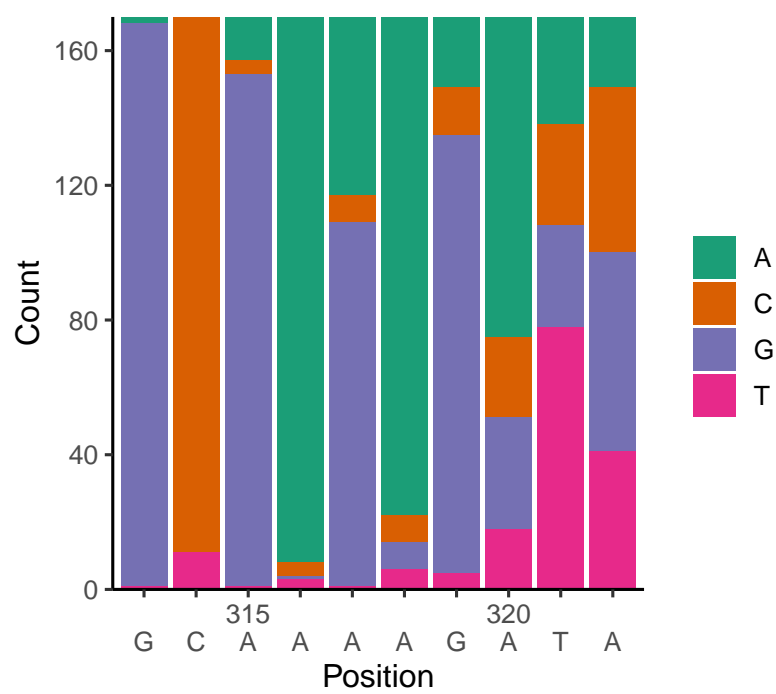
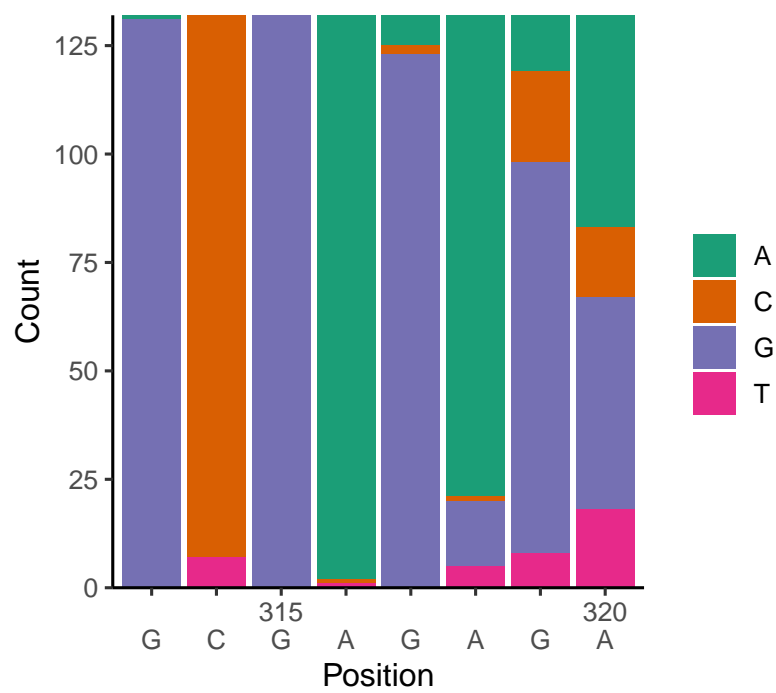


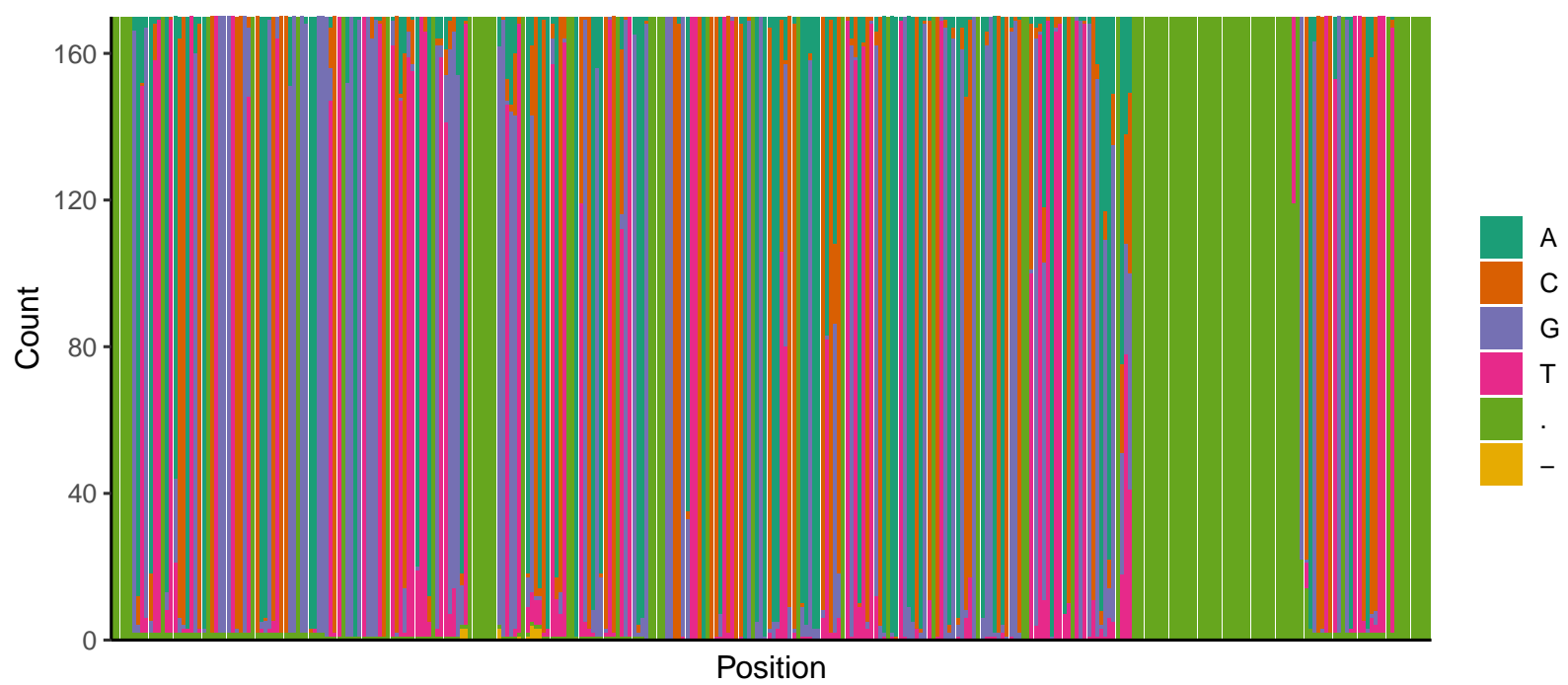
Gene IGHV3-43\*01\_A247G\_G248C\_A252G\_C258A\_T279C\_A286G\_T288C\_C297G\_C300G



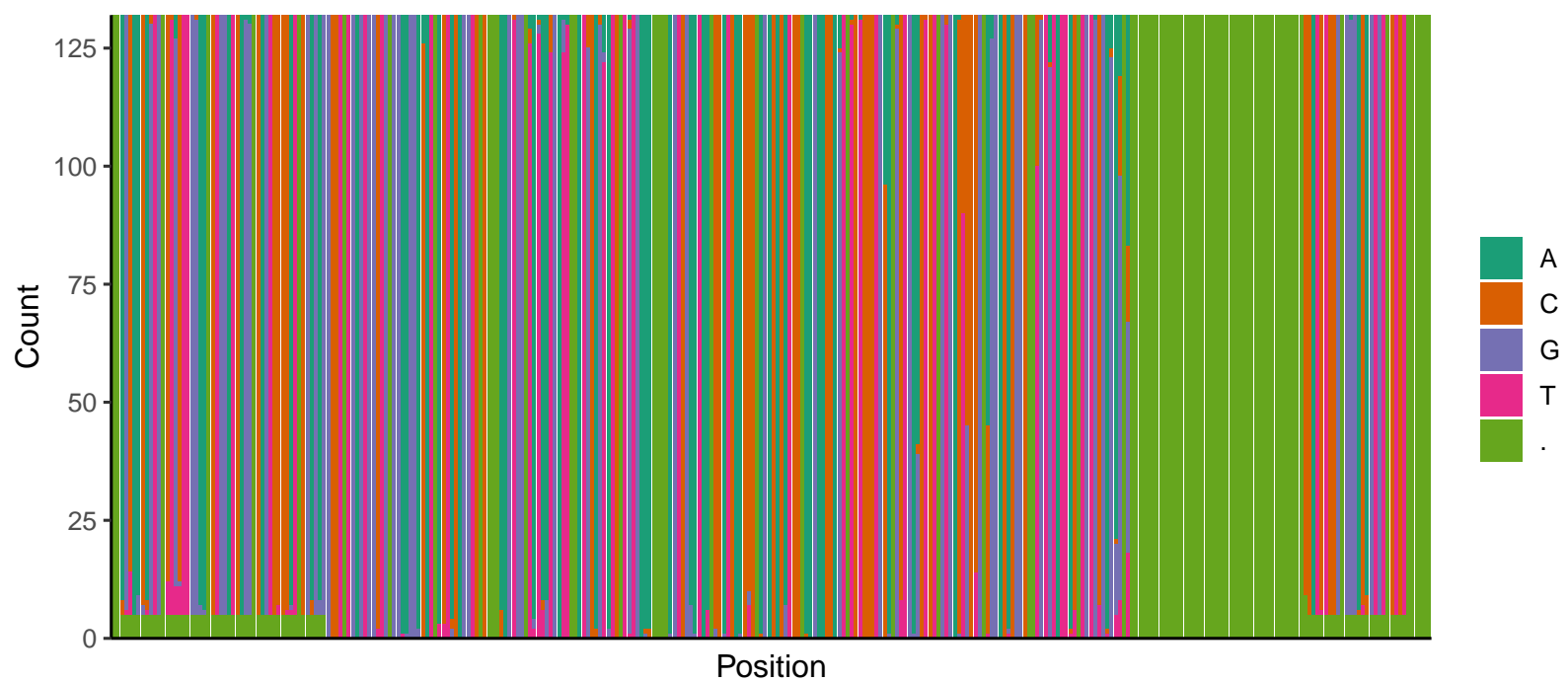
Gene IGHV6-1\*01\_02\_A315G



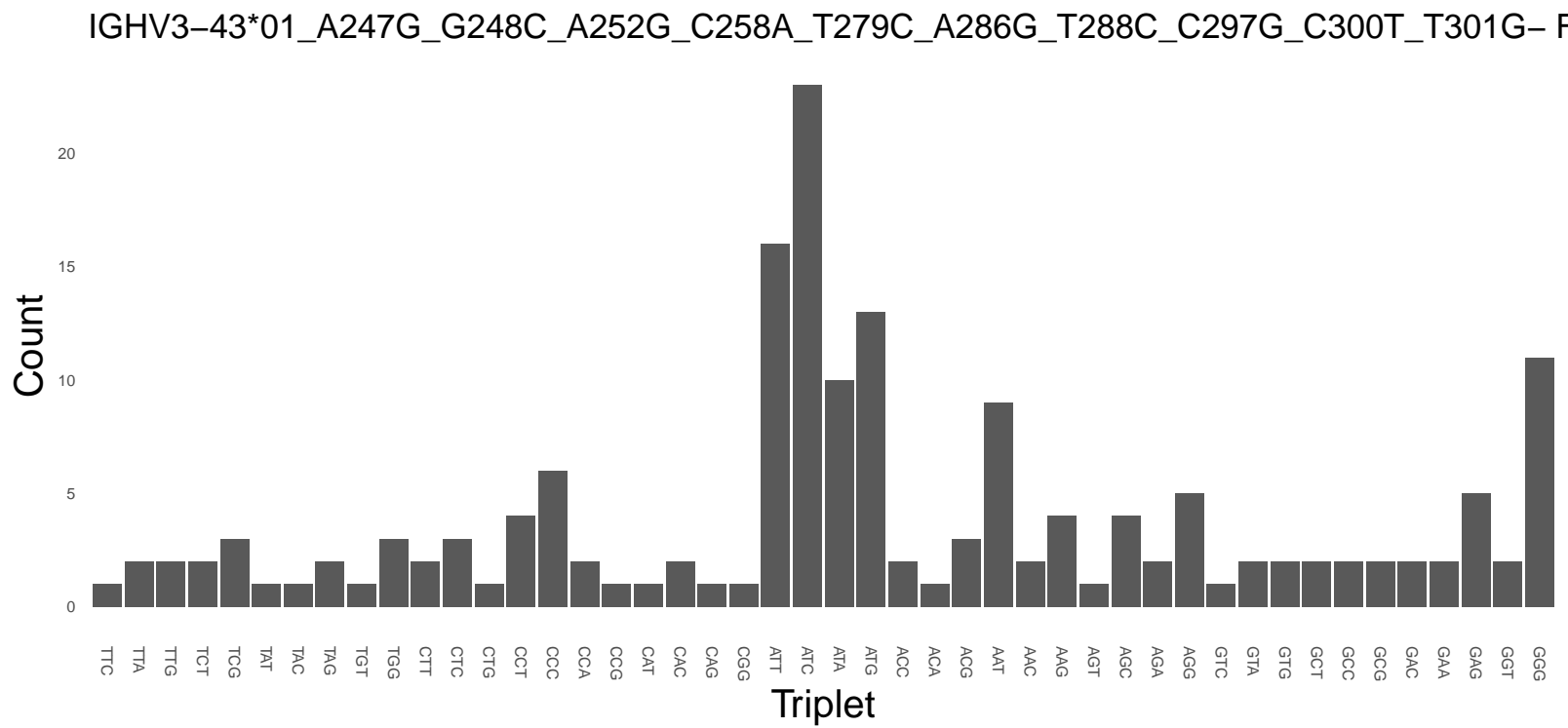
Gene IGHV3-43\*01\_A247G\_G248C\_A252G\_C258A\_T279C\_A286G\_T288C\_C297G\_C300G



