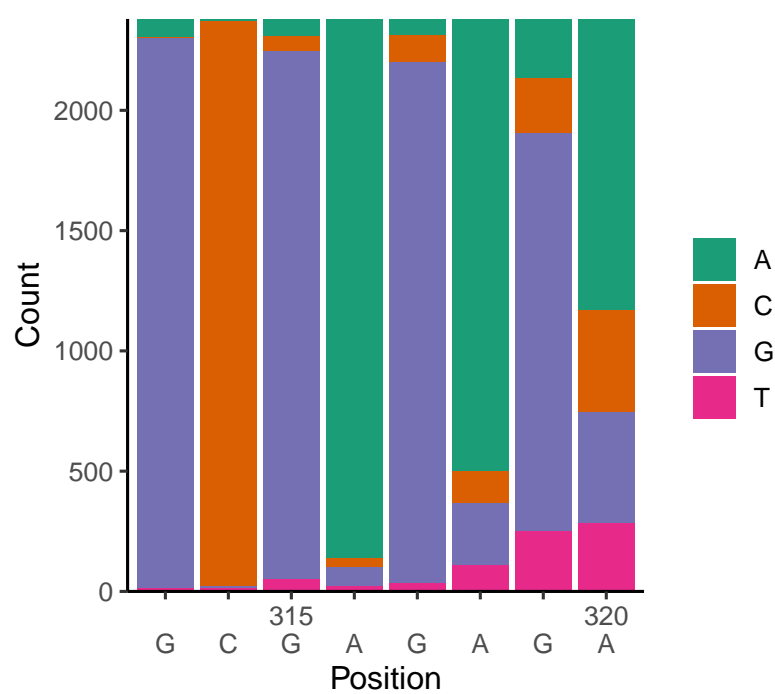
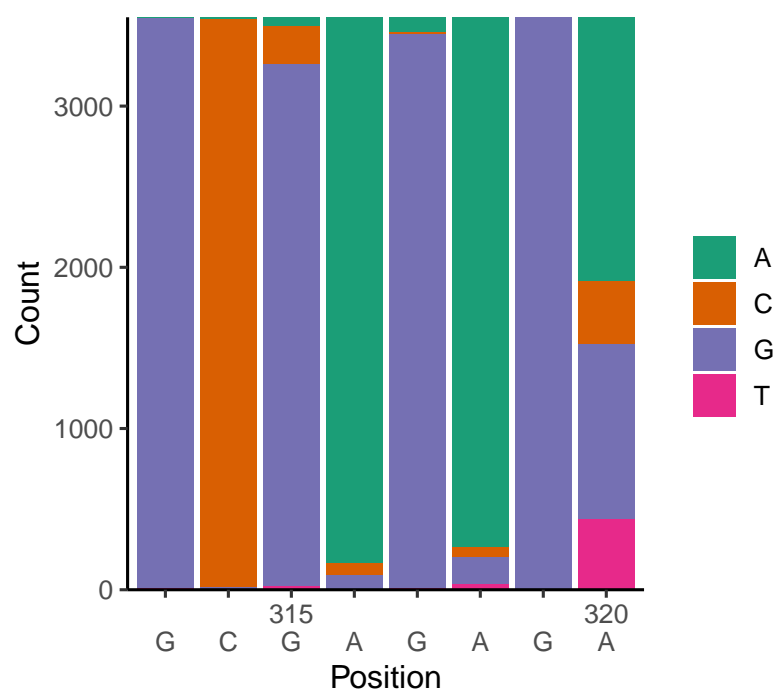


