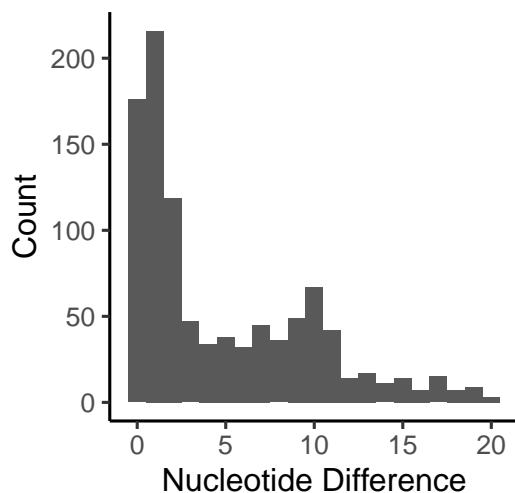


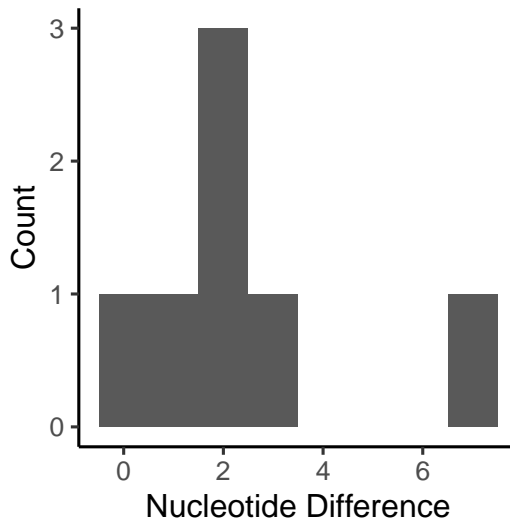
IGHV1-2*04

1004 sequences assigned
176 (17.5%) exact matches, in which:
148 unique CDR3
6 unique J



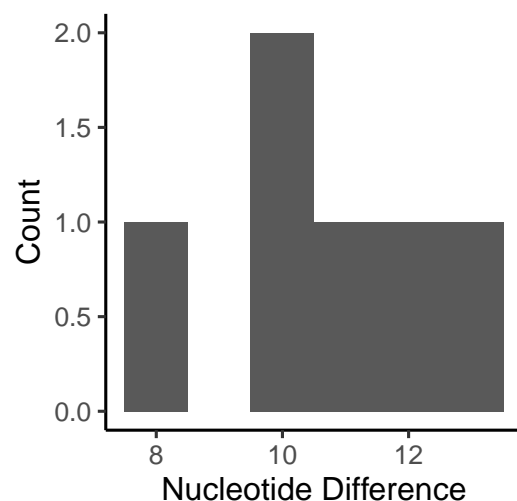
IGHV1-8*01

8 sequences assigned
1 (12.5%) exact matches, in which:
1 unique CDR3
1 unique J



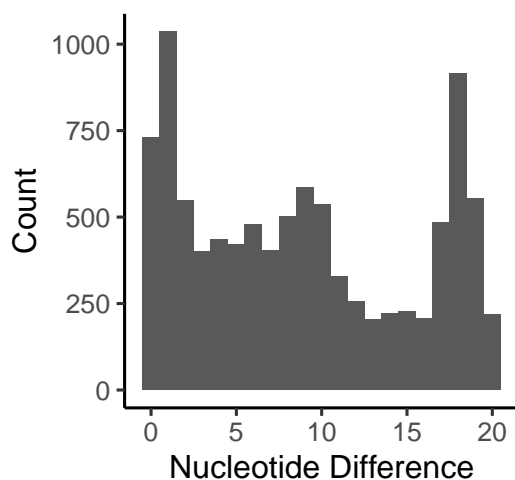
IGHV1-45*02

6 sequences assigned
No exact matches.



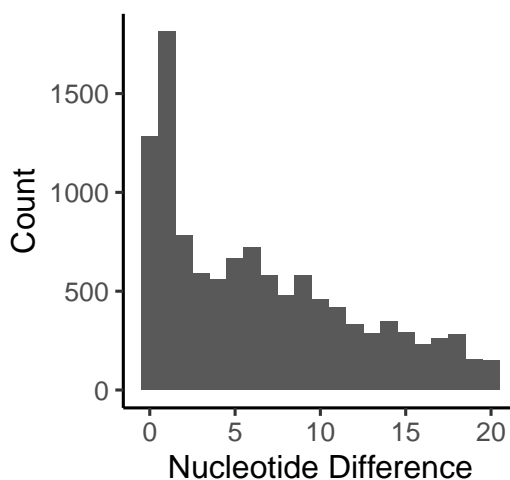
IGHV1-2*06

10402 sequences assigned
729 (7%) exact matches, in which:
561 unique CDR3
7 unique J



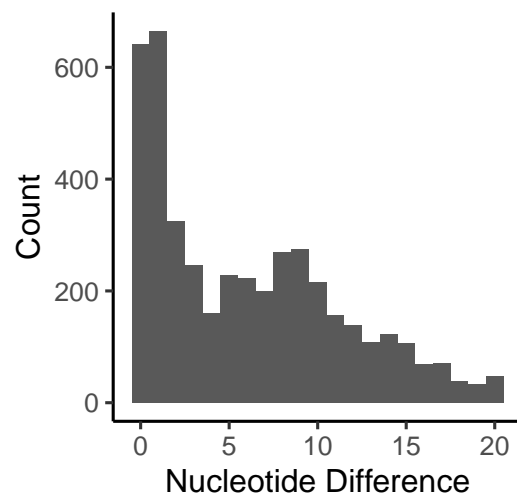
IGHV1-18*01

12394 sequences assigned
1285 (10.4%) exact matches, in which:
984 unique CDR3
7 unique J



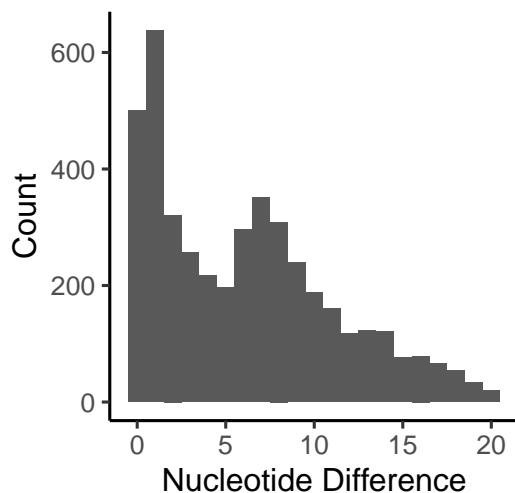
IGHV1-46*01

7487 sequences assigned
641 (8.6%) exact matches, in which:
538 unique CDR3
7 unique J



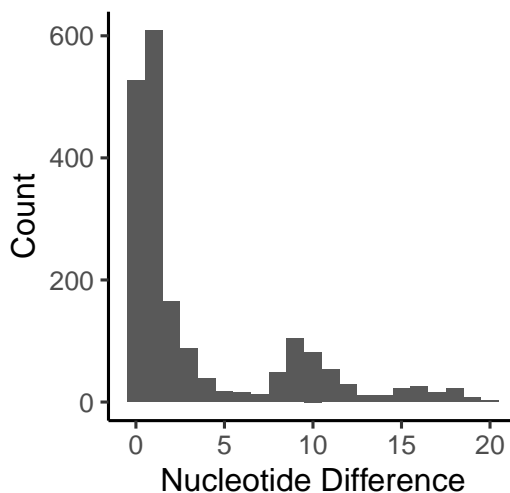
IGHV1-3*01_05

4670 sequences assigned
501 (10.7%) exact matches, in which:
402 unique CDR3
7 unique J



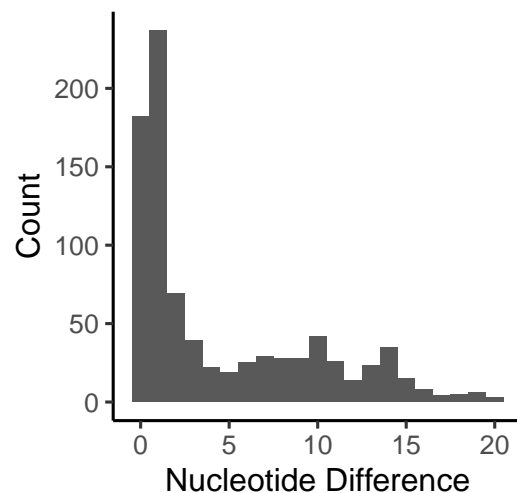
IGHV1-24*01

1923 sequences assigned
527 (27.4%) exact matches, in which:
403 unique CDR3
7 unique J



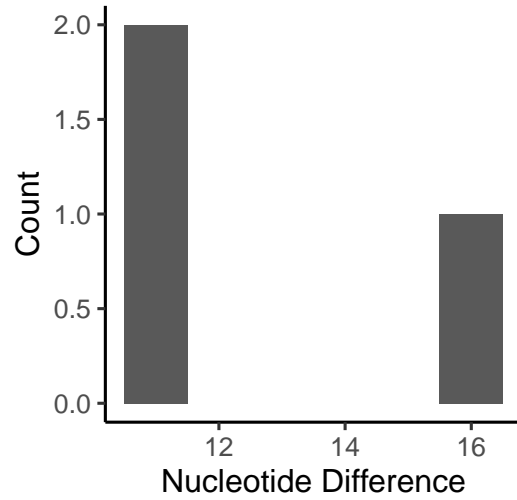
IGHV1-58*01_03

875 sequences assigned
182 (20.8%) exact matches, in which:
146 unique CDR3
7 unique J



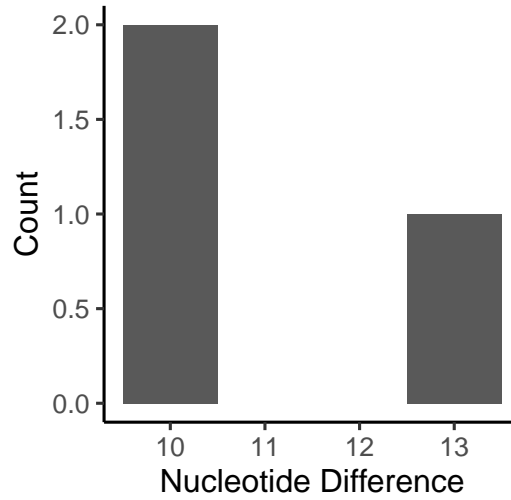
IGHV1-68*01

3 sequences assigned
No exact matches.



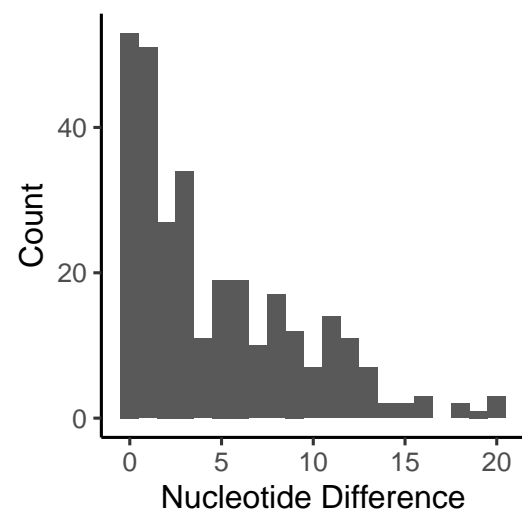
IGHV1-NL1*01

3 sequences assigned
No exact matches.



