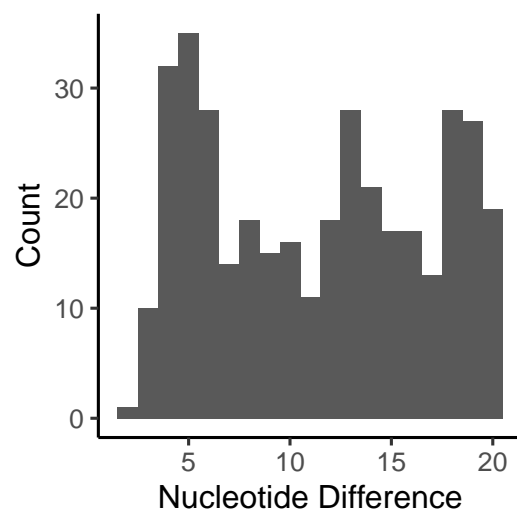
IGHV4-30-2*02

655 sequences assigned
30 (4.6%) exact matches, in which:
27 unique CDR3
5 unique J



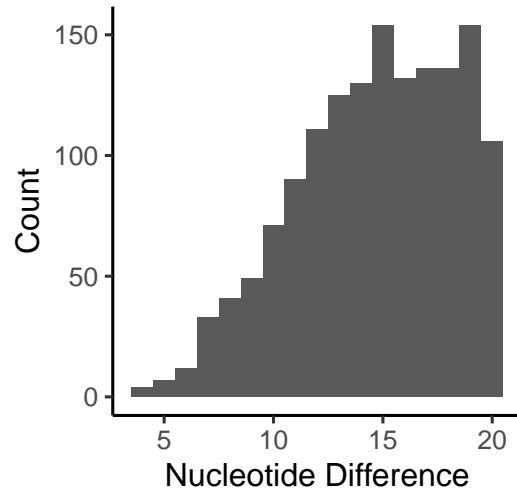
IGHV4-30-4*07

461 sequences assigned
No exact matches.



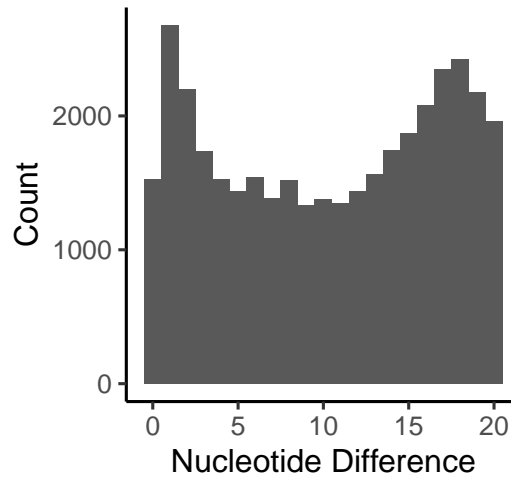
IGHV4-30-4*08

2242 sequences assigned
No exact matches.



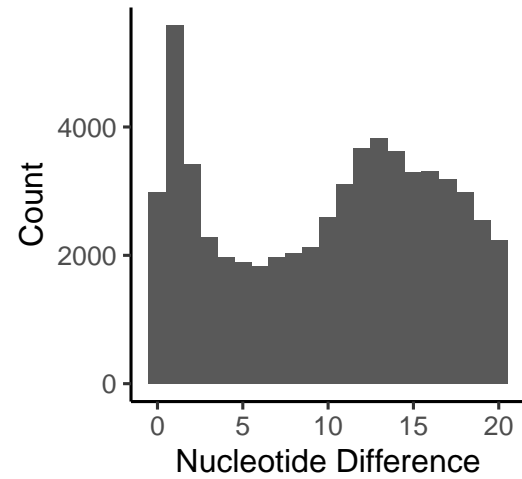
IGHV4-38-2*02

46453 sequences assigned
1524 (3.3%) exact matches, in which:
1023 unique CDR3
7 unique J



