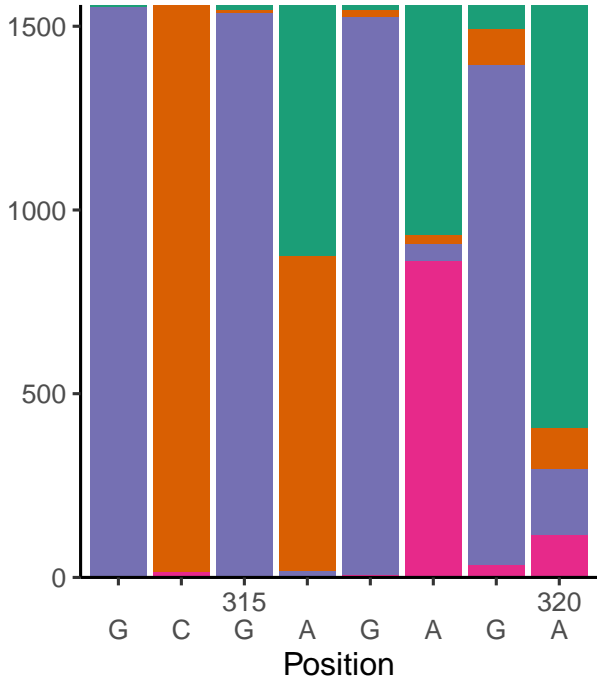
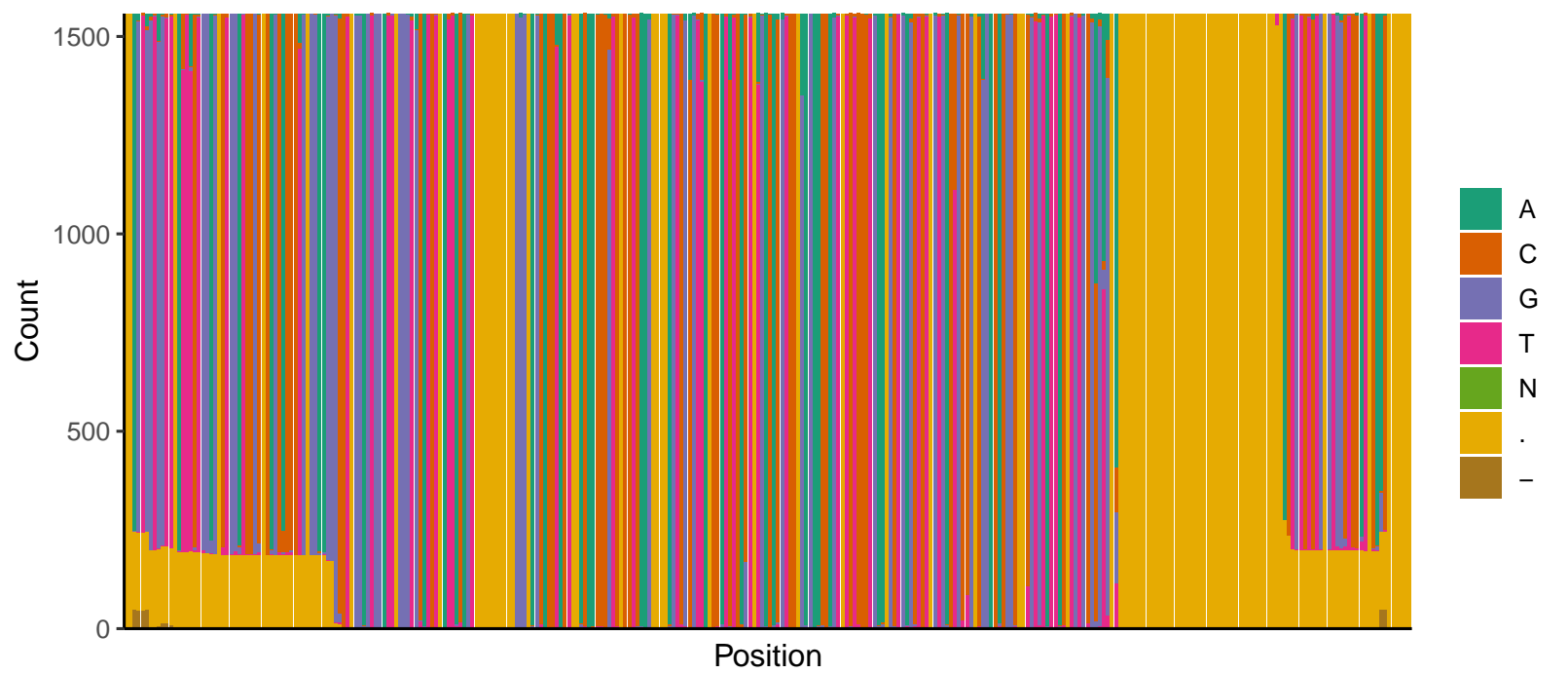


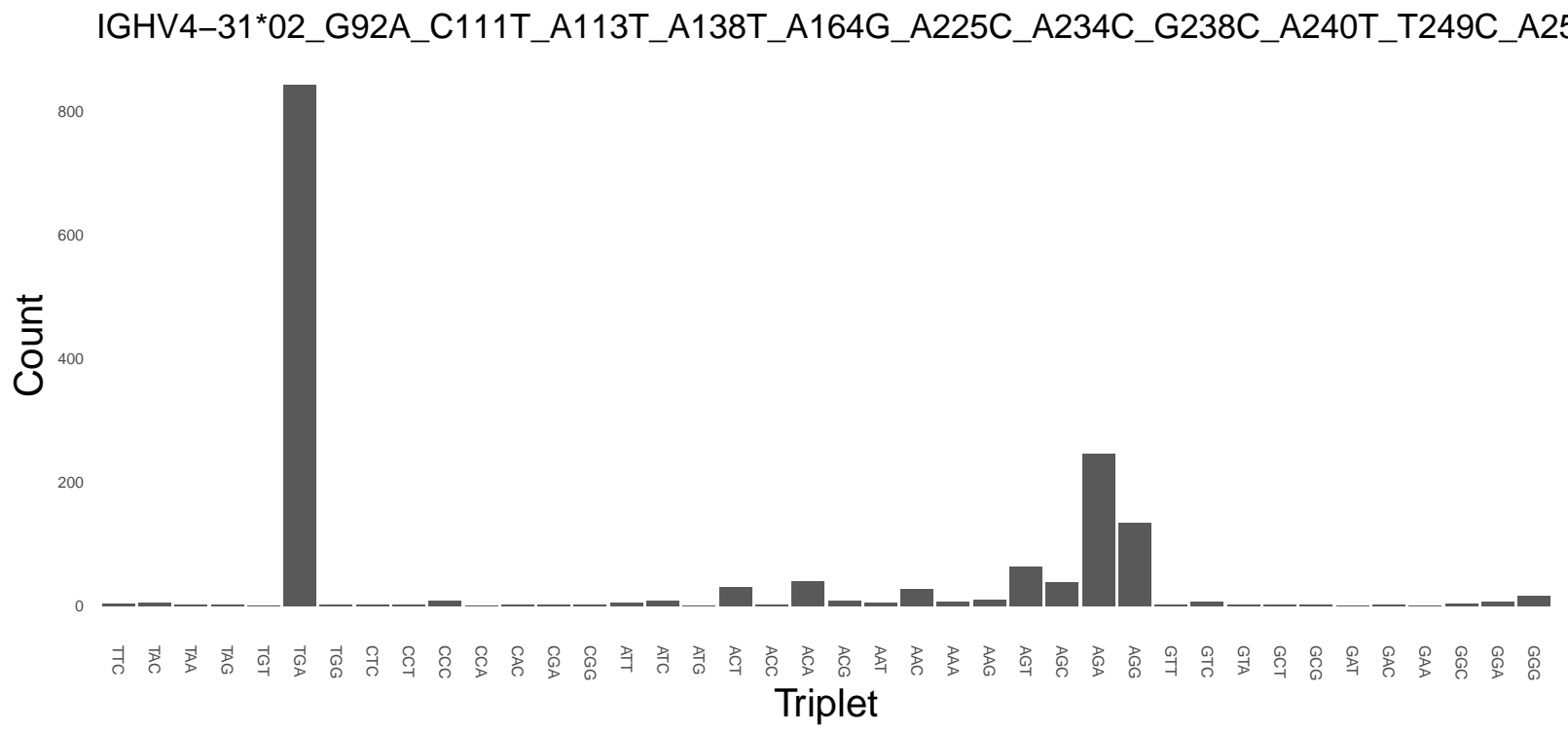
Gene IGHV4-31*02_G92A_C111T_A113T_A138T_A164G_A225C_A234C_G238C_A240

Count



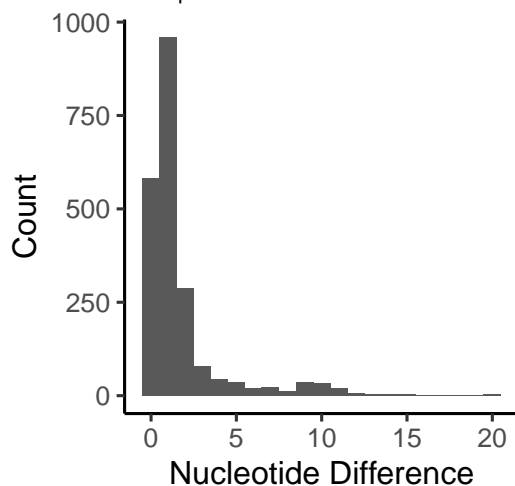
Gene IGHV4-31*02_G92A_C111T_A113T_A138T_A164G_A225C_A234C_G238C_A240





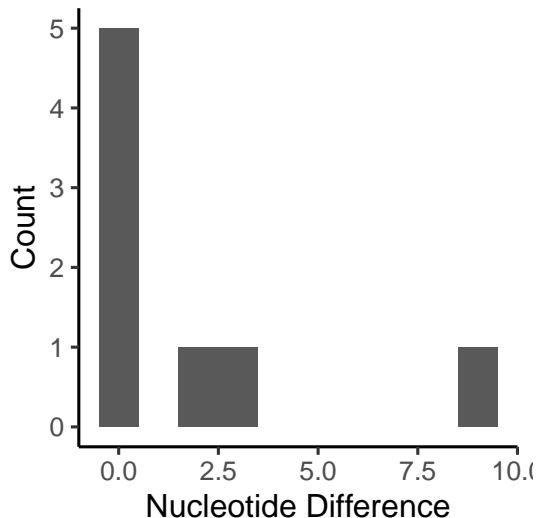
IGHV1-2*04

2165 sequences assigned
581 (26.8%) exact matches, in which:
438 unique CDR3
6 unique J



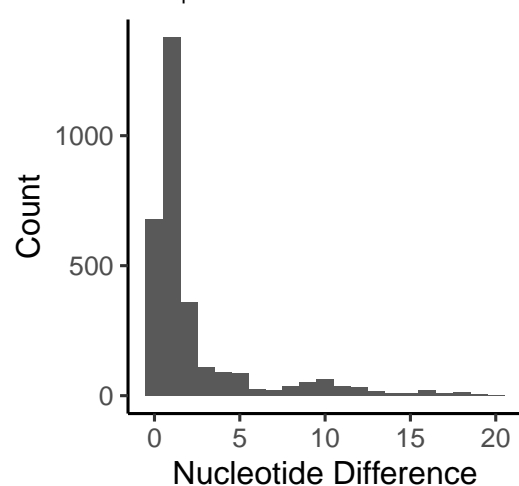
IGHV1-8*01

8 sequences assigned
5 (62.5%) exact matches, in which:
5 unique CDR3
3 unique J



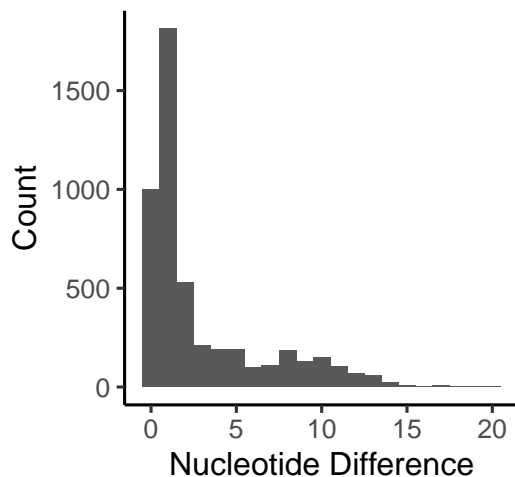
IGHV1-24*01

3053 sequences assigned
679 (22.2%) exact matches, in which:
492 unique CDR3
7 unique J



