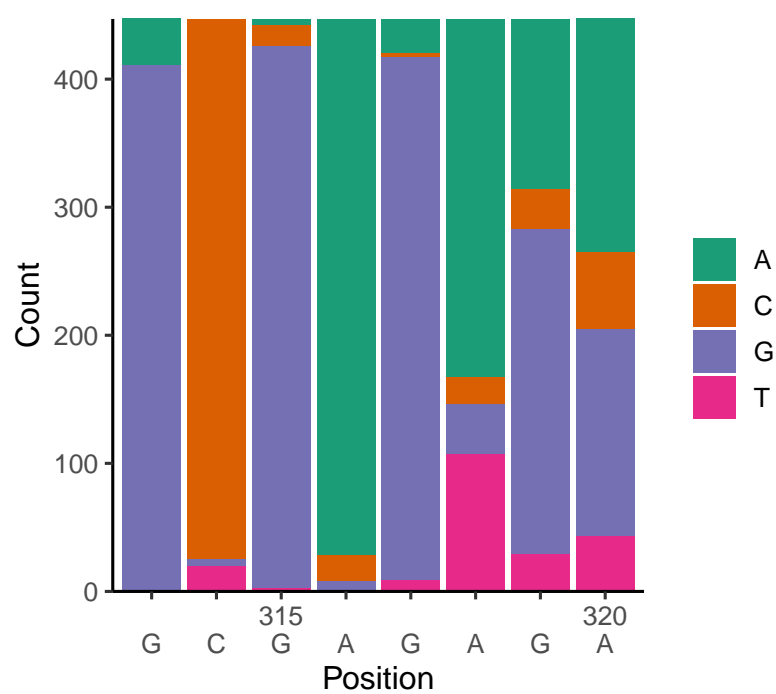
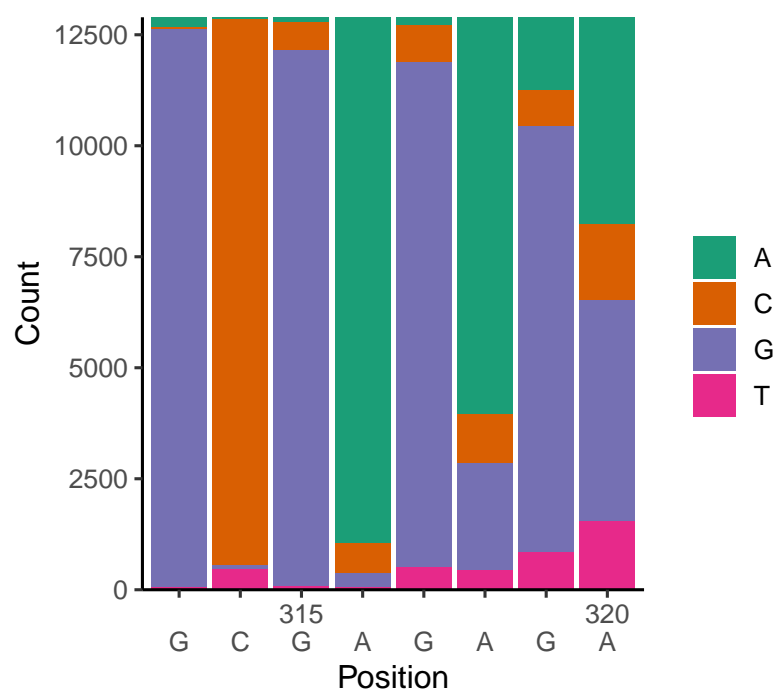


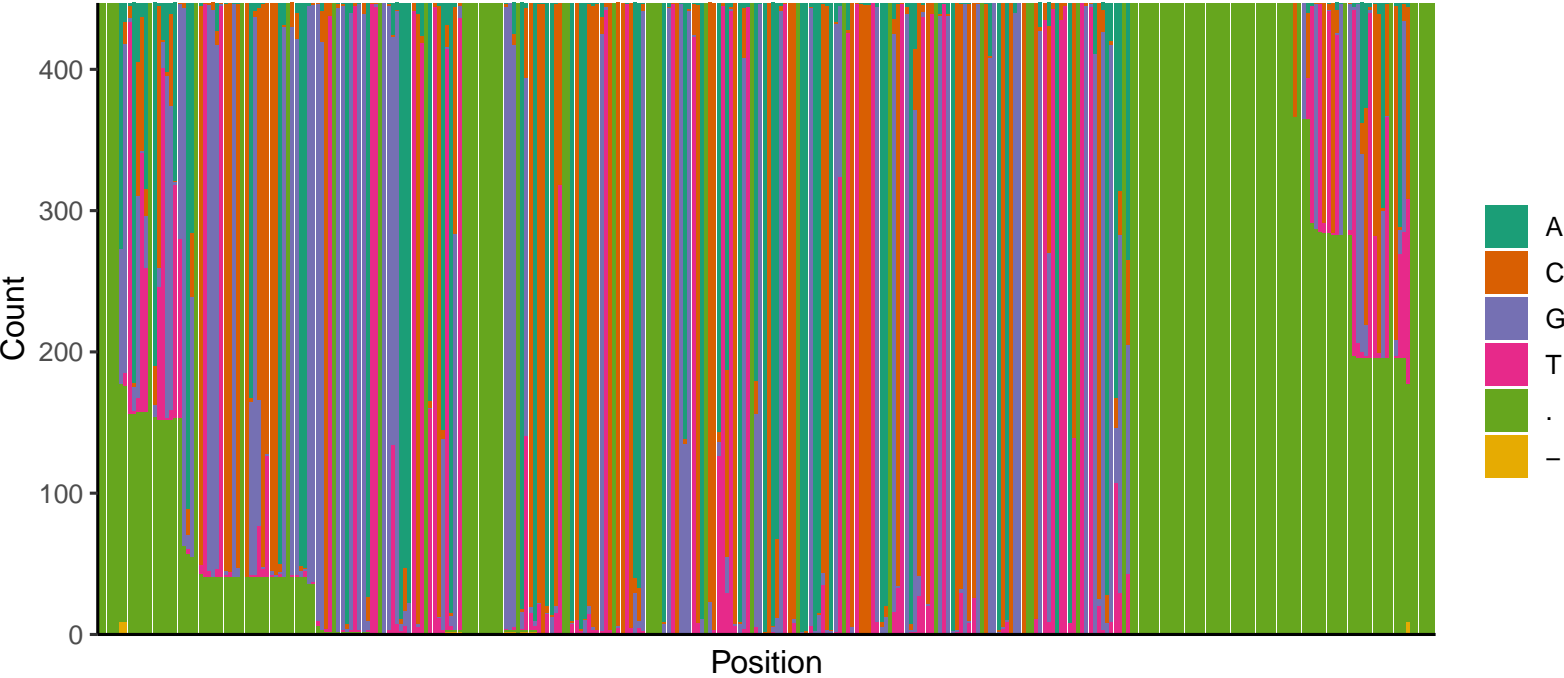
Gene IGHV4/OR15-8*01_C193A



Gene IGHV4-61*02_A234G



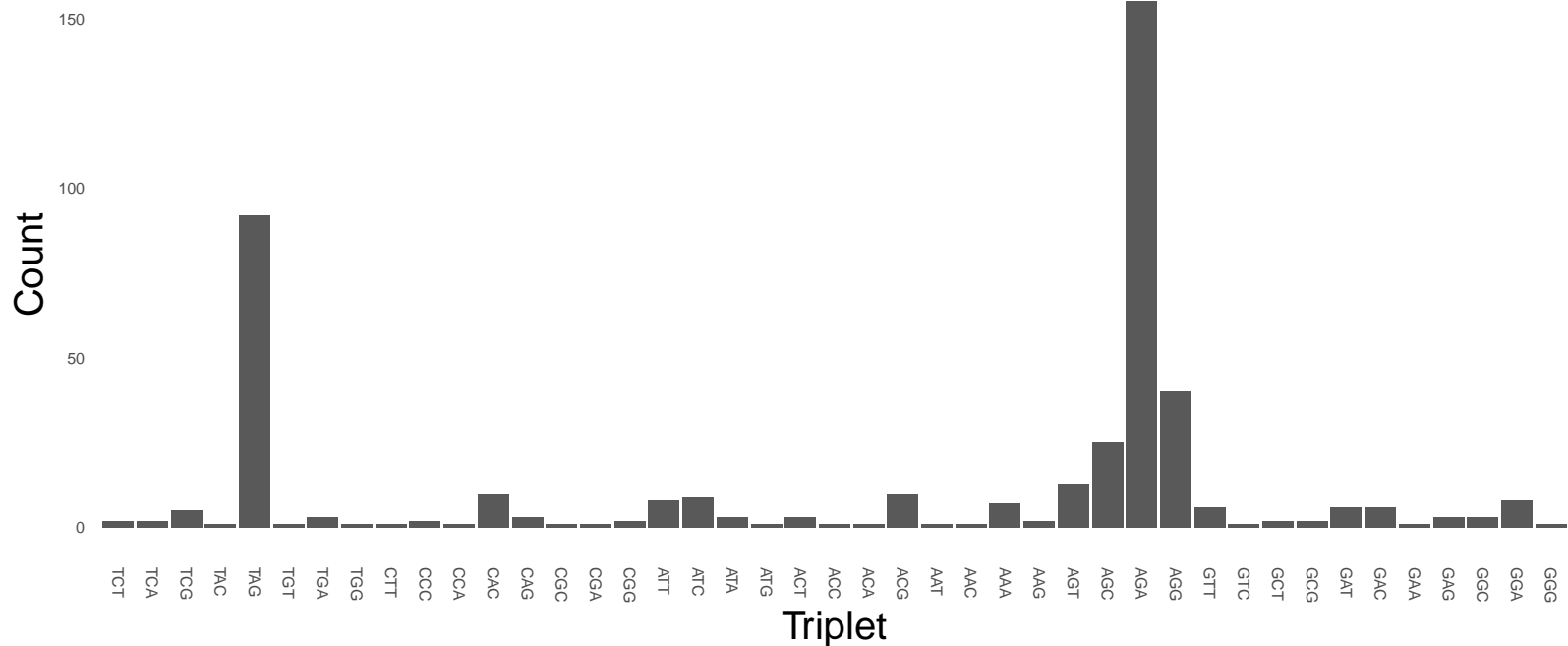
Gene IGHV4/OR15-8*01_C193A



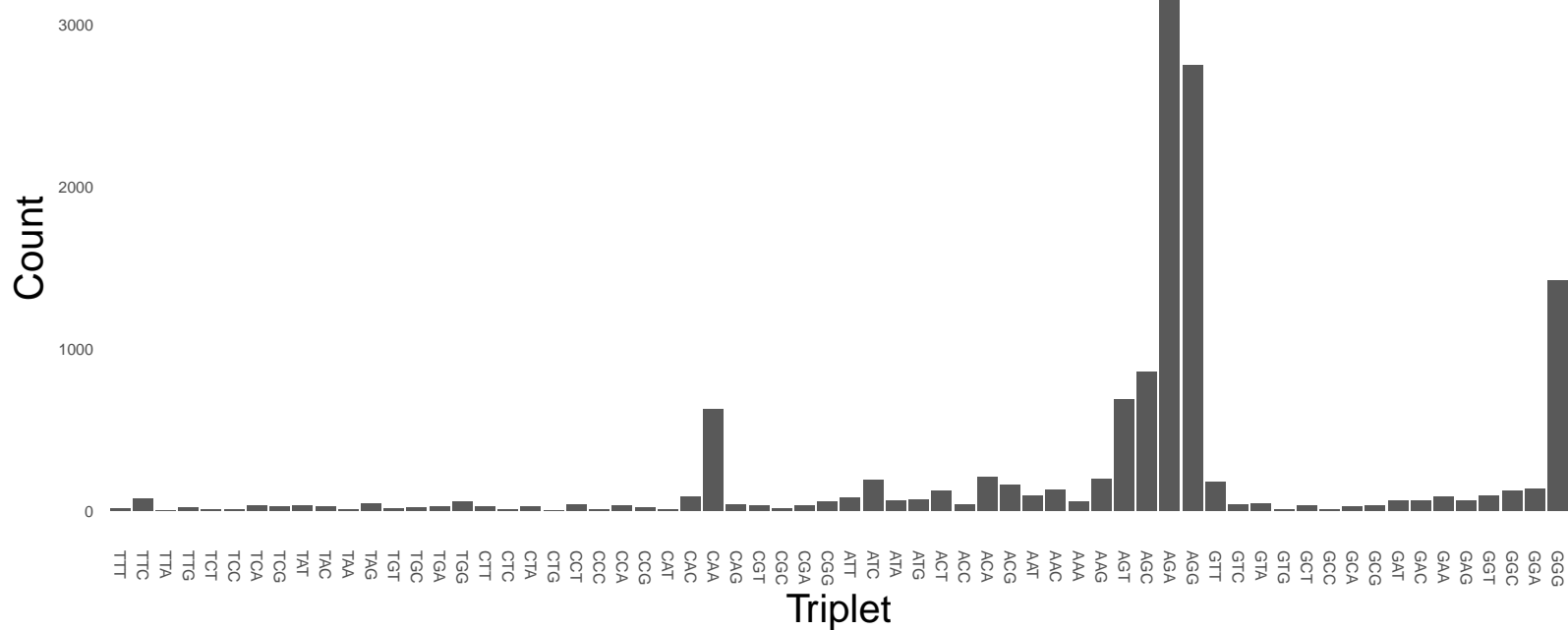
Gene IGHV4-61*02_A234G



IGHV4/OR15–8*01_C193A– Final 3 nucleotides as a triplet

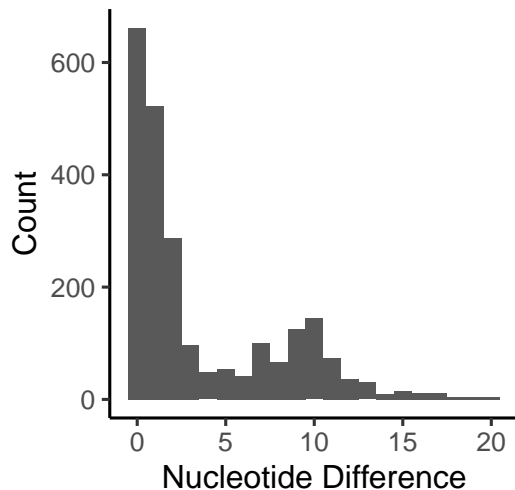


IGHV4–61*02_A234G– Final 3 nucleotides as a triplet



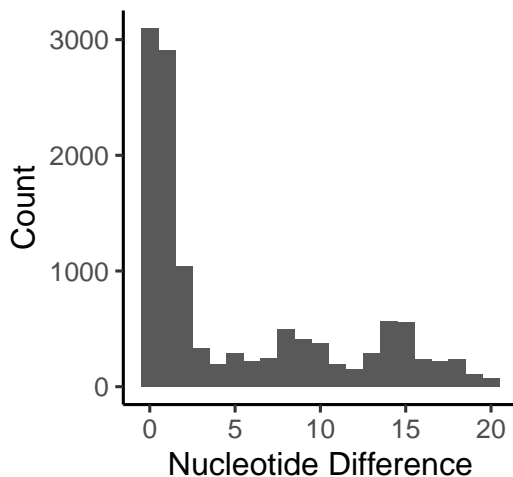
IGHV1-2*04

2531 sequences assigned
662 (26.2%) exact matches, in which:
567 unique CDR3
6 unique J