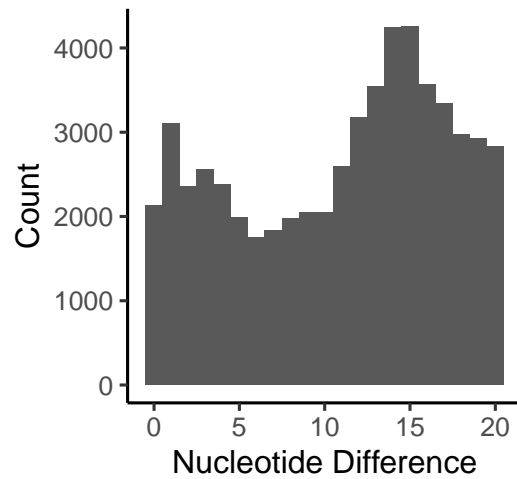
IGHV4-59*08

73128 sequences assigned
2990 (4.1%) exact matches, in which:
1954 unique CDR3
7 unique J



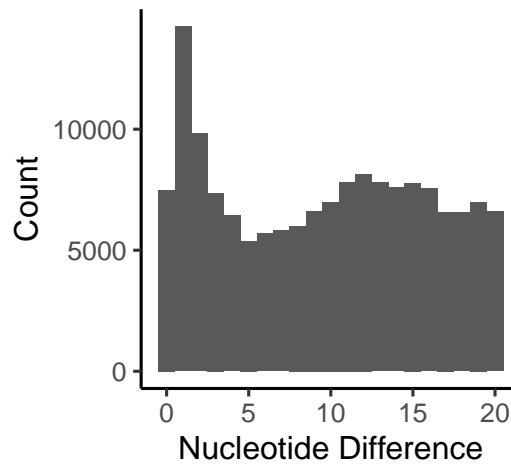
IGHV4-31*02

70963 sequences assigned
2136 (3%) exact matches, in which:
1451 unique CDR3
7 unique J



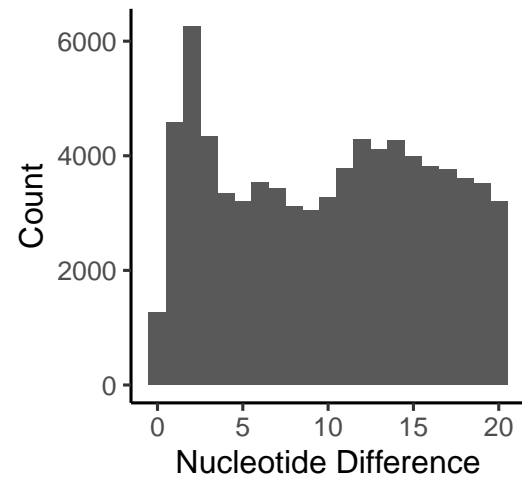
IGHV4-39*07

202862 sequences assigned
7480 (3.7%) exact matches, in which:
4519 unique CDR3
7 unique J



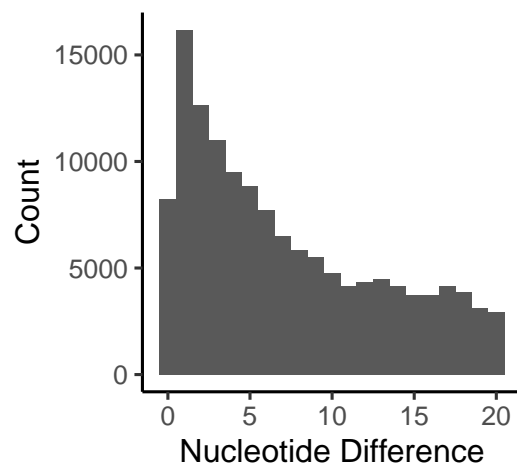
IGHV4-59*12

94114 sequences assigned
1265 (1.3%) exact matches, in which:
1020 unique CDR3
7 unique J