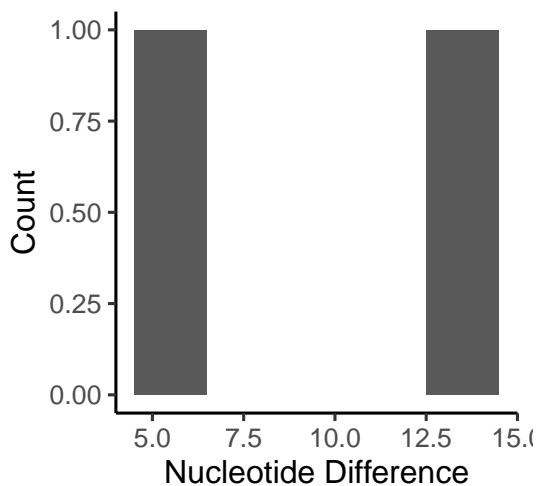
IGHV1-2*06

4888 sequences assigned
1001 (20.5%) exact matches, in which:
685 unique CDR3
7 unique J



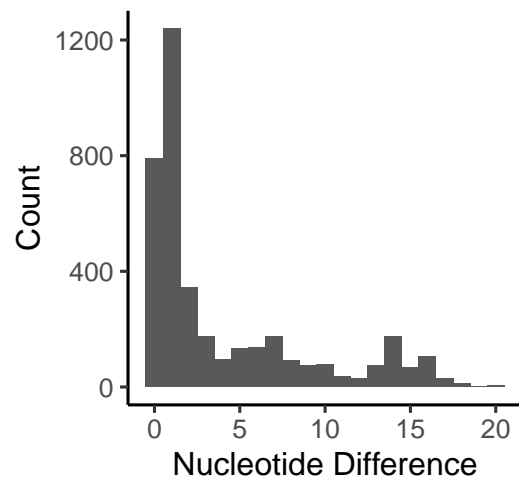
IGHV1-8*02

5 sequences assigned
No exact matches.



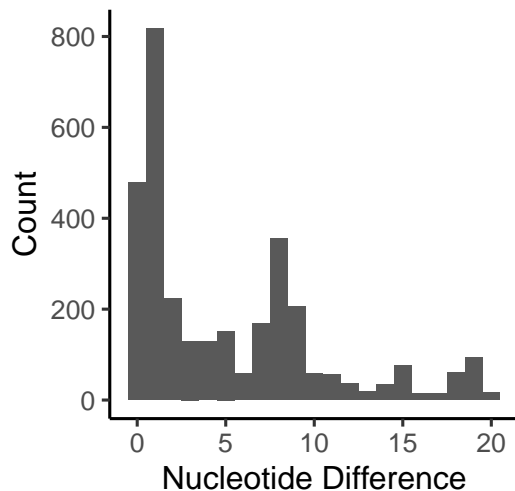
IGHV1-46*01

3876 sequences assigned
789 (20.4%) exact matches, in which:
585 unique CDR3
7 unique J



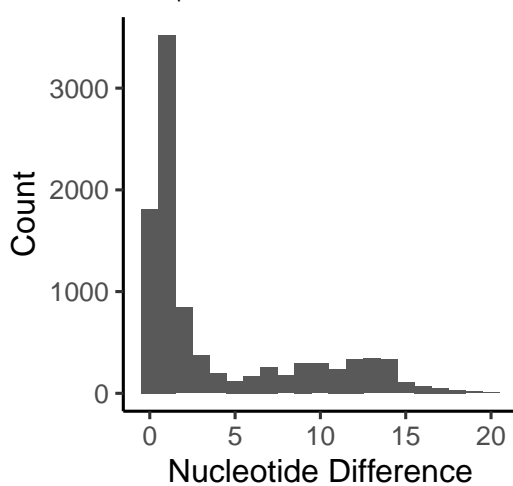
IGHV1-3*01_05

3221 sequences assigned
479 (14.9%) exact matches, in which:
354 unique CDR3
7 unique J



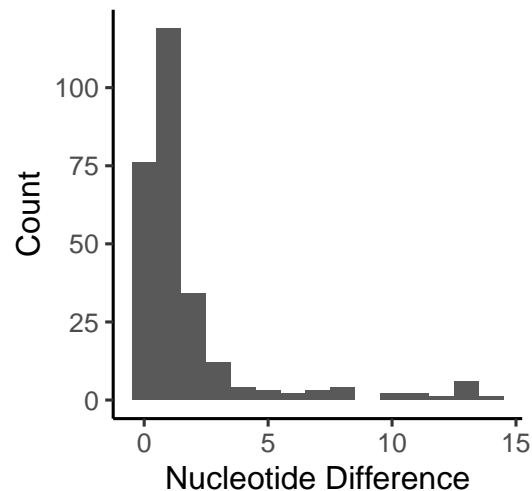
IGHV1-18*01

10332 sequences assigned
1811 (17.5%) exact matches, in which:
1242 unique CDR3
7 unique J



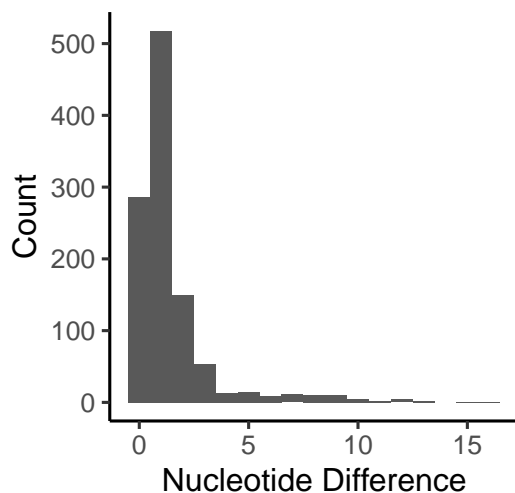
IGHV1-58*02

269 sequences assigned
76 (28.3%) exact matches, in which:
63 unique CDR3
5 unique J



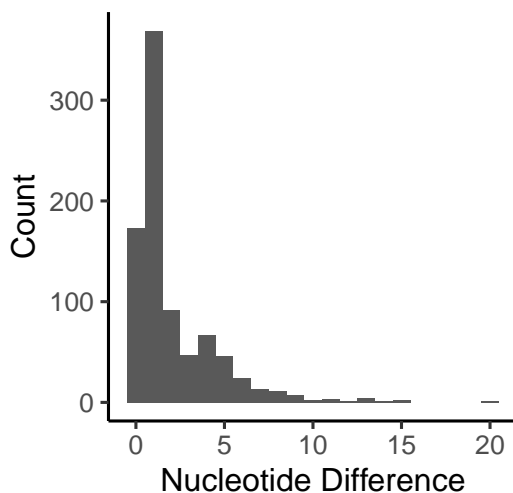
IGHV1–69*02

1090 sequences assigned
286 (26.2%) exact matches, in which:
200 unique CDR3
6 unique J



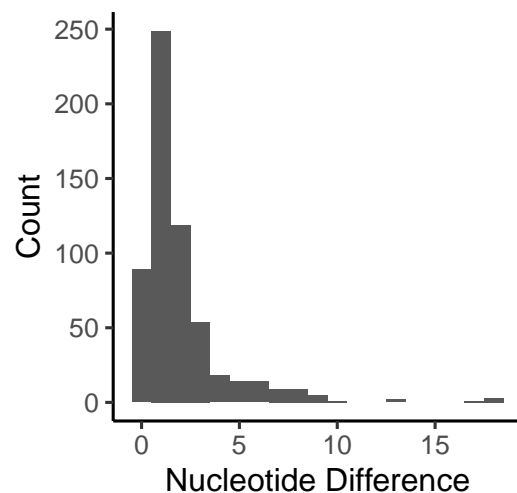
IGHV2–5*02

863 sequences assigned
173 (20%) exact matches, in which:
106 unique CDR3
6 unique J



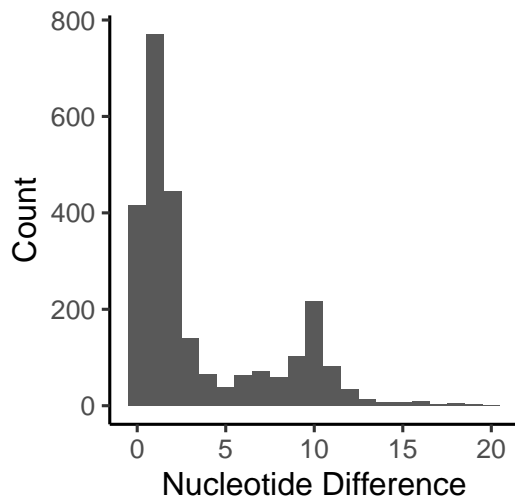
IGHV2–70*11_15

588 sequences assigned
89 (15.1%) exact matches, in which:
51 unique CDR3
4 unique J



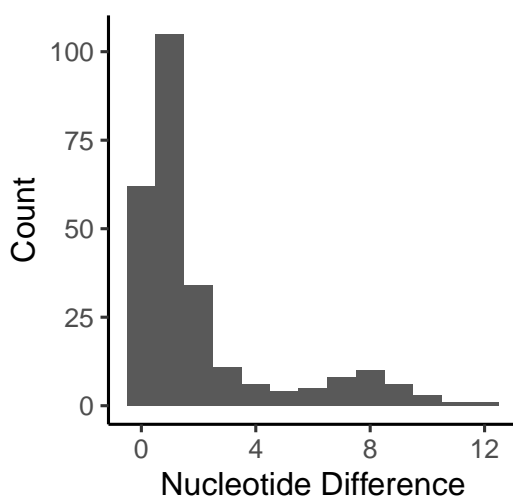
IGHV1–69*04_09

2556 sequences assigned
415 (16.2%) exact matches, in which:
343 unique CDR3
7 unique J



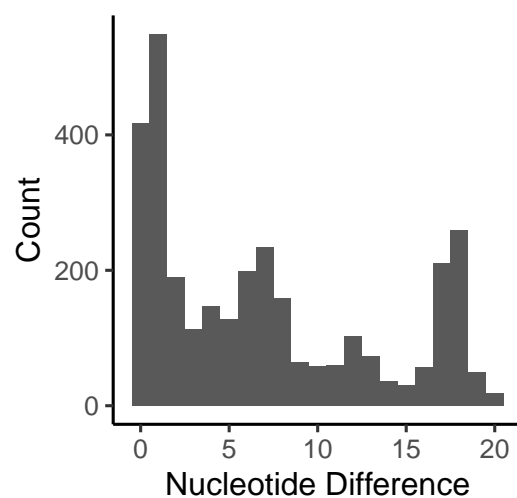
IGHV2–26*01

258 sequences assigned
62 (24%) exact matches, in which:
42 unique CDR3
5 unique J



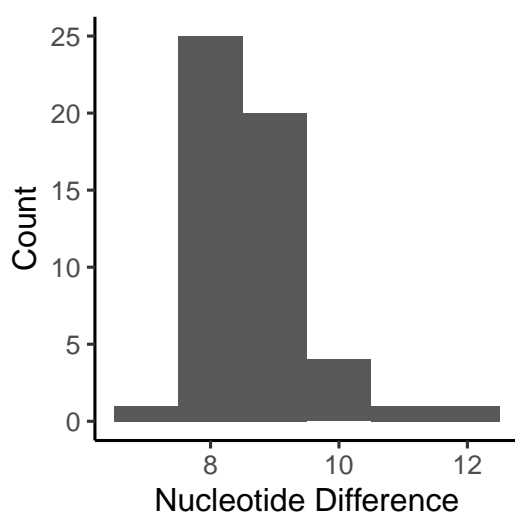
IGHV3–7*01

3573 sequences assigned
417 (11.7%) exact matches, in which:
278 unique CDR3
6 unique J



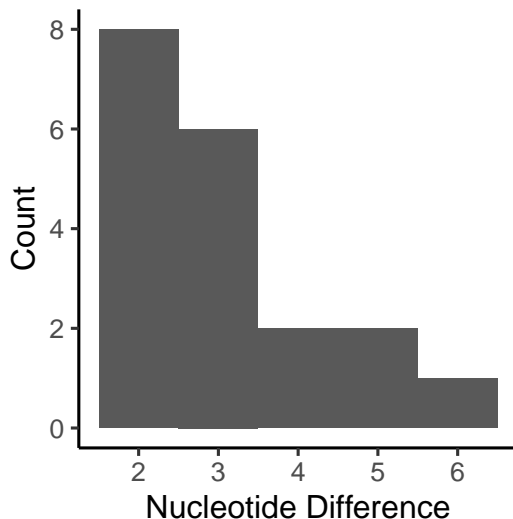
IGHV1–NL1*01

52 sequences assigned
No exact matches.



