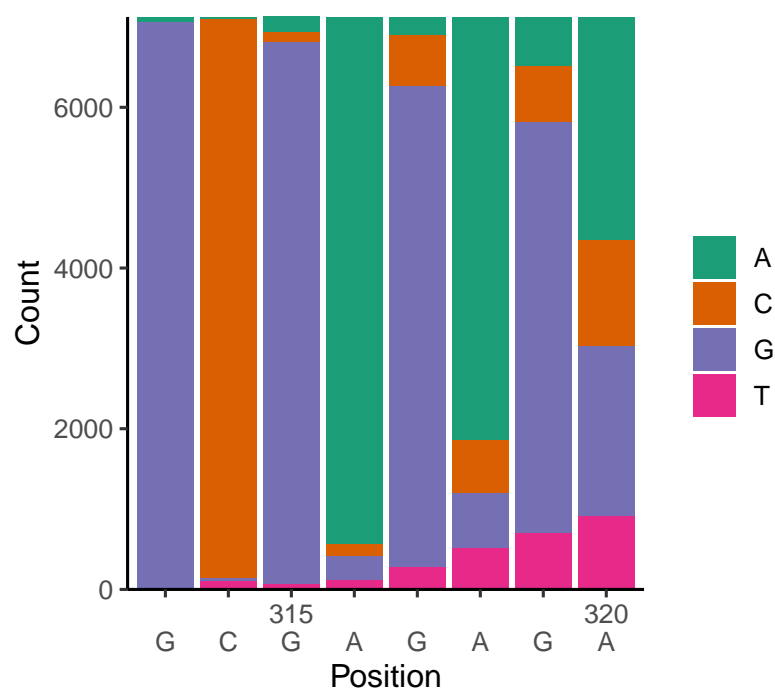
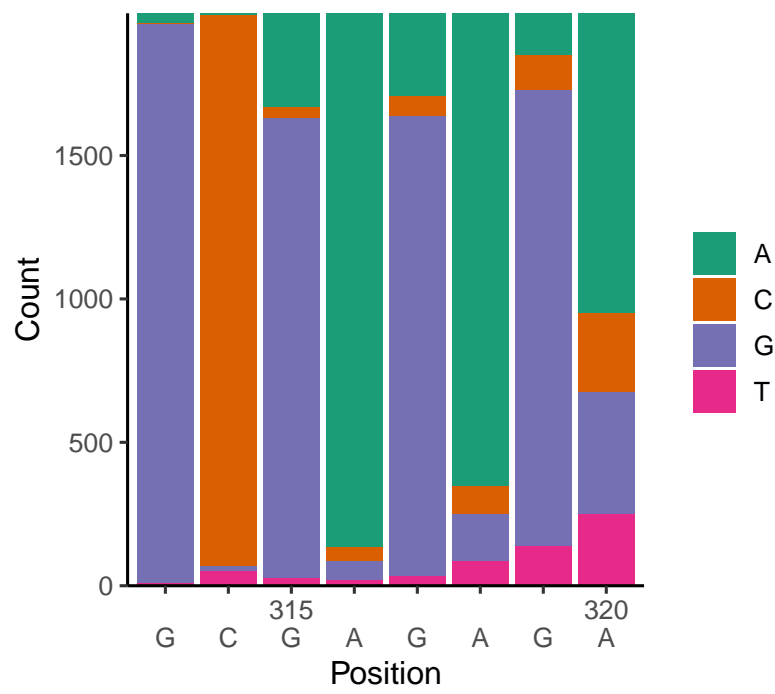


