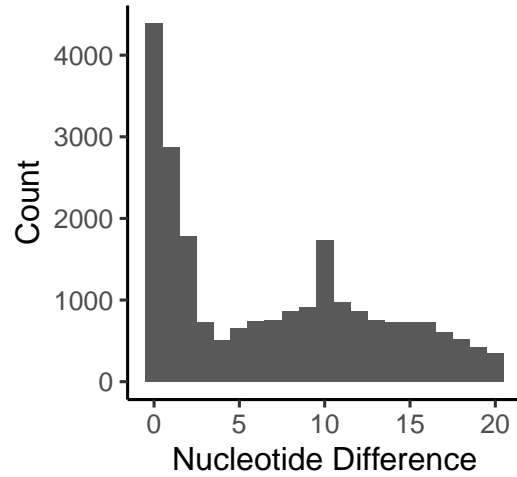


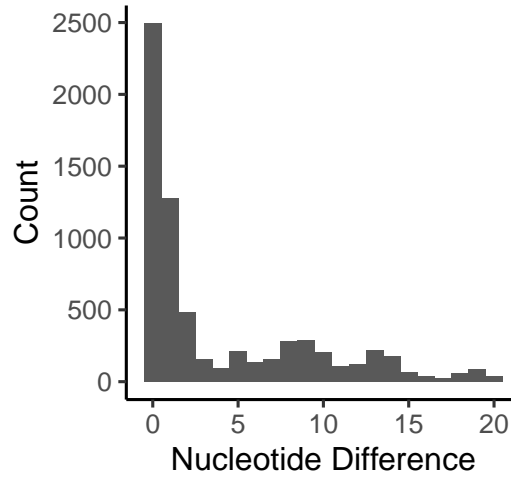
IGHV1-2*02

24007 sequences assigned
4389 (18.3%) exact matches, in which:
3955 unique CDR3
7 unique J



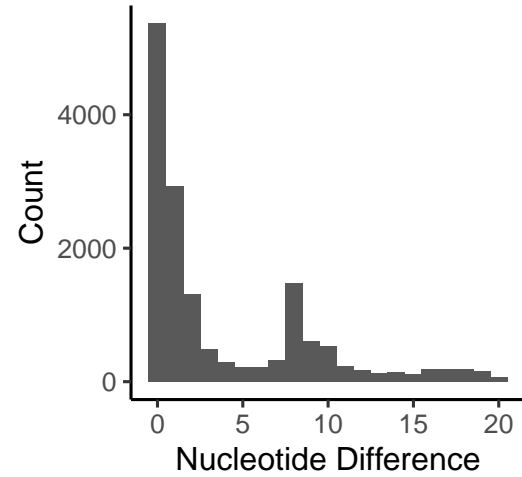
IGHV1-8*01

7260 sequences assigned
2494 (34.4%) exact matches, in which:
2305 unique CDR3
7 unique J



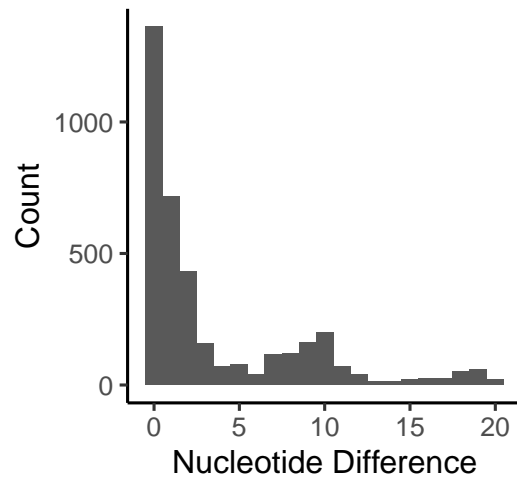
IGHV1-18*04

15897 sequences assigned
5368 (33.8%) exact matches, in which:
4950 unique CDR3
7 unique J



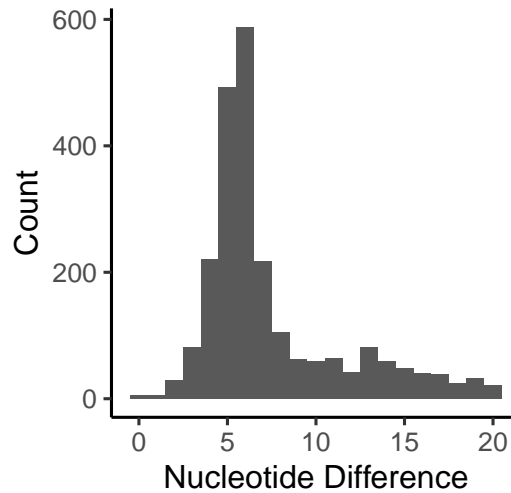
IGHV1-2*04

3881 sequences assigned
1362 (35.1%) exact matches, in which:
1252 unique CDR3
7 unique J



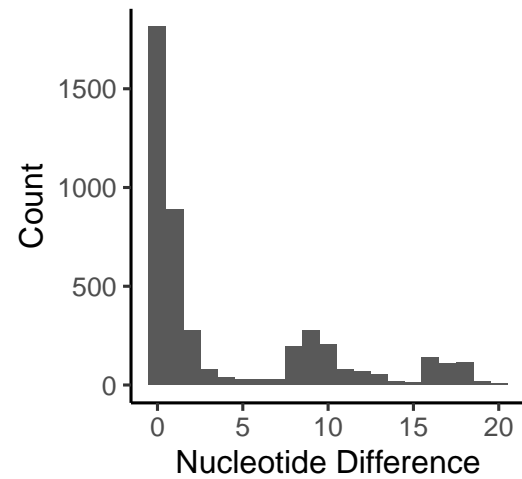
IGHV1-8*02

3076 sequences assigned
5 (0.2%) exact matches, in which:
5 unique CDR3
3 unique J



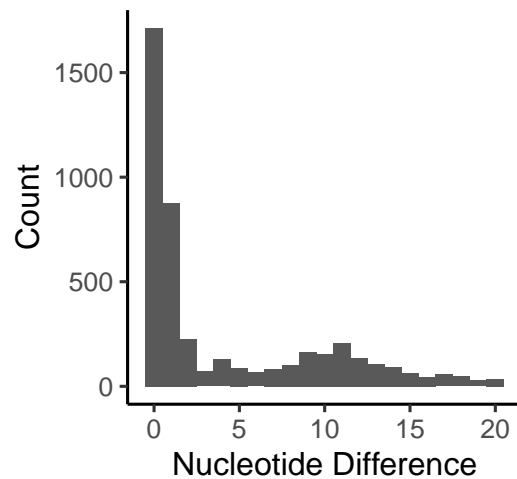
IGHV1-24*01

4512 sequences assigned
1814 (40.2%) exact matches, in which:
1643 unique CDR3
7 unique J



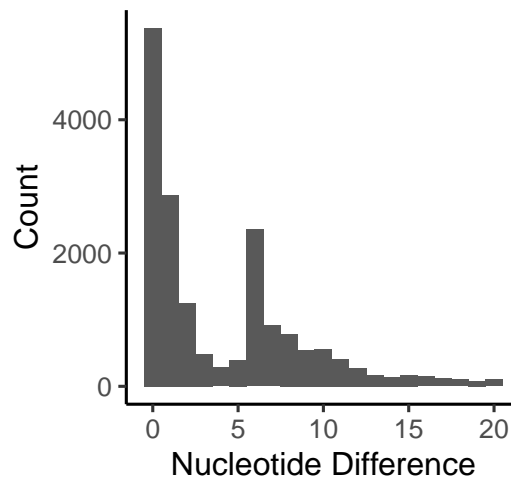
IGHV1-3*01_05

4790 sequences assigned
1713 (35.8%) exact matches, in which:
1532 unique CDR3
7 unique J



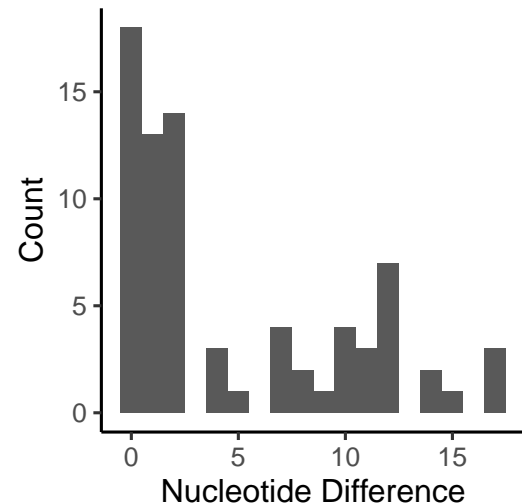
IGHV1-18*01

18429 sequences assigned
5376 (29.2%) exact matches, in which:
4977 unique CDR3
7 unique J



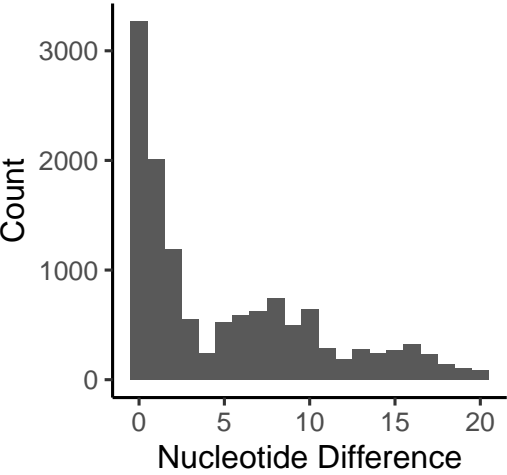
IGHV1-45*02

77 sequences assigned
18 (23.4%) exact matches, in which:
16 unique CDR3
5 unique J



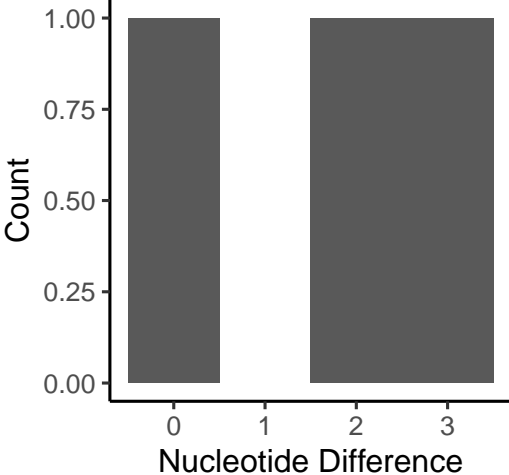
IGHV1-46*01

13510 sequences assigned
3268 (24.2%) exact matches, in which:
2986 unique CDR3
7 unique J



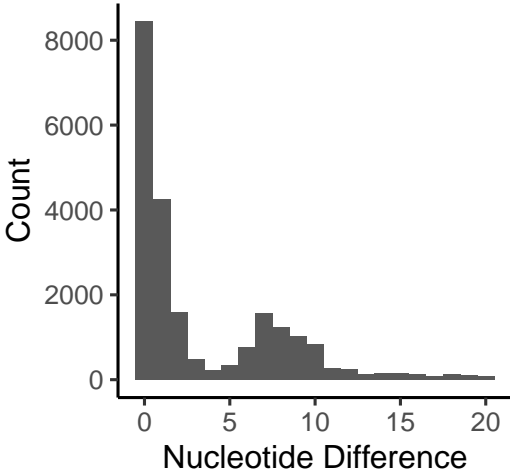
IGHV1-68*02_03

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



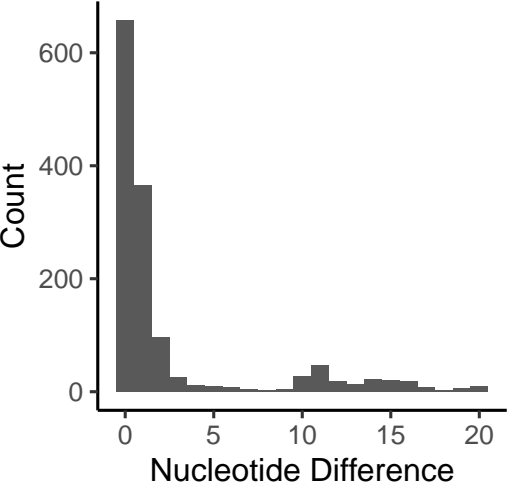
IGHV1-69*06_14

23126 sequences assigned
8444 (36.5%) exact matches, in which:
7806 unique CDR3
7 unique J