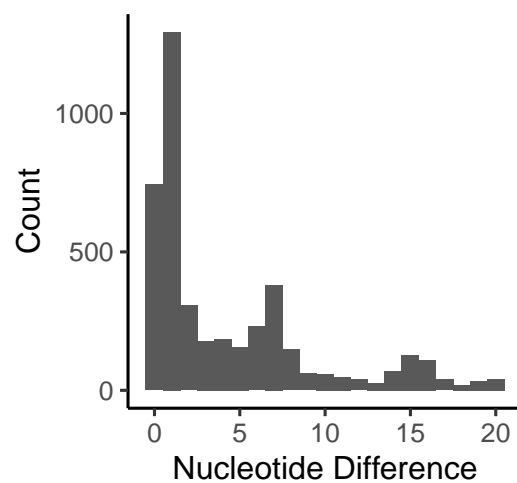
IGHV2–70*12

19 sequences assigned
No exact matches.



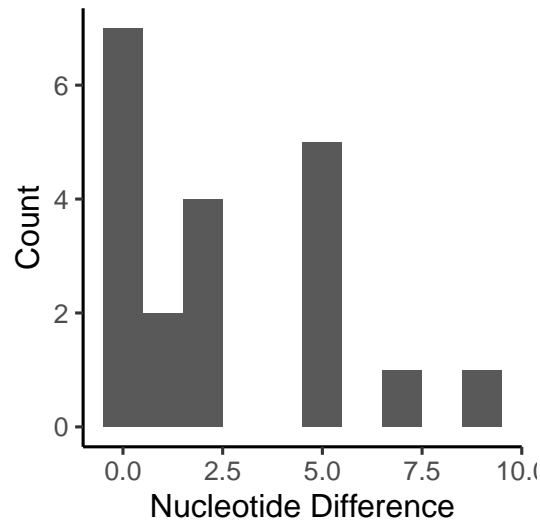
IGHV3–7*03

5453 sequences assigned
743 (13.6%) exact matches, in which:
476 unique CDR3
7 unique J



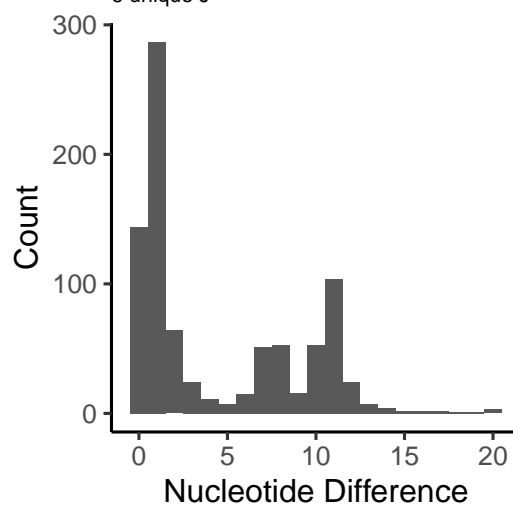
IGHV3-9*01

21 sequences assigned
7 (33.3%) exact matches, in which:
4 unique CDR3
3 unique J



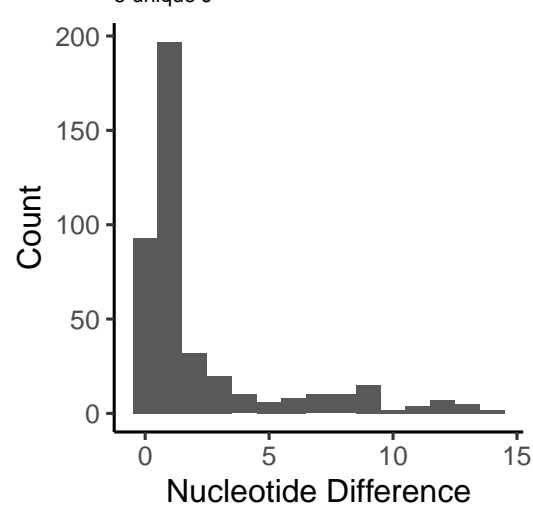
IGHV3-13*04

875 sequences assigned
144 (16.5%) exact matches, in which:
89 unique CDR3
6 unique J



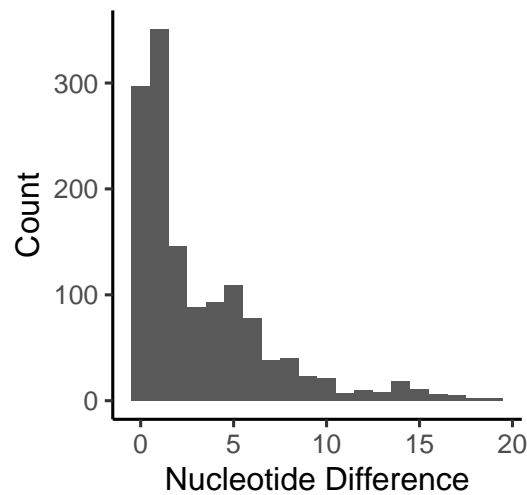
IGHV3-20*01_02

422 sequences assigned
93 (22%) exact matches, in which:
44 unique CDR3
5 unique J



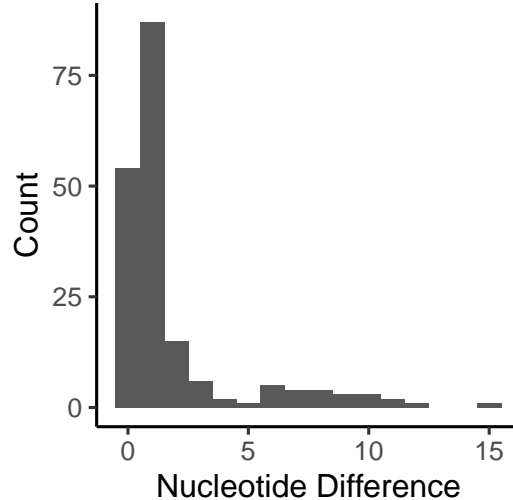
IGHV3-11*06

1357 sequences assigned
297 (21.9%) exact matches, in which:
196 unique CDR3
6 unique J



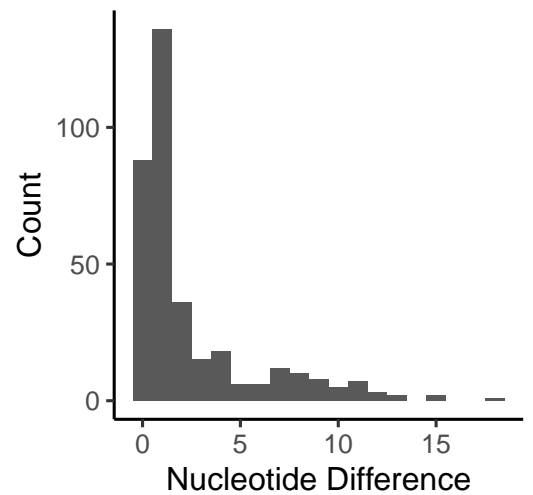
IGHV3-13*05

188 sequences assigned
54 (28.7%) exact matches, in which:
32 unique CDR3
6 unique J



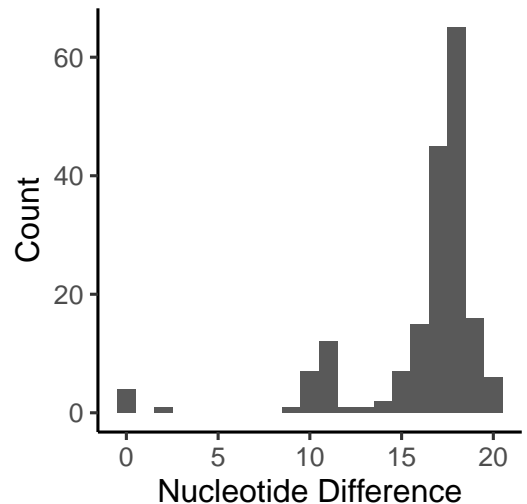
IGHV3-20*03_04

355 sequences assigned
88 (24.8%) exact matches, in which:
61 unique CDR3
4 unique J



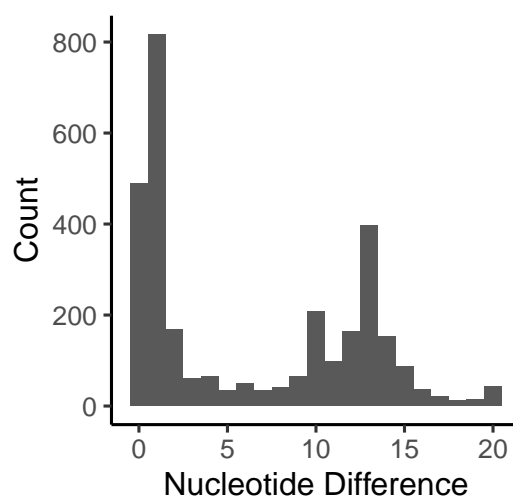
IGHV3-13*01

194 sequences assigned
4 (2.1%) exact matches, in which:
4 unique CDR3
2 unique J



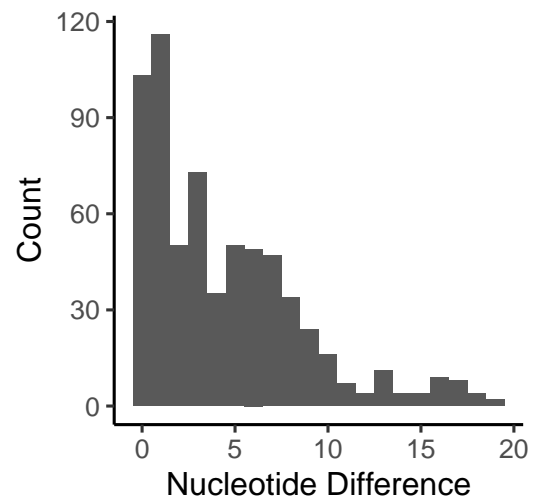
IGHV3-15*01_02

3706 sequences assigned
490 (13.2%) exact matches, in which:
270 unique CDR3
6 unique J



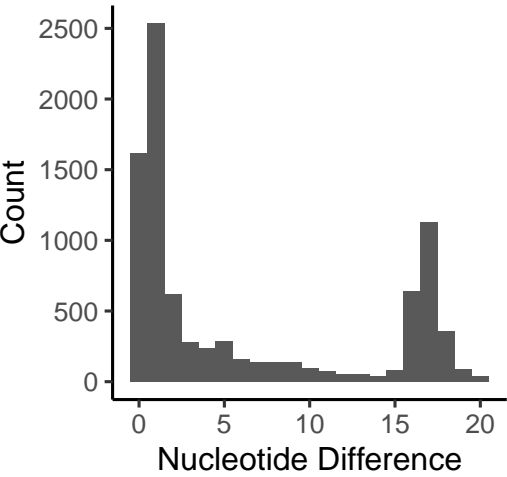
IGHV3-21*04

656 sequences assigned
103 (15.7%) exact matches, in which:
85 unique CDR3
6 unique J



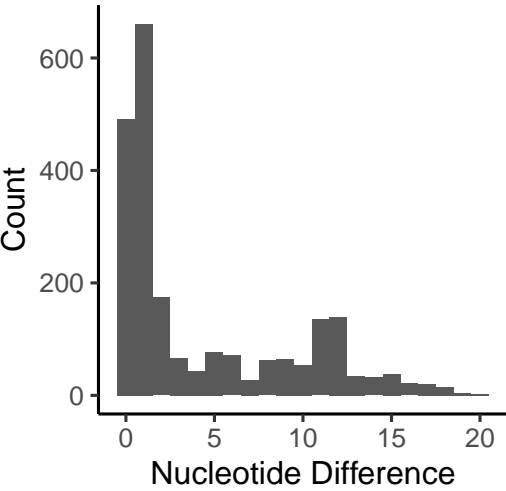
IGHV3-21*01_02

8849 sequences assigned
1620 (18.3%) exact matches, in which:
900 unique CDR3
7 unique J