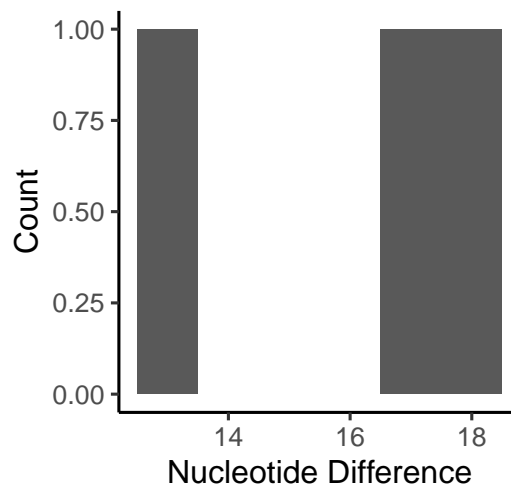
IGHV4-34*01_02

153878 sequences assigned
8222 (5.3%) exact matches, in which:
5115 unique CDR3
7 unique J



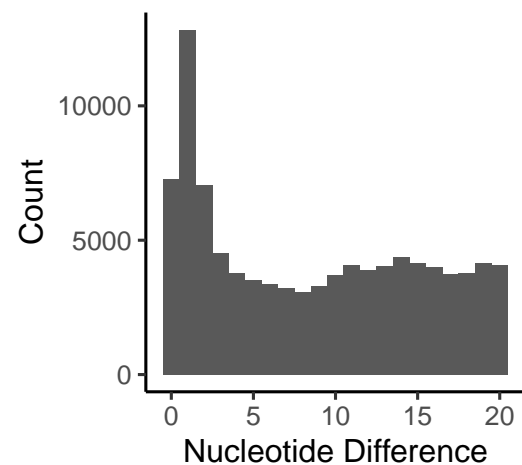
IGHV4-55*09

19 sequences assigned
No exact matches.



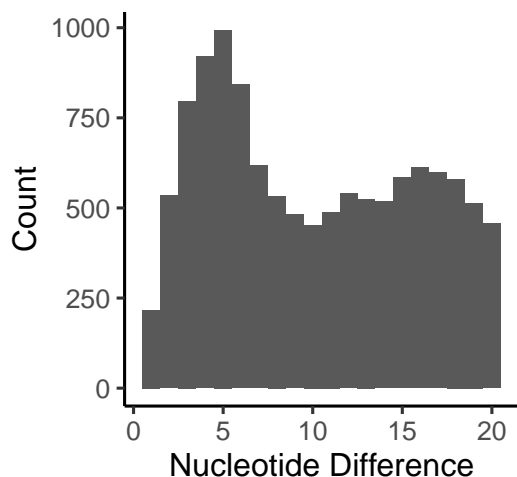
IGHV4-59*01_07

113253 sequences assigned
7270 (6.4%) exact matches, in which:
4593 unique CDR3
7 unique J



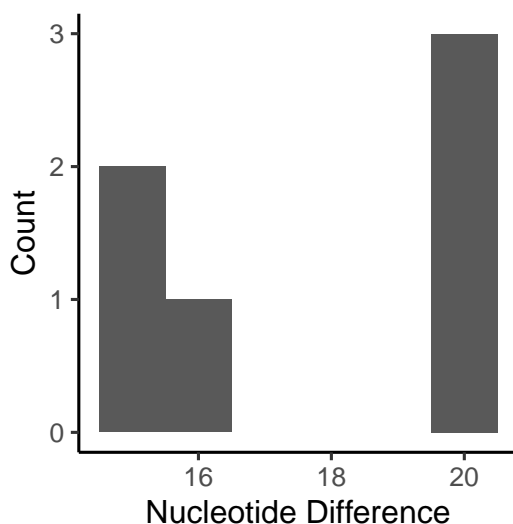
IGHV4-61*01

14005 sequences assigned
No exact matches.



