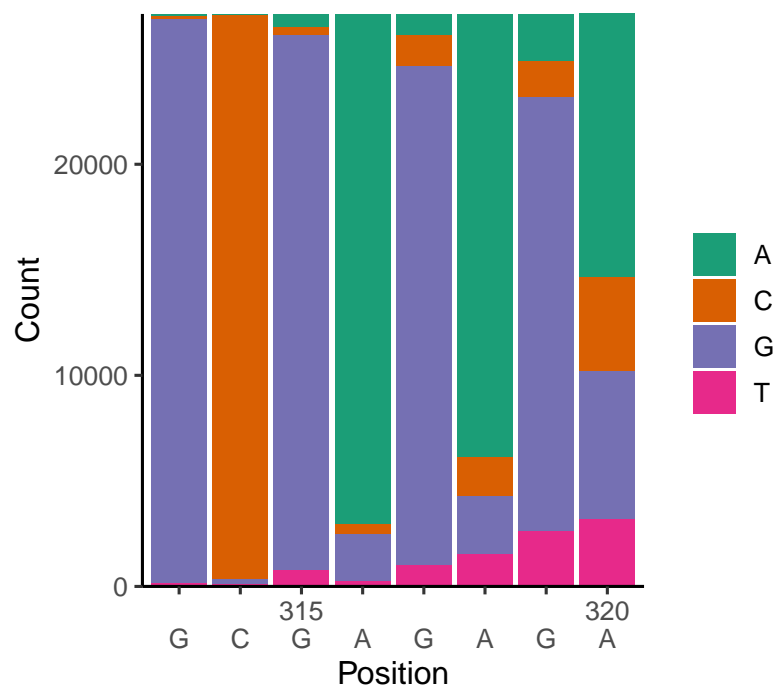
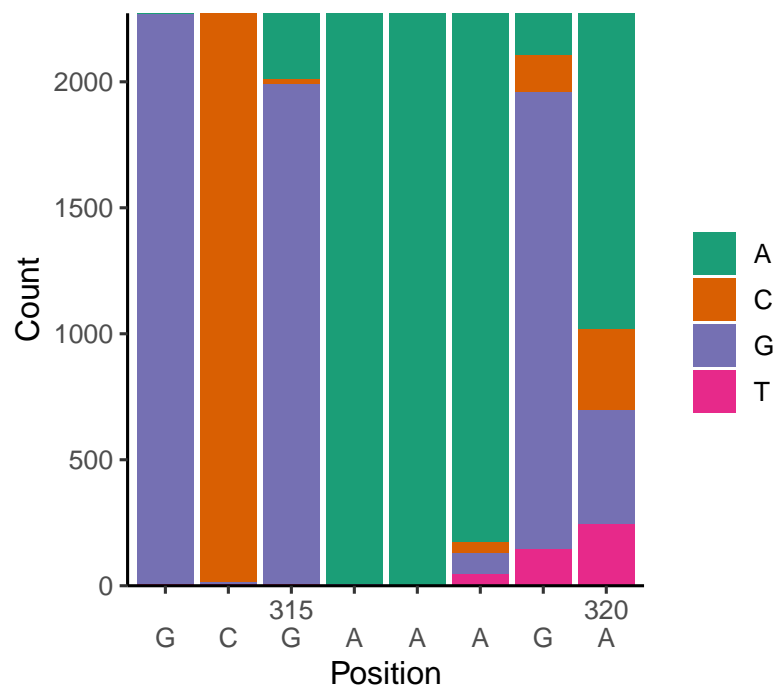