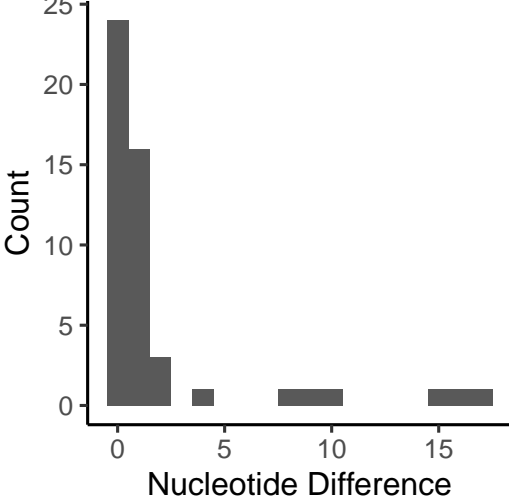
IGHV1-58*01_03

1466 sequences assigned
658 (44.9%) exact matches, in which:
610 unique CDR3
7 unique J



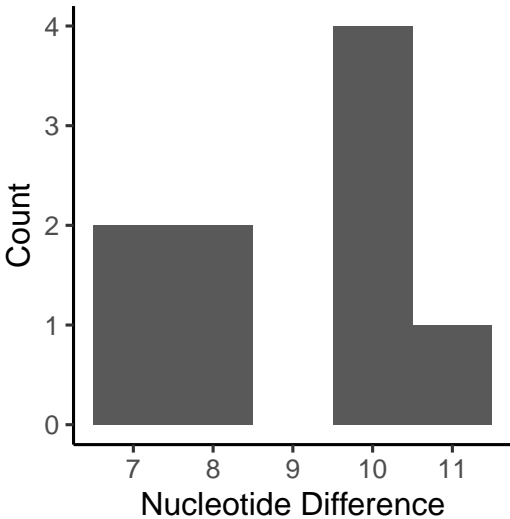
IGHV1-69-2*01

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



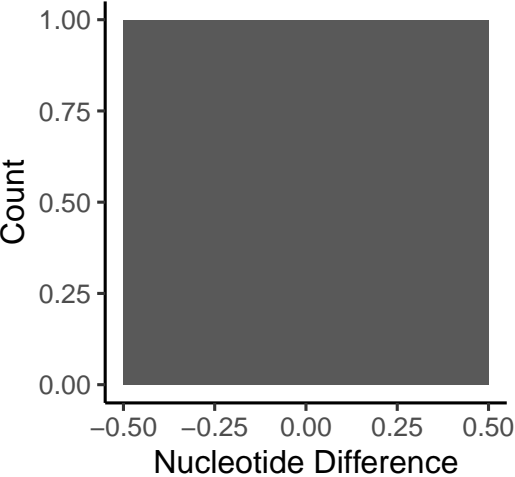
IGHV1-NL1*01

9 sequences assigned
No exact matches.



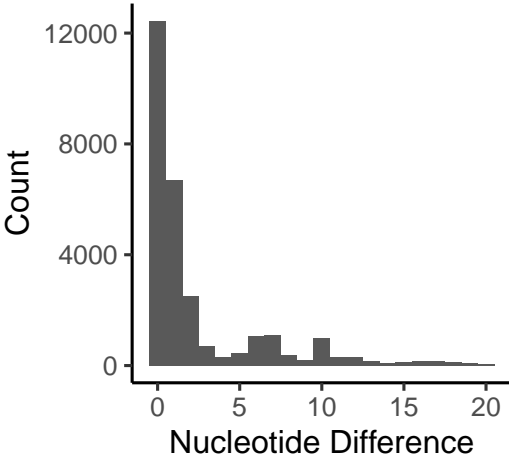
IGHV1-68*01

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



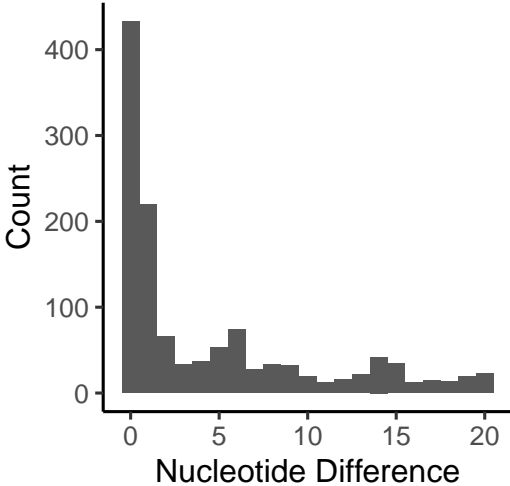
IGHV1-69*01_12_13

29196 sequences assigned
12444 (42.6%) exact matches, in which:
11407 unique CDR3
7 unique J



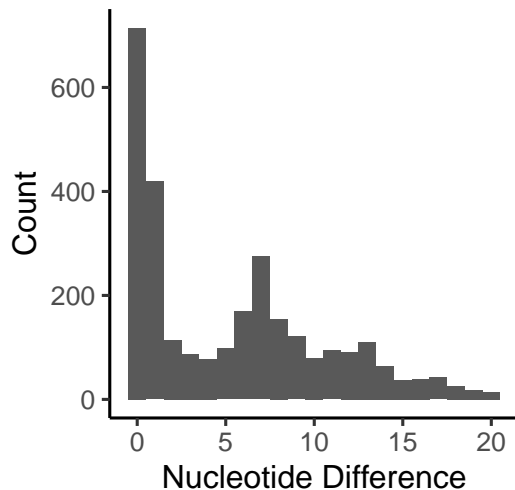
IGHV2-5*01

1320 sequences assigned
433 (32.8%) exact matches, in which:
409 unique CDR3
7 unique J



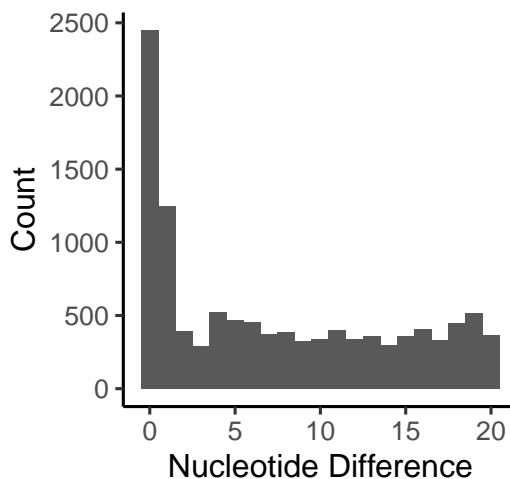
IGHV2-5*02

3385 sequences assigned
715 (21.1%) exact matches, in which:
662 unique CDR3
7 unique J



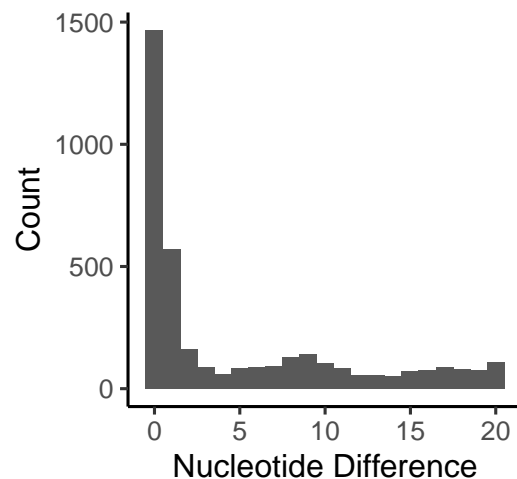
IGHV3-7*01

12356 sequences assigned
2448 (19.8%) exact matches, in which:
1879 unique CDR3
7 unique J



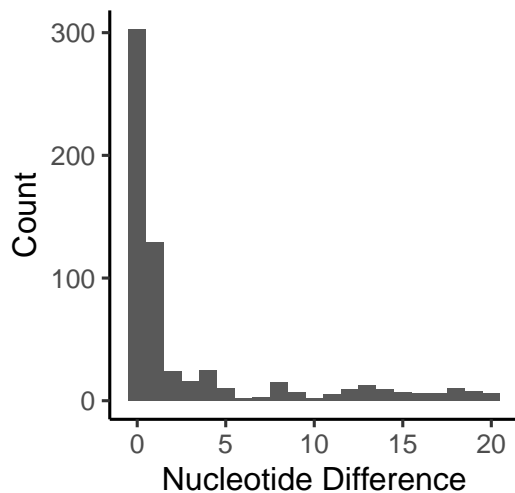
IGHV3-11*01

4332 sequences assigned
1466 (33.8%) exact matches, in which:
1091 unique CDR3
7 unique J



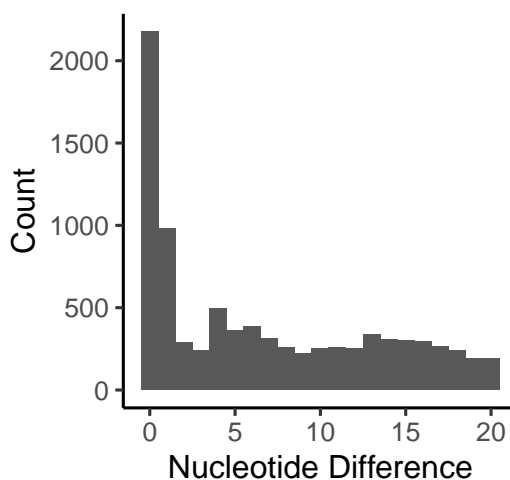
IGHV2-26*01

640 sequences assigned
303 (47.3%) exact matches, in which:
279 unique CDR3
7 unique J



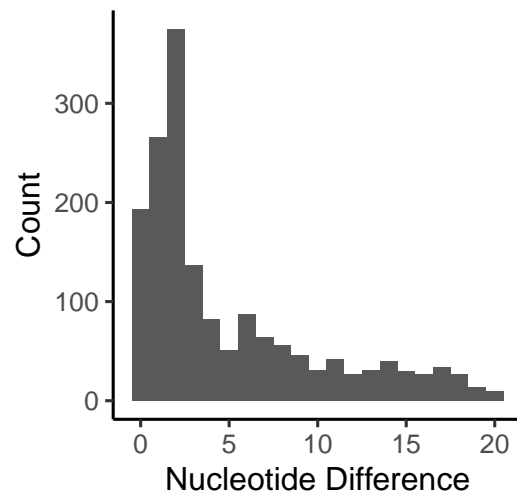
IGHV3-7*03

9574 sequences assigned
2176 (22.7%) exact matches, in which:
1563 unique CDR3
7 unique J



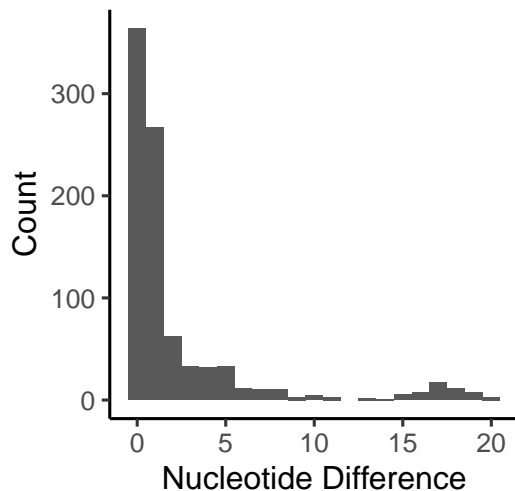
IGHV3-11*04

1754 sequences assigned
193 (11%) exact matches, in which:
189 unique CDR3
7 unique J



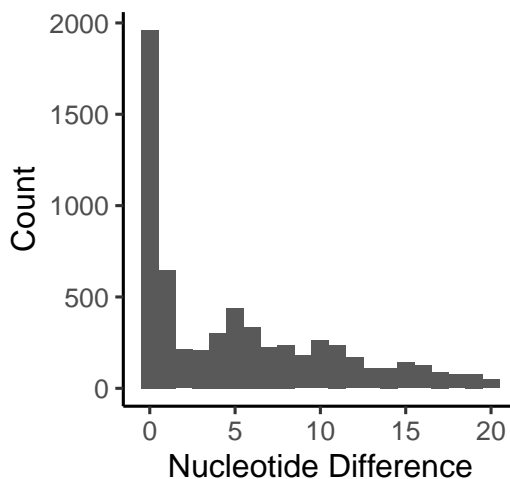
IGHV2-70*01

906 sequences assigned
364 (40.2%) exact matches, in which:
337 unique CDR3
6 unique J