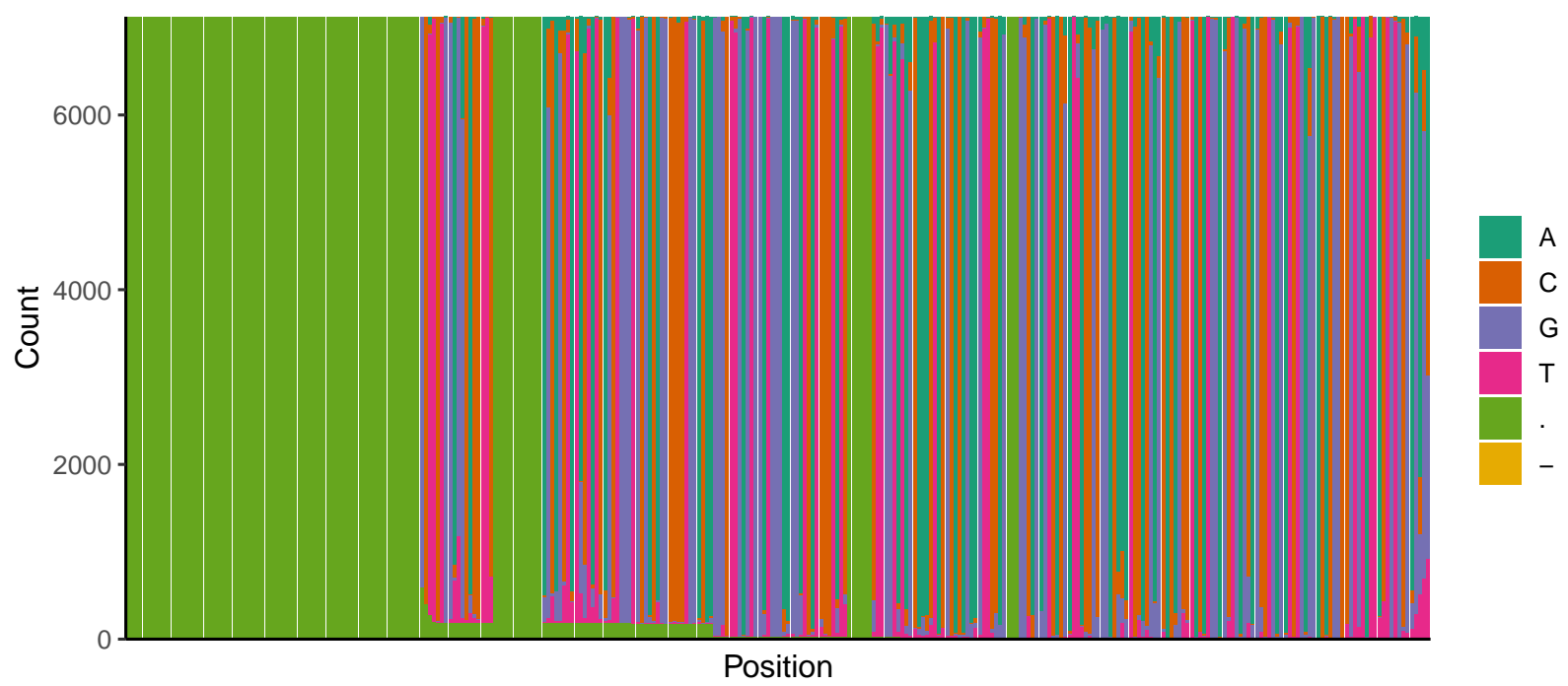
Gene IGHV1-69*04_09_G112A



Gene IGHV3-48*03_T303G



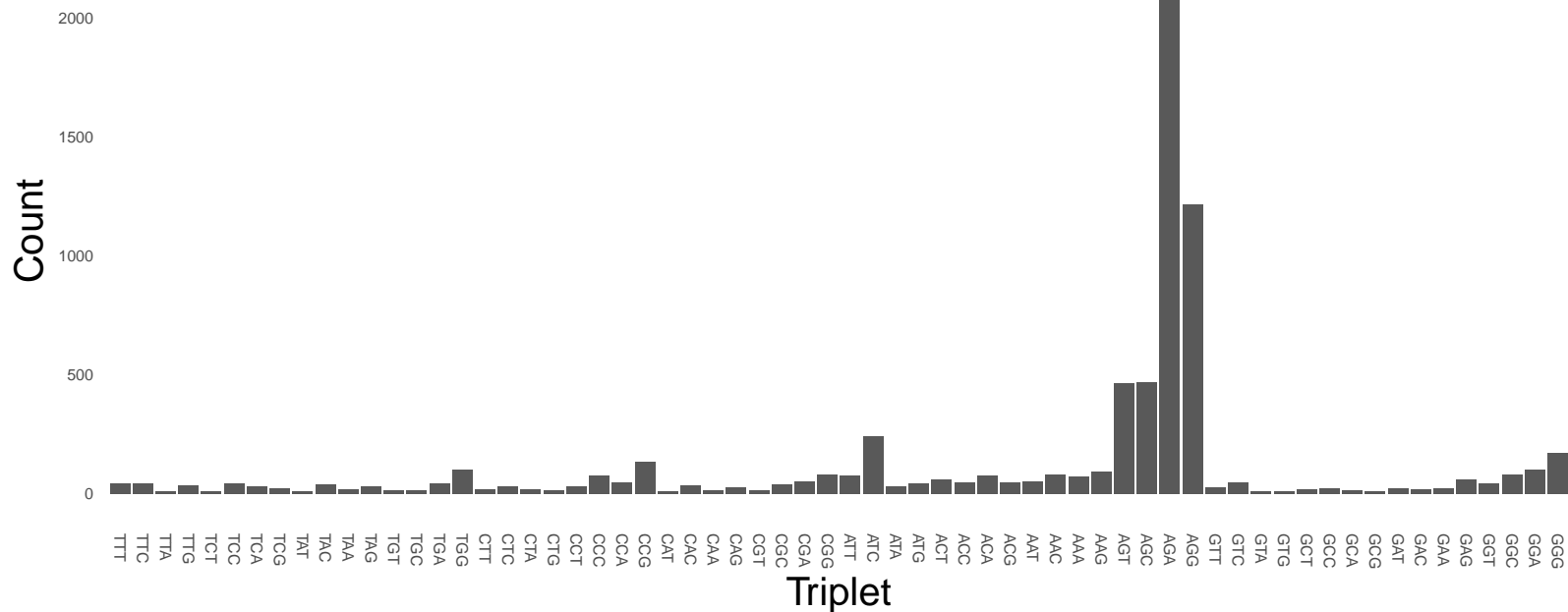
Gene IGHV1-69*04_09_G112A



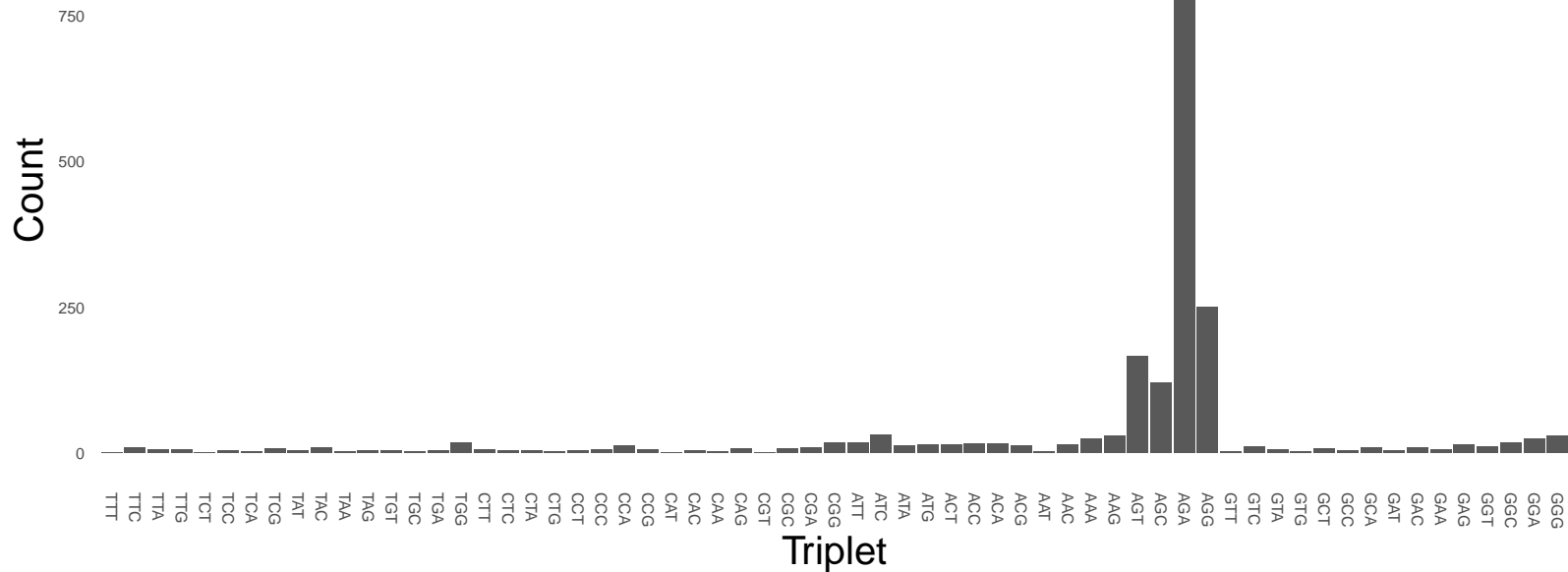
Gene IGHV3-48*03_T303G



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

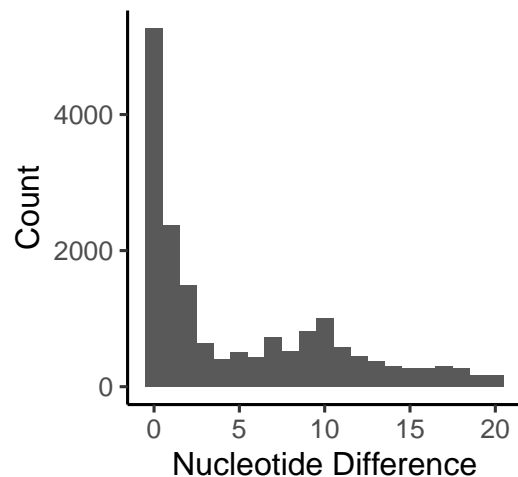


IGHV3-48*03_T303G- Final 3 nucleotides as a triplet



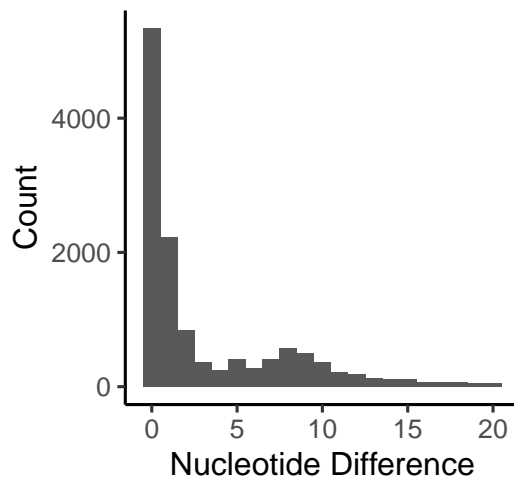
IGHV1-2*02

18453 sequences assigned
5266 (28.5%) exact matches, in which:
5050 unique CDR3
6 unique J



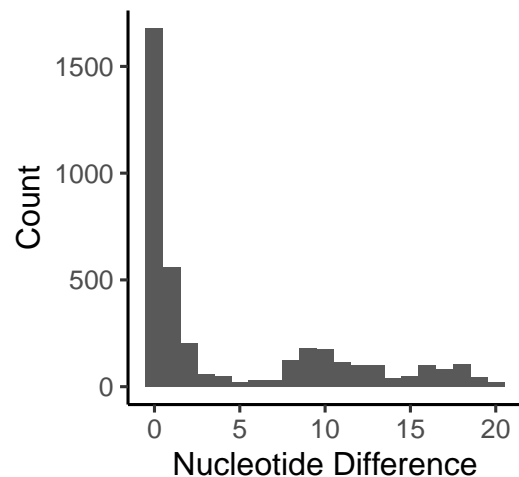
IGHV1-8*01

12915 sequences assigned
5337 (41.3%) exact matches, in which:
5121 unique CDR3
6 unique J



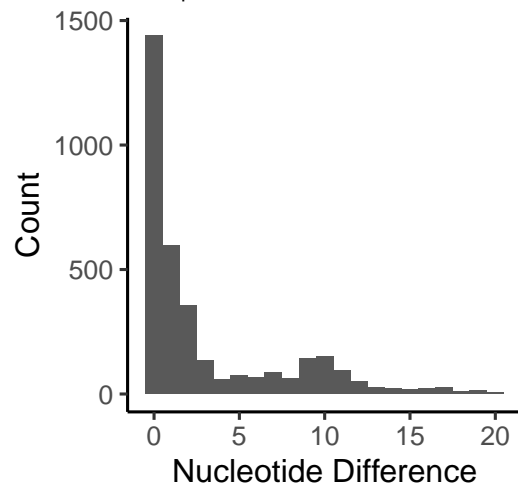
IGHV1-24*01

3982 sequences assigned
1678 (42.1%) exact matches, in which:
1610 unique CDR3
6 unique J



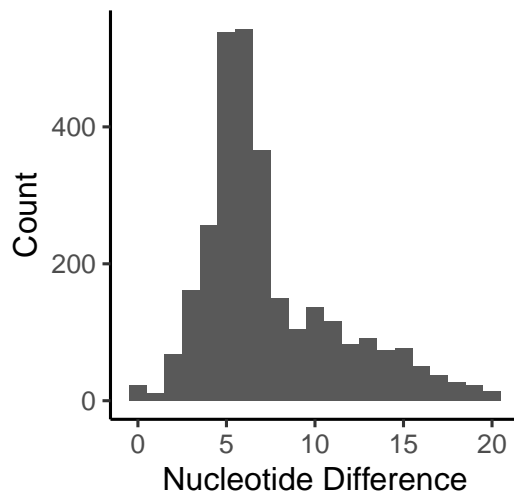
IGHV1-2*04

3501 sequences assigned
1439 (41.1%) exact matches, in which:
1390 unique CDR3
6 unique J



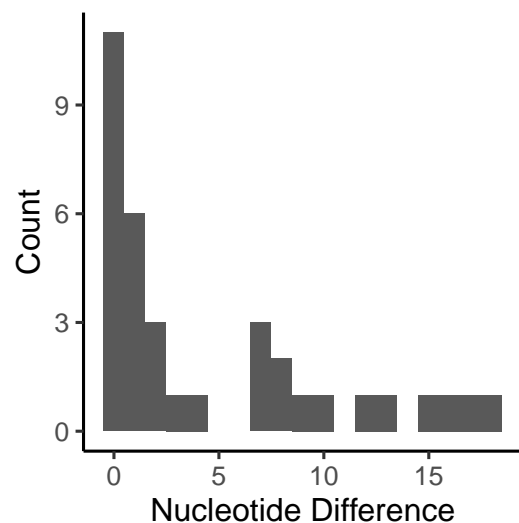
IGHV1-8*02

3092 sequences assigned
23 (0.7%) exact matches, in which:
23 unique CDR3
4 unique J



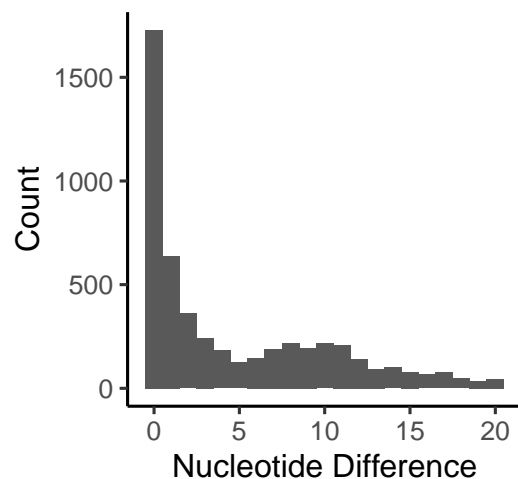
IGHV1-45*02

39 sequences assigned
11 (28.2%) exact matches, in which:
11 unique CDR3
4 unique J



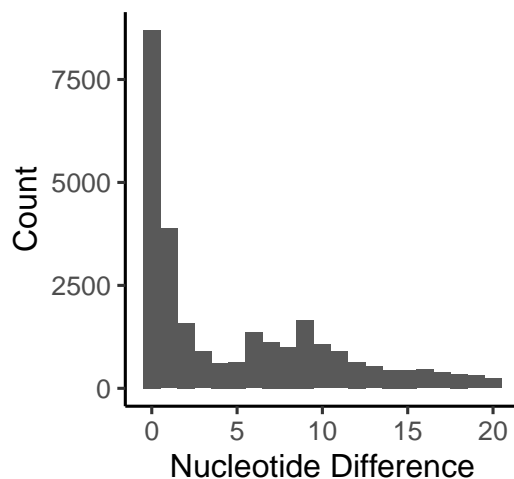
IGHV1-3*01_05

5551 sequences assigned
1728 (31.1%) exact matches, in which:
1658 unique CDR3
6 unique J



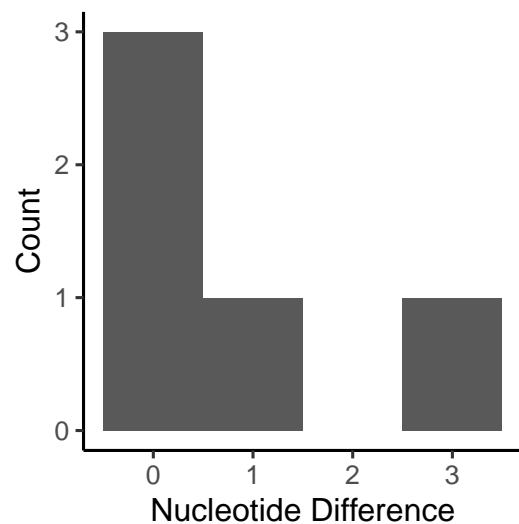
IGHV1-18*01

28766 sequences assigned
8701 (30.2%) exact matches, in which:
8229 unique CDR3
6 unique J



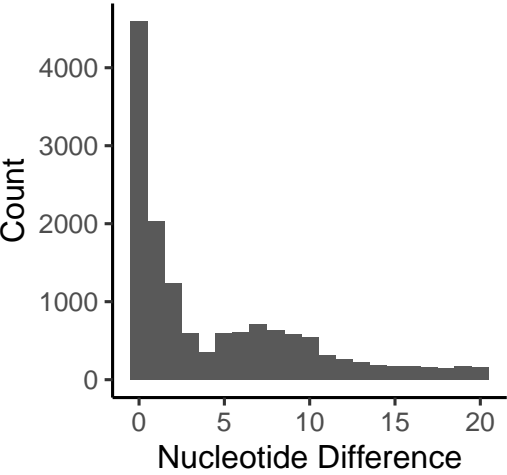
IGHV1-45*03

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



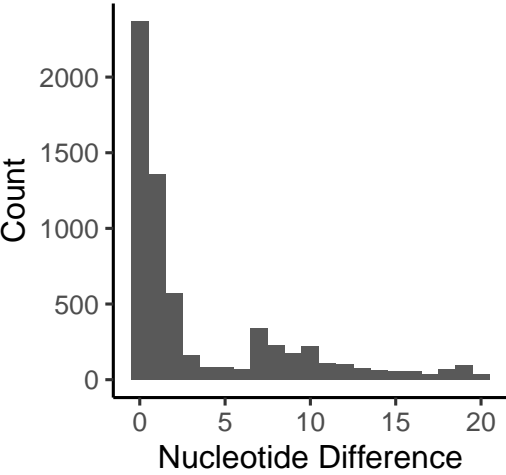
IGHV1-46*01

15419 sequences assigned
4594 (29.8%) exact matches, in which:
4387 unique CDR3
6 unique J



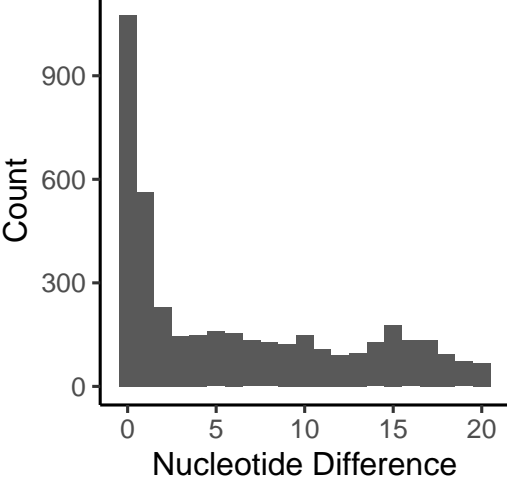
IGHV1-69*04_09_G112.

