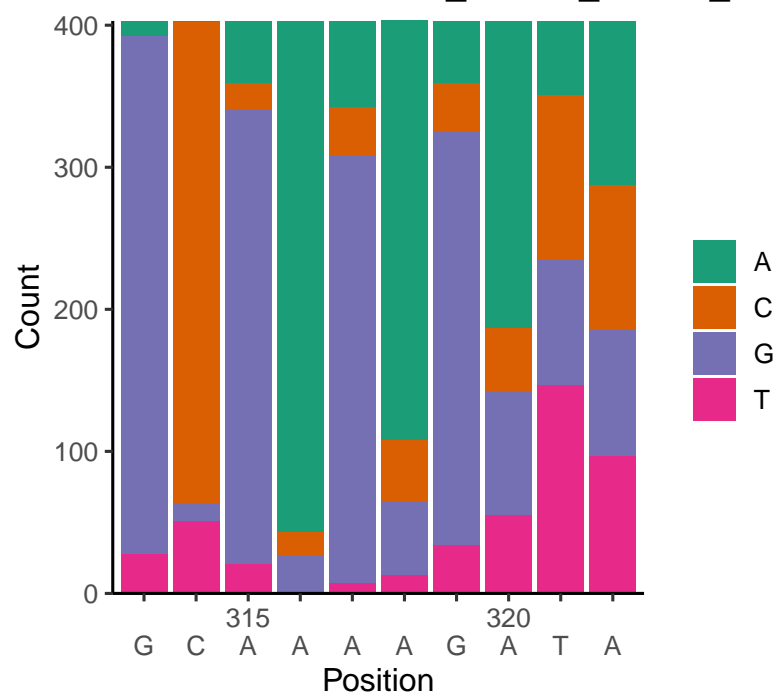
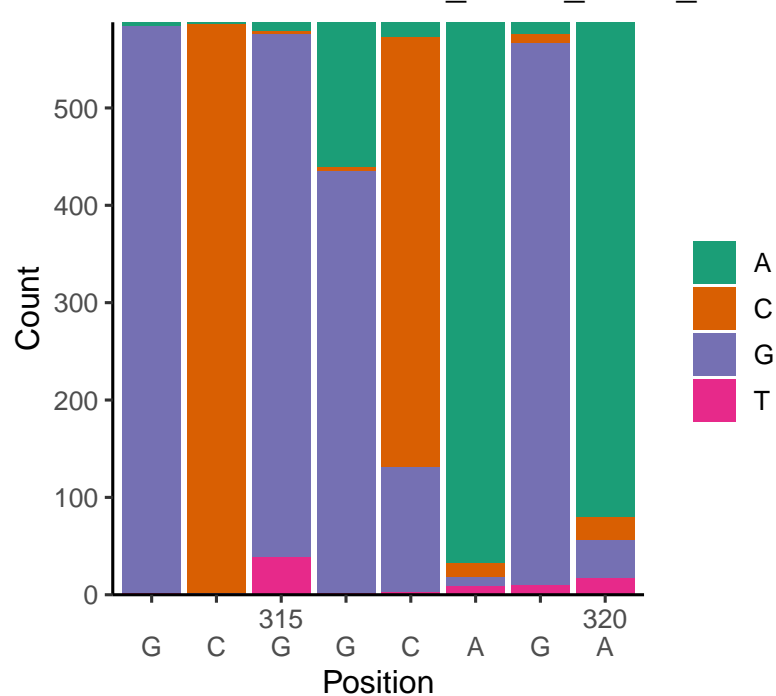


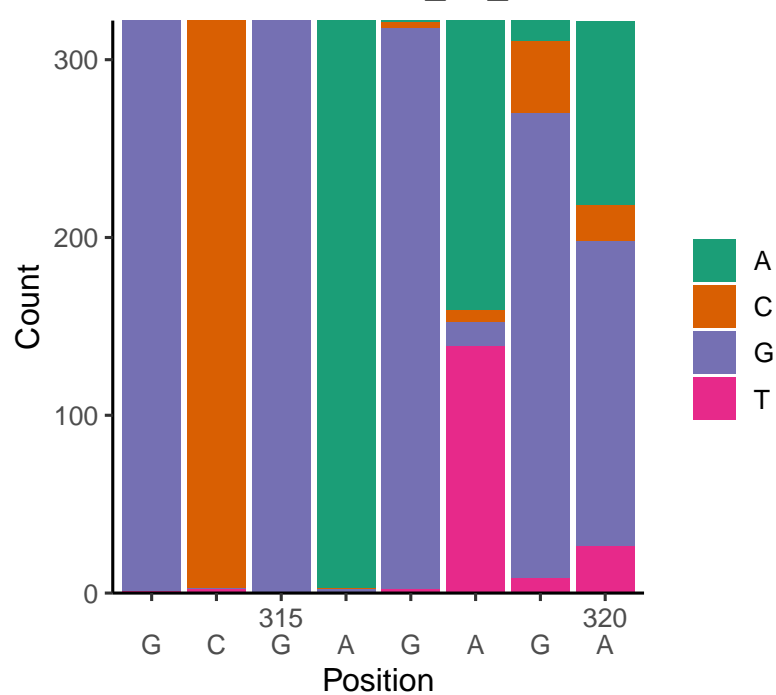
Gene IGHV3-43\*01\_C246T\_A247T\_G248C\_A252G\_T256A\_C258G\_T279C\_A286G\_T28



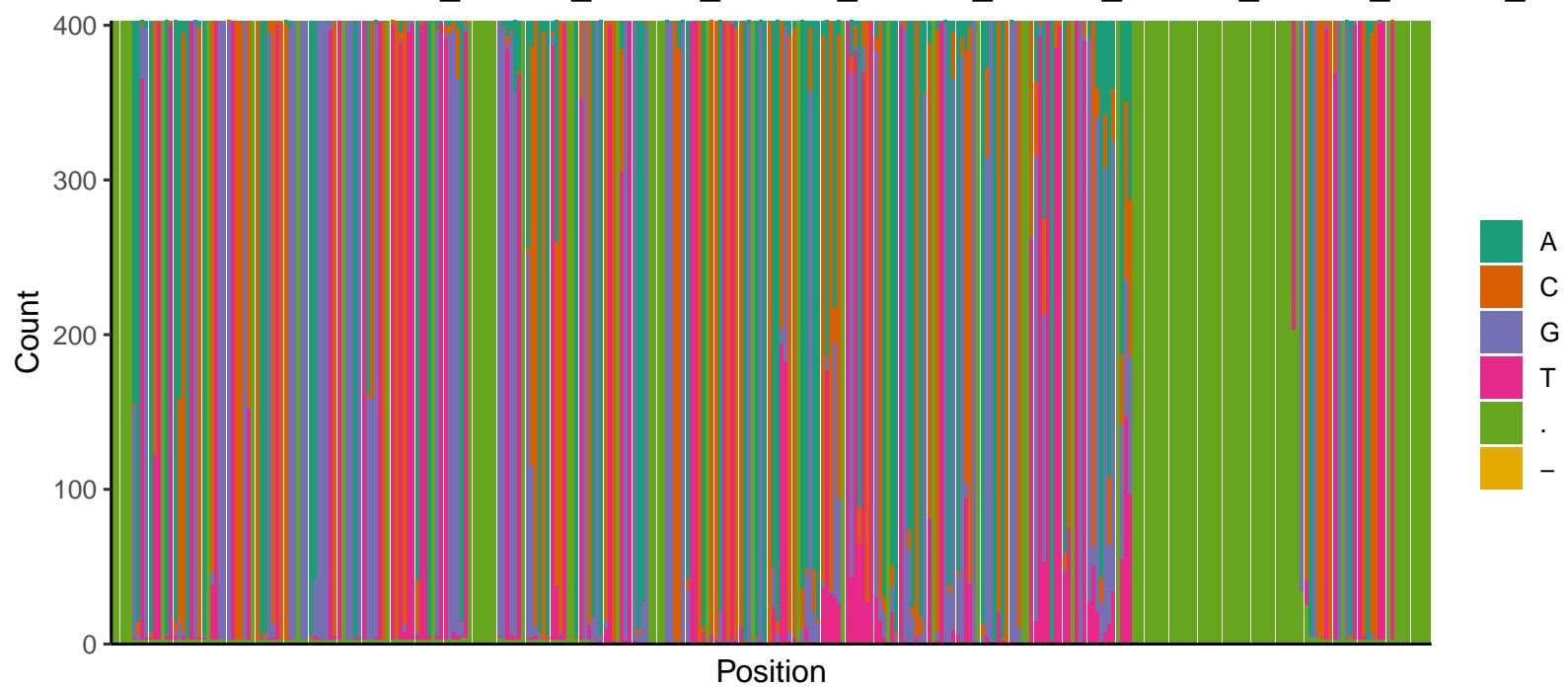
Gene IGHV1-58\*02\_C86G\_T90C\_C104G\_T105C\_G107C\_G117T\_T150G\_G169A\_G185



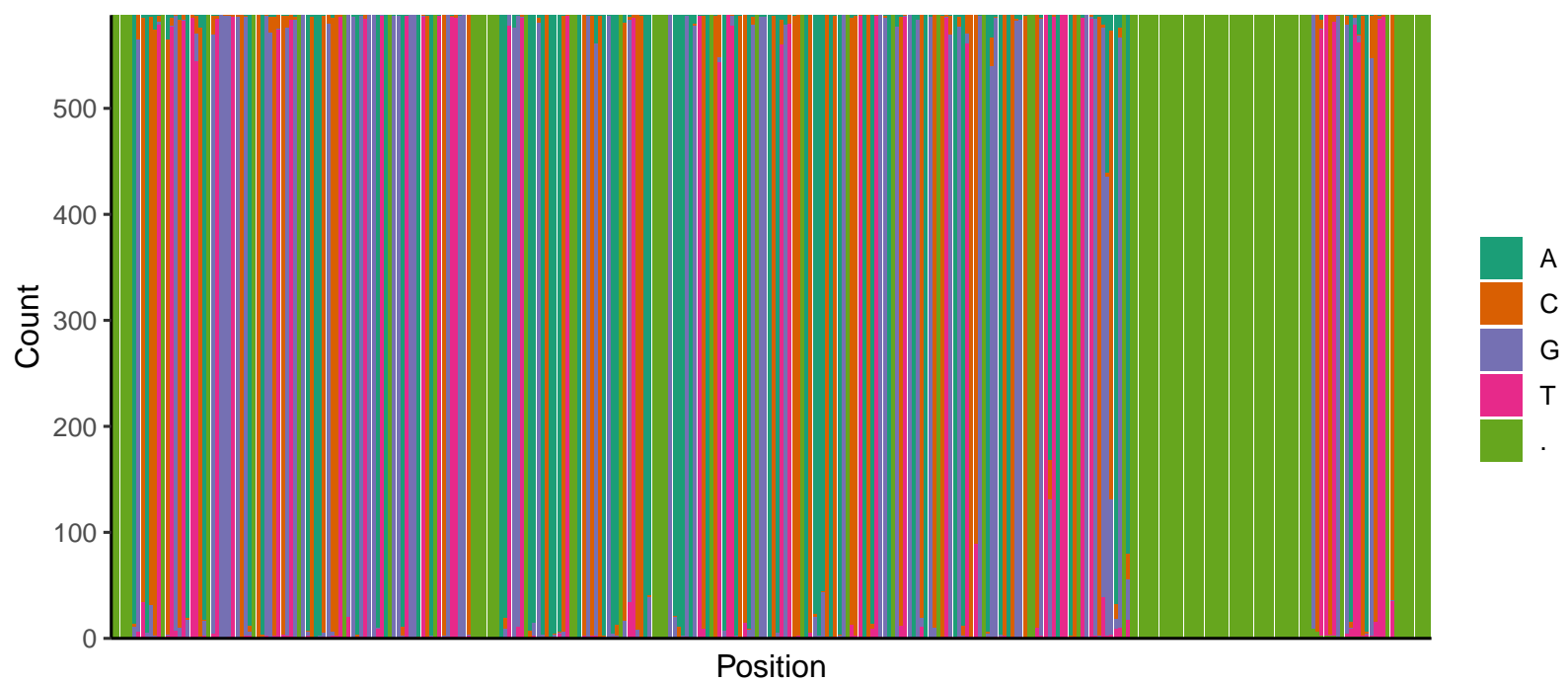
Gene IGHV6-1\*01\_02\_A315G



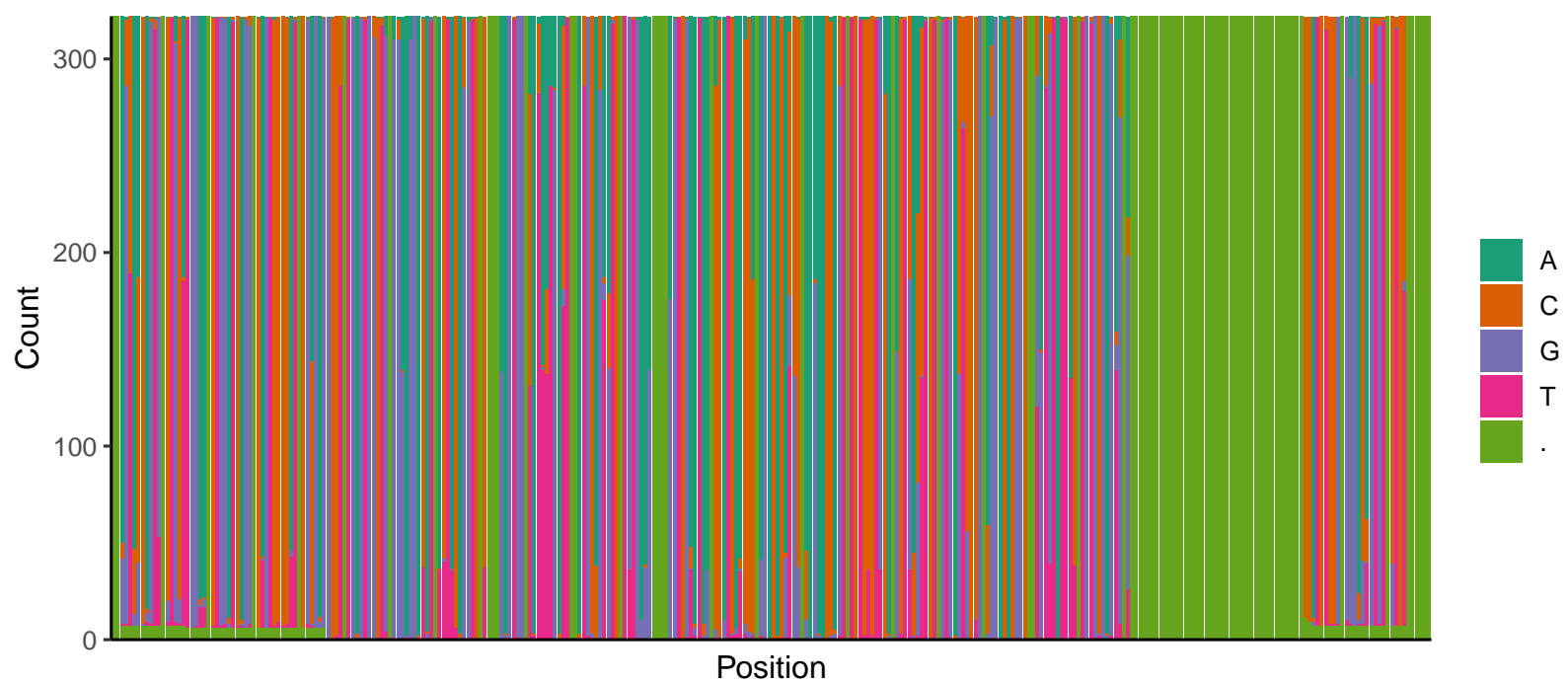
Gene IGHV3-43\*01\_C246T\_A247T\_G248C\_A252G\_T256A\_C258G\_T279C\_A286G\_T28