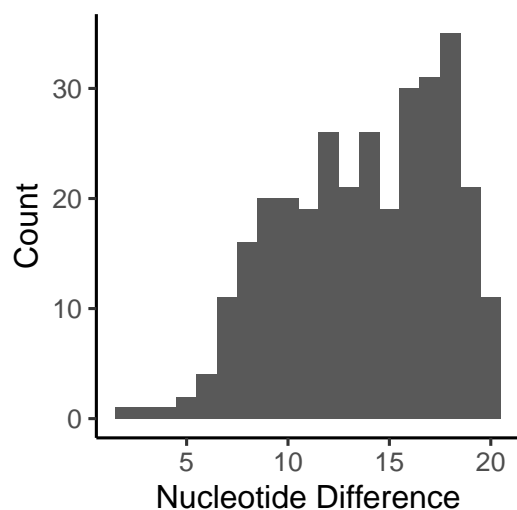
IGHV1/OR15-1*04

10 sequences assigned
No exact matches.



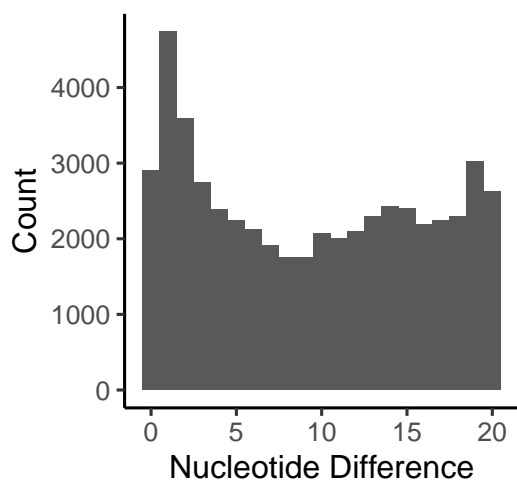
IGHV4/OR15-8*01

492 sequences assigned
No exact matches.



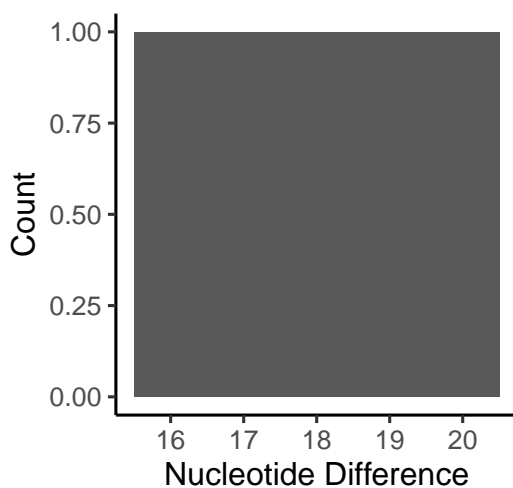
IGHV4-61*02

63776 sequences assigned
2904 (4.6%) exact matches, in which:
1930 unique CDR3
7 unique J



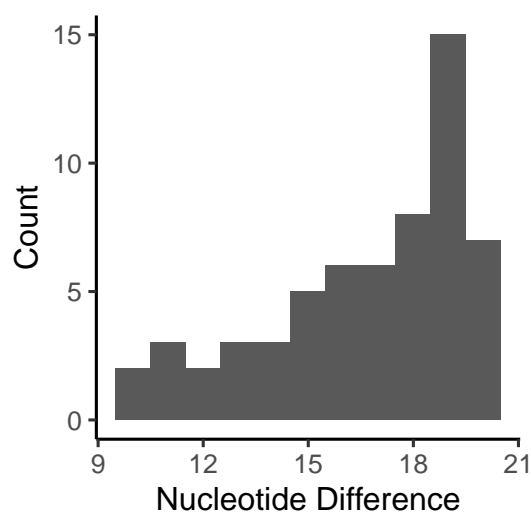
IGHV1/OR15-2*02_03

14 sequences assigned
No exact matches.