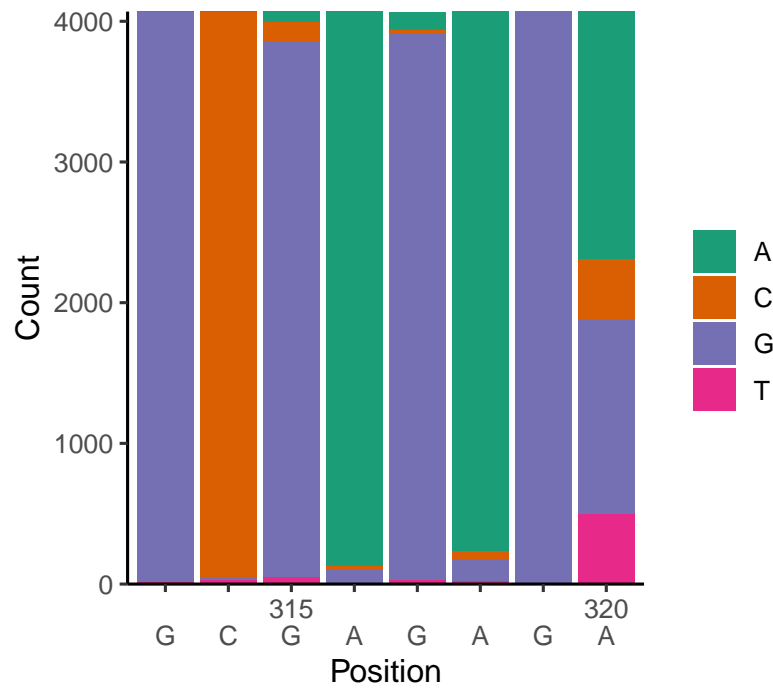
Gene IGHV1-69*04_09_G112A



Gene IGHV3-30-3*02_G75C



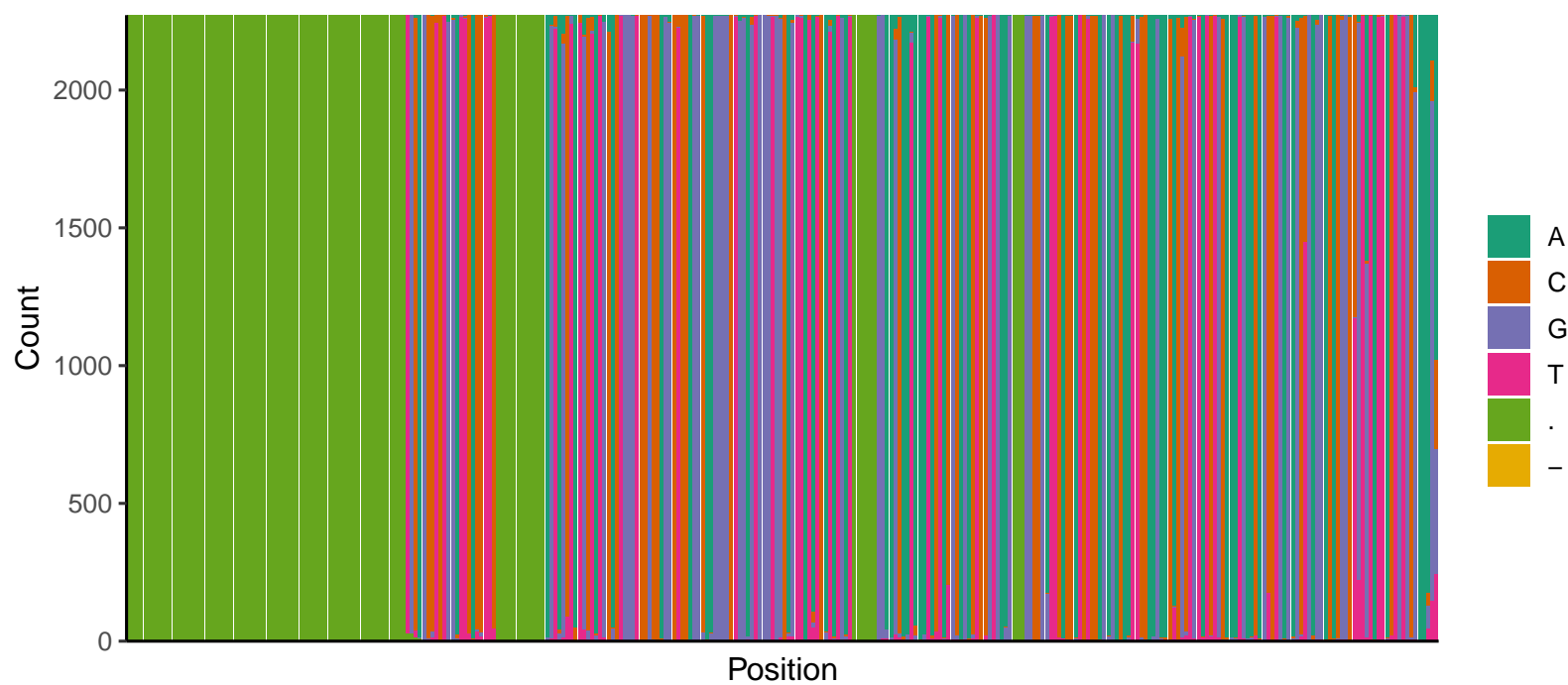
Gene IGHV4-39*02_C258G



Gene IGHV1-69*04_09_G112A



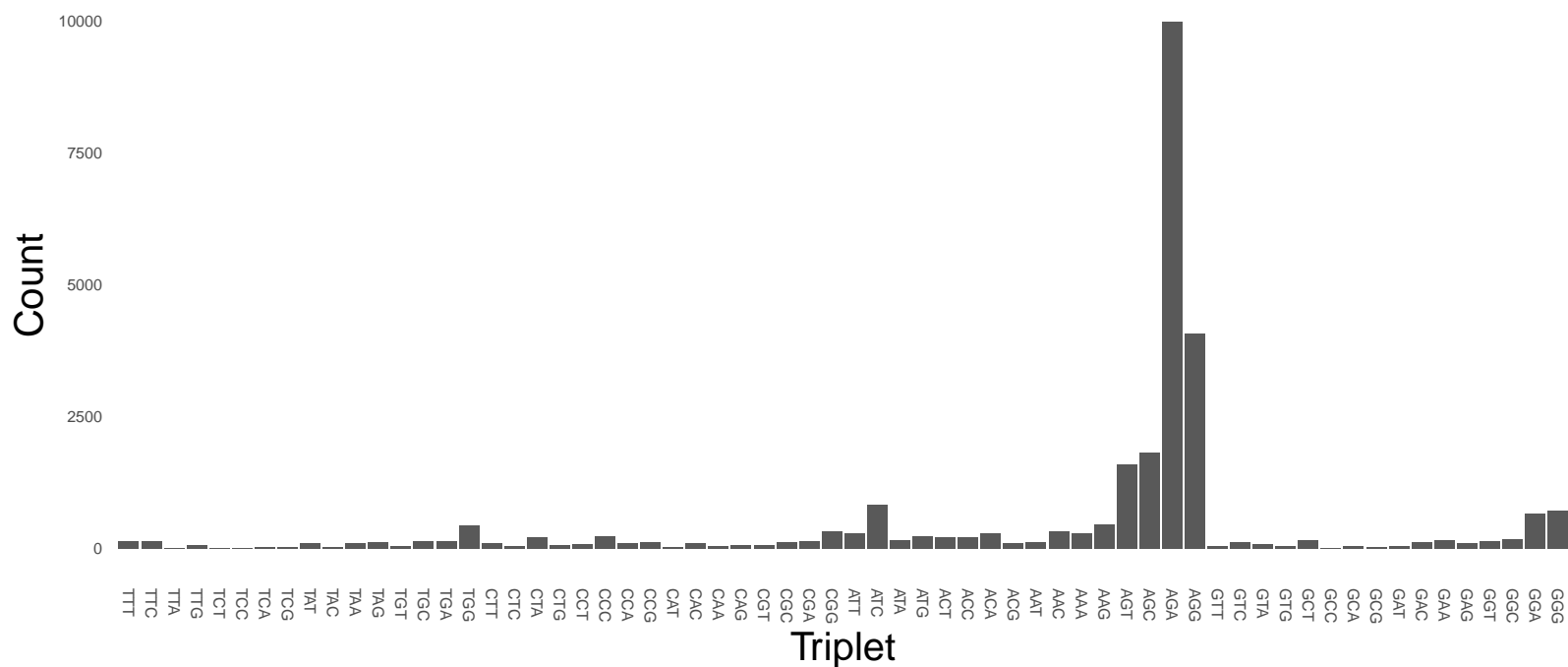
Gene IGHV3-30-3*02_G75C



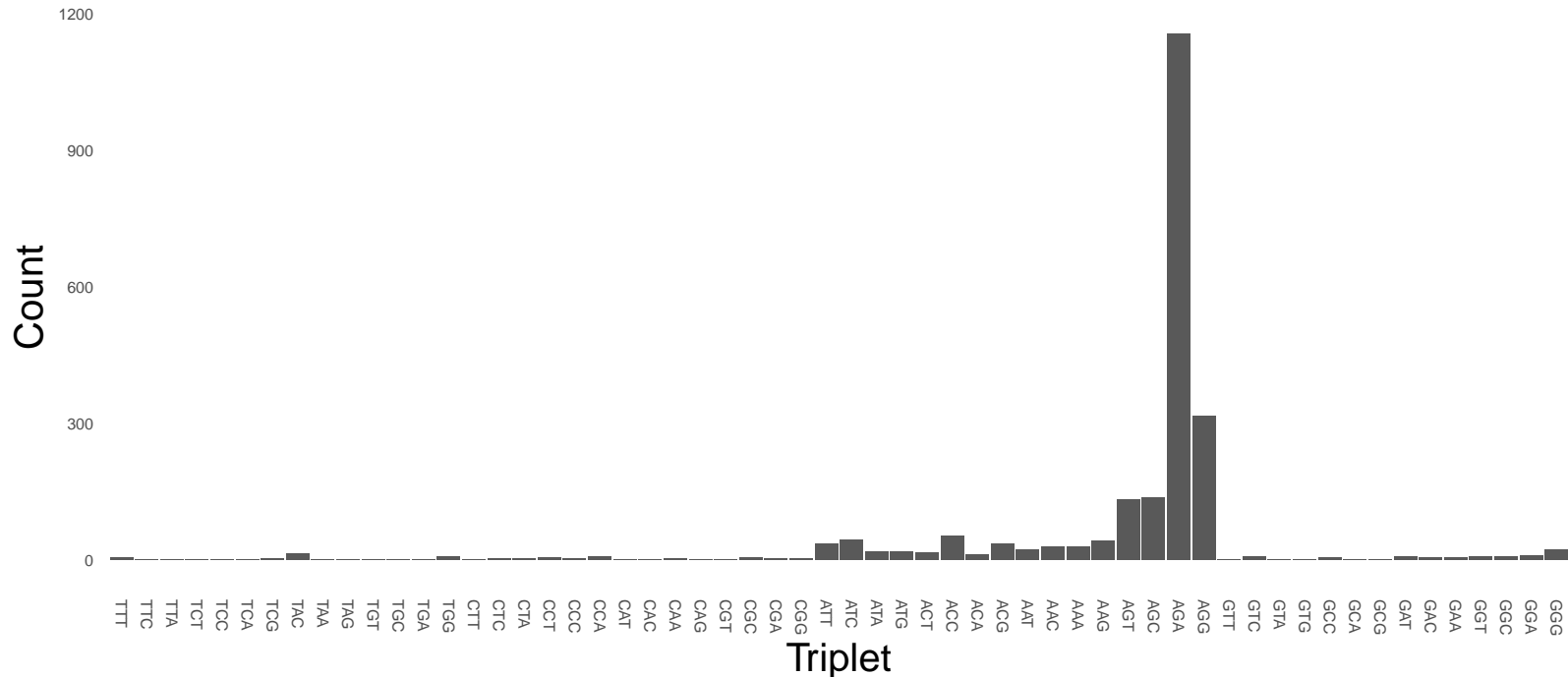
Gene IGHV4-39*02_C258G



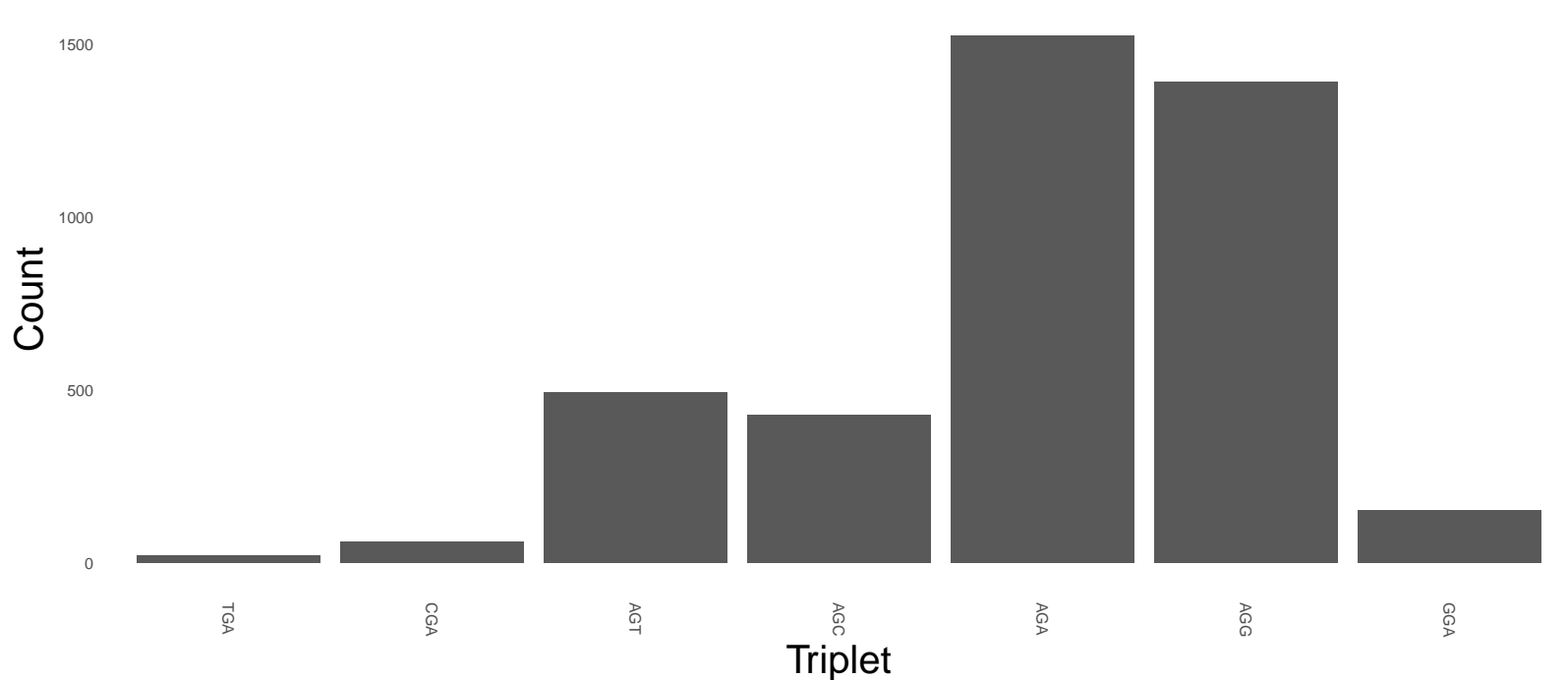
IGHV1-69*04_09_G112A- Final 3 nucleotides as a triplet



IGHV3-30-3*02_G75C- Final 3 nucleotides as a triplet

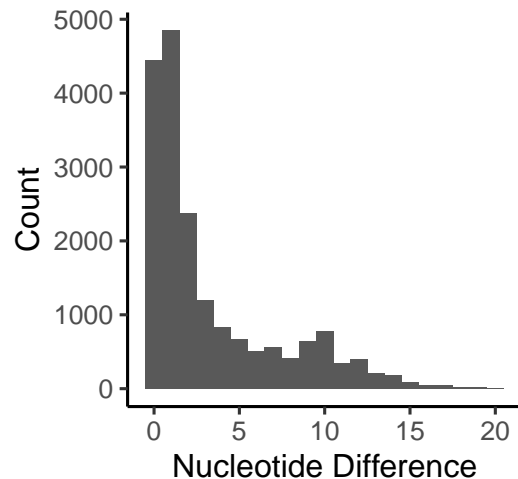


IGHV4-39*02_C258G- Final 3 nucleotides as a triplet



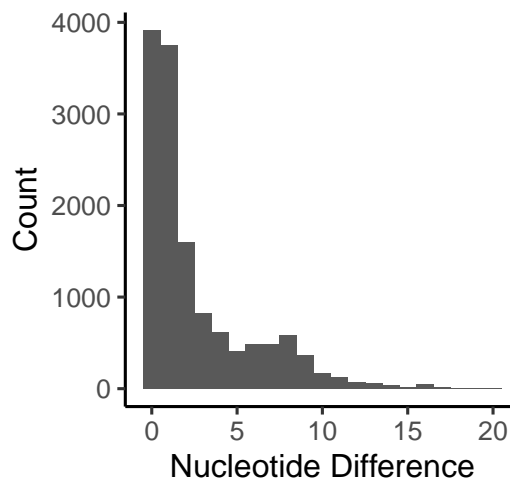
IGHV1-2*02

18663 sequences assigned
4446 (23.8%) exact matches, in which:
3747 unique CDR3
7 unique J



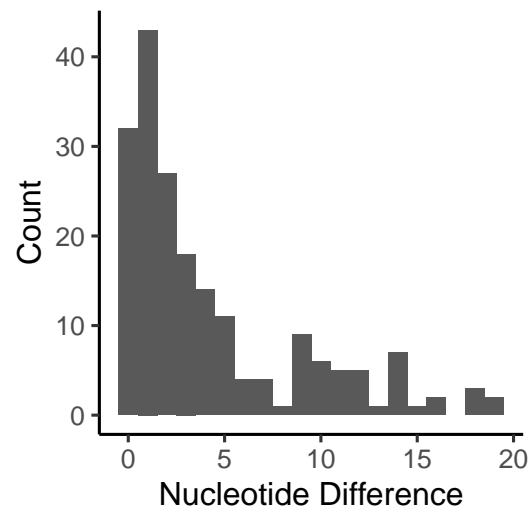
IGHV1-8*01

13604 sequences assigned
3912 (28.8%) exact matches, in which:
3419 unique CDR3
7 unique J



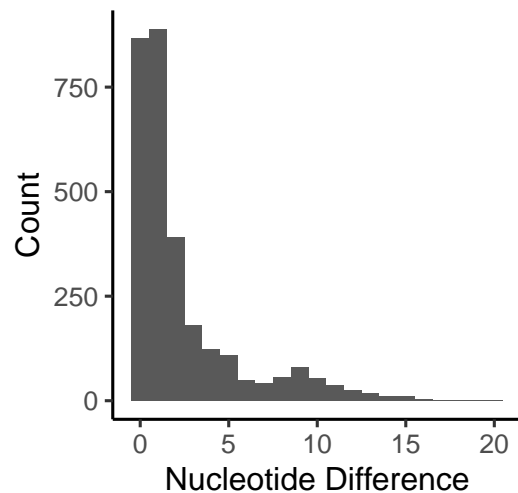
IGHV1-45*02

195 sequences assigned
32 (16.4%) exact matches, in which:
28 unique CDR3
6 unique J