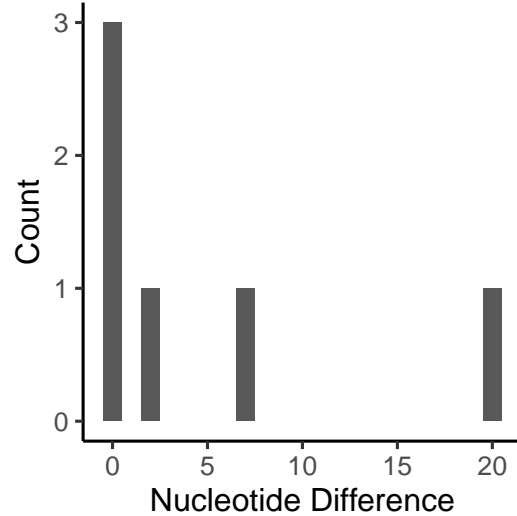
IGHV2-26*01

312 sequences assigned
53 (17%) exact matches, in which:
44 unique CDR3
6 unique J



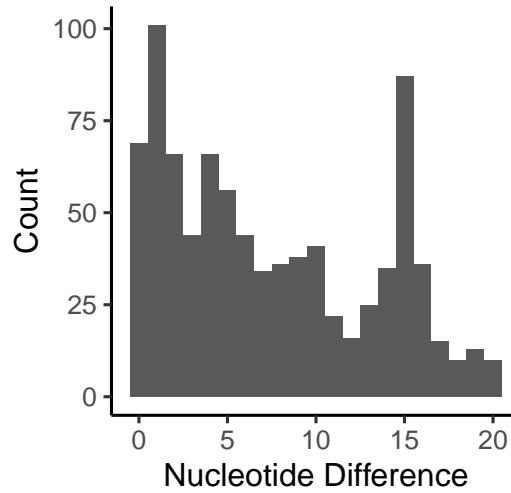
IGHV1-69-2*01

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



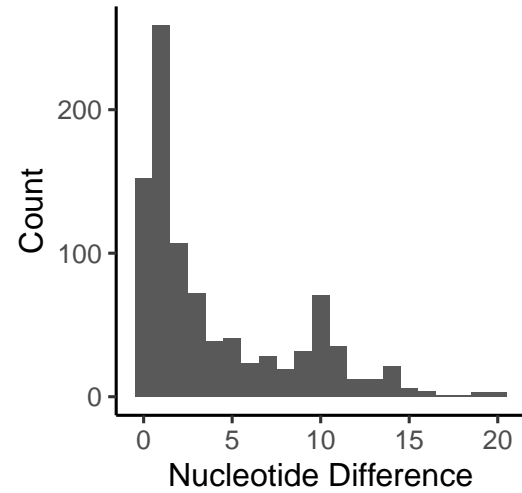
IGHV2-5*01

963 sequences assigned
69 (7.2%) exact matches, in which:
57 unique CDR3
5 unique J



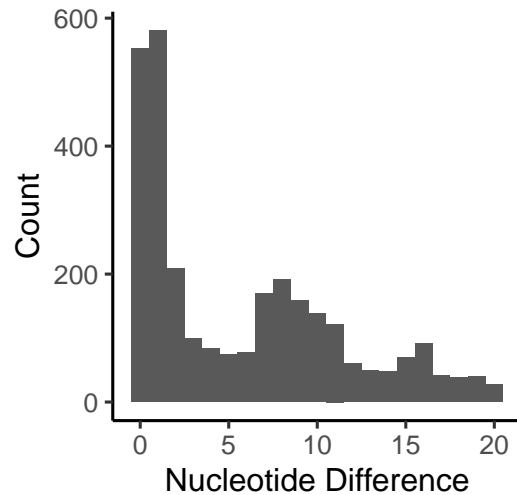
IGHV2-70*01

998 sequences assigned
152 (15.2%) exact matches, in which:
105 unique CDR3
6 unique J



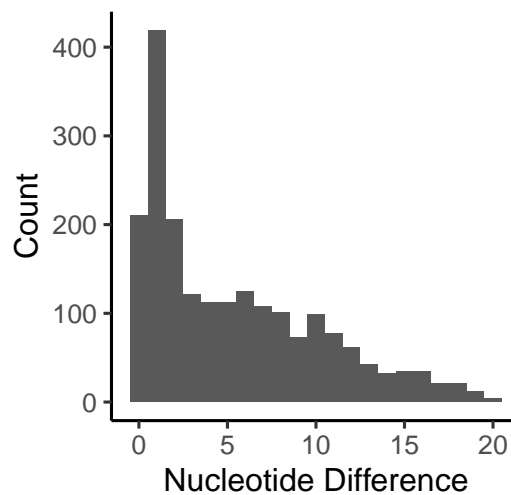
IGHV1-69*06_14

3246 sequences assigned
552 (17%) exact matches, in which:
475 unique CDR3
7 unique J



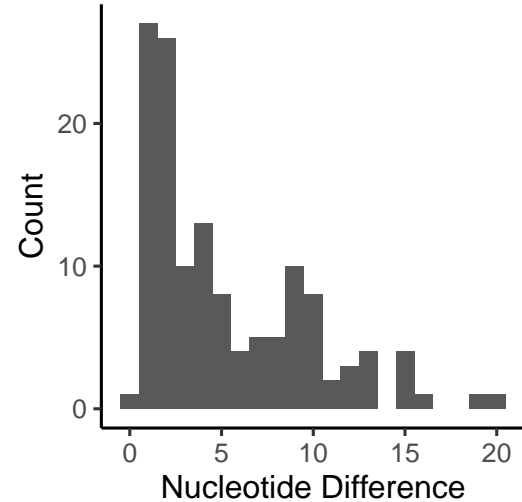
IGHV2-5*02

2182 sequences assigned
210 (9.6%) exact matches, in which:
150 unique CDR3
5 unique J



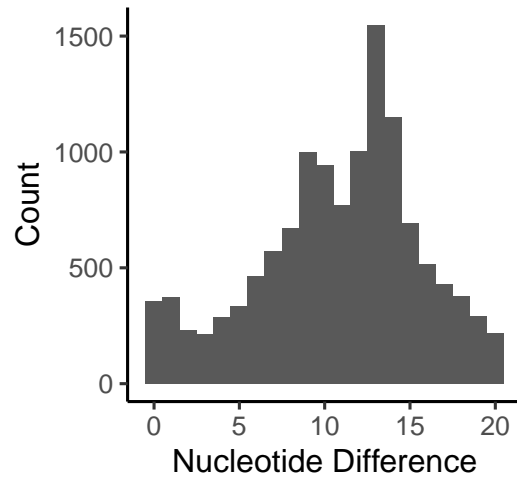
IGHV2-70*12

138 sequences assigned
1 (0.7%) exact matches, in which:
1 unique CDR3
1 unique J



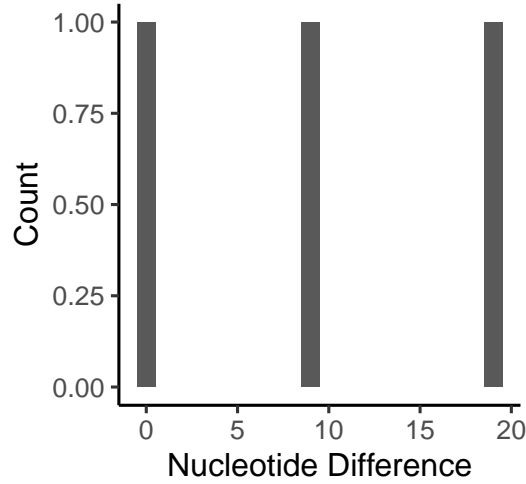
IGHV3-7*01

13375 sequences assigned
356 (2.7%) exact matches, in which:
243 unique CDR3
7 unique J



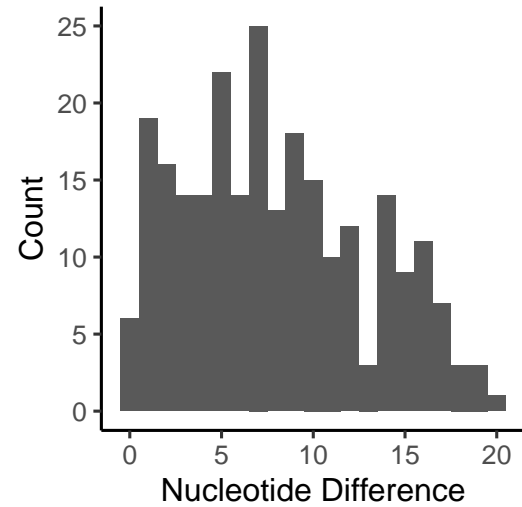
IGHV3-9*01

4 sequences assigned
1 (25%) exact matches, in which:
1 unique CDR3
1 unique J



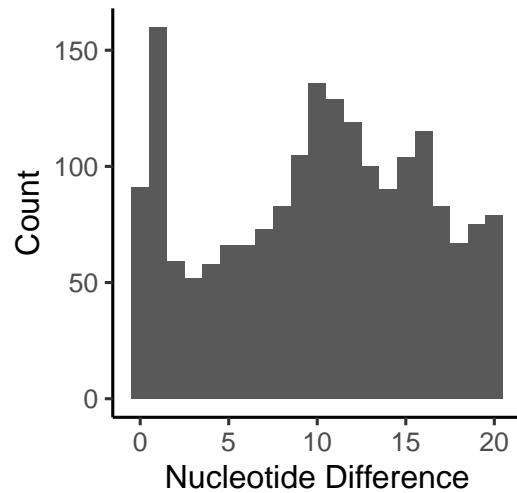
IGHV3-11*03_05

271 sequences assigned
6 (2.2%) exact matches, in which:
6 unique CDR3
3 unique J



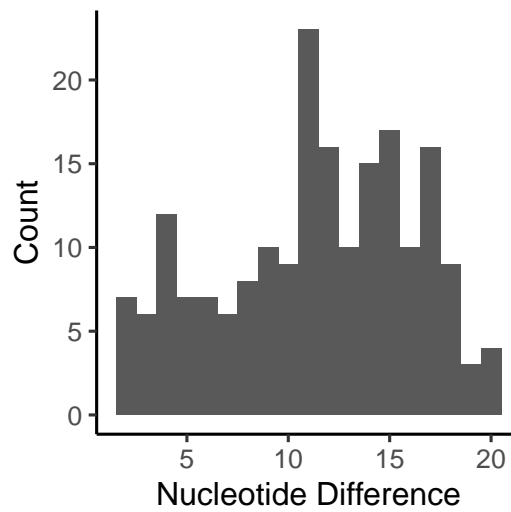
IGHV3-7*03

2437 sequences assigned
91 (3.7%) exact matches, in which:
52 unique CDR3
6 unique J



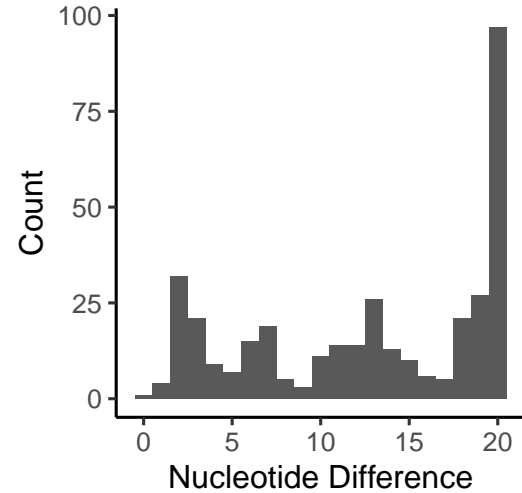
IGHV3-11*04

222 sequences assigned
No exact matches.



