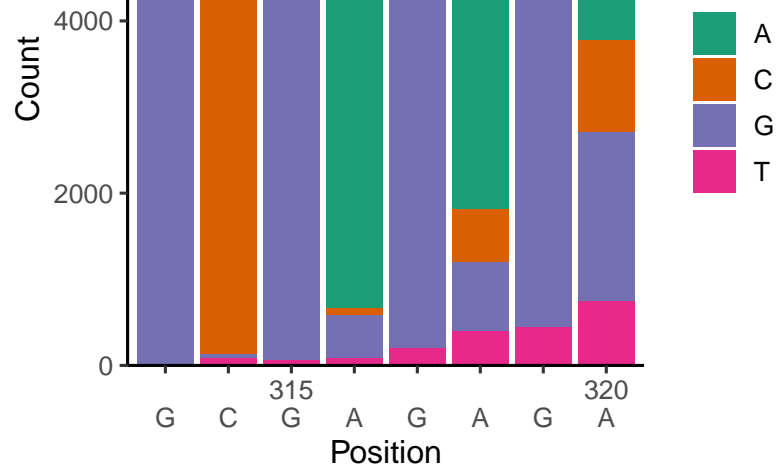
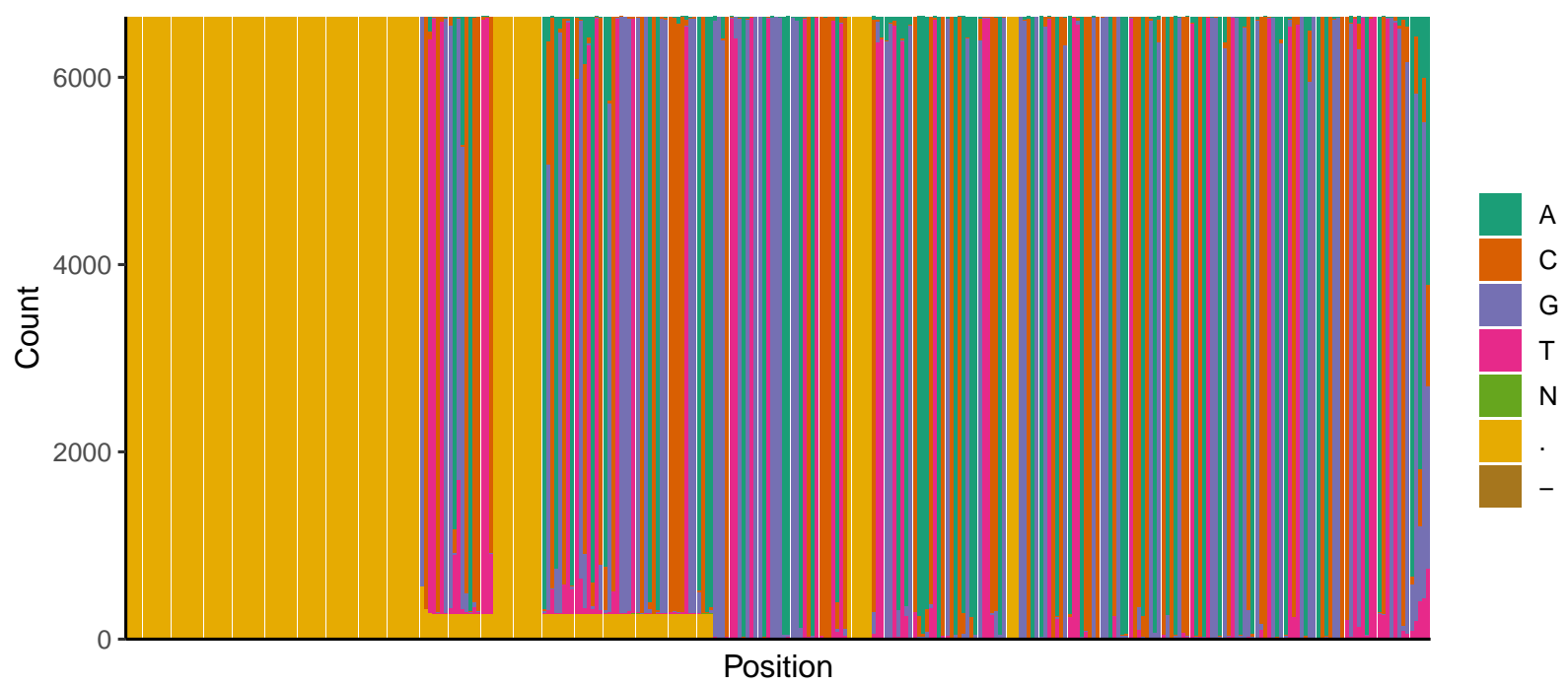


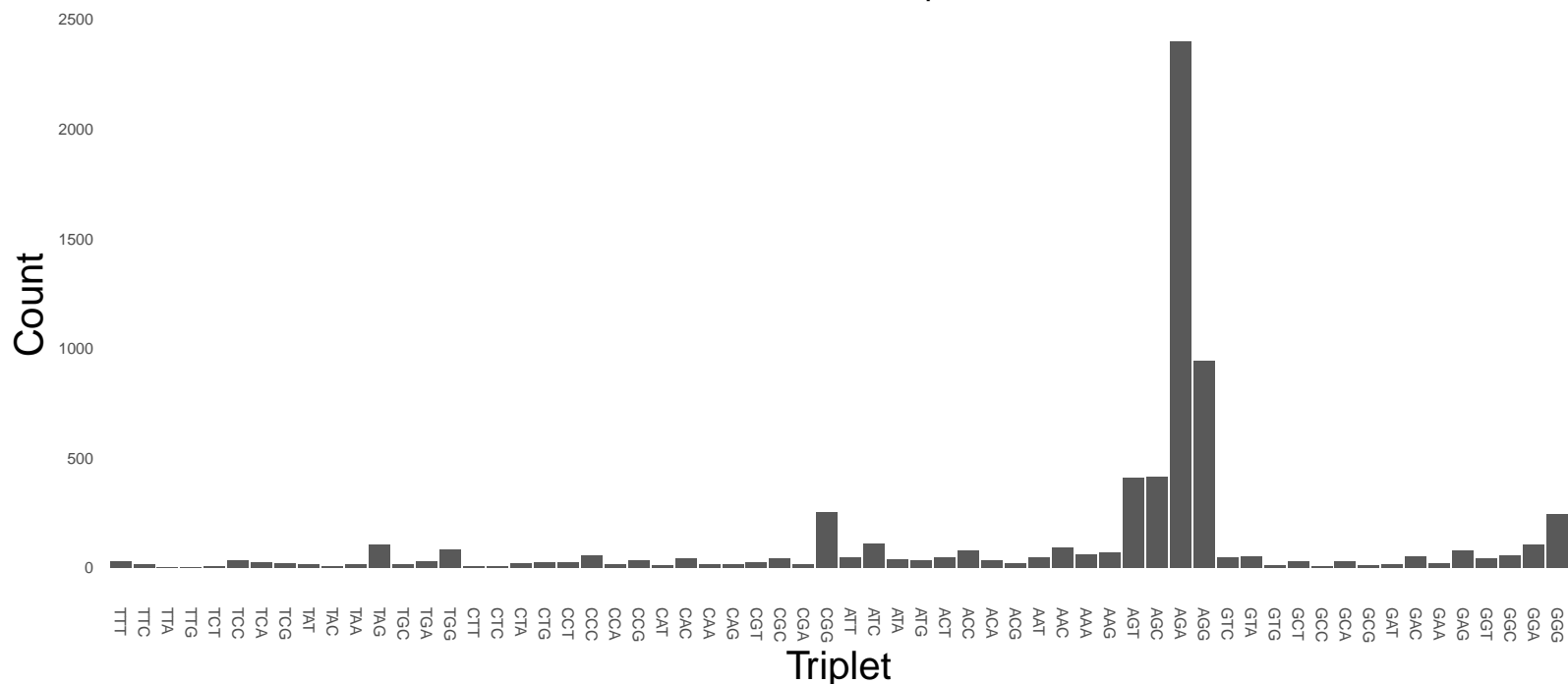
Gene IGHV1-69*04_09_A244G



Gene IGHV1-69*04_09_A244G

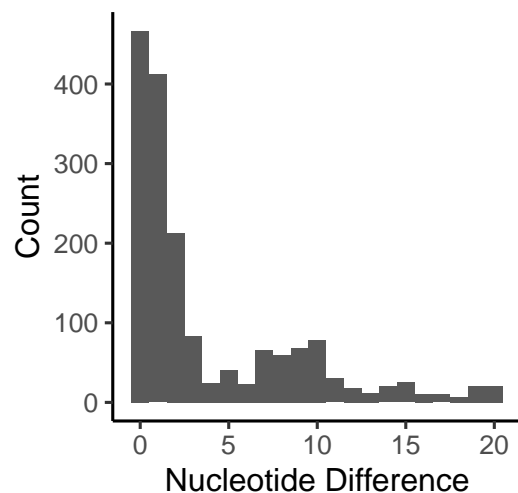


IGHV1-69*04_09_A244G- Final 3 nucleotides as a triplet



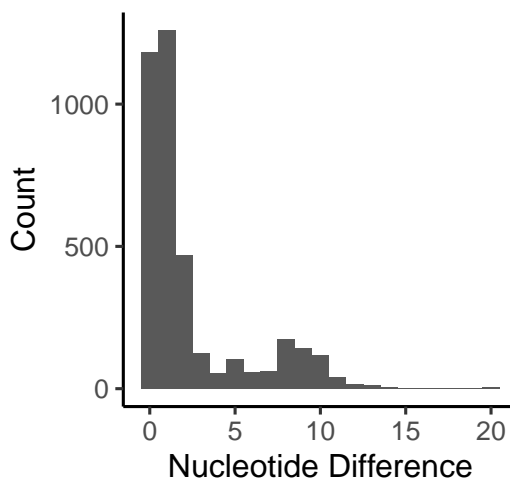
IGHV1-2*04

1732 sequences assigned
467 (27%) exact matches, in which:
407 unique CDR3
6 unique J



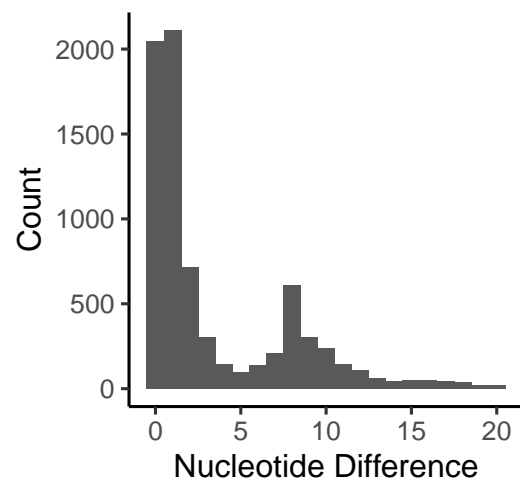
IGHV1-8*01

3847 sequences assigned
1183 (30.8%) exact matches, in which:
981 unique CDR3
6 unique J



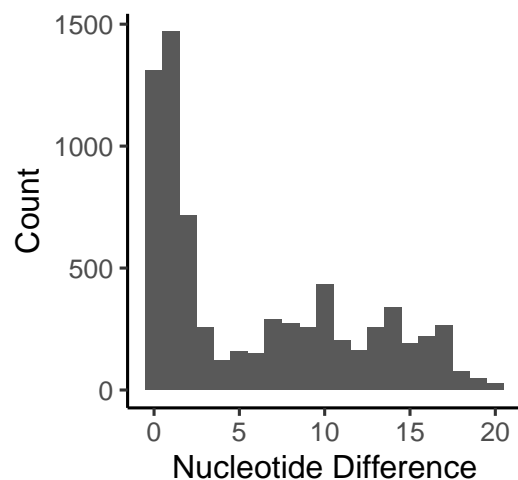
IGHV1-18*04

8092 sequences assigned
2044 (25.3%) exact matches, in which:
1685 unique CDR3
6 unique J