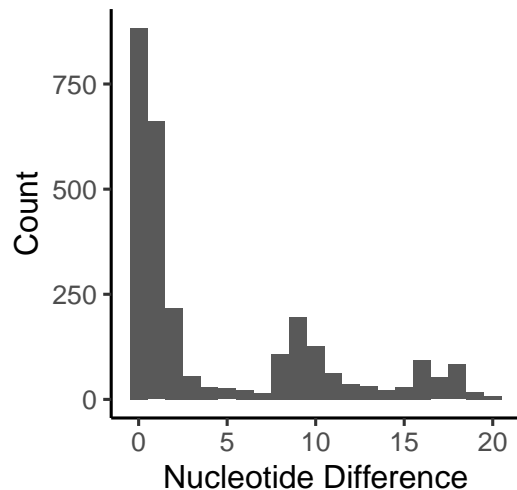
IGHV1-8*01

12911 sequences assigned
3097 (24%) exact matches, in which:
2614 unique CDR3
6 unique J



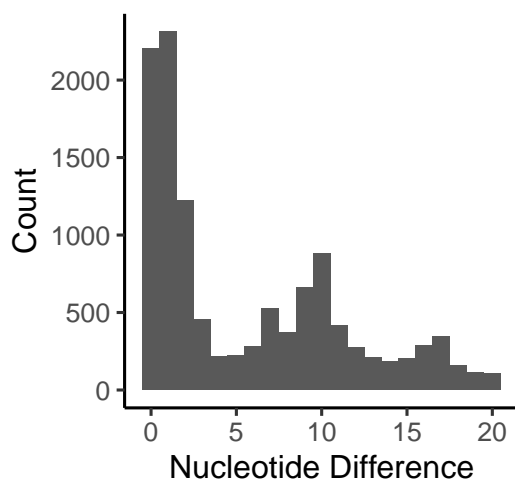
IGHV1-24*01

2808 sequences assigned
884 (31.5%) exact matches, in which:
766 unique CDR3
6 unique J



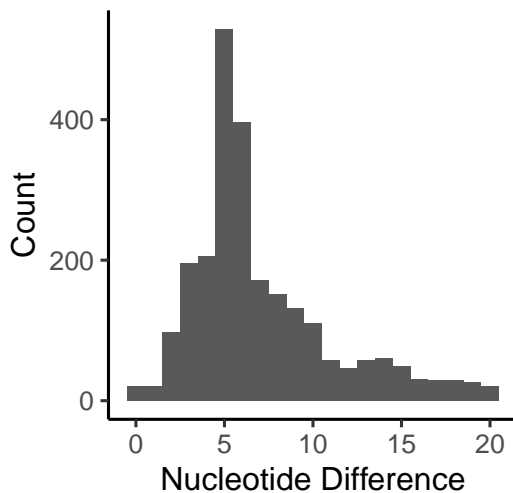
IGHV1-2*06

13040 sequences assigned
2204 (16.9%) exact matches, in which:
1855 unique CDR3
6 unique J



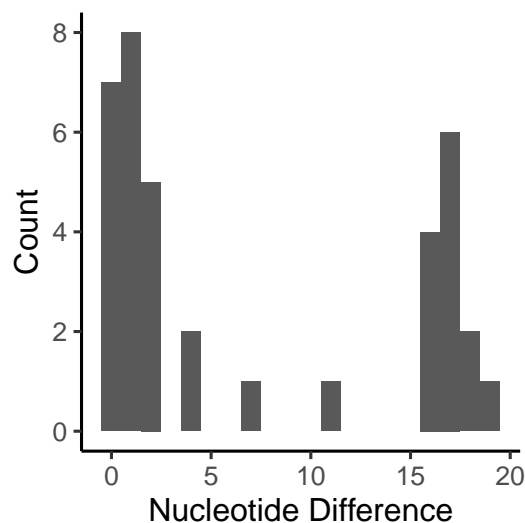
IGHV1-8*02

2530 sequences assigned
21 (0.8%) exact matches, in which:
21 unique CDR3
5 unique J



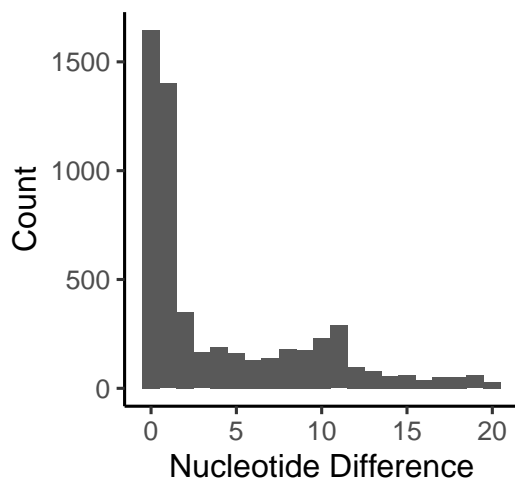
IGHV1-45*02

41 sequences assigned
7 (17.1%) exact matches, in which:
7 unique CDR3
2 unique J



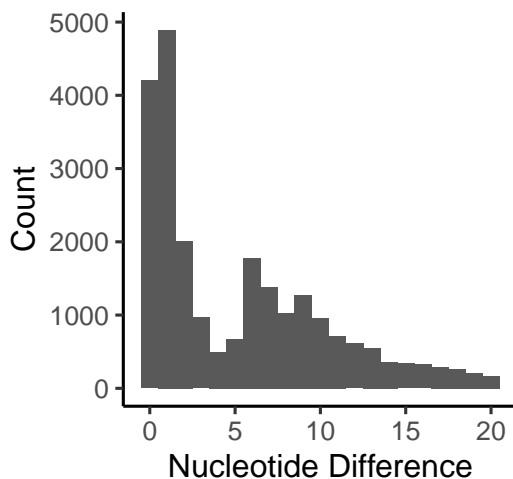
IGHV1-3*01_05

5981 sequences assigned
1646 (27.5%) exact matches, in which:
1318 unique CDR3
6 unique J



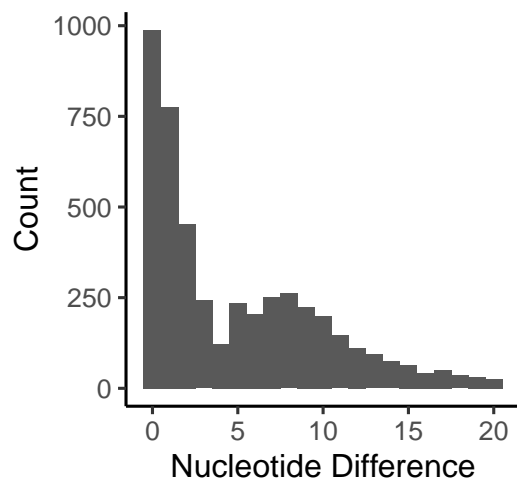
IGHV1-18*01

27582 sequences assigned
4203 (15.2%) exact matches, in which:
3400 unique CDR3
6 unique J



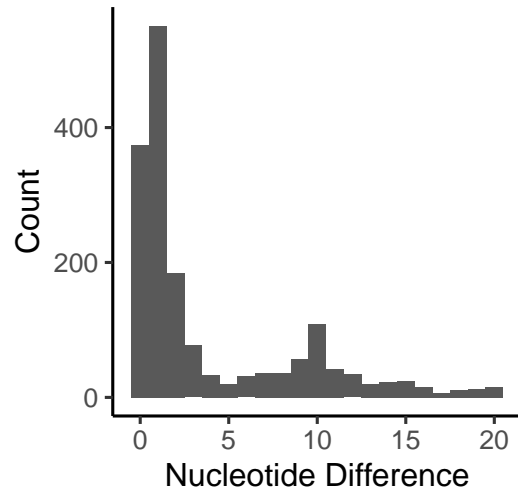
IGHV1-46*01

5434 sequences assigned
988 (18.2%) exact matches, in which:
906 unique CDR3
6 unique J



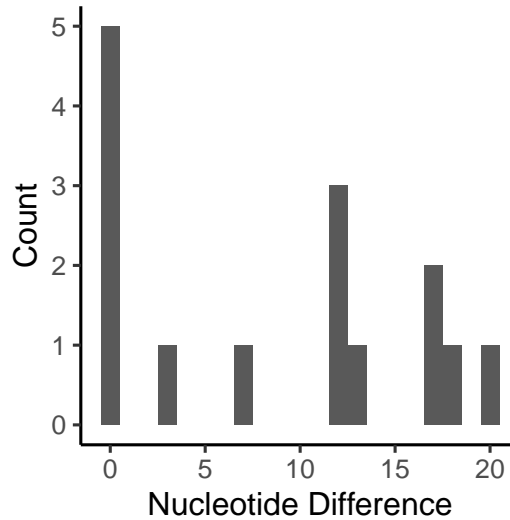
IGHV1-46*03

2092 sequences assigned
374 (17.9%) exact matches, in which:
262 unique CDR3
6 unique J



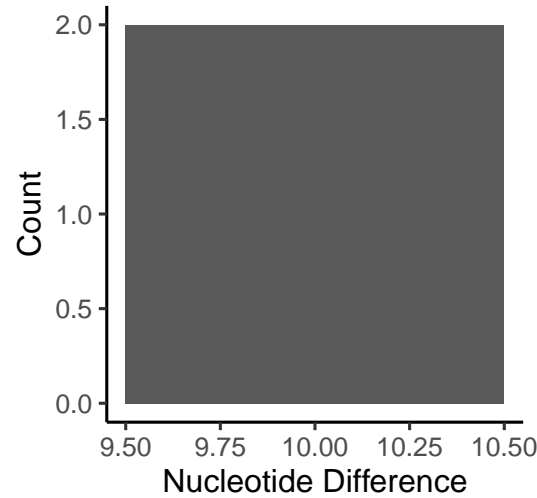
IGHV1-69-2*01

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



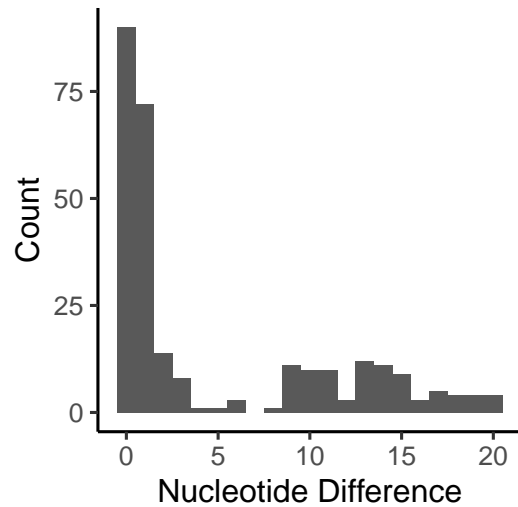
IGHV1-NL1*01

2 sequences assigned
No exact matches.



