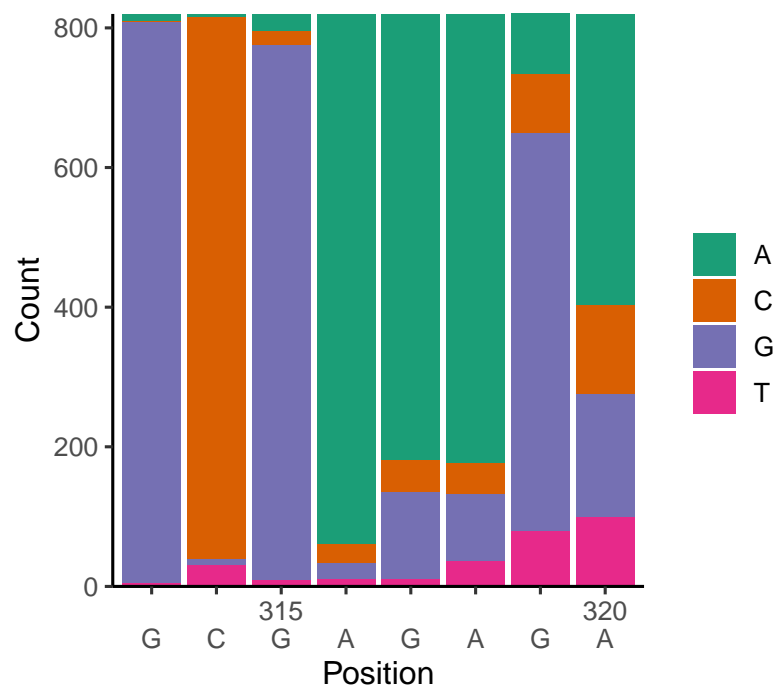
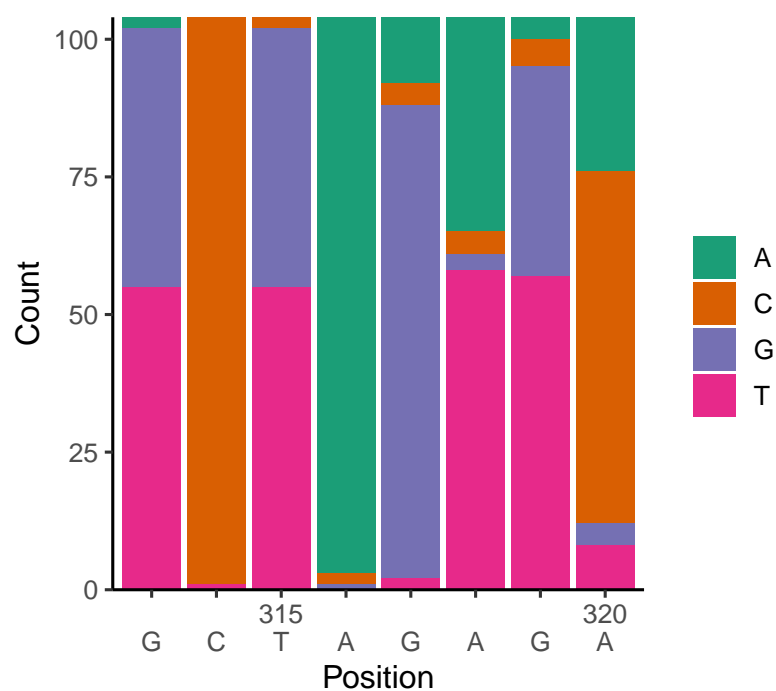