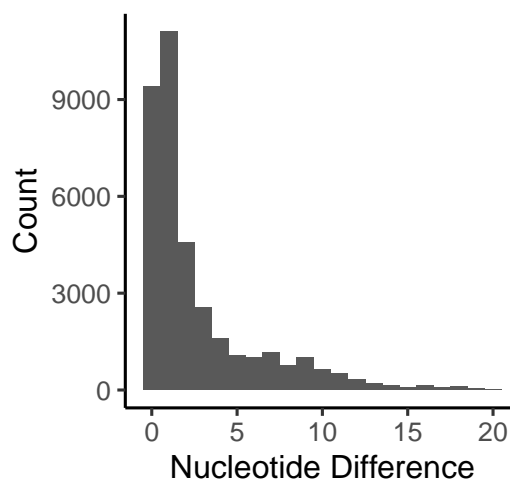
IGHV1-2*04

2958 sequences assigned
866 (29.3%) exact matches, in which:
737 unique CDR3
7 unique J



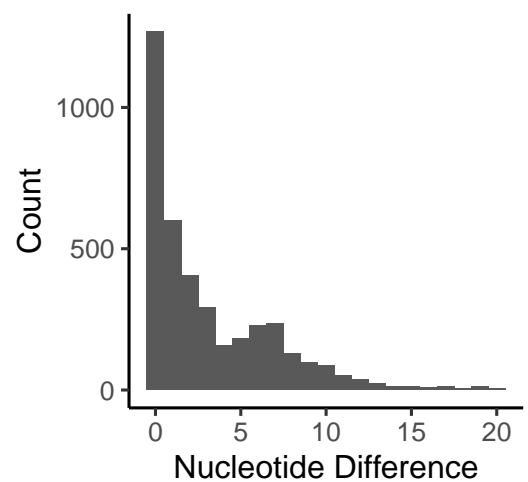
IGHV1-18*01

36575 sequences assigned
9396 (25.7%) exact matches, in which:
7703 unique CDR3
7 unique J



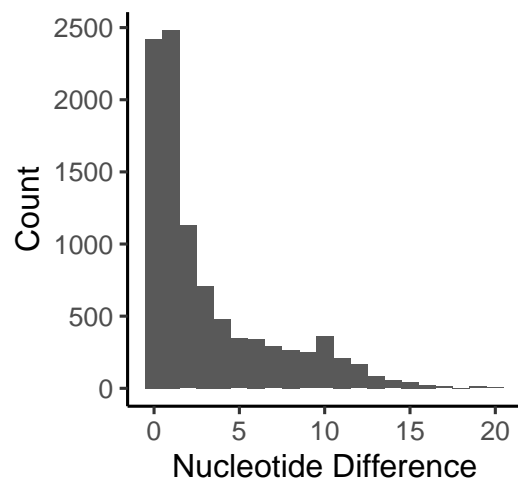
IGHV1-46*01

3898 sequences assigned
1268 (32.5%) exact matches, in which:
1247 unique CDR3
7 unique J



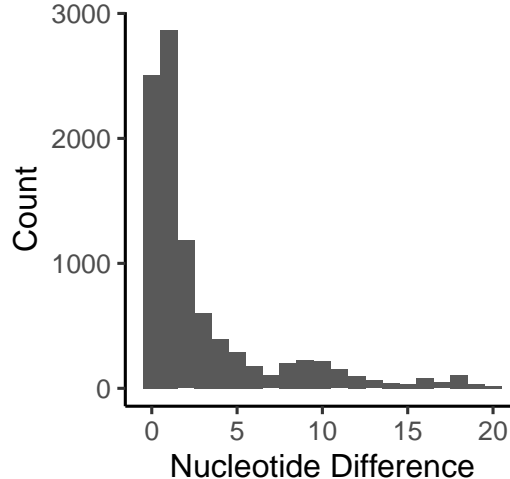
IGHV1-3*01_05

9701 sequences assigned
2423 (25%) exact matches, in which:
2030 unique CDR3
7 unique J



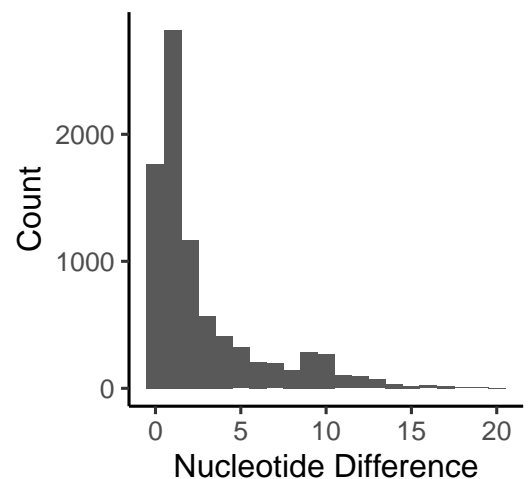
IGHV1-24*01

9480 sequences assigned
2505 (26.4%) exact matches, in which:
2099 unique CDR3
7 unique J



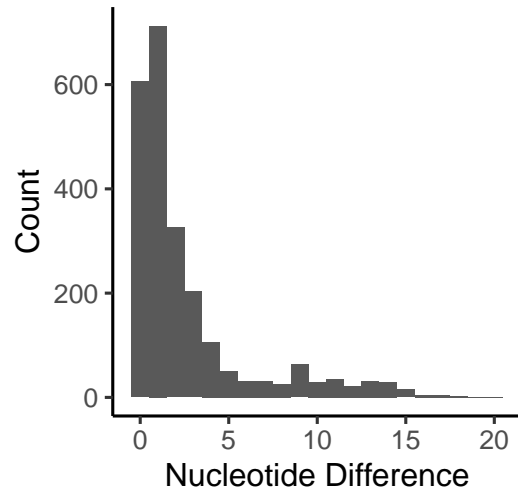
IGHV1-46*03

8565 sequences assigned
1765 (20.6%) exact matches, in which:
1347 unique CDR3
7 unique J



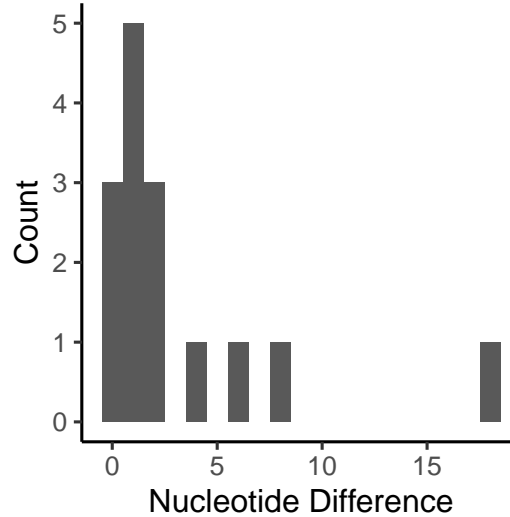
IGHV1–58*02

2342 sequences assigned
606 (25.9%) exact matches, in which:
508 unique CDR3
6 unique J



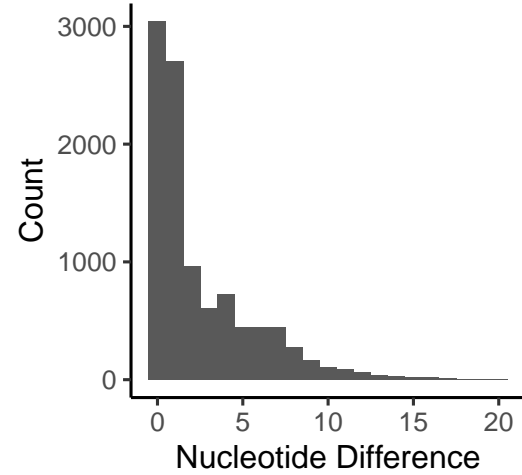
IGHV1–69D*01

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



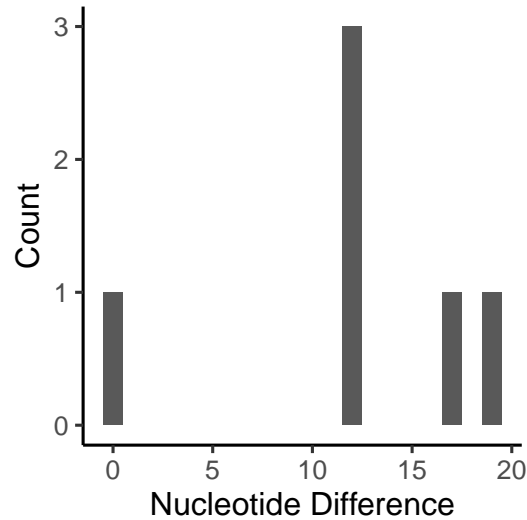
IGHV3–7*01

10226 sequences assigned
3042 (29.7%) exact matches, in which:
2676 unique CDR3
7 unique J



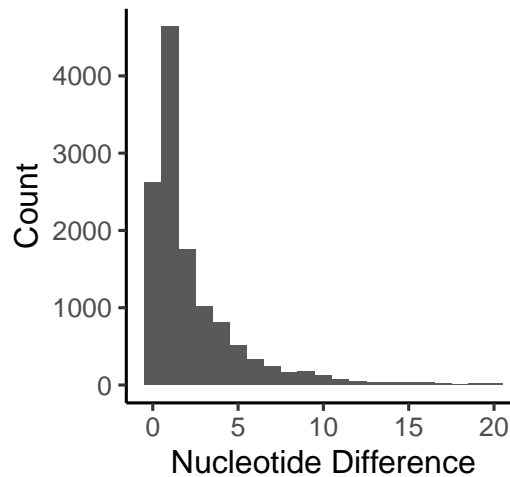
IGHV1–69–2*01

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



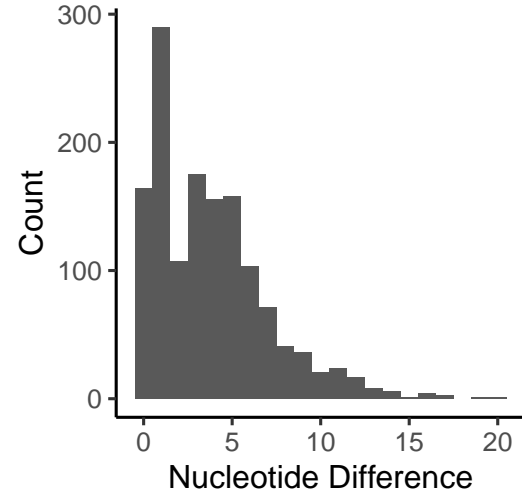
IGHV2–5*02

12812 sequences assigned
2626 (20.5%) exact matches, in which:
1990 unique CDR3
7 unique J



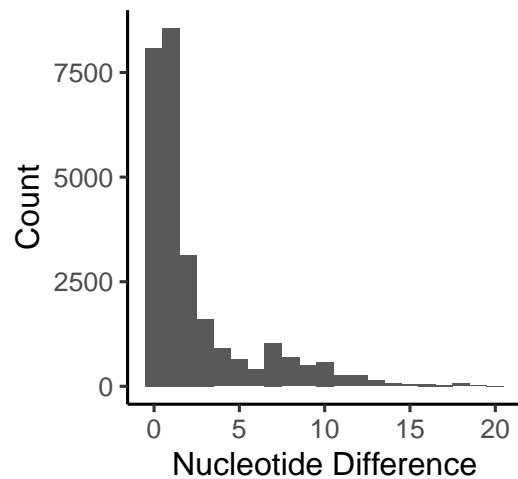
IGHV3–7*03

1393 sequences assigned
164 (11.8%) exact matches, in which:
164 unique CDR3
7 unique J



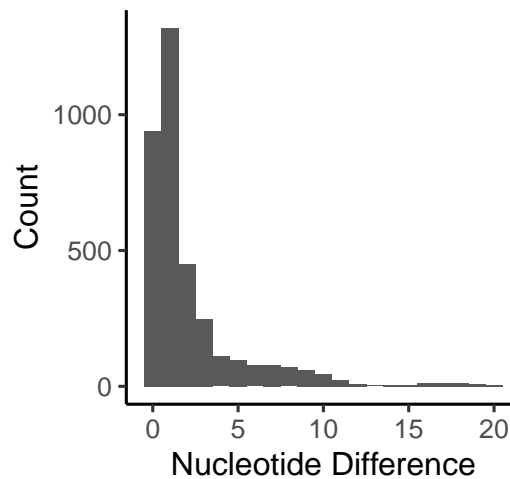
IGHV1–69*04_09_G112.