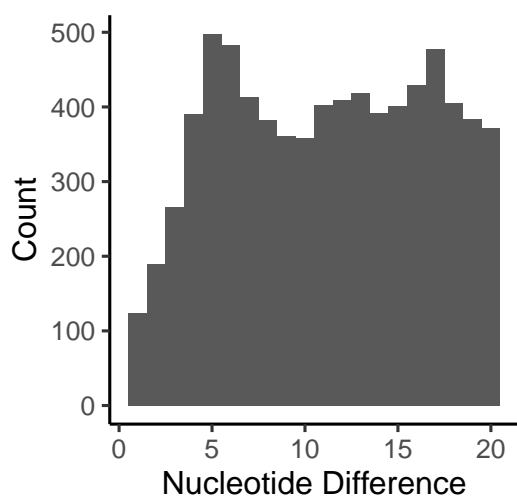
IGHV4/OR15-8*02

733 sequences assigned
No exact matches.



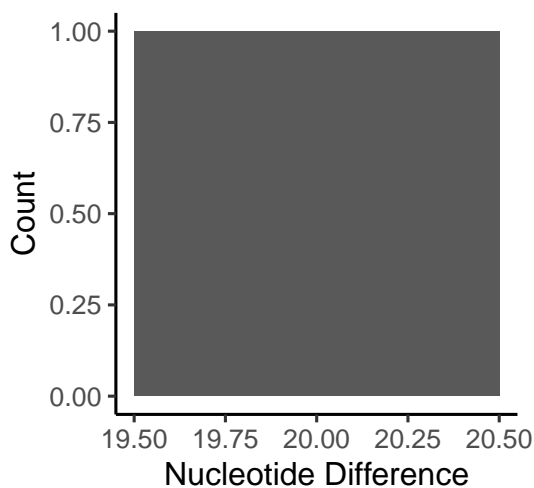
IGHV4-61*08

9550 sequences assigned
No exact matches.



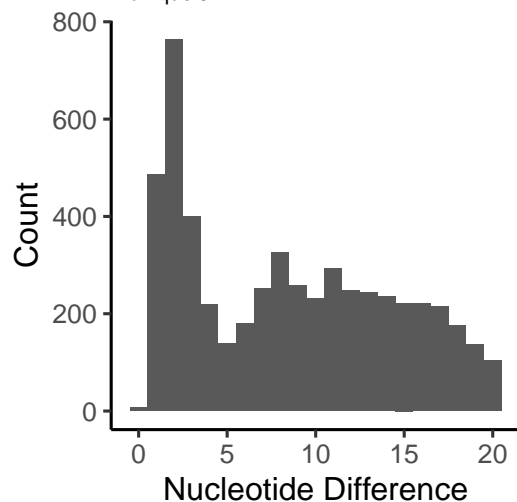
IGHV1/OR15-3*02

1 sequences assigned
No exact matches.



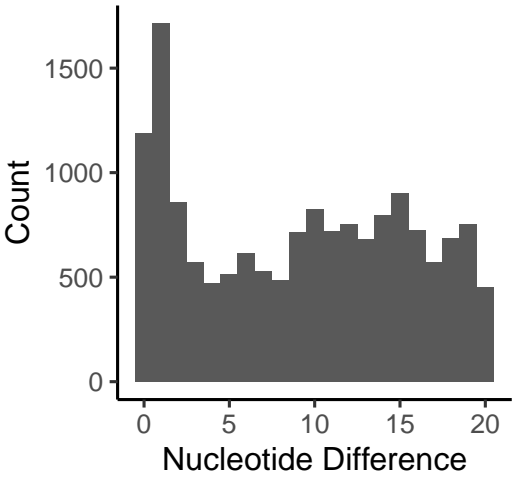
IGHV5-51*07

5779 sequences assigned
8 (0.1%) exact matches, in which:
8 unique CDR3
4 unique J



