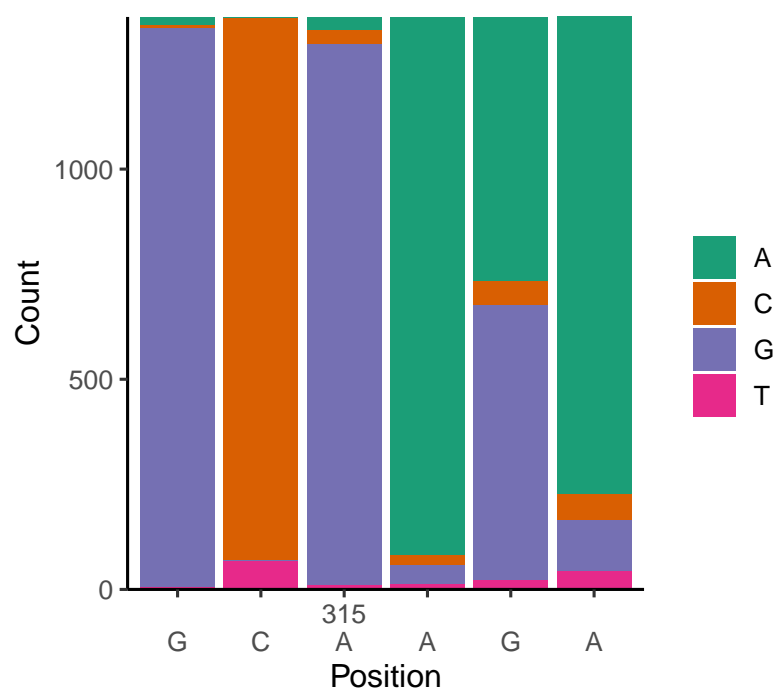
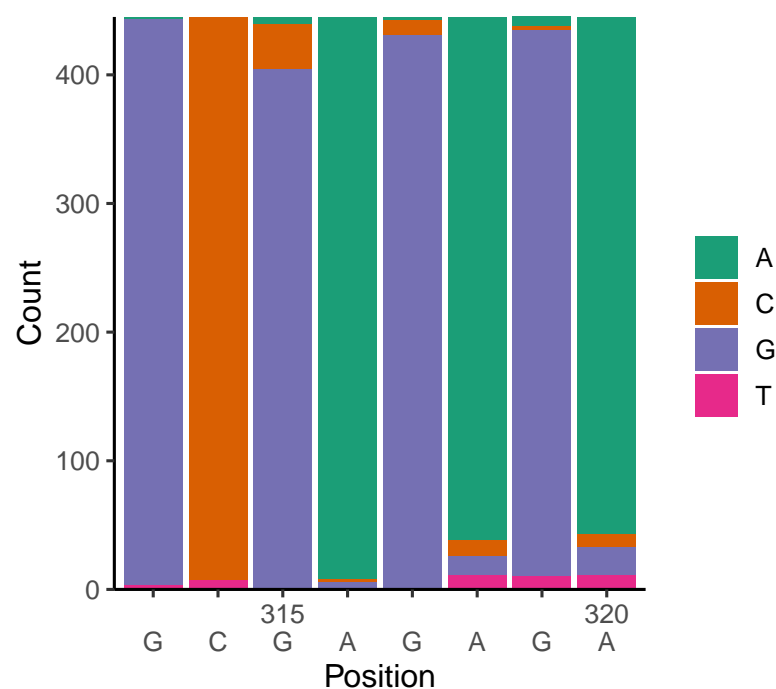


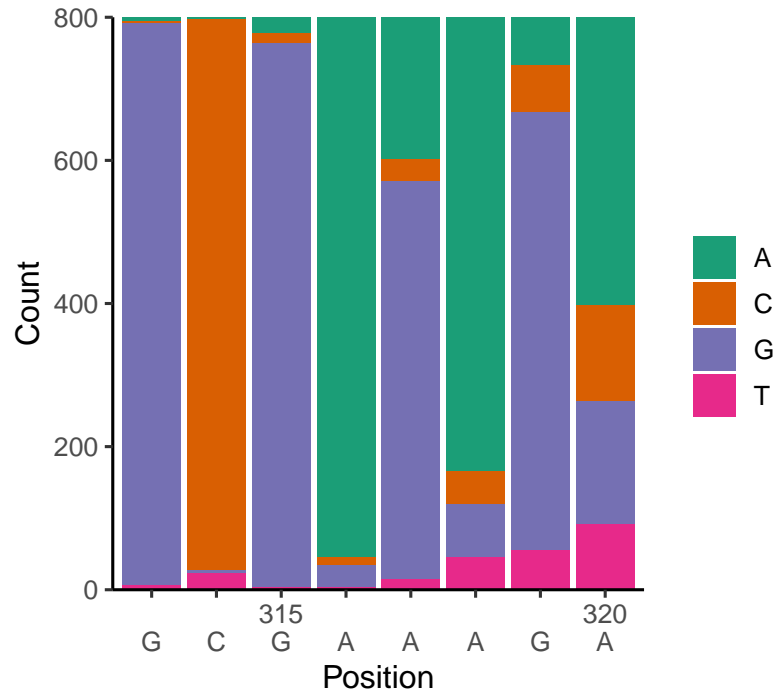
Gene IGHV3-74*01_02_C246T_G247T_



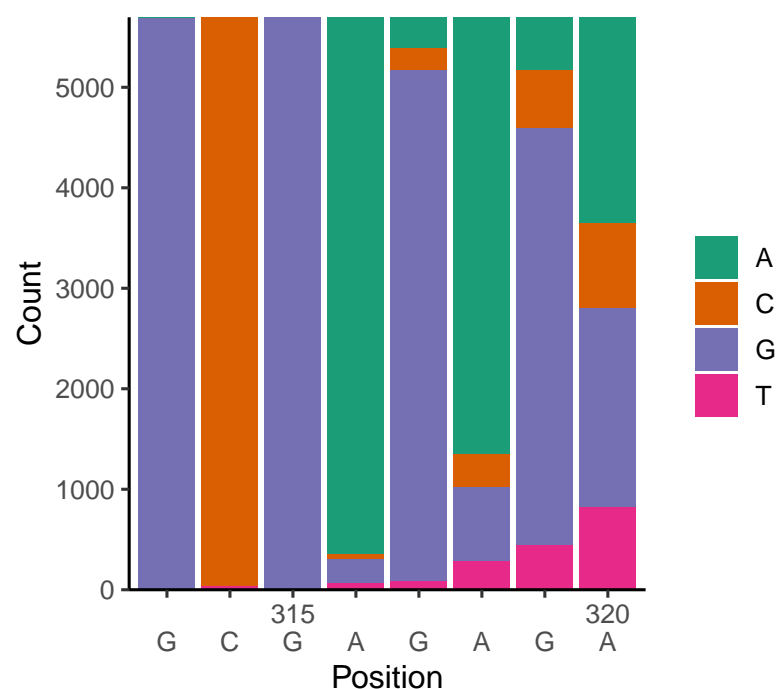
Gene IGHV4/OR15-8*01_C193A



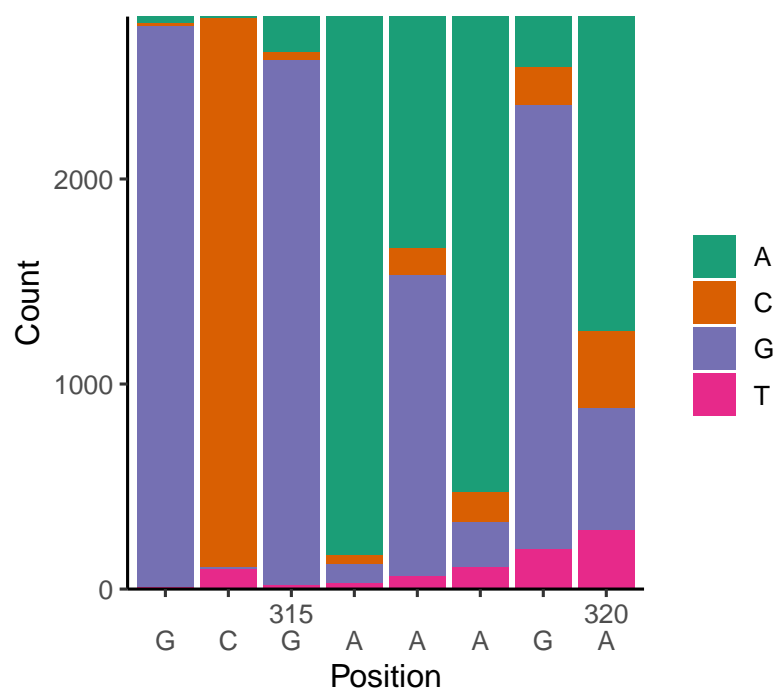
Gene IGHV3-NL1*01_C141G_T201C_G2



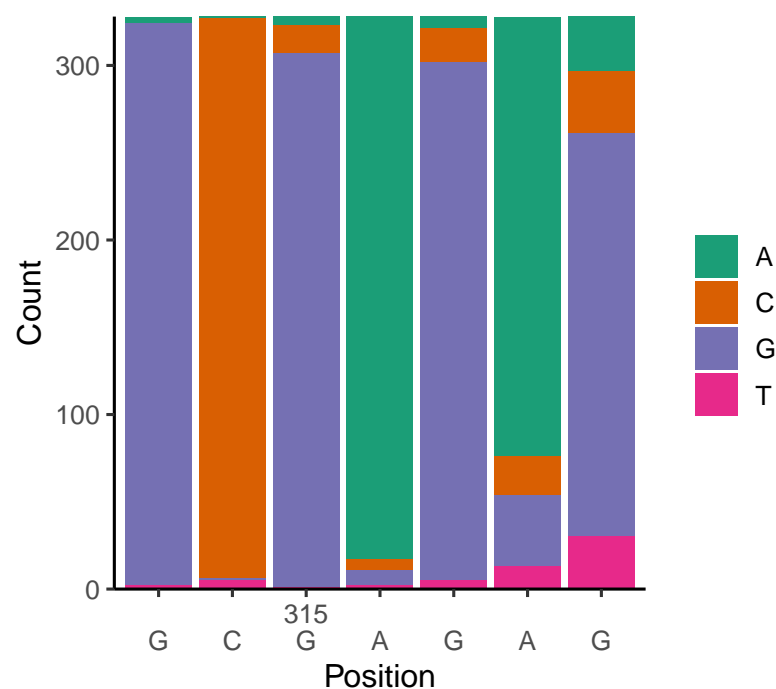
Gene IGHV6-1*01_02_A315G



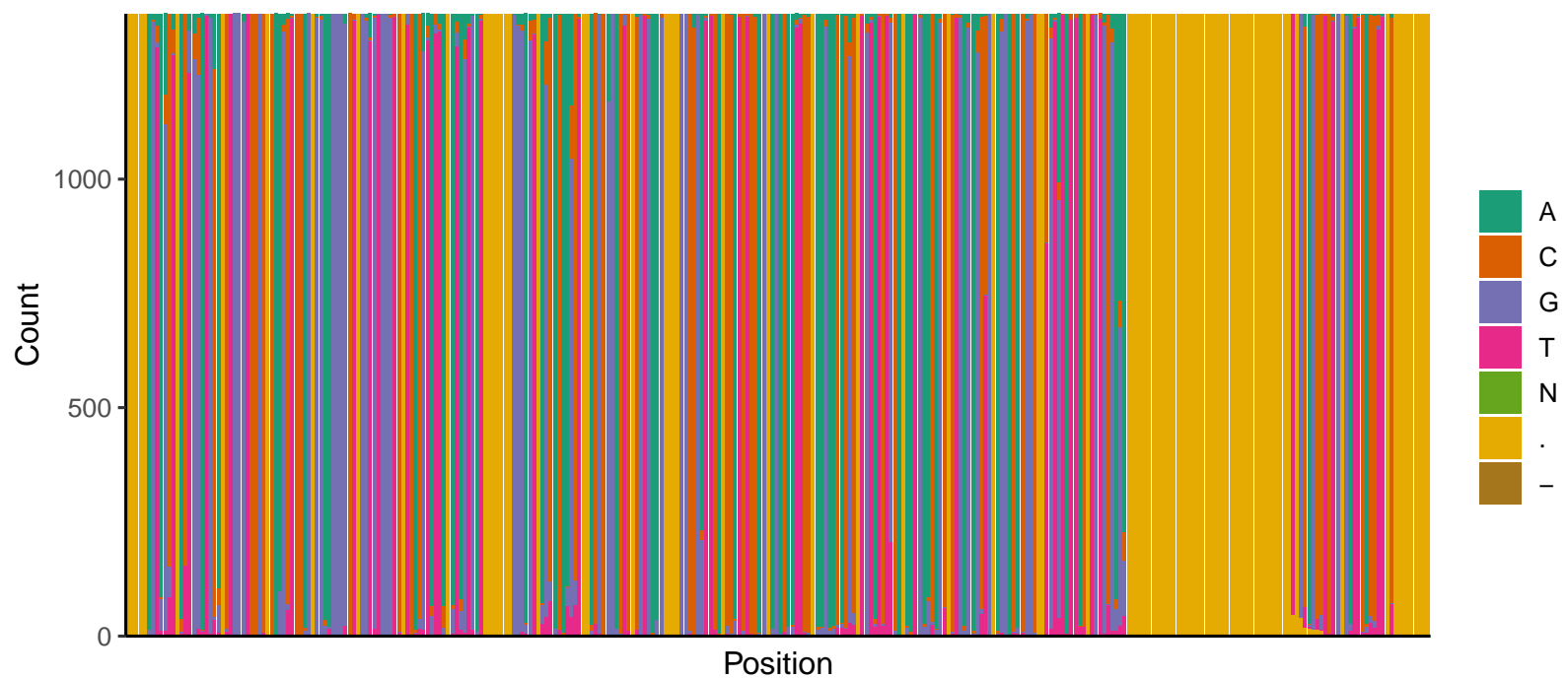
Gene IGHV3-NL1*01_C141G_T164C_T



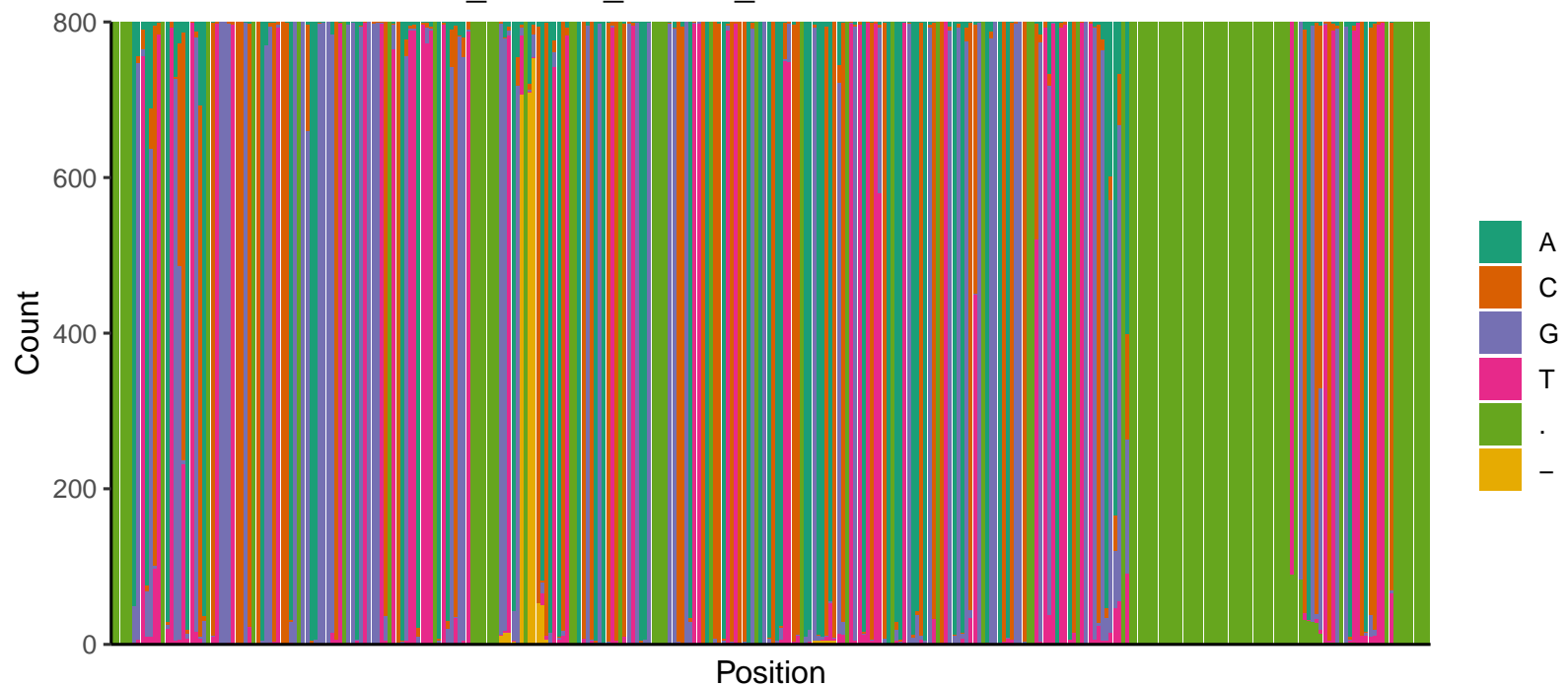
Gene IGHV4-4*02_03_T120C



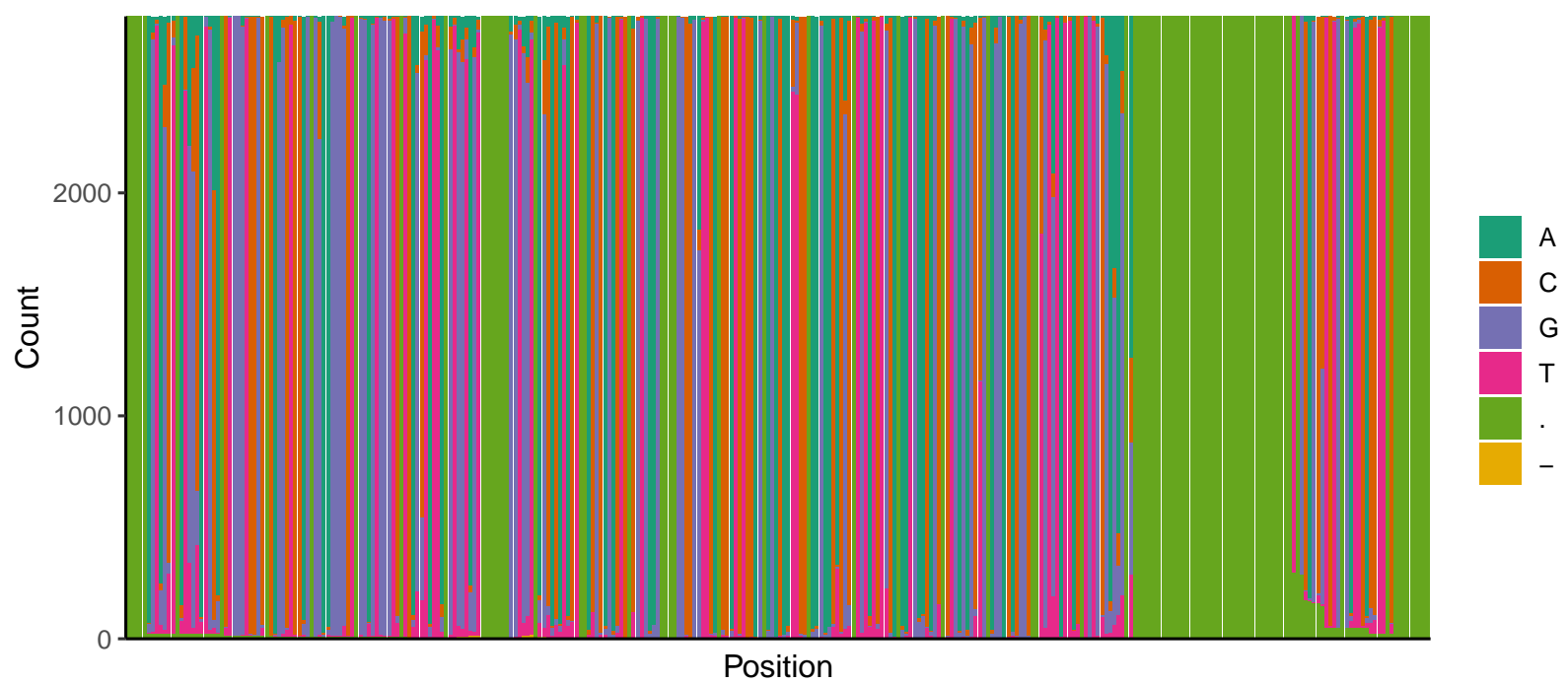
Gene IGHV3-74*01_02_C246T_G247T_T279C_C288T