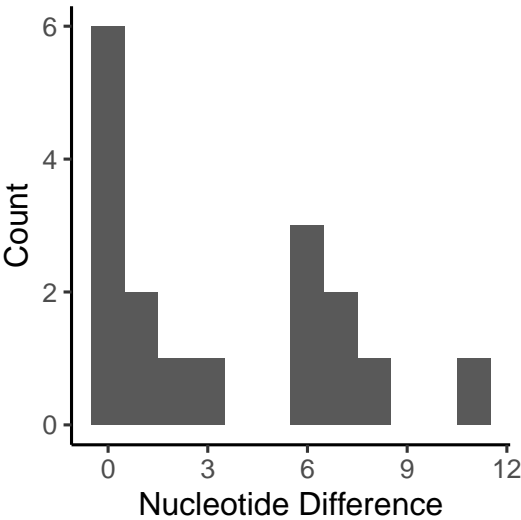
IGHV3-30*01

2548 sequences assigned
491 (19.3%) exact matches, in which:
311 unique CDR3
7 unique J



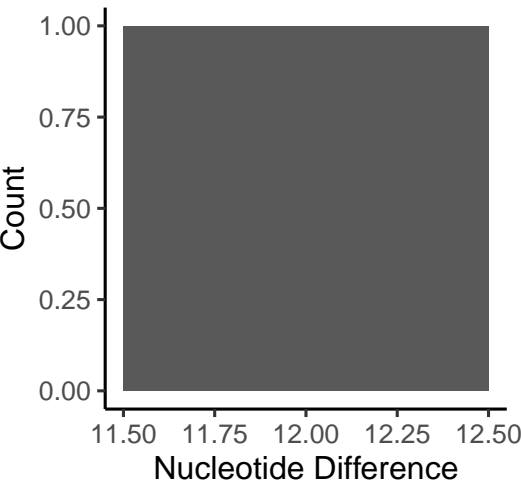
IGHV3-30-3*03

17 sequences assigned
6 (35.3%) exact matches, in which:
6 unique CDR3
3 unique J



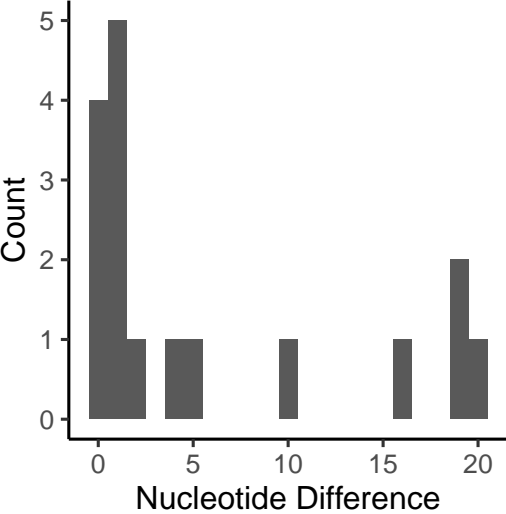
IGHV3-22*01_02

1 sequences assigned
No exact matches.



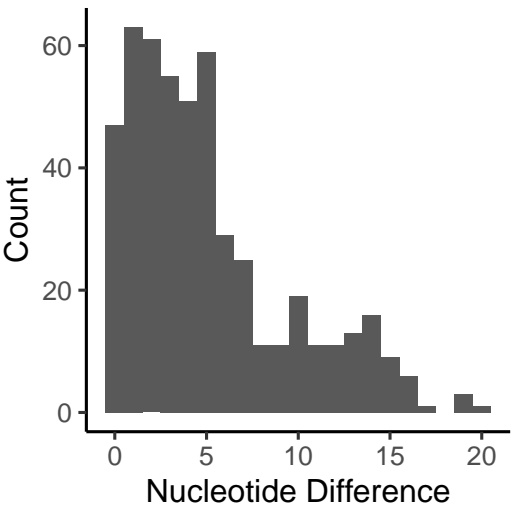
IGHV3-30-3*01

20 sequences assigned
4 (20%) exact matches, in which:
3 unique CDR3
1 unique J



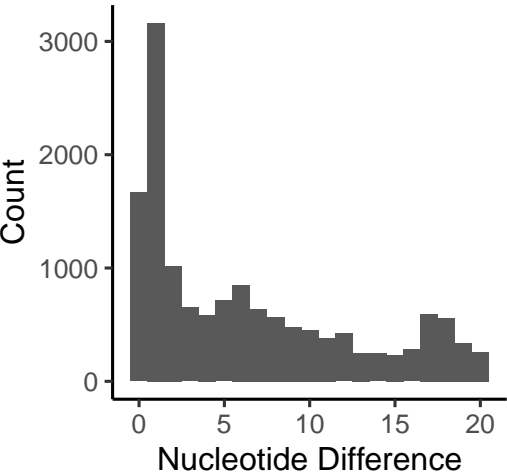
IGHV3-30*07

511 sequences assigned
47 (9.2%) exact matches, in which:
45 unique CDR3
6 unique J



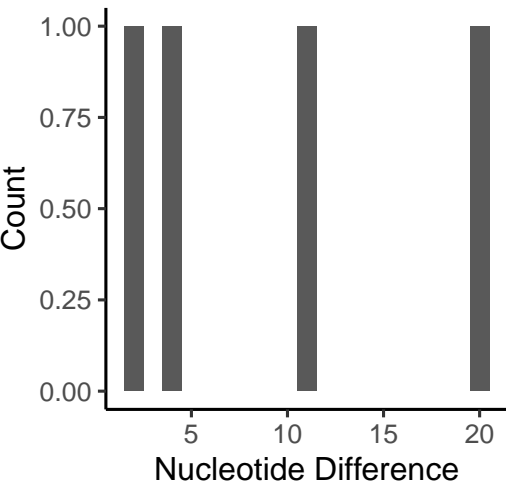
IGHV3-23*01_04

22210 sequences assigned
1668 (7.5%) exact matches, in which:
919 unique CDR3
7 unique J



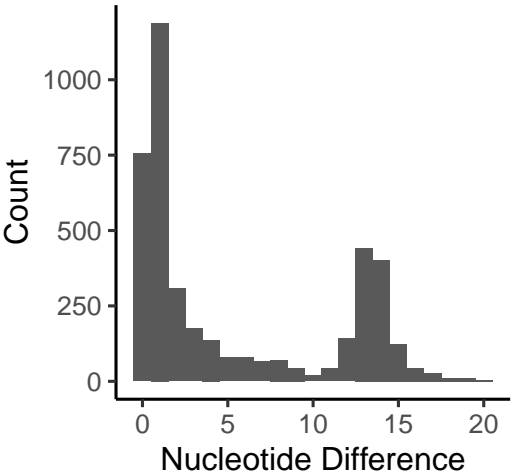
IGHV3-30-3*02

22 sequences assigned
No exact matches.



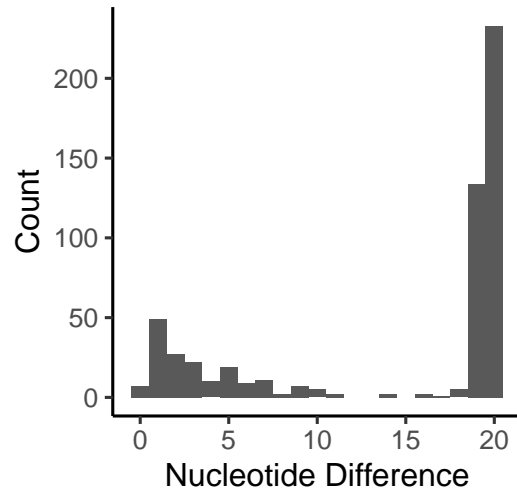
IGHV3-33*01

4198 sequences assigned
755 (18%) exact matches, in which:
478 unique CDR3
7 unique J



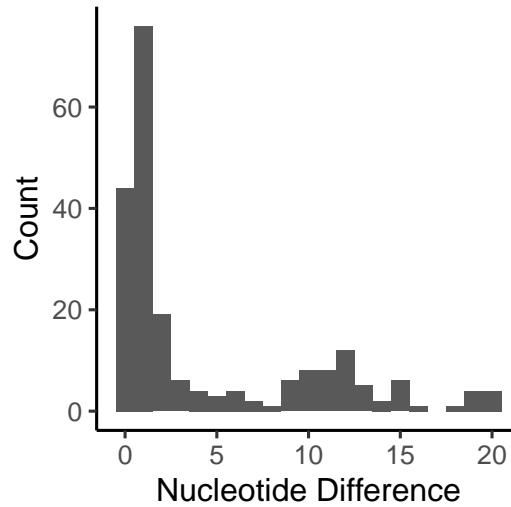
IGHV3-33*05

3192 sequences assigned
7 (0.2%) exact matches, in which:
7 unique CDR3
4 unique J



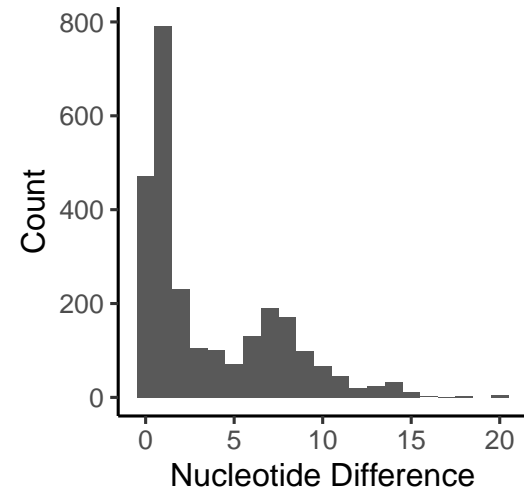
IGHV3-43*01

425 sequences assigned
44 (10.4%) exact matches, in which:
28 unique CDR3
2 unique J



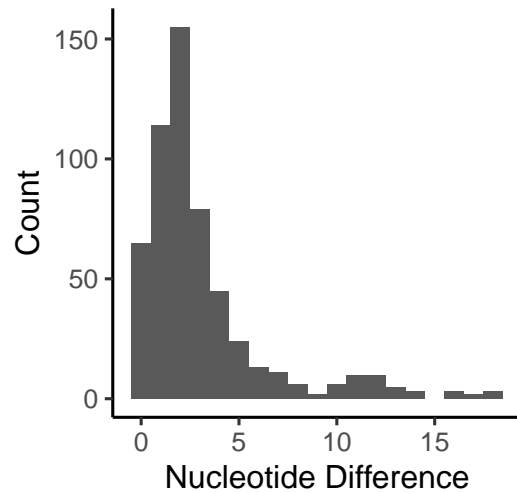
IGHV3-48*02

2641 sequences assigned
472 (17.9%) exact matches, in which:
285 unique CDR3
6 unique J



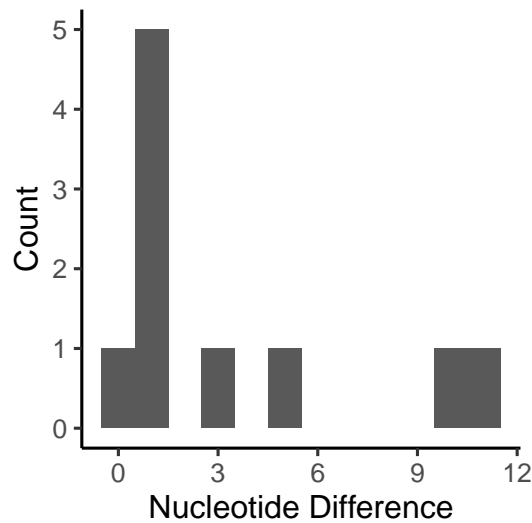
IGHV3-33*06

559 sequences assigned
65 (11.6%) exact matches, in which:
56 unique CDR3
6 unique J



