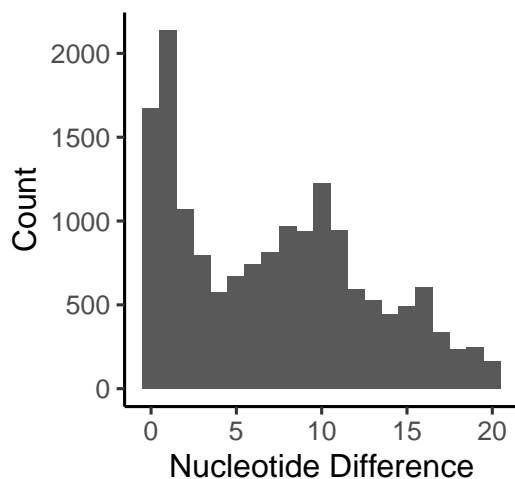


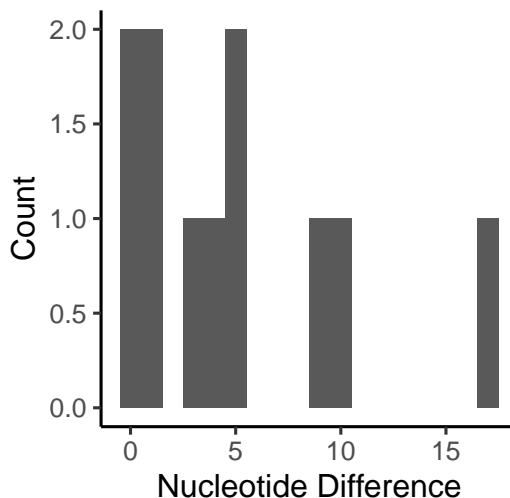
IGHV1-2*02

18186 sequences assigned
1676 (9.2%) exact matches, in which:
1337 unique CDR3
6 unique J



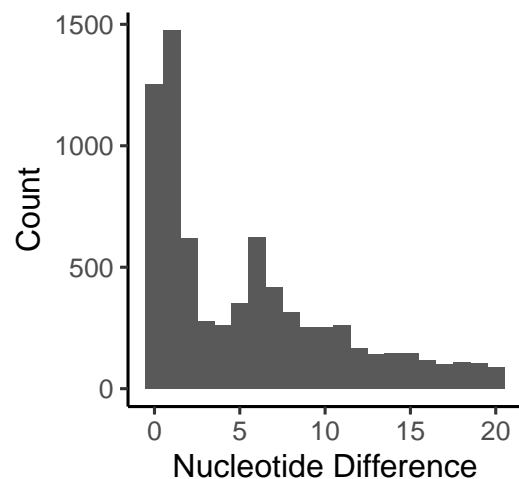
IGHV1-8*01

11 sequences assigned
2 (18.2%) exact matches, in which:
2 unique CDR3
1 unique J



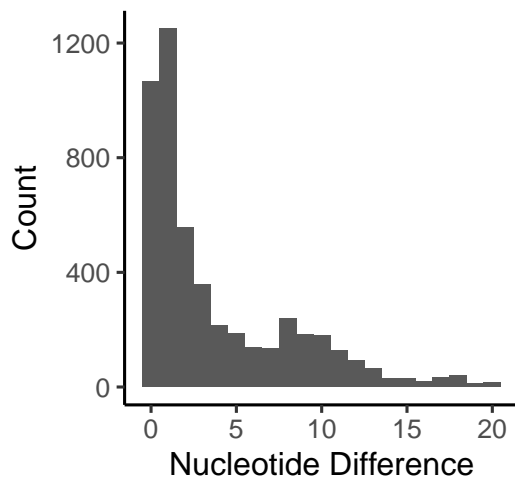
IGHV1-18*01

9757 sequences assigned
1253 (12.8%) exact matches, in which:
989 unique CDR3
6 unique J



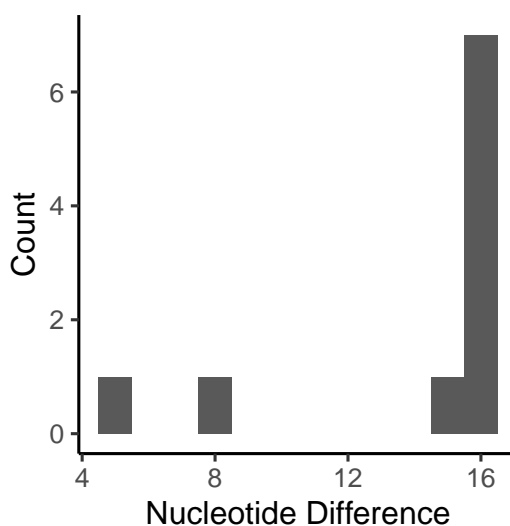
IGHV1-2*04

5049 sequences assigned
1065 (21.1%) exact matches, in which:
862 unique CDR3
6 unique J



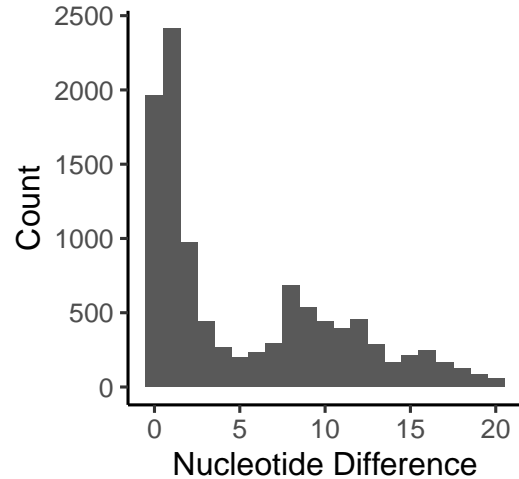
IGHV1-8*02

11 sequences assigned
No exact matches.



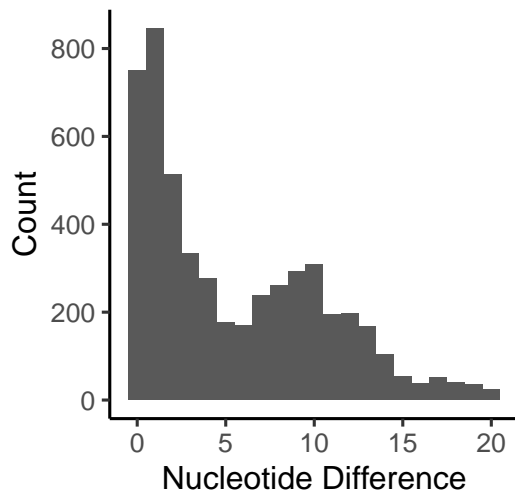
IGHV1-18*04

11789 sequences assigned
1966 (16.7%) exact matches, in which:
1516 unique CDR3
6 unique J



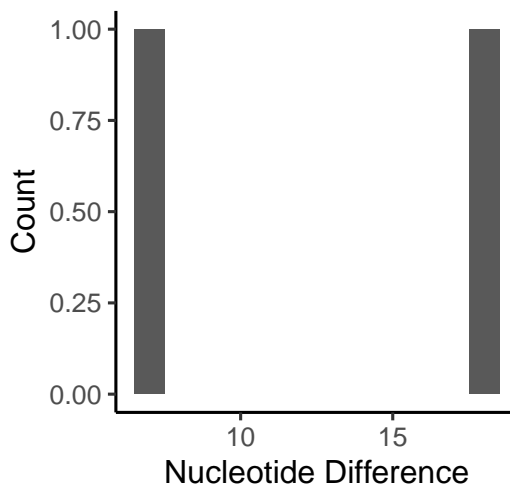
IGHV1-3*01_05

5756 sequences assigned
749 (13%) exact matches, in which:
573 unique CDR3
6 unique J



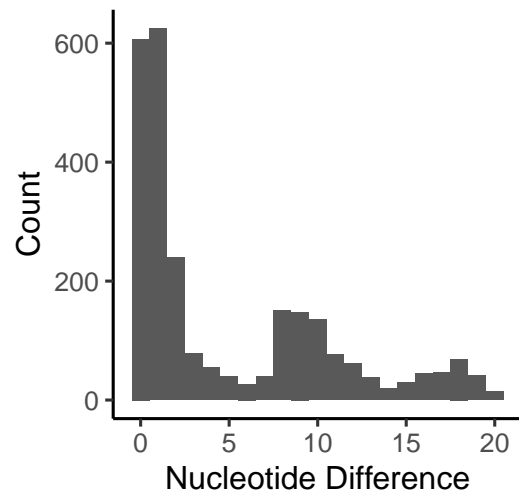
IGHV1-8*03

3 sequences assigned
No exact matches.



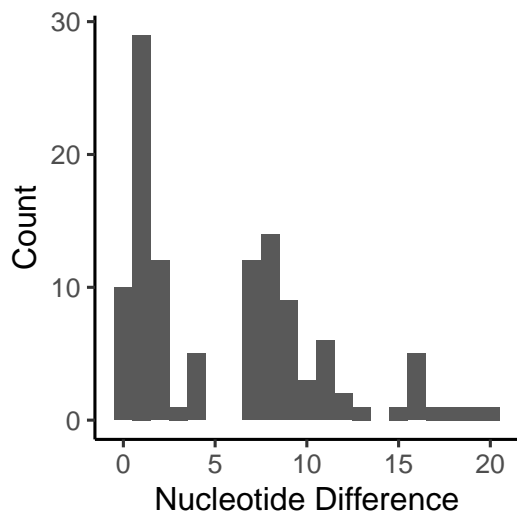
IGHV1-24*01

3286 sequences assigned
607 (18.5%) exact matches, in which:
504 unique CDR3
6 unique J



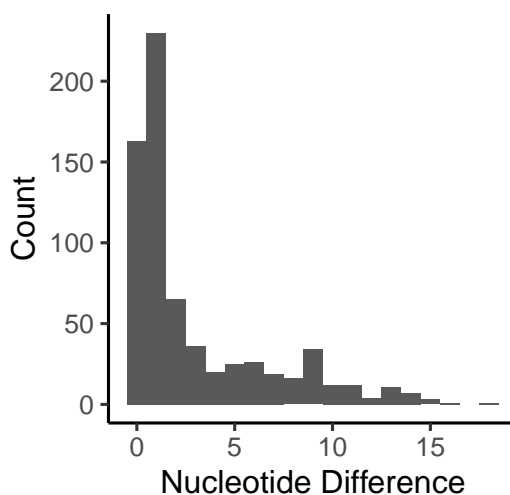
IGHV1-45*02

115 sequences assigned
10 (8.7%) exact matches, in which:
10 unique CDR3
3 unique J



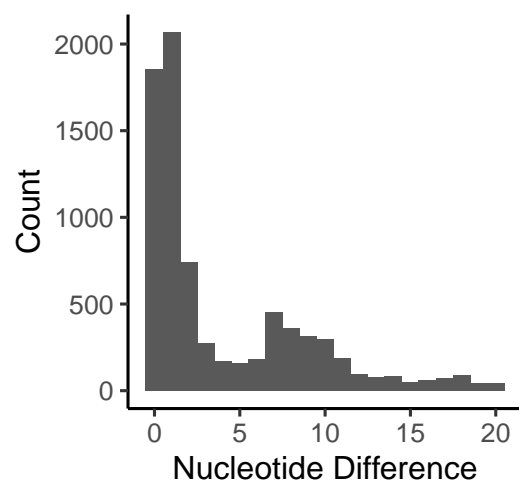
IGHV1-58*01_03

685 sequences assigned
163 (23.8%) exact matches, in which:
117 unique CDR3
6 unique J