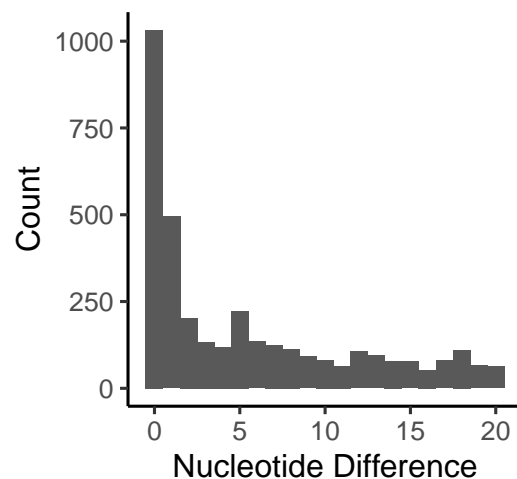
IGHV3-9*01

6531 sequences assigned
1961 (30%) exact matches, in which:
1346 unique CDR3
7 unique J



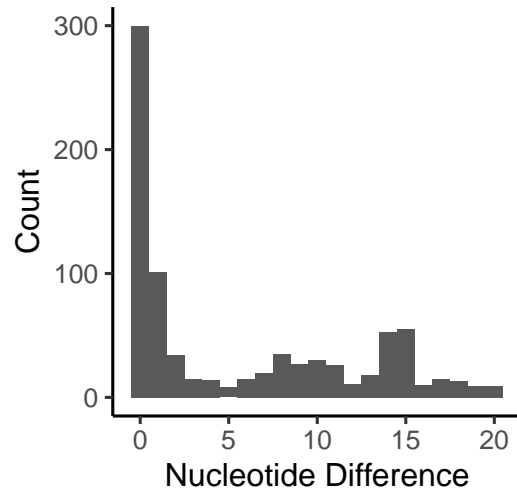
IGHV3-11*06

3902 sequences assigned
1032 (26.4%) exact matches, in which:
775 unique CDR3
7 unique J



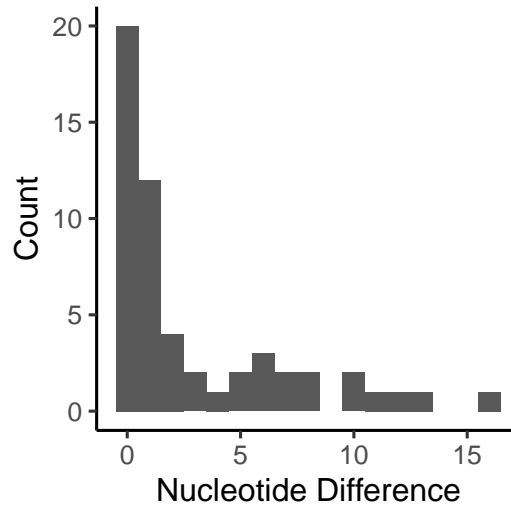
IGHV3-13*01

867 sequences assigned
300 (34.6%) exact matches, in which:
207 unique CDR3
7 unique J



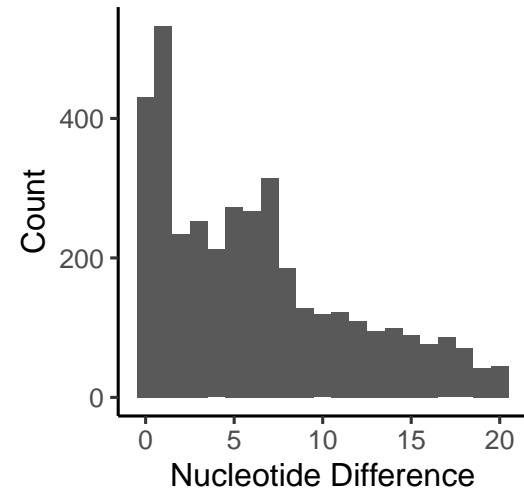
IGHV3-19*01

54 sequences assigned
20 (37%) exact matches, in which:
14 unique CDR3
4 unique J



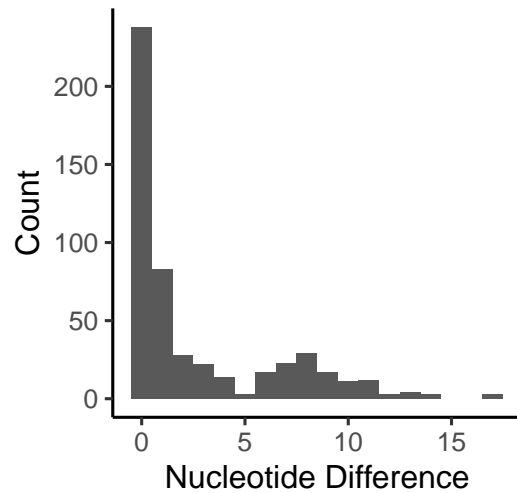
IGHV3-21*04

4074 sequences assigned
431 (10.6%) exact matches, in which:
411 unique CDR3
7 unique J



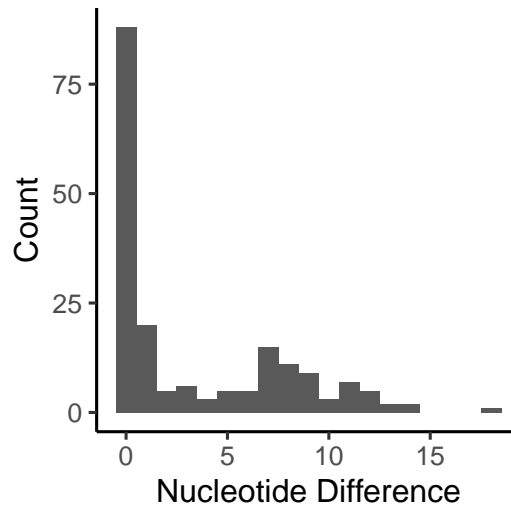
IGHV3-13*05

513 sequences assigned
238 (46.4%) exact matches, in which:
164 unique CDR3
7 unique J



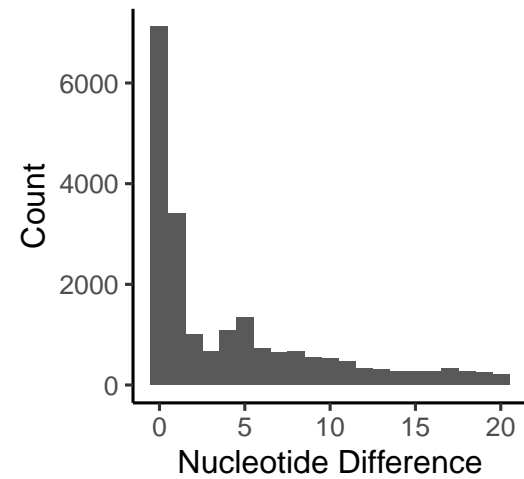
IGHV3-20*01_02

188 sequences assigned
88 (46.8%) exact matches, in which:
65 unique CDR3
5 unique J



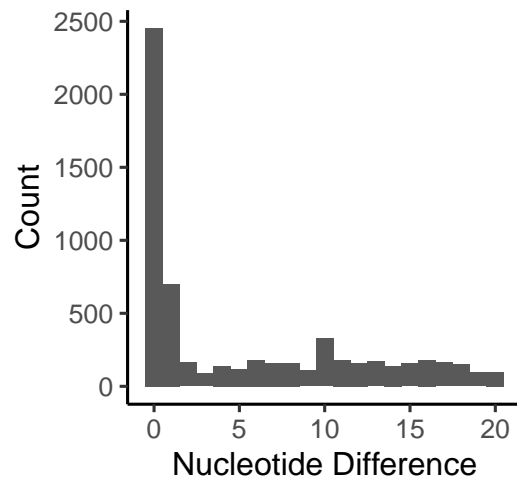
IGHV3-21*01_02

21610 sequences assigned
7118 (32.9%) exact matches, in which:
4960 unique CDR3
7 unique J



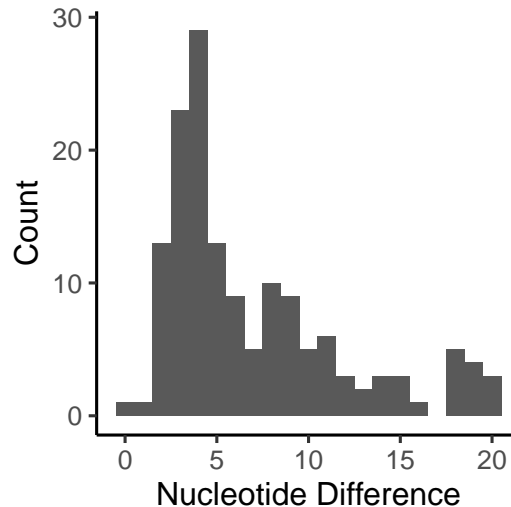
IGHV3-15*01_02

6918 sequences assigned
2454 (35.5%) exact matches, in which:
1788 unique CDR3
7 unique J



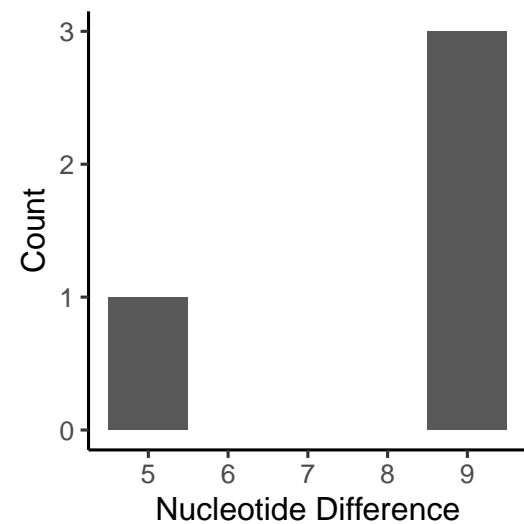
IGHV3-20*03_04

196 sequences assigned
1 (0.5%) exact matches, in which:
1 unique CDR3
1 unique J



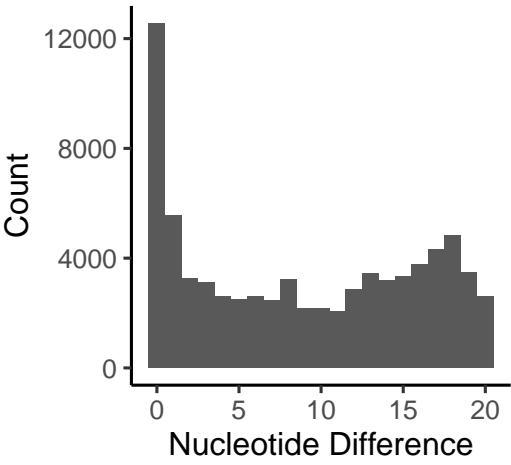
IGHV3-22*01_02

4 sequences assigned
No exact matches.



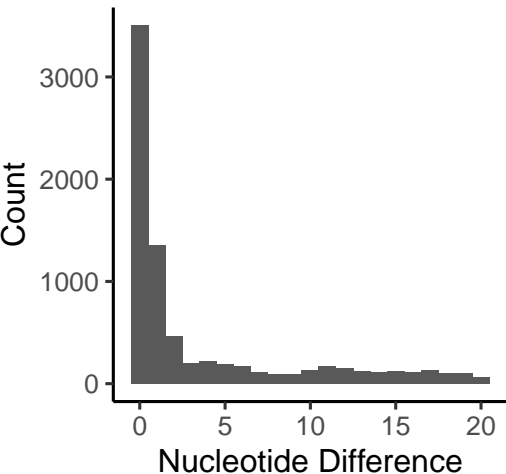
IGHV3-23*01_04

88190 sequences assigned
12563 (14.2%) exact matches, in which:
8111 unique CDR3
7 unique J



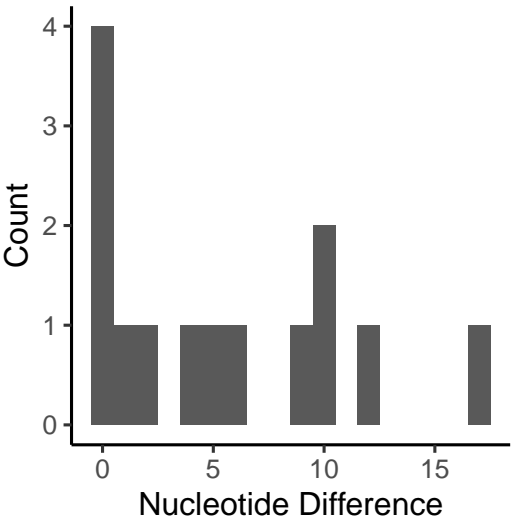
IGHV3-33*01

8040 sequences assigned
3504 (43.6%) exact matches, in which:
2603 unique CDR3
7 unique J



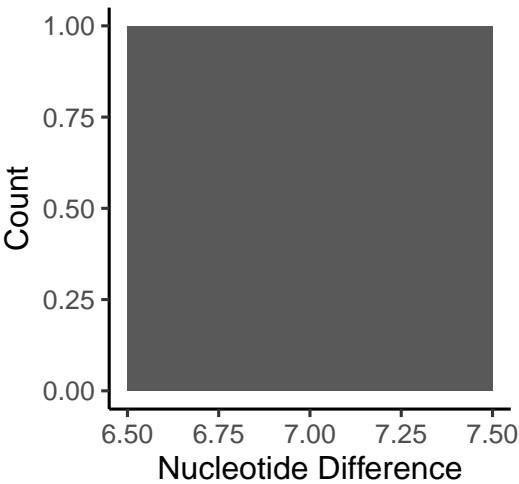
IGHV3-35*01

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



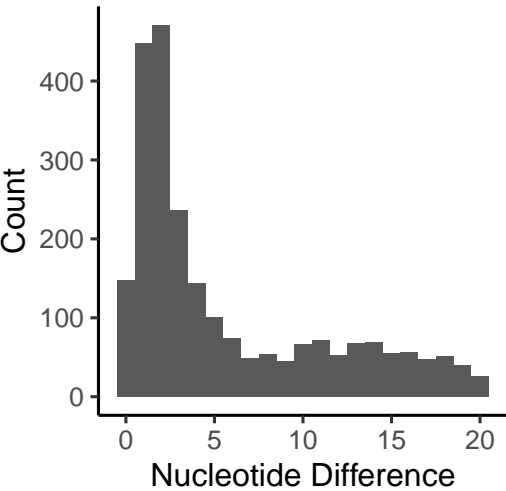
IGHV3-25*04

1 sequences assigned
No exact matches.



