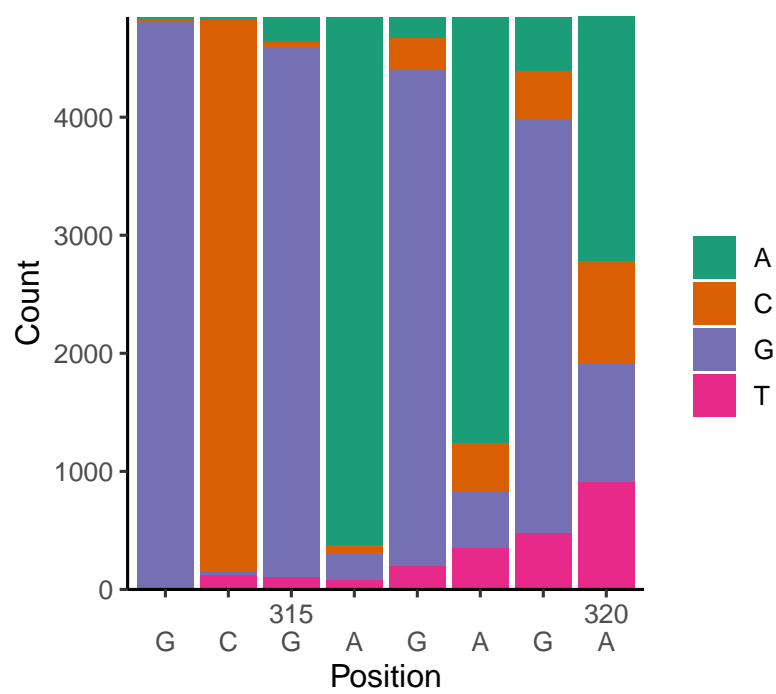
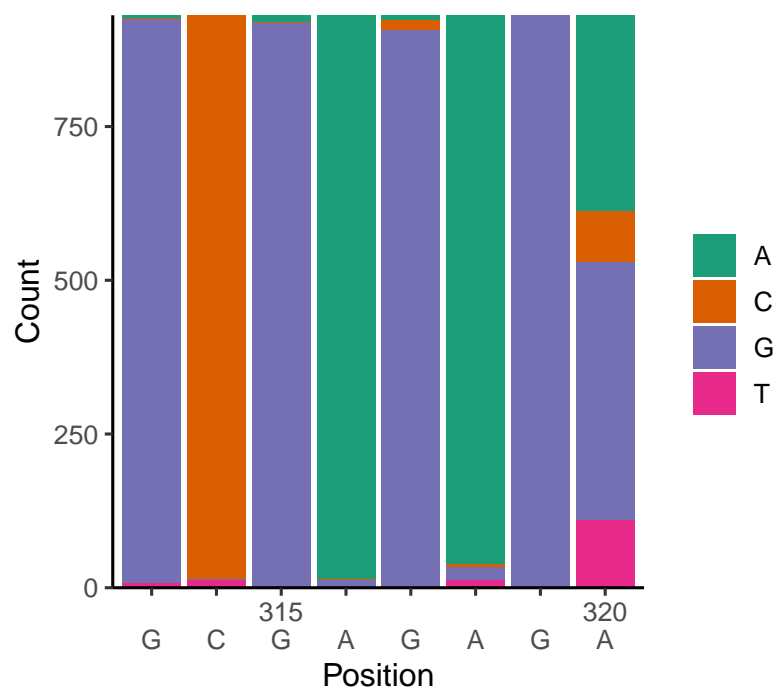