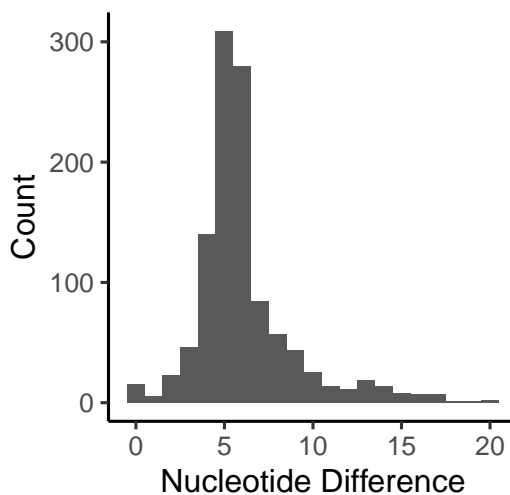
IGHV1-2*06

8147 sequences assigned
1311 (16.1%) exact matches, in which:
1057 unique CDR3
6 unique J



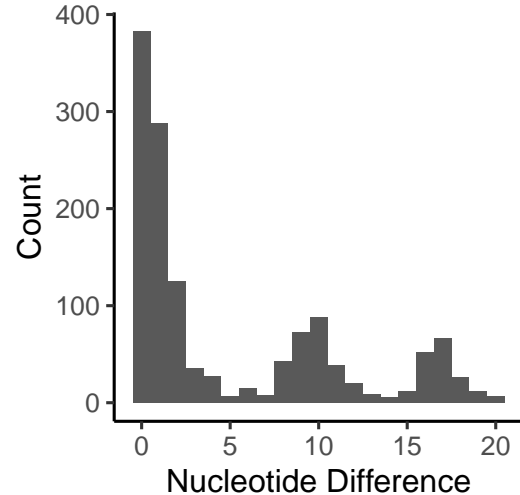
IGHV1-8*02

1117 sequences assigned
15 (1.3%) exact matches, in which:
15 unique CDR3
5 unique J



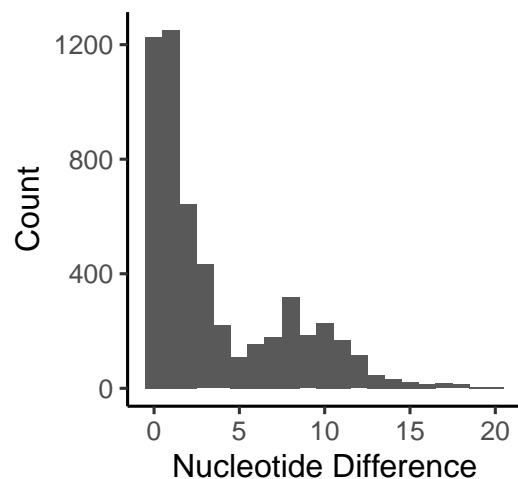
IGHV1-24*01

1396 sequences assigned
383 (27.4%) exact matches, in which:
318 unique CDR3
6 unique J



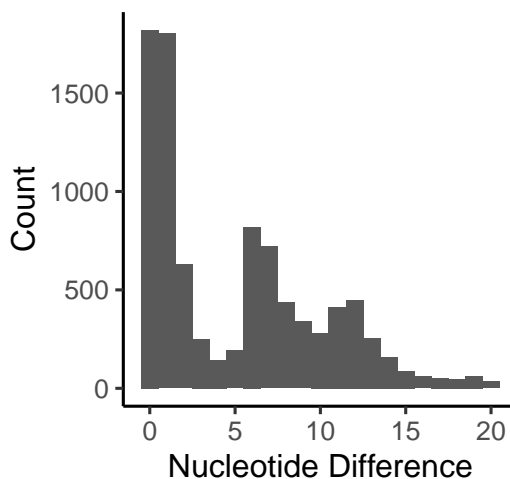
IGHV1-3*01_05

5471 sequences assigned
1226 (22.4%) exact matches, in which:
974 unique CDR3
6 unique J



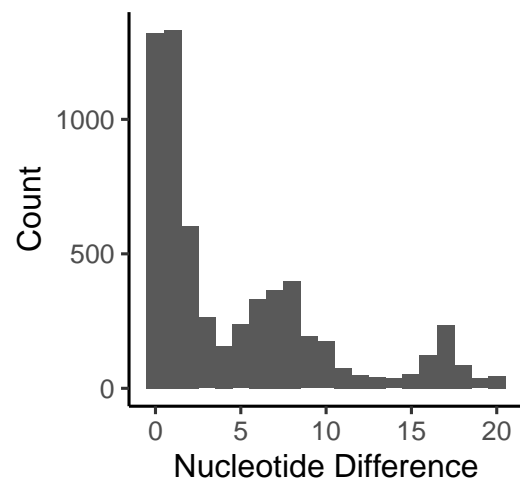
IGHV1-18*01

9314 sequences assigned
1820 (19.5%) exact matches, in which:
1507 unique CDR3
6 unique J



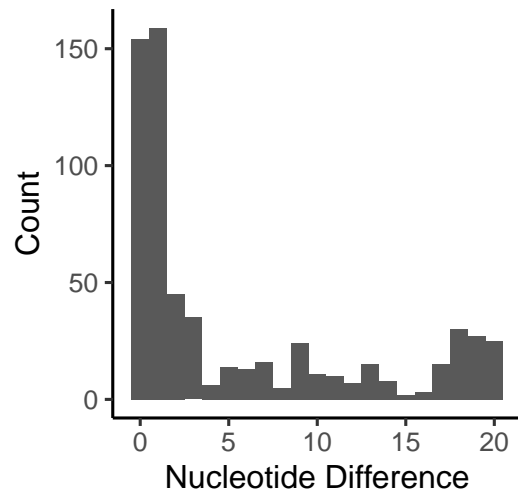
IGHV1-46*01

6377 sequences assigned
1321 (20.7%) exact matches, in which:
1131 unique CDR3
6 unique J



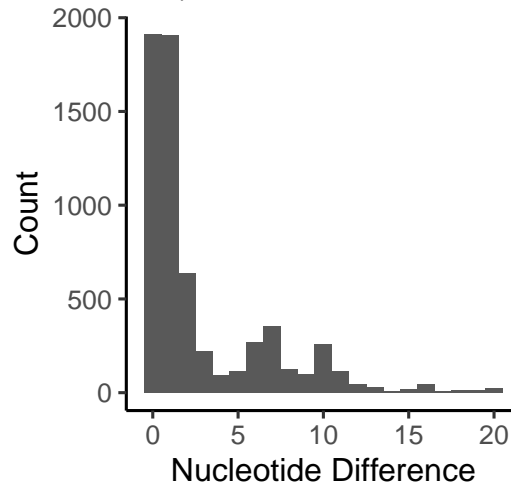
IGHV1–58*02

644 sequences assigned
154 (23.9%) exact matches, in which:
130 unique CDR3
5 unique J



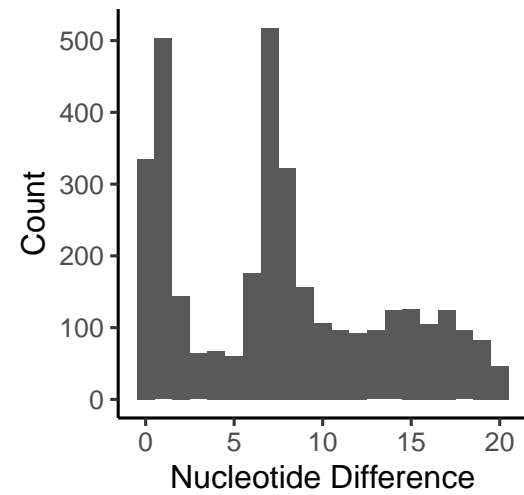
IGHV1–69*04_09_A244C

6647 sequences assigned
1911 (28.7%) exact matches, in which:
1606 unique CDR3
6 unique J



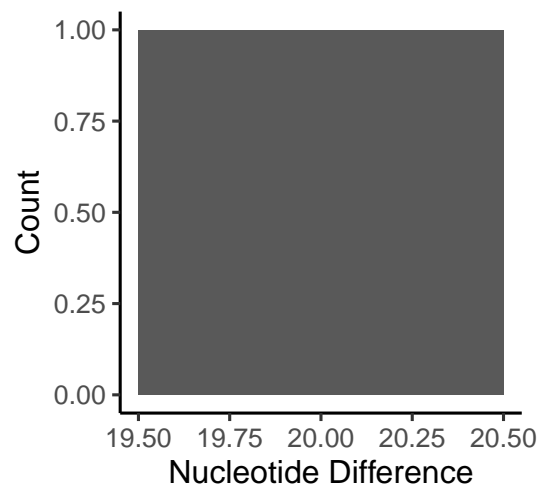
IGHV2–5*02

3735 sequences assigned
335 (9%) exact matches, in which:
251 unique CDR3
6 unique J



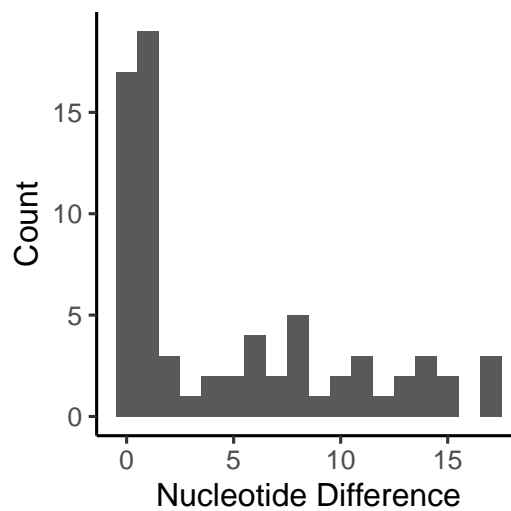
IGHV1–69–2*01

1 sequences assigned
No exact matches.



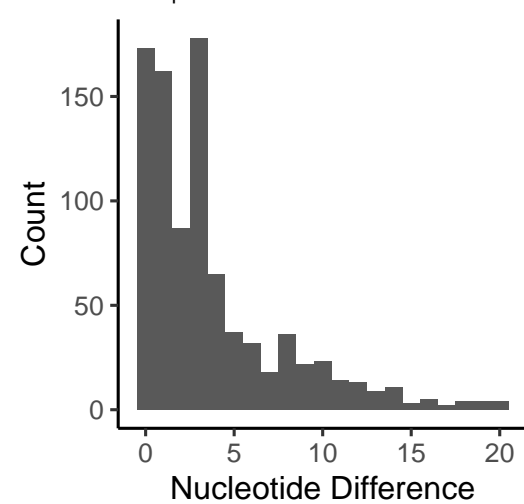
IGHV1–69D*01

96 sequences assigned
17 (17.7%) exact matches, in which:
16 unique CDR3
4 unique J



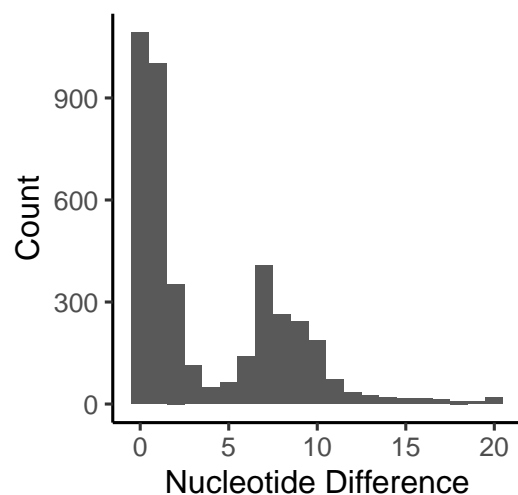
IGHV2–26*01

953 sequences assigned
173 (18.2%) exact matches, in which:
147 unique CDR3
5 unique J