7125 sequences assigned
2368 (33.2%) exact matches, in which:
2271 unique CDR3
6 unique J



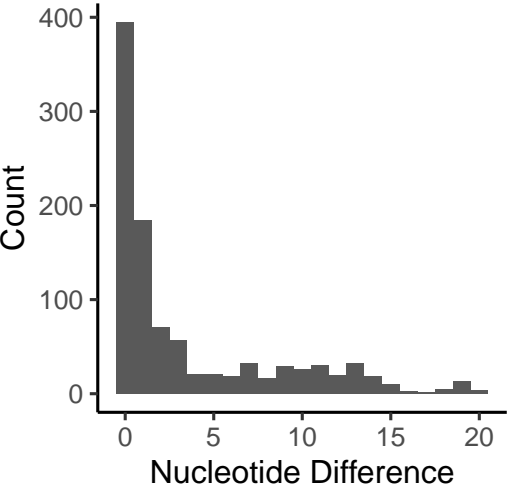
IGHV2-5*02

4386 sequences assigned
1077 (24.6%) exact matches, in which:
1032 unique CDR3
6 unique J



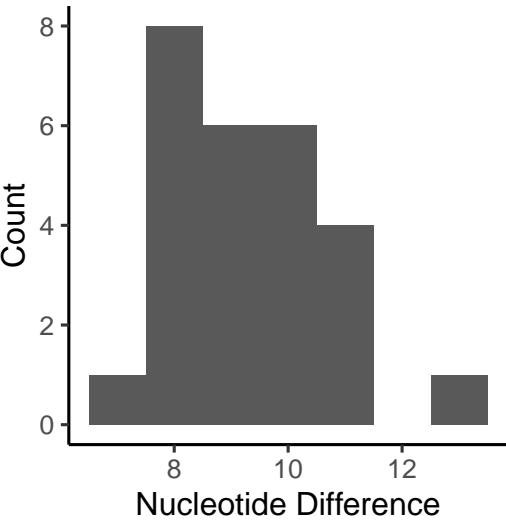
IGHV1-58*02

1047 sequences assigned
395 (37.7%) exact matches, in which:
383 unique CDR3
6 unique J



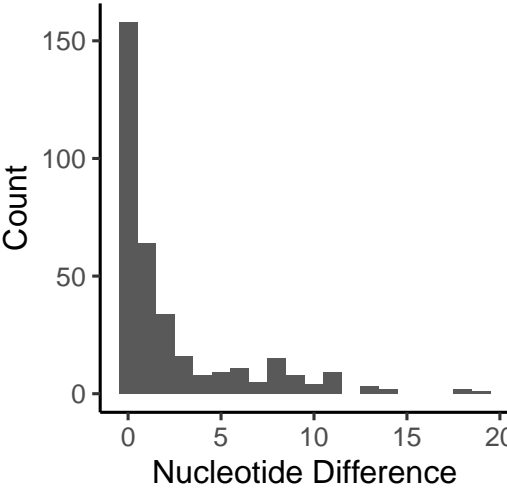
IGHV1-NL1*01

26 sequences assigned
No exact matches.



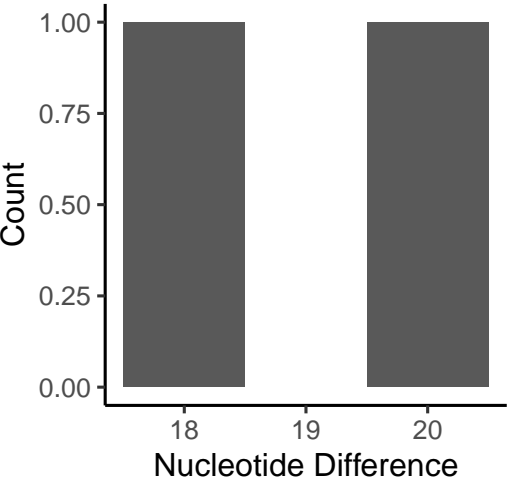
IGHV2-26*01

353 sequences assigned
158 (44.8%) exact matches, in which:
153 unique CDR3
5 unique J



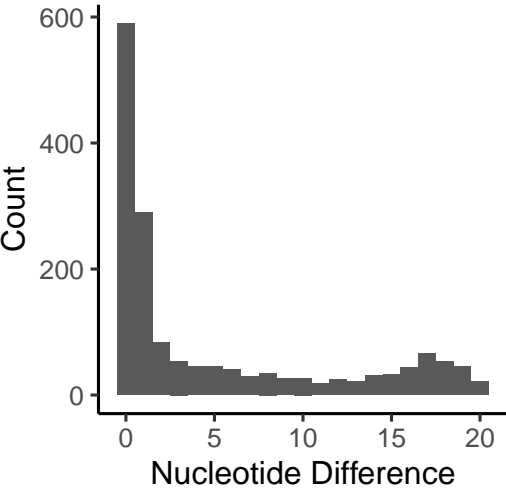
IGHV1-69-2*01

2 sequences assigned
No exact matches.



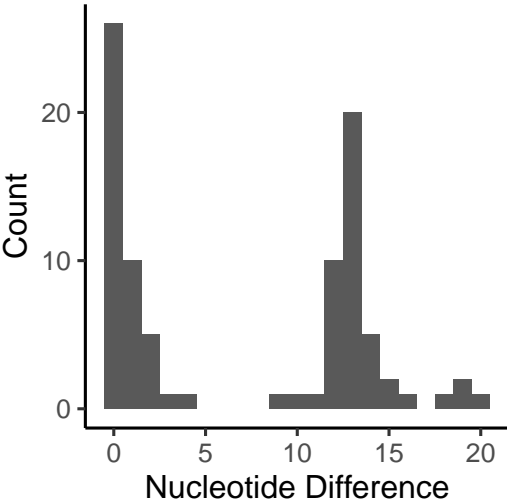
IGHV2-5*01

1693 sequences assigned
590 (34.8%) exact matches, in which:
563 unique CDR3
6 unique J



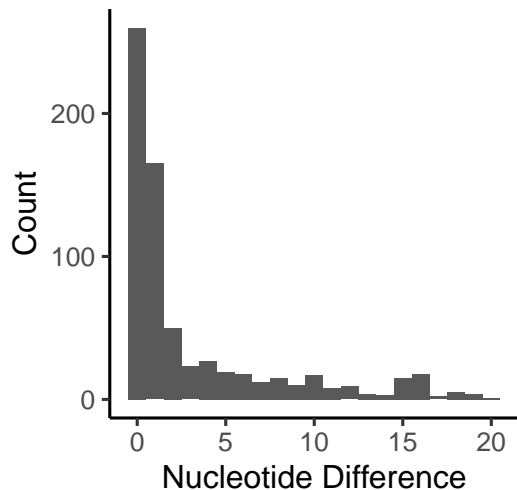
IGHV2-26*02

91 sequences assigned
26 (28.6%) exact matches, in which:
26 unique CDR3
5 unique J



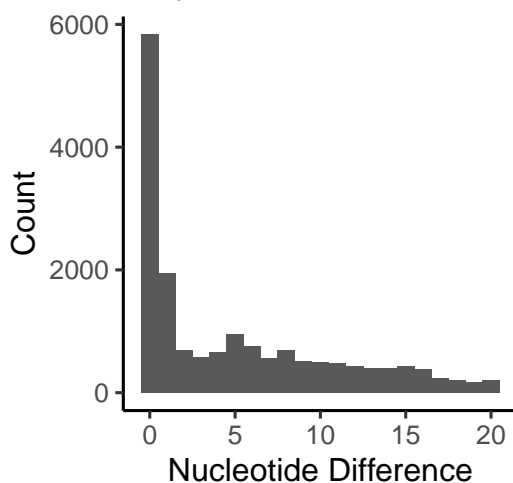
IGHV2-70*01

693 sequences assigned
260 (37.5%) exact matches, in which:
255 unique CDR3
6 unique J



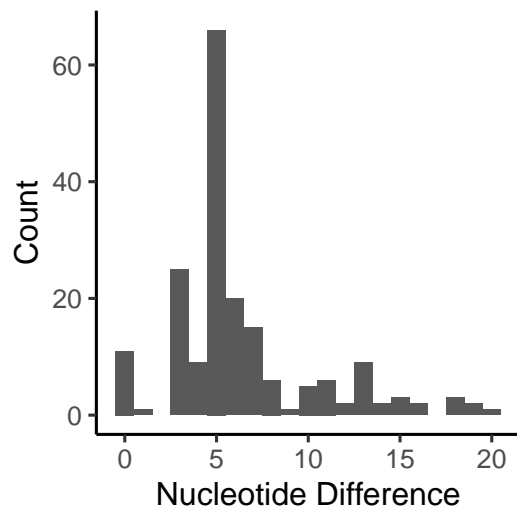
IGHV3-9*01

18585 sequences assigned
5837 (31.4%) exact matches, in which:
4800 unique CDR3
6 unique J



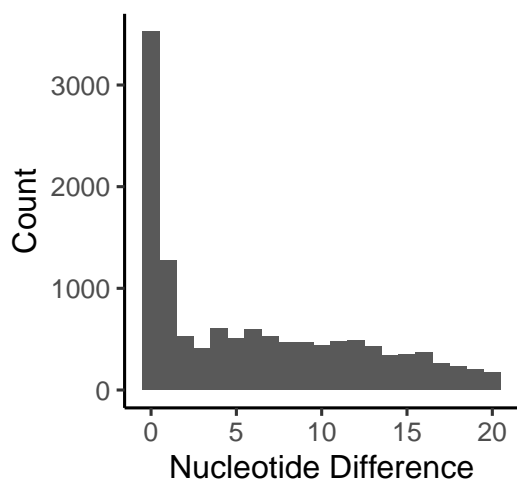
IGHV3-11*06

210 sequences assigned
11 (5.2%) exact matches, in which:
10 unique CDR3
3 unique J



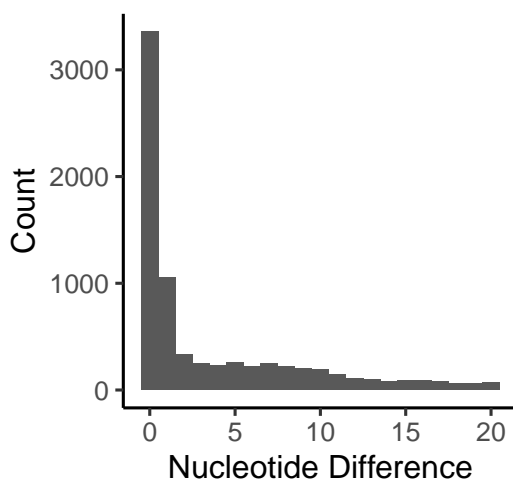
IGHV3-7*01

13802 sequences assigned
3524 (25.5%) exact matches, in which:
2965 unique CDR3
6 unique J



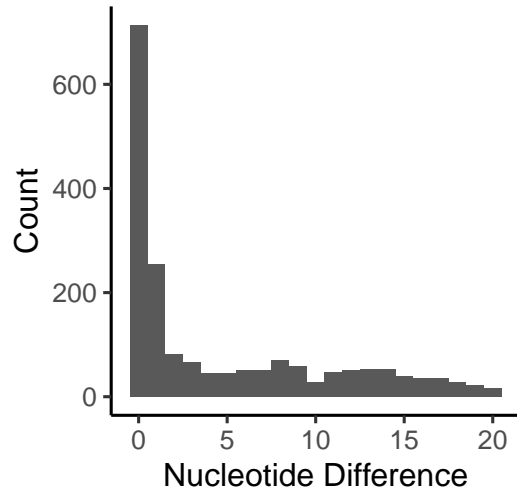
IGHV3-11*01

7879 sequences assigned
3357 (42.6%) exact matches, in which:
2832 unique CDR3
6 unique J



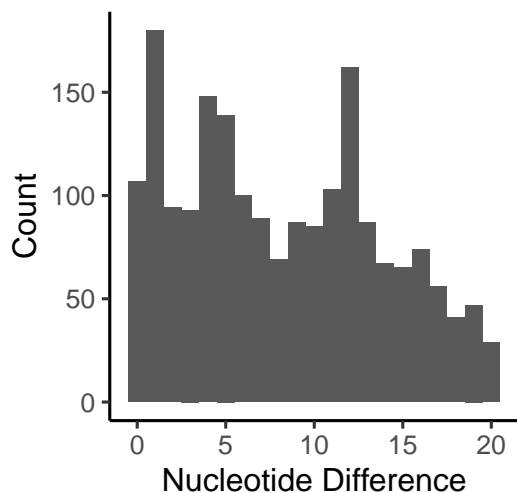
IGHV3-13*01

2016 sequences assigned
714 (35.4%) exact matches, in which:
585 unique CDR3
5 unique J