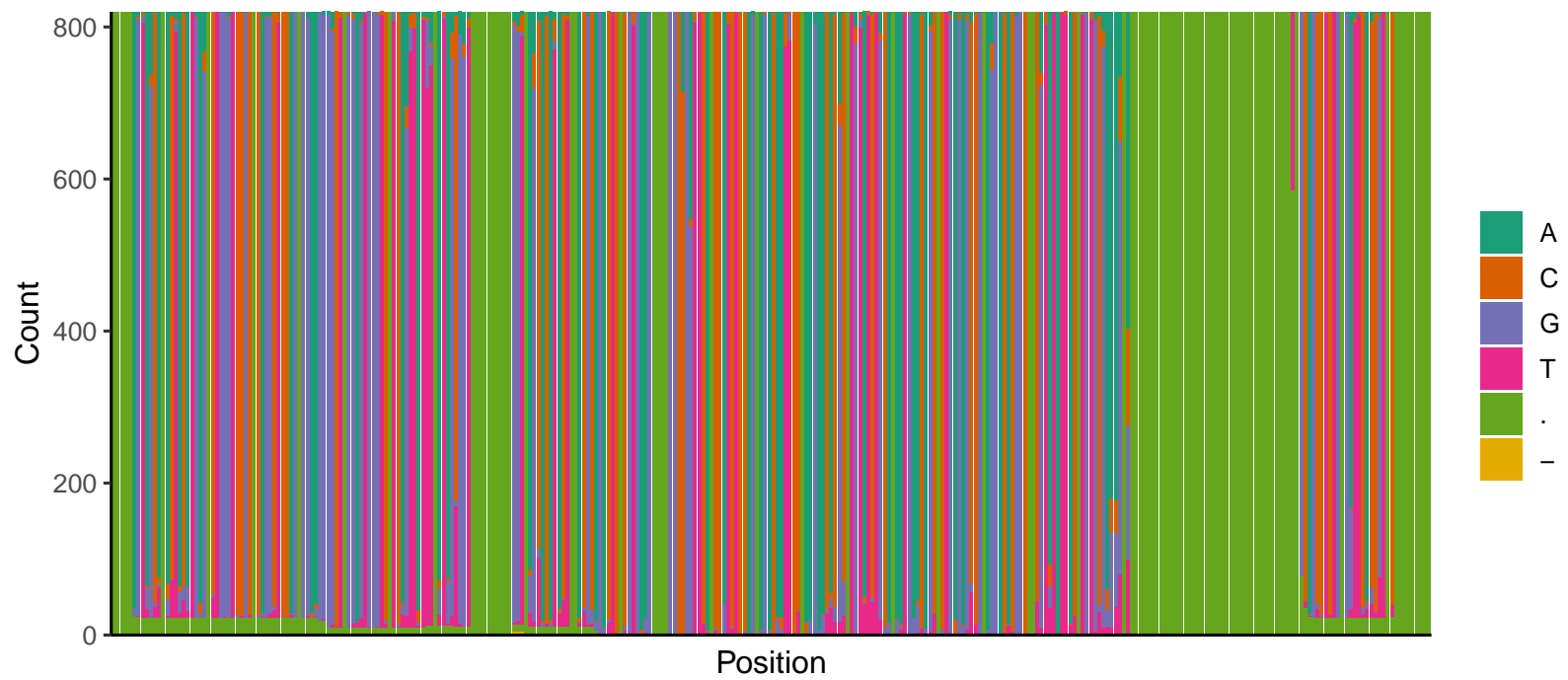
Gene IGHV3-53\*01\_02\_G81A\_A225G\_T267G\_G303A