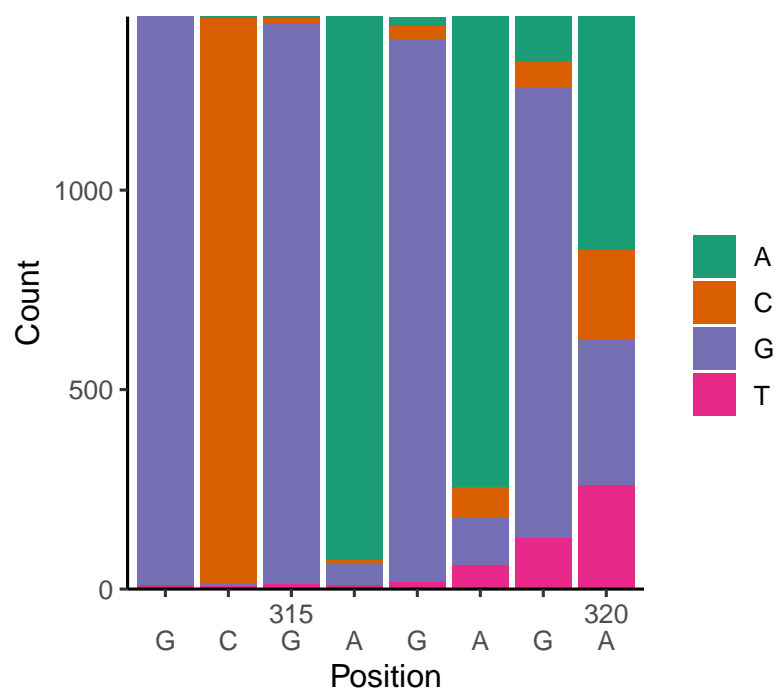
Gene IGHV3-33*05_G75C



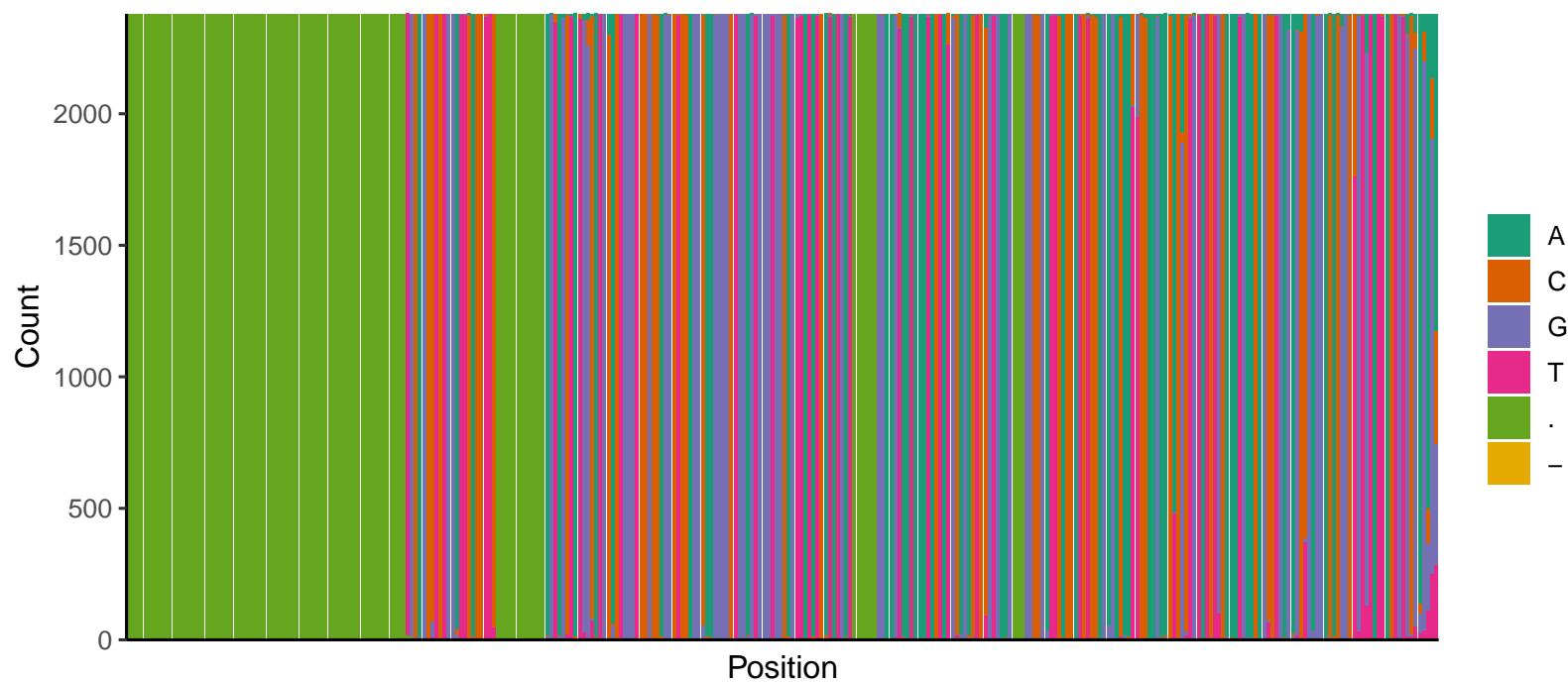
Gene IGHV4-39*02_C258G



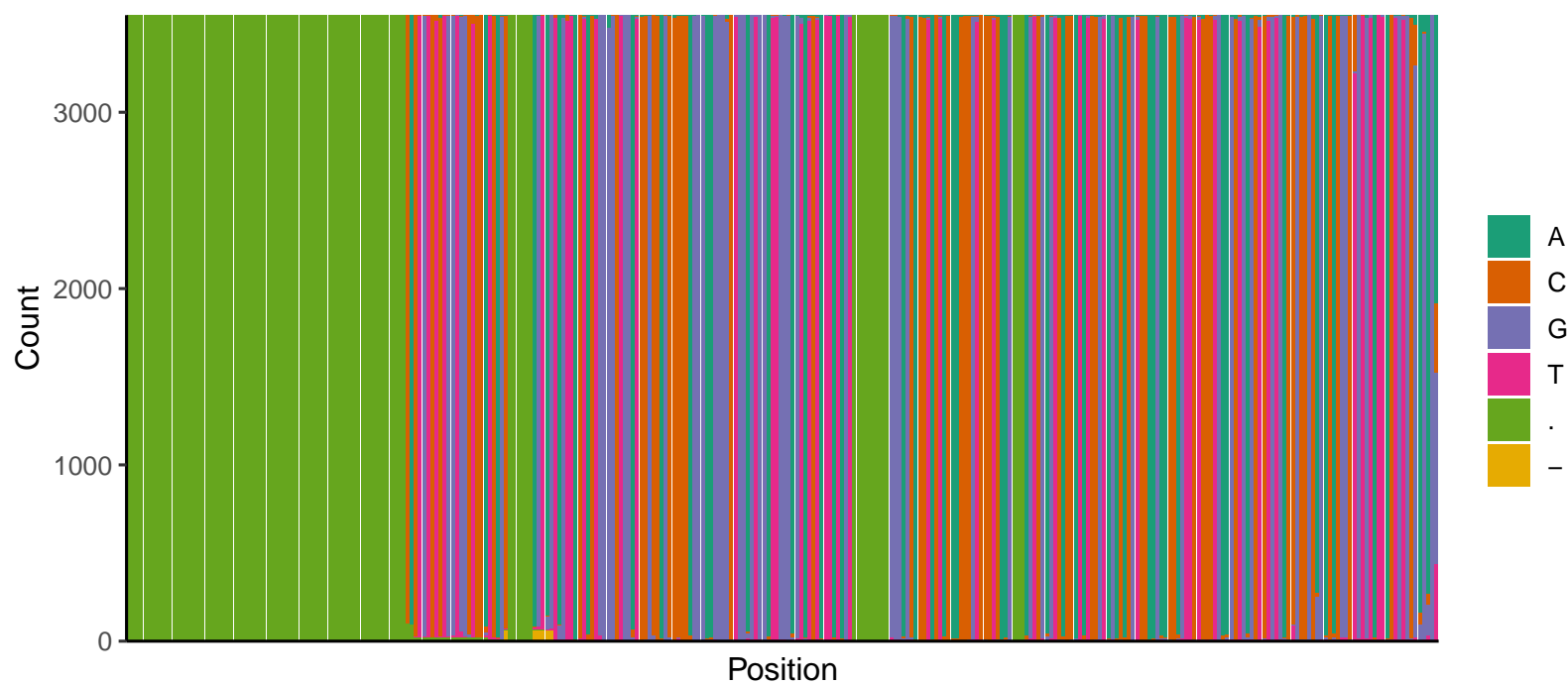
Gene IGHV4-61*08_G88A



Gene IGHV3-33*05_G75C



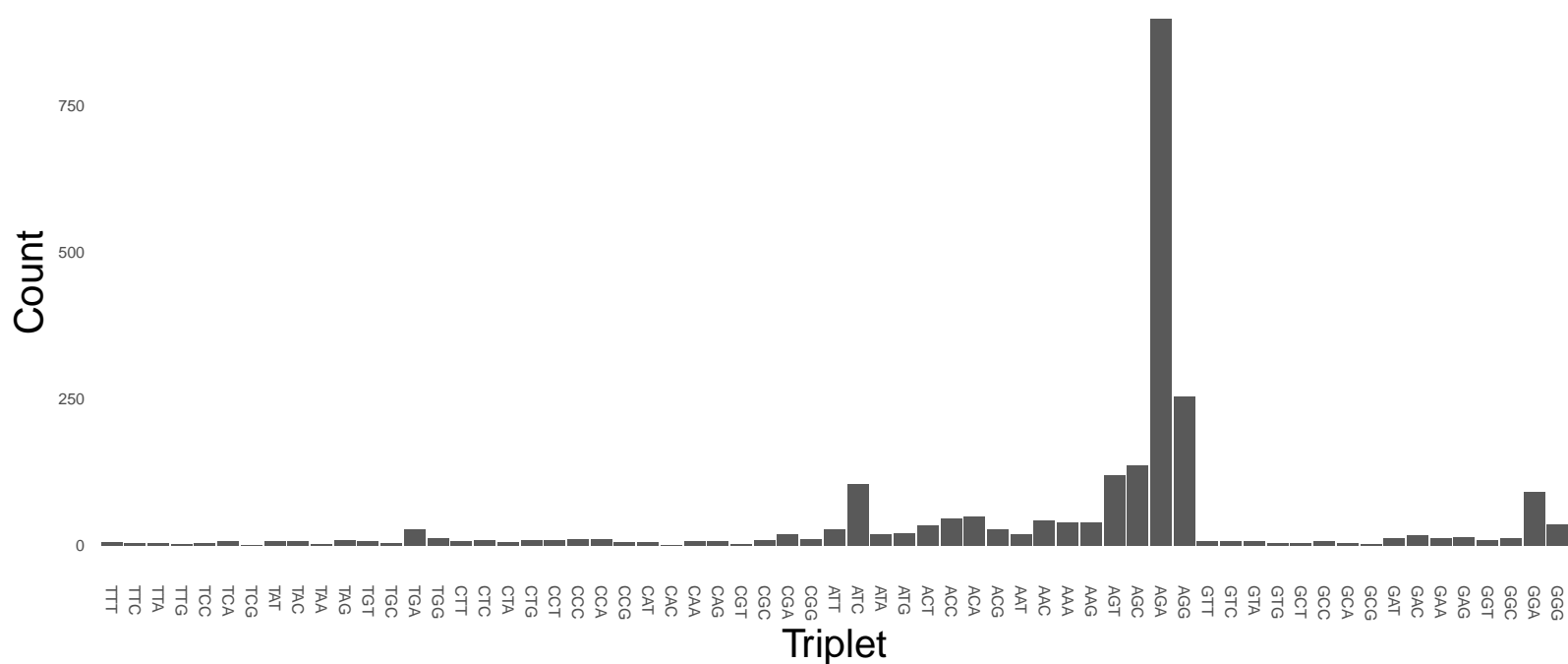
Gene IGHV4-39*02_C258G



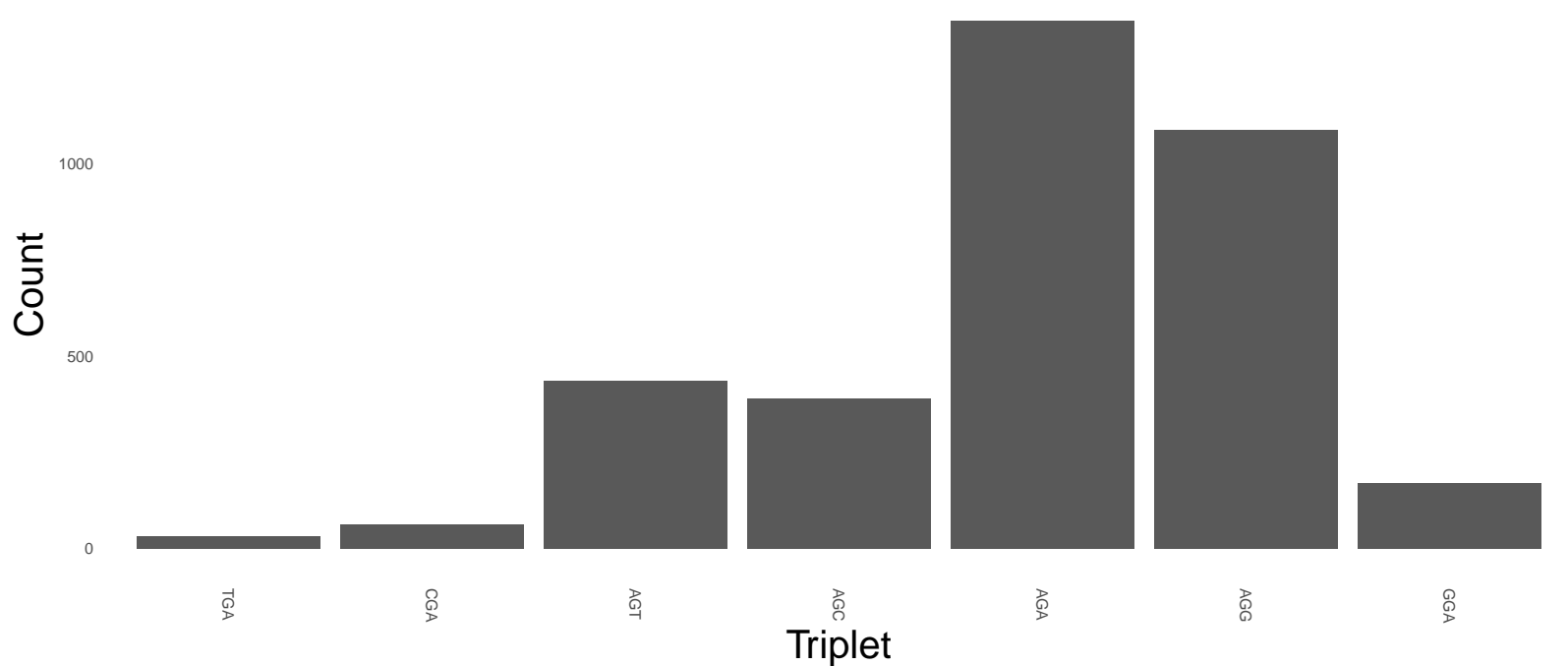
Gene IGHV4-61*08_G88A



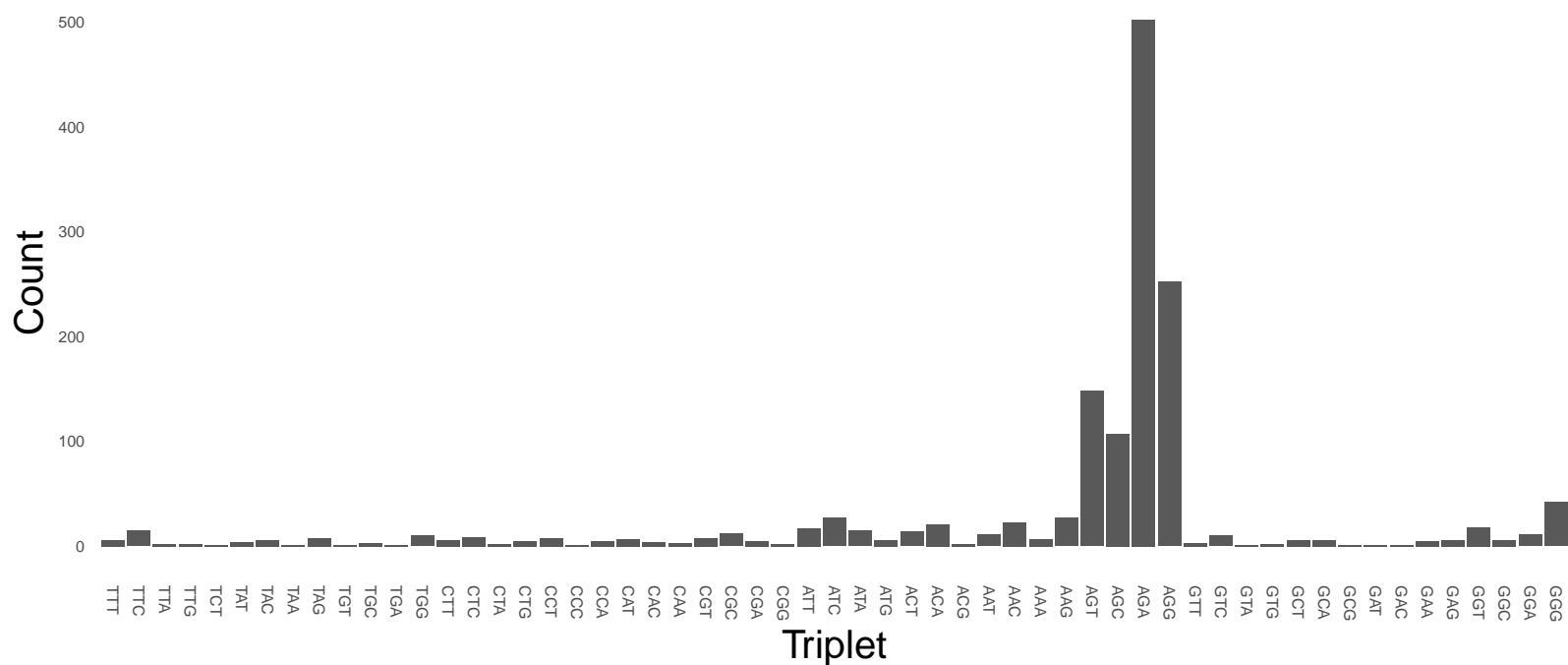
IGHV3–33*05_G75C– Final 3 nucleotides as a triplet