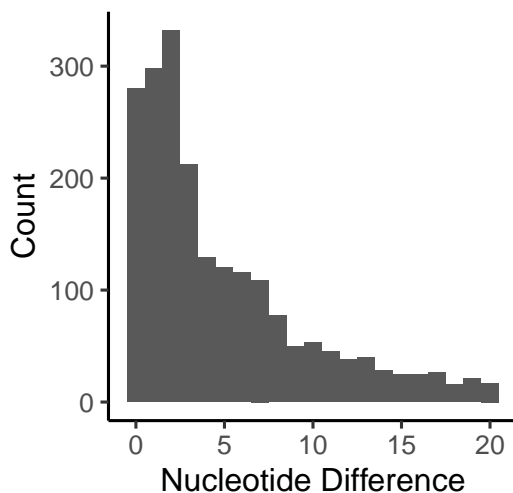
IGHV3-7*03

2131 sequences assigned
107 (5%) exact matches, in which:
101 unique CDR3
6 unique J



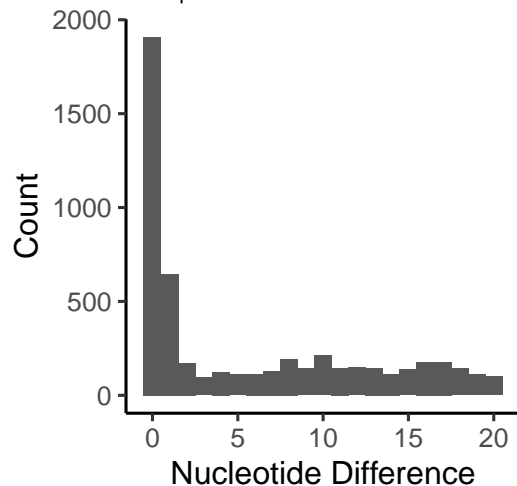
IGHV3-11*04

2111 sequences assigned
280 (13.3%) exact matches, in which:
275 unique CDR3
6 unique J



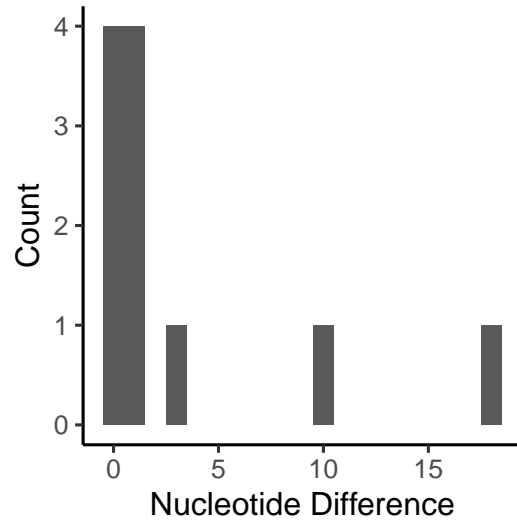
IGHV3-15*01_02

6317 sequences assigned
1908 (30.2%) exact matches, in which:
1626 unique CDR3
6 unique J



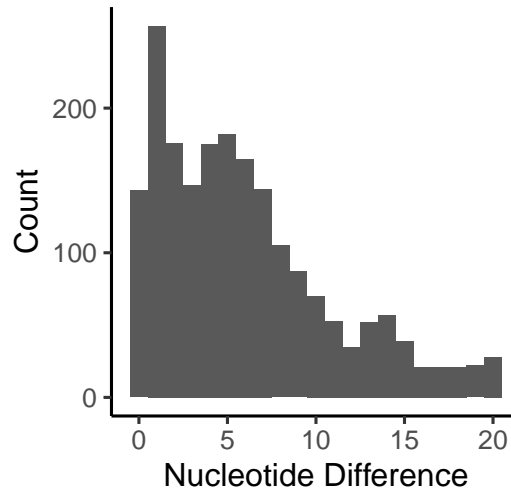
IGHV3-19*01

11 sequences assigned
4 (36.4%) exact matches, in which:
3 unique CDR3
1 unique J



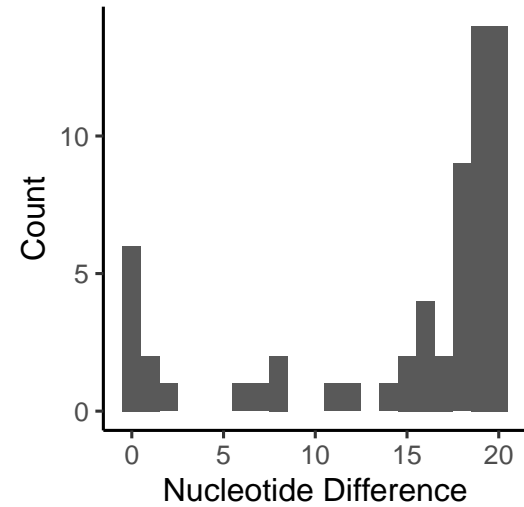
IGHV3-21*04

2131 sequences assigned
143 (6.7%) exact matches, in which:
143 unique CDR3
5 unique J



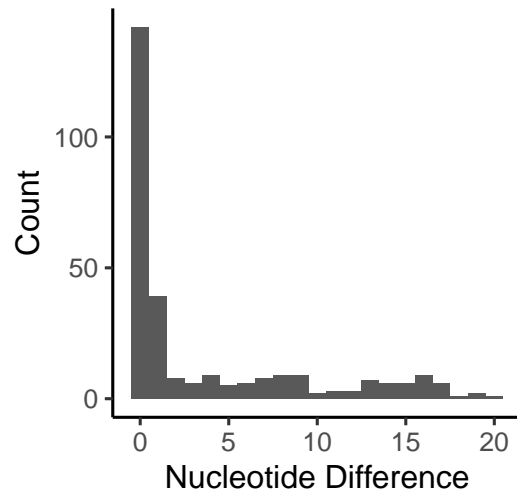
IGHV3-30-3*01

97 sequences assigned
6 (6.2%) exact matches, in which:
6 unique CDR3
4 unique J



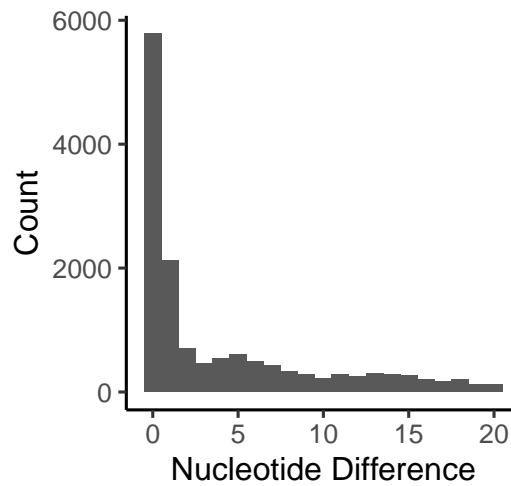
IGHV3-20*01_02

361 sequences assigned
142 (39.3%) exact matches, in which:
114 unique CDR3
5 unique J



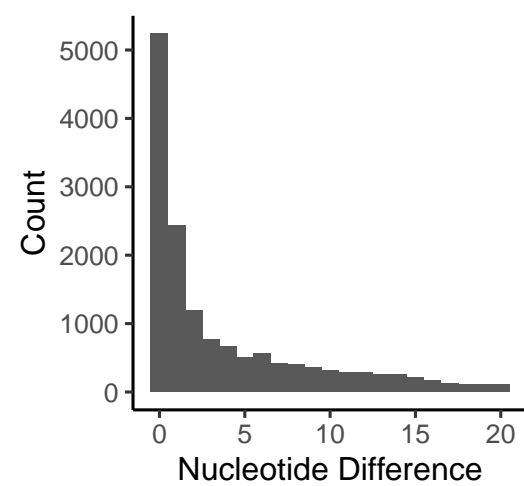
IGHV3-21*01_02

15372 sequences assigned
5783 (37.6%) exact matches, in which:
4873 unique CDR3
6 unique J



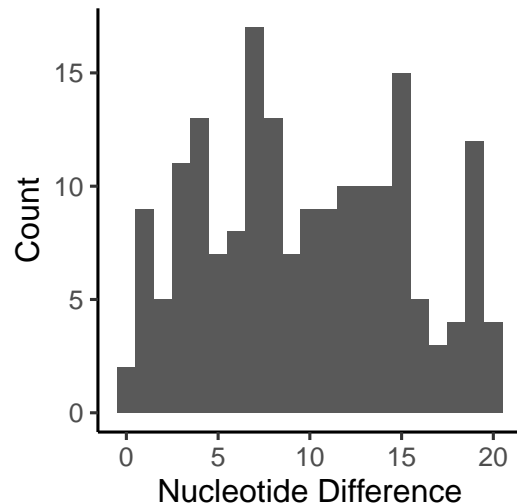
IGHV3-33*01

15294 sequences assigned
5238 (34.2%) exact matches, in which:
4514 unique CDR3
6 unique J



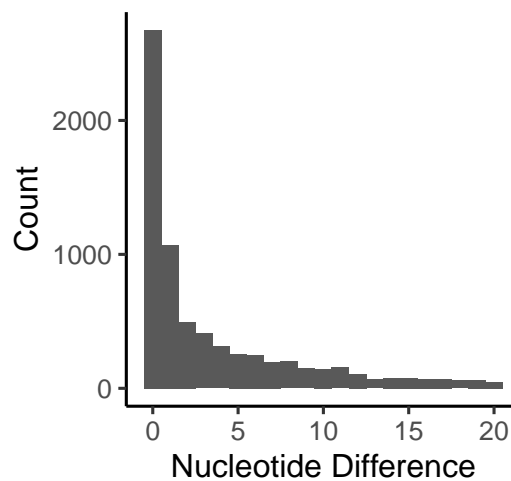
IGHV3-20*03_04

244 sequences assigned
2 (0.8%) exact matches, in which:
2 unique CDR3
1 unique J



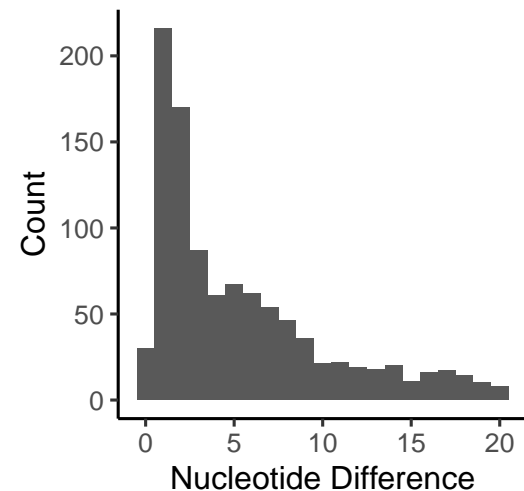
IGHV3-30*01

7099 sequences assigned
2675 (37.7%) exact matches, in which:
2293 unique CDR3
6 unique J



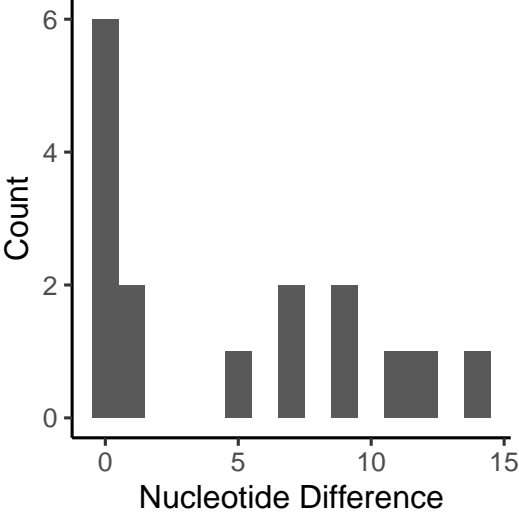
IGHV3-33*05

1053 sequences assigned
30 (2.8%) exact matches, in which:
30 unique CDR3
6 unique J



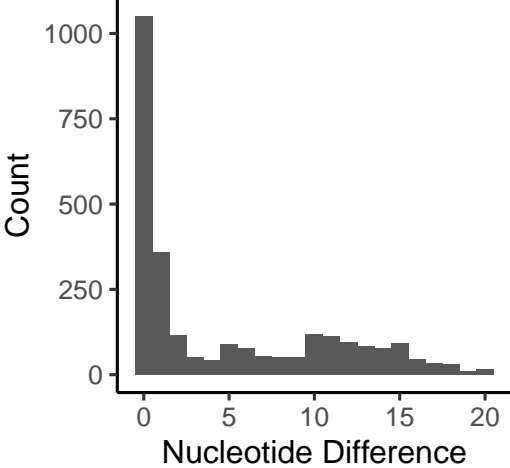
IGHV3-35*01

16 sequences assigned
6 (37.5%) exact matches, in which:
6 unique CDR3
3 unique J