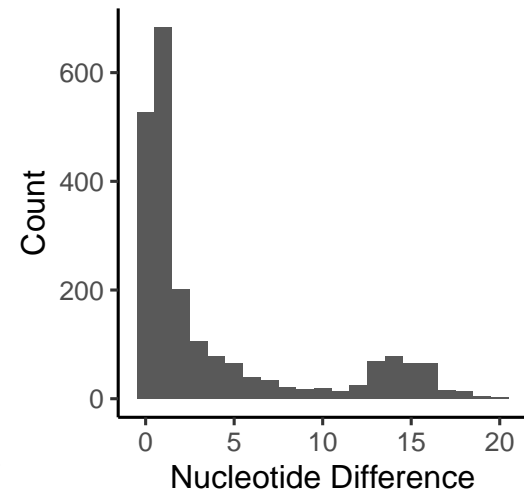
IGHV3-47*01

10 sequences assigned
1 (10%) exact matches, in which:
1 unique CDR3
1 unique J



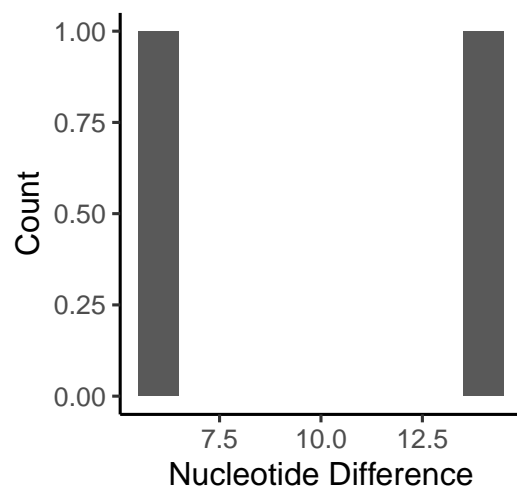
IGHV3-48*04

2535 sequences assigned
527 (20.8%) exact matches, in which:
343 unique CDR3
7 unique J



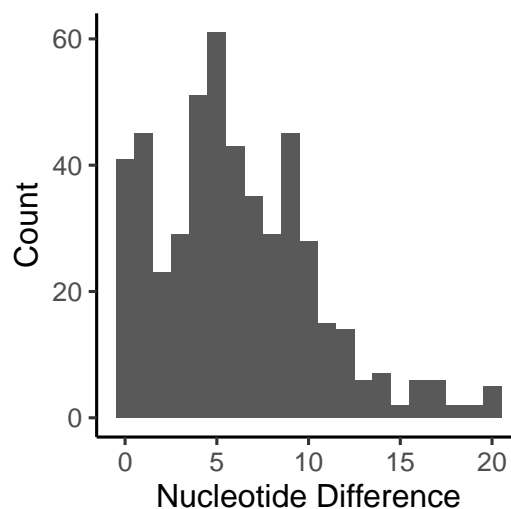
IGHV3-35*01

2 sequences assigned
No exact matches.



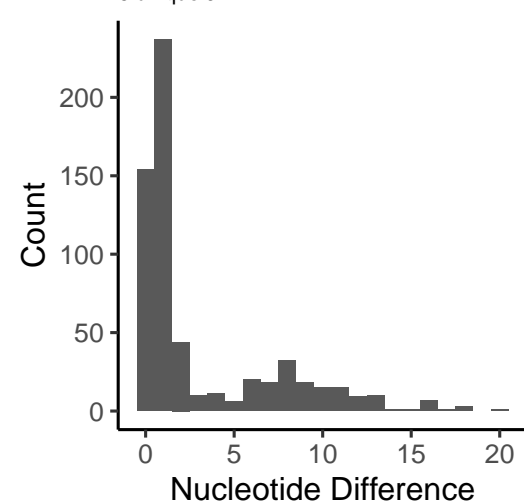
IGHV3-48*01

781 sequences assigned
41 (5.2%) exact matches, in which:
37 unique CDR3
6 unique J



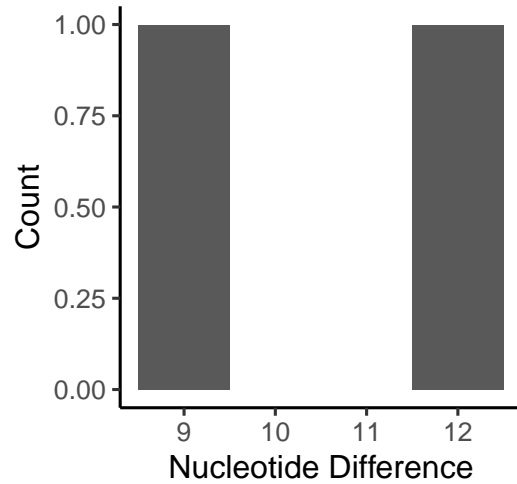
IGHV3-49*03_05

614 sequences assigned
154 (25.1%) exact matches, in which:
104 unique CDR3
6 unique J



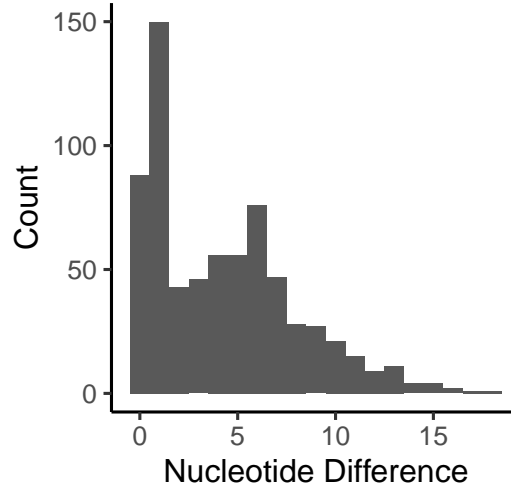
IGHV3-52*01_03

2 sequences assigned
No exact matches.



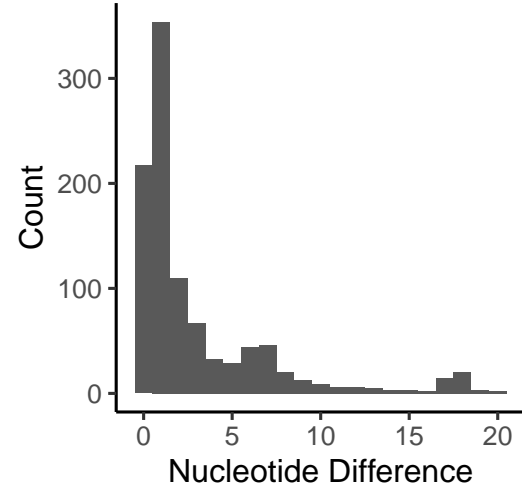
IGHV3-53*01_02

690 sequences assigned
88 (12.8%) exact matches, in which:
59 unique CDR3
6 unique J



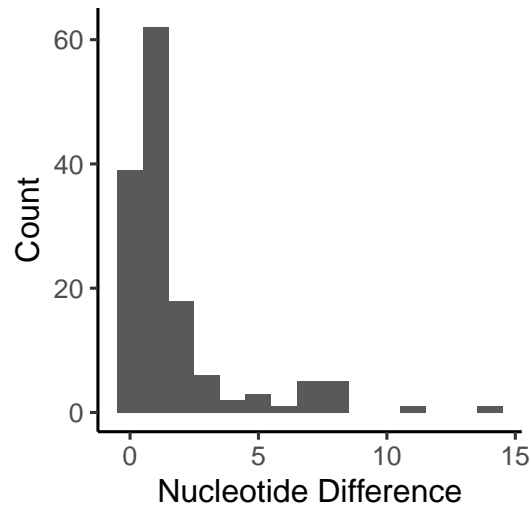
IGHV3-66*01

1012 sequences assigned
217 (21.4%) exact matches, in which:
147 unique CDR3
6 unique J



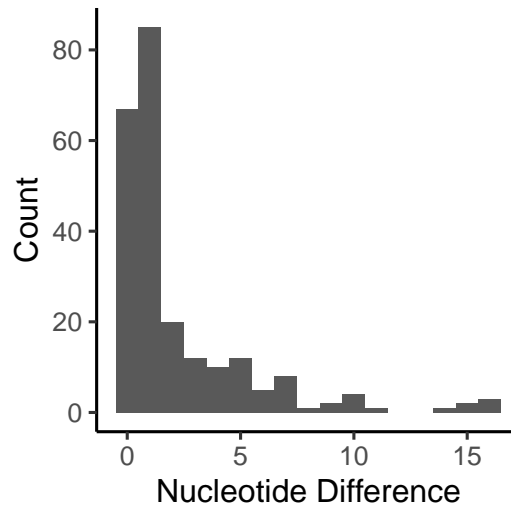
IGHV3-53*04

143 sequences assigned
39 (27.3%) exact matches, in which:
24 unique CDR3
6 unique J



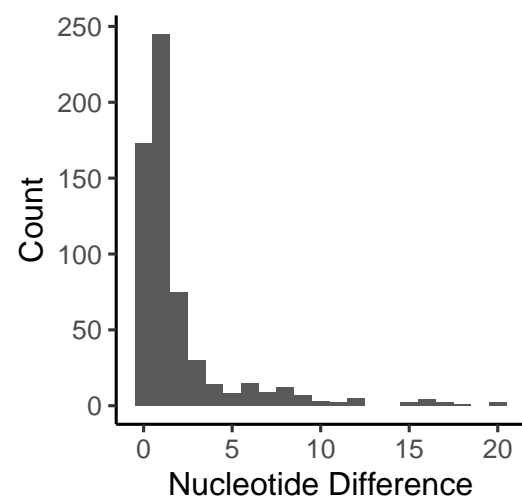
IGHV3-64*01

233 sequences assigned
67 (28.8%) exact matches, in which:
44 unique CDR3
6 unique J



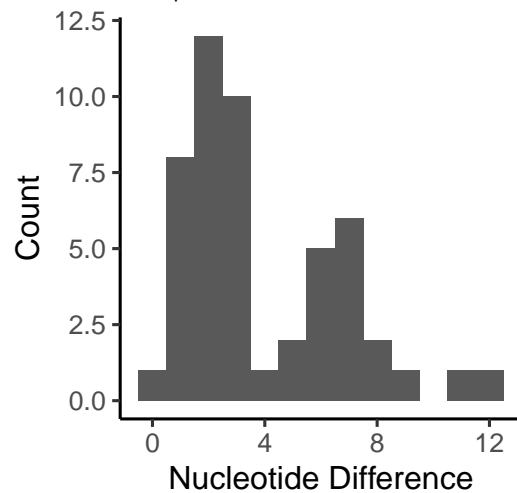
IGHV3-66*02

610 sequences assigned
173 (28.4%) exact matches, in which:
121 unique CDR3
7 unique J



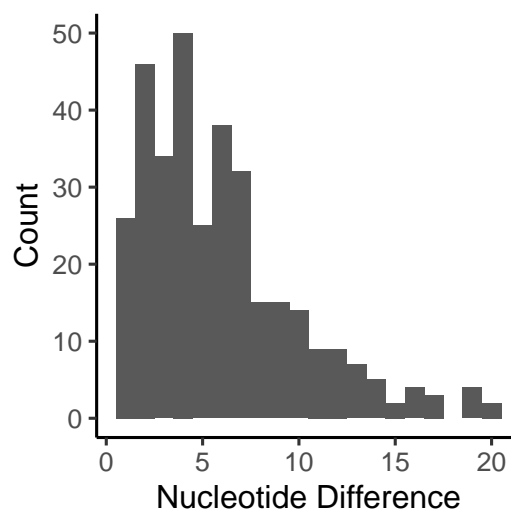
IGHV3-53*05

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



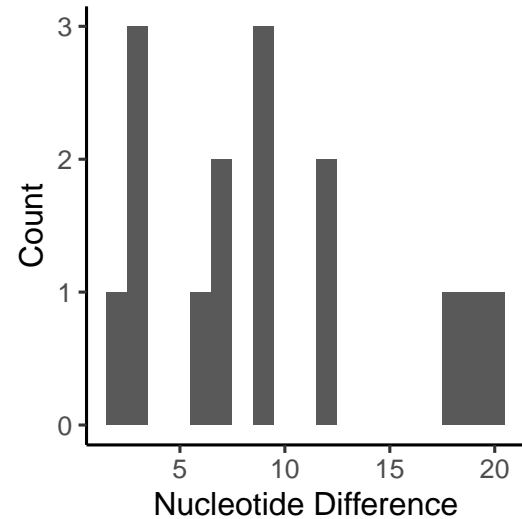
IGHV3-64*04

345 sequences assigned
No exact matches.



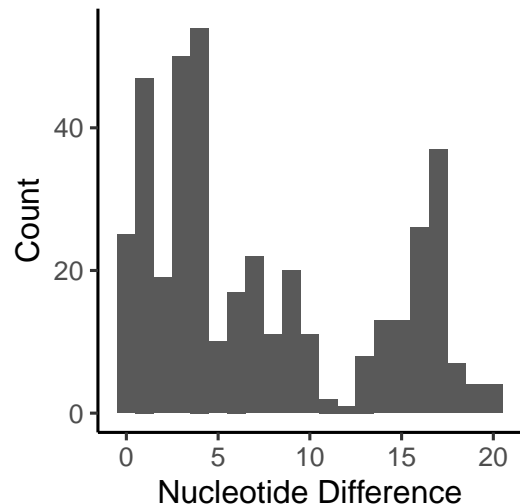
IGHV3-69-1*01

17 sequences assigned
No exact matches.