27121 sequences assigned
8084 (29.8%) exact matches, in which:
6660 unique CDR3
7 unique J



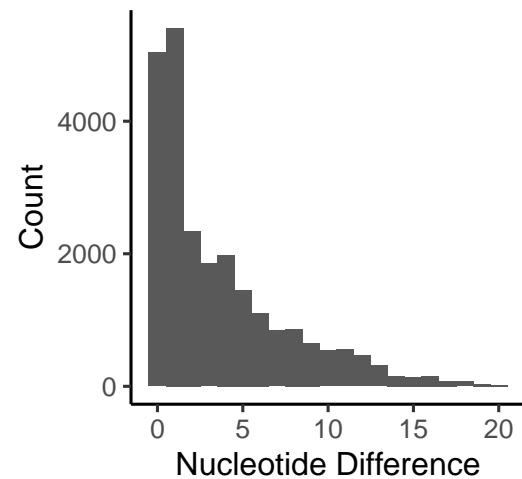
IGHV2–26*01

3688 sequences assigned
941 (25.5%) exact matches, in which:
774 unique CDR3
7 unique J



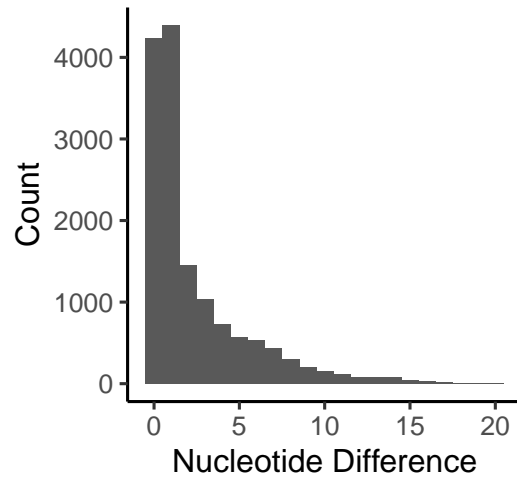
IGHV3–9*01

24136 sequences assigned
5035 (20.9%) exact matches, in which:
4066 unique CDR3
7 unique J



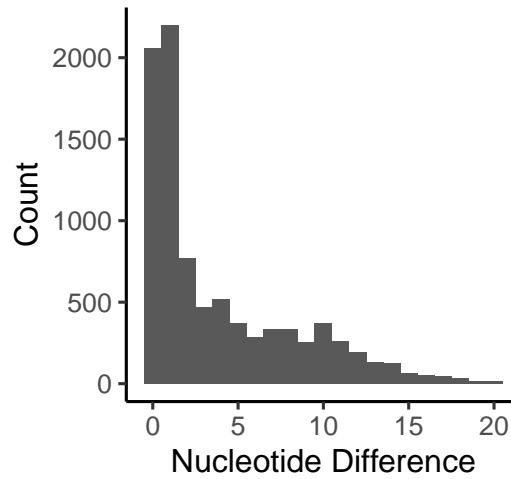
IGHV3-11*01

14507 sequences assigned
4231 (29.2%) exact matches, in which:
3529 unique CDR3
7 unique J



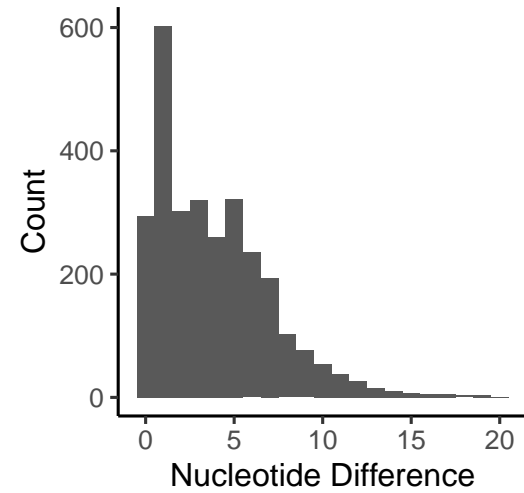
IGHV3-15*01_02

8932 sequences assigned
2060 (23.1%) exact matches, in which:
1678 unique CDR3
7 unique J



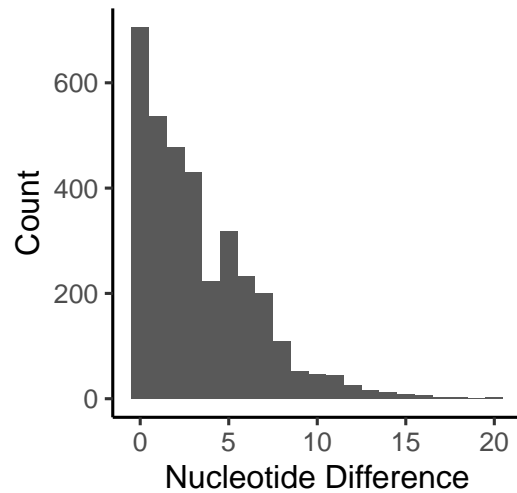
IGHV3-21*04

2880 sequences assigned
294 (10.2%) exact matches, in which:
288 unique CDR3
7 unique J



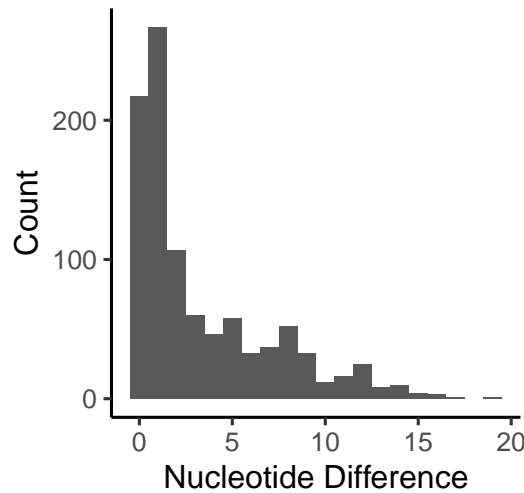
IGHV3-11*04

3467 sequences assigned
706 (20.4%) exact matches, in which:
700 unique CDR3
7 unique J



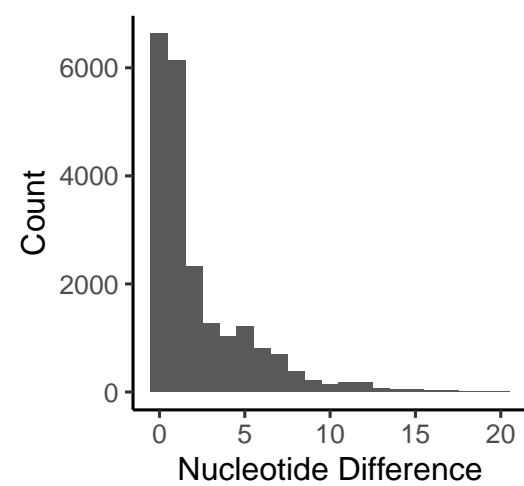
IGHV3-20*01_02

990 sequences assigned
217 (21.9%) exact matches, in which:
169 unique CDR3
6 unique J



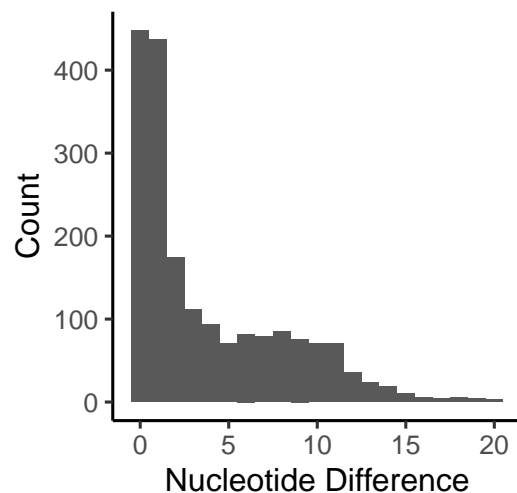
IGHV3-21*01_02

21441 sequences assigned
6631 (30.9%) exact matches, in which:
5552 unique CDR3
7 unique J



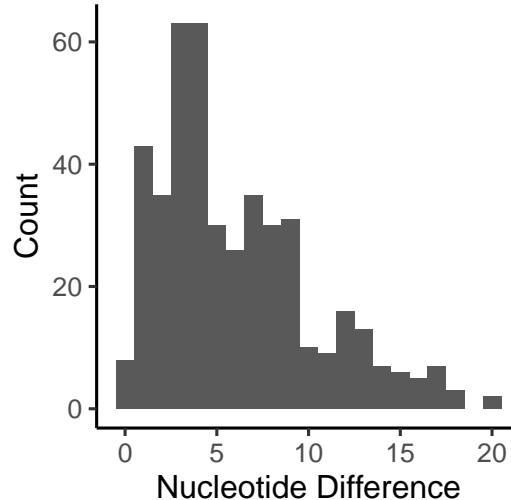
IGHV3-13*01

1911 sequences assigned
448 (23.4%) exact matches, in which:
371 unique CDR3
7 unique J



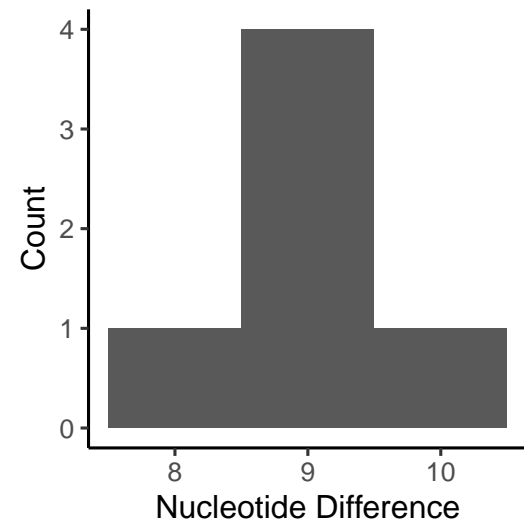
IGHV3-20*03_04

445 sequences assigned
8 (1.8%) exact matches, in which:
8 unique CDR3
4 unique J



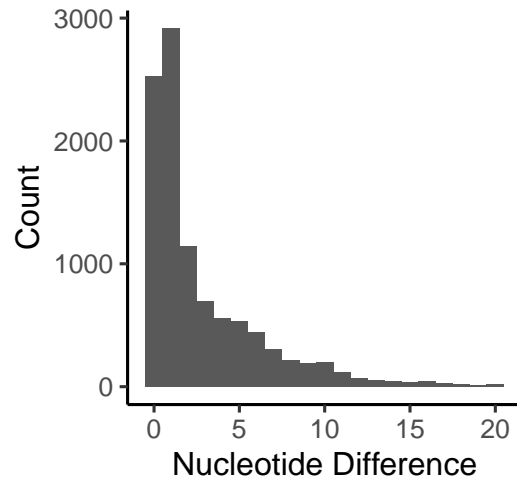
IGHV3-22*01_02

6 sequences assigned
No exact matches.