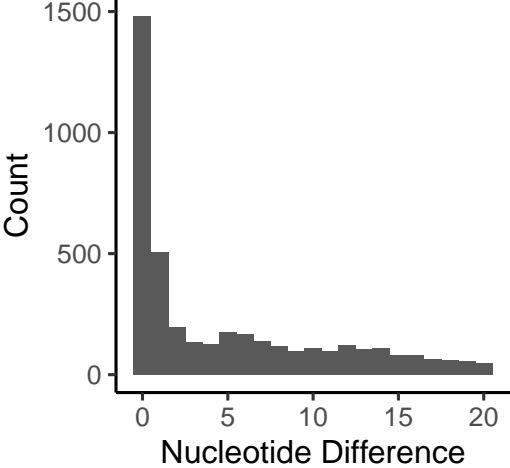
IGHV3-43*02

2890 sequences assigned
1050 (36.3%) exact matches, in which:
886 unique CDR3
6 unique J



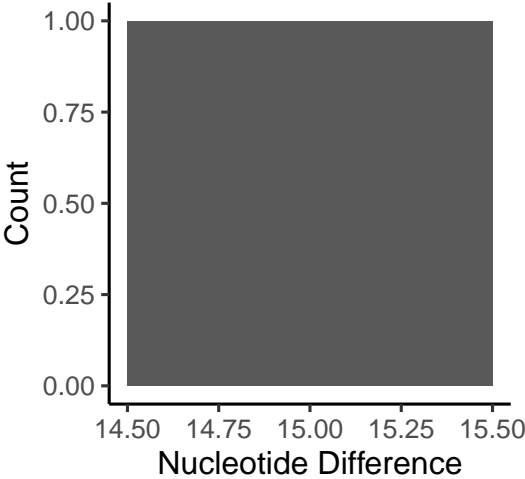
IGHV3-48*02

4380 sequences assigned
1480 (33.8%) exact matches, in which:
1251 unique CDR3
6 unique J



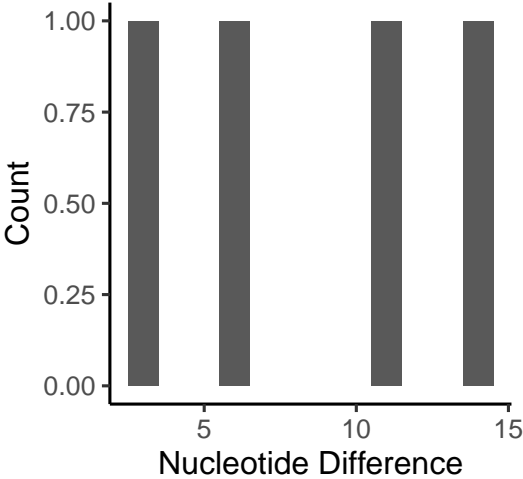
IGHV3-41*02

1 sequences assigned
No exact matches.



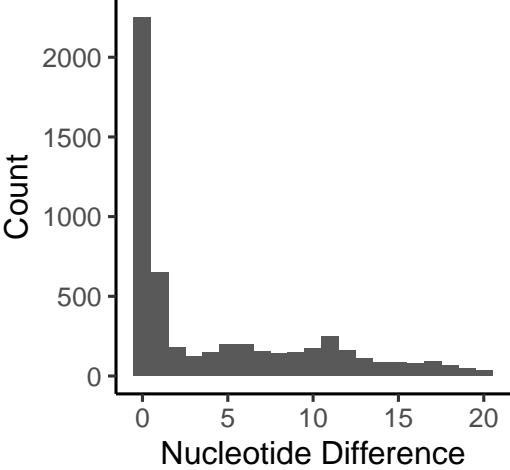
IGHV3-47*01

4 sequences assigned
No exact matches.



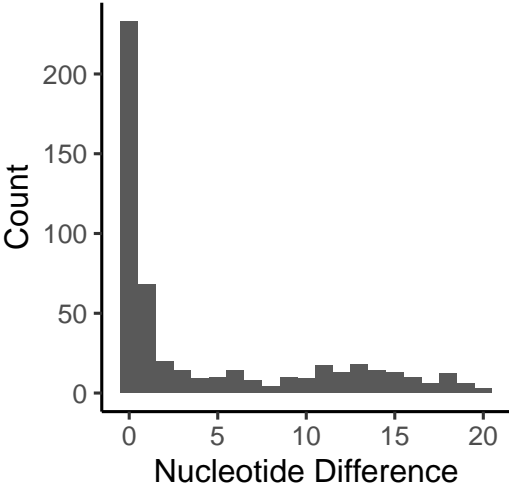
IGHV3-48*03

5614 sequences assigned
2248 (40%) exact matches, in which:
1890 unique CDR3
6 unique J



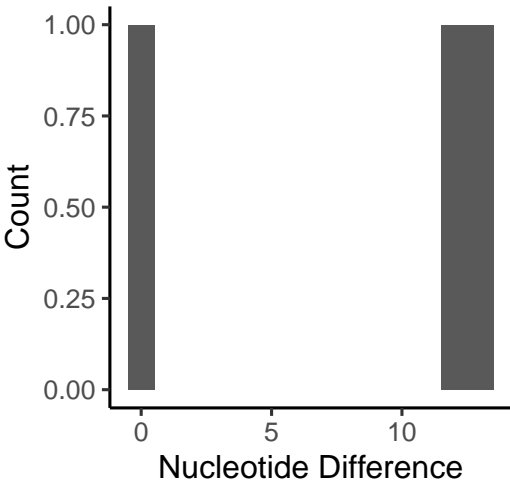
IGHV3-43*01

550 sequences assigned
233 (42.4%) exact matches, in which:
202 unique CDR3
6 unique J



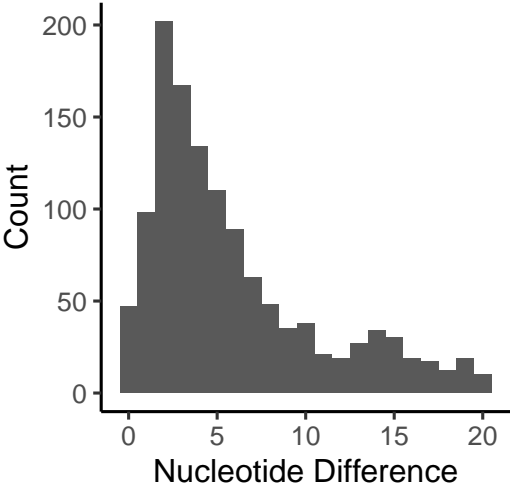
IGHV3-47*02

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



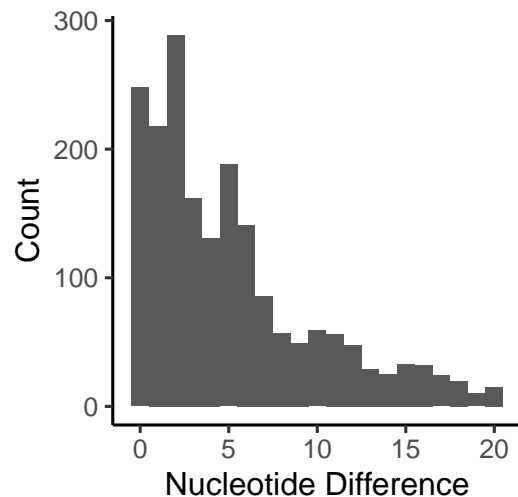
IGHV3-48*04

1307 sequences assigned
47 (3.6%) exact matches, in which:
47 unique CDR3
5 unique J



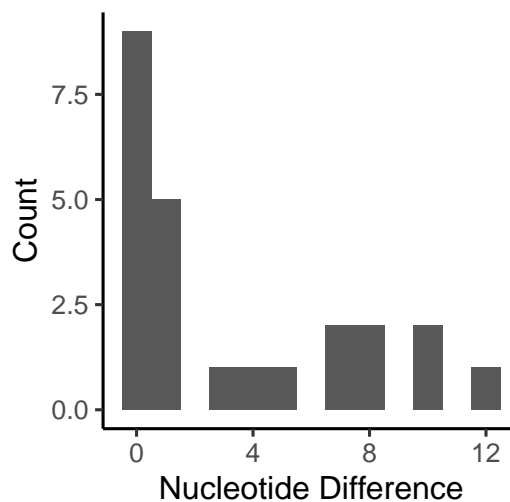
IGHV3-48*03_T303G

1996 sequences assigned
248 (12.4%) exact matches, in which:
245 unique CDR3
6 unique J



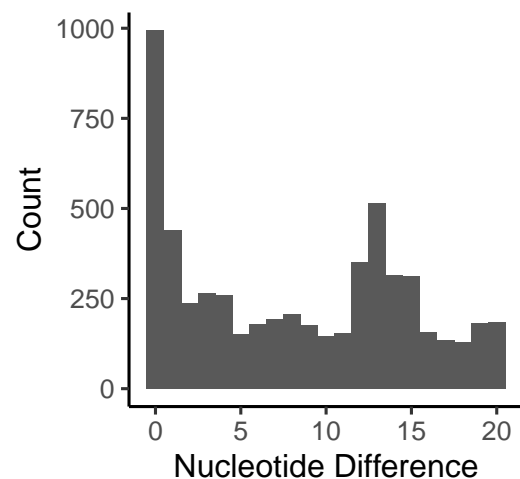
IGHV3-52*01_03

24 sequences assigned
9 (37.5%) exact matches, in which:
6 unique CDR3
4 unique J



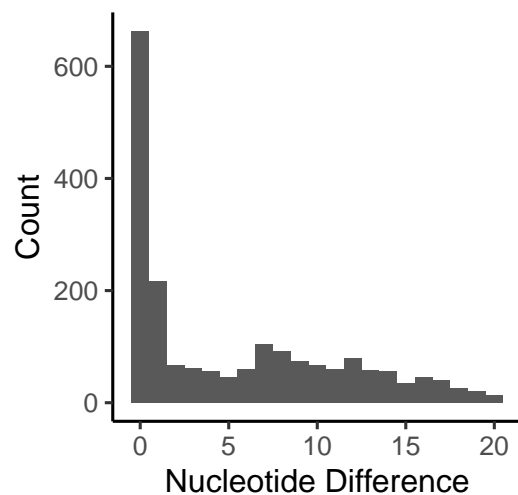
IGHV3-53*01_02

6140 sequences assigned
994 (16.2%) exact matches, in which:
836 unique CDR3
6 unique J



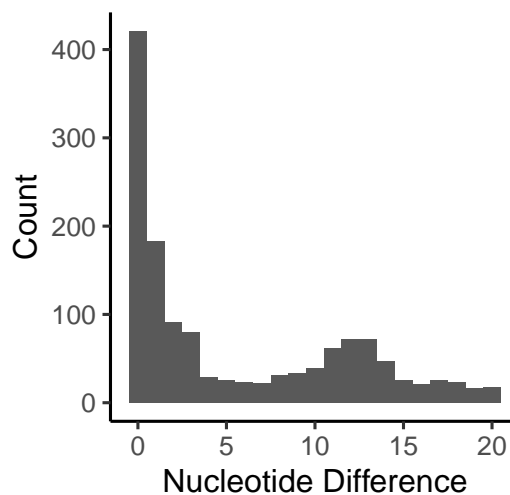
IGHV3-49*04

2077 sequences assigned
663 (31.9%) exact matches, in which:
580 unique CDR3
6 unique J



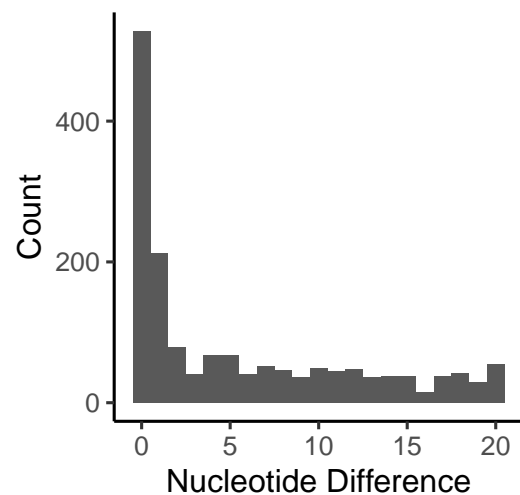
IGHV3-53*04

1436 sequences assigned
421 (29.3%) exact matches, in which:
360 unique CDR3
6 unique J



