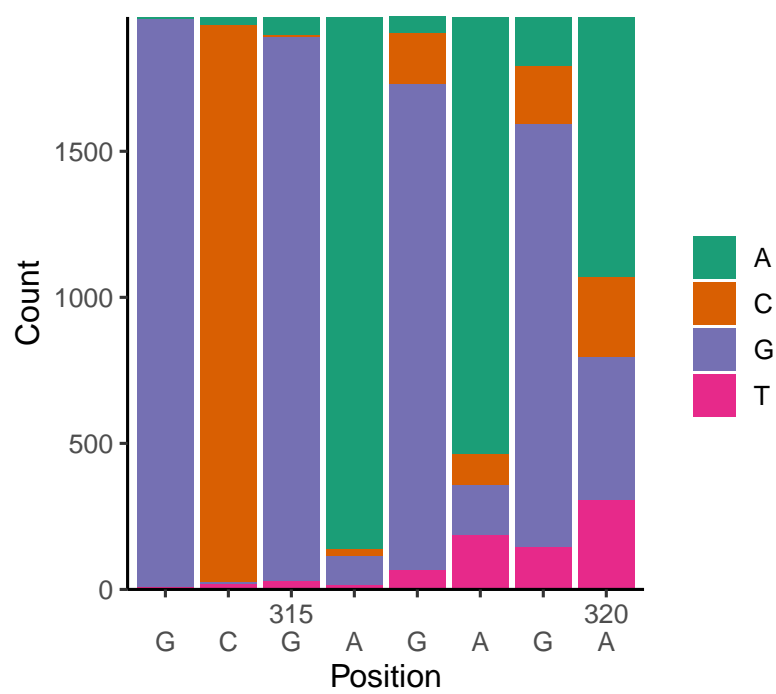
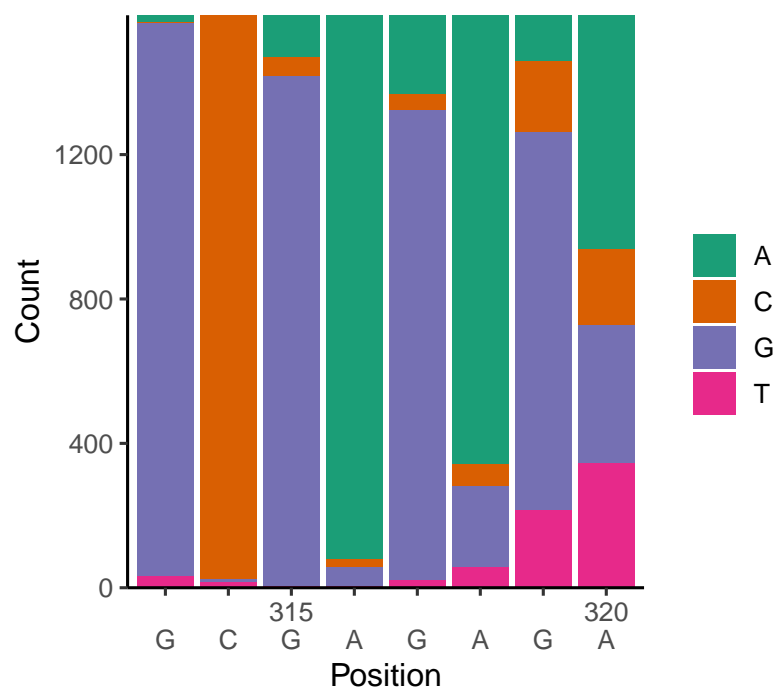