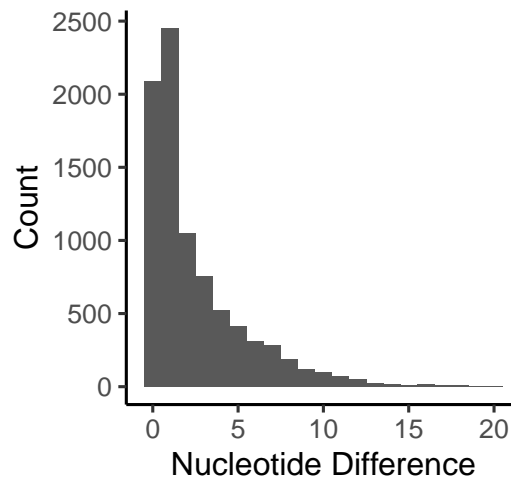
IGHV3-30-3*01

10271 sequences assigned
2529 (24.6%) exact matches, in which:
2038 unique CDR3
7 unique J



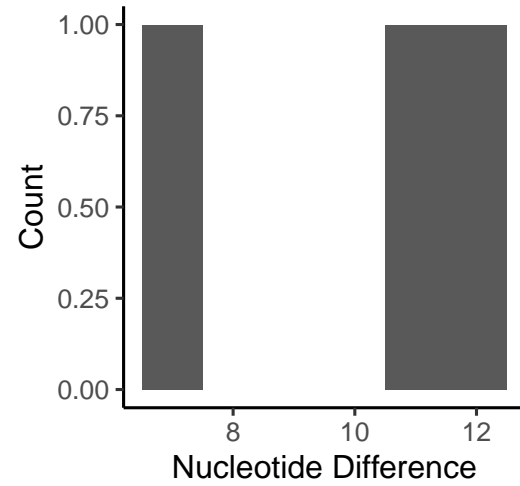
IGHV3-33*01

8504 sequences assigned
2087 (24.5%) exact matches, in which:
1720 unique CDR3
7 unique J



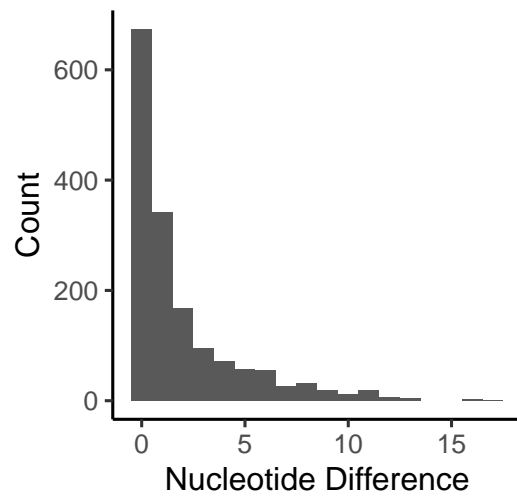
IGHV3-35*01

3 sequences assigned
No exact matches.



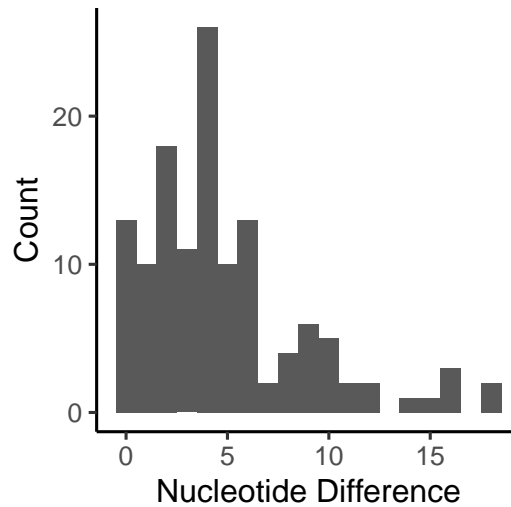
IGHV3-30*03

1587 sequences assigned
674 (42.5%) exact matches, in which:
662 unique CDR3
7 unique J



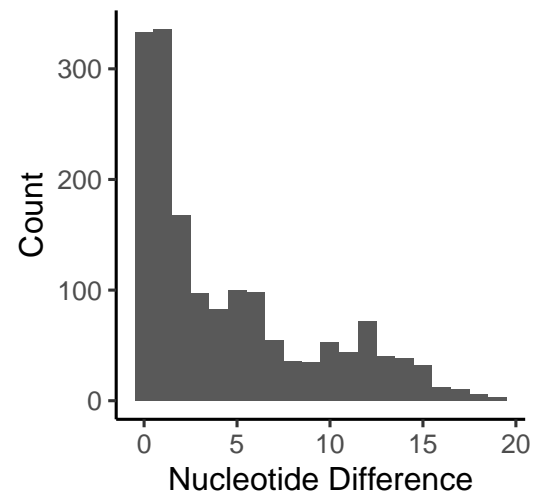
IGHV3-33*05

130 sequences assigned
13 (10%) exact matches, in which:
13 unique CDR3
6 unique J



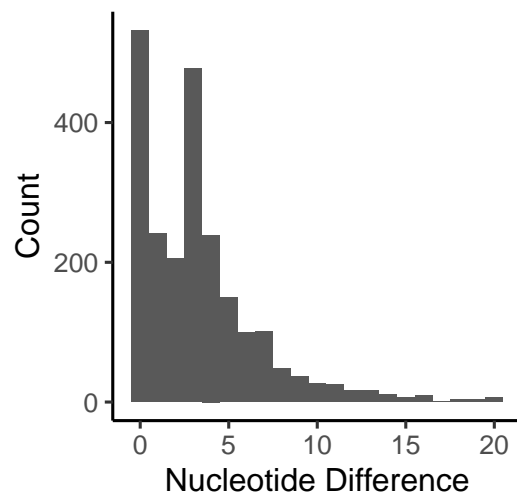
IGHV3-43*01

1655 sequences assigned
333 (20.1%) exact matches, in which:
283 unique CDR3
7 unique J



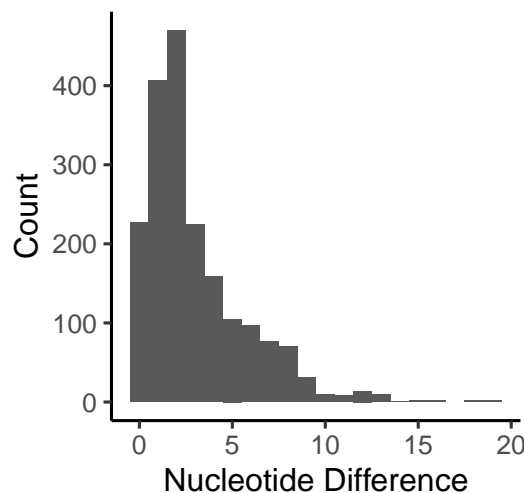
IGHV3-30-3*02_G75C

2272 sequences assigned
532 (23.4%) exact matches, in which:
528 unique CDR3
7 unique J



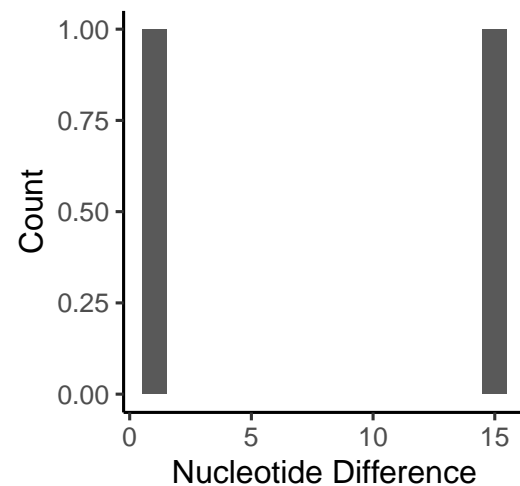
IGHV3-33*06

1919 sequences assigned
227 (11.8%) exact matches, in which:
223 unique CDR3
7 unique J



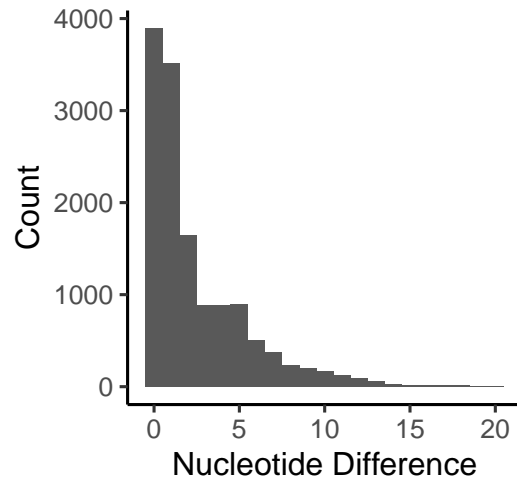
IGHV3-47*02

2 sequences assigned
No exact matches.



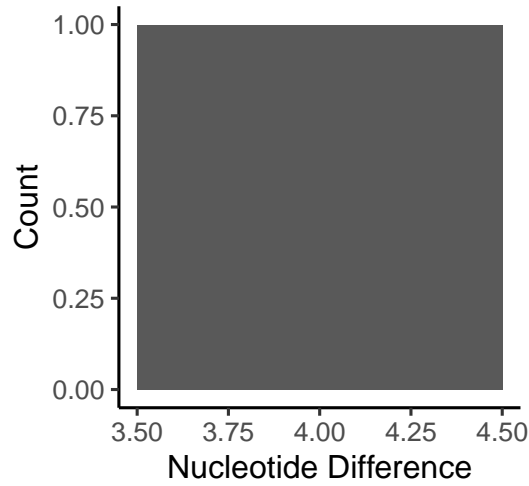
IGHV3-48*01

13613 sequences assigned
3893 (28.6%) exact matches, in which:
3216 unique CDR3
7 unique J



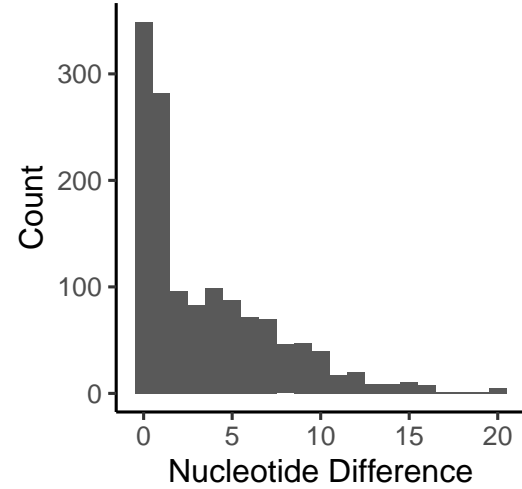
IGHV3-52*02

1 sequences assigned
No exact matches.