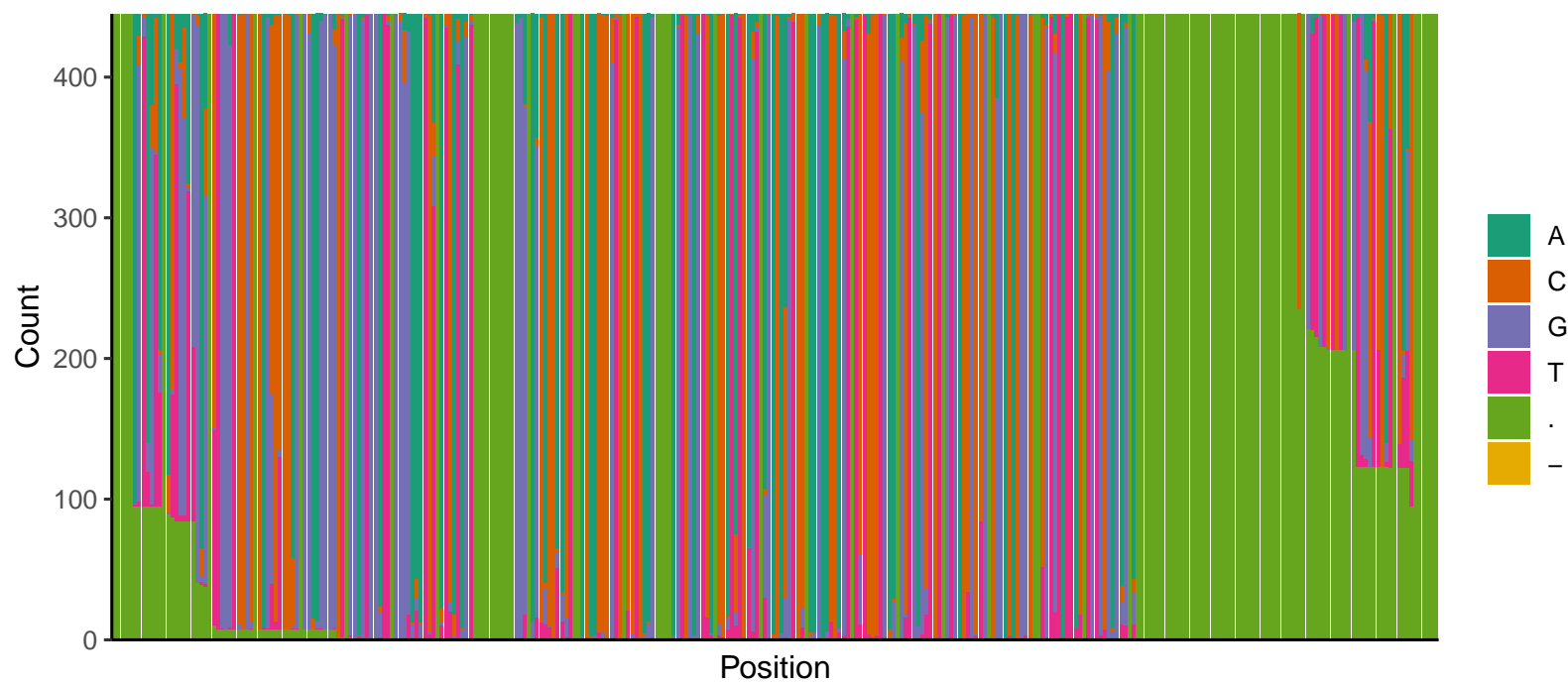
Gene IGHV3-NL1*01_C141G_T201C_G267T



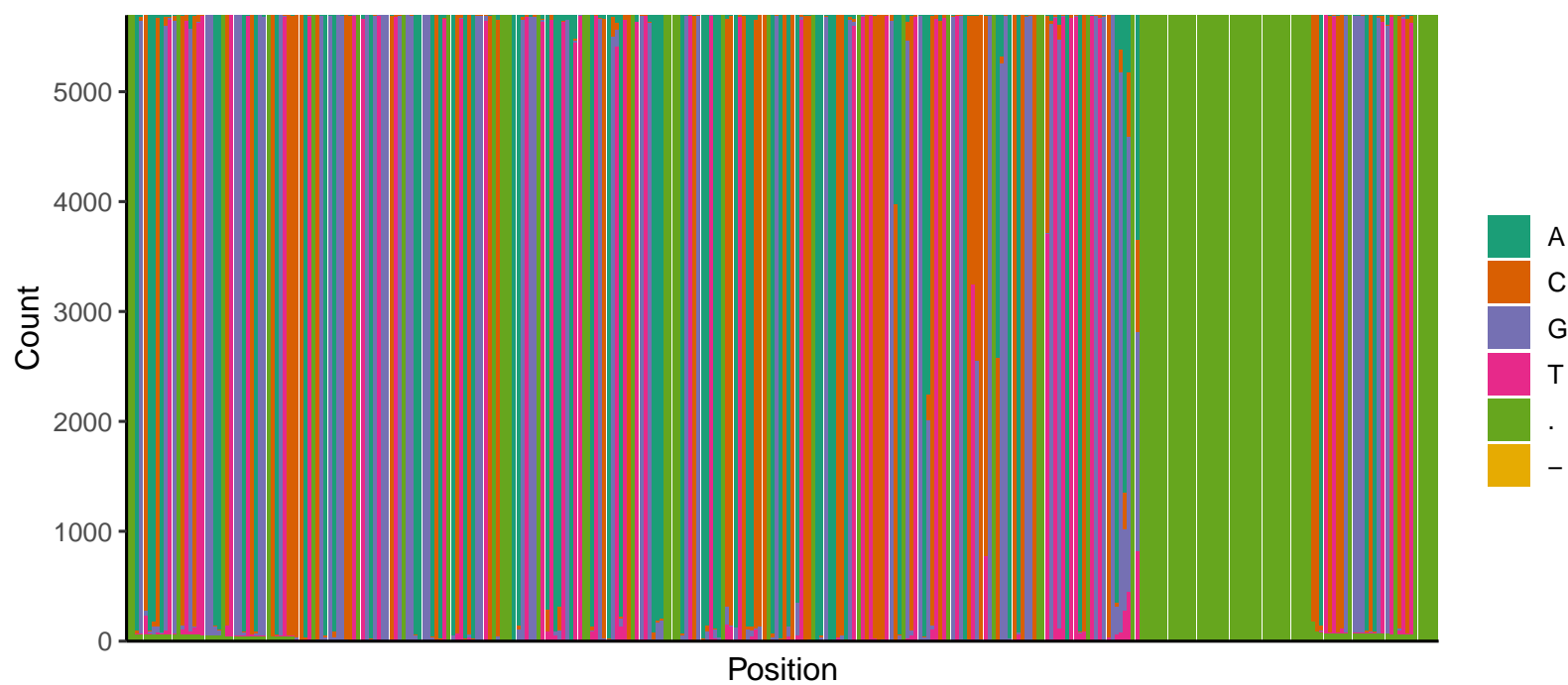
Gene IGHV3-NL1*01_C141G_T164C_T169A_A170G_A172G_C174T_G175A_A187G_T



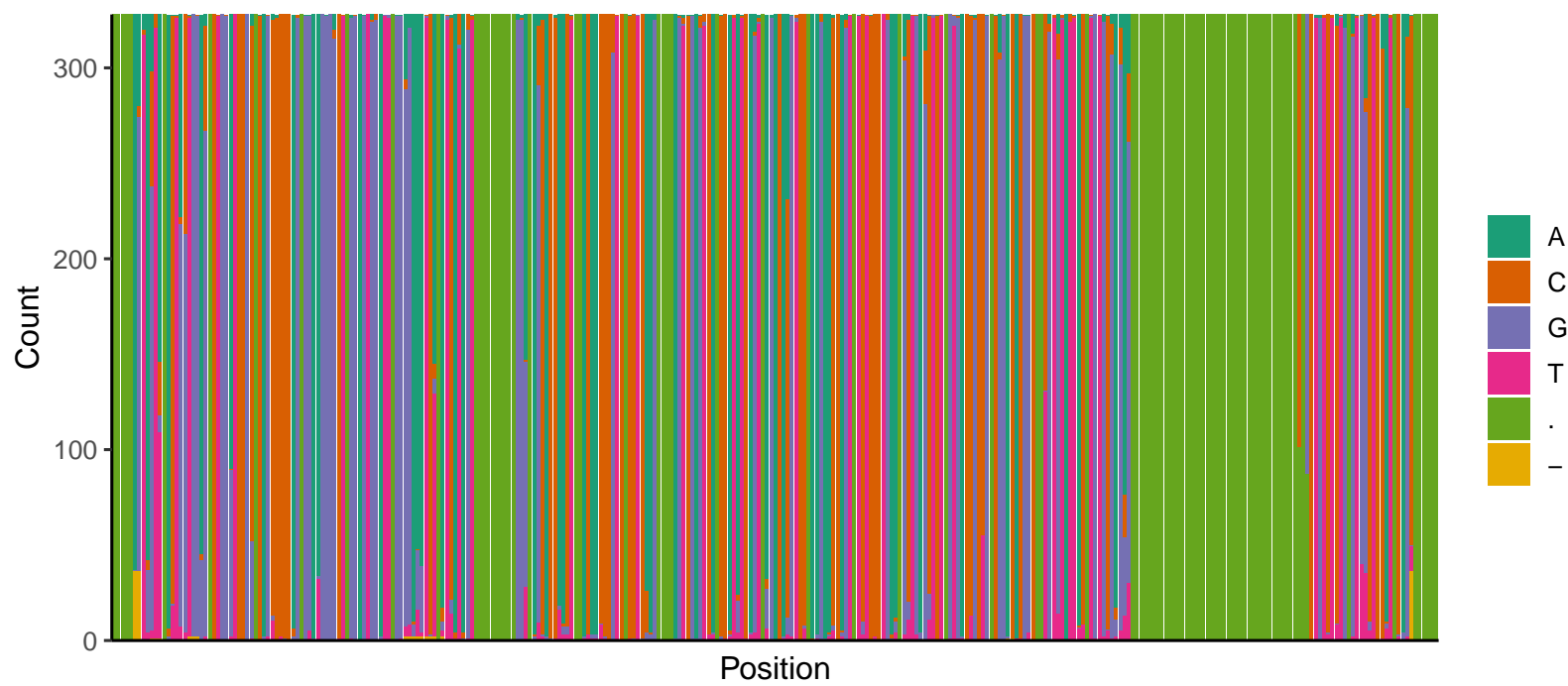
Gene IGHV4/OR15-8*01_C193A



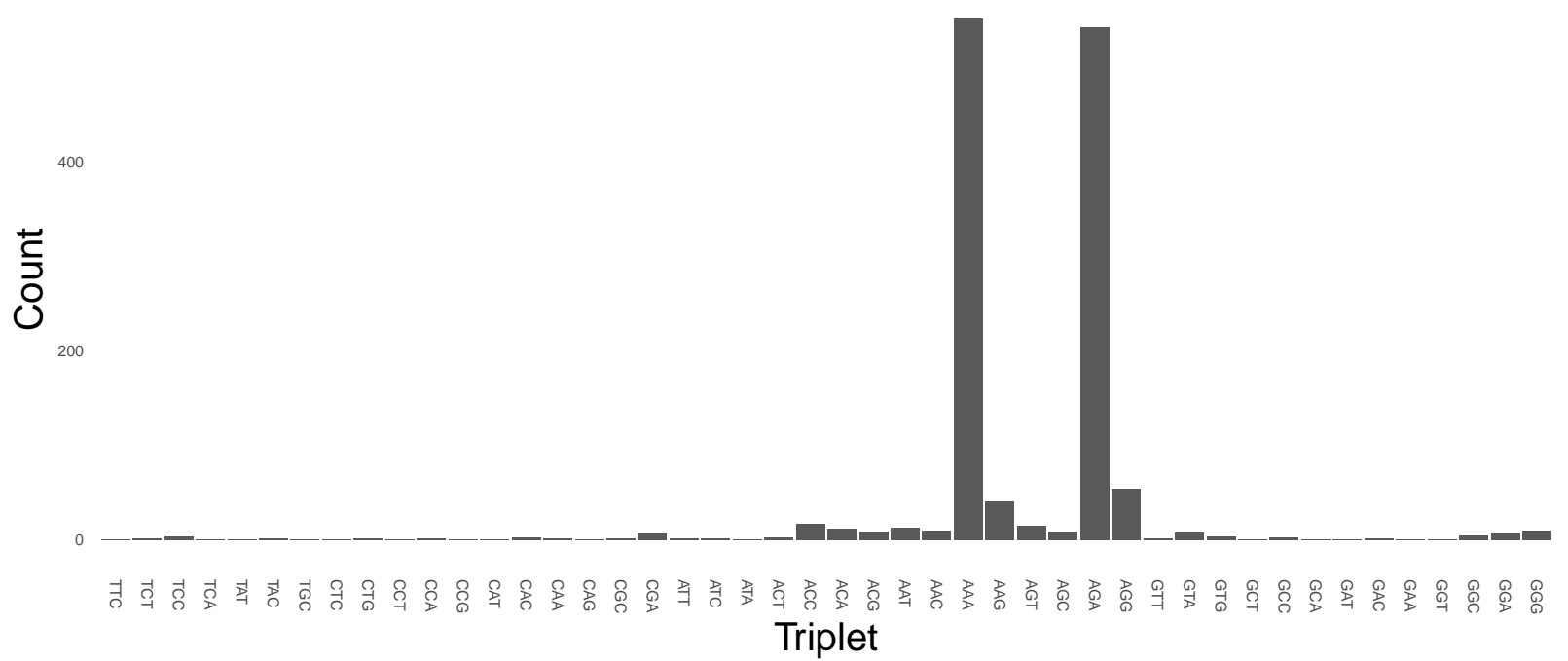
Gene IGHV6-1*01_02_A315G



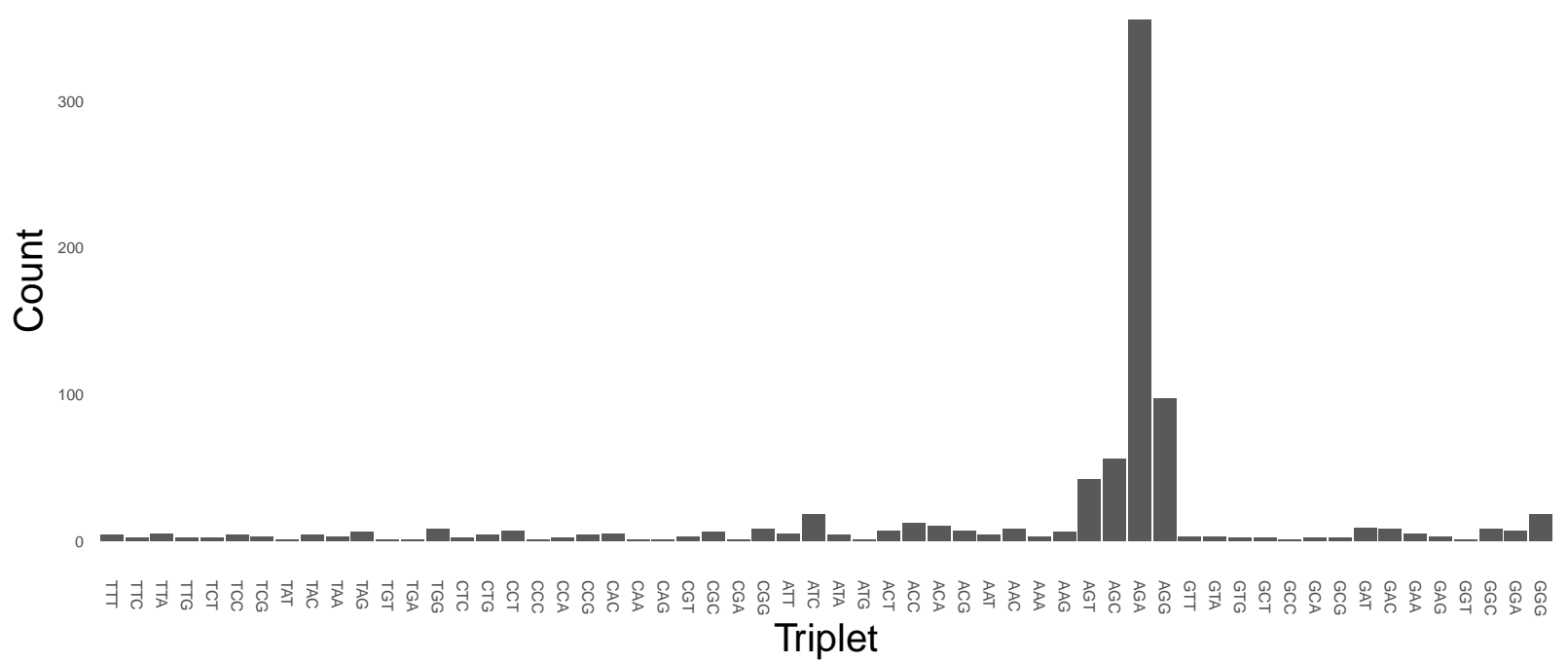
Gene IGHV4-4*02_03_T120C



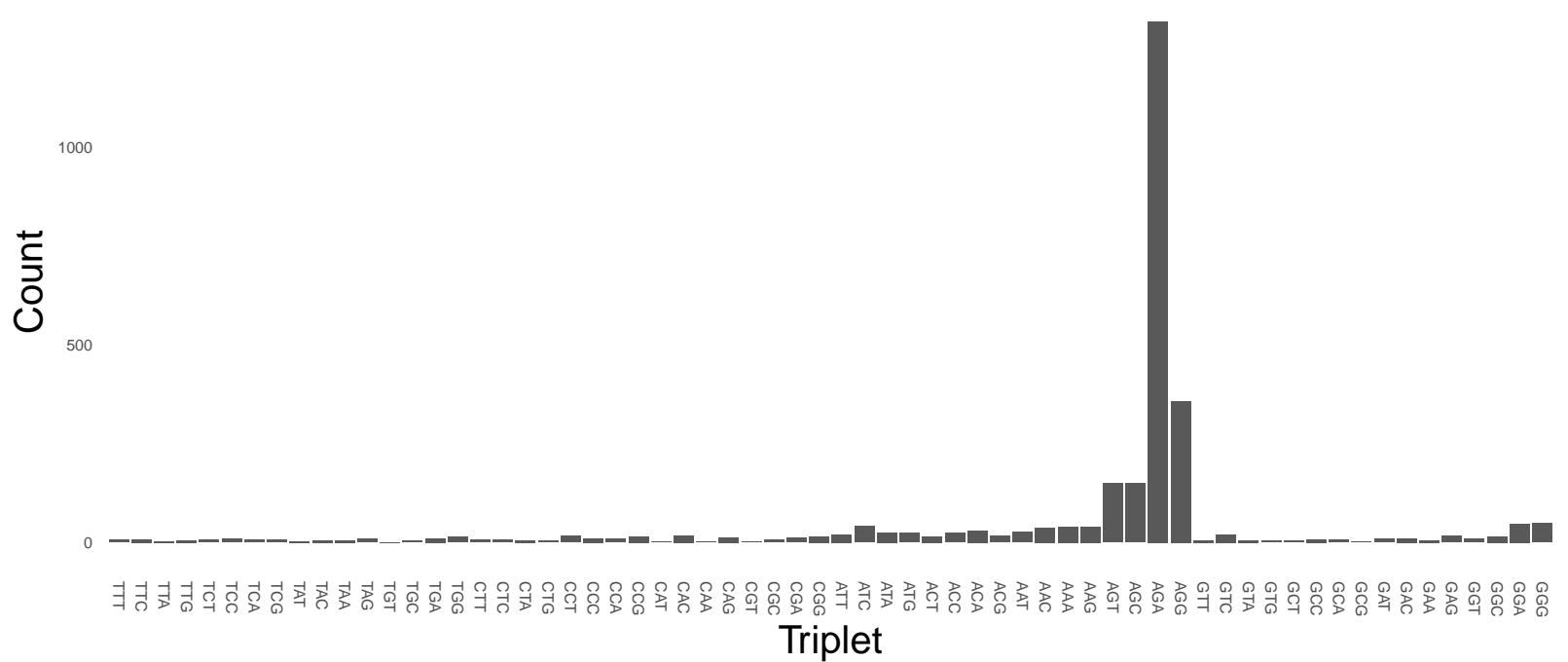
IGHV3-74*01_02_C246T_G247T_T279C_C288T- Final 3 nucleotides as a triplet



