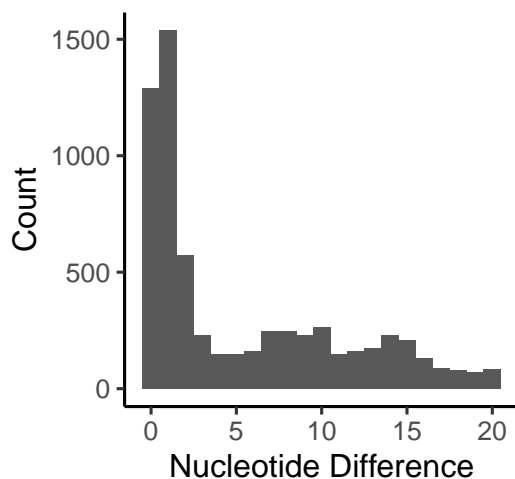


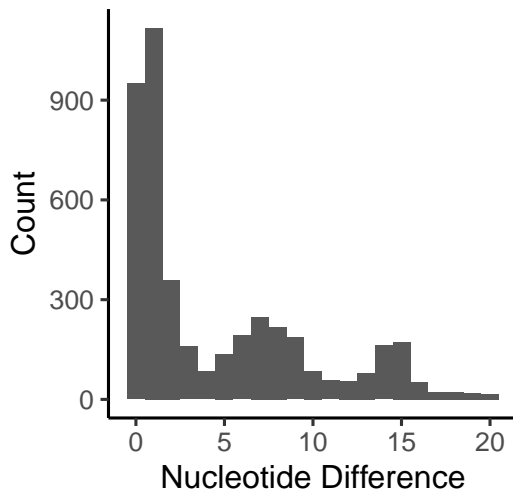
### IGHV1-2\*02

7239 sequences assigned  
1290 (17.8%) exact matches, in which:  
1063 unique CDR3  
7 unique J



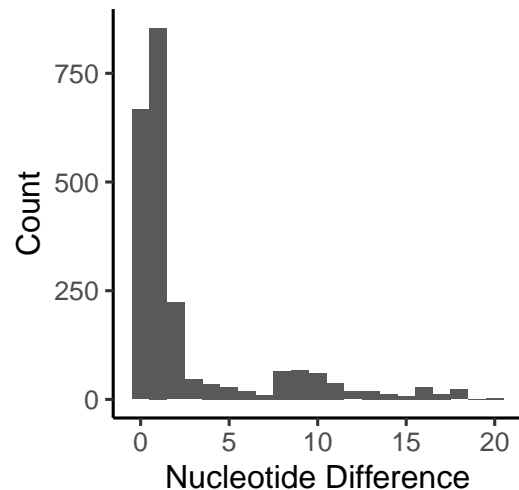
### IGHV1-8\*01

6023 sequences assigned  
950 (15.8%) exact matches, in which:  
794 unique CDR3  
7 unique J



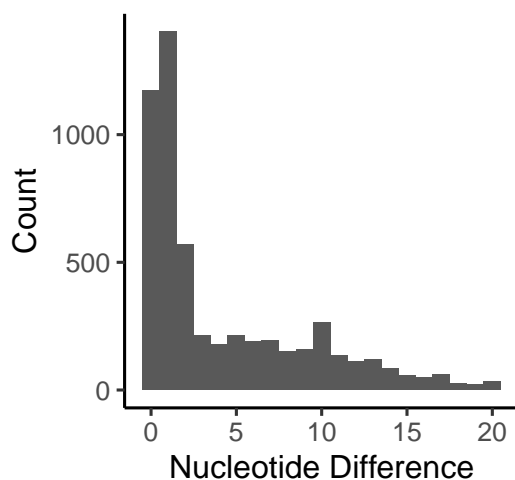
### IGHV1-24\*01

2362 sequences assigned  
667 (28.2%) exact matches, in which:  
540 unique CDR3  
7 unique J



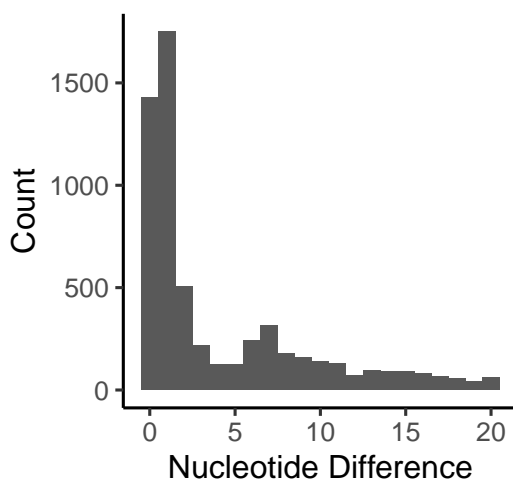
### IGHV1-2\*06

5745 sequences assigned  
1174 (20.4%) exact matches, in which:  
959 unique CDR3  
7 unique J



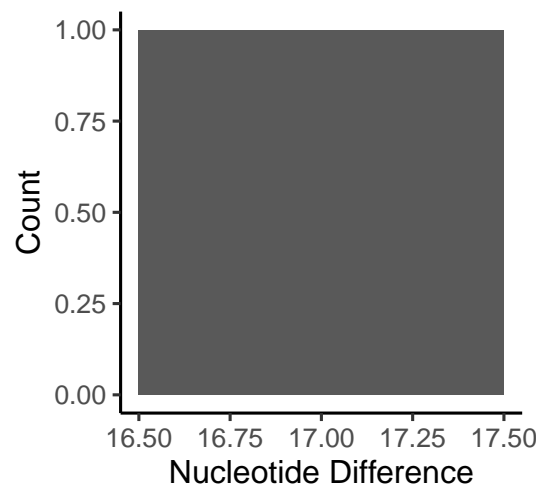
### IGHV1-18\*01

7420 sequences assigned  
1431 (19.3%) exact matches, in which:  
1155 unique CDR3  
7 unique J



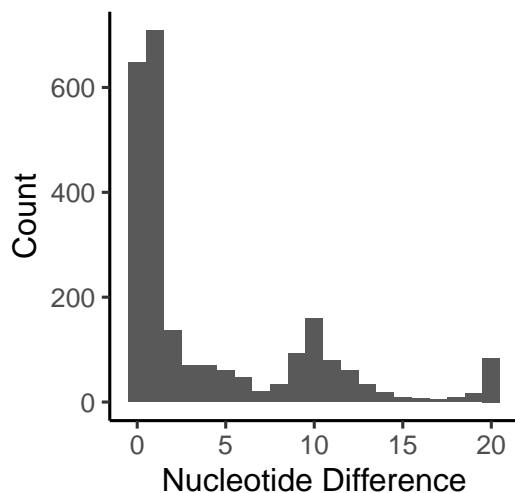
### IGHV1-45\*02

1 sequences assigned  
No exact matches.



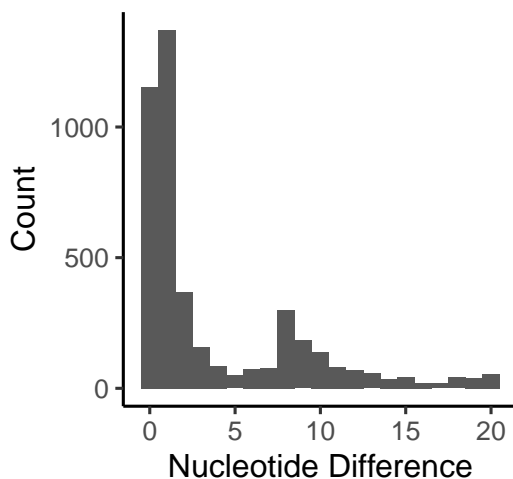
### IGHV1-3\*01\_05

2900 sequences assigned  
647 (22.3%) exact matches, in which:  
513 unique CDR3  
7 unique J



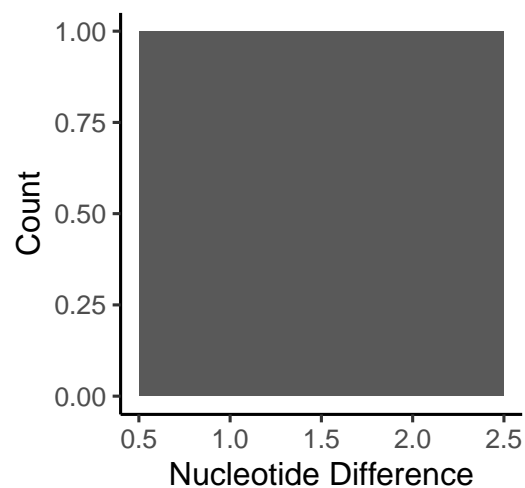
### IGHV1-18\*04

4740 sequences assigned  
1154 (24.3%) exact matches, in which:  
991 unique CDR3  
7 unique J



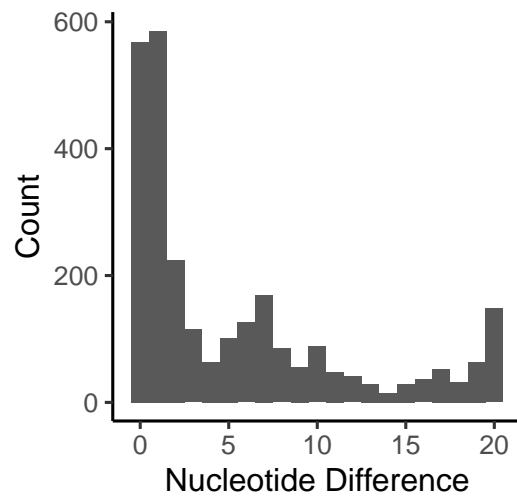
### IGHV1-45\*03

2 sequences assigned  
No exact matches.



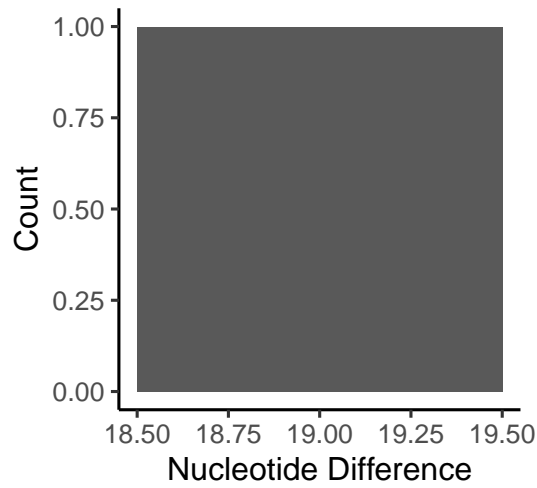
### IGHV1-46\*01

2943 sequences assigned  
568 (19.3%) exact matches, in which:  
474 unique CDR3  
7 unique J



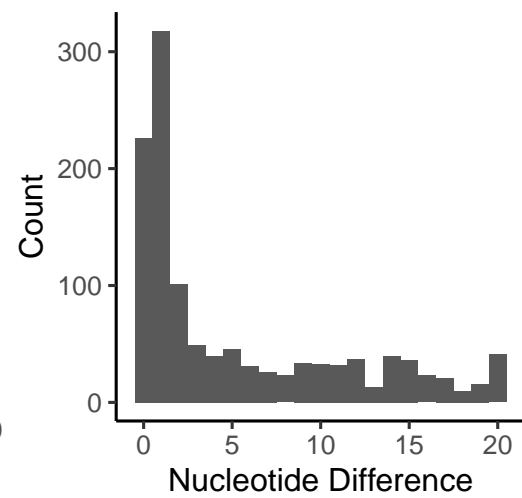
### IGHV1-69-2\*01

9 sequences assigned  
No exact matches.