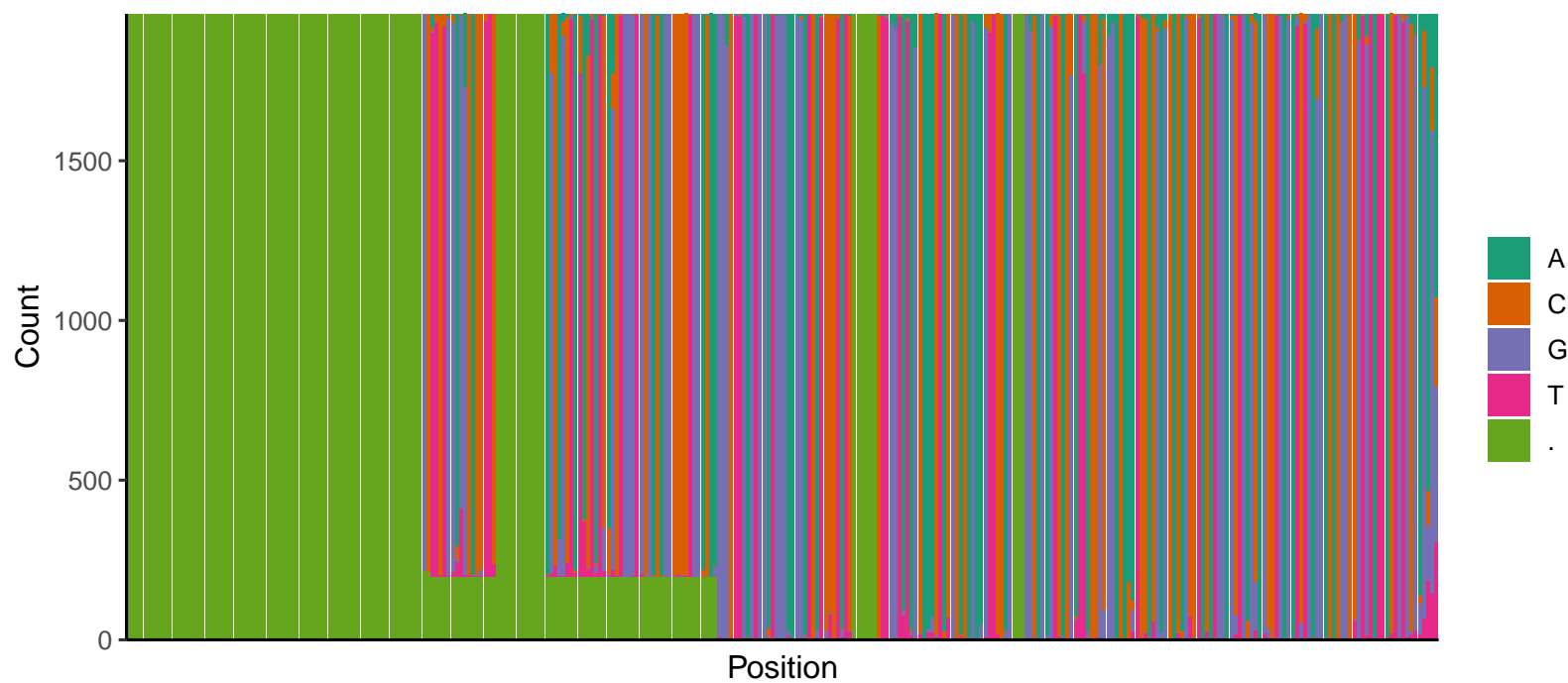
Gene IGHV1-69*04_09_G112A



Gene IGHV3-20*03_04_A104G



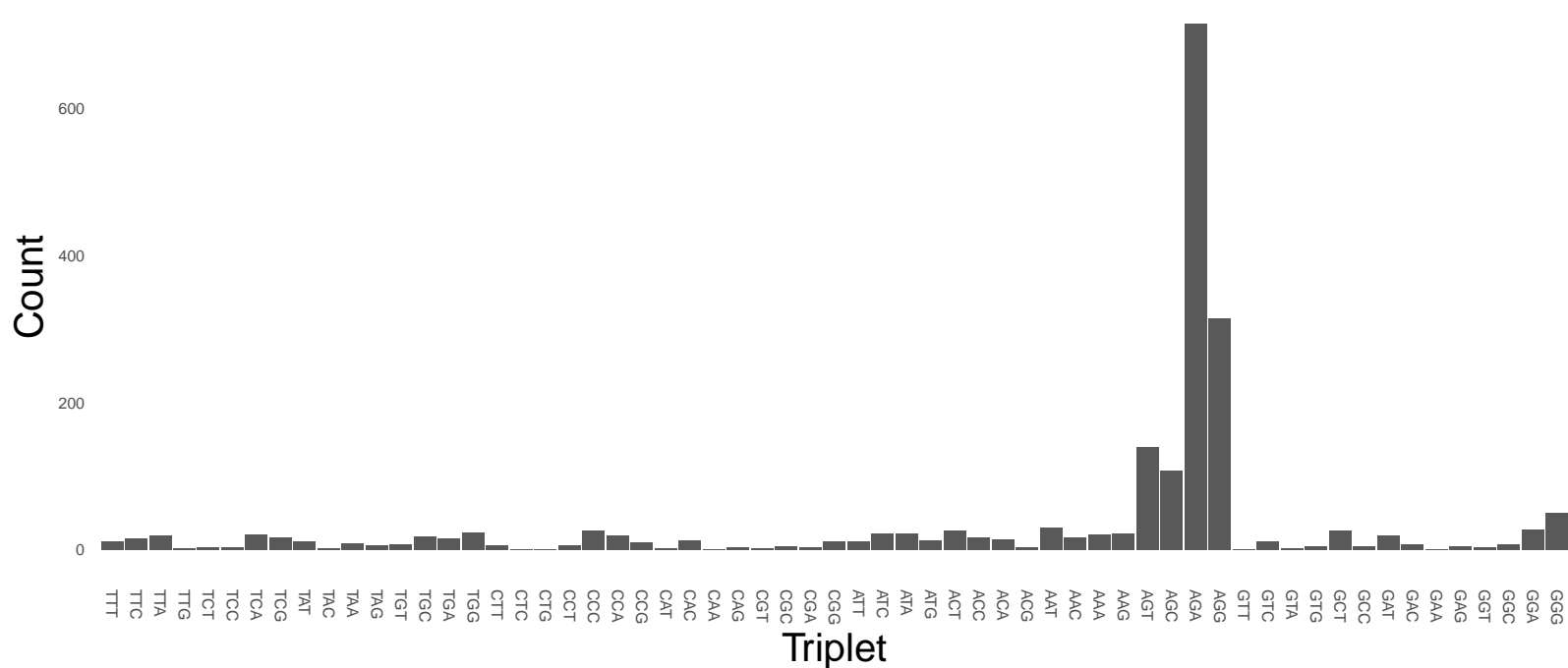
Gene IGHV1-69*04_09_G112A



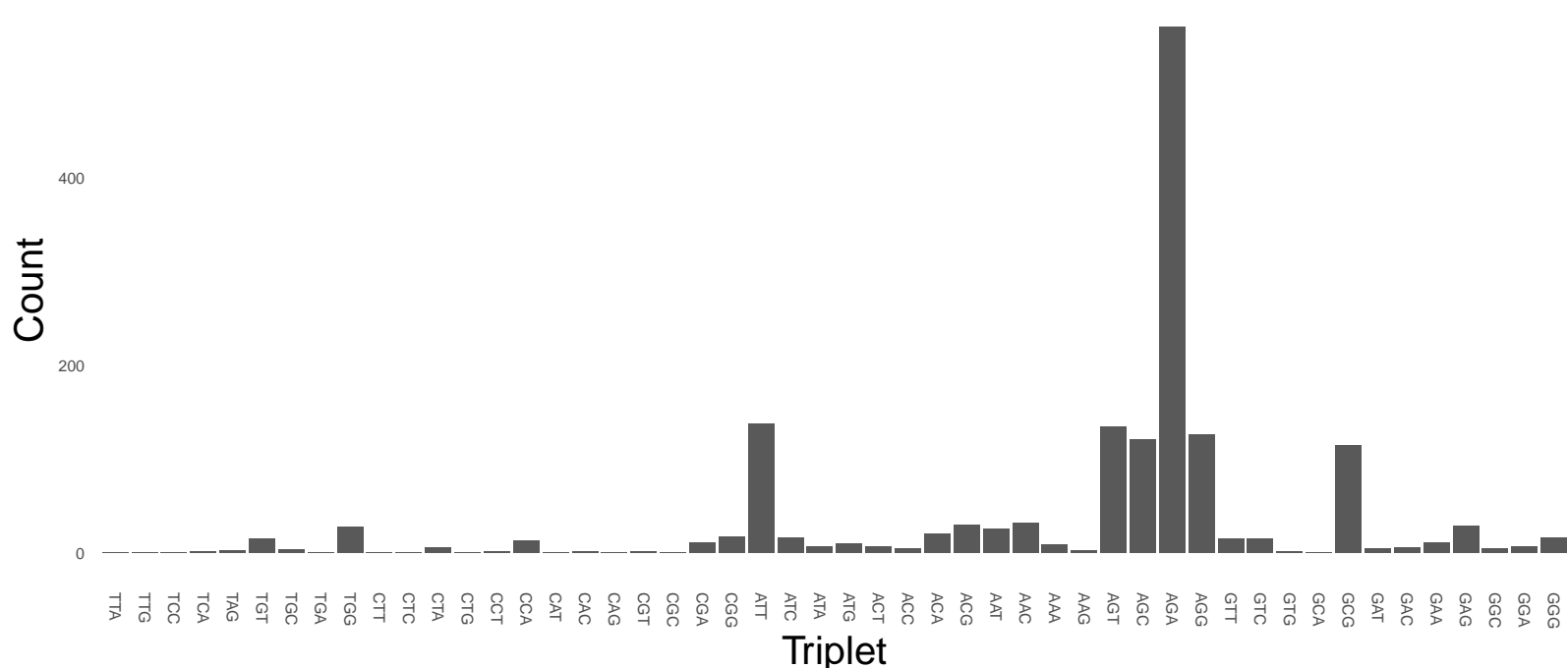
Gene IGHV3-20*03_04_A104G



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

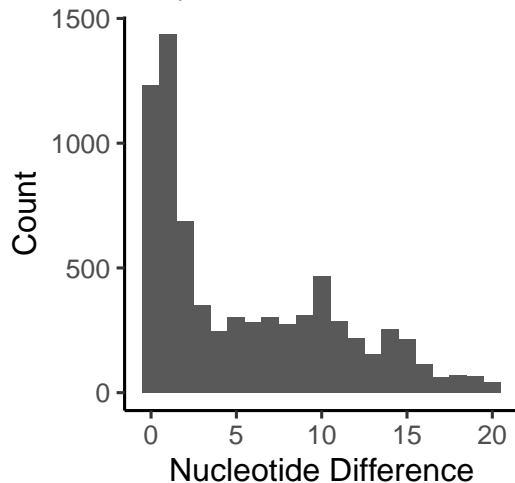


IGHV3-20*03_04_A104G- Final 3 nucleotides as a triplet



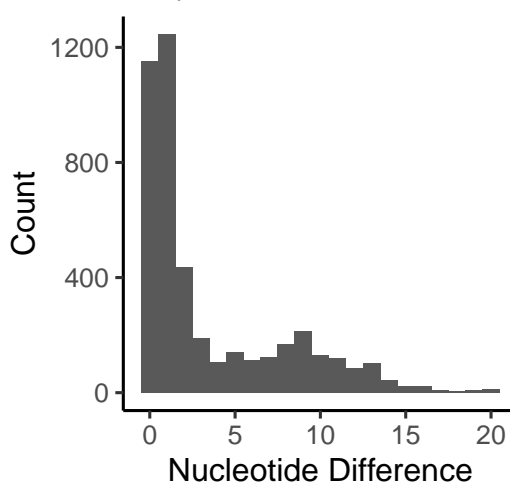
IGHV1-2*02

8803 sequences assigned
1232 (14%) exact matches, in which:
1028 unique CDR3
6 unique J



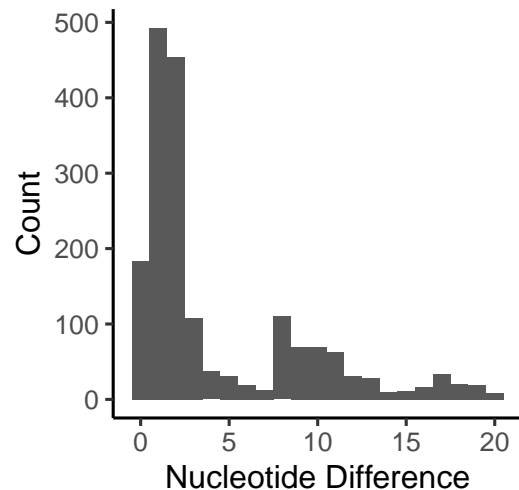
IGHV1-8*01

6885 sequences assigned
1152 (16.7%) exact matches, in which:
959 unique CDR3
6 unique J



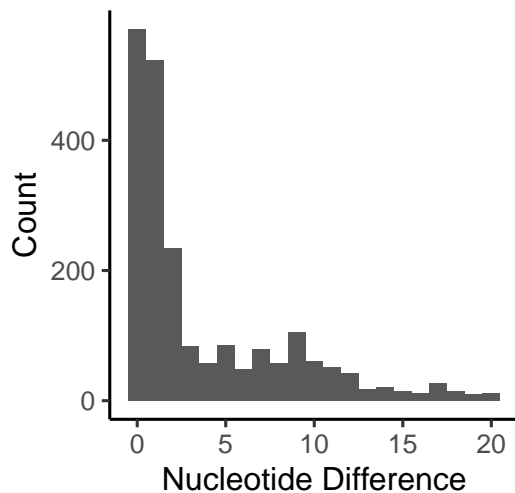
IGHV1-24*01

1878 sequences assigned
184 (9.8%) exact matches, in which:
156 unique CDR3
6 unique J



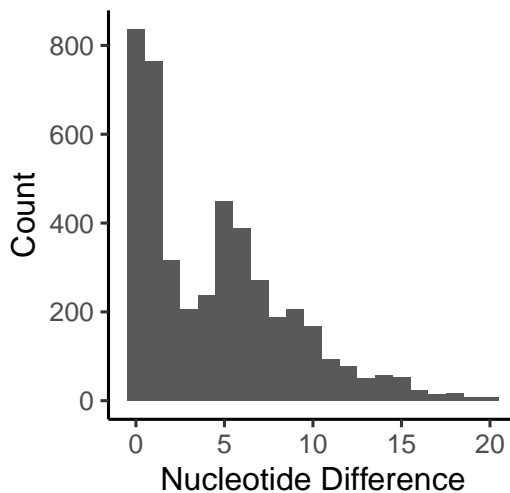
IGHV1-2*04

2145 sequences assigned
571 (26.6%) exact matches, in which:
500 unique CDR3
6 unique J



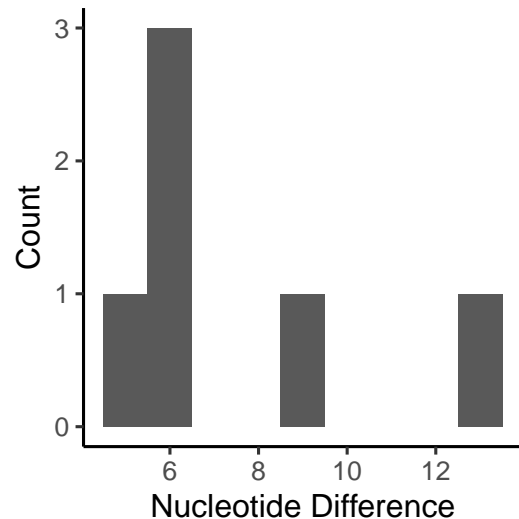
IGHV1-8*02

4581 sequences assigned
837 (18.3%) exact matches, in which:
727 unique CDR3
6 unique J



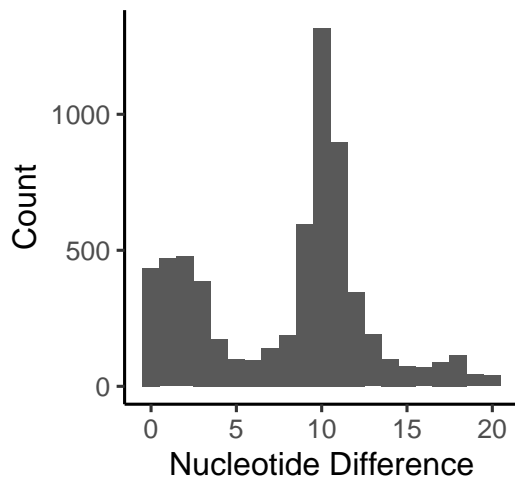
IGHV1-38-4*01

6 sequences assigned
No exact matches.



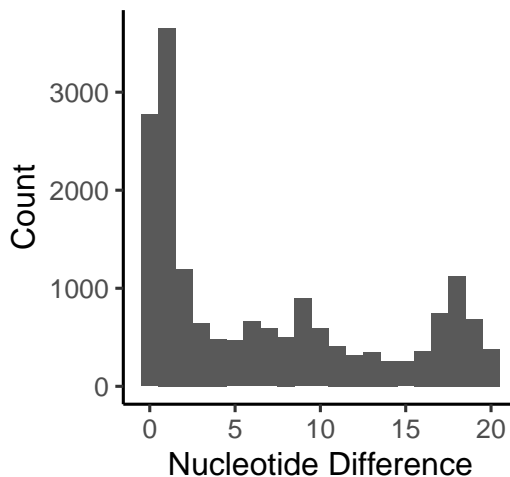
IGHV1-3*01_05

6785 sequences assigned
436 (6.4%) exact matches, in which:
353 unique CDR3
6 unique J



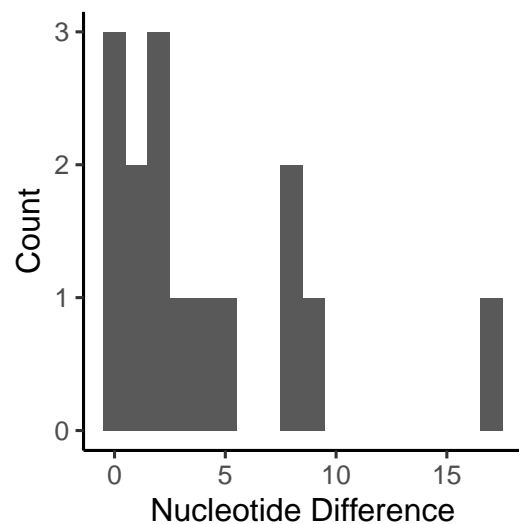
IGHV1-18*01

18661 sequences assigned
2772 (14.9%) exact matches, in which:
2156 unique CDR3
6 unique J



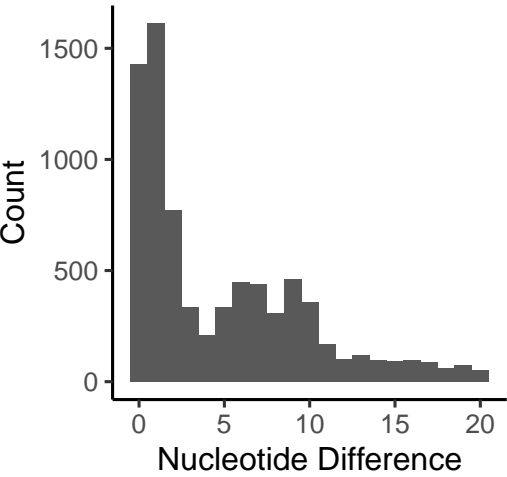
IGHV1-45*02

18 sequences assigned
3 (16.7%) exact matches, in which:
2 unique CDR3
2 unique J



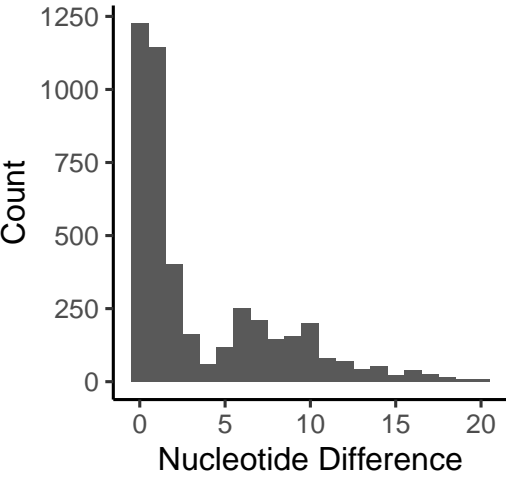
IGHV1-46*01

8291 sequences assigned
1428 (17.2%) exact matches, in which:
1179 unique CDR3
6 unique J



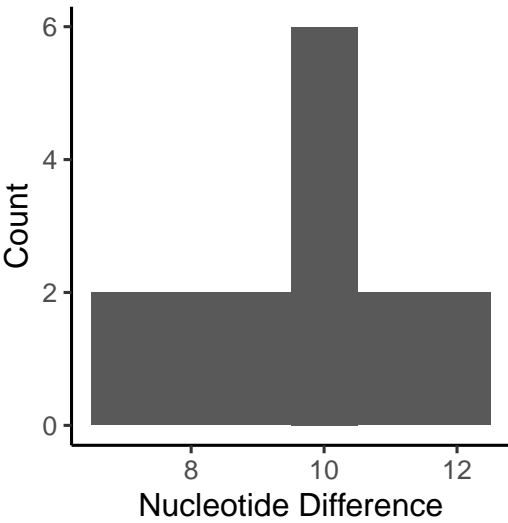
IGHV1-69*10

4546 sequences assigned
1226 (27%) exact matches, in which:
1061 unique CDR3
6 unique J



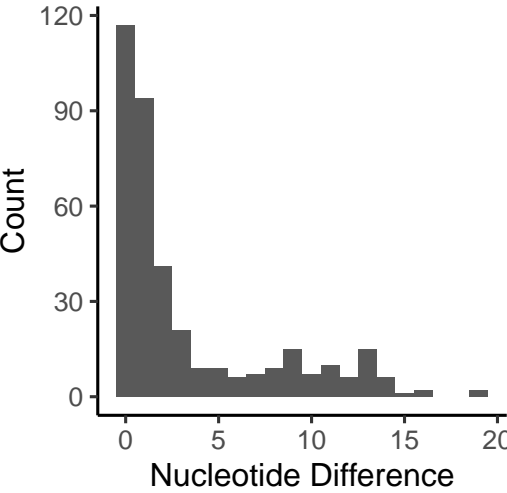
IGHV1-NL1*01

16 sequences assigned
No exact matches.