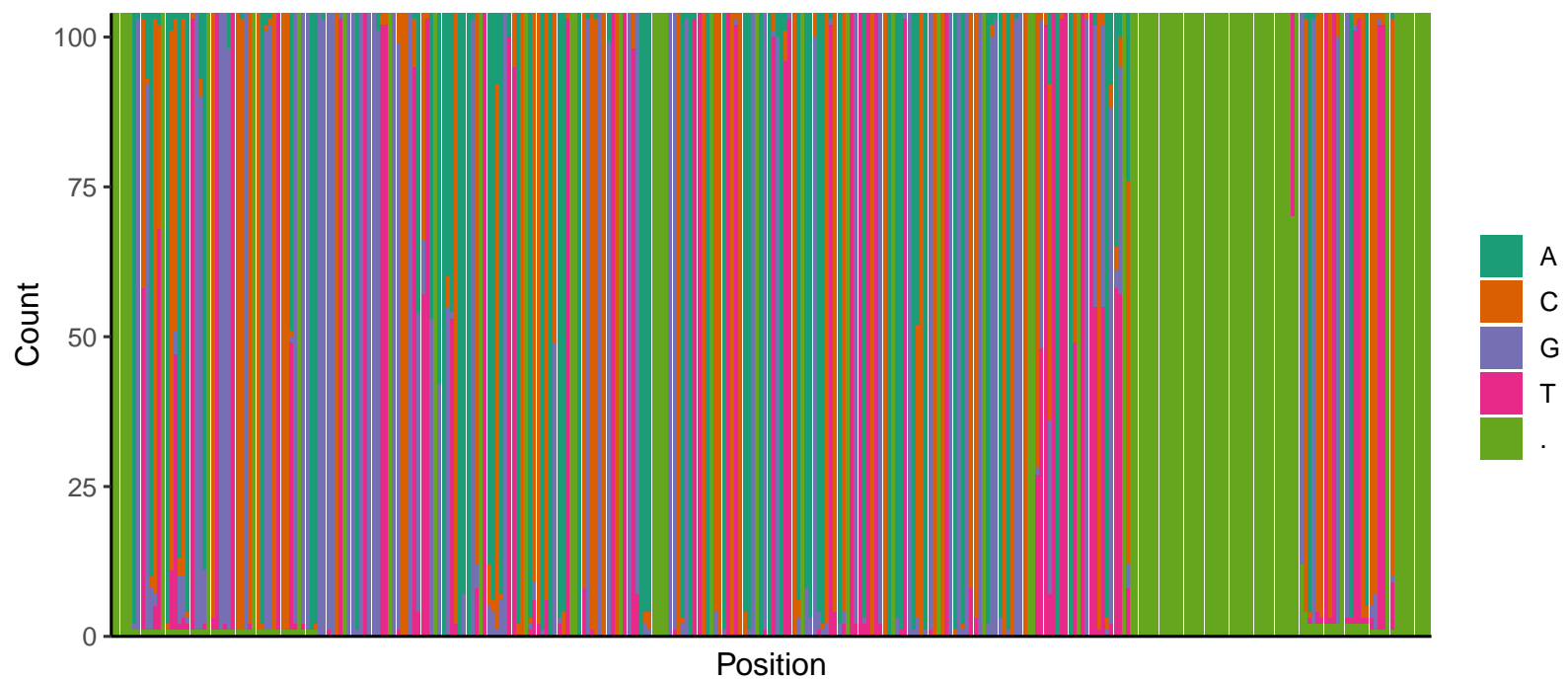
Gene IGHV3-72\*01\_A284G\_A286G\_C300T