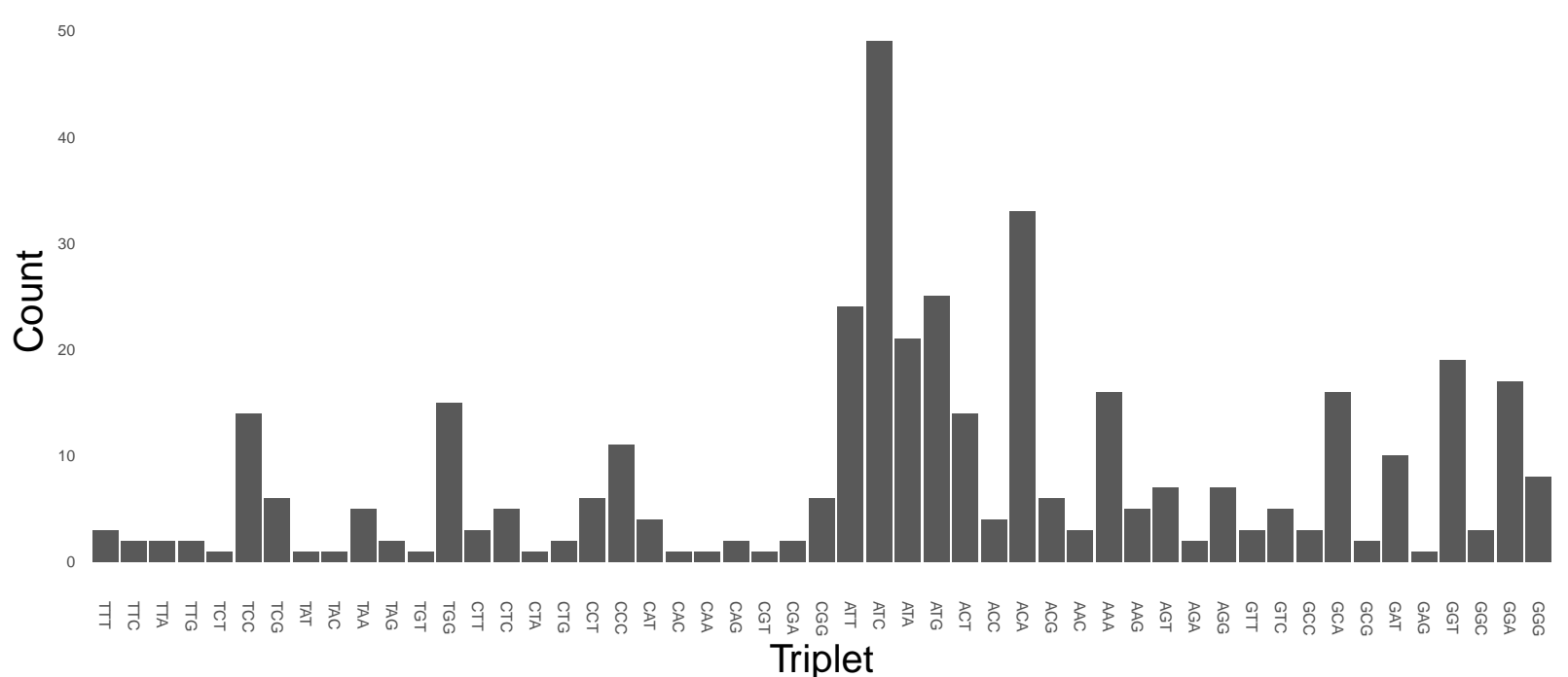
Gene IGHV1-58\*02\_C86G\_T90C\_C104G\_T105C\_G107C\_G117T\_T150G\_G169A\_G185



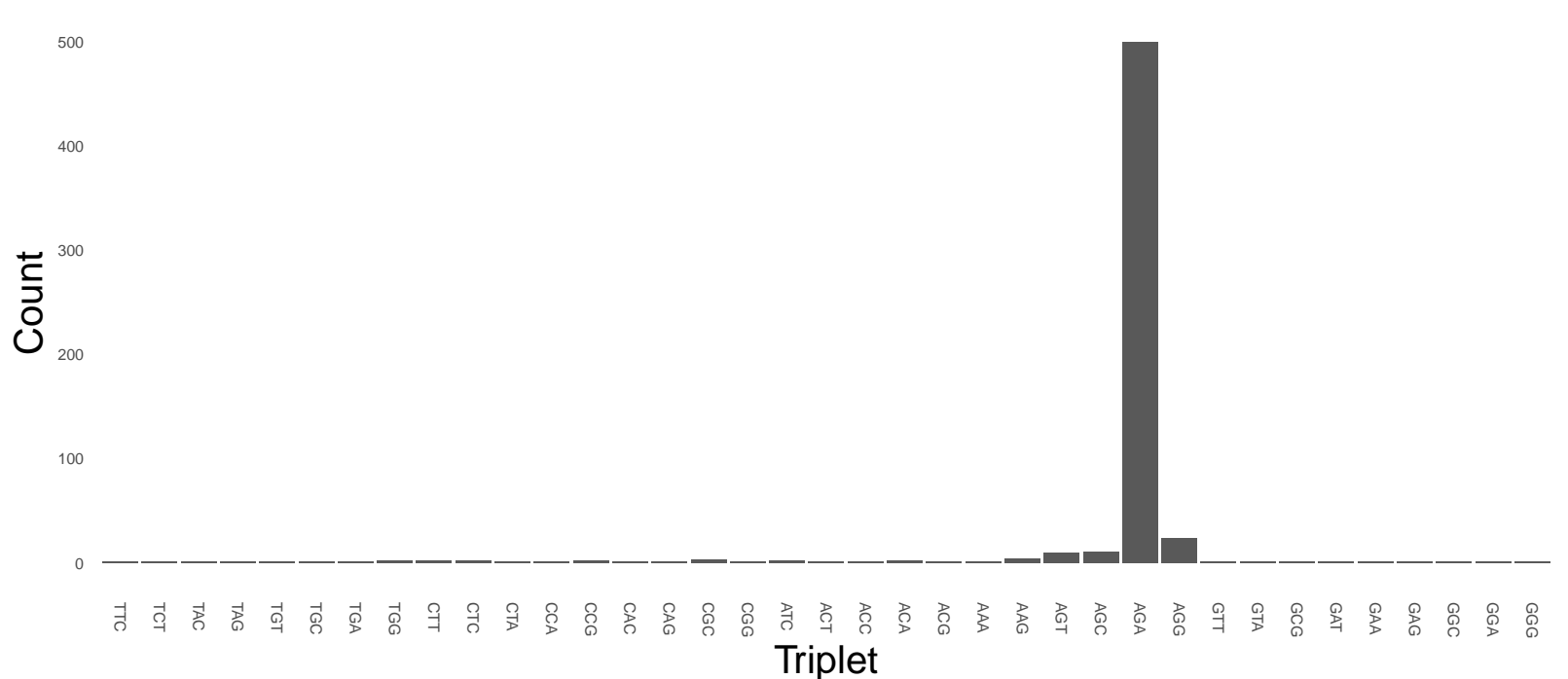
Gene IGHV6-1\*01\_02\_A315G



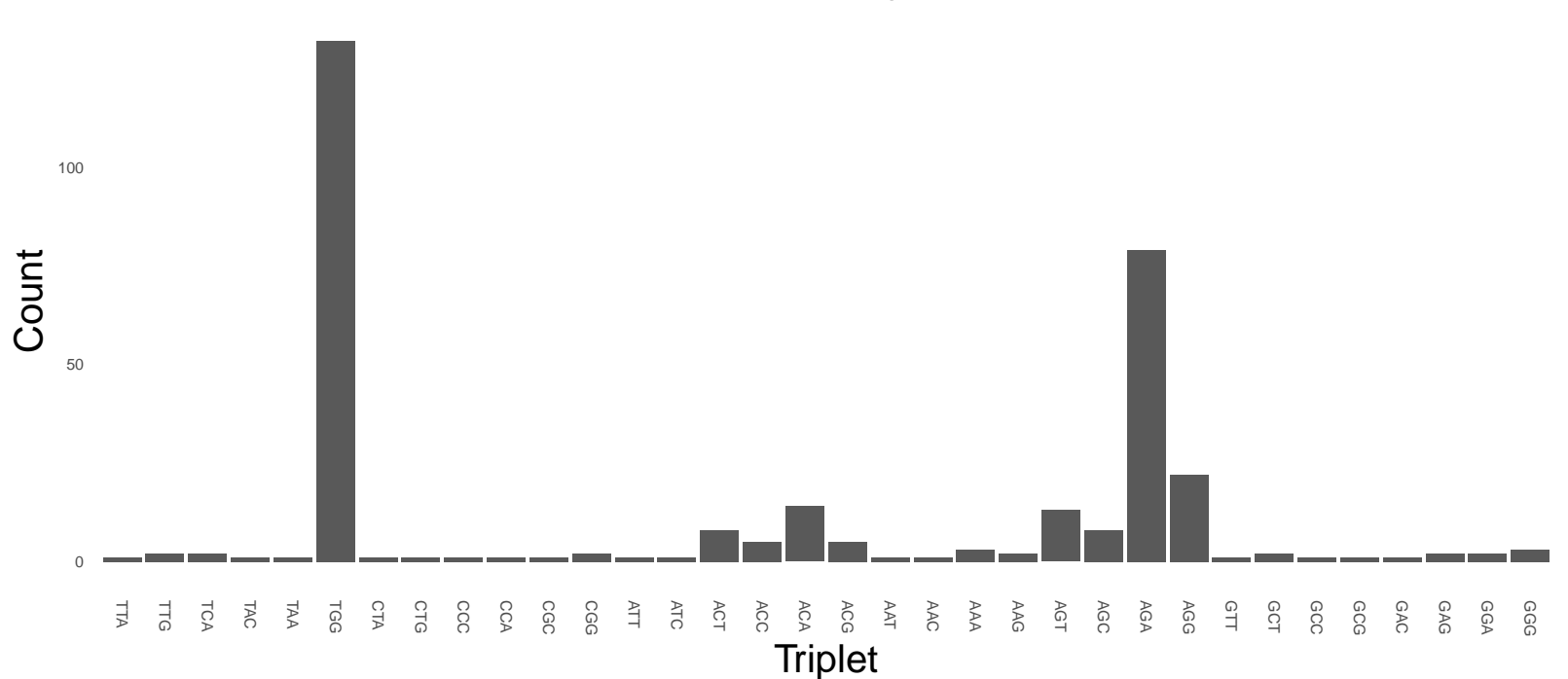
IGHV3-43\*01\_C246T\_A247T\_G248C\_A252G\_T256A\_C258G\_T279C\_A286G\_T288C\_C297G\_C3



IGHV1-58\*02\_C86G\_T90C\_C104G\_T105C\_G107C\_G117T\_T150G\_G169A\_G185A\_C192G\_A20

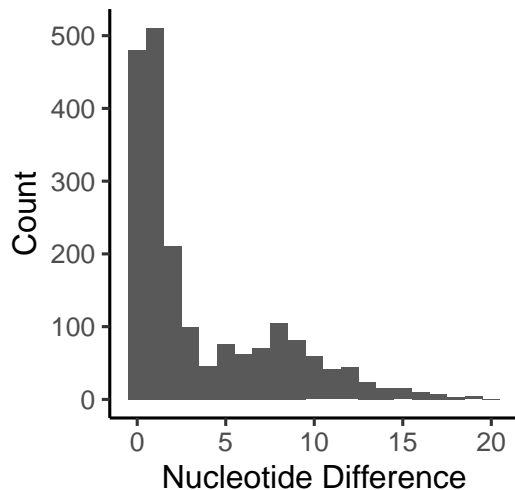


IGHV6-1\*01\_02\_A315G- Final 3 nucleotides as a triplet



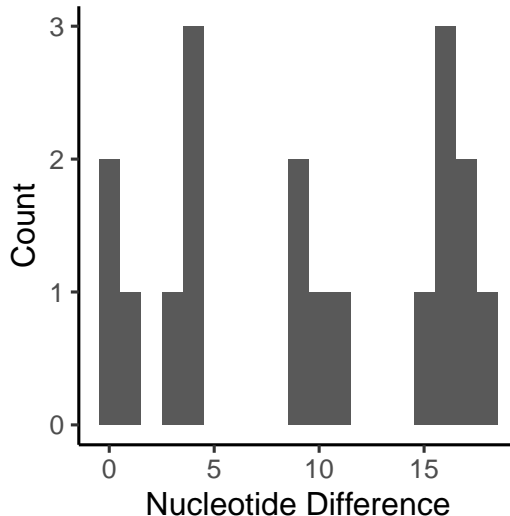
### IGHV1-2\*04

2009 sequences assigned  
480 (23.9%) exact matches, in which:  
413 unique CDR3  
6 unique J



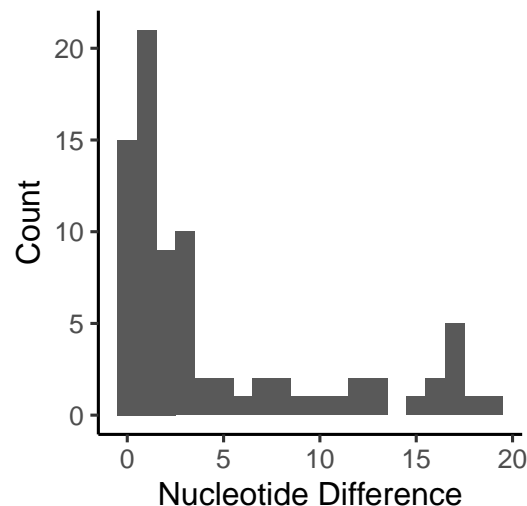
### IGHV1-8\*01

37 sequences assigned  
2 (5.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