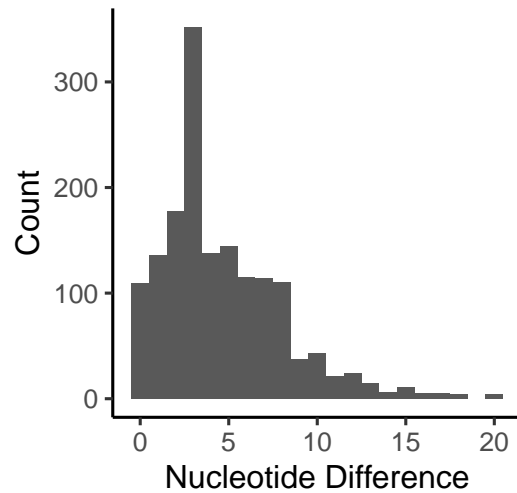
IGHV3-64*01

1359 sequences assigned
349 (25.7%) exact matches, in which:
311 unique CDR3
7 unique J



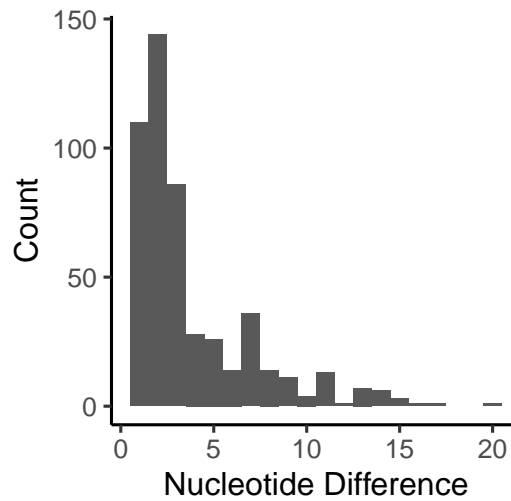
IGHV3-48*04

1574 sequences assigned
109 (6.9%) exact matches, in which:
109 unique CDR3
6 unique J



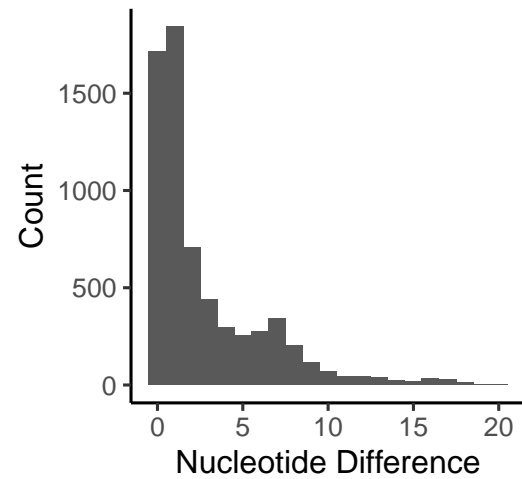
IGHV3-53*05

507 sequences assigned
No exact matches.



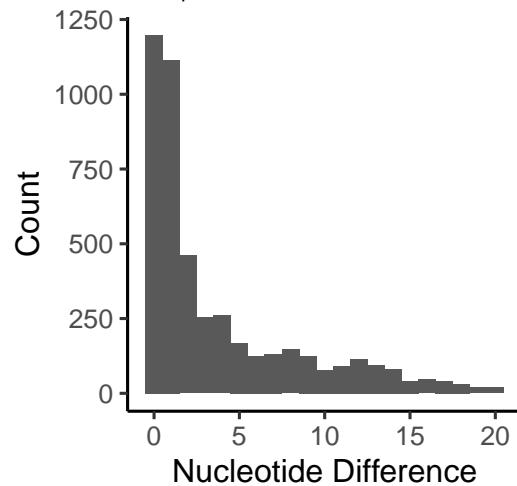
IGHV3-66*02

6519 sequences assigned
1715 (26.3%) exact matches, in which:
1411 unique CDR3
7 unique J



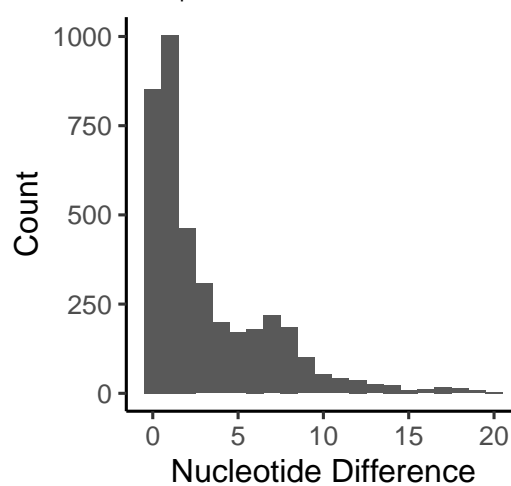
IGHV3-49*03_05

4653 sequences assigned
1198 (25.7%) exact matches, in which:
1011 unique CDR3
7 unique J



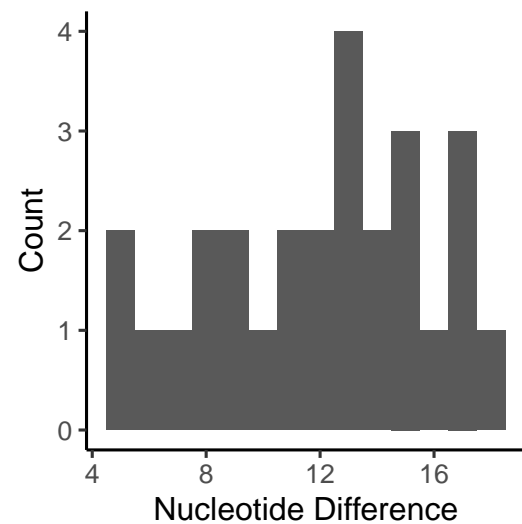
IGHV3-53*01_02

3937 sequences assigned
853 (21.7%) exact matches, in which:
712 unique CDR3
7 unique J



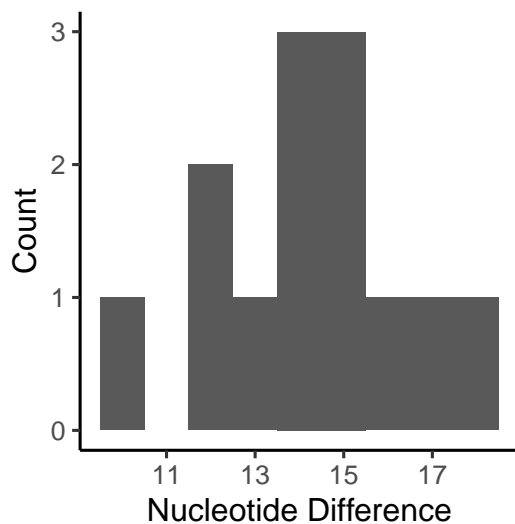
IGHV3-69-1*01

28 sequences assigned
No exact matches.



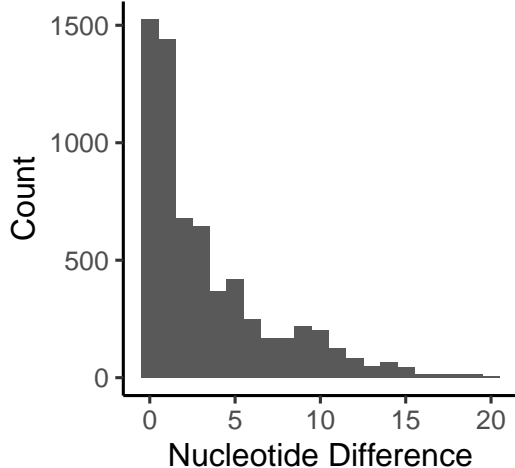
IGHV3-71*01_04

16 sequences assigned
No exact matches.



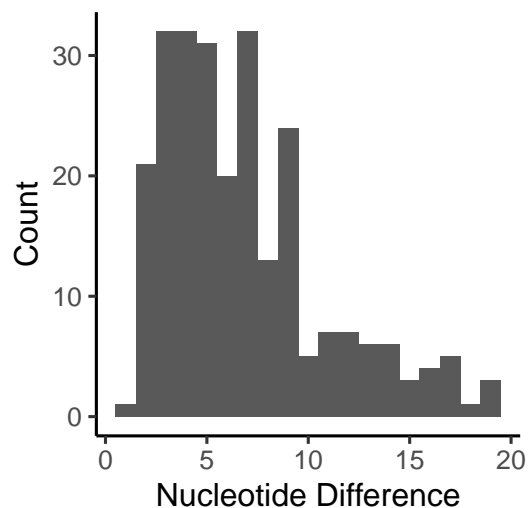
IGHV3-74*01_02

6541 sequences assigned
1525 (23.3%) exact matches, in which:
1288 unique CDR3
7 unique J



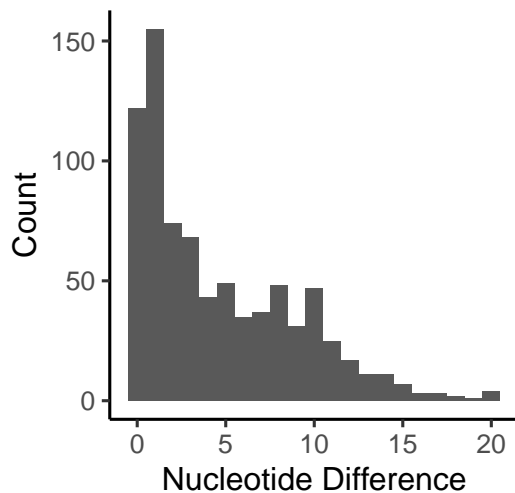
IGHV3-NL1*01

256 sequences assigned
No exact matches.



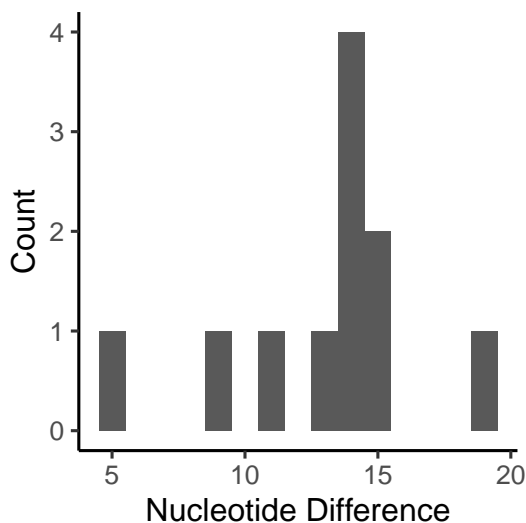
IGHV3-72*01

799 sequences assigned
122 (15.3%) exact matches, in which:
100 unique CDR3
6 unique J



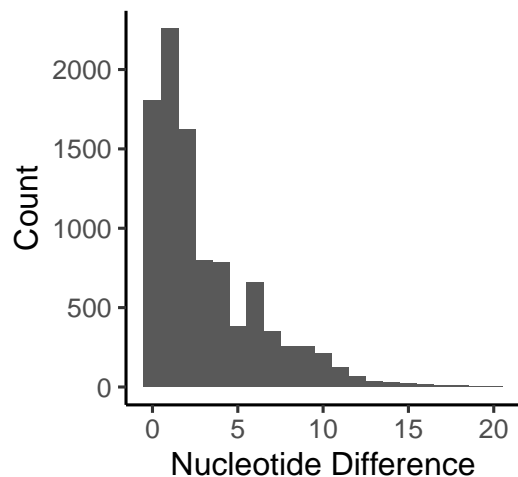
IGHV3-43D*04

12 sequences assigned
No exact matches.