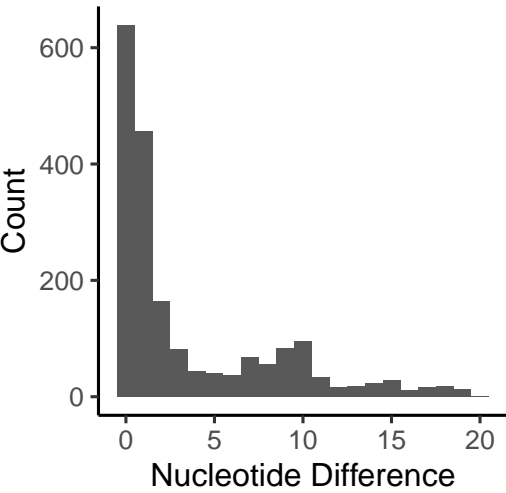
IGHV1-58*02

377 sequences assigned
117 (31%) exact matches, in which:
102 unique CDR3
5 unique J



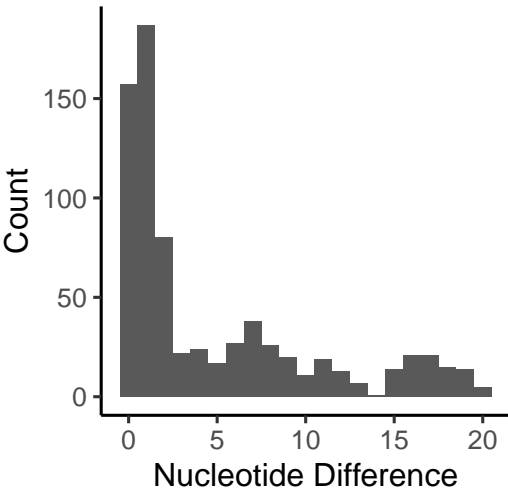
IGHV1-69*04_09_G112A

1960 sequences assigned
639 (32.6%) exact matches, in which:
567 unique CDR3
6 unique J



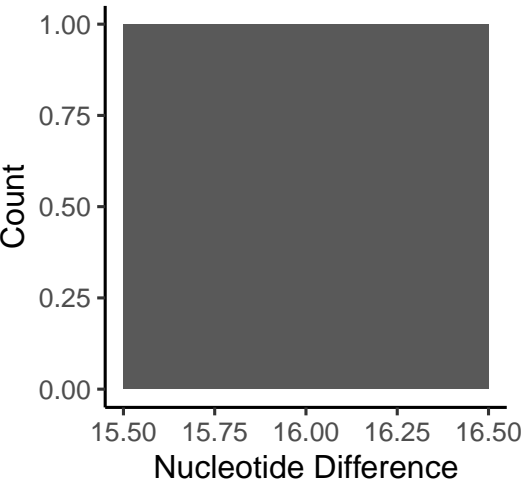
IGHV2-5*01

761 sequences assigned
157 (20.6%) exact matches, in which:
127 unique CDR3
5 unique J



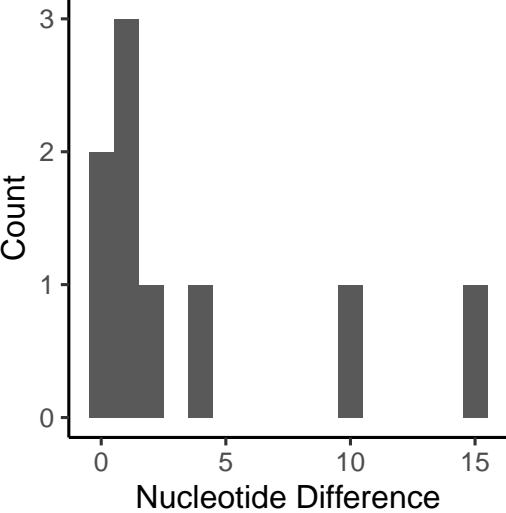
IGHV1-69-2*01

1 sequences assigned
No exact matches.



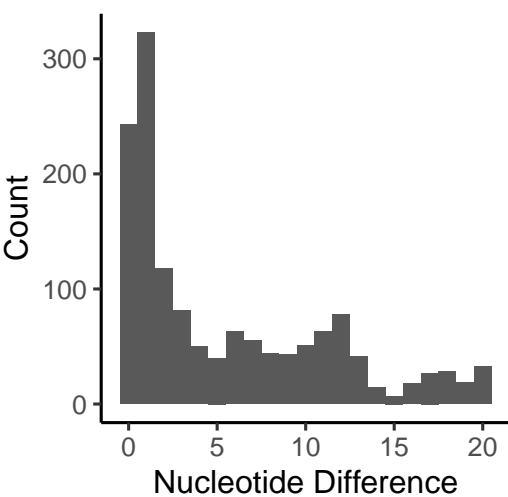
IGHV1-69D*01

10 sequences assigned
2 (20%) exact matches, in which:
2 unique CDR3
2 unique J



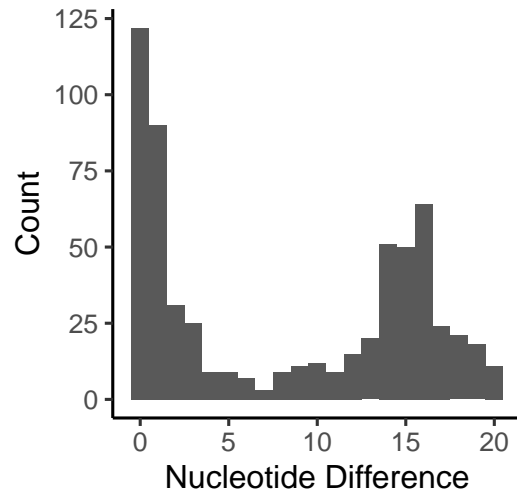
IGHV2-5*02

1618 sequences assigned
243 (15%) exact matches, in which:
179 unique CDR3
6 unique J



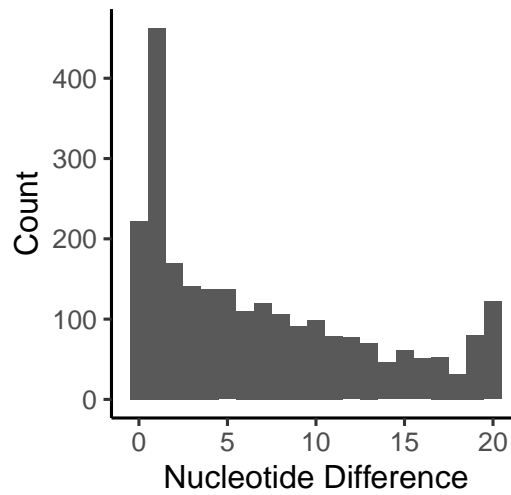
IGHV2-26*01

3210 sequences assigned
122 (3.8%) exact matches, in which:
92 unique CDR3
5 unique J



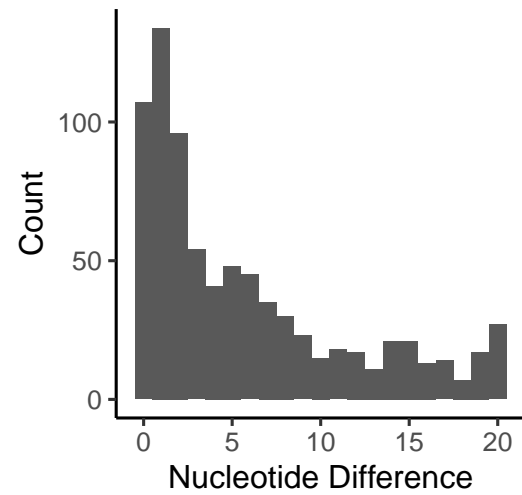
IGHV3-7*03

3172 sequences assigned
222 (7%) exact matches, in which:
138 unique CDR3
5 unique J



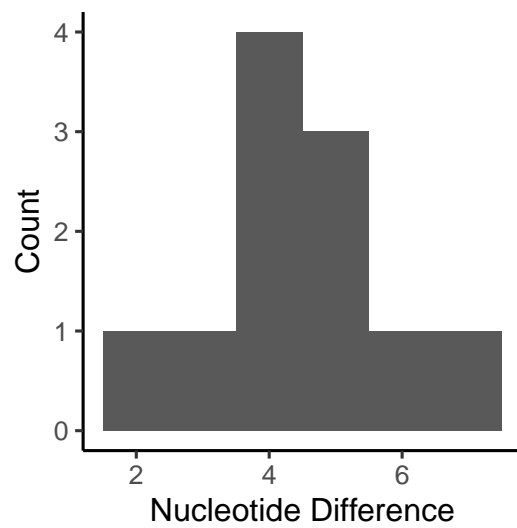
IGHV3-11*04

952 sequences assigned
107 (11.2%) exact matches, in which:
105 unique CDR3
5 unique J



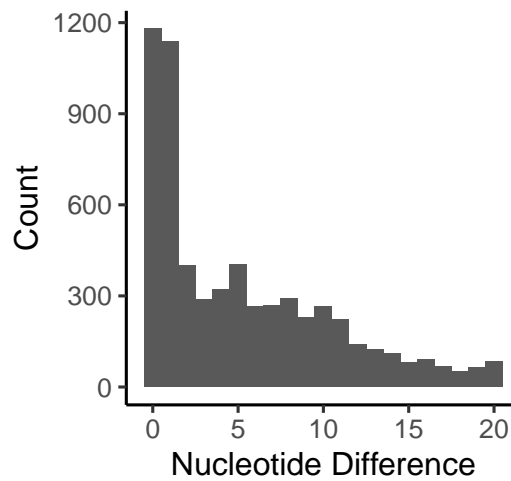
IGHV2-70*12

11 sequences assigned
No exact matches.