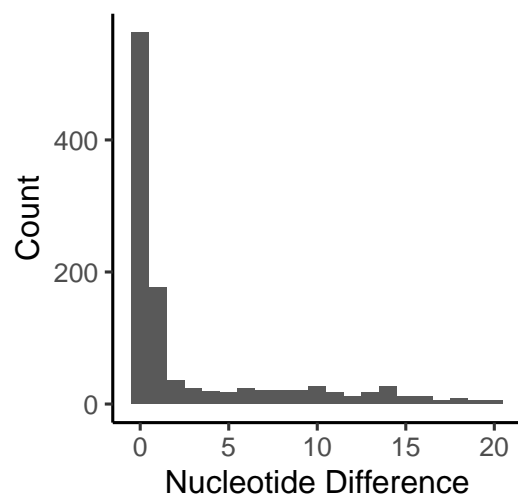
IGHV3-64*01

2564 sequences assigned
528 (20.6%) exact matches, in which:
420 unique CDR3
6 unique J



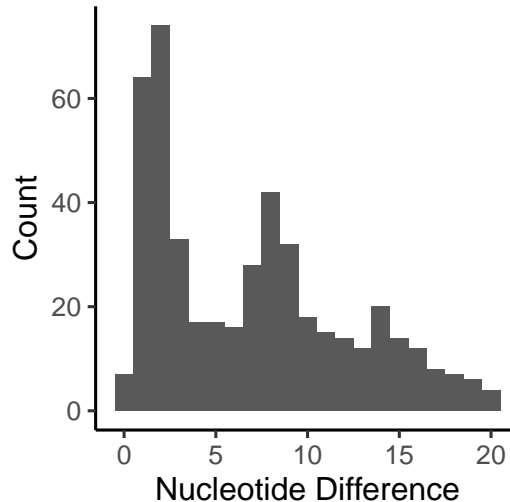
IGHV3-49*03_05

1095 sequences assigned
563 (51.4%) exact matches, in which:
484 unique CDR3
6 unique J



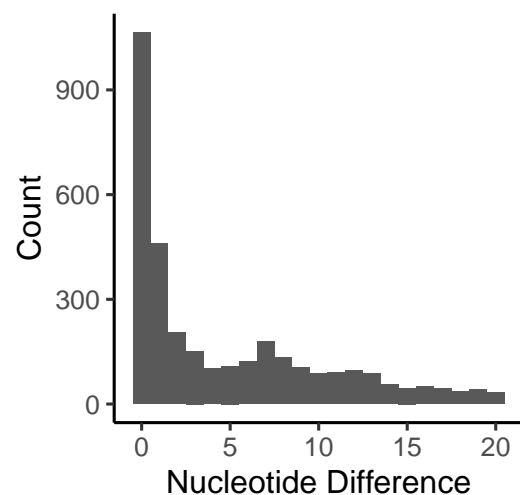
IGHV3-53*05

543 sequences assigned
7 (1.3%) exact matches, in which:
7 unique CDR3
3 unique J



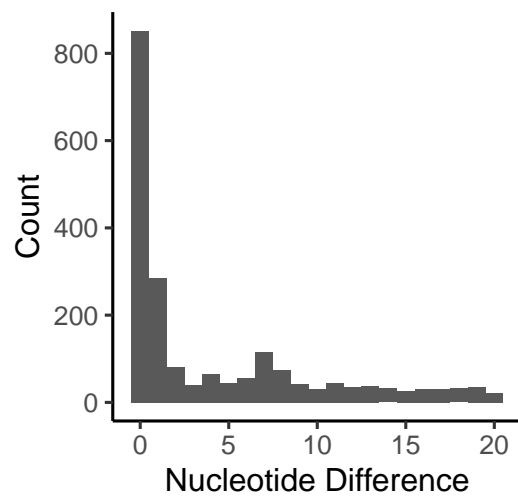
IGHV3-66*01

3666 sequences assigned
1065 (29.1%) exact matches, in which:
916 unique CDR3
6 unique J



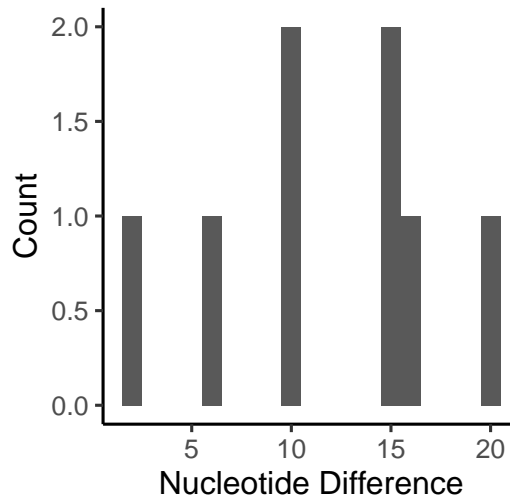
IGHV3-66*02

2182 sequences assigned
852 (39%) exact matches, in which:
732 unique CDR3
6 unique J



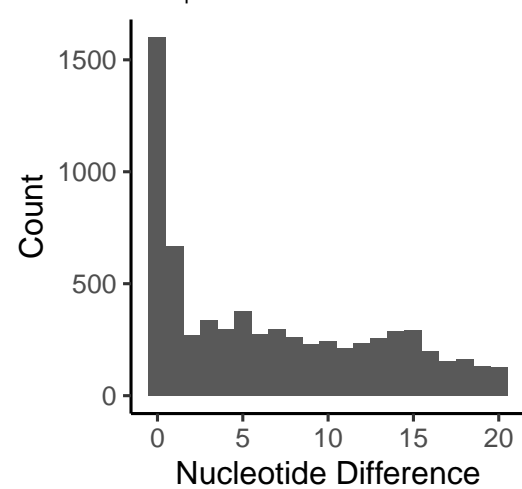
IGHV3-71*01_04

11 sequences assigned
No exact matches.



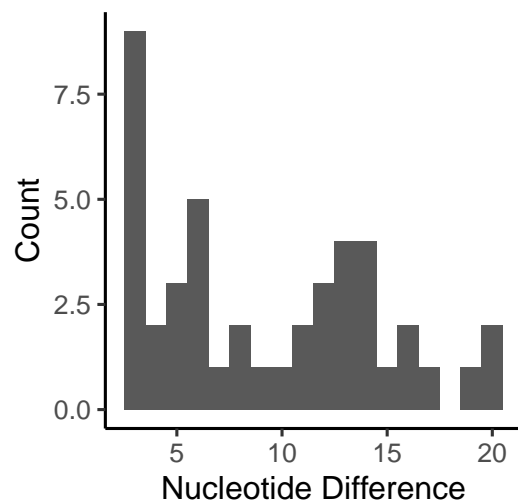
IGHV3-74*01_02

7746 sequences assigned
1600 (20.7%) exact matches, in which:
1325 unique CDR3
6 unique J



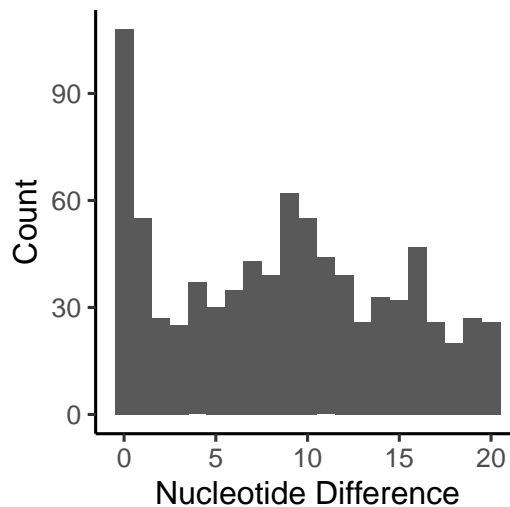
IGHV3-69-1*01

54 sequences assigned
No exact matches.



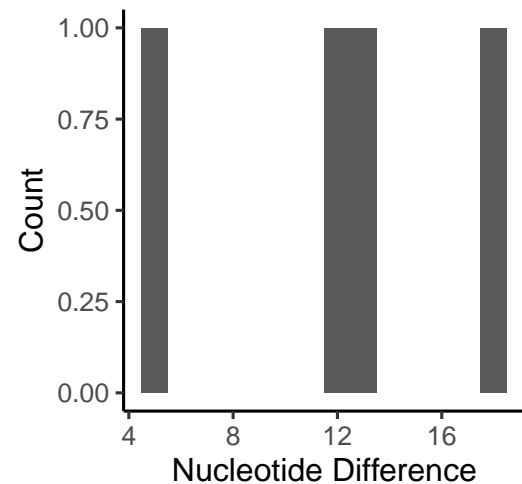
IGHV3-72*01

945 sequences assigned
108 (11.4%) exact matches, in which:
93 unique CDR3
5 unique J



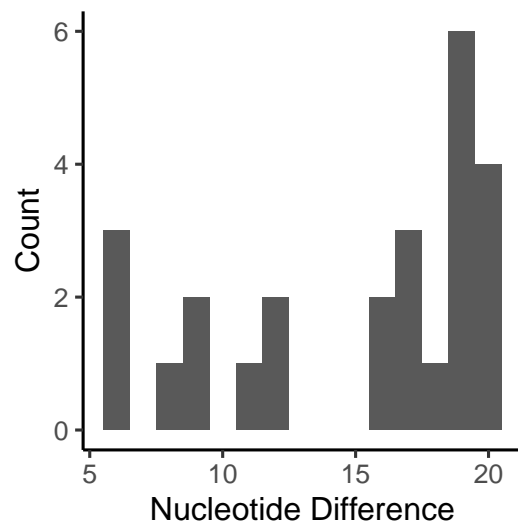
IGHV3-43D*04

5 sequences assigned
No exact matches.



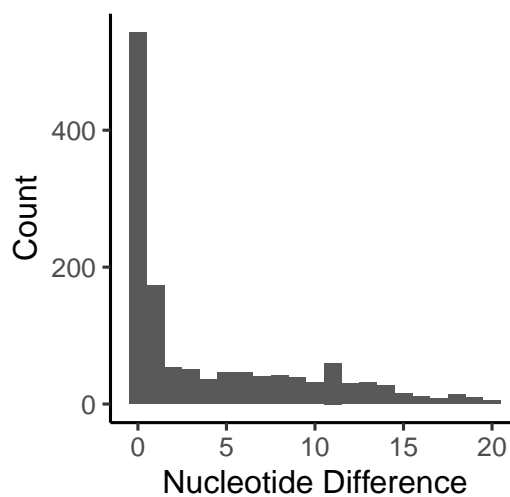
IGHV3-69-1*02

41 sequences assigned
No exact matches.



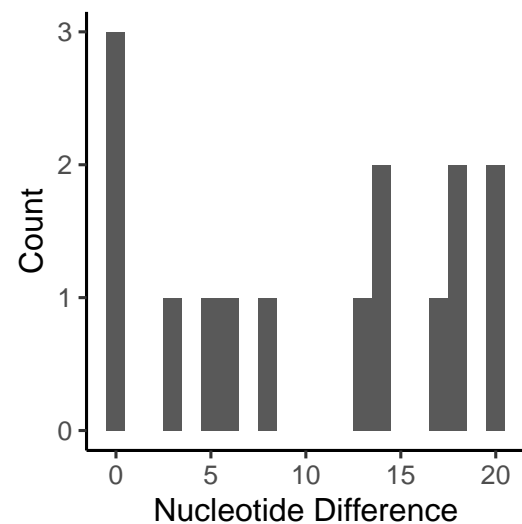
IGHV3-73*01_02

1379 sequences assigned
543 (39.4%) exact matches, in which:
460 unique CDR3
6 unique J



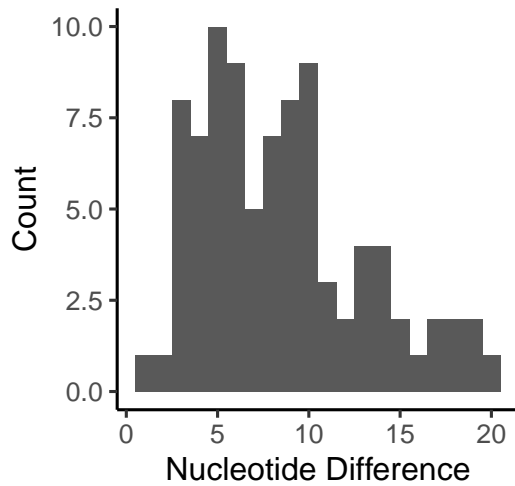
IGHV3-64D*06

37 sequences assigned
3 (8.1%) exact matches, in which:
3 unique CDR3
2 unique J



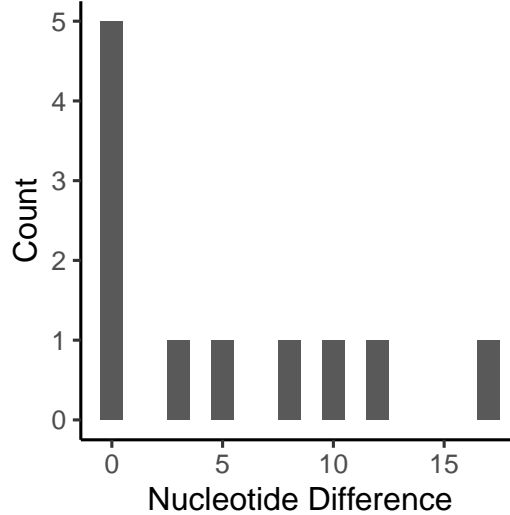
IGHV3–NL1*01

113 sequences assigned
No exact matches.