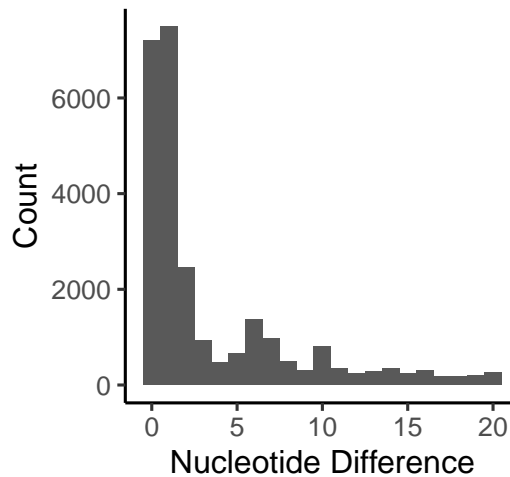
IGHV1-58*02

431 sequences assigned
90 (20.9%) exact matches, in which:
76 unique CDR3
6 unique J



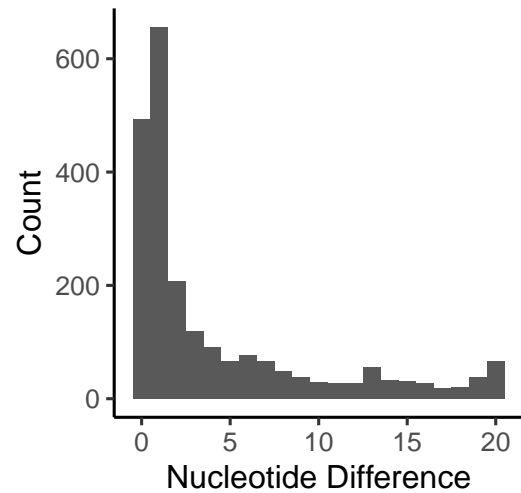
IGHV1-69*01_12_13

28080 sequences assigned
7192 (25.6%) exact matches, in which:
5864 unique CDR3
6 unique J



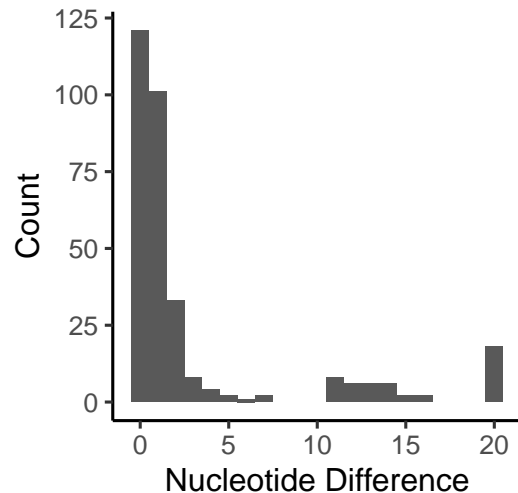
IGHV2-5*02

2814 sequences assigned
493 (17.5%) exact matches, in which:
383 unique CDR3
6 unique J



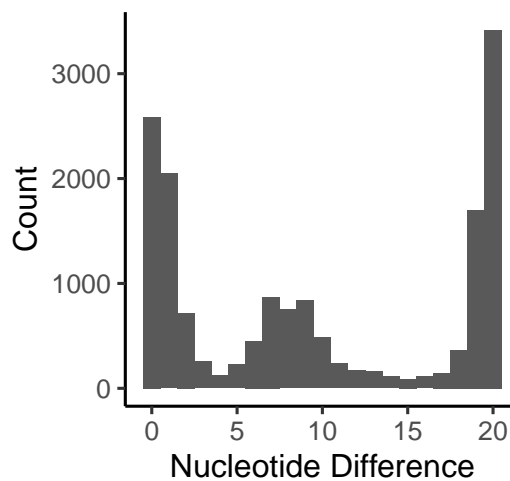
IGHV1-58*01_03

379 sequences assigned
121 (31.9%) exact matches, in which:
109 unique CDR3
5 unique J



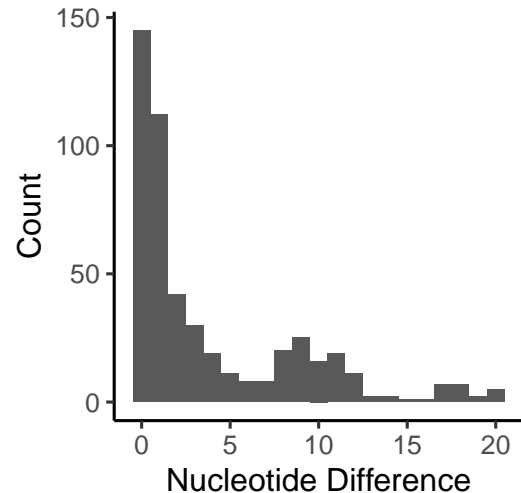
IGHV1-69*06_14

22230 sequences assigned
2589 (11.6%) exact matches, in which:
2280 unique CDR3
6 unique J



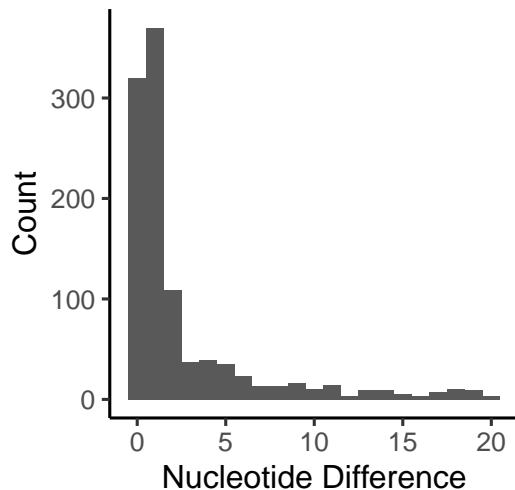
IGHV2-26*01

606 sequences assigned
145 (23.9%) exact matches, in which:
117 unique CDR3
6 unique J



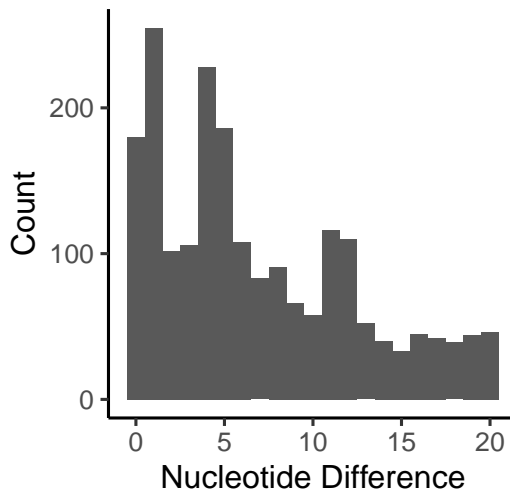
IGHV2-70*01

1102 sequences assigned
320 (29%) exact matches, in which:
237 unique CDR3
6 unique J



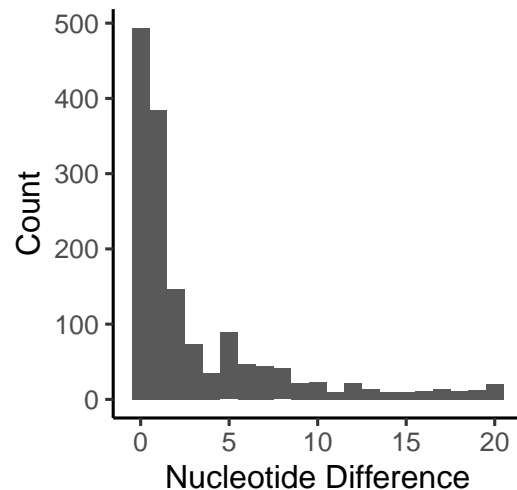
IGHV3-7*03

2521 sequences assigned
180 (7.1%) exact matches, in which:
168 unique CDR3
6 unique J



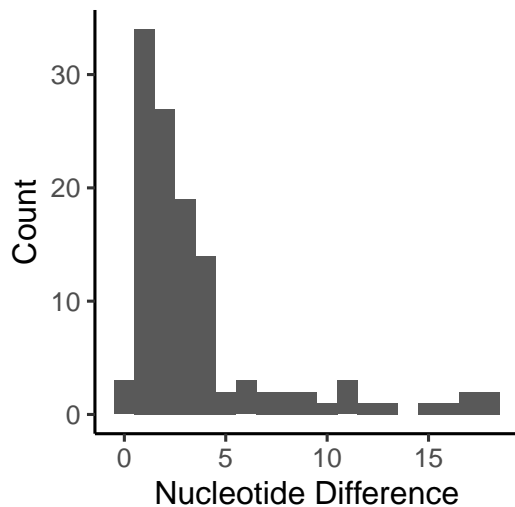
IGHV3-11*04

1681 sequences assigned
494 (29.4%) exact matches, in which:
465 unique CDR3
6 unique J



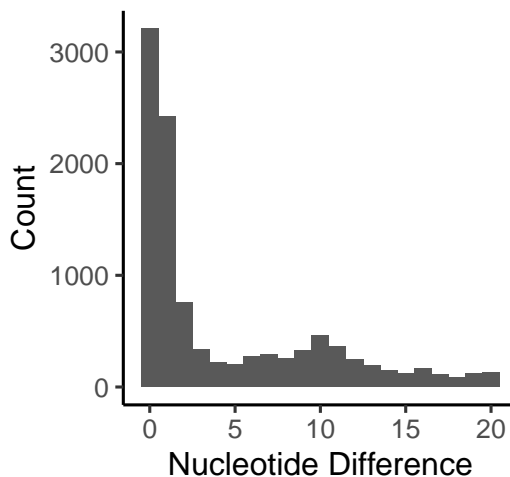
IGHV2-70*12

155 sequences assigned
3 (1.9%) exact matches, in which:
3 unique CDR3
2 unique J



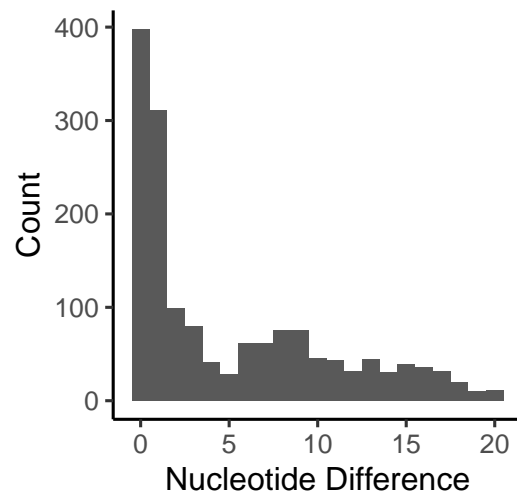
IGHV3-9*01

12583 sequences assigned
3208 (25.5%) exact matches, in which:
1808 unique CDR3
6 unique J



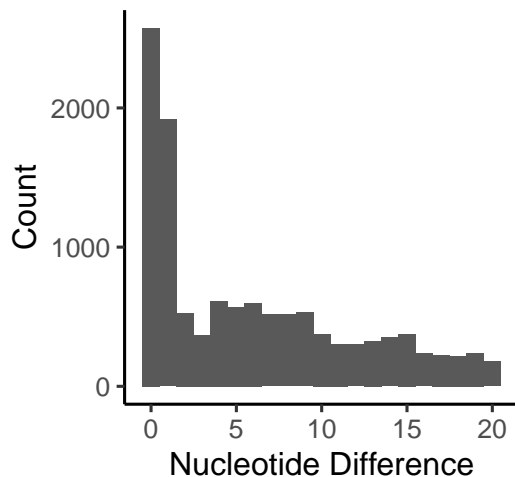
IGHV3-13*01

2221 sequences assigned
398 (17.9%) exact matches, in which:
257 unique CDR3
6 unique J



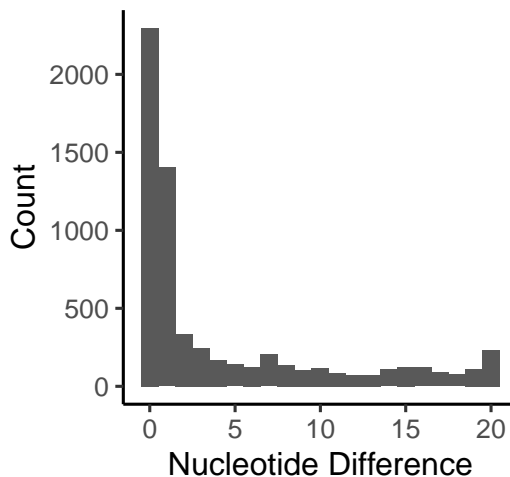
IGHV3-7*01

14212 sequences assigned
2574 (18.1%) exact matches, in which:
1754 unique CDR3
6 unique J



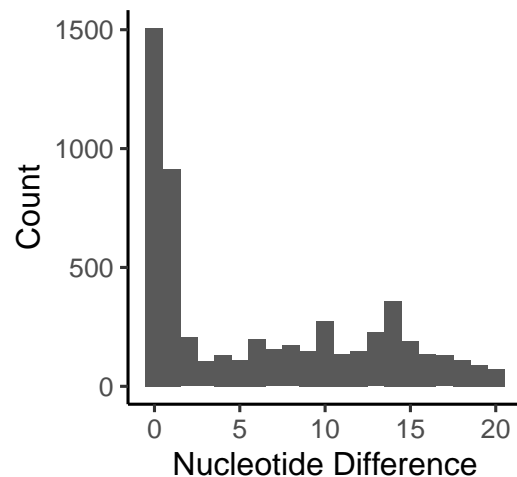
IGHV3-11*01

8733 sequences assigned
2297 (26.3%) exact matches, in which:
1534 unique CDR3
6 unique J



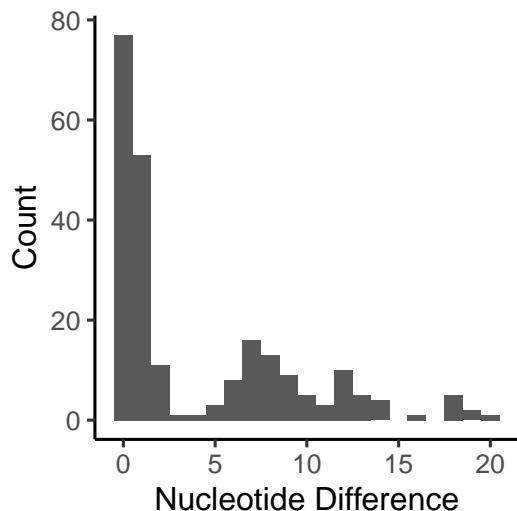
IGHV3-15*01_02

6849 sequences assigned
1507 (22%) exact matches, in which:
887 unique CDR3
6 unique J



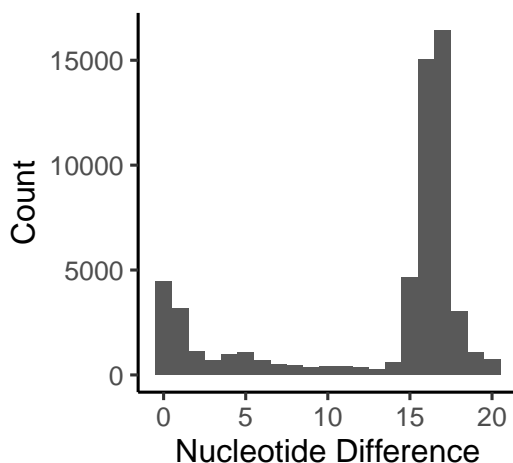
IGHV3-20*01_02

229 sequences assigned
77 (33.6%) exact matches, in which:
47 unique CDR3
5 unique J