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

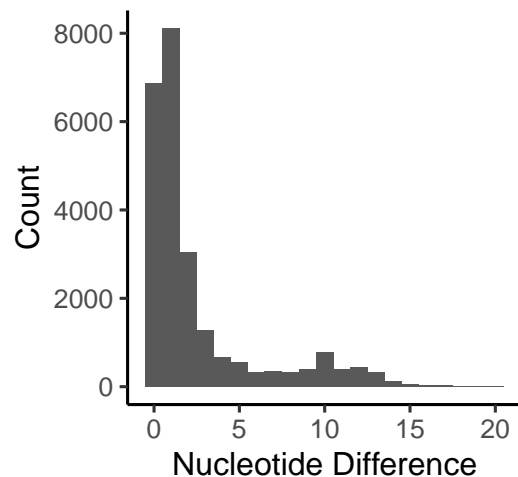


IGHV4–61*08_G88A– Final 3 nucleotides as a triplet



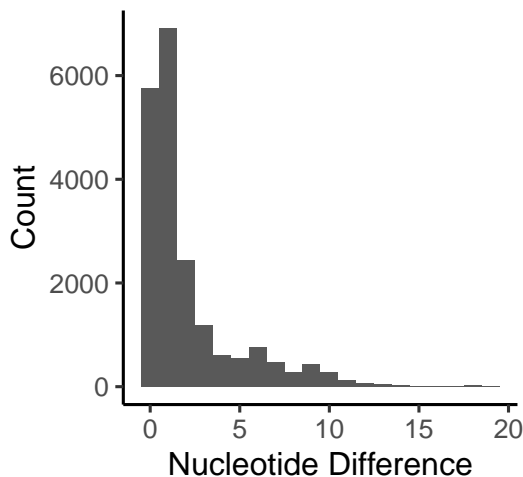
IGHV1-2*02

24193 sequences assigned
6876 (28.4%) exact matches, in which:
5631 unique CDR3
6 unique J



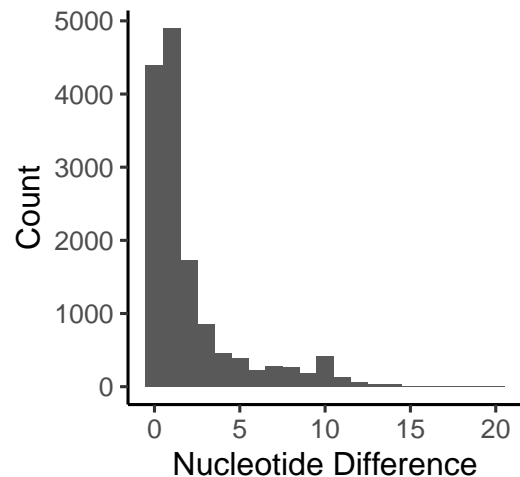
IGHV1-18*01

20045 sequences assigned
5766 (28.8%) exact matches, in which:
4743 unique CDR3
6 unique J



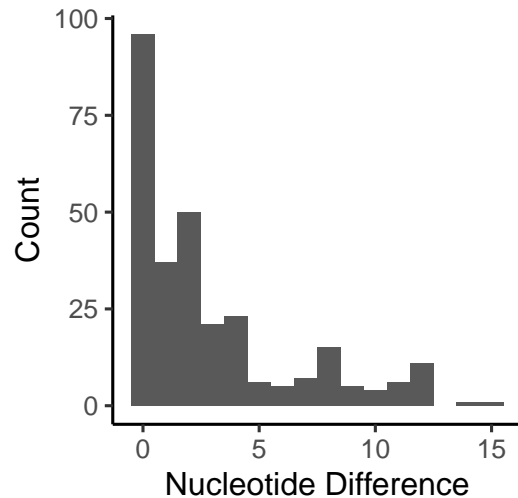
IGHV1-46*01

14411 sequences assigned
4399 (30.5%) exact matches, in which:
3689 unique CDR3
6 unique J



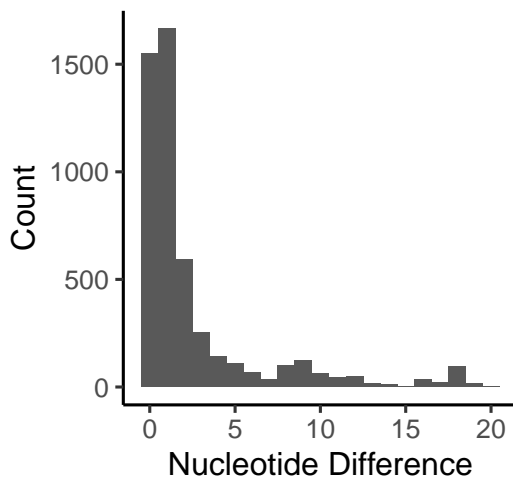
IGHV1-3*02

288 sequences assigned
96 (33.3%) exact matches, in which:
93 unique CDR3
6 unique J



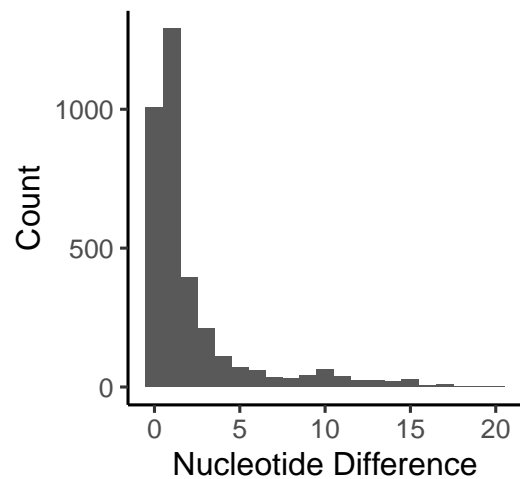
IGHV1-24*01

5007 sequences assigned
1552 (31%) exact matches, in which:
1282 unique CDR3
6 unique J



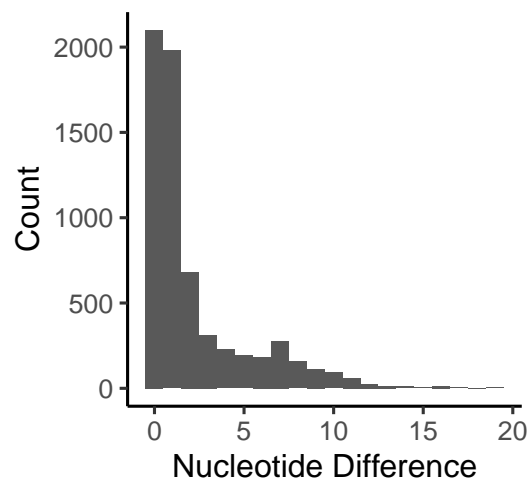
IGHV1-58*01_03

3474 sequences assigned
1007 (29%) exact matches, in which:
804 unique CDR3
6 unique J



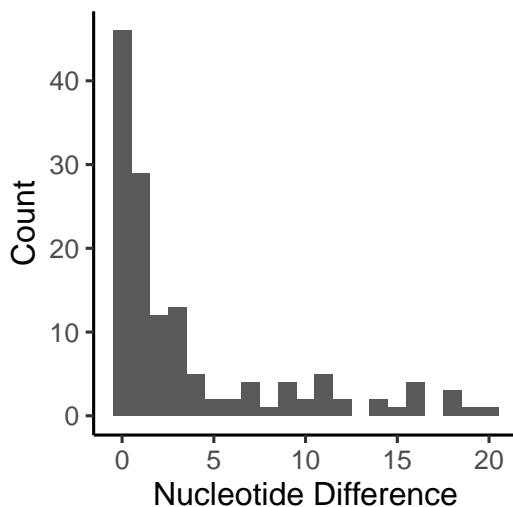
IGHV1-8*01

6461 sequences assigned
2100 (32.5%) exact matches, in which:
1782 unique CDR3
6 unique J



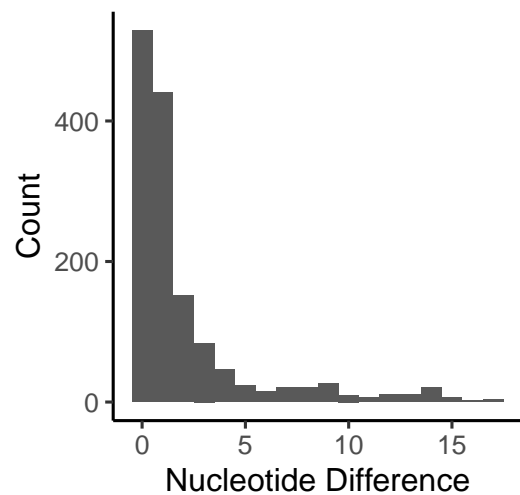
IGHV1-45*02

140 sequences assigned
46 (32.9%) exact matches, in which:
36 unique CDR3
4 unique J



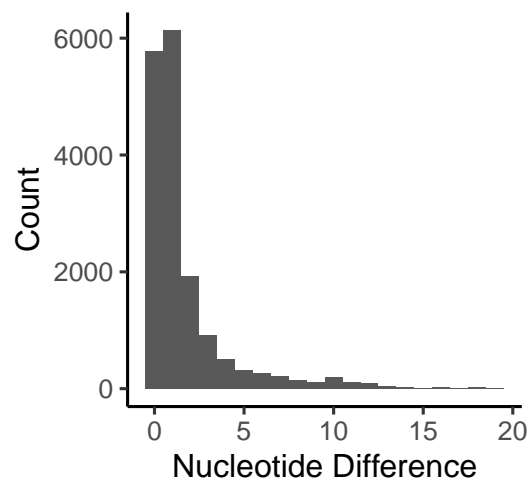
IGHV1-69-2*01

1434 sequences assigned
529 (36.9%) exact matches, in which:
431 unique CDR3
6 unique J



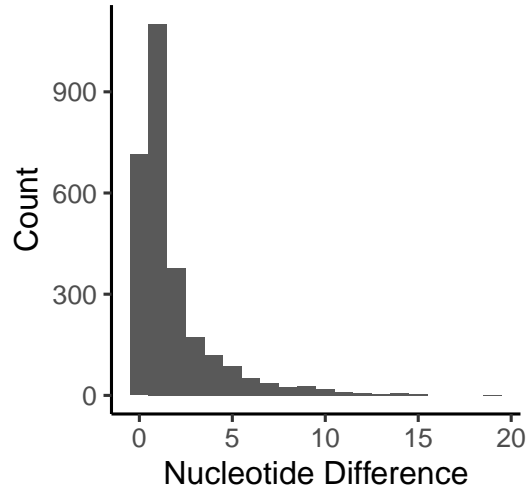
IGHV1-69*17

16840 sequences assigned
5771 (34.3%) exact matches, in which:
4815 unique CDR3
6 unique J



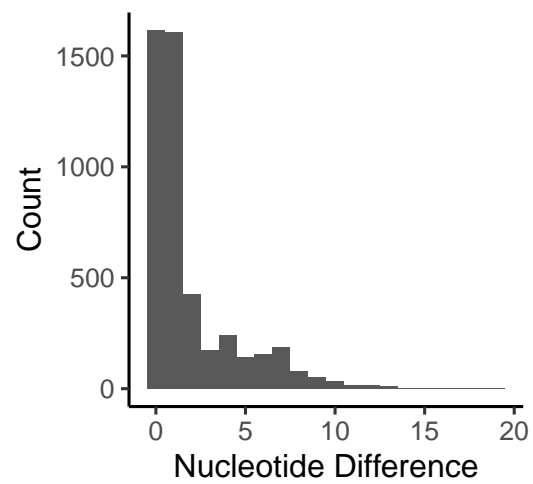
IGHV2-5*02

2773 sequences assigned
714 (25.7%) exact matches, in which:
583 unique CDR3
6 unique J



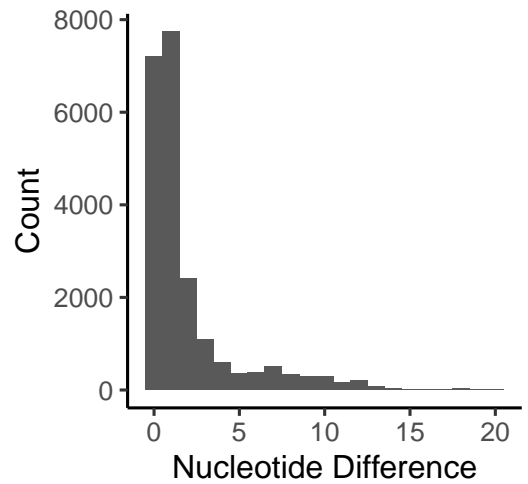
IGHV3-7*01

4769 sequences assigned
1615 (33.9%) exact matches, in which:
1377 unique CDR3
6 unique J