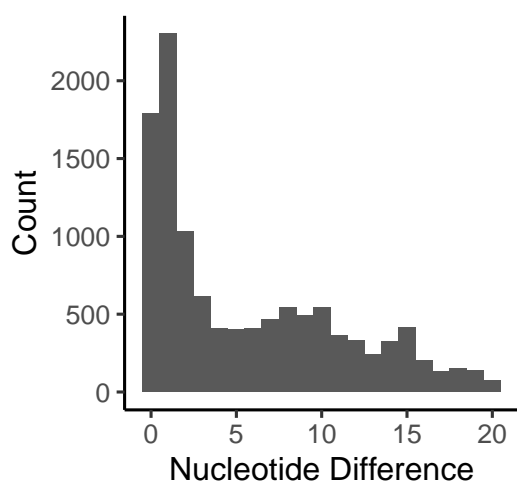
IGHV1-69*06_14

8353 sequences assigned
1856 (22.2%) exact matches, in which:
1535 unique CDR3
6 unique J



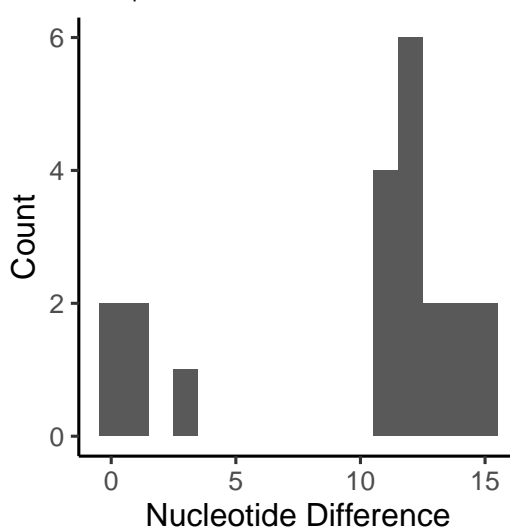
IGHV1-46*01

12611 sequences assigned
1790 (14.2%) exact matches, in which:
1435 unique CDR3
6 unique J



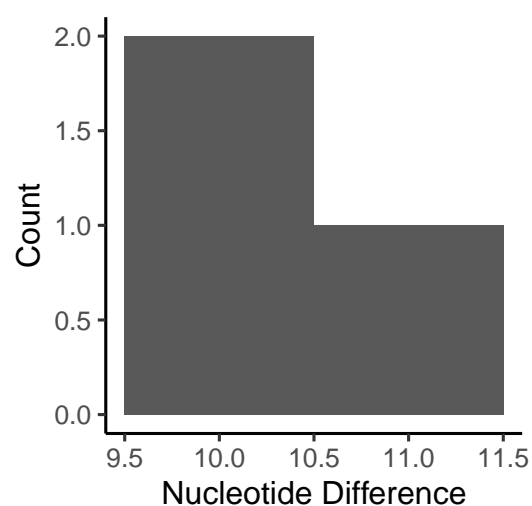
IGHV1-69-2*01

24 sequences assigned
2 (8.3%) exact matches, in which:
2 unique CDR3
1 unique J



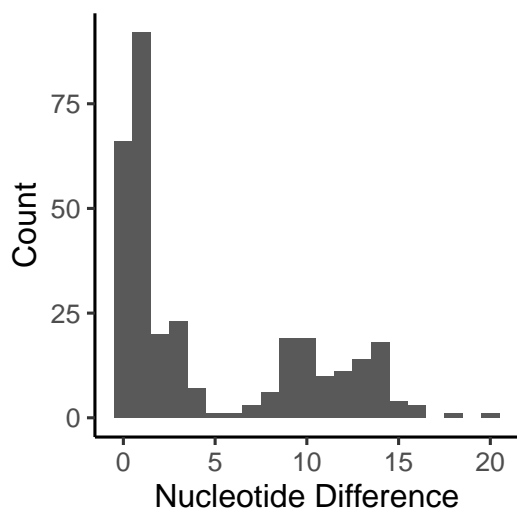
IGHV1-NL1*01

3 sequences assigned
No exact matches.



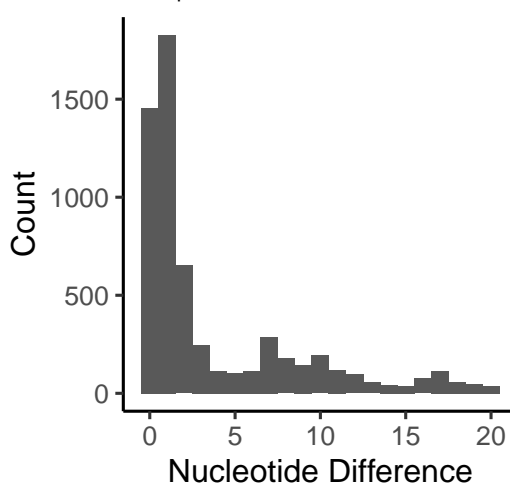
IGHV1-58*02

320 sequences assigned
66 (20.6%) exact matches, in which:
52 unique CDR3
5 unique J



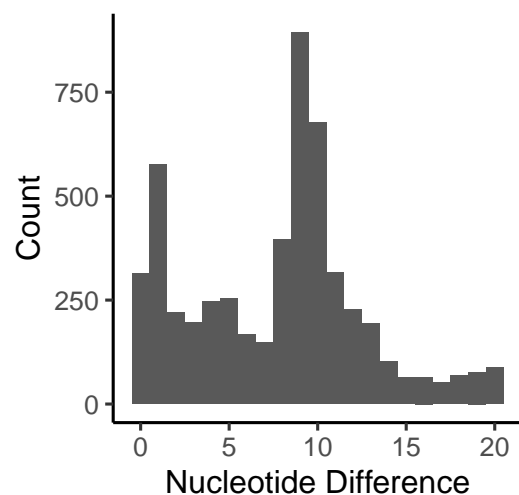
IGHV1-69*04_09

7493 sequences assigned
1456 (19.4%) exact matches, in which:
1216 unique CDR3
6 unique J



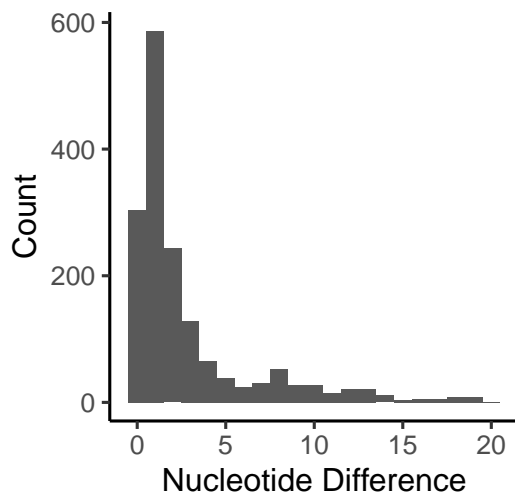
IGHV2-5*02

6704 sequences assigned
313 (4.7%) exact matches, in which:
220 unique CDR3
6 unique J



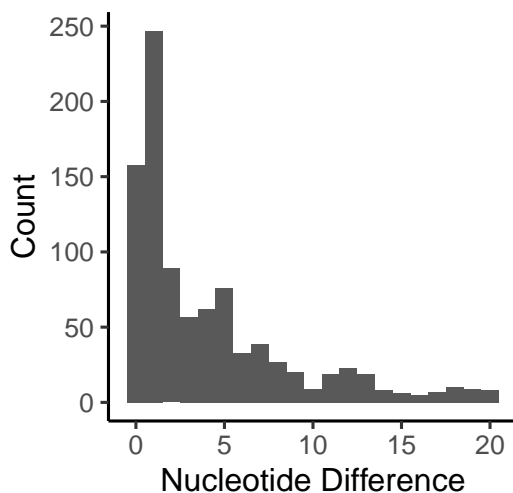
IGHV2-26*01

2014 sequences assigned
304 (15.1%) exact matches, in which:
201 unique CDR3
6 unique J



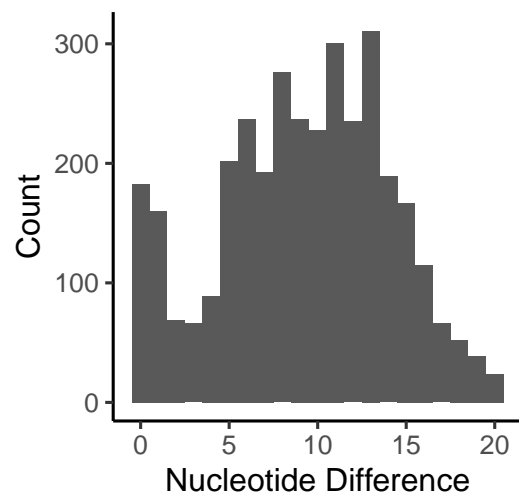
IGHV2-70*11_15

1010 sequences assigned
158 (15.6%) exact matches, in which:
111 unique CDR3
5 unique J



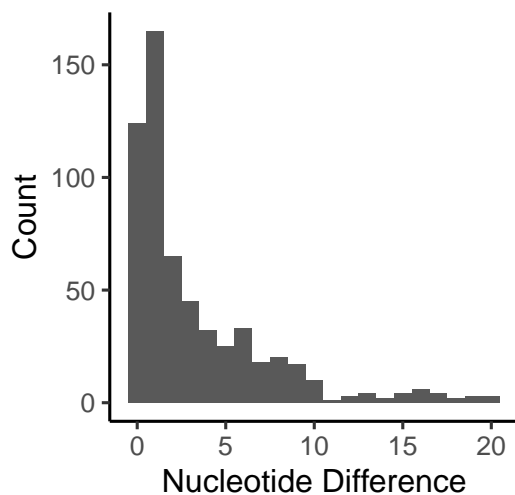
IGHV3-7*04

3780 sequences assigned
183 (4.8%) exact matches, in which:
114 unique CDR3
5 unique J



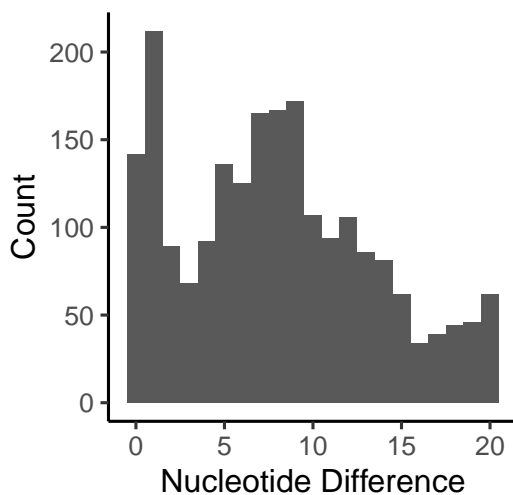
IGHV2-70*01

717 sequences assigned
124 (17.3%) exact matches, in which:
104 unique CDR3
6 unique J