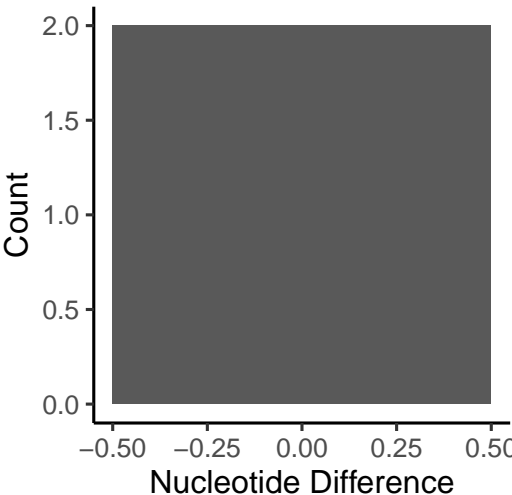
IGHV3-33*06

2469 sequences assigned
148 (6%) exact matches, in which:
145 unique CDR3
6 unique J



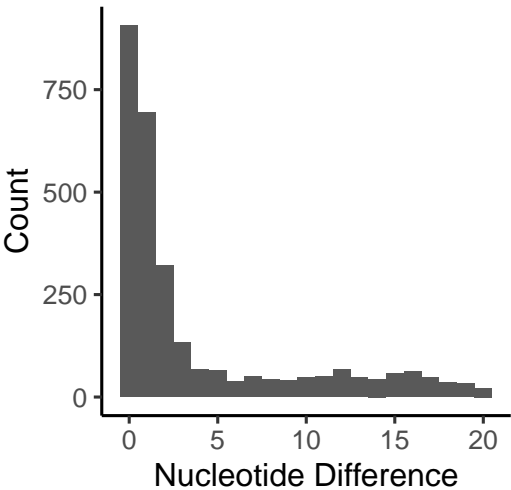
IGHV3-43*02

3 sequences assigned
2 (66.7%) exact matches, in which:
2 unique CDR3
2 unique J



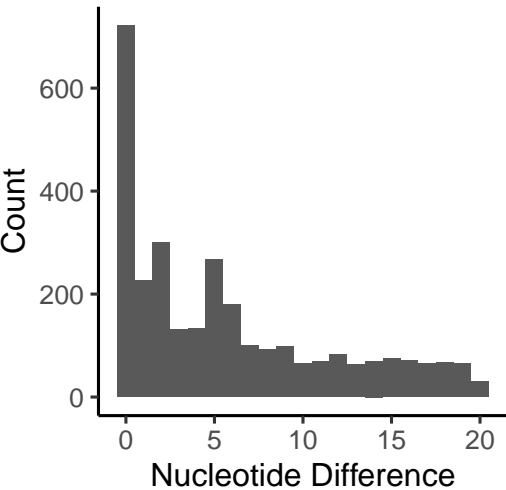
IGHV3-30*03

3070 sequences assigned
907 (29.5%) exact matches, in which:
840 unique CDR3
7 unique J



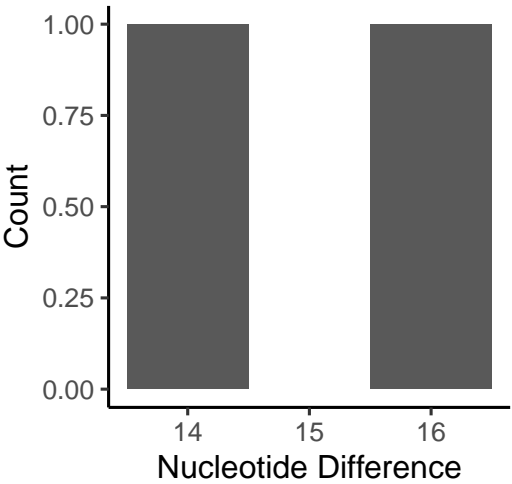
IGHV3-33*08

3160 sequences assigned
722 (22.8%) exact matches, in which:
647 unique CDR3
7 unique J



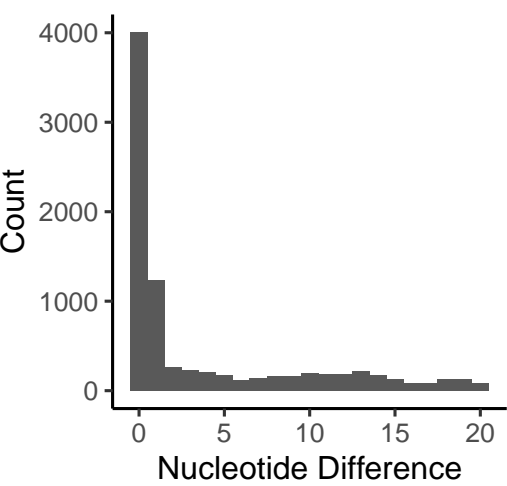
IGHV3-47*02

2 sequences assigned
No exact matches.



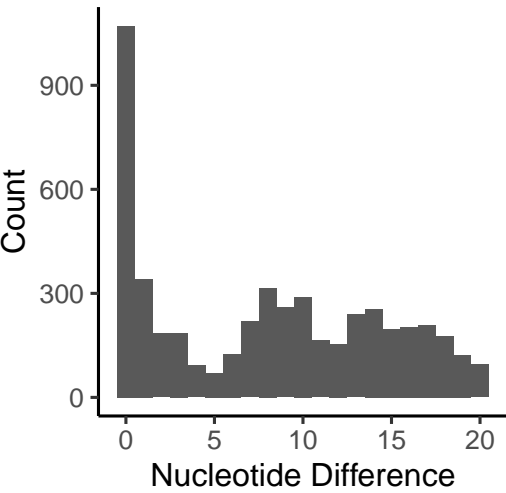
IGHV3-48*03

8758 sequences assigned
4004 (45.7%) exact matches, in which:
2812 unique CDR3
7 unique J



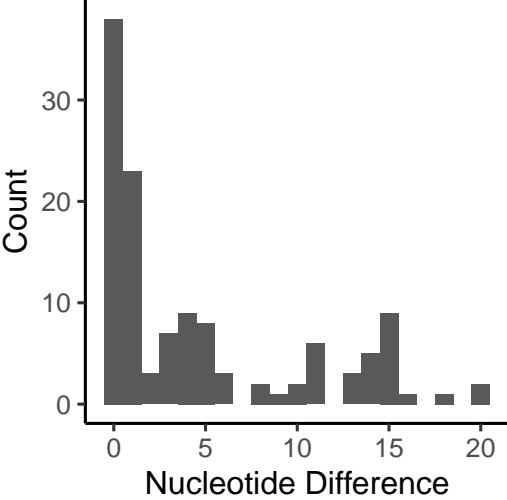
IGHV3-53*01_02

5571 sequences assigned
1072 (19.2%) exact matches, in which:
784 unique CDR3
7 unique J



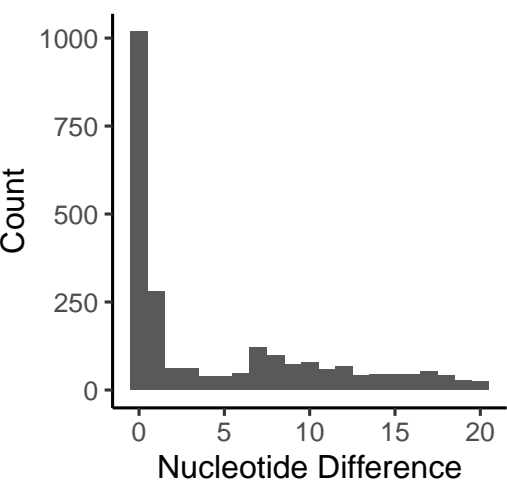
IGHV3-64*02_07

131 sequences assigned
38 (29%) exact matches, in which:
29 unique CDR3
5 unique J



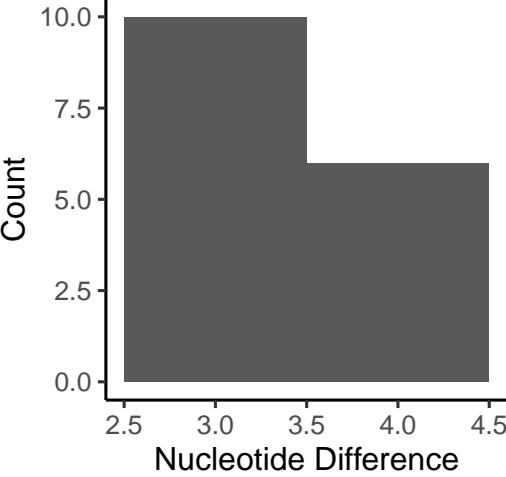
IGHV3-49*04

2593 sequences assigned
1018 (39.3%) exact matches, in which:
756 unique CDR3
7 unique J



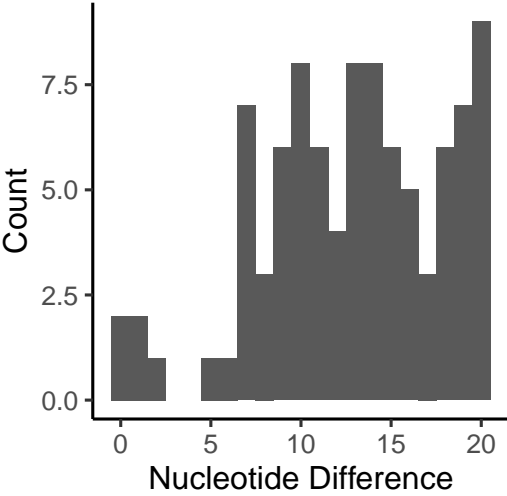
IGHV3-62*03

16 sequences assigned
No exact matches.



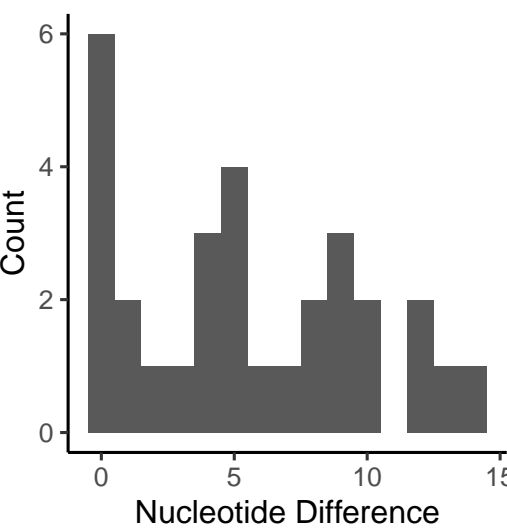
IGHV3-66*01

113 sequences assigned
2 (1.8%) exact matches, in which:
1 unique CDR3
1 unique J



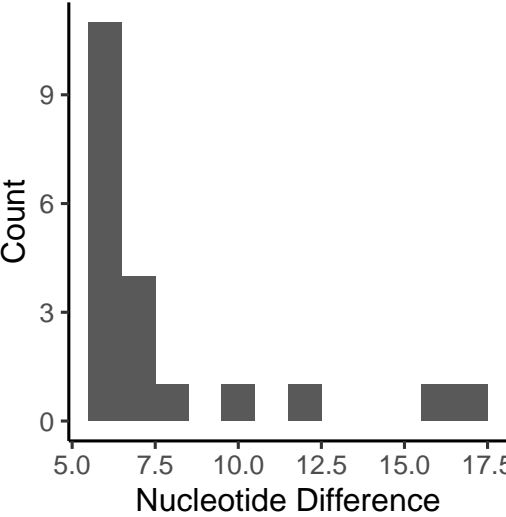
IGHV3-52*01_03

30 sequences assigned
6 (20%) exact matches, in which:
4 unique CDR3
2 unique J



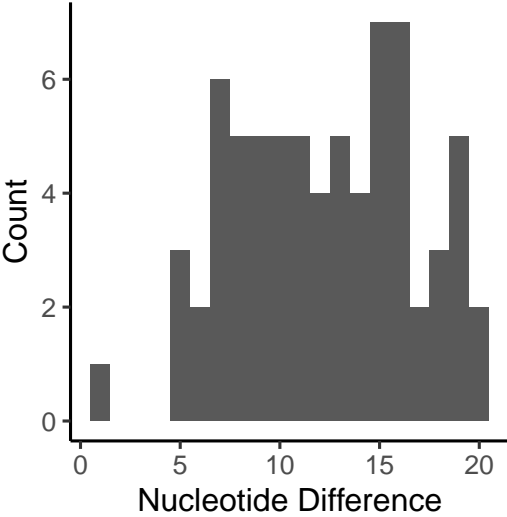
IGHV3-64*04

20 sequences assigned
No exact matches.