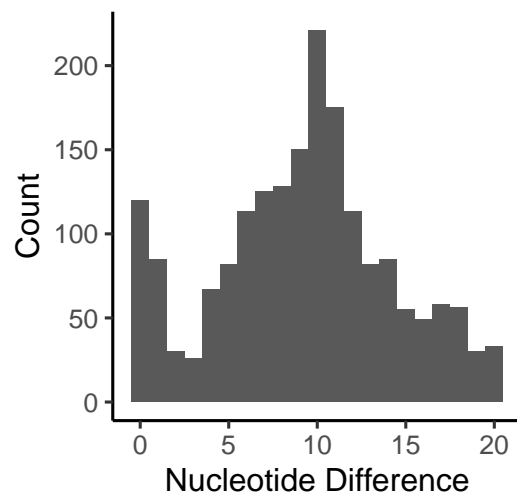
IGHV3-13*01

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



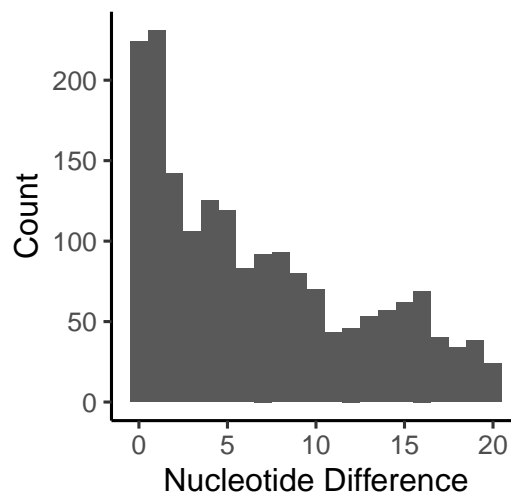
IGHV3-7*05

1983 sequences assigned
120 (6.1%) exact matches, in which:
79 unique CDR3
7 unique J



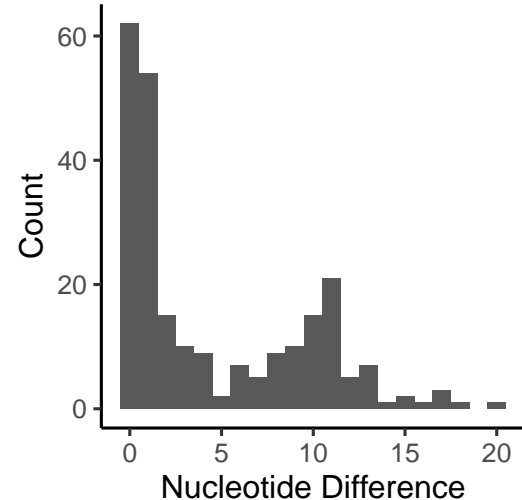
IGHV3-11*06

1917 sequences assigned
224 (11.7%) exact matches, in which:
131 unique CDR3
7 unique J



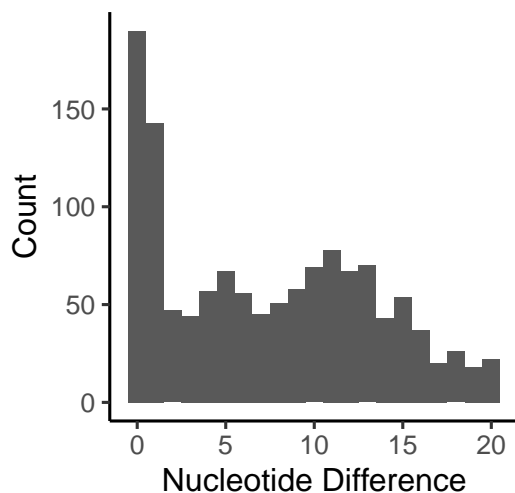
IGHV3-13*05

240 sequences assigned
62 (25.8%) exact matches, in which:
44 unique CDR3
7 unique J



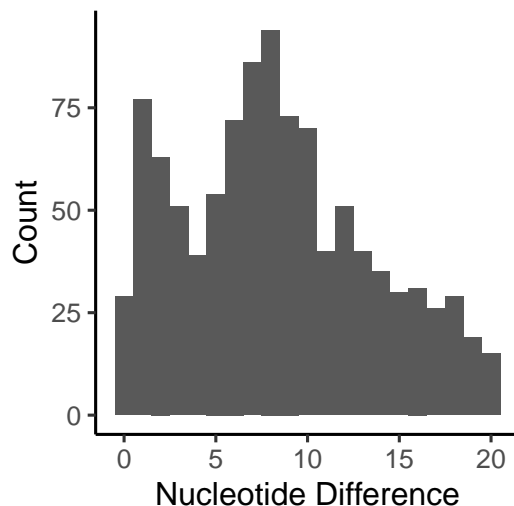
IGHV3-15*07

1361 sequences assigned
190 (14%) exact matches, in which:
124 unique CDR3
6 unique J



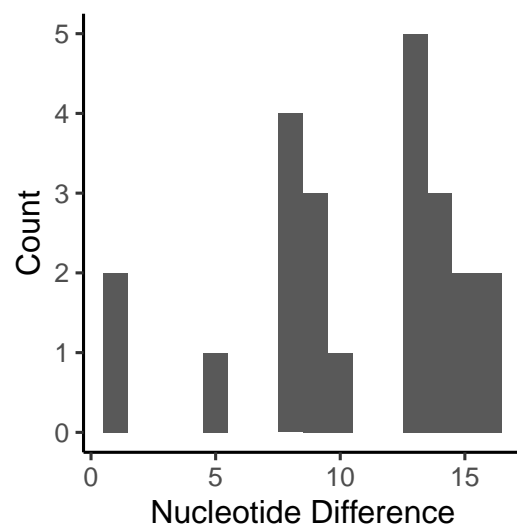
IGHV3-21*04

1117 sequences assigned
29 (2.6%) exact matches, in which:
29 unique CDR3
6 unique J



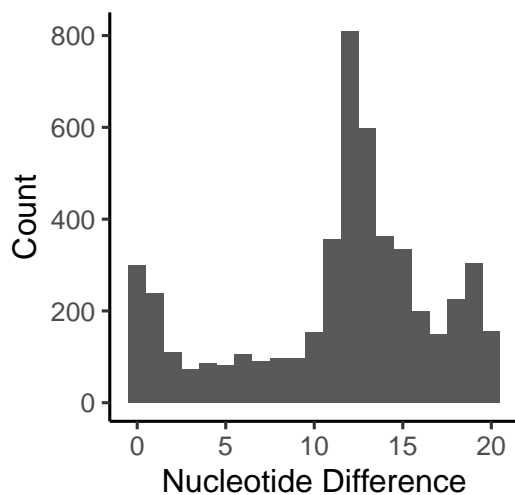
IGHV3-30-3*01

30 sequences assigned
No exact matches.



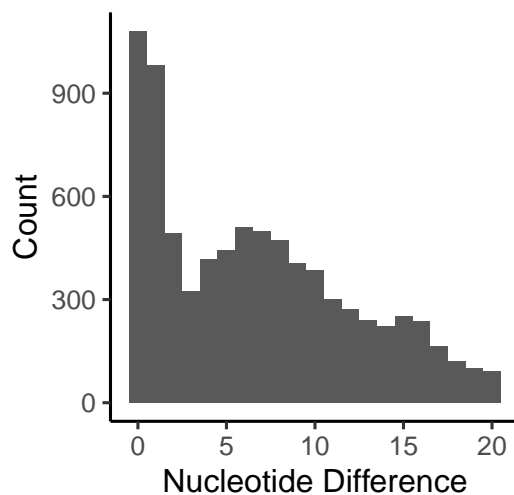
IGHV3-15*01_02

5254 sequences assigned
299 (5.7%) exact matches, in which:
196 unique CDR3
7 unique J



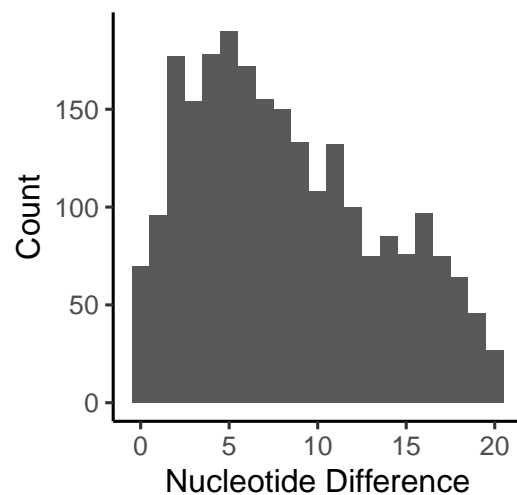
IGHV3-21*01_02

14693 sequences assigned
1081 (7.4%) exact matches, in which:
678 unique CDR3
7 unique J



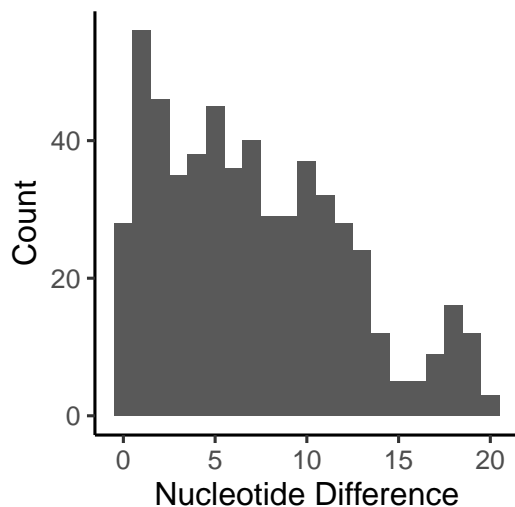
IGHV3-30*07

2492 sequences assigned
70 (2.8%) exact matches, in which:
66 unique CDR3
6 unique J