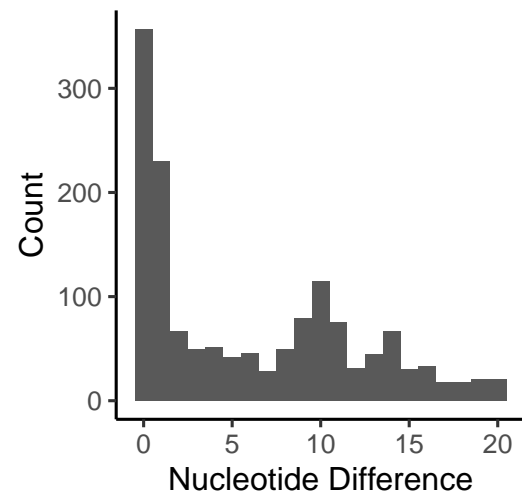
IGHV3-9*01

8450 sequences assigned
1180 (14%) exact matches, in which:
707 unique CDR3
6 unique J



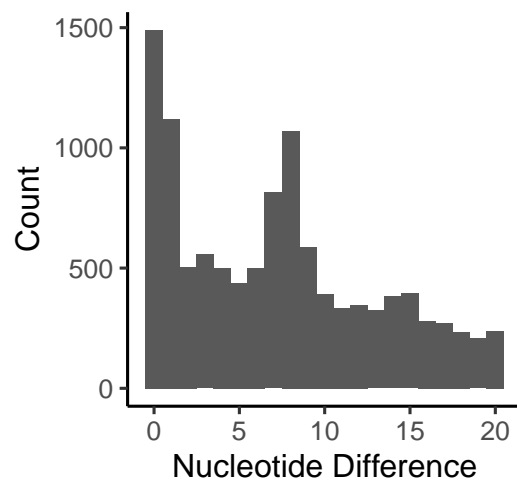
IGHV3-13*01

1557 sequences assigned
357 (22.9%) exact matches, in which:
242 unique CDR3
6 unique J



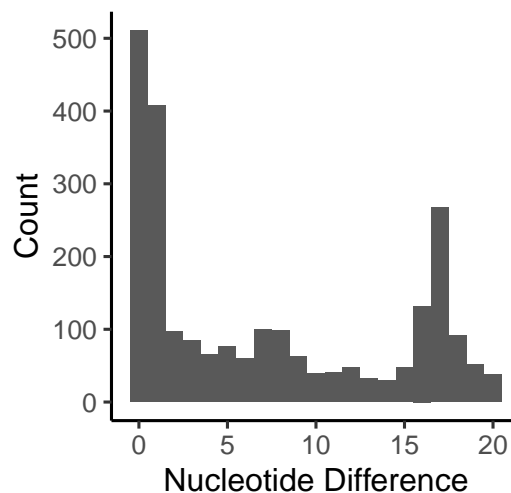
IGHV3-7*01

17385 sequences assigned
1490 (8.6%) exact matches, in which:
1021 unique CDR3
6 unique J



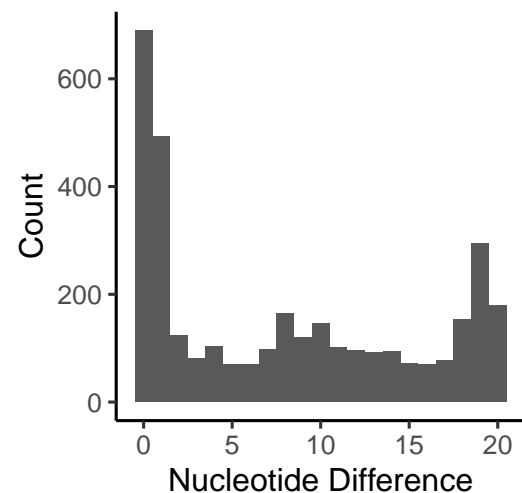
IGHV3-11*01

3775 sequences assigned
511 (13.5%) exact matches, in which:
342 unique CDR3
6 unique J



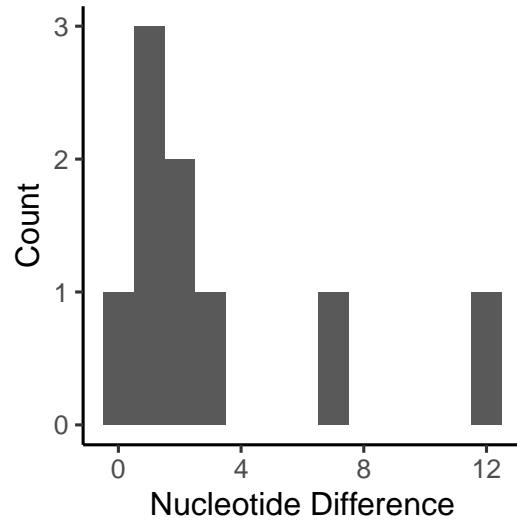
IGHV3-15*01_02

3885 sequences assigned
690 (17.8%) exact matches, in which:
420 unique CDR3
6 unique J



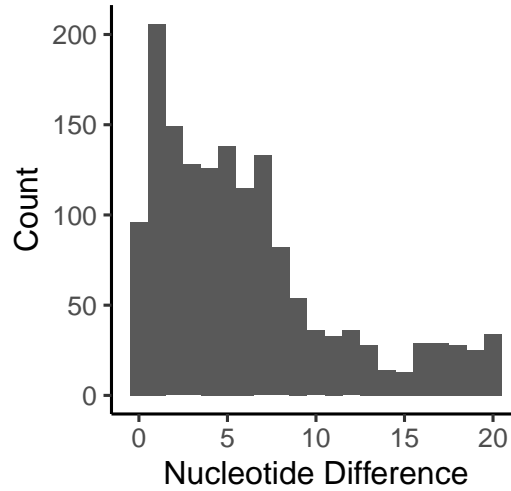
IGHV3-19*01

9 sequences assigned
1 (11.1%) exact matches, in which:
1 unique CDR3
1 unique J



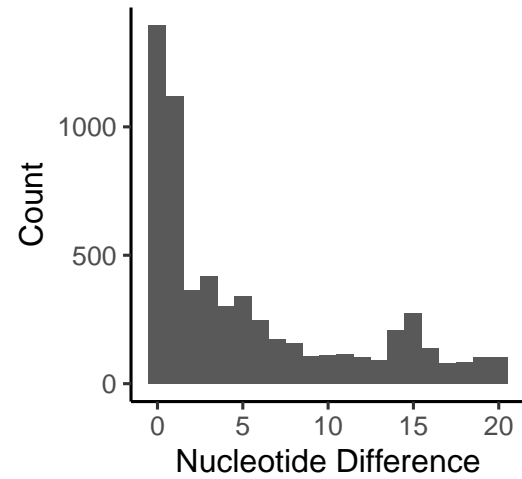
IGHV3-21*04

1693 sequences assigned
96 (5.7%) exact matches, in which:
94 unique CDR3
5 unique J



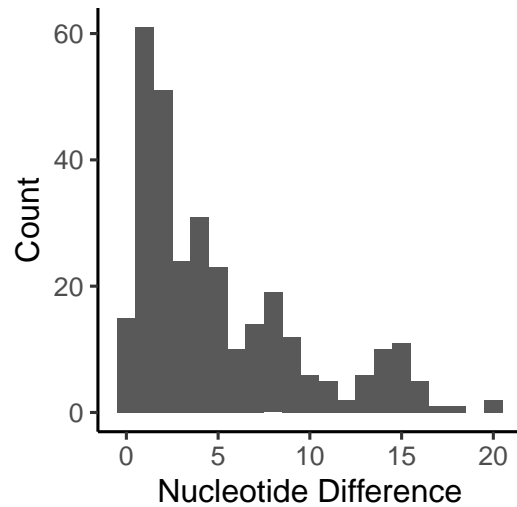
IGHV3-30-3*01

6516 sequences assigned
1395 (21.4%) exact matches, in which:
945 unique CDR3
6 unique J



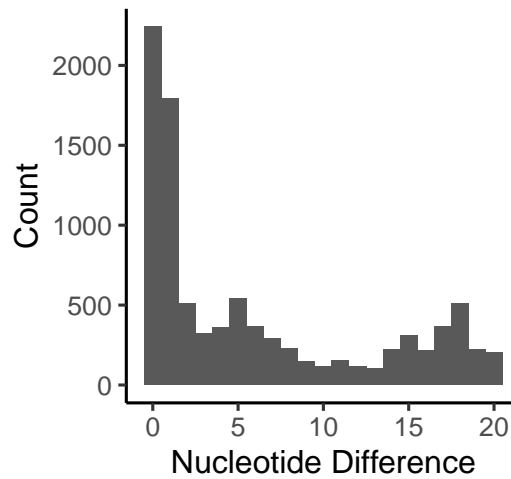
IGHV3-20*03_04

412 sequences assigned
15 (3.6%) exact matches, in which:
14 unique CDR3
4 unique J



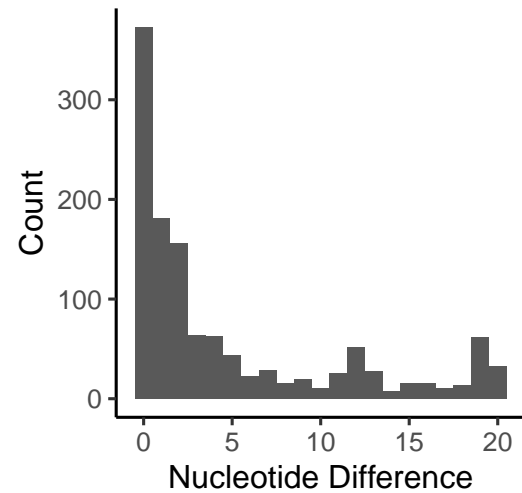
IGHV3-21*01_02

10439 sequences assigned
2242 (21.5%) exact matches, in which:
1430 unique CDR3
6 unique J



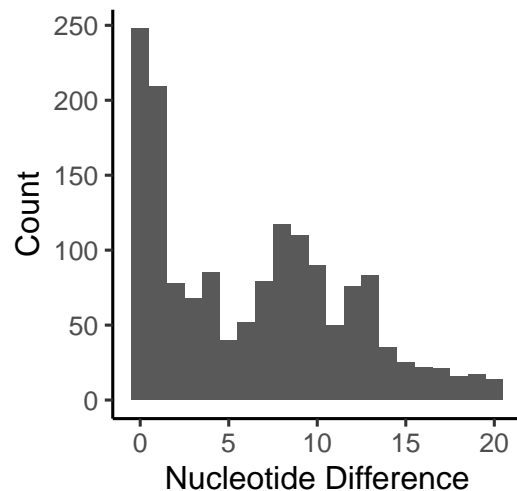
IGHV3-30*03

1589 sequences assigned
373 (23.5%) exact matches, in which:
337 unique CDR3
6 unique J



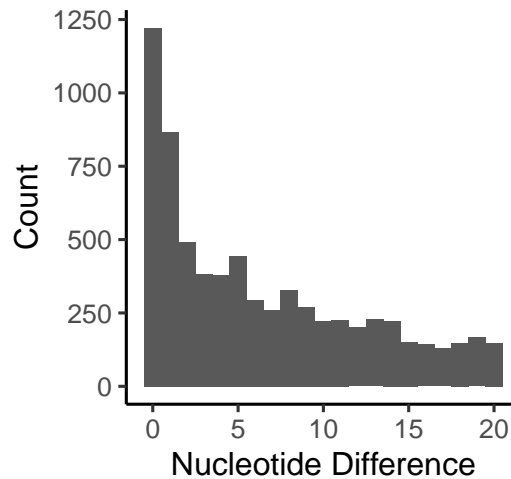
IGHV3-20*03_04_A104C

1586 sequences assigned
248 (15.6%) exact matches, in which:
157 unique CDR3
6 unique J



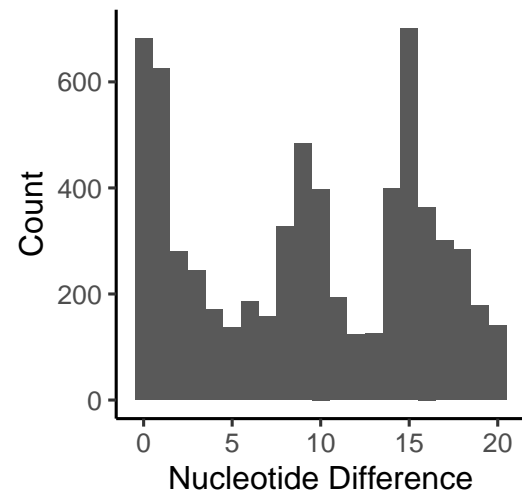
IGHV3-23*03

8197 sequences assigned
1221 (14.9%) exact matches, in which:
821 unique CDR3
6 unique J



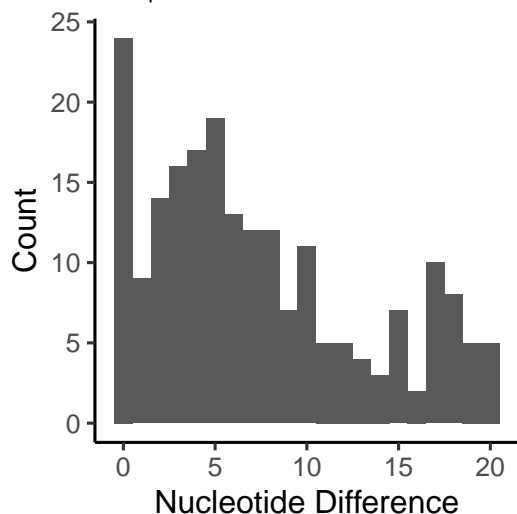
IGHV3-33*01

7350 sequences assigned
682 (9.3%) exact matches, in which:
483 unique CDR3
6 unique J