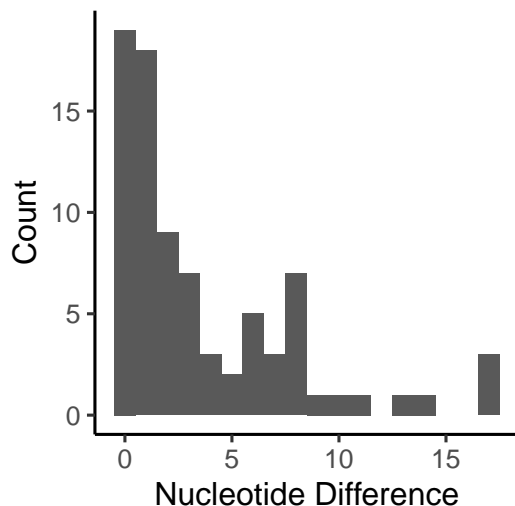
IGHV3-66*02

78 sequences assigned
No exact matches.



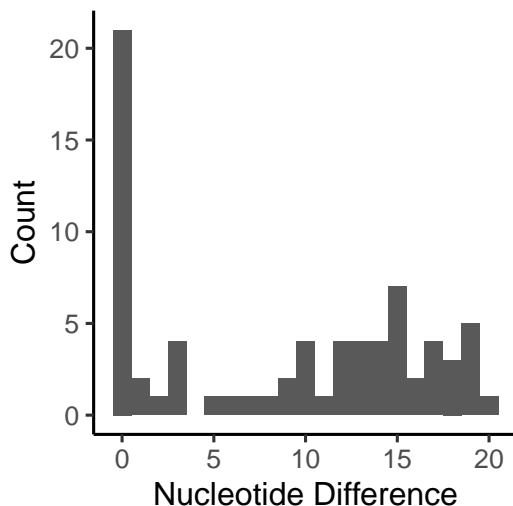
IGHV3-66*03

82 sequences assigned
19 (23.2%) exact matches, in which:
19 unique CDR3
5 unique J



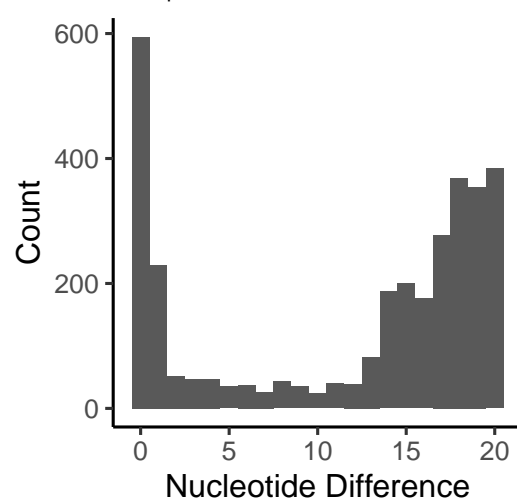
IGHV3-69-1*02

84 sequences assigned
21 (25%) exact matches, in which:
21 unique CDR3
4 unique J



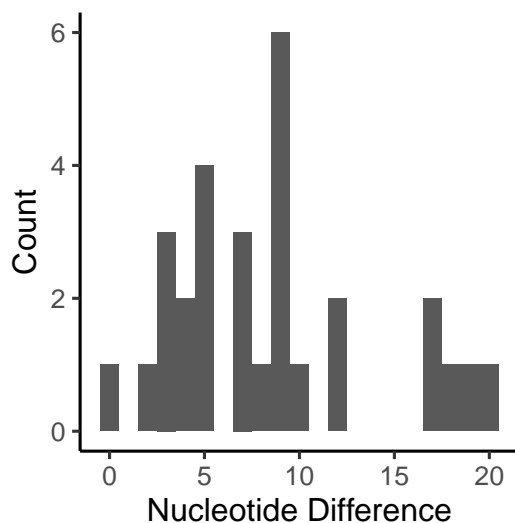
IGHV3-73*01_02

4286 sequences assigned
595 (13.9%) exact matches, in which:
428 unique CDR3
7 unique J



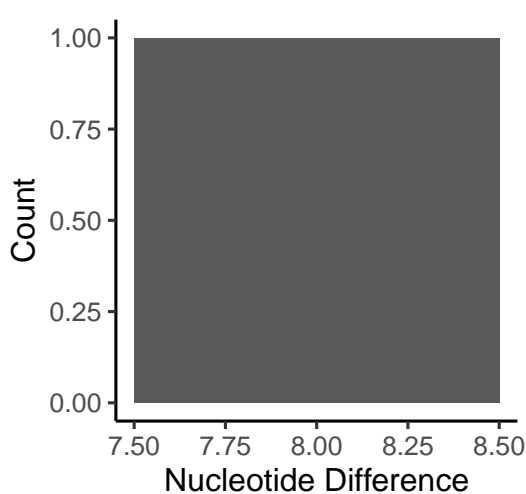
IGHV3-66*04

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



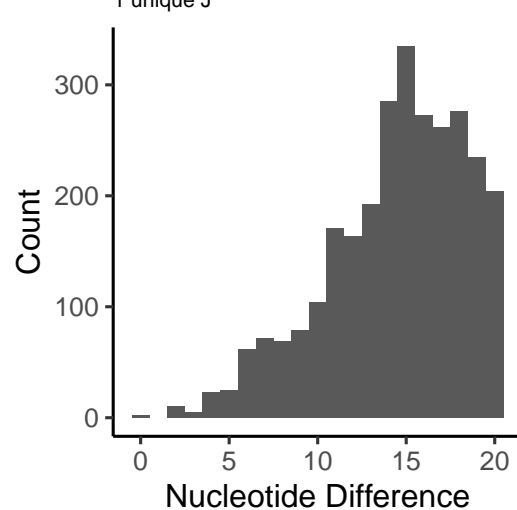
IGHV3-71*01_04

3 sequences assigned
No exact matches.



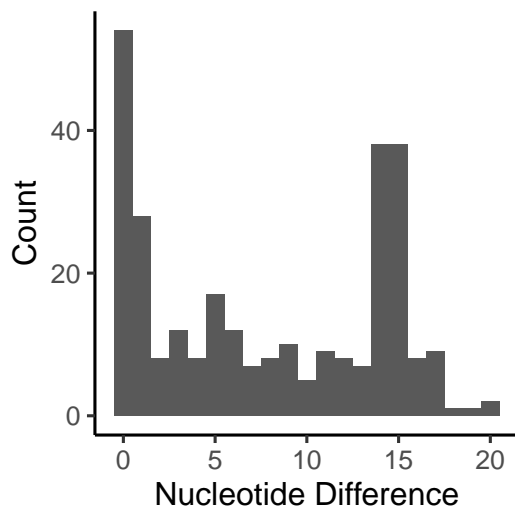
IGHV3-74*03

4235 sequences assigned
2 (0%) exact matches, in which:
2 unique CDR3
1 unique J



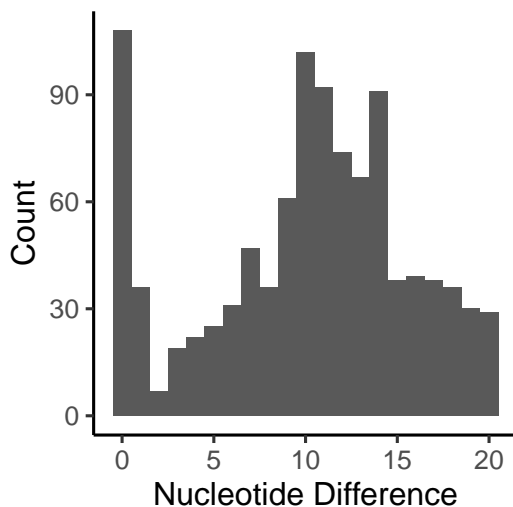
IGHV3-69-1*01

309 sequences assigned
54 (17.5%) exact matches, in which:
46 unique CDR3
7 unique J



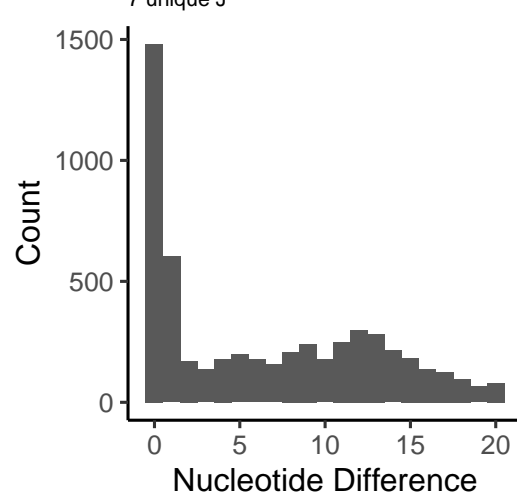
IGHV3-72*01

1371 sequences assigned
108 (7.9%) exact matches, in which:
82 unique CDR3
7 unique J



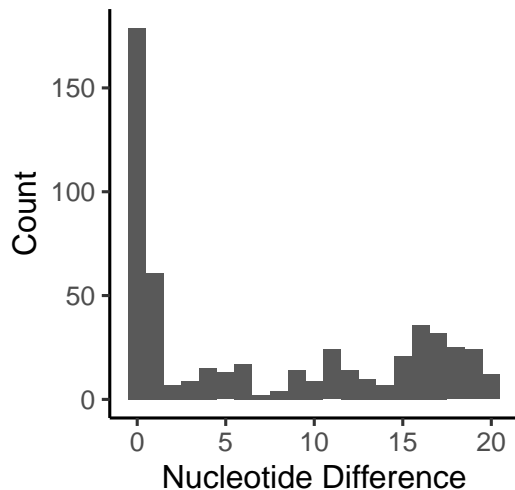
IGHV3-74*01_02

5980 sequences assigned
1481 (24.8%) exact matches, in which:
1030 unique CDR3
7 unique J



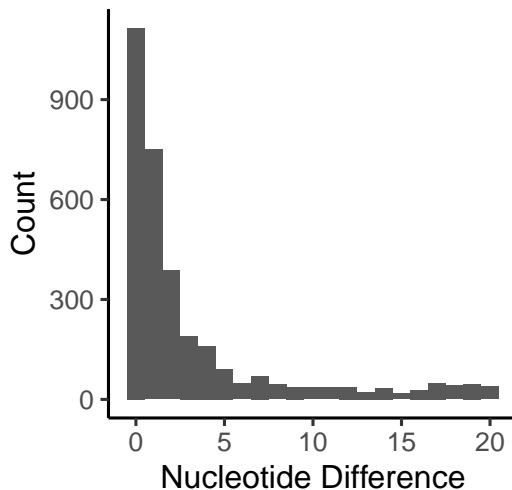
IGHV3-43D*04

561 sequences assigned
179 (31.9%) exact matches, in which:
122 unique CDR3
7 unique J