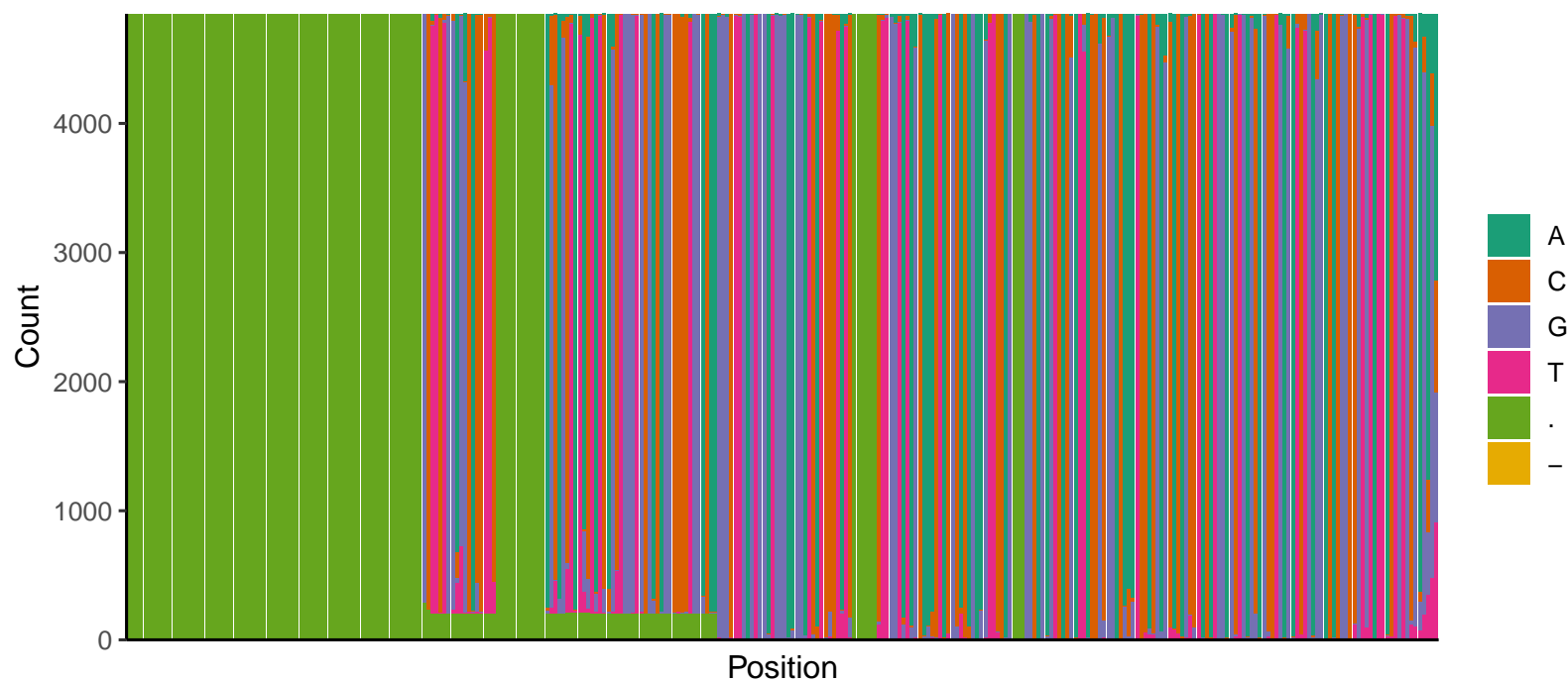
Gene IGHV1-69*04_09_G112A



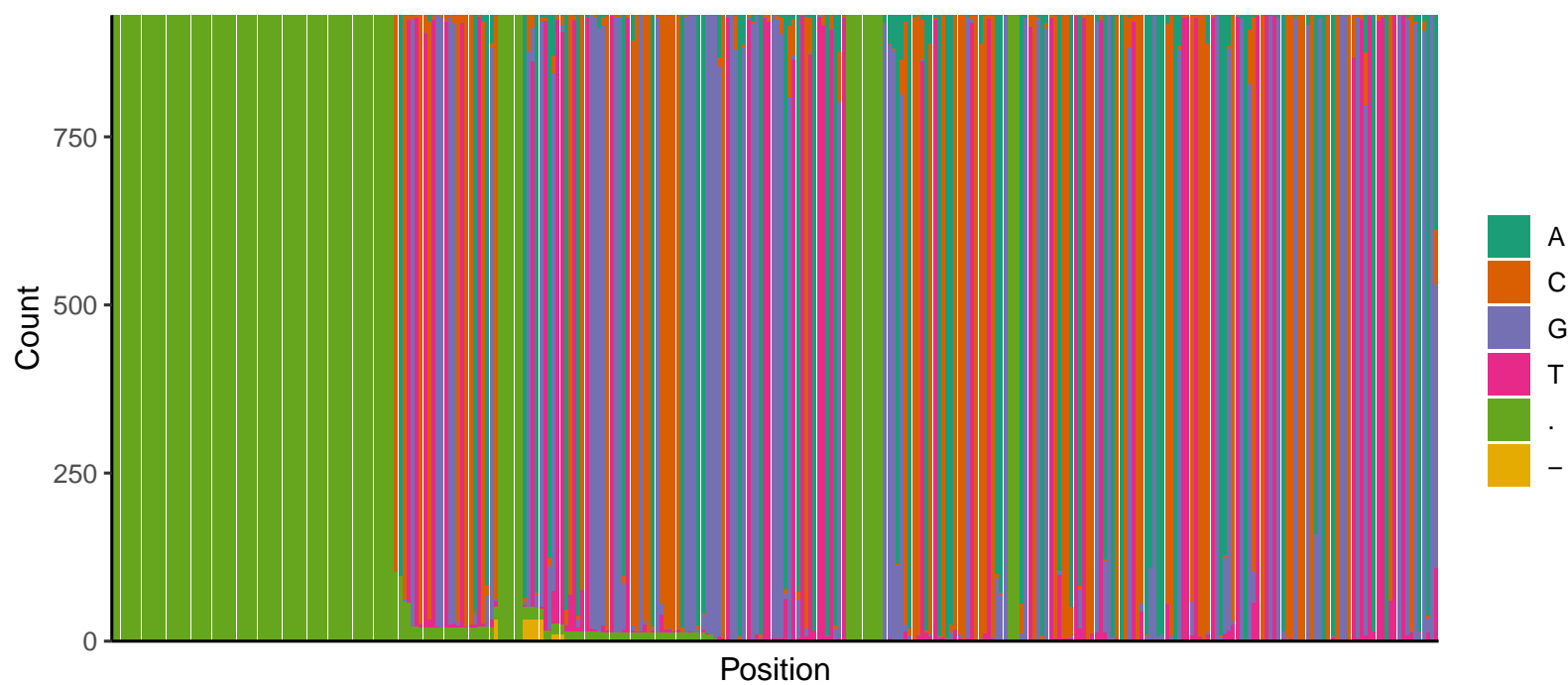
Gene IGHV4-39*02_C258G



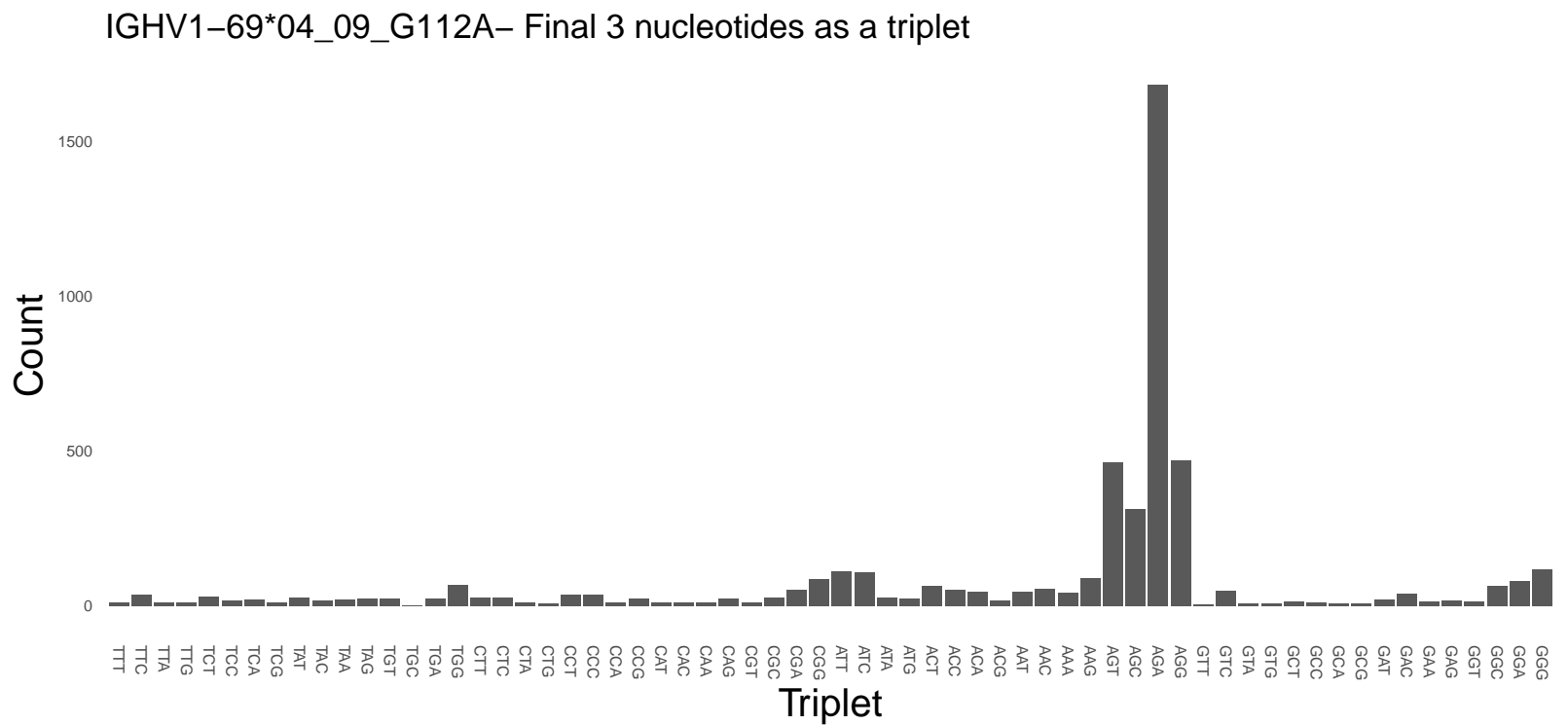
Gene IGHV1-69*04_09_G112A



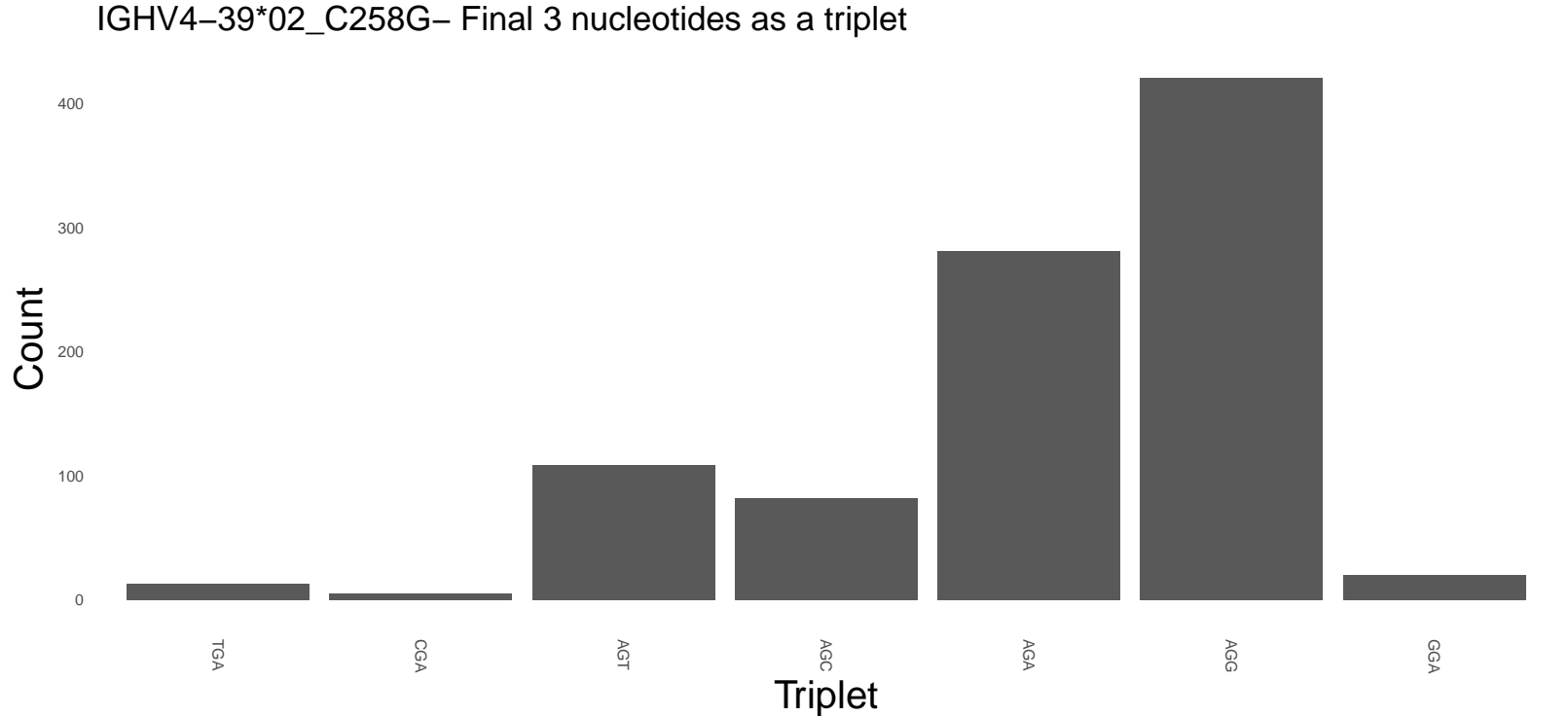
Gene IGHV4-39*02_C258G



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

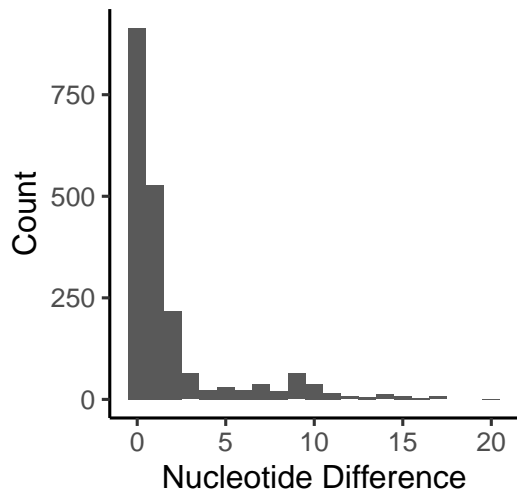


IGHV4-39*02_C258G- Final 3 nucleotides as a triplet



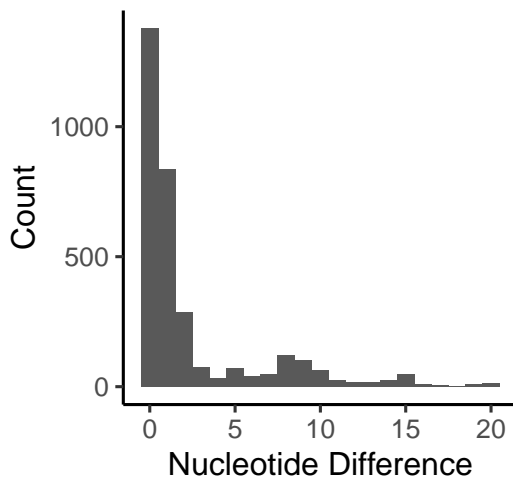
IGHV1-2*04

2200 sequences assigned
915 (41.6%) exact matches, in which:
844 unique CDR3
6 unique J



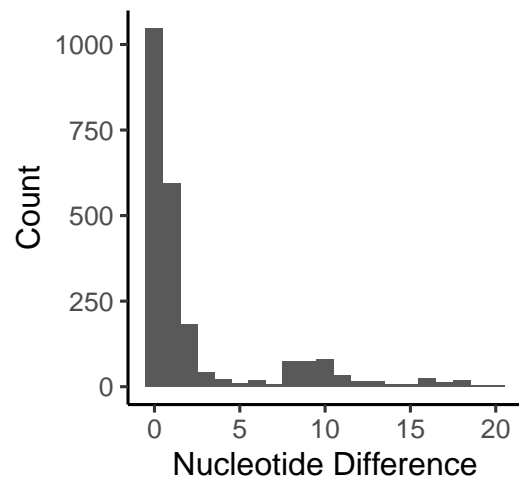
IGHV1-8*01

3264 sequences assigned
1378 (42.2%) exact matches, in which:
1264 unique CDR3
6 unique J



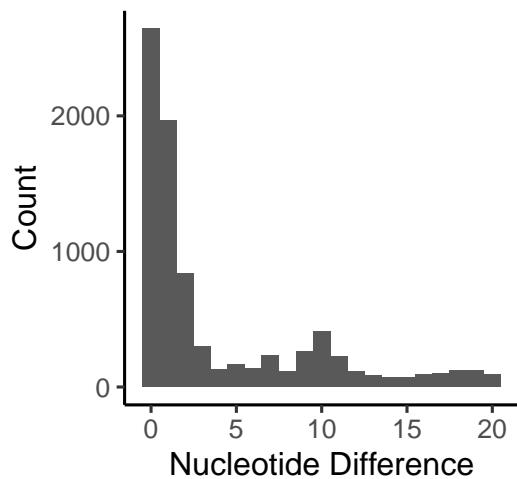
IGHV1-24*01

2374 sequences assigned
1047 (44.1%) exact matches, in which:
937 unique CDR3
6 unique J



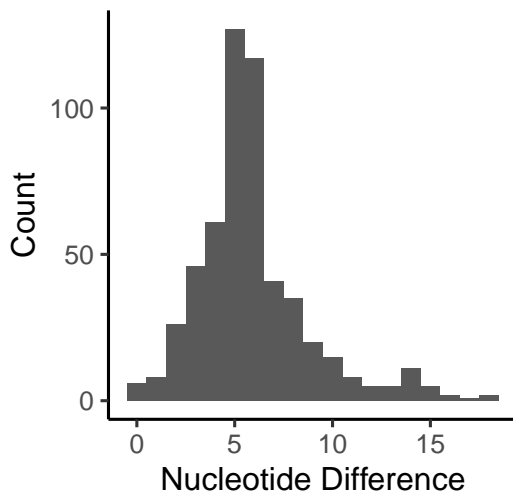
IGHV1-2*06

9339 sequences assigned
2643 (28.3%) exact matches, in which:
2382 unique CDR3
6 unique J



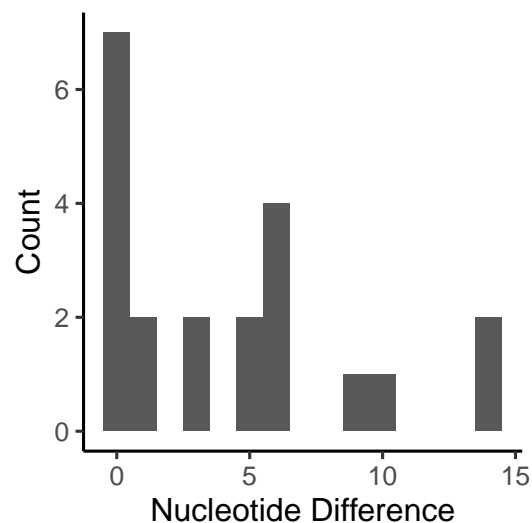
IGHV1-8*02

544 sequences assigned
6 (1.1%) exact matches, in which:
6 unique CDR3
3 unique J



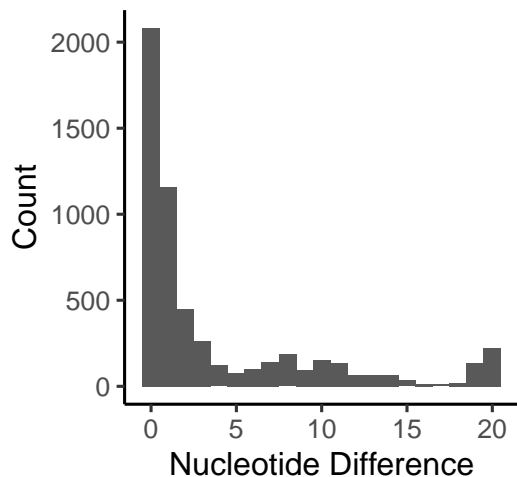
IGHV1-45*02

21 sequences assigned
7 (33.3%) exact matches, in which:
7 unique CDR3
3 unique J



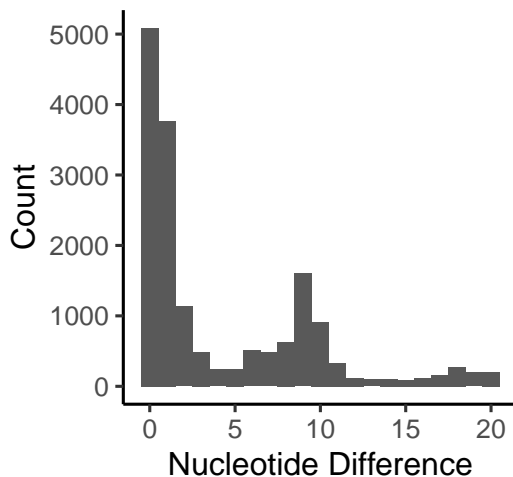
IGHV1-3*01_05

6197 sequences assigned
2082 (33.6%) exact matches, in which:
1875 unique CDR3
6 unique J