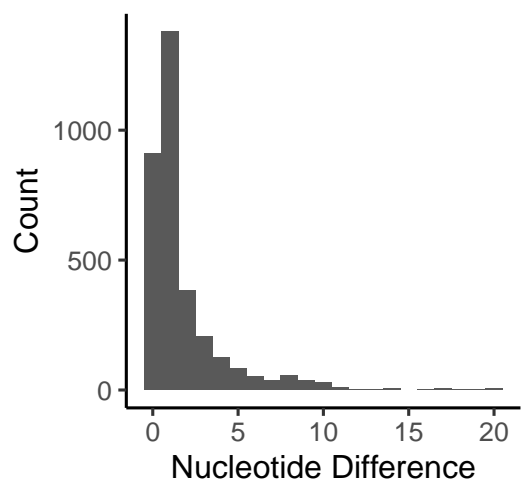
IGHV1-69*06_14

21769 sequences assigned
7195 (33.1%) exact matches, in which:
5987 unique CDR3
6 unique J



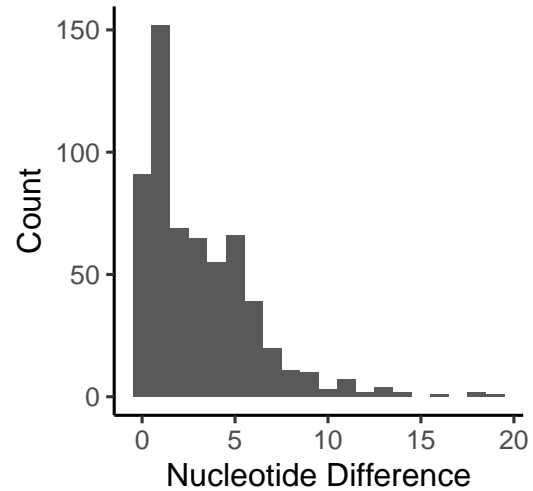
IGHV2-26*01

3389 sequences assigned
912 (26.9%) exact matches, in which:
708 unique CDR3
6 unique J



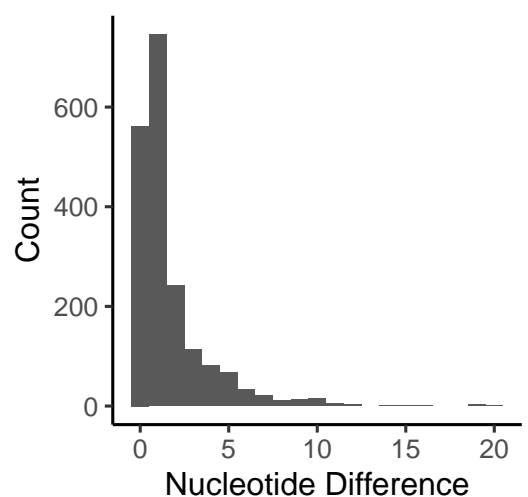
IGHV3-7*03

601 sequences assigned
91 (15.1%) exact matches, in which:
91 unique CDR3
6 unique J



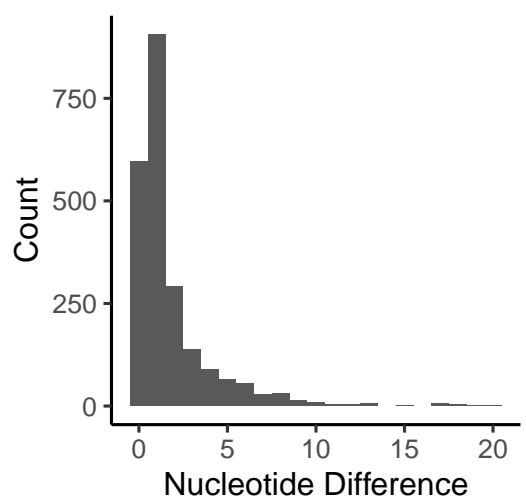
IGHV2-5*01

1946 sequences assigned
562 (28.9%) exact matches, in which:
463 unique CDR3
6 unique J



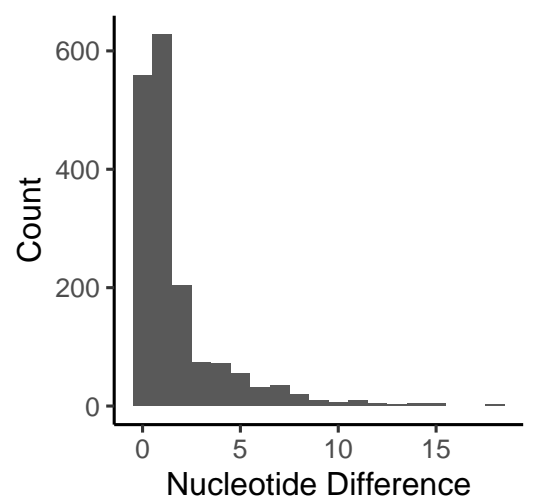
IGHV2-70*01

2279 sequences assigned
596 (26.2%) exact matches, in which:
466 unique CDR3
6 unique J



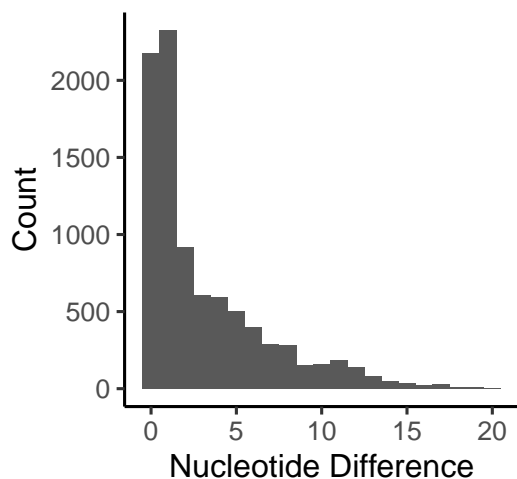
IGHV3-7*04

1721 sequences assigned
559 (32.5%) exact matches, in which:
470 unique CDR3
6 unique J



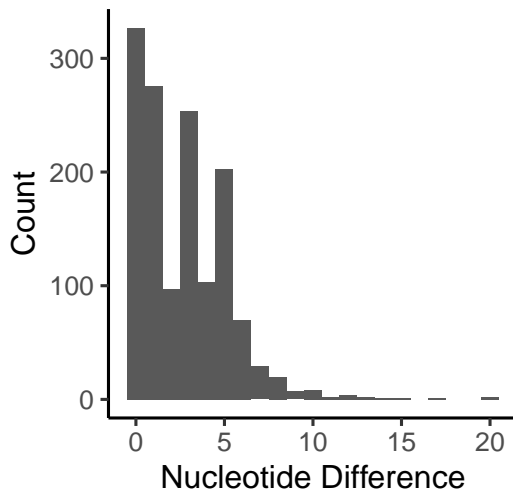
IGHV3-9*01

8966 sequences assigned
2177 (24.3%) exact matches, in which:
1785 unique CDR3
6 unique J



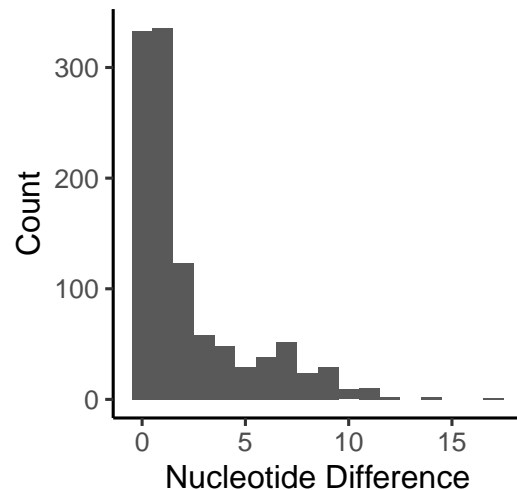
IGHV3-11*06

1407 sequences assigned
327 (23.2%) exact matches, in which:
327 unique CDR3
6 unique J



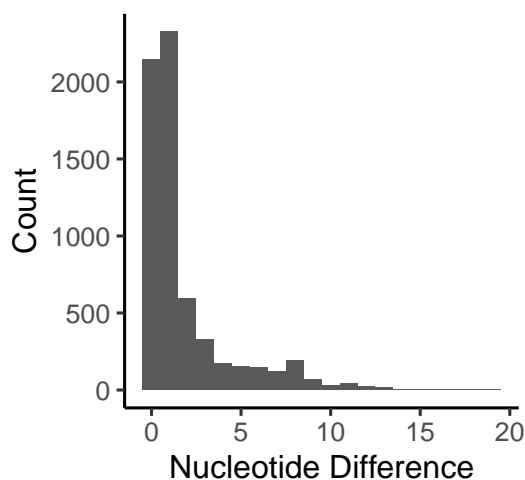
IGHV3-13*04

1094 sequences assigned
333 (30.4%) exact matches, in which:
273 unique CDR3
6 unique J



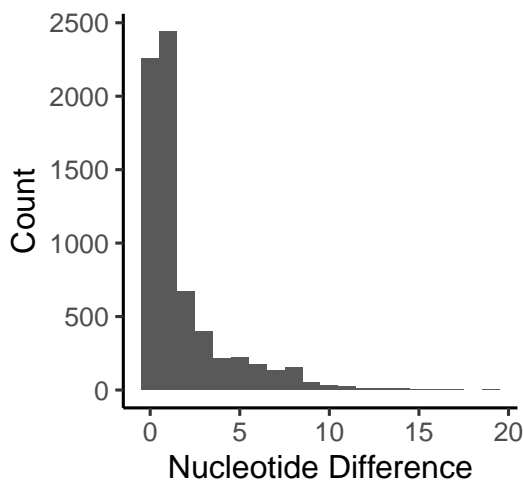
IGHV3-11*01

6390 sequences assigned
2148 (33.6%) exact matches, in which:
1829 unique CDR3
6 unique J



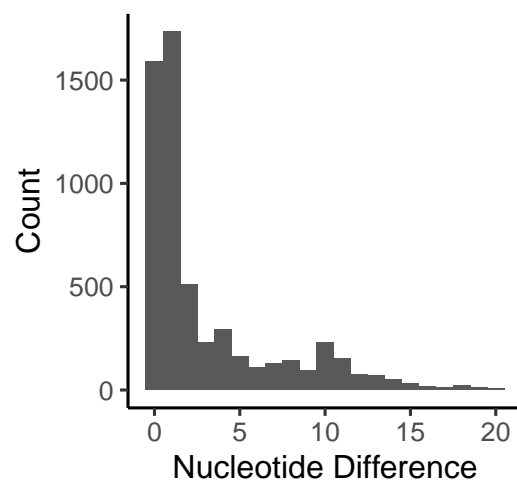
IGHV3-11*03_05

6794 sequences assigned
2255 (33.2%) exact matches, in which:
1845 unique CDR3
6 unique J



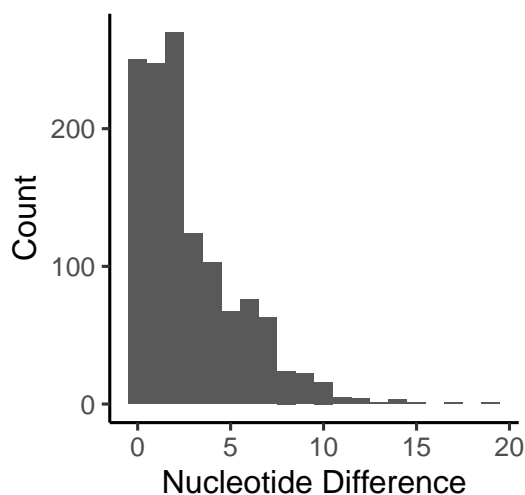
IGHV3-15*01_02

5684 sequences assigned
1591 (28%) exact matches, in which:
1291 unique CDR3
6 unique J