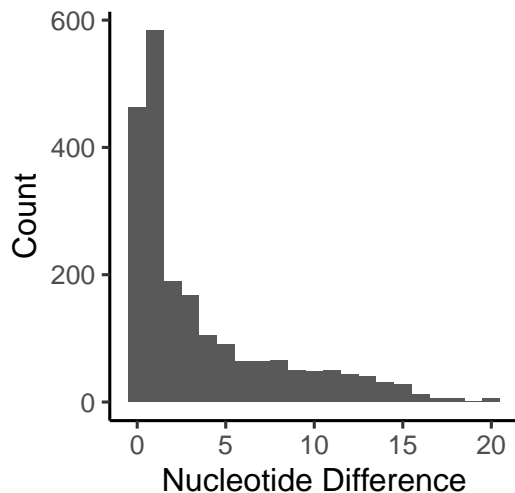
IGHV4-4*07

9723 sequences assigned
1805 (18.6%) exact matches, in which:
1550 unique CDR3
7 unique J



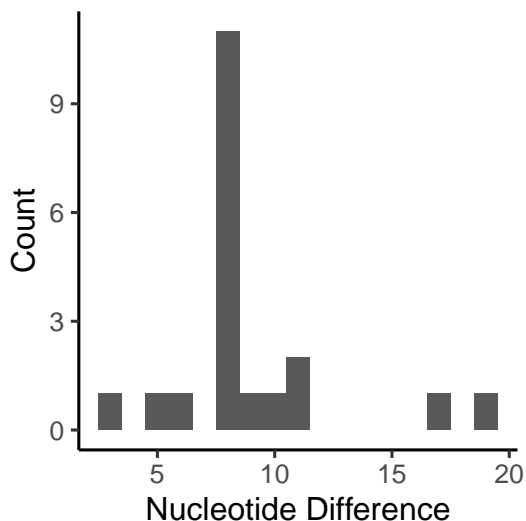
IGHV3-73*01_02

2117 sequences assigned
463 (21.9%) exact matches, in which:
384 unique CDR3
7 unique J



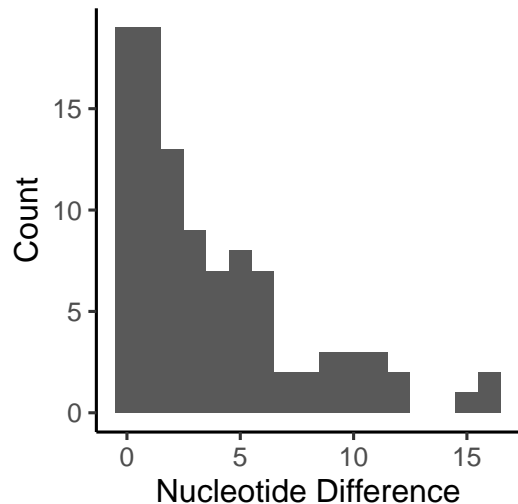
IGHV3-64D*06

20 sequences assigned
No exact matches.



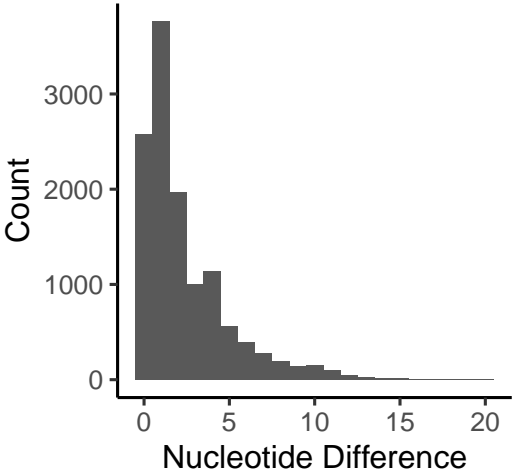
IGHV4-28*03

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



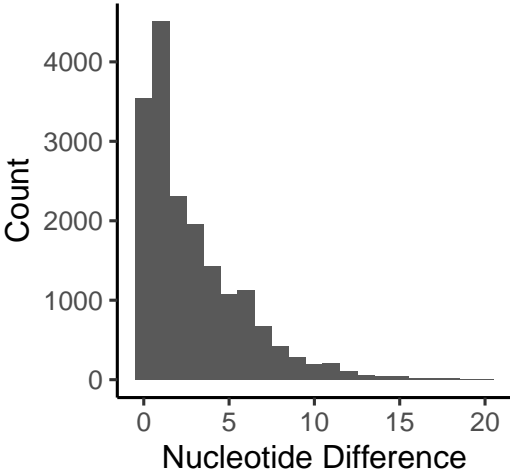
IGHV4-30-2*01

12416 sequences assigned
2579 (20.8%) exact matches, in which:
1938 unique CDR3
7 unique J



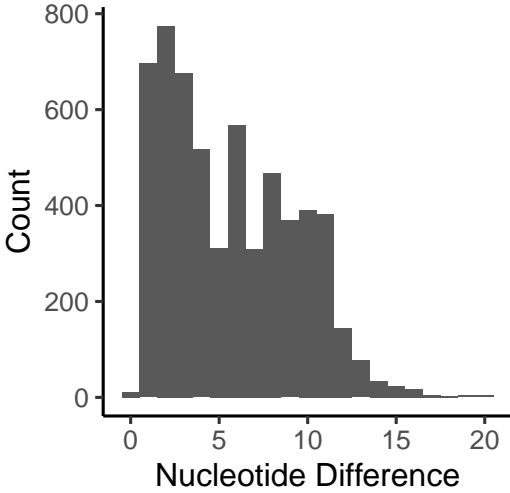
IGHV4-31*03_04

18100 sequences assigned
3543 (19.6%) exact matches, in which:
2791 unique CDR3
7 unique J



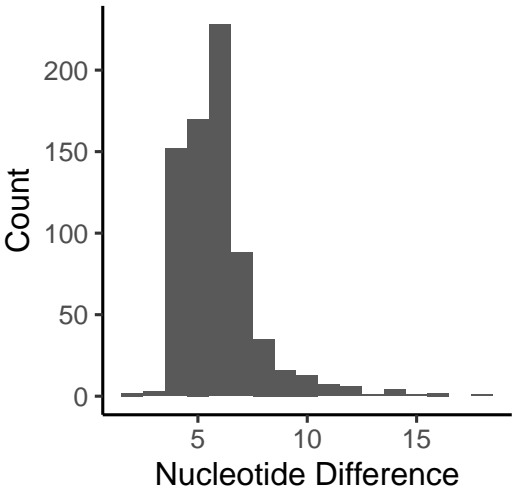
IGHV4-39*07

5796 sequences assigned
11 (0.2%) exact matches, in which:
11 unique CDR3
6 unique J



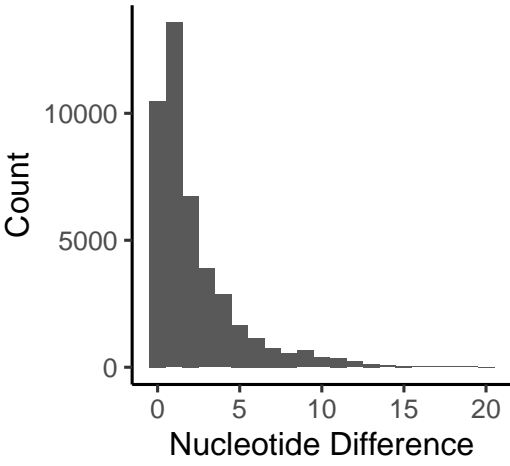
IGHV4-30-4*07

729 sequences assigned
No exact matches.



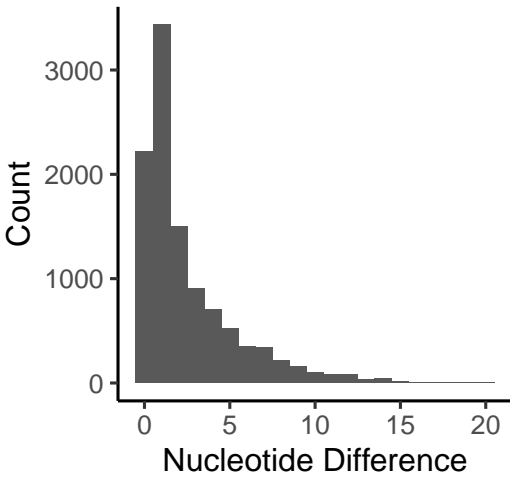
IGHV4-34*01_02

43753 sequences assigned
10484 (24%) exact matches, in which:
8320 unique CDR3
7 unique J



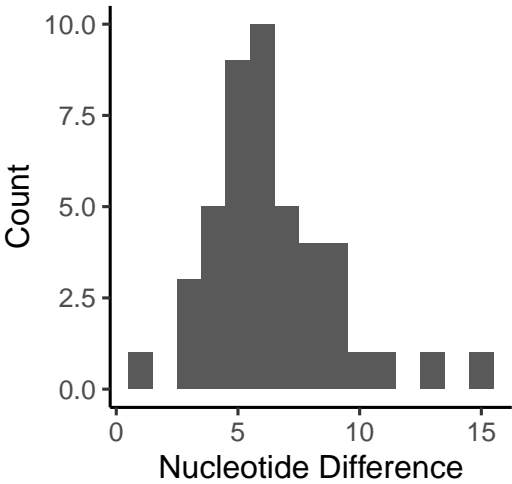
IGHV4-39*01_05

10806 sequences assigned
2218 (20.5%) exact matches, in which:
1545 unique CDR3
7 unique J



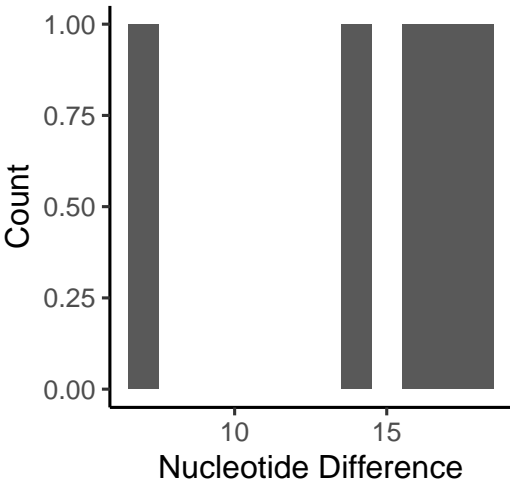
IGHV4-30-4*08

45 sequences assigned
No exact matches.



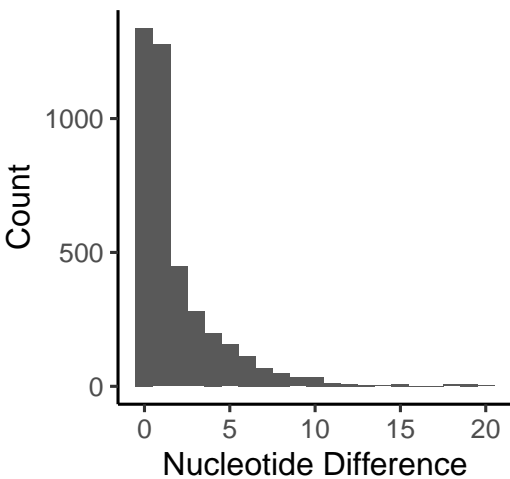
IGHV4-38-2*01

5 sequences assigned
No exact matches.