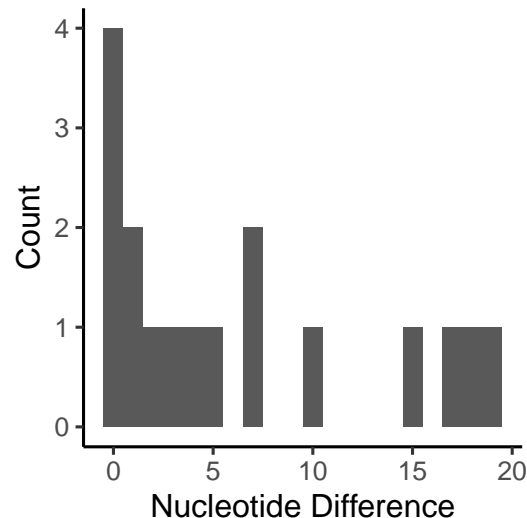
IGHV4-4*07

3446 sequences assigned
1116 (32.4%) exact matches, in which:
1015 unique CDR3
7 unique J



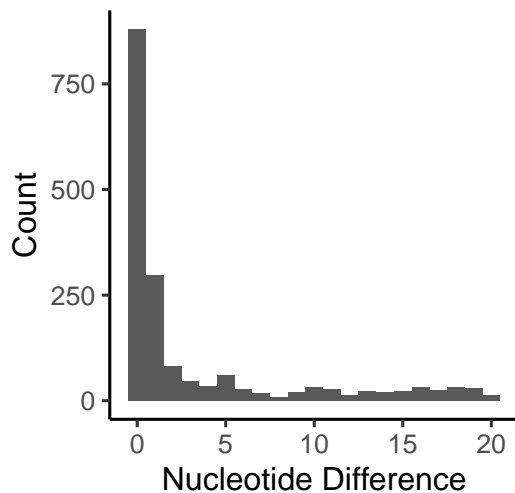
IGHV4-28*01_07

18 sequences assigned
4 (22.2%) exact matches, in which:
3 unique CDR3
3 unique J



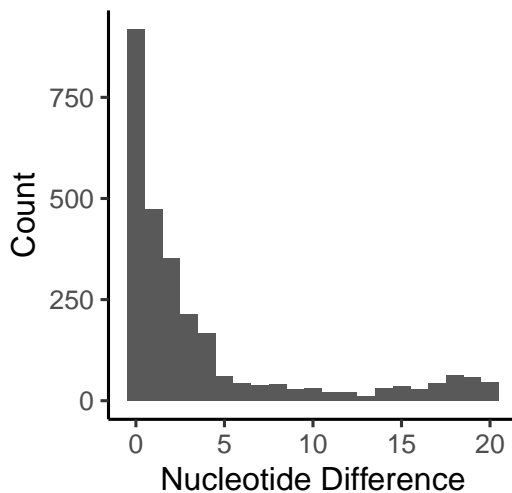
IGHV3-64D*06

1876 sequences assigned
880 (46.9%) exact matches, in which:
521 unique CDR3
7 unique J



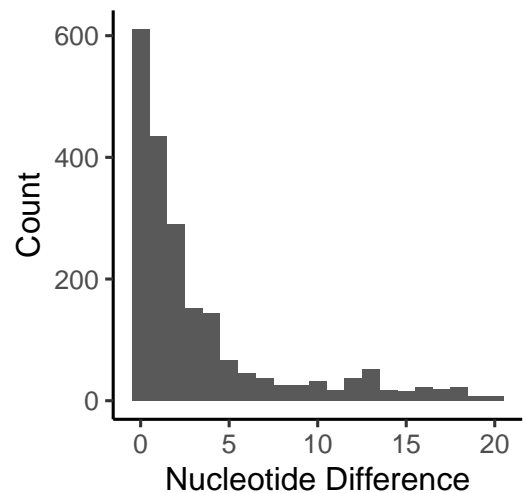
IGHV4-4*02_03

3059 sequences assigned
919 (30%) exact matches, in which:
860 unique CDR3
7 unique J



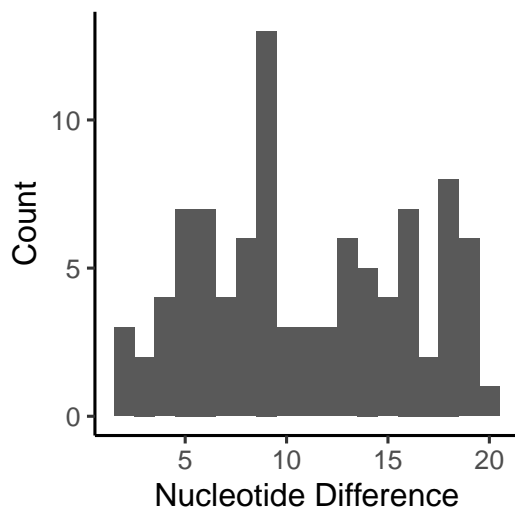
IGHV4-30-2*01

2179 sequences assigned
611 (28%) exact matches, in which:
549 unique CDR3
7 unique J



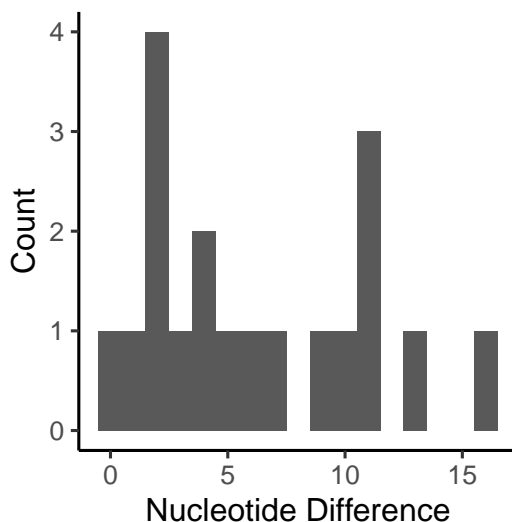
IGHV3-NL1*01

113 sequences assigned
No exact matches.



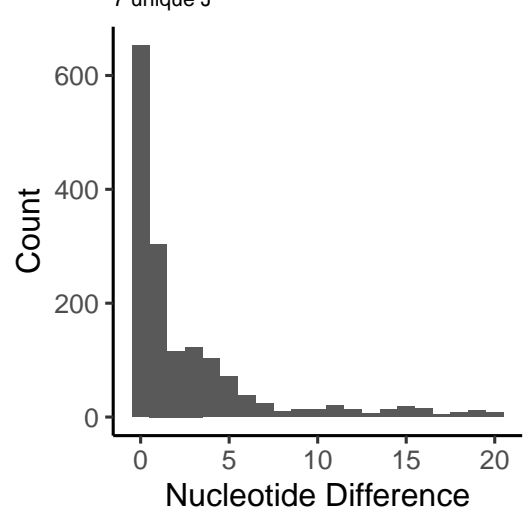
IGHV4-28*03

21 sequences assigned
1 (4.8%) exact matches, in which:
1 unique CDR3
1 unique J



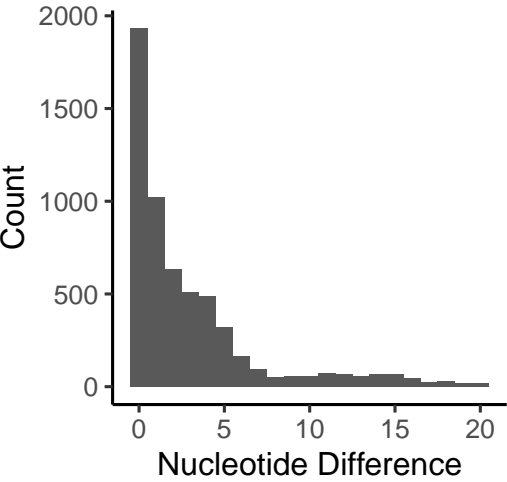
IGHV4-30-4*01

1720 sequences assigned
653 (38%) exact matches, in which:
602 unique CDR3
7 unique J



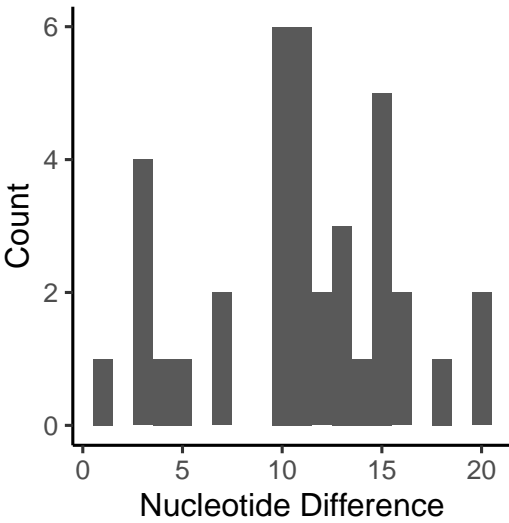
IGHV4-31*02

6101 sequences assigned
1932 (31.7%) exact matches, in which:
1798 unique CDR3
7 unique J



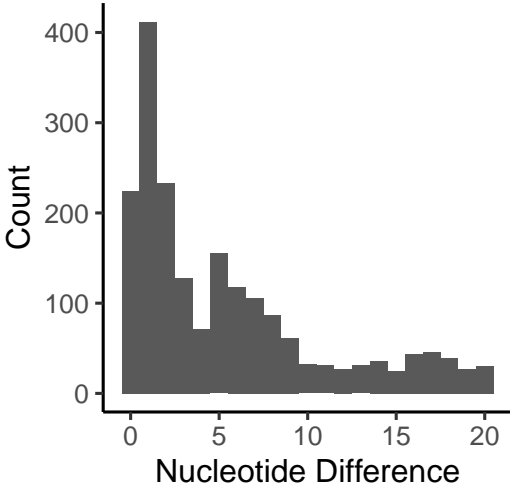
IGHV4-39*07

48 sequences assigned
No exact matches.



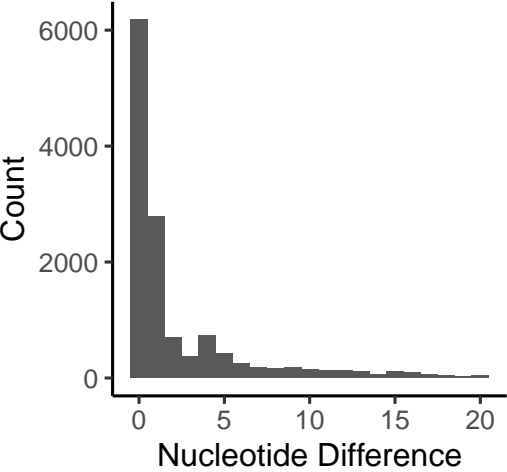
IGHV4-59*12

2161 sequences assigned
224 (10.4%) exact matches, in which:
224 unique CDR3
7 unique J



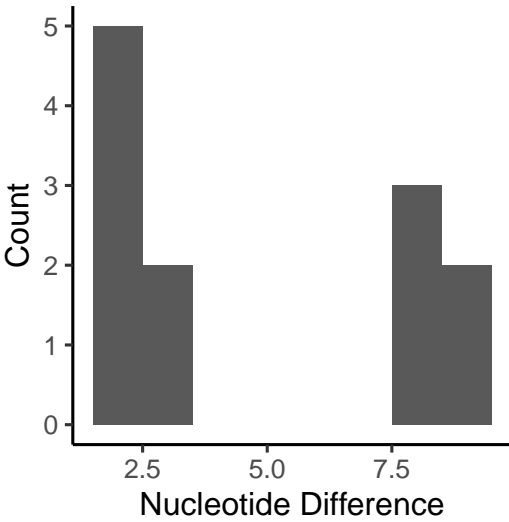
IGHV4-34*01_02

13256 sequences assigned
6180 (46.6%) exact matches, in which:
5514 unique CDR3
7 unique J



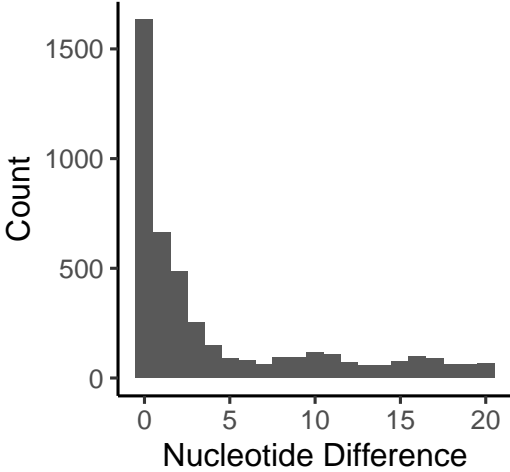
IGHV4-55*09

12 sequences assigned
No exact matches.