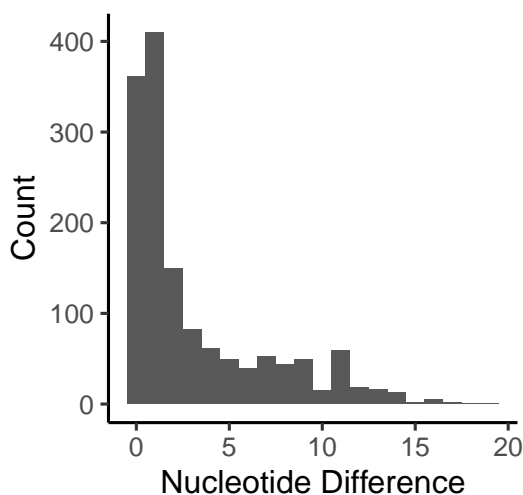
IGHV3-11*04

1278 sequences assigned
250 (19.6%) exact matches, in which:
249 unique CDR3
6 unique J



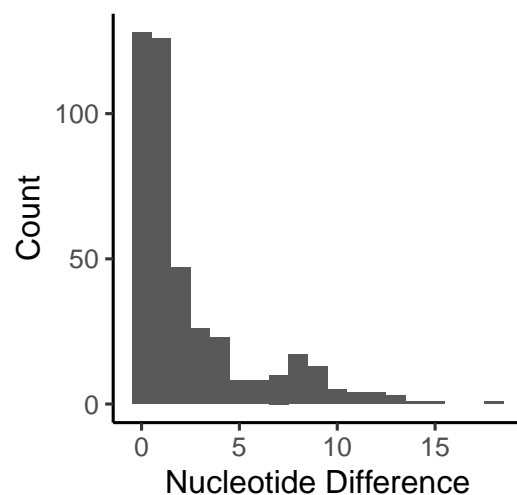
IGHV3-13*01

1429 sequences assigned
361 (25.3%) exact matches, in which:
297 unique CDR3
6 unique J



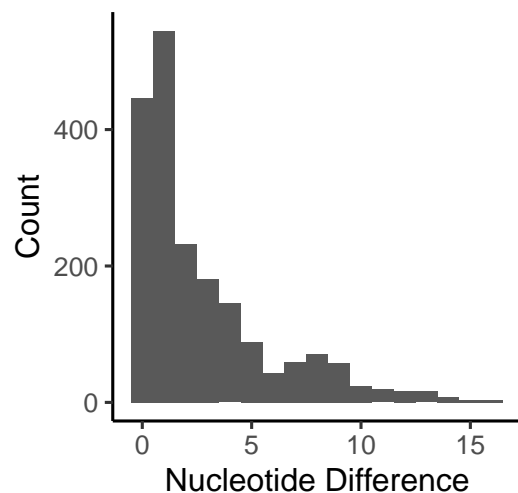
IGHV3-20*01_02

425 sequences assigned
128 (30.1%) exact matches, in which:
104 unique CDR3
6 unique J



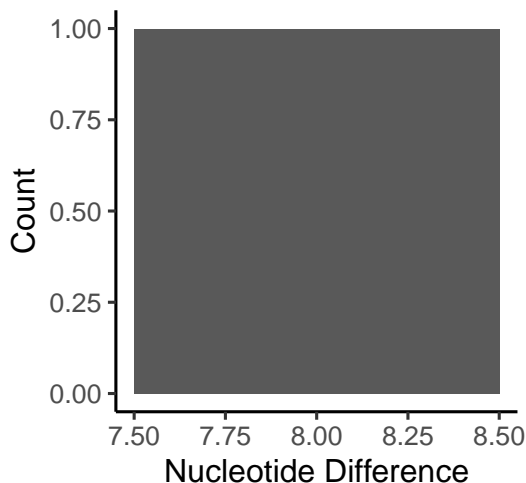
IGHV3-20*03_04

1961 sequences assigned
446 (22.7%) exact matches, in which:
378 unique CDR3
6 unique J



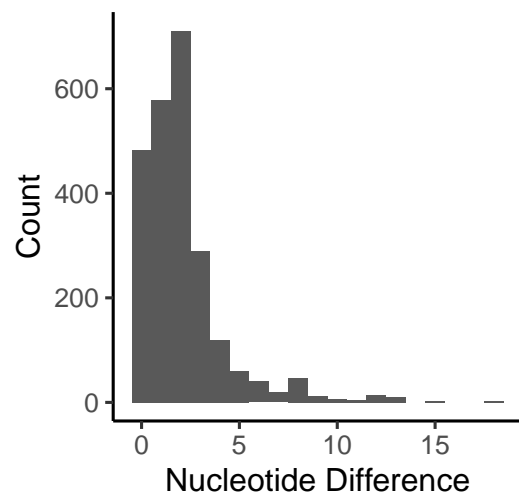
IGHV3-22*01_02

1 sequences assigned
No exact matches.



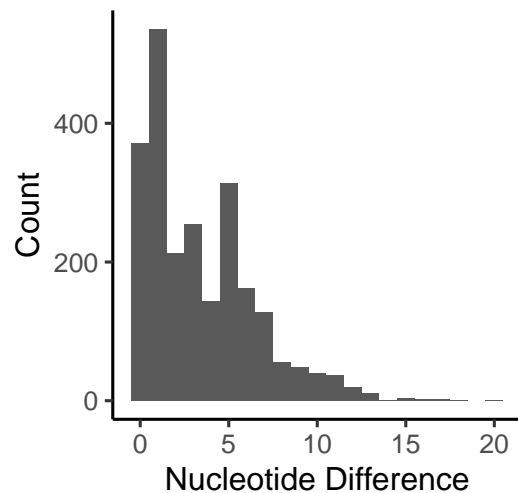
IGHV3-33*06

2403 sequences assigned
483 (20.1%) exact matches, in which:
478 unique CDR3
6 unique J



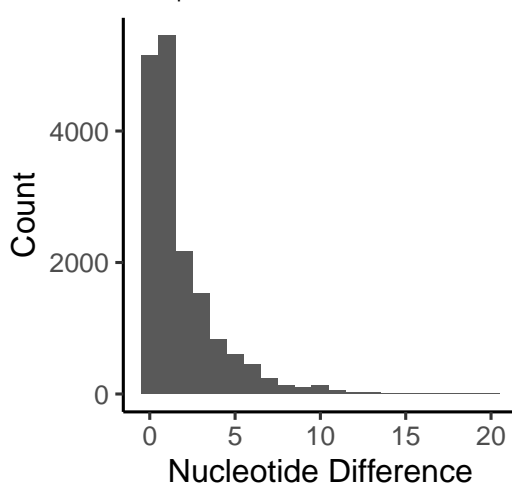
IGHV3-21*04

2345 sequences assigned
371 (15.8%) exact matches, in which:
367 unique CDR3
6 unique J



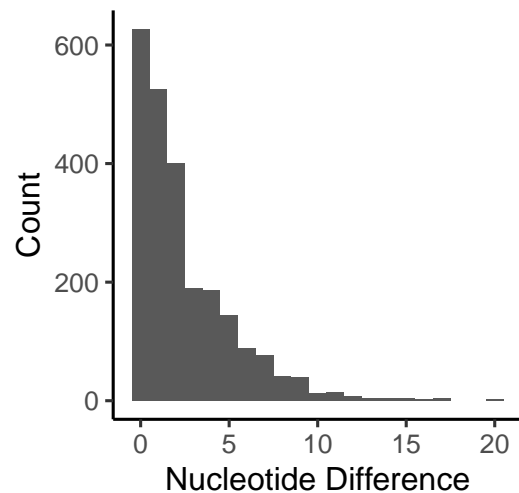
IGHV3-30-3*01

16875 sequences assigned
5143 (30.5%) exact matches, in which:
4320 unique CDR3
6 unique J



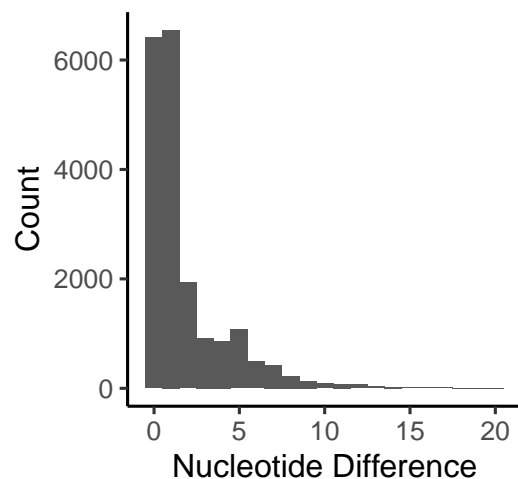
IGHV3-33*05_G75C

2380 sequences assigned
627 (26.3%) exact matches, in which:
611 unique CDR3
6 unique J



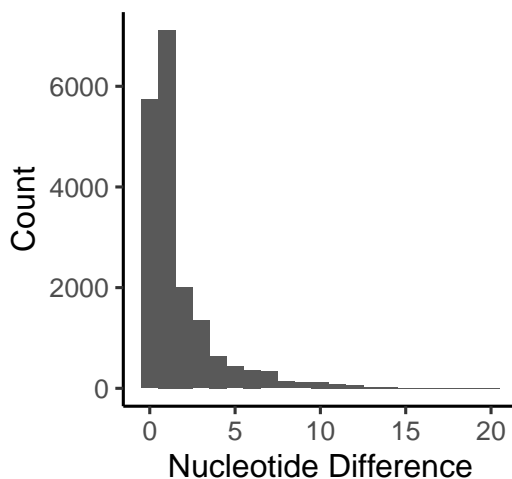
IGHV3-21*01_02

19371 sequences assigned
6413 (33.1%) exact matches, in which:
5270 unique CDR3
6 unique J



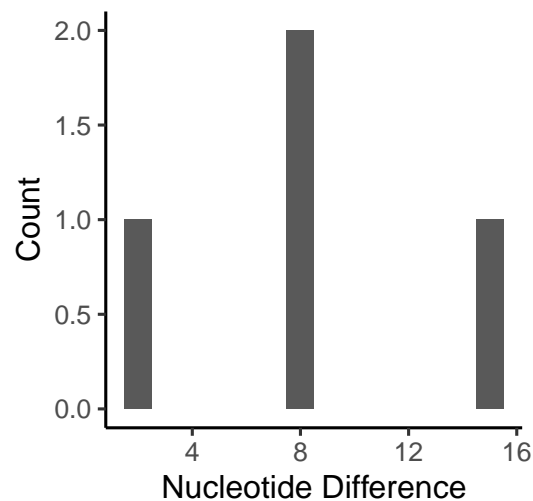
IGHV3-33*01

18601 sequences assigned
5734 (30.8%) exact matches, in which:
4682 unique CDR3
6 unique J



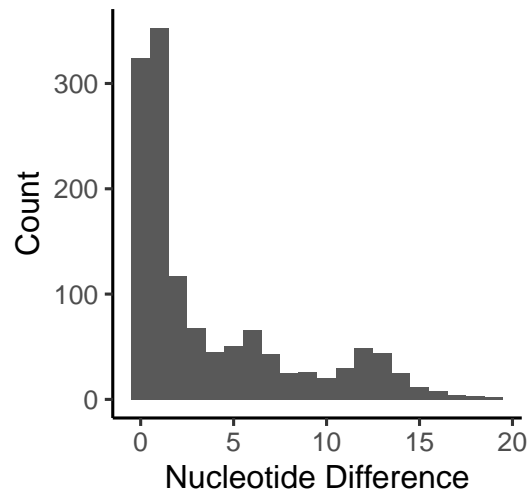
IGHV3-35*01

4 sequences assigned
No exact matches.



