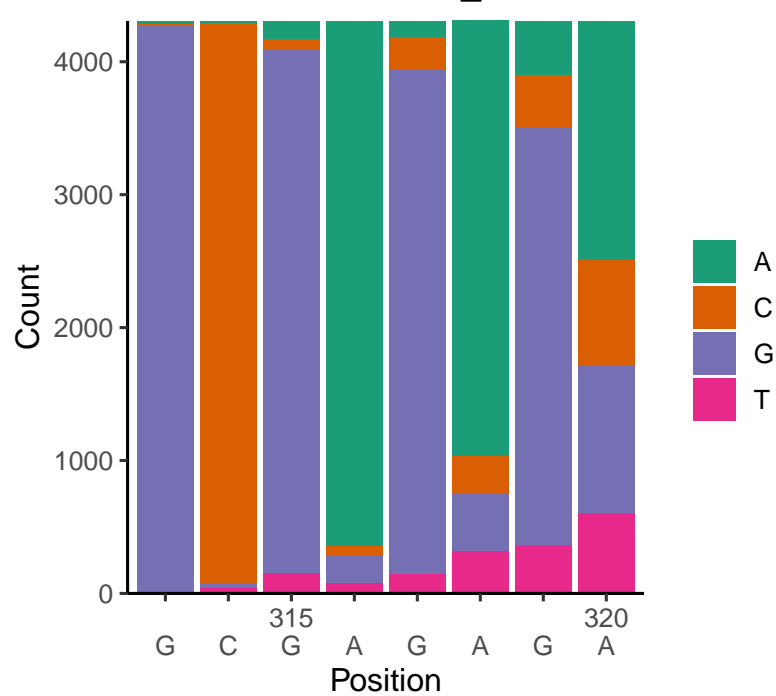
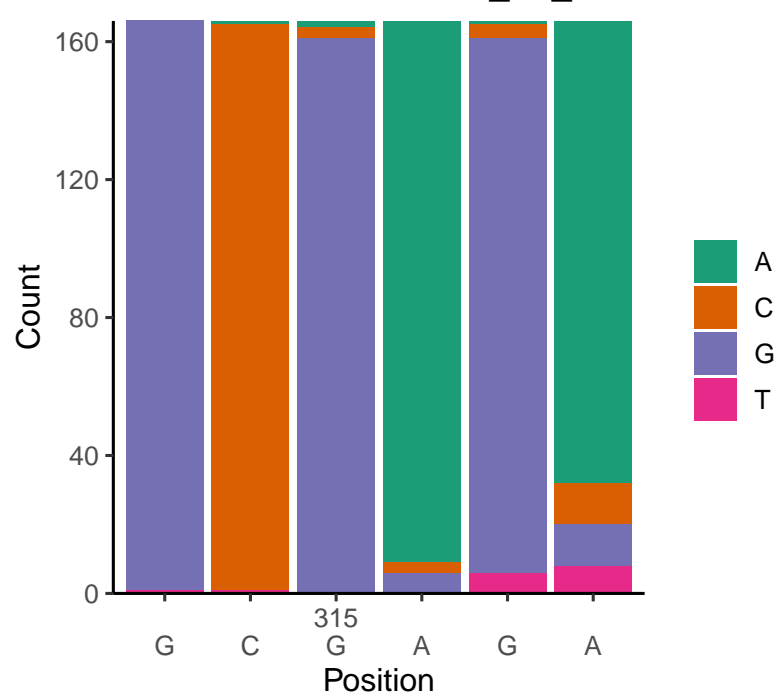