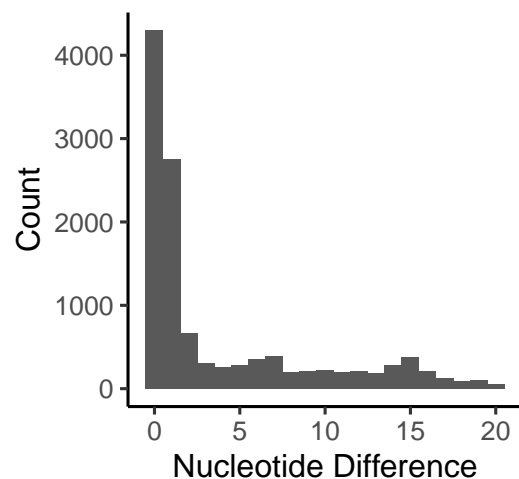
IGHV3-21*01_02

59296 sequences assigned
4451 (7.5%) exact matches, in which:
2837 unique CDR3
6 unique J



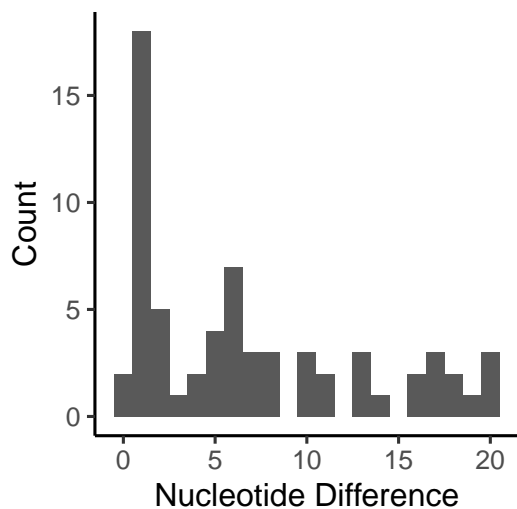
IGHV3-30-3*01

12205 sequences assigned
4298 (35.2%) exact matches, in which:
2691 unique CDR3
6 unique J



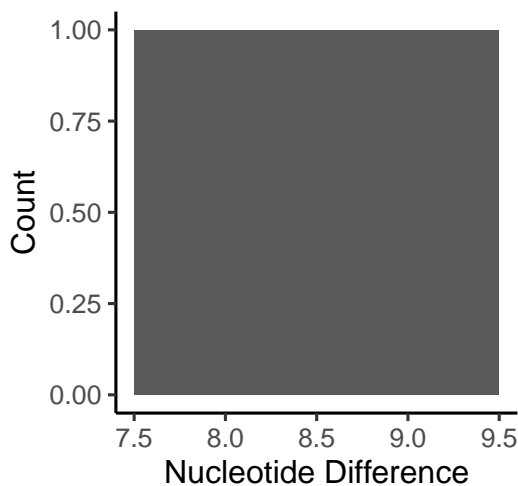
IGHV3-20*03_04

78 sequences assigned
2 (2.6%) exact matches, in which:
2 unique CDR3
1 unique J



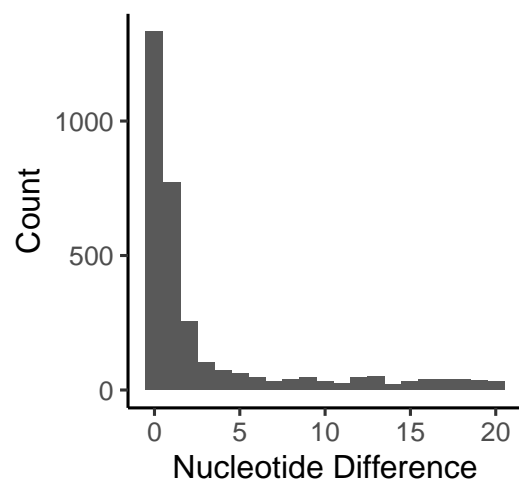
IGHV3-22*01_02

2 sequences assigned
No exact matches.



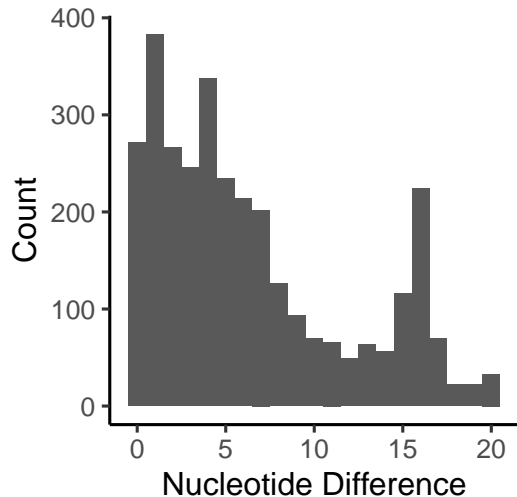
IGHV3-30*03

3499 sequences assigned
1332 (38.1%) exact matches, in which:
1170 unique CDR3
6 unique J



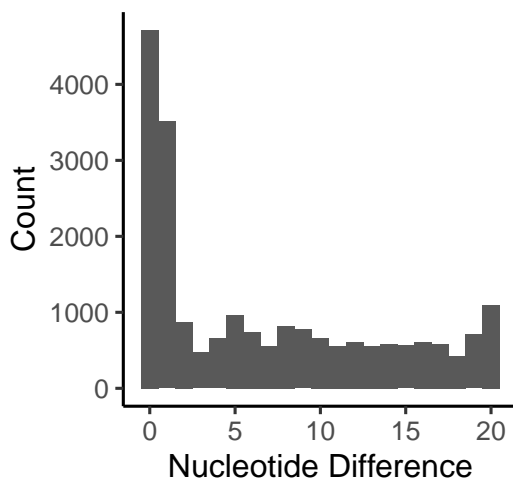
IGHV3-21*04

3484 sequences assigned
272 (7.8%) exact matches, in which:
247 unique CDR3
6 unique J



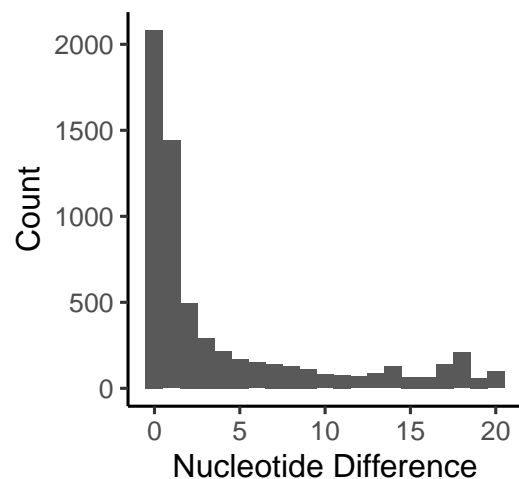
IGHV3-23*01_04

27213 sequences assigned
4715 (17.3%) exact matches, in which:
2653 unique CDR3
6 unique J



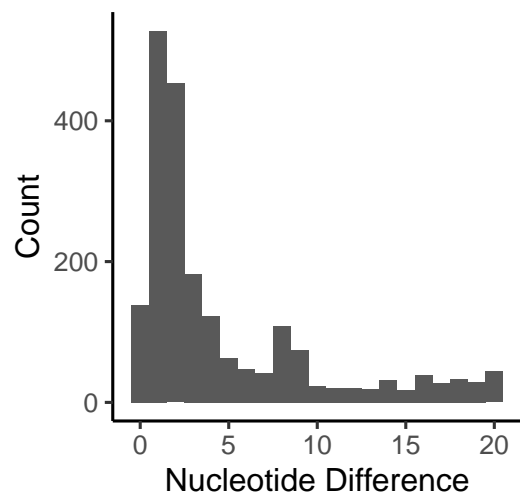
IGHV3-33*01

7879 sequences assigned
2083 (26.4%) exact matches, in which:
1393 unique CDR3
6 unique J



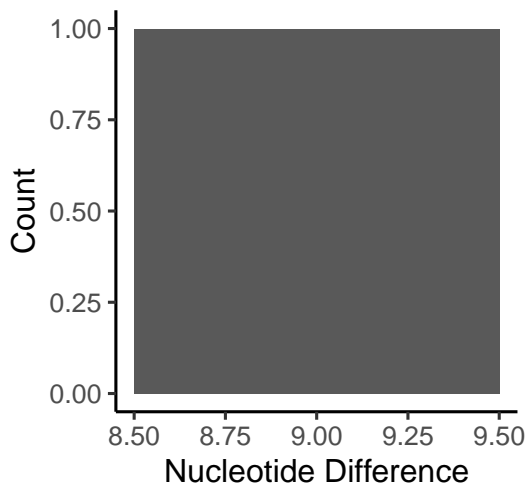
IGHV3-33*06

2306 sequences assigned
138 (6%) exact matches, in which:
134 unique CDR3
6 unique J



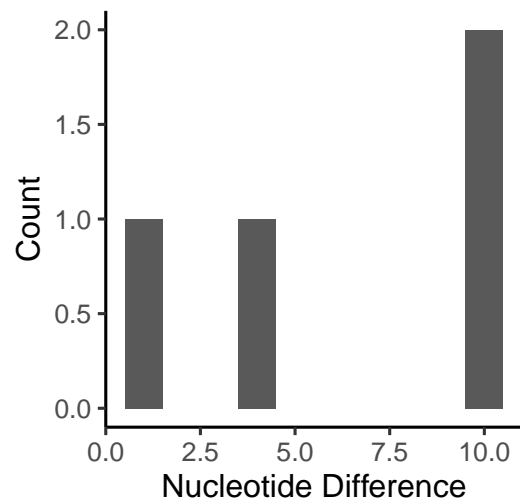
IGHV3-38-3*01

1 sequences assigned
No exact matches.



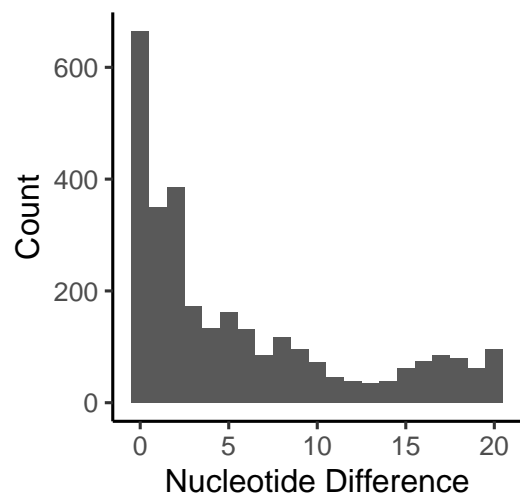
IGHV3-47*02

4 sequences assigned
No exact matches.



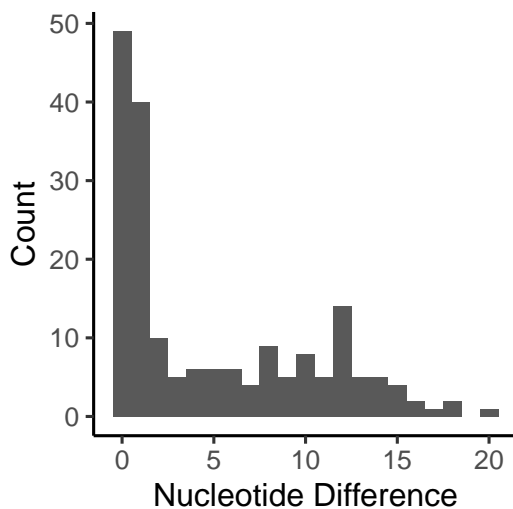
IGHV3-33*08

3848 sequences assigned
665 (17.3%) exact matches, in which:
532 unique CDR3
6 unique J



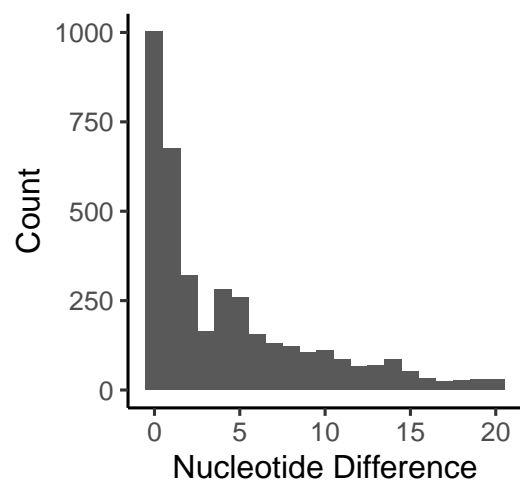
IGHV3-43*01

190 sequences assigned
49 (25.8%) exact matches, in which:
30 unique CDR3
4 unique J



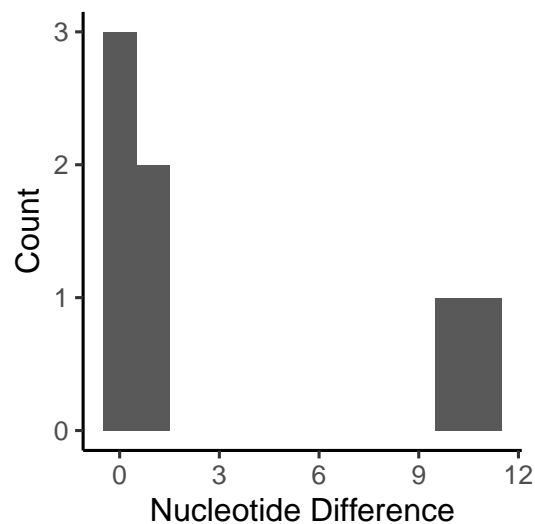
IGHV3-48*01

4467 sequences assigned
1002 (22.4%) exact matches, in which:
674 unique CDR3
6 unique J



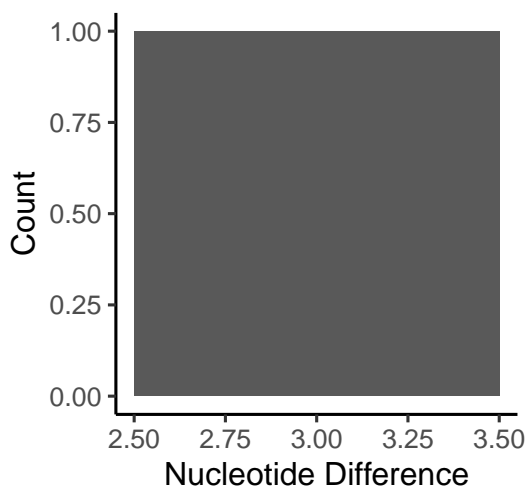
IGHV3-35*01

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



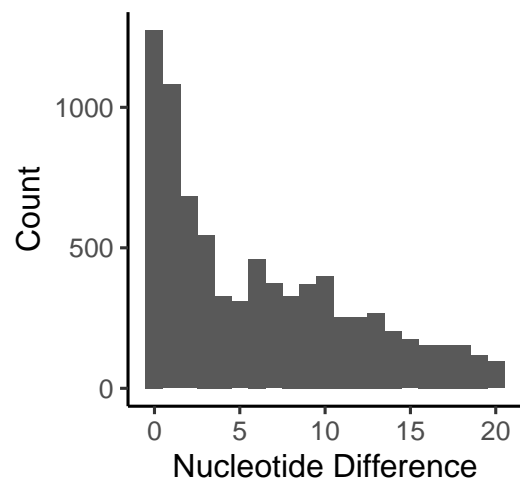
IGHV3-47*01

1 sequences assigned
No exact matches.