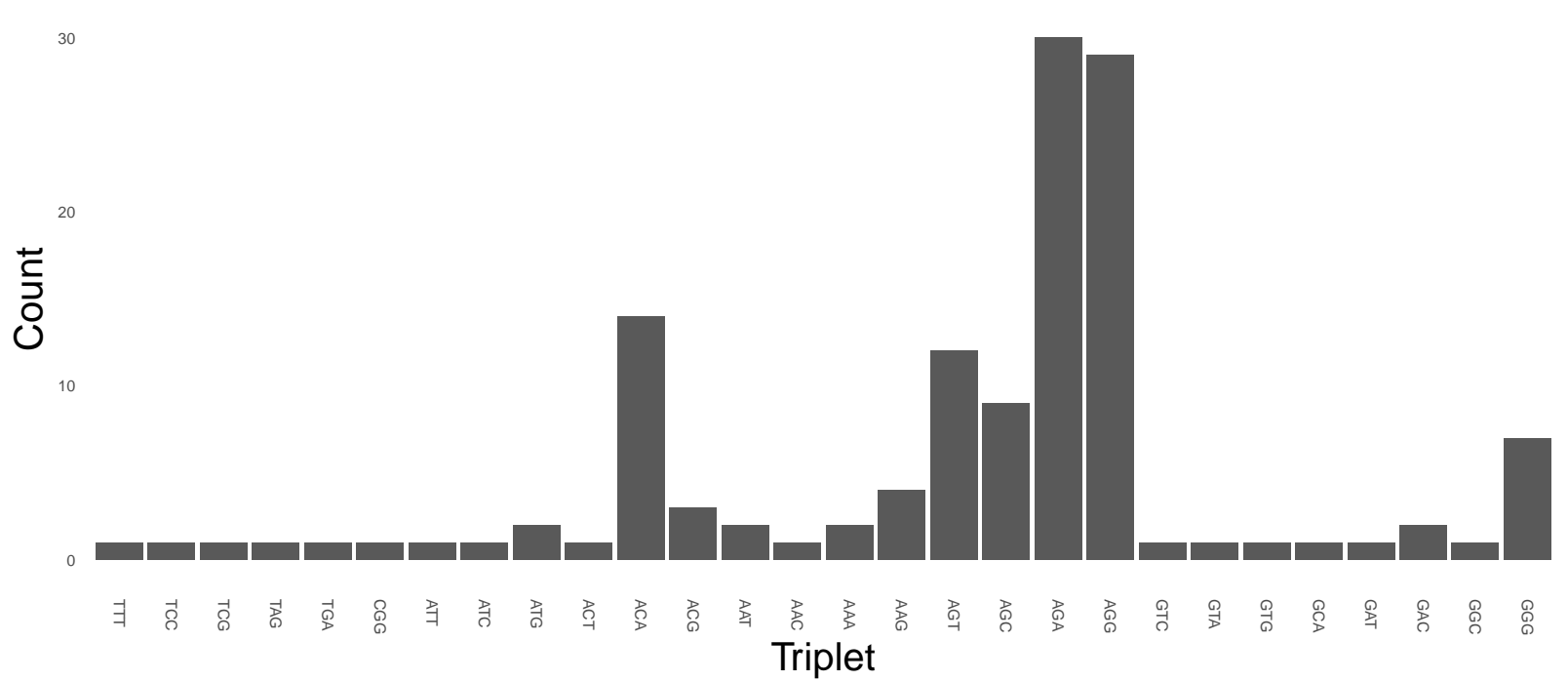
Gene IGHV6-1\*01\_02\_A315G



IGHV3-43\*01\_A247G\_G248C\_A252G\_C258A\_T279C\_A286G\_T288C\_C297G\_C300T\_T301G- F

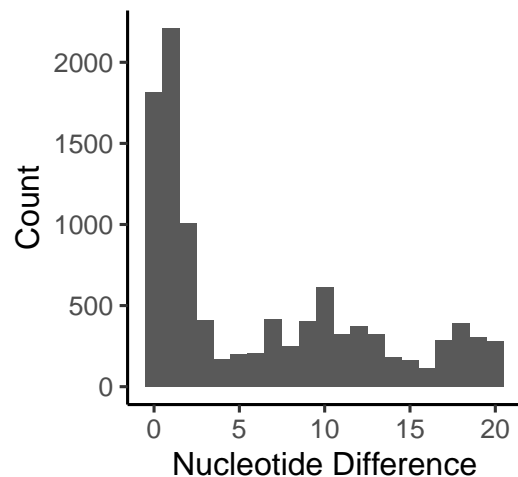


IGHV6-1\*01\_02\_A315G- Final 3 nucleotides as a triplet



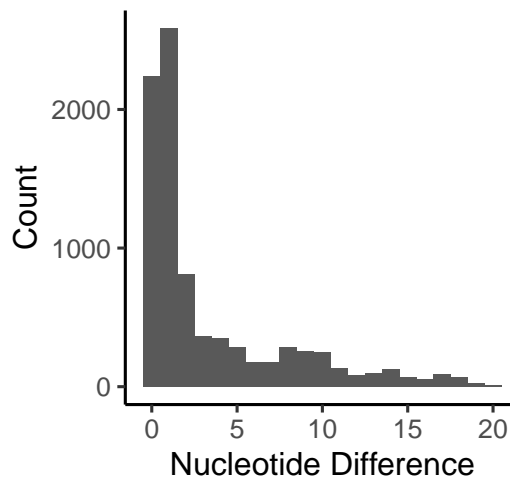
### IGHV1-2\*02

12355 sequences assigned  
1814 (14.7%) exact matches, in which:  
1479 unique CDR3  
6 unique J



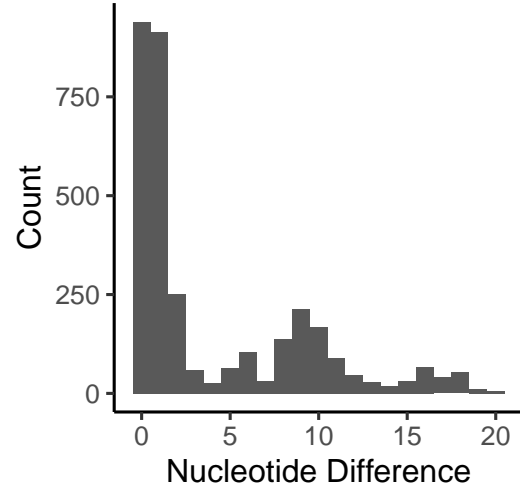
### IGHV1-8\*01

8689 sequences assigned  
2244 (25.8%) exact matches, in which:  
1882 unique CDR3  
6 unique J



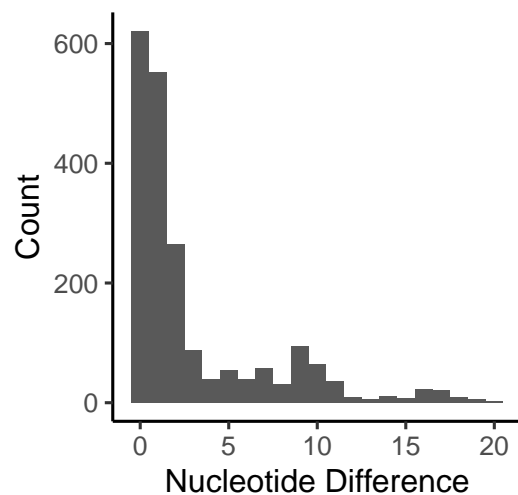
### IGHV1-24\*01

3323 sequences assigned  
940 (28.3%) exact matches, in which:  
776 unique CDR3  
6 unique J



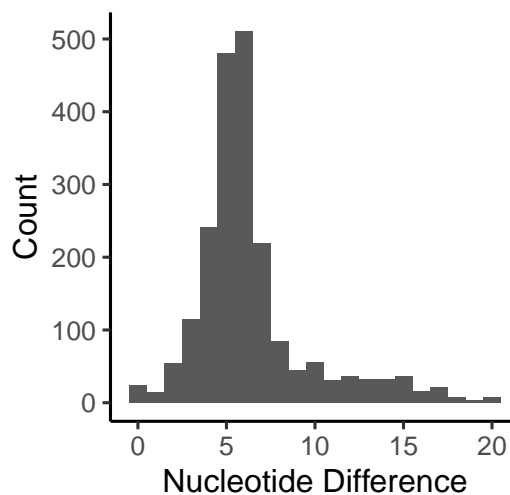
### IGHV1-2\*04

2050 sequences assigned  
621 (30.3%) exact matches, in which:  
525 unique CDR3  
6 unique J



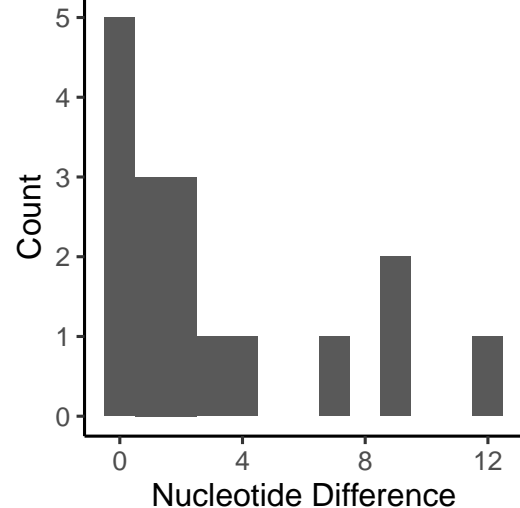
### IGHV1-8\*02

2103 sequences assigned  
24 (1.1%) exact matches, in which:  
24 unique CDR3  
4 unique J



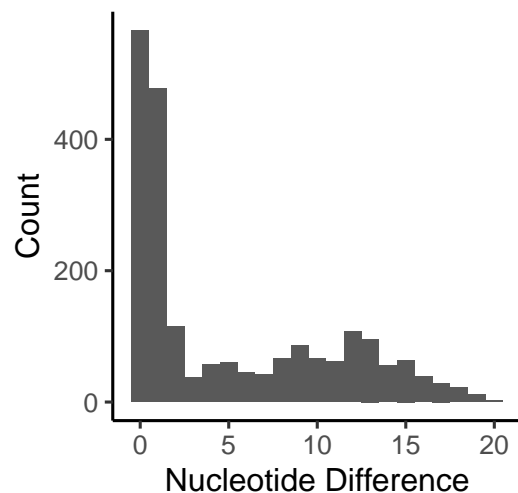
### IGHV1-45\*02

17 sequences assigned  
5 (29.4%) exact matches, in which:  
4 unique CDR3  
1 unique J



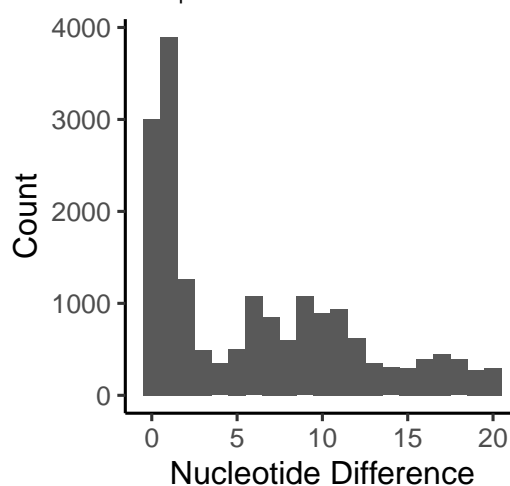
### IGHV1-3\*01\_05

2338 sequences assigned  
566 (24.2%) exact matches, in which:  
458 unique CDR3  
6 unique J



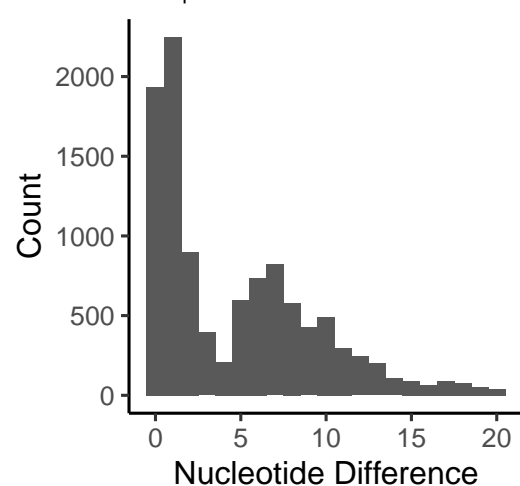
### IGHV1-18\*01

21223 sequences assigned  
3005 (14.2%) exact matches, in which:  
2427 unique CDR3  
6 unique J



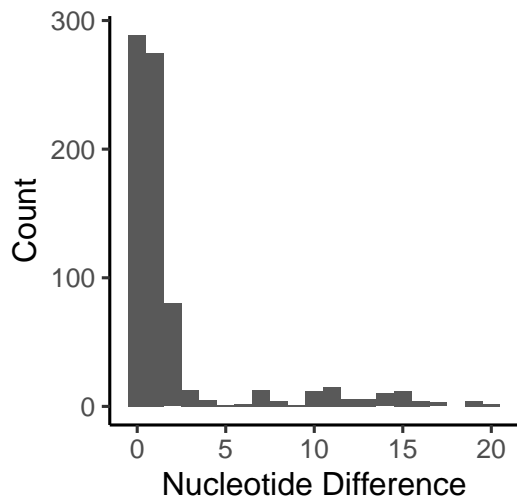
### IGHV1-46\*01

10870 sequences assigned  
1933 (17.8%) exact matches, in which:  
1617 unique CDR3  
6 unique J



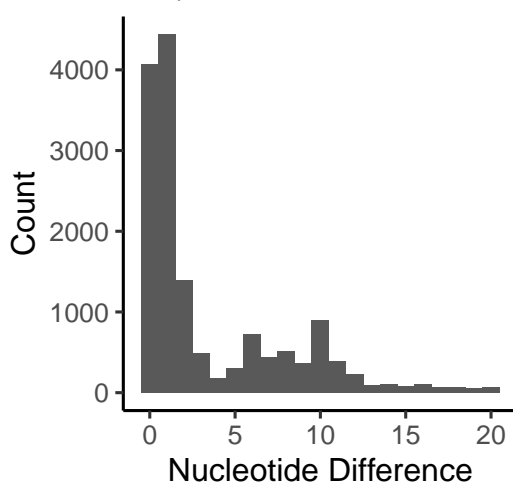
### IGHV1–58\*01\_03

759 sequences assigned  
289 (38.1%) exact matches, in which:  
242 unique CDR3  
6 unique J