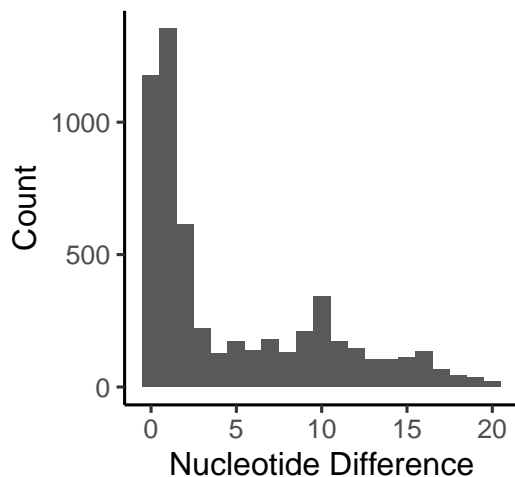
### IGHV1-45\*02

83 sequences assigned  
15 (18.1%) exact matches, in which:  
14 unique CDR3  
3 unique J



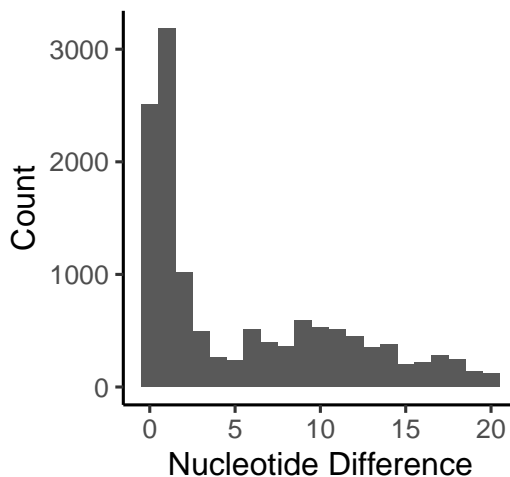
### IGHV1-2\*06

5975 sequences assigned  
1178 (19.7%) exact matches, in which:  
966 unique CDR3  
6 unique J



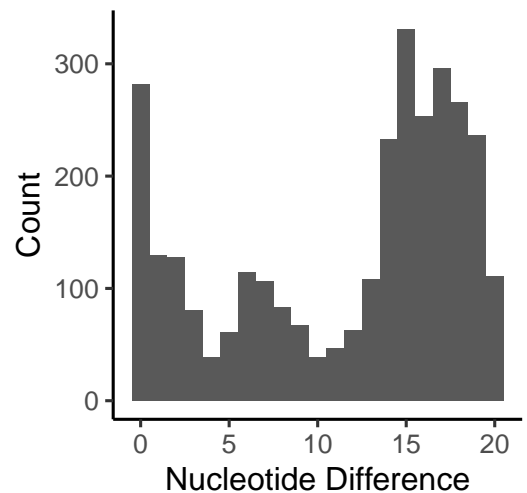
### IGHV1-18\*01

14561 sequences assigned  
2509 (17.2%) exact matches, in which:  
1966 unique CDR3  
6 unique J



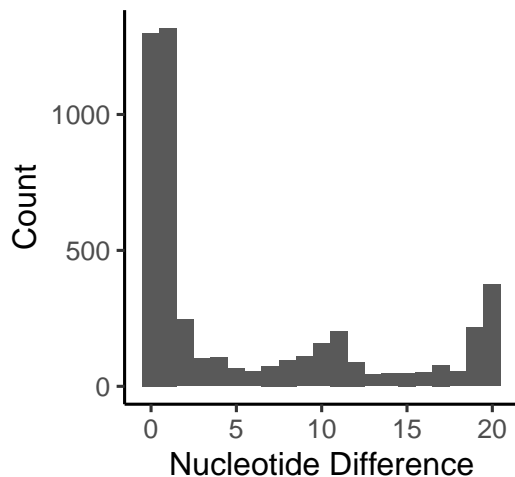
### IGHV1-46\*01

3419 sequences assigned  
282 (8.2%) exact matches, in which:  
279 unique CDR3  
6 unique J



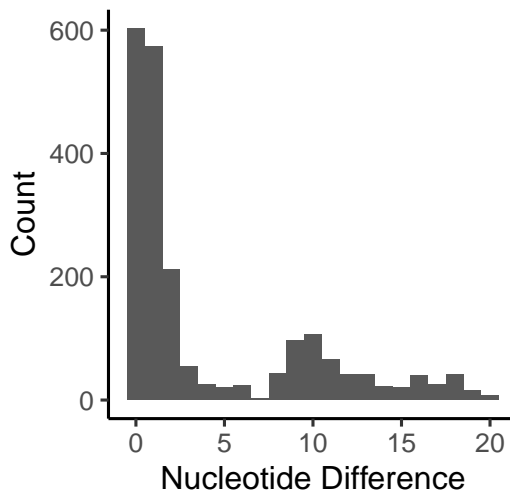
### IGHV1-3\*01\_05

5240 sequences assigned  
1300 (24.8%) exact matches, in which:  
1070 unique CDR3  
6 unique J



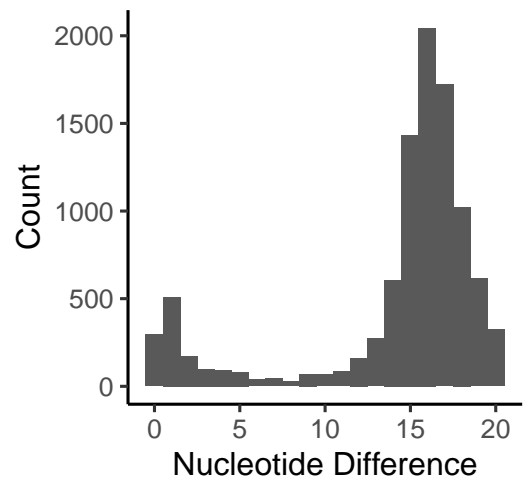
### IGHV1-24\*01

2100 sequences assigned  
603 (28.7%) exact matches, in which:  
496 unique CDR3  
6 unique J



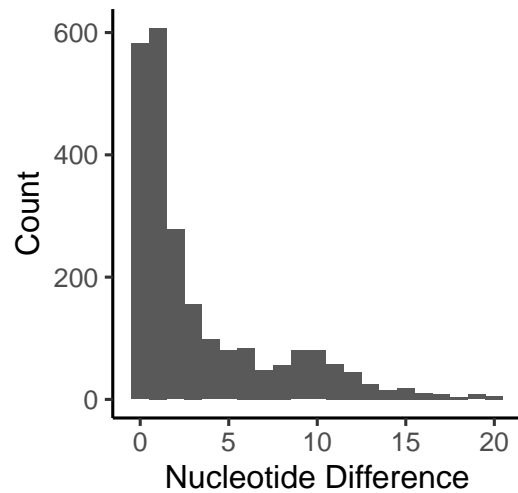
### IGHV1-46\*03

11391 sequences assigned  
295 (2.6%) exact matches, in which:  
201 unique CDR3  
6 unique J



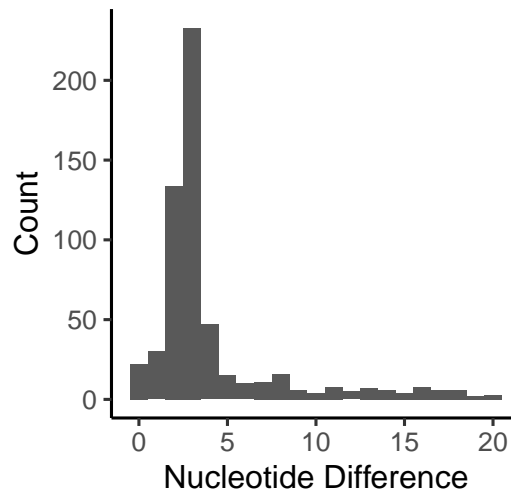
### IGHV1-46\*04

2550 sequences assigned  
582 (22.8%) exact matches, in which:  
494 unique CDR3  
6 unique J



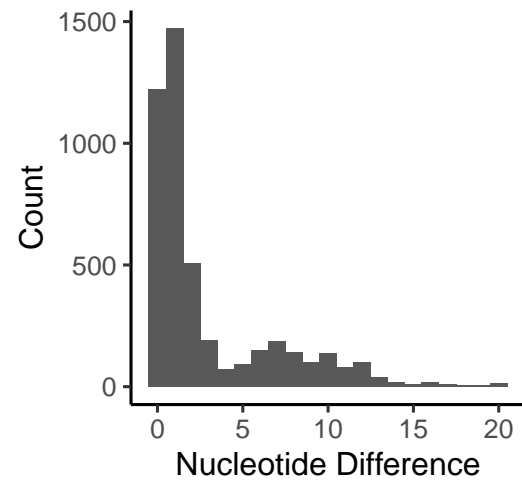
### IGHV1-58\*02\_C86G\_T9C

588 sequences assigned  
22 (3.7%) exact matches, in which:  
22 unique CDR3  
4 unique J



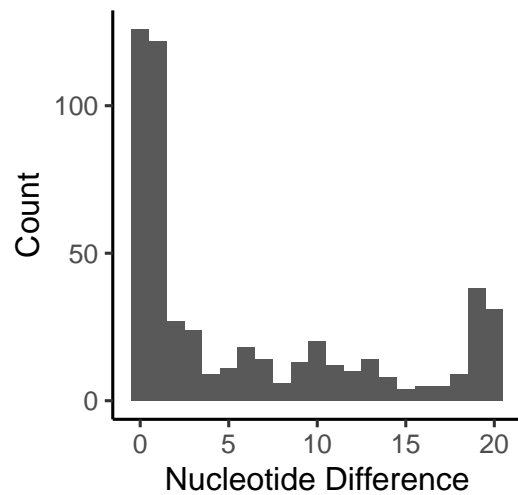
### IGHV1-69\*04\_09

4604 sequences assigned  
1221 (26.5%) exact matches, in which:  
1051 unique CDR3  
6 unique J



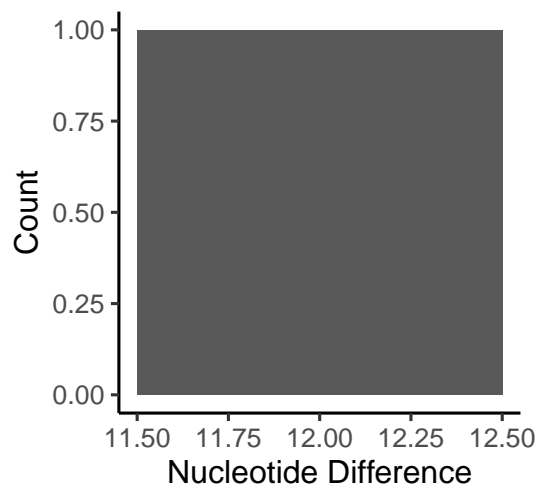
### IGHV1-58\*02

690 sequences assigned  
126 (18.3%) exact matches, in which:  
104 unique CDR3  
5 unique J



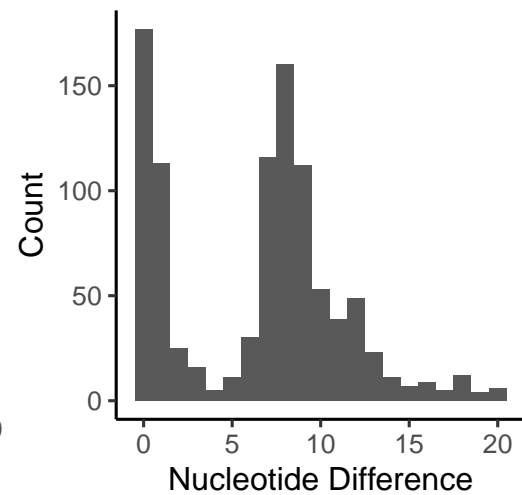
### IGHV1-69-2\*01

2 sequences assigned  
No exact matches.



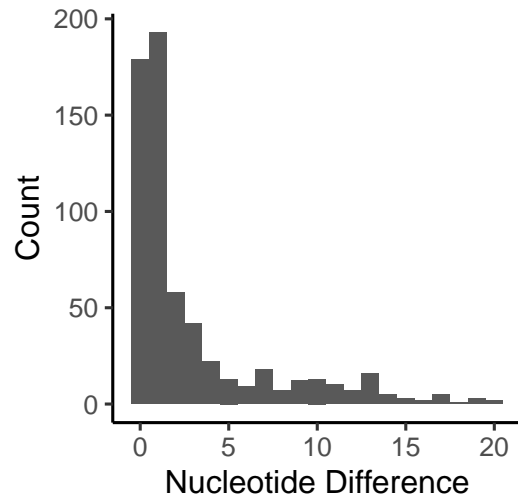
### IGHV1-69\*06\_14

1029 sequences assigned  
177 (17.2%) exact matches, in which:  
170 unique CDR3  
6 unique J



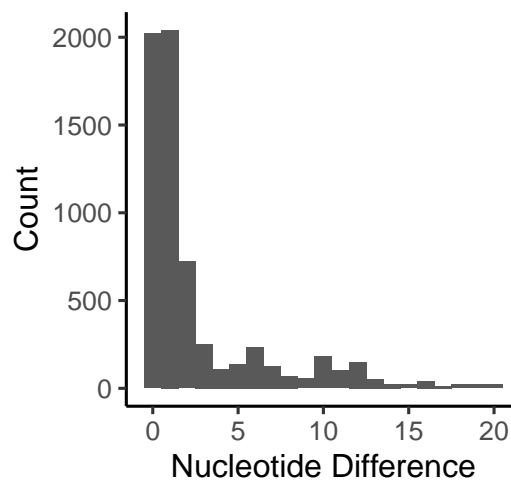
### IGHV1-58\*01\_03

1030 sequences assigned  
179 (17.4%) exact matches, in which:  
152 unique CDR3  
6 unique J



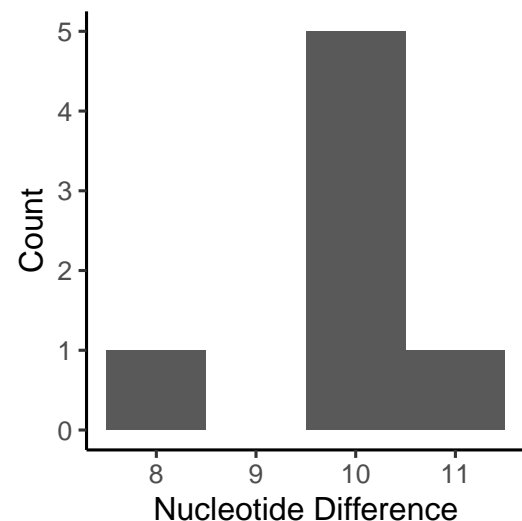
### IGHV1-69\*01\_12\_13

6569 sequences assigned  
2021 (30.8%) exact matches, in which:  
1711 unique CDR3  
6 unique J



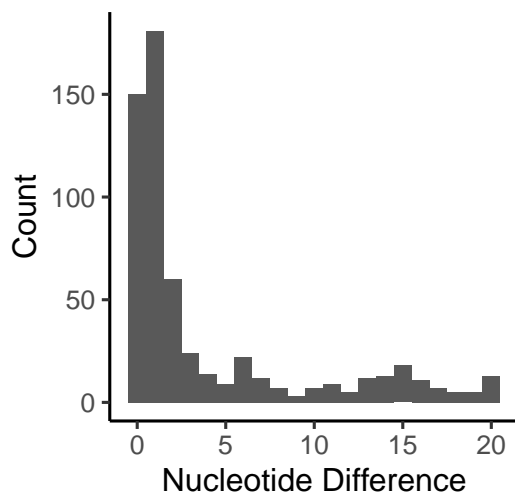
### IGHV1-NL1\*01

7 sequences assigned  
No exact matches.