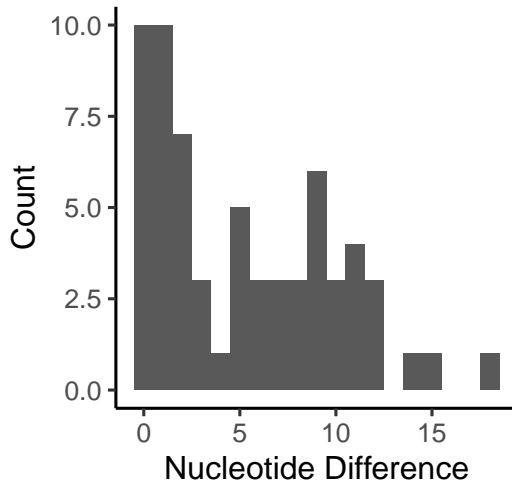
IGHV3-33*05

299 sequences assigned
24 (8%) exact matches, in which:
24 unique CDR3
2 unique J



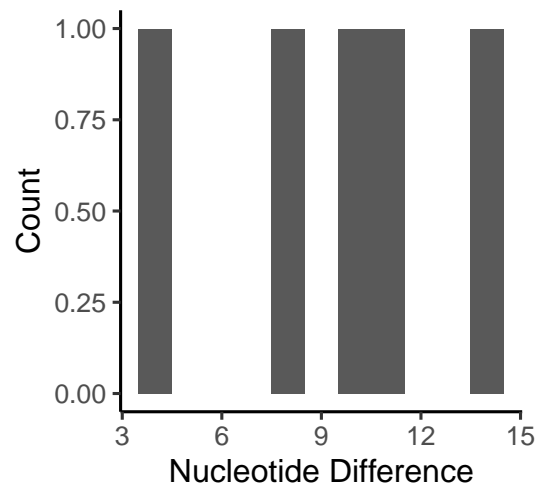
IGHV3-38-3*01

64 sequences assigned
10 (15.6%) exact matches, in which:
10 unique CDR3
4 unique J



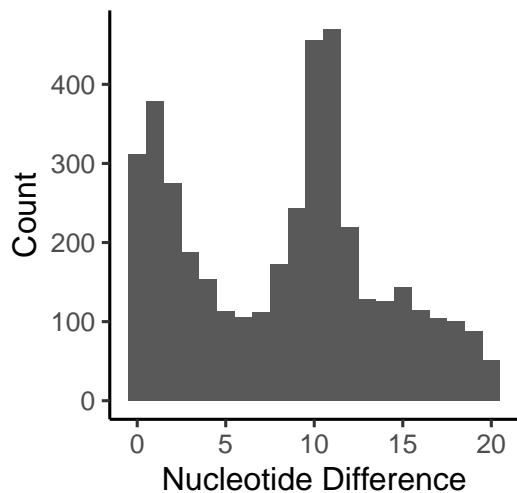
IGHV3-47*02

5 sequences assigned
No exact matches.



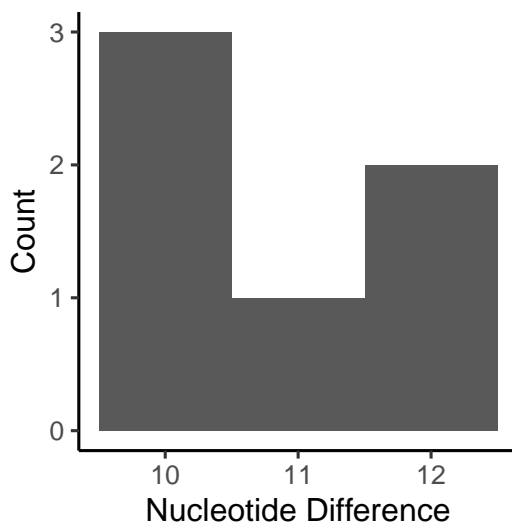
IGHV3-33*06

4268 sequences assigned
312 (7.3%) exact matches, in which:
206 unique CDR3
5 unique J



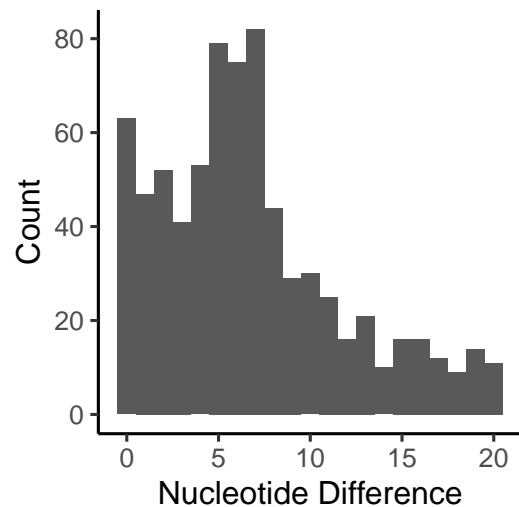
IGHV3-38*03

7 sequences assigned
No exact matches.



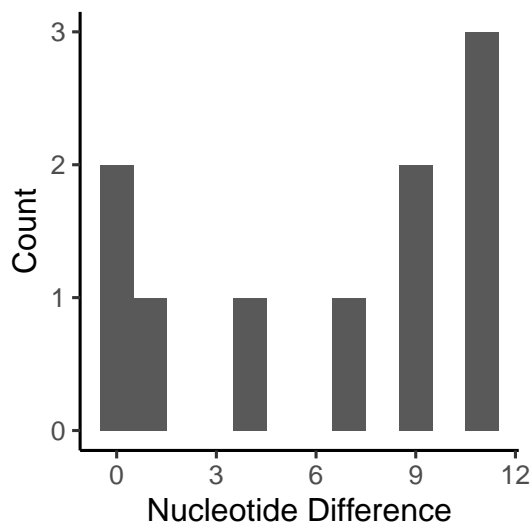
IGHV3-48*01

872 sequences assigned
63 (7.2%) exact matches, in which:
62 unique CDR3
6 unique J



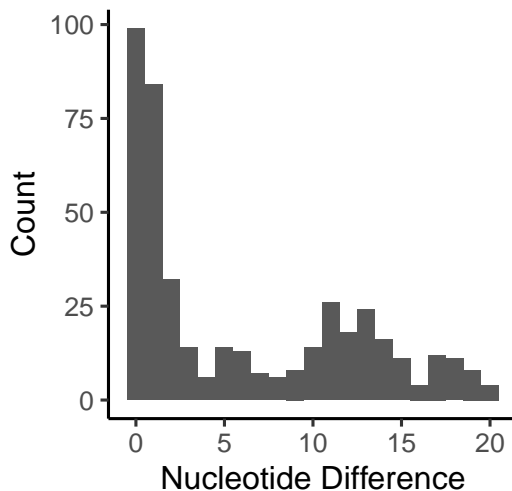
IGHV3-35*01

10 sequences assigned
2 (20%) exact matches, in which:
2 unique CDR3
2 unique J



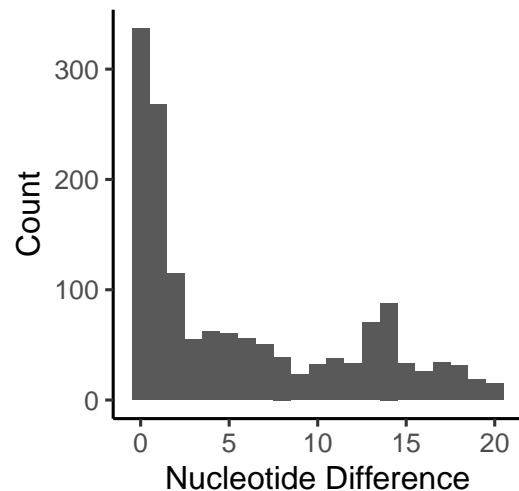
IGHV3-43*01

525 sequences assigned
99 (18.9%) exact matches, in which:
57 unique CDR3
5 unique J



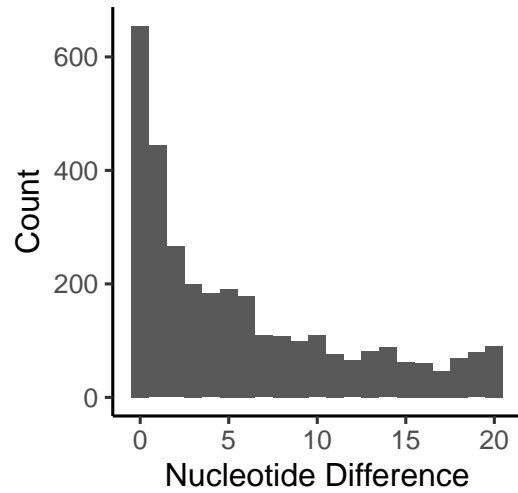
IGHV3-48*02

2767 sequences assigned
337 (12.2%) exact matches, in which:
227 unique CDR3
6 unique J



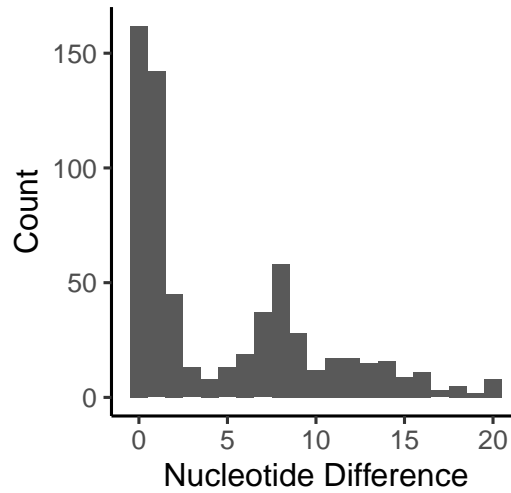
IGHV3-48*04

4244 sequences assigned
655 (15.4%) exact matches, in which:
462 unique CDR3
6 unique J



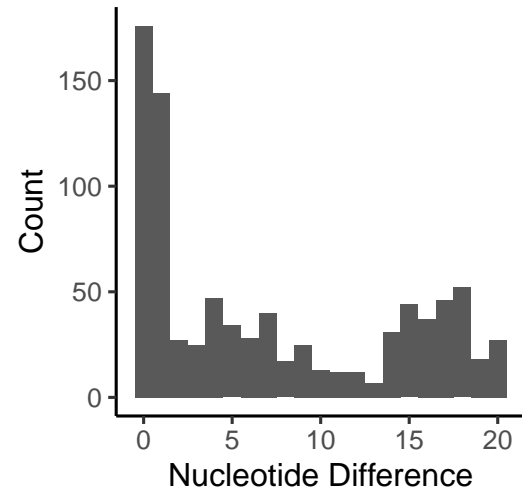
IGHV3-53*04

824 sequences assigned
162 (19.7%) exact matches, in which:
117 unique CDR3
6 unique J



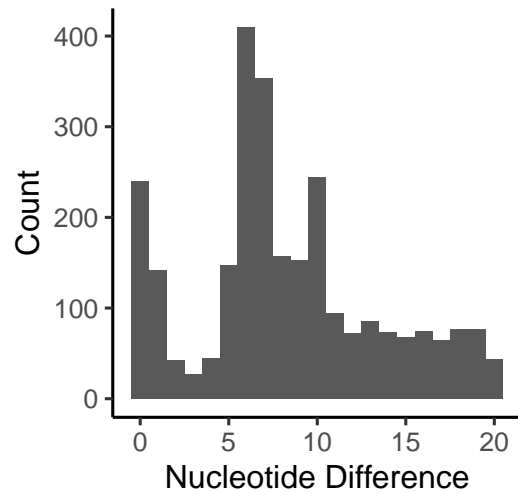
IGHV3-64*01

1549 sequences assigned
176 (11.4%) exact matches, in which:
119 unique CDR3
6 unique J