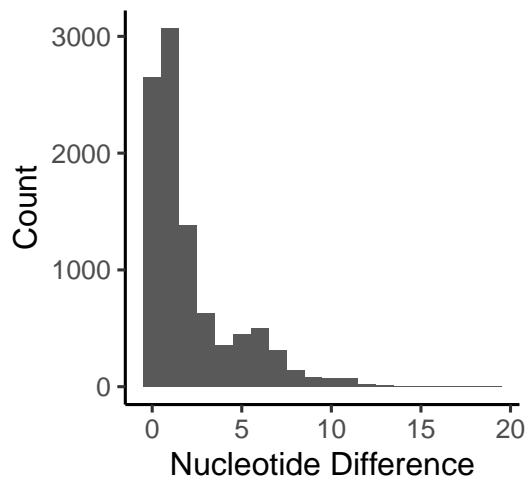
IGHV3-43*01

1318 sequences assigned
324 (24.6%) exact matches, in which:
268 unique CDR3
6 unique J



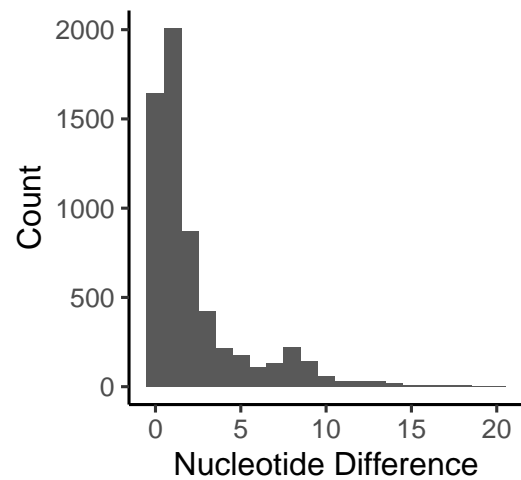
IGHV3-48*03

9760 sequences assigned
2651 (27.2%) exact matches, in which:
2190 unique CDR3
6 unique J



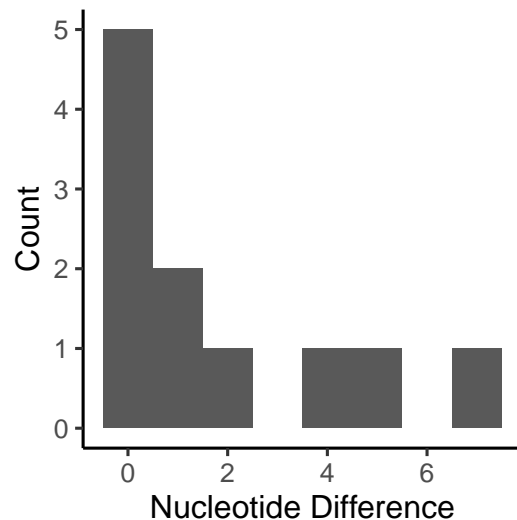
IGHV3-53*01_02

6166 sequences assigned
1643 (26.6%) exact matches, in which:
1341 unique CDR3
6 unique J



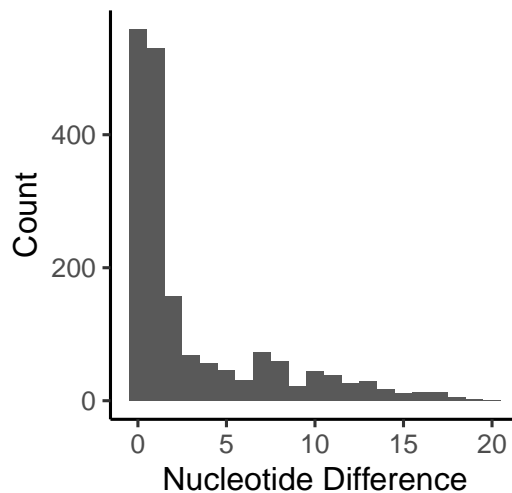
IGHV3-47*02

11 sequences assigned
5 (45.5%) exact matches, in which:
3 unique CDR3
1 unique J



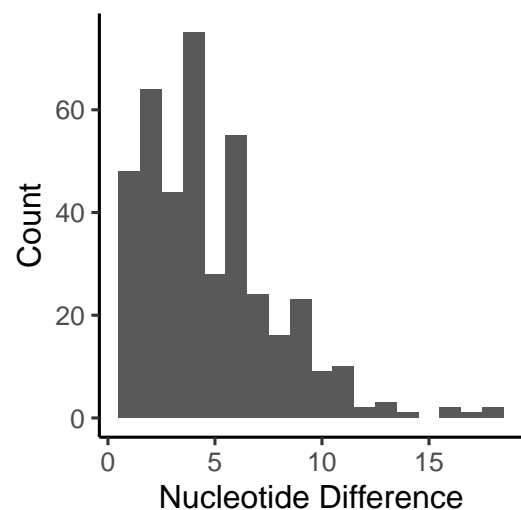
IGHV3-49*04

1808 sequences assigned
559 (30.9%) exact matches, in which:
458 unique CDR3
6 unique J



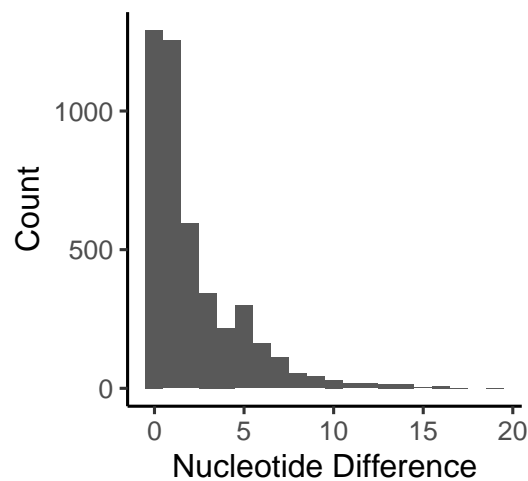
IGHV3-64*04

409 sequences assigned
No exact matches.



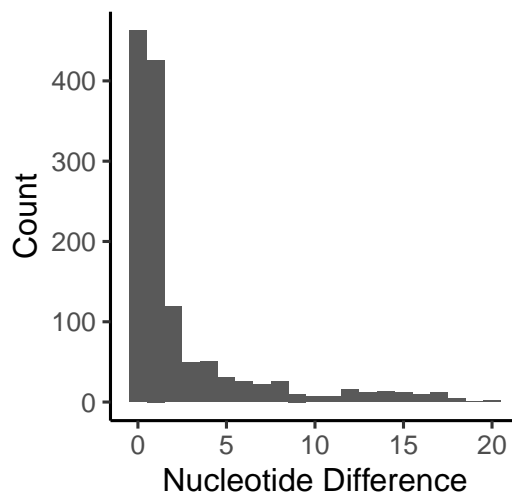
IGHV3-48*02

4482 sequences assigned
1292 (28.8%) exact matches, in which:
1059 unique CDR3
6 unique J



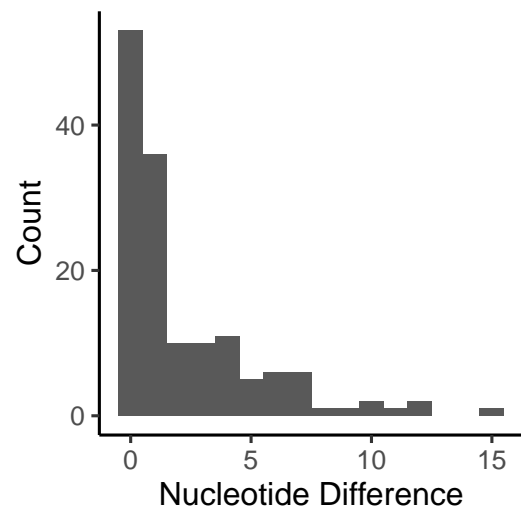
IGHV3-49*03_05

1317 sequences assigned
463 (35.2%) exact matches, in which:
362 unique CDR3
6 unique J



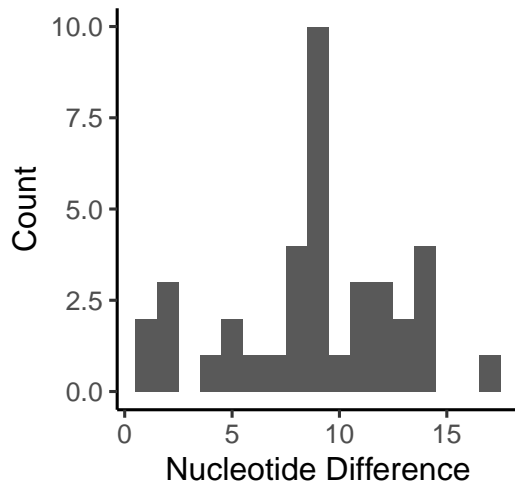
IGHV3-64*02_07

145 sequences assigned
53 (36.6%) exact matches, in which:
36 unique CDR3
4 unique J



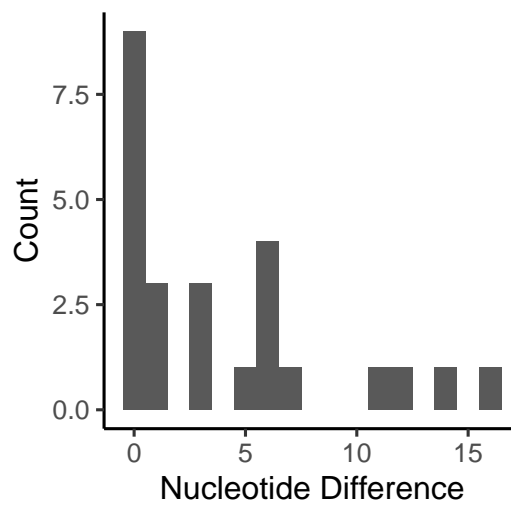
IGHV3-66*01

38 sequences assigned
No exact matches.