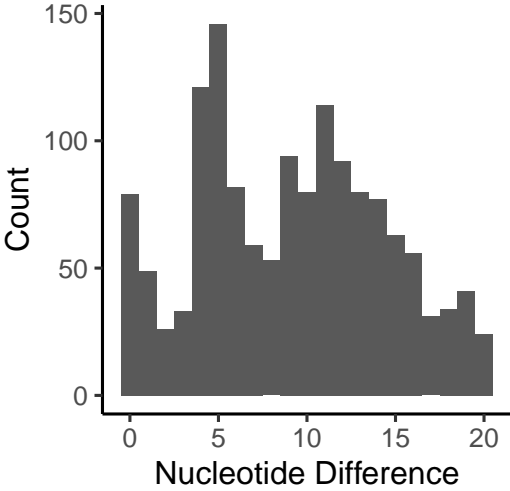
IGHV5-51*01_03

17141 sequences assigned
1190 (6.9%) exact matches, in which:
860 unique CDR3
7 unique J



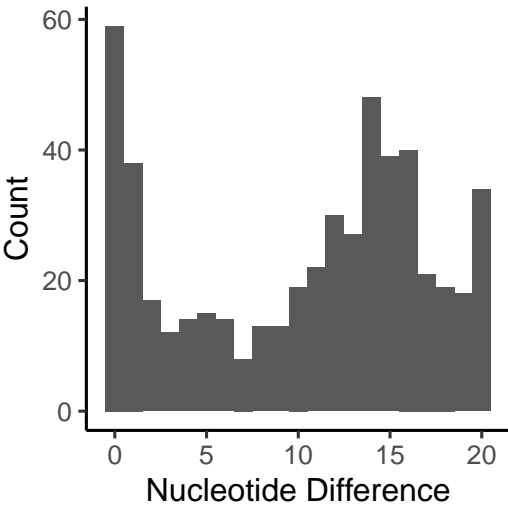
IGHV6-1*01_02_A315G

1591 sequences assigned
79 (5%) exact matches, in which:
79 unique CDR3
7 unique J



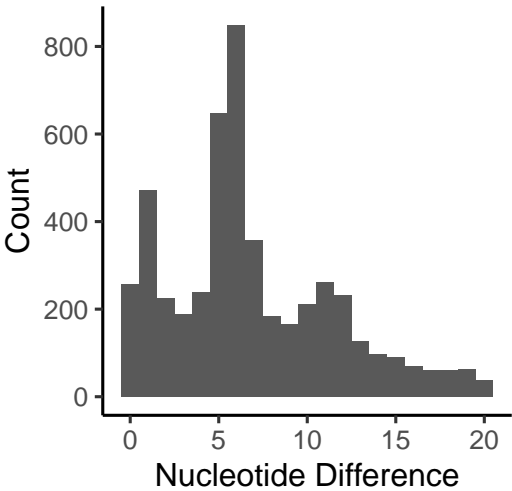
IGHV7-4-1*02

668 sequences assigned
59 (8.8%) exact matches, in which:
51 unique CDR3
7 unique J



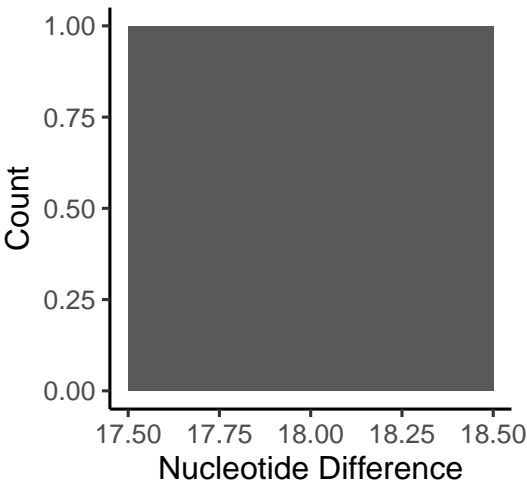
IGHV6-1*01_02

5066 sequences assigned
256 (5.1%) exact matches, in which:
164 unique CDR3
7 unique J



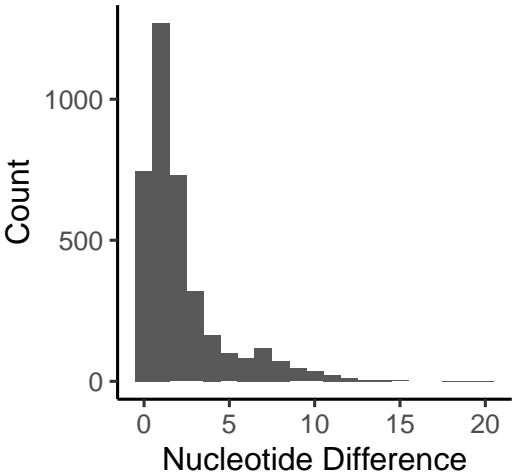
IGHV3/OR16-8*01

2 sequences assigned
No exact matches.