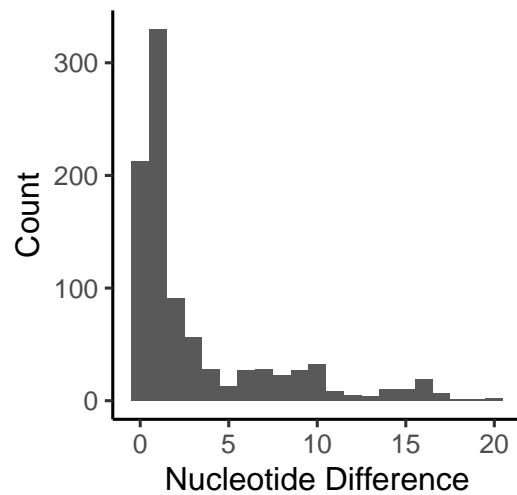
### IGHV2-5\*02

2192 sequences assigned  
226 (10.3%) exact matches, in which:  
184 unique CDR3  
7 unique J



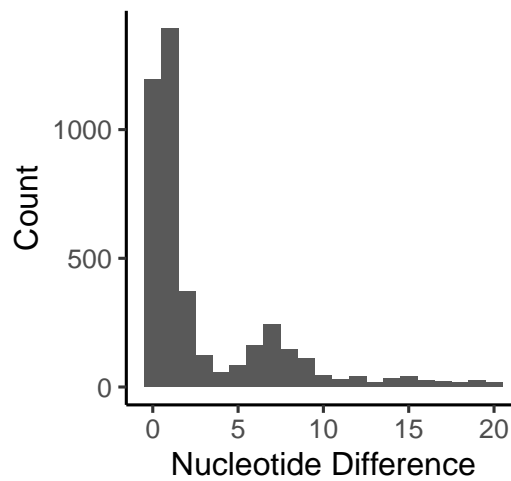
### IGHV1-46\*03

954 sequences assigned  
213 (22.3%) exact matches, in which:  
155 unique CDR3  
5 unique J



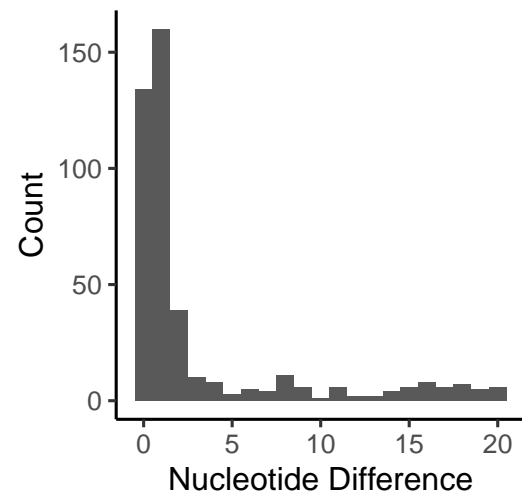
### IGHV1-69\*04\_09

4966 sequences assigned  
1195 (24.1%) exact matches, in which:  
1017 unique CDR3  
7 unique J



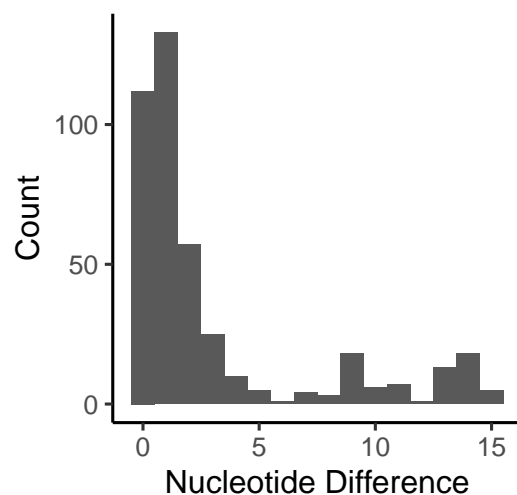
### IGHV2-26\*01

444 sequences assigned  
134 (30.2%) exact matches, in which:  
108 unique CDR3  
7 unique J



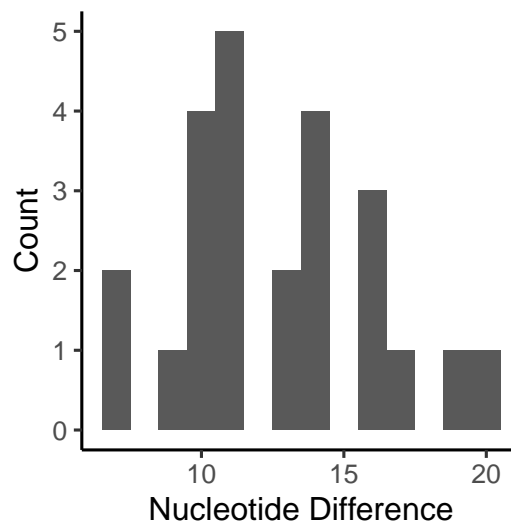
### IGHV1-58\*02

445 sequences assigned  
112 (25.2%) exact matches, in which:  
99 unique CDR3  
6 unique J



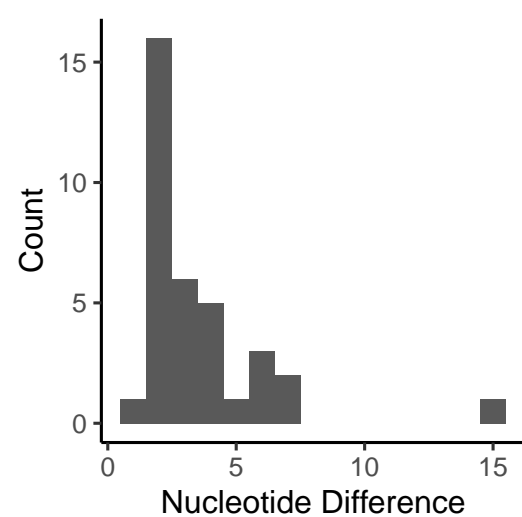
### IGHV1-NL1\*01

24 sequences assigned  
No exact matches.



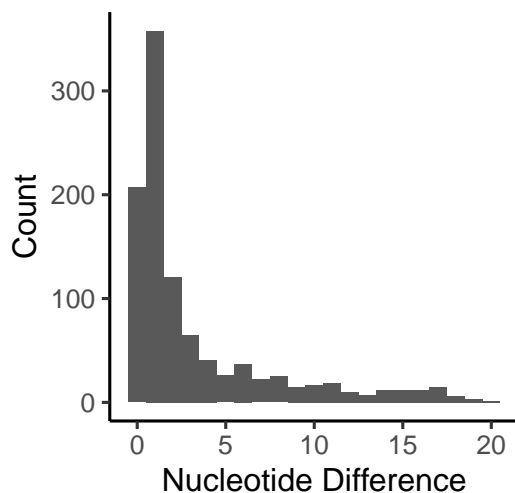
### IGHV2-70\*12

35 sequences assigned  
No exact matches.



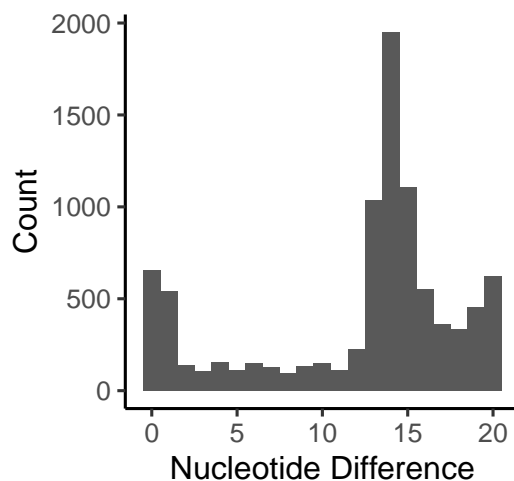
### IGHV2-70\*11\_15

1040 sequences assigned  
207 (19.9%) exact matches, in which:  
148 unique CDR3  
6 unique J



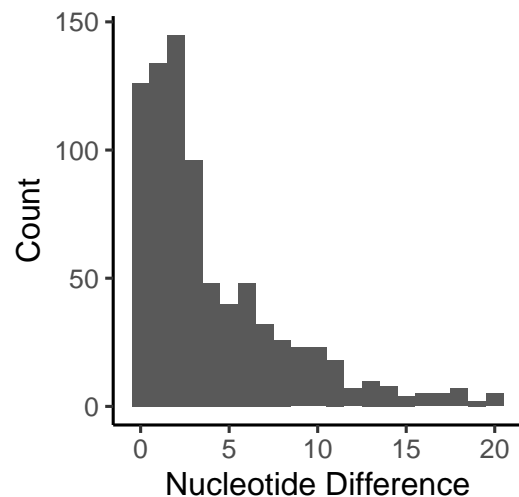
### IGHV3-7\*03

11059 sequences assigned  
657 (5.9%) exact matches, in which:  
436 unique CDR3  
7 unique J



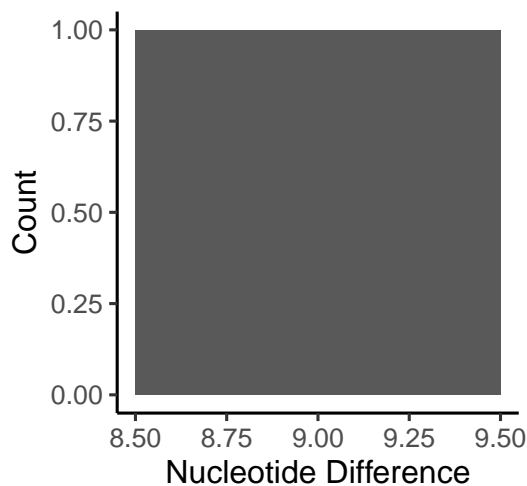
### IGHV3-11\*04

840 sequences assigned  
126 (15%) exact matches, in which:  
118 unique CDR3  
7 unique J



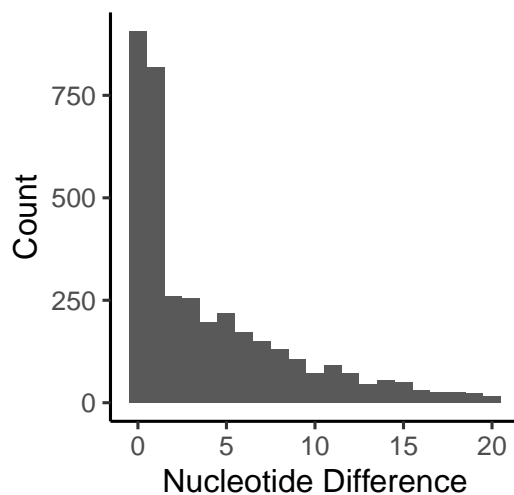
### IGHV2-70D\*04

1 sequences assigned  
No exact matches.



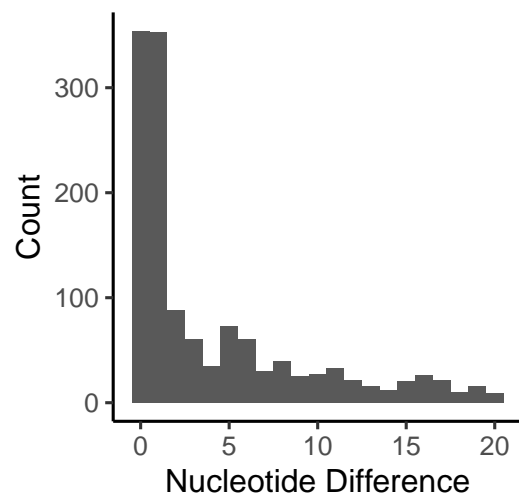
### IGHV3-9\*01

3908 sequences assigned  
907 (23.2%) exact matches, in which:  
542 unique CDR3  
7 unique J



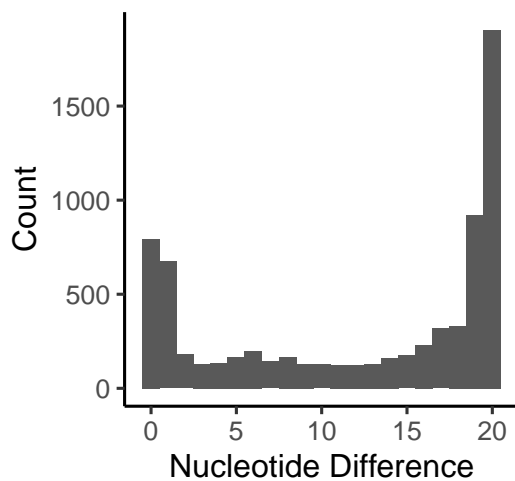
### IGHV3-11\*06

1401 sequences assigned  
354 (25.3%) exact matches, in which:  
241 unique CDR3  
6 unique J



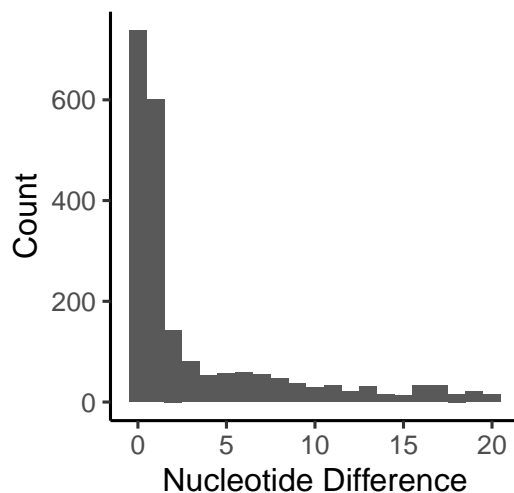
### IGHV3-7\*01

9845 sequences assigned  
793 (8.1%) exact matches, in which:  
547 unique CDR3  
7 unique J