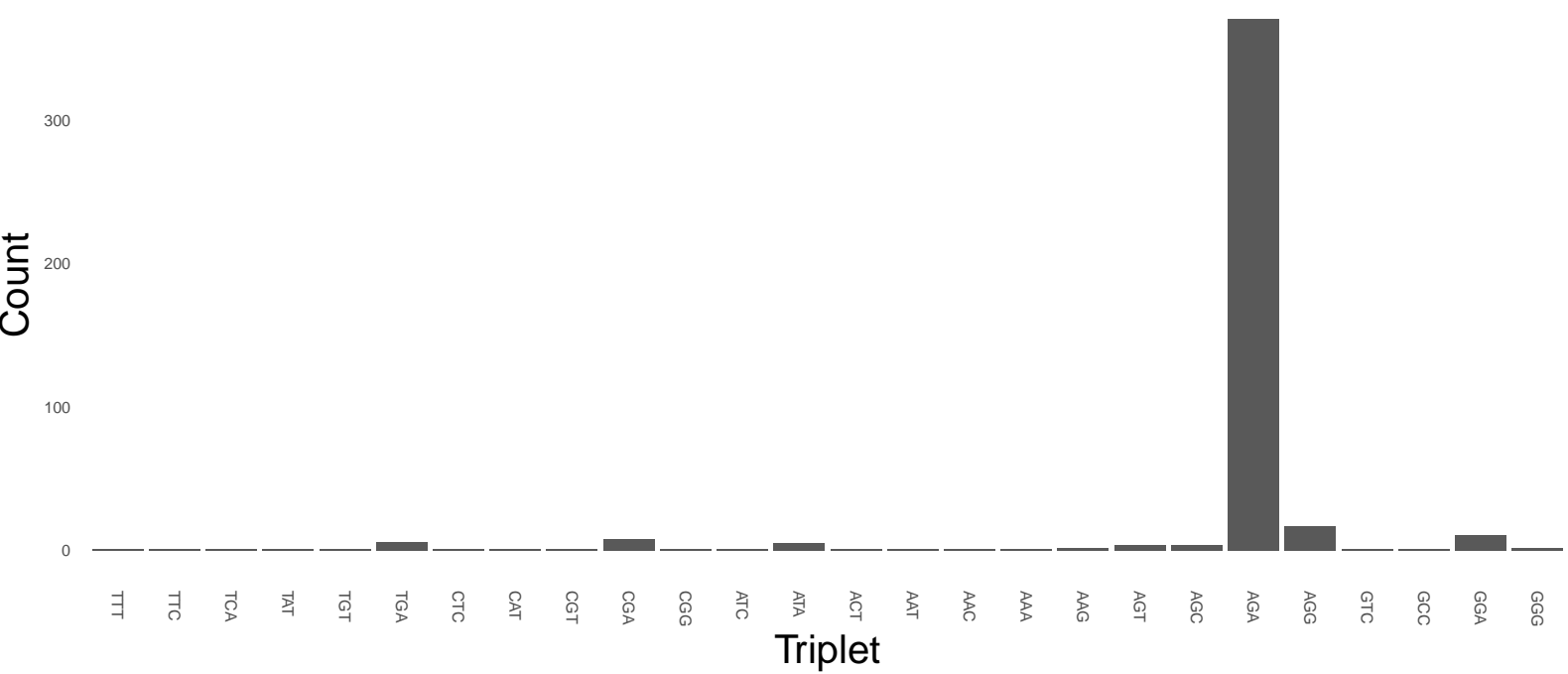
IGHV3-NL1*01_C141G_T201C_G267T- Final 3 nucleotides as a triplet



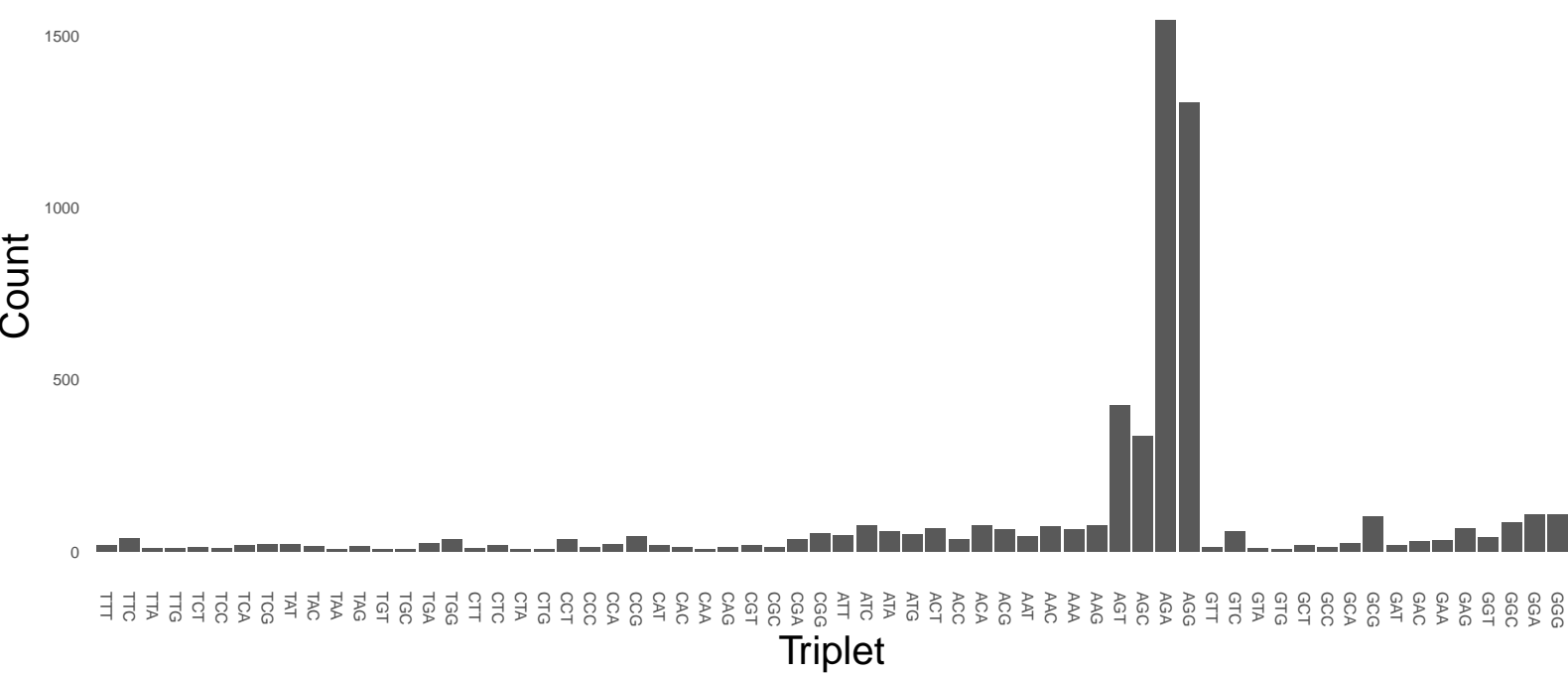
IGHV3-NL1*01_C141G_T164C_T169A_A170G_A172G_C174T_G175A_A187G_T201C- Final 3 nucleotides as a triplet



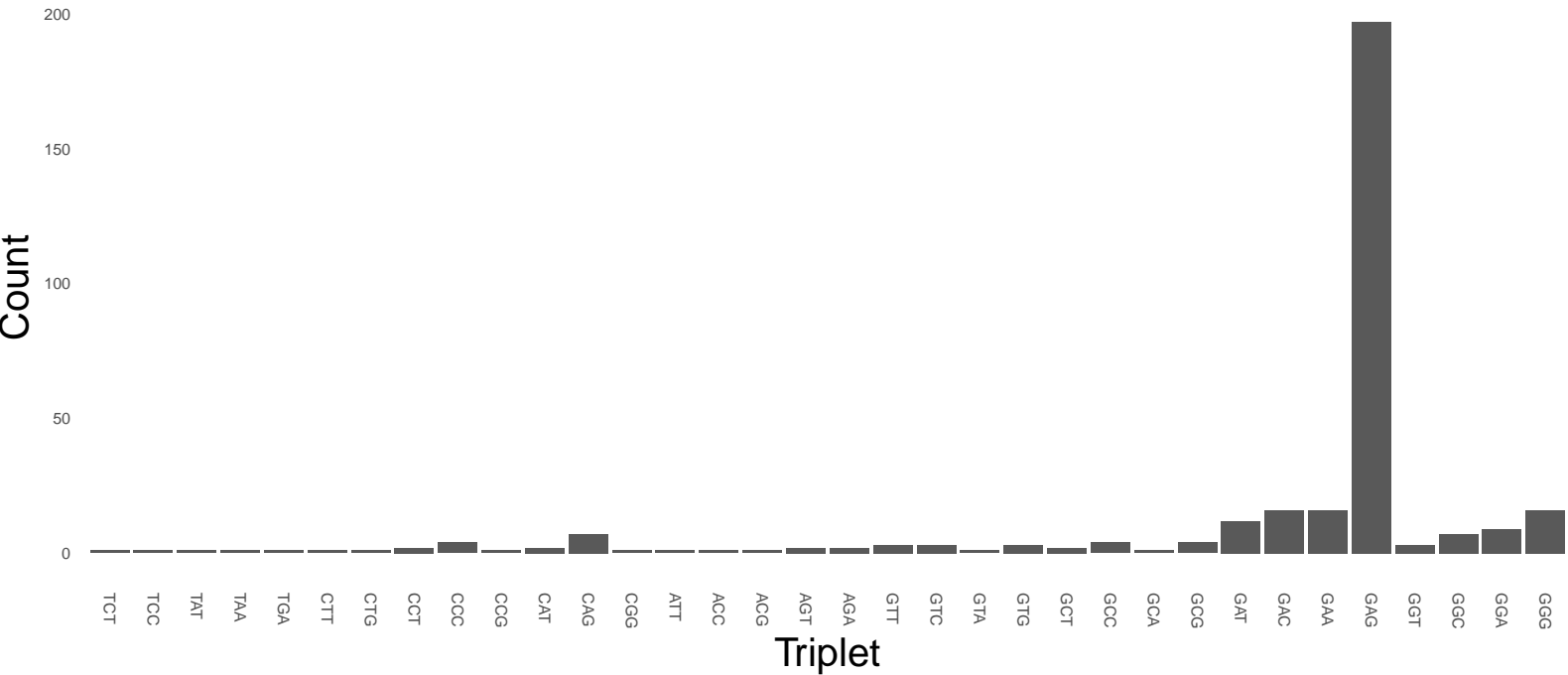
IGHV4/OR15-8*01_C193A- Final 3 nucleotides as a triplet



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

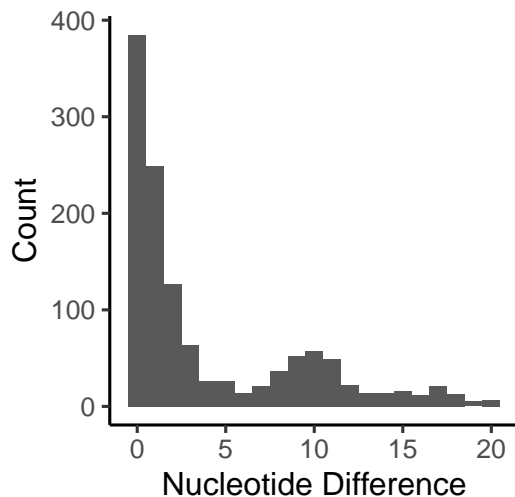


IGHV4-4*02_03_T120C- Final 3 nucleotides as a triplet



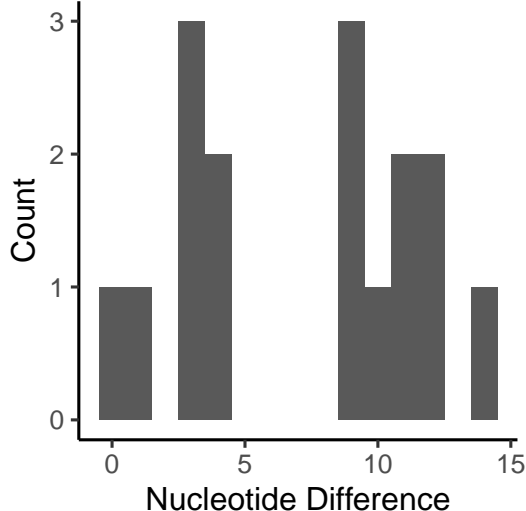
IGHV1-2*04

1252 sequences assigned
385 (30.8%) exact matches, in which:
327 unique CDR3
7 unique J



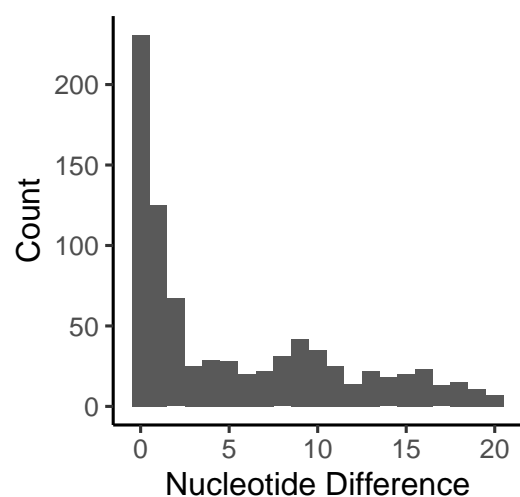
IGHV1-8*01

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



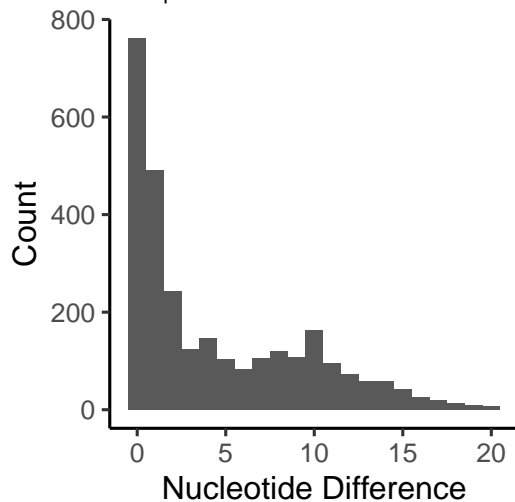
IGHV1-24*01

847 sequences assigned
231 (27.3%) exact matches, in which:
218 unique CDR3
7 unique J



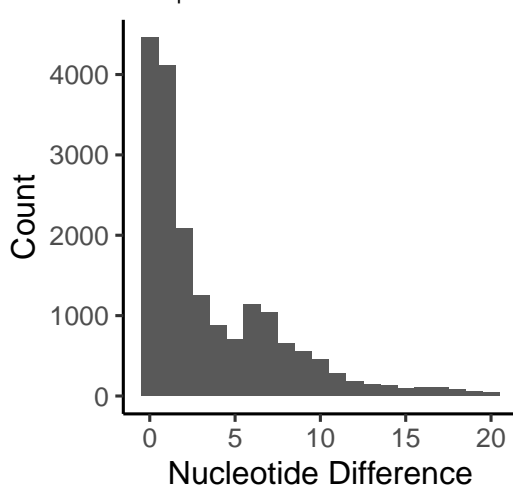
IGHV1-2*06

2889 sequences assigned
762 (26.4%) exact matches, in which:
658 unique CDR3
7 unique J



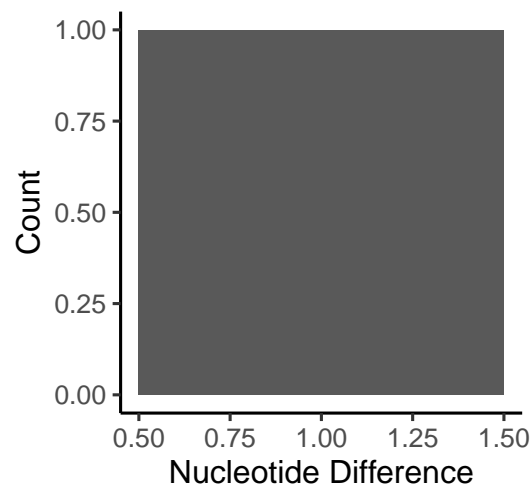
IGHV1-18*01

18825 sequences assigned
4458 (23.7%) exact matches, in which:
3666 unique CDR3
7 unique J



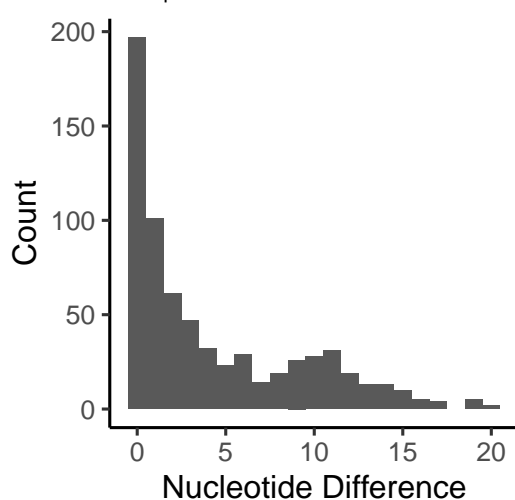
IGHV1-38-4*01

1 sequences assigned
No exact matches.