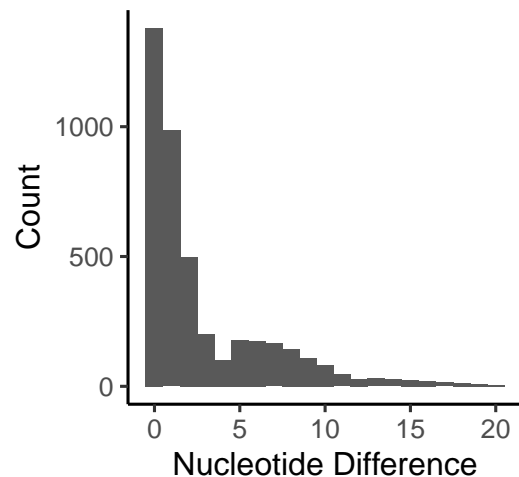
IGHV1-18*01

18072 sequences assigned
5086 (28.1%) exact matches, in which:
4505 unique CDR3
6 unique J



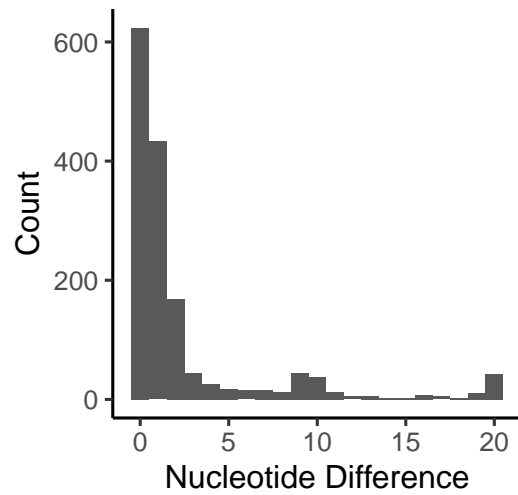
IGHV1-46*01

4760 sequences assigned
1380 (29%) exact matches, in which:
1275 unique CDR3
6 unique J



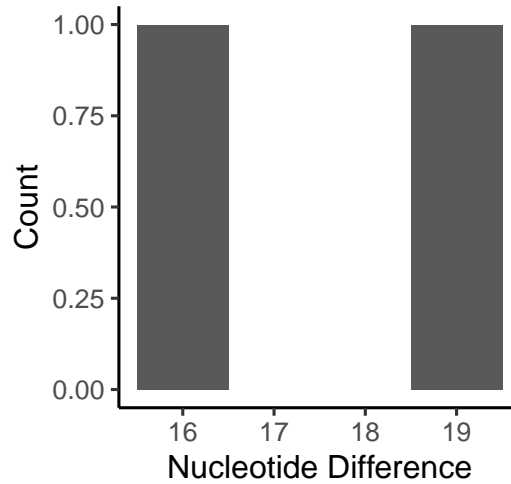
IGHV1-46*03

1736 sequences assigned
624 (35.9%) exact matches, in which:
547 unique CDR3
6 unique J



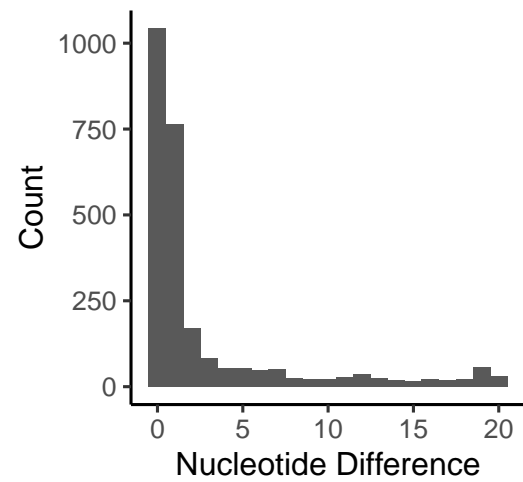
IGHV1-69-2*01

2 sequences assigned
No exact matches.



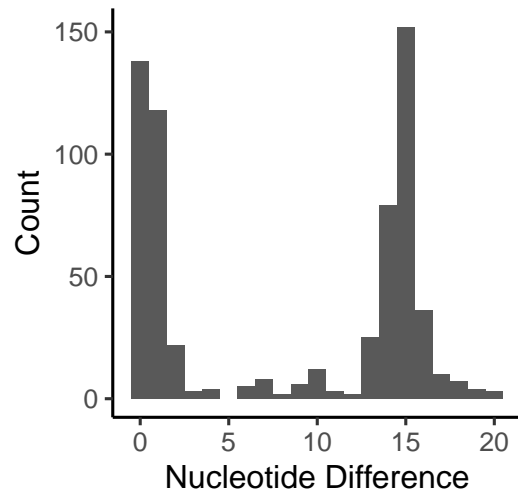
IGHV2-5*02

2970 sequences assigned
1043 (35.1%) exact matches, in which:
949 unique CDR3
6 unique J



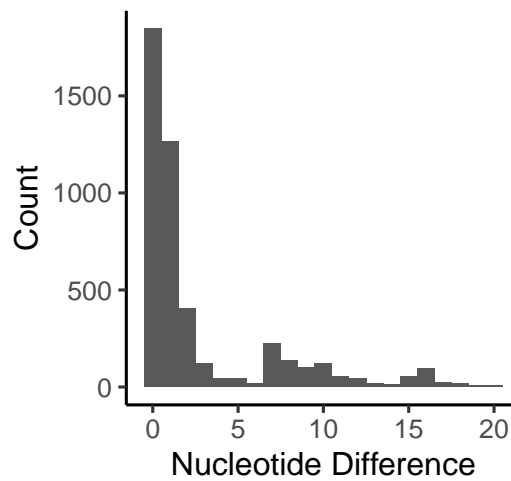
IGHV1-58*02

644 sequences assigned
138 (21.4%) exact matches, in which:
130 unique CDR3
5 unique J



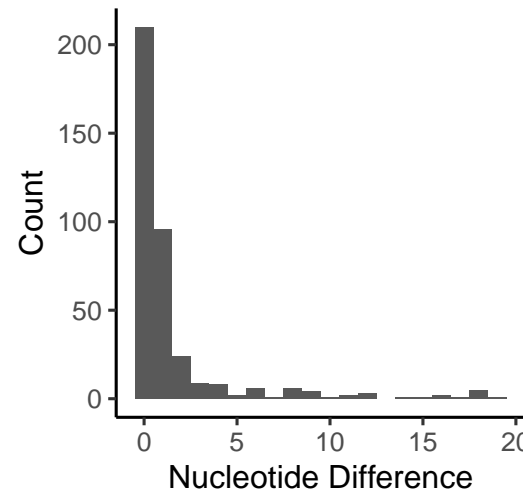
IGHV1-69*04_09_G112

4849 sequences assigned
1846 (38.1%) exact matches, in which:
1708 unique CDR3
6 unique J



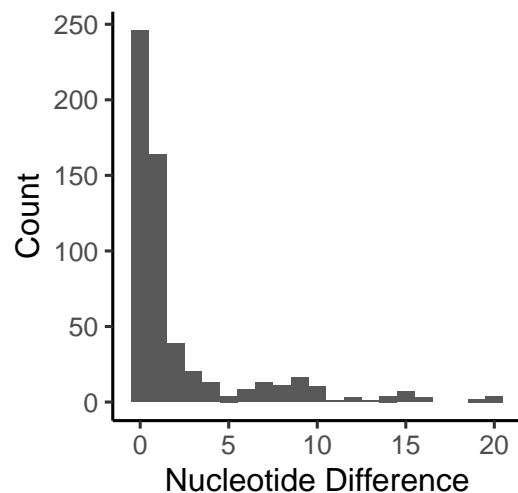
IGHV2-26*01

389 sequences assigned
210 (54%) exact matches, in which:
196 unique CDR3
5 unique J



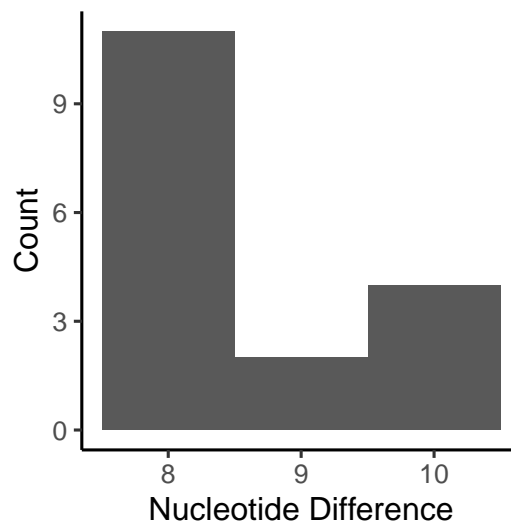
IGHV1-58*01_03

740 sequences assigned
246 (33.2%) exact matches, in which:
221 unique CDR3
6 unique J



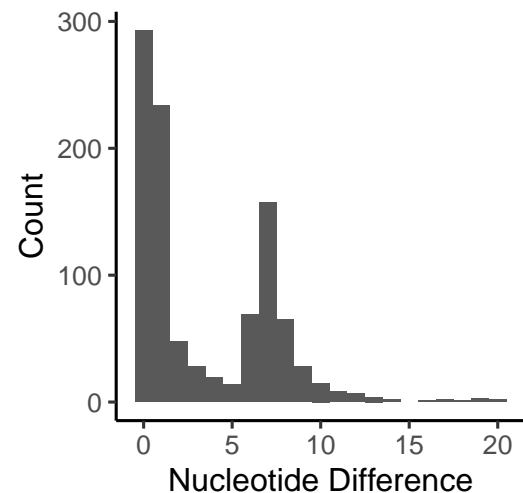
IGHV1-NL1*01

17 sequences assigned
No exact matches.



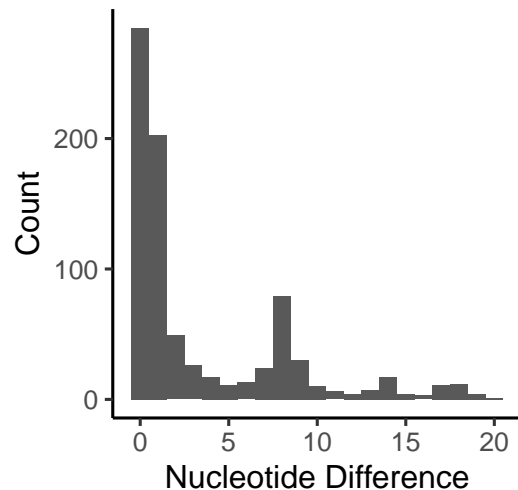
IGHV2-70*01

1029 sequences assigned
293 (28.5%) exact matches, in which:
261 unique CDR3
6 unique J



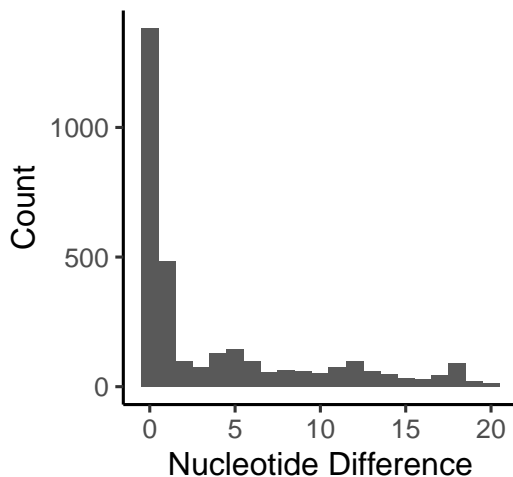
IGHV2-70*11_15

842 sequences assigned
285 (33.8%) exact matches, in which:
258 unique CDR3
6 unique J



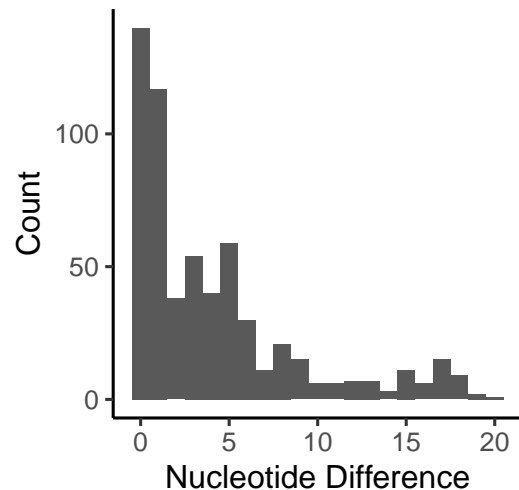
IGHV3-9*01

3487 sequences assigned
1382 (39.6%) exact matches, in which:
977 unique CDR3
6 unique J