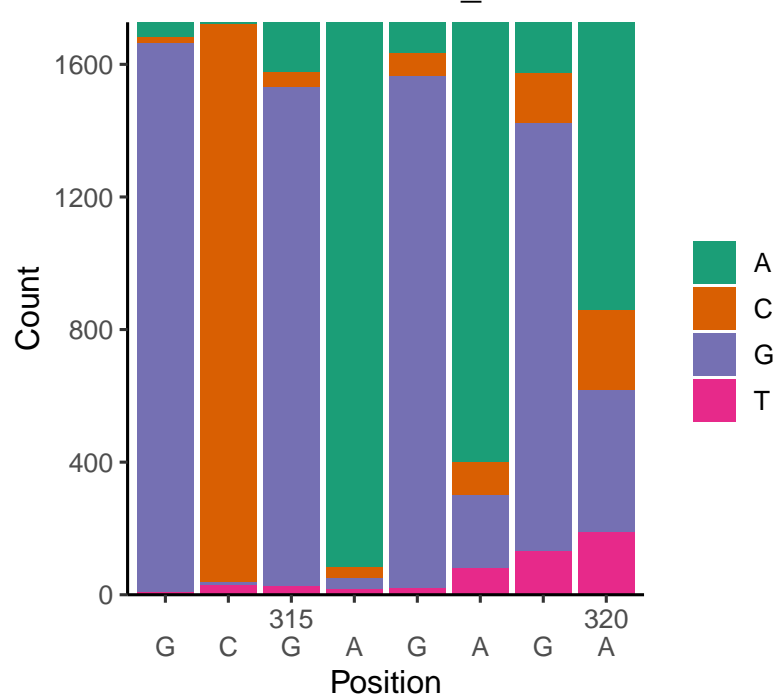
Gene IGHV1-69*08_C191T



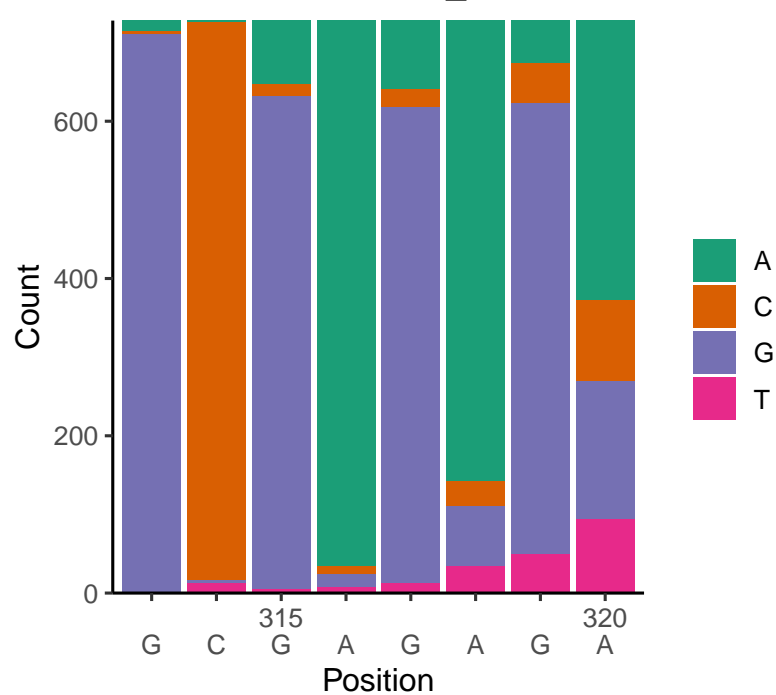
Gene IGHV5-10-1*01_03_A118G



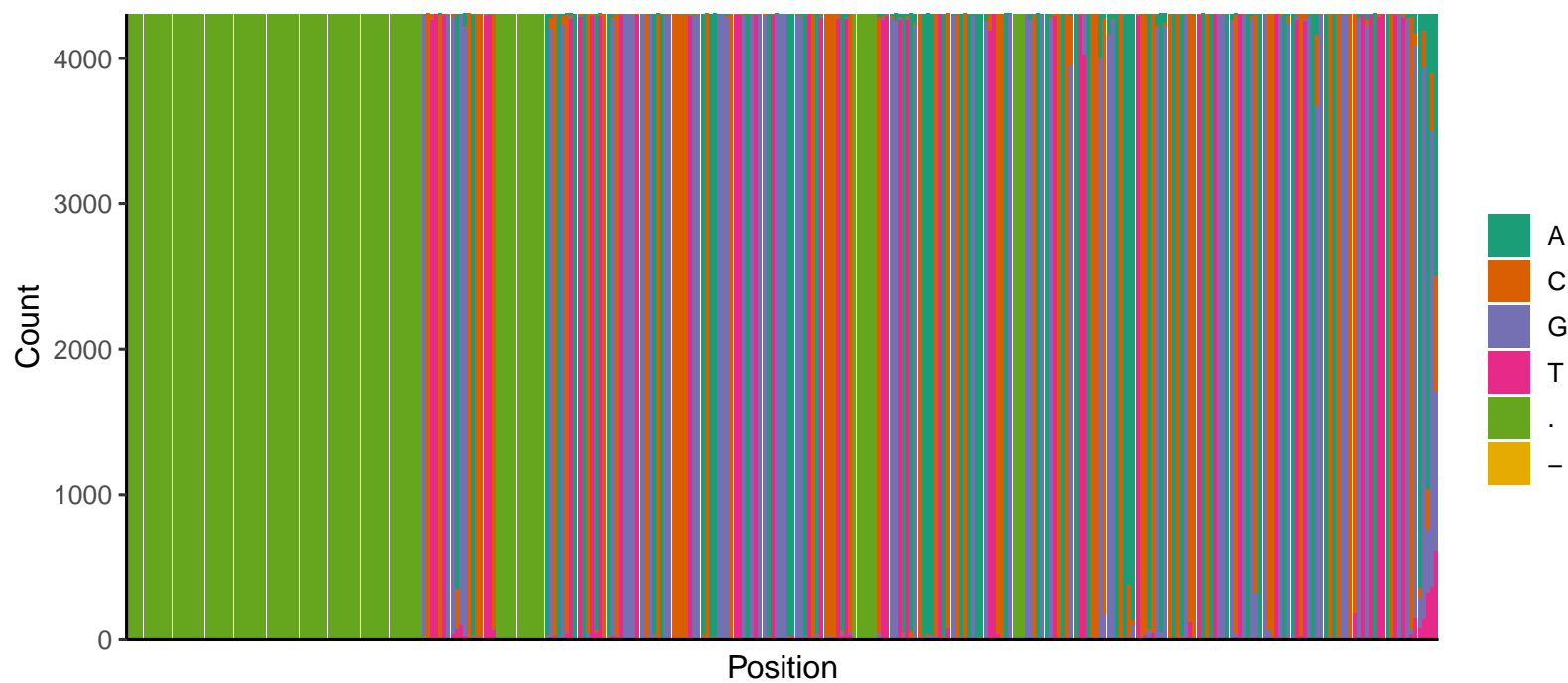
Gene IGHV3-33*05_G75C



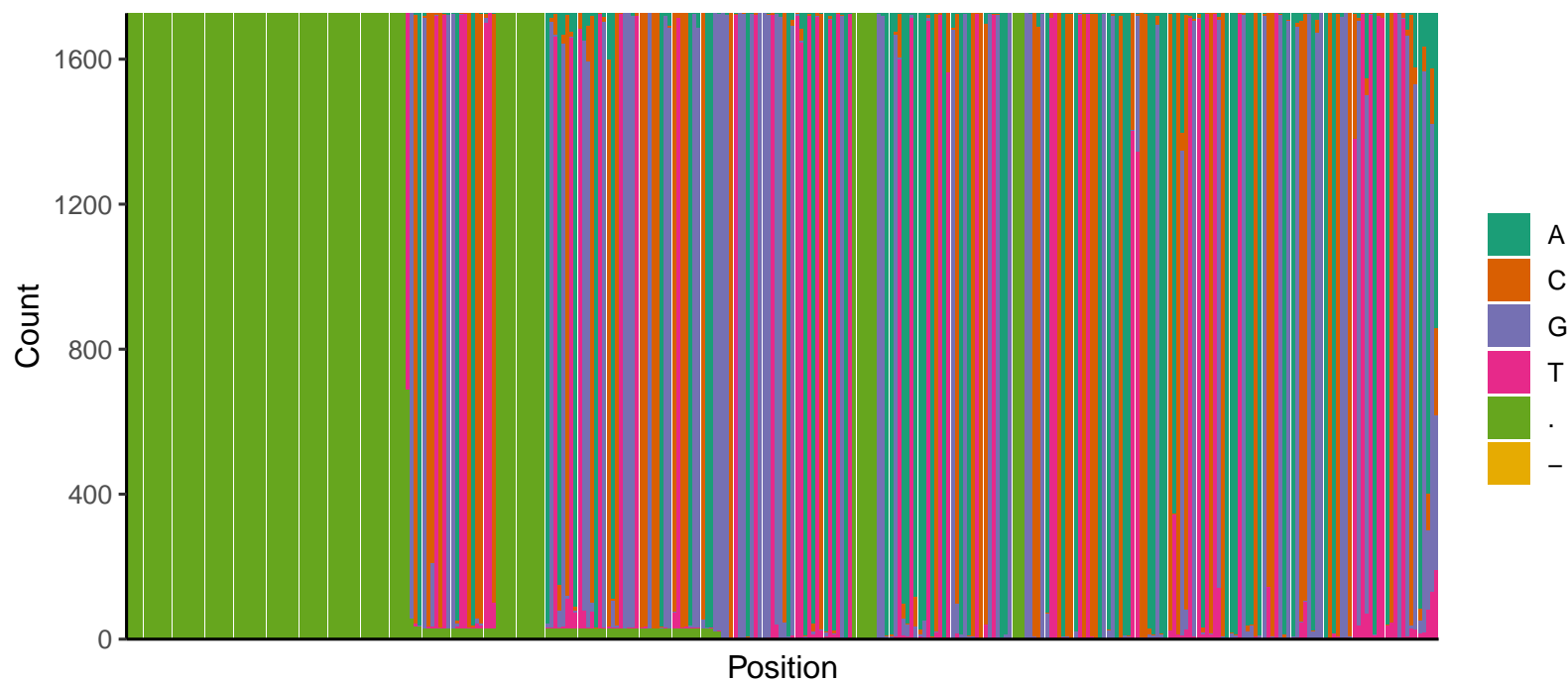
Gene IGHV3-48*03_T303G



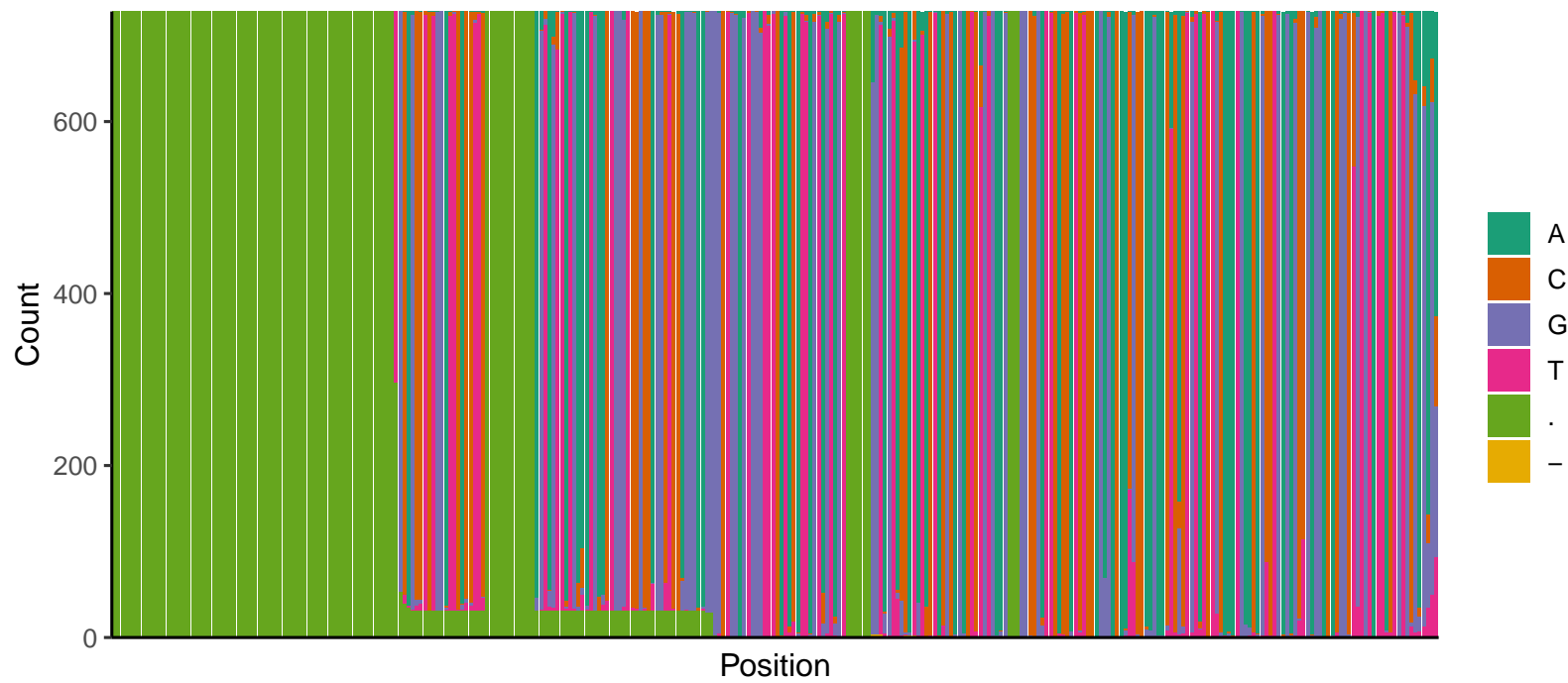
Gene IGHV1-69*08_C191T



Gene IGHV3-33*05_G75C



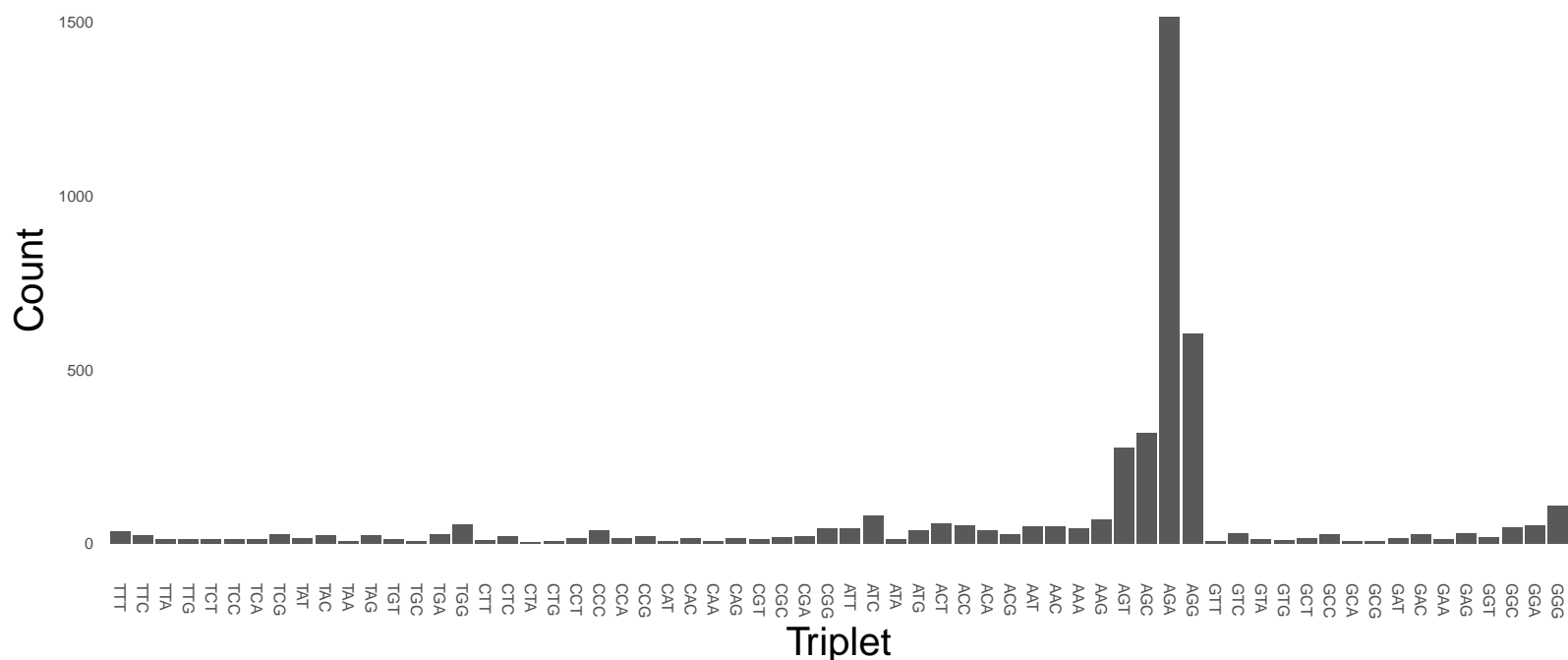
Gene IGHV3-48*03_T303G



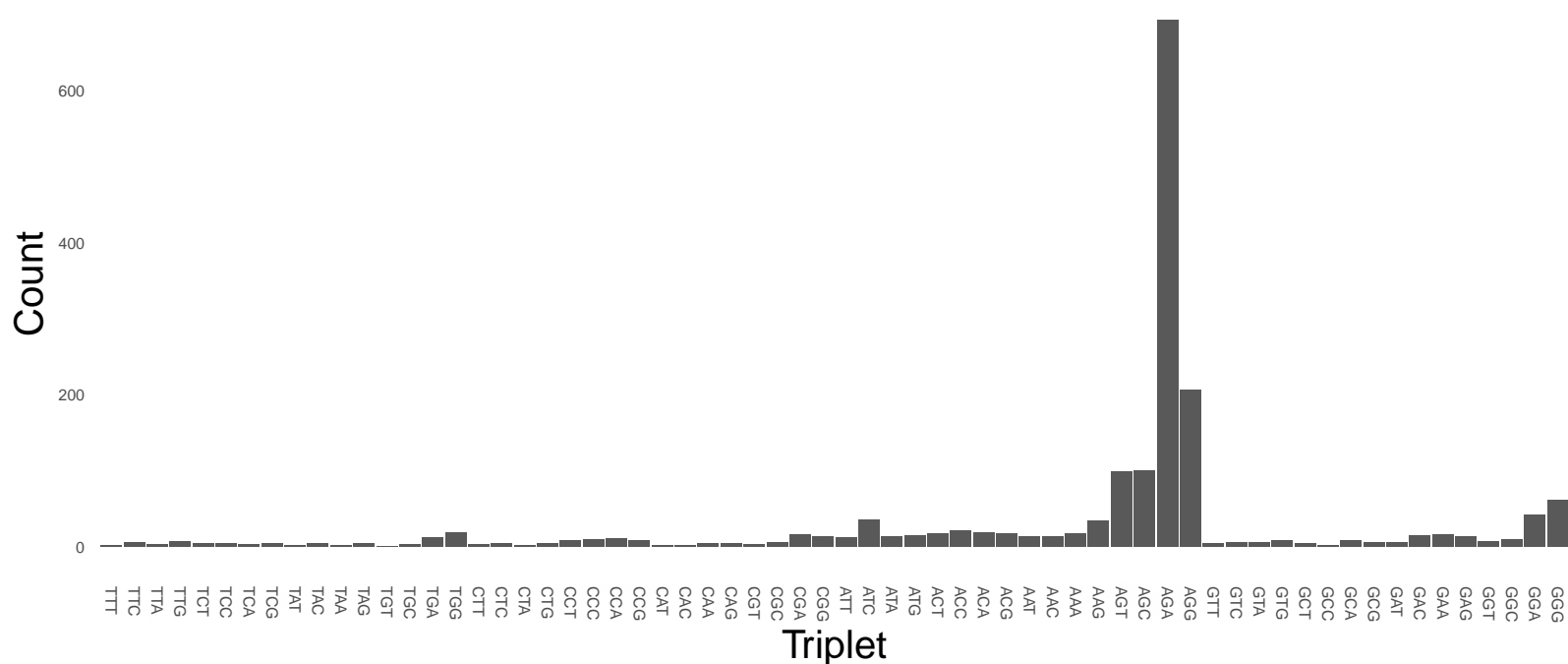
Gene IGHV5-10-1*01_03_A118G



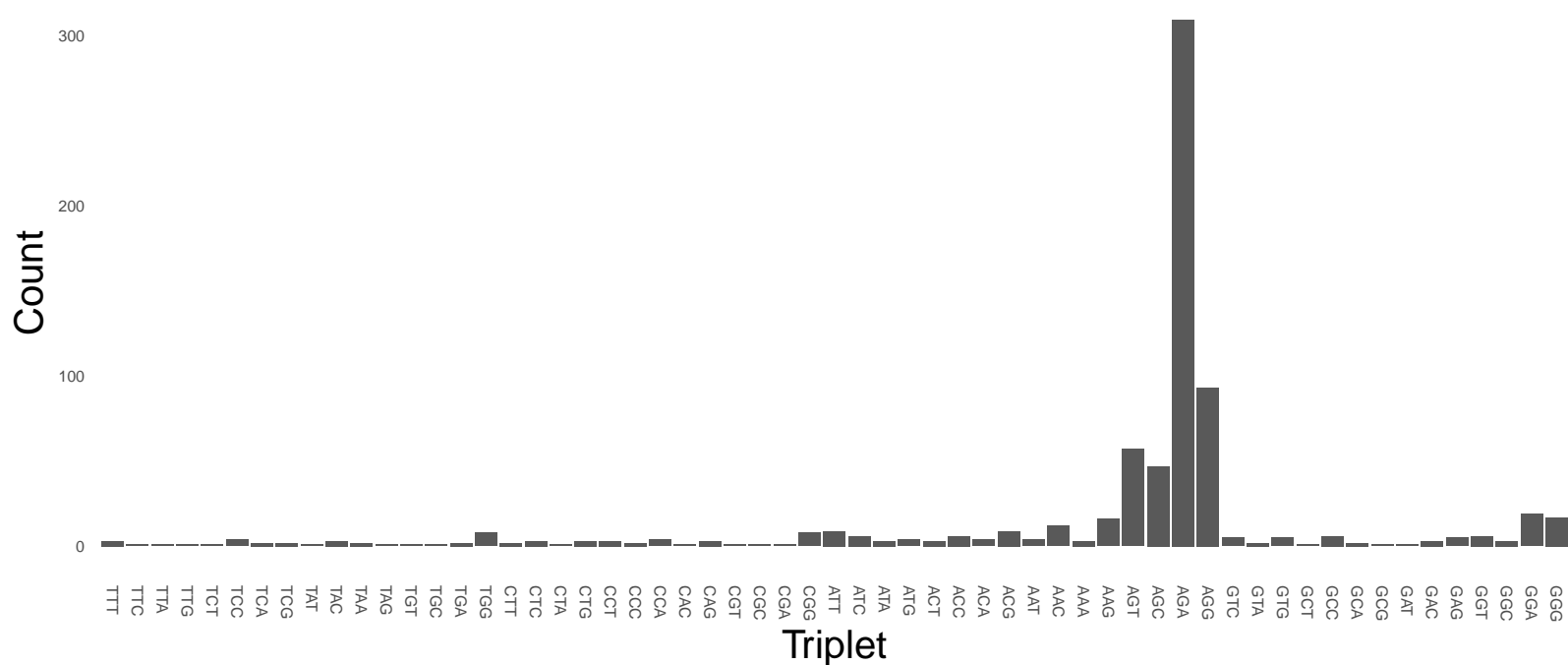
IGHV1-69*08_C191T- Final 3 nucleotides as a triplet