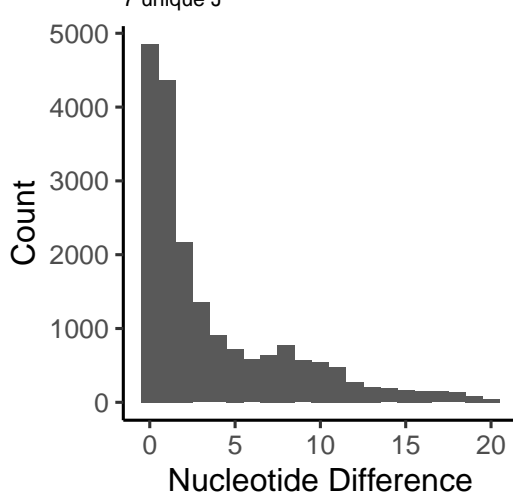
IGHV1-3*01_05

691 sequences assigned
197 (28.5%) exact matches, in which:
190 unique CDR3
7 unique J



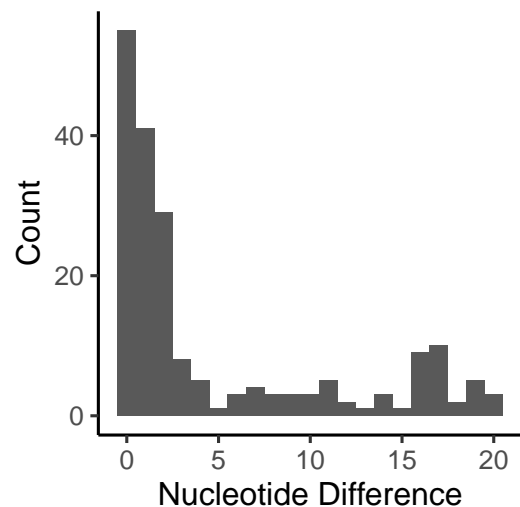
IGHV1-18*04

19641 sequences assigned
4854 (24.7%) exact matches, in which:
3966 unique CDR3
7 unique J



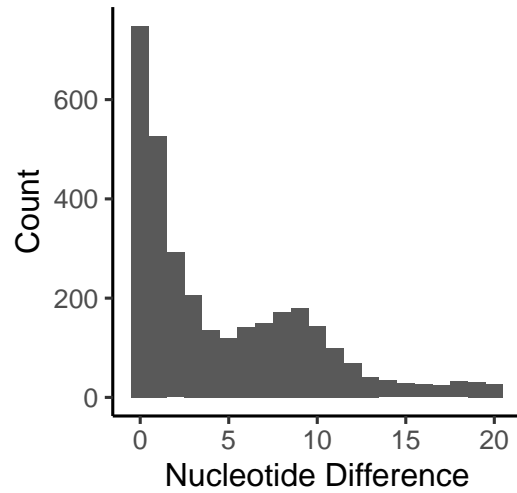
IGHV1-45*02

209 sequences assigned
55 (26.3%) exact matches, in which:
46 unique CDR3
5 unique J



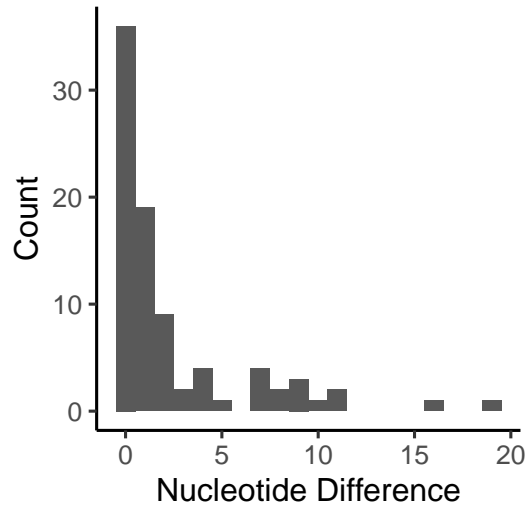
IGHV1-46*01

3340 sequences assigned
749 (22.4%) exact matches, in which:
663 unique CDR3
7 unique J



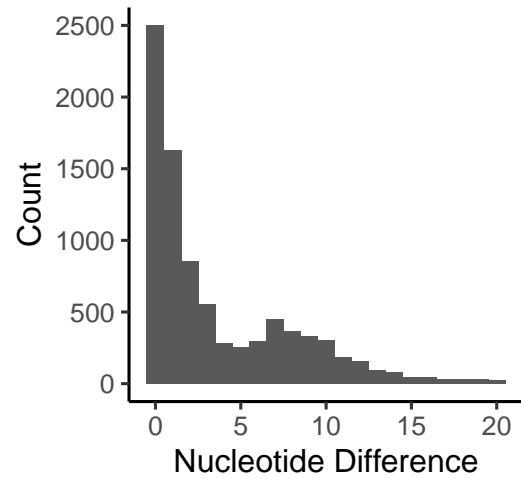
IGHV1-58*01_03

85 sequences assigned
36 (42.4%) exact matches, in which:
35 unique CDR3
6 unique J



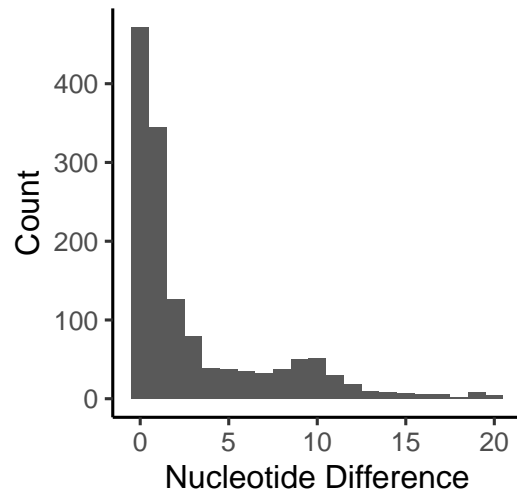
IGHV1-69*06_14

8655 sequences assigned
2500 (28.9%) exact matches, in which:
2192 unique CDR3
7 unique J



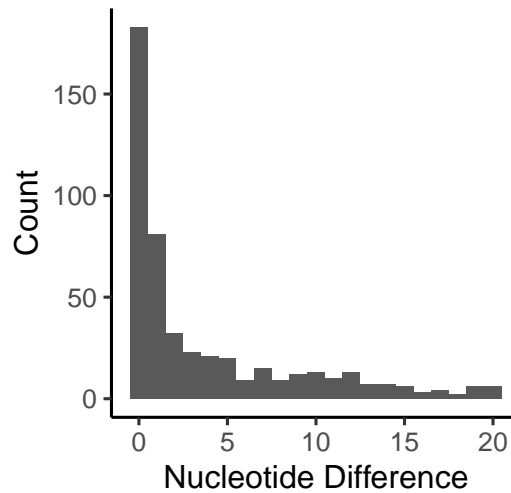
IGHV1-46*03

1422 sequences assigned
472 (33.2%) exact matches, in which:
373 unique CDR3
6 unique J



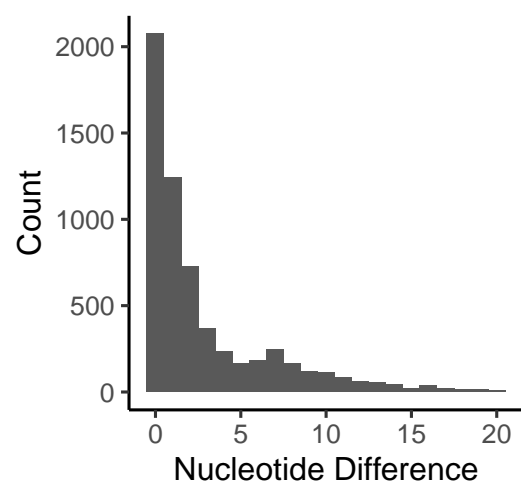
IGHV1-69-2*01

487 sequences assigned
183 (37.6%) exact matches, in which:
172 unique CDR3
7 unique J



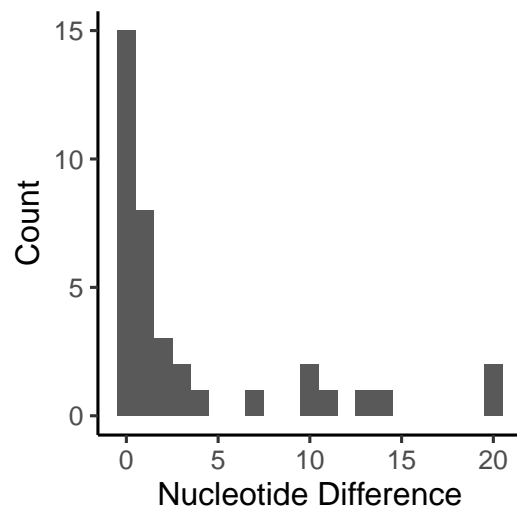
IGHV1-69*15_18

6030 sequences assigned
2075 (34.4%) exact matches, in which:
1853 unique CDR3
7 unique J



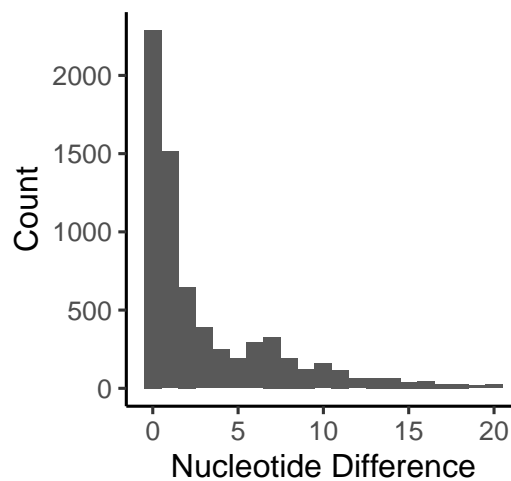
IGHV1-58*02

37 sequences assigned
15 (40.5%) exact matches, in which:
14 unique CDR3
3 unique J



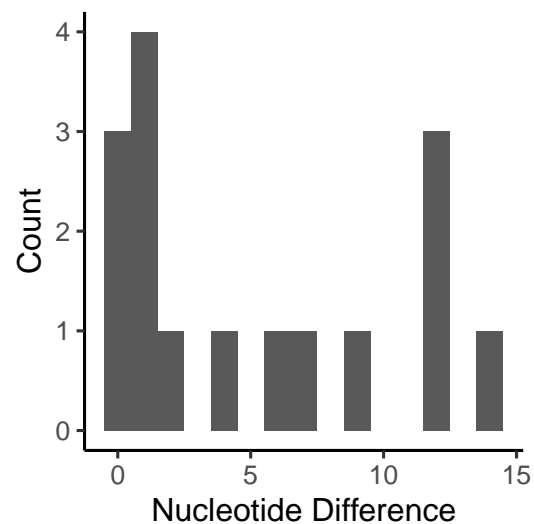
IGHV1-69*01_12_13

6993 sequences assigned
2290 (32.7%) exact matches, in which:
2046 unique CDR3
7 unique J



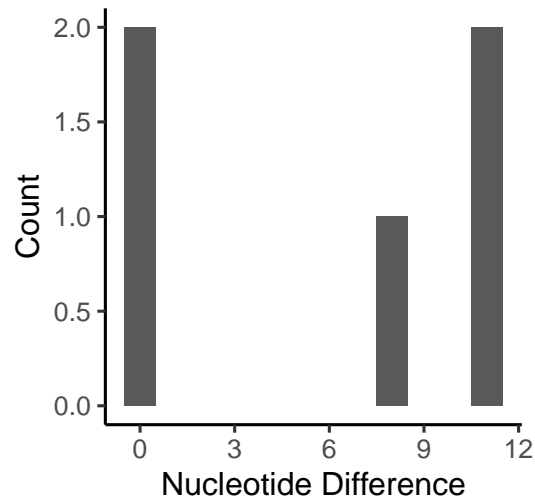
IGHV2-5*02

17 sequences assigned
3 (17.6%) exact matches, in which:
3 unique CDR3
1 unique J



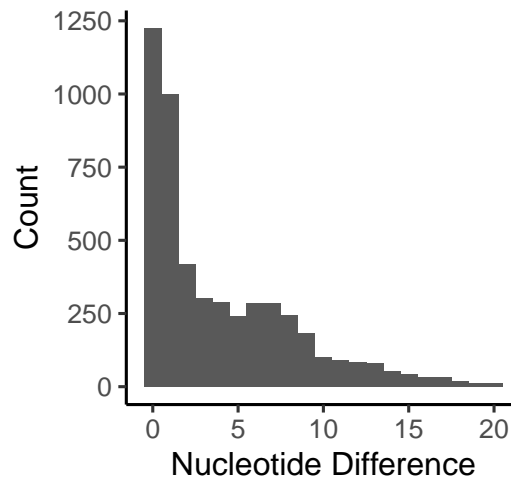
IGHV2-70*01

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



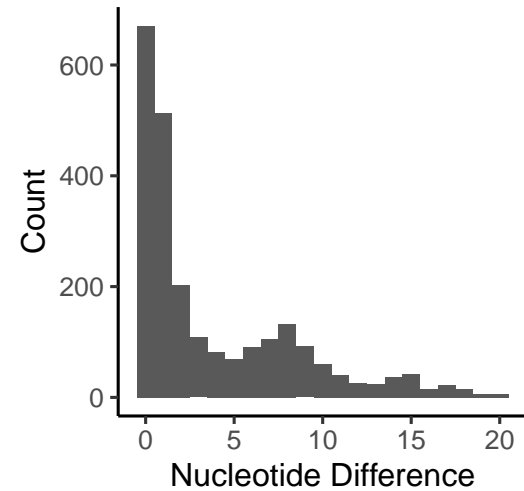
IGHV3-7*05

5094 sequences assigned
1224 (24%) exact matches, in which:
1042 unique CDR3
7 unique J



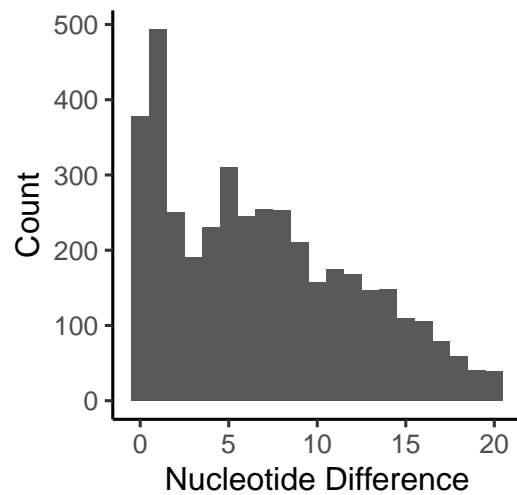
IGHV3-13*04

2407 sequences assigned
671 (27.9%) exact matches, in which:
532 unique CDR3
7 unique J



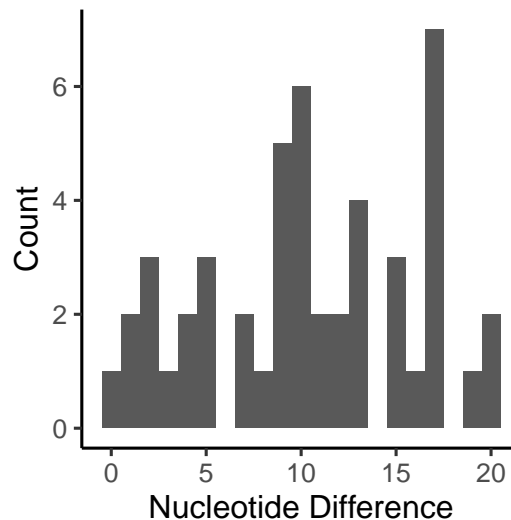
IGHV3-7*01

4139 sequences assigned
378 (9.1%) exact matches, in which:
373 unique CDR3
7 unique J



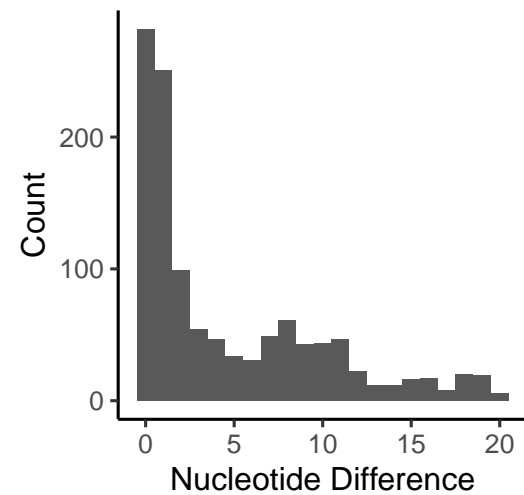
IGHV3-9*01

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



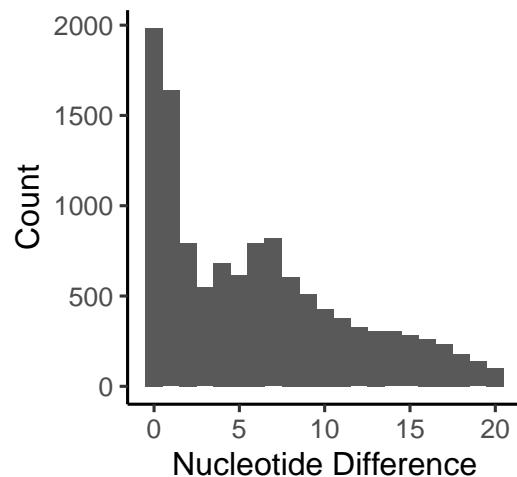
IGHV3-13*05

1205 sequences assigned
282 (23.4%) exact matches, in which:
218 unique CDR3
6 unique J



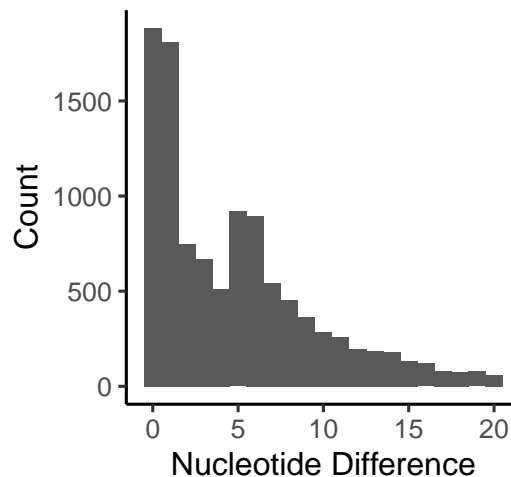
IGHV3-7*03

12372 sequences assigned
1984 (16%) exact matches, in which:
1652 unique CDR3
7 unique J



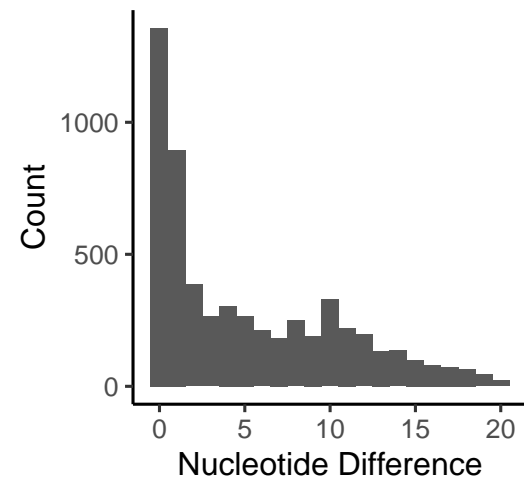
IGHV3-11*06

10634 sequences assigned
1883 (17.7%) exact matches, in which:
1620 unique CDR3
7 unique J



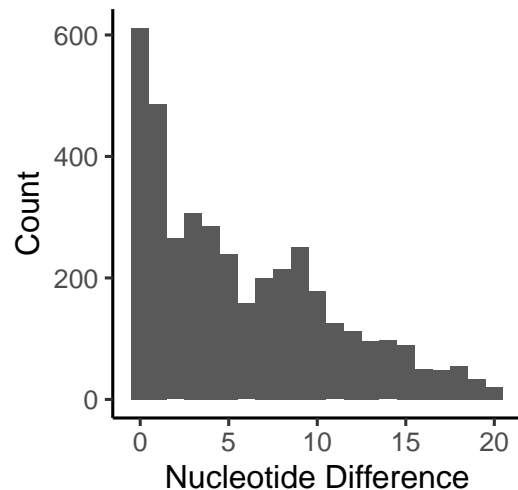
IGHV3-15*01_02

5886 sequences assigned
1357 (23.1%) exact matches, in which:
1118 unique CDR3
7 unique J



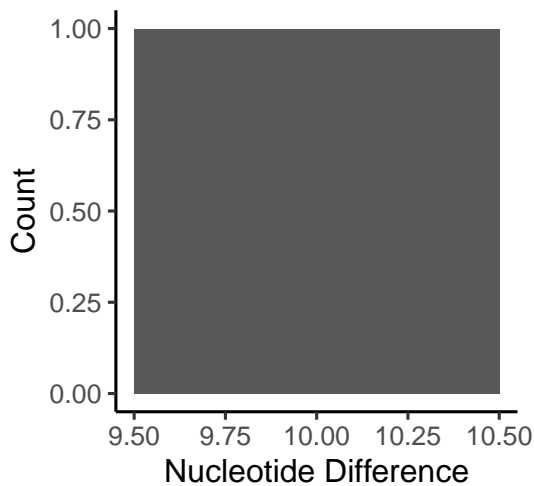
IGHV3-20*03_04

3983 sequences assigned
612 (15.4%) exact matches, in which:
485 unique CDR3
7 unique J



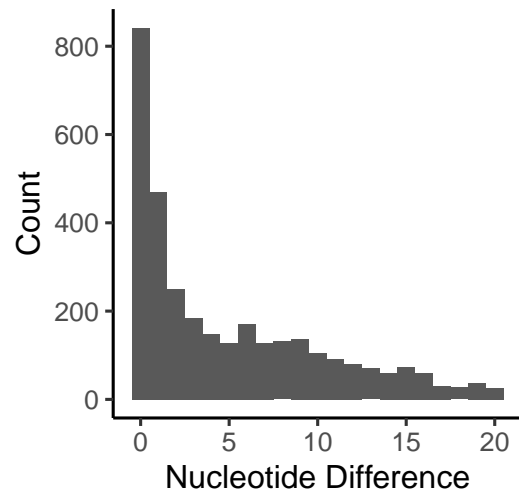
IGHV3-22*01_02

1 sequences assigned
No exact matches.