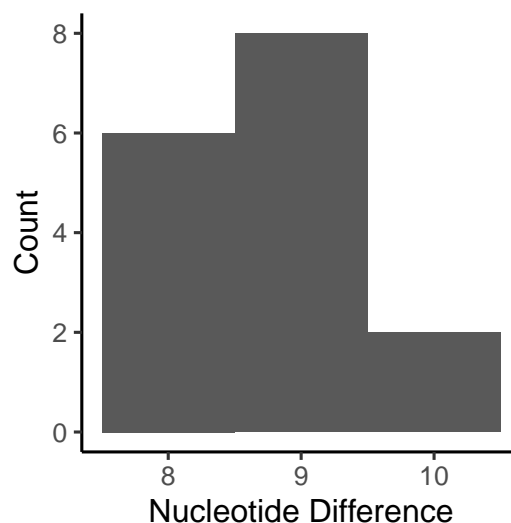
IGHV1–69*04_09

5055 sequences assigned
1093 (21.6%) exact matches, in which:
940 unique CDR3
6 unique J



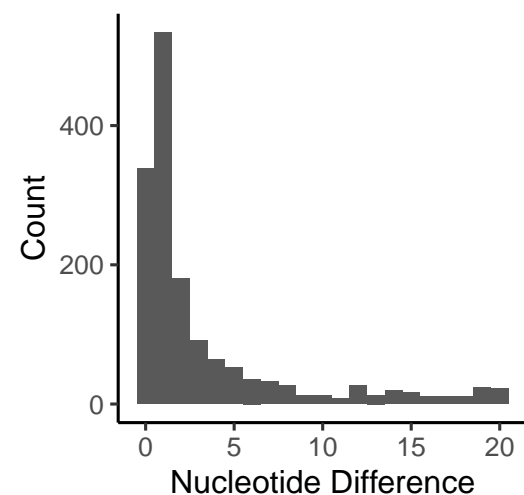
IGHV1–NL1*01

16 sequences assigned
No exact matches.



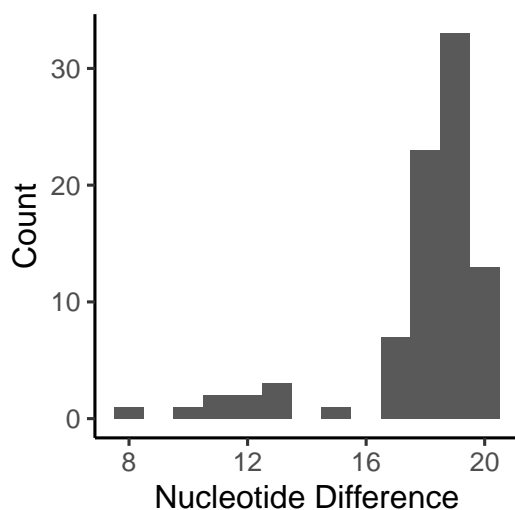
IGHV2–70*11_15

1851 sequences assigned
339 (18.3%) exact matches, in which:
225 unique CDR3
6 unique J



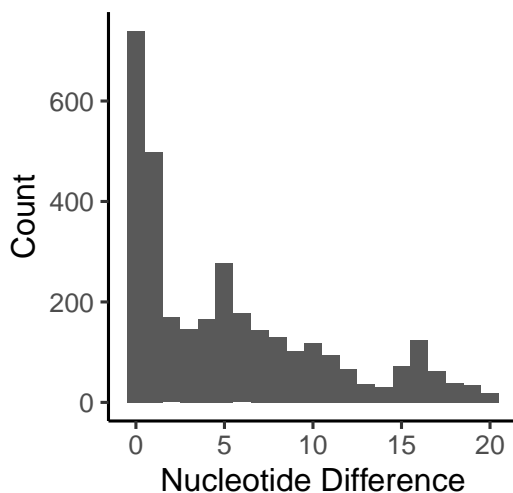
IGHV2-70D*04

110 sequences assigned
No exact matches.



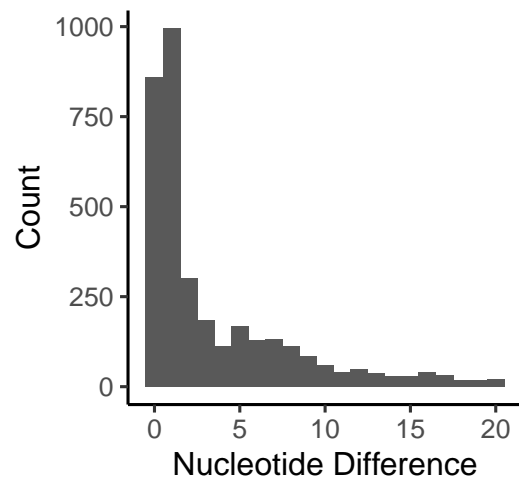
IGHV3-9*01

3787 sequences assigned
740 (19.5%) exact matches, in which:
418 unique CDR3
6 unique J



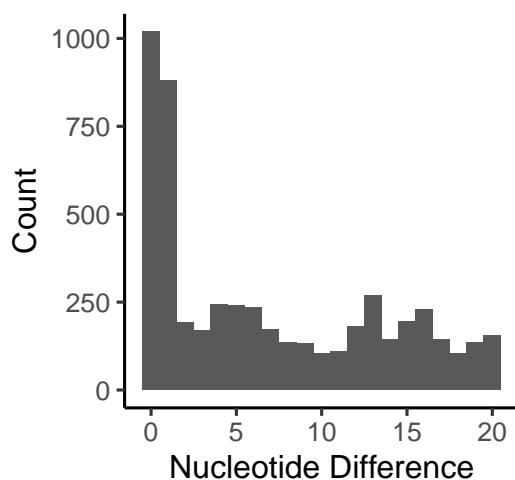
IGHV3-11*06

3933 sequences assigned
860 (21.9%) exact matches, in which:
540 unique CDR3
6 unique J



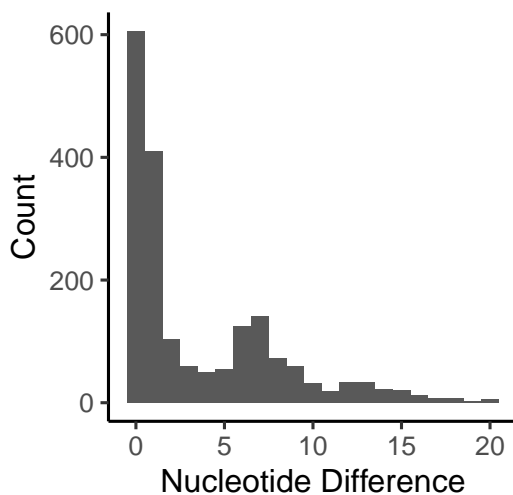
IGHV3-7*01

6745 sequences assigned
1019 (15.1%) exact matches, in which:
743 unique CDR3
6 unique J



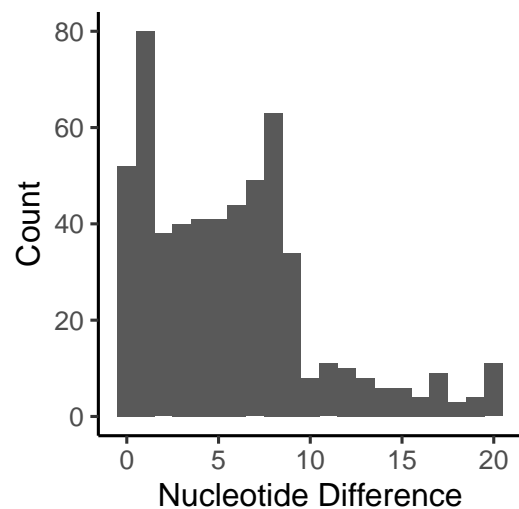
IGHV3-11*01

2289 sequences assigned
606 (26.5%) exact matches, in which:
404 unique CDR3
6 unique J



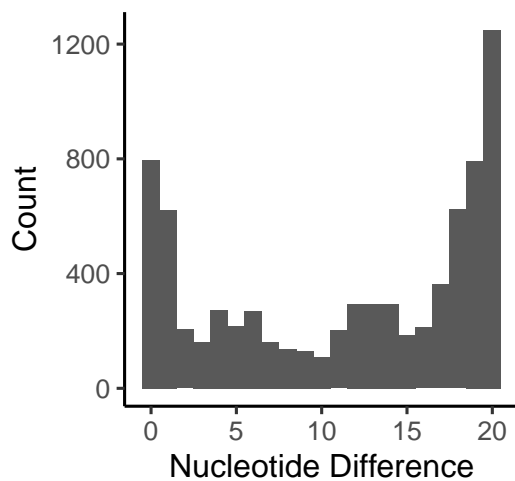
IGHV3-11*03_05

660 sequences assigned
52 (7.9%) exact matches, in which:
44 unique CDR3
5 unique J



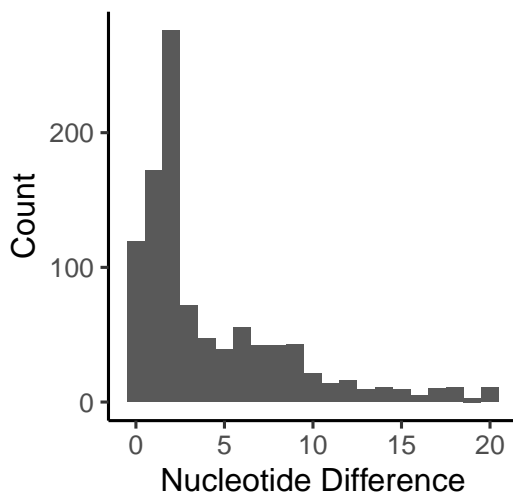
IGHV3-7*03

11276 sequences assigned
795 (7.1%) exact matches, in which:
546 unique CDR3
6 unique J



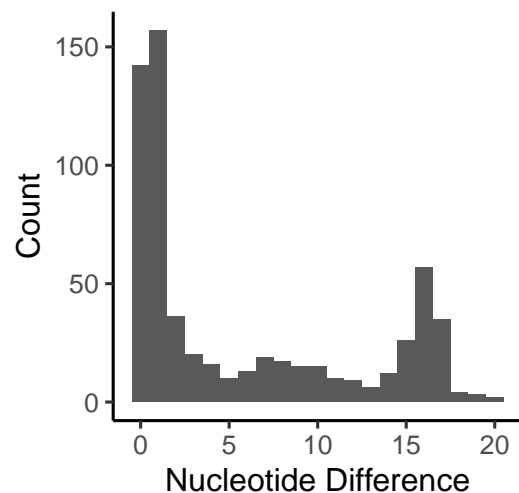
IGHV3-11*04

1117 sequences assigned
119 (10.7%) exact matches, in which:
116 unique CDR3
6 unique J



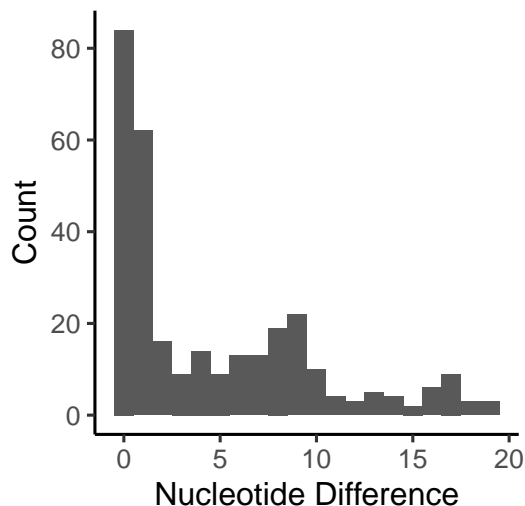
IGHV3-13*01

649 sequences assigned
142 (21.9%) exact matches, in which:
92 unique CDR3
5 unique J