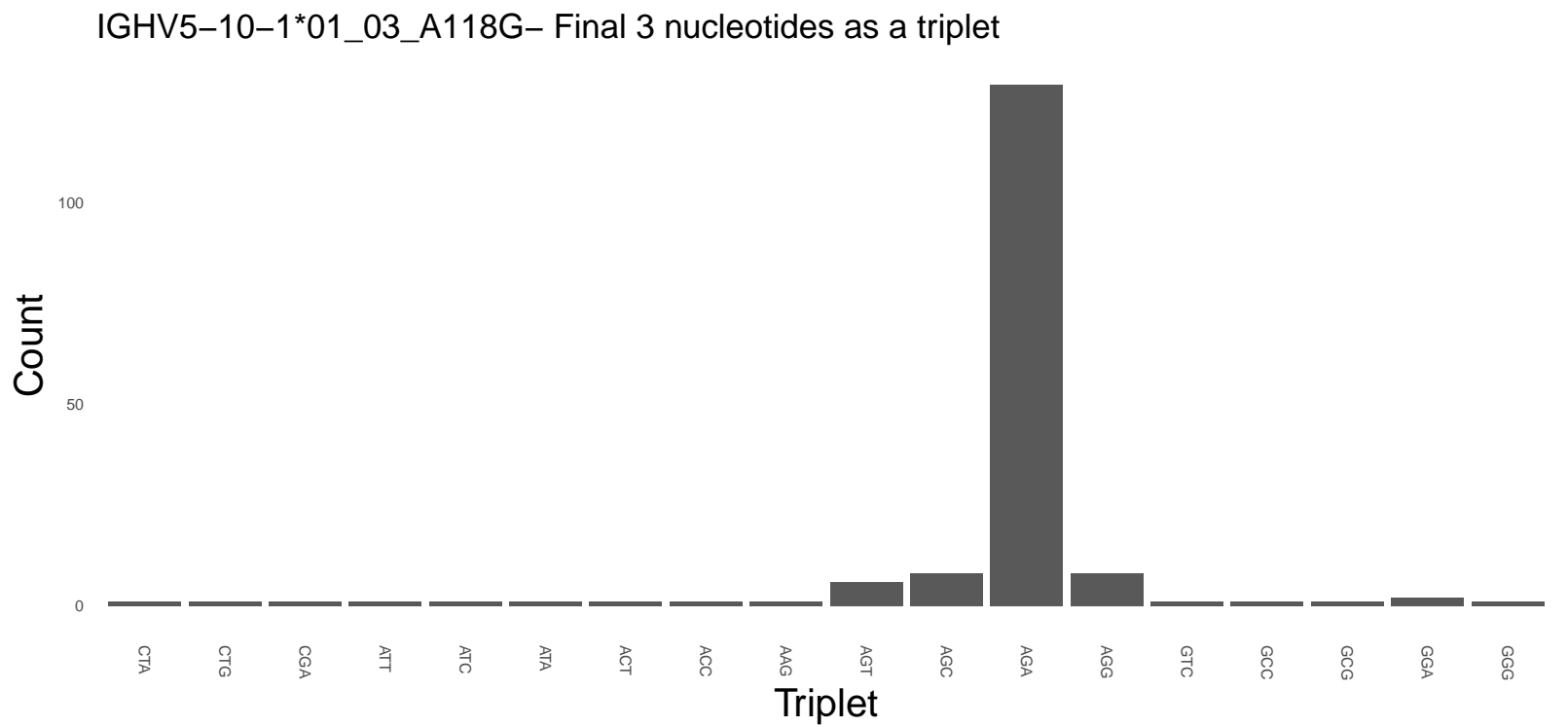
IGHV3-33*05_G75C- Final 3 nucleotides as a triplet



IGHV3-48*03_T303G- Final 3 nucleotides as a triplet

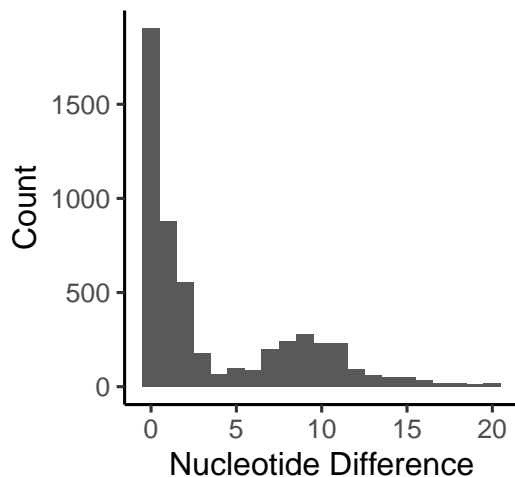


IGHV5-10-1*01_03_A118G- Final 3 nucleotides as a triplet



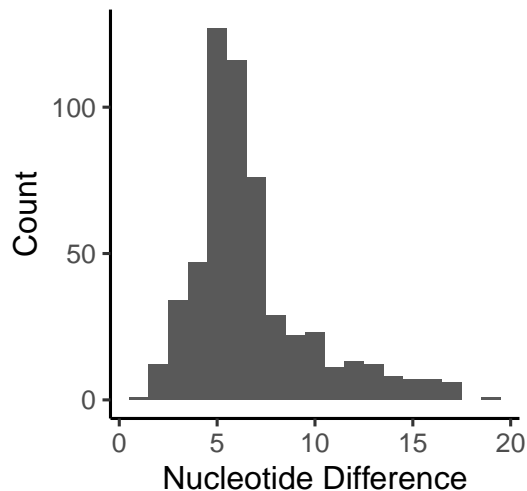
IGHV1-2*04

5359 sequences assigned
1903 (35.5%) exact matches, in which:
1840 unique CDR3
6 unique J



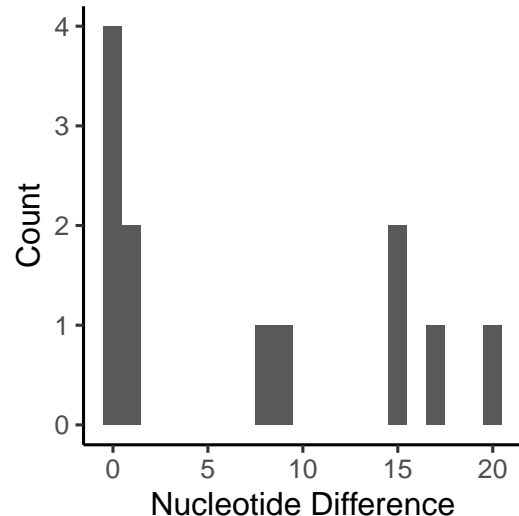
IGHV1-8*02

562 sequences assigned
No exact matches.



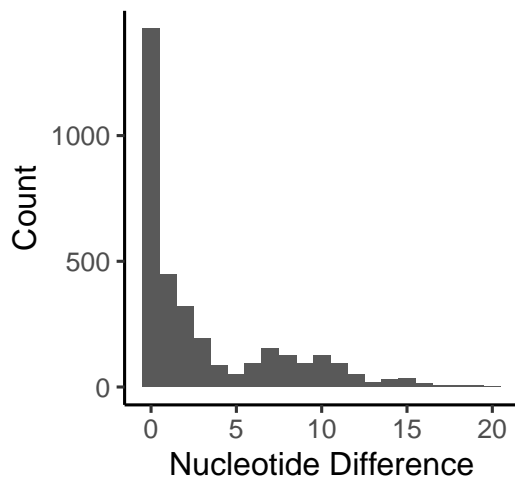
IGHV1-45*02

12 sequences assigned
4 (33.3%) exact matches, in which:
4 unique CDR3
3 unique J



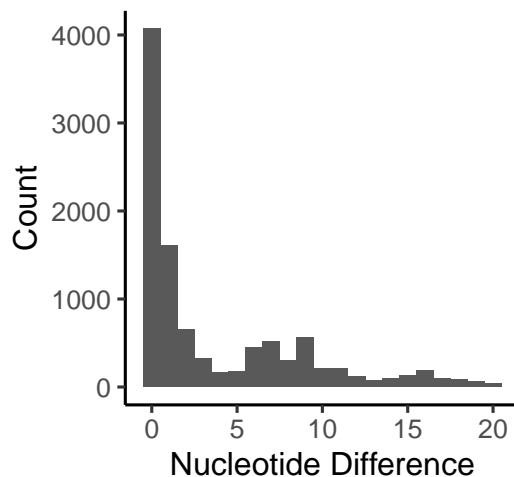
IGHV1-3*01_05

3408 sequences assigned
1425 (41.8%) exact matches, in which:
1348 unique CDR3
6 unique J



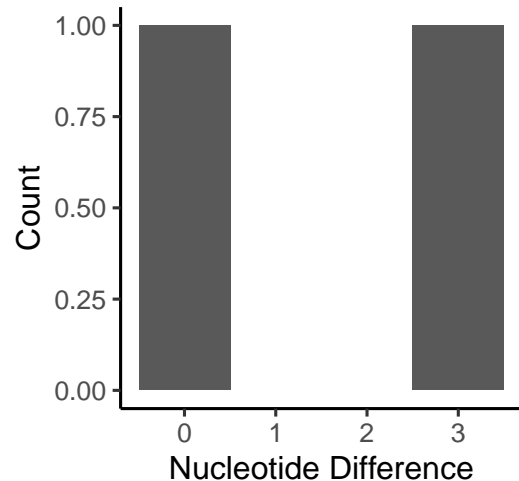
IGHV1-18*01

10681 sequences assigned
4071 (38.1%) exact matches, in which:
3940 unique CDR3
6 unique J



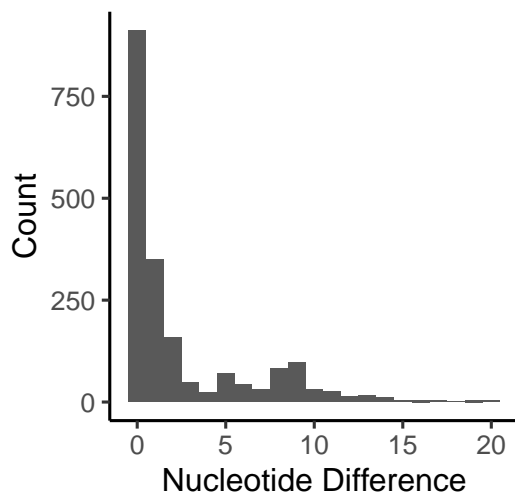
IGHV1-45*03

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



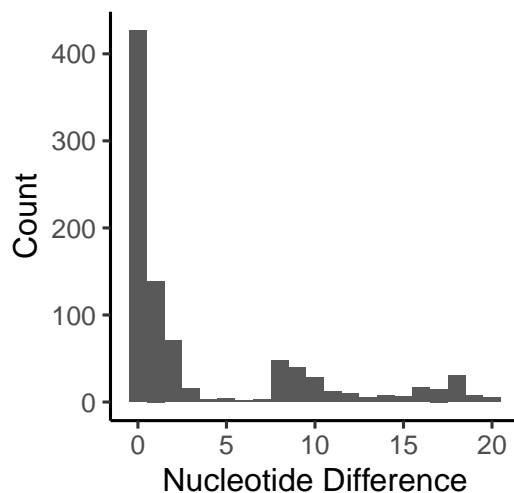
IGHV1-8*01

1958 sequences assigned
912 (46.6%) exact matches, in which:
891 unique CDR3
6 unique J



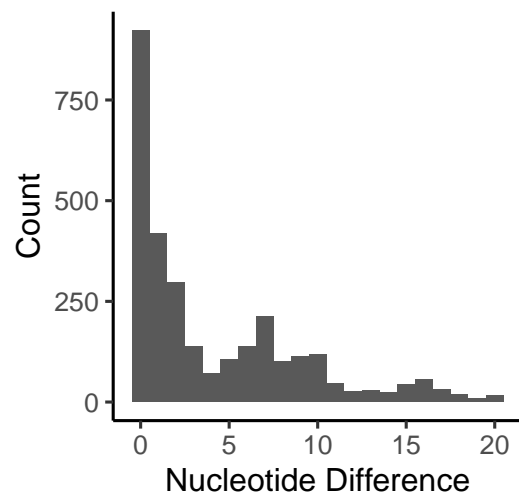
IGHV1-24*01

935 sequences assigned
427 (45.7%) exact matches, in which:
420 unique CDR3
6 unique J



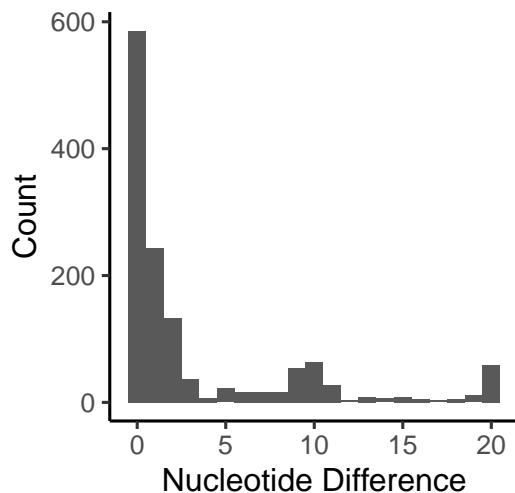
IGHV1-46*01

2984 sequences assigned
923 (30.9%) exact matches, in which:
904 unique CDR3
6 unique J



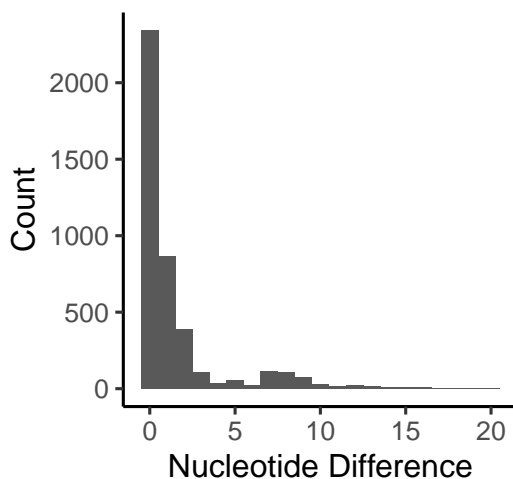
IGHV1-46*03

1597 sequences assigned
586 (36.7%) exact matches, in which:
558 unique CDR3
6 unique J



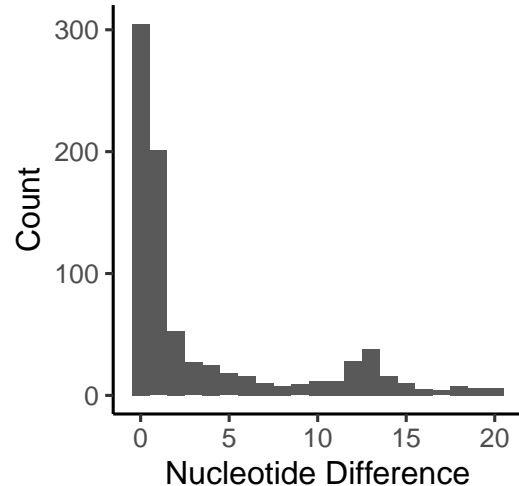
IGHV1-69*08_C191T

4307 sequences assigned
2342 (54.4%) exact matches, in which:
2305 unique CDR3
6 unique J



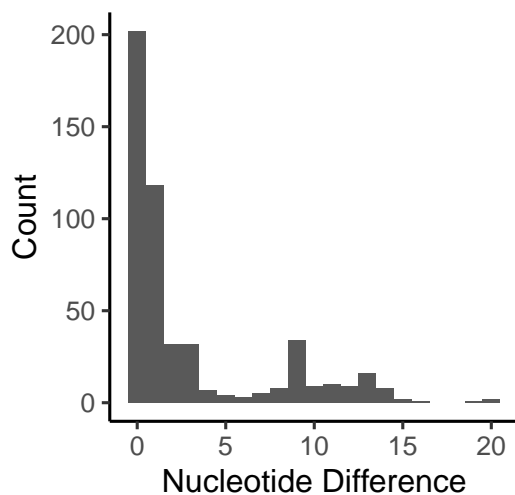
IGHV2-5*02

840 sequences assigned
305 (36.3%) exact matches, in which:
288 unique CDR3
6 unique J