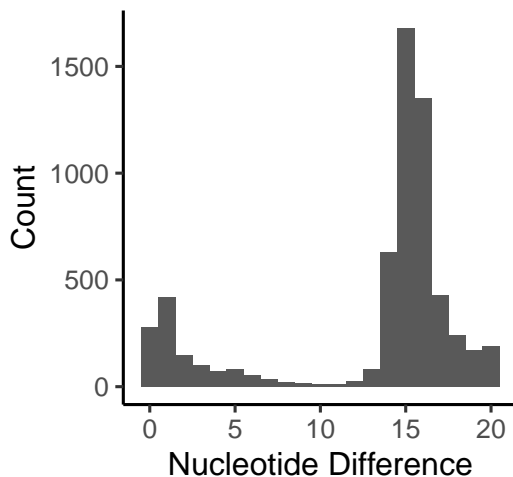
IGHV3-72*01

406 sequences assigned
25 (6.2%) exact matches, in which:
16 unique CDR3
4 unique J



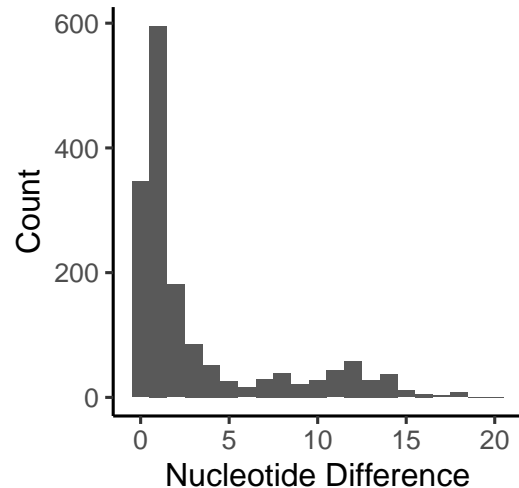
IGHV3-74*01_02

6226 sequences assigned
281 (4.5%) exact matches, in which:
189 unique CDR3
7 unique J



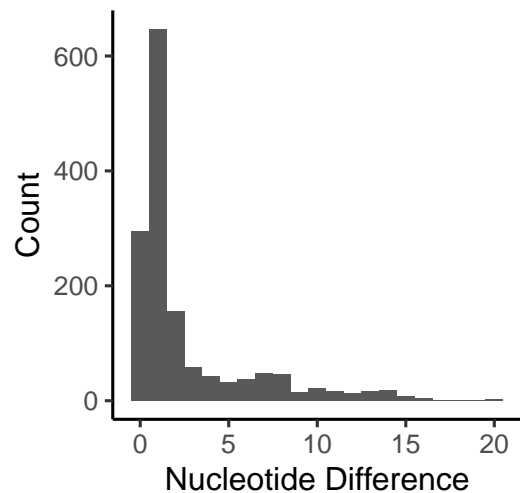
IGHV3-64D*06

1777 sequences assigned
346 (19.5%) exact matches, in which:
209 unique CDR3
7 unique J



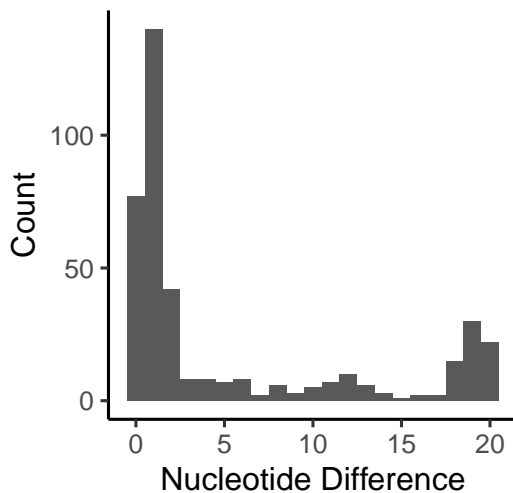
IGHV3-73*01_02

1481 sequences assigned
295 (19.9%) exact matches, in which:
173 unique CDR3
6 unique J



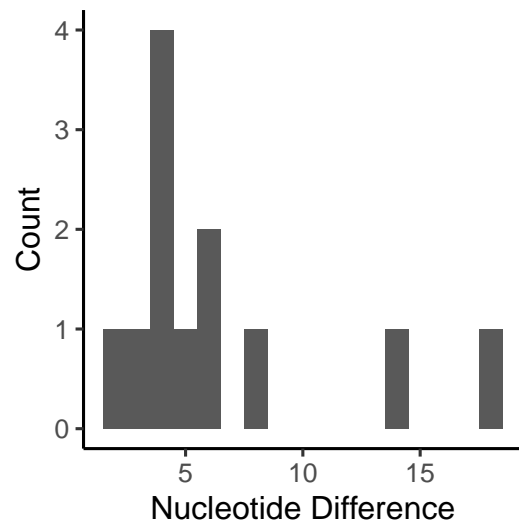
IGHV3-43D*03

417 sequences assigned
77 (18.5%) exact matches, in which:
45 unique CDR3
4 unique J



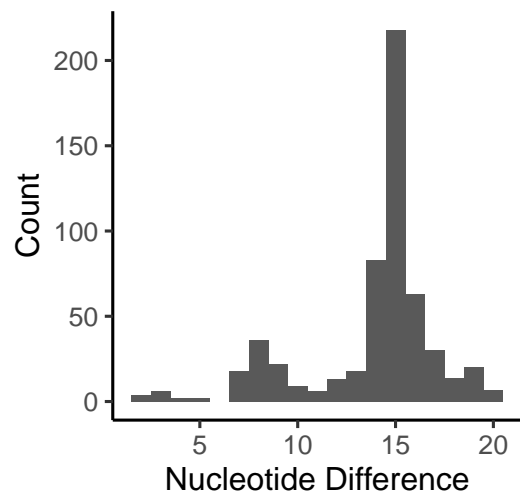
IGHV3-NL1*01

15 sequences assigned
No exact matches.



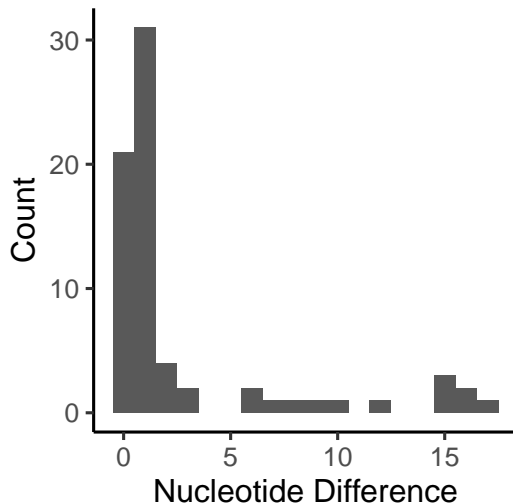
IGHV3-74*03

621 sequences assigned
No exact matches.



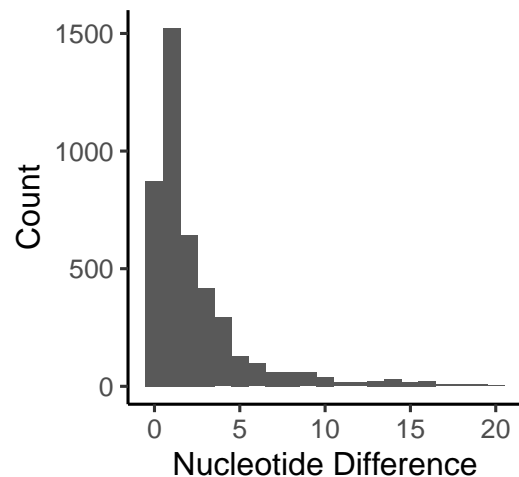
IGHV3-43D*04

72 sequences assigned
21 (29.2%) exact matches, in which:
16 unique CDR3
4 unique J



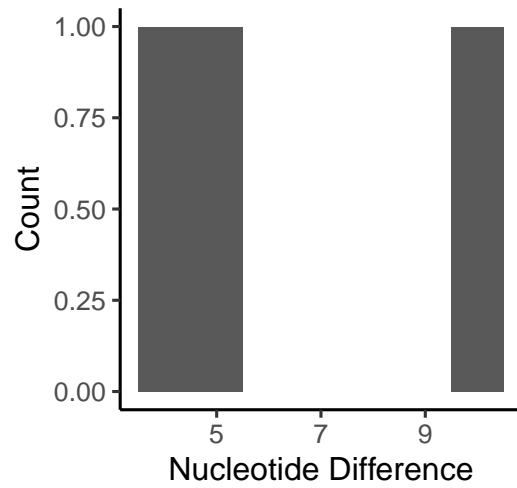
IGHV4-4*02_03

6369 sequences assigned
874 (13.7%) exact matches, in which:
567 unique CDR3
7 unique J



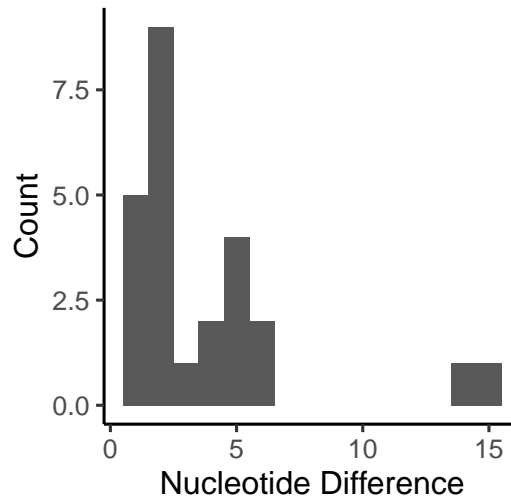
IGHV4-28*03

3 sequences assigned
No exact matches.



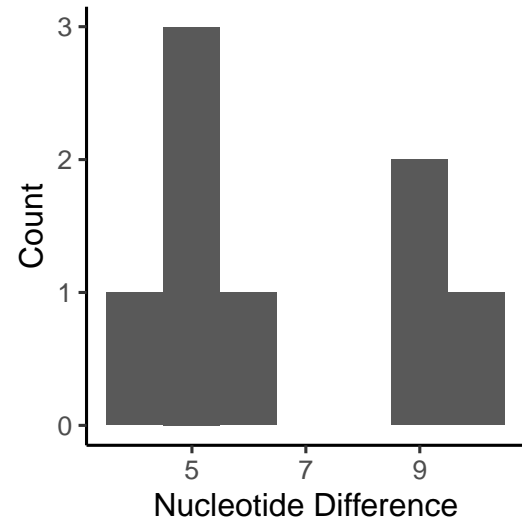
IGHV4-30-2*03

25 sequences assigned
No exact matches.



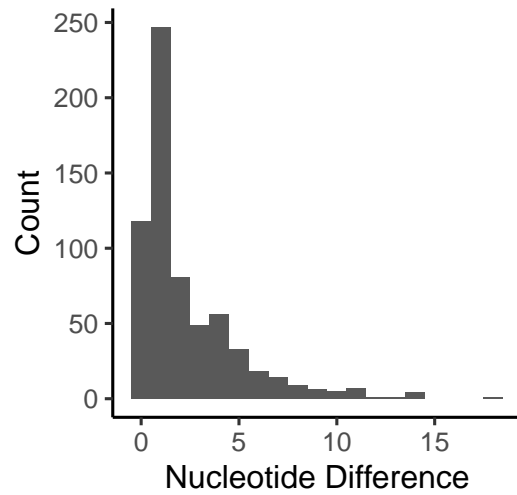
IGHV4-30-4*07

8 sequences assigned
No exact matches.