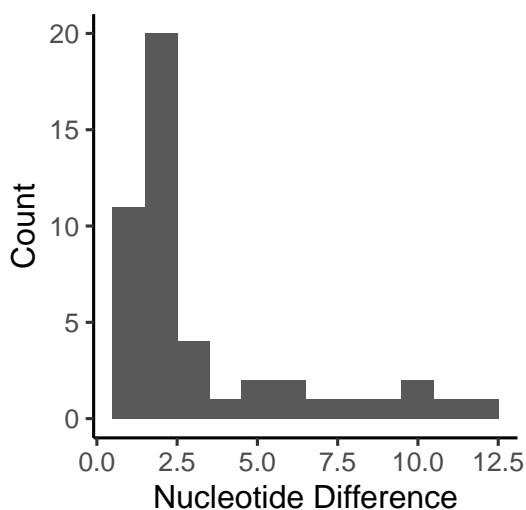
### IGHV2-5\*02

646 sequences assigned  
150 (23.2%) exact matches, in which:  
117 unique CDR3  
5 unique J



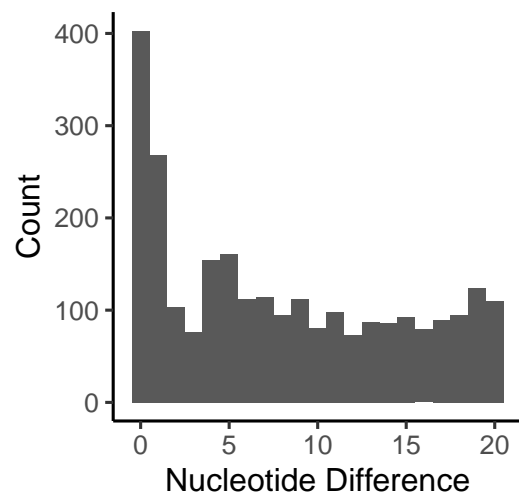
### IGHV2-70\*12

48 sequences assigned  
No exact matches.



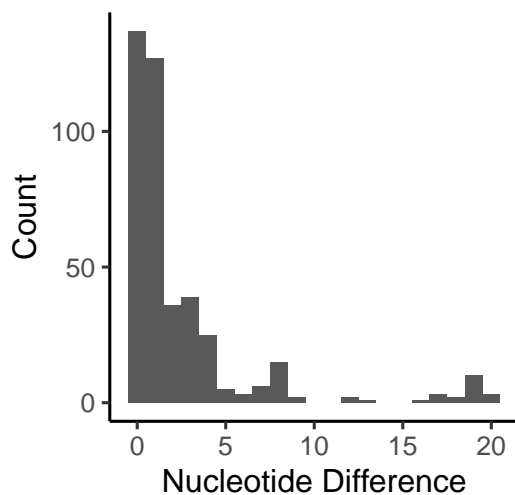
### IGHV3-7\*01

3180 sequences assigned  
403 (12.7%) exact matches, in which:  
364 unique CDR3  
6 unique J



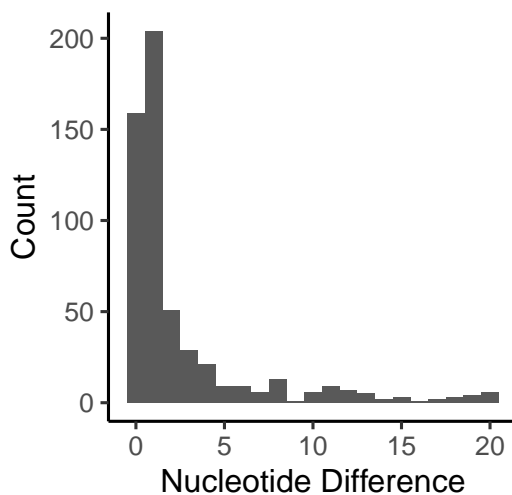
### IGHV2-26\*01

431 sequences assigned  
137 (31.8%) exact matches, in which:  
108 unique CDR3  
5 unique J



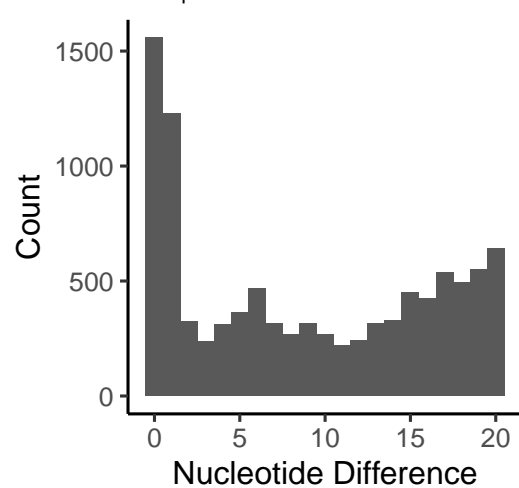
### IGHV2-70\*11\_15

857 sequences assigned  
159 (18.6%) exact matches, in which:  
119 unique CDR3  
5 unique J



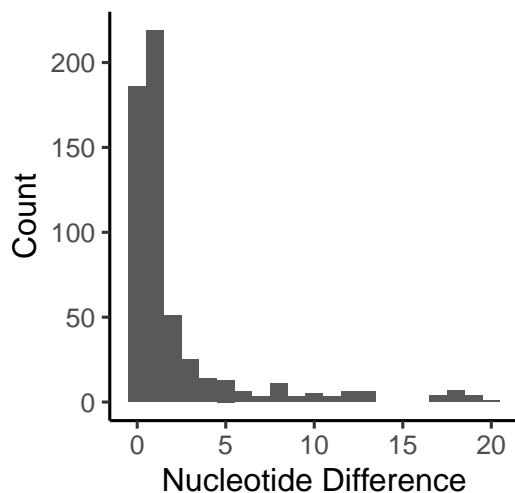
### IGHV3-7\*03

13669 sequences assigned  
1558 (11.4%) exact matches, in which:  
984 unique CDR3  
6 unique J



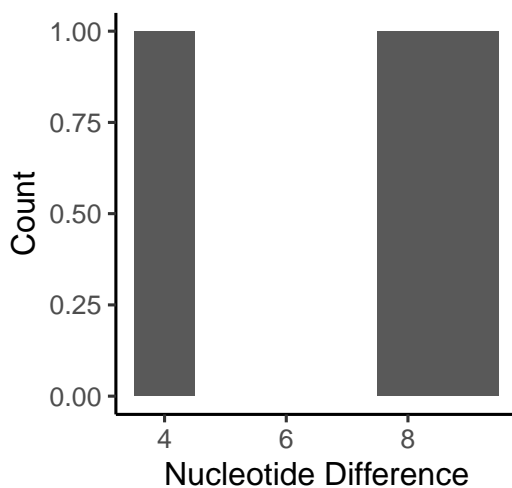
### IGHV2-70\*01

576 sequences assigned  
186 (32.3%) exact matches, in which:  
139 unique CDR3  
5 unique J



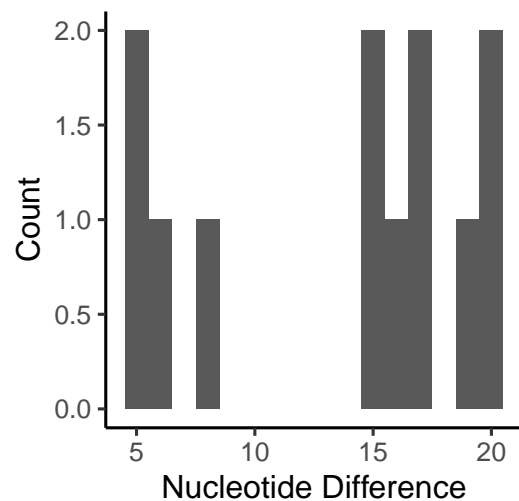
### IGHV2-70D\*04

5 sequences assigned  
No exact matches.



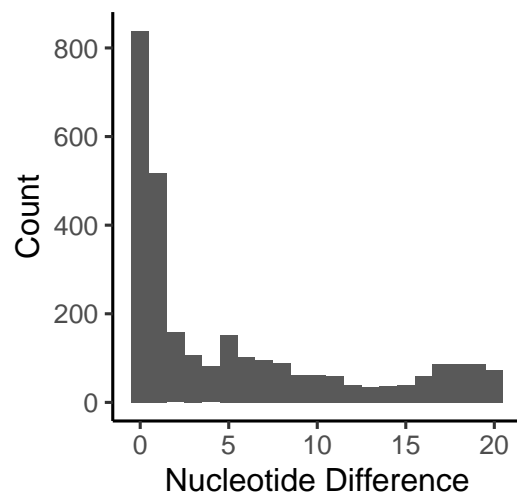
### IGHV3-9\*01

27 sequences assigned  
No exact matches.



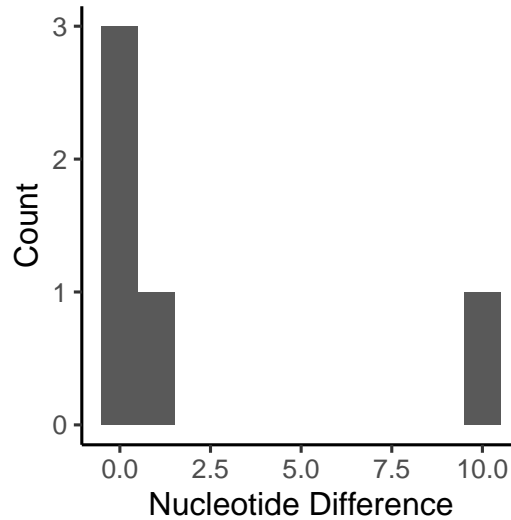
### IGHV3-11\*06

5576 sequences assigned  
839 (15%) exact matches, in which:  
576 unique CDR3  
6 unique J



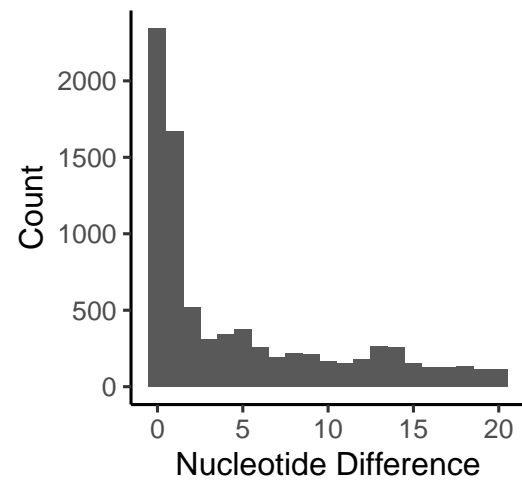
### IGHV3-19\*01

5 sequences assigned  
3 (60%) exact matches, in which:  
3 unique CDR3  
3 unique J



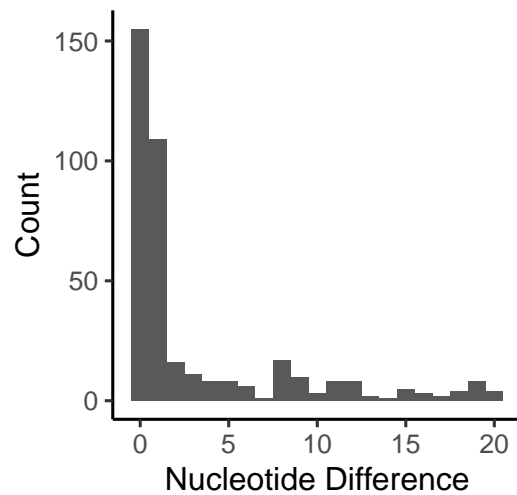
### IGHV3-21\*01\_02

9281 sequences assigned  
2343 (25.2%) exact matches, in which:  
1483 unique CDR3  
6 unique J



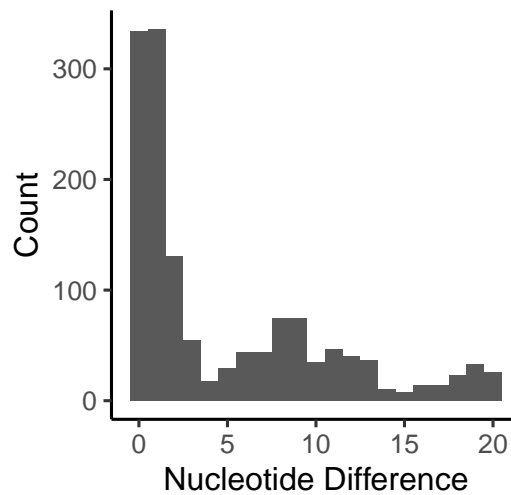
### IGHV3-13\*05

448 sequences assigned  
155 (34.6%) exact matches, in which:  
108 unique CDR3  
6 unique J



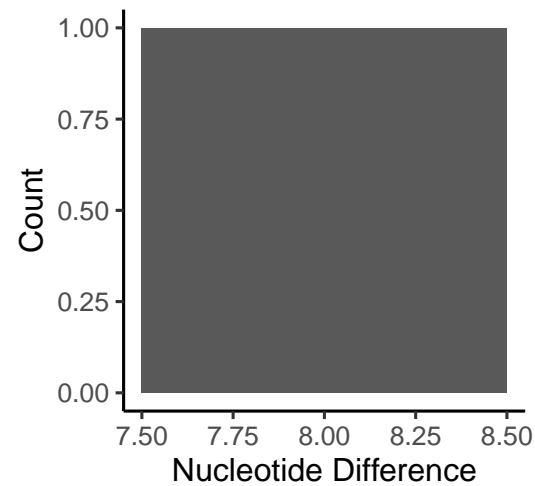
### IGHV3-20\*03\_04

1824 sequences assigned  
334 (18.3%) exact matches, in which:  
206 unique CDR3  
6 unique J



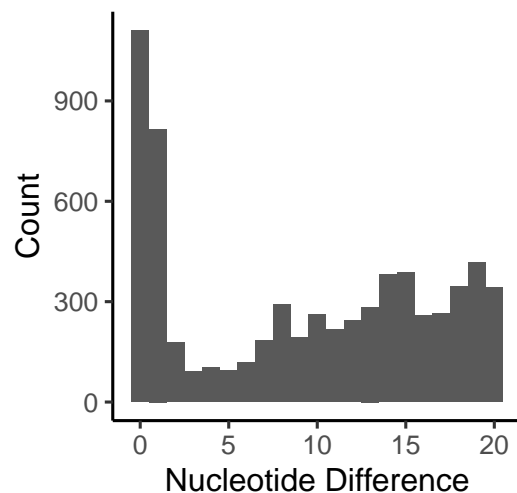
### IGHV3-22\*01\_02

1 sequences assigned  
No exact matches.