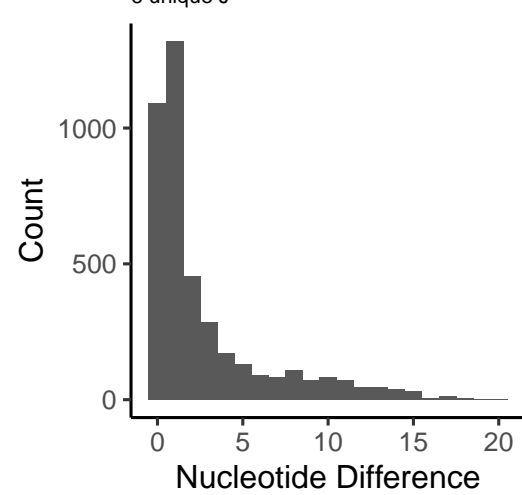
IGHV3-69-1*01

25 sequences assigned
9 (36%) exact matches, in which:
8 unique CDR3
2 unique J



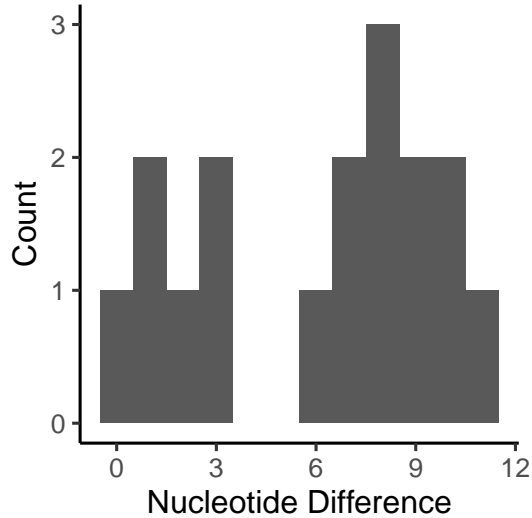
IGHV3-73*01_02

4151 sequences assigned
1093 (26.3%) exact matches, in which:
909 unique CDR3
6 unique J



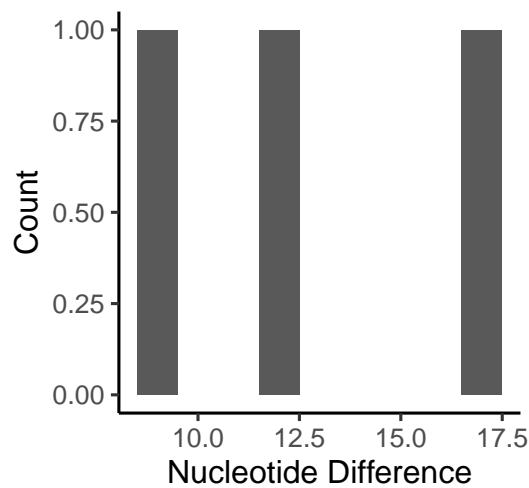
IGHV3-66*02

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



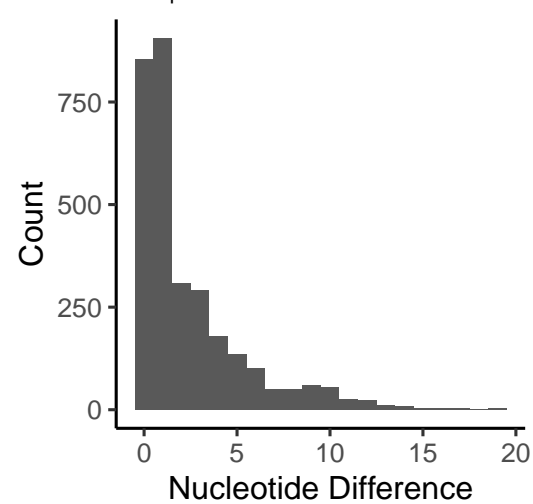
IGHV3-71*01_04

3 sequences assigned
No exact matches.



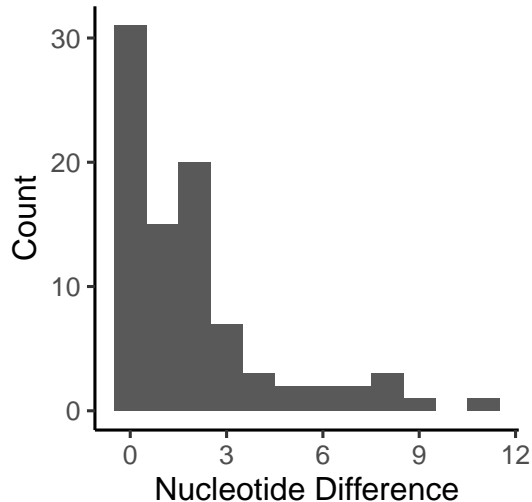
IGHV3-74*01_02

3073 sequences assigned
855 (27.8%) exact matches, in which:
722 unique CDR3
6 unique J



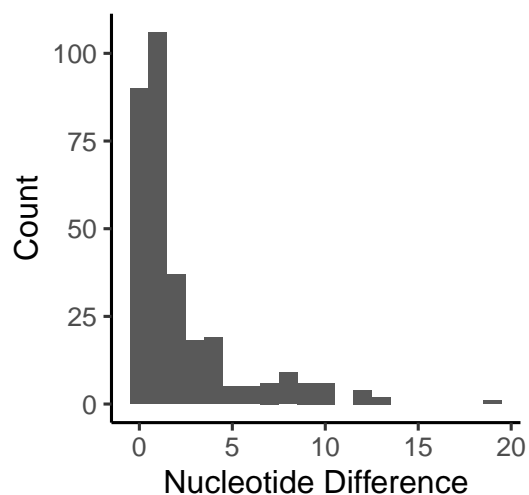
IGHV3-66*03

87 sequences assigned
31 (35.6%) exact matches, in which:
27 unique CDR3
4 unique J



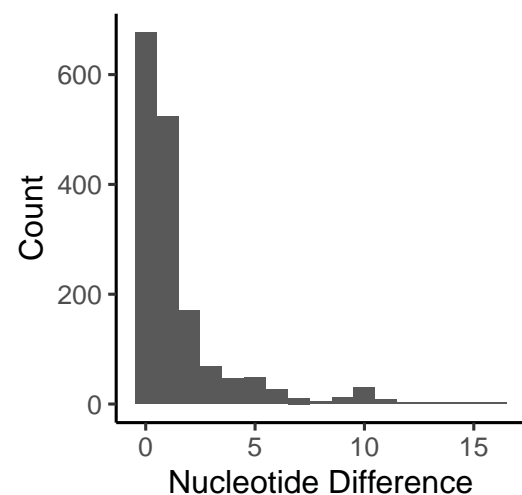
IGHV3-72*01

314 sequences assigned
90 (28.7%) exact matches, in which:
69 unique CDR3
5 unique J



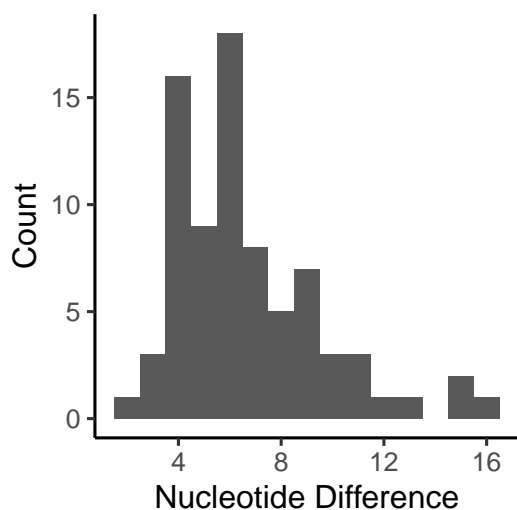
IGHV3-64D*06

1638 sequences assigned
677 (41.3%) exact matches, in which:
535 unique CDR3
6 unique J



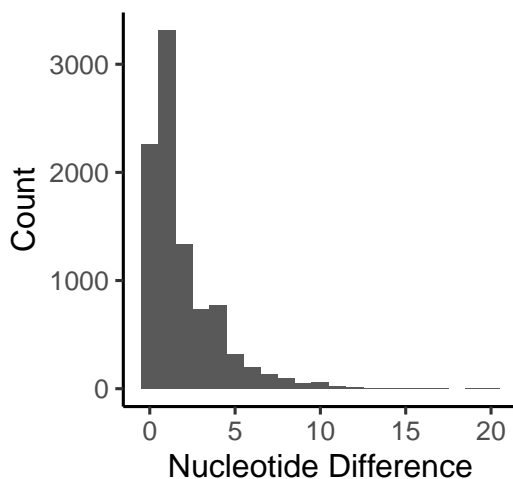
IGHV3–NL1*01

78 sequences assigned
No exact matches.



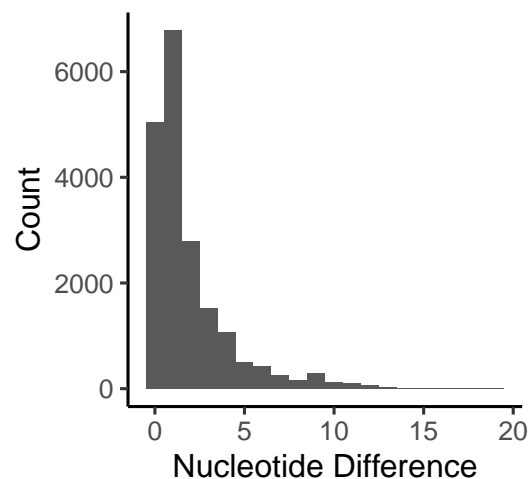
IGHV4–30–2*01

9353 sequences assigned
2259 (24.2%) exact matches, in which:
1673 unique CDR3
6 unique J



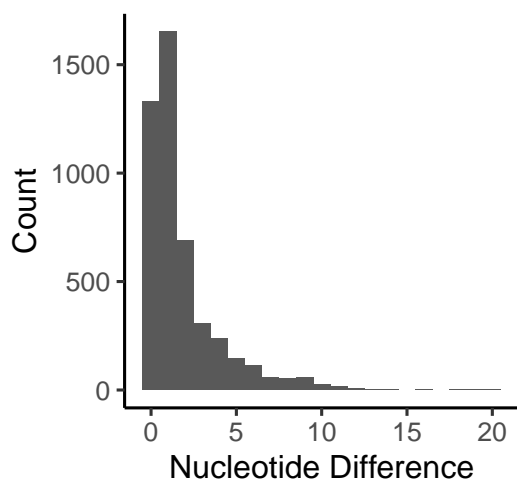
IGHV4–34*01_02

19258 sequences assigned
5042 (26.2%) exact matches, in which:
4055 unique CDR3
6 unique J



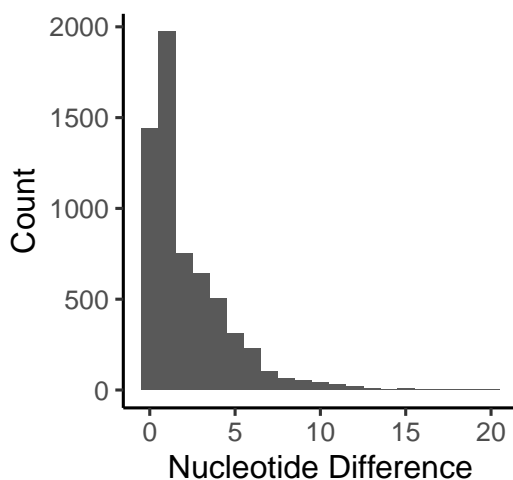
IGHV4–4*07

4714 sequences assigned
1331 (28.2%) exact matches, in which:
1073 unique CDR3
6 unique J



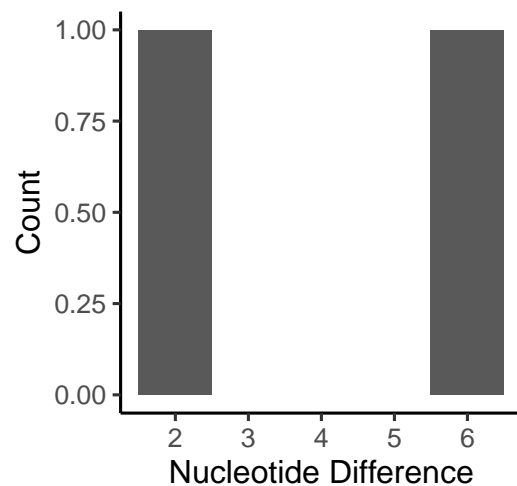
IGHV4–30–4*01

6184 sequences assigned
1439 (23.3%) exact matches, in which:
1153 unique CDR3
6 unique J



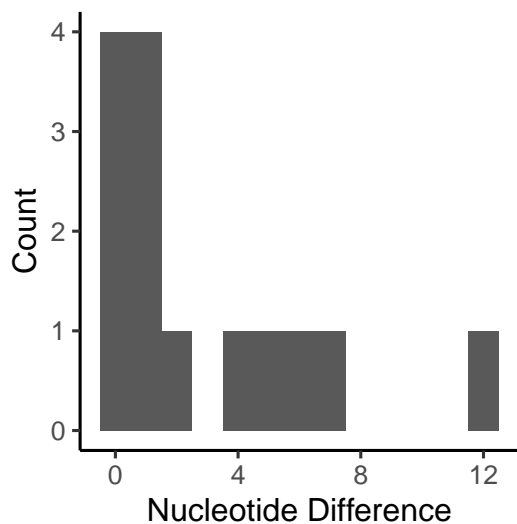
IGHV4–38–2*01

2 sequences assigned
No exact matches.