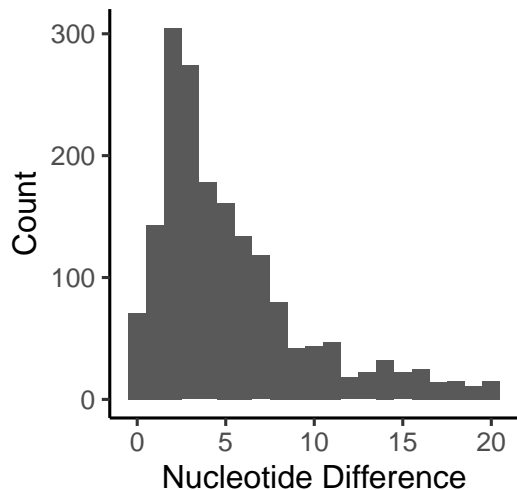
IGHV3-48*03

9815 sequences assigned
1275 (13%) exact matches, in which:
773 unique CDR3
6 unique J



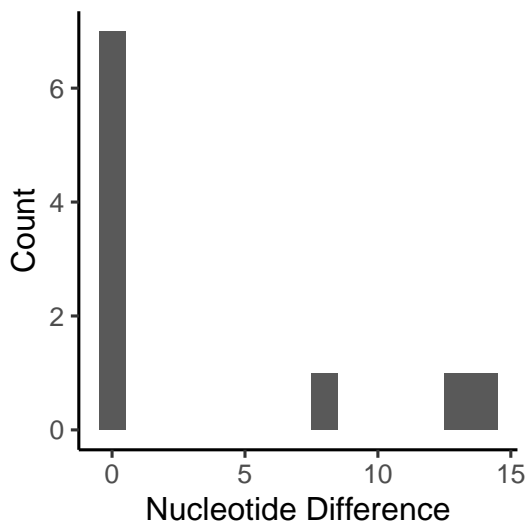
IGHV3-48*04

1937 sequences assigned
71 (3.7%) exact matches, in which:
70 unique CDR3
5 unique J



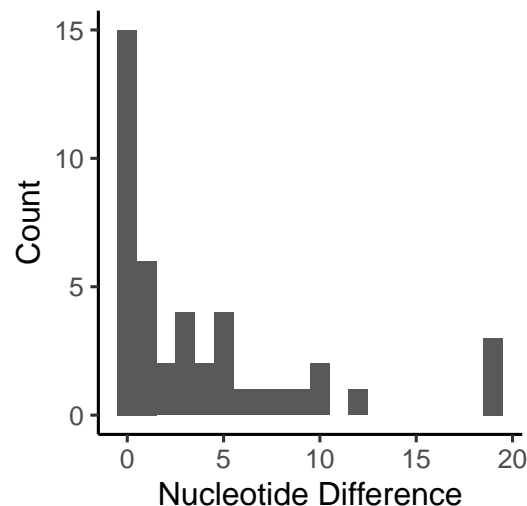
IGHV3-52*02

10 sequences assigned
7 (70%) exact matches, in which:
7 unique CDR3
3 unique J



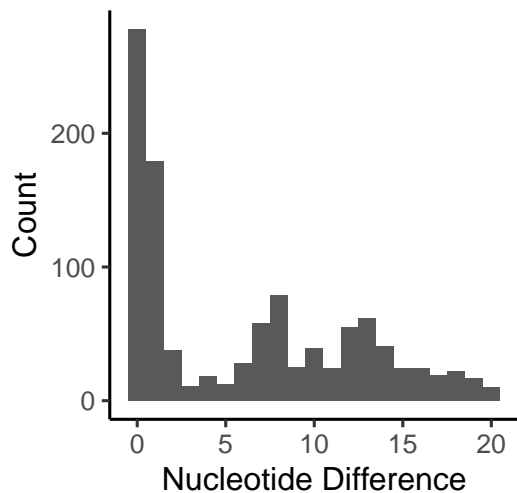
IGHV3-64*02_07

44 sequences assigned
15 (34.1%) exact matches, in which:
14 unique CDR3
4 unique J



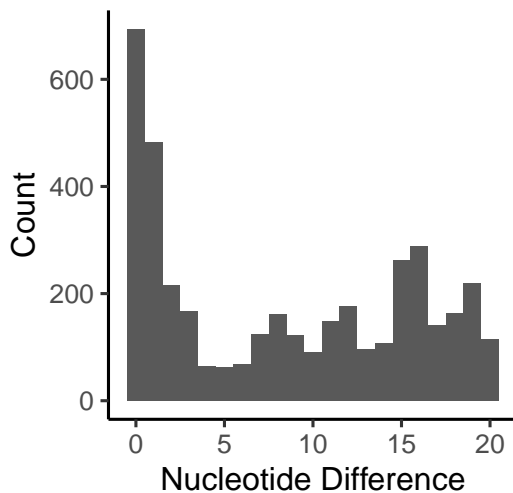
IGHV3-49*04

1283 sequences assigned
278 (21.7%) exact matches, in which:
170 unique CDR3
6 unique J



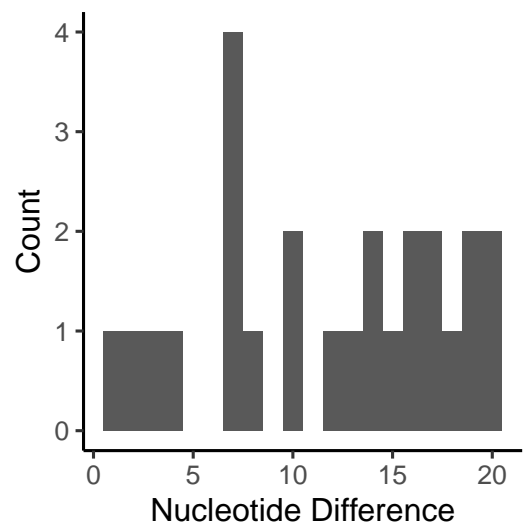
IGHV3-53*01_02

5203 sequences assigned
694 (13.3%) exact matches, in which:
464 unique CDR3
6 unique J



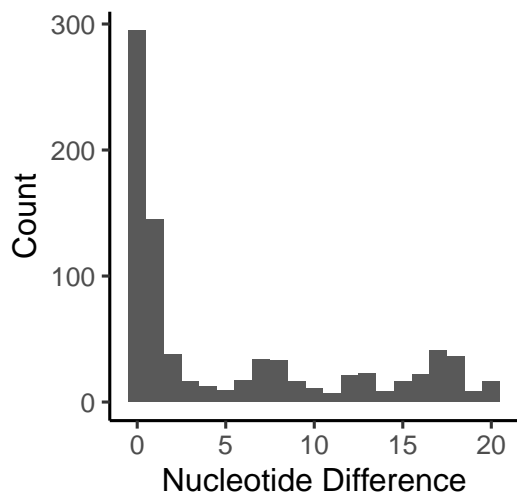
IGHV3-66*01

38 sequences assigned
No exact matches.



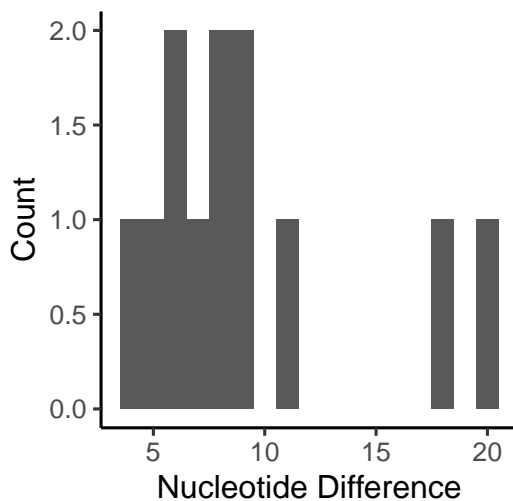
IGHV3-49*03_05

977 sequences assigned
295 (30.2%) exact matches, in which:
194 unique CDR3
6 unique J



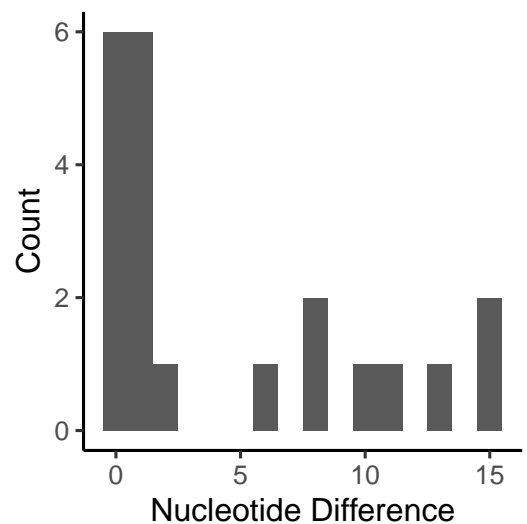
IGHV3-64*04

17 sequences assigned
No exact matches.



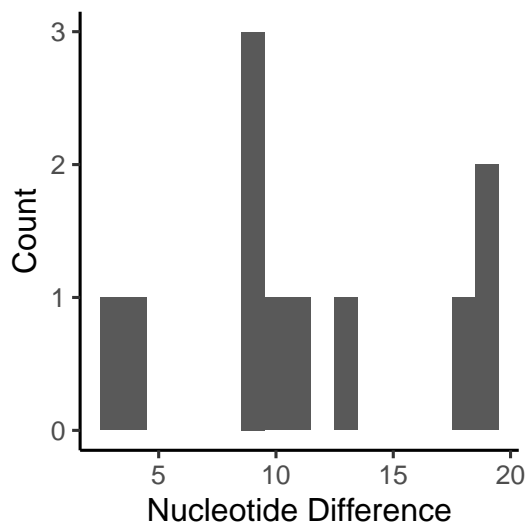
IGHV3-66*03

22 sequences assigned
6 (27.3%) exact matches, in which:
4 unique CDR3
2 unique J



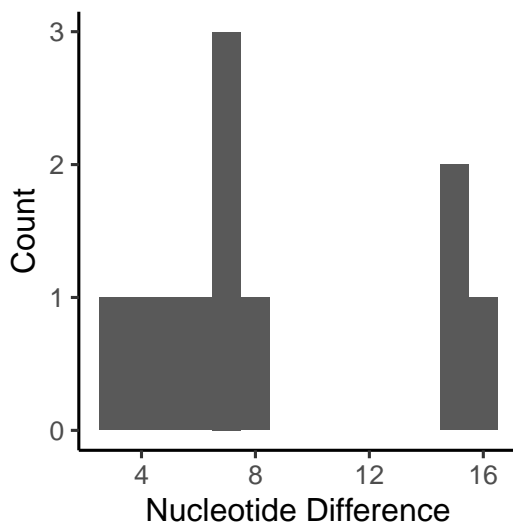
IGHV3-66*04

13 sequences assigned
No exact matches.



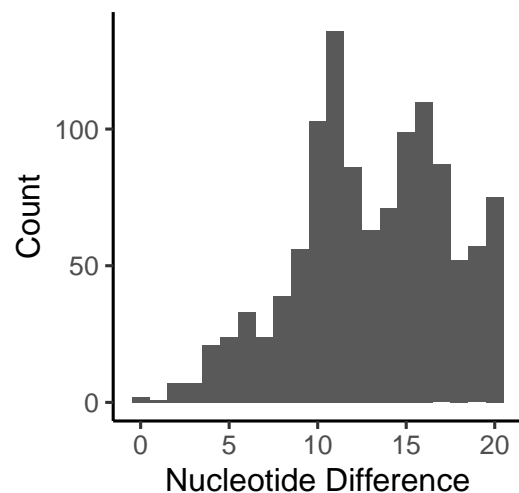
IGHV3-71*01_04

12 sequences assigned
No exact matches.