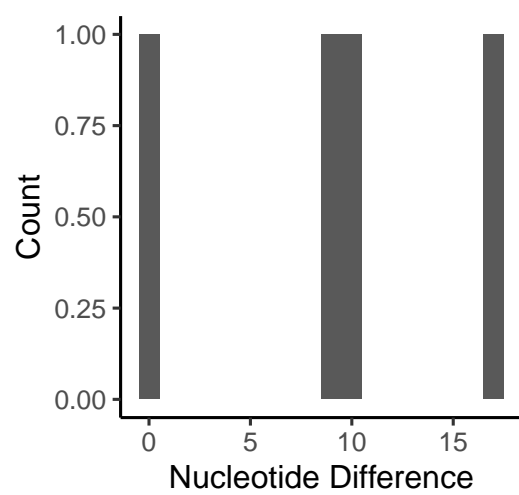
IGHV3-7*01

2478 sequences assigned
142 (5.7%) exact matches, in which:
122 unique CDR3
6 unique J



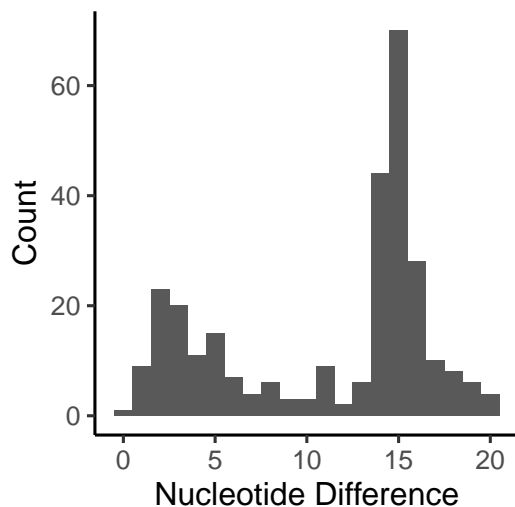
IGHV3-9*01

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



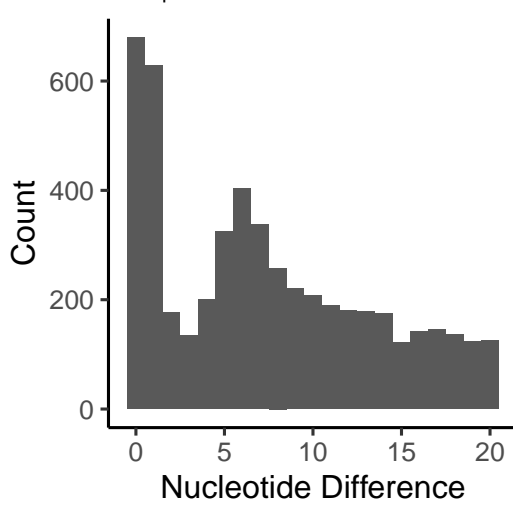
IGHV2-70*12

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



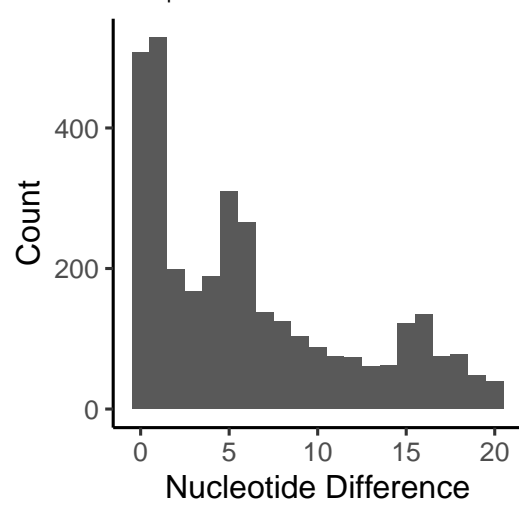
IGHV3-7*03

8599 sequences assigned
680 (7.9%) exact matches, in which:
436 unique CDR3
6 unique J



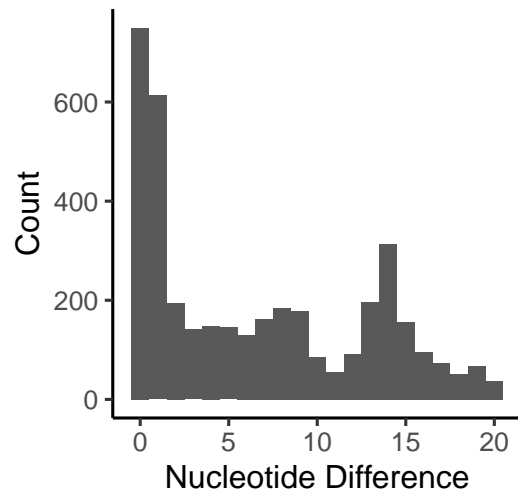
IGHV3-11*06

4380 sequences assigned
508 (11.6%) exact matches, in which:
368 unique CDR3
6 unique J



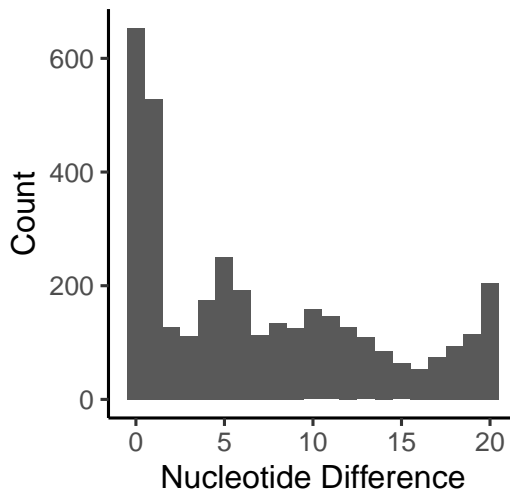
IGHV3-11*03_05

4586 sequences assigned
750 (16.4%) exact matches, in which:
468 unique CDR3
6 unique J



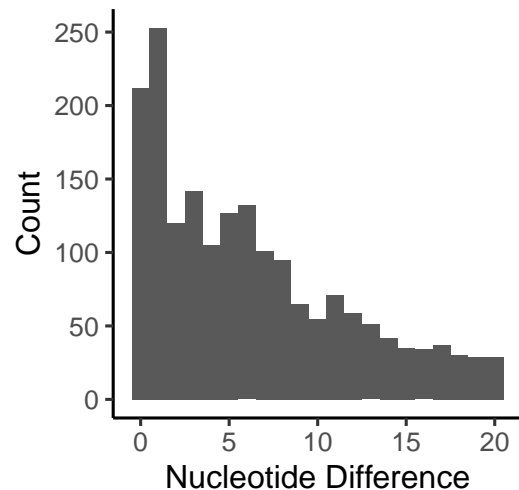
IGHV3-15*01_02

4566 sequences assigned
654 (14.3%) exact matches, in which:
368 unique CDR3
5 unique J



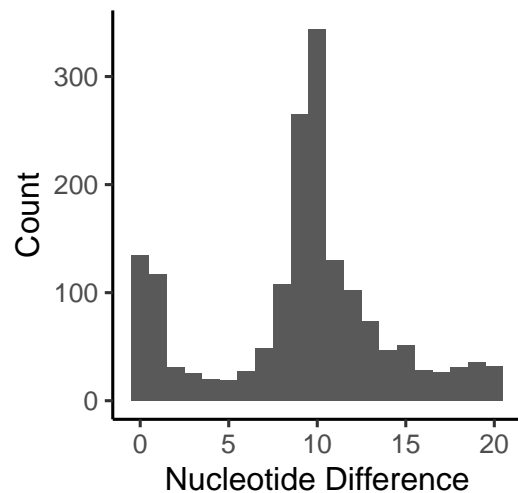
IGHV3-21*04

2006 sequences assigned
212 (10.6%) exact matches, in which:
184 unique CDR3
6 unique J



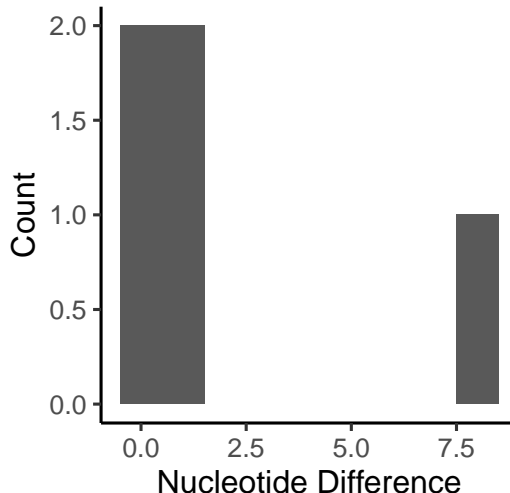
IGHV3-13*04

1746 sequences assigned
135 (7.7%) exact matches, in which:
89 unique CDR3
6 unique J



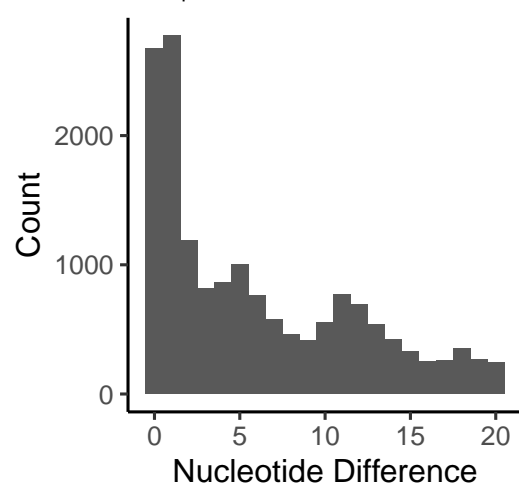
IGHV3-19*01

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



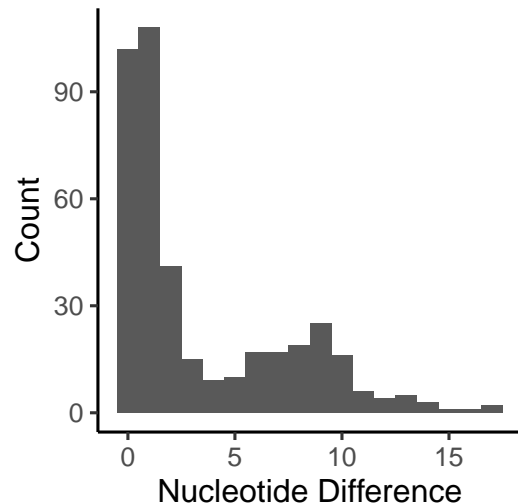
IGHV3-21*01_02

18519 sequences assigned
2672 (14.4%) exact matches, in which:
1645 unique CDR3
6 unique J



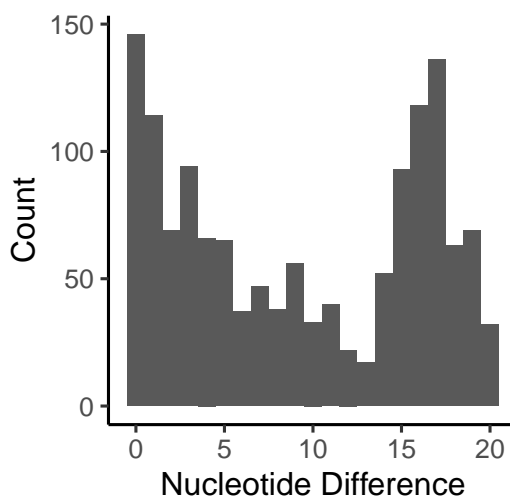
IGHV3-13*05

403 sequences assigned
102 (25.3%) exact matches, in which:
72 unique CDR3
6 unique J