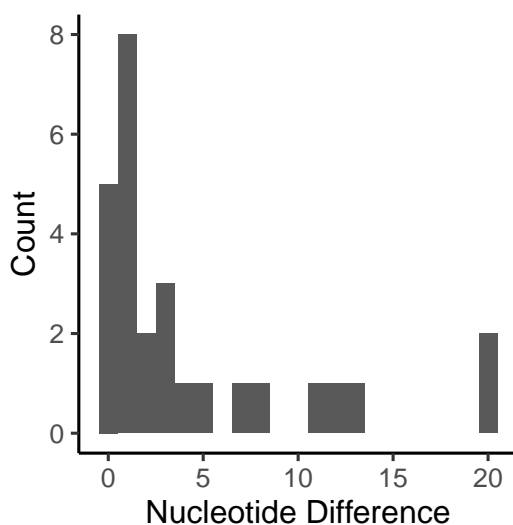
IGHV1-58*02

506 sequences assigned
202 (39.9%) exact matches, in which:
200 unique CDR3
5 unique J



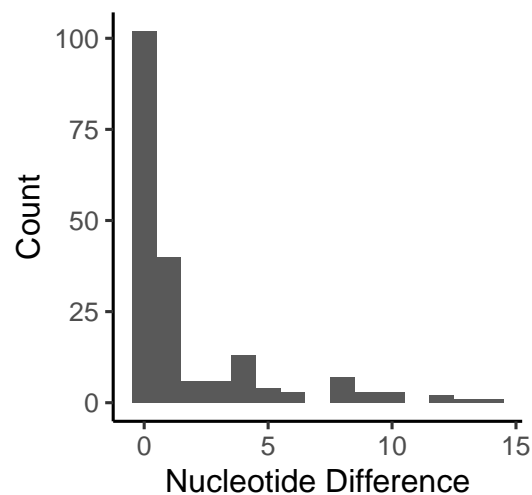
IGHV1-69D*01

52 sequences assigned
5 (9.6%) exact matches, in which:
5 unique CDR3
2 unique J



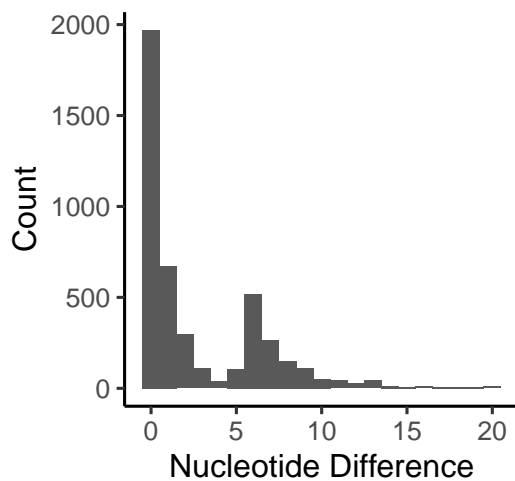
IGHV2-26*01

192 sequences assigned
102 (53.1%) exact matches, in which:
92 unique CDR3
5 unique J



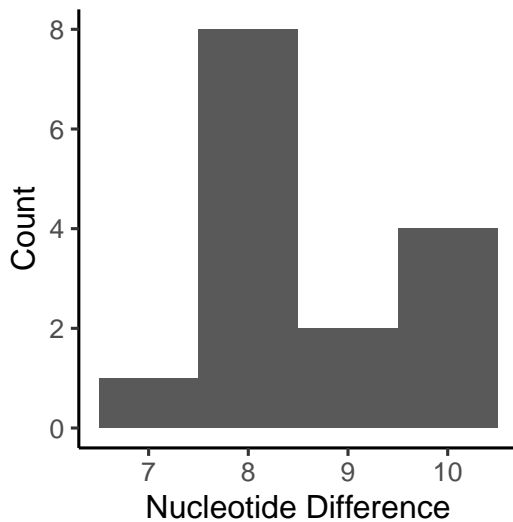
IGHV1-69*04_09

4526 sequences assigned
1970 (43.5%) exact matches, in which:
1940 unique CDR3
6 unique J



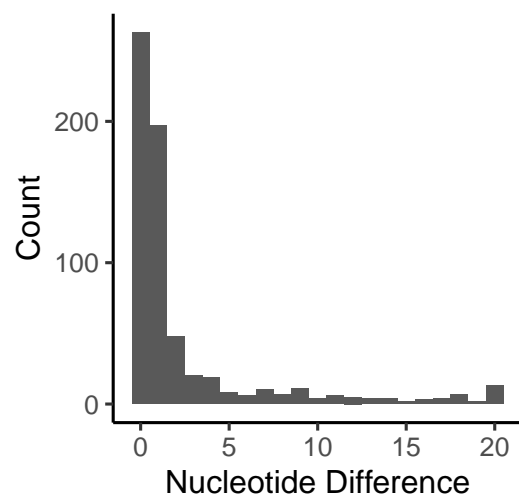
IGHV1-NL1*01

15 sequences assigned
No exact matches.



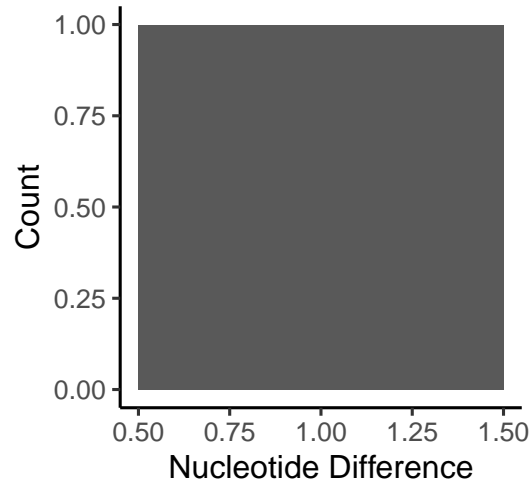
IGHV2-70*11_15

676 sequences assigned
263 (38.9%) exact matches, in which:
243 unique CDR3
6 unique J



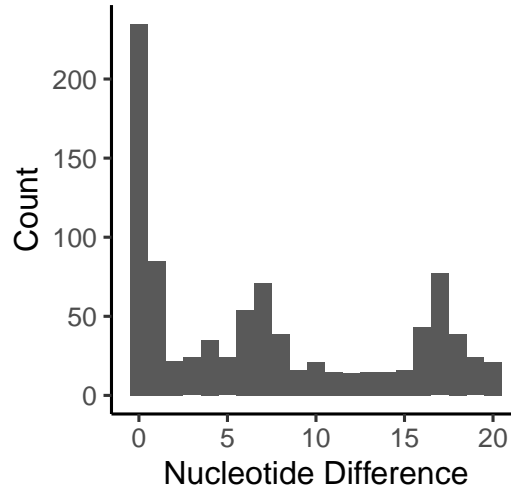
IGHV2-70D*04

2 sequences assigned
No exact matches.



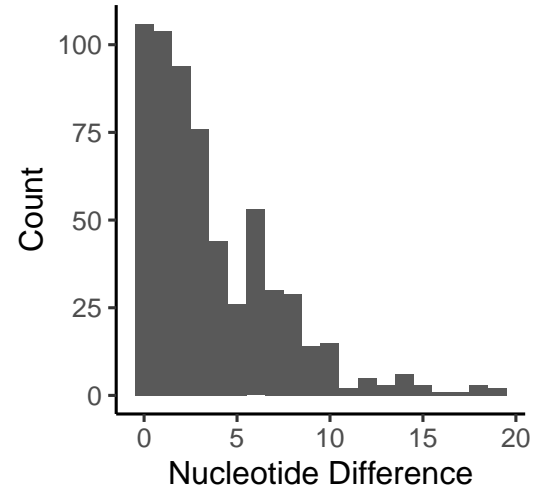
IGHV3-7*04

946 sequences assigned
235 (24.8%) exact matches, in which:
196 unique CDR3
5 unique J



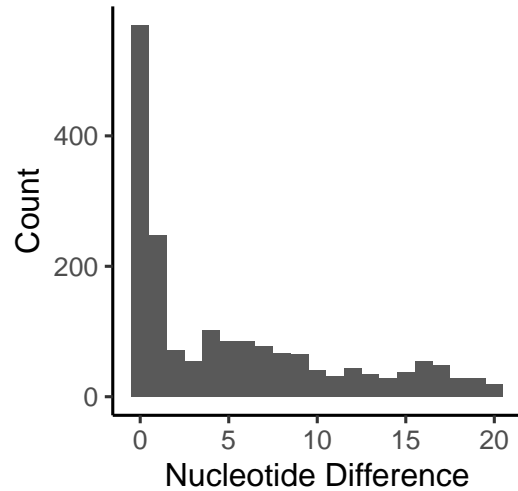
IGHV3-11*04

625 sequences assigned
106 (17%) exact matches, in which:
106 unique CDR3
6 unique J



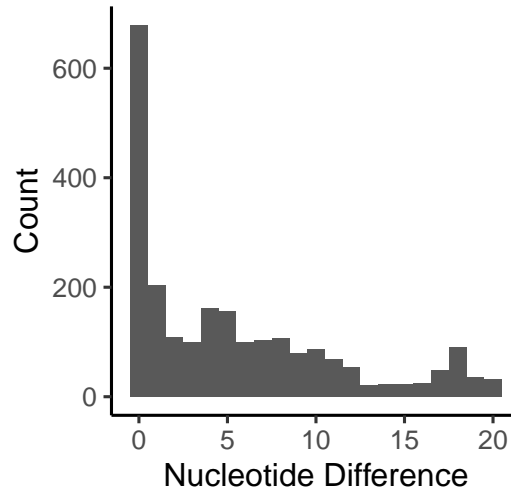
IGHV3-7*01

1956 sequences assigned
570 (29.1%) exact matches, in which:
498 unique CDR3
6 unique J



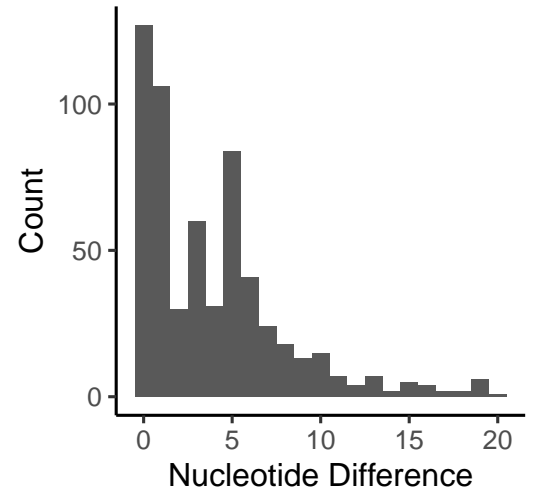
IGHV3-9*01

3441 sequences assigned
679 (19.7%) exact matches, in which:
591 unique CDR3
6 unique J



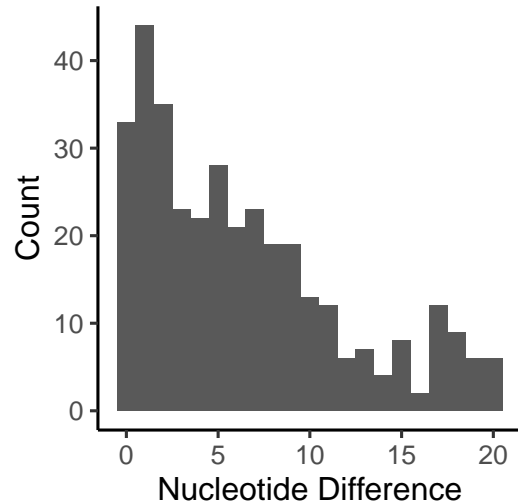
IGHV3-11*06

639 sequences assigned
127 (19.9%) exact matches, in which:
125 unique CDR3
5 unique J



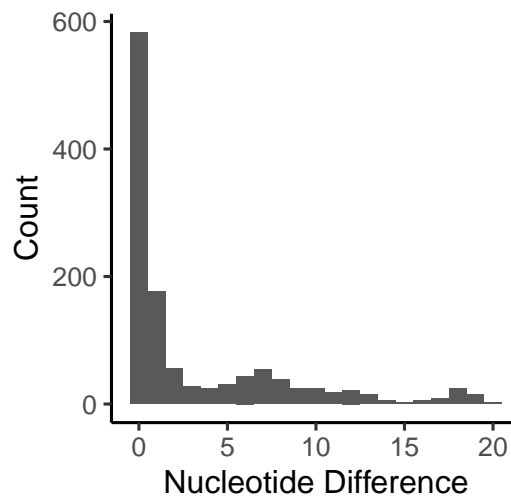
IGHV3-7*03

380 sequences assigned
33 (8.7%) exact matches, in which:
29 unique CDR3
4 unique J



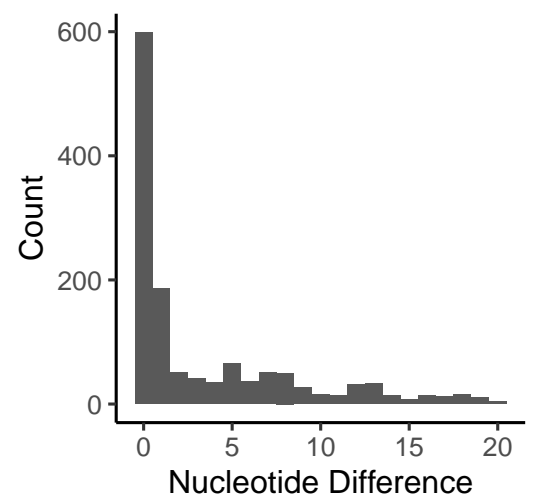
IGHV3-11*01

1292 sequences assigned
583 (45.1%) exact matches, in which:
499 unique CDR3
6 unique J



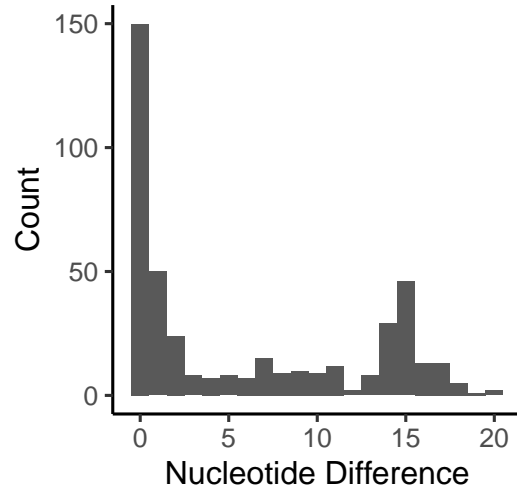
IGHV3-11*03_05

1483 sequences assigned
599 (40.4%) exact matches, in which:
524 unique CDR3
6 unique J