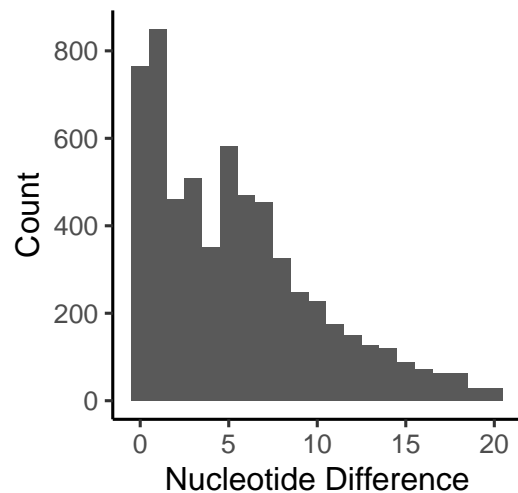
IGHV3-30*03

3341 sequences assigned
842 (25.2%) exact matches, in which:
829 unique CDR3
7 unique J



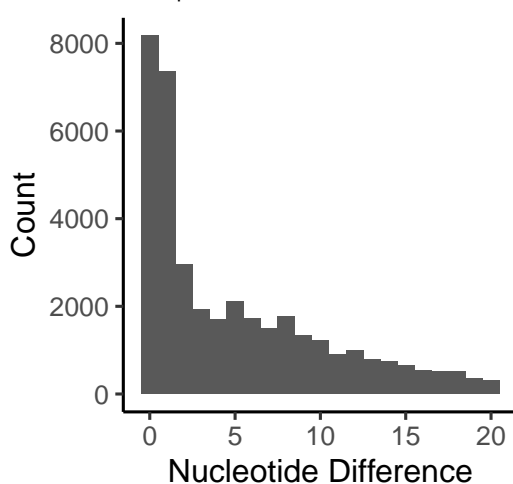
IGHV3-21*04

6262 sequences assigned
764 (12.2%) exact matches, in which:
735 unique CDR3
7 unique J



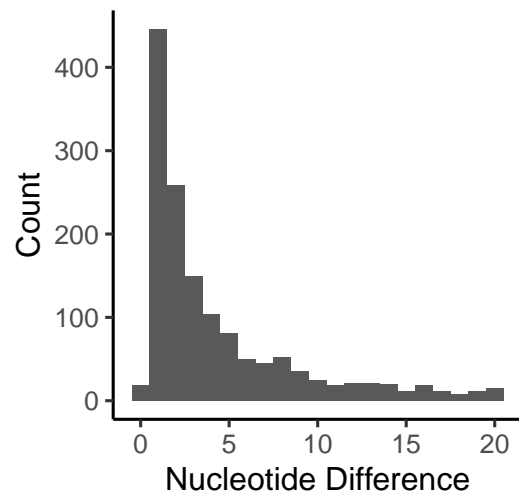
IGHV3-23*01_04

39328 sequences assigned
8174 (20.8%) exact matches, in which:
6191 unique CDR3
7 unique J



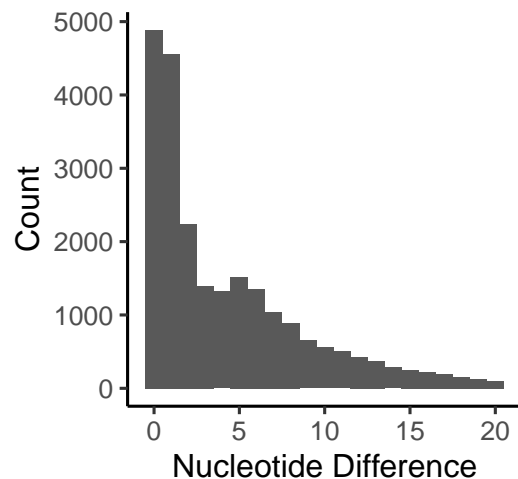
IGHV3-30*19

1452 sequences assigned
18 (1.2%) exact matches, in which:
18 unique CDR3
5 unique J



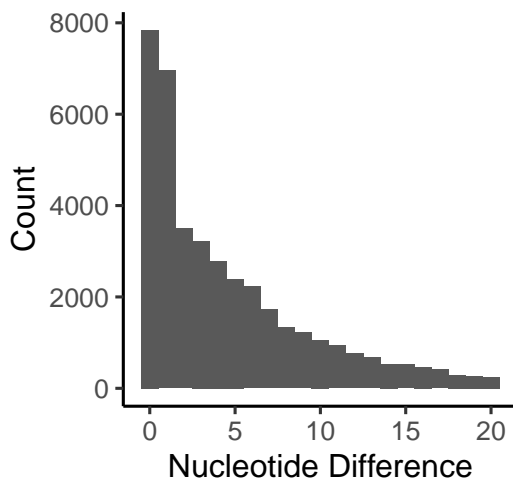
IGHV3-21*01_02

23400 sequences assigned
4885 (20.9%) exact matches, in which:
3953 unique CDR3
7 unique J



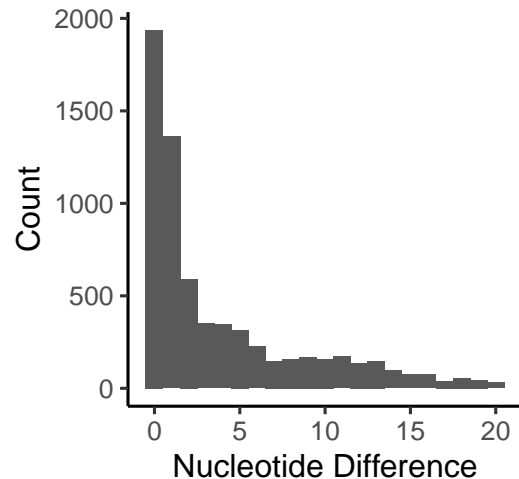
IGHV3-30-3*01

40156 sequences assigned
7842 (19.5%) exact matches, in which:
6466 unique CDR3
7 unique J



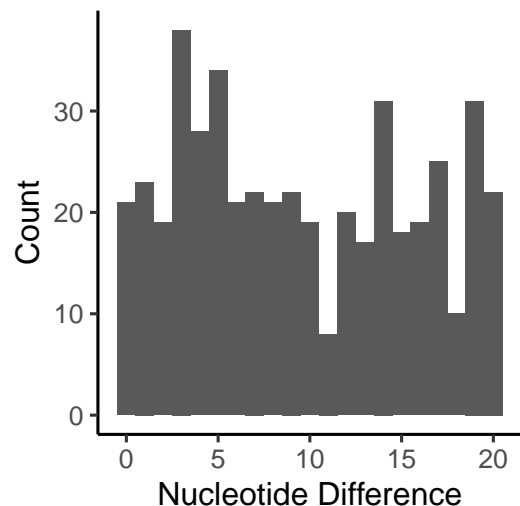
IGHV3-33*01

6806 sequences assigned
1937 (28.5%) exact matches, in which:
1498 unique CDR3
7 unique J



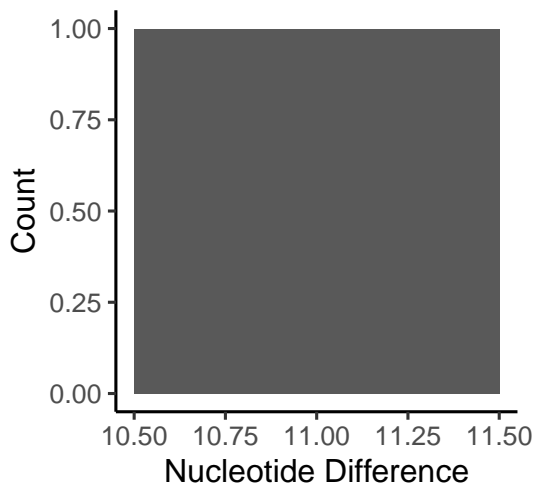
IGHV3-33*05

528 sequences assigned
21 (4%) exact matches, in which:
21 unique CDR3
6 unique J



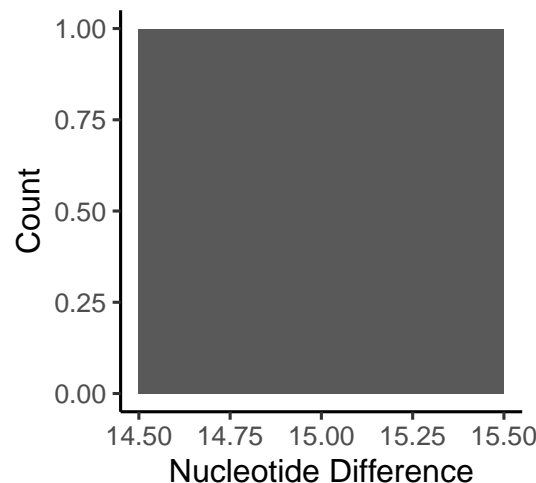
IGHV3-35*01

1 sequences assigned
No exact matches.



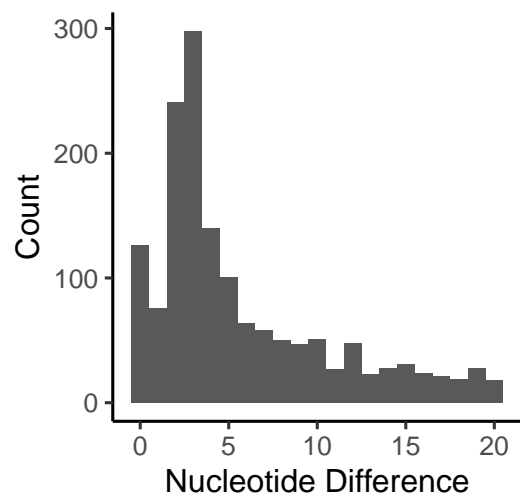
IGHV3-38*02

3 sequences assigned
No exact matches.



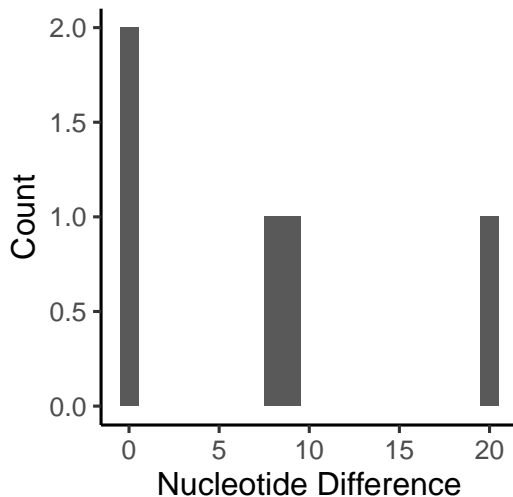
IGHV3-33*06

1620 sequences assigned
126 (7.8%) exact matches, in which:
125 unique CDR3
7 unique J



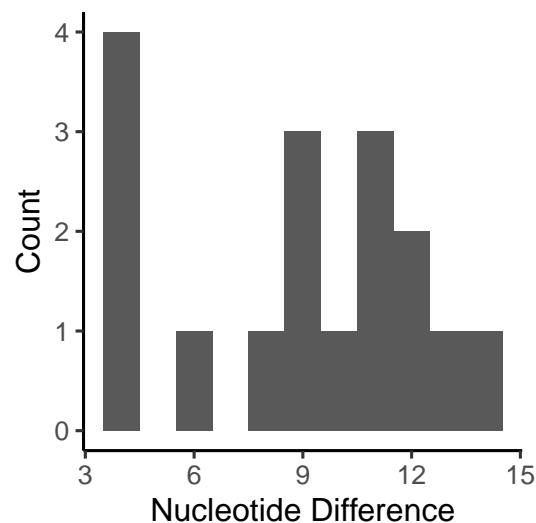
IGHV3-35*02

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



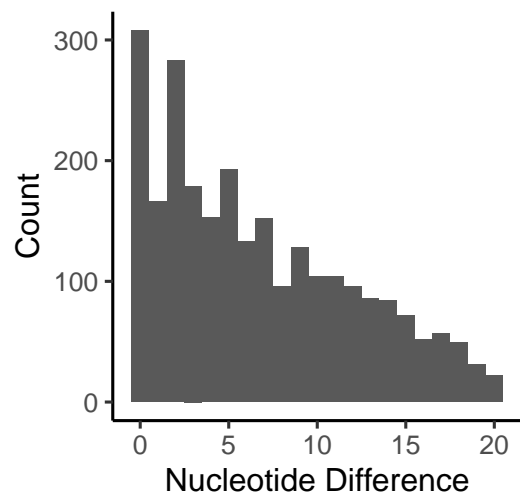
IGHV3-38*03

17 sequences assigned
No exact matches.



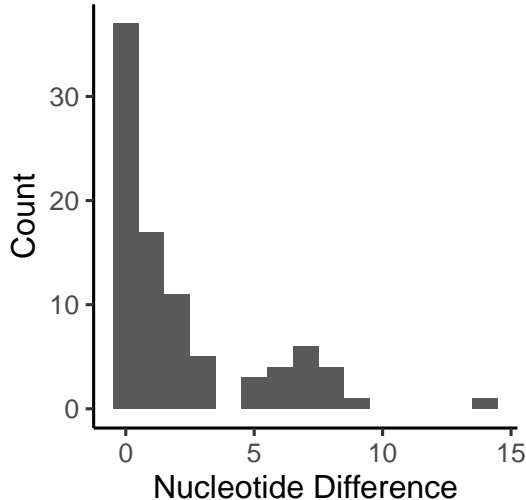
IGHV3-33*08

2663 sequences assigned
308 (11.6%) exact matches, in which:
291 unique CDR3
7 unique J



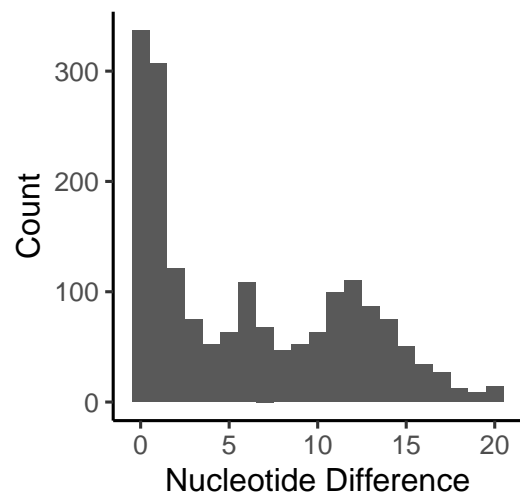
IGHV3-38-3*01

89 sequences assigned
37 (41.6%) exact matches, in which:
37 unique CDR3
5 unique J



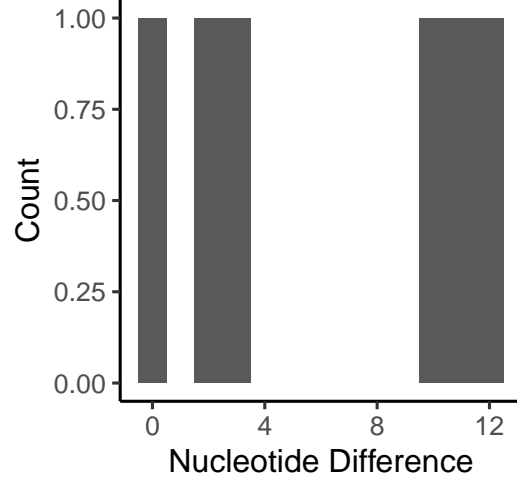
IGHV3-43*01

1834 sequences assigned
337 (18.4%) exact matches, in which:
264 unique CDR3
7 unique J



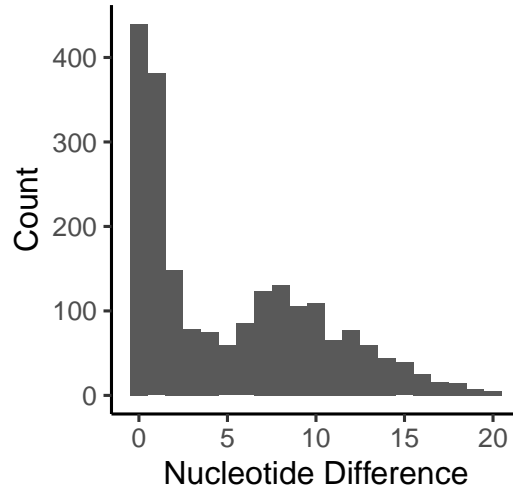
IGHV3-47*02

6 sequences assigned
1 (16.7%) exact matches, in which:
1 unique CDR3
1 unique J



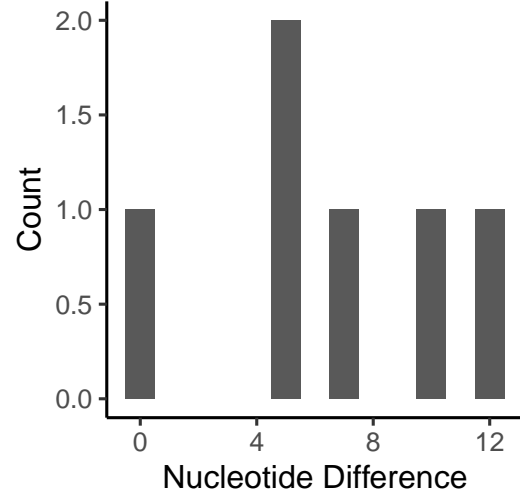
IGHV3-49*04

2163 sequences assigned
440 (20.3%) exact matches, in which:
336 unique CDR3
7 unique J



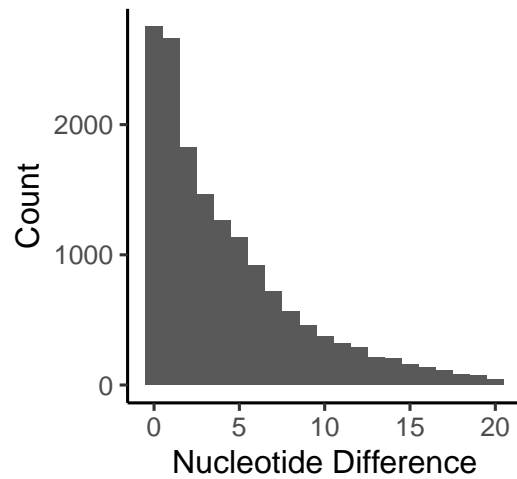
IGHV3-52*01_03

6 sequences assigned
1 (16.7%) exact matches, in which:
1 unique CDR3
1 unique J



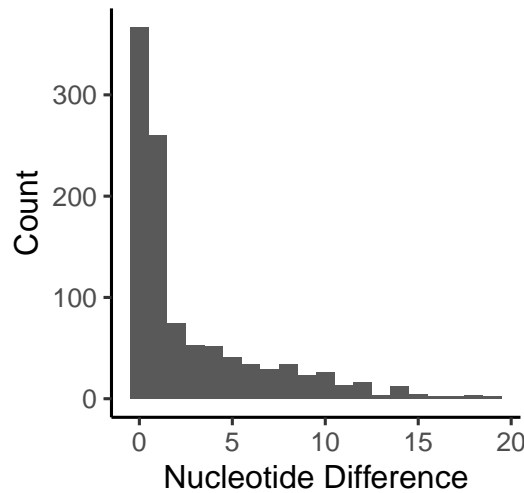
IGHV3-48*01

15988 sequences assigned
2752 (17.2%) exact matches, in which:
2209 unique CDR3
7 unique J



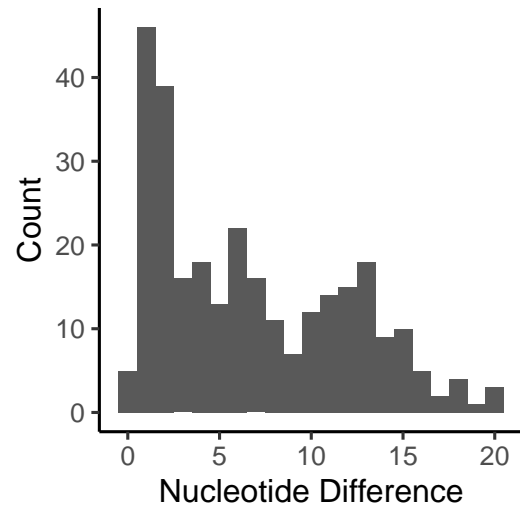
IGHV3-49*03_05

1057 sequences assigned
367 (34.7%) exact matches, in which:
296 unique CDR3
7 unique J



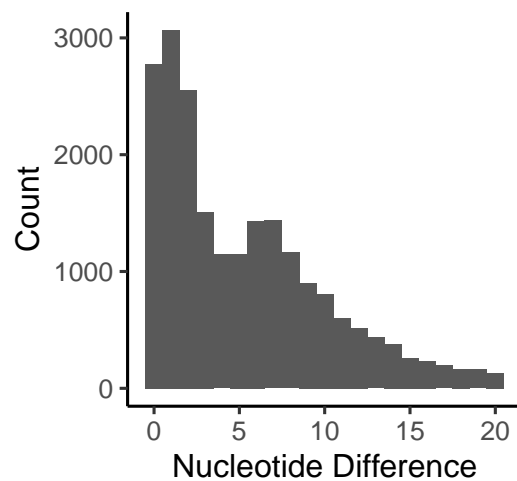
IGHV3-53*05

294 sequences assigned
5 (1.7%) exact matches, in which:
5 unique CDR3
2 unique J



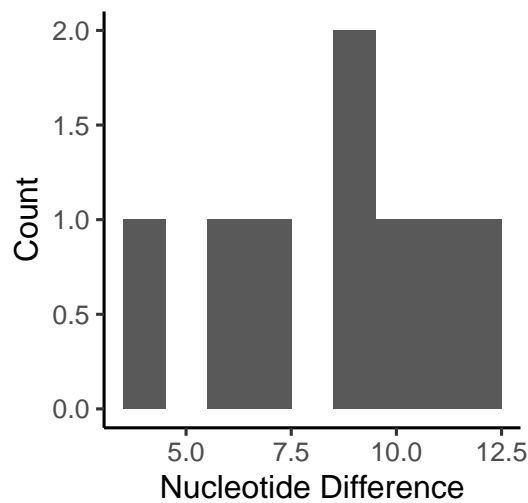
IGHV3-48*03

21578 sequences assigned
2774 (12.9%) exact matches, in which:
2148 unique CDR3
7 unique J



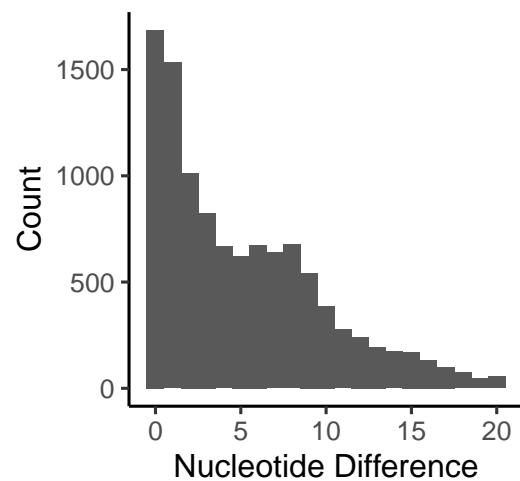
IGHV3-52*02

8 sequences assigned
No exact matches.