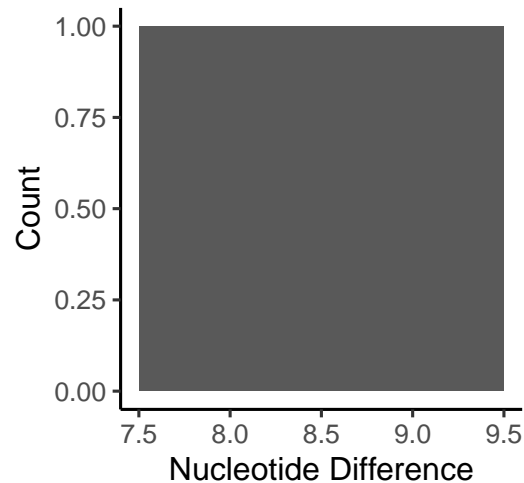
IGHV3-20*03_04

1902 sequences assigned
146 (7.7%) exact matches, in which:
88 unique CDR3
5 unique J



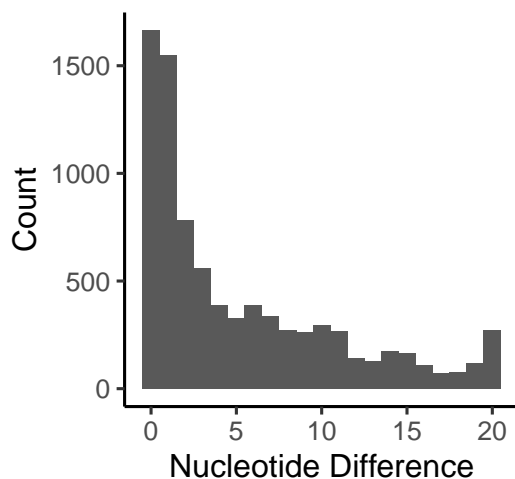
IGHV3-22*01_02

2 sequences assigned
No exact matches.



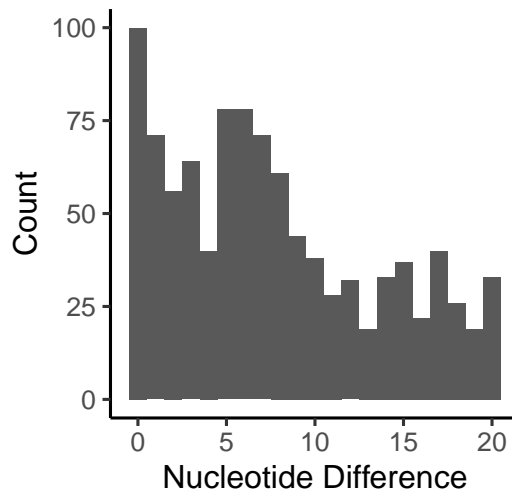
IGHV3-30*01

9970 sequences assigned
1664 (16.7%) exact matches, in which:
1101 unique CDR3
6 unique J



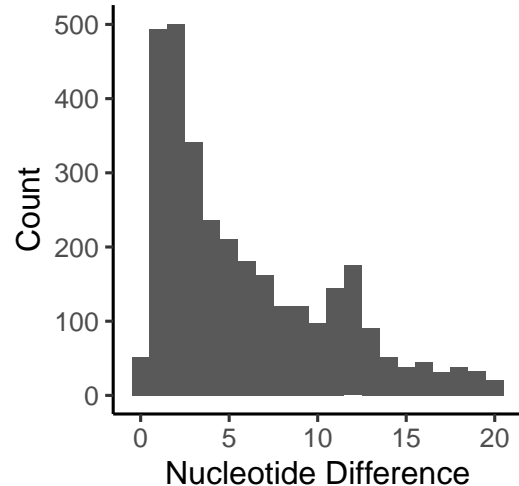
IGHV3-30-3*03

1690 sequences assigned
100 (5.9%) exact matches, in which:
91 unique CDR3
4 unique J



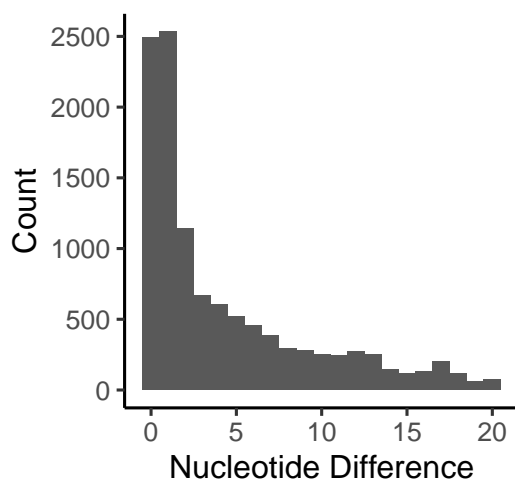
IGHV3-33*05

3332 sequences assigned
52 (1.6%) exact matches, in which:
38 unique CDR3
5 unique J



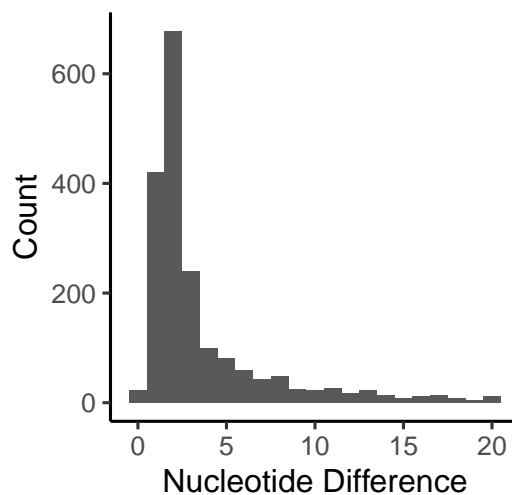
IGHV3-30-3*01

12417 sequences assigned
2494 (20.1%) exact matches, in which:
1529 unique CDR3
6 unique J



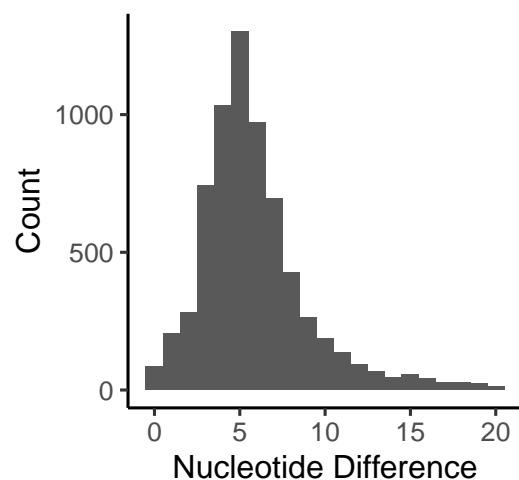
IGHV3-30*19

2223 sequences assigned
23 (1%) exact matches, in which:
23 unique CDR3
3 unique J



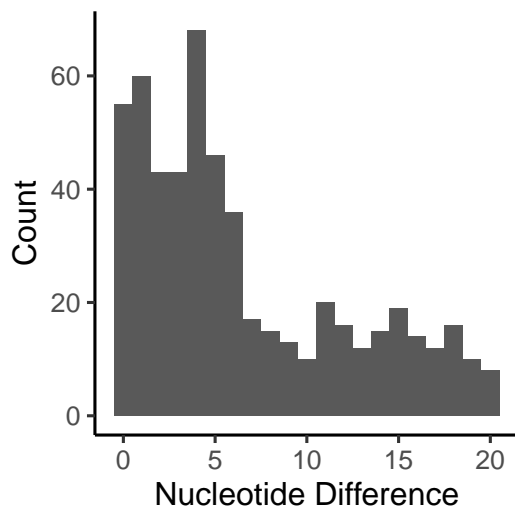
IGHV3-33*06

6826 sequences assigned
84 (1.2%) exact matches, in which:
77 unique CDR3
5 unique J



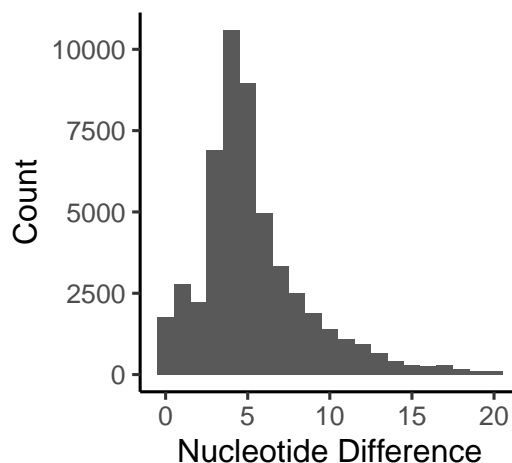
IGHV3-30-3*02

609 sequences assigned
55 (9%) exact matches, in which:
46 unique CDR3
5 unique J



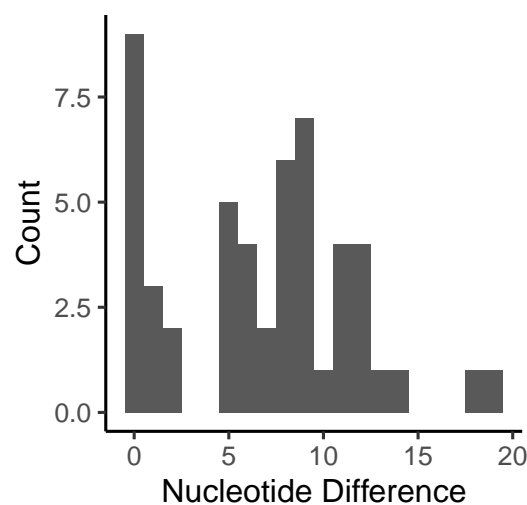
IGHV3-33*01

53598 sequences assigned
1773 (3.3%) exact matches, in which:
1106 unique CDR3
6 unique J



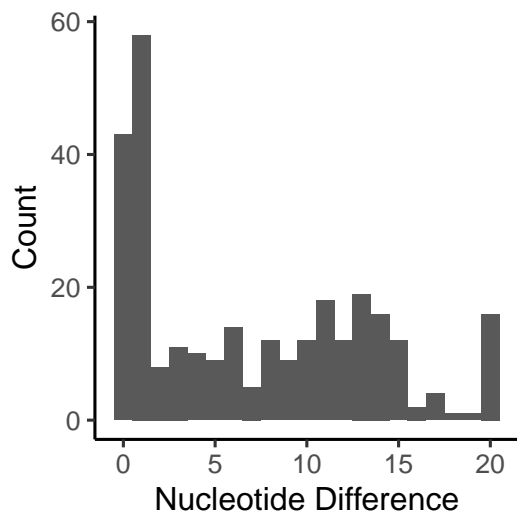
IGHV3-35*01

51 sequences assigned
9 (17.6%) exact matches, in which:
9 unique CDR3
3 unique J



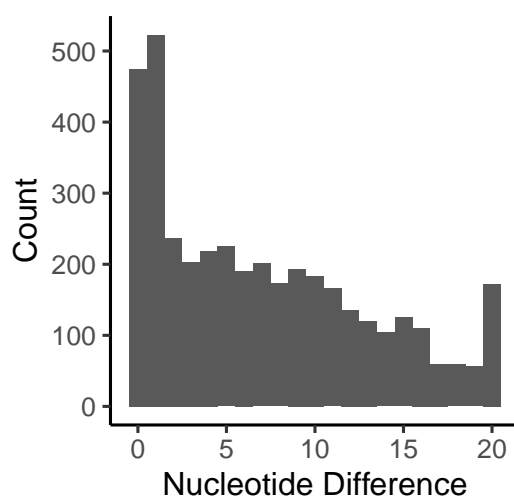
IGHV3-43*01

1091 sequences assigned
43 (3.9%) exact matches, in which:
21 unique CDR3
3 unique J