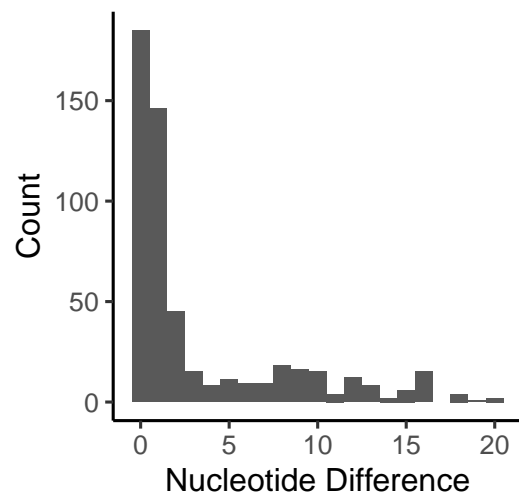
### IGHV3-11\*01

2320 sequences assigned  
738 (31.8%) exact matches, in which:  
472 unique CDR3  
7 unique J



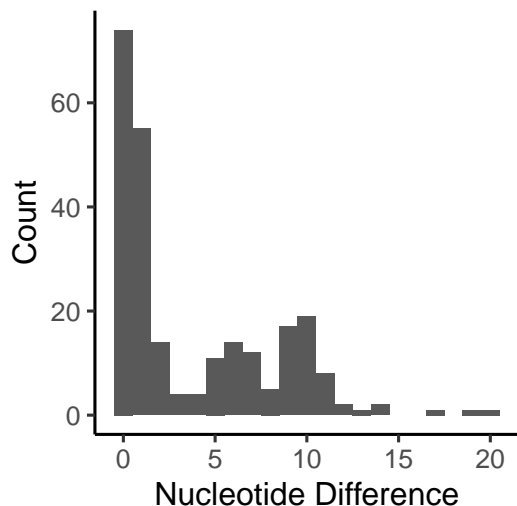
### IGHV3-13\*01

556 sequences assigned  
185 (33.3%) exact matches, in which:  
124 unique CDR3  
6 unique J



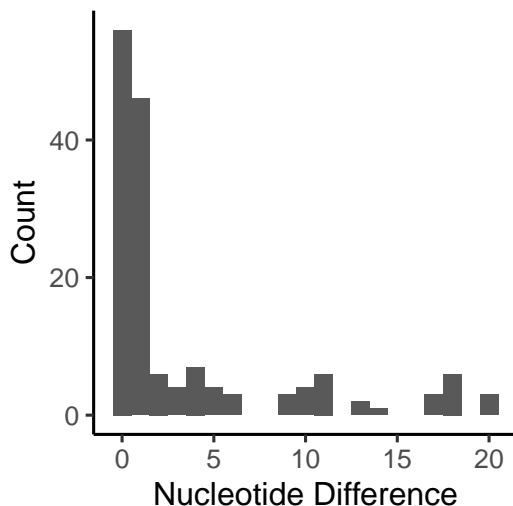
### IGHV3-13\*05

245 sequences assigned  
74 (30.2%) exact matches, in which:  
51 unique CDR3  
6 unique J



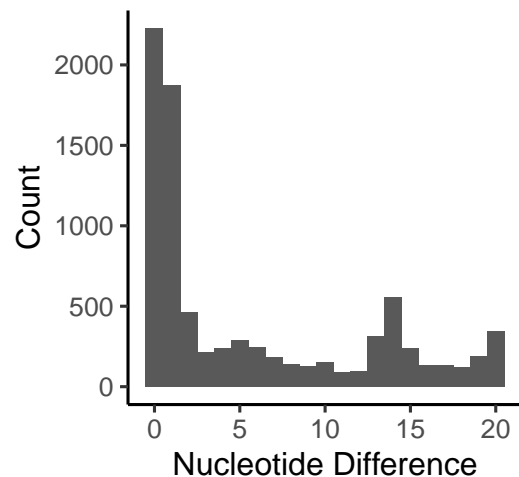
### IGHV3-20\*01\_02

163 sequences assigned  
56 (34.4%) exact matches, in which:  
33 unique CDR3  
4 unique J



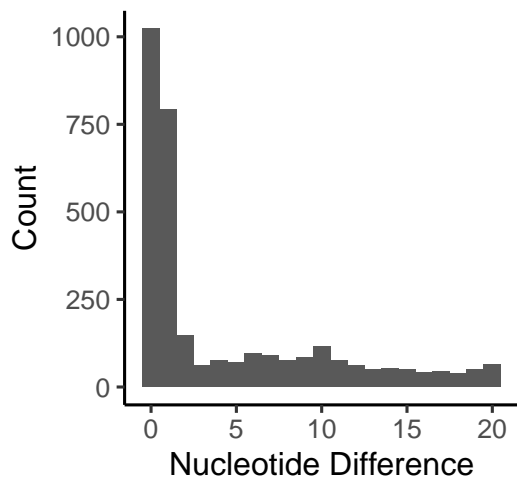
### IGHV3-21\*01\_02

10548 sequences assigned  
2227 (21.1%) exact matches, in which:  
1369 unique CDR3  
7 unique J



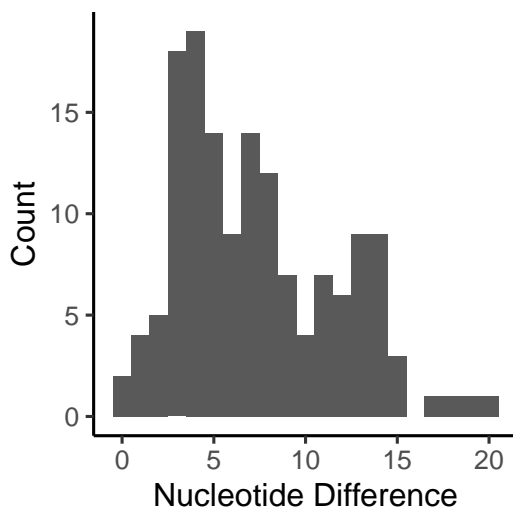
### IGHV3-15\*01\_02

5183 sequences assigned  
1023 (19.7%) exact matches, in which:  
621 unique CDR3  
7 unique J



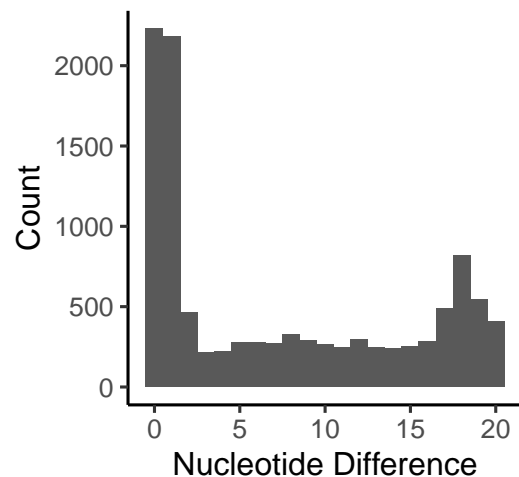
### IGHV3-20\*03\_04

157 sequences assigned  
2 (1.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



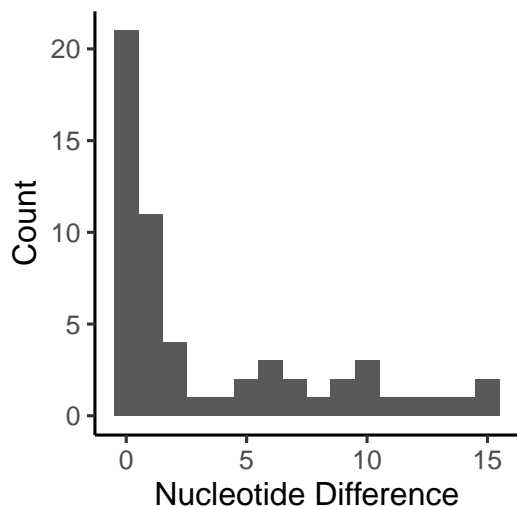
### IGHV3-23\*01\_04

14796 sequences assigned  
2230 (15.1%) exact matches, in which:  
1303 unique CDR3  
7 unique J



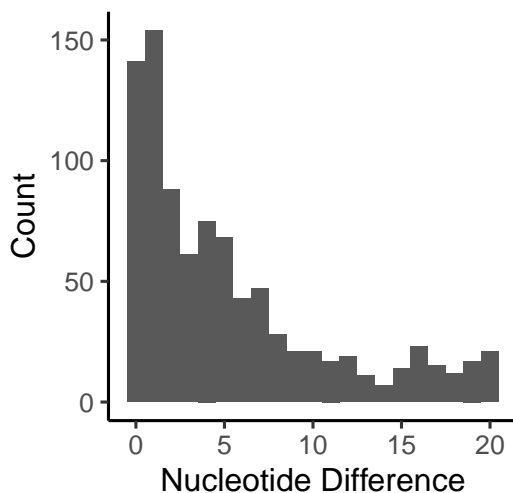
### IGHV3-19\*01

57 sequences assigned  
21 (36.8%) exact matches, in which:  
17 unique CDR3  
4 unique J



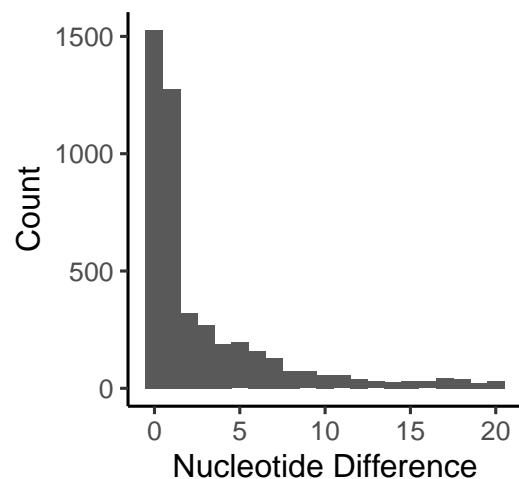
### IGHV3-21\*04

1000 sequences assigned  
141 (14.1%) exact matches, in which:  
128 unique CDR3  
6 unique J



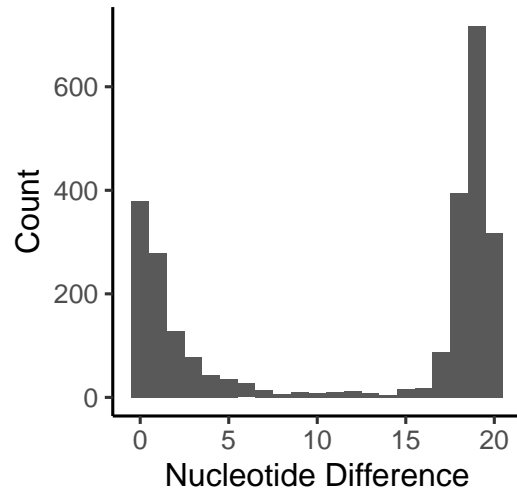
### IGHV3-30-3\*01

4911 sequences assigned  
1527 (31.1%) exact matches, in which:  
1037 unique CDR3  
7 unique J



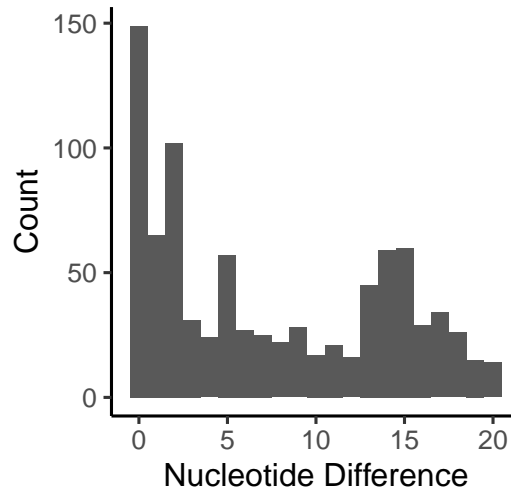
### IGHV3–30\*03

2984 sequences assigned  
379 (12.7%) exact matches, in which:  
345 unique CDR3  
7 unique J



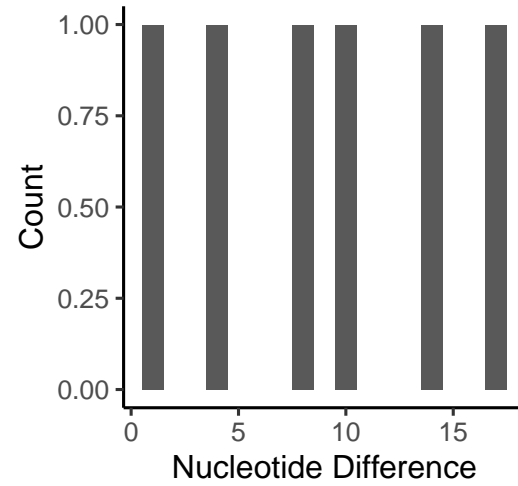
### IGHV3–33\*08

1048 sequences assigned  
149 (14.2%) exact matches, in which:  
104 unique CDR3  
6 unique J



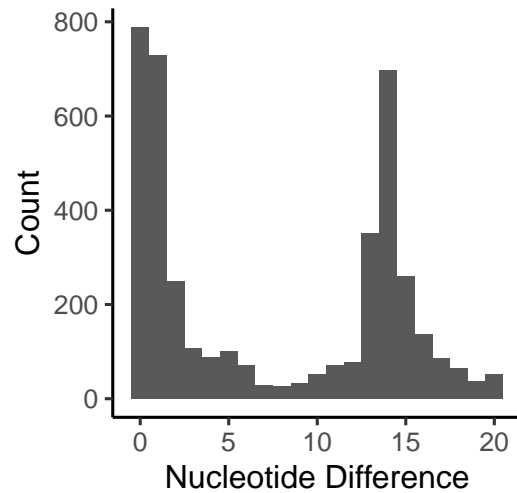
### IGHV3–47\*02

6 sequences assigned  
No exact matches.