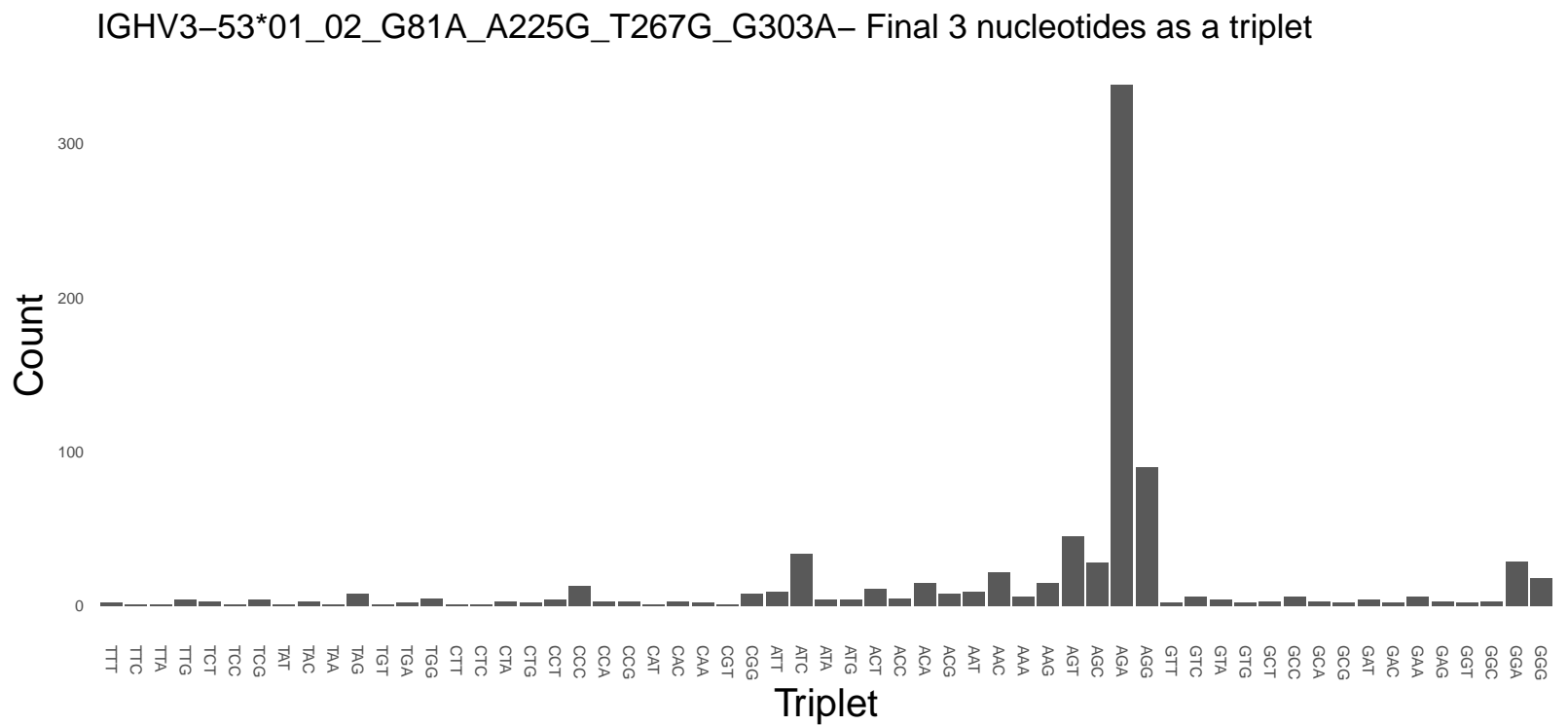
Gene IGHV3-53\*01\_02\_G81A\_A225G\_T267G\_G303A