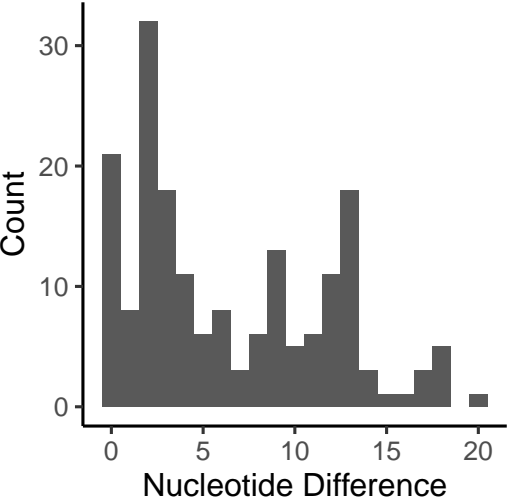
IGHV4-61*01

4863 sequences assigned
1633 (33.6%) exact matches, in which:
1519 unique CDR3
7 unique J



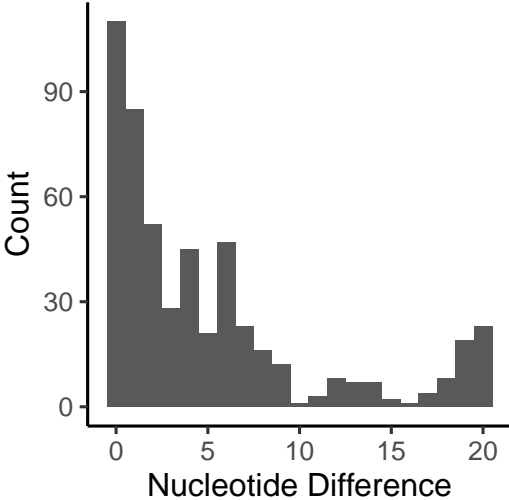
IGHV4-38-2*02

212 sequences assigned
21 (9.9%) exact matches, in which:
21 unique CDR3
5 unique J



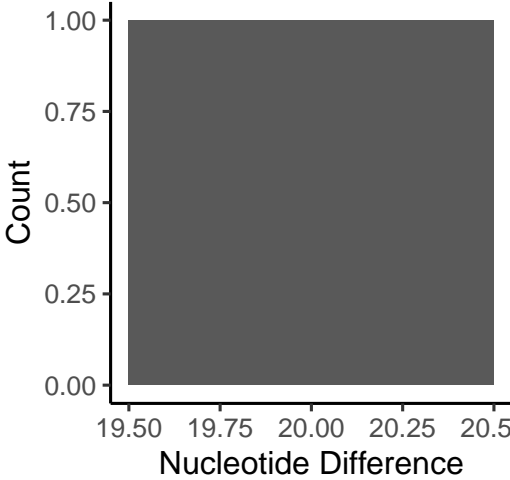
IGHV4-59*08

549 sequences assigned
110 (20%) exact matches, in which:
108 unique CDR3
7 unique J



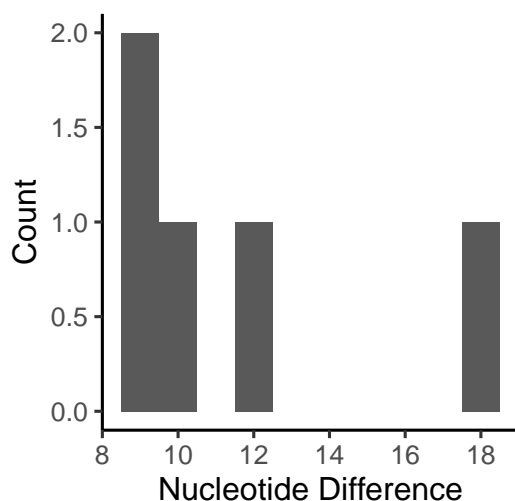
IGHV1/OR15-1*04

3 sequences assigned
No exact matches.



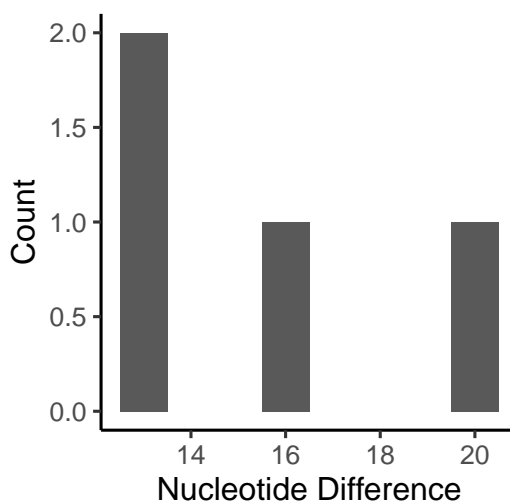
IGHV1/OR15-2*02_03

7 sequences assigned
No exact matches.



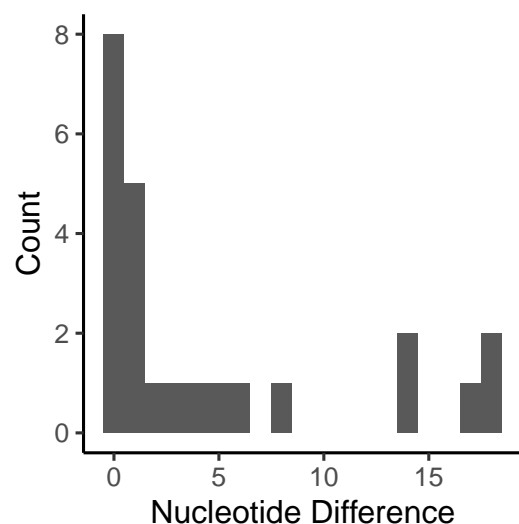
IGHV4/OR15-8*02

29 sequences assigned
No exact matches.



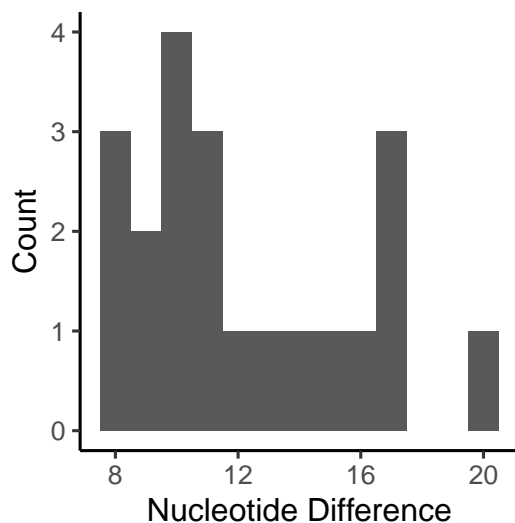
IGHV5-51*04

25 sequences assigned
8 (32%) exact matches, in which:
8 unique CDR3
5 unique J



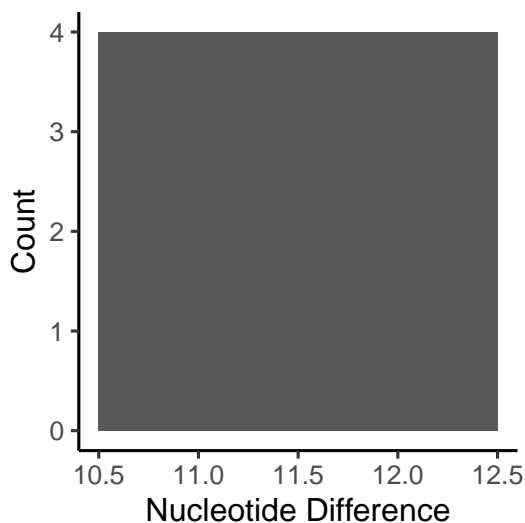
IGHV1/OR15-3*02

28 sequences assigned
No exact matches.



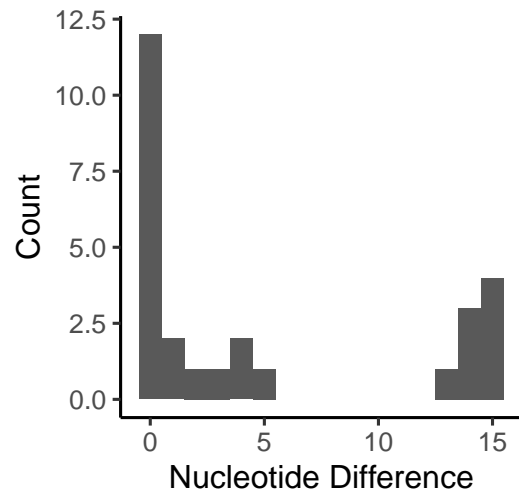
IGHV1/OR15-9*01

8 sequences assigned
No exact matches.



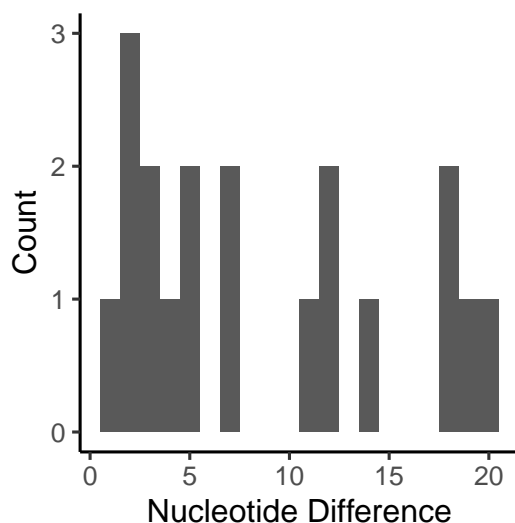
IGHV5-51*06

28 sequences assigned
12 (42.9%) exact matches, in which:
12 unique CDR3
3 unique J



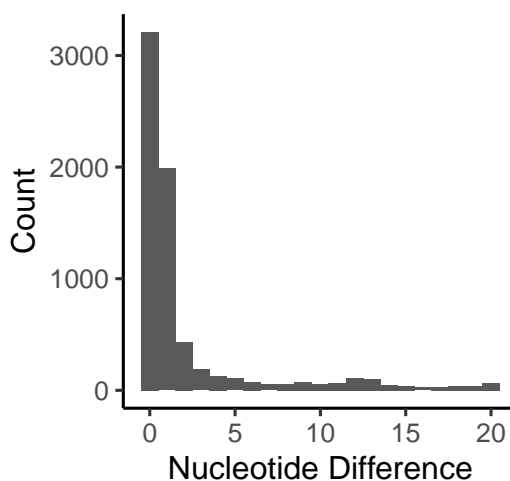
IGHV4/OR15-8*01

26 sequences assigned
No exact matches.



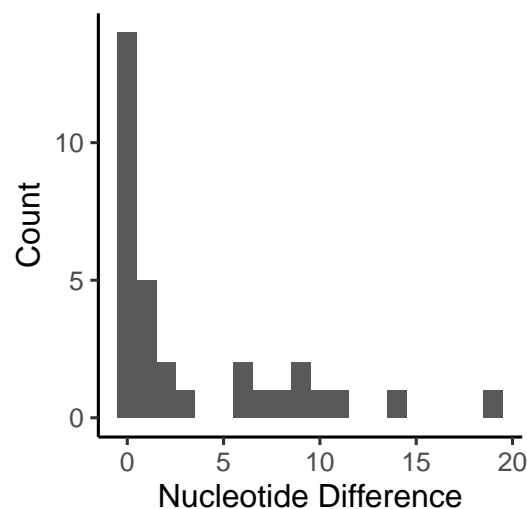
IGHV5-10-1*01_03

7194 sequences assigned
3210 (44.6%) exact matches, in which:
2388 unique CDR3
7 unique J



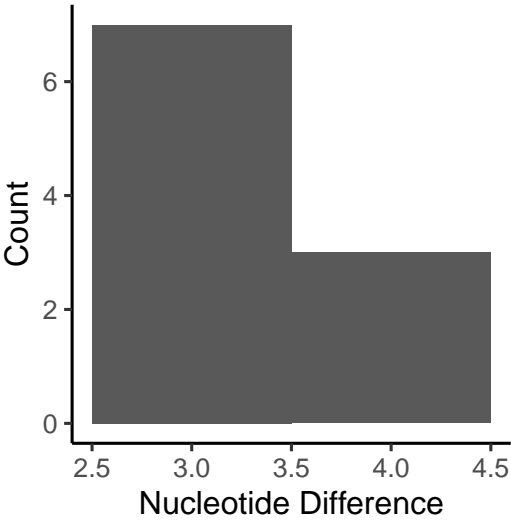
IGHV5-51*07

33 sequences assigned
14 (42.4%) exact matches, in which:
14 unique CDR3
5 unique J



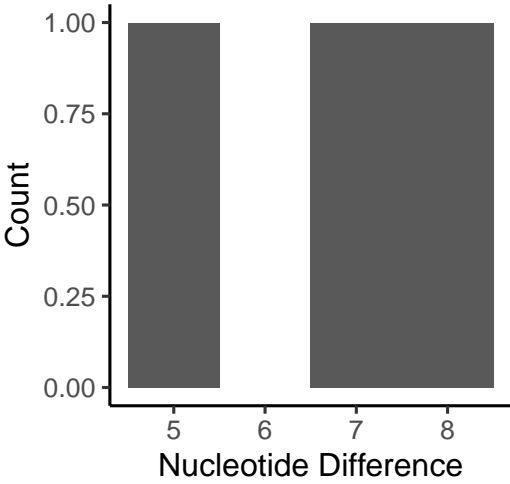
IGHV5-78*01

10 sequences assigned
No exact matches.