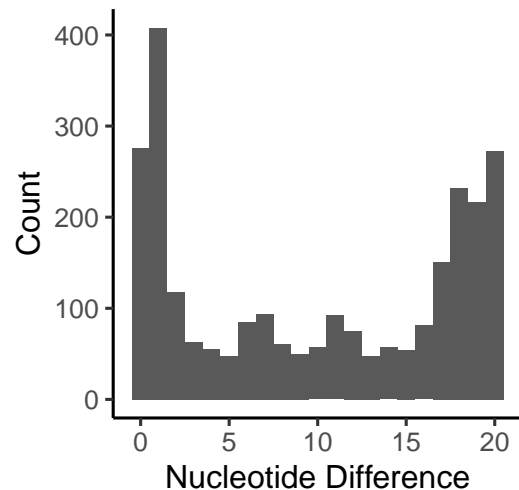
### IGHV1–69\*01\_12\_13

16360 sequences assigned  
4066 (24.9%) exact matches, in which:  
3390 unique CDR3  
6 unique J



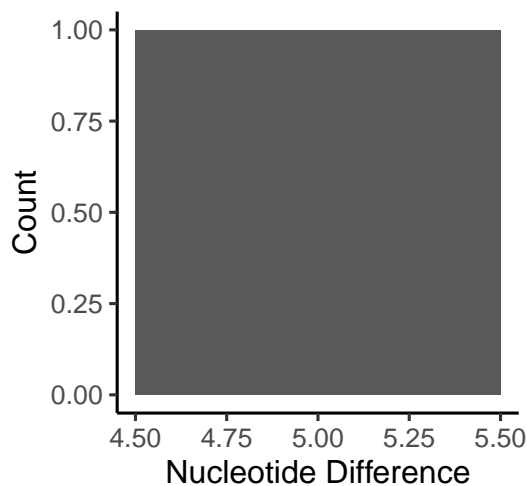
### IGHV2–5\*02

3740 sequences assigned  
276 (7.4%) exact matches, in which:  
218 unique CDR3  
5 unique J



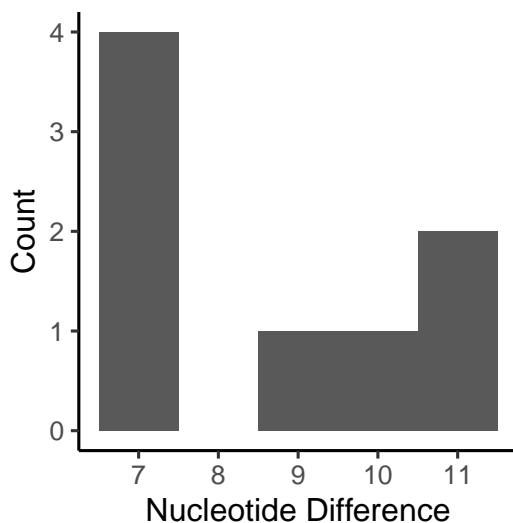
### IGHV1–68\*01

1 sequences assigned  
No exact matches.



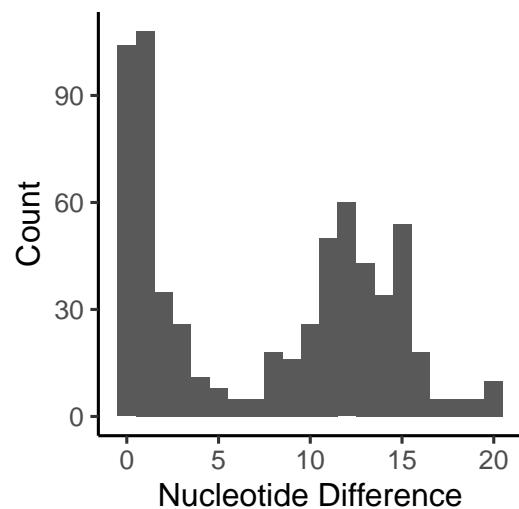
### IGHV1–NL1\*01

8 sequences assigned  
No exact matches.



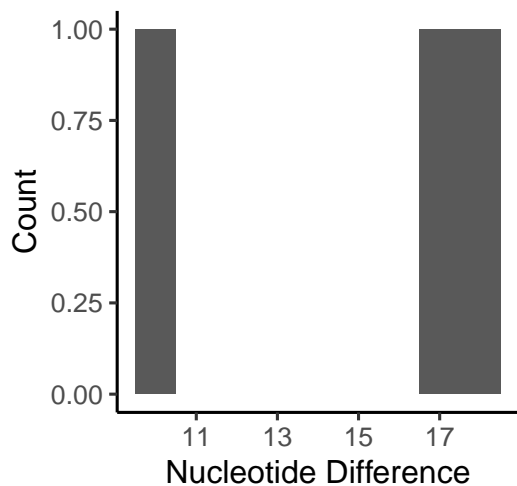
### IGHV2–26\*01

824 sequences assigned  
104 (12.6%) exact matches, in which:  
86 unique CDR3  
5 unique J



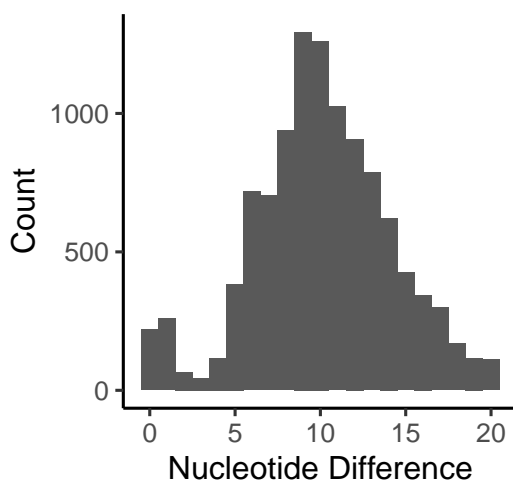
### IGHV1–69–2\*01

3 sequences assigned  
No exact matches.



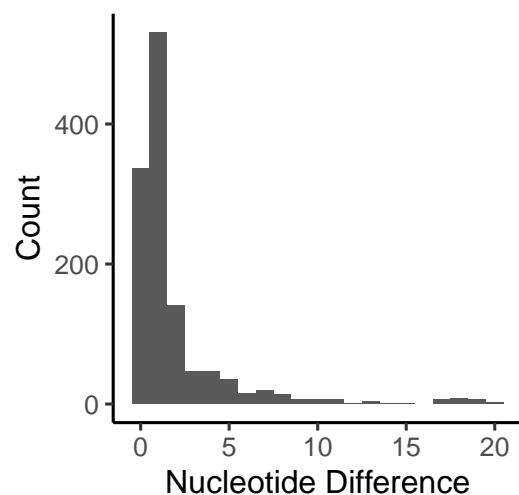
### IGHV2–5\*01

11237 sequences assigned  
220 (2%) exact matches, in which:  
170 unique CDR3  
6 unique J



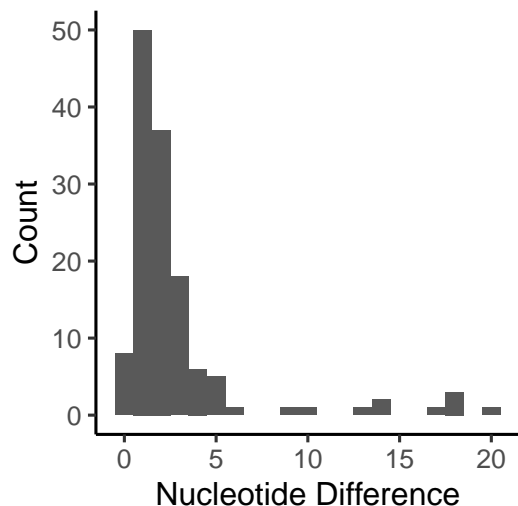
### IGHV2–70\*01

1292 sequences assigned  
337 (26.1%) exact matches, in which:  
210 unique CDR3  
5 unique J



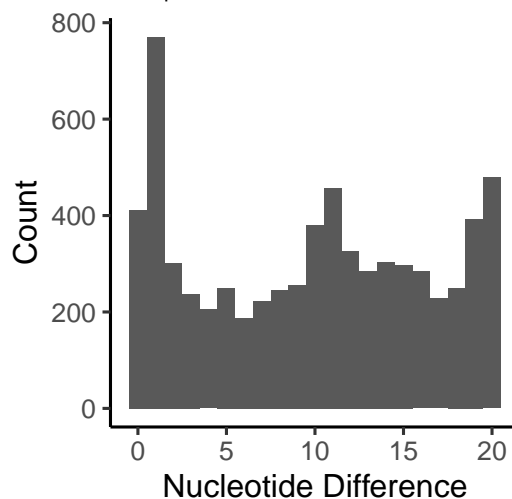
## IGHV2-70\*12

144 sequences assigned  
8 (5.6%) exact matches, in which:  
8 unique CDR3  
3 unique J



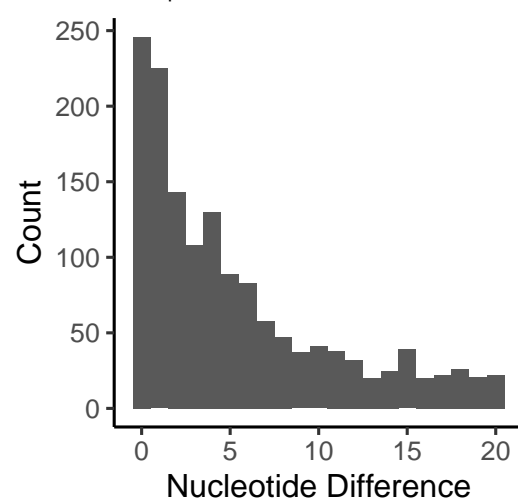
## IGHV3-7\*03

10211 sequences assigned  
412 (4%) exact matches, in which:  
274 unique CDR3  
6 unique J



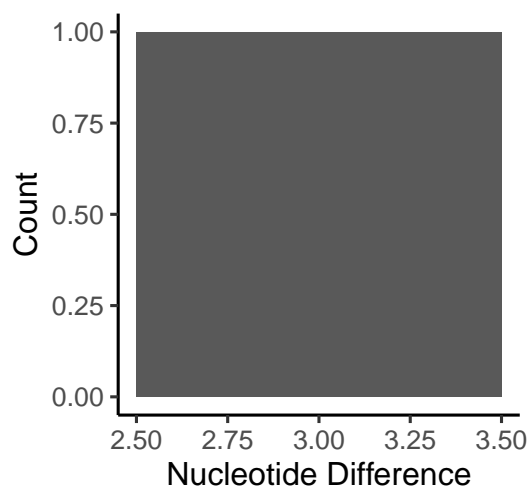
## IGHV3-11\*04

1609 sequences assigned  
246 (15.3%) exact matches, in which:  
235 unique CDR3  
6 unique J



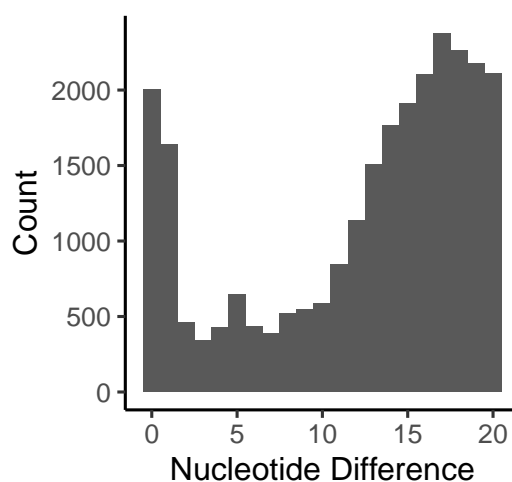
## IGHV2-70D\*04

2 sequences assigned  
No exact matches.



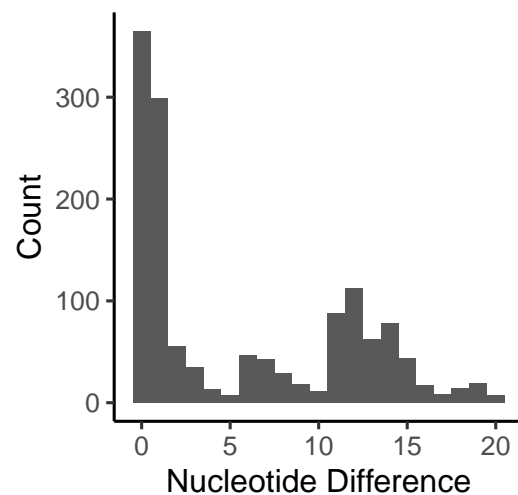
## IGHV3-9\*01

40581 sequences assigned  
2004 (4.9%) exact matches, in which:  
1161 unique CDR3  
6 unique J



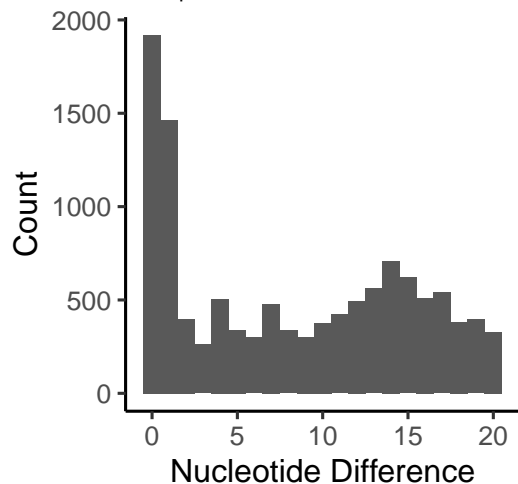
## IGHV3-13\*01

1635 sequences assigned  
365 (22.3%) exact matches, in which:  
236 unique CDR3  
6 unique J



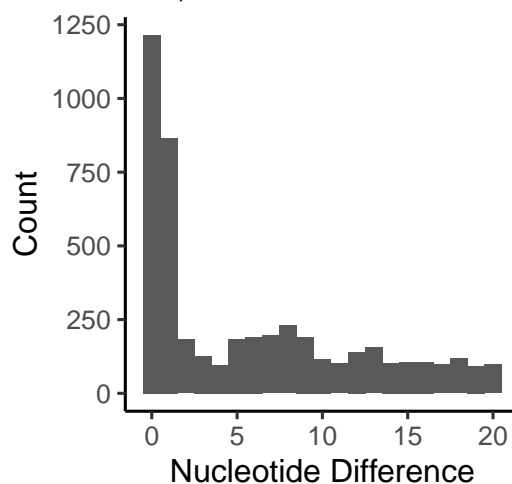
## IGHV3-7\*01

14263 sequences assigned  
1919 (13.5%) exact matches, in which:  
1292 unique CDR3  
6 unique J