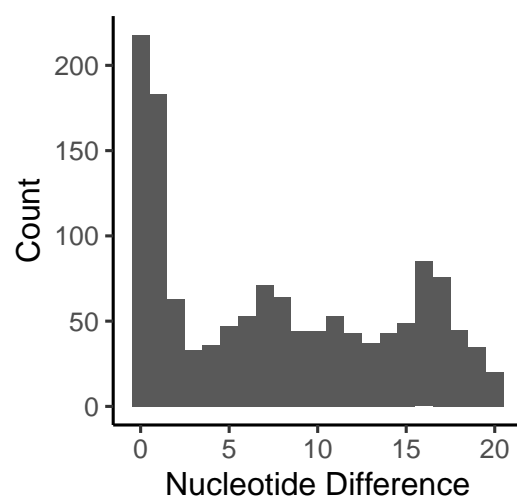
IGHV3-48*01

4731 sequences assigned
475 (10%) exact matches, in which:
304 unique CDR3
6 unique J



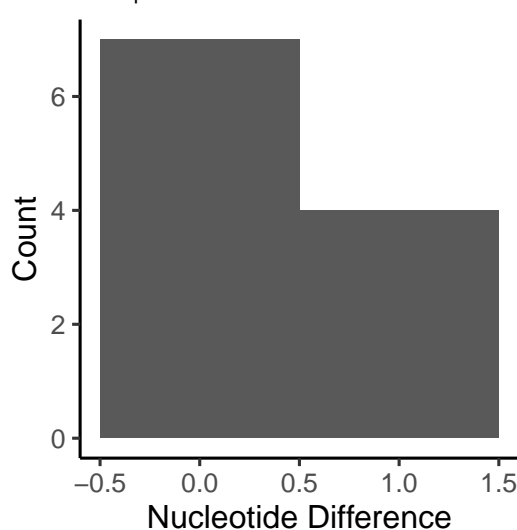
IGHV3-49*04

1431 sequences assigned
218 (15.2%) exact matches, in which:
132 unique CDR3
6 unique J



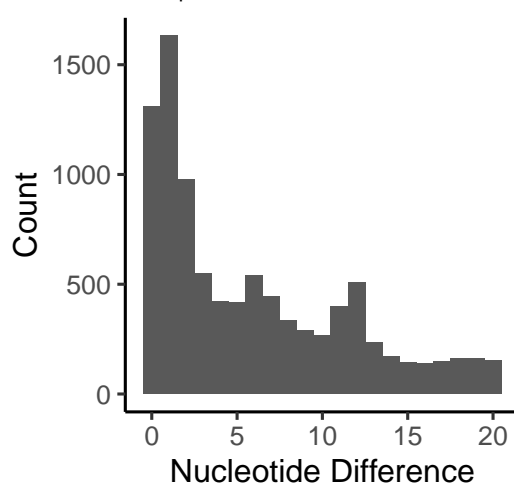
IGHV3-47*01

11 sequences assigned
7 (63.6%) exact matches, in which:
5 unique CDR3
1 unique J



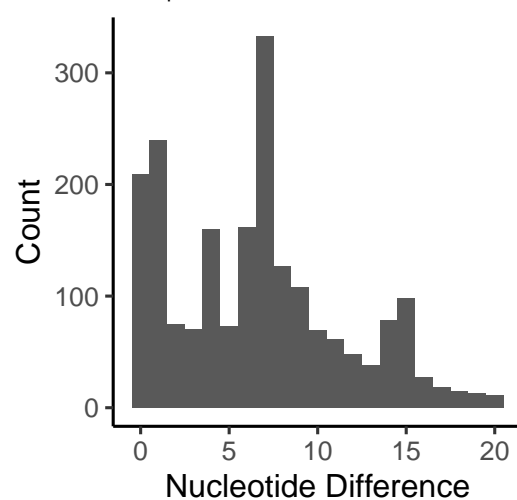
IGHV3-48*03

11870 sequences assigned
1308 (11%) exact matches, in which:
766 unique CDR3
6 unique J



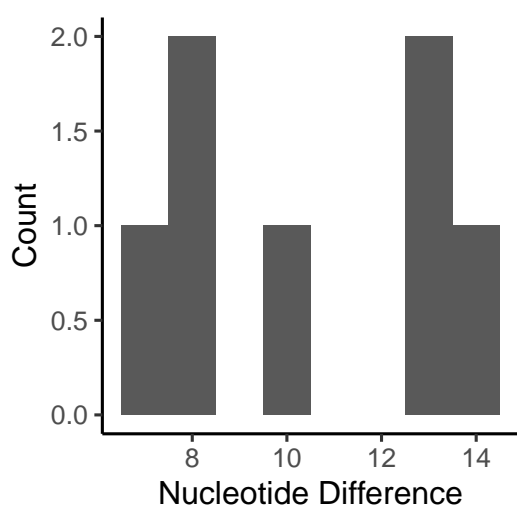
IGHV3-49*03_05

2136 sequences assigned
209 (9.8%) exact matches, in which:
120 unique CDR3
6 unique J



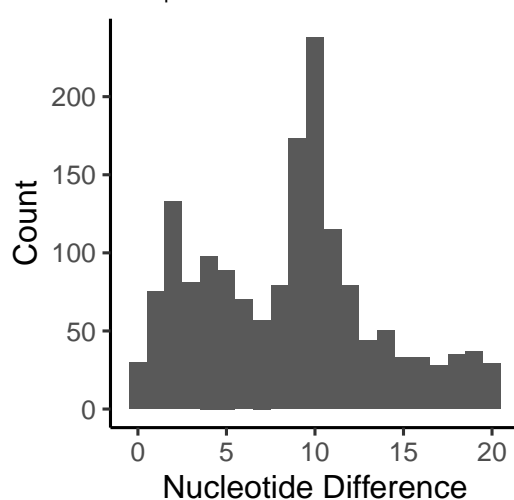
IGHV3-47*02

7 sequences assigned
No exact matches.



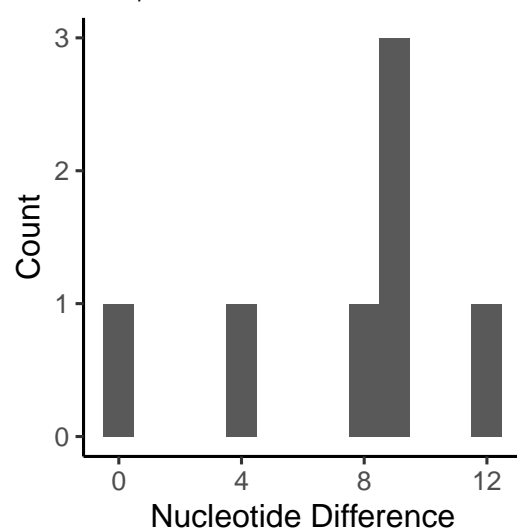
IGHV3-48*04

2316 sequences assigned
30 (1.3%) exact matches, in which:
28 unique CDR3
6 unique J



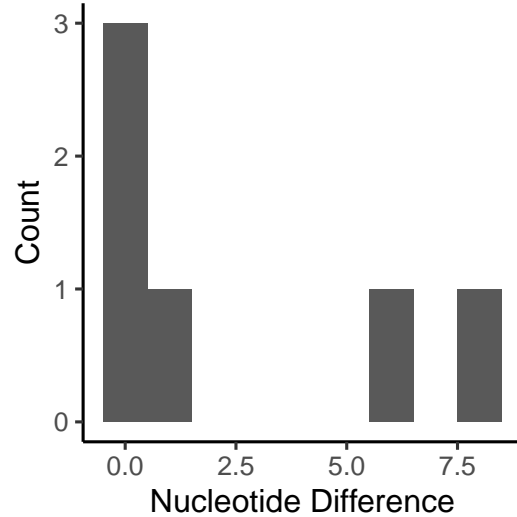
IGHV3-52*02

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



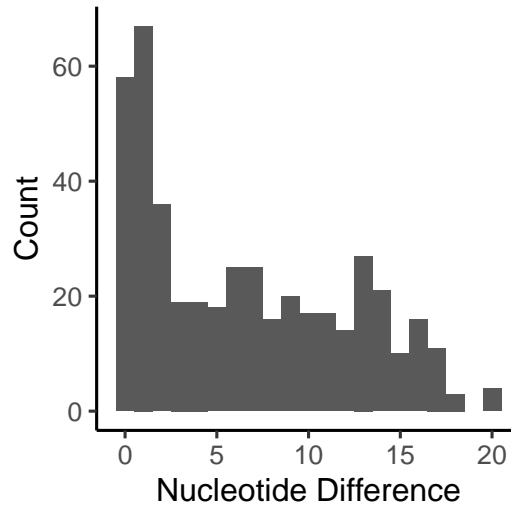
IGHV3-52*01_03

6 sequences assigned
3 (50%) exact matches, in which:
3 unique CDR3
2 unique J



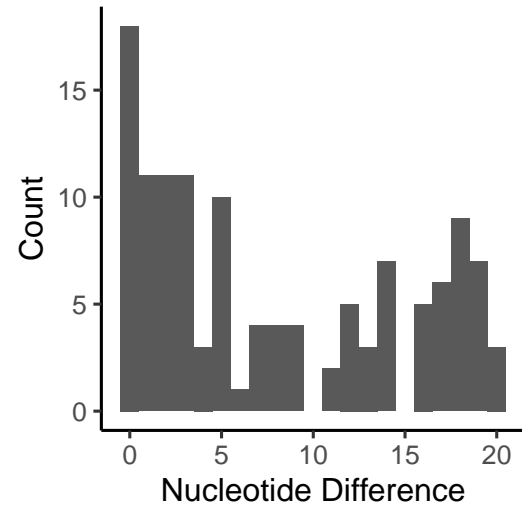
IGHV3-64*01

454 sequences assigned
58 (12.8%) exact matches, in which:
34 unique CDR3
6 unique J



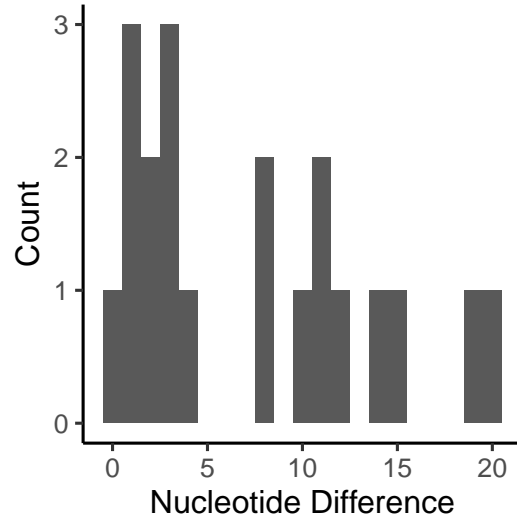
IGHV3-66*03

130 sequences assigned
18 (13.8%) exact matches, in which:
16 unique CDR3
4 unique J