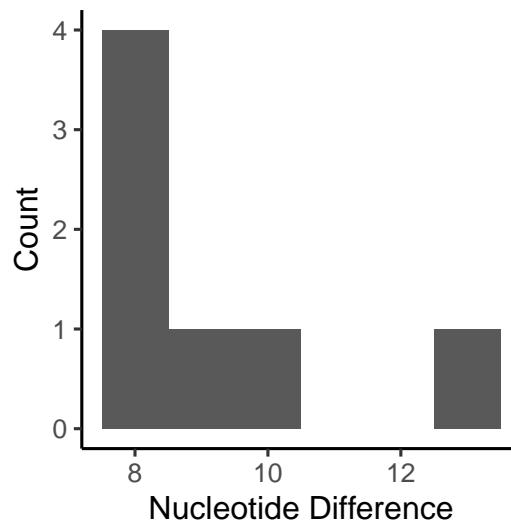
### IGHV3–33\*01

5619 sequences assigned  
789 (14%) exact matches, in which:  
525 unique CDR3  
7 unique J



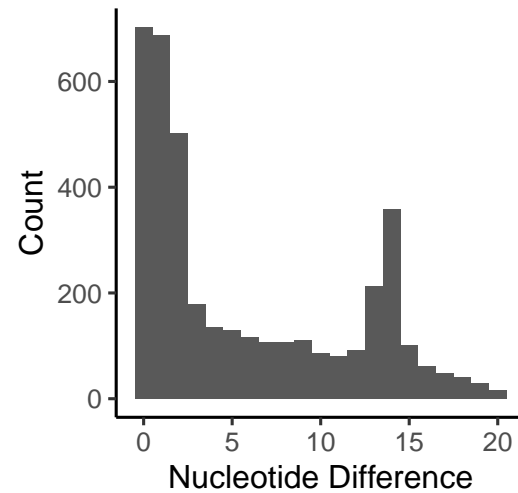
### IGHV3–35\*01

7 sequences assigned  
No exact matches.



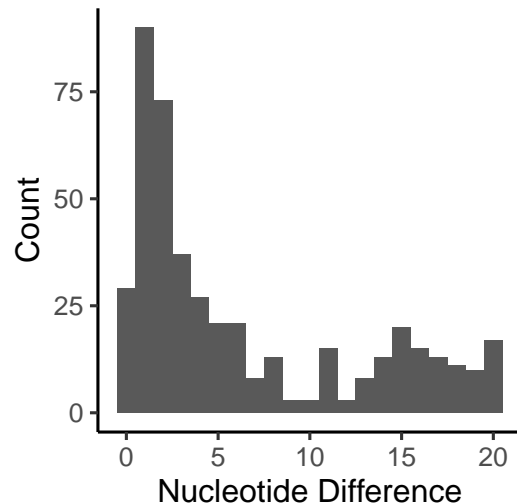
### IGHV3–48\*01

6398 sequences assigned  
703 (11%) exact matches, in which:  
468 unique CDR3  
7 unique J



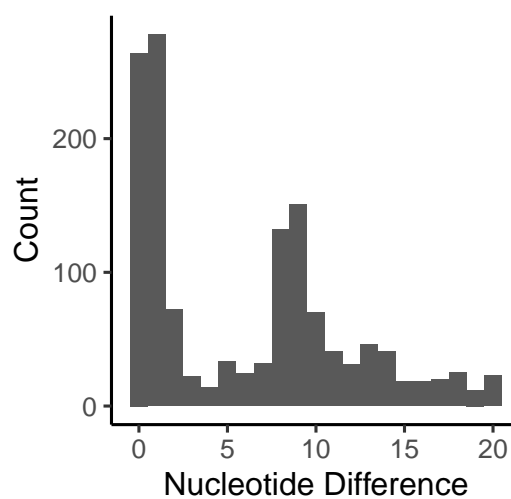
### IGHV3–33\*06

502 sequences assigned  
29 (5.8%) exact matches, in which:  
27 unique CDR3  
6 unique J



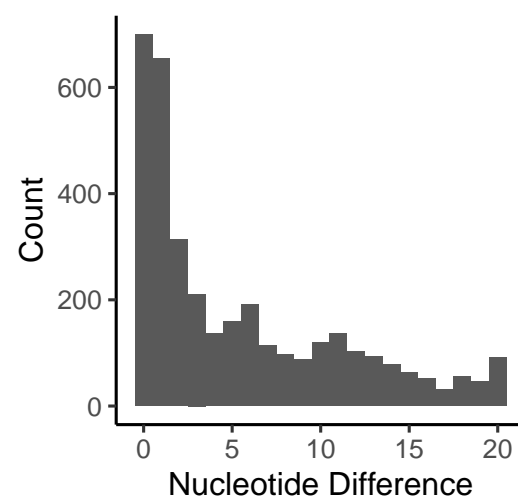
### IGHV3–43\*02

2396 sequences assigned  
264 (11%) exact matches, in which:  
145 unique CDR3  
6 unique J



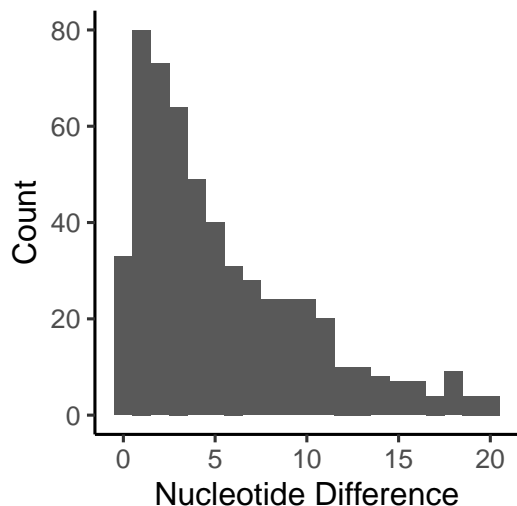
### IGHV3–48\*03

5611 sequences assigned  
700 (12.5%) exact matches, in which:  
437 unique CDR3  
6 unique J



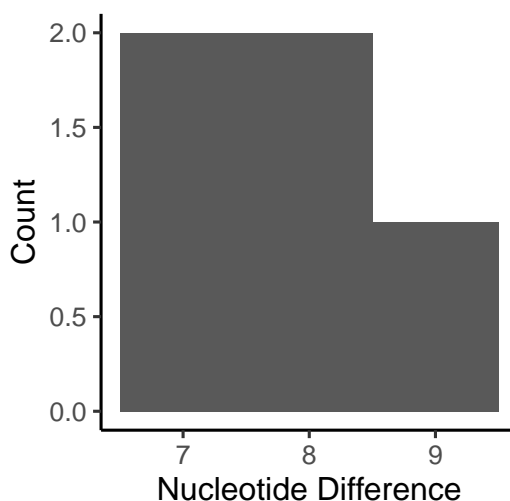
### IGHV3-48\*04

642 sequences assigned  
33 (5.1%) exact matches, in which:  
33 unique CDR3  
5 unique J



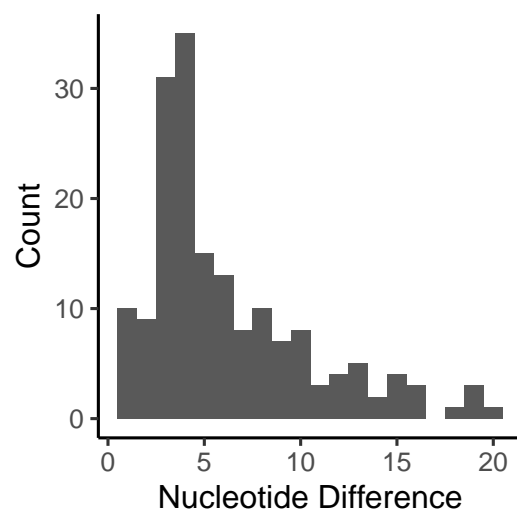
### IGHV3-52\*02

5 sequences assigned  
No exact matches.



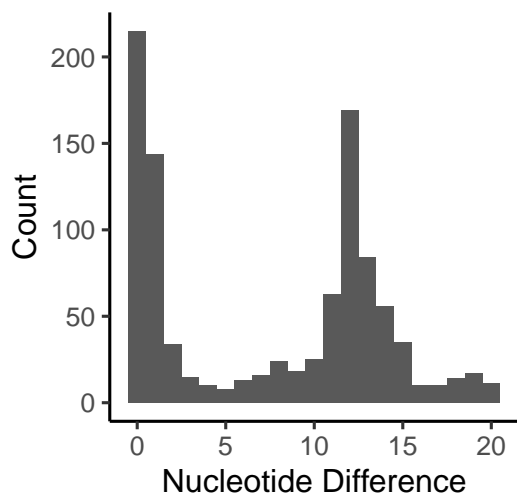
### IGHV3-53\*01\_02

188 sequences assigned  
No exact matches.



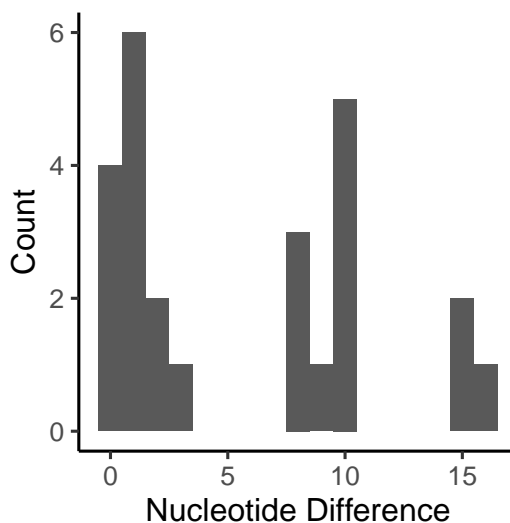
### IGHV3-49\*04

1079 sequences assigned  
215 (19.9%) exact matches, in which:  
133 unique CDR3  
5 unique J



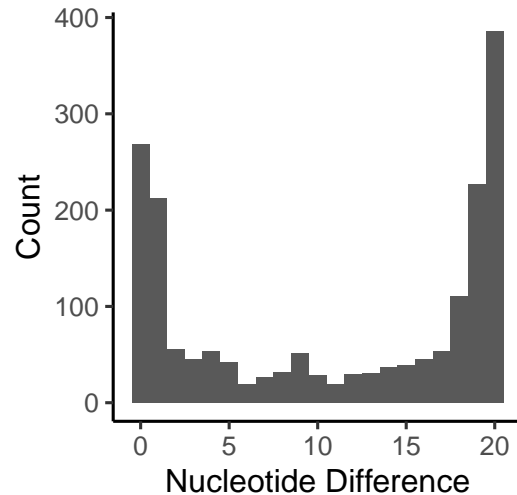
### IGHV3-52\*01\_03

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



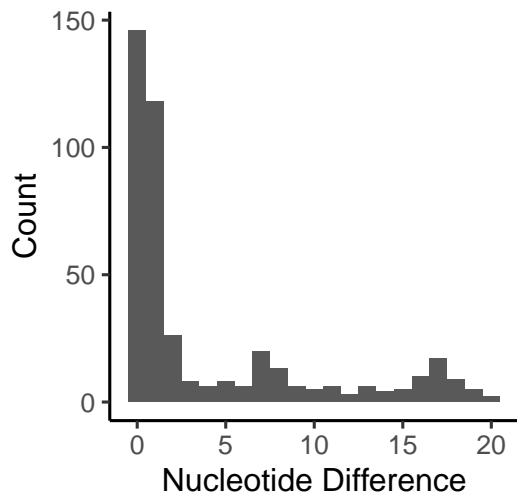
### IGHV3-64\*01

5474 sequences assigned  
268 (4.9%) exact matches, in which:  
172 unique CDR3  
6 unique J