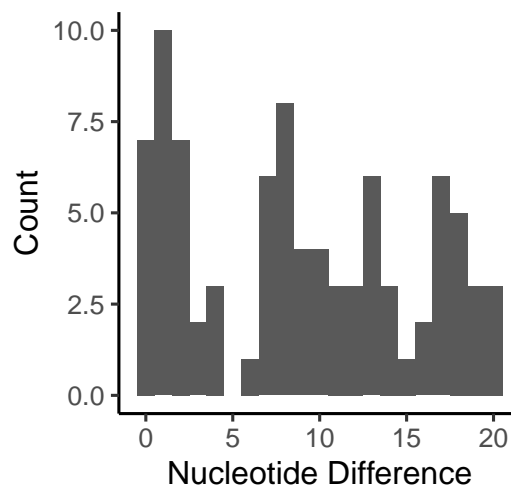
IGHV3-49*03_05

2898 sequences assigned
240 (8.3%) exact matches, in which:
150 unique CDR3
6 unique J



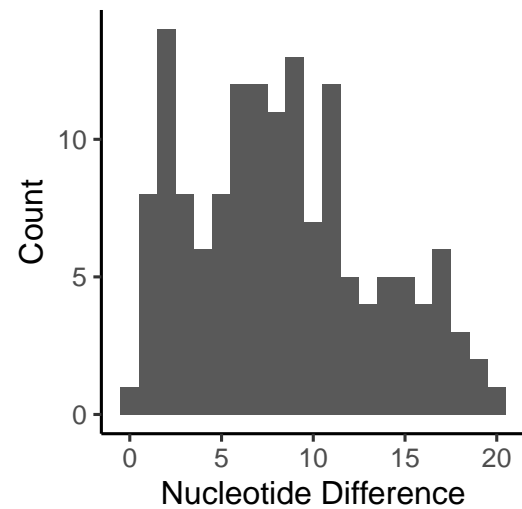
IGHV3-53*05

104 sequences assigned
7 (6.7%) exact matches, in which:
7 unique CDR3
2 unique J



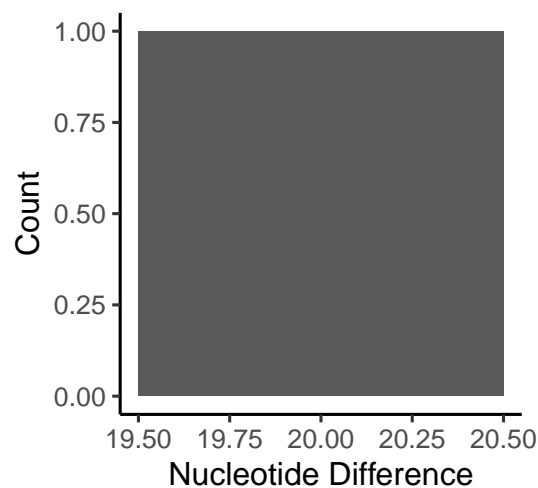
IGHV3-66*01

167 sequences assigned
1 (0.6%) exact matches, in which:
1 unique CDR3
1 unique J



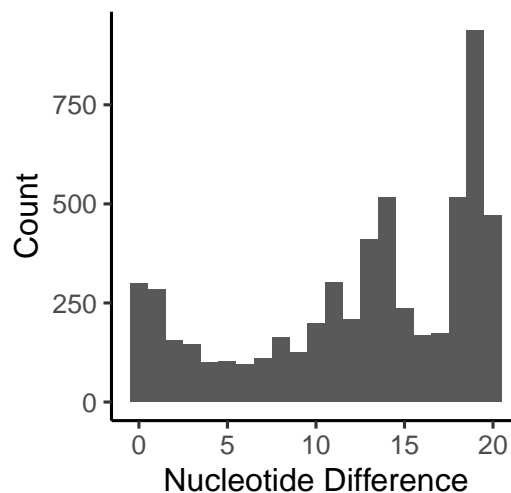
IGHV3-52*01_03

2 sequences assigned
No exact matches.



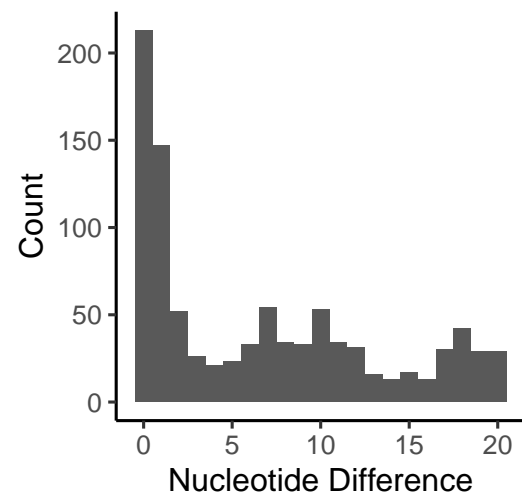
IGHV3-53*01_02

6942 sequences assigned
300 (4.3%) exact matches, in which:
218 unique CDR3
6 unique J



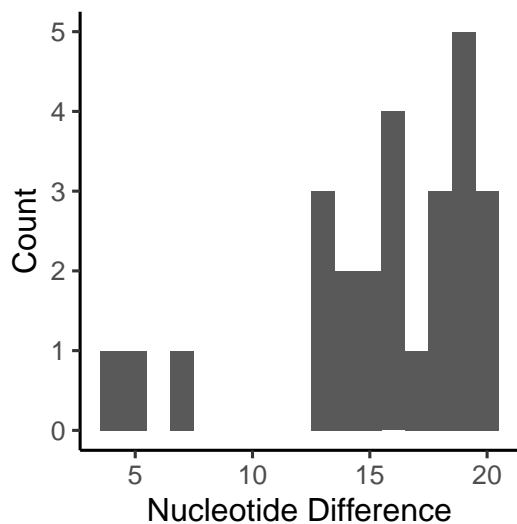
IGHV3-66*02

1052 sequences assigned
213 (20.2%) exact matches, in which:
149 unique CDR3
5 unique J



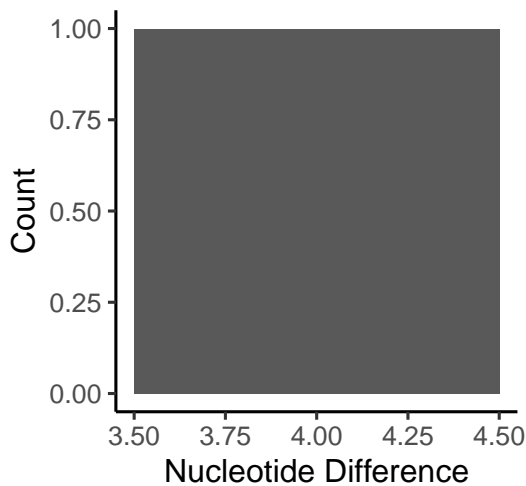
IGHV3-66*03

37 sequences assigned
No exact matches.



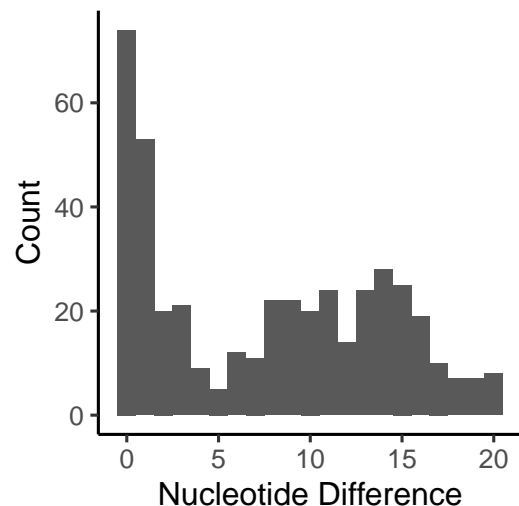
IGHV3-71*03

1 sequences assigned
No exact matches.



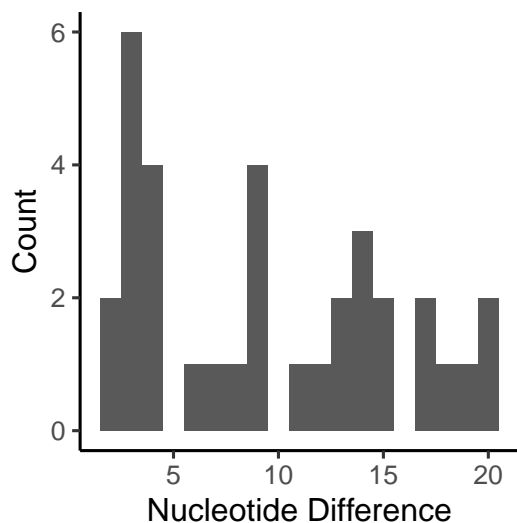
IGHV3-73*01_02

468 sequences assigned
74 (15.8%) exact matches, in which:
49 unique CDR3
4 unique J



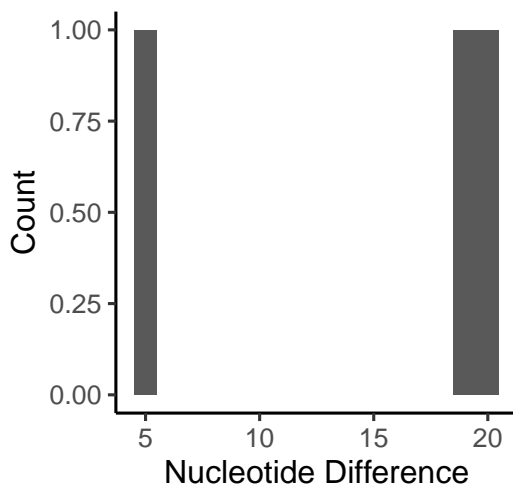
IGHV3-69-1*01

70 sequences assigned
No exact matches.



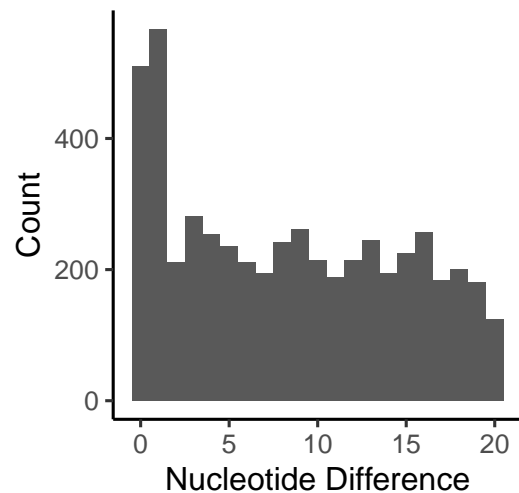
IGHV3-71*01_04

5 sequences assigned
No exact matches.



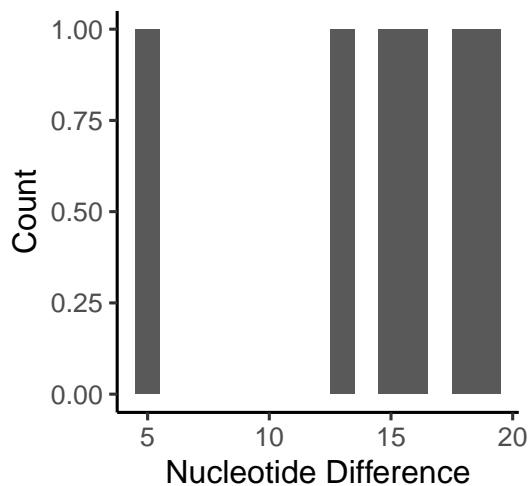
IGHV3-74*01_02

5854 sequences assigned
510 (8.7%) exact matches, in which:
345 unique CDR3
6 unique J



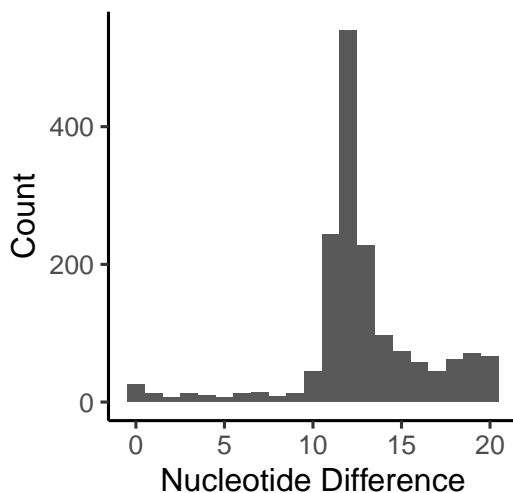
IGHV3-69-1*02

11 sequences assigned
No exact matches.