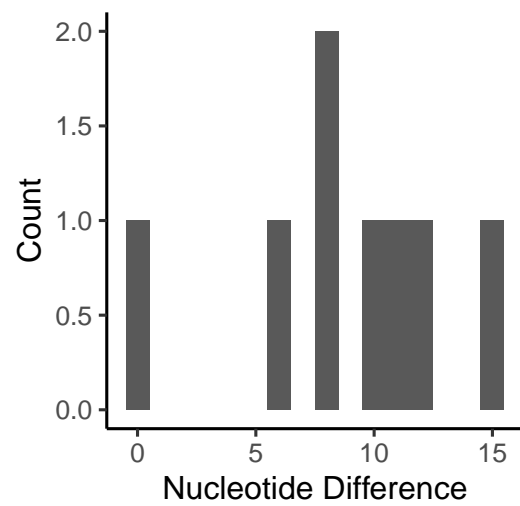
IGHV4–28*01_07

13 sequences assigned
5 (38.5%) exact matches, in which:
5 unique CDR3
3 unique J



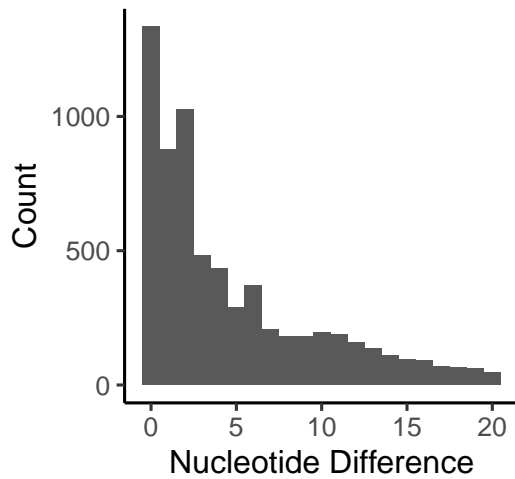
IGHV4–30–2*01

12 sequences assigned
1 (8.3%) exact matches, in which:
1 unique CDR3
1 unique J



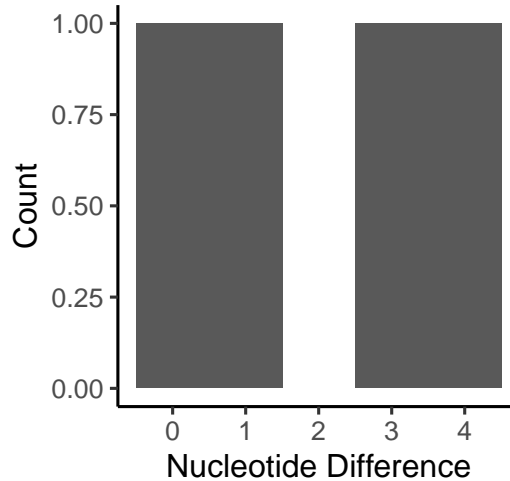
IGHV4–4*07

6971 sequences assigned
1334 (19.1%) exact matches, in which:
1277 unique CDR3
6 unique J



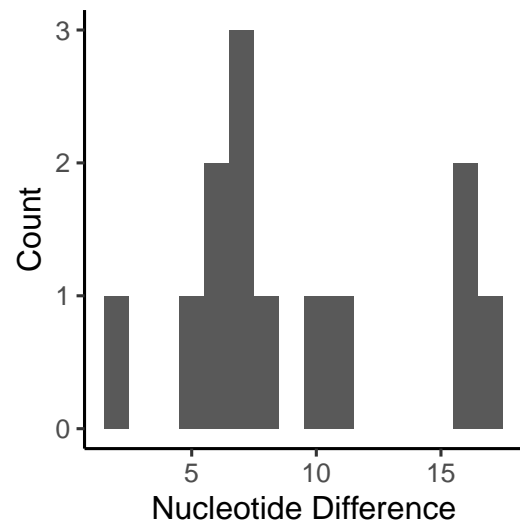
IGHV4–28*02_05

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



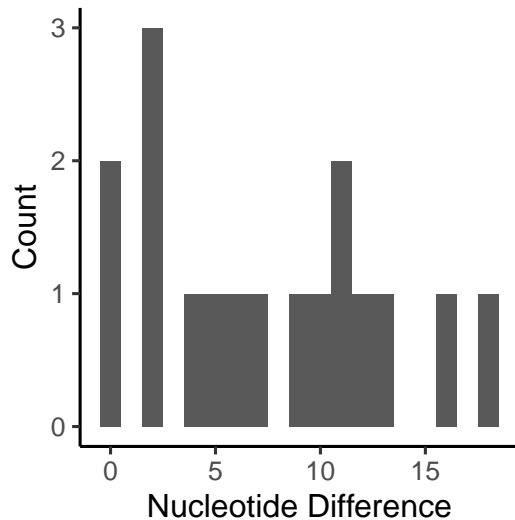
IGHV4–30–2*03

21 sequences assigned
No exact matches.



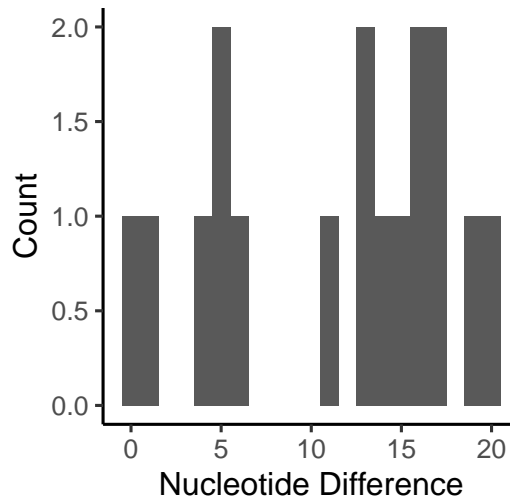
IGHV4–28*03

17 sequences assigned
2 (11.8%) exact matches, in which:
2 unique CDR3
1 unique J



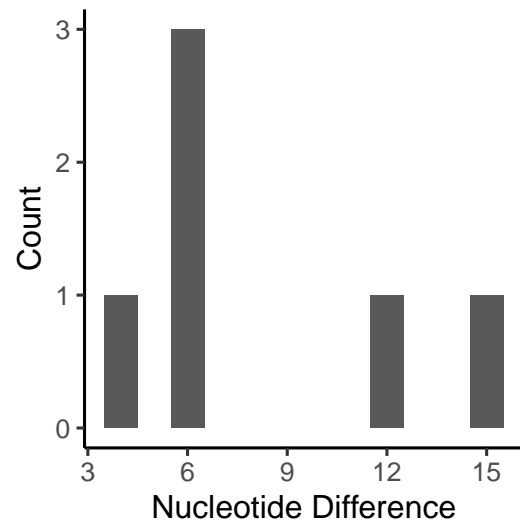
IGHV4–30–4*01

28 sequences assigned
1 (3.6%) exact matches, in which:
1 unique CDR3
1 unique J



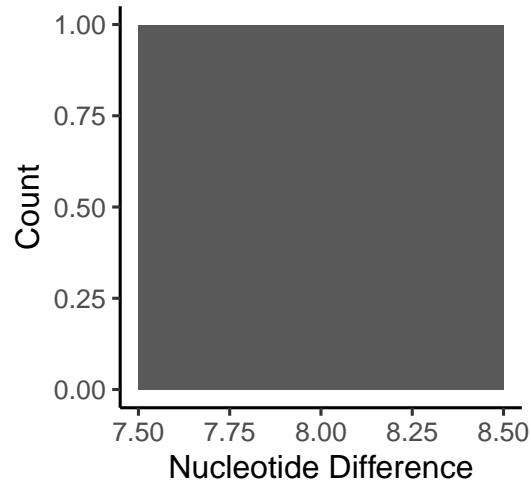
IGHV4–30–2*04

7 sequences assigned
No exact matches.



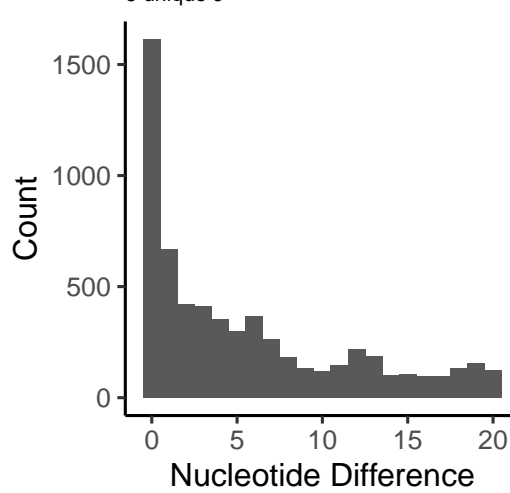
IGHV4-30-4*05

1 sequences assigned
No exact matches.



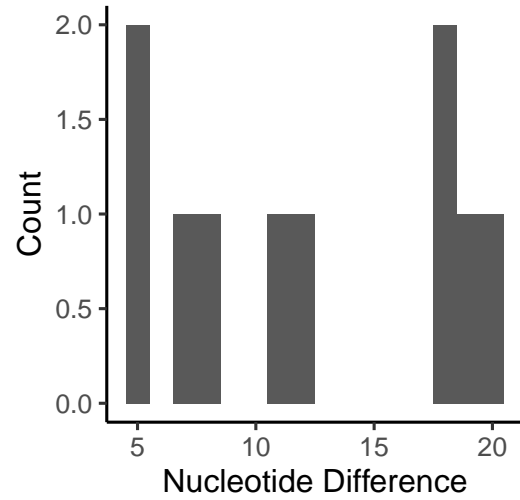
IGHV4-31*03_04

7667 sequences assigned
1613 (21%) exact matches, in which:
1564 unique CDR3
6 unique J



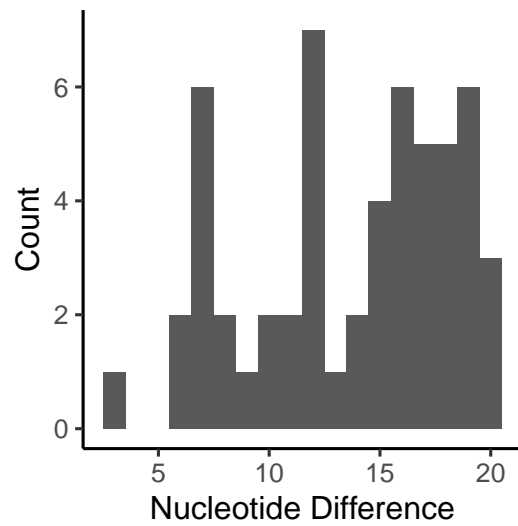
IGHV4-38-2*02

12 sequences assigned
No exact matches.



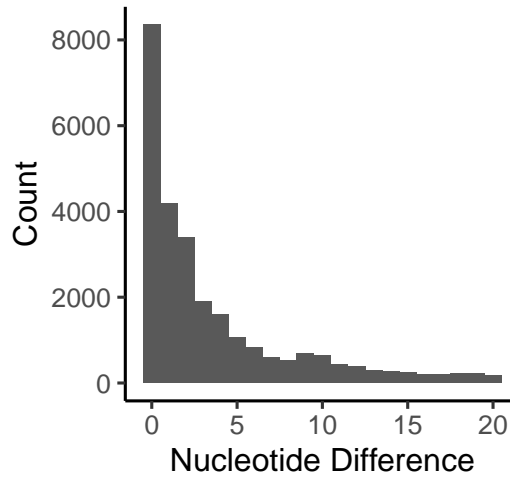
IGHV4-30-4*08

69 sequences assigned
No exact matches.