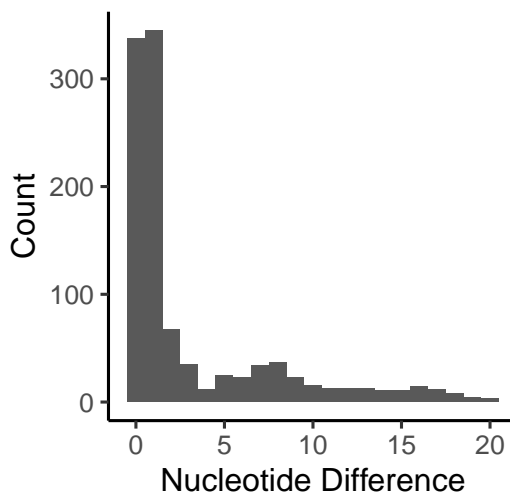
### IGHV3-49\*03\_05

561 sequences assigned  
146 (26%) exact matches, in which:  
91 unique CDR3  
7 unique J



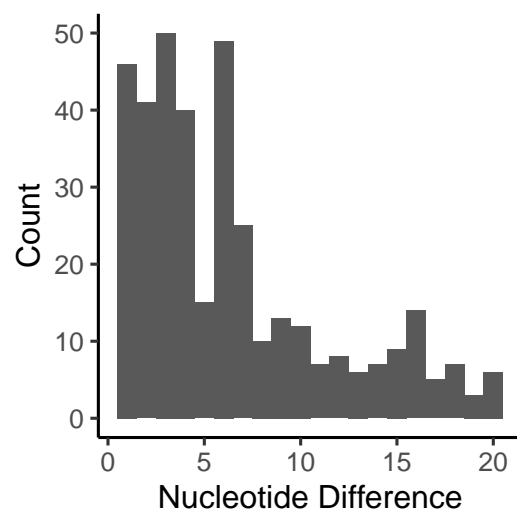
### IGHV3-53\*04

1089 sequences assigned  
337 (30.9%) exact matches, in which:  
222 unique CDR3  
7 unique J



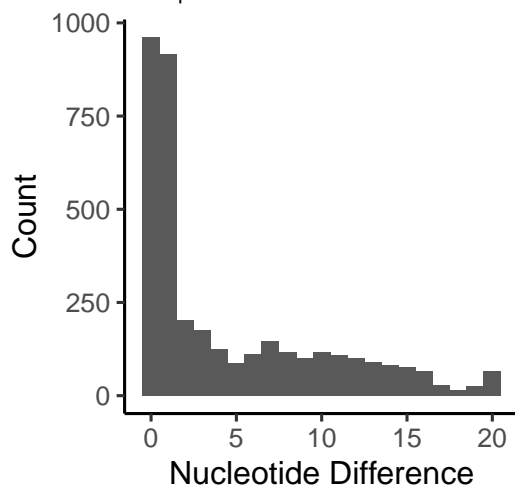
### IGHV3-64\*04

569 sequences assigned  
No exact matches.



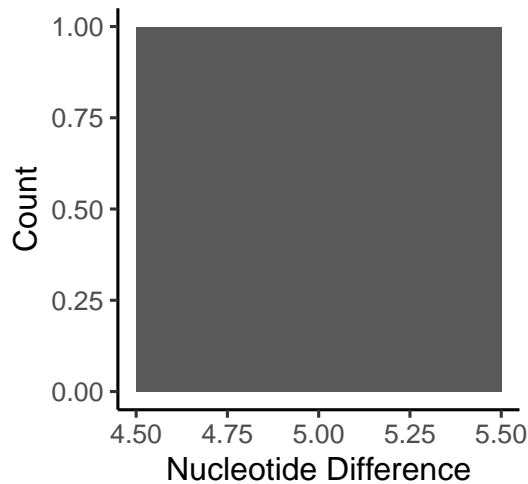
### IGHV3-66\*01

4626 sequences assigned  
961 (20.8%) exact matches, in which:  
647 unique CDR3  
7 unique J



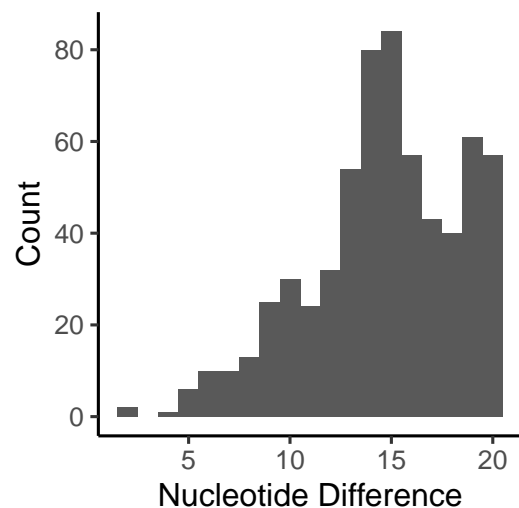
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



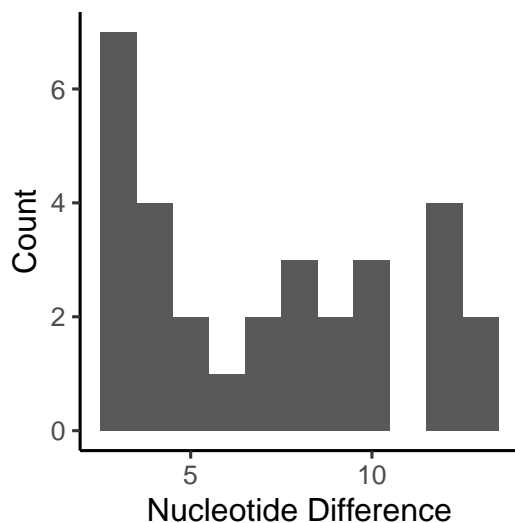
### IGHV3-74\*03

4043 sequences assigned  
No exact matches.



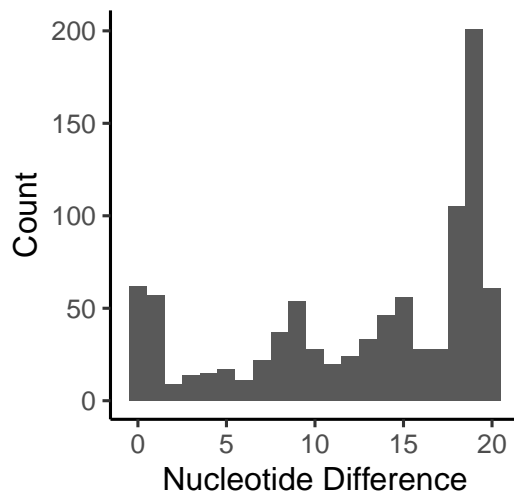
### IGHV3-69-1\*01

37 sequences assigned  
No exact matches.



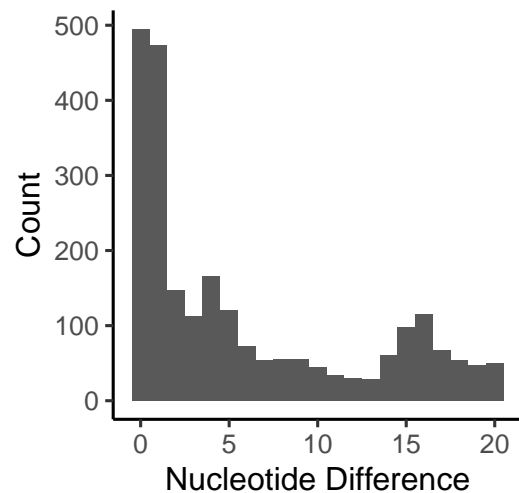
### IGHV3-72\*01

1146 sequences assigned  
62 (5.4%) exact matches, in which:  
38 unique CDR3  
6 unique J



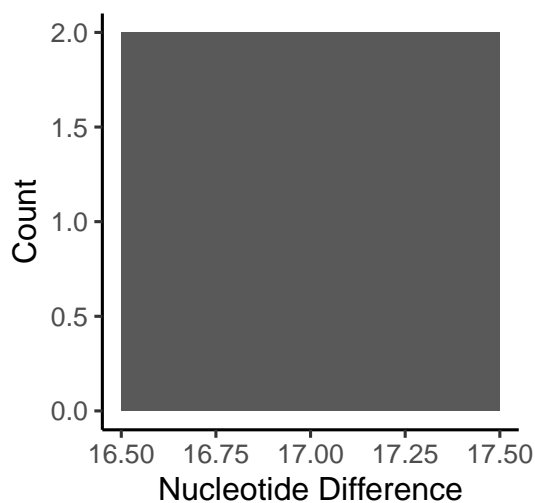
### IGHV3-74\*01\_02

2954 sequences assigned  
495 (16.8%) exact matches, in which:  
326 unique CDR3  
7 unique J



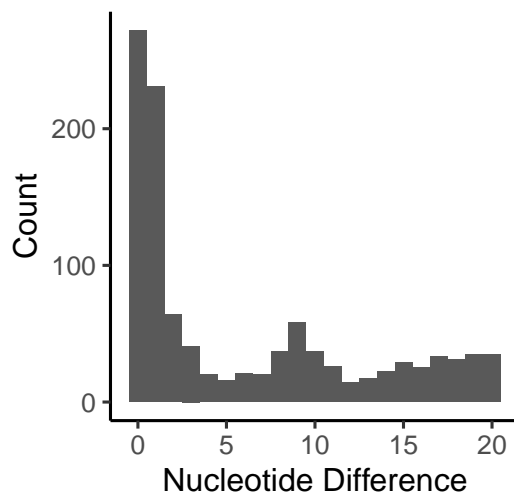
### IGHV3-69-1\*02

10 sequences assigned  
No exact matches.



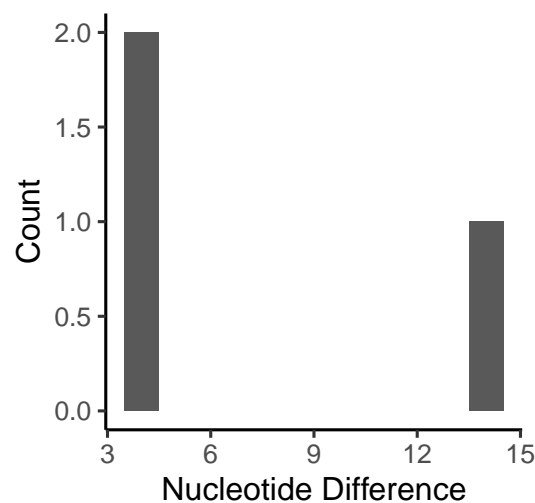
### IGHV3-73\*01\_02

1547 sequences assigned  
272 (17.6%) exact matches, in which:  
161 unique CDR3  
7 unique J



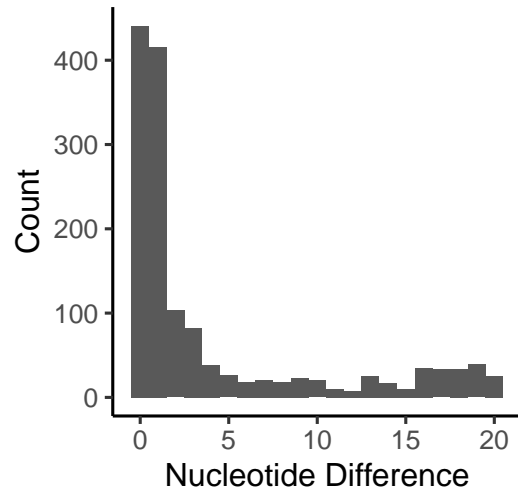
### IGHV3-43D\*04

3 sequences assigned  
No exact matches.