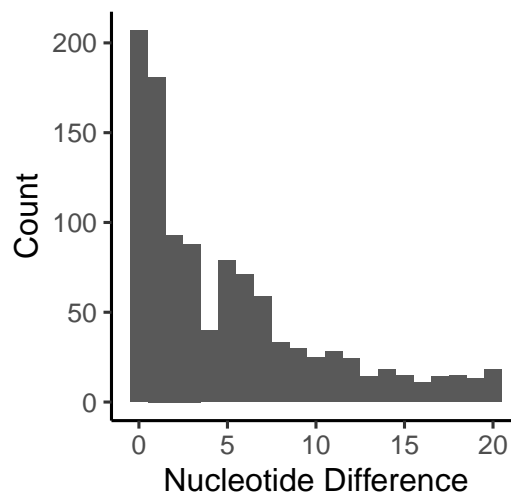
### IGHV3-15\*01\_02

8537 sequences assigned  
1111 (13%) exact matches, in which:  
657 unique CDR3  
6 unique J



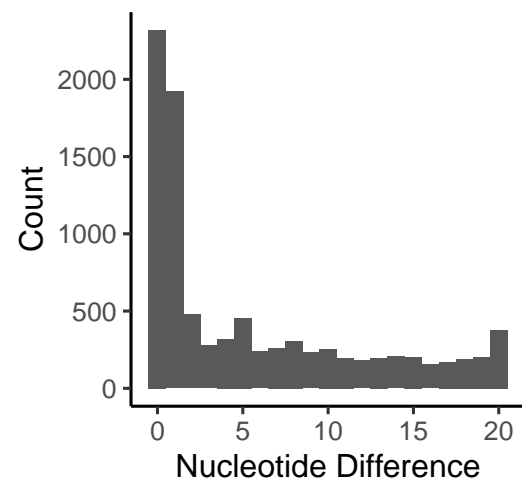
### IGHV3-21\*04

1889 sequences assigned  
207 (11%) exact matches, in which:  
179 unique CDR3  
6 unique J



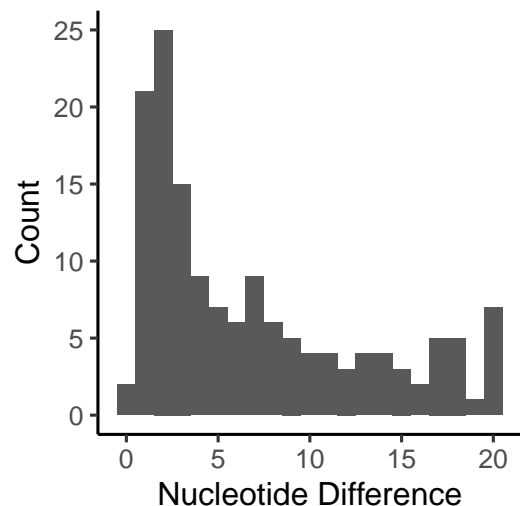
### IGHV3-23\*01\_04

13189 sequences assigned  
2319 (17.6%) exact matches, in which:  
1338 unique CDR3  
6 unique J



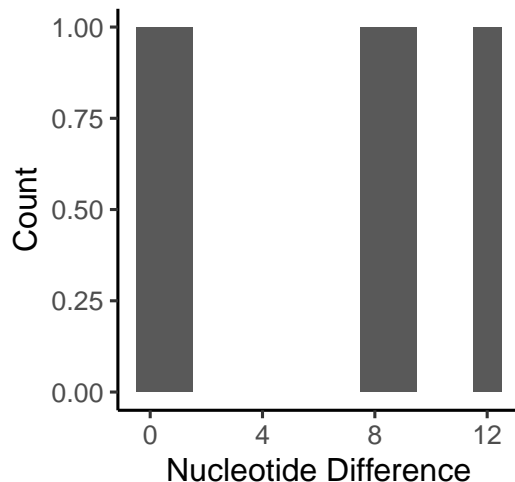
### IGHV3-30-5\*01

493 sequences assigned  
2 (0.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



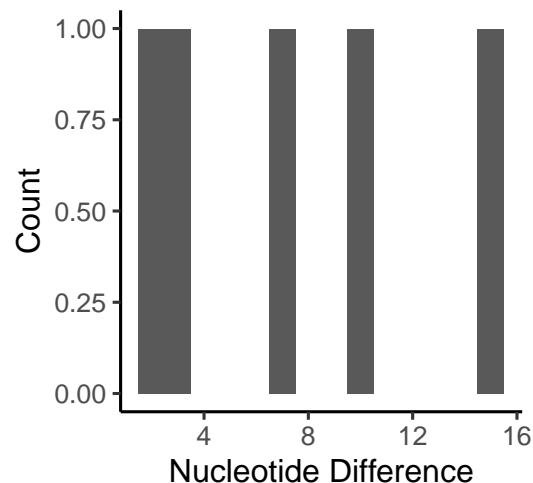
### IGHV3-35\*01

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



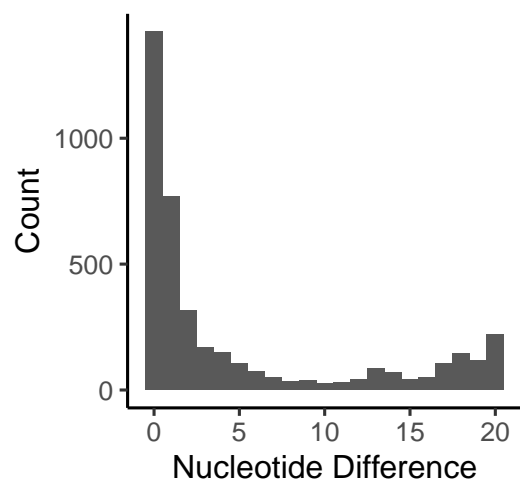
### IGHV3-47\*02

5 sequences assigned  
No exact matches.



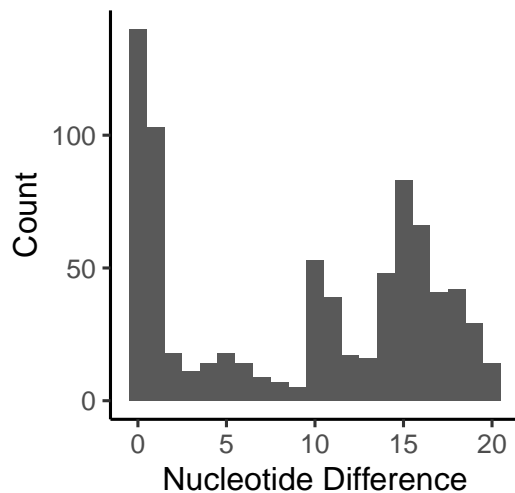
### IGHV3-33\*01

7712 sequences assigned  
1423 (18.5%) exact matches, in which:  
1010 unique CDR3  
6 unique J



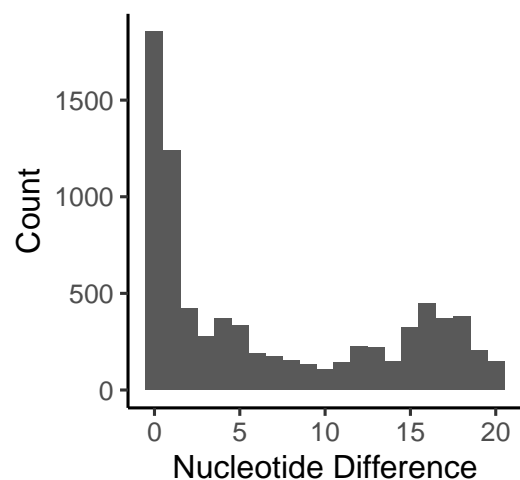
### IGHV3-43\*01

835 sequences assigned  
140 (16.8%) exact matches, in which:  
80 unique CDR3  
5 unique J



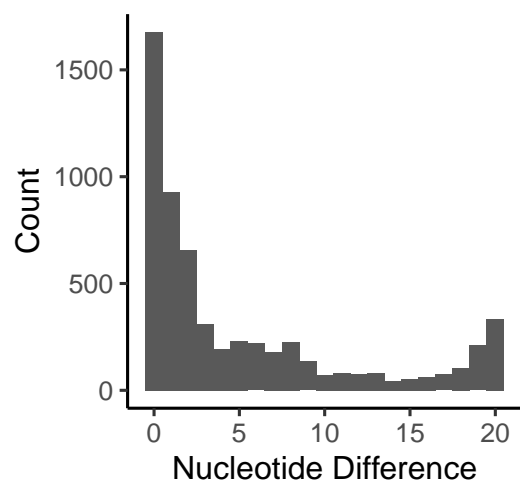
### IGHV3-48\*01

9402 sequences assigned  
1854 (19.7%) exact matches, in which:  
1201 unique CDR3  
6 unique J



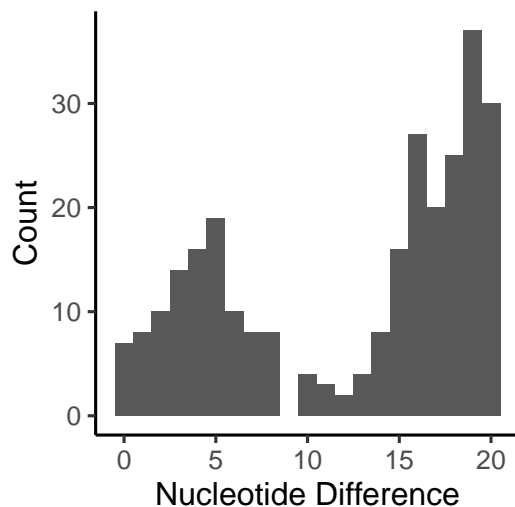
### IGHV3-33\*08

10893 sequences assigned  
1677 (15.4%) exact matches, in which:  
1132 unique CDR3  
6 unique J



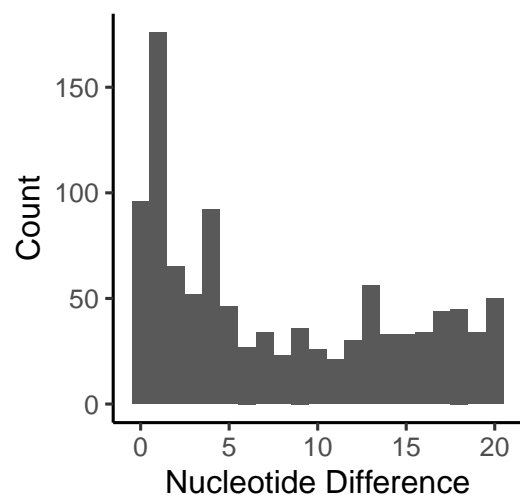
### IGHV3-43\*01\_C246T\_A24

403 sequences assigned  
7 (1.7%) exact matches, in which:  
7 unique CDR3  
4 unique J



### IGHV3-48\*04

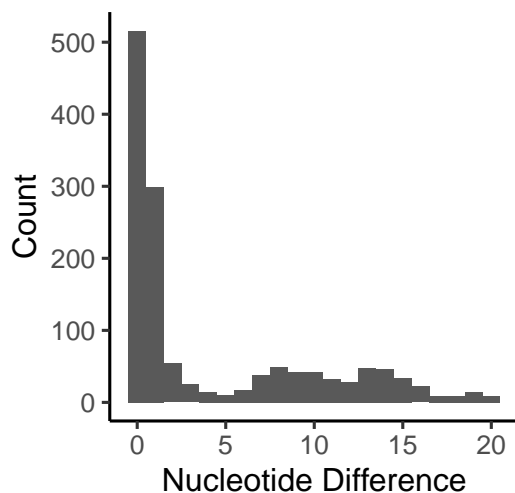
1522 sequences assigned  
96 (6.3%) exact matches, in which:  
89 unique CDR3  
6 unique J





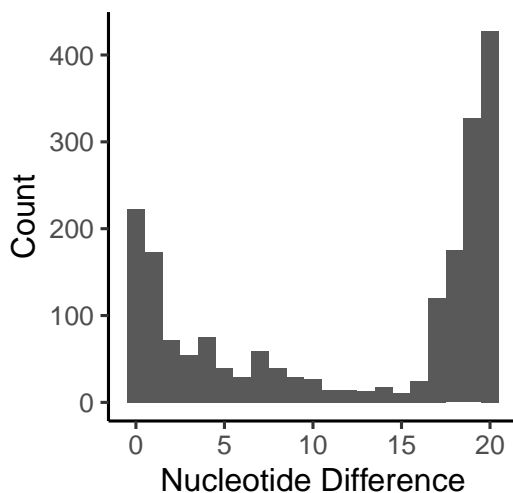
### IGHV3-49\*03\_05

1479 sequences assigned  
516 (34.9%) exact matches, in which:  
309 unique CDR3  
6 unique J



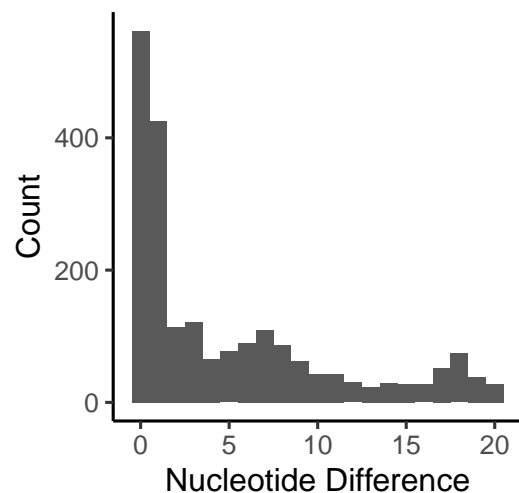
### IGHV3-53\*01\_02

5454 sequences assigned  
223 (4.1%) exact matches, in which:  
151 unique CDR3  
6 unique J



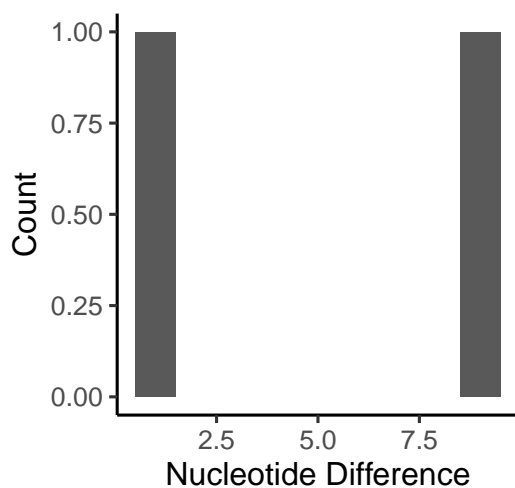
### IGHV3-66\*01

2387 sequences assigned  
562 (23.5%) exact matches, in which:  
405 unique CDR3  
6 unique J



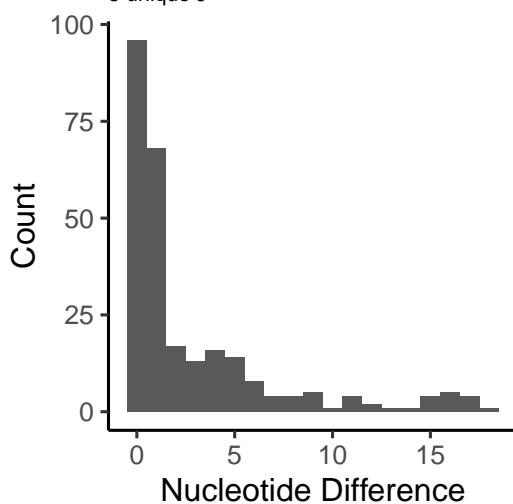
### IGHV3-52\*02

2 sequences assigned  
No exact matches.