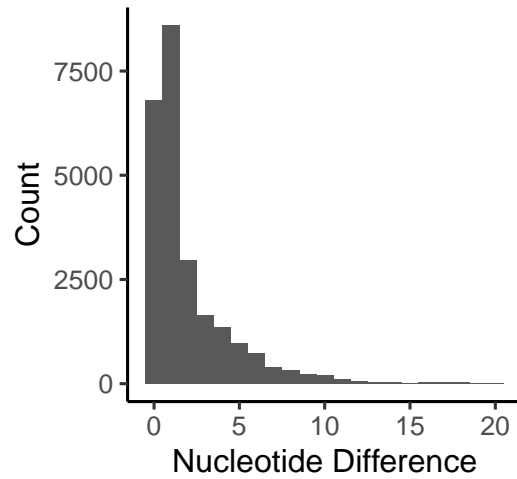
IGHV4-39*02_C258G

4069 sequences assigned
1338 (32.9%) exact matches, in which:
1244 unique CDR3
7 unique J



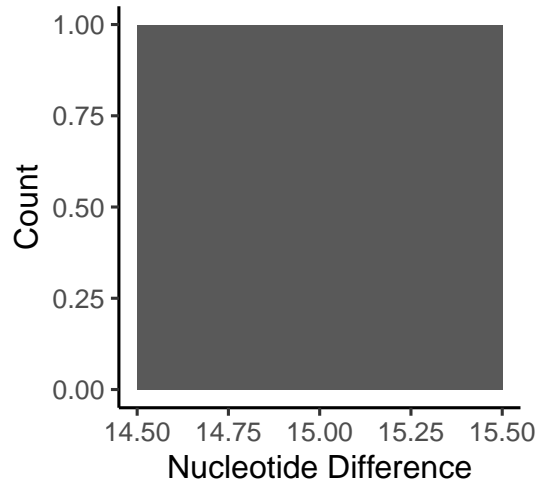
IGHV4-59*01_07

24594 sequences assigned
6810 (27.7%) exact matches, in which:
5314 unique CDR3
7 unique J



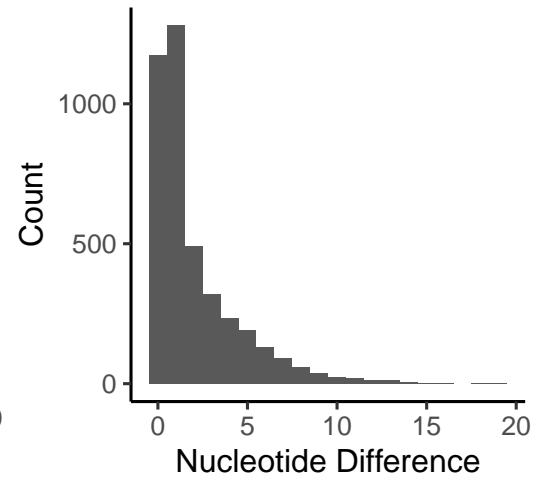
IGHV5-10-1*04

1 sequences assigned
No exact matches.



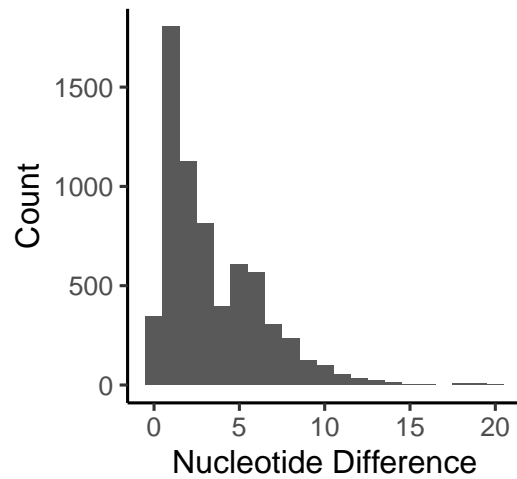
IGHV6-1*01_02

4086 sequences assigned
1173 (28.7%) exact matches, in which:
956 unique CDR3
7 unique J



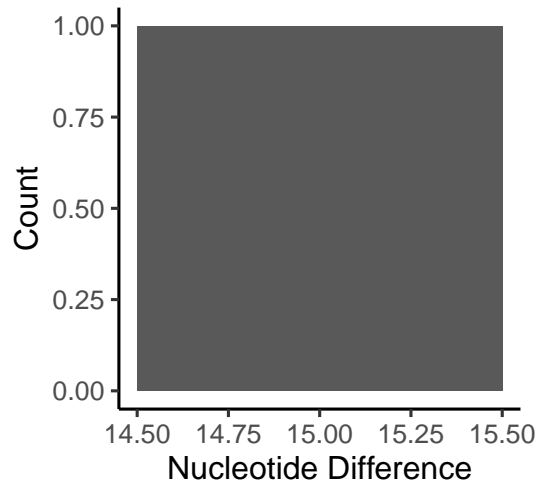
IGHV4-59*12

6573 sequences assigned
346 (5.3%) exact matches, in which:
337 unique CDR3
7 unique J



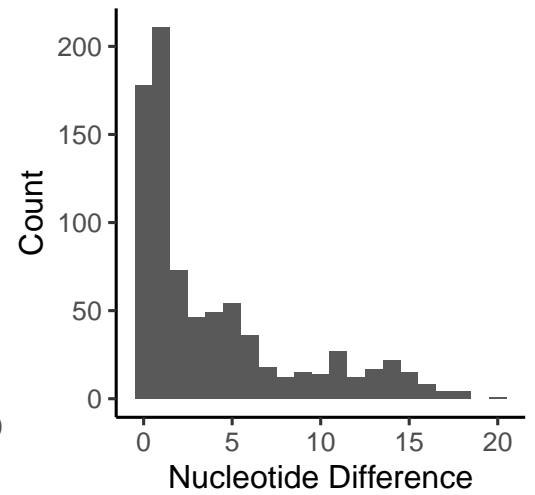
IGHV5-10-1*01_03

1 sequences assigned
No exact matches.



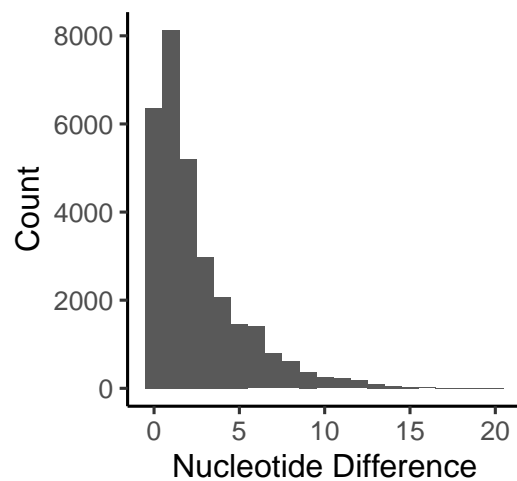
IGHV7-4-1*01

831 sequences assigned
178 (21.4%) exact matches, in which:
156 unique CDR3
6 unique J



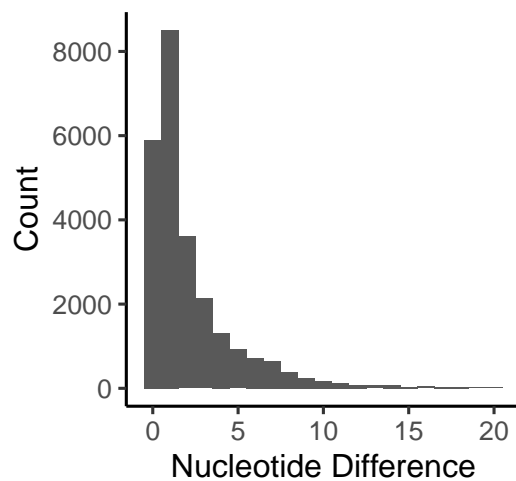
IGHV4-61*02

30346 sequences assigned
6369 (21%) exact matches, in which:
5168 unique CDR3
7 unique J



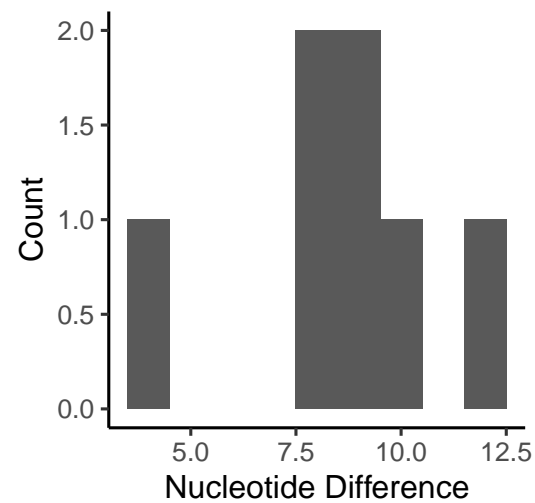
IGHV5-51*01_03

25200 sequences assigned
5902 (23.4%) exact matches, in which:
4375 unique CDR3
7 unique J

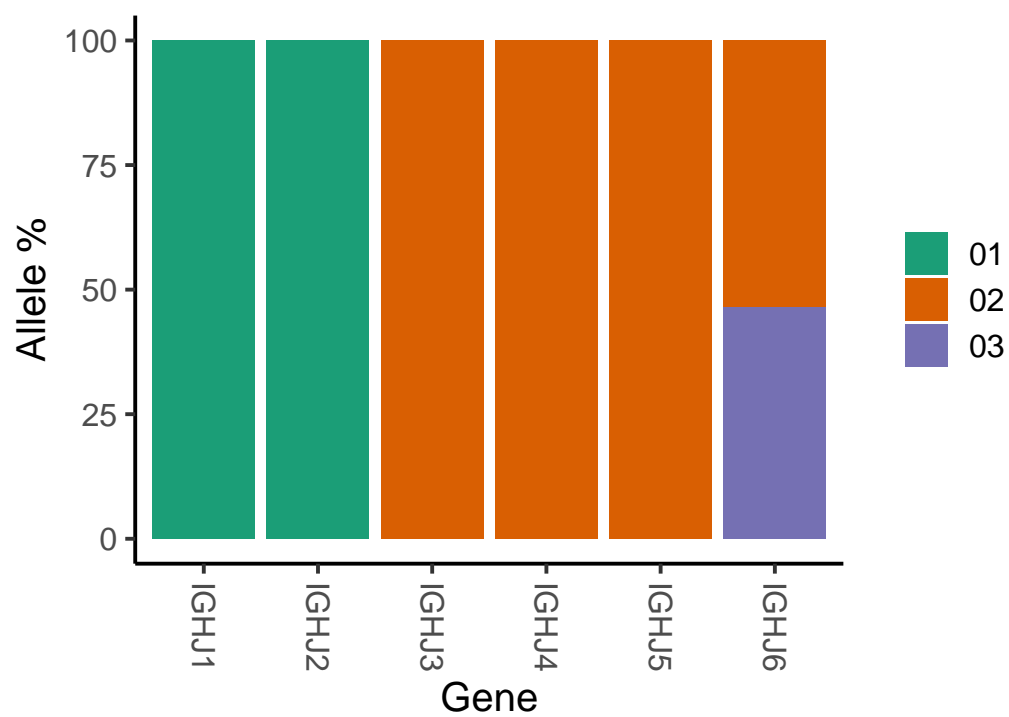


IGHV7-4-1*02

73 sequences assigned
No exact matches.



Allele Usage



Sequence Count by IGHJ6 allele usage



Novel sequence(s)IGHV1-69*08_C191TIGHV3-11*06_T300CIGHV4-59*02_G88AIGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV3-53*05_C300T are not listed in the genotype and will be ignored.