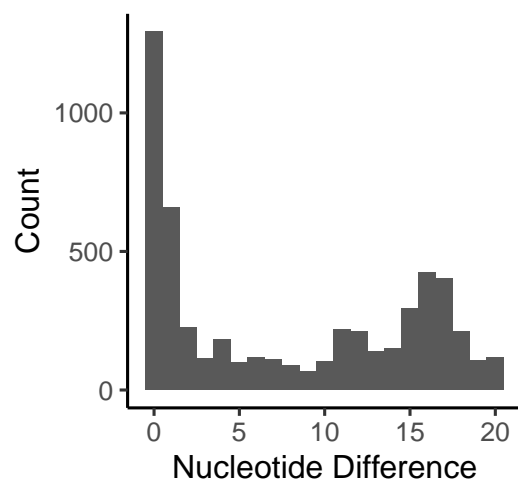
IGHV3-11*06

630 sequences assigned
140 (22.2%) exact matches, in which:
138 unique CDR3
6 unique J



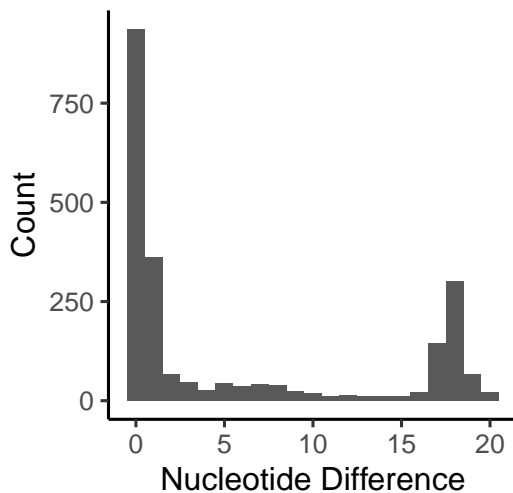
IGHV3-7*01

11178 sequences assigned
1293 (11.6%) exact matches, in which:
931 unique CDR3
6 unique J



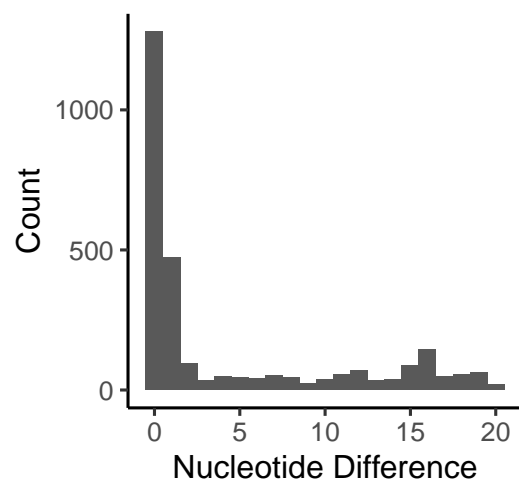
IGHV3-11*01

2416 sequences assigned
937 (38.8%) exact matches, in which:
689 unique CDR3
6 unique J



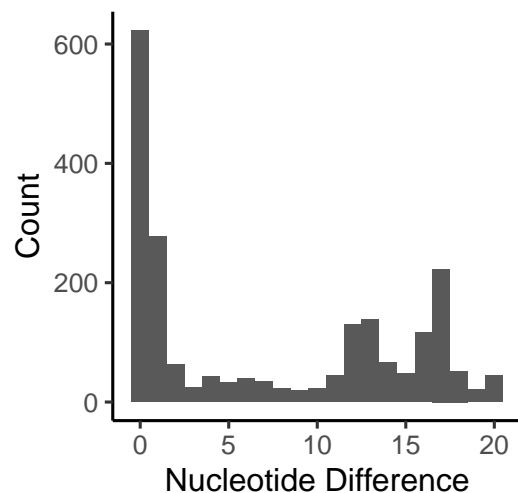
IGHV3-11*03_05

3084 sequences assigned
1279 (41.5%) exact matches, in which:
920 unique CDR3
6 unique J



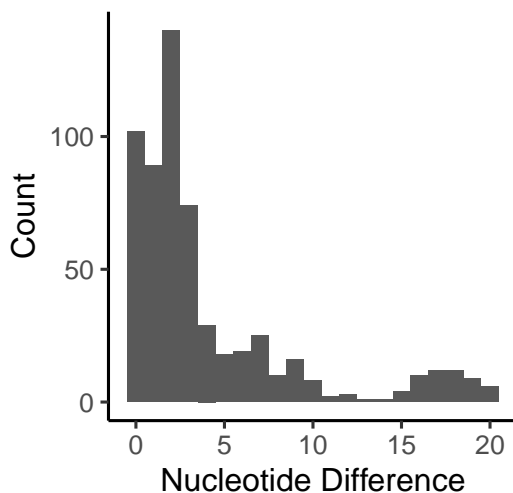
IGHV3-7*04

2368 sequences assigned
623 (26.3%) exact matches, in which:
422 unique CDR3
6 unique J



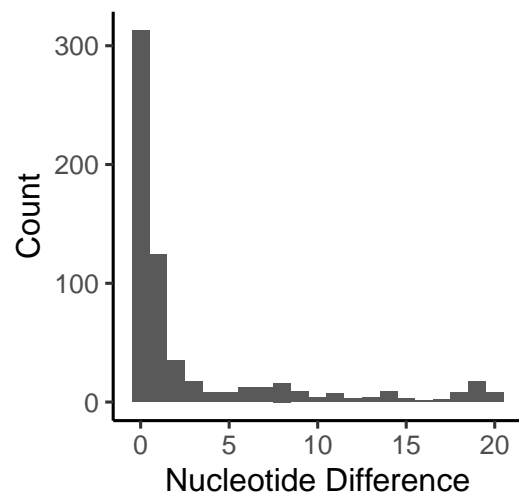
IGHV3-11*04

628 sequences assigned
102 (16.2%) exact matches, in which:
99 unique CDR3
5 unique J



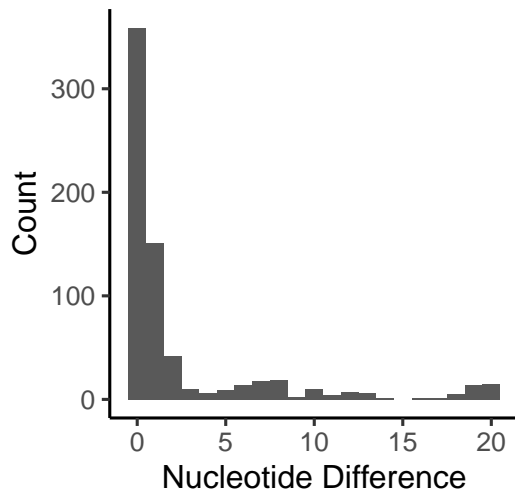
IGHV3-13*01

882 sequences assigned
313 (35.5%) exact matches, in which:
209 unique CDR3
6 unique J



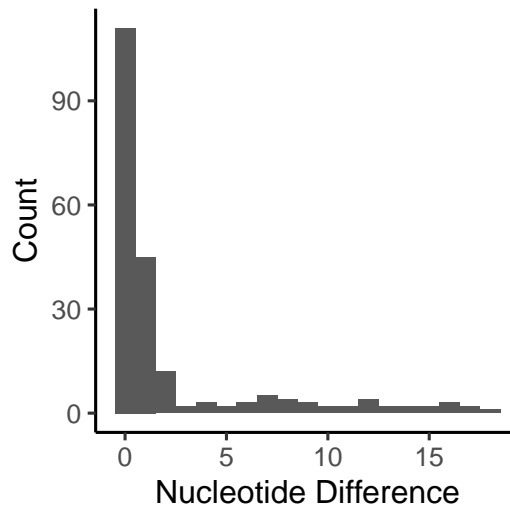
IGHV3-13*04

707 sequences assigned
359 (50.8%) exact matches, in which:
248 unique CDR3
6 unique J



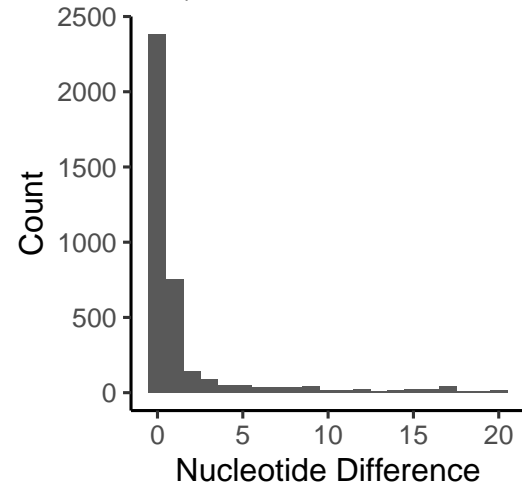
IGHV3-20*01_02

224 sequences assigned
111 (49.6%) exact matches, in which:
81 unique CDR3
5 unique J



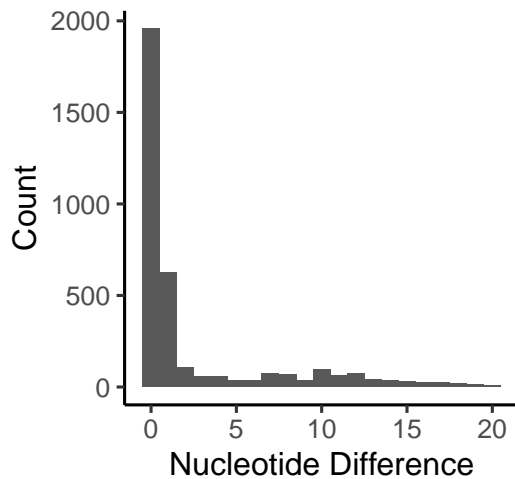
IGHV3-30*01

3947 sequences assigned
2381 (60.3%) exact matches, in which:
1711 unique CDR3
6 unique J



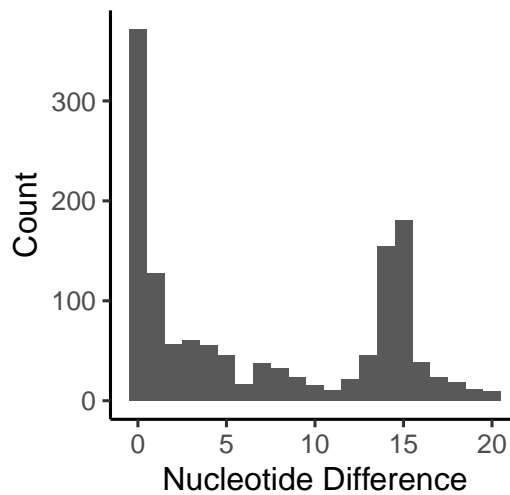
IGHV3-15*01_02

4867 sequences assigned
1957 (40.2%) exact matches, in which:
1399 unique CDR3
6 unique J



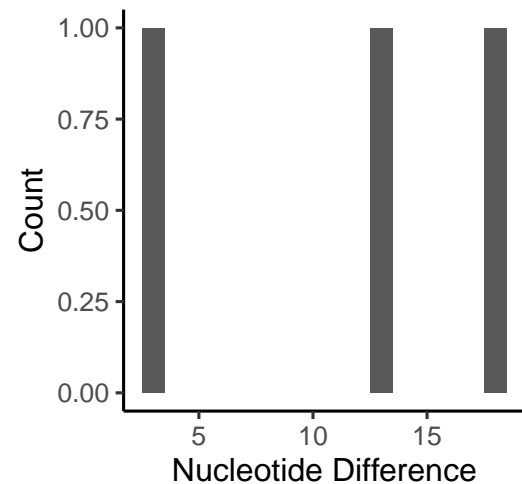
IGHV3-20*03_04

1448 sequences assigned
372 (25.7%) exact matches, in which:
265 unique CDR3
6 unique J



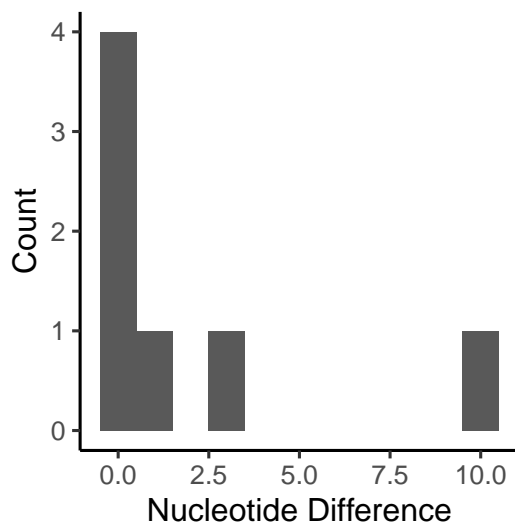
IGHV3-30-3*02

80 sequences assigned
No exact matches.