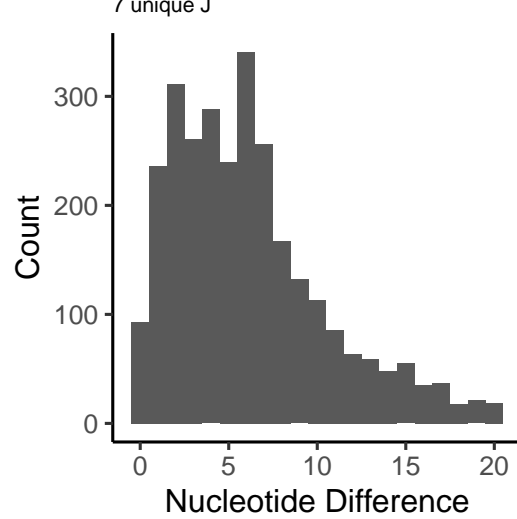
IGHV3-53*01_02

10906 sequences assigned
1686 (15.5%) exact matches, in which:
1395 unique CDR3
7 unique J



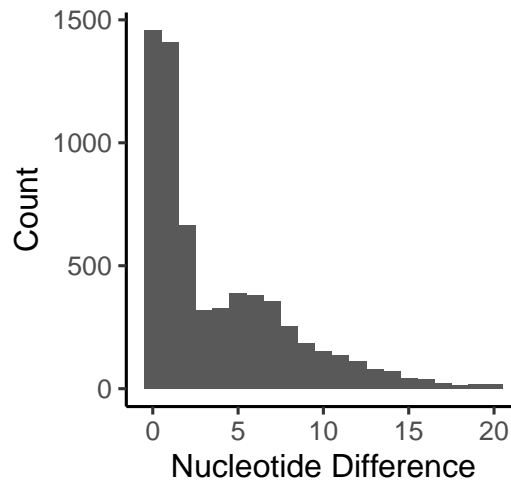
IGHV3-64*04

2971 sequences assigned
93 (3.1%) exact matches, in which:
93 unique CDR3
7 unique J



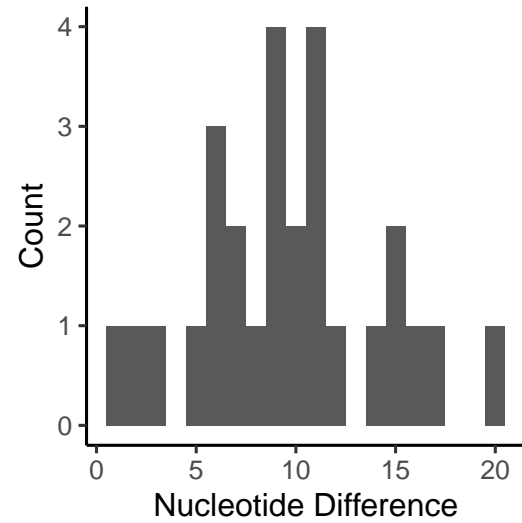
IGHV3-66*02

6493 sequences assigned
1457 (22.4%) exact matches, in which:
1176 unique CDR3
7 unique J



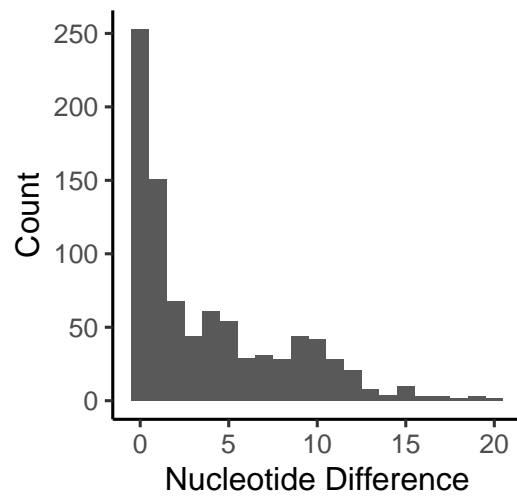
IGHV3-69-1*02

31 sequences assigned
No exact matches.



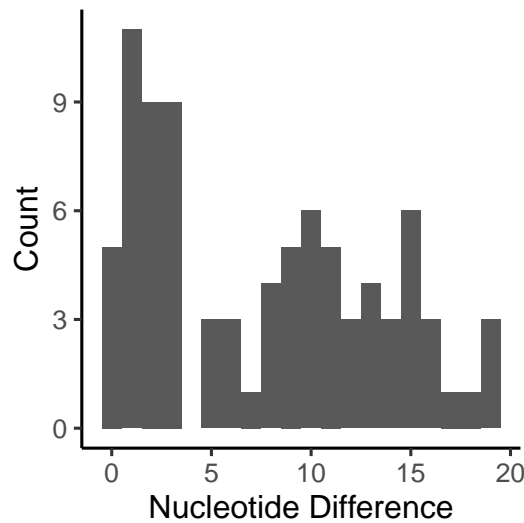
IGHV3-64*02_07

901 sequences assigned
253 (28.1%) exact matches, in which:
194 unique CDR3
7 unique J



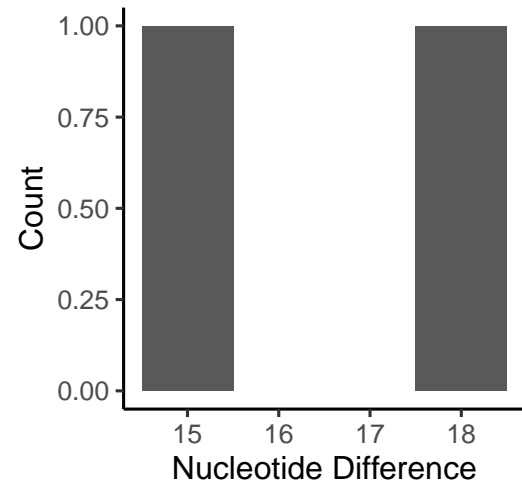
IGHV3-66*03

94 sequences assigned
5 (5.3%) exact matches, in which:
5 unique CDR3
2 unique J



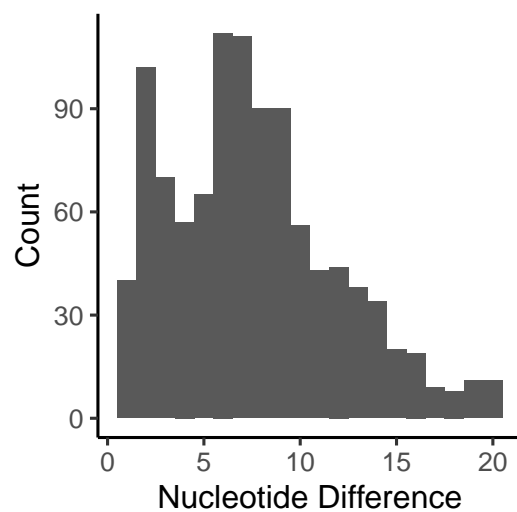
IGHV3-71*03

8 sequences assigned
No exact matches.



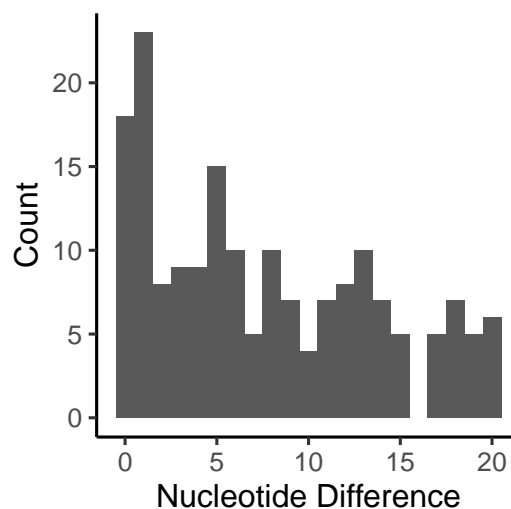
IGHV3-66*01

1061 sequences assigned
No exact matches.



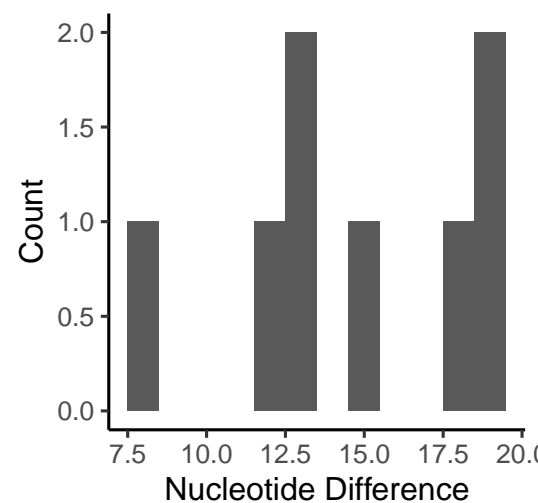
IGHV3-69-1*01

188 sequences assigned
18 (9.6%) exact matches, in which:
18 unique CDR3
6 unique J



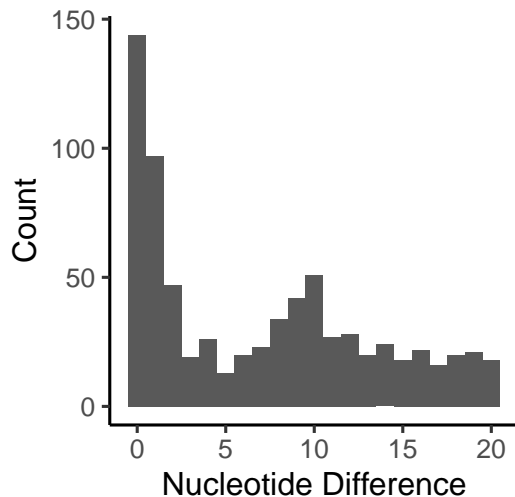
IGHV3-71*01_04

11 sequences assigned
No exact matches.



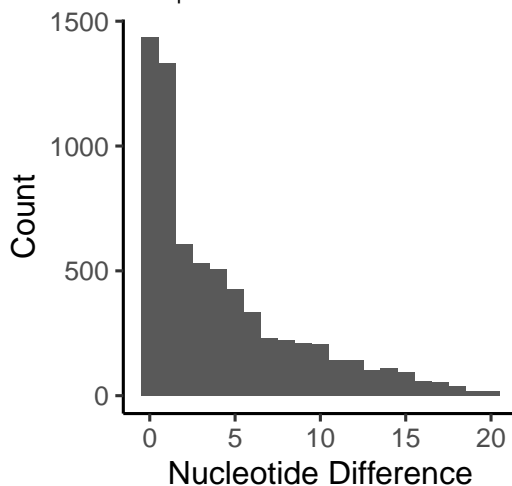
IGHV3-72*01

782 sequences assigned
144 (18.4%) exact matches, in which:
124 unique CDR3
7 unique J



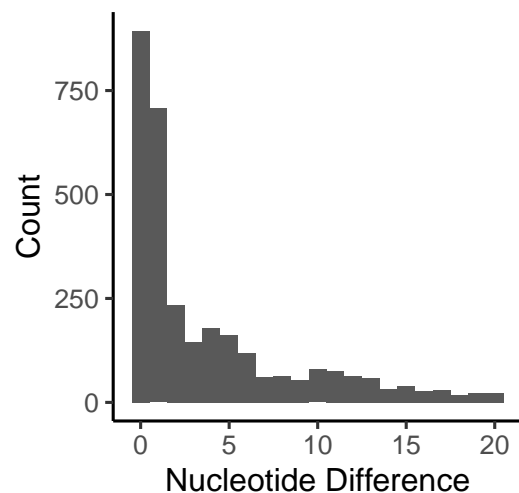
IGHV3-74*01_02

7012 sequences assigned
1435 (20.5%) exact matches, in which:
1138 unique CDR3
7 unique J



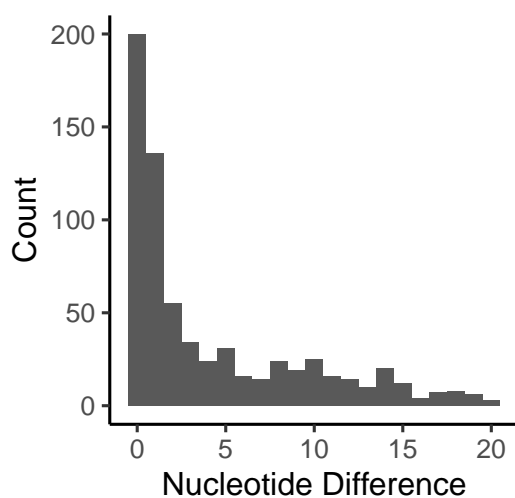
IGHV3-64D*06

3267 sequences assigned
894 (27.4%) exact matches, in which:
634 unique CDR3
7 unique J



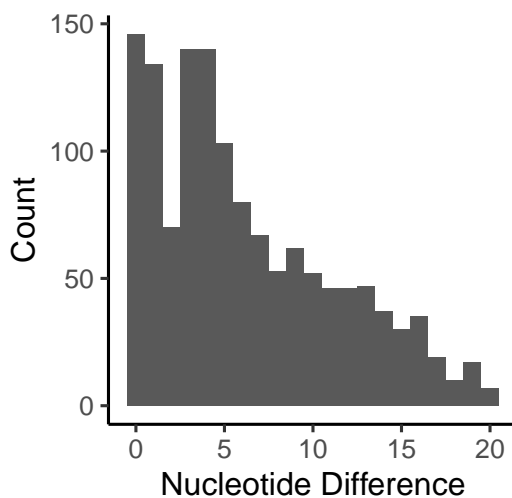
IGHV3-73*01_02

695 sequences assigned
200 (28.8%) exact matches, in which:
167 unique CDR3
7 unique J



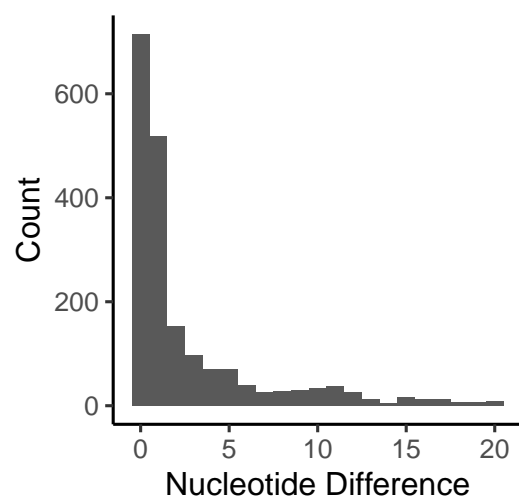
IGHV3-74*01_02_C246T

1362 sequences assigned
146 (10.7%) exact matches, in which:
145 unique CDR3
7 unique J



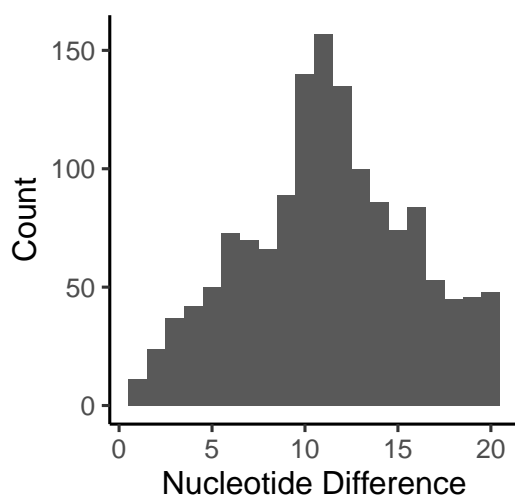
IGHV3-64D*09

1936 sequences assigned
715 (36.9%) exact matches, in which:
498 unique CDR3
7 unique J



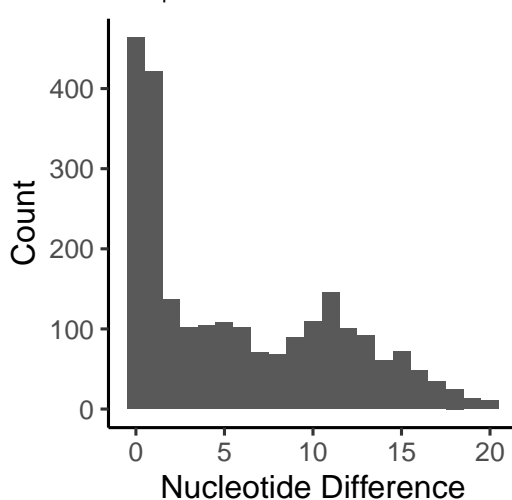
IGHV3-74*03

1768 sequences assigned
No exact matches.



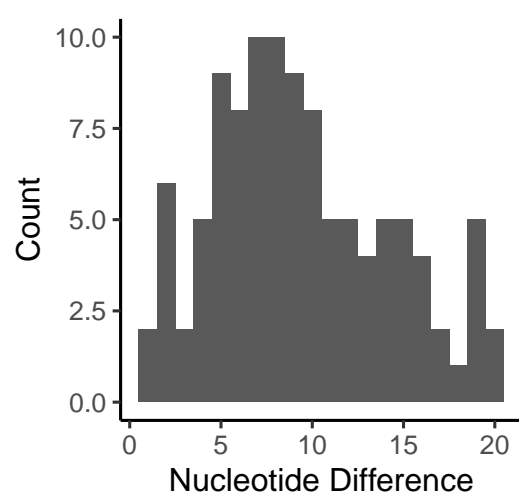
IGHV3-43D*04

2422 sequences assigned
464 (19.2%) exact matches, in which:
377 unique CDR3
7 unique J



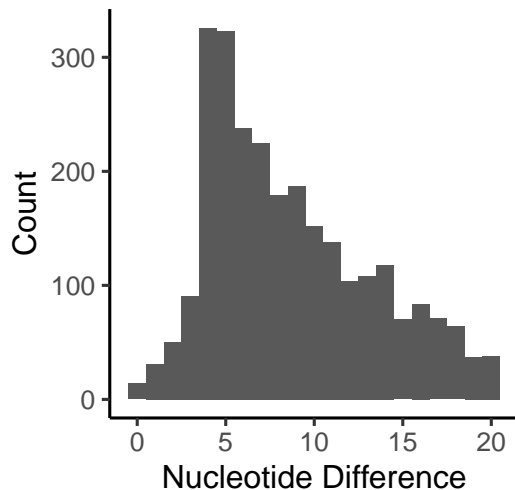
IGHV3-NL1*01

111 sequences assigned
No exact matches.