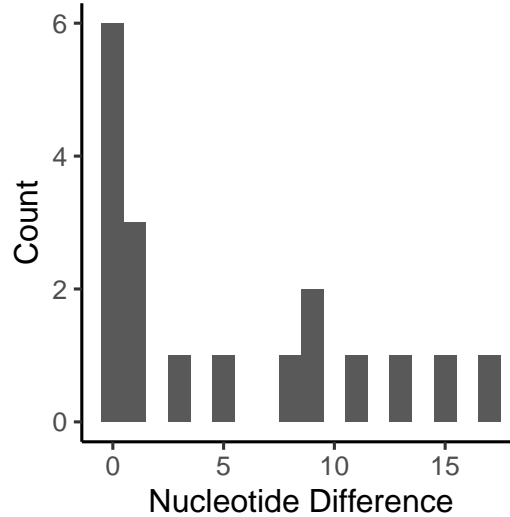
IGHV3-13*01

475 sequences assigned
150 (31.6%) exact matches, in which:
126 unique CDR3
5 unique J



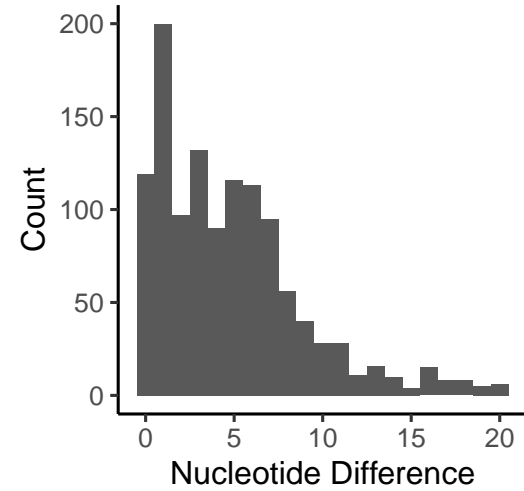
IGHV3-19*01

18 sequences assigned
6 (33.3%) exact matches, in which:
4 unique CDR3
2 unique J



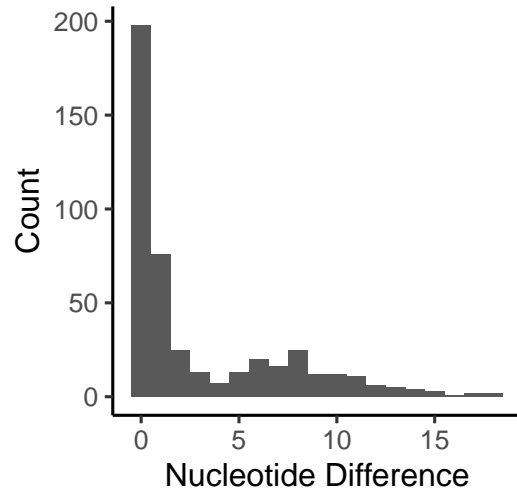
IGHV3-21*04

1248 sequences assigned
119 (9.5%) exact matches, in which:
116 unique CDR3
5 unique J



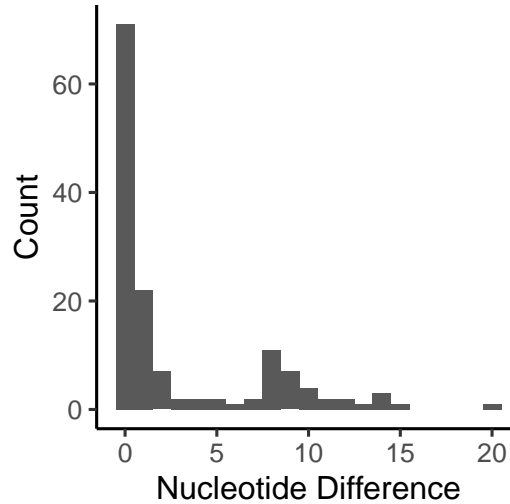
IGHV3-13*04

494 sequences assigned
198 (40.1%) exact matches, in which:
170 unique CDR3
5 unique J



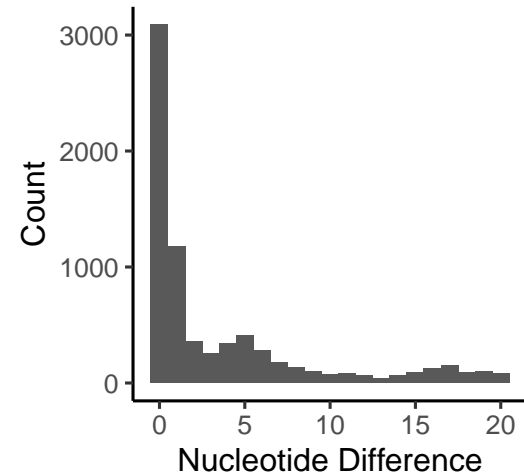
IGHV3-20*01_02

141 sequences assigned
71 (50.4%) exact matches, in which:
59 unique CDR3
5 unique J



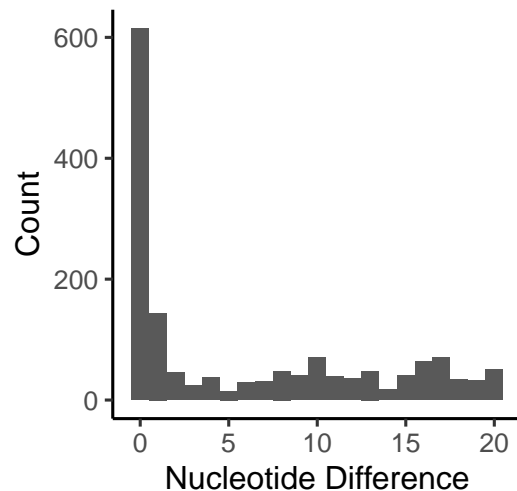
IGHV3-21*01_02

7984 sequences assigned
3089 (38.7%) exact matches, in which:
2610 unique CDR3
6 unique J



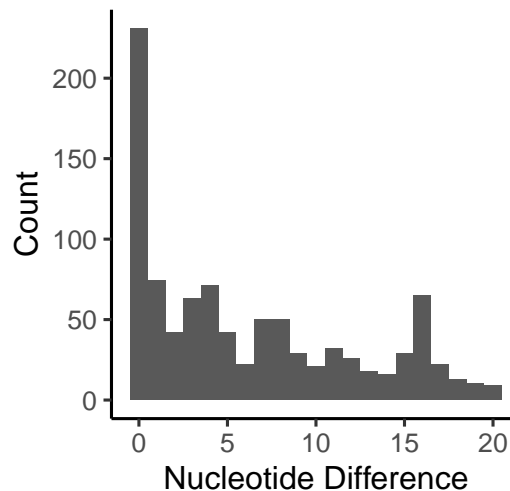
IGHV3-15*01_02

1845 sequences assigned
615 (33.3%) exact matches, in which:
540 unique CDR3
6 unique J



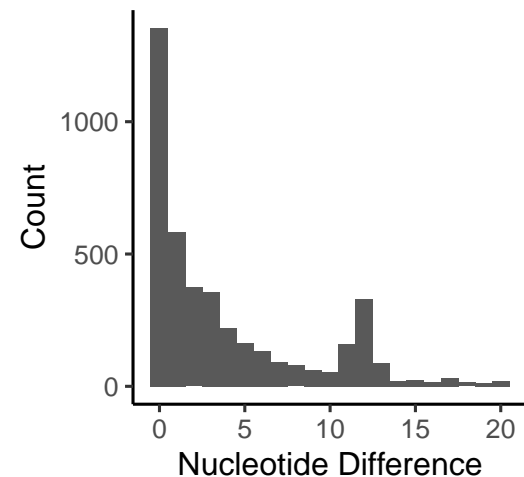
IGHV3-20*03_04

1022 sequences assigned
231 (22.6%) exact matches, in which:
204 unique CDR3
6 unique J



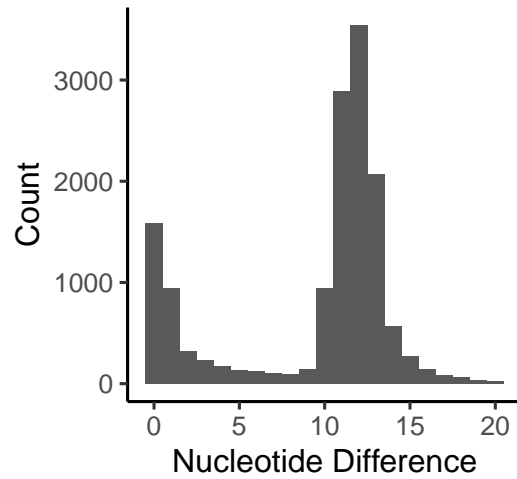
IGHV3-30-3*01

4425 sequences assigned
1354 (30.6%) exact matches, in which:
1215 unique CDR3
6 unique J



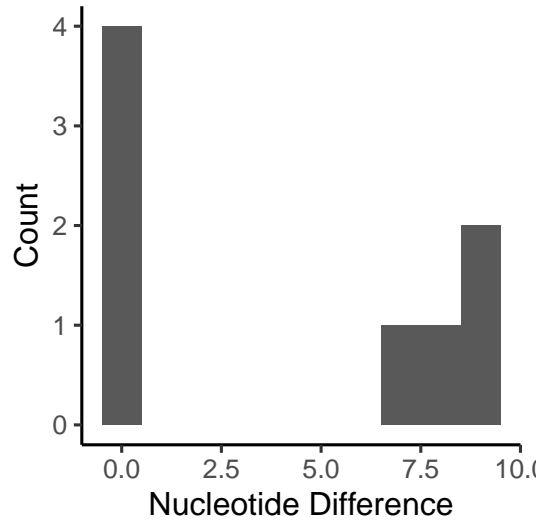
IGHV3-33*01

14568 sequences assigned
1584 (10.9%) exact matches, in which:
1413 unique CDR3
6 unique J



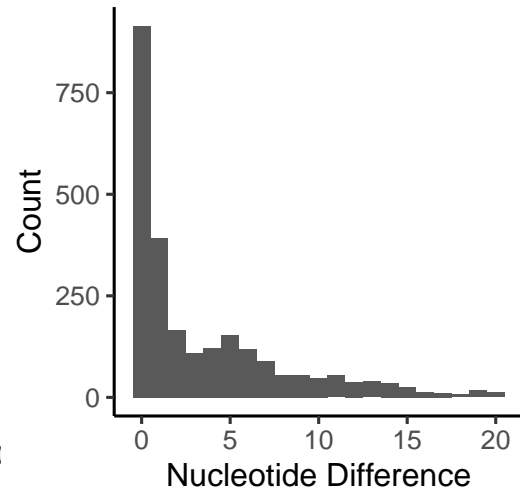
IGHV3-35*01

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



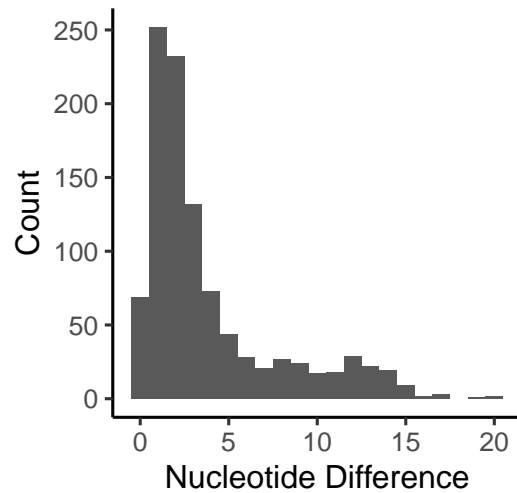
IGHV3-48*01

2687 sequences assigned
915 (34.1%) exact matches, in which:
790 unique CDR3
6 unique J



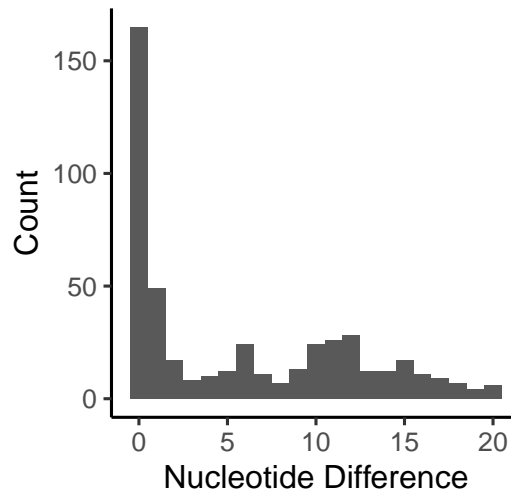
IGHV3-33*06

1042 sequences assigned
69 (6.6%) exact matches, in which:
69 unique CDR3
6 unique J



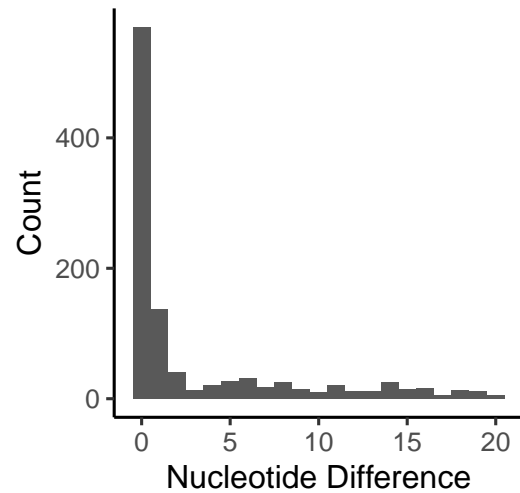
IGHV3-43*02

485 sequences assigned
165 (34%) exact matches, in which:
143 unique CDR3
5 unique J



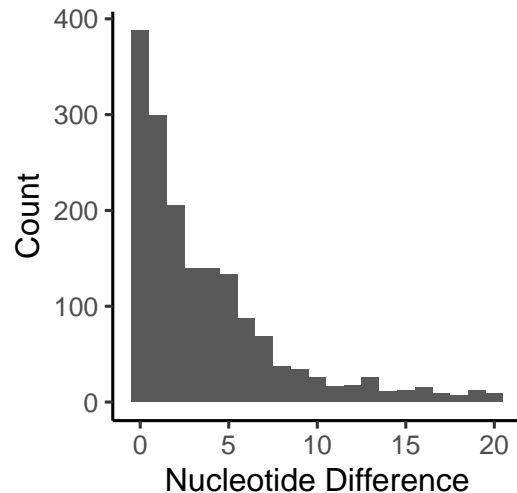
IGHV3-48*03

1087 sequences assigned
570 (52.4%) exact matches, in which:
486 unique CDR3
6 unique J