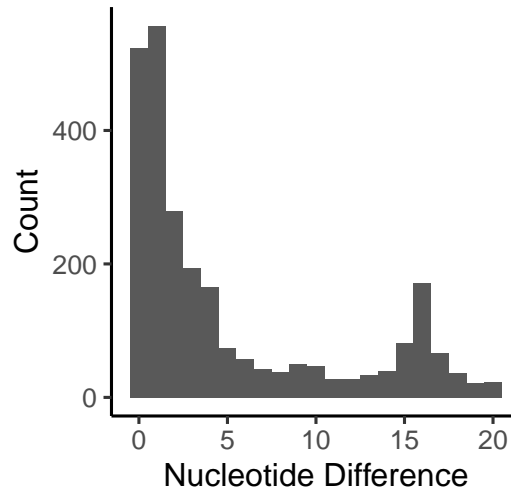
### IGHV3-64D\*06

3501 sequences assigned  
441 (12.6%) exact matches, in which:  
244 unique CDR3  
7 unique J



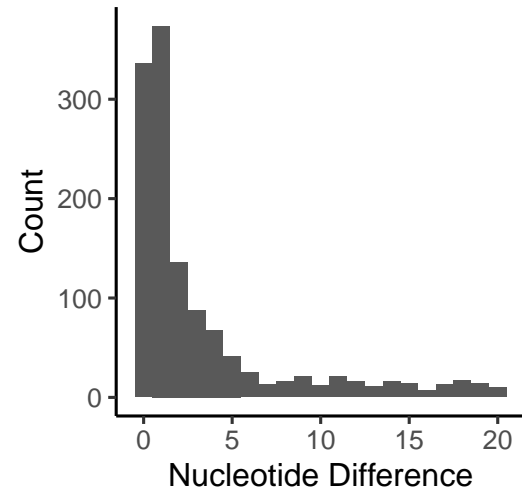
### IGHV4-4\*02\_03

2909 sequences assigned  
524 (18%) exact matches, in which:  
414 unique CDR3  
7 unique J



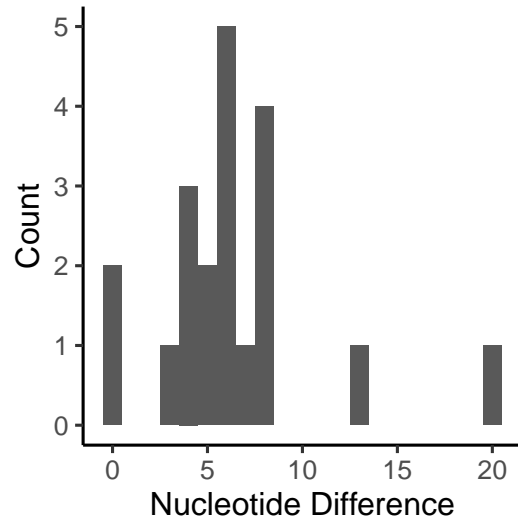
### IGHV4-30-4\*01

2508 sequences assigned  
336 (13.4%) exact matches, in which:  
270 unique CDR3  
7 unique J



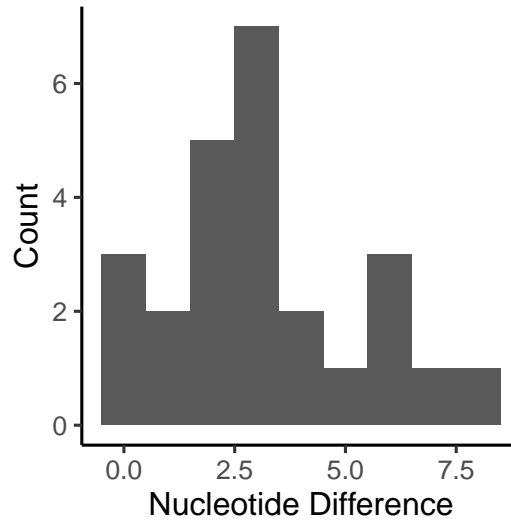
### IGHV3-NL1\*01

29 sequences assigned  
2 (6.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



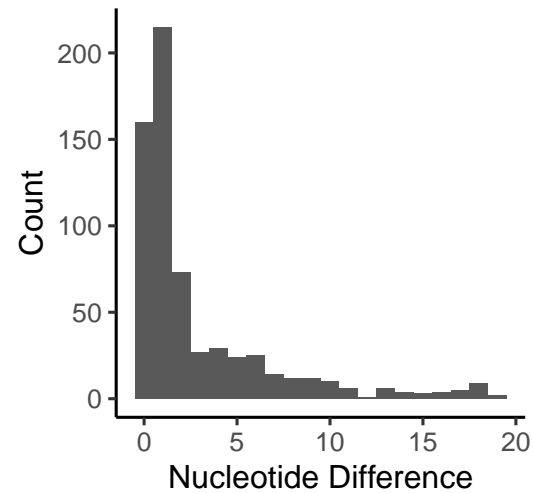
### IGHV4-28\*03

26 sequences assigned  
3 (11.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



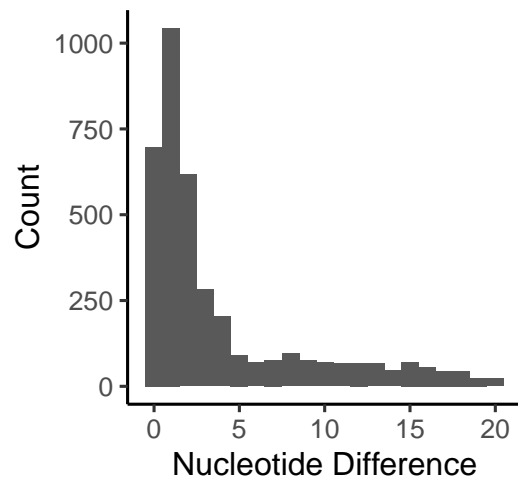
### IGHV4-30-2\*01

691 sequences assigned  
160 (23.2%) exact matches, in which:  
94 unique CDR3  
5 unique J



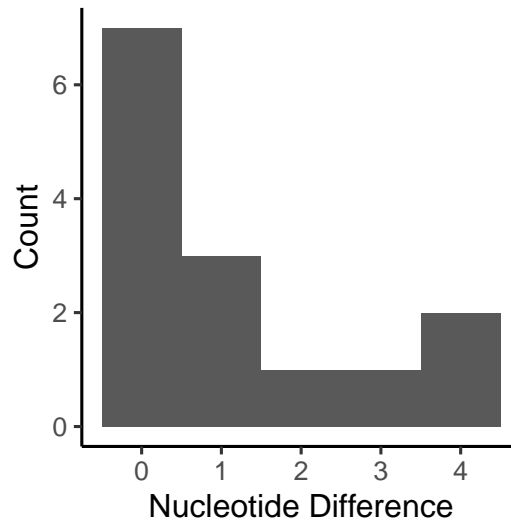
### IGHV4-4\*07

4007 sequences assigned  
698 (17.4%) exact matches, in which:  
564 unique CDR3  
7 unique J



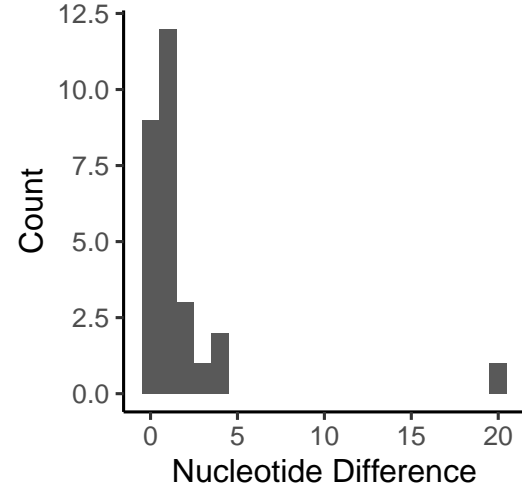
### IGHV4-28\*01\_07

14 sequences assigned  
7 (50%) exact matches, in which:  
4 unique CDR3  
2 unique J



### IGHV4-30-2\*02

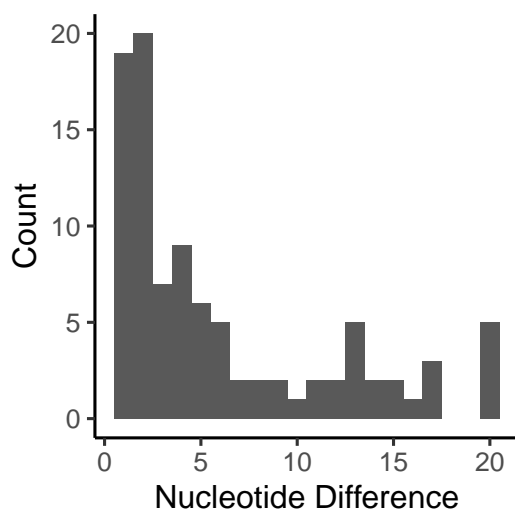
28 sequences assigned  
9 (32.1%) exact matches, in which:  
9 unique CDR3  
4 unique J





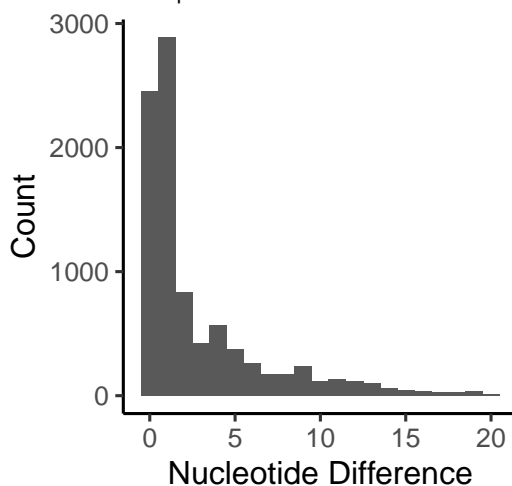
### IGHV4-30-2\*03

112 sequences assigned  
No exact matches.



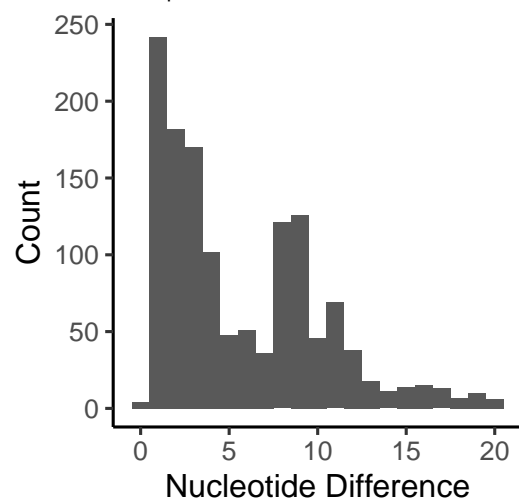
### IGHV4-34\*01\_02

9286 sequences assigned  
2457 (26.5%) exact matches, in which:  
1821 unique CDR3  
7 unique J



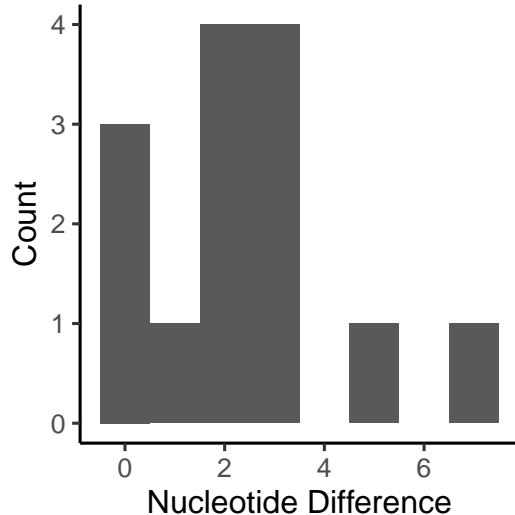
### IGHV4-39\*07

3285 sequences assigned  
4 (0.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



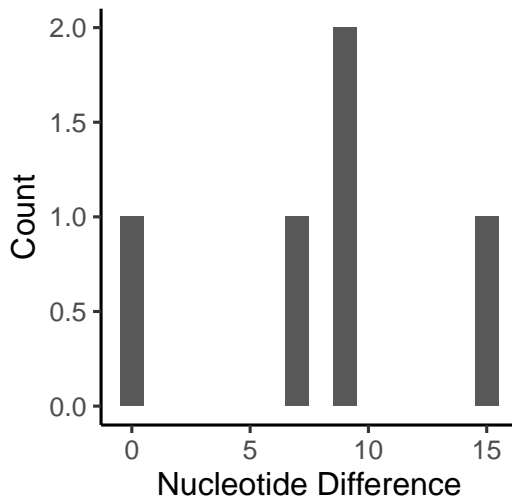
### IGHV4-30-2\*04

14 sequences assigned  
3 (21.4%) exact matches, in which:  
3 unique CDR3  
3 unique J