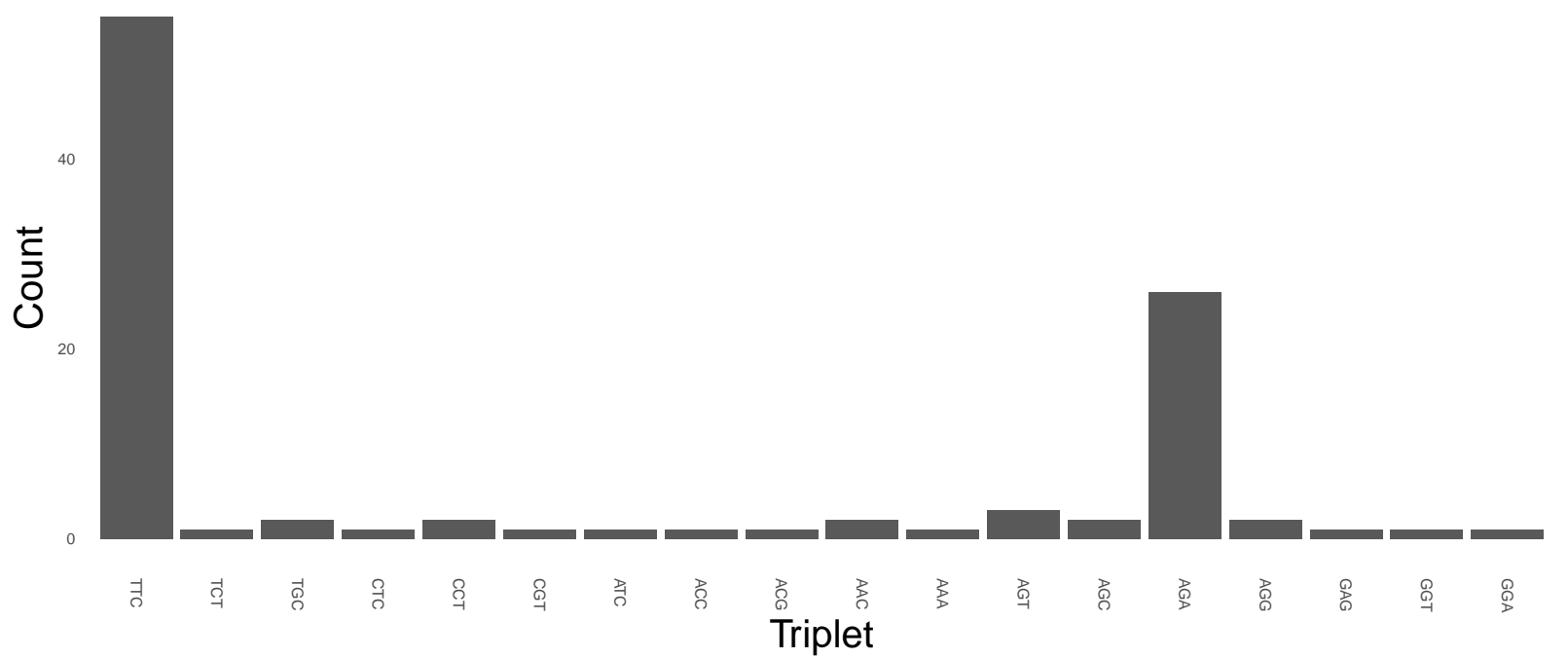
Gene IGHV3-72\*01\_A284G\_A286G\_C300T



IGHV3-53\*01\_02\_G81A\_A225G\_T267G\_G303A- Final 3 nucleotides as a triplet

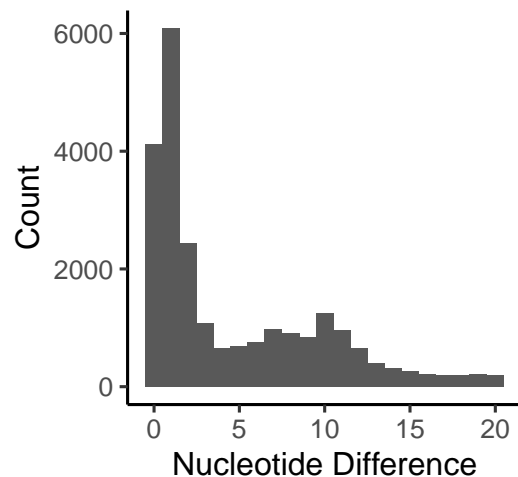


IGHV3-72\*01\_A284G\_A286G\_C300T- Final 3 nucleotides as a triplet



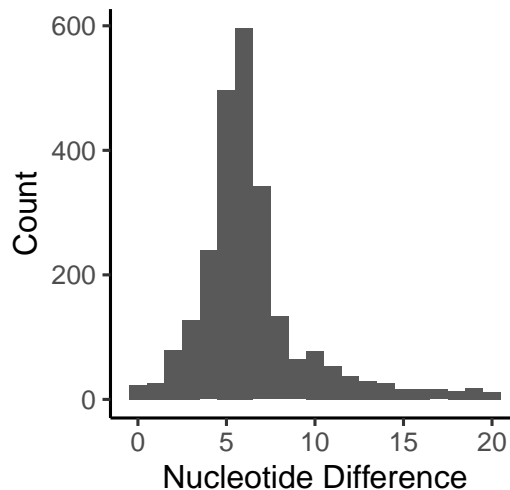
### IGHV1-2\*02

24097 sequences assigned  
4117 (17.1%) exact matches, in which:  
3165 unique CDR3  
6 unique J