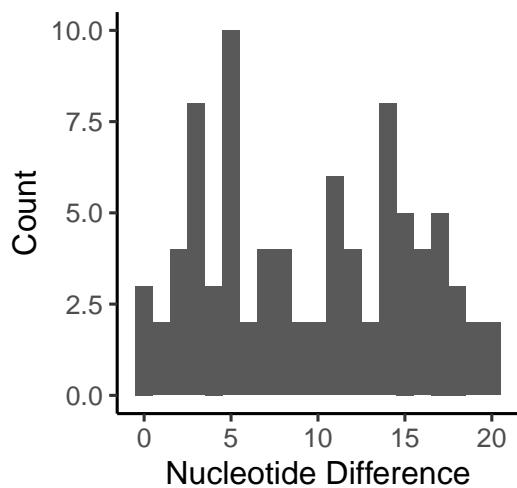
IGHV3-74*03

4137 sequences assigned
2 (0%) exact matches, in which:
2 unique CDR3
2 unique J



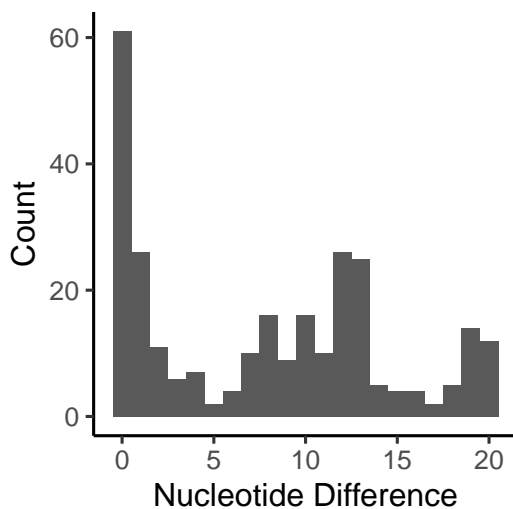
IGHV3-69-1*01

104 sequences assigned
3 (2.9%) exact matches, in which:
3 unique CDR3
2 unique J



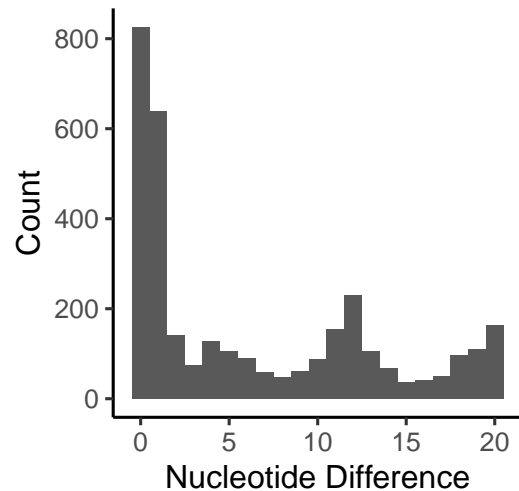
IGHV3-72*01

762 sequences assigned
61 (8%) exact matches, in which:
38 unique CDR3
6 unique J



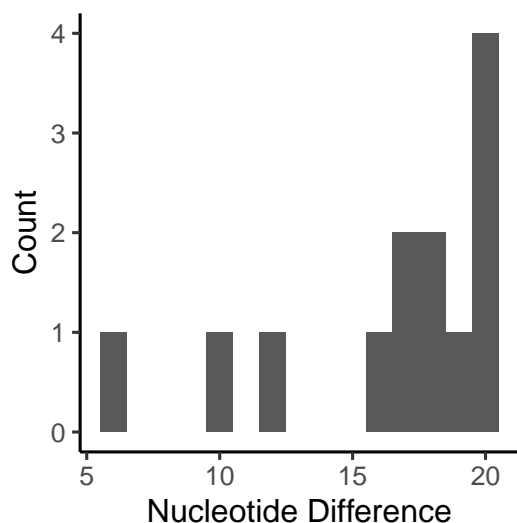
IGHV3-74*01_02

4195 sequences assigned
826 (19.7%) exact matches, in which:
526 unique CDR3
6 unique J



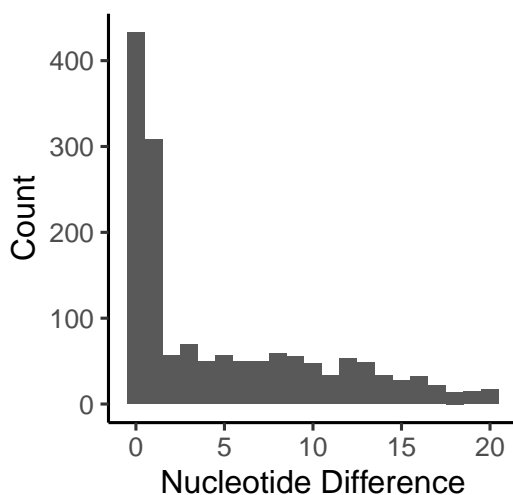
IGHV3-69-1*02

407 sequences assigned
No exact matches.



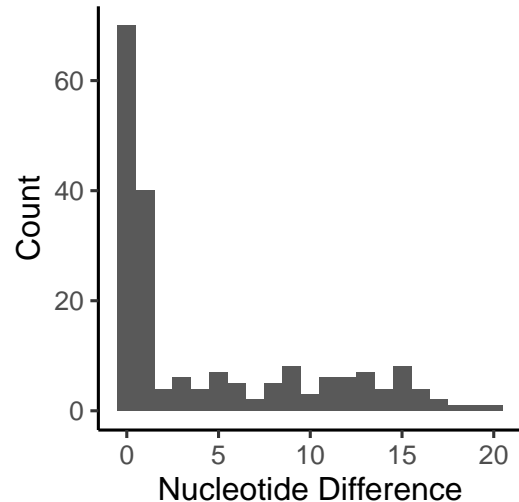
IGHV3-73*01_02

1569 sequences assigned
433 (27.6%) exact matches, in which:
277 unique CDR3
5 unique J



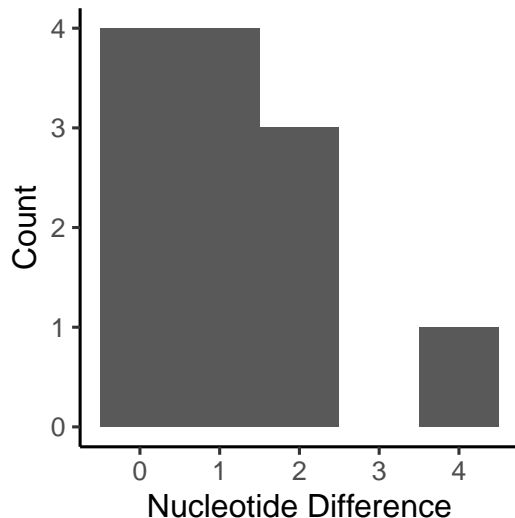
IGHV3-43D*04

204 sequences assigned
70 (34.3%) exact matches, in which:
39 unique CDR3
5 unique J



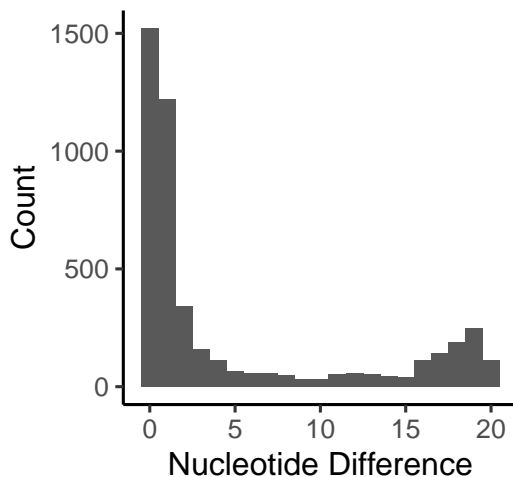
IGHV3-64D*06

13 sequences assigned
4 (30.8%) exact matches, in which:
2 unique CDR3
1 unique J



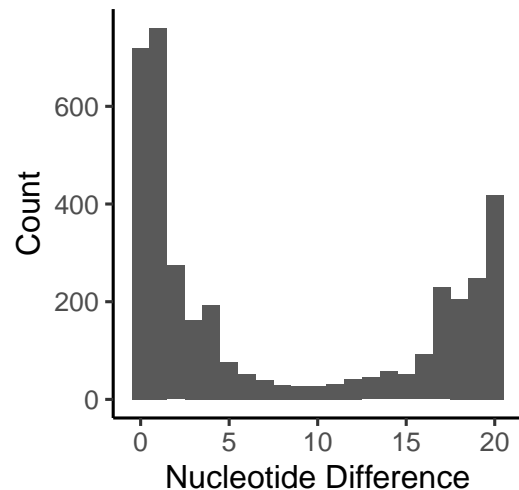
IGHV4-4*02_03

5248 sequences assigned
1521 (29%) exact matches, in which:
1220 unique CDR3
6 unique J



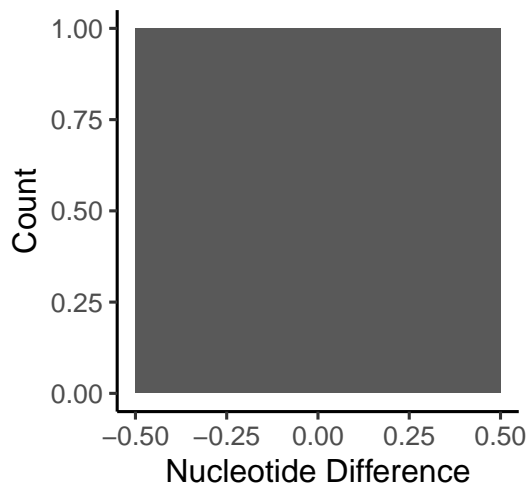
IGHV4-30-4*01

4426 sequences assigned
720 (16.3%) exact matches, in which:
574 unique CDR3
6 unique J



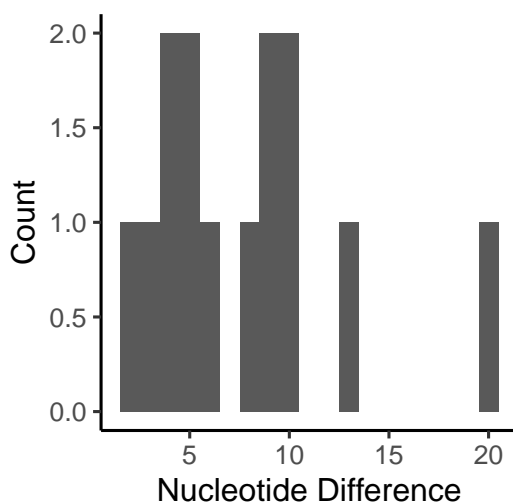
IGHV3-64D*08

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



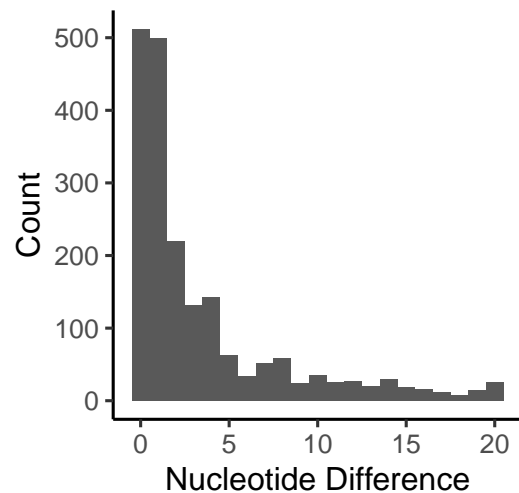
IGHV4-28*03

23 sequences assigned
No exact matches.



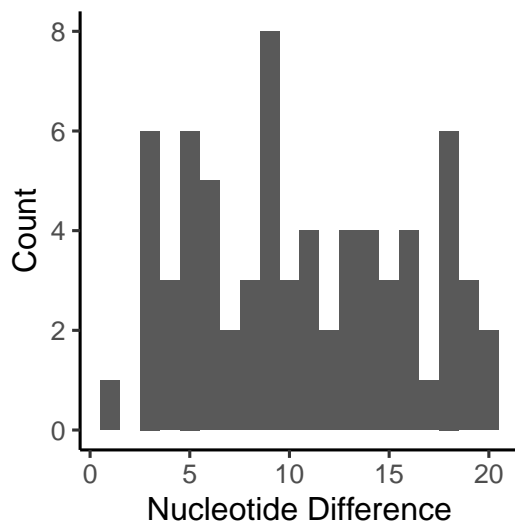
IGHV4-30-2*01

2350 sequences assigned
512 (21.8%) exact matches, in which:
297 unique CDR3
6 unique J



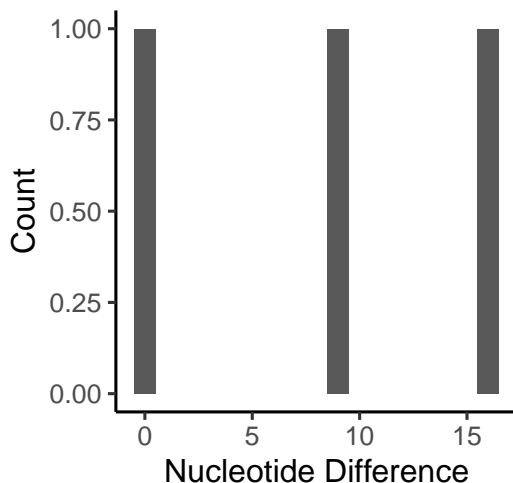
IGHV3-NL1*01

143 sequences assigned
No exact matches.



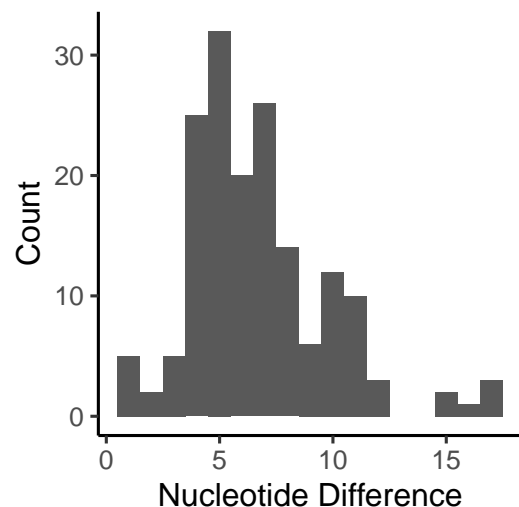
IGHV4-28*01_07

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



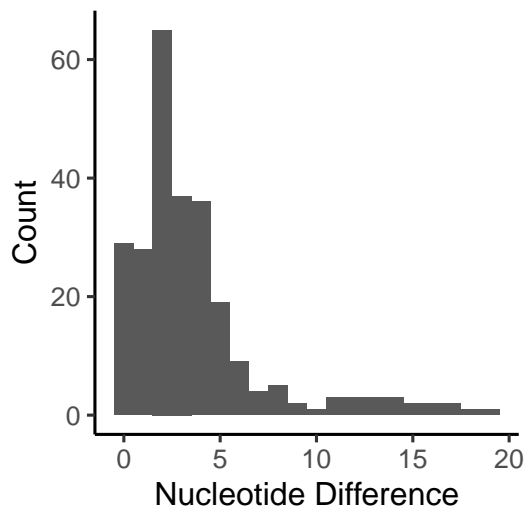
IGHV4-30-2*03

194 sequences assigned
No exact matches.