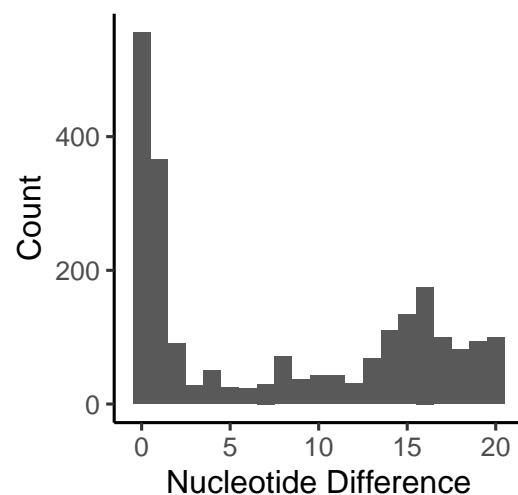
## IGHV3-11\*01

5628 sequences assigned  
1215 (21.6%) exact matches, in which:  
822 unique CDR3  
6 unique J



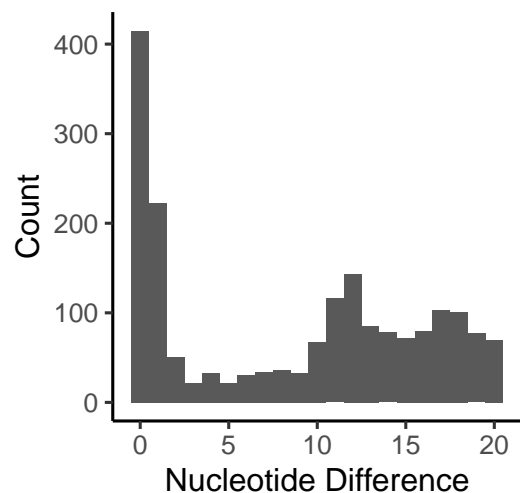
## IGHV3-15\*07

3165 sequences assigned  
556 (17.6%) exact matches, in which:  
361 unique CDR3  
5 unique J



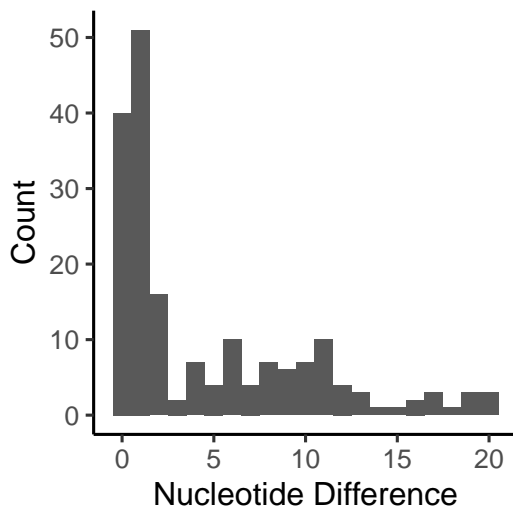
### IGHV3-15\*01\_02

2407 sequences assigned  
415 (17.2%) exact matches, in which:  
278 unique CDR3  
6 unique J



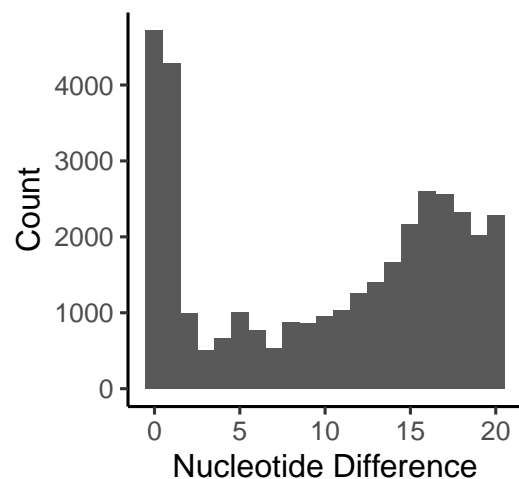
### IGHV3-20\*03\_04

258 sequences assigned  
40 (15.5%) exact matches, in which:  
29 unique CDR3  
4 unique J



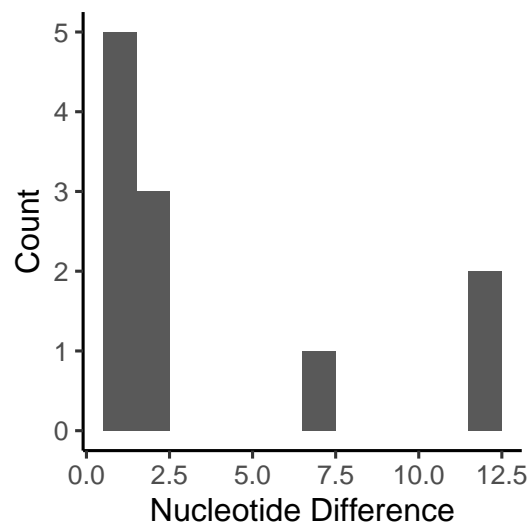
### IGHV3-23\*01\_04

53209 sequences assigned  
4719 (8.9%) exact matches, in which:  
2694 unique CDR3  
6 unique J



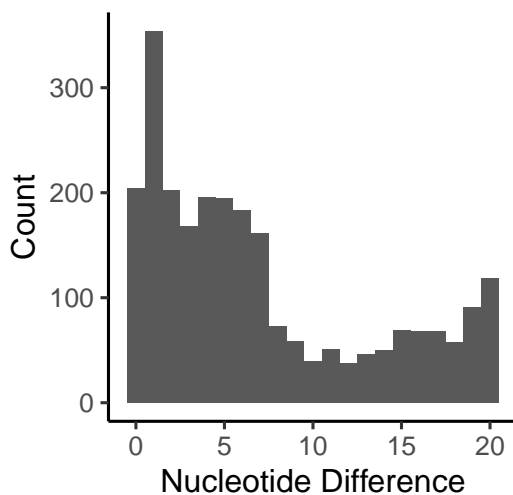
### IGHV3-19\*01

11 sequences assigned  
No exact matches.



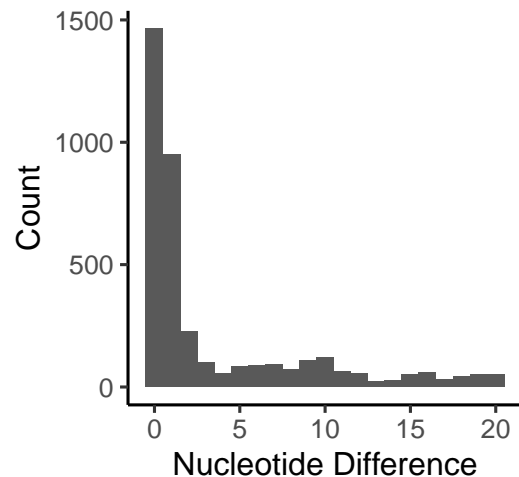
### IGHV3-21\*04

3325 sequences assigned  
204 (6.1%) exact matches, in which:  
188 unique CDR3  
6 unique J



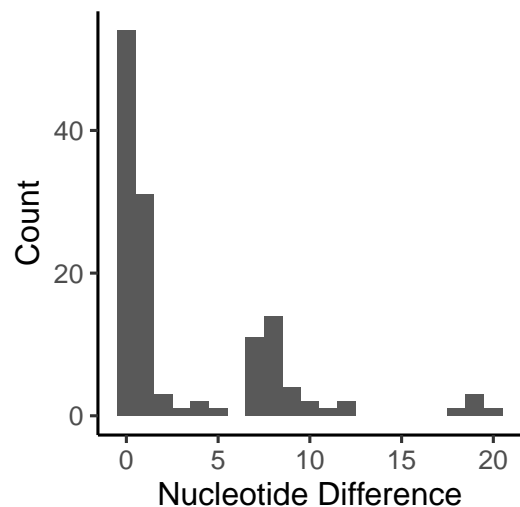
### IGHV3-30-3\*01

4123 sequences assigned  
1464 (35.5%) exact matches, in which:  
982 unique CDR3  
6 unique J



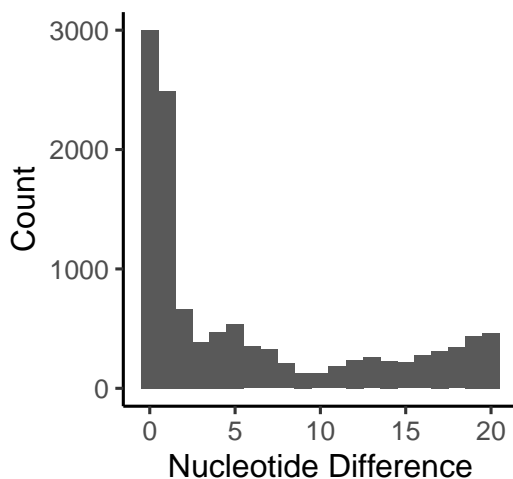
### IGHV3-20\*01\_02

147 sequences assigned  
54 (36.7%) exact matches, in which:  
29 unique CDR3  
5 unique J



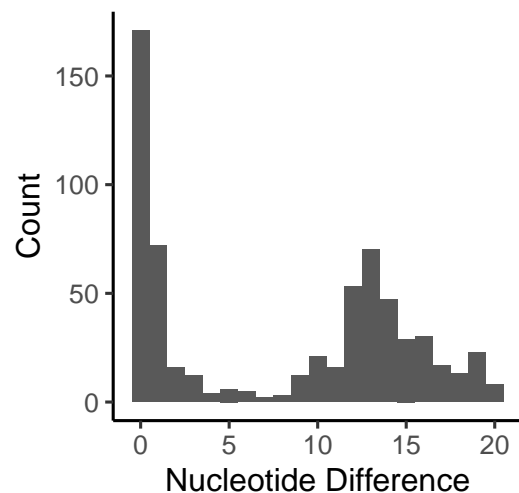
### IGHV3-21\*01\_02

14670 sequences assigned  
3001 (20.5%) exact matches, in which:  
1860 unique CDR3  
6 unique J



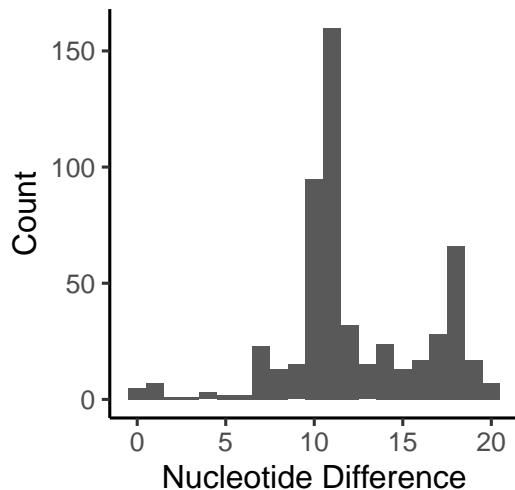
### IGHV3-30\*03

783 sequences assigned  
171 (21.8%) exact matches, in which:  
162 unique CDR3  
6 unique J



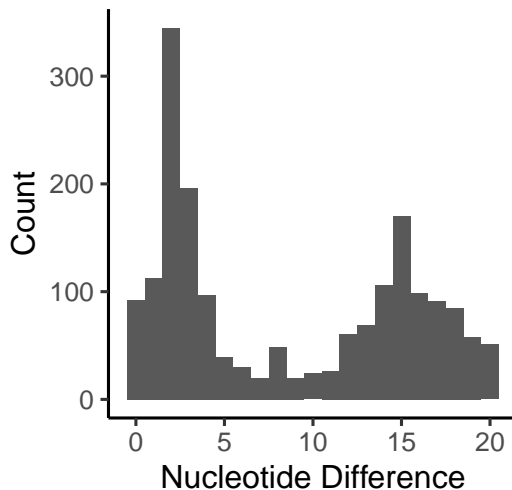
### IGHV3-30\*04

687 sequences assigned  
5 (0.7%) exact matches, in which:  
5 unique CDR3  
2 unique J



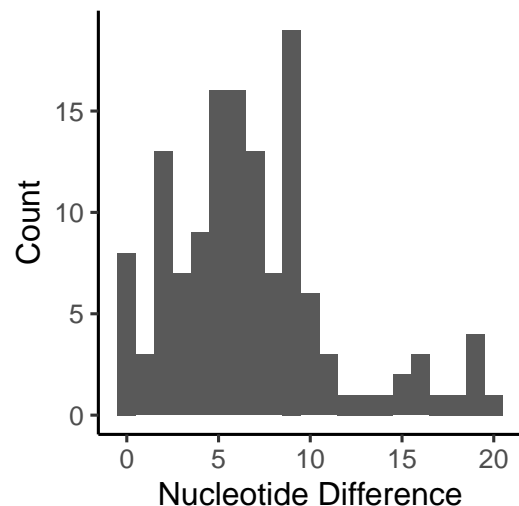
### IGHV3-33\*06

2054 sequences assigned  
92 (4.5%) exact matches, in which:  
86 unique CDR3  
6 unique J



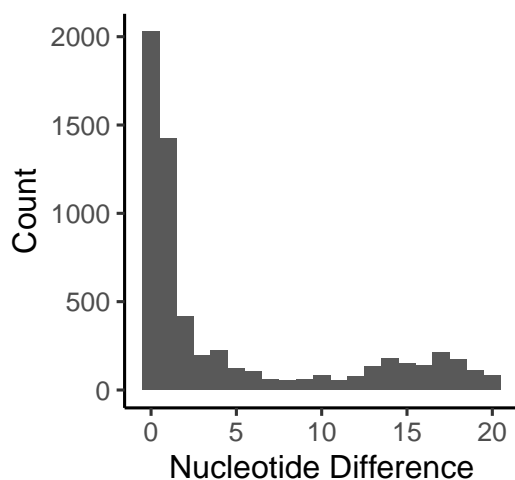
### IGHV3-43\*01\_A247G\_G2

170 sequences assigned  
8 (4.7%) exact matches, in which:  
8 unique CDR3  
4 unique J