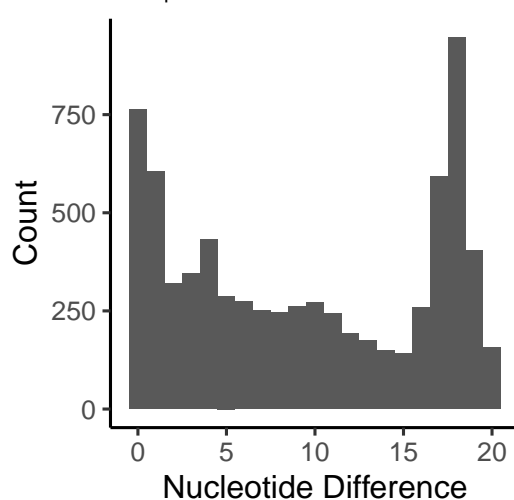
IGHV3-20*03_04

579 sequences assigned
28 (4.8%) exact matches, in which:
16 unique CDR3
3 unique J



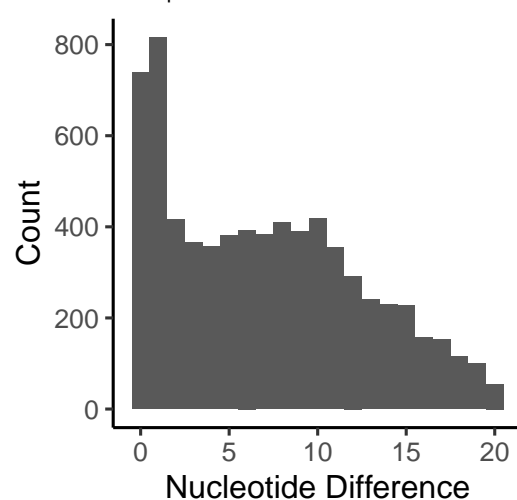
IGHV3-30*01

7847 sequences assigned
763 (9.7%) exact matches, in which:
502 unique CDR3
7 unique J



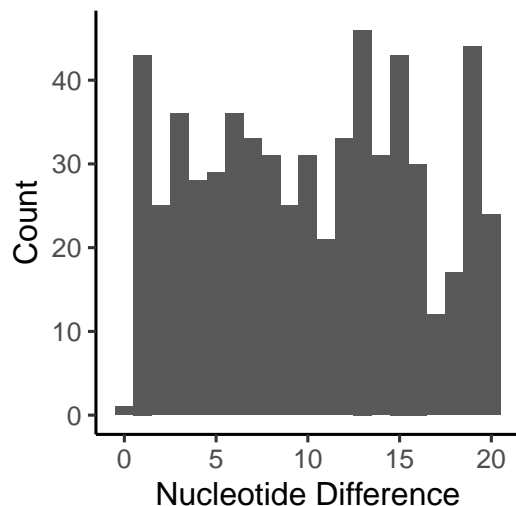
IGHV3-33*01

7408 sequences assigned
739 (10%) exact matches, in which:
488 unique CDR3
7 unique J



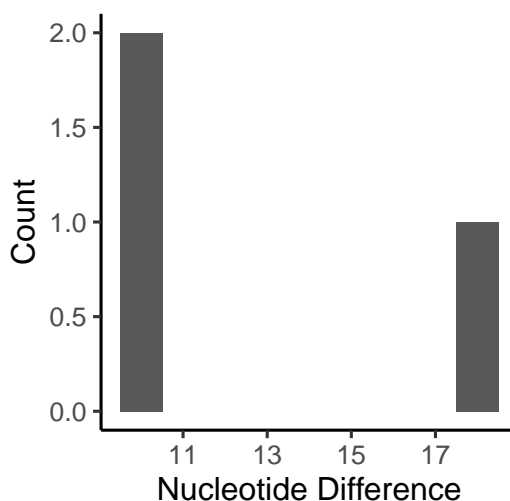
IGHV3-33*05

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



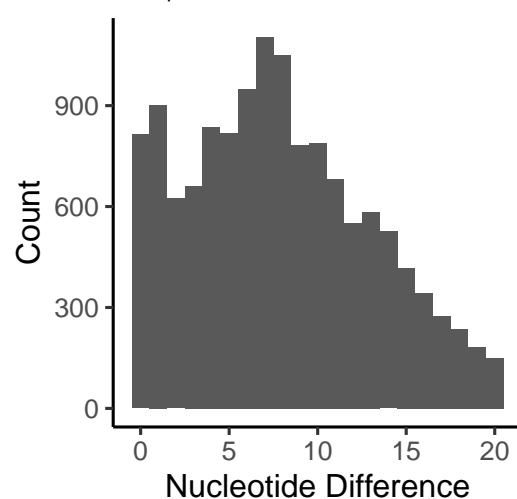
IGHV3-43*01

4 sequences assigned
No exact matches.



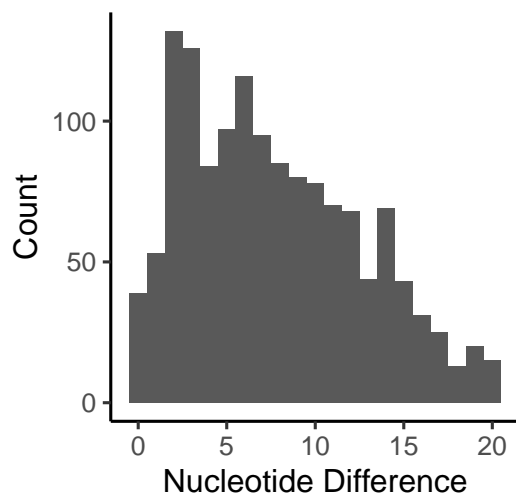
IGHV3-48*03

14004 sequences assigned
814 (5.8%) exact matches, in which:
486 unique CDR3
7 unique J



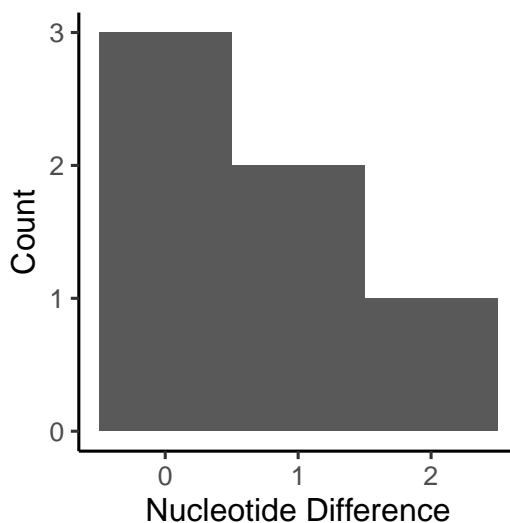
IGHV3-33*06

1444 sequences assigned
39 (2.7%) exact matches, in which:
39 unique CDR3
6 unique J



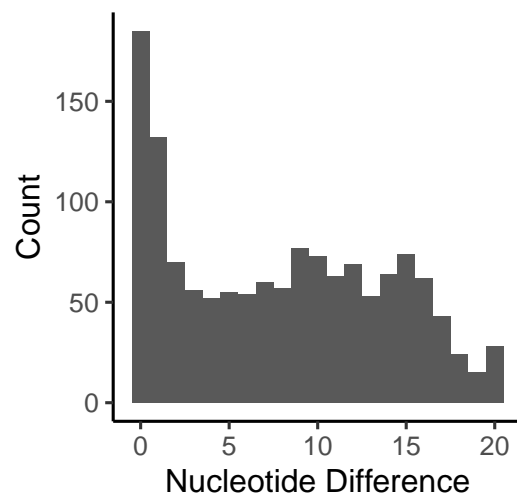
IGHV3-47*01

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



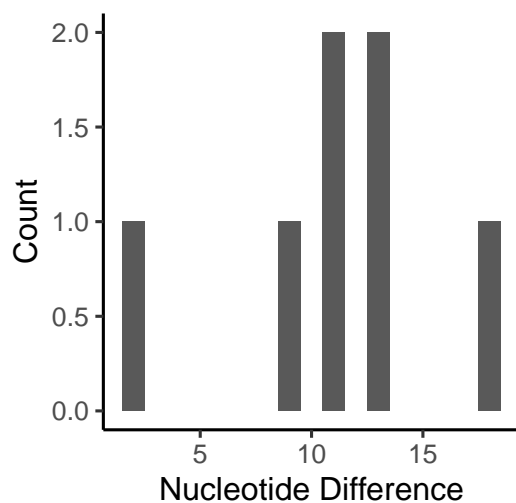
IGHV3-49*04

1498 sequences assigned
185 (12.3%) exact matches, in which:
115 unique CDR3
7 unique J



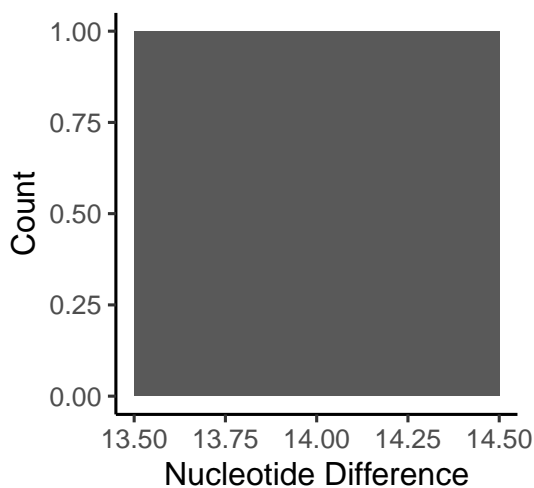
IGHV3-35*01

7 sequences assigned
No exact matches.



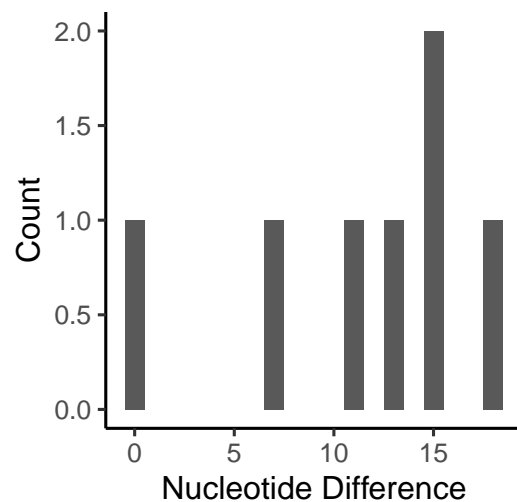
IGHV3-47*02

1 sequences assigned
No exact matches.