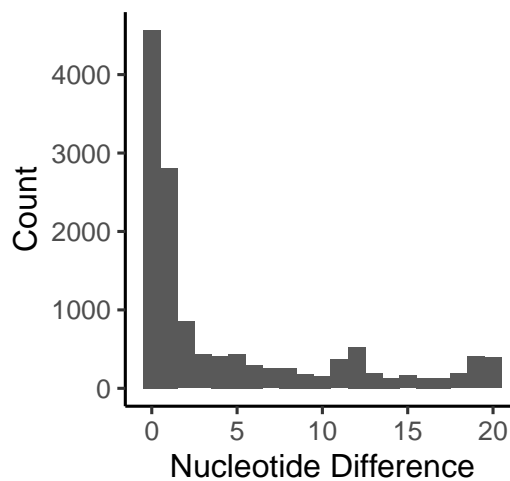
IGHV3-19*01

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



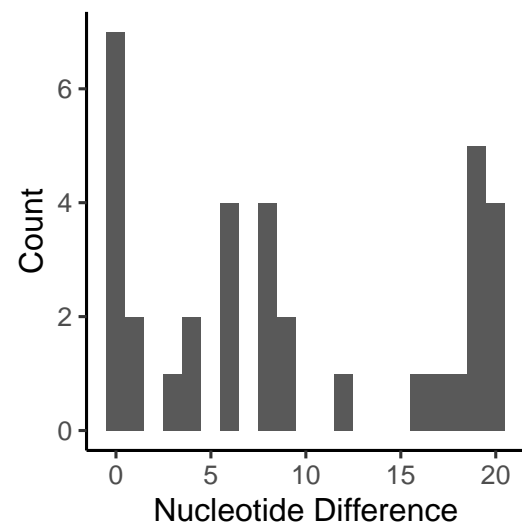
IGHV3-21*01_02

15047 sequences assigned
4568 (30.4%) exact matches, in which:
3088 unique CDR3
6 unique J



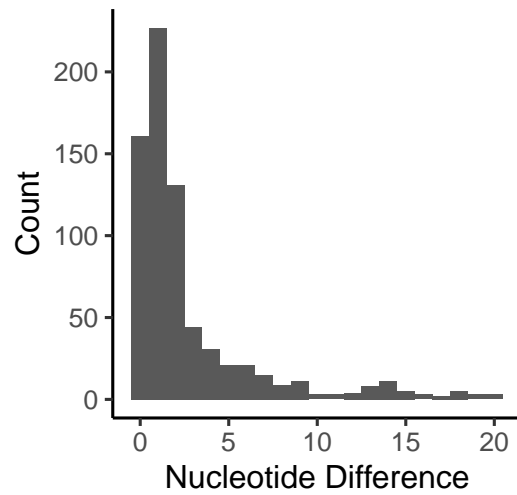
IGHV3-30-3*03

89 sequences assigned
7 (7.9%) exact matches, in which:
7 unique CDR3
2 unique J



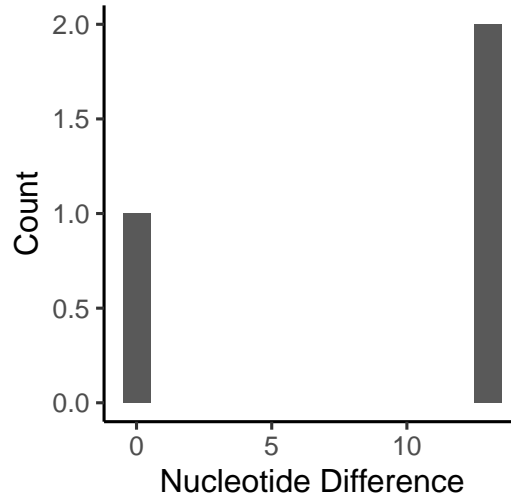
IGHV3–30*03

795 sequences assigned
161 (20.3%) exact matches, in which:
151 unique CDR3
6 unique J



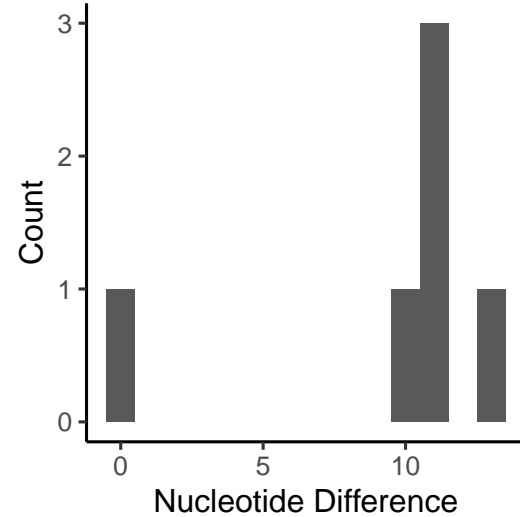
IGHV3–35*01

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



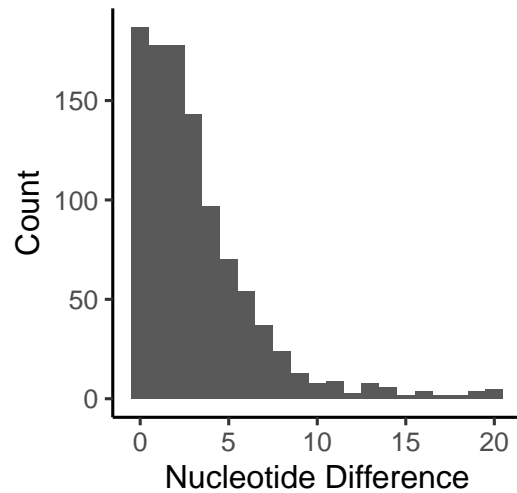
IGHV3–47*02

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



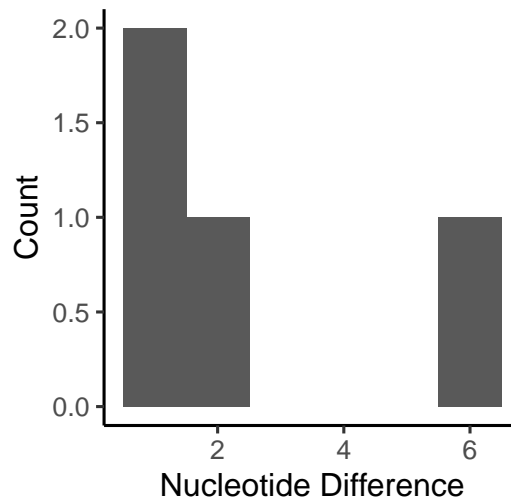
IGHV3–30*07

1060 sequences assigned
187 (17.6%) exact matches, in which:
183 unique CDR3
6 unique J



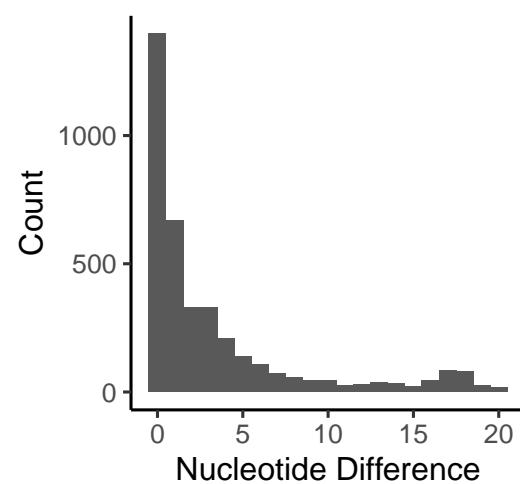
IGHV3–43*01

4 sequences assigned
No exact matches.



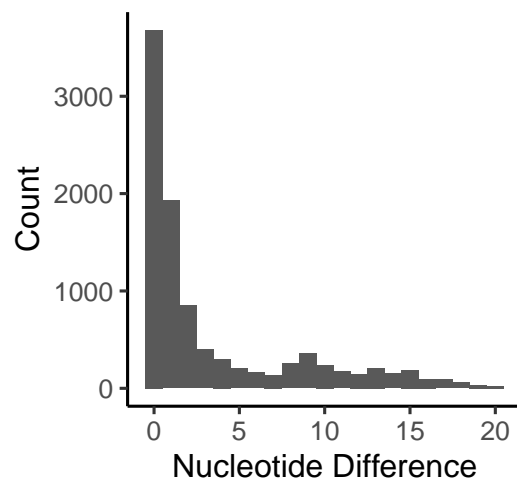
IGHV3–48*01

3957 sequences assigned
1397 (35.3%) exact matches, in which:
988 unique CDR3
6 unique J



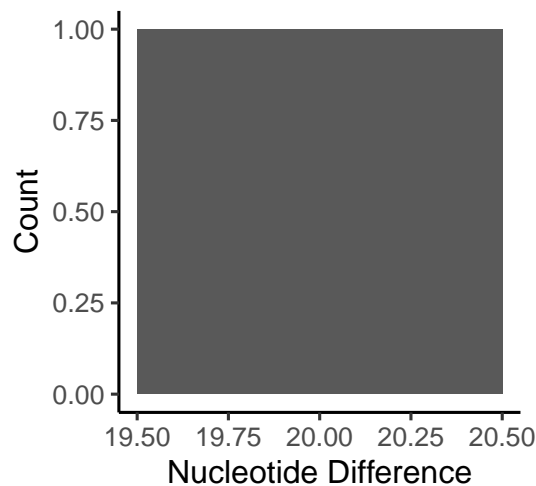
IGHV3–33*01

10436 sequences assigned
3680 (35.3%) exact matches, in which:
2714 unique CDR3
6 unique J



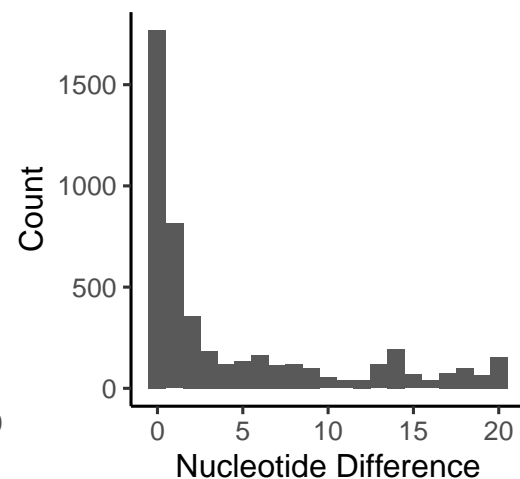
IGHV3–43*02

1 sequences assigned
No exact matches.



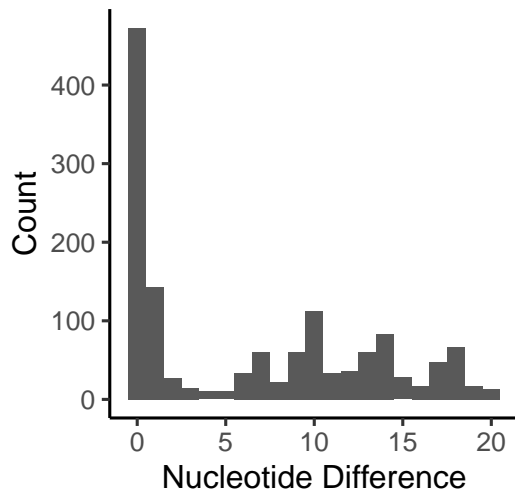
IGHV3–48*03

6891 sequences assigned
1770 (25.7%) exact matches, in which:
1263 unique CDR3
6 unique J



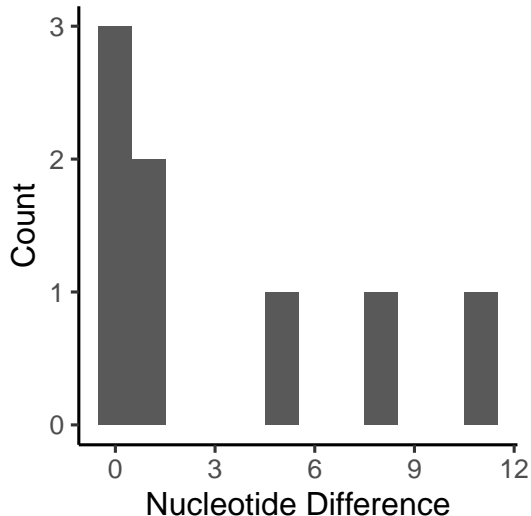
IGHV3-49*04

1411 sequences assigned
473 (33.5%) exact matches, in which:
346 unique CDR3
6 unique J