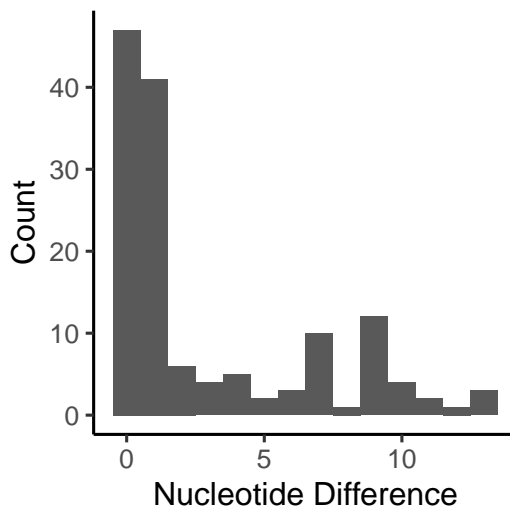
IGHV3-13*05

317 sequences assigned
84 (26.5%) exact matches, in which:
60 unique CDR3
6 unique J



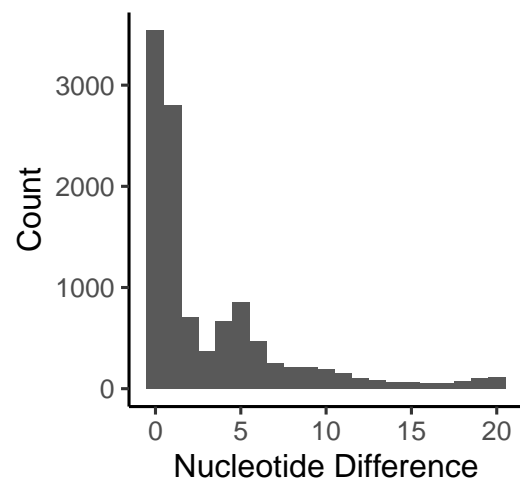
IGHV3-20*01_02

152 sequences assigned
47 (30.9%) exact matches, in which:
25 unique CDR3
5 unique J



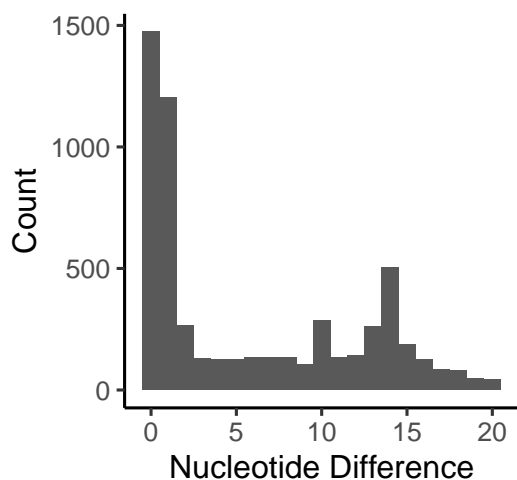
IGHV3-21*01_02

13167 sequences assigned
3541 (26.9%) exact matches, in which:
2185 unique CDR3
6 unique J



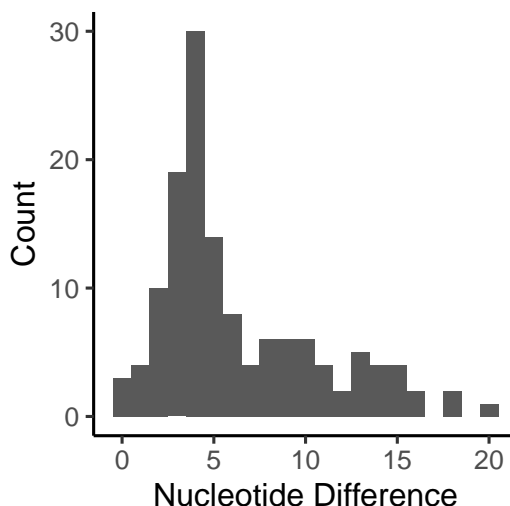
IGHV3-15*01_02

6381 sequences assigned
1474 (23.1%) exact matches, in which:
846 unique CDR3
6 unique J



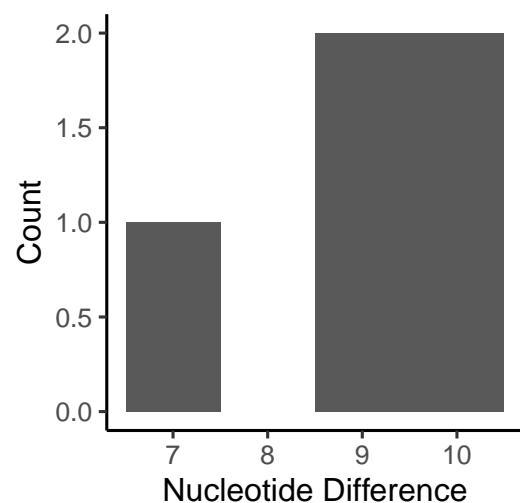
IGHV3-20*03_04

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



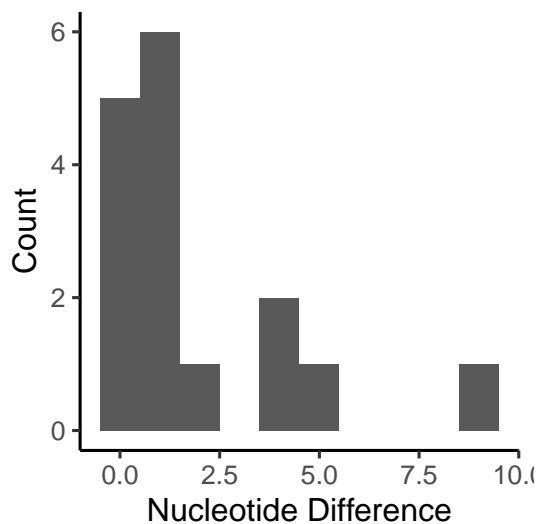
IGHV3-22*01_02

9 sequences assigned
No exact matches.



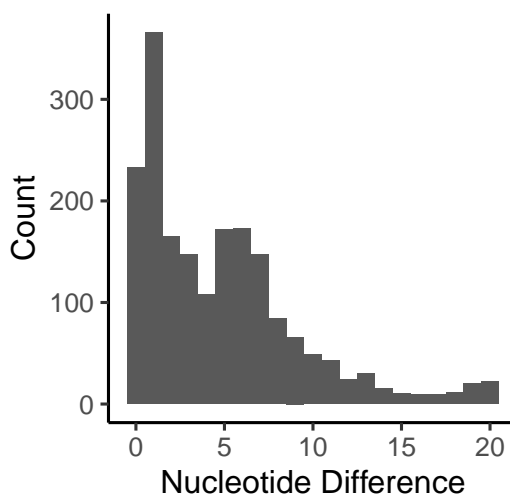
IGHV3-19*01

16 sequences assigned
5 (31.2%) exact matches, in which:
4 unique CDR3
4 unique J



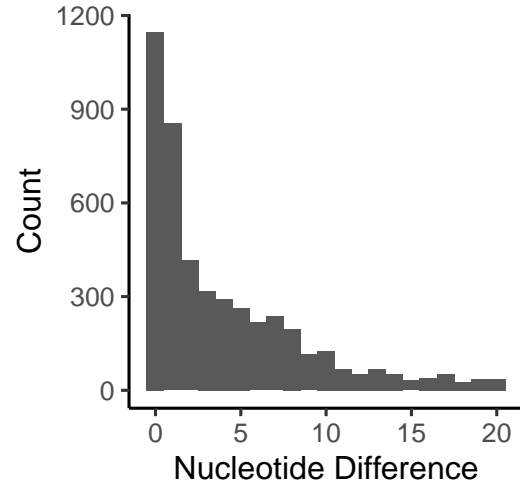
IGHV3-21*04

2301 sequences assigned
233 (10.1%) exact matches, in which:
214 unique CDR3
6 unique J



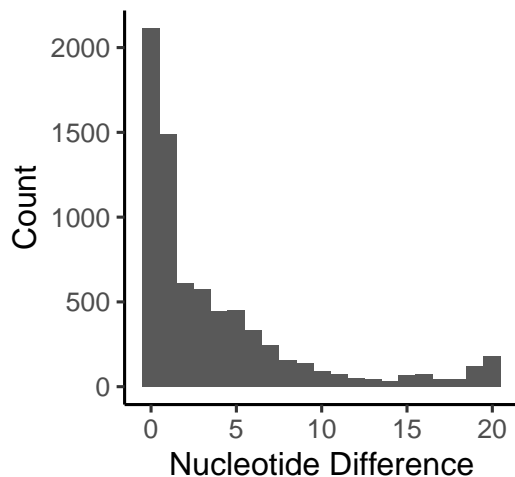
IGHV3-23*03

5371 sequences assigned
1147 (21.4%) exact matches, in which:
738 unique CDR3
6 unique J



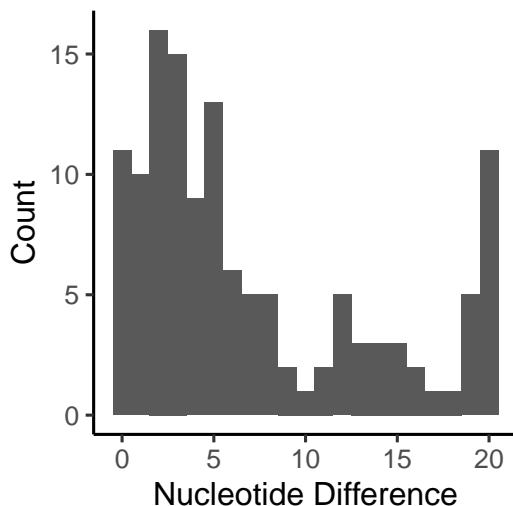
IGHV3-30-3*01

9538 sequences assigned
2113 (22.2%) exact matches, in which:
1403 unique CDR3
6 unique J



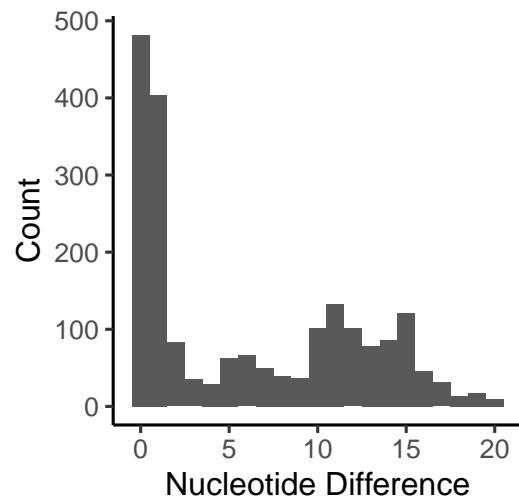
IGHV3-33*05

327 sequences assigned
11 (3.4%) exact matches, in which:
9 unique CDR3
3 unique J



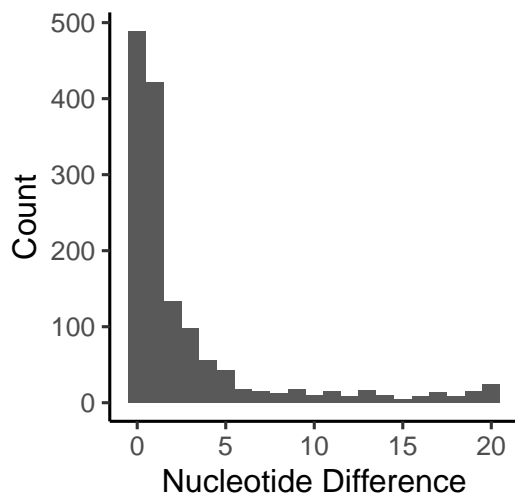
IGHV3-43*02

2230 sequences assigned
482 (21.6%) exact matches, in which:
270 unique CDR3
6 unique J