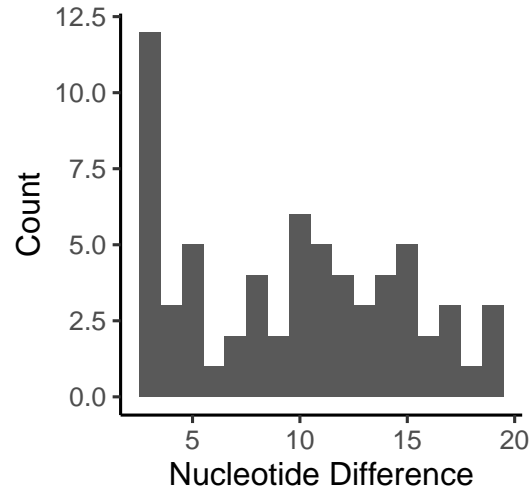
### IGHV3-64\*01

311 sequences assigned  
96 (30.9%) exact matches, in which:  
64 unique CDR3  
5 unique J



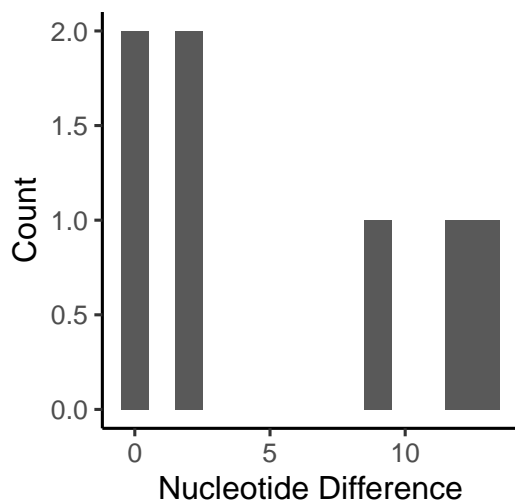
### IGHV3-69-1\*01

87 sequences assigned  
No exact matches.



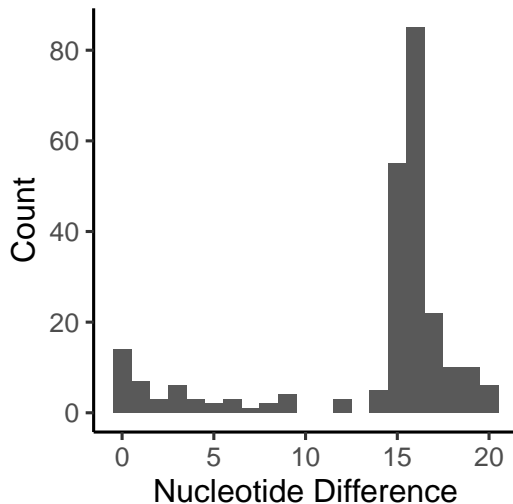
### IGHV3-52\*01\_03

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



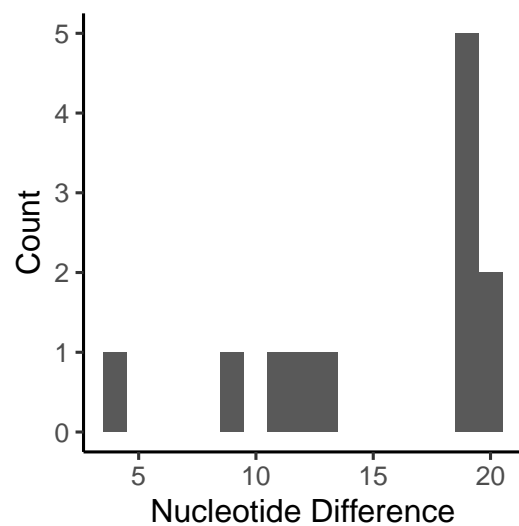
### IGHV3-64\*02\_07

264 sequences assigned  
14 (5.3%) exact matches, in which:  
12 unique CDR3  
5 unique J



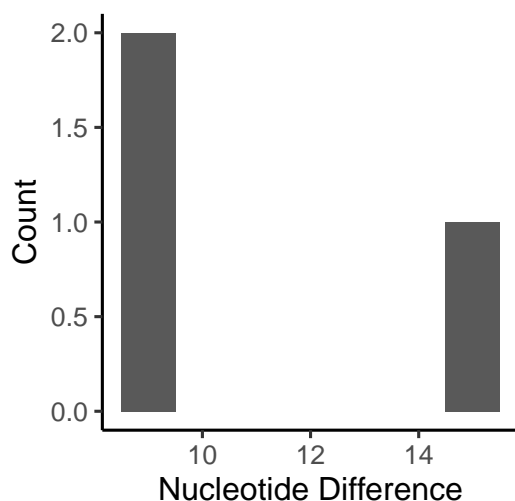
### IGHV3-69-1\*02

22 sequences assigned  
No exact matches.



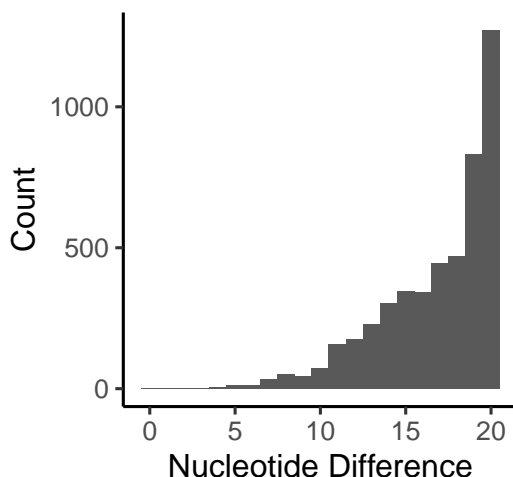
### IGHV3-71\*01\_04

6 sequences assigned  
No exact matches.



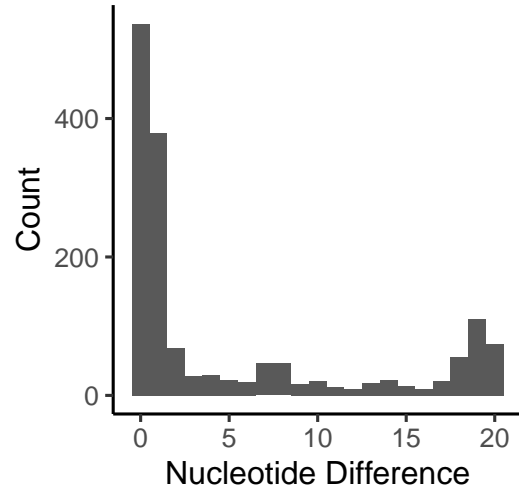
### IGHV3-74\*03

16964 sequences assigned  
1 (0%) exact matches, in which:  
1 unique CDR3  
1 unique J



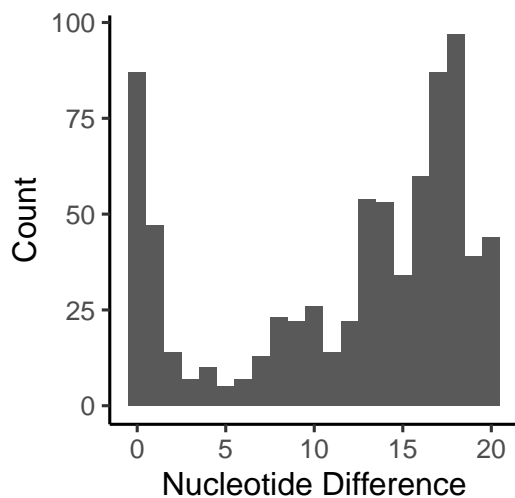
### IGHV3-64D\*06

2494 sequences assigned  
537 (21.5%) exact matches, in which:  
251 unique CDR3  
6 unique J



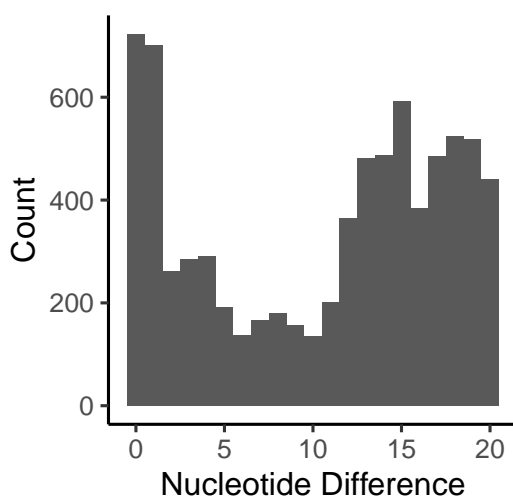
### IGHV3-72\*01

1505 sequences assigned  
87 (5.8%) exact matches, in which:  
50 unique CDR3  
5 unique J



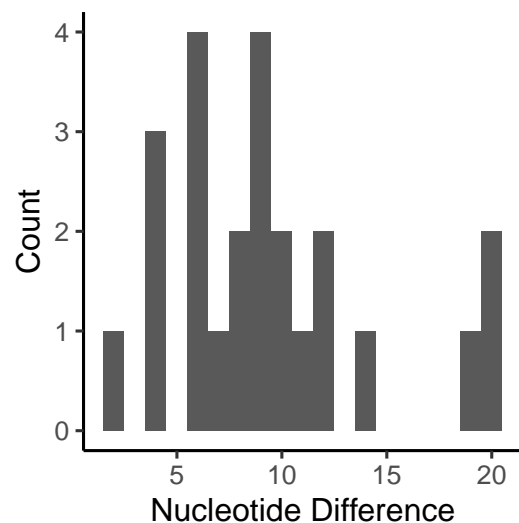
### IGHV3-74\*01\_02

11745 sequences assigned  
723 (6.2%) exact matches, in which:  
485 unique CDR3  
6 unique J



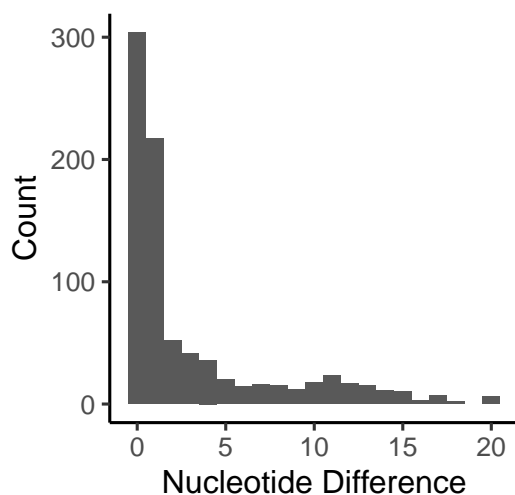
### IGHV3-NL1\*01

76 sequences assigned  
No exact matches.



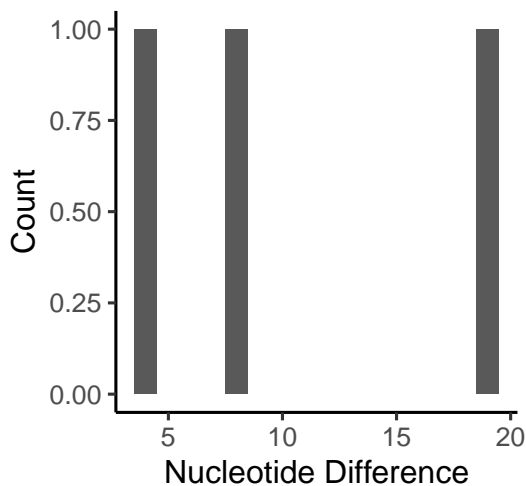
### IGHV3-73\*01\_02

968 sequences assigned  
304 (31.4%) exact matches, in which:  
192 unique CDR3  
5 unique J



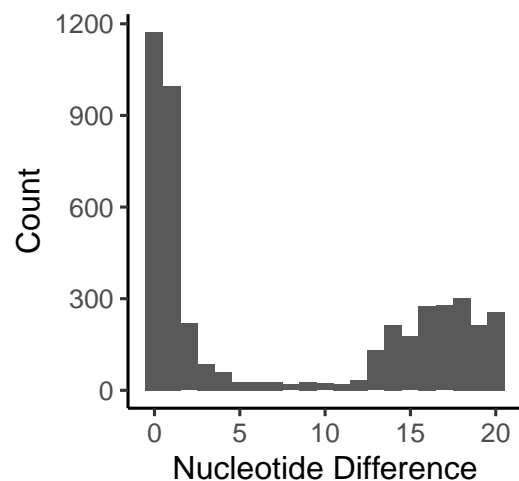
### IGHV3-43D\*04

4 sequences assigned  
No exact matches.



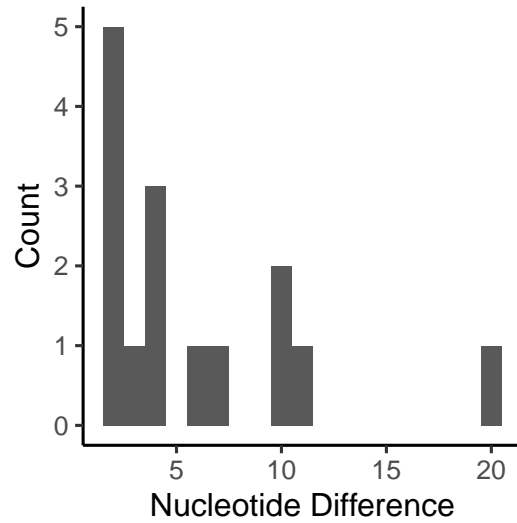
### IGHV4-4\*02\_03

7041 sequences assigned  
1173 (16.7%) exact matches, in which:  
904 unique CDR3  
6 unique J



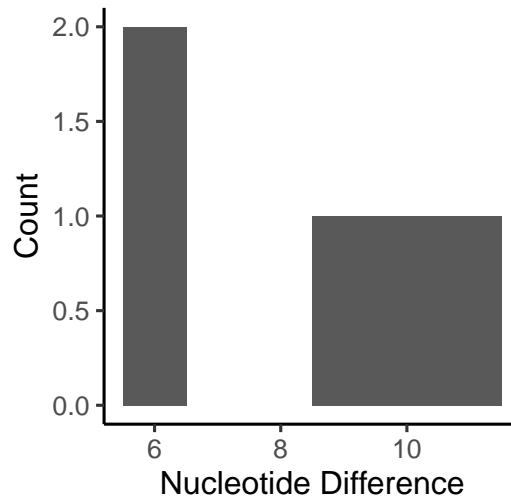
### IGHV4-28\*03

20 sequences assigned  
No exact matches.