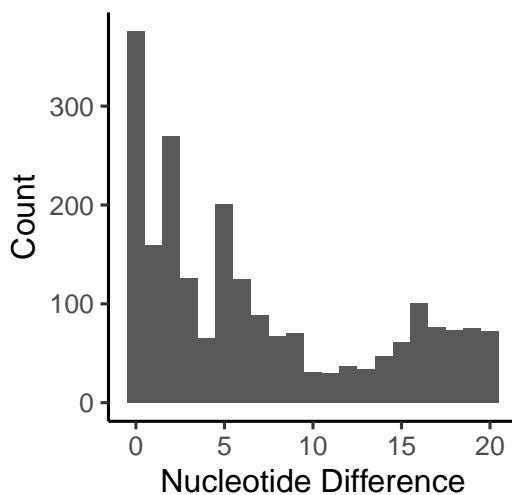
### IGHV3-33\*01

6980 sequences assigned  
2028 (29.1%) exact matches, in which:  
1318 unique CDR3  
6 unique J



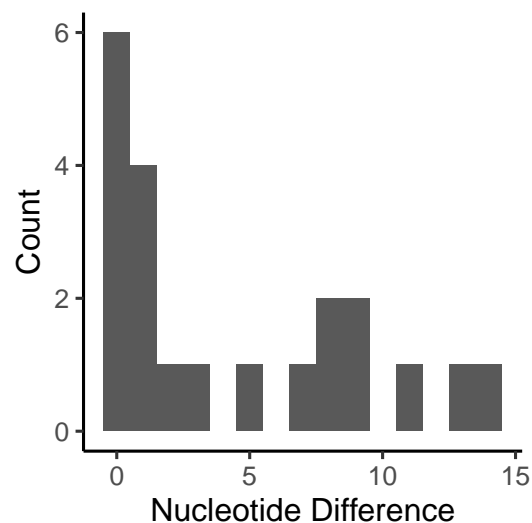
### IGHV3-33\*08

2637 sequences assigned  
376 (14.3%) exact matches, in which:  
304 unique CDR3  
6 unique J



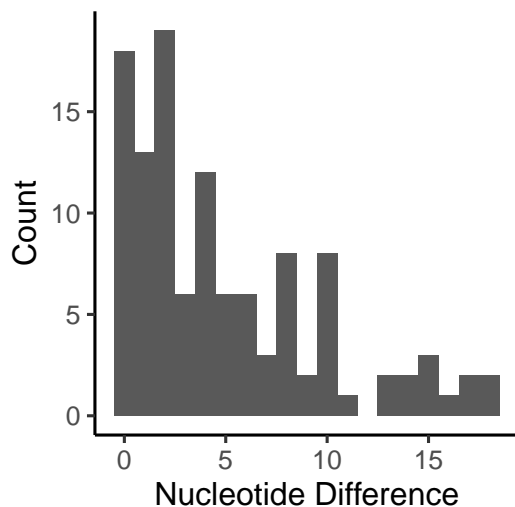
### IGHV3-47\*02

21 sequences assigned  
6 (28.6%) exact matches, in which:  
3 unique CDR3  
1 unique J



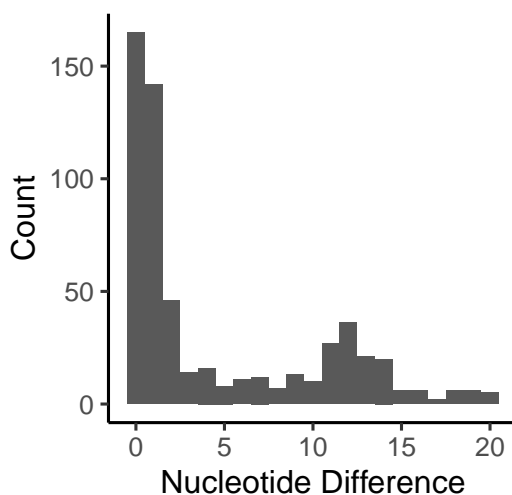
### IGHV3-33\*05

170 sequences assigned  
18 (10.6%) exact matches, in which:  
17 unique CDR3  
4 unique J



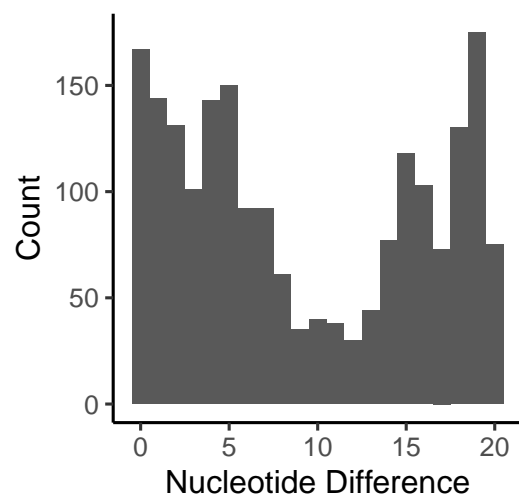
### IGHV3-43\*01

683 sequences assigned  
165 (24.2%) exact matches, in which:  
103 unique CDR3  
5 unique J



### IGHV3-48\*01

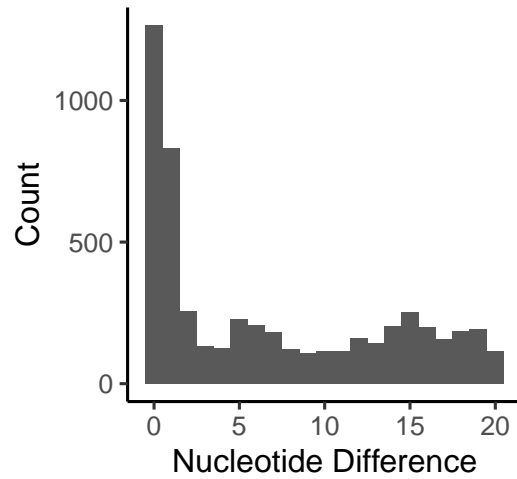
2343 sequences assigned  
167 (7.1%) exact matches, in which:  
157 unique CDR3  
6 unique J





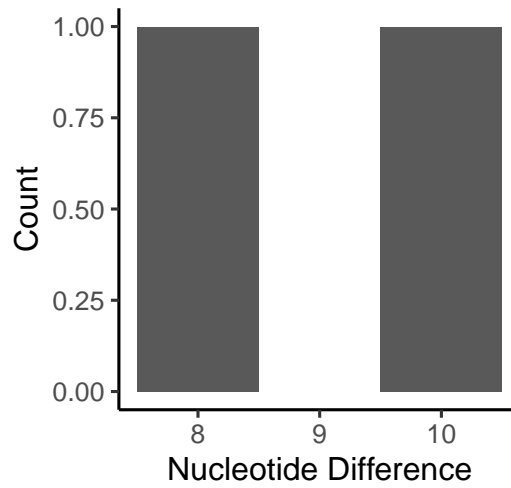
### IGHV3-48\*02

6359 sequences assigned  
1265 (19.9%) exact matches, in which:  
811 unique CDR3  
6 unique J



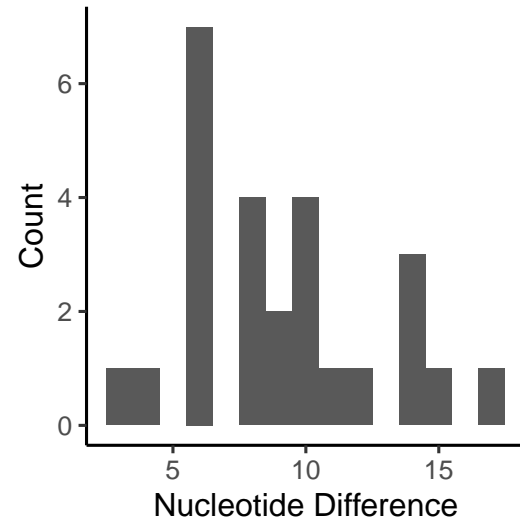
### IGHV3-52\*01\_03

2 sequences assigned  
No exact matches.



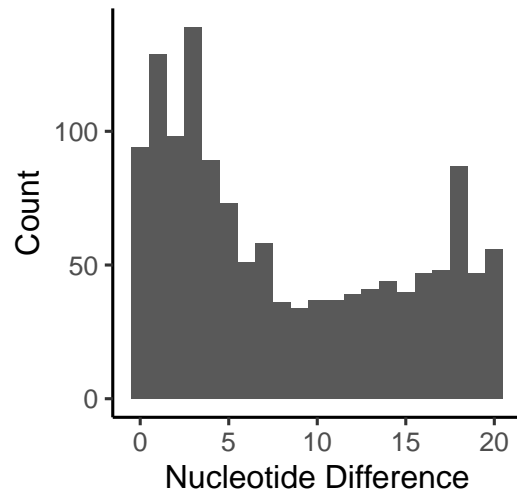
### IGHV3-64\*04

30 sequences assigned  
No exact matches.



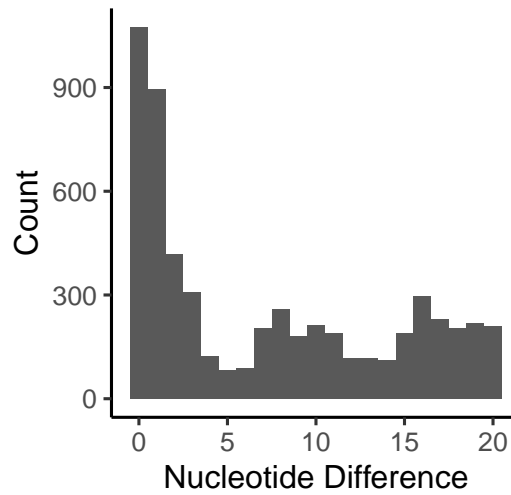
### IGHV3-48\*04

1898 sequences assigned  
94 (5%) exact matches, in which:  
86 unique CDR3  
5 unique J



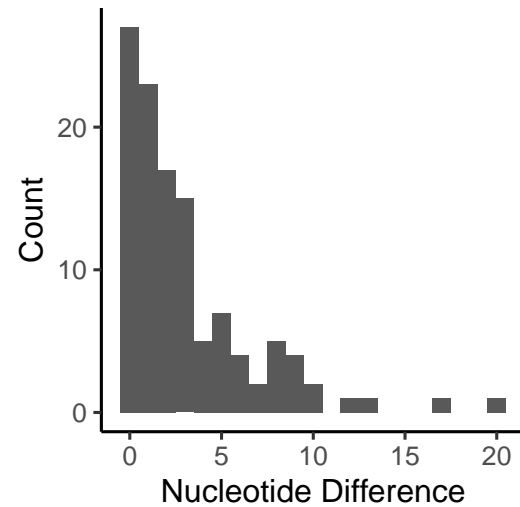
### IGHV3-53\*01\_02

9659 sequences assigned  
1075 (11.1%) exact matches, in which:  
750 unique CDR3  
6 unique J



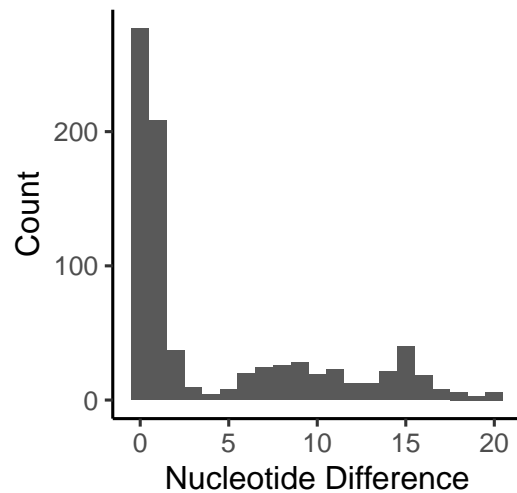
### IGHV3-64\*02\_07

118 sequences assigned  
27 (22.9%) exact matches, in which:  
16 unique CDR3  
3 unique J



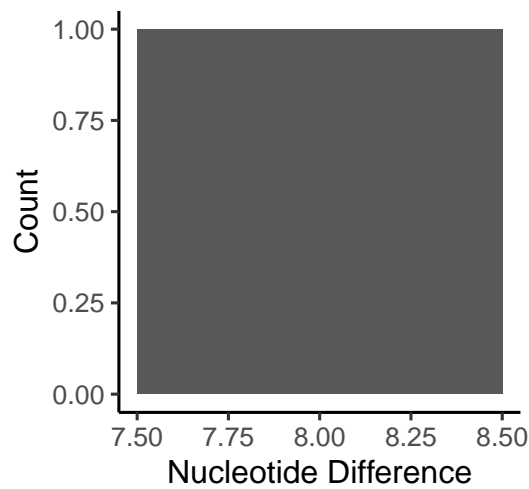
### IGHV3-49\*03\_05

860 sequences assigned  
277 (32.2%) exact matches, in which:  
164 unique CDR3  
6 unique J



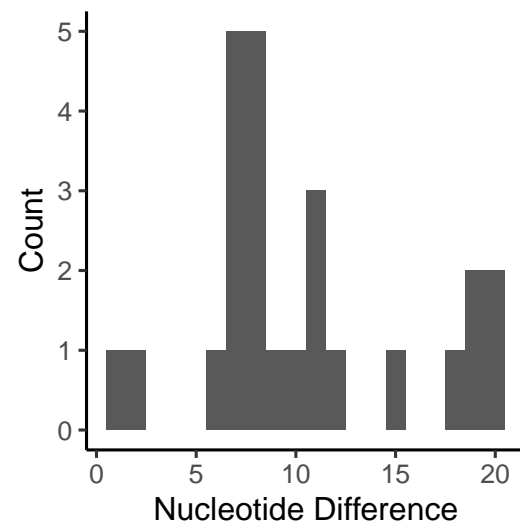
### IGHV3-62\*03

2 sequences assigned  
No exact matches.



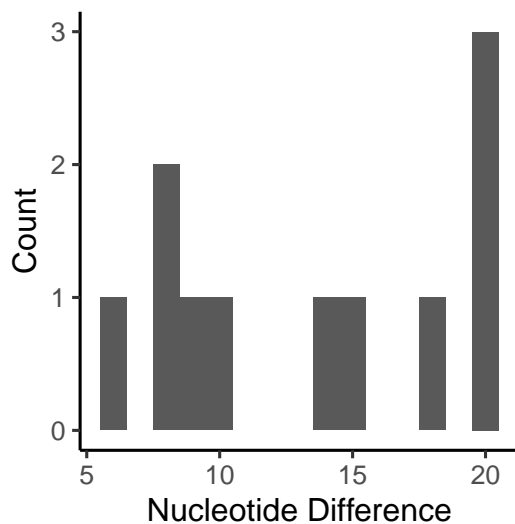
### IGHV3-66\*01

58 sequences assigned  
No exact matches.