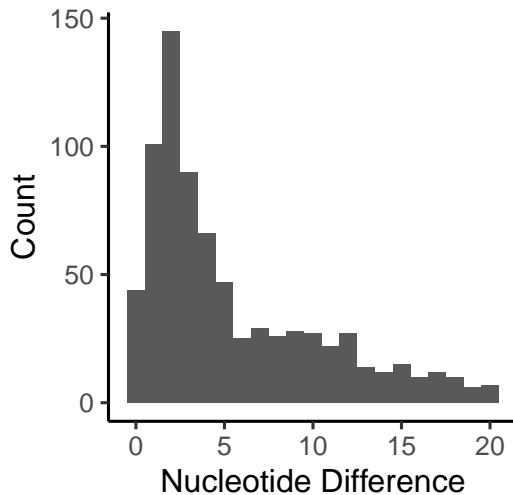
IGHV3-30*03

3152 sequences assigned
489 (15.5%) exact matches, in which:
444 unique CDR3
6 unique J



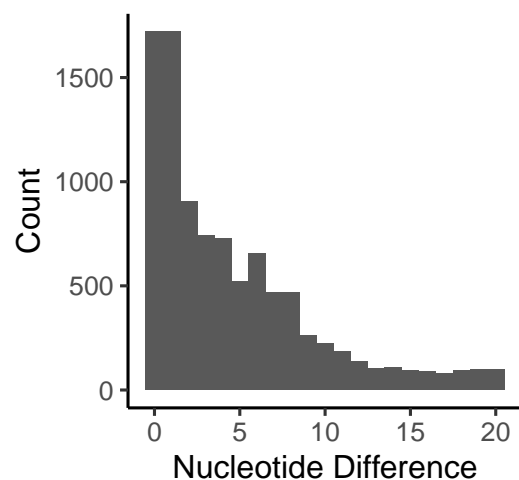
IGHV3-33*06

787 sequences assigned
44 (5.6%) exact matches, in which:
43 unique CDR3
4 unique J



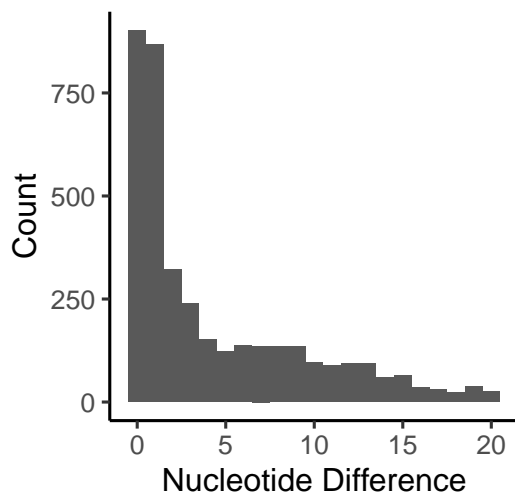
IGHV3-48*03

11872 sequences assigned
1720 (14.5%) exact matches, in which:
999 unique CDR3
6 unique J



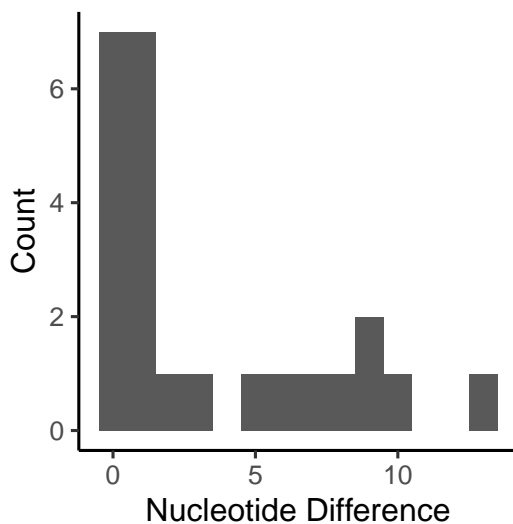
IGHV3-33*01

4104 sequences assigned
902 (22%) exact matches, in which:
595 unique CDR3
6 unique J



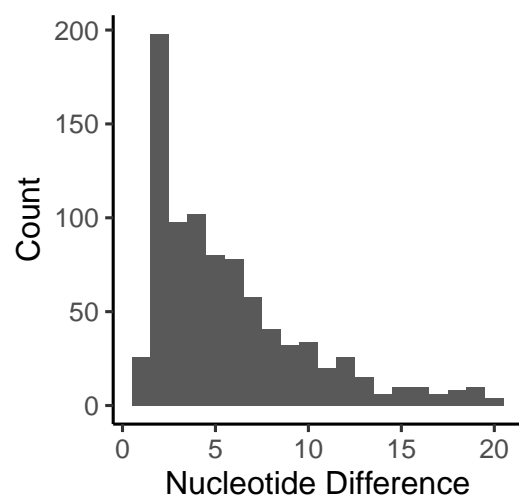
IGHV3-35*01

24 sequences assigned
7 (29.2%) exact matches, in which:
5 unique CDR3
3 unique J



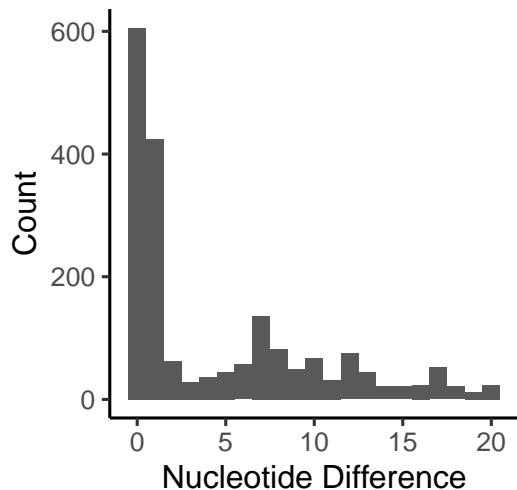
IGHV3-48*04

976 sequences assigned
No exact matches.



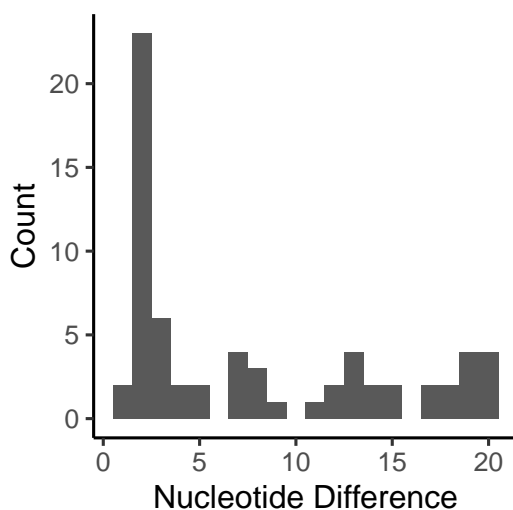
IGHV3-49*04

2476 sequences assigned
606 (24.5%) exact matches, in which:
371 unique CDR3
6 unique J



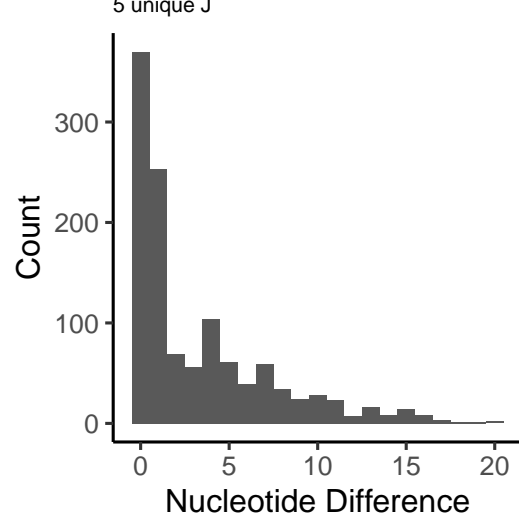
IGHV3-53*05

416 sequences assigned
No exact matches.



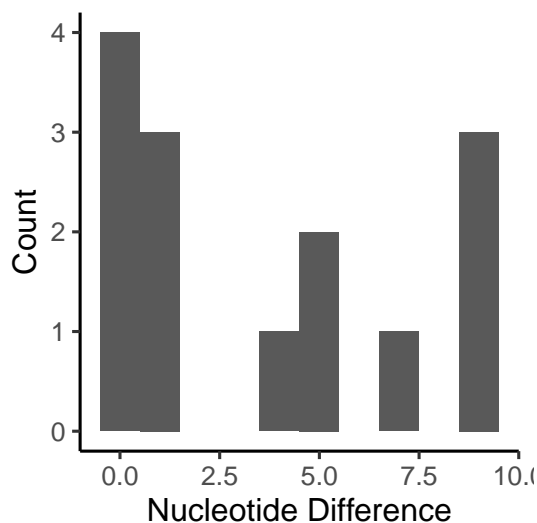
IGHV3-64*01

1247 sequences assigned
370 (29.7%) exact matches, in which:
240 unique CDR3
5 unique J



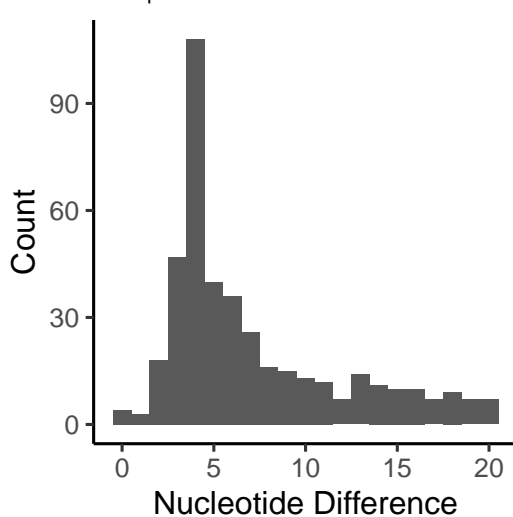
IGHV3-52*01_03

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



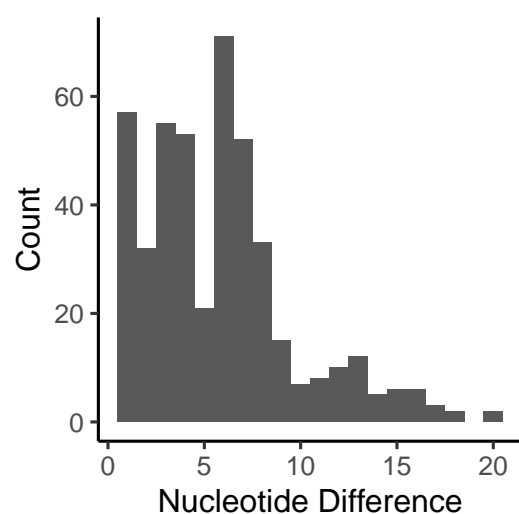
IGHV3-53*01_02

504 sequences assigned
4 (0.8%) exact matches, in which:
3 unique CDR3
2 unique J



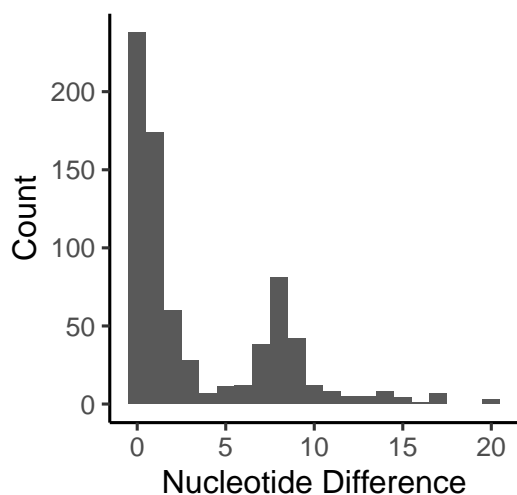
IGHV3-64*04

470 sequences assigned
No exact matches.