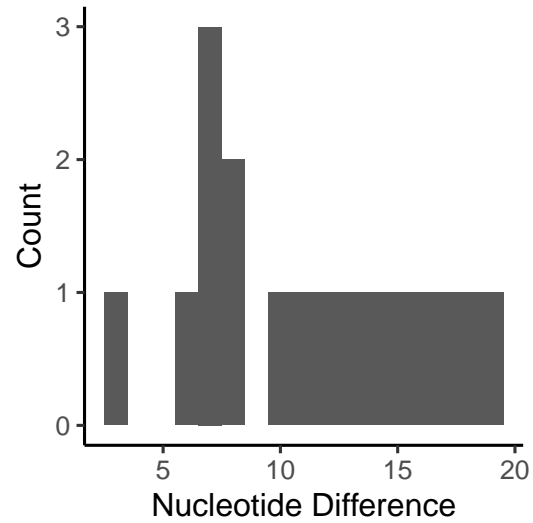
### IGHV4-30-2\*01

8 sequences assigned  
No exact matches.



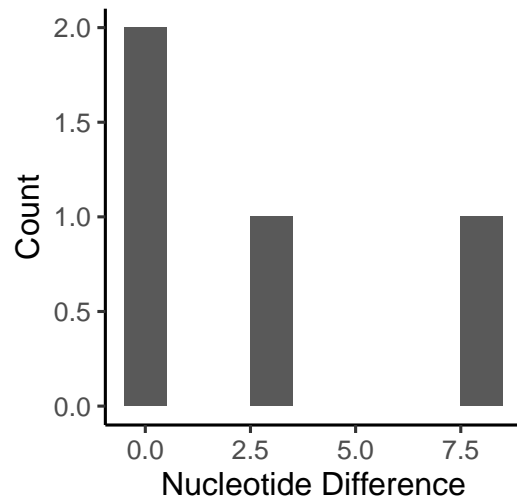
### IGHV4-30-4\*08

27 sequences assigned  
No exact matches.



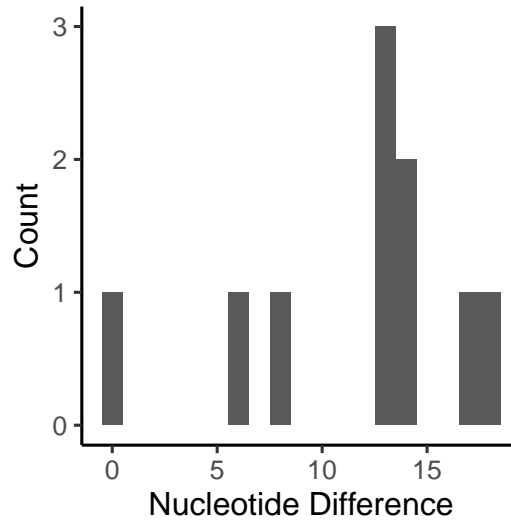
### IGHV4-28\*01\_07

5 sequences assigned  
2 (40%) exact matches, in which:  
1 unique CDR3  
1 unique J



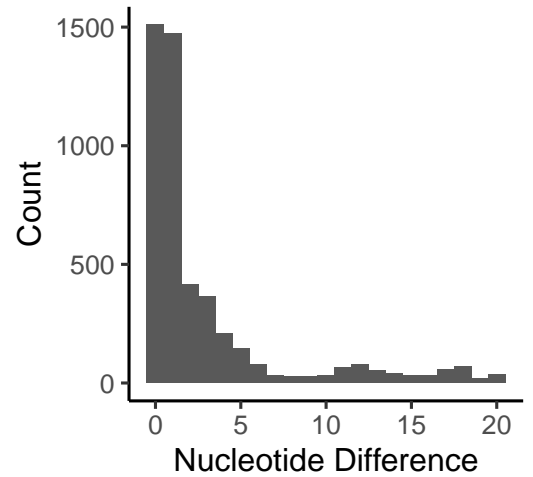
### IGHV4-30-4\*01

30 sequences assigned  
1 (3.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



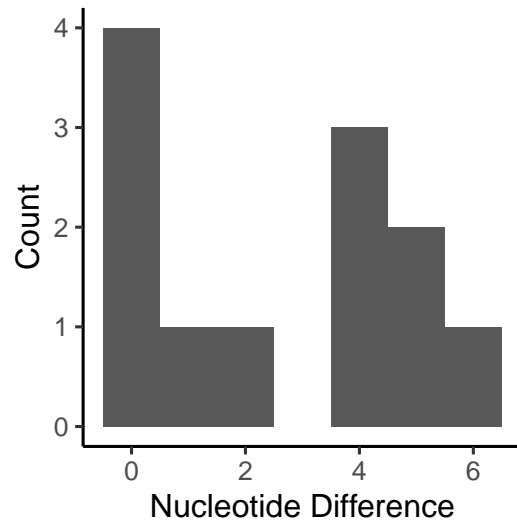
### IGHV4-31\*02

5621 sequences assigned  
1510 (26.9%) exact matches, in which:  
1207 unique CDR3  
6 unique J



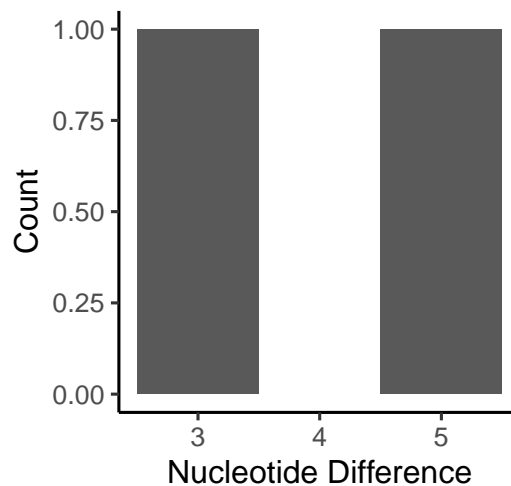
### IGHV4-28\*02\_05

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



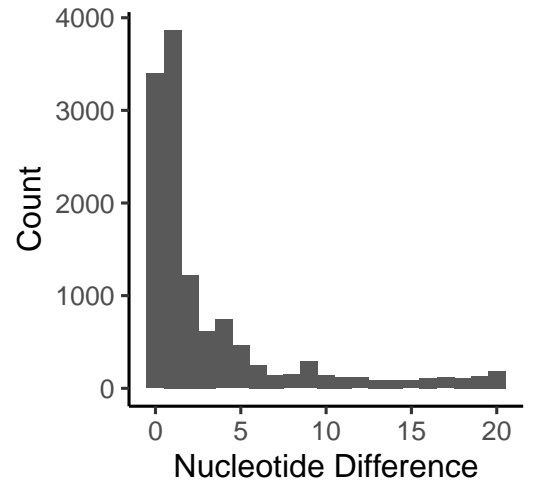
### IGHV4-30-2\*04

2 sequences assigned  
No exact matches.



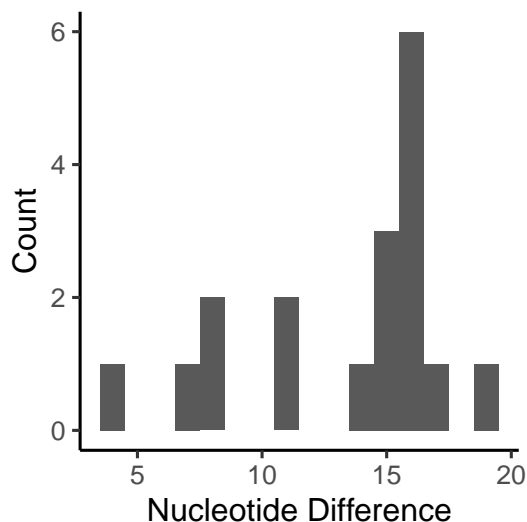
### IGHV4-34\*01\_02

13596 sequences assigned  
3400 (25%) exact matches, in which:  
2419 unique CDR3  
6 unique J



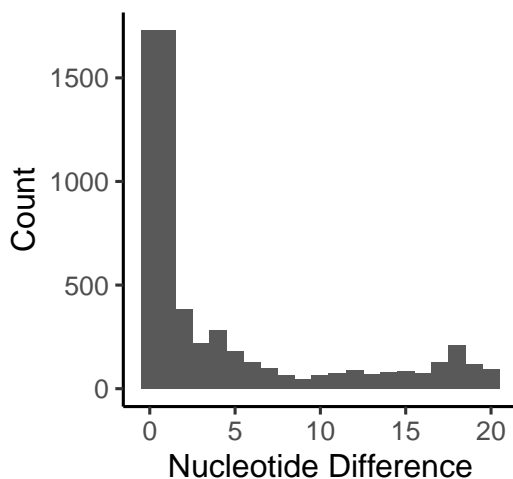
### IGHV4-38-2\*02

100 sequences assigned  
No exact matches.



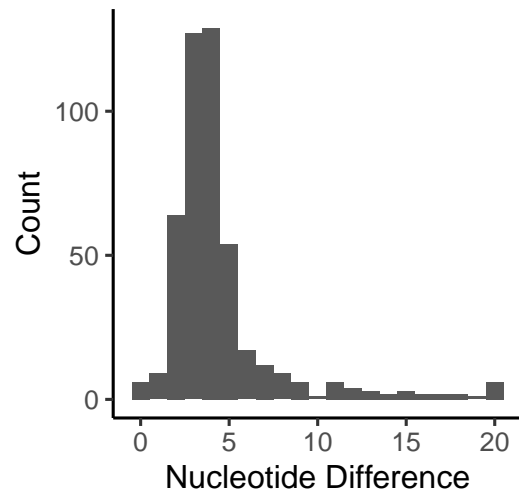
### IGHV4-59\*01\_07

8205 sequences assigned  
1728 (21.1%) exact matches, in which:  
1362 unique CDR3  
6 unique J



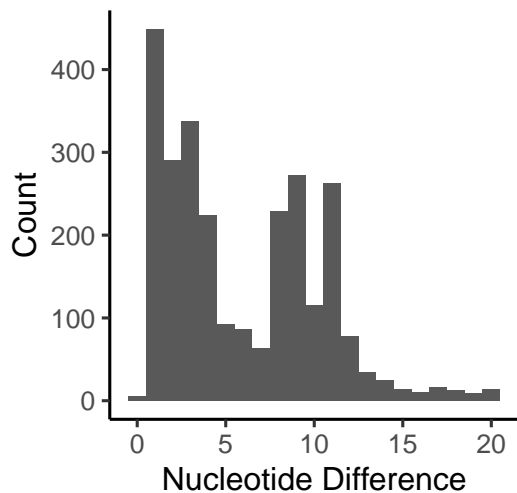
### IGHV4-61\*05

497 sequences assigned  
6 (1.2%) exact matches, in which:  
6 unique CDR3  
4 unique J



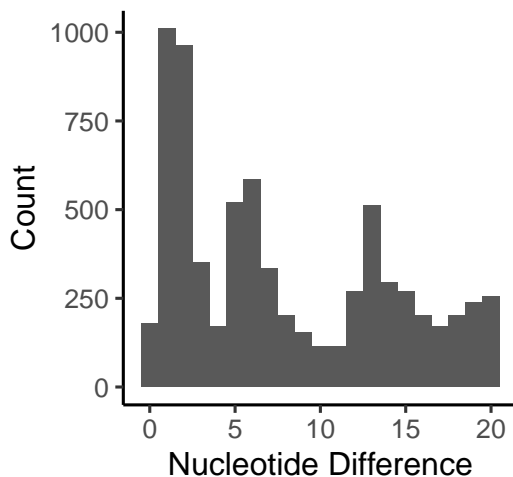
### IGHV4-39\*07

2834 sequences assigned  
5 (0.2%) exact matches, in which:  
5 unique CDR3  
3 unique J



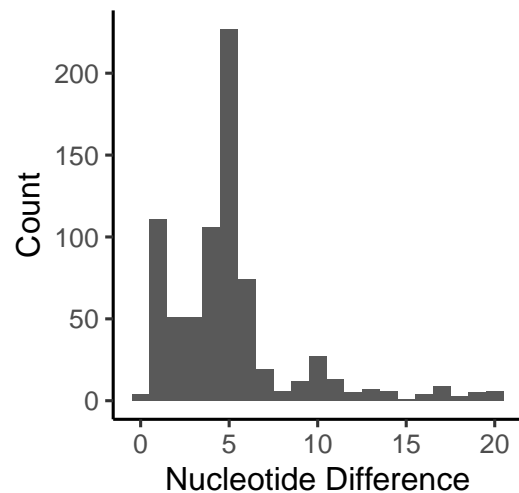
### IGHV4-59\*12

14519 sequences assigned  
179 (1.2%) exact matches, in which:  
171 unique CDR3  
6 unique J



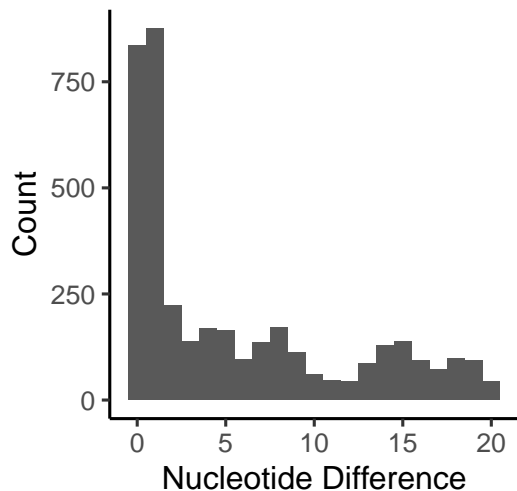
### IGHV4-61\*08

802 sequences assigned  
4 (0.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



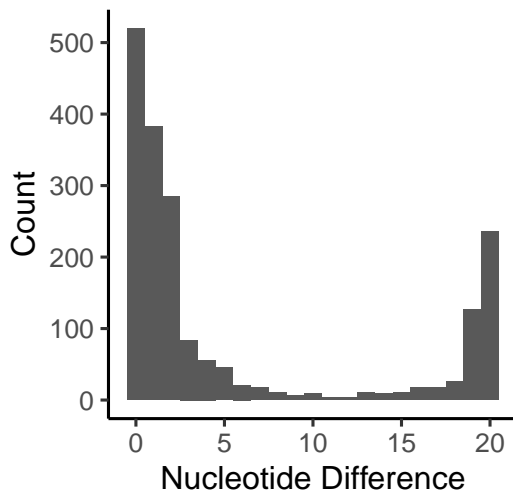
### IGHV4-59\*08

5442 sequences assigned  
836 (15.4%) exact matches, in which:  
655 unique CDR3  
6 unique J



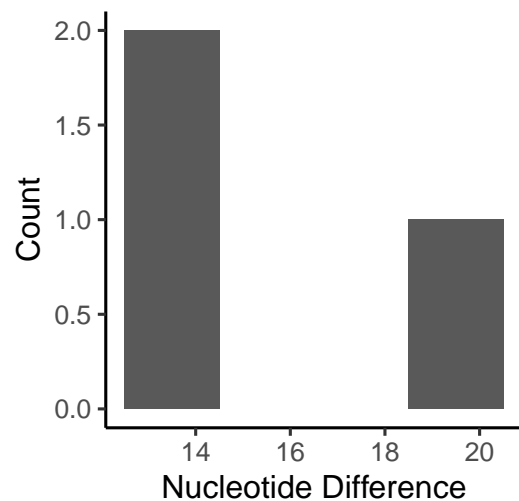
### IGHV4-61\*01

2157 sequences assigned  
520 (24.1%) exact matches, in which:  
454 unique CDR3  
6 unique J



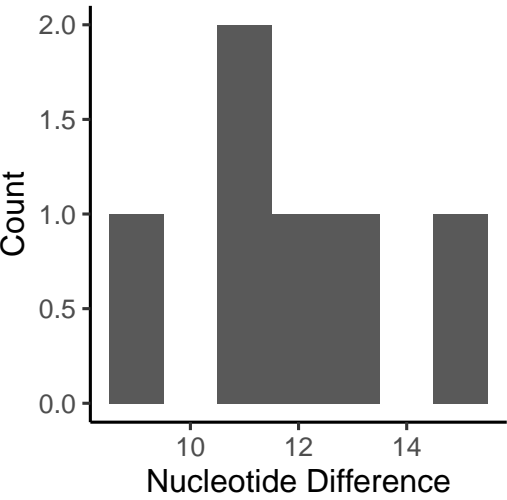
### IGHV1/OR15-2\*02\_03

15 sequences assigned  
No exact matches.