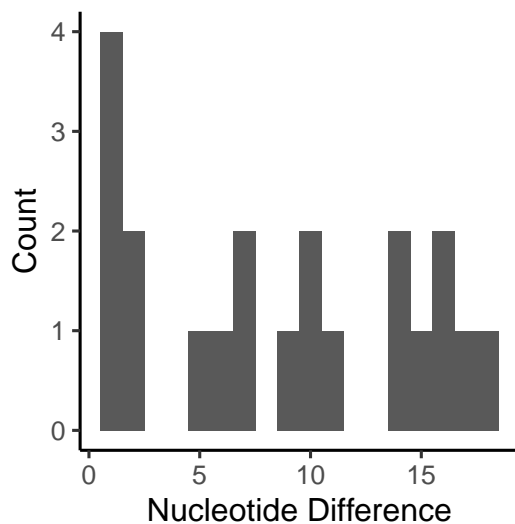
IGHV3-52*01_03

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



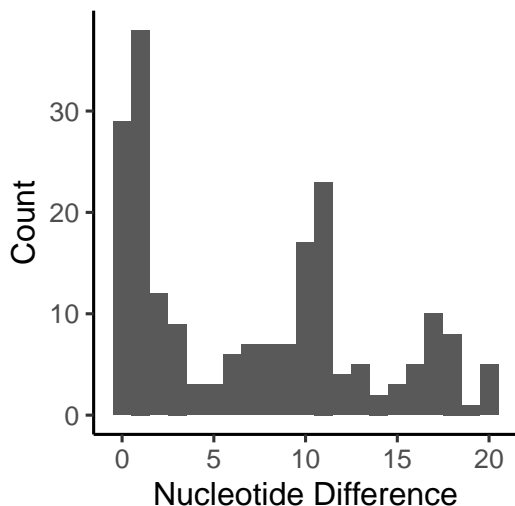
IGHV3-53*05

24 sequences assigned
No exact matches.



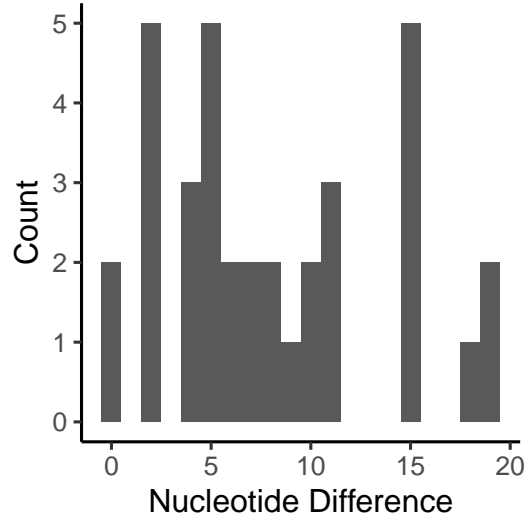
IGHV3-64*02_07

206 sequences assigned
29 (14.1%) exact matches, in which:
18 unique CDR3
4 unique J



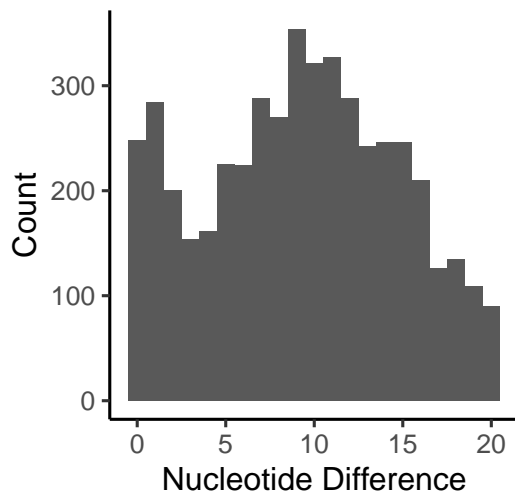
IGHV3-66*03

36 sequences assigned
2 (5.6%) exact matches, in which:
2 unique CDR3
1 unique J



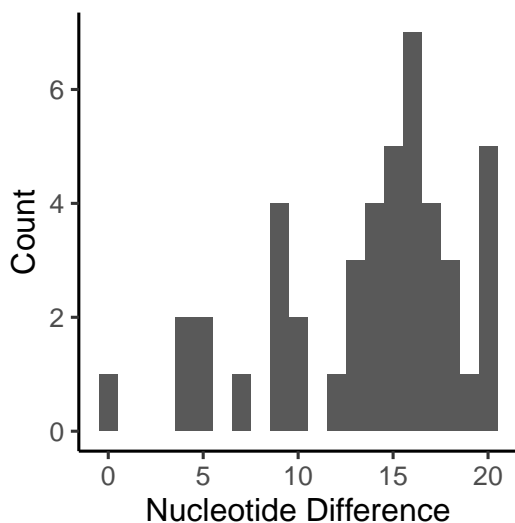
IGHV3-53*01_02

5571 sequences assigned
248 (4.5%) exact matches, in which:
146 unique CDR3
7 unique J



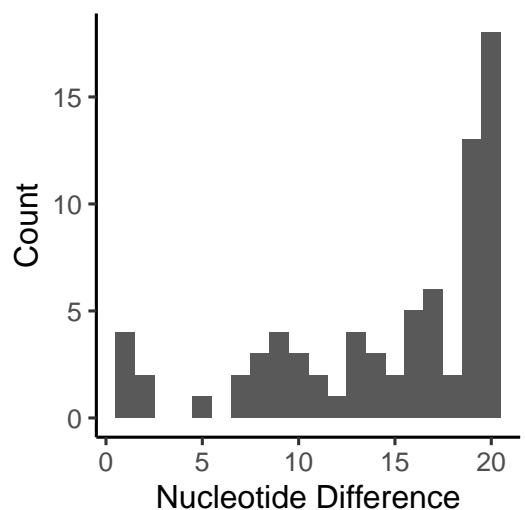
IGHV3-66*01

63 sequences assigned
1 (1.6%) exact matches, in which:
1 unique CDR3
1 unique J



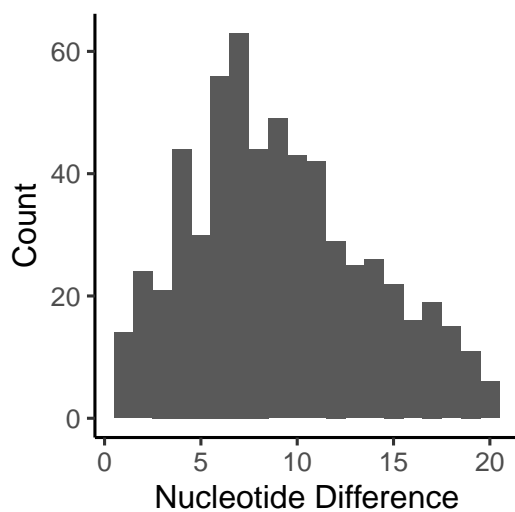
IGHV3-69-1*01

88 sequences assigned
No exact matches.



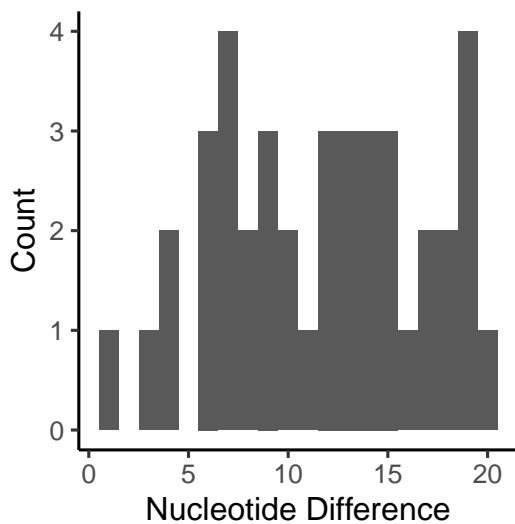
IGHV3-64*04

618 sequences assigned
No exact matches.



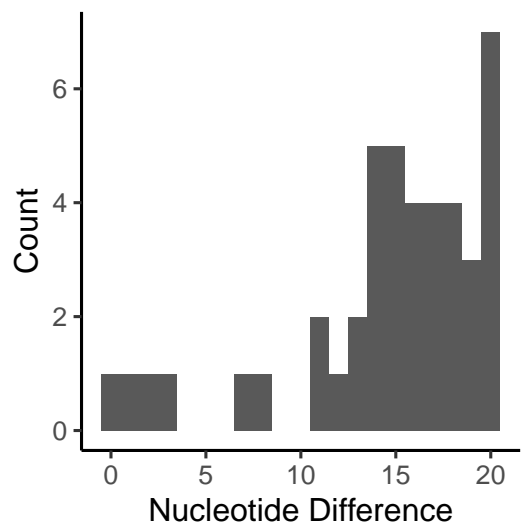
IGHV3-66*02

49 sequences assigned
No exact matches.



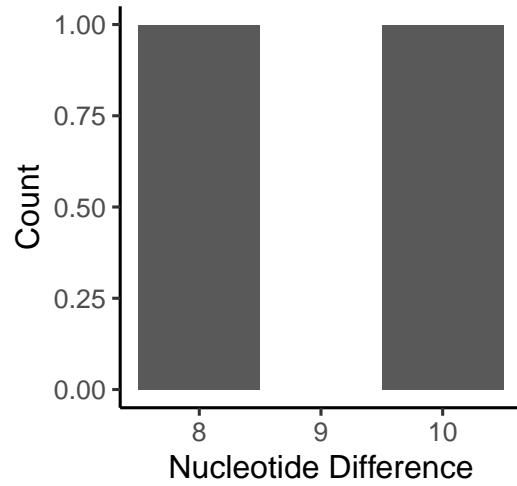
IGHV3-69-1*02

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



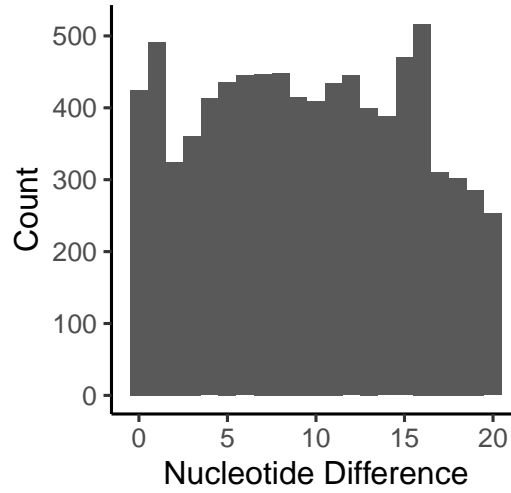
IGHV3-71*01_04

2 sequences assigned
No exact matches.