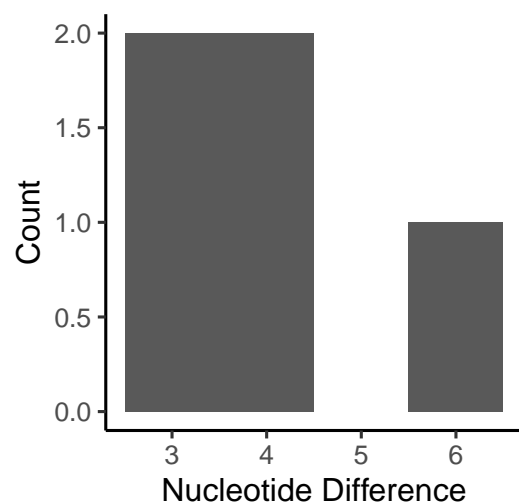
### IGHV4-38-2\*01

13 sequences assigned  
1 (7.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



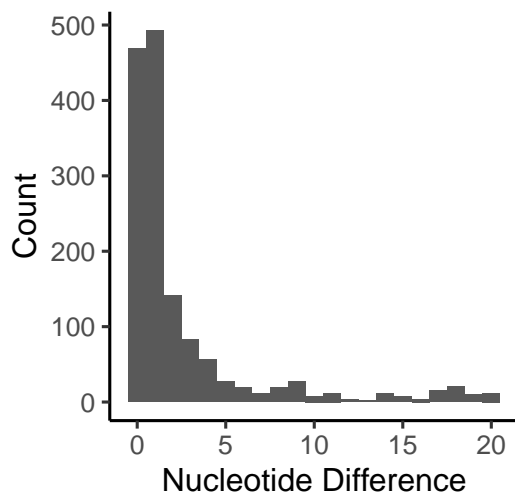
### IGHV4-55\*09

5 sequences assigned  
No exact matches.



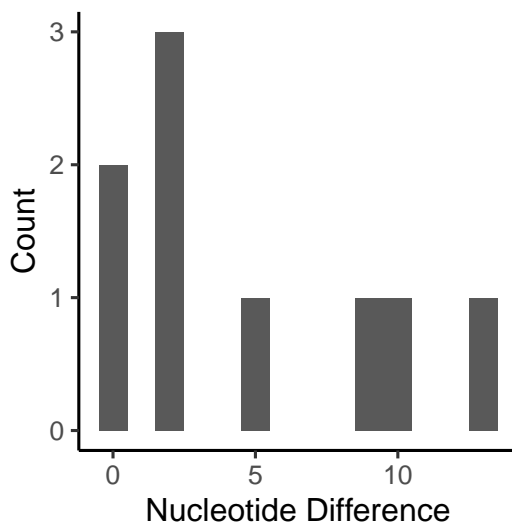
### IGHV4-31\*02

1666 sequences assigned  
469 (28.2%) exact matches, in which:  
391 unique CDR3  
7 unique J



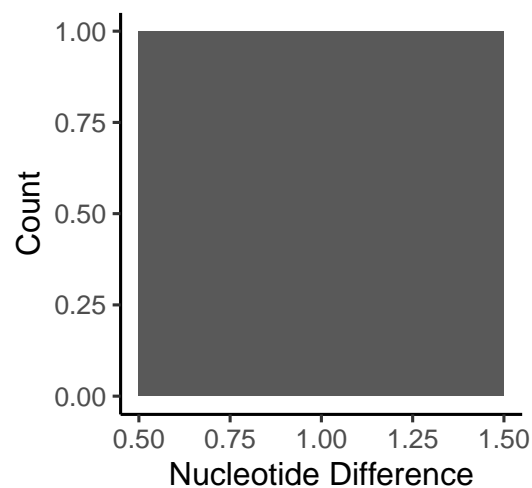
### IGHV4-38-2\*02

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



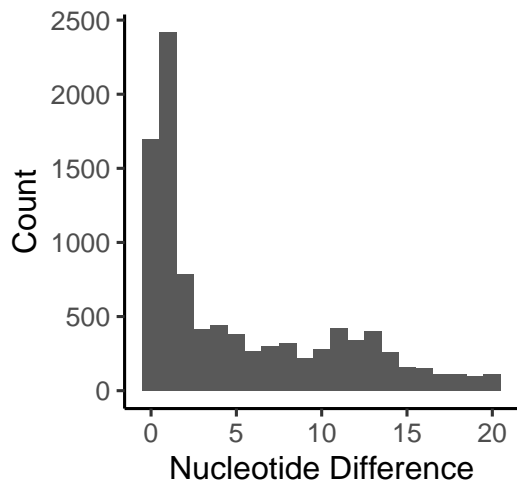
### IGHV4-55\*02\_04\_08

1 sequences assigned  
No exact matches.



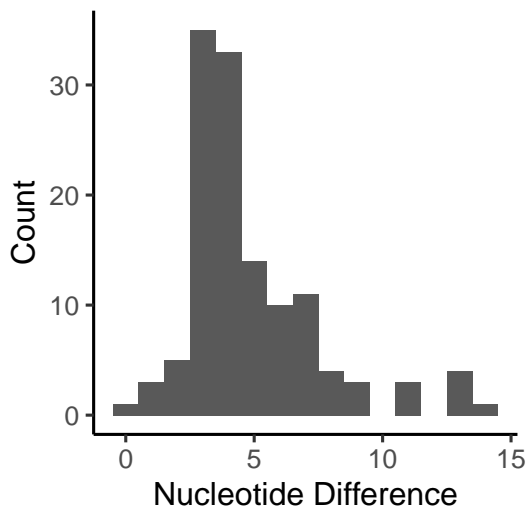
### IGHV4-59\*08

14720 sequences assigned  
1694 (11.5%) exact matches, in which:  
1272 unique CDR3  
7 unique J



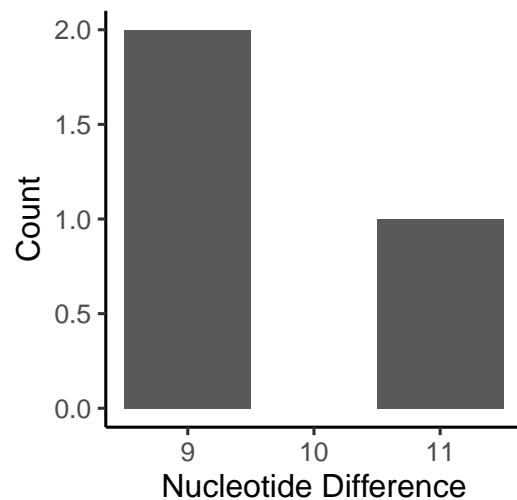
### IGHV4-61\*02

128 sequences assigned  
1 (0.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



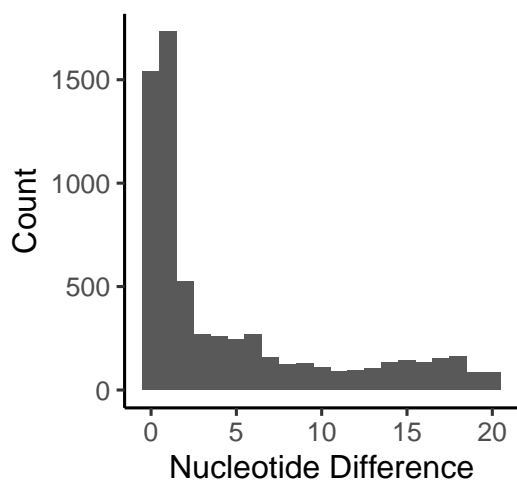
### IGHV1/OR15-3\*02

3 sequences assigned  
No exact matches.



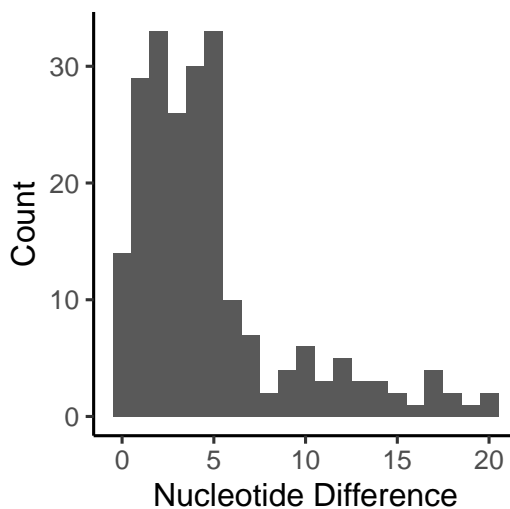
### IGHV4-59\*01\_07

8606 sequences assigned  
1539 (17.9%) exact matches, in which:  
1230 unique CDR3  
7 unique J



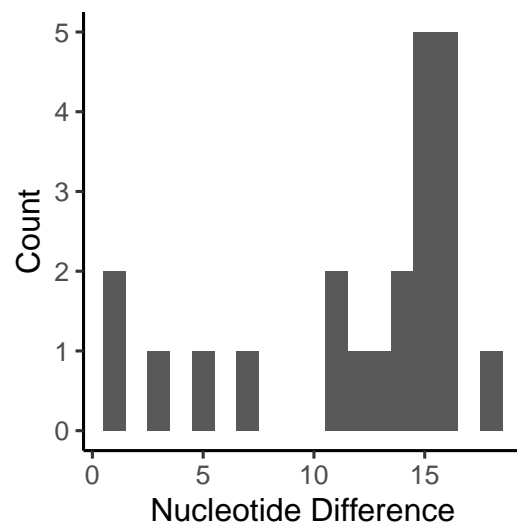
### IGHV4-61\*08

272 sequences assigned  
14 (5.1%) exact matches, in which:  
13 unique CDR3  
4 unique J



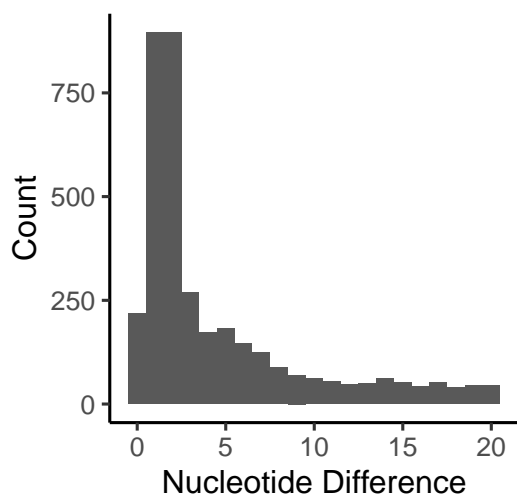
### IGHV4/OR15-8\*01

25 sequences assigned  
No exact matches.



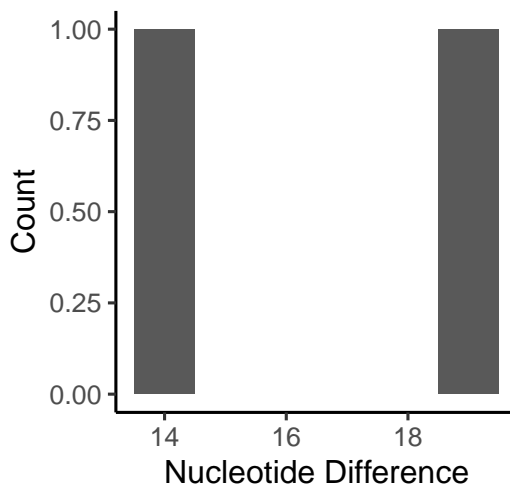
### IGHV4-59\*12

4259 sequences assigned  
218 (5.1%) exact matches, in which:  
203 unique CDR3  
7 unique J



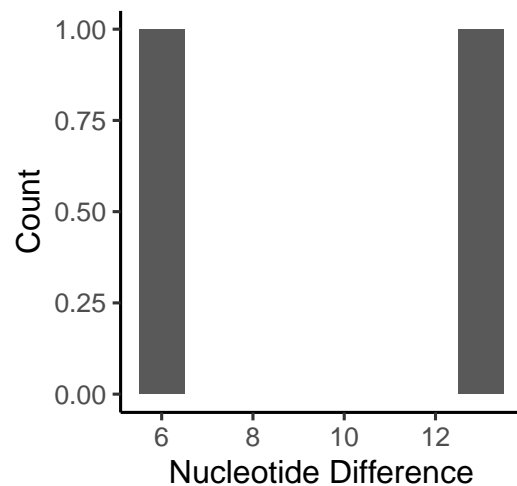
### IGHV1/OR15-2\*02\_03

2 sequences assigned  
No exact matches.