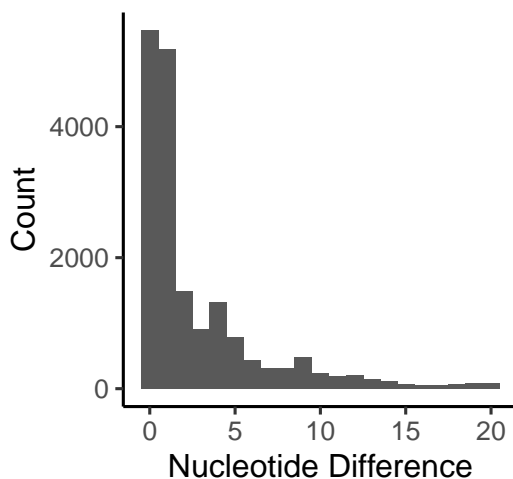
IGHV4-30-2*05

264 sequences assigned
29 (11%) exact matches, in which:
29 unique CDR3
4 unique J



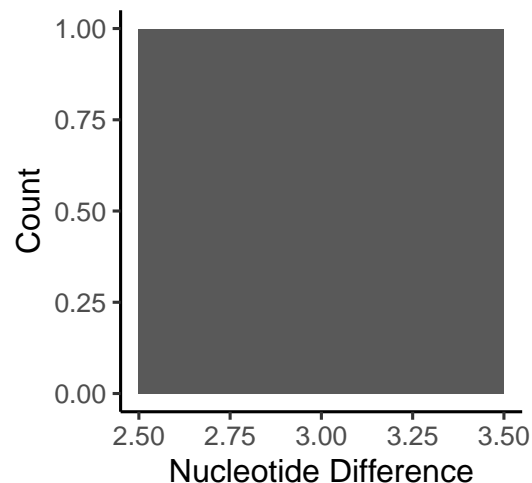
IGHV4-34*01_02

19665 sequences assigned
5469 (27.8%) exact matches, in which:
4058 unique CDR3
6 unique J



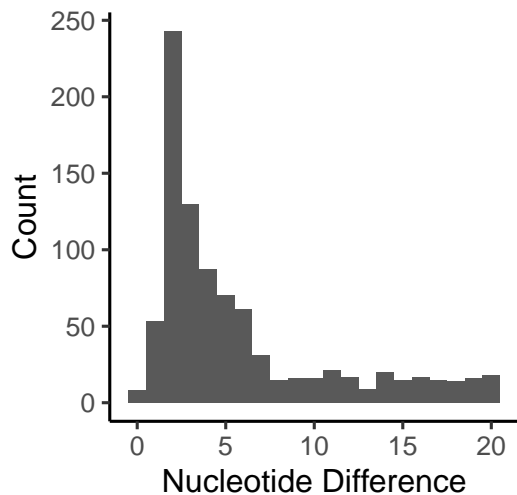
IGHV4-55*09

1 sequences assigned
No exact matches.



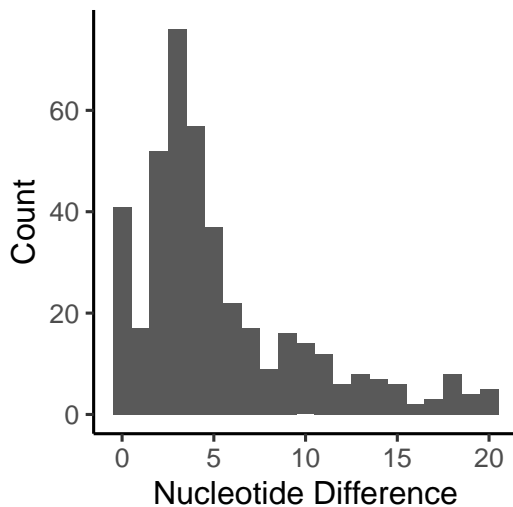
IGHV4-30-4*08

986 sequences assigned
8 (0.8%) exact matches, in which:
8 unique CDR3
4 unique J



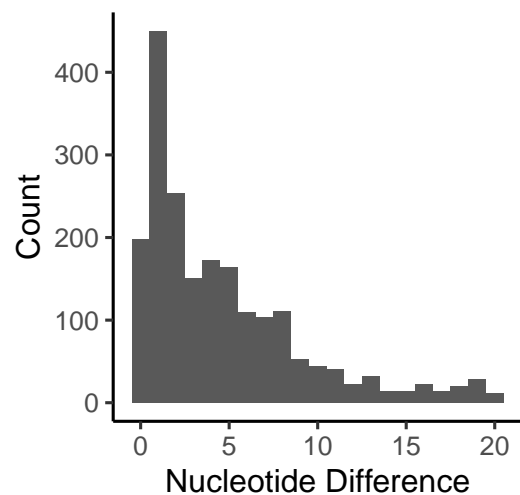
IGHV4-38-2*02

622 sequences assigned
41 (6.6%) exact matches, in which:
40 unique CDR3
5 unique J



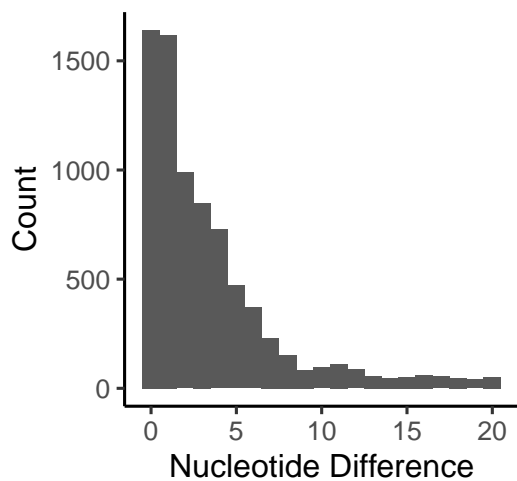
IGHV4-59*08

2319 sequences assigned
198 (8.5%) exact matches, in which:
191 unique CDR3
6 unique J



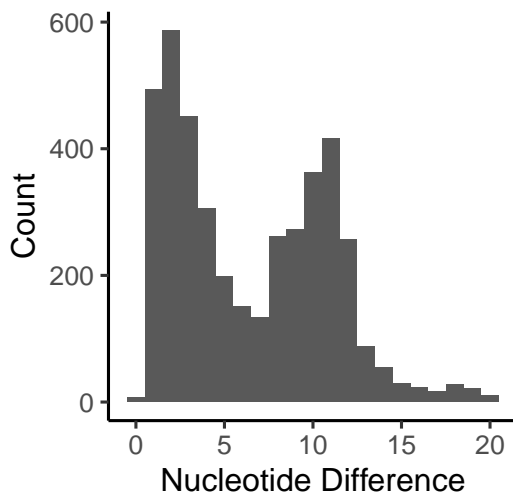
IGHV4-31*02

9293 sequences assigned
1641 (17.7%) exact matches, in which:
1367 unique CDR3
6 unique J



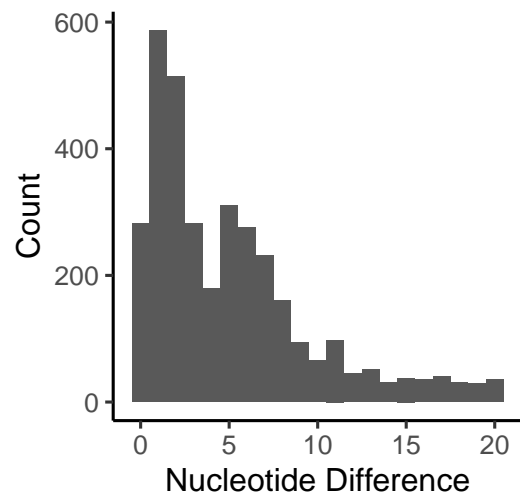
IGHV4-39*07

4548 sequences assigned
7 (0.2%) exact matches, in which:
7 unique CDR3
3 unique J



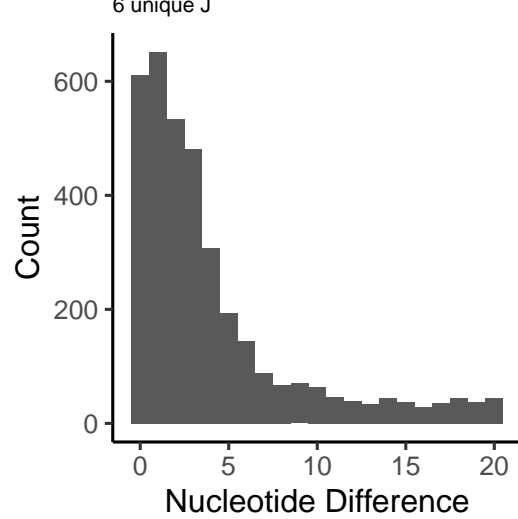
IGHV4-59*12

4423 sequences assigned
282 (6.4%) exact matches, in which:
276 unique CDR3
5 unique J



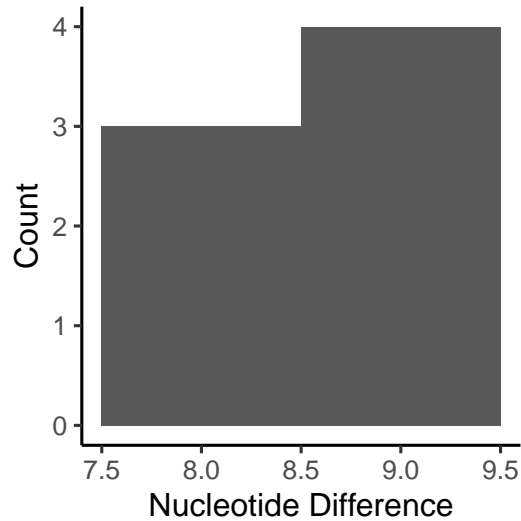
IGHV4-61*01

4278 sequences assigned
611 (14.3%) exact matches, in which:
569 unique CDR3
6 unique J



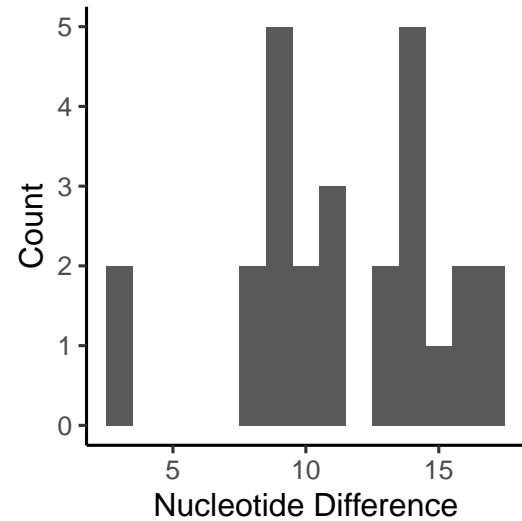
IGHV1/OR15-1*02

7 sequences assigned
No exact matches.



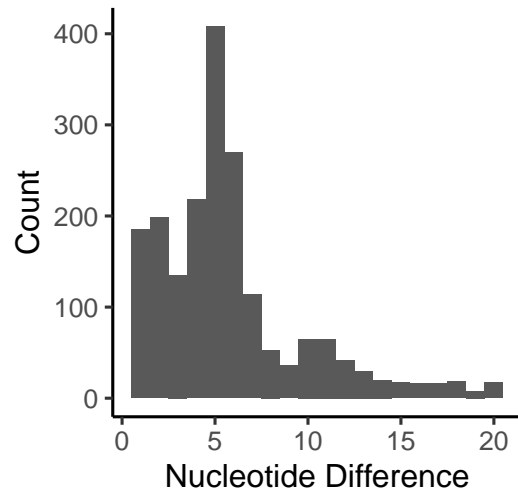
IGHV1/OR15-3*02

30 sequences assigned
No exact matches.



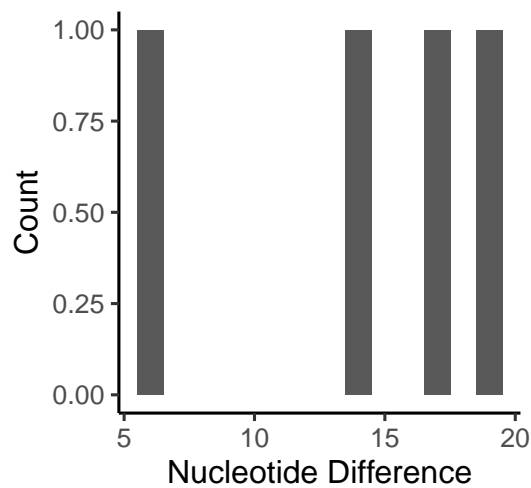
IGHV4-61*08

2254 sequences assigned
No exact matches.



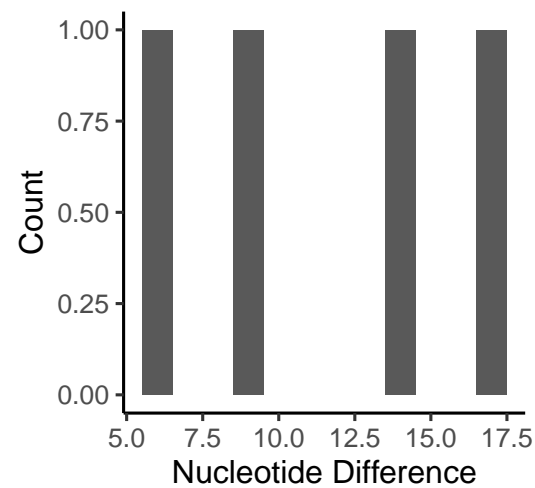
IGHV1/OR15-1*04

7 sequences assigned
No exact matches.



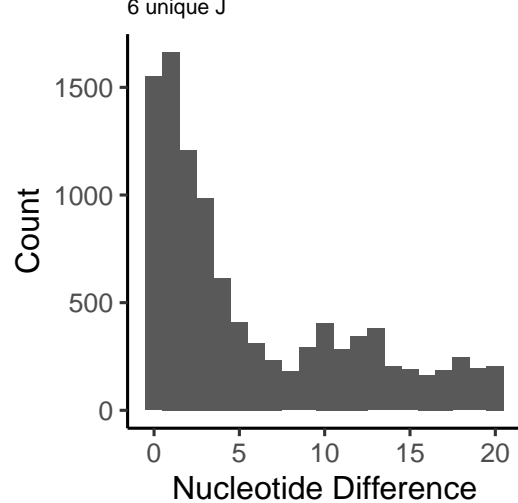
IGHV1/OR15-4*01

5 sequences assigned
No exact matches.