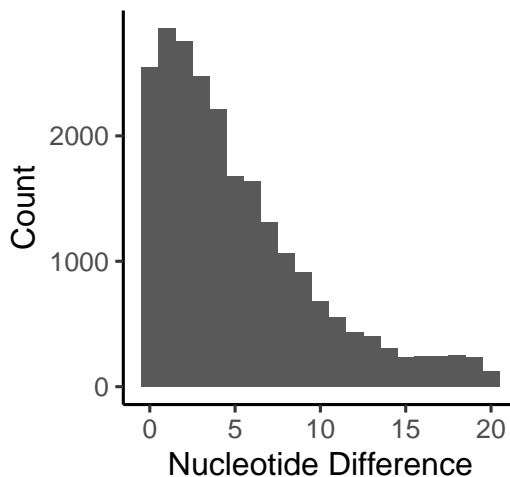
IGHV3–NL1*01_C141G_

2792 sequences assigned
14 (0.5%) exact matches, in which:
14 unique CDR3
3 unique J



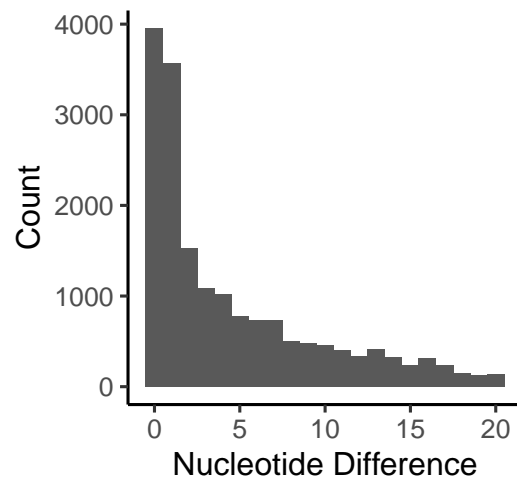
IGHV4–4*02_03

23797 sequences assigned
2544 (10.7%) exact matches, in which:
1981 unique CDR3
7 unique J



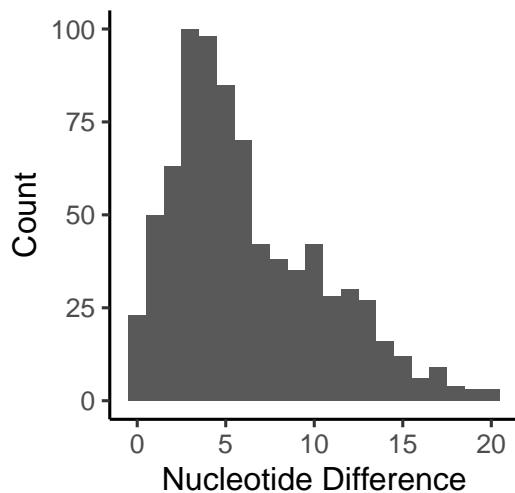
IGHV4–30–4*01

18218 sequences assigned
3953 (21.7%) exact matches, in which:
2798 unique CDR3
7 unique J



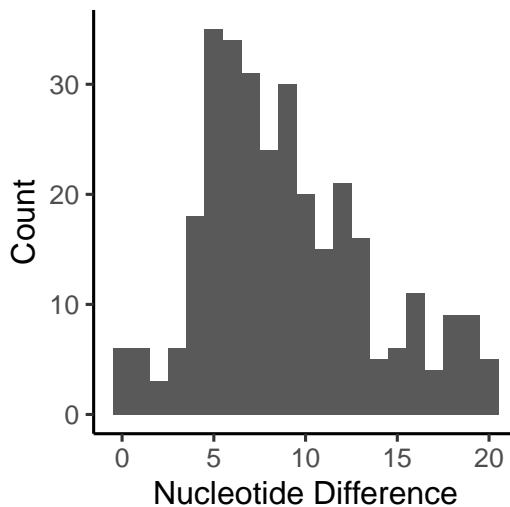
IGHV3–NL1*01_C141G_

800 sequences assigned
23 (2.9%) exact matches, in which:
23 unique CDR3
4 unique J



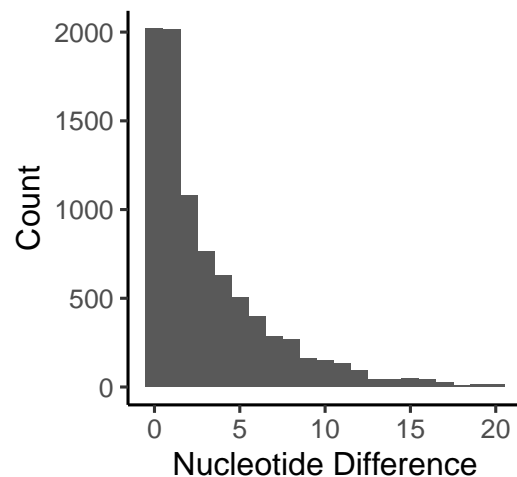
IGHV4–4*02_03_T120C

328 sequences assigned
6 (1.8%) exact matches, in which:
6 unique CDR3
3 unique J



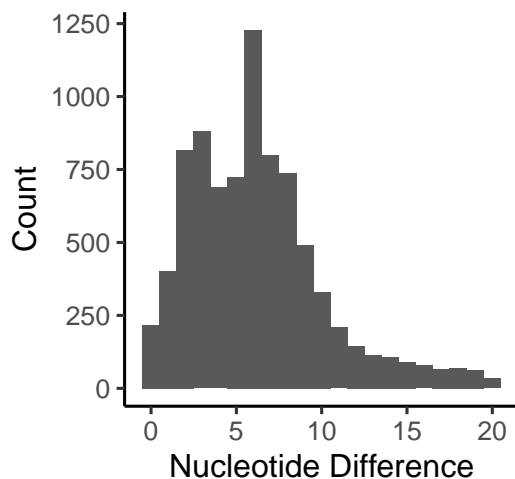
IGHV4–30–2*01

8811 sequences assigned
2019 (22.9%) exact matches, in which:
1467 unique CDR3
7 unique J



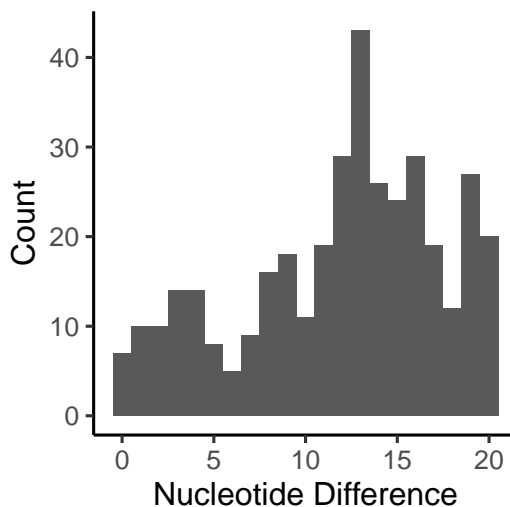
IGHV4–4*09

8363 sequences assigned
216 (2.6%) exact matches, in which:
209 unique CDR3
7 unique J



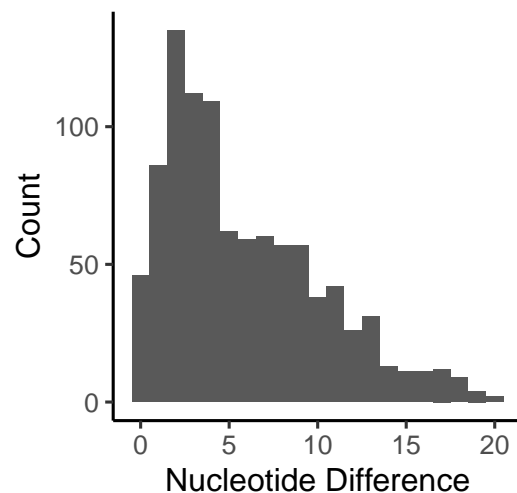
IGHV4–28*03

463 sequences assigned
7 (1.5%) exact matches, in which:
7 unique CDR3
2 unique J



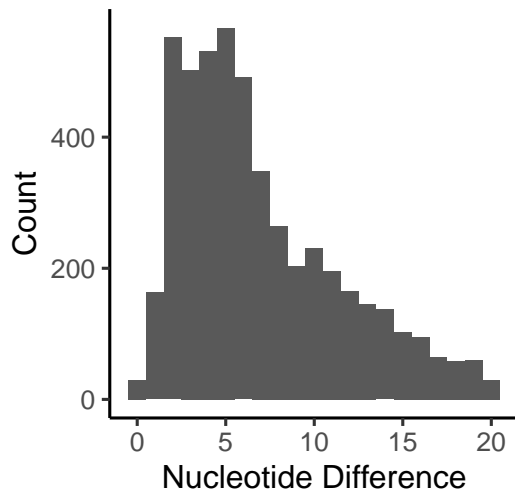
IGHV4–30–2*05

1003 sequences assigned
46 (4.6%) exact matches, in which:
46 unique CDR3
6 unique J



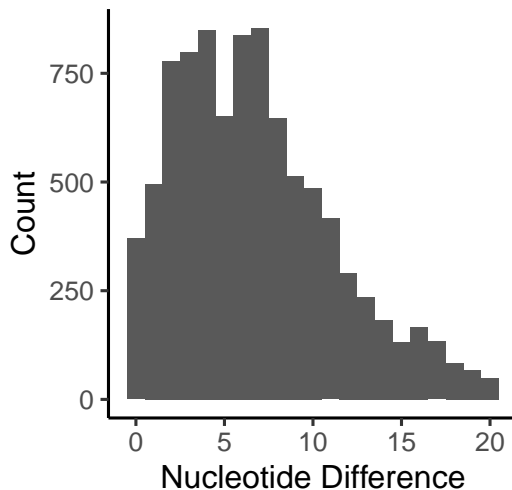
IGHV4-30-4*08

5113 sequences assigned
30 (0.6%) exact matches, in which:
28 unique CDR3
5 unique J



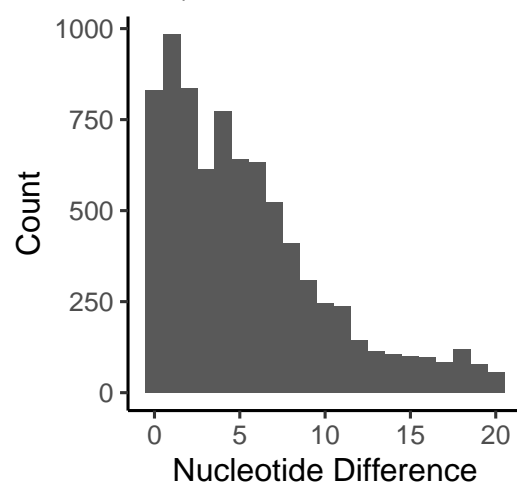
IGHV4-38-2*02

9167 sequences assigned
370 (4%) exact matches, in which:
332 unique CDR3
7 unique J



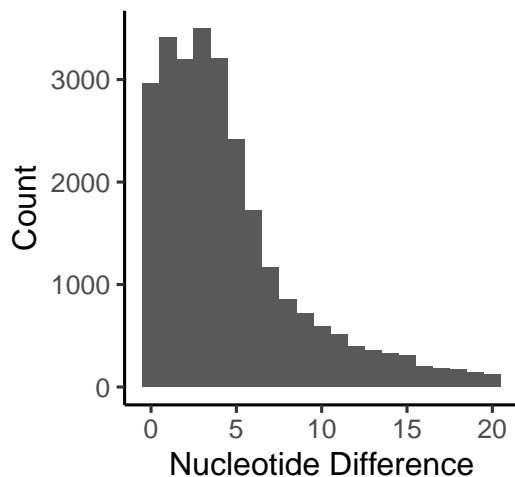
IGHV4-59*08

8088 sequences assigned
832 (10.3%) exact matches, in which:
749 unique CDR3
7 unique J



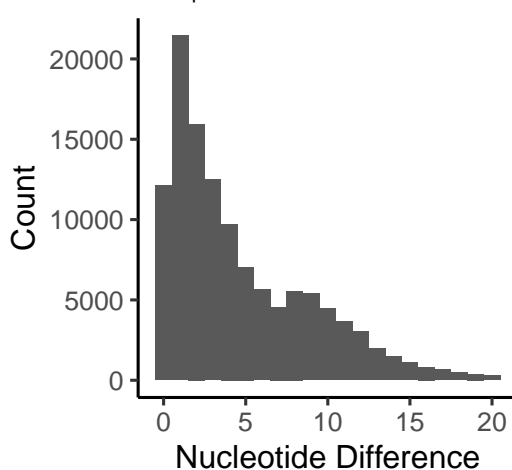
IGHV4-31*02

27292 sequences assigned
2964 (10.9%) exact matches, in which:
2196 unique CDR3
7 unique J



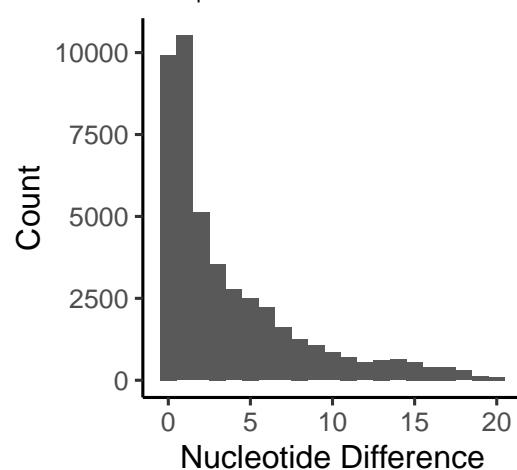
IGHV4-39*07

119525 sequences assigned
12124 (10.1%) exact matches, in which:
8021 unique CDR3
7 unique J



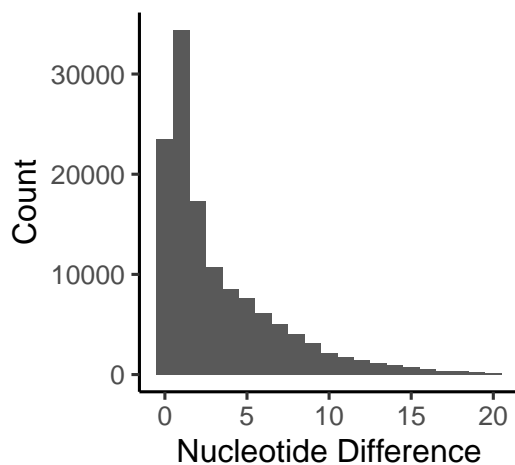
IGHV4-59*11

46077 sequences assigned
9933 (21.6%) exact matches, in which:
6915 unique CDR3
7 unique J



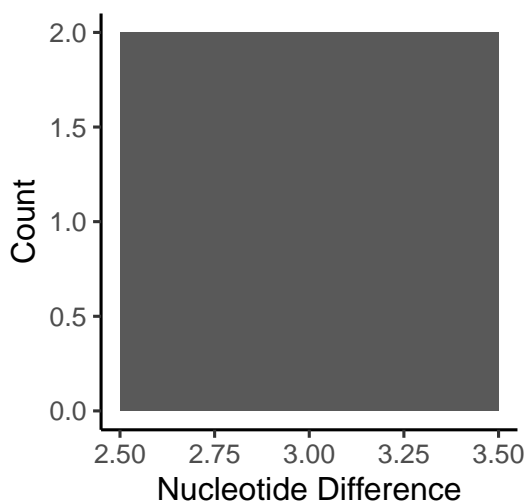
IGHV4-34*01_02

131669 sequences assigned
23542 (17.9%) exact matches, in which:
14509 unique CDR3
7 unique J



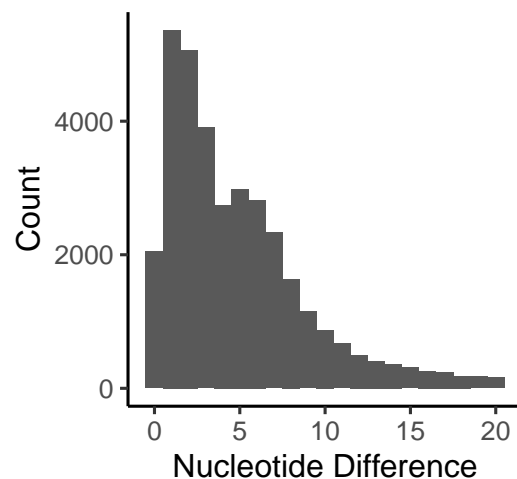
IGHV4-55*09

2 sequences assigned
No exact matches.



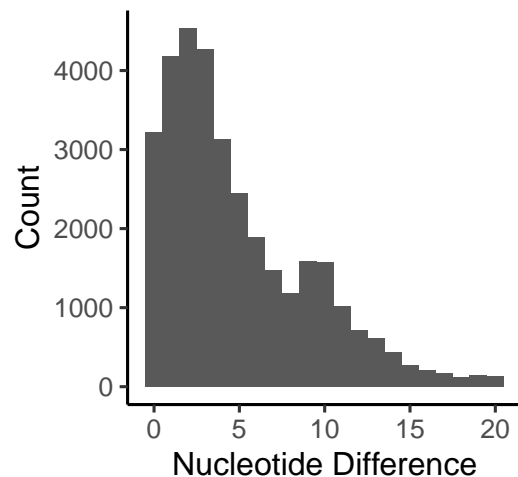
IGHV4-59*12

34747 sequences assigned
2051 (5.9%) exact matches, in which:
1836 unique CDR3
7 unique J



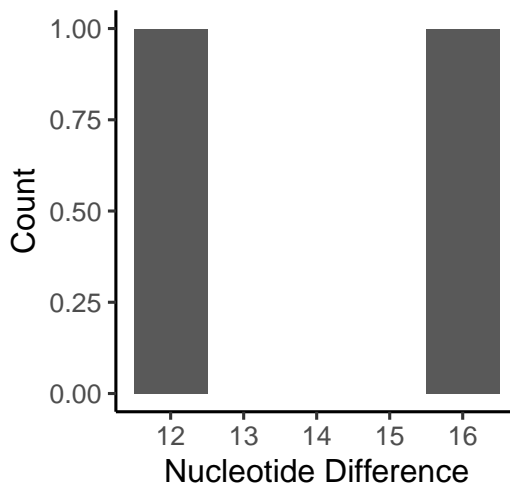
IGHV4-61*01

33549 sequences assigned
3222 (9.6%) exact matches, in which:
2560 unique CDR3
7 unique J



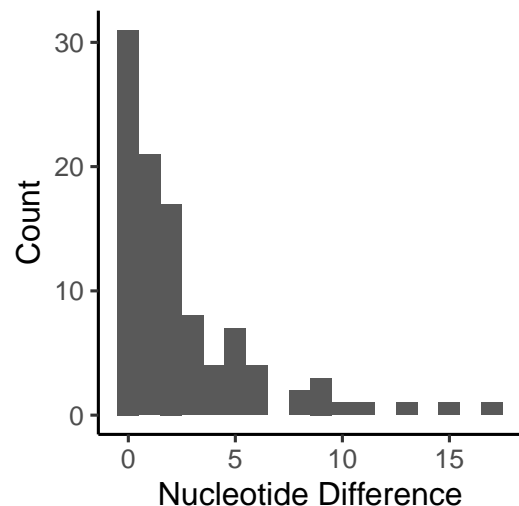
IGHV1/OR15-2*02_03

2 sequences assigned
No exact matches.