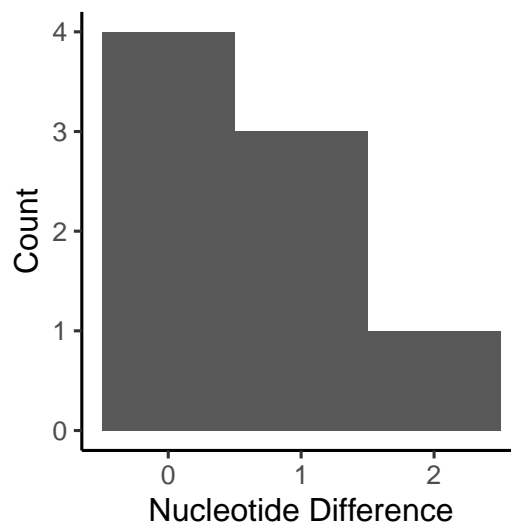
IGHV3-33*05_G75C

1727 sequences assigned
388 (22.5%) exact matches, in which:
386 unique CDR3
5 unique J



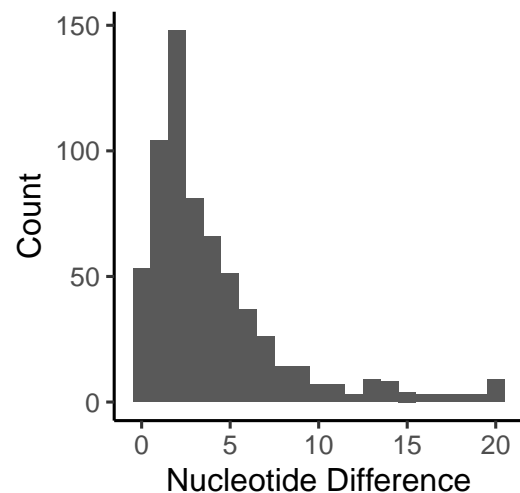
IGHV3-47*02

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



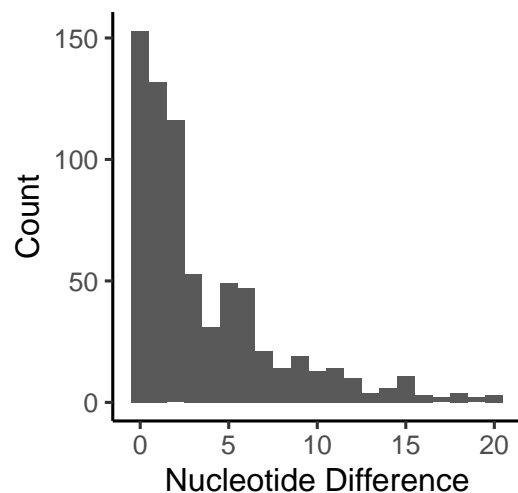
IGHV3-48*04

677 sequences assigned
53 (7.8%) exact matches, in which:
52 unique CDR3
5 unique J



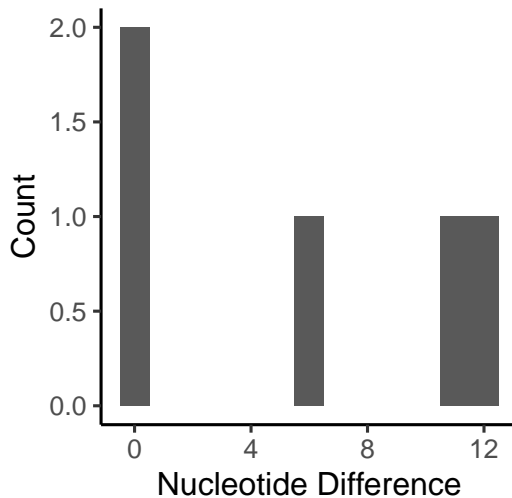
IGHV3-48*03_T303G

728 sequences assigned
153 (21%) exact matches, in which:
149 unique CDR3
6 unique J



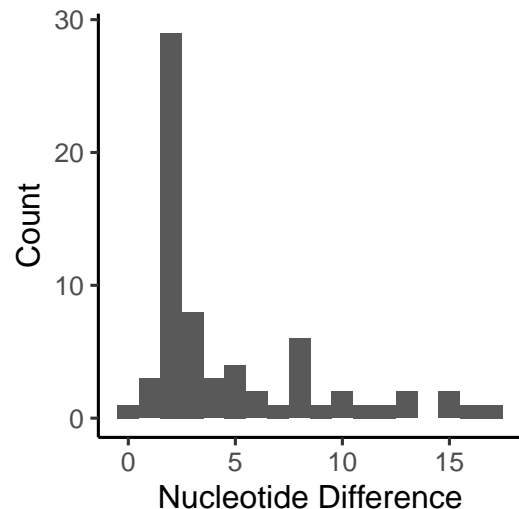
IGHV3-52*02

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



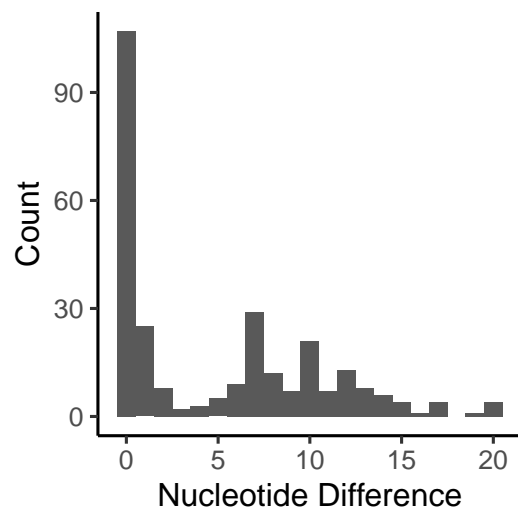
IGHV3-53*05

87 sequences assigned
1 (1.1%) exact matches, in which:
1 unique CDR3
1 unique J



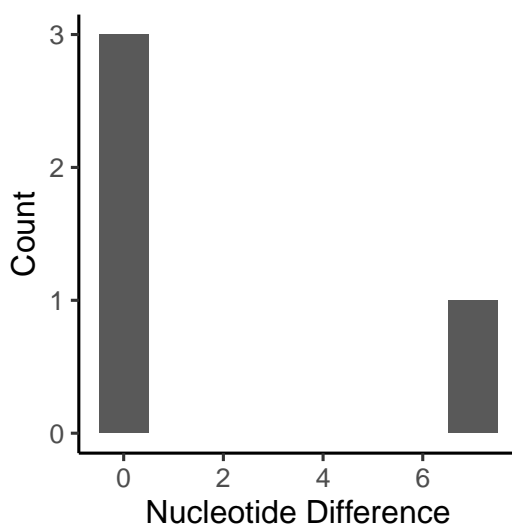
IGHV3-49*04

314 sequences assigned
107 (34.1%) exact matches, in which:
97 unique CDR3
5 unique J



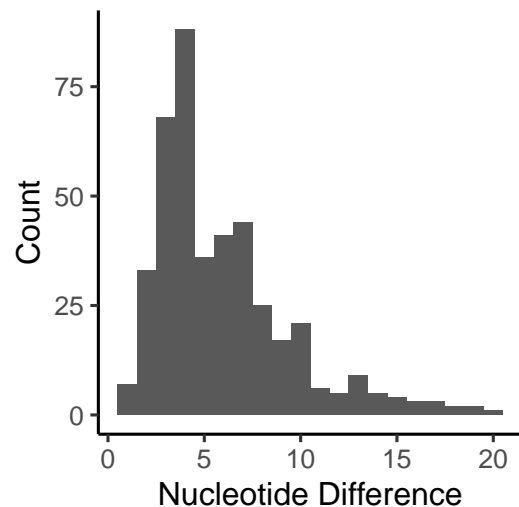
IGHV3-52*01_03

4 sequences assigned
3 (75%) exact matches, in which:
3 unique CDR3
2 unique J



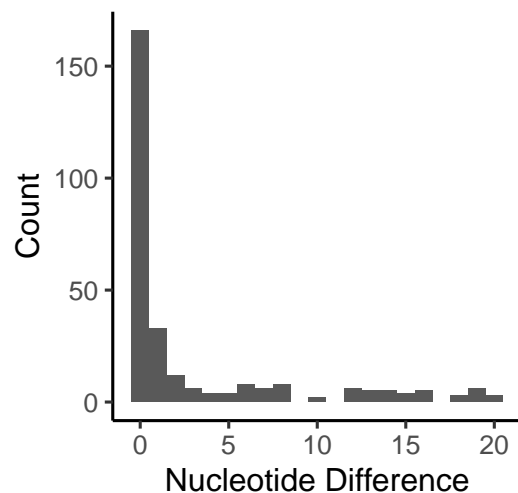
IGHV3-53*01_02

454 sequences assigned
No exact matches.



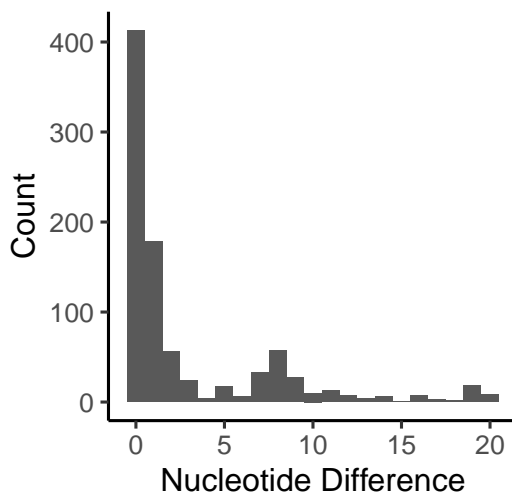
IGHV3-49*03_05

344 sequences assigned
166 (48.3%) exact matches, in which:
148 unique CDR3
6 unique J



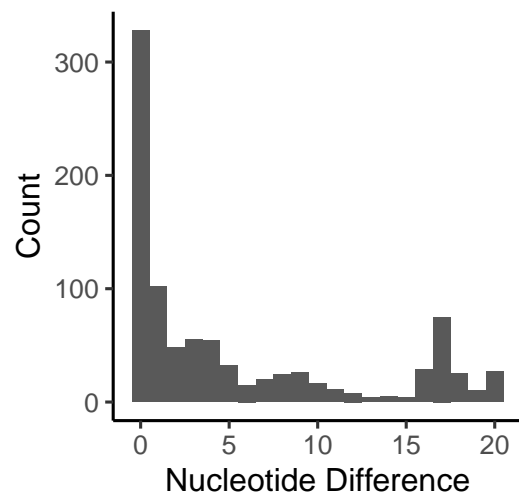
IGHV3-53*04

1049 sequences assigned
413 (39.4%) exact matches, in which:
369 unique CDR3
6 unique J



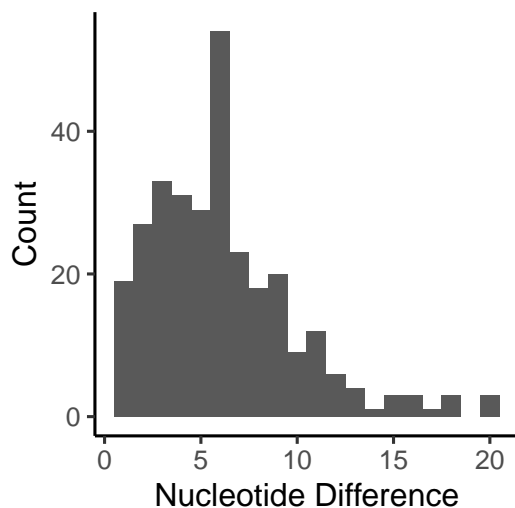
IGHV3-64*01

1257 sequences assigned
328 (26.1%) exact matches, in which:
280 unique CDR3
6 unique J



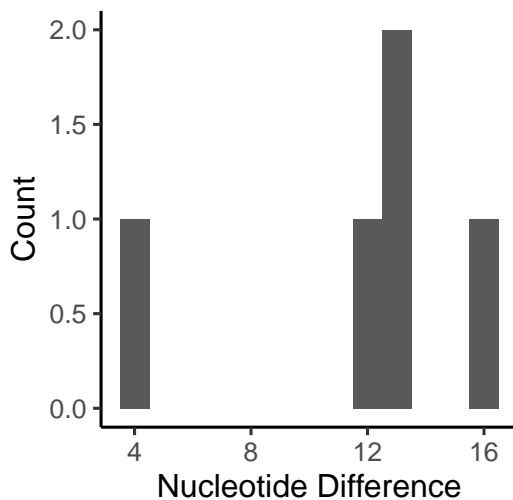
IGHV3-64*04

318 sequences assigned
No exact matches.



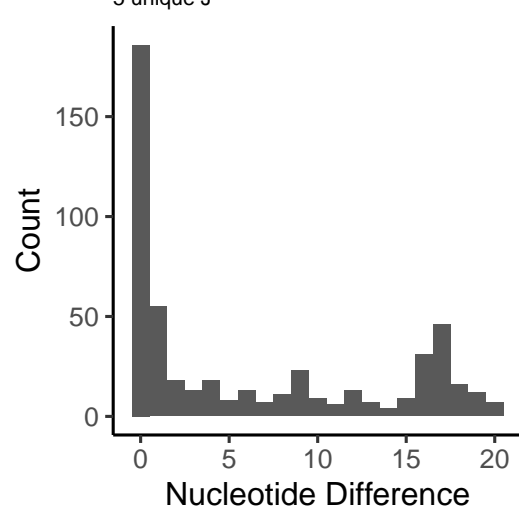
IGHV3-69-1*02

8 sequences assigned
No exact matches.