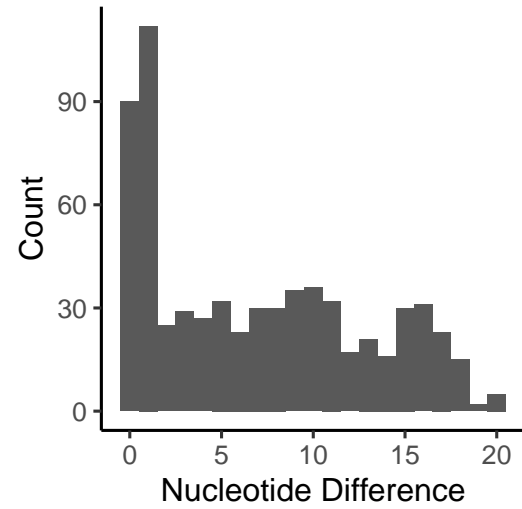
IGHV3-74*01_02

13500 sequences assigned
425 (3.1%) exact matches, in which:
278 unique CDR3
6 unique J



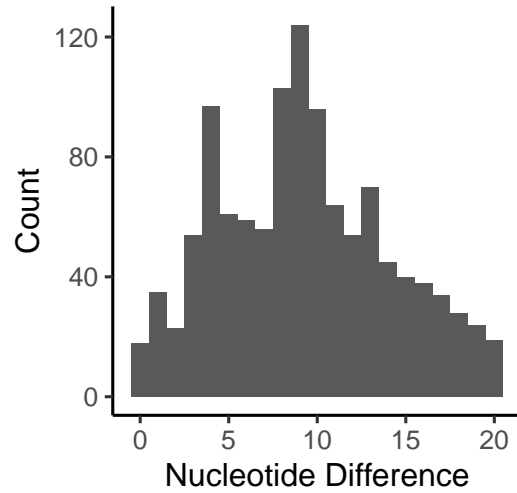
IGHV3-64D*08

756 sequences assigned
90 (11.9%) exact matches, in which:
57 unique CDR3
7 unique J



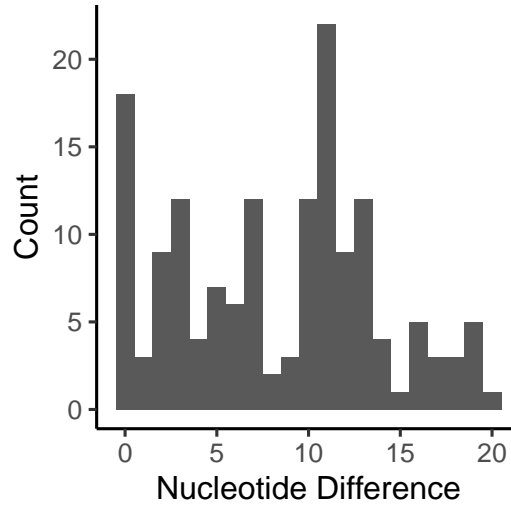
IGHV3-72*01

1192 sequences assigned
18 (1.5%) exact matches, in which:
11 unique CDR3
4 unique J



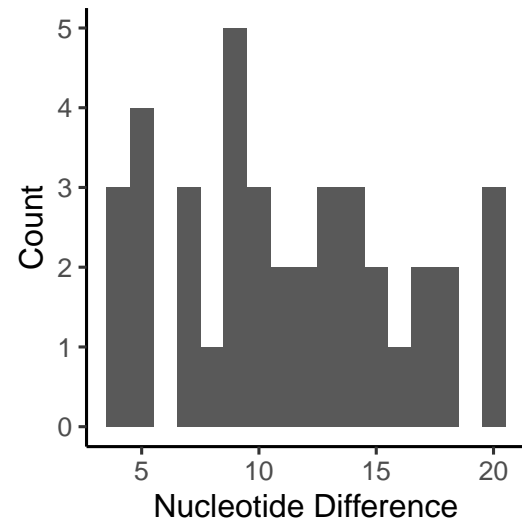
IGHV3-43D*04

157 sequences assigned
18 (11.5%) exact matches, in which:
10 unique CDR3
4 unique J



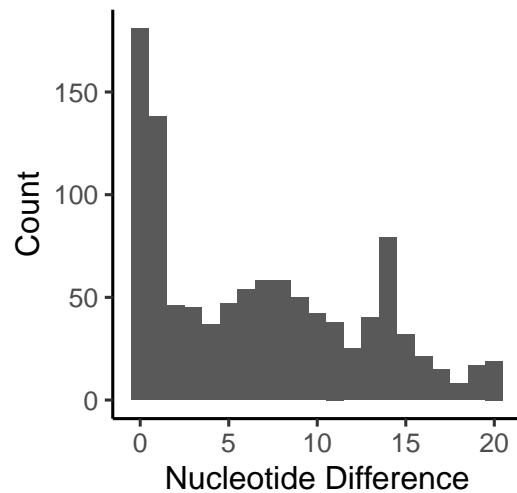
IGHV3-NL1*01

54 sequences assigned
No exact matches.



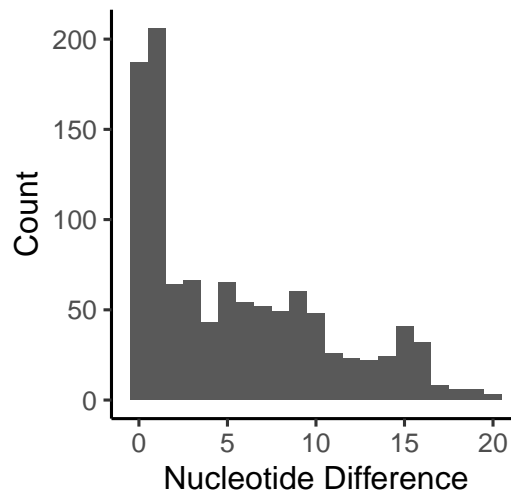
IGHV3-73*01_02

1165 sequences assigned
181 (15.5%) exact matches, in which:
105 unique CDR3
6 unique J



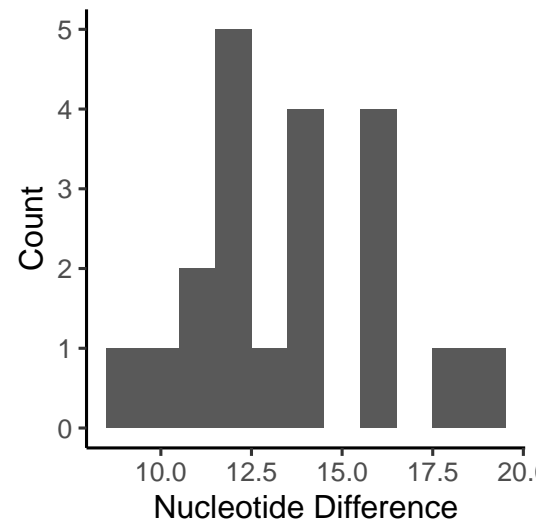
IGHV3-64D*06

1134 sequences assigned
187 (16.5%) exact matches, in which:
113 unique CDR3
6 unique J



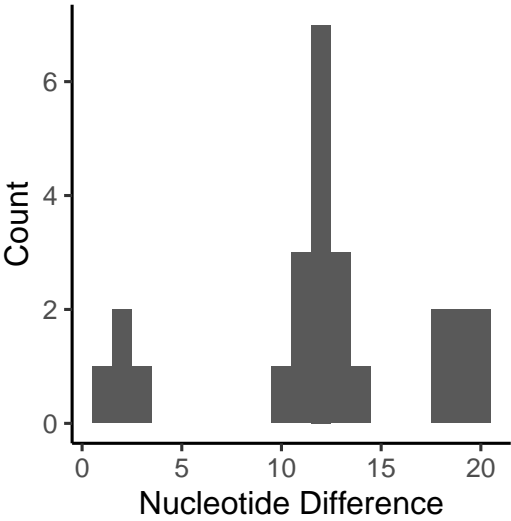
IGHV4-28*03

21 sequences assigned
No exact matches.



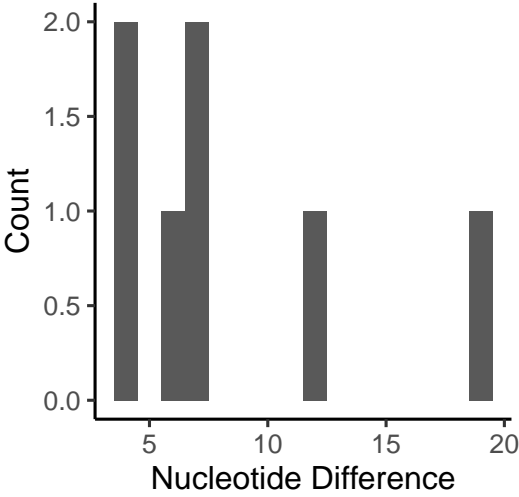
IGHV4-28*01_07

26 sequences assigned
No exact matches.



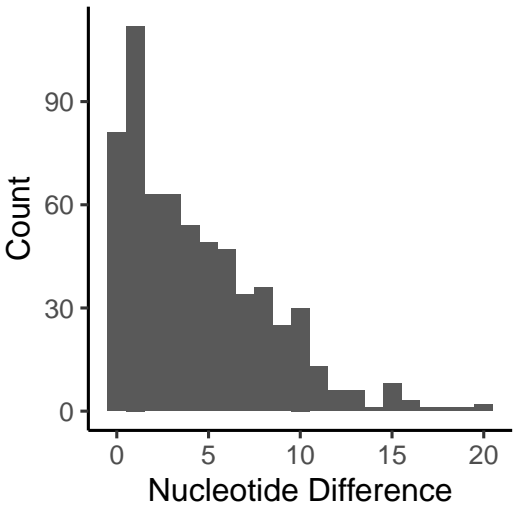
IGHV4-30-2*04

8 sequences assigned
No exact matches.



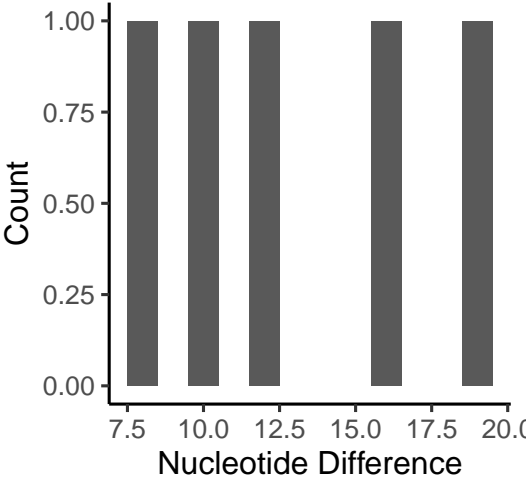
IGHV4-31*01

641 sequences assigned
81 (12.6%) exact matches, in which:
71 unique CDR3
5 unique J



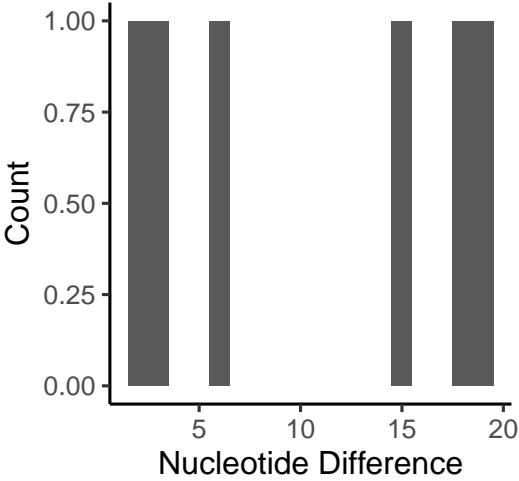
IGHV4-30-4*01

8 sequences assigned
No exact matches.