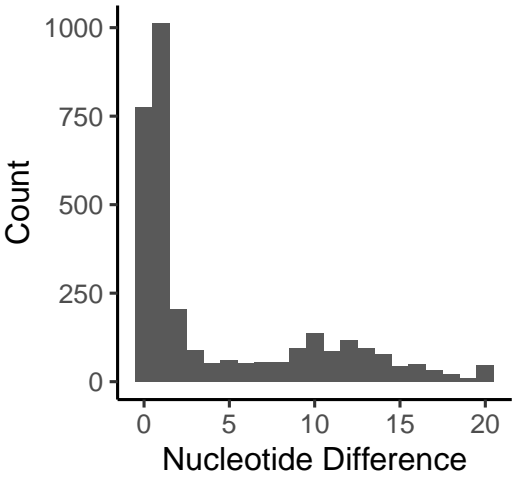
### IGHV4/OR15-8\*02

4 sequences assigned  
No exact matches.



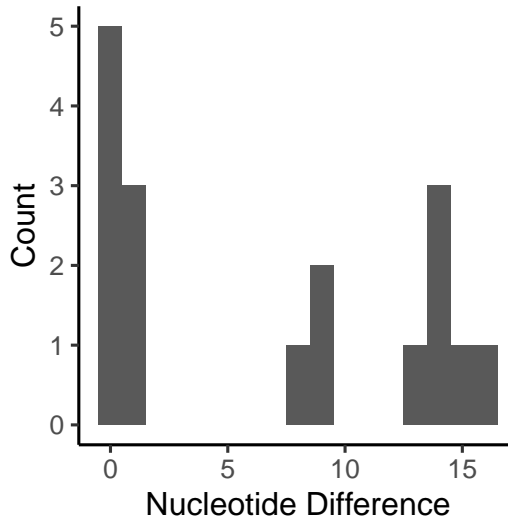
### IGHV5-10-1\*01\_03

3434 sequences assigned  
775 (22.6%) exact matches, in which:  
521 unique CDR3  
7 unique J



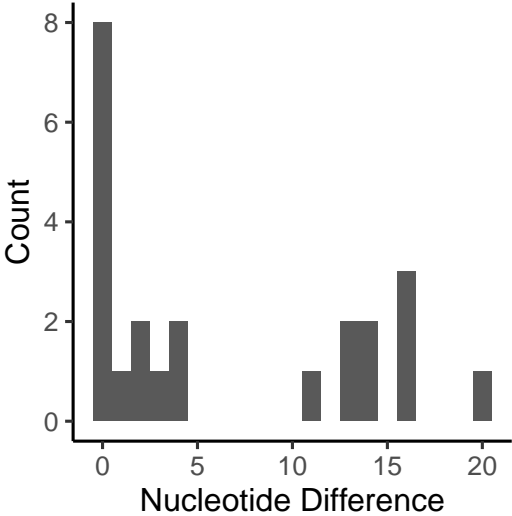
### IGHV5-51\*07

22 sequences assigned  
5 (22.7%) exact matches, in which:  
5 unique CDR3  
3 unique J



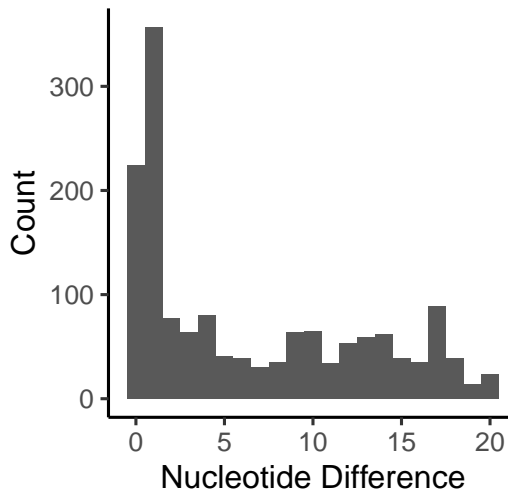
### IGHV5-51\*04

30 sequences assigned  
8 (26.7%) exact matches, in which:  
8 unique CDR3  
5 unique J



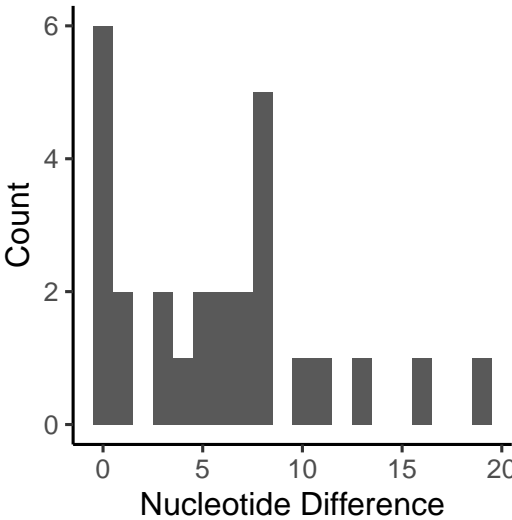
### IGHV6-1\*01\_02

1655 sequences assigned  
224 (13.5%) exact matches, in which:  
179 unique CDR3  
7 unique J



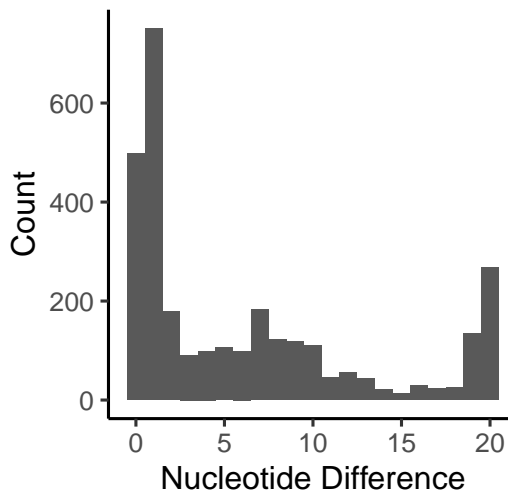
### IGHV5-51\*06

36 sequences assigned  
6 (16.7%) exact matches, in which:  
6 unique CDR3  
3 unique J

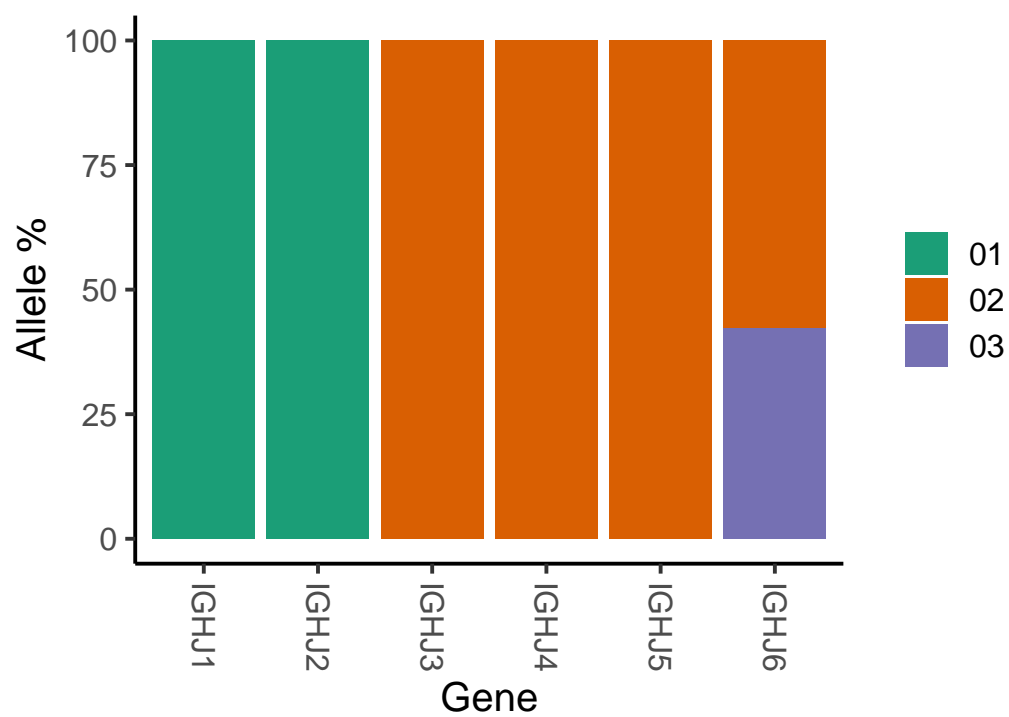


### IGHV7-4-1\*02

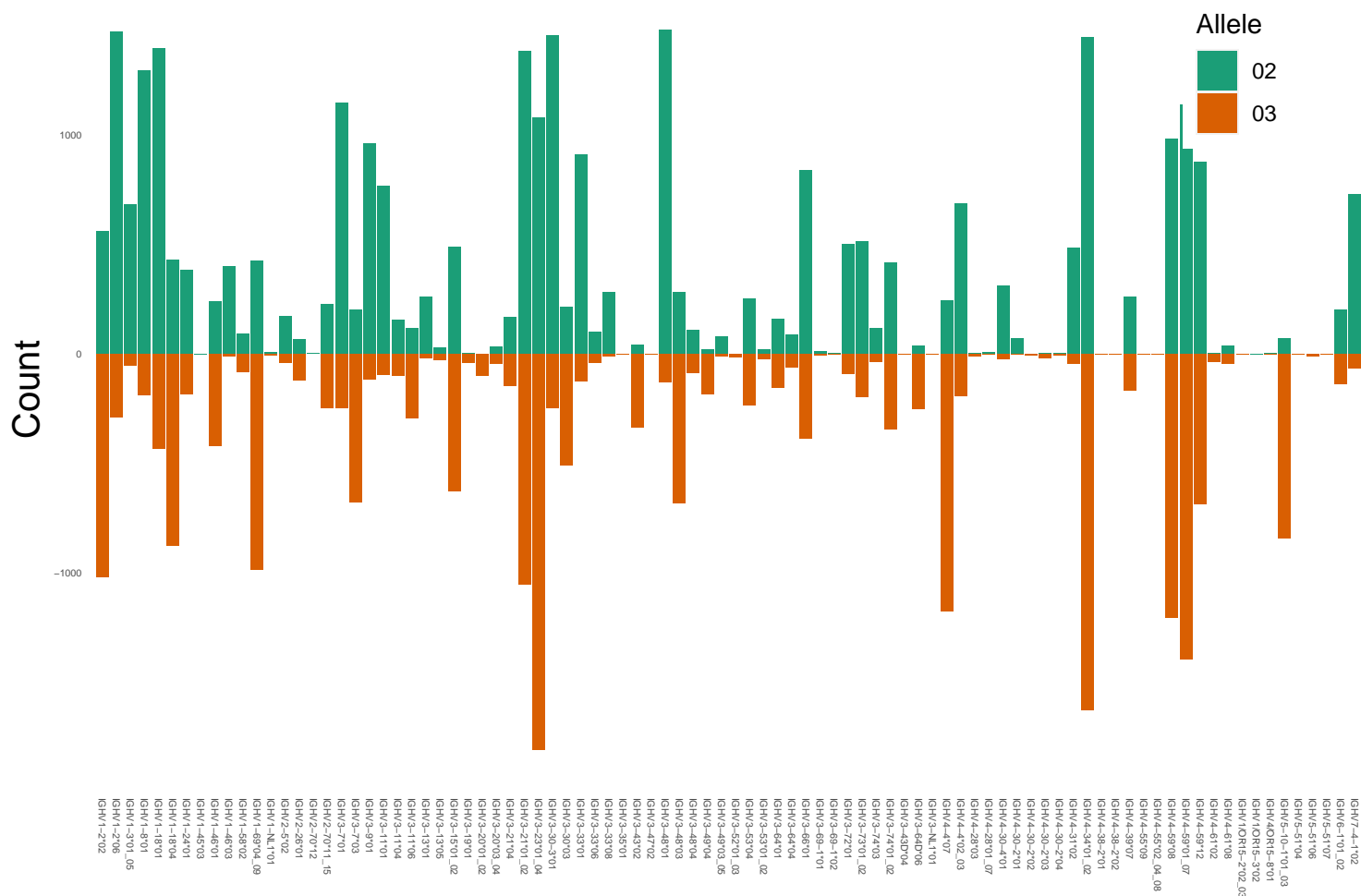
4085 sequences assigned  
498 (12.2%) exact matches, in which:  
377 unique CDR3  
7 unique J



Allele Usage



### Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.