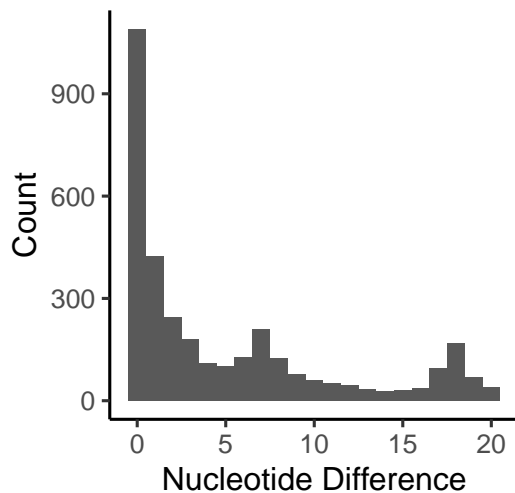
IGHV3-73*01_02

609 sequences assigned
186 (30.5%) exact matches, in which:
168 unique CDR3
5 unique J



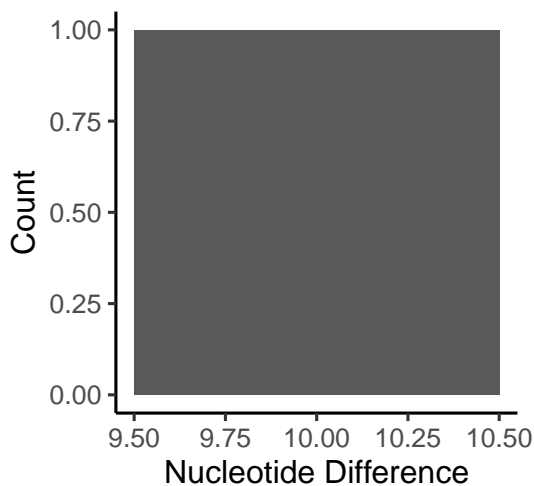
IGHV3-66*01

4007 sequences assigned
1090 (27.2%) exact matches, in which:
965 unique CDR3
6 unique J



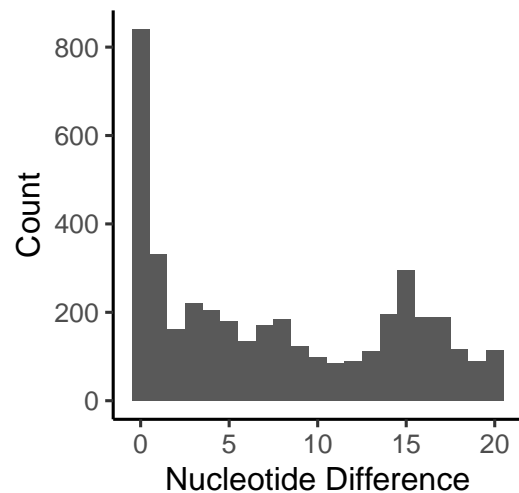
IGHV3-71*01_04

3 sequences assigned
No exact matches.



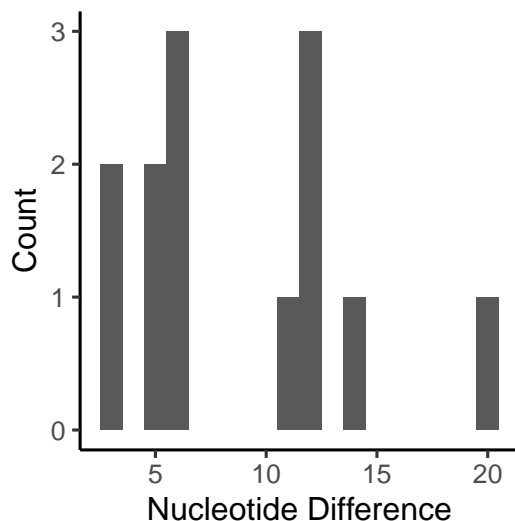
IGHV3-74*01_02

5909 sequences assigned
841 (14.2%) exact matches, in which:
706 unique CDR3
6 unique J



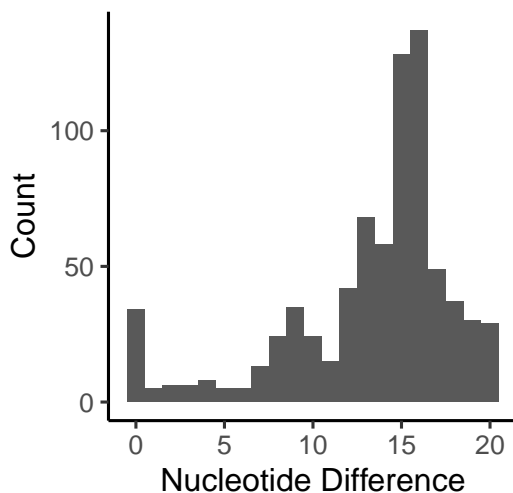
IGHV3-69-1*01

16 sequences assigned
No exact matches.



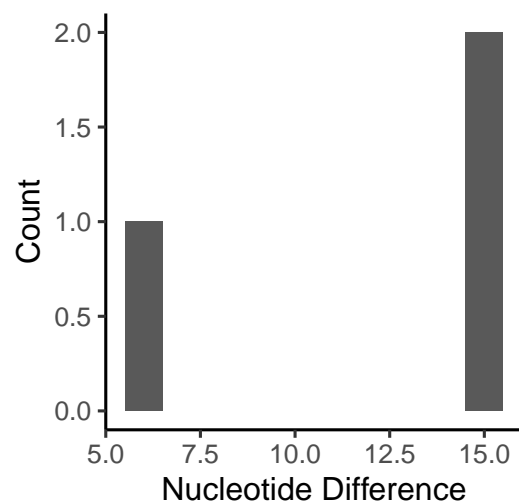
IGHV3-72*01

1131 sequences assigned
34 (3%) exact matches, in which:
29 unique CDR3
6 unique J



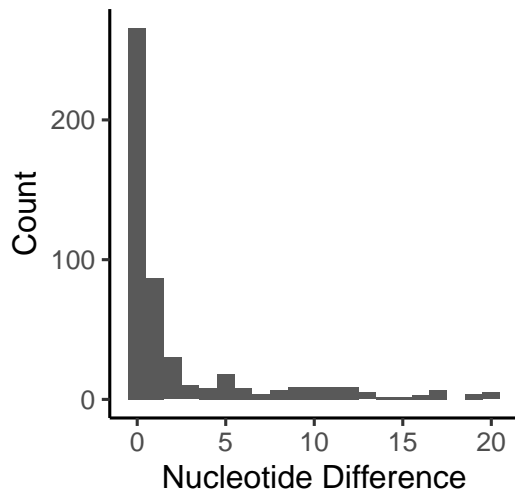
IGHV3-43D*04

3 sequences assigned
No exact matches.



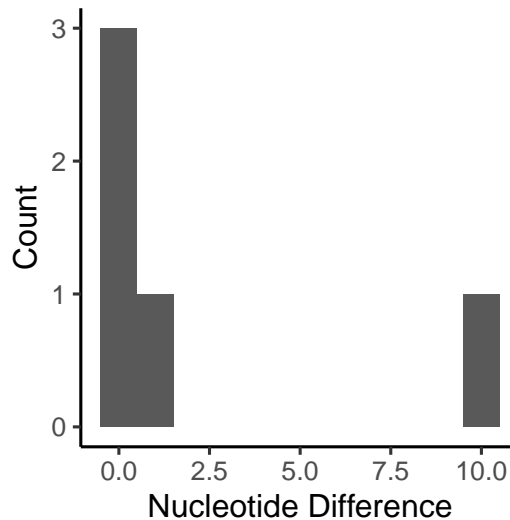
IGHV3–64D*06

647 sequences assigned
266 (41.1%) exact matches, in which:
226 unique CDR3
6 unique J



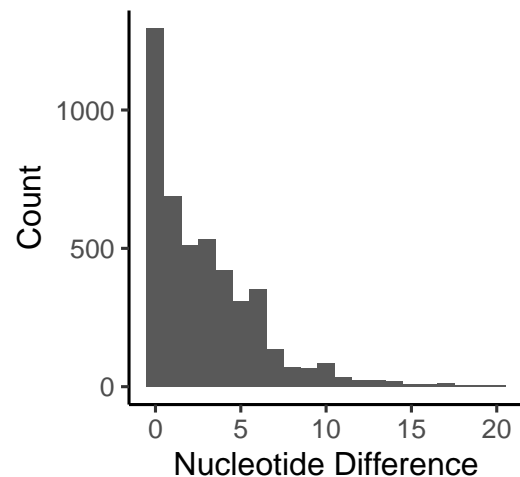
IGHV4–28*01_07

5 sequences assigned
3 (60%) exact matches, in which:
3 unique CDR3
3 unique J



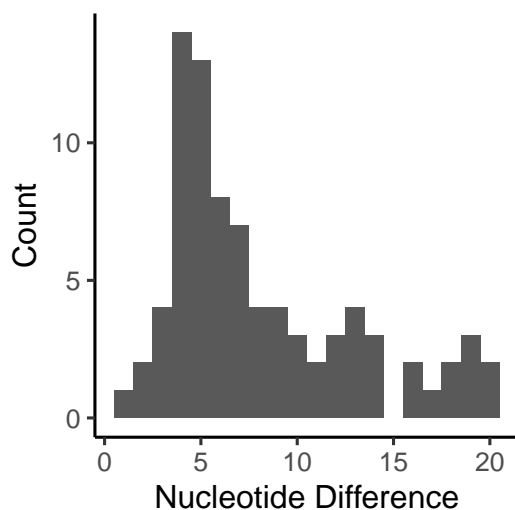
IGHV4–31*03_04

5031 sequences assigned
1295 (25.7%) exact matches, in which:
1243 unique CDR3
6 unique J



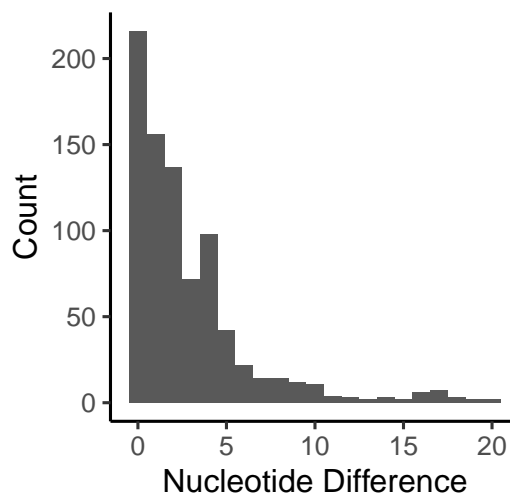
IGHV3–NL1*01

83 sequences assigned
No exact matches.



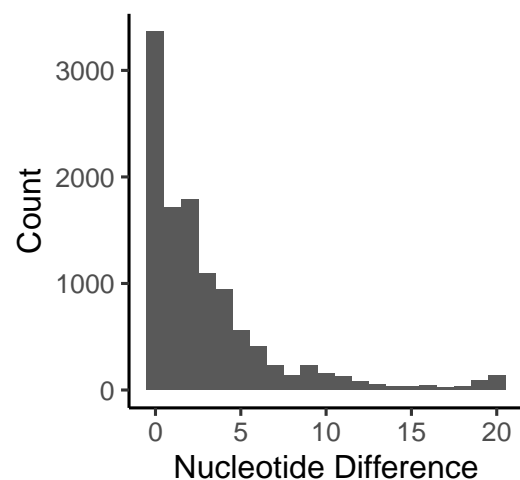
IGHV4–30–2*01

841 sequences assigned
216 (25.7%) exact matches, in which:
193 unique CDR3
6 unique J



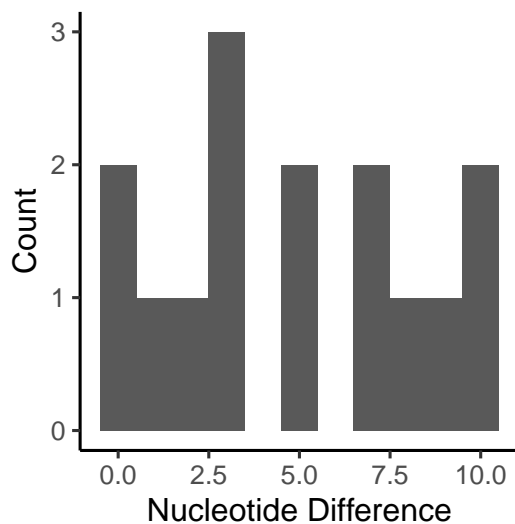
IGHV4–34*01_02

11970 sequences assigned
3363 (28.1%) exact matches, in which:
3168 unique CDR3
6 unique J



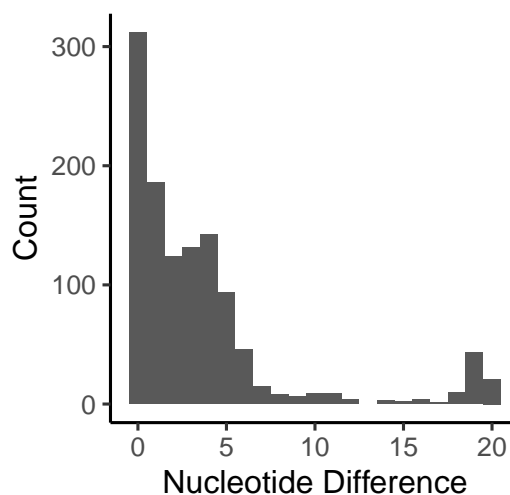
IGHV4–28*03

15 sequences assigned
2 (13.3%) exact matches, in which:
2 unique CDR3
2 unique J



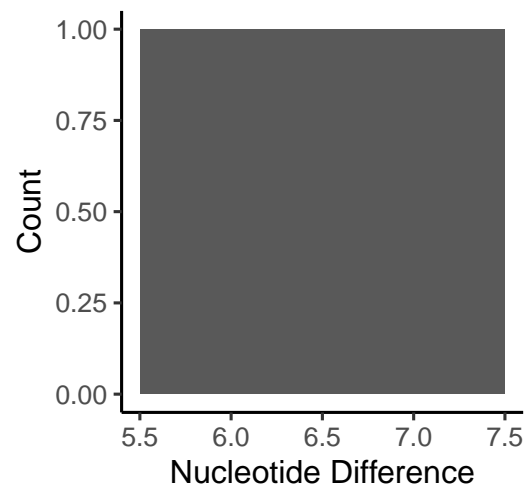
IGHV4–30–4*01

1206 sequences assigned
312 (25.9%) exact matches, in which:
302 unique CDR3
6 unique J



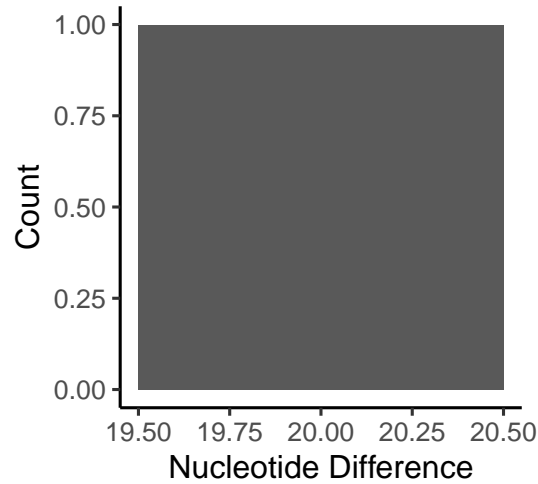
IGHV4–38–2*01

4 sequences assigned
No exact matches.