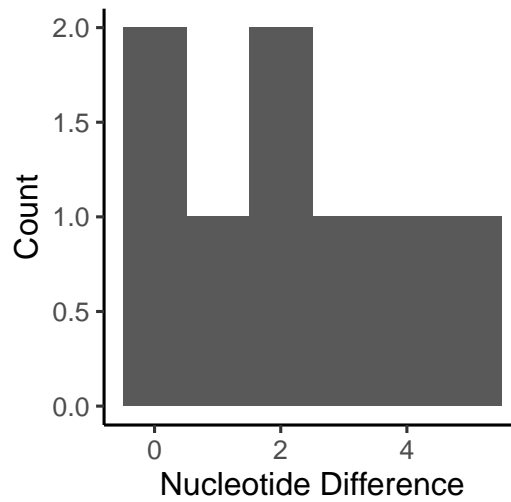
IGHV4-30-2*01

650 sequences assigned
118 (18.2%) exact matches, in which:
63 unique CDR3
4 unique J



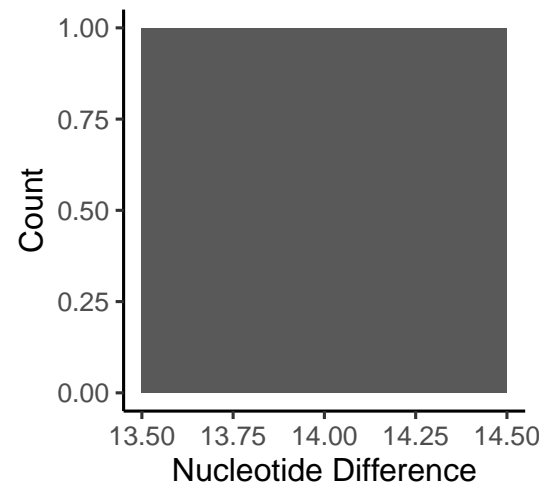
IGHV4-30-2*04

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



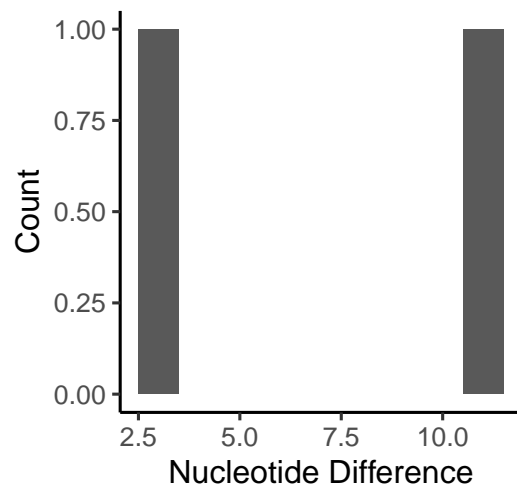
IGHV4-30-4*08

2 sequences assigned
No exact matches.



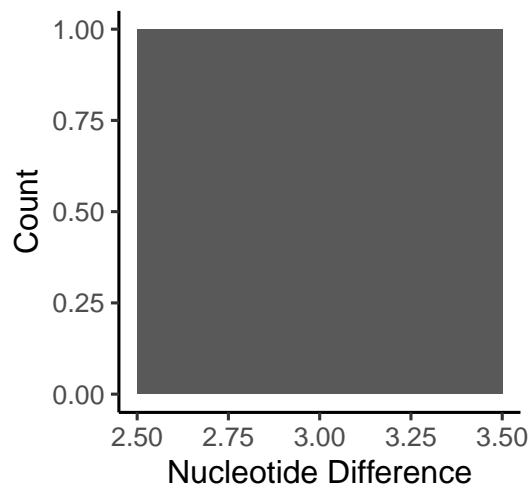
IGHV4-30-4*01

2 sequences assigned
No exact matches.



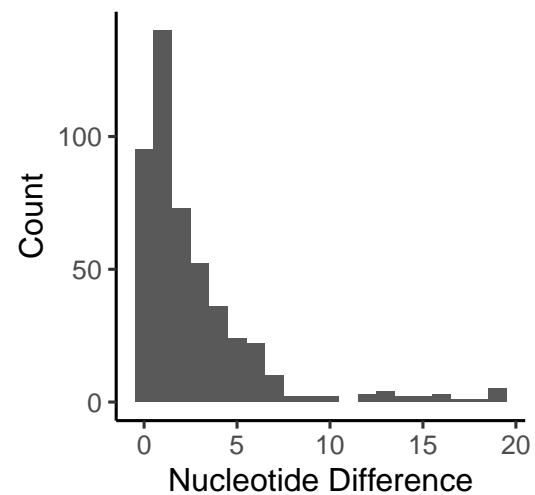
IGHV4-30-4*05

1 sequences assigned
No exact matches.



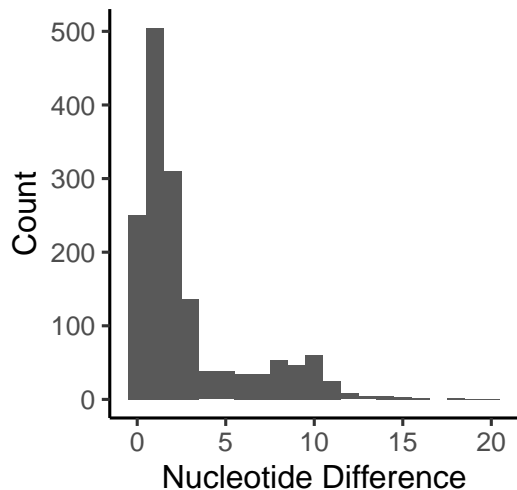
IGHV4-31*01

2590 sequences assigned
95 (3.7%) exact matches, in which:
64 unique CDR3
5 unique J



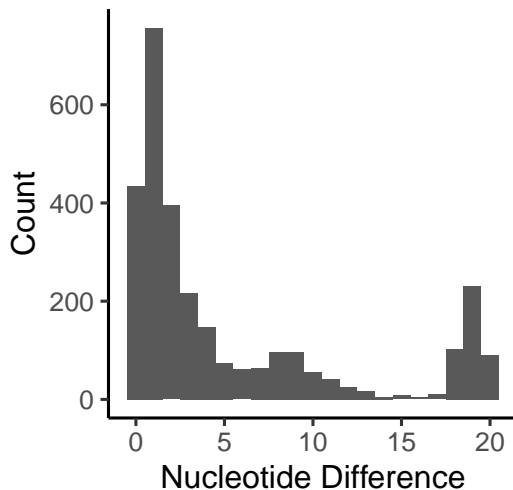
IGHV4-31*02_G92A_C1'

1558 sequences assigned
251 (16.1%) exact matches, in which:
210 unique CDR3
6 unique J



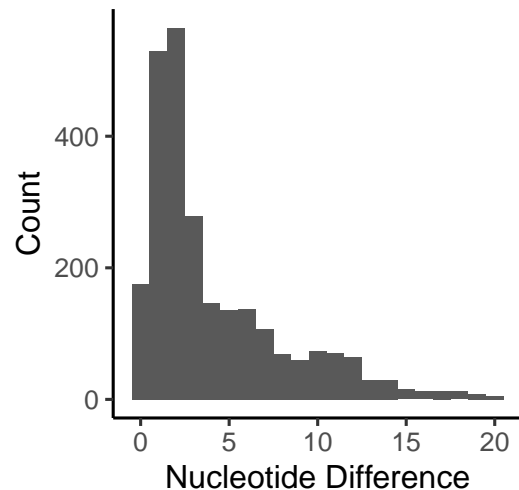
IGHV4-38-2*02

3038 sequences assigned
435 (14.3%) exact matches, in which:
318 unique CDR3
7 unique J



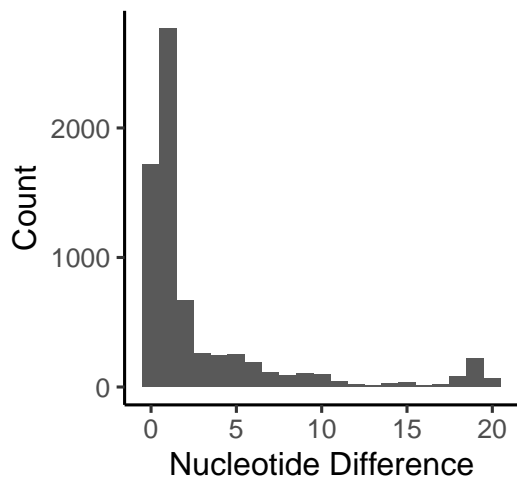
IGHV4-59*12

2768 sequences assigned
176 (6.4%) exact matches, in which:
152 unique CDR3
7 unique J



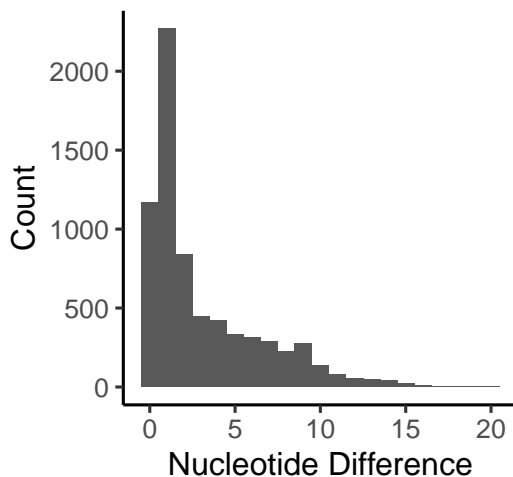
IGHV4-34*01_02

7082 sequences assigned
1717 (24.2%) exact matches, in which:
1074 unique CDR3
7 unique J



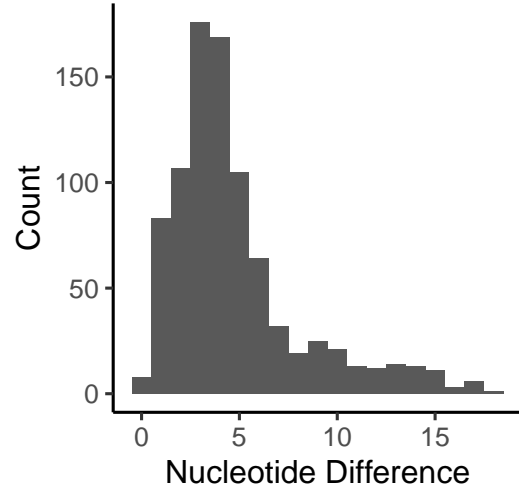
IGHV4-39*07

7776 sequences assigned
1169 (15%) exact matches, in which:
740 unique CDR3
7 unique J



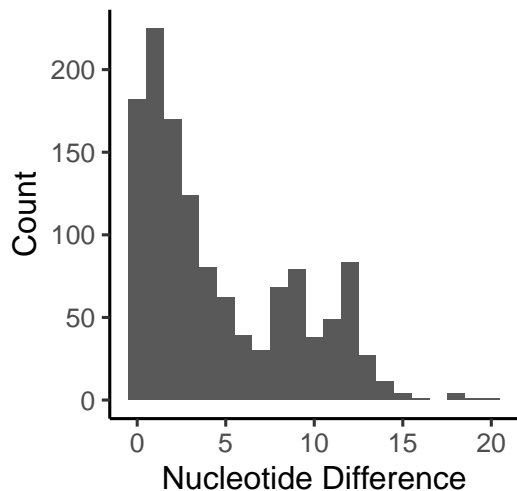
IGHV4-61*01

884 sequences assigned
8 (0.9%) exact matches, in which:
7 unique CDR3
4 unique J



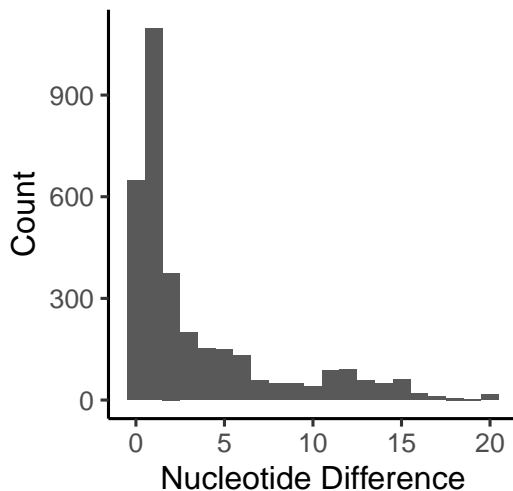
IGHV4-38-2*01

1281 sequences assigned
182 (14.2%) exact matches, in which:
159 unique CDR3
7 unique J



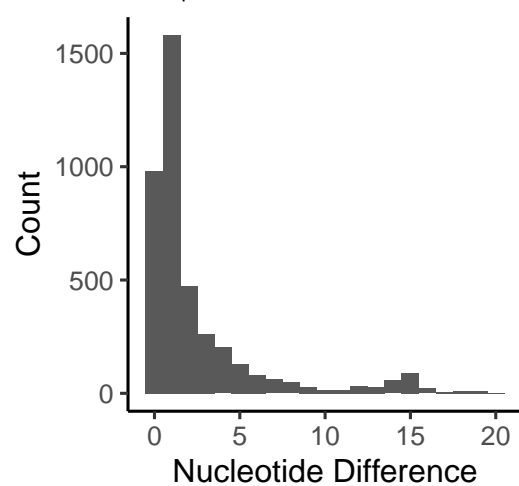
IGHV4-59*08

3756 sequences assigned
647 (17.2%) exact matches, in which:
431 unique CDR3
7 unique J