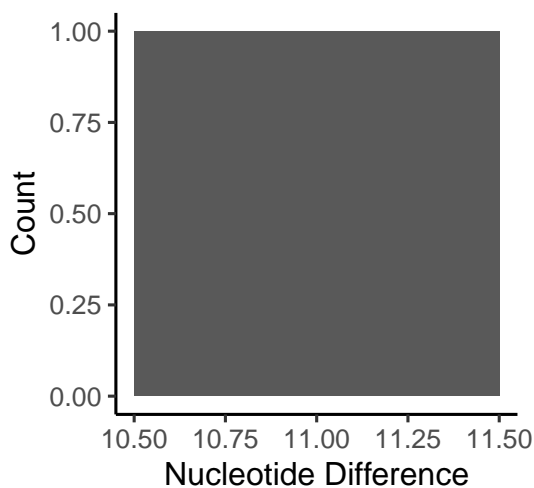
IGHV3-53*04

853 sequences assigned
238 (27.9%) exact matches, in which:
168 unique CDR3
6 unique J



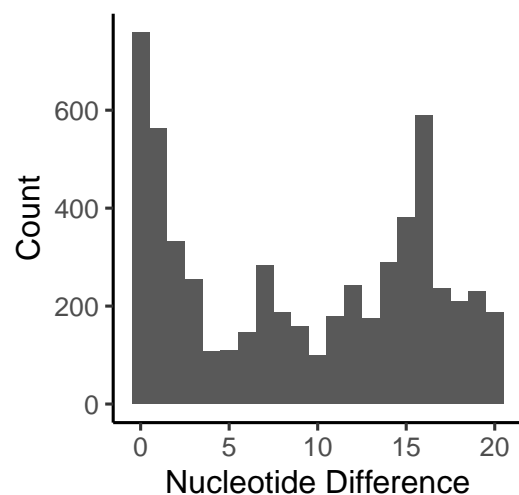
IGHV3-62*03

1 sequences assigned
No exact matches.



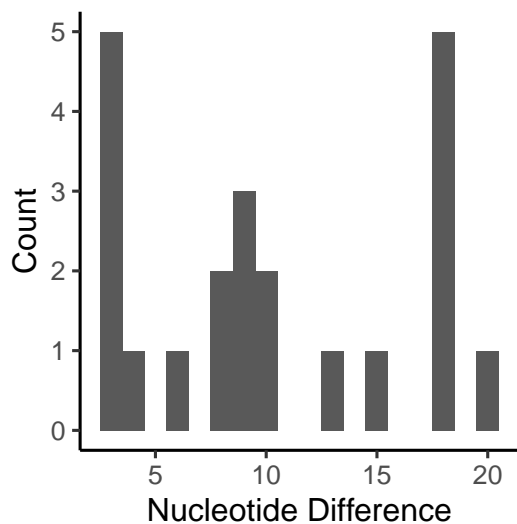
IGHV3-66*01

7087 sequences assigned
759 (10.7%) exact matches, in which:
525 unique CDR3
6 unique J



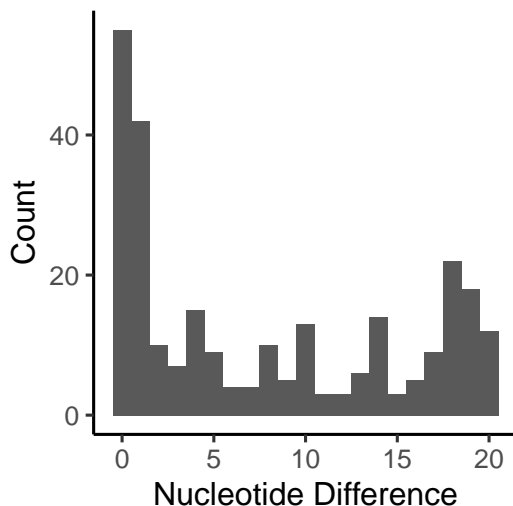
IGHV3-69-1*01

26 sequences assigned
No exact matches.



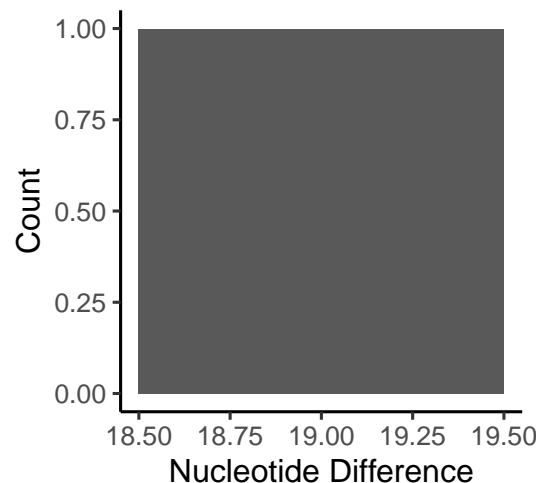
IGHV3-72*01

468 sequences assigned
55 (11.8%) exact matches, in which:
40 unique CDR3
5 unique J



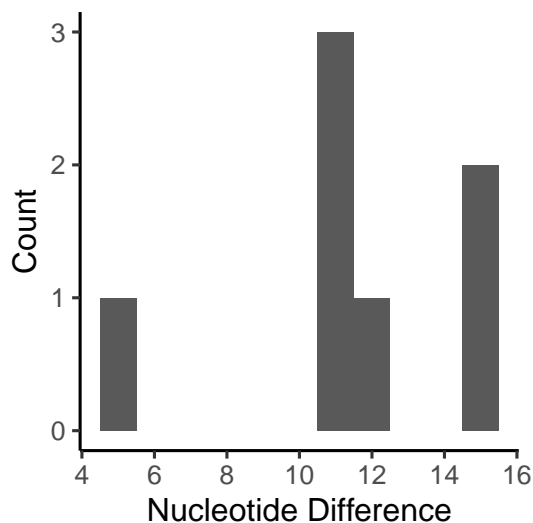
IGHV3-43D*04

1 sequences assigned
No exact matches.



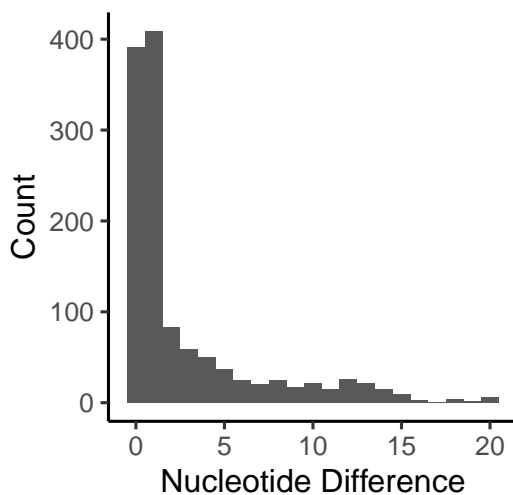
IGHV3-69-1*02

35 sequences assigned
No exact matches.



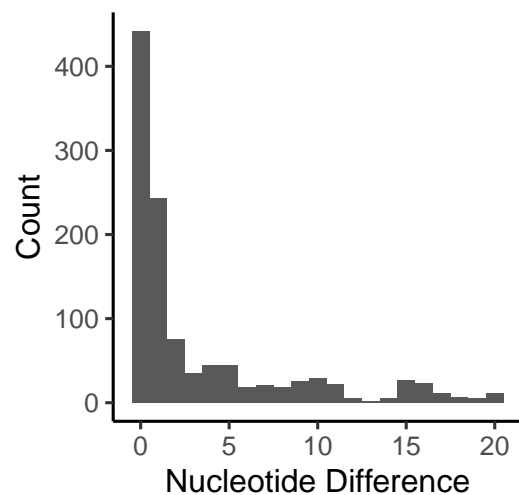
IGHV3-73*01_02

1518 sequences assigned
391 (25.8%) exact matches, in which:
240 unique CDR3
5 unique J



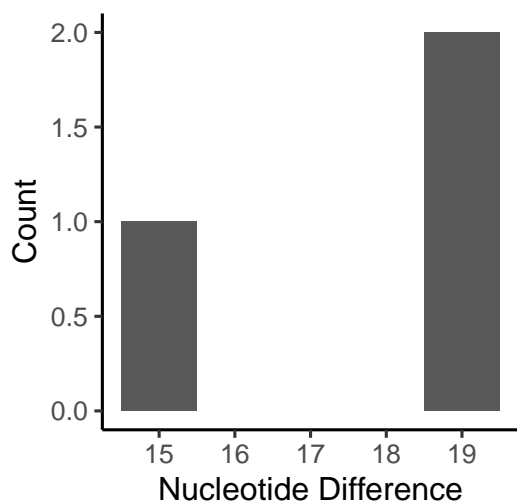
IGHV3-64D*06

1328 sequences assigned
442 (33.3%) exact matches, in which:
261 unique CDR3
6 unique J



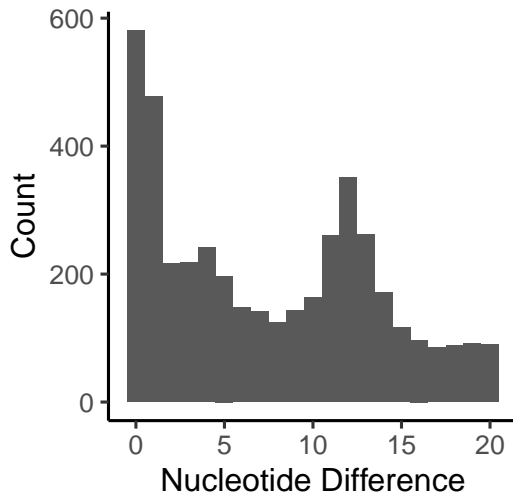
IGHV3-71*01_04

10 sequences assigned
No exact matches.



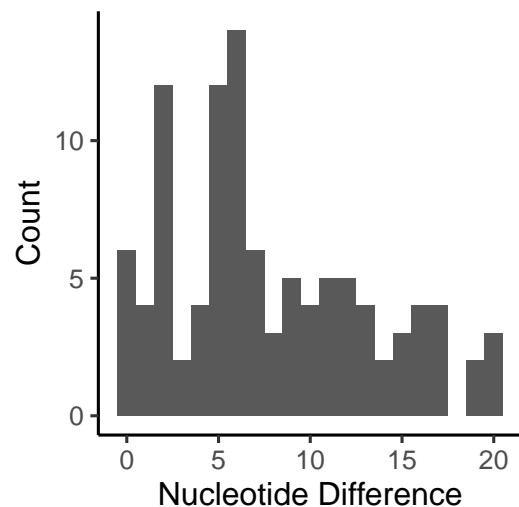
IGHV3-74*01_02

5233 sequences assigned
581 (11.1%) exact matches, in which:
404 unique CDR3
6 unique J



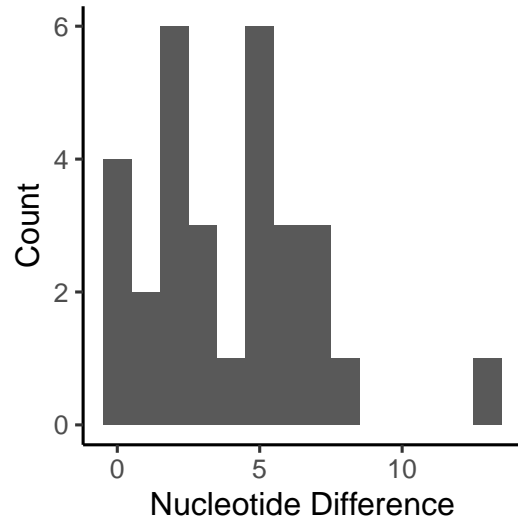
IGHV3-NL1*01

141 sequences assigned
6 (4.3%) exact matches, in which:
6 unique CDR3
2 unique J