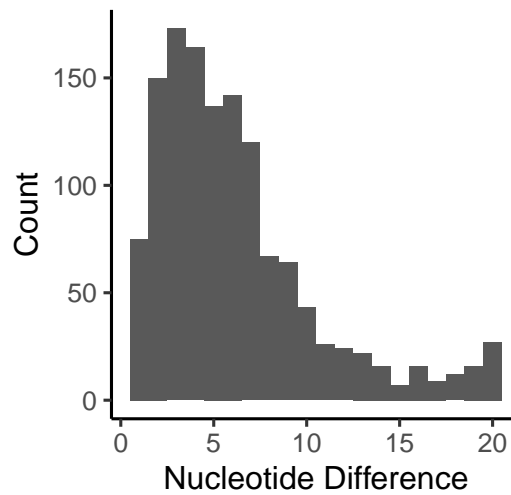
IGHV3-53*05

35 sequences assigned
1 (2.9%) exact matches, in which:
1 unique CDR3
1 unique J



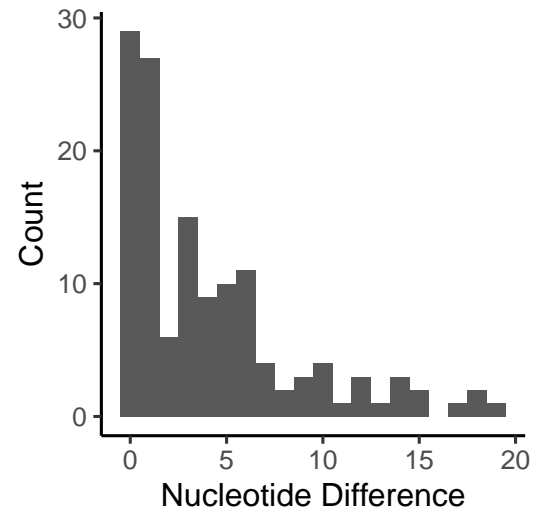
IGHV3-64*04

1437 sequences assigned
No exact matches.



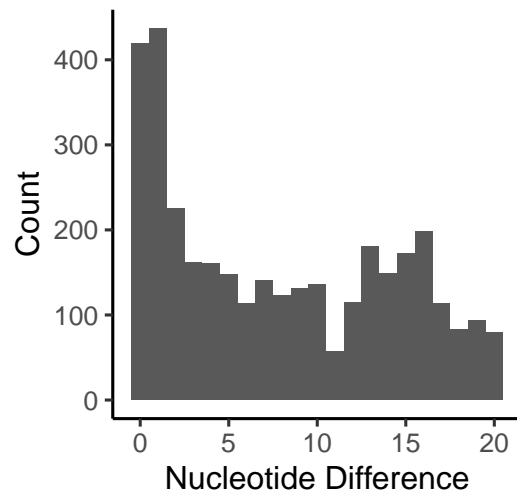
IGHV3-69-1*01

138 sequences assigned
29 (21%) exact matches, in which:
21 unique CDR3
3 unique J



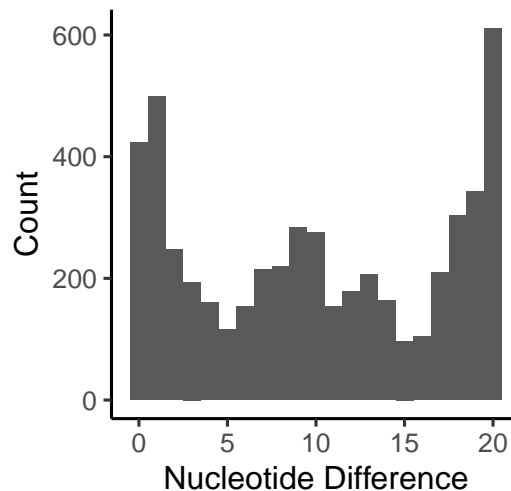
IGHV3-53*01_02

3820 sequences assigned
419 (11%) exact matches, in which:
276 unique CDR3
6 unique J



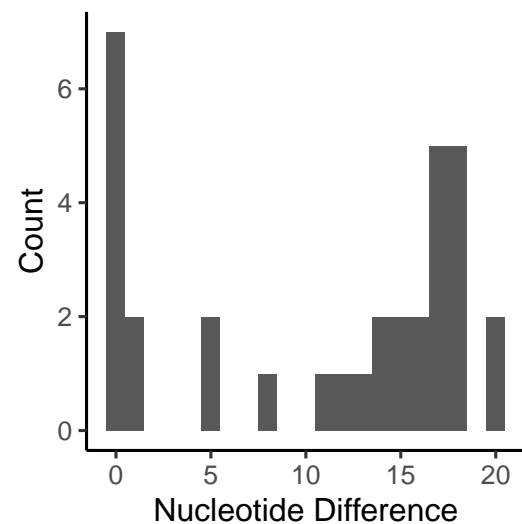
IGHV3-66*01

7905 sequences assigned
424 (5.4%) exact matches, in which:
293 unique CDR3
6 unique J



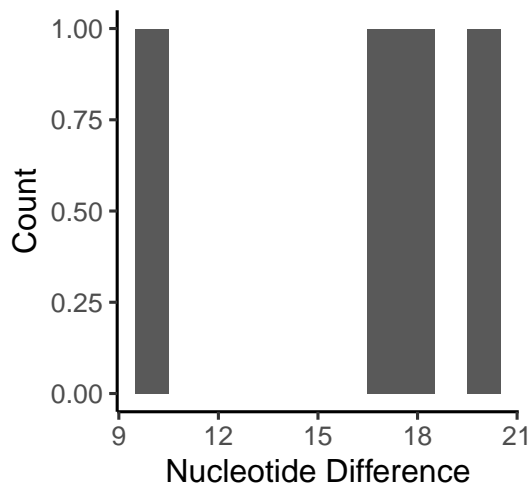
IGHV3-69-1*02

67 sequences assigned
7 (10.4%) exact matches, in which:
7 unique CDR3
3 unique J



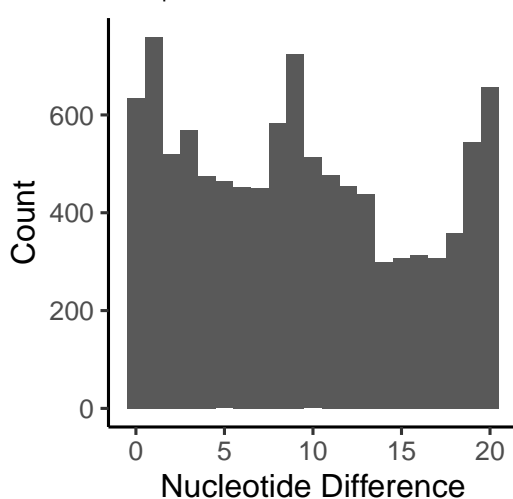
IGHV3-71*01_04

4 sequences assigned
No exact matches.



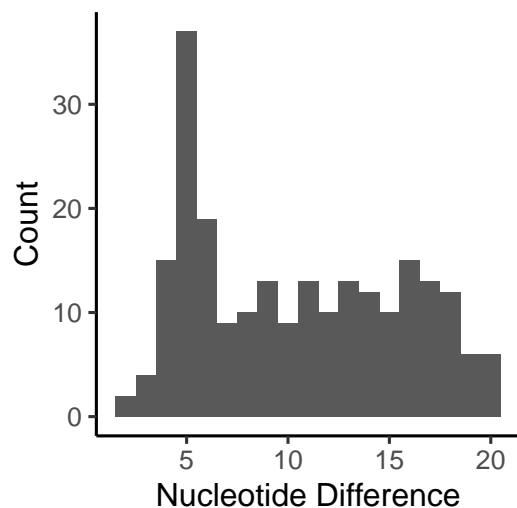
IGHV3-74*01_02

15105 sequences assigned
635 (4.2%) exact matches, in which:
407 unique CDR3
6 unique J



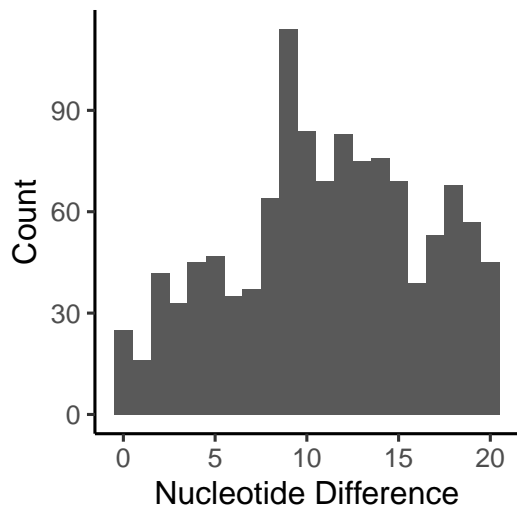
IGHV3-NL1*01

254 sequences assigned
No exact matches.



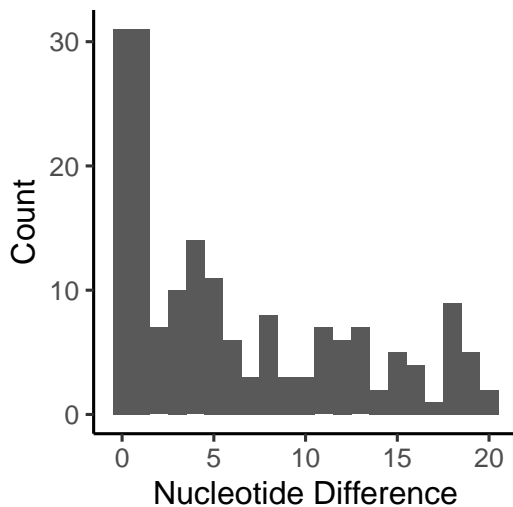
IGHV3-72*01

1281 sequences assigned
25 (2%) exact matches, in which:
17 unique CDR3
5 unique J



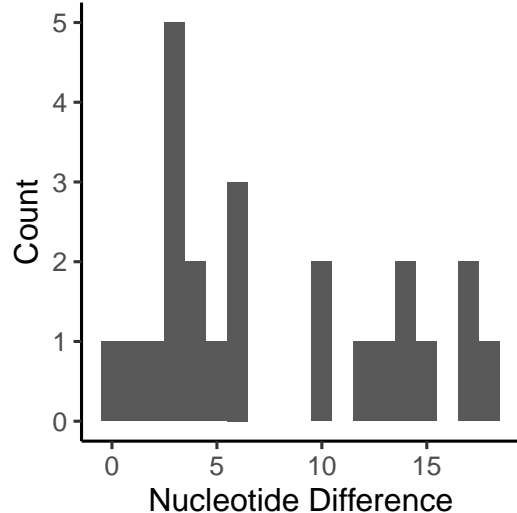
IGHV3-43D*04

303 sequences assigned
31 (10.2%) exact matches, in which:
15 unique CDR3
3 unique J