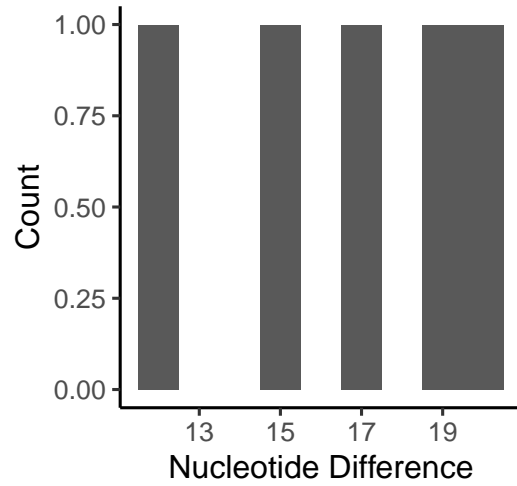
IGHV4-61*02

4147 sequences assigned
980 (23.6%) exact matches, in which:
682 unique CDR3
7 unique J



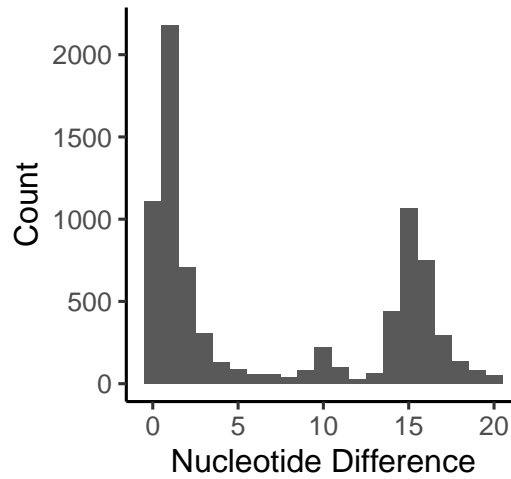
IGHV1/OR15-2*02_03

5 sequences assigned
No exact matches.



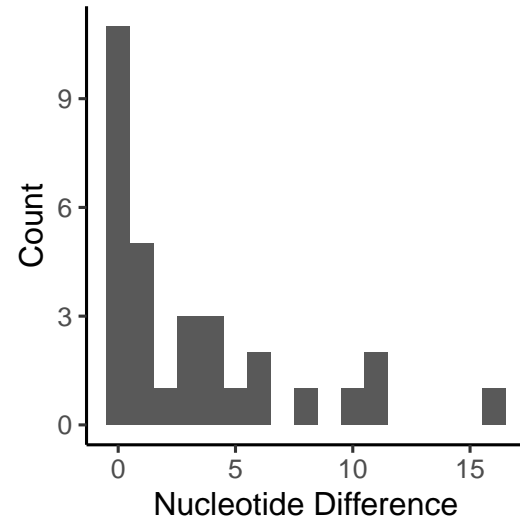
IGHV5-10-1*01_03

8103 sequences assigned
1112 (13.7%) exact matches, in which:
628 unique CDR3
6 unique J



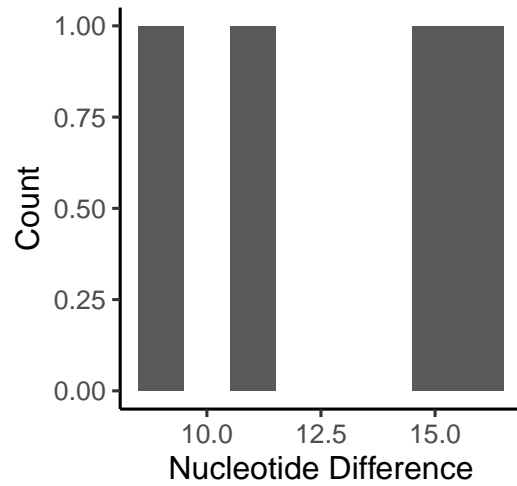
IGHV5-51*07

31 sequences assigned
11 (35.5%) exact matches, in which:
11 unique CDR3
4 unique J



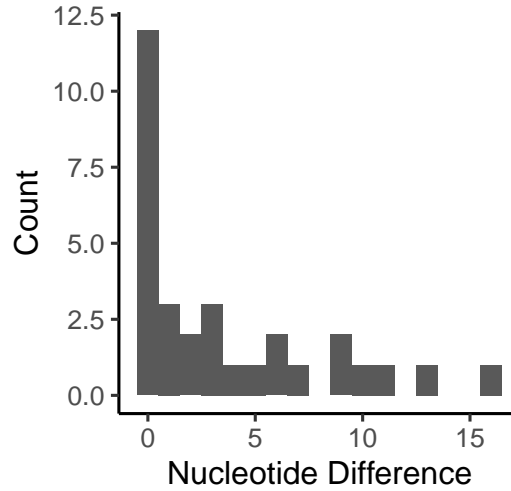
IGHV1/OR15-3*02

4 sequences assigned
No exact matches.



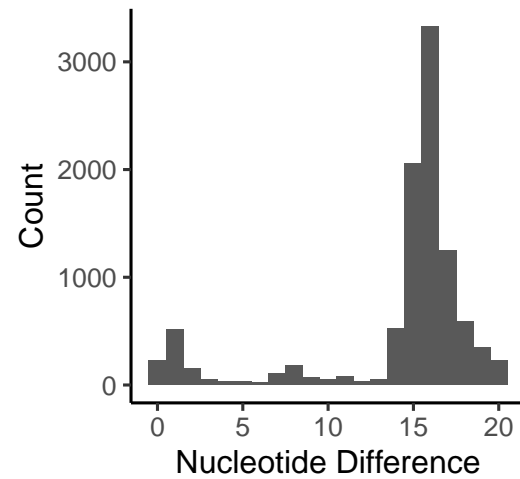
IGHV5-51*04

31 sequences assigned
12 (38.7%) exact matches, in which:
12 unique CDR3
4 unique J



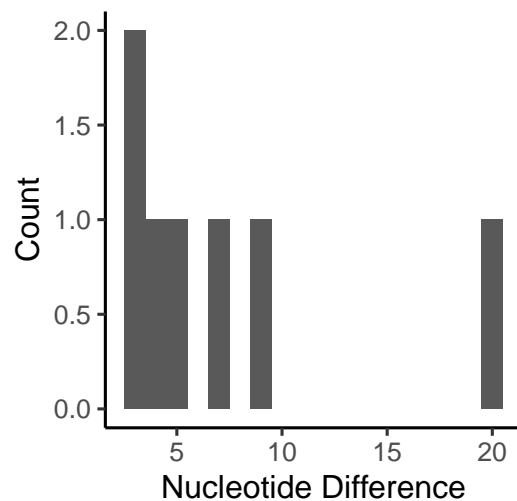
IGHV6-1*01_02

10433 sequences assigned
227 (2.2%) exact matches, in which:
158 unique CDR3
7 unique J



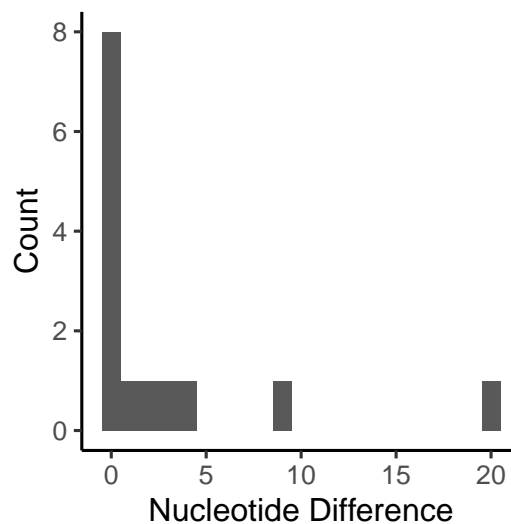
IGHV4/OR15-8*01

7 sequences assigned
No exact matches.



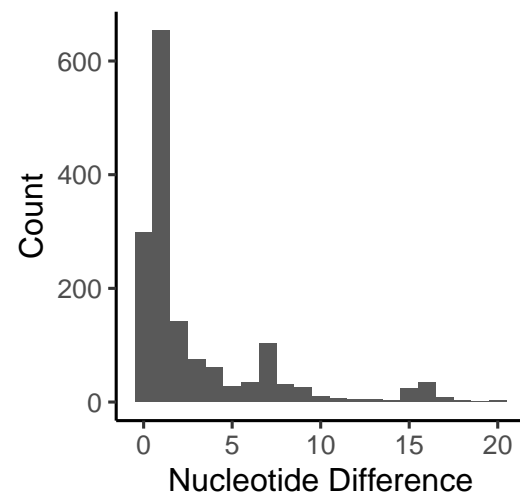
IGHV5-51*06

14 sequences assigned
8 (57.1%) exact matches, in which:
8 unique CDR3
2 unique J

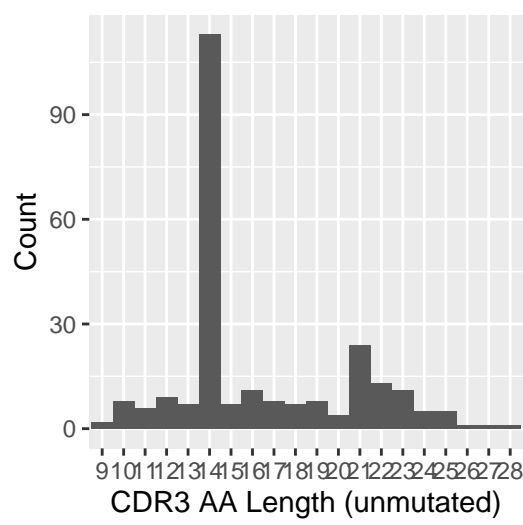


IGHV7-4-1*02

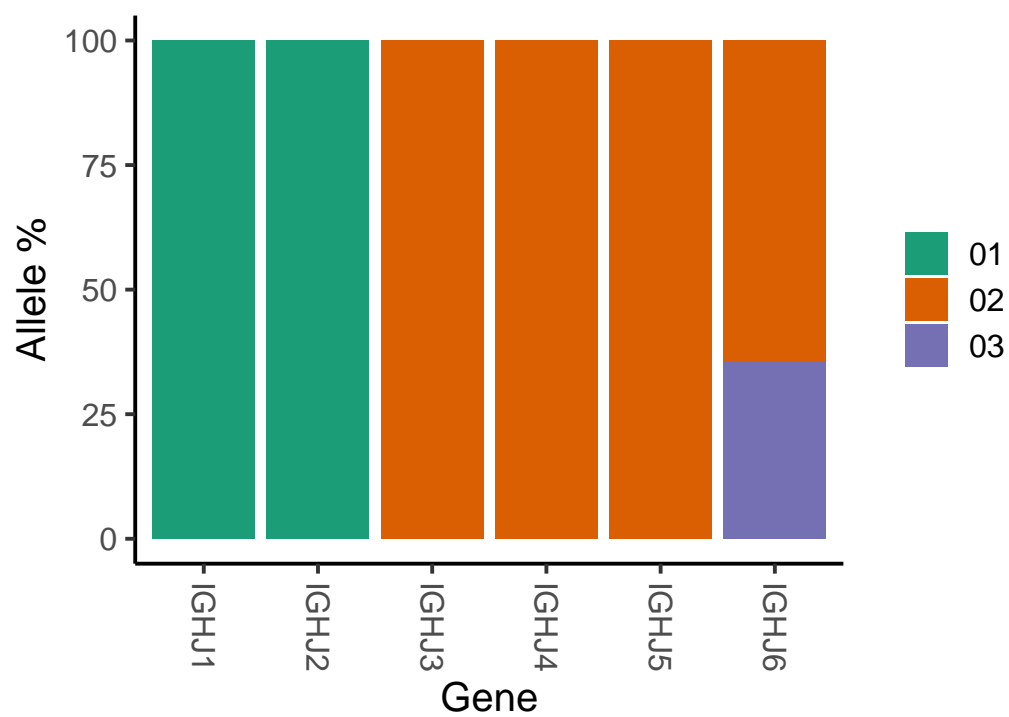
1555 sequences assigned
299 (19.2%) exact matches, in which:
205 unique CDR3
7 unique J



IGHV4-31*02_G92A_C111T_A113T_A138T_A164G_A225C_A234C_G238C_A240T_T249C_A25



Allele Usage



Sequence Count by IGHJ6 allele usage