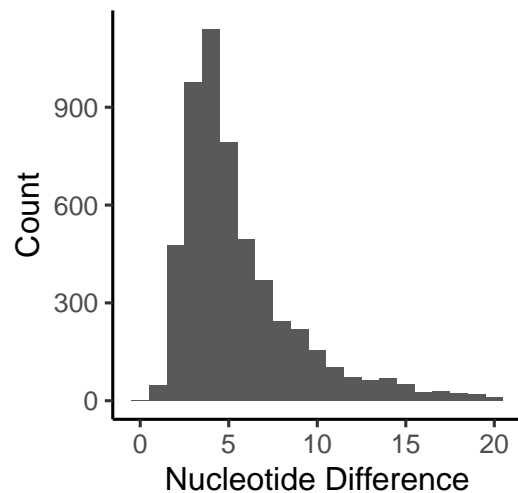
IGHV5-51*04

104 sequences assigned
31 (29.8%) exact matches, in which:
30 unique CDR3
4 unique J



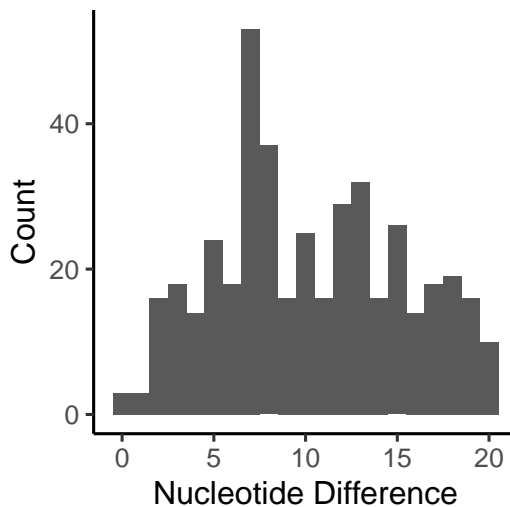
IGHV4-61*05

5427 sequences assigned
3 (0.1%) exact matches, in which:
3 unique CDR3
1 unique J



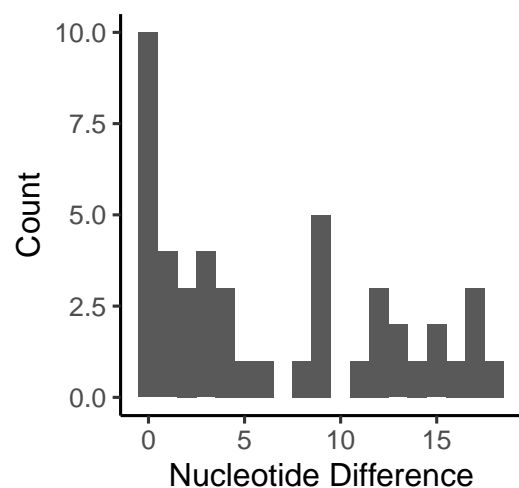
IGHV4/OR15-8*01_C193/

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



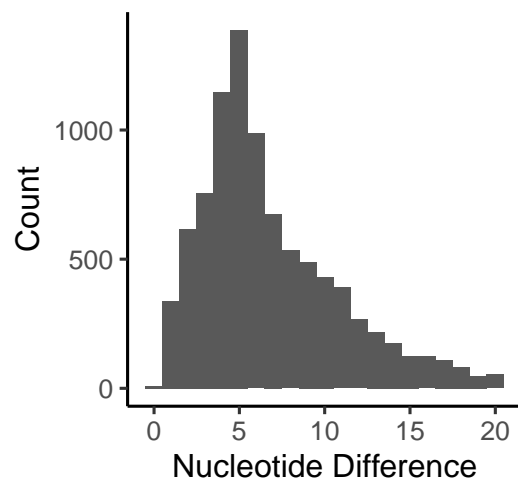
IGHV5-51*06

46 sequences assigned
10 (21.7%) exact matches, in which:
10 unique CDR3
2 unique J



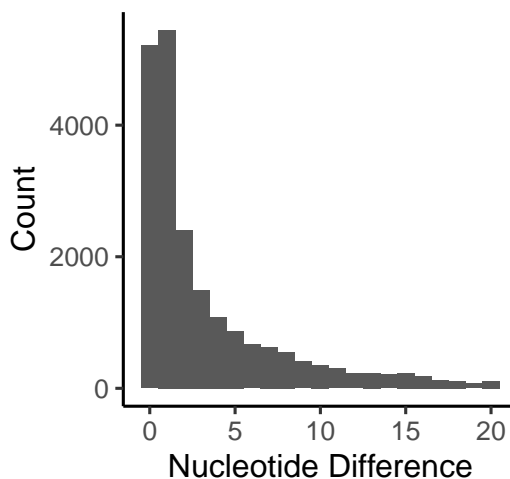
IGHV4-61*08

9055 sequences assigned
8 (0.1%) exact matches, in which:
8 unique CDR3
4 unique J



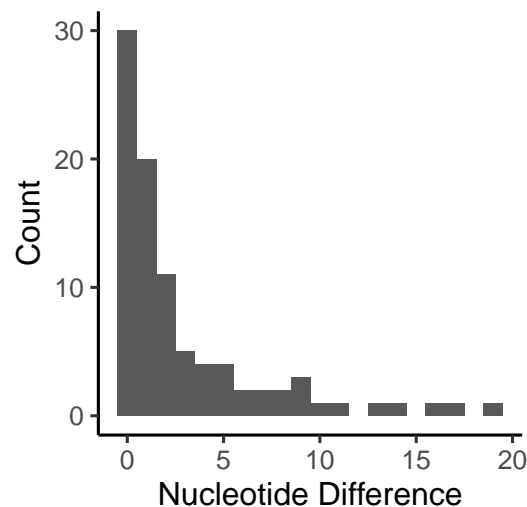
IGHV5-10-1*01_03

21249 sequences assigned
5212 (24.5%) exact matches, in which:
4093 unique CDR3
7 unique J



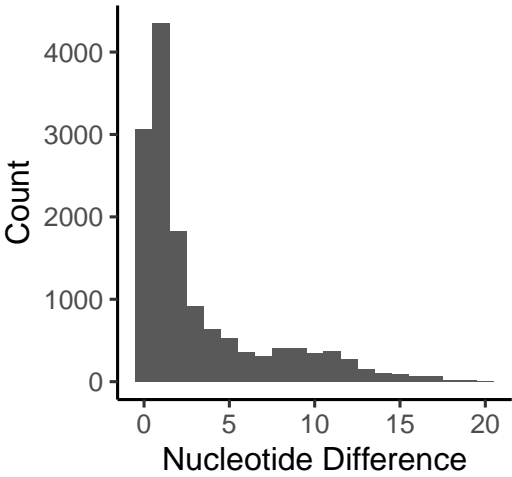
IGHV5-51*07

91 sequences assigned
30 (33%) exact matches, in which:
30 unique CDR3
6 unique J



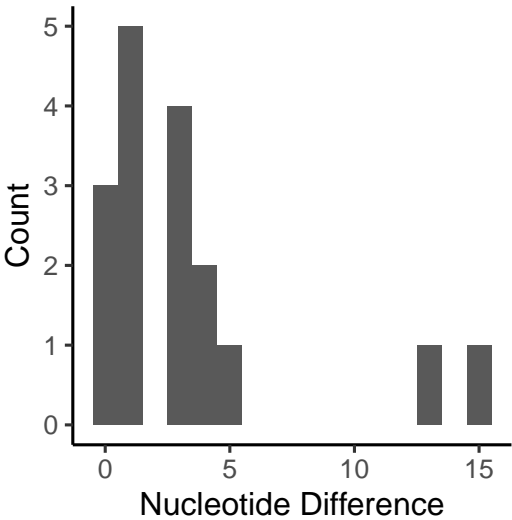
IGHV6-1*01_02

14348 sequences assigned
3063 (21.3%) exact matches, in which:
1849 unique CDR3
7 unique J



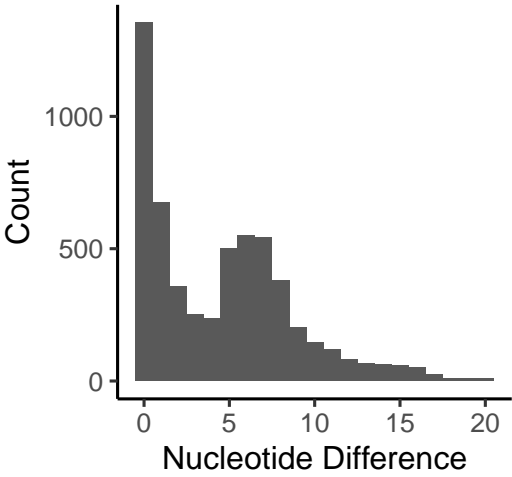
IGHV7-4-1*01

17 sequences assigned
3 (17.6%) exact matches, in which:
2 unique CDR3
2 unique J



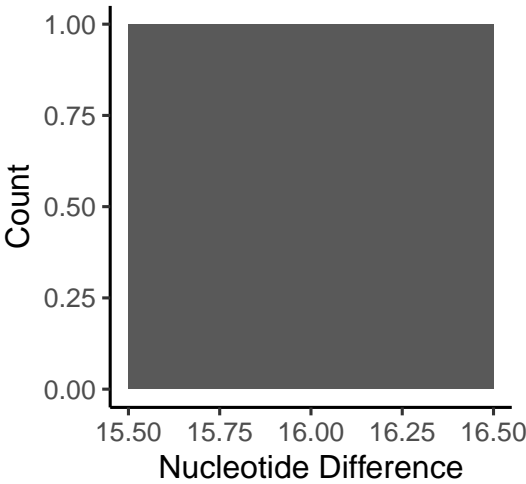
IGHV6-1*01_02_A315G

5697 sequences assigned
1354 (23.8%) exact matches, in which:
1319 unique CDR3
7 unique J

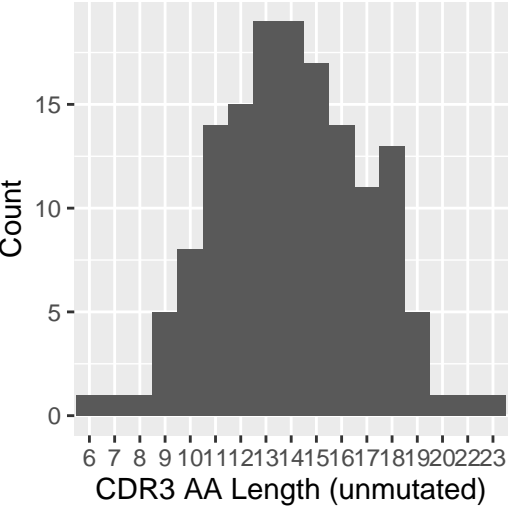


IGHV3/OR16-10*01_03

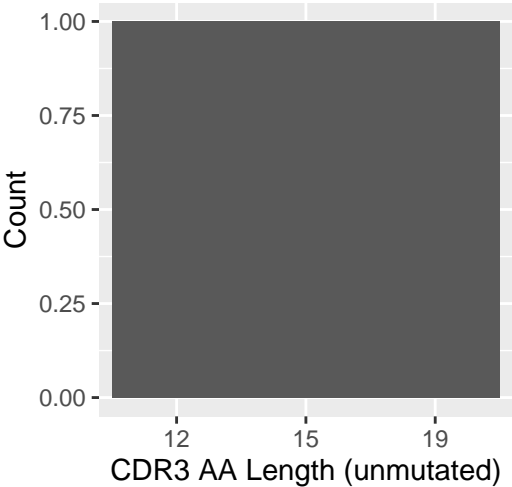
1 sequences assigned
No exact matches.



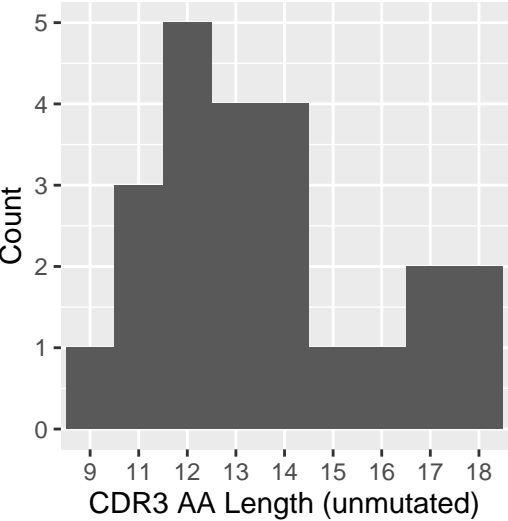
IGHV3-74*01_02_C246T_G:



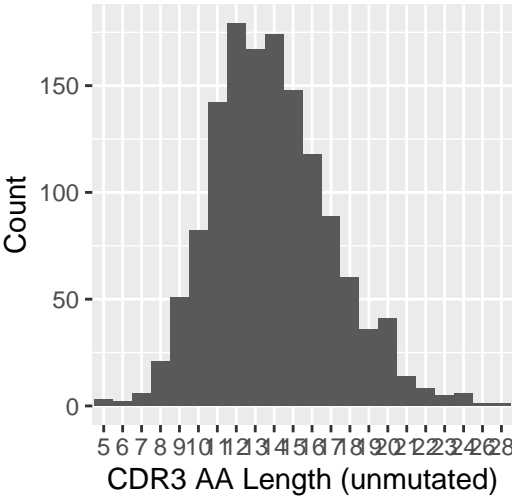
IGHV4/OR15-8*01_C193A



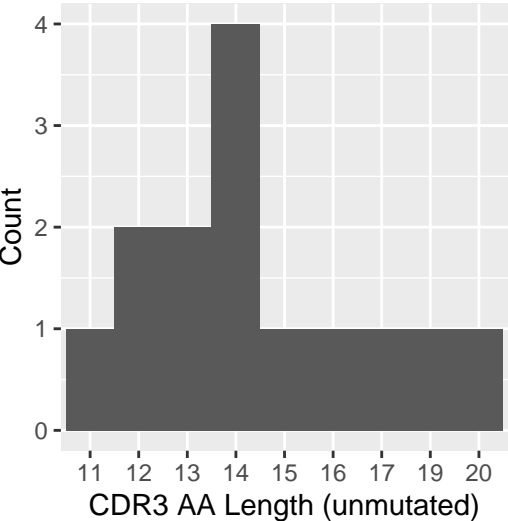
IGHV3-NL1*01_C141G_T201



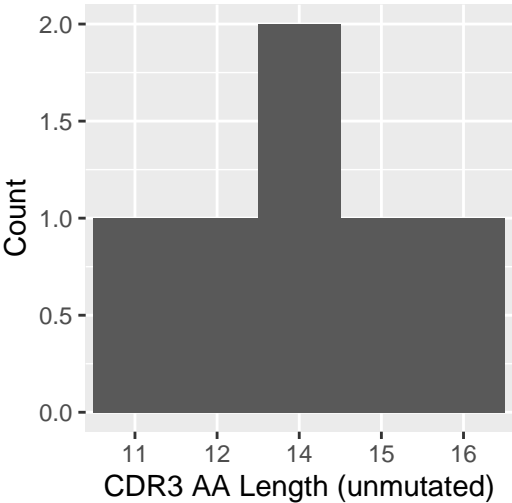
IGHV6-1*01_02_A315G



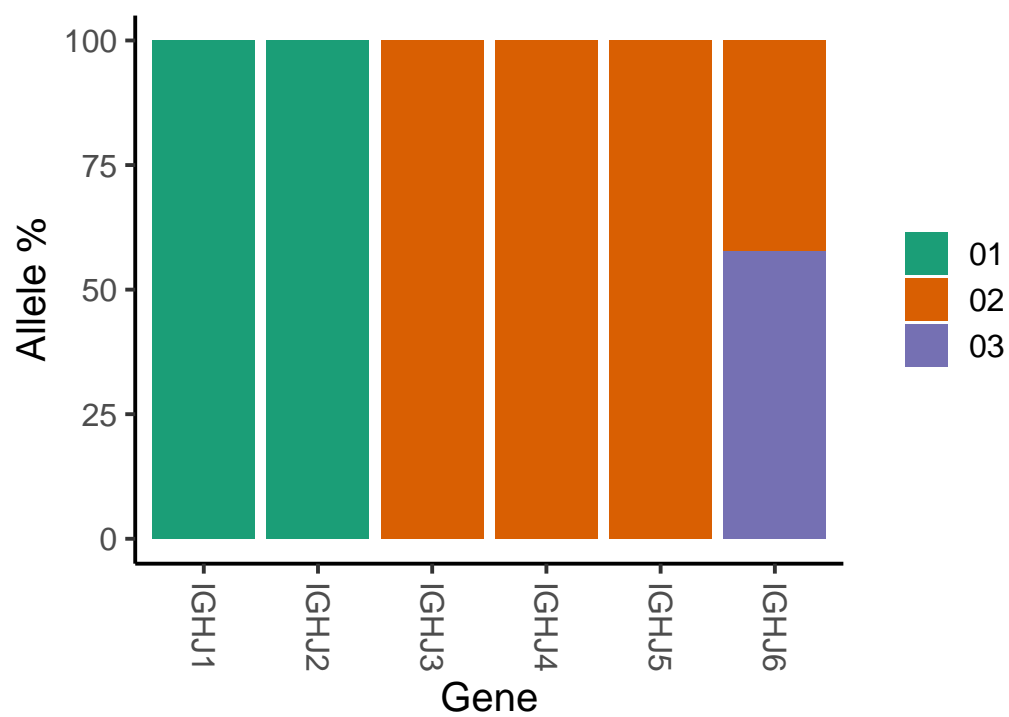
IGHV3-NL1*01_C141G_T164



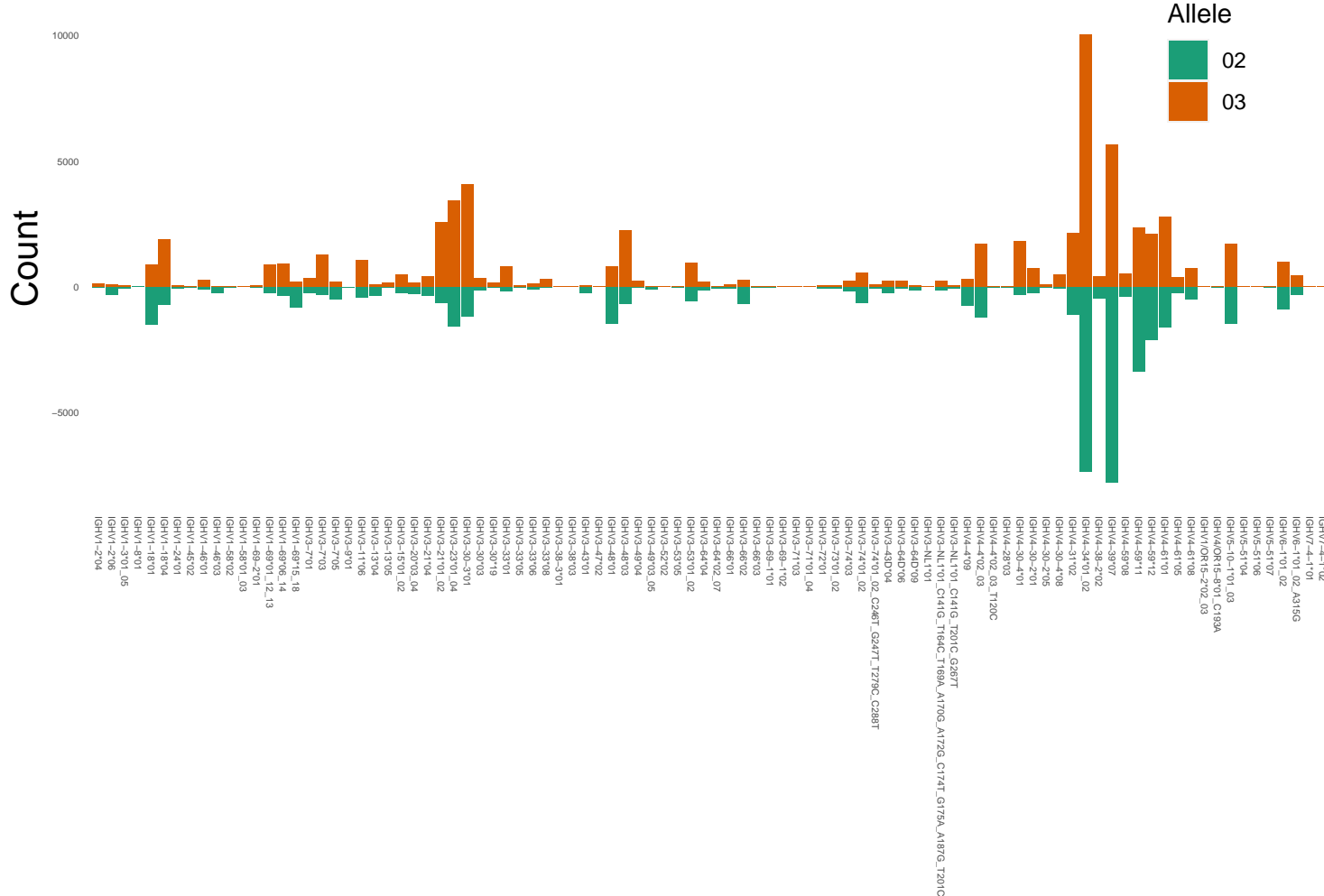
IGHV4-4*02_03_T120C _G175A_A187G_T201C



Allele Usage



Sequence Count by IGHJ6 allele usage



[illegible]