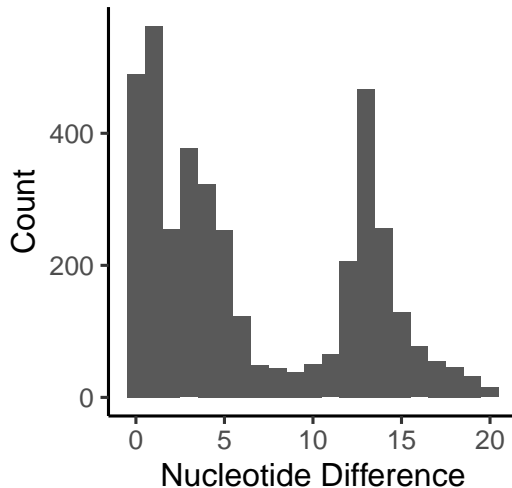
IGHV4-28*03

31 sequences assigned
4 (12.9%) exact matches, in which:
3 unique CDR3
2 unique J



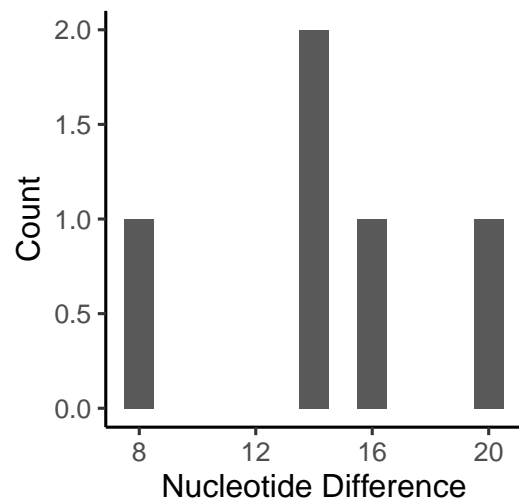
IGHV4-30-4*01

4999 sequences assigned
490 (9.8%) exact matches, in which:
378 unique CDR3
6 unique J



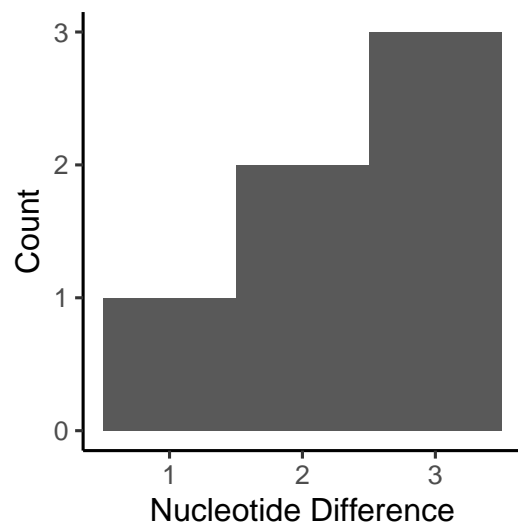
IGHV4-38-2*01

30 sequences assigned
No exact matches.



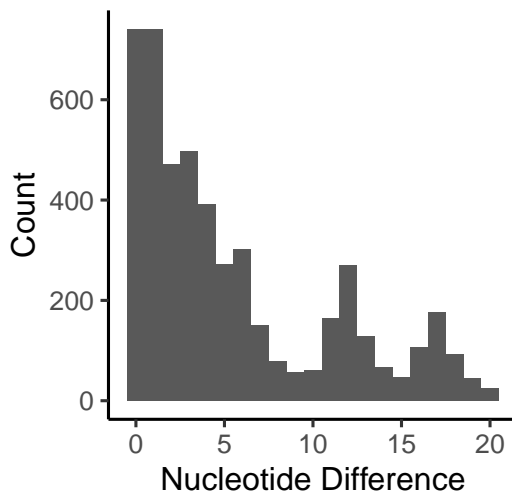
IGHV4-28*02_05

6 sequences assigned
No exact matches.



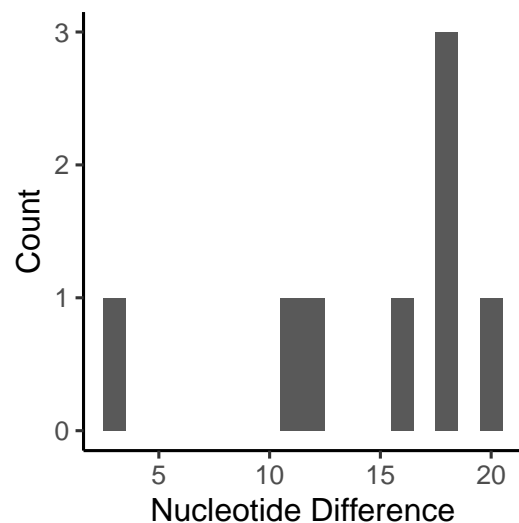
IGHV4-31*03_04

6152 sequences assigned
740 (12%) exact matches, in which:
613 unique CDR3
6 unique J



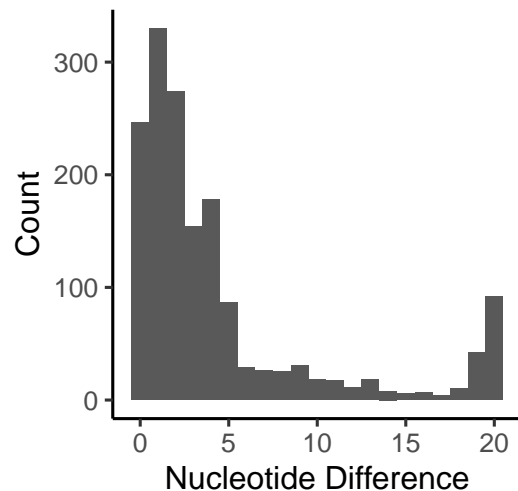
IGHV4-38-2*02

15 sequences assigned
No exact matches.



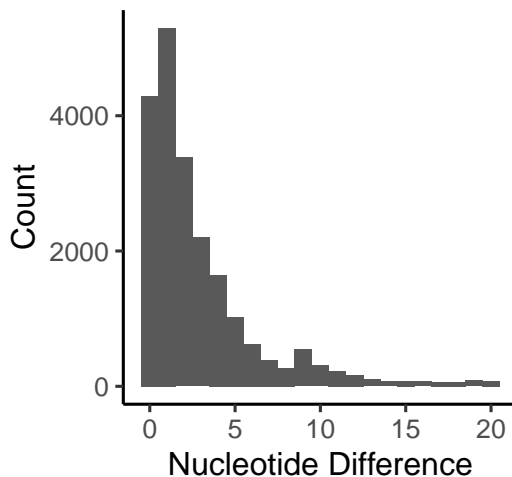
IGHV4-30-2*01

2181 sequences assigned
246 (11.3%) exact matches, in which:
174 unique CDR3
6 unique J



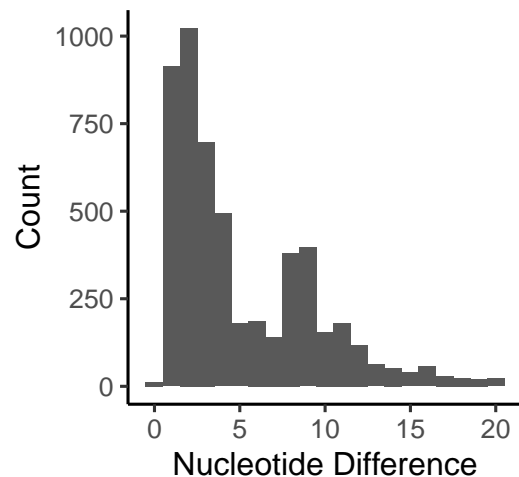
IGHV4-34*01_02

25061 sequences assigned
4295 (17.1%) exact matches, in which:
2885 unique CDR3
6 unique J



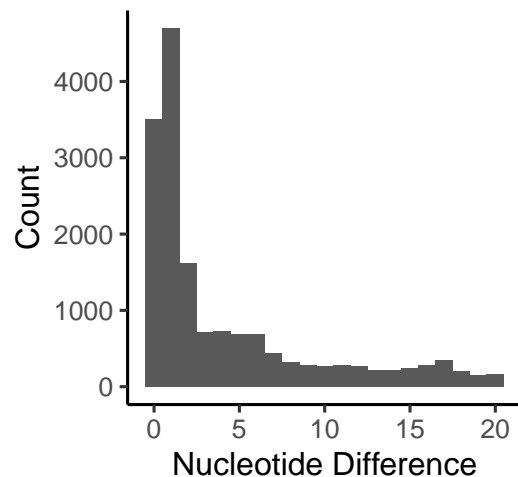
IGHV4-39*07

5466 sequences assigned
13 (0.2%) exact matches, in which:
13 unique CDR3
4 unique J



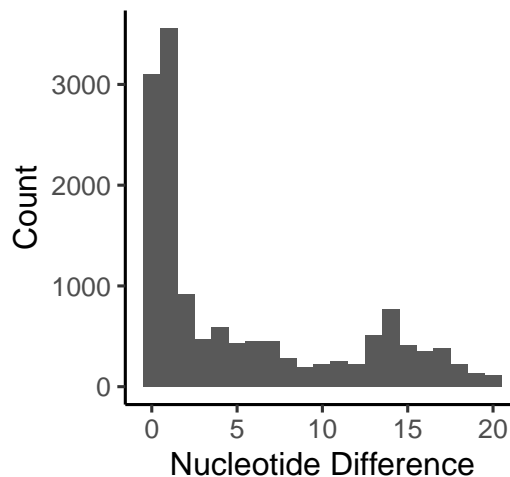
IGHV4-39*01_05

21775 sequences assigned
3502 (16.1%) exact matches, in which:
2390 unique CDR3
6 unique J



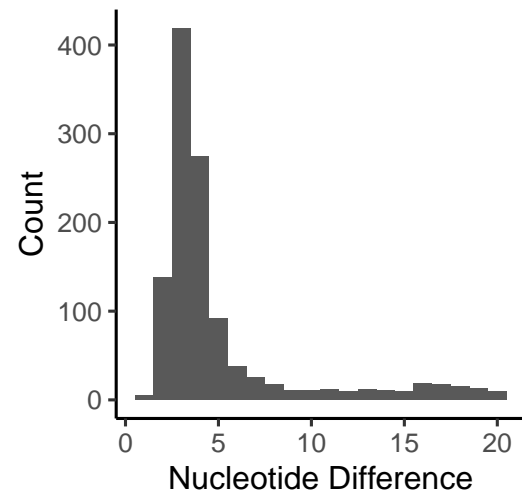
IGHV4-59*01_07

15690 sequences assigned
3101 (19.8%) exact matches, in which:
2372 unique CDR3
6 unique J



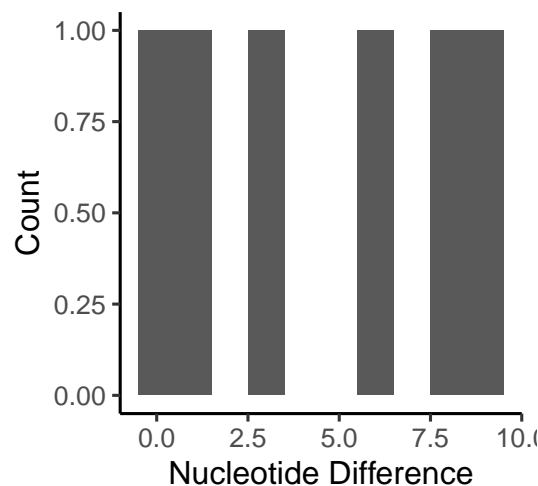
IGHV4-61*05

1324 sequences assigned
No exact matches.