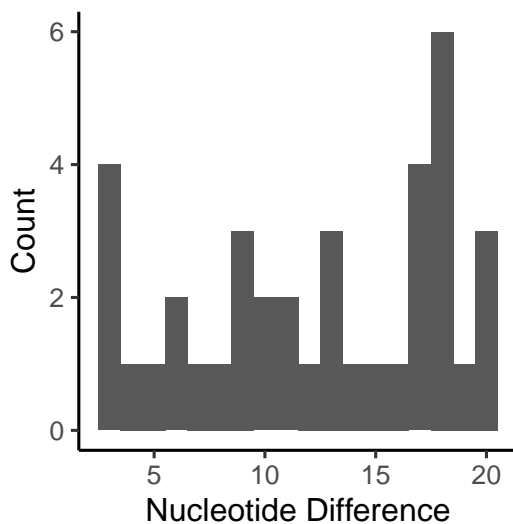
### IGHV3-66\*02

17 sequences assigned  
No exact matches.



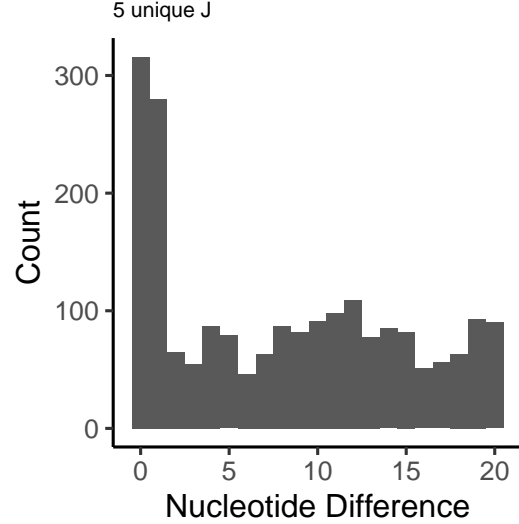
### IGHV3-69-1\*01

103 sequences assigned  
No exact matches.



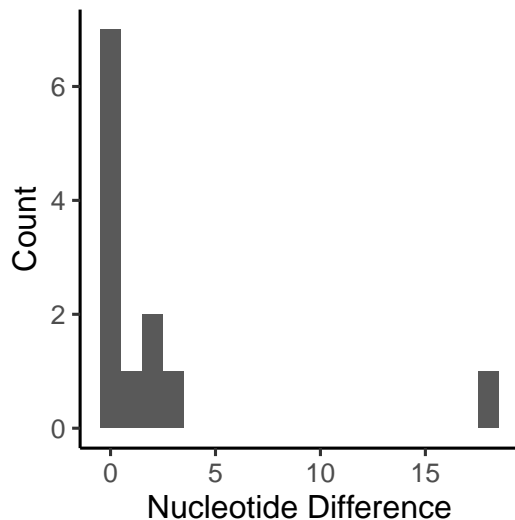
### IGHV3-73\*01\_02

2406 sequences assigned  
316 (13.1%) exact matches, in which:  
186 unique CDR3  
5 unique J



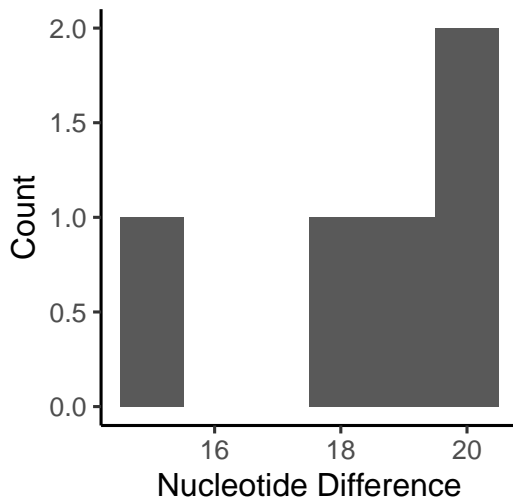
### IGHV3-66\*03

12 sequences assigned  
7 (58.3%) exact matches, in which:  
7 unique CDR3  
2 unique J



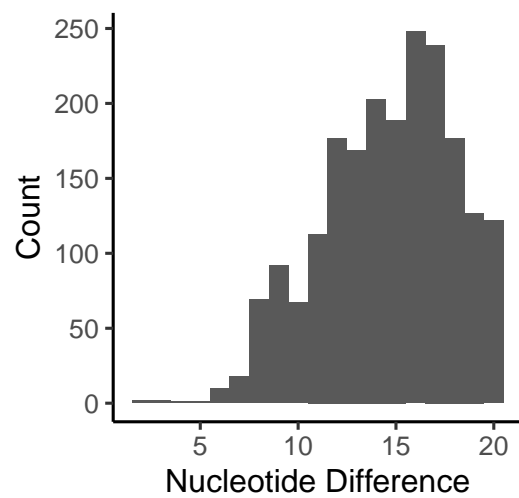
### IGHV3-69-1\*02

22 sequences assigned  
No exact matches.



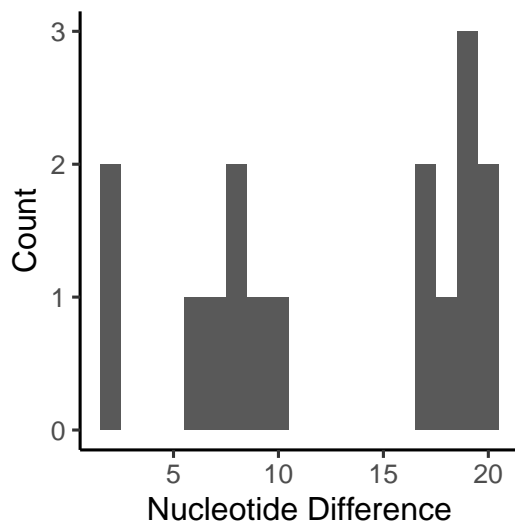
### IGHV3-74\*03

3321 sequences assigned  
No exact matches.



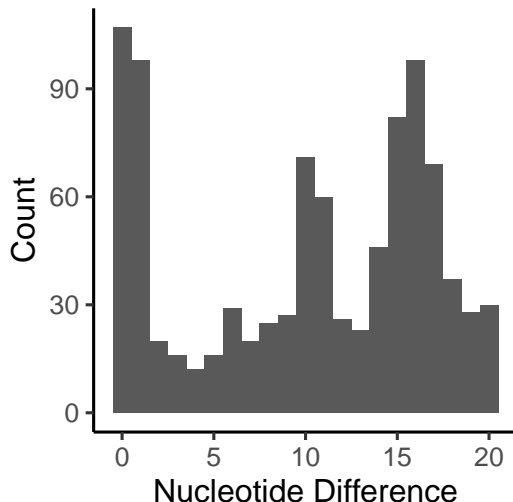
### IGHV3-66\*04

44 sequences assigned  
No exact matches.



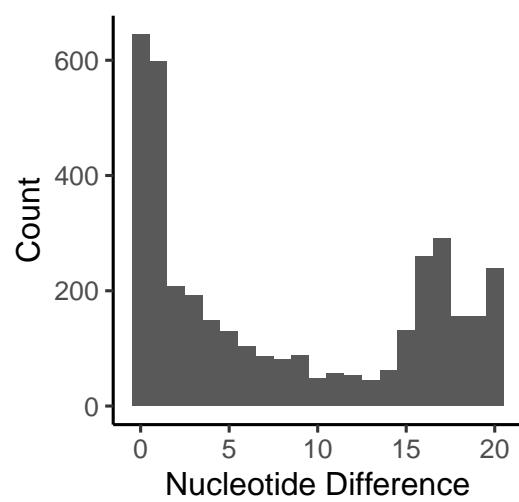
### IGHV3-72\*01

1197 sequences assigned  
107 (8.9%) exact matches, in which:  
65 unique CDR3  
6 unique J



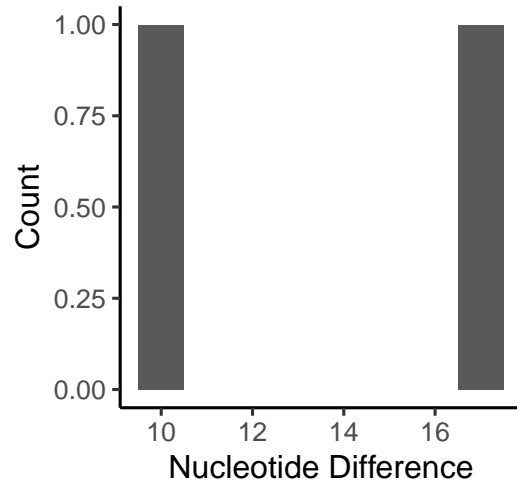
### IGHV3-74\*01\_02

4946 sequences assigned  
645 (13%) exact matches, in which:  
422 unique CDR3  
6 unique J



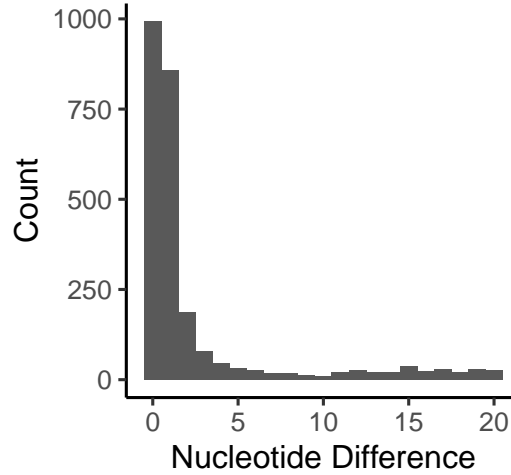
### IGHV3-43D\*04

2 sequences assigned  
No exact matches.



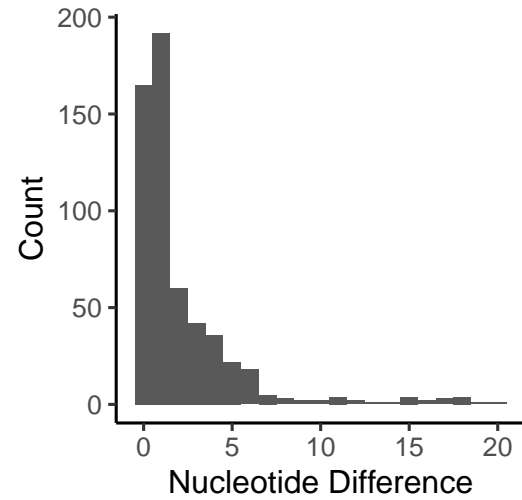
### IGHV4-4\*02\_03

2804 sequences assigned  
993 (35.4%) exact matches, in which:  
727 unique CDR3  
6 unique J



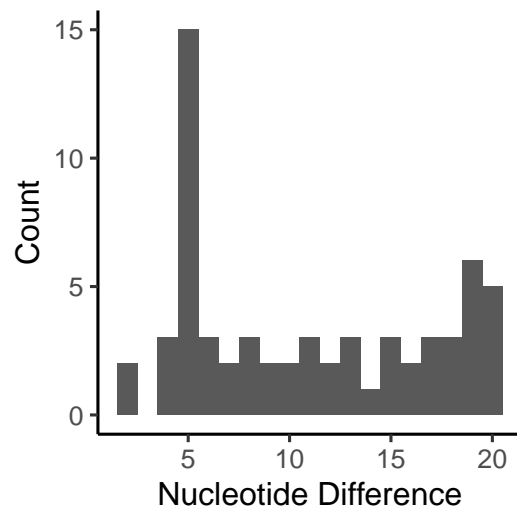
### IGHV4-30-2\*01

590 sequences assigned  
165 (28%) exact matches, in which:  
87 unique CDR3  
5 unique J



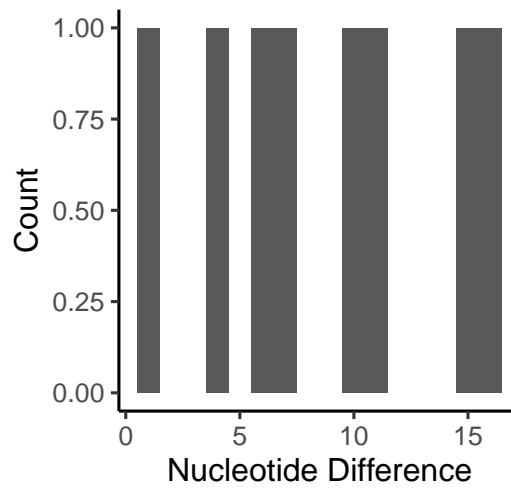
### IGHV3-NL1\*01

123 sequences assigned  
No exact matches.



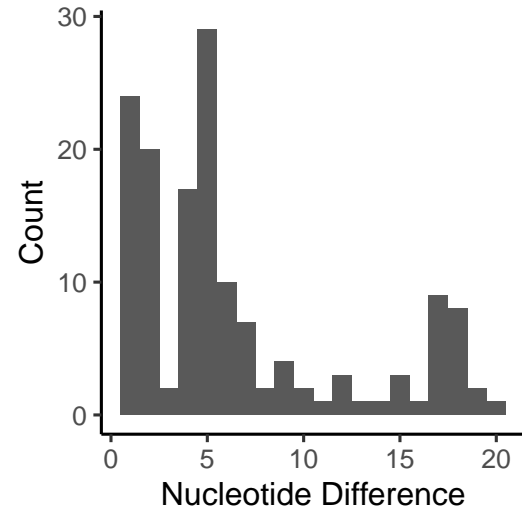
### IGHV4-28\*03

11 sequences assigned  
No exact matches.