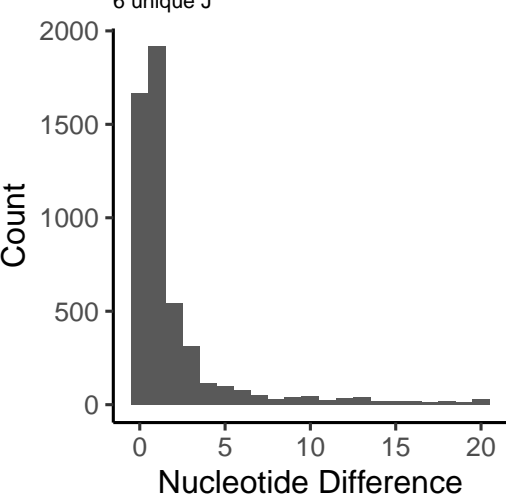
IGHV1/OR15-3\*02

6 sequences assigned  
No exact matches.



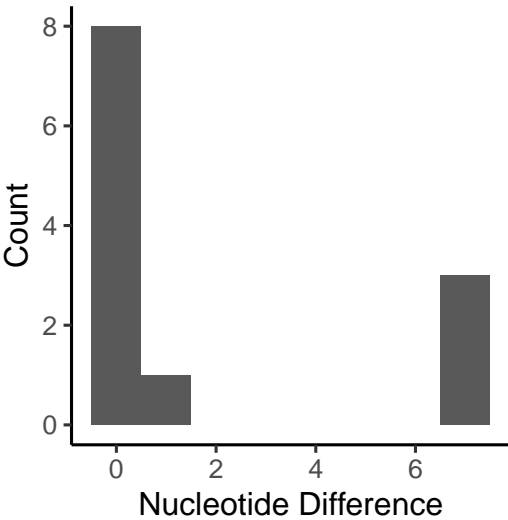
IGHV5-10-1\*01\_03

5962 sequences assigned  
1666 (27.9%) exact matches, in which:  
959 unique CDR3  
6 unique J



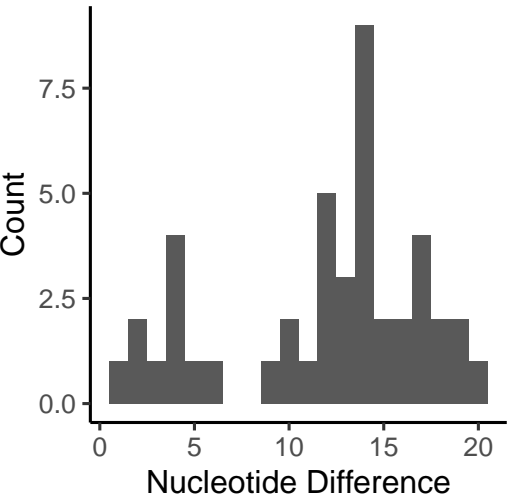
IGHV5-51\*07

13 sequences assigned  
8 (61.5%) exact matches, in which:  
8 unique CDR3  
4 unique J



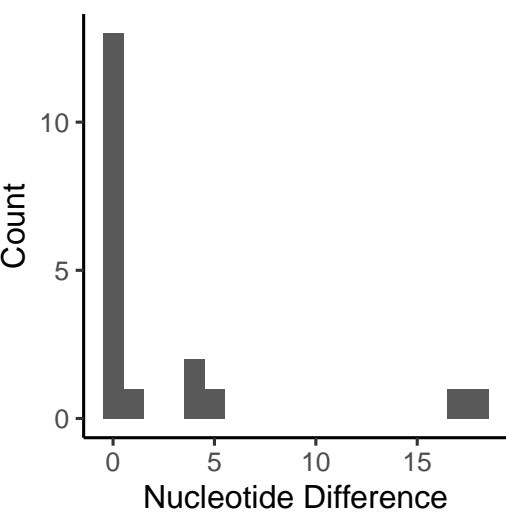
IGHV4/OR15-8\*01

62 sequences assigned  
No exact matches.



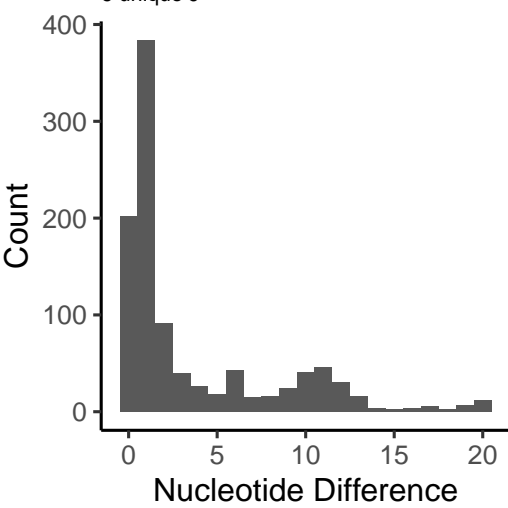
IGHV5-51\*04

19 sequences assigned  
13 (68.4%) exact matches, in which:  
13 unique CDR3  
6 unique J



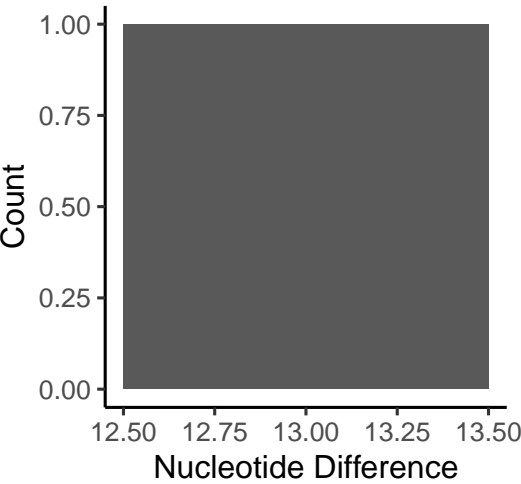
IGHV6-1\*01\_02

1271 sequences assigned  
202 (15.9%) exact matches, in which:  
152 unique CDR3  
6 unique J



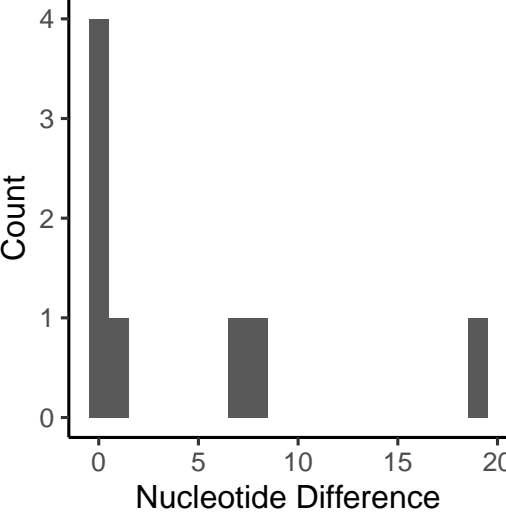
IGHV4/OR15-8\*02

230 sequences assigned  
No exact matches.



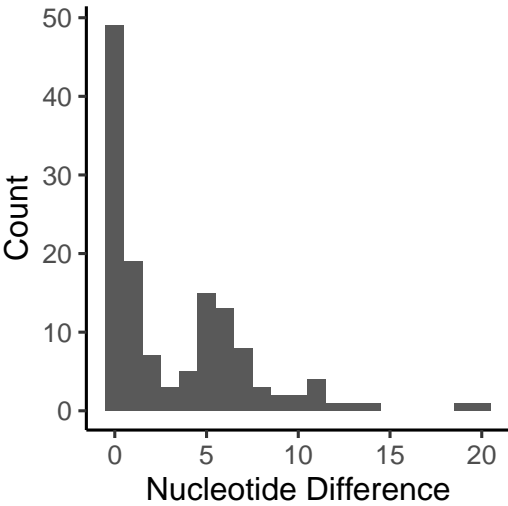
IGHV5-51\*06

36 sequences assigned  
4 (11.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



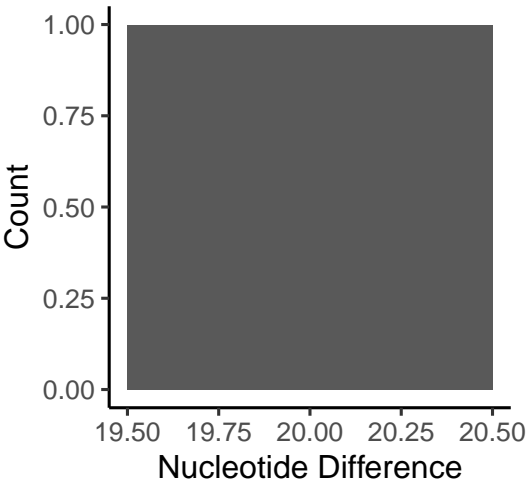
IGHV6-1\*01\_02\_A315G

322 sequences assigned  
49 (15.2%) exact matches, in which:  
49 unique CDR3  
4 unique J



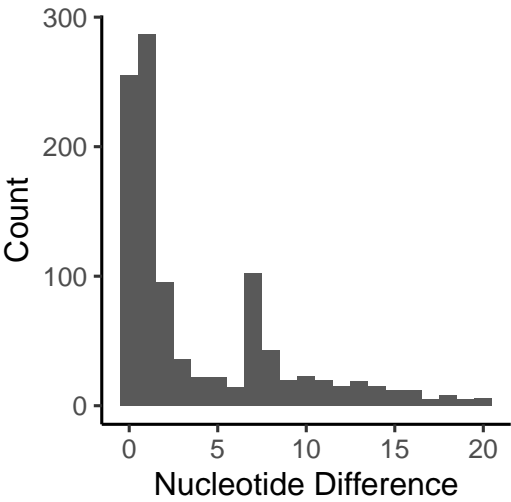
IGHV3/OR16-9\*01

3 sequences assigned  
No exact matches.



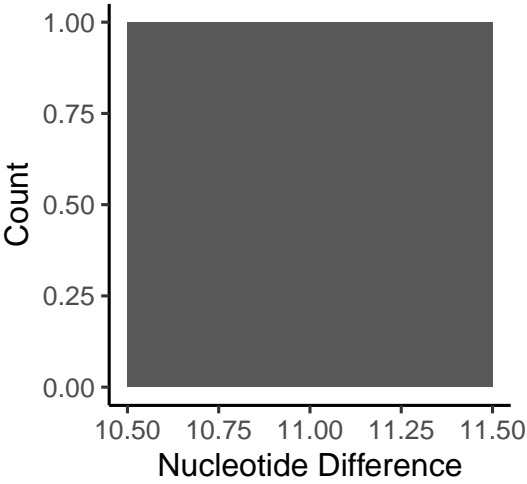
IGHV7-4-1\*02

1090 sequences assigned  
255 (23.4%) exact matches, in which:  
196 unique CDR3  
5 unique J

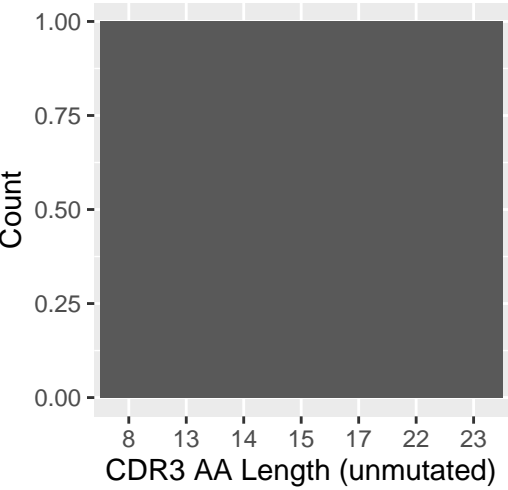


IGHV7-81\*01

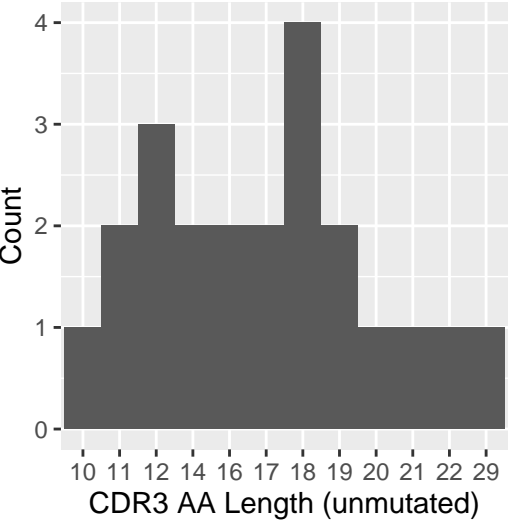
2 sequences assigned  
No exact matches.



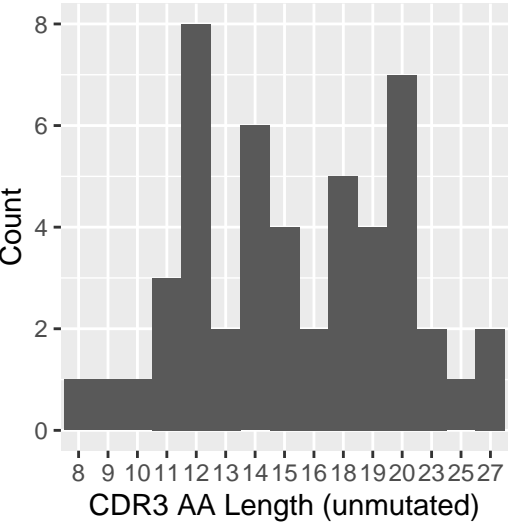
IGHV3-43\*01\_C246T\_A247T\_G248C\_A252G\_T256A\_C258G\_T279C\_A286G\_T288C\_C297G\_C



IGHV1-58\*02\_C86G\_T90C\_C104G\_T105C\_G107C\_G117T\_T150G\_G169A\_G185A\_C192G\_A204



IGHV6-1\*01\_02\_A315G







[illegible]