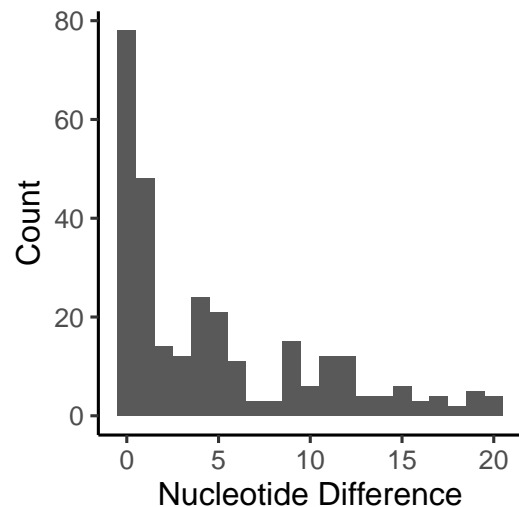
IGHV3-72*01

1992 sequences assigned
25 (1.3%) exact matches, in which:
18 unique CDR3
5 unique J



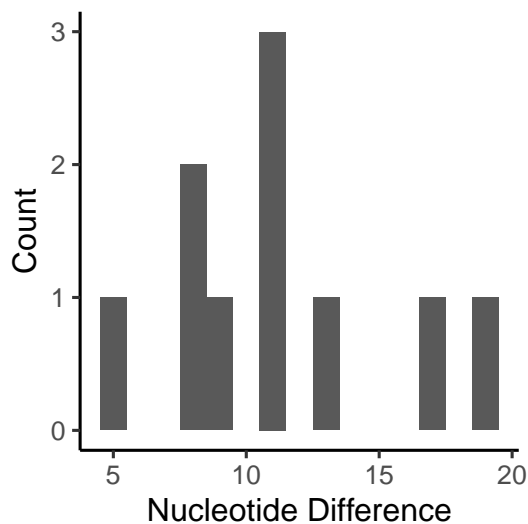
IGHV3-43D*03

295 sequences assigned
78 (26.4%) exact matches, in which:
47 unique CDR3
6 unique J



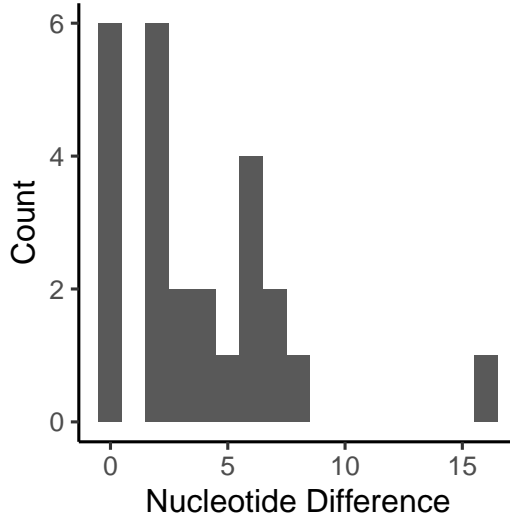
IGHV3-64D*06

40 sequences assigned
No exact matches.



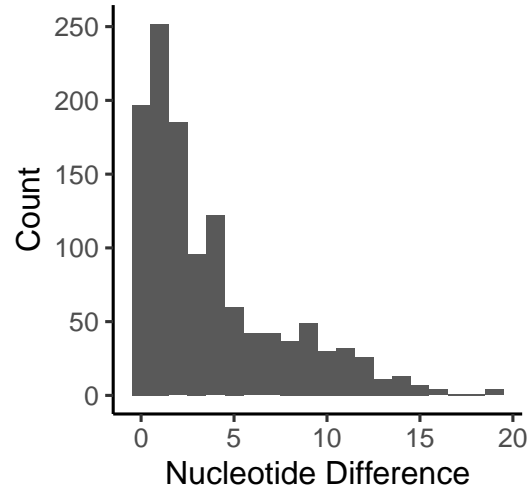
IGHV4-28*03

25 sequences assigned
6 (24%) exact matches, in which:
6 unique CDR3
4 unique J



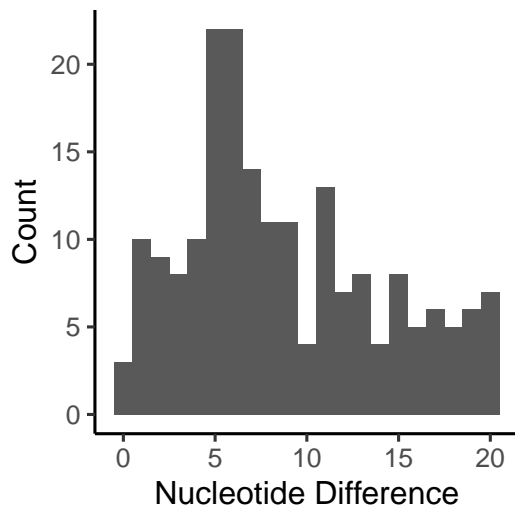
IGHV4-30-2*01

1228 sequences assigned
197 (16%) exact matches, in which:
145 unique CDR3
6 unique J



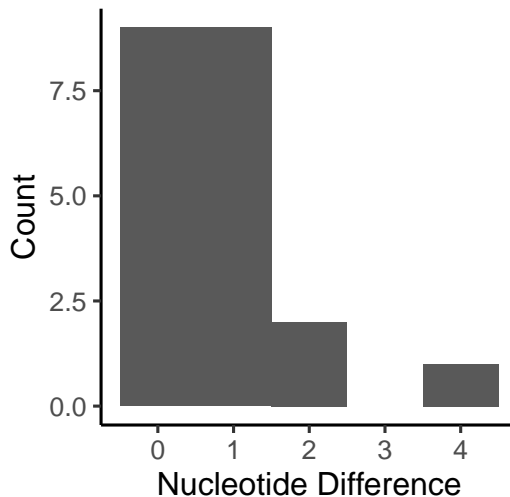
IGHV3-NL1*01

230 sequences assigned
3 (1.3%) exact matches, in which:
3 unique CDR3
2 unique J



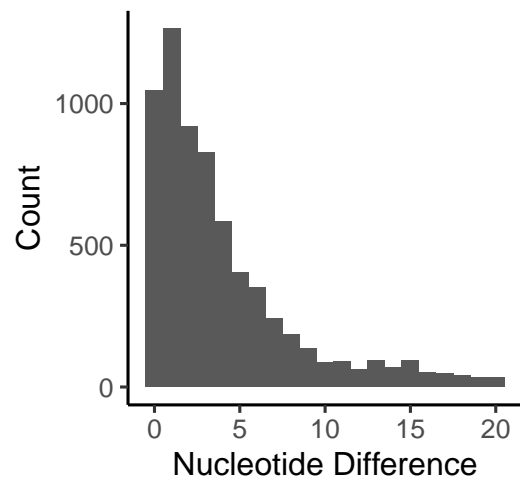
IGHV4-28*01_07

21 sequences assigned
9 (42.9%) exact matches, in which:
5 unique CDR3
3 unique J



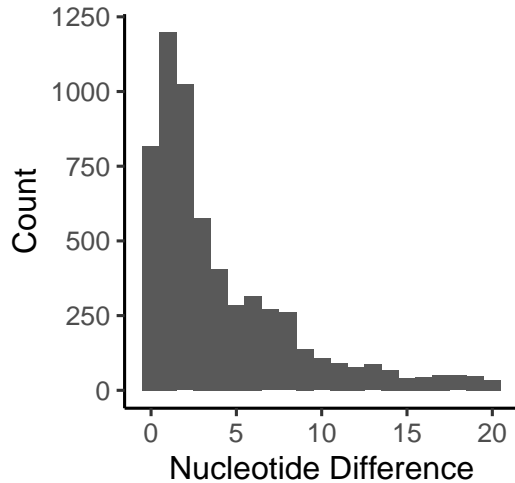
IGHV4-31*03_04

7763 sequences assigned
1045 (13.5%) exact matches, in which:
849 unique CDR3
6 unique J



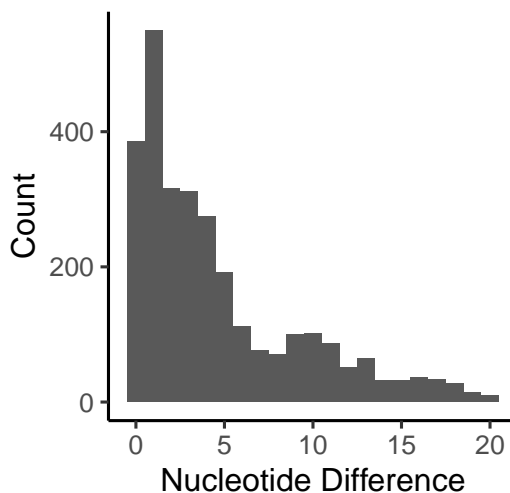
IGHV4-4*07

6687 sequences assigned
817 (12.2%) exact matches, in which:
686 unique CDR3
6 unique J



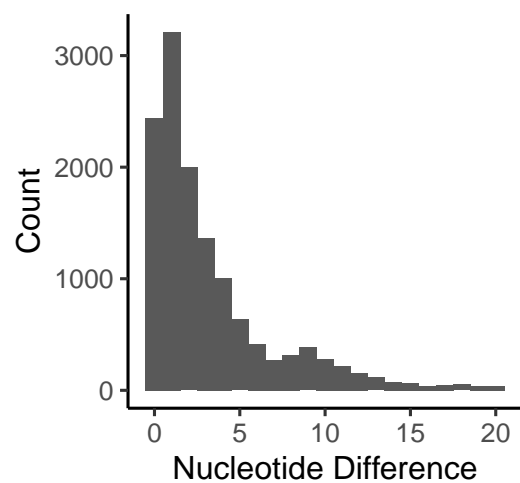
IGHV4-30-4*01

3043 sequences assigned
386 (12.7%) exact matches, in which:
321 unique CDR3
6 unique J



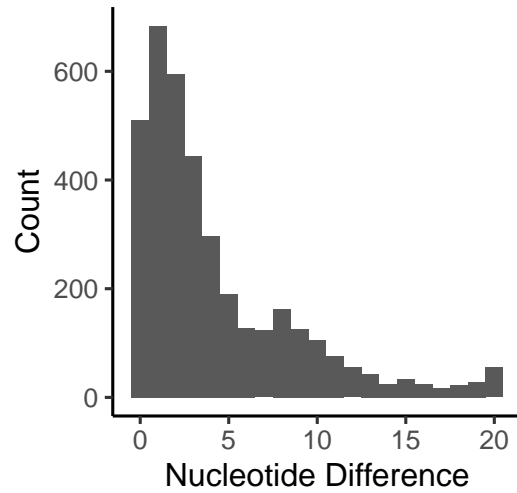
IGHV4-34*01_02

20391 sequences assigned
2442 (12%) exact matches, in which:
1645 unique CDR3
6 unique J



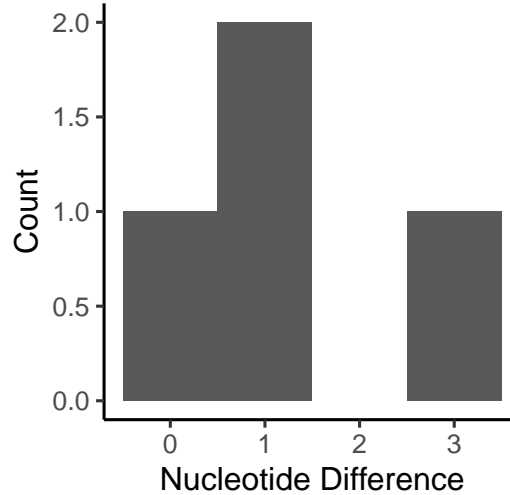
IGHV4-38-2*02

4181 sequences assigned
510 (12.2%) exact matches, in which:
445 unique CDR3
6 unique J