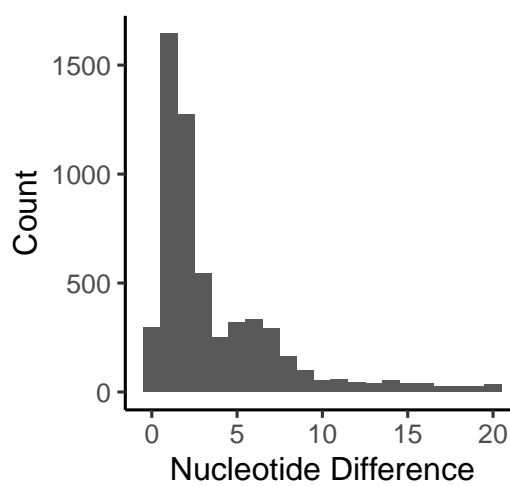
IGHV4-55*02_04_08

7 sequences assigned
1 (14.3%) exact matches, in which:
1 unique CDR3
1 unique J



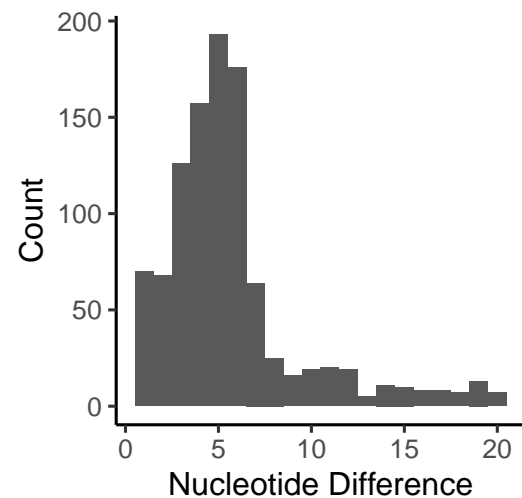
IGHV4-59*12

6239 sequences assigned
296 (4.7%) exact matches, in which:
279 unique CDR3
6 unique J



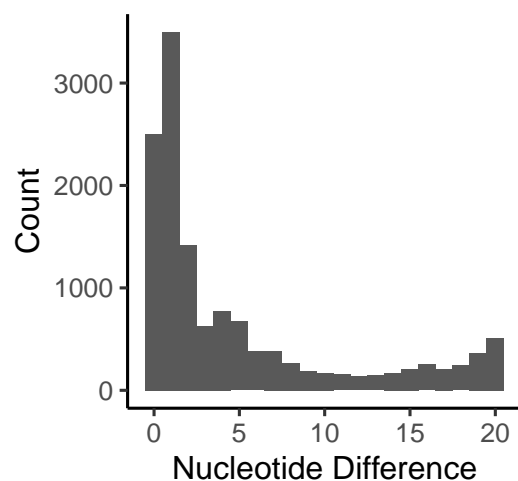
IGHV4-61*08

1092 sequences assigned
No exact matches.



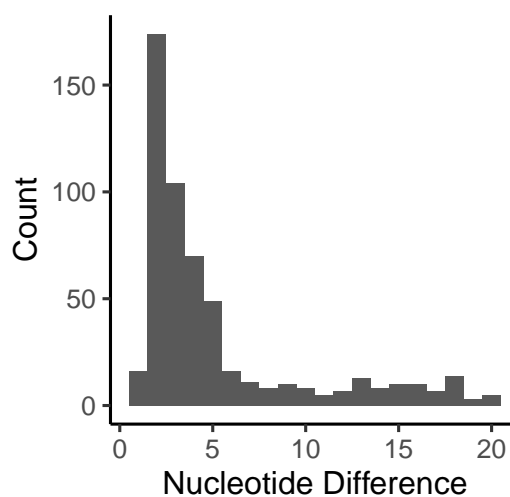
IGHV4-59*08

19462 sequences assigned
2501 (12.9%) exact matches, in which:
1907 unique CDR3
6 unique J



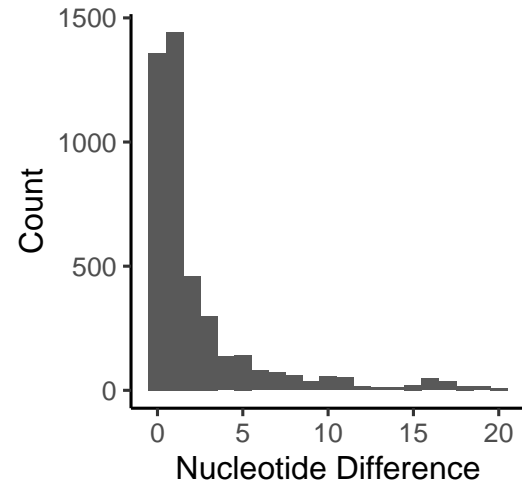
IGHV4-61*01

612 sequences assigned
No exact matches.



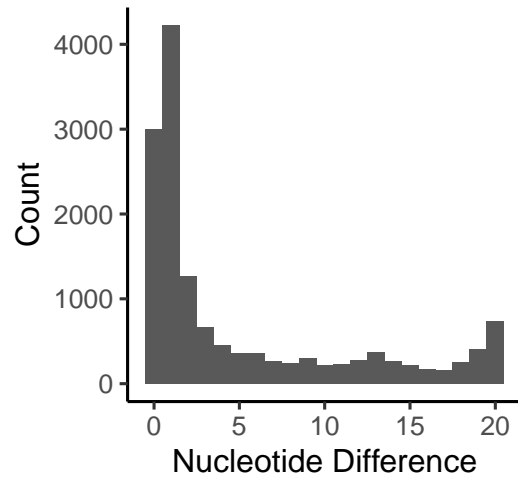
IGHV5-10-1*01_03

4826 sequences assigned
1358 (28.1%) exact matches, in which:
851 unique CDR3
6 unique J



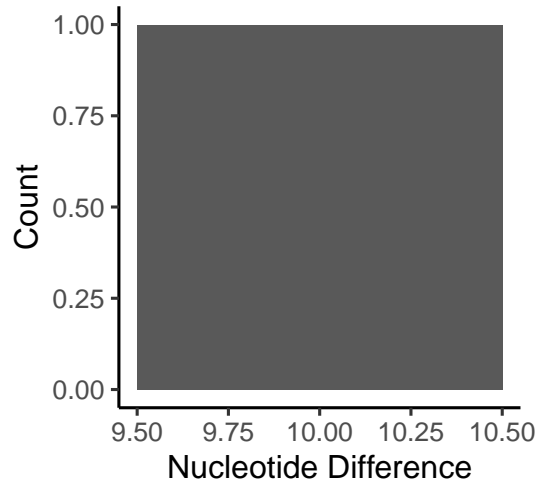
IGHV5–51*01_03

18742 sequences assigned
2999 (16%) exact matches, in which:
1598 unique CDR3
6 unique J



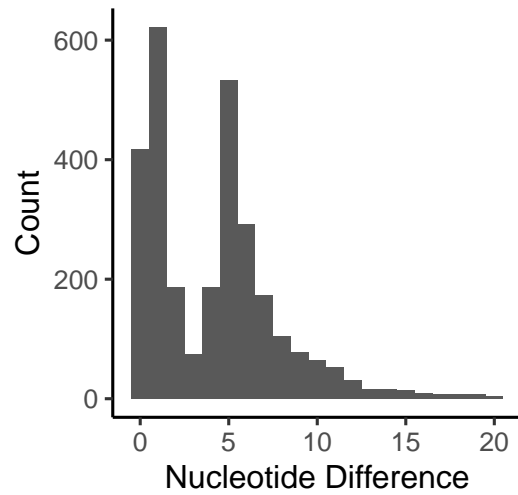
IGHV7–81*01

1 sequences assigned
No exact matches.



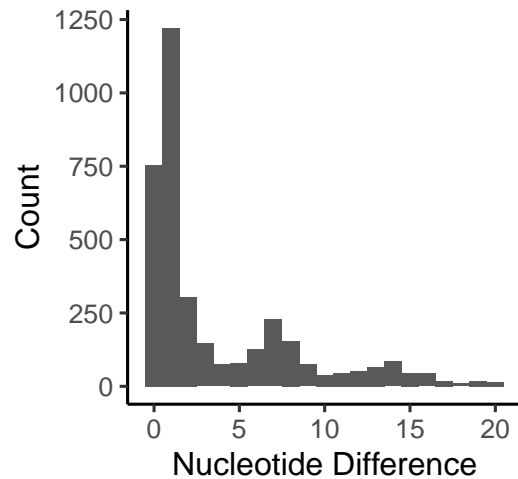
IGHV6–1*01_02

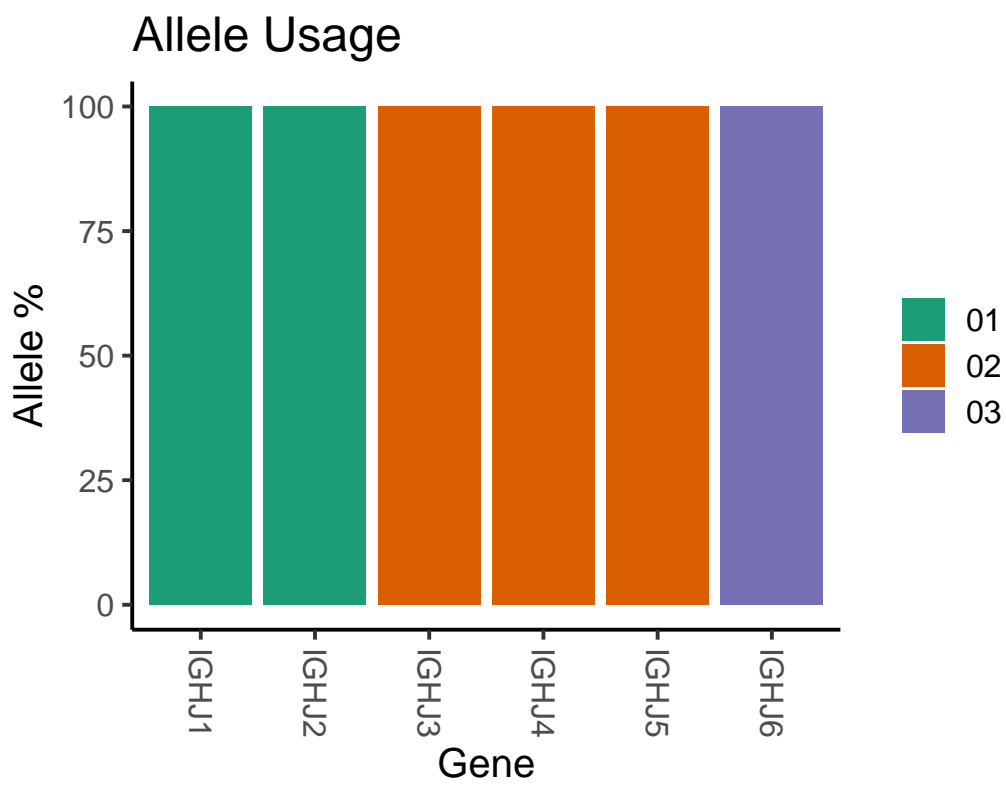
3019 sequences assigned
417 (13.8%) exact matches, in which:
318 unique CDR3
6 unique J



IGHV7–4–1*02

3662 sequences assigned
755 (20.6%) exact matches, in which:
576 unique CDR3
6 unique J





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.

Novel sequence(s)IGHV1–69*08_C191TIGHV3–30*03_T288CIGHV3–30–3*02_G75CIGHV4–59*02_G88AIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4–59*02_G88AIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

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

Novel sequence(s)IGHV4–4*02_03_C300TIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

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

Warning – no inferred sequences found.

Novel sequence(s)IGHV4–59*02_G88A are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV1–69*08_C191TIGHV3–11*06_T300CIGHV3–30*03_T288CIGHV4–59*02_G88AIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4–59*02_G88AIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

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

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s)IGHV3–30*03_T288CIGHV3–30–3*01_T288CIGHV4–59*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)IGHV3–48*04_A193T_C198T_A200C_C201T_T210A are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4–59*02_G88A are not listed in the genotype and will be ignored.

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

Novel sequence(s)IGHV3–33*01_C288TIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4–59*02_G88AIGHV5–51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV3–33*01_T105C_A173T_T192G_C288T are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV3–30*04_T288CIGHV3–33*01_G75CIGHV4–30–2*03_T288CIGHV4–59*02_G88A are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV3–11*06_T300C are not listed in the genotype and will be ignored.