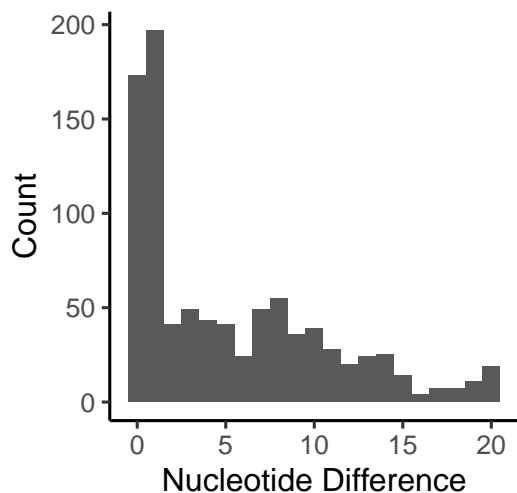
IGHV4-28*03

38 sequences assigned
1 (2.6%) exact matches, in which:
1 unique CDR3
1 unique J



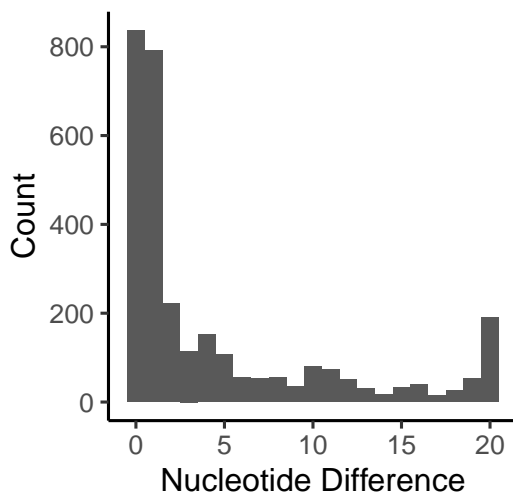
IGHV3-73*01_02

1061 sequences assigned
173 (16.3%) exact matches, in which:
107 unique CDR3
6 unique J



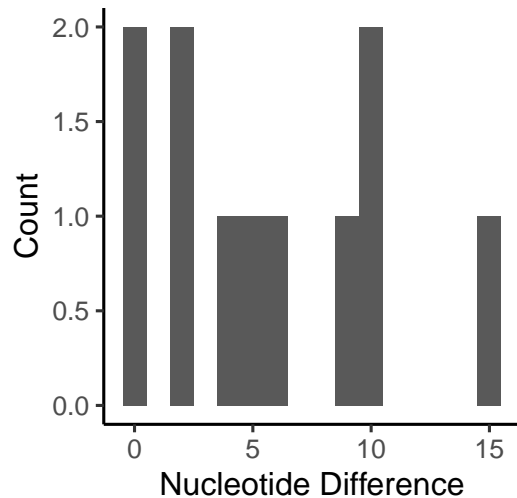
IGHV3-64D*06

3917 sequences assigned
837 (21.4%) exact matches, in which:
471 unique CDR3
6 unique J



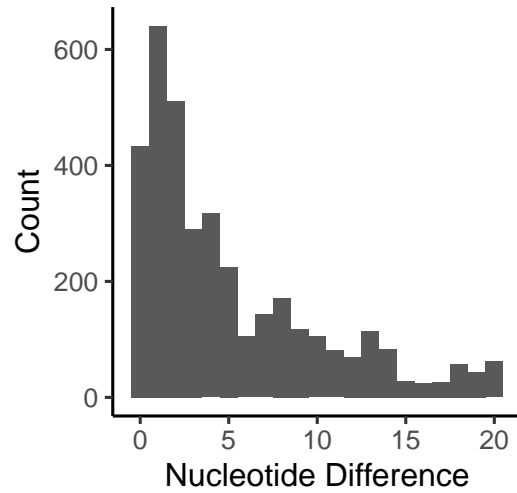
IGHV4-28*01_07

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



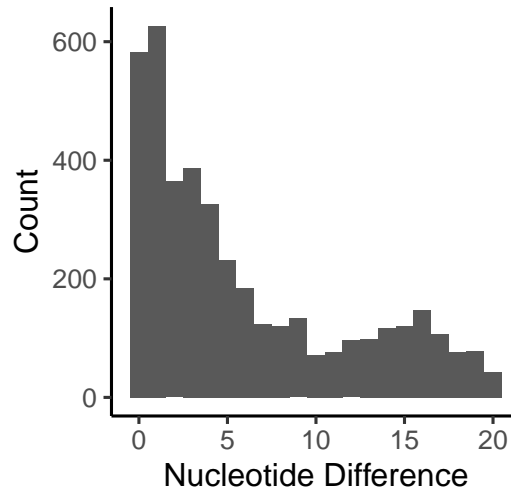
IGHV4-30-2*01

4445 sequences assigned
433 (9.7%) exact matches, in which:
321 unique CDR3
6 unique J



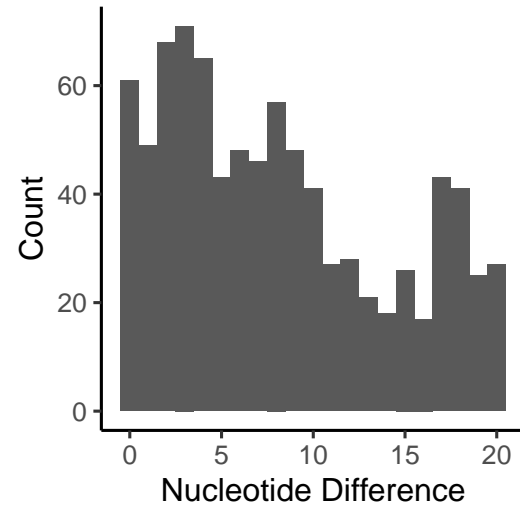
IGHV4-31*03_04

4481 sequences assigned
583 (13%) exact matches, in which:
451 unique CDR3
6 unique J



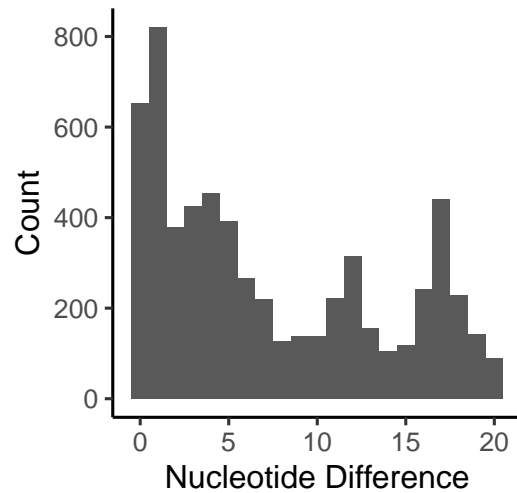
IGHV4-38-2*02

1540 sequences assigned
61 (4%) exact matches, in which:
52 unique CDR3
4 unique J



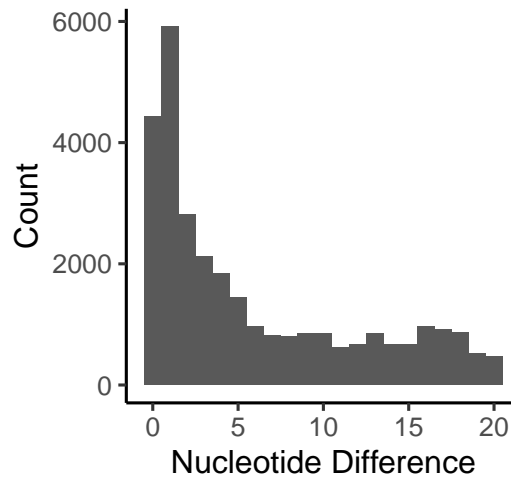
IGHV4-30-4*01

6407 sequences assigned
653 (10.2%) exact matches, in which:
487 unique CDR3
6 unique J



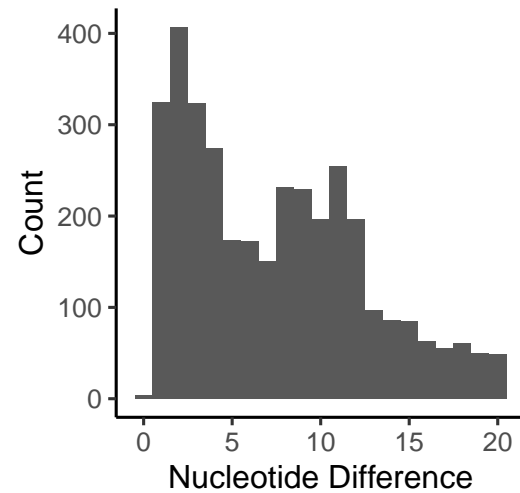
IGHV4-34*01_02

33180 sequences assigned
4431 (13.4%) exact matches, in which:
2894 unique CDR3
6 unique J



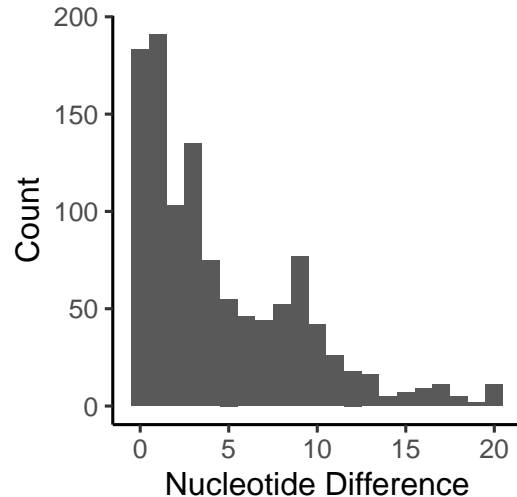
IGHV4-39*07

3828 sequences assigned
4 (0.1%) exact matches, in which:
4 unique CDR3
2 unique J



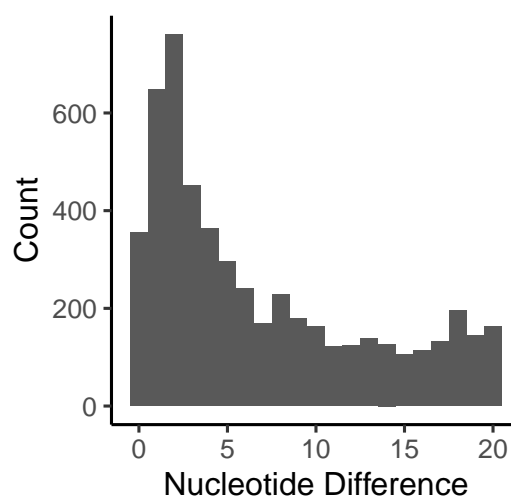
IGHV4-31*01

1157 sequences assigned
183 (15.8%) exact matches, in which:
148 unique CDR3
6 unique J



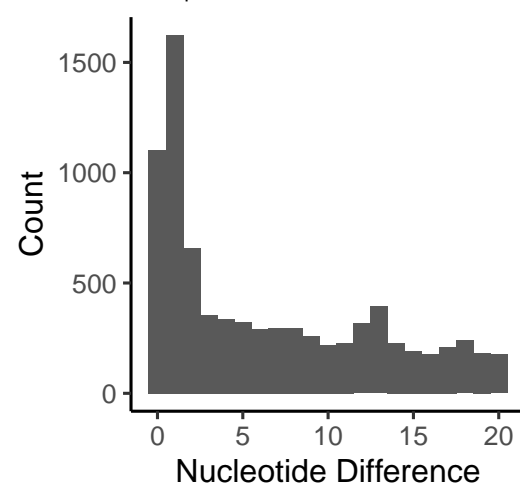
IGHV4-38-2*01

6295 sequences assigned
355 (5.6%) exact matches, in which:
299 unique CDR3
6 unique J



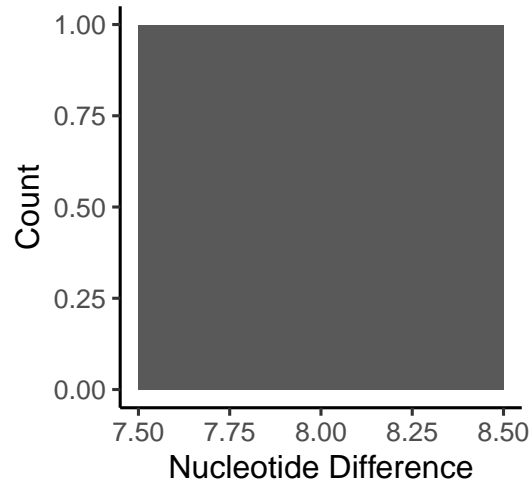
IGHV4-39*01_05

9580 sequences assigned
1102 (11.5%) exact matches, in which:
752 unique CDR3
6 unique J



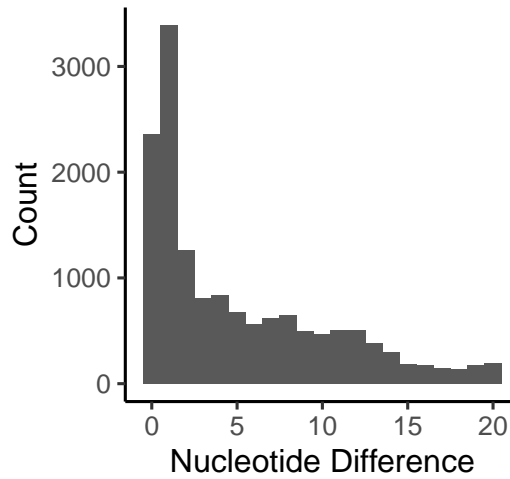
IGHV4-55*01_05

1 sequences assigned
No exact matches.