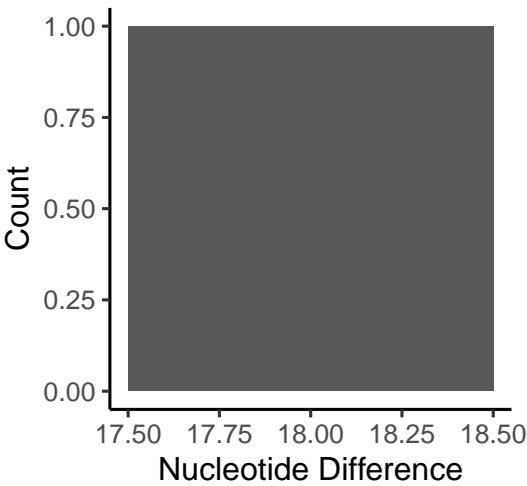
IGHV6-1*01_02_A163C

3746 sequences assigned
745 (19.9%) exact matches, in which:
334 unique CDR3
7 unique J

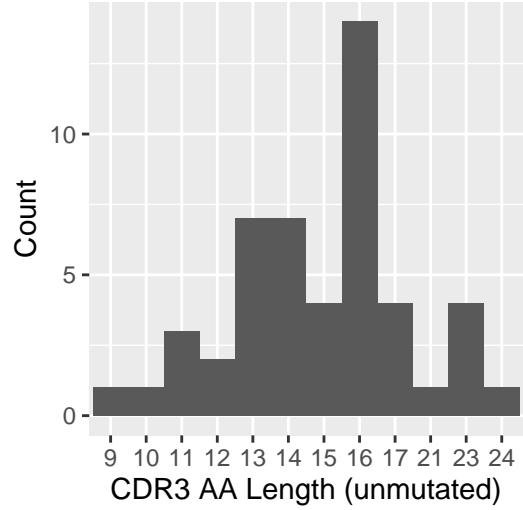


IGHV3/OR16-13*01_A275C

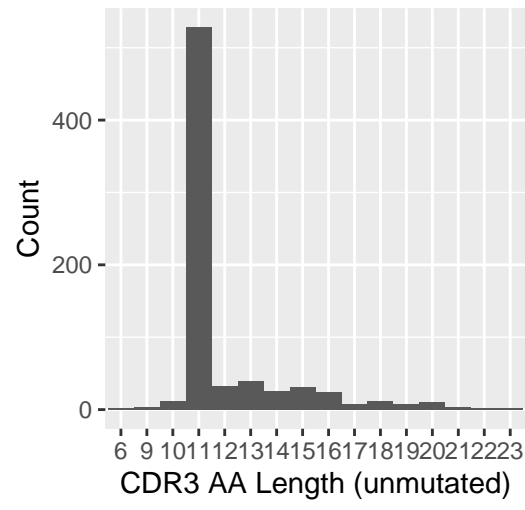
4 sequences assigned
No exact matches.