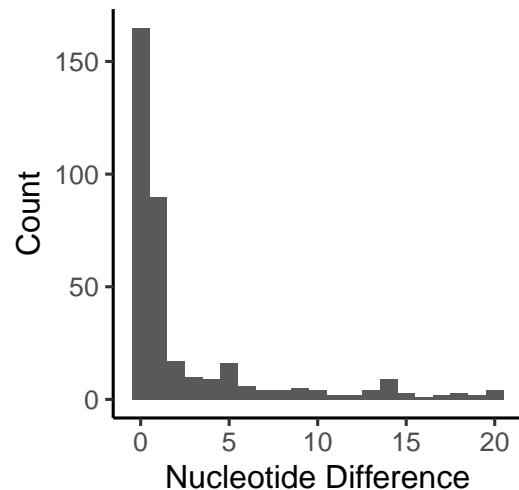
IGHV3-52*01_03

8 sequences assigned
3 (37.5%) exact matches, in which:
2 unique CDR3
1 unique J



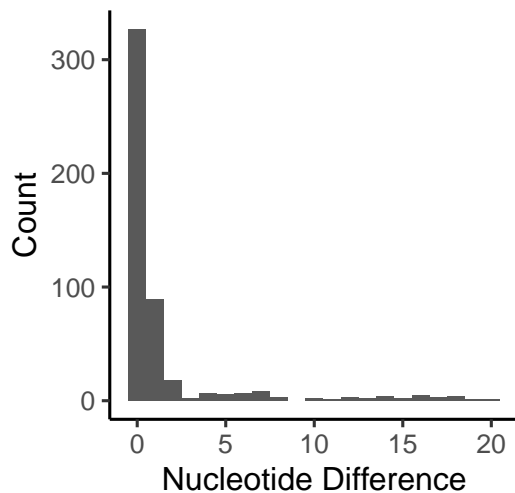
IGHV3-64*01

593 sequences assigned
165 (27.8%) exact matches, in which:
112 unique CDR3
6 unique J



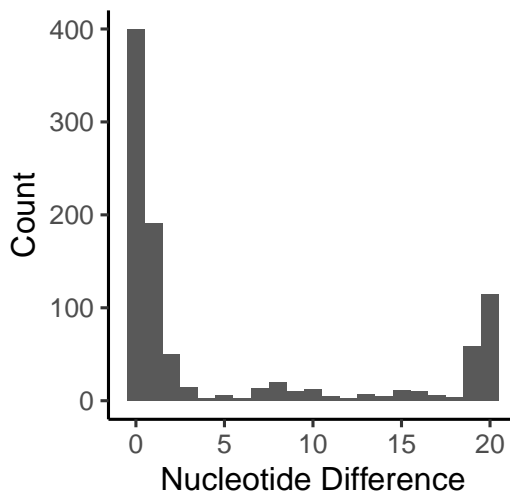
IGHV3-49*03_05

503 sequences assigned
327 (65%) exact matches, in which:
243 unique CDR3
6 unique J



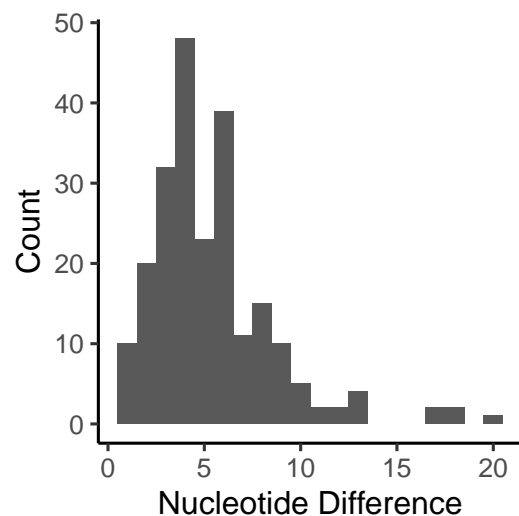
IGHV3-53*04

1016 sequences assigned
400 (39.4%) exact matches, in which:
277 unique CDR3
6 unique J



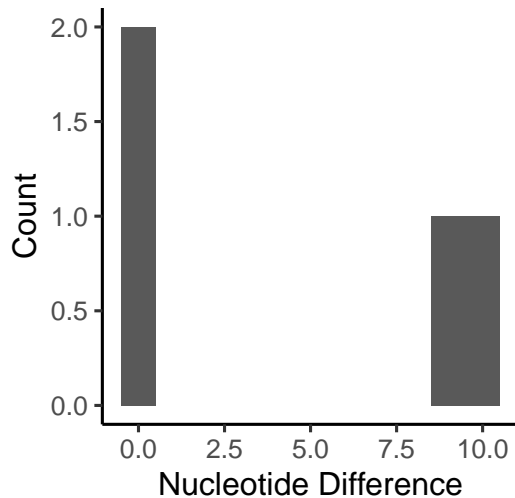
IGHV3-64*04

235 sequences assigned
No exact matches.



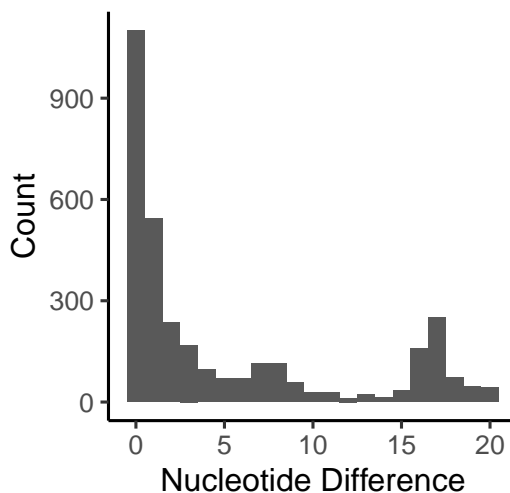
IGHV3-52*02

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



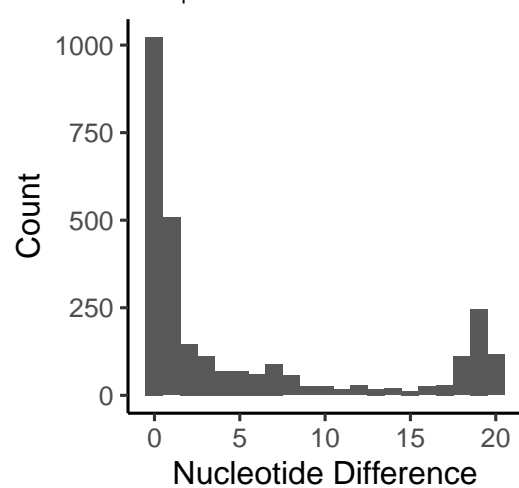
IGHV3-53*01_02

4424 sequences assigned
1101 (24.9%) exact matches, in which:
767 unique CDR3
6 unique J



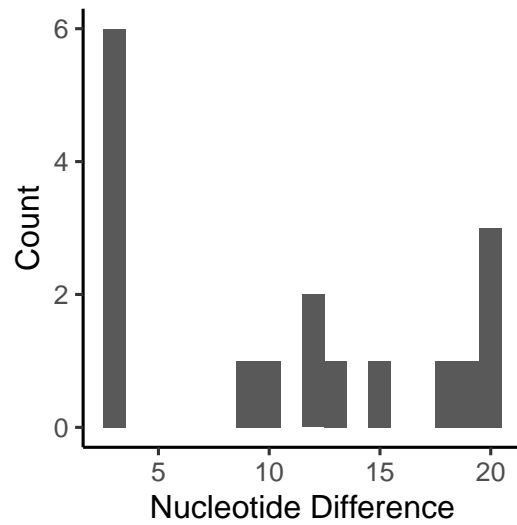
IGHV3-66*01

3734 sequences assigned
1023 (27.4%) exact matches, in which:
709 unique CDR3
6 unique J



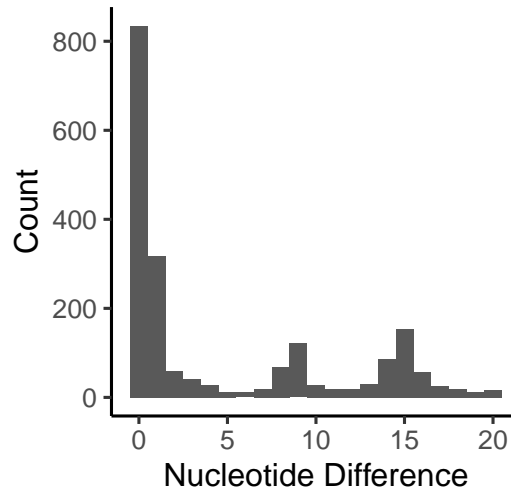
IGHV3-69-1*01

469 sequences assigned
No exact matches.



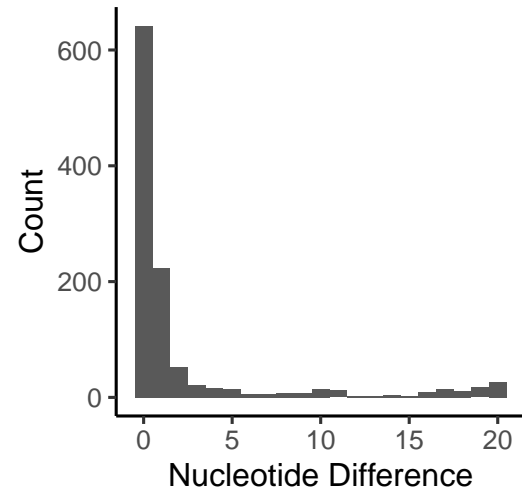
IGHV3-73*01_02

2288 sequences assigned
835 (36.5%) exact matches, in which:
593 unique CDR3
6 unique J



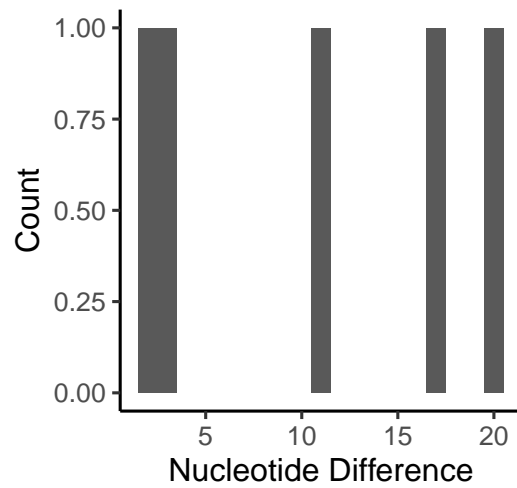
IGHV3-64D*06

1252 sequences assigned
642 (51.3%) exact matches, in which:
424 unique CDR3
6 unique J



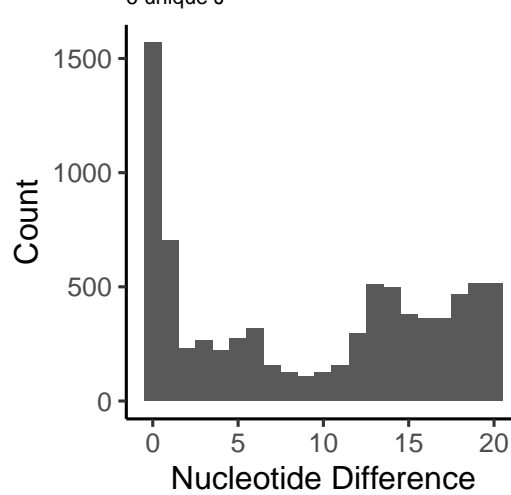
IGHV3-69-1*02

21 sequences assigned
No exact matches.



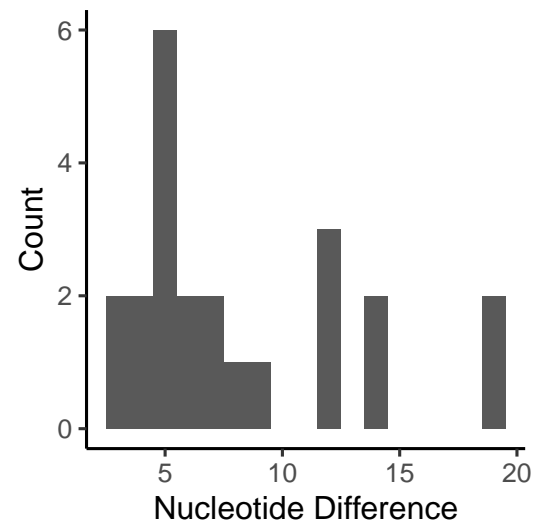
IGHV3-74*01_02

11492 sequences assigned
1569 (13.7%) exact matches, in which:
1090 unique CDR3
6 unique J



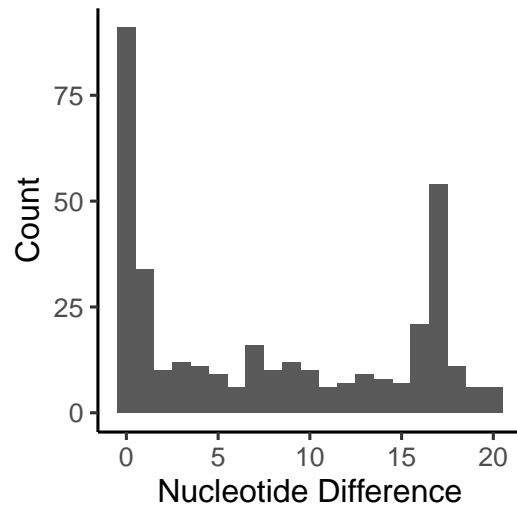
IGHV3-NL1*01

38 sequences assigned
No exact matches.