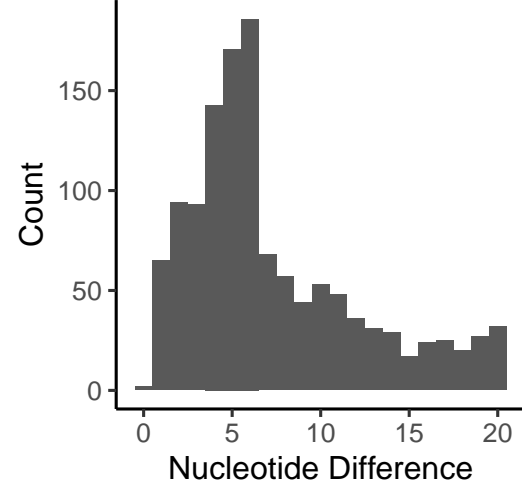
IGHV4-59*01_07

18697 sequences assigned
2357 (12.6%) exact matches, in which:
1737 unique CDR3
6 unique J



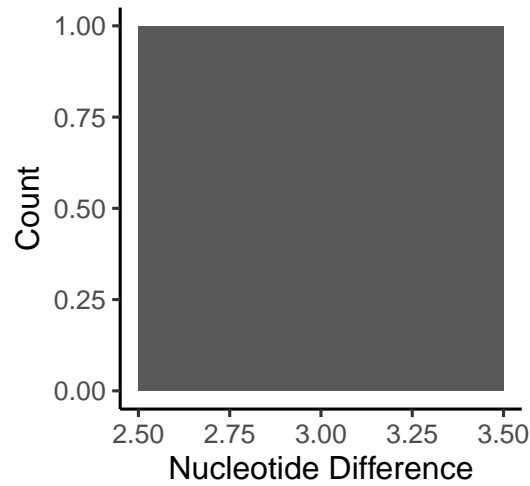
IGHV4-61*08

1647 sequences assigned
2 (0.1%) exact matches, in which:
2 unique CDR3
1 unique J



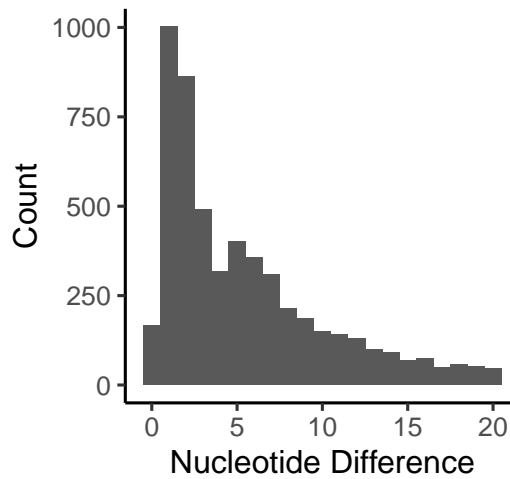
IGHV4-55*02_04_08

1 sequences assigned
No exact matches.



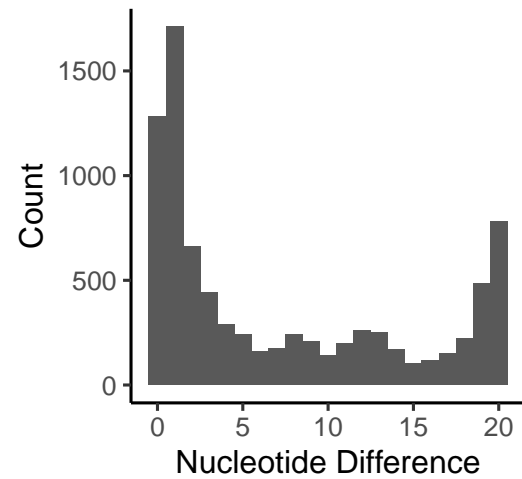
IGHV4-59*12

5690 sequences assigned
167 (2.9%) exact matches, in which:
160 unique CDR3
6 unique J



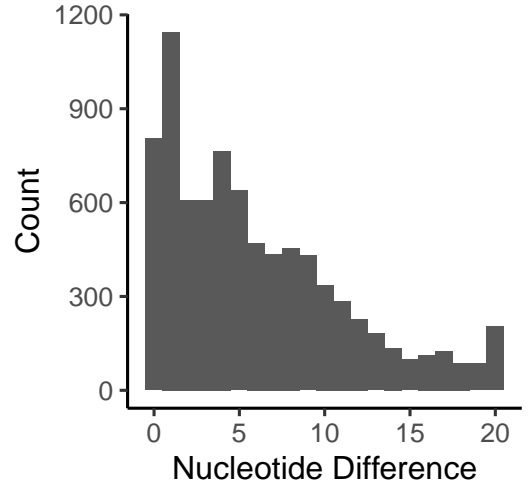
IGHV5-10-1*01_03

11475 sequences assigned
1282 (11.2%) exact matches, in which:
732 unique CDR3
6 unique J



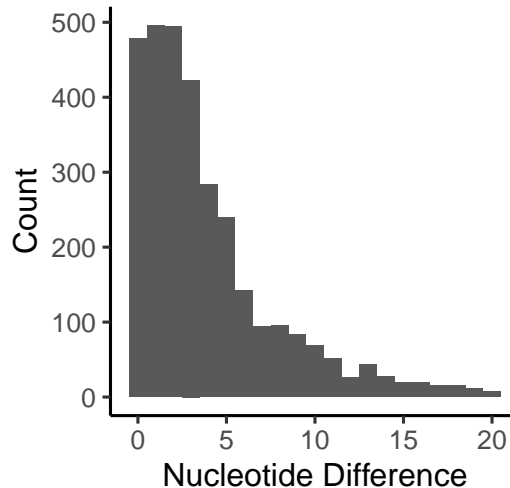
IGHV4-59*08

10271 sequences assigned
805 (7.8%) exact matches, in which:
654 unique CDR3
6 unique J



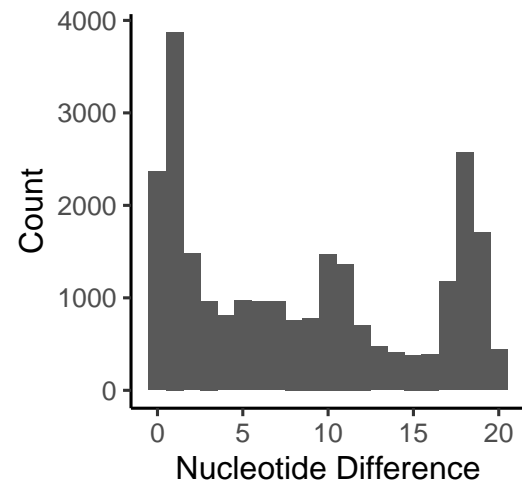
IGHV4-61*01

3568 sequences assigned
478 (13.4%) exact matches, in which:
405 unique CDR3
6 unique J



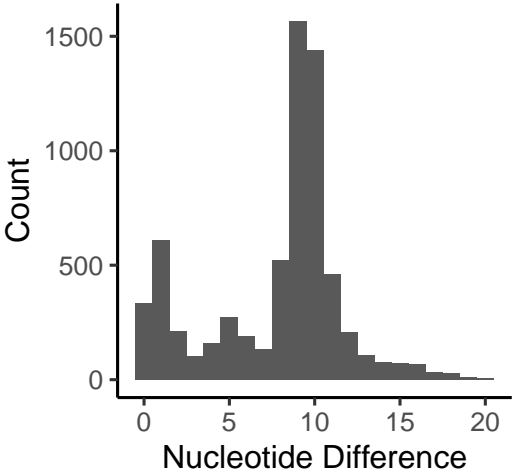
IGHV5-51*01_03

25998 sequences assigned
2367 (9.1%) exact matches, in which:
1224 unique CDR3
6 unique J



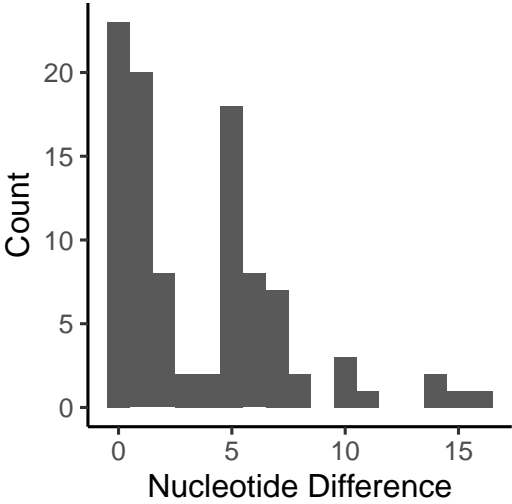
IGHV6-1*01_02

6627 sequences assigned
335 (5.1%) exact matches, in which:
255 unique CDR3
6 unique J



IGHV7-4-1*01

98 sequences assigned
23 (23.5%) exact matches, in which:
21 unique CDR3
3 unique J





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

Warning – no inferred sequences found.

Warning – no inferred sequences found.

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

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

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

Novel sequence(s) IGHV1-69*04_09_G112A are not listed in the genotype and will be ignored.

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

Warning – no inferred sequences found.

Novel sequence(s) IGHV1-69*08_C191T IGHV3-30*03_T288C IGHV3-30-3*02_G75C IGHV4-59*02_G88A IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV4-59*02_G88A 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) IGHV4-4*02_03_C300T 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.

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_C191T IGHV3-11*06_T300C IGHV3-30*03_T288C IGHV4-59*02_G88A IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV4-59*02_G88A 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.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s) IGHV3-30*03_T288C IGHV3-30-3*01_T288C IGHV4-59*02_G88A IGHV5-10-1*01_03_T258C IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s) 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_C288T IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV4-59*02_G88A IGHV5-51*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.