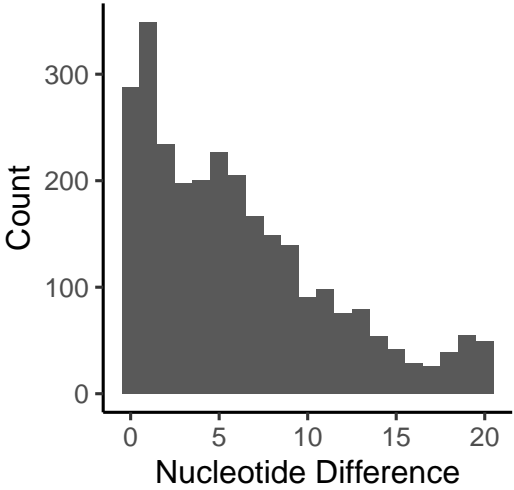
IGHV4-30-4*07

6 sequences assigned
No exact matches.



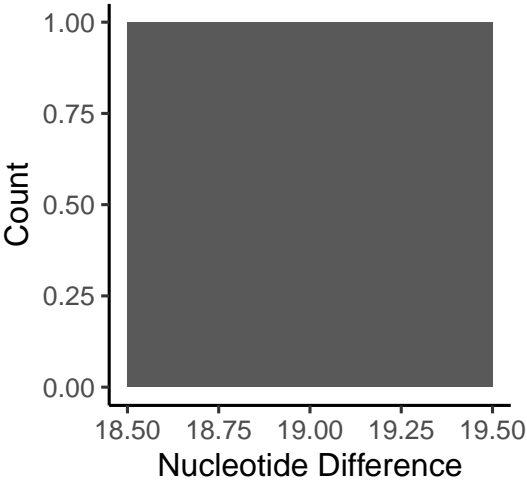
IGHV4-31*03_04

3125 sequences assigned
288 (9.2%) exact matches, in which:
218 unique CDR3
7 unique J



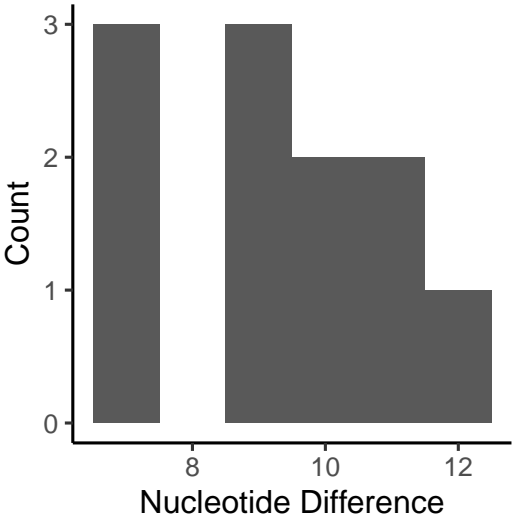
IGHV4-30-2*01

2 sequences assigned
No exact matches.



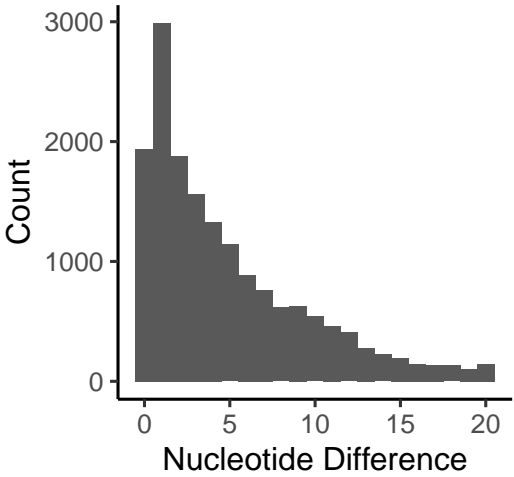
IGHV4-30-4*08

11 sequences assigned
No exact matches.



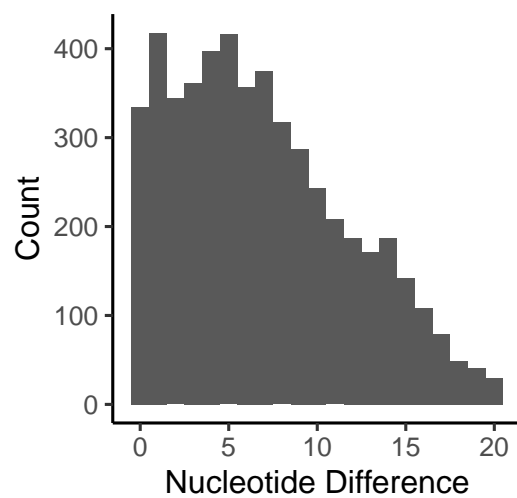
IGHV4-34*01_02

18207 sequences assigned
1937 (10.6%) exact matches, in which:
1263 unique CDR3
7 unique J



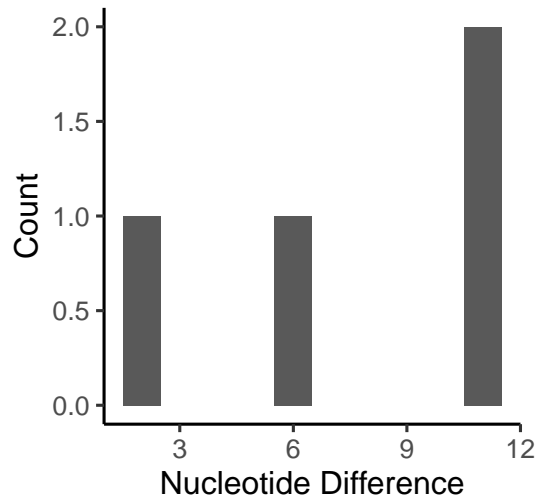
IGHV4-38-2*01

5239 sequences assigned
334 (6.4%) exact matches, in which:
271 unique CDR3
7 unique J



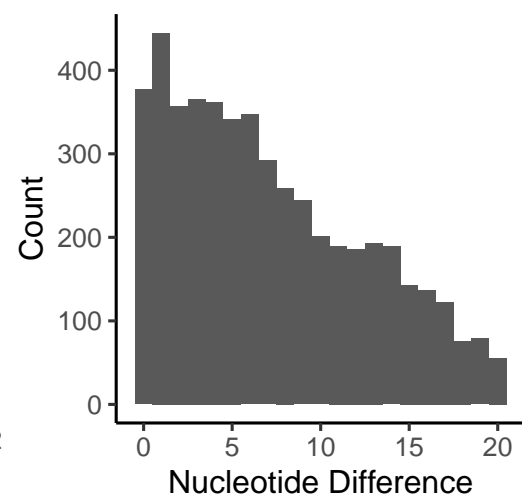
IGHV4-55*01_05

4 sequences assigned
No exact matches.



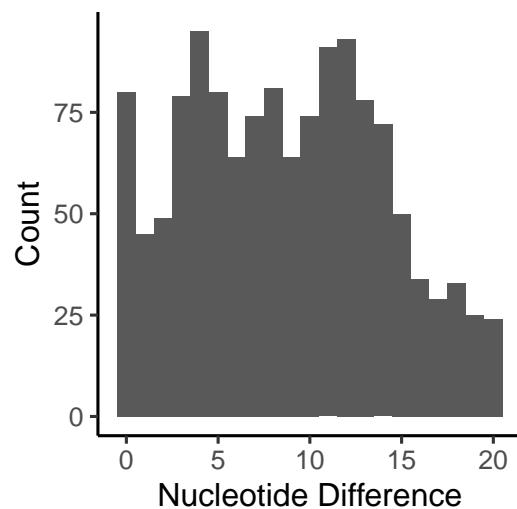
IGHV4-61*01

8954 sequences assigned
377 (4.2%) exact matches, in which:
323 unique CDR3
7 unique J



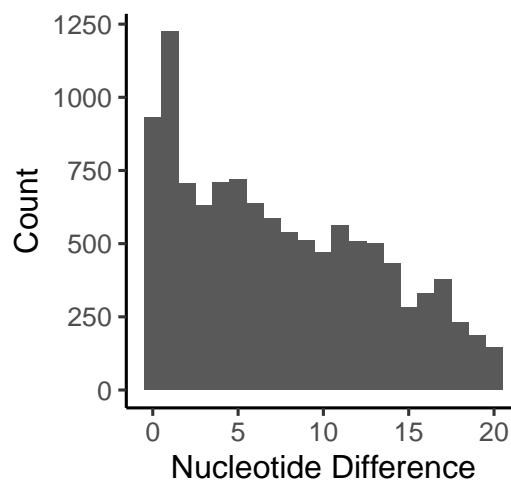
IGHV4-38-2*02

1473 sequences assigned
80 (5.4%) exact matches, in which:
65 unique CDR3
6 unique J



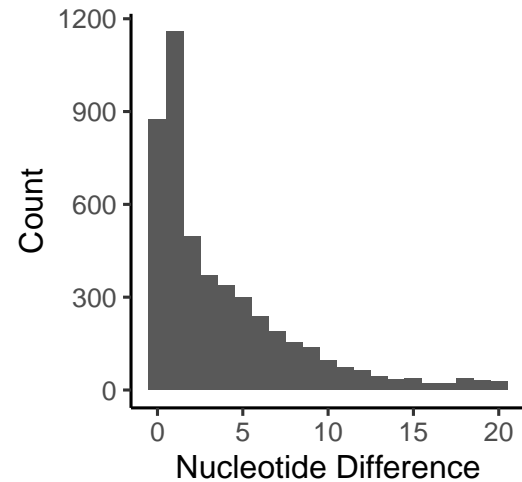
IGHV4-59*01_07

12595 sequences assigned
930 (7.4%) exact matches, in which:
745 unique CDR3
7 unique J



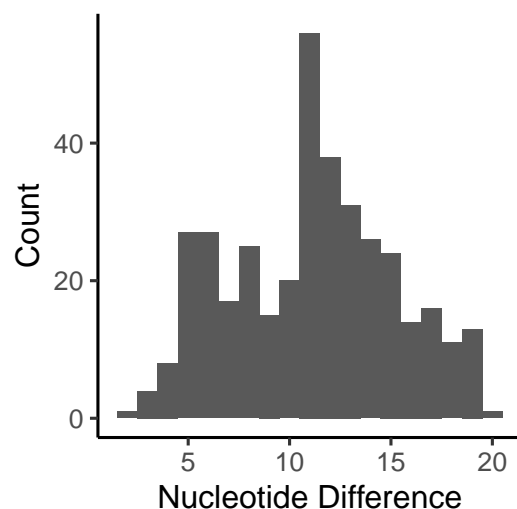
IGHV5-10-1*01_03

4996 sequences assigned
874 (17.5%) exact matches, in which:
538 unique CDR3
7 unique J



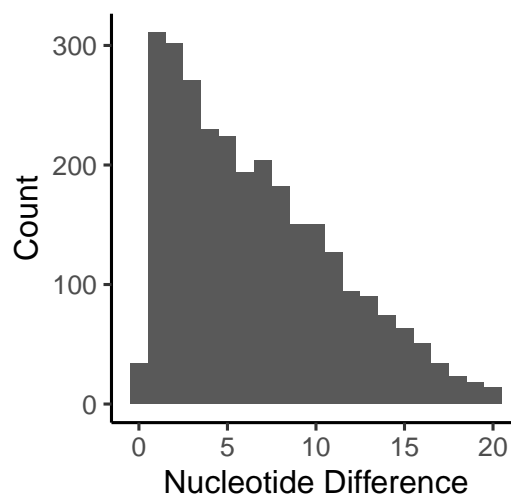
IGHV4-39*07

394 sequences assigned
No exact matches.