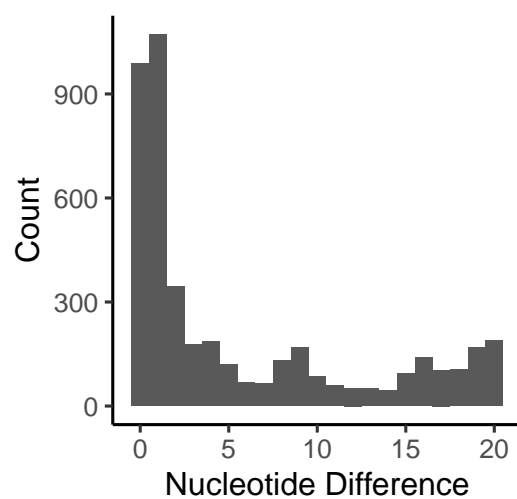
### IGHV4-30-2\*03

232 sequences assigned  
No exact matches.



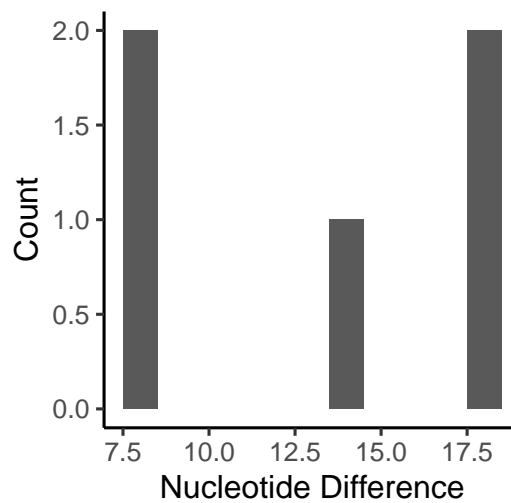
### IGHV4-4\*07

6134 sequences assigned  
989 (16.1%) exact matches, in which:  
804 unique CDR3  
6 unique J



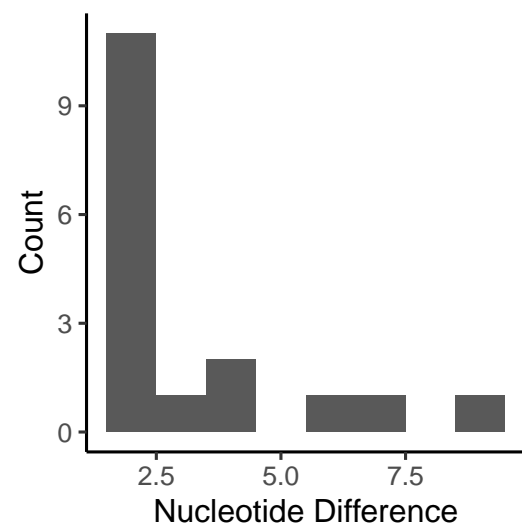
### IGHV4-30-4\*01

37 sequences assigned  
No exact matches.



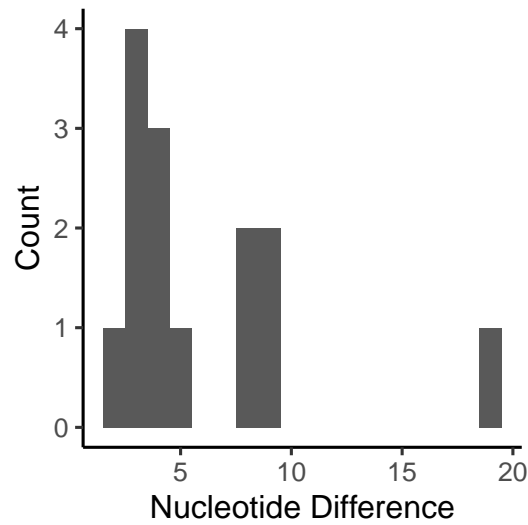
### IGHV4-30-2\*05

18 sequences assigned  
No exact matches.



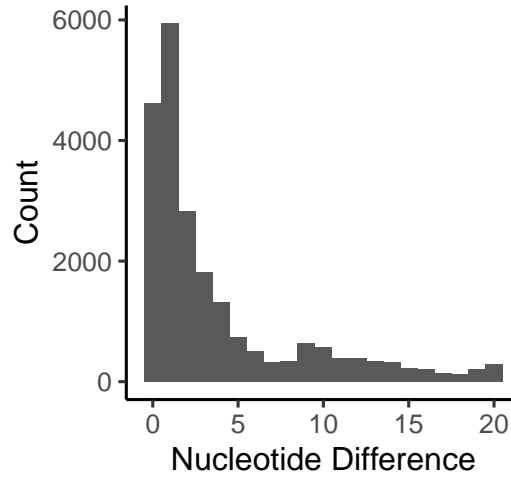
### IGHV4-30-4\*07

15 sequences assigned  
No exact matches.



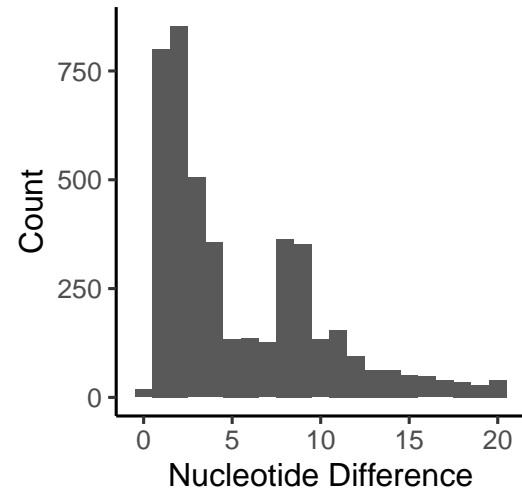
### IGHV4-34\*01\_02

23496 sequences assigned  
4615 (19.6%) exact matches, in which:  
3020 unique CDR3  
6 unique J



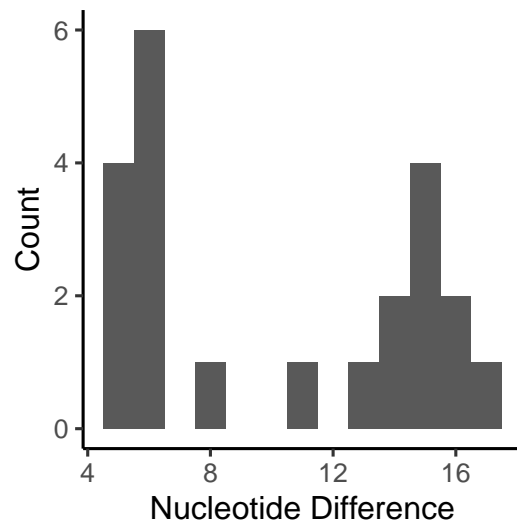
### IGHV4-39\*07

4801 sequences assigned  
18 (0.4%) exact matches, in which:  
18 unique CDR3  
5 unique J



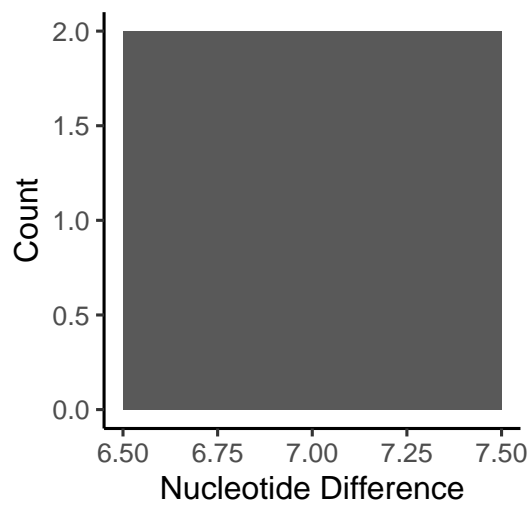
### IGHV4-30-4\*08

29 sequences assigned  
No exact matches.



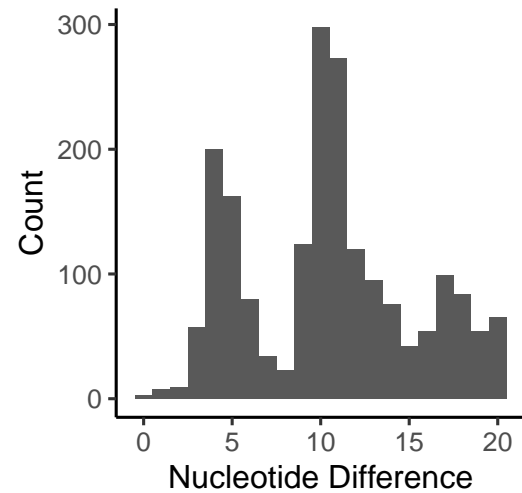
### IGHV4-38-2\*01

5 sequences assigned  
No exact matches.



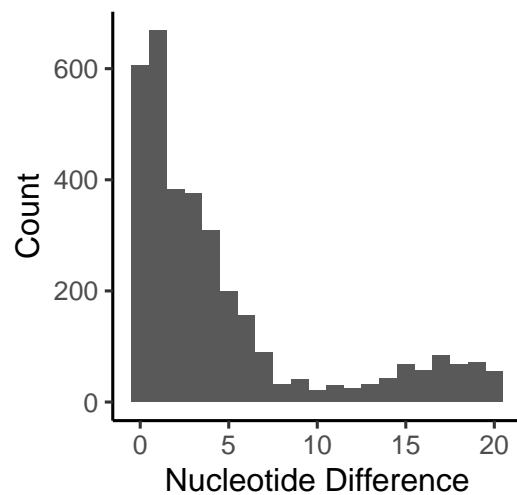
### IGHV4-59\*02

2583 sequences assigned  
3 (0.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



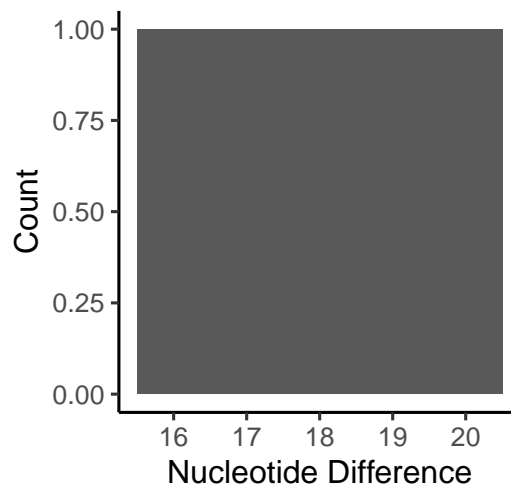
### IGHV4-31\*02

5384 sequences assigned  
605 (11.2%) exact matches, in which:  
486 unique CDR3  
6 unique J



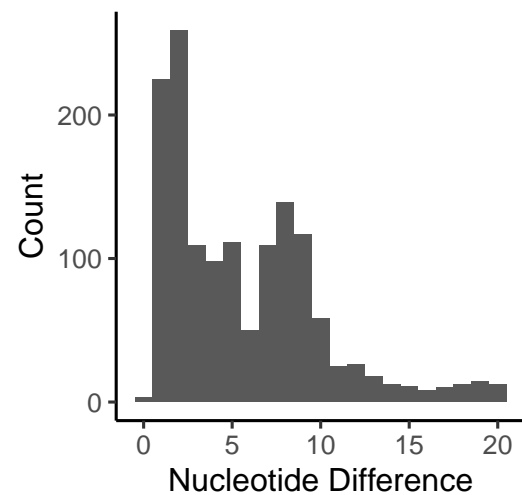
### IGHV4-38-2\*02

28 sequences assigned  
No exact matches.



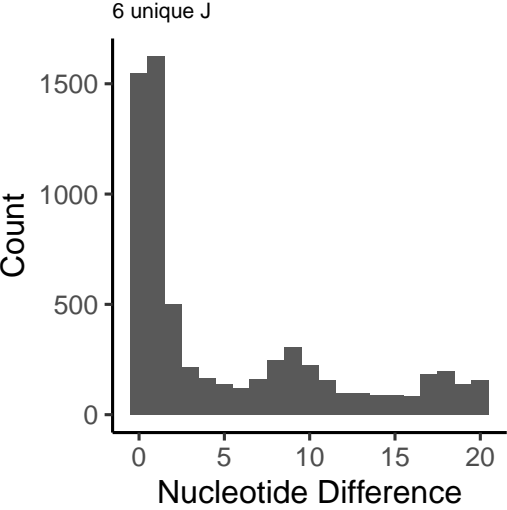
### IGHV4-59\*08

1590 sequences assigned  
3 (0.2%) exact matches, in which:  
3 unique CDR3  
2 unique J



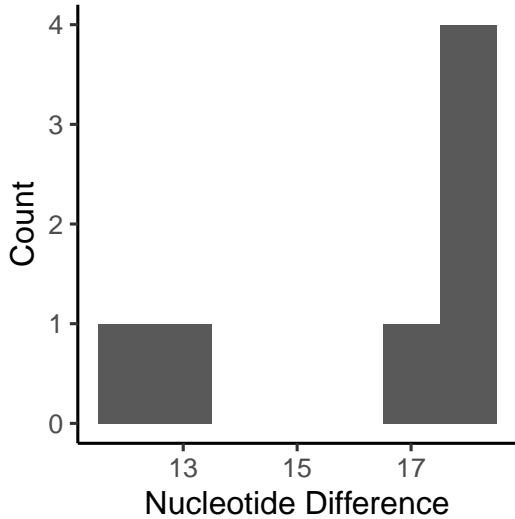
IGHV4-59\*01\_07

7500 sequences assigned  
1547 (20.6%) exact matches, in which:  
1224 unique CDR3  
6 unique J



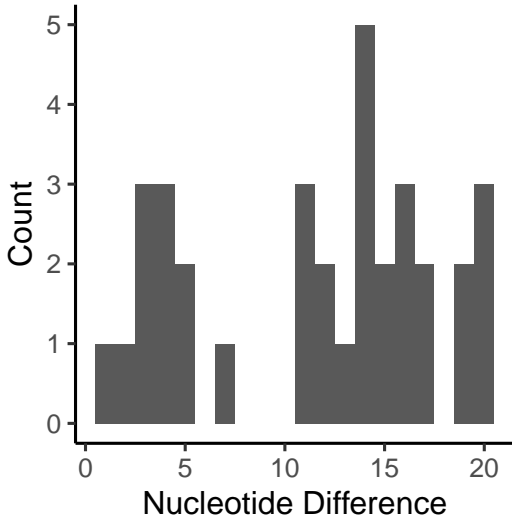
IGHV1/OR15-2\*02\_03

10 sequences assigned  
No exact matches.