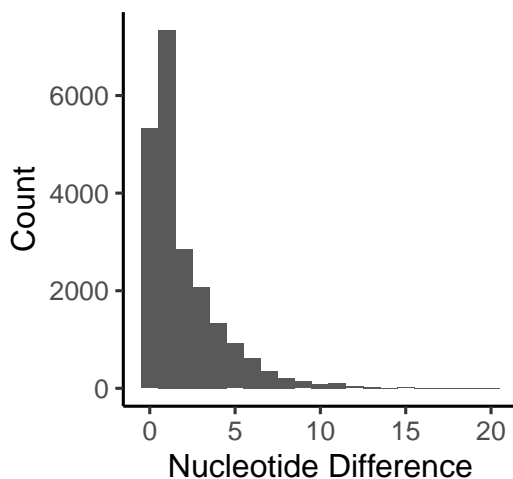
IGHV4–28*03

14 sequences assigned
4 (28.6%) exact matches, in which:
1 unique CDR3
2 unique J



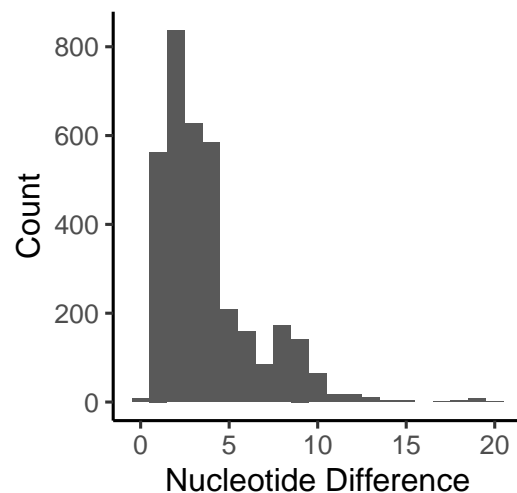
IGHV4–31*03_04

21489 sequences assigned
5326 (24.8%) exact matches, in which:
4203 unique CDR3
6 unique J



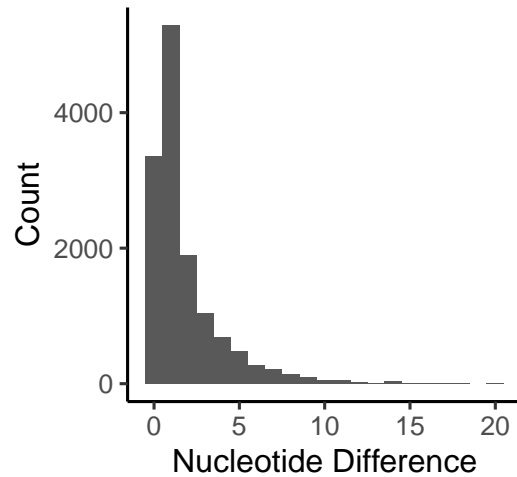
IGHV4–39*07

3522 sequences assigned
8 (0.2%) exact matches, in which:
8 unique CDR3
3 unique J



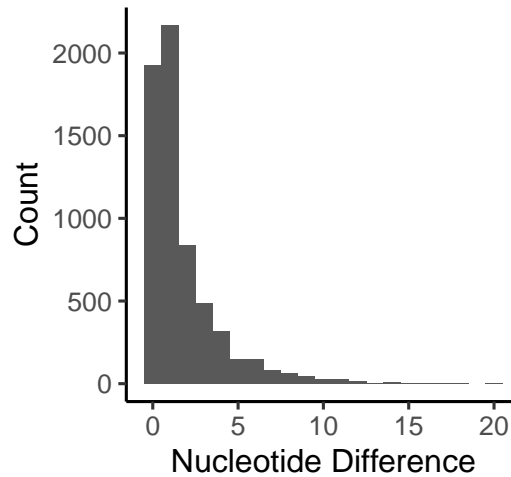
IGHV4-39*01_05

13668 sequences assigned
3353 (24.5%) exact matches, in which:
2313 unique CDR3
6 unique J



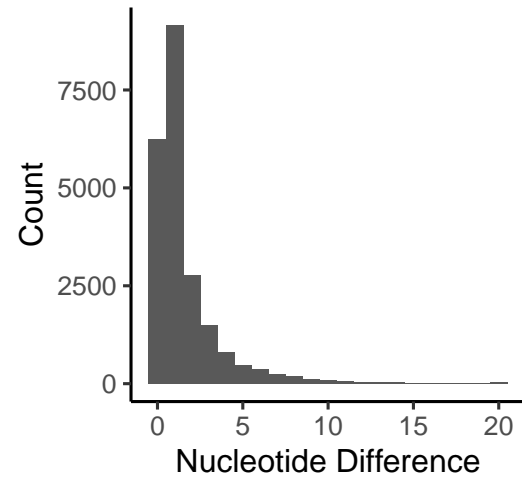
IGHV4-61*01

6320 sequences assigned
1925 (30.5%) exact matches, in which:
1635 unique CDR3
6 unique J



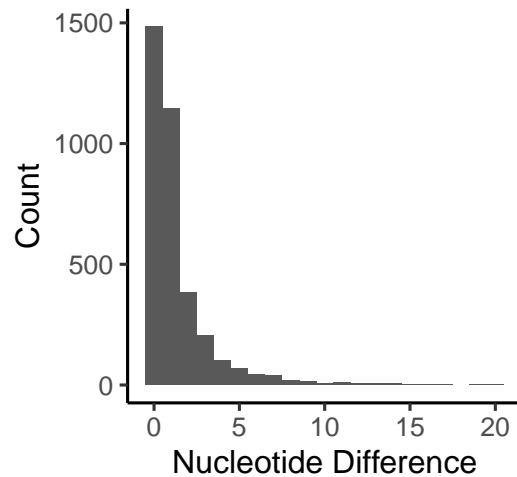
IGHV5-51*01_03

22205 sequences assigned
6236 (28.1%) exact matches, in which:
4655 unique CDR3
6 unique J



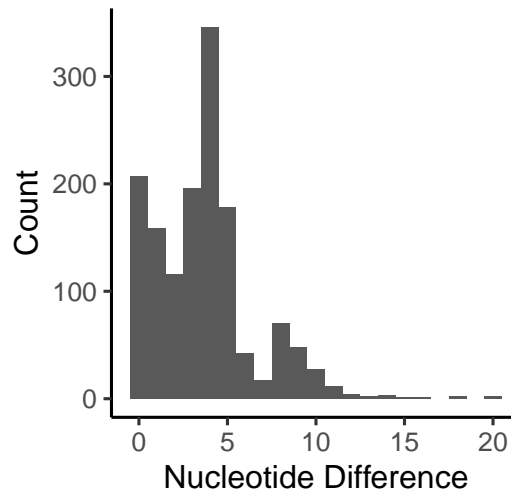
IGHV4-39*02_C258G

3551 sequences assigned
1484 (41.8%) exact matches, in which:
1380 unique CDR3
6 unique J



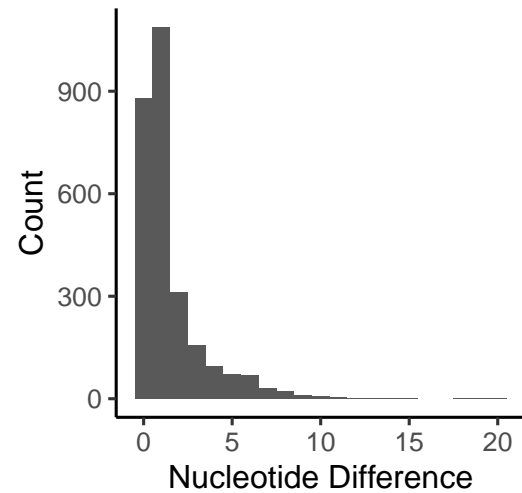
IGHV4-61*08_G88A

1435 sequences assigned
207 (14.4%) exact matches, in which:
198 unique CDR3
6 unique J



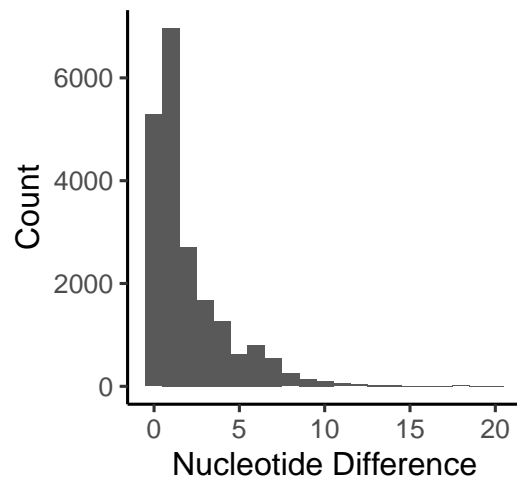
IGHV6-1*01_02

2761 sequences assigned
880 (31.9%) exact matches, in which:
688 unique CDR3
6 unique J



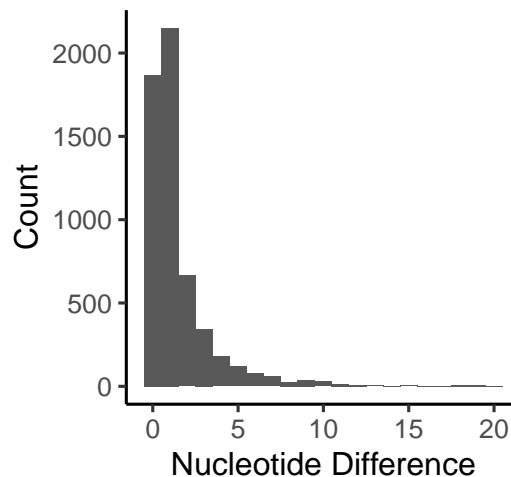
IGHV4-59*01_07

20634 sequences assigned
5288 (25.6%) exact matches, in which:
4262 unique CDR3
6 unique J



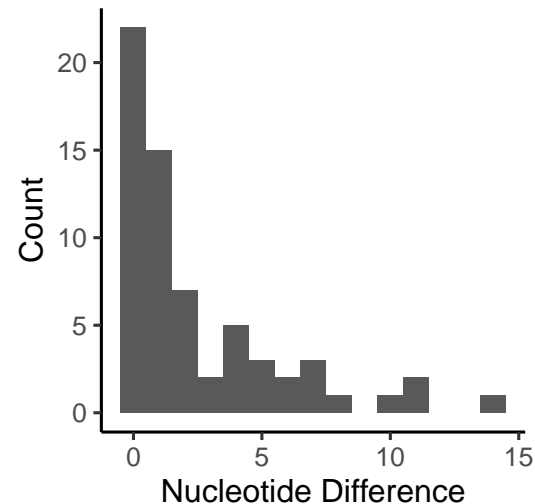
IGHV5-10-1*01_03

5616 sequences assigned
1867 (33.2%) exact matches, in which:
1515 unique CDR3
6 unique J



IGHV7-4-1*01

65 sequences assigned
22 (33.8%) exact matches, in which:
21 unique CDR3
4 unique J





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.