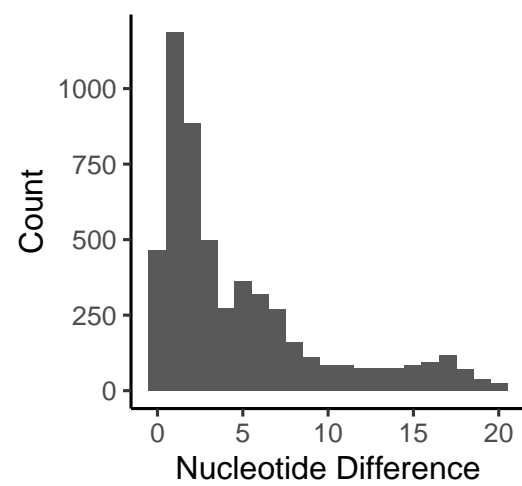
IGHV4-55*02_04_08

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



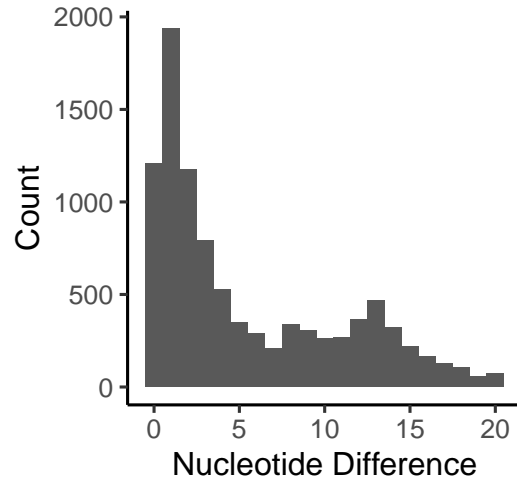
IGHV4-59*12

5575 sequences assigned
465 (8.3%) exact matches, in which:
442 unique CDR3
6 unique J



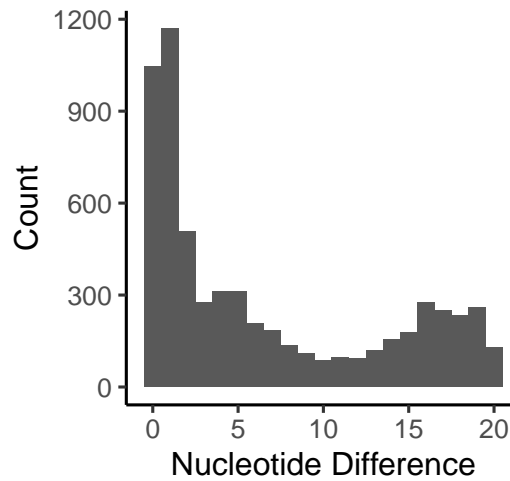
IGHV4-39*07

11469 sequences assigned
1208 (10.5%) exact matches, in which:
945 unique CDR3
6 unique J



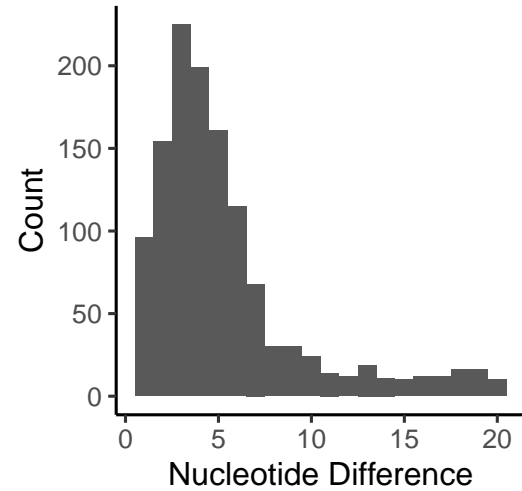
IGHV4-59*08

7516 sequences assigned
1045 (13.9%) exact matches, in which:
827 unique CDR3
6 unique J



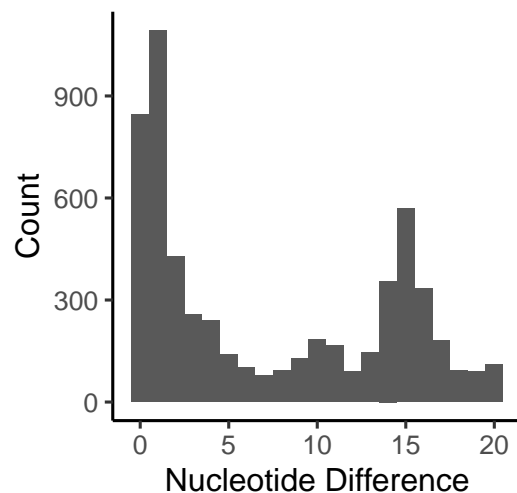
IGHV4-61*01

1308 sequences assigned
No exact matches.



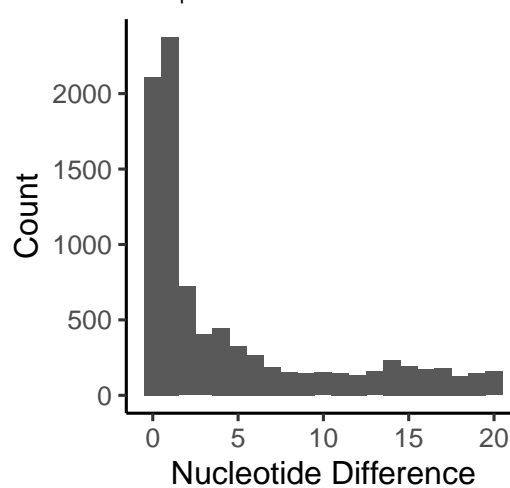
IGHV4-39*01_05

6566 sequences assigned
845 (12.9%) exact matches, in which:
644 unique CDR3
6 unique J



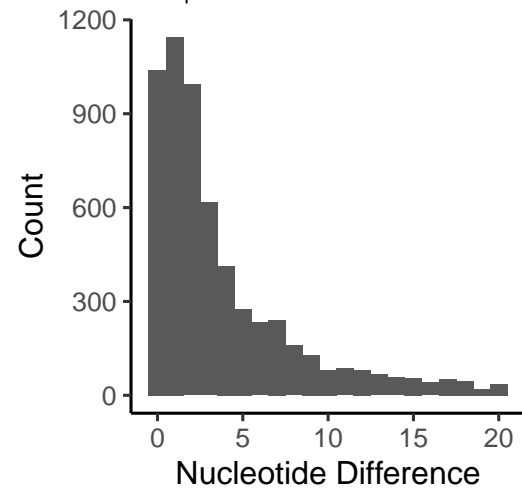
IGHV4-59*01_07

11362 sequences assigned
2112 (18.6%) exact matches, in which:
1679 unique CDR3
6 unique J



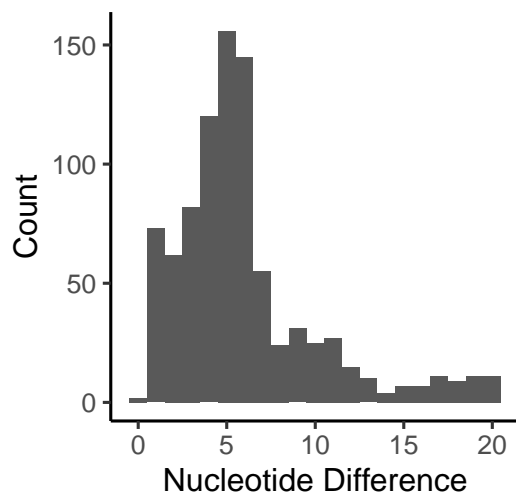
IGHV4-61*02

6390 sequences assigned
1040 (16.3%) exact matches, in which:
873 unique CDR3
6 unique J



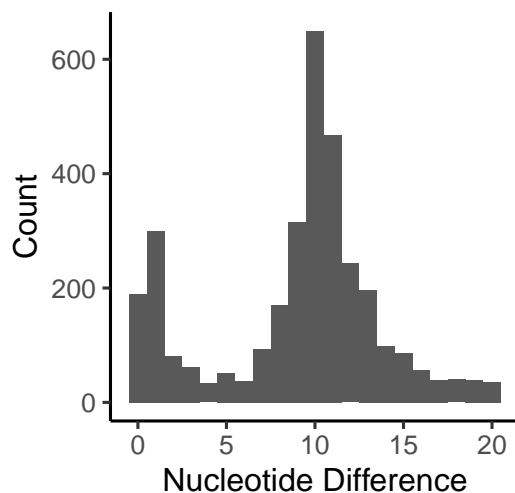
IGHV4-61*08

925 sequences assigned
2 (0.2%) exact matches, in which:
2 unique CDR3
1 unique J



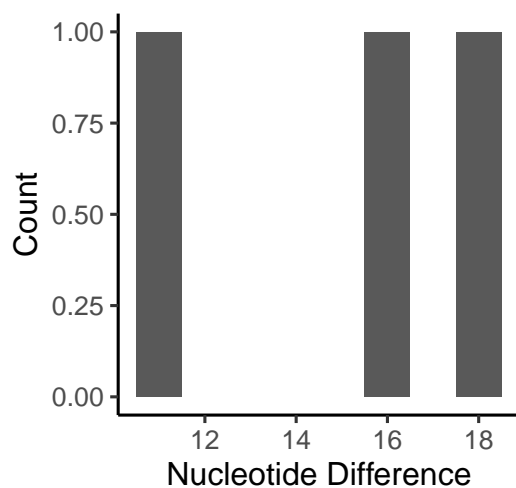
IGHV6-1*01_02

3469 sequences assigned
189 (5.4%) exact matches, in which:
153 unique CDR3
6 unique J



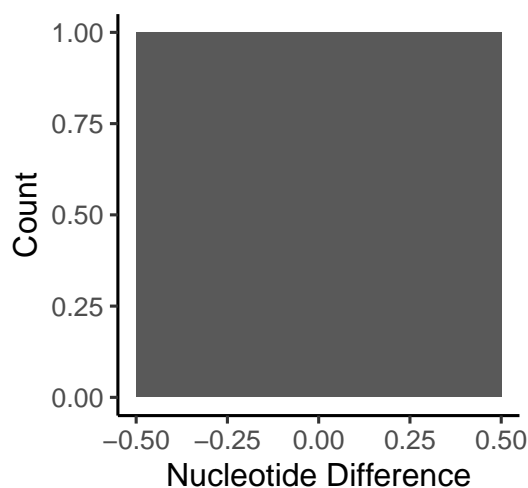
IGHV5-10-1*01_03

3 sequences assigned
No exact matches.



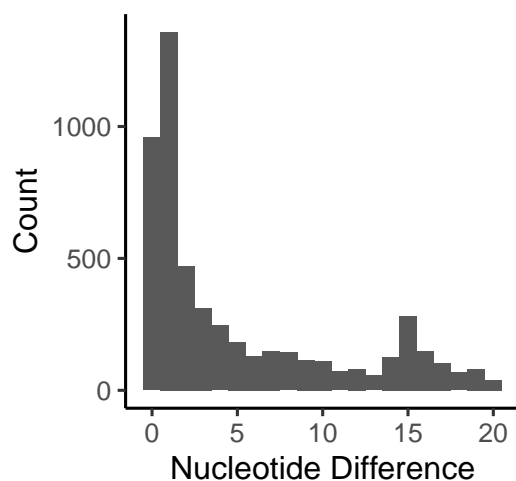
IGHV7-4-1*02

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



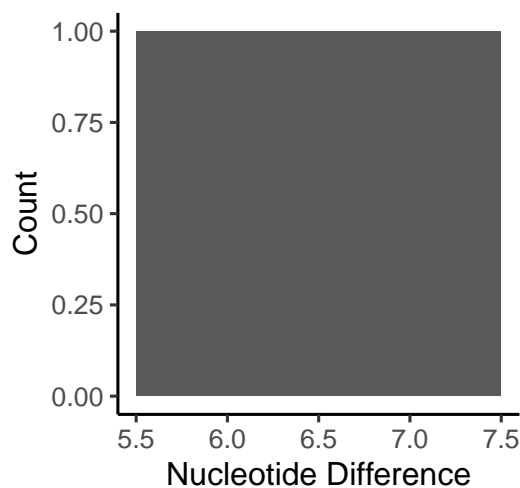
IGHV5-51*01_03

5625 sequences assigned
959 (17%) exact matches, in which:
510 unique CDR3
6 unique J



IGHV7-40*03

2 sequences assigned
No exact matches.





Novel sequence(s)IGHV3-33*01_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s)IGHV3-33*01_G75CIGHV4-59*02_G88AIGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV3-33*01_G75CIGHV4-59*02_G88AIGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV3-30*03_T288CIGHV4-59*02_G88AIGHV5-51*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_G112AIGHV4-59*02_G88AIGHV5-10-1*01_03_T258CIGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV1-69*08_C191TIGHV3-48*03_T303GIGHV4-59*02_G88AIGHV5-51*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_T288CIGHV5-51*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.