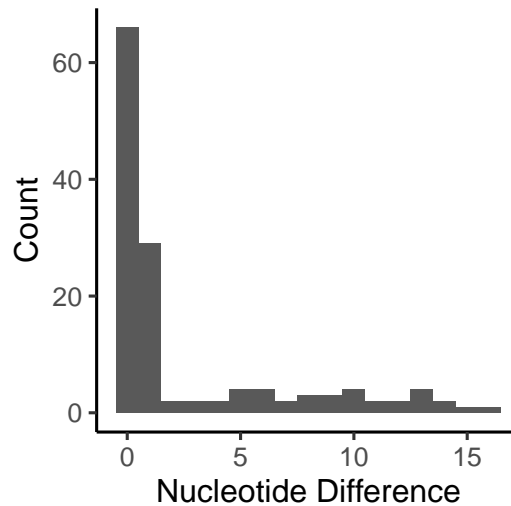
IGHV3-72*01

619 sequences assigned
91 (14.7%) exact matches, in which:
63 unique CDR3
5 unique J



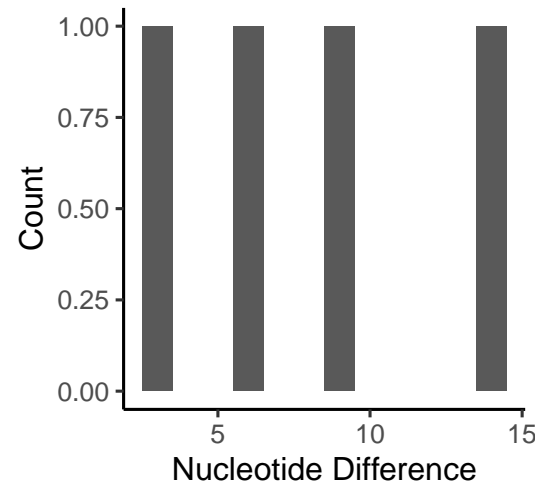
IGHV3-43D*04

137 sequences assigned
66 (48.2%) exact matches, in which:
53 unique CDR3
4 unique J



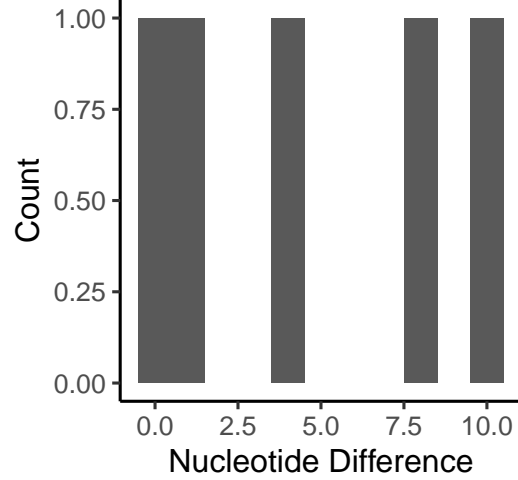
IGHV4-28*03

7 sequences assigned
No exact matches.



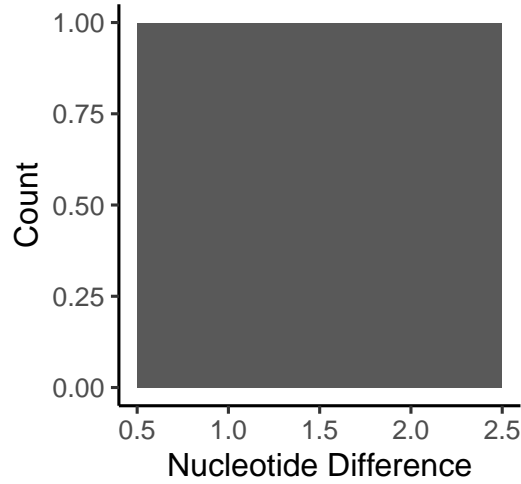
IGHV4-28*01_07

10 sequences assigned
1 (10%) exact matches, in which:
1 unique CDR3
1 unique J



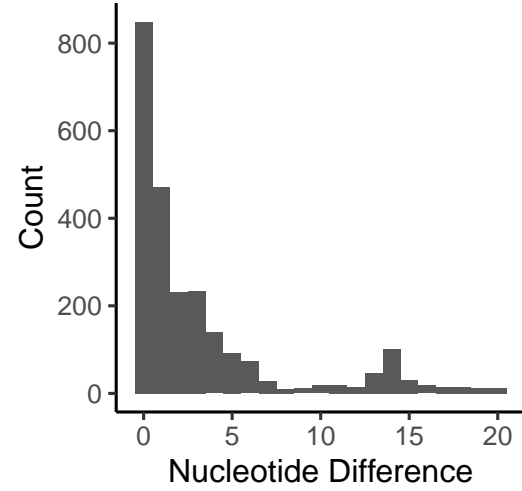
IGHV4-30-4*07

2 sequences assigned
No exact matches.



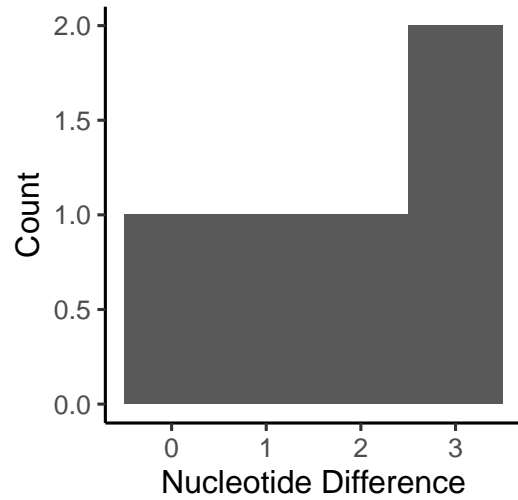
IGHV4-31*03_04

3314 sequences assigned
849 (25.6%) exact matches, in which:
780 unique CDR3
6 unique J



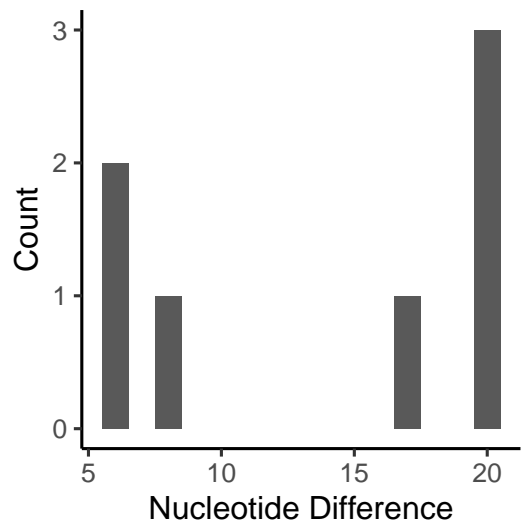
IGHV4-28*02_05

5 sequences assigned
1 (20%) exact matches, in which:
1 unique CDR3
1 unique J



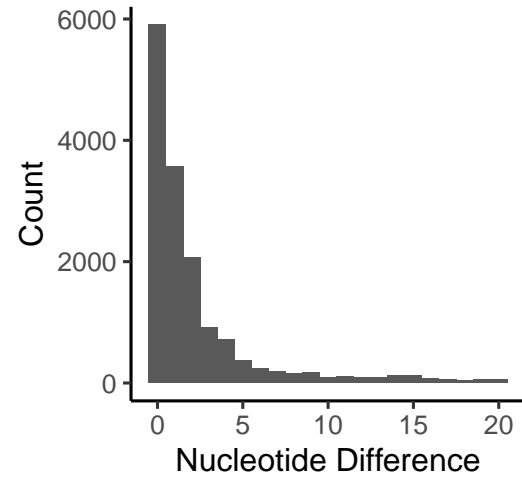
IGHV4-30-4*08

125 sequences assigned
No exact matches.



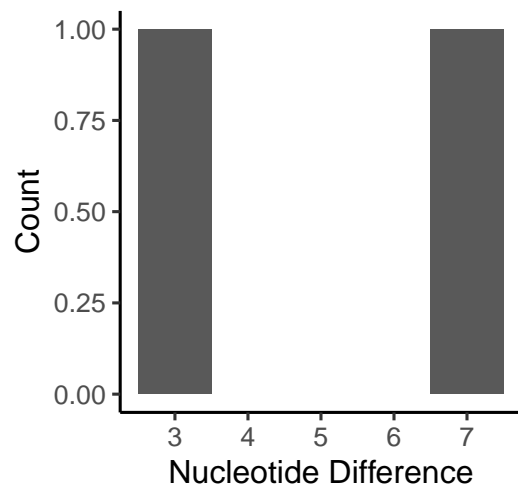
IGHV4-34*01_02

18161 sequences assigned
5905 (32.5%) exact matches, in which:
4855 unique CDR3
6 unique J



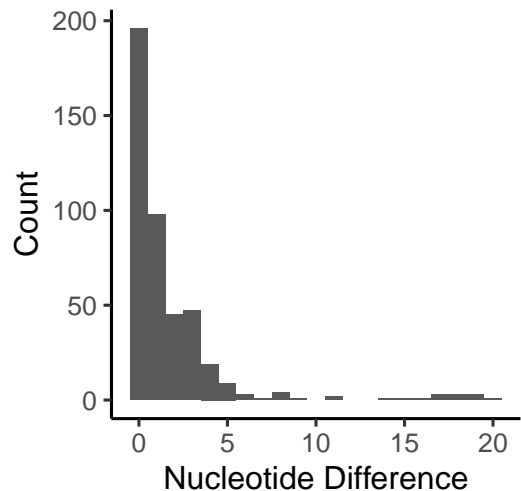
IGHV4-30-4*05

2 sequences assigned
No exact matches.



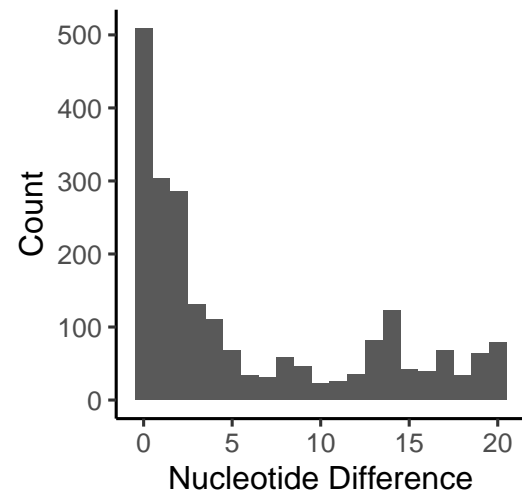
IGHV4-31*01

442 sequences assigned
196 (44.3%) exact matches, in which:
190 unique CDR3
6 unique J



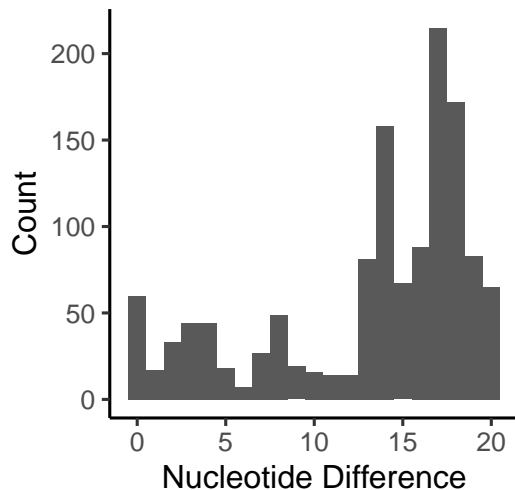
IGHV4-38-2*01

2355 sequences assigned
509 (21.6%) exact matches, in which:
484 unique CDR3
6 unique J



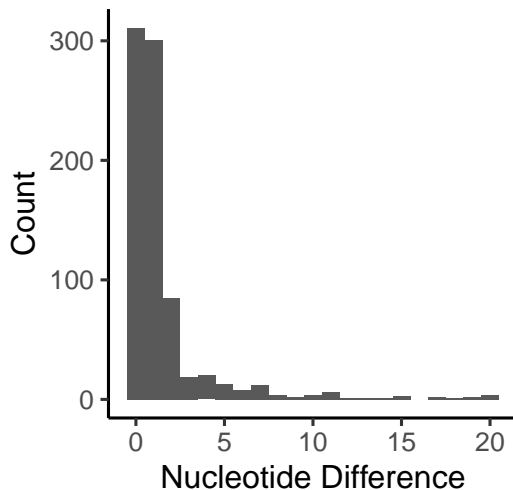
IGHV4-38-2*02

1625 sequences assigned
60 (3.7%) exact matches, in which:
59 unique CDR3
5 unique J