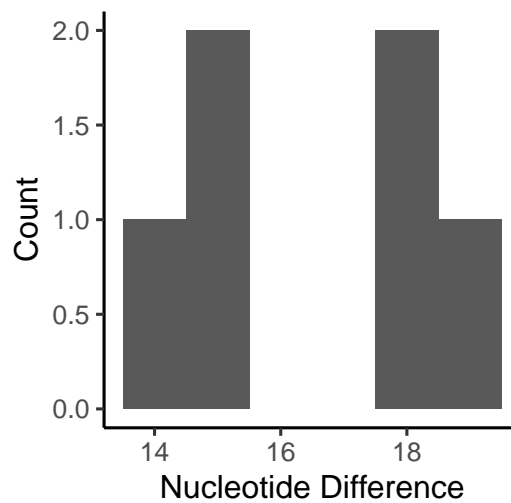
IGHV4-61*02_A234G

12894 sequences assigned
1550 (12%) exact matches, in which:
1301 unique CDR3
6 unique J



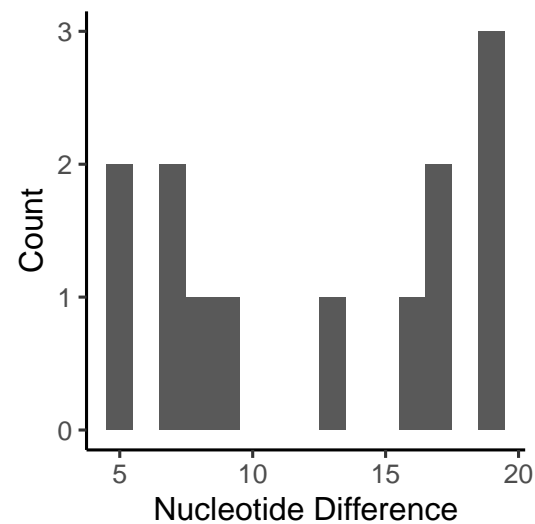
IGHV1/OR15-2*02_03

15 sequences assigned
No exact matches.



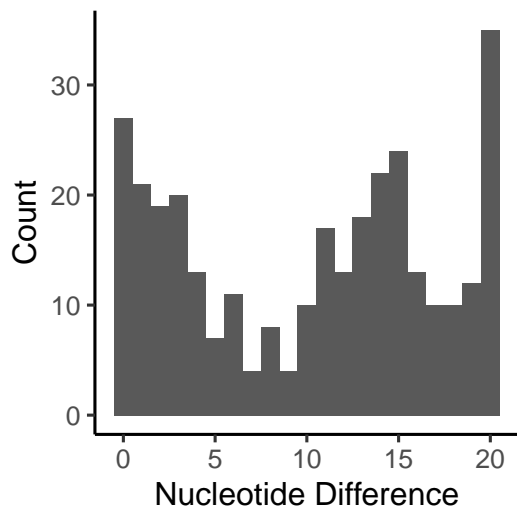
IGHV4/OR15-8*02

41 sequences assigned
No exact matches.



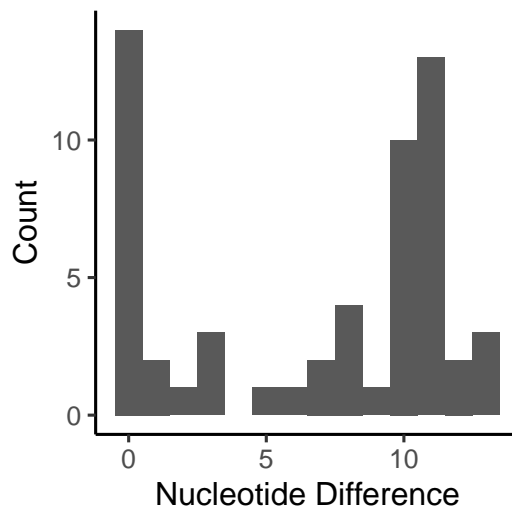
IGHV4/OR15–8*01_C193/

447 sequences assigned
27 (6%) exact matches, in which:
22 unique CDR3
5 unique J



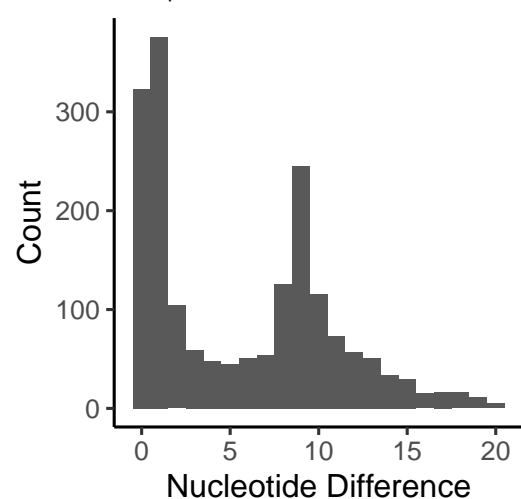
IGHV5–51*06

59 sequences assigned
14 (23.7%) exact matches, in which:
14 unique CDR3
4 unique J



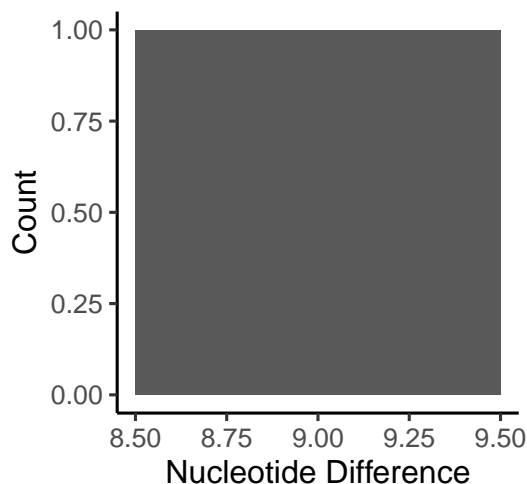
IGHV6–1*01_02

2376 sequences assigned
323 (13.6%) exact matches, in which:
254 unique CDR3
6 unique J



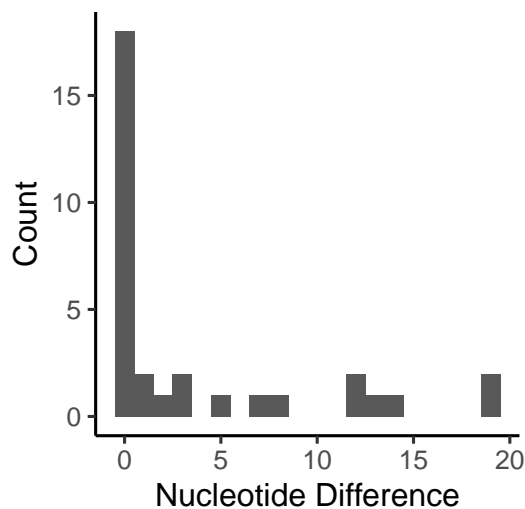
IGHV5–10–1*01_03

1 sequences assigned
No exact matches.



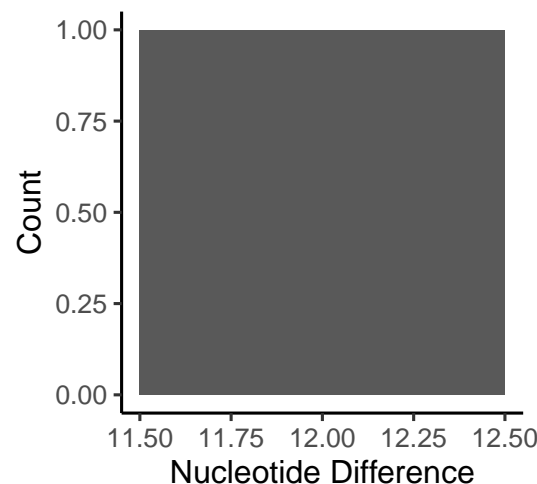
IGHV5–51*07

37 sequences assigned
18 (48.6%) exact matches, in which:
18 unique CDR3
4 unique J



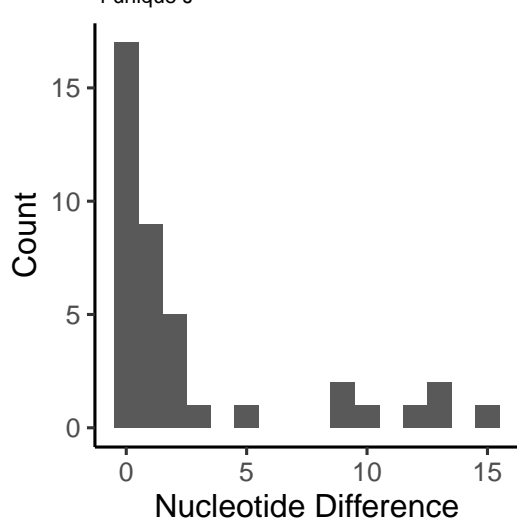
IGHV3/OR16–6*02

2 sequences assigned
No exact matches.



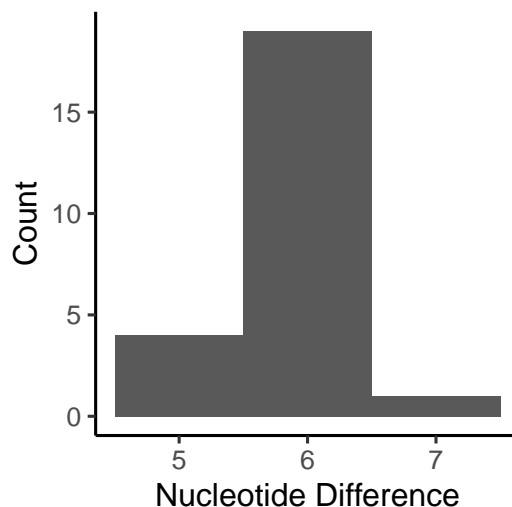
IGHV5–51*04

45 sequences assigned
17 (37.8%) exact matches, in which:
17 unique CDR3
4 unique J



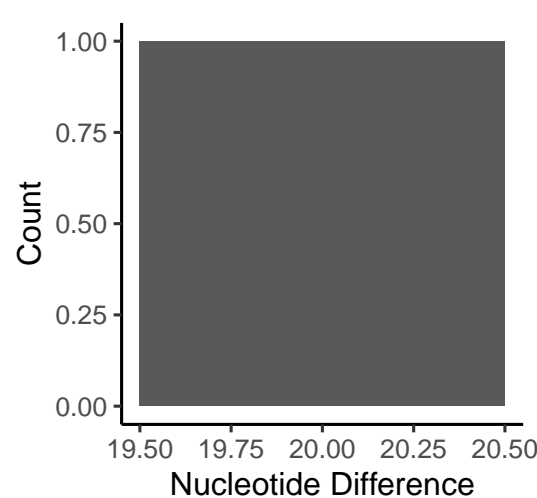
IGHV5–78*01

25 sequences assigned
No exact matches.



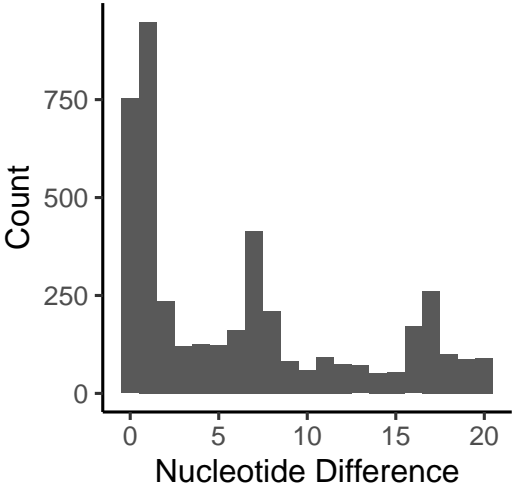
IGHV3/OR16–10*01_03

4 sequences assigned
No exact matches.



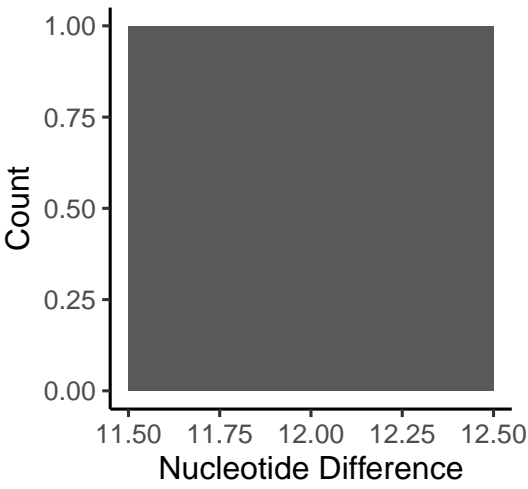
IGHV7-4-1*02

8075 sequences assigned
753 (9.3%) exact matches, in which:
576 unique CDR3
6 unique J

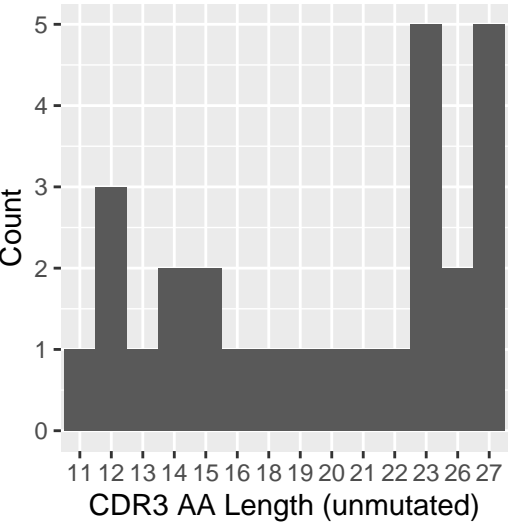


IGHV7-81*01

1 sequences assigned
No exact matches.



IGHV4/OR15-8*01_C193A



IGHV4-61*02_A234G