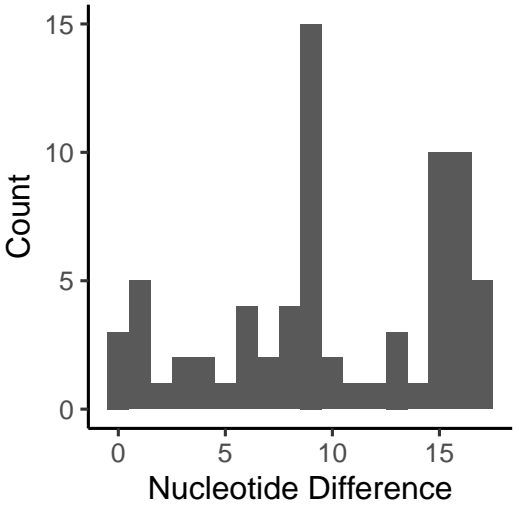
IGHV3/OR16-9*01

3 sequences assigned
No exact matches.



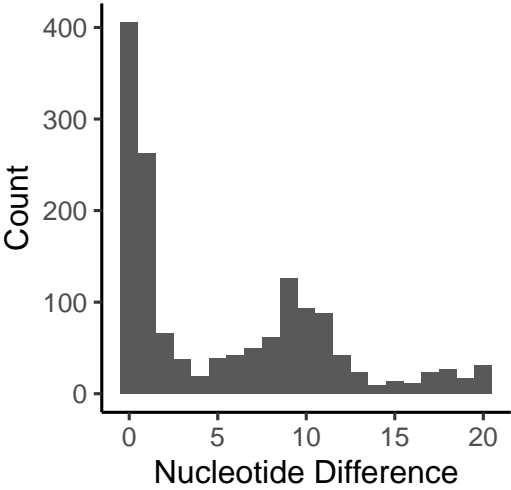
IGHV7-4-1*02

94 sequences assigned
3 (3.2%) exact matches, in which:
2 unique CDR3
1 unique J



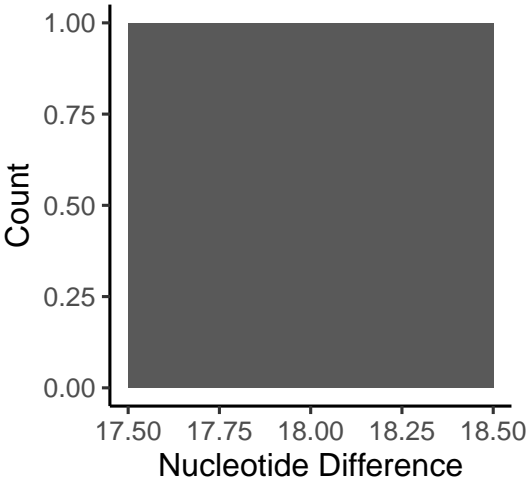
IGHV6-1*01_02

1618 sequences assigned
406 (25.1%) exact matches, in which:
371 unique CDR3
6 unique J



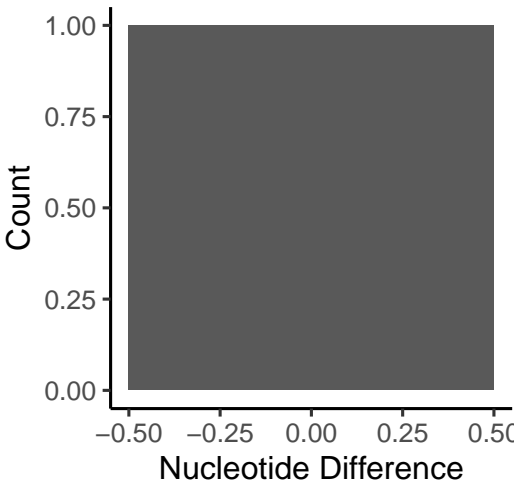
IGHV3/OR16-13*01

2 sequences assigned
No exact matches.



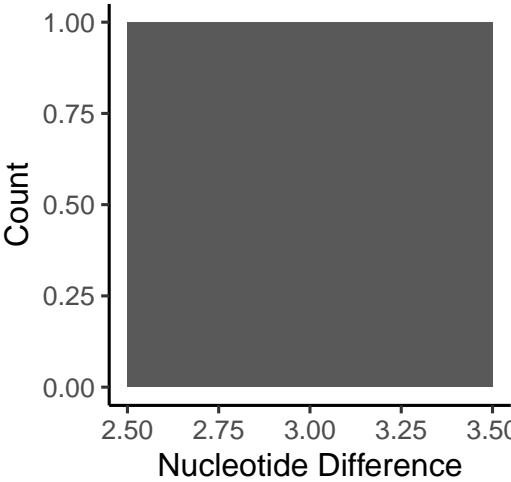
IGHV7-81*01

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



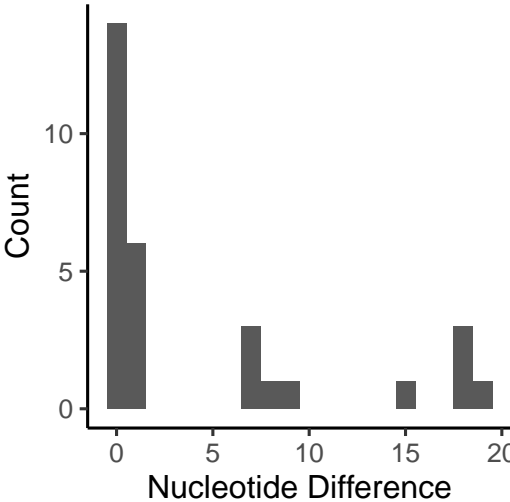
IGHV3/OR16-8*01

1 sequences assigned
No exact matches.

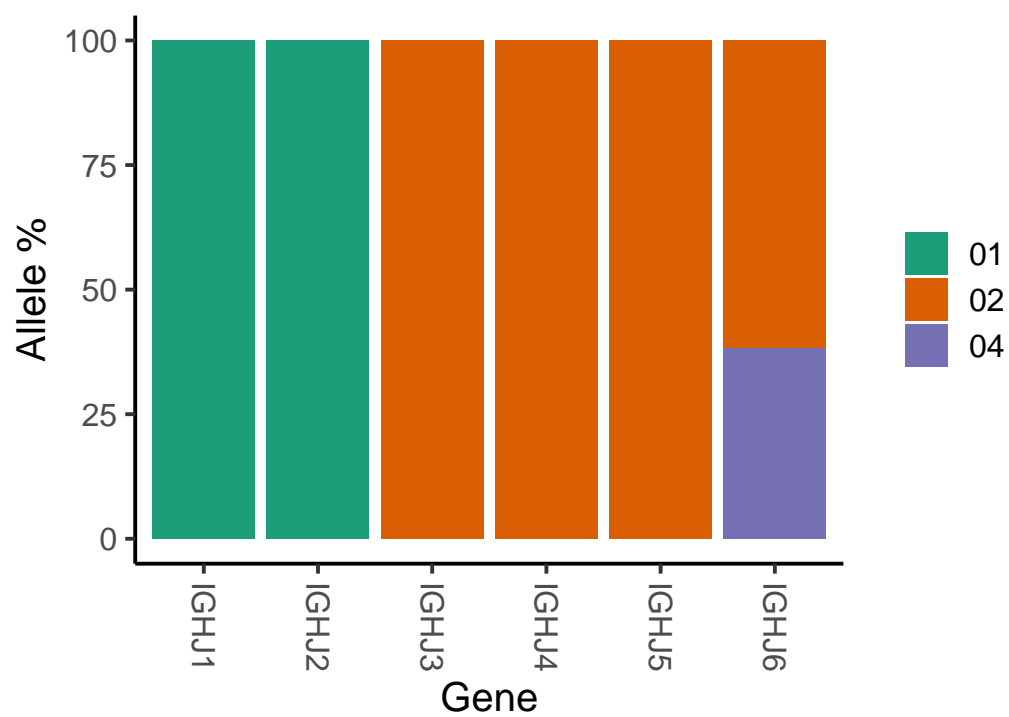


IGHV7-4-1*01

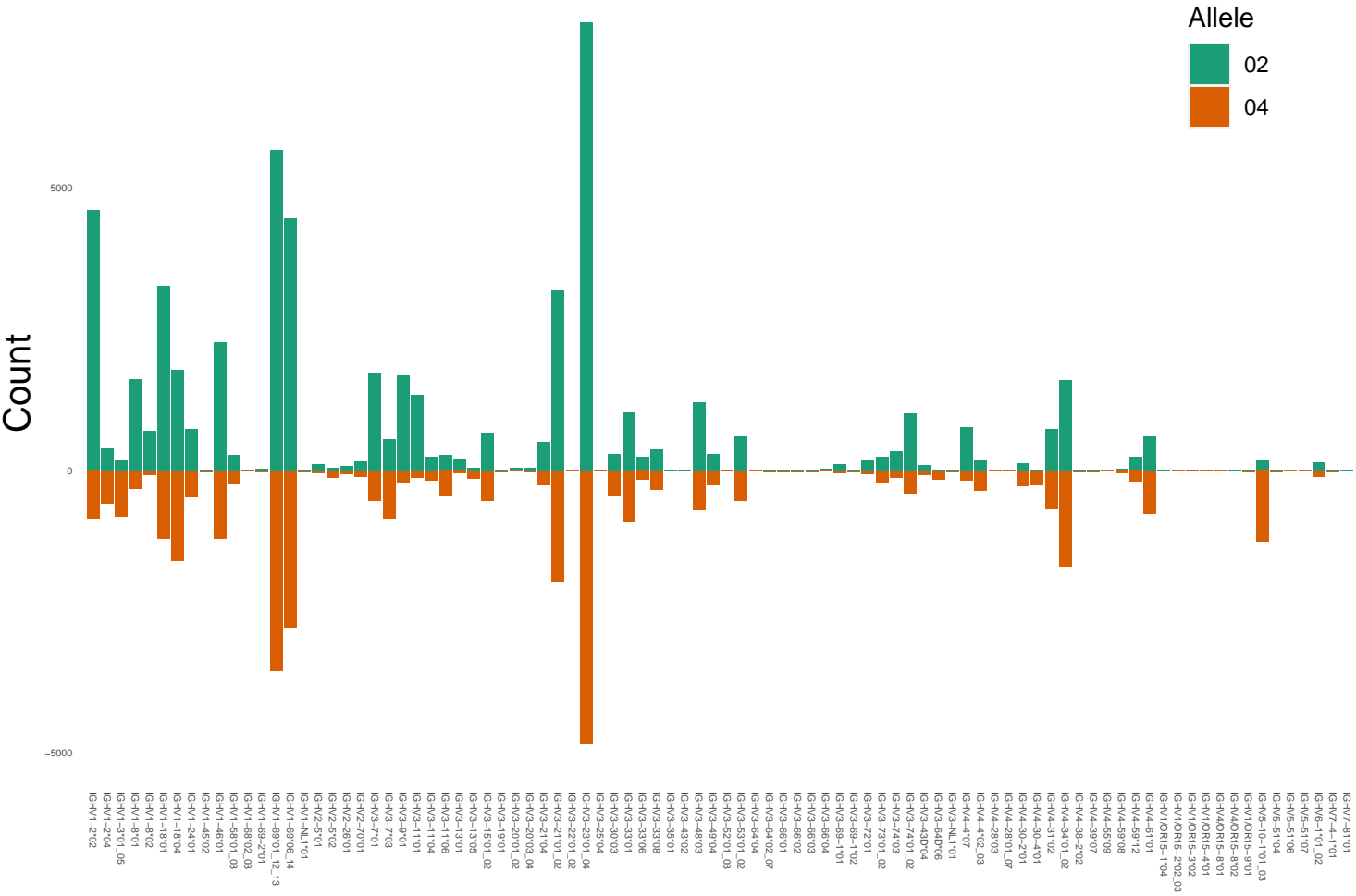
33 sequences assigned
14 (42.4%) exact matches, in which:
14 unique CDR3
6 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage



[illegible]