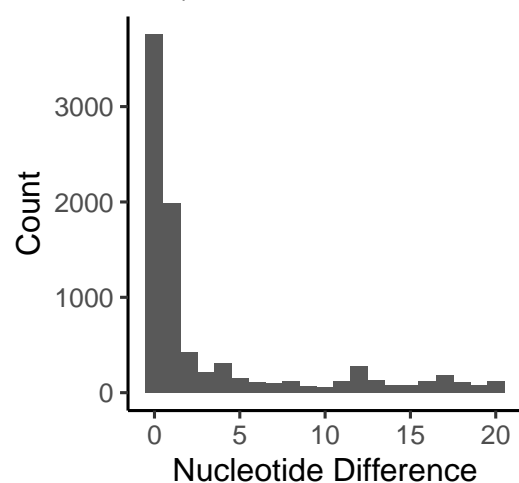
IGHV4-39*02_C258G

931 sequences assigned
311 (33.4%) exact matches, in which:
282 unique CDR3
6 unique J



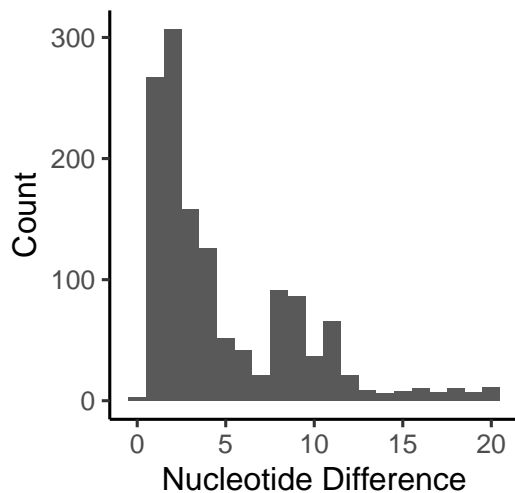
IGHV4-59*01_07

12041 sequences assigned
3757 (31.2%) exact matches, in which:
3383 unique CDR3
6 unique J



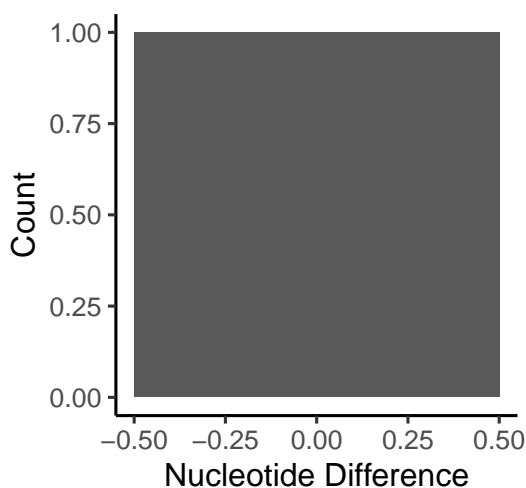
IGHV4-39*07

1402 sequences assigned
3 (0.2%) exact matches, in which:
3 unique CDR3
1 unique J



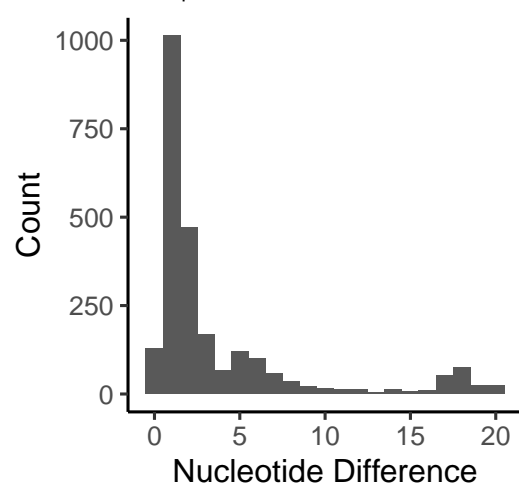
IGHV4-55*01_05

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



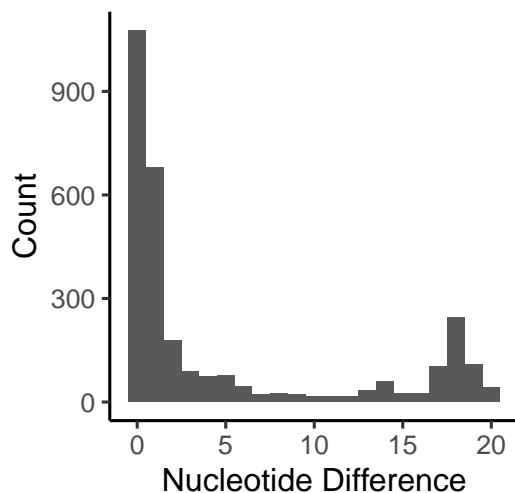
IGHV4-59*12

2692 sequences assigned
130 (4.8%) exact matches, in which:
130 unique CDR3
6 unique J



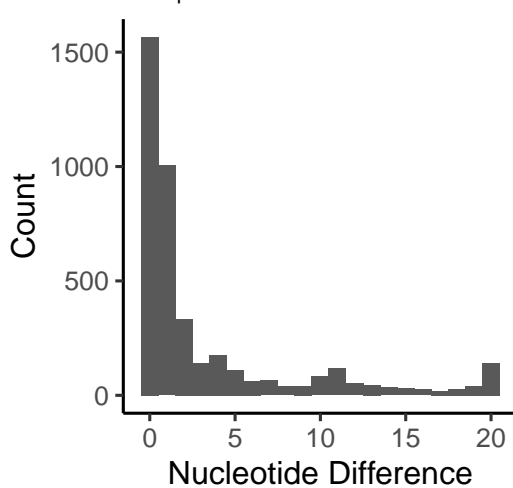
IGHV4-39*01_05

4223 sequences assigned
1077 (25.5%) exact matches, in which:
913 unique CDR3
6 unique J



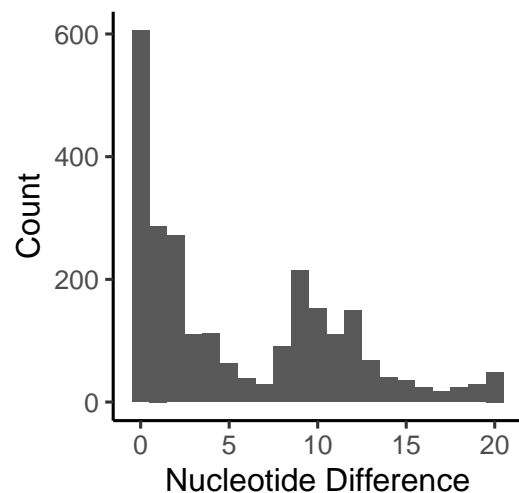
IGHV4-59*08

4871 sequences assigned
1566 (32.1%) exact matches, in which:
1413 unique CDR3
6 unique J



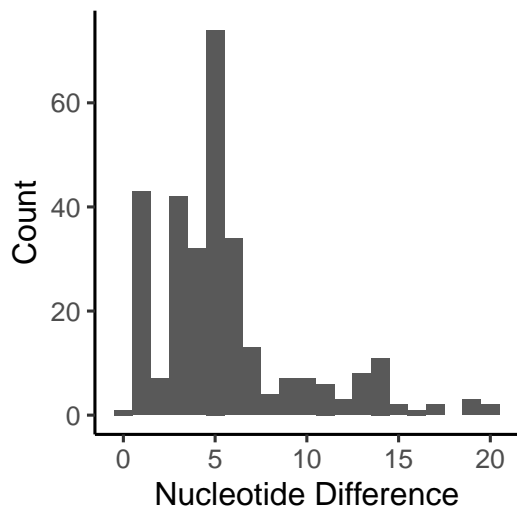
IGHV4-61*01

2758 sequences assigned
606 (22%) exact matches, in which:
575 unique CDR3
6 unique J



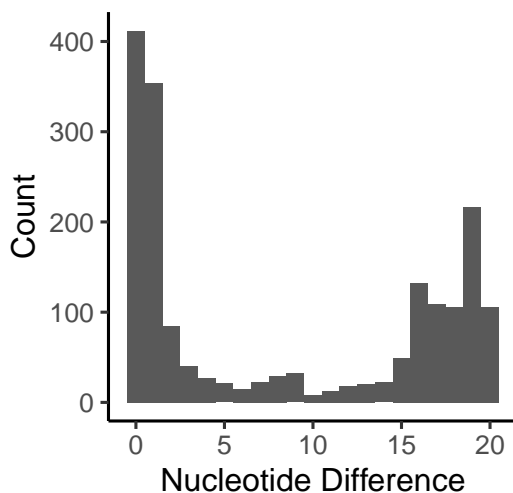
IGHV4-61*08

374 sequences assigned
1 (0.3%) exact matches, in which:
1 unique CDR3
1 unique J



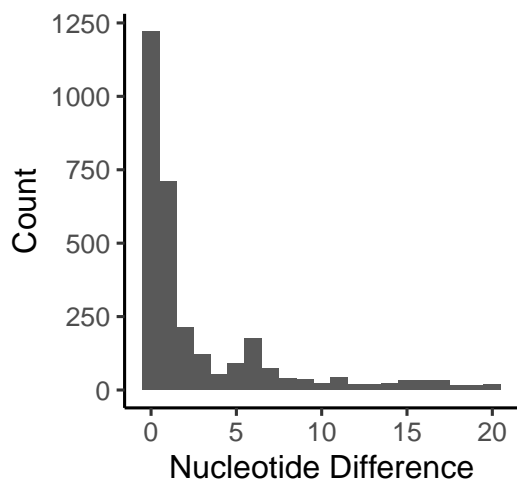
IGHV6-1*01_02

3359 sequences assigned
412 (12.3%) exact matches, in which:
385 unique CDR3
6 unique J



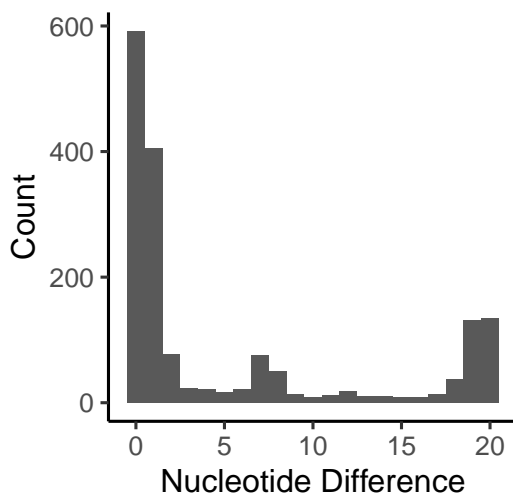
IGHV5-10-1*01_03

4037 sequences assigned
1220 (30.2%) exact matches, in which:
898 unique CDR3
6 unique J



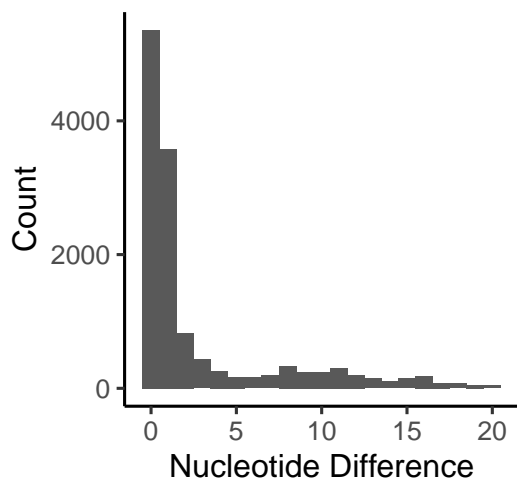
IGHV7-4-1*02

1890 sequences assigned
592 (31.3%) exact matches, in which:
548 unique CDR3
6 unique J



IGHV5-51*01_03

14456 sequences assigned
5358 (37.1%) exact matches, in which:
3504 unique CDR3
6 unique J





Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s) IGHV3–33*01_G75C IGHV4–59*02_G88A IGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3–33*01_G75C IGHV4–59*02_G88A IGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3–30*03_T288C IGHV4–59*02_G88A IGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s) IGHV1–69*04_09_G112A IGHV4–59*02_G88A IGHV5–10–1*01_03_T258C IGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s) IGHV1–69*08_C191T IGHV3–48*03_T303G IGHV4–59*02_G88A IGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s) IGHV3–30*03_T288C IGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Warning: IGHV4–31*02, IGHV4–31*03_04 have identical germline sequences.

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

Novel sequence(s) IGHV1–69*04_09_G112A 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.

Warning – no inferred sequences found.