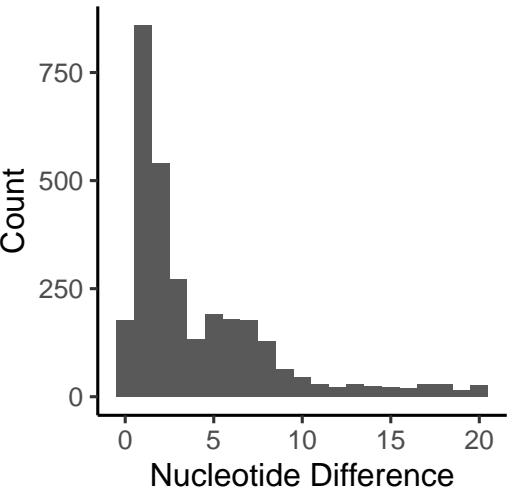
IGHV4/OR15-8\*01

46 sequences assigned  
No exact matches.



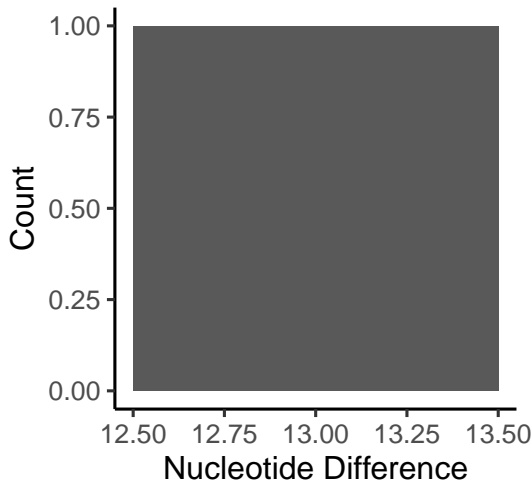
IGHV4-59\*12

3259 sequences assigned  
177 (5.4%) exact matches, in which:  
170 unique CDR3  
6 unique J



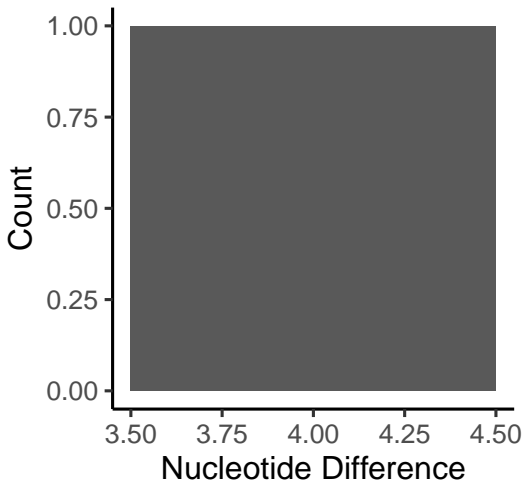
IGHV1/OR15-3\*02

2 sequences assigned  
No exact matches.



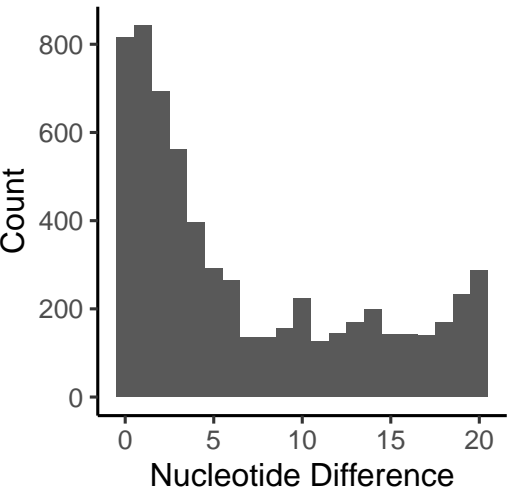
IGHV5-10-1\*04

1 sequences assigned  
No exact matches.



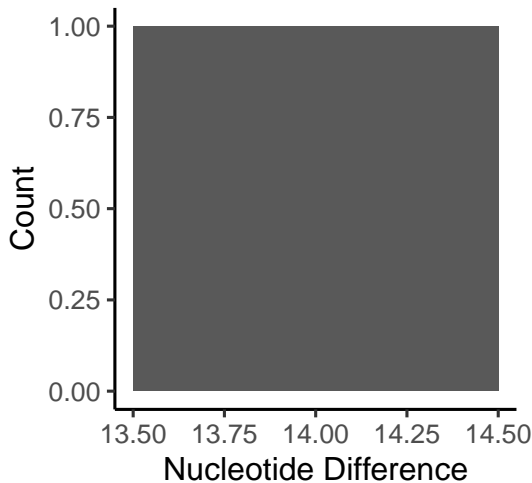
IGHV4-61\*01

8178 sequences assigned  
816 (10%) exact matches, in which:  
705 unique CDR3  
6 unique J



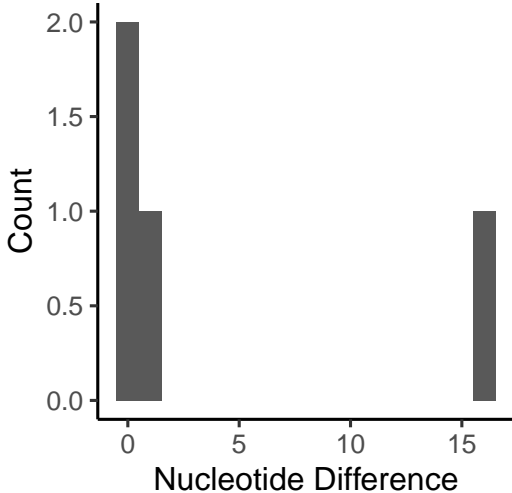
IGHV1/OR15-4\*01

1 sequences assigned  
No exact matches.



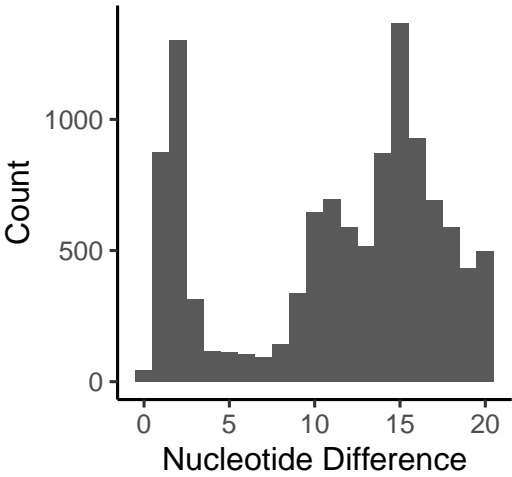
IGHV5-10-1\*01\_03

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



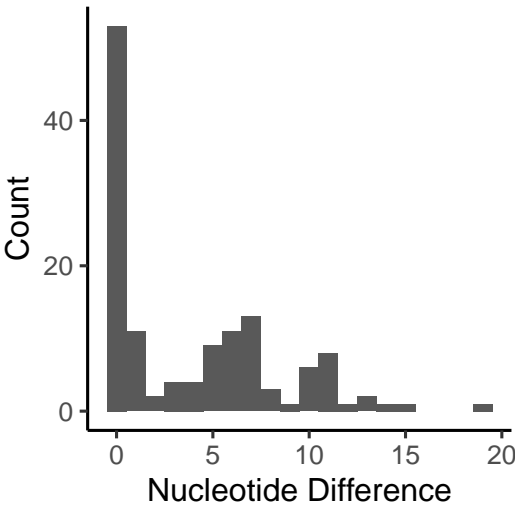
IGHV5-51\*07

14739 sequences assigned  
44 (0.3%) exact matches, in which:  
36 unique CDR3  
4 unique J



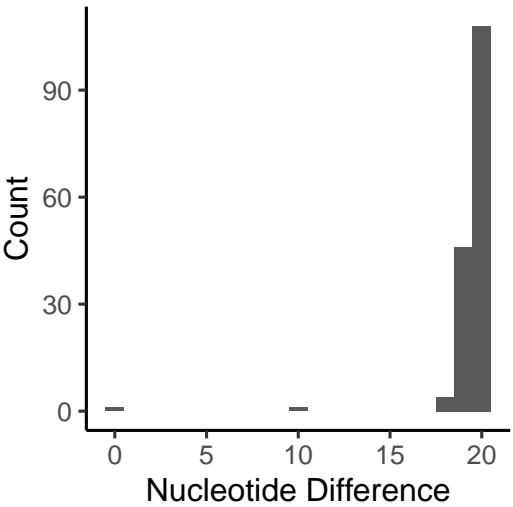
IGHV6-1\*01\_02\_A315G

132 sequences assigned  
53 (40.2%) exact matches, in which:  
53 unique CDR3  
5 unique J



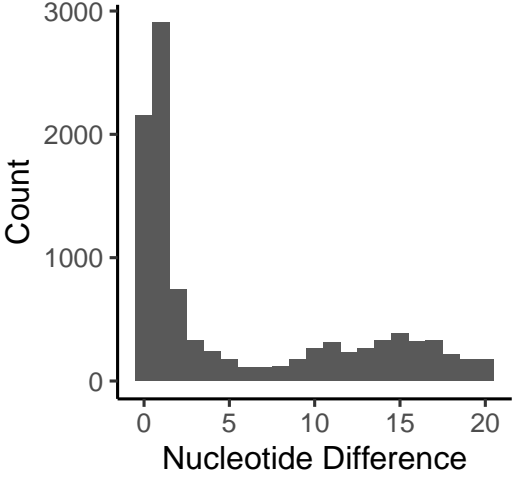
IGHV7-4-1\*02

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



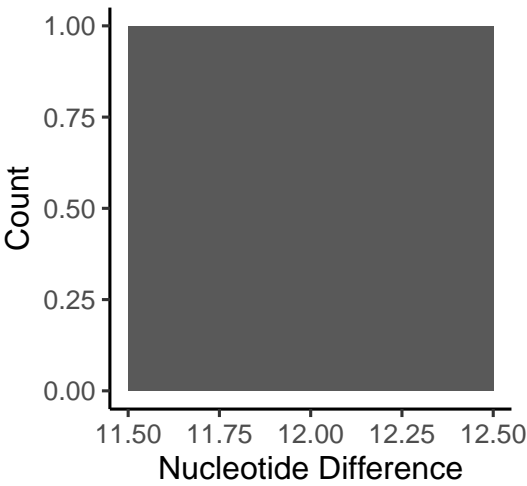
IGHV5-51\*01\_03

11054 sequences assigned  
2153 (19.5%) exact matches, in which:  
1127 unique CDR3  
6 unique J



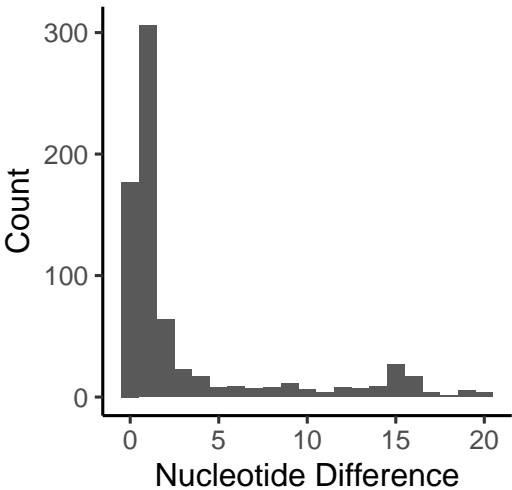
IGHV3/OR16-10\*01\_03

2 sequences assigned  
No exact matches.



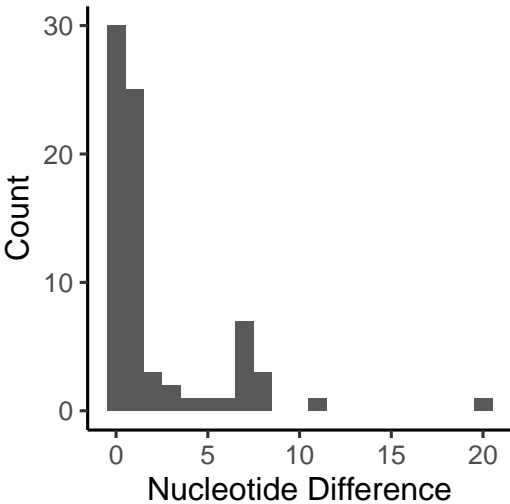
IGHV6-1\*01\_02

746 sequences assigned  
177 (23.7%) exact matches, in which:  
129 unique CDR3  
5 unique J

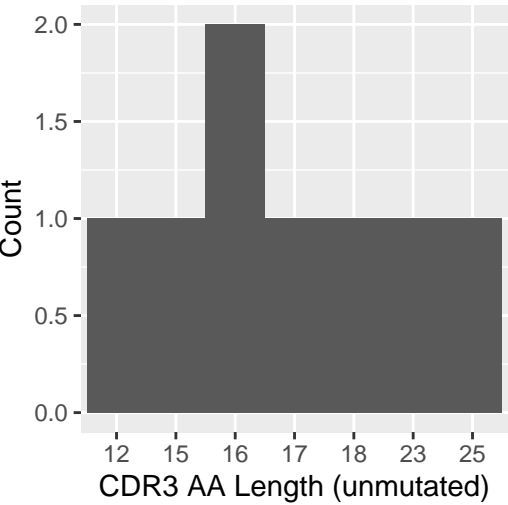


IGHV7-4-1\*01

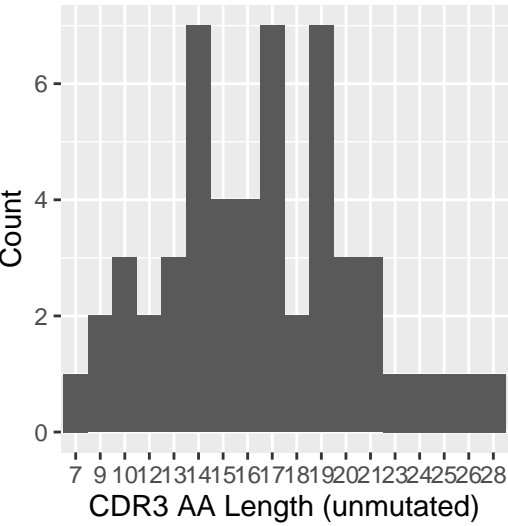
75 sequences assigned  
30 (40%) exact matches, in which:  
22 unique CDR3  
5 unique J



IGHV3-43\*01\_A247G\_G248C\_A252G\_C258A\_T279C\_A286G\_T288C\_C297G\_C300T\_T301G



IGHV6-1\*01\_02\_A315G







[illegible]