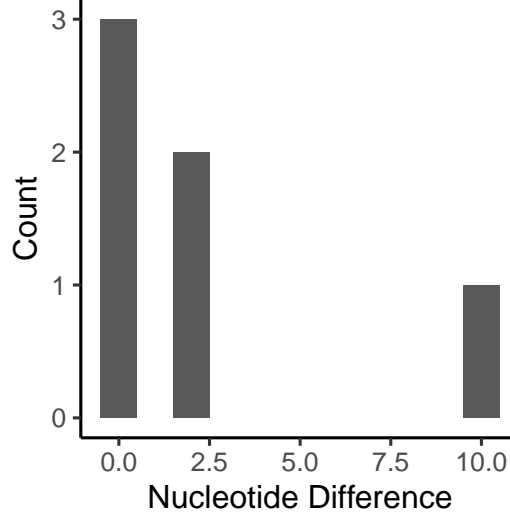
IGHV4-38-2*02

2 sequences assigned
No exact matches.



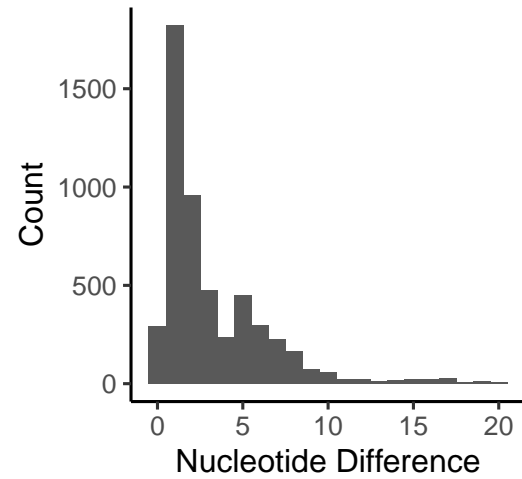
IGHV4-55*02_04_08

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



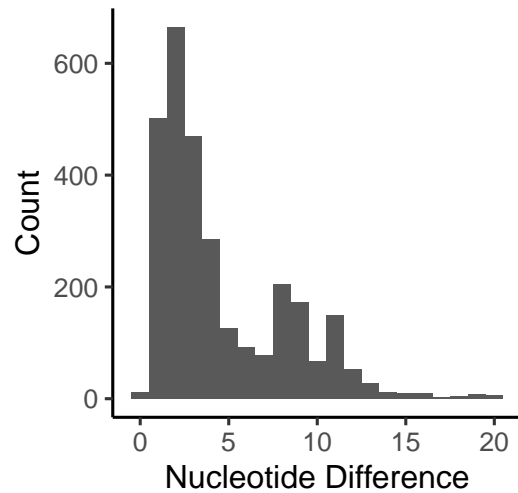
IGHV4-59*12

5268 sequences assigned
294 (5.6%) exact matches, in which:
291 unique CDR3
6 unique J



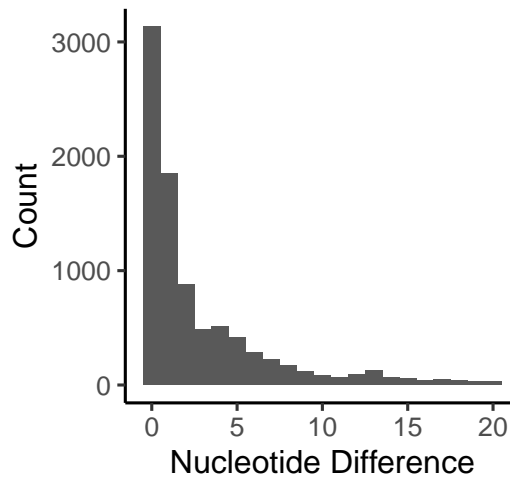
IGHV4-39*07

2968 sequences assigned
12 (0.4%) exact matches, in which:
12 unique CDR3
4 unique J



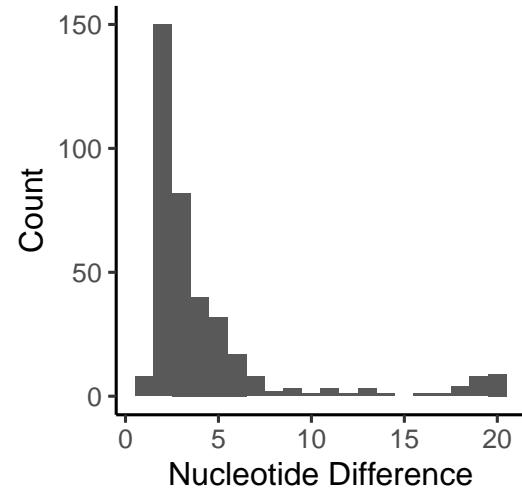
IGHV4-59*08

9369 sequences assigned
3133 (33.4%) exact matches, in which:
3011 unique CDR3
6 unique J



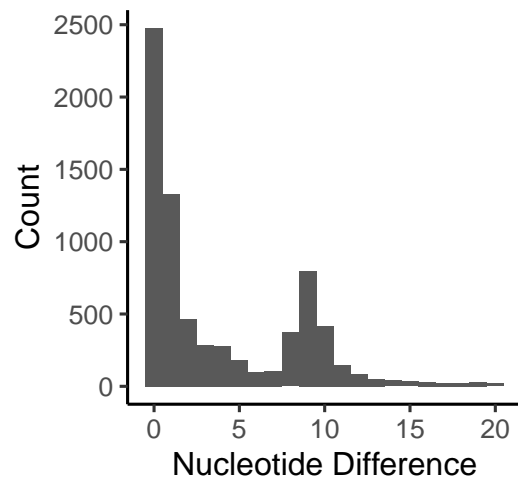
IGHV4-61*01

386 sequences assigned
No exact matches.



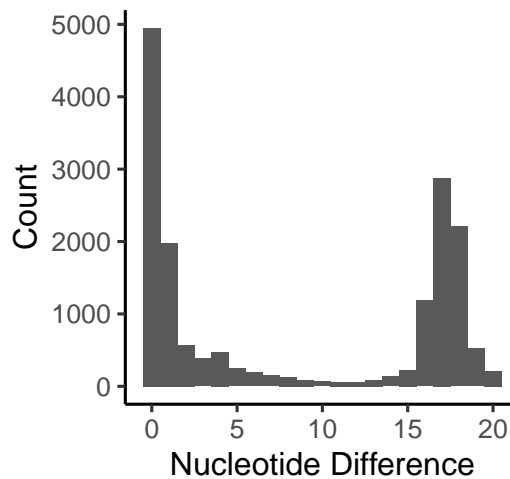
IGHV4-39*01_05

7487 sequences assigned
2477 (33.1%) exact matches, in which:
2311 unique CDR3
6 unique J



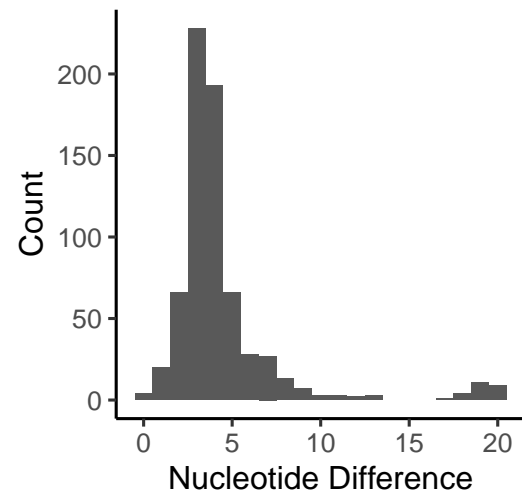
IGHV4-59*01_07

17235 sequences assigned
4949 (28.7%) exact matches, in which:
4781 unique CDR3
6 unique J



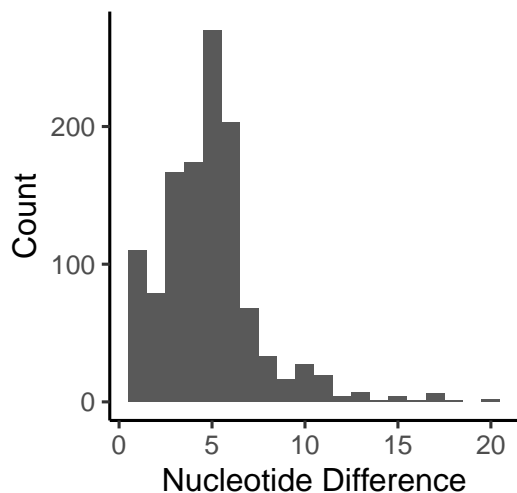
IGHV4-61*05

694 sequences assigned
4 (0.6%) exact matches, in which:
4 unique CDR3
3 unique J



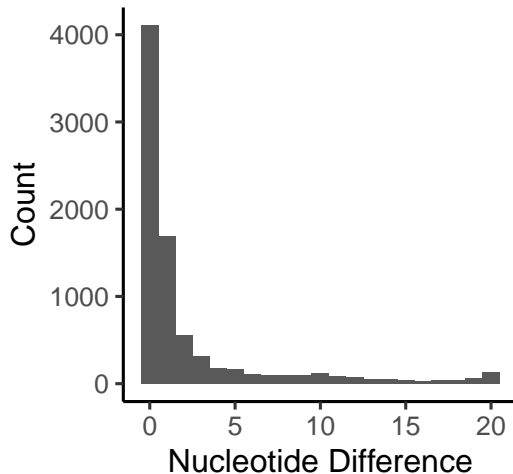
IGHV4–61*08

1200 sequences assigned
No exact matches.



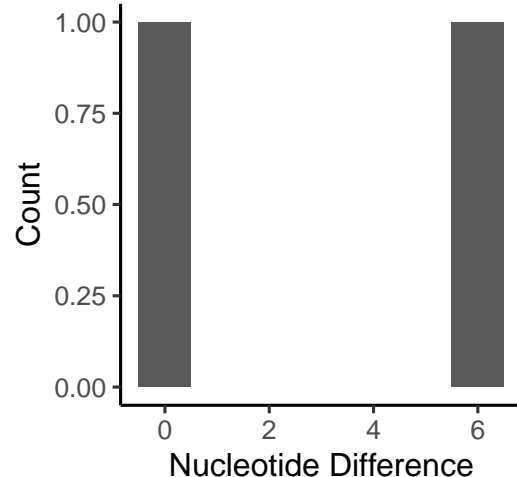
IGHV5–51*01_03

8906 sequences assigned
4107 (46.1%) exact matches, in which:
3562 unique CDR3
6 unique J



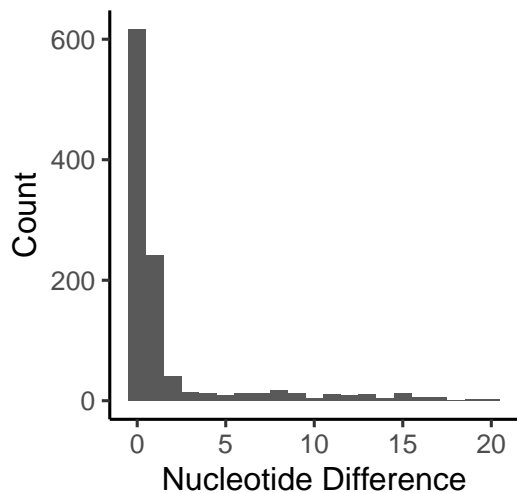
IGHV7–81*01

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



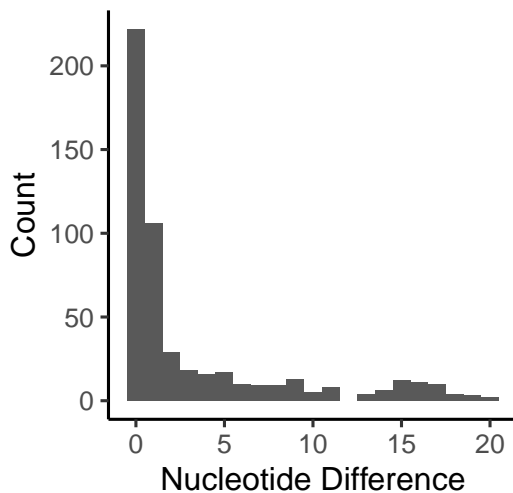
IGHV5–10–1*01_03

1064 sequences assigned
617 (58%) exact matches, in which:
565 unique CDR3
6 unique J



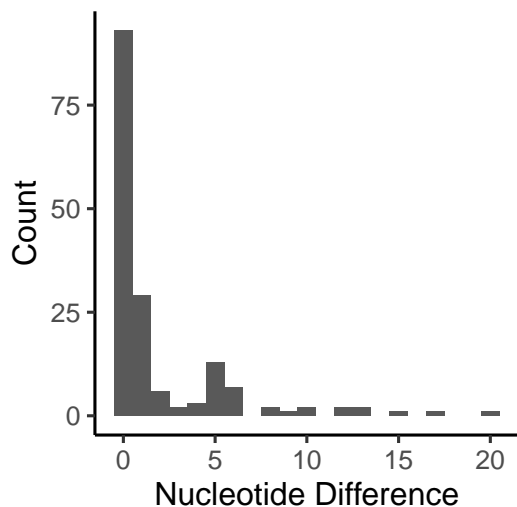
IGHV6–1*01_02

521 sequences assigned
222 (42.6%) exact matches, in which:
218 unique CDR3
6 unique J



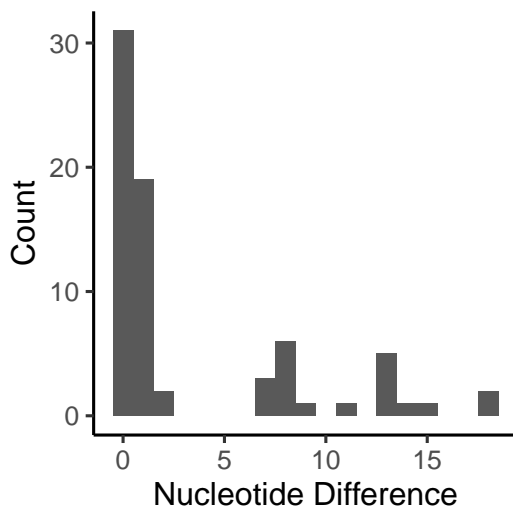
IGHV5–10–1*01_03_A118

166 sequences assigned
93 (56%) exact matches, in which:
91 unique CDR3
5 unique J



IGHV7–4–1*01

72 sequences assigned
31 (43.1%) exact matches, in which:
29 unique CDR3
6 unique J





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.

Warning – no inferred sequences found.