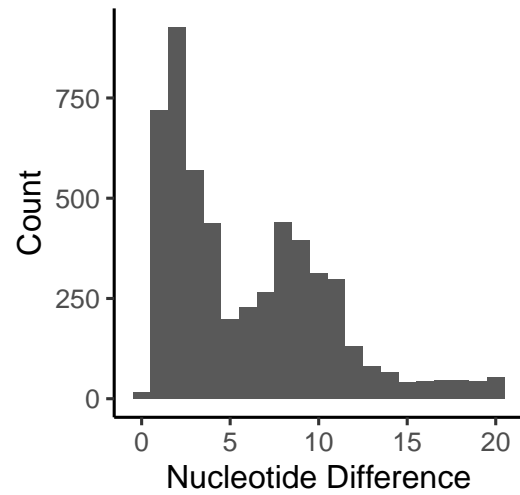
IGHV4-34*01_02

27920 sequences assigned
8354 (29.9%) exact matches, in which:
7795 unique CDR3
6 unique J



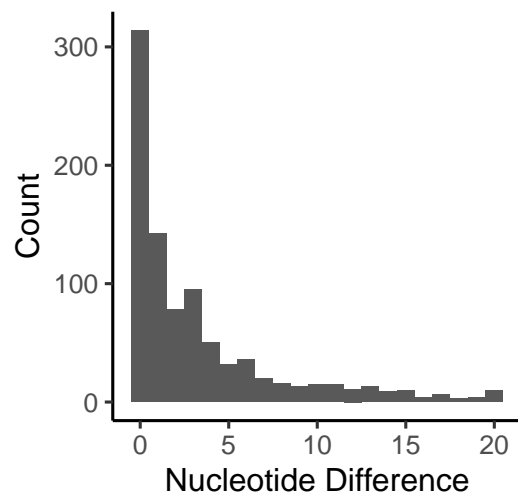
IGHV4-39*07

5672 sequences assigned
15 (0.3%) exact matches, in which:
15 unique CDR3
3 unique J



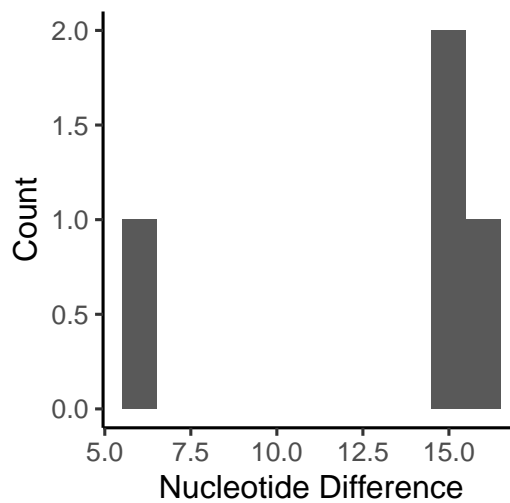
IGHV4-31*01

977 sequences assigned
314 (32.1%) exact matches, in which:
305 unique CDR3
6 unique J



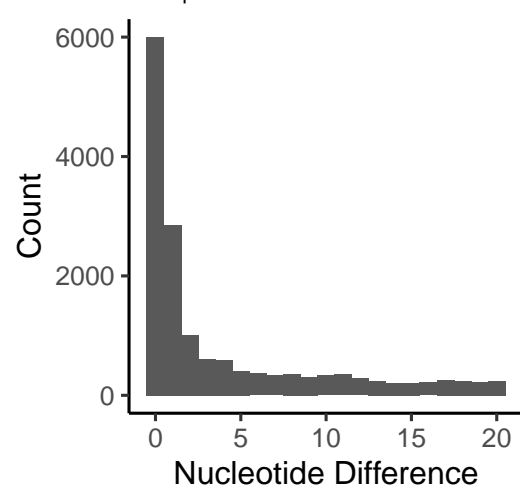
IGHV4-38-2*01

9 sequences assigned
No exact matches.



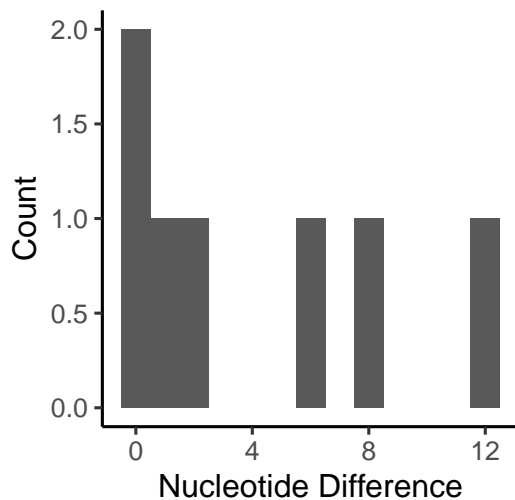
IGHV4-39*01_05

17180 sequences assigned
6001 (34.9%) exact matches, in which:
5630 unique CDR3
6 unique J



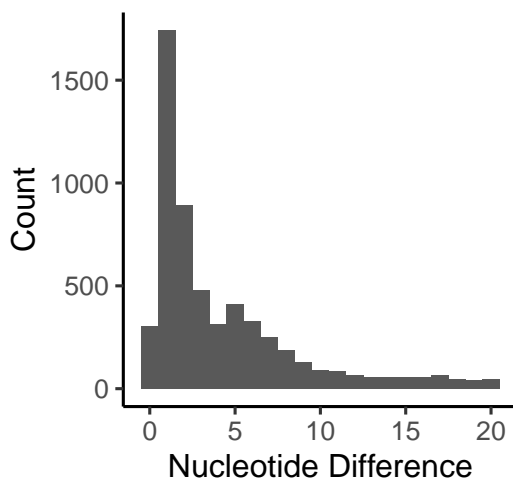
IGHV4-55*01_05

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



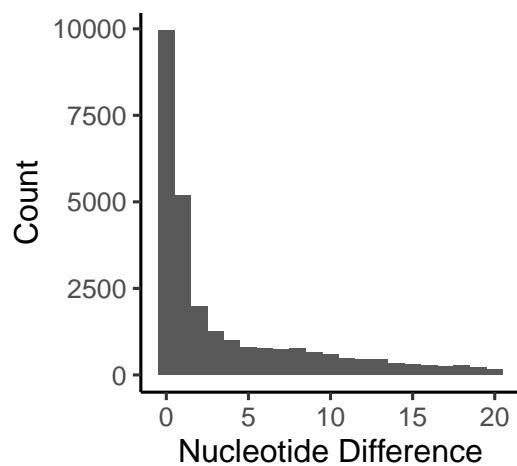
IGHV4-59*12

5975 sequences assigned
302 (5.1%) exact matches, in which:
300 unique CDR3
6 unique J



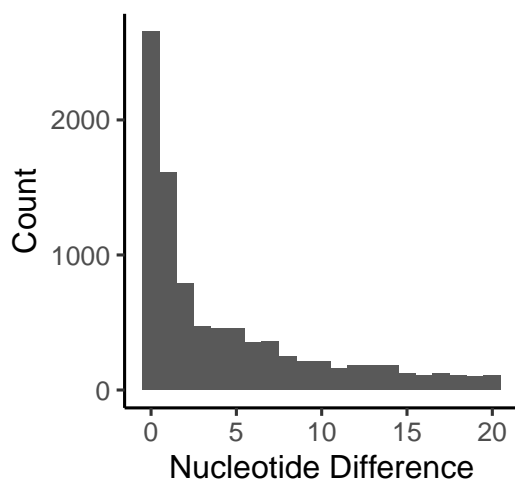
IGHV5-51*01_03

27771 sequences assigned
9961 (35.9%) exact matches, in which:
8256 unique CDR3
6 unique J



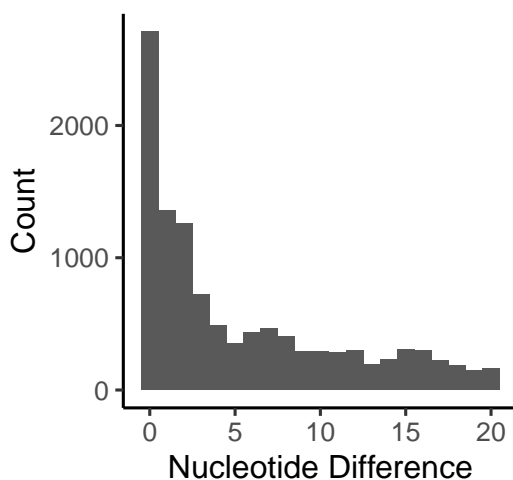
IGHV4-59*08

10085 sequences assigned
2653 (26.3%) exact matches, in which:
2510 unique CDR3
6 unique J



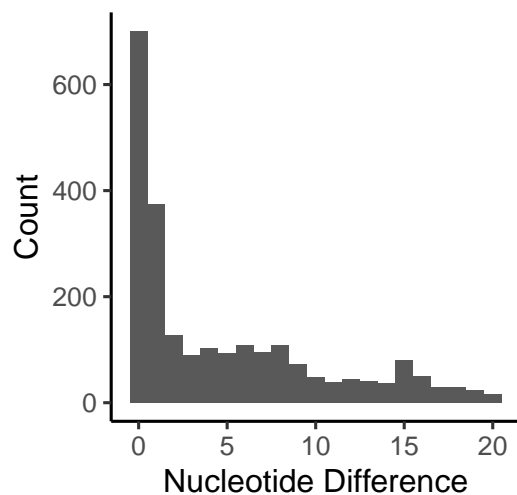
IGHV4-61*02

12352 sequences assigned
2709 (21.9%) exact matches, in which:
2609 unique CDR3
6 unique J



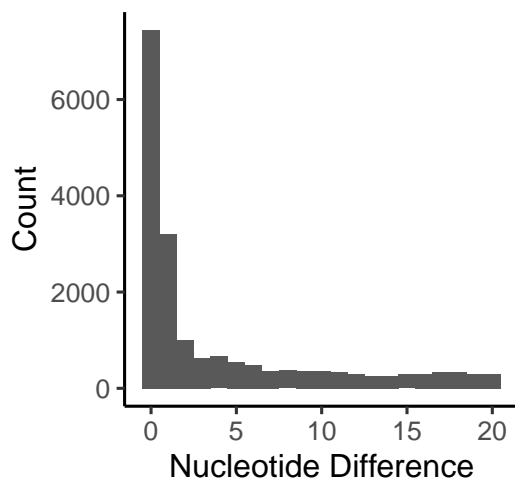
IGHV6-1*01_02

2389 sequences assigned
701 (29.3%) exact matches, in which:
667 unique CDR3
6 unique J



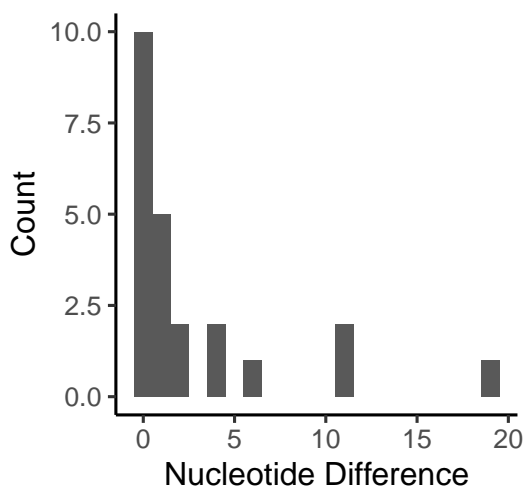
IGHV4-59*01_07

20403 sequences assigned
7443 (36.5%) exact matches, in which:
6934 unique CDR3
6 unique J



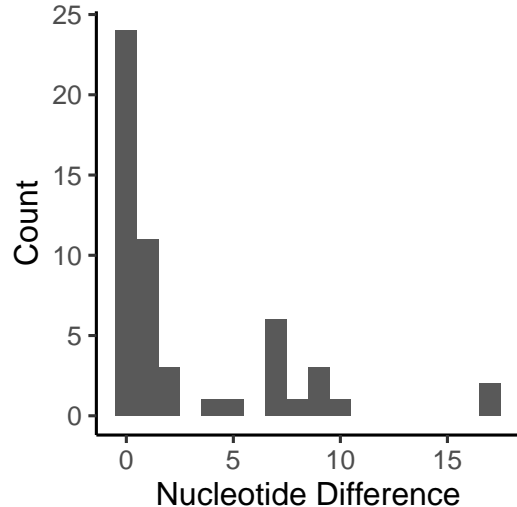
IGHV5-10-1*01_03

23 sequences assigned
10 (43.5%) exact matches, in which:
10 unique CDR3
3 unique J



IGHV7-4-1*01

53 sequences assigned
24 (45.3%) exact matches, in which:
24 unique CDR3
3 unique J





Novel sequence(s) IGHV1-69*01_12_13_G238A IGHV3-48*03_T303G 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) IGHV5-51*07_A128G 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.