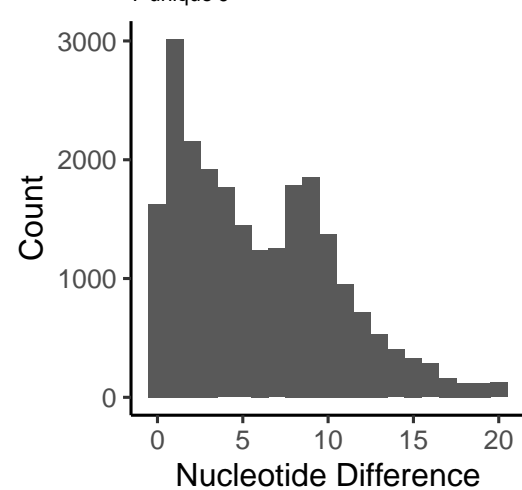
IGHV4-59*12

3010 sequences assigned
34 (1.1%) exact matches, in which:
34 unique CDR3
7 unique J



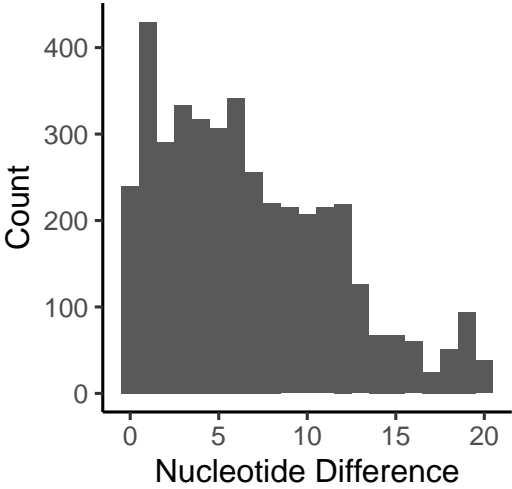
IGHV5-51*01_03

23687 sequences assigned
1627 (6.9%) exact matches, in which:
882 unique CDR3
7 unique J



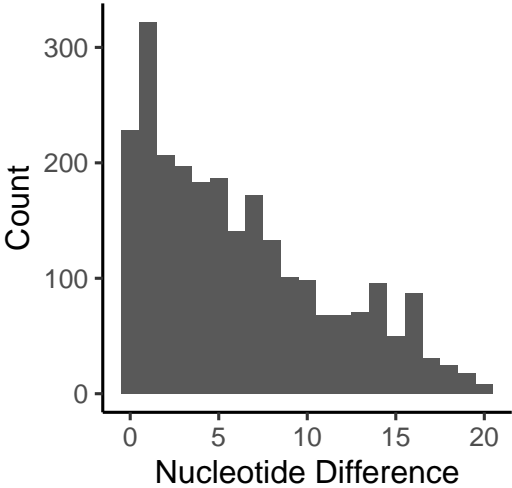
IGHV6-1*01_02

4339 sequences assigned
240 (5.5%) exact matches, in which:
190 unique CDR3
7 unique J



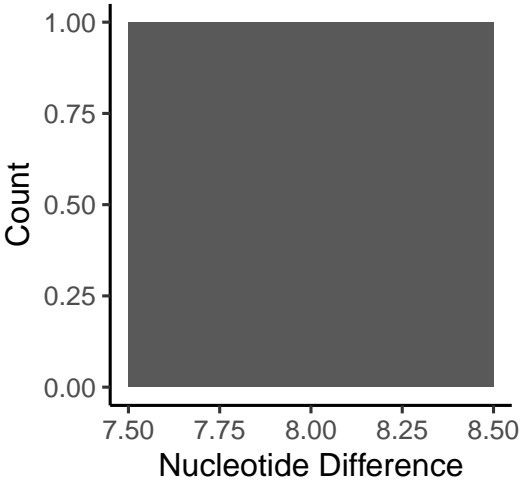
IGHV7-4-1*02

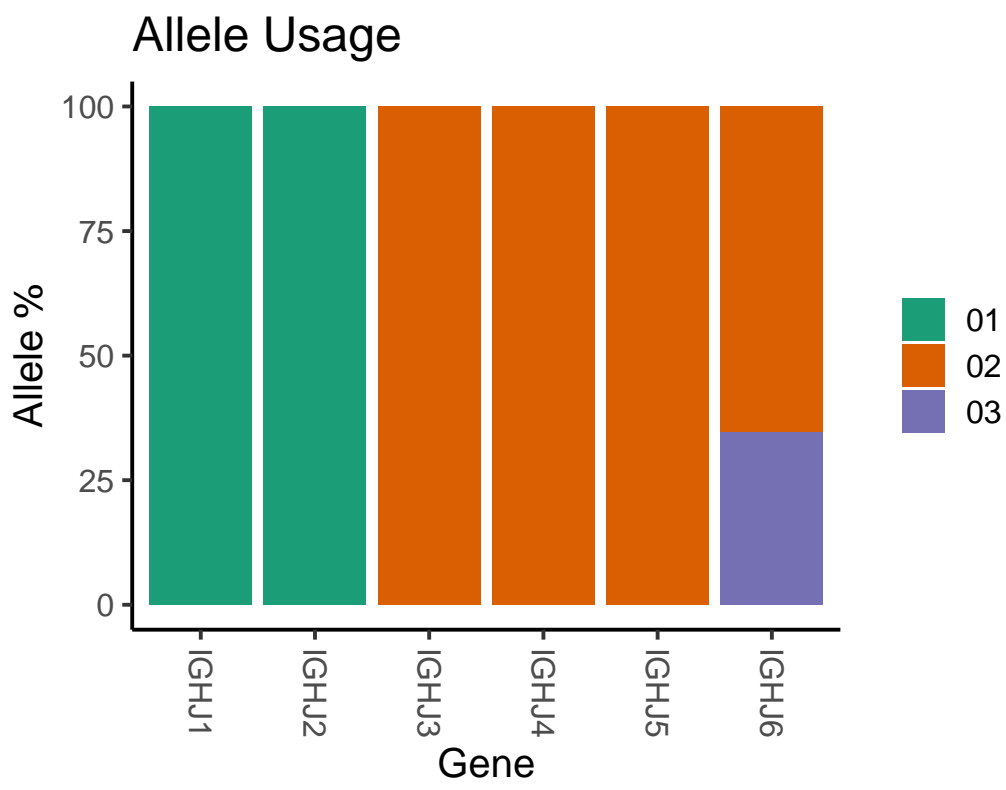
2542 sequences assigned
228 (9%) exact matches, in which:
182 unique CDR3
7 unique J



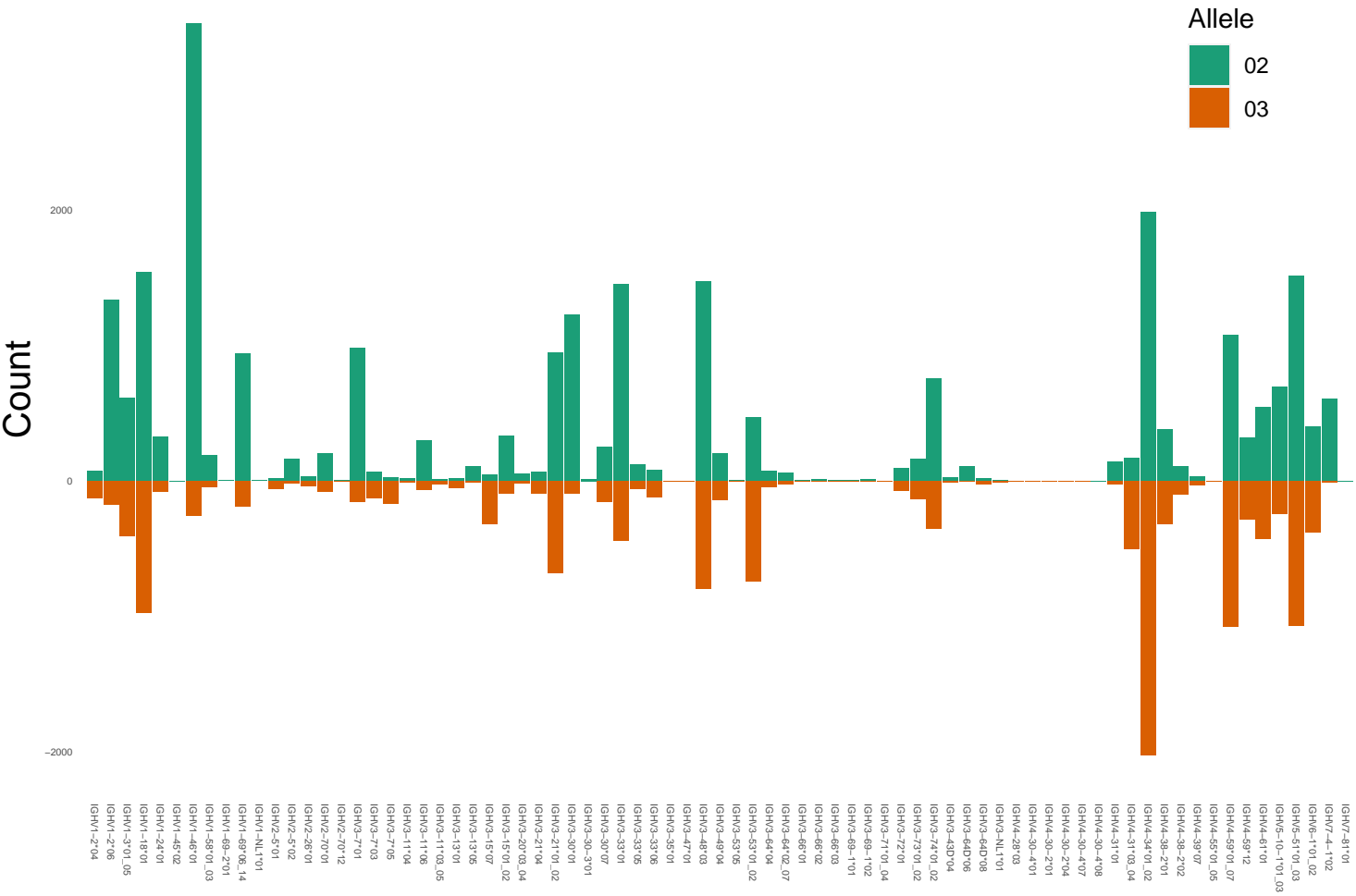
IGHV7-81*01

1 sequences assigned
No exact matches.





Sequence Count by IGHJ6 allele usage



Novel sequence(s) IGHV3-33*01_G75C IGHV4-59*02_G88A IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-33*01_G75C IGHV4-59*02_G88A IGHV5-51*07_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-30*03_T288C 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.

Warning - no inferred sequences found.

Novel sequence(s) IGHV1-69*04_09_G112A 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) 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.