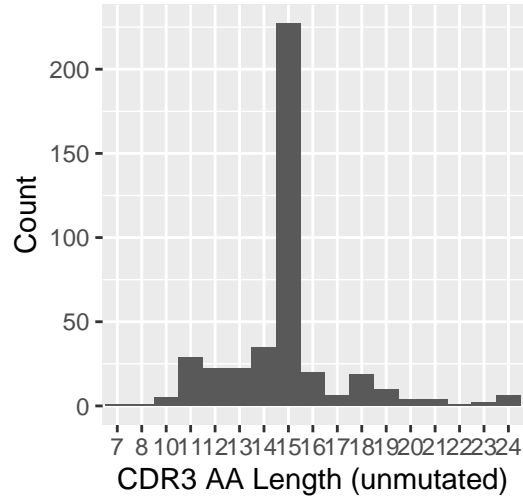
IGHV1-3*01_05_C134A



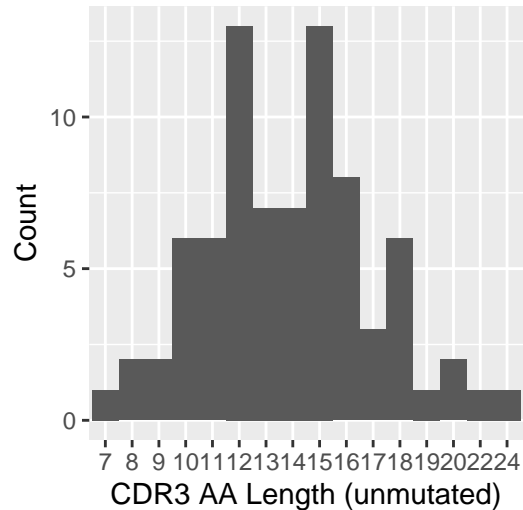
IGHV6-1*01_02_A163C_C174T_G176T_A207C_C230T_A275



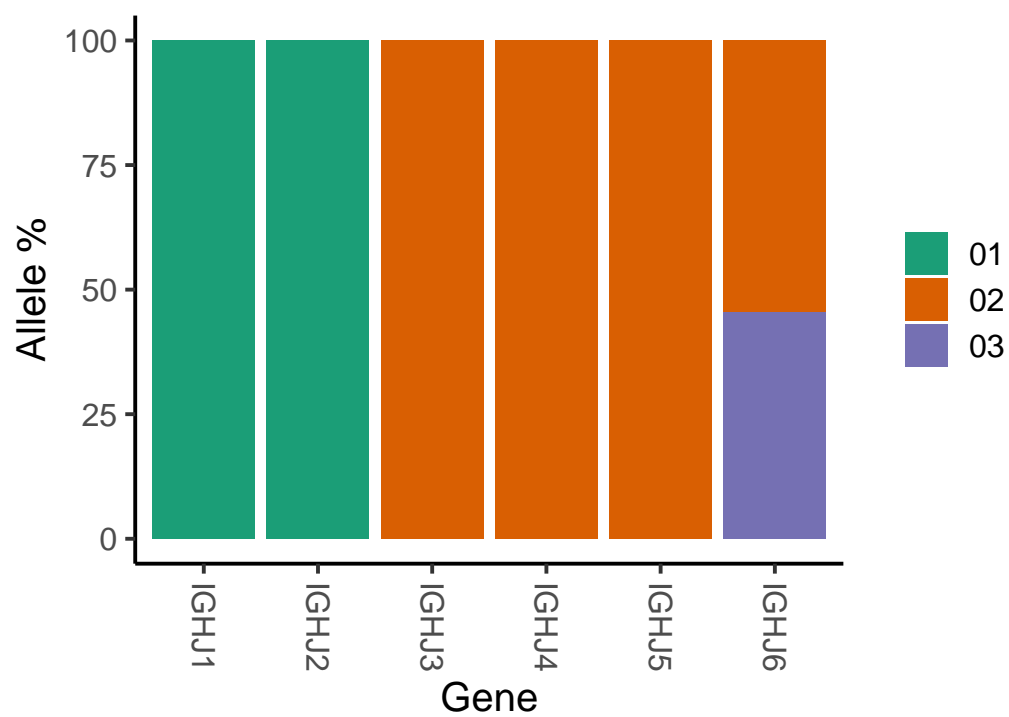
IGHV4-28*02_05_G80T_A109C_G162A_T163C_A175G_G191C_C210A_G238A_C287A



IGHV6-1*01_02_A315G



Allele Usage



Sequence Count by IGHJ6 allele usage



02
03