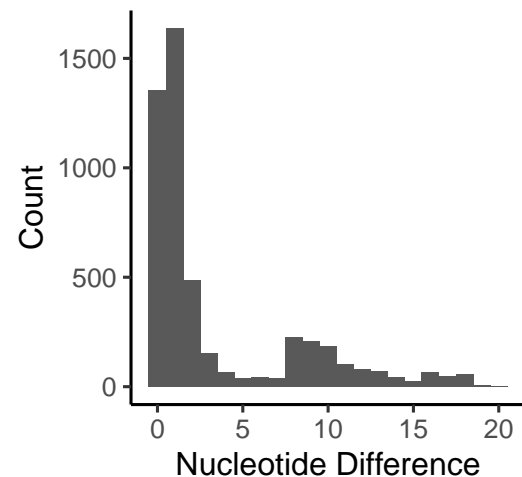
### IGHV1-8\*02

2620 sequences assigned  
23 (0.9%) exact matches, in which:  
23 unique CDR3  
4 unique J



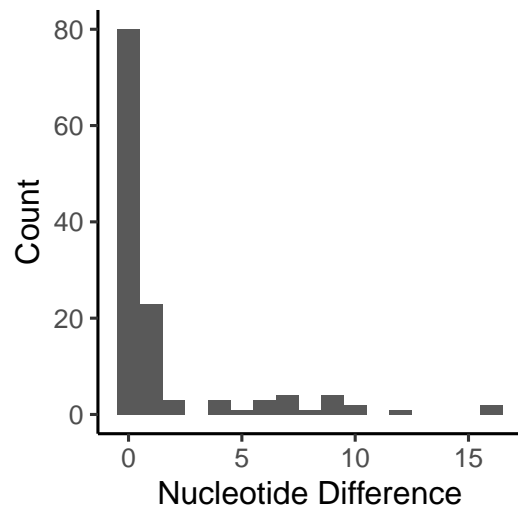
### IGHV1-24\*01

4976 sequences assigned  
1355 (27.2%) exact matches, in which:  
1108 unique CDR3  
6 unique J



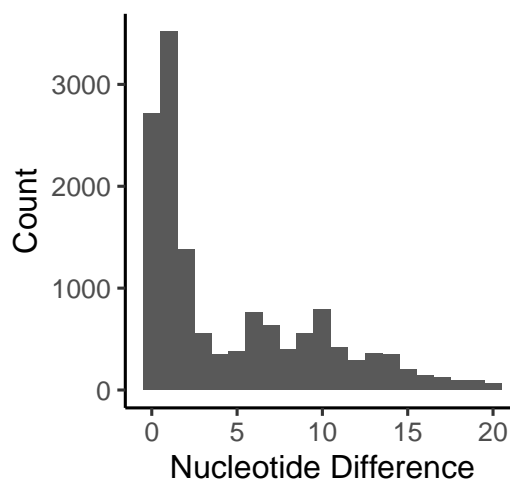
### IGHV1-3\*02

131 sequences assigned  
80 (61.1%) exact matches, in which:  
76 unique CDR3  
6 unique J



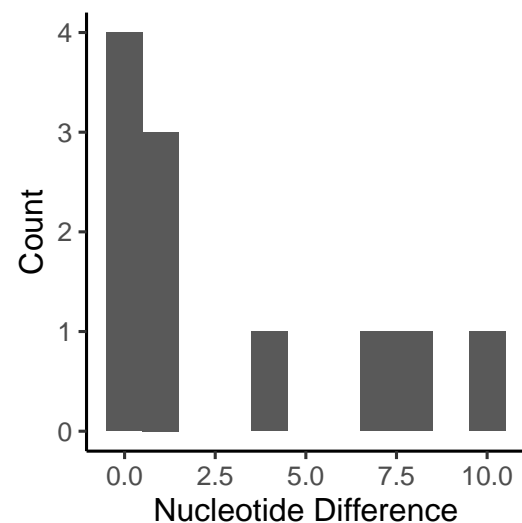
### IGHV1-18\*01

14588 sequences assigned  
2717 (18.6%) exact matches, in which:  
2203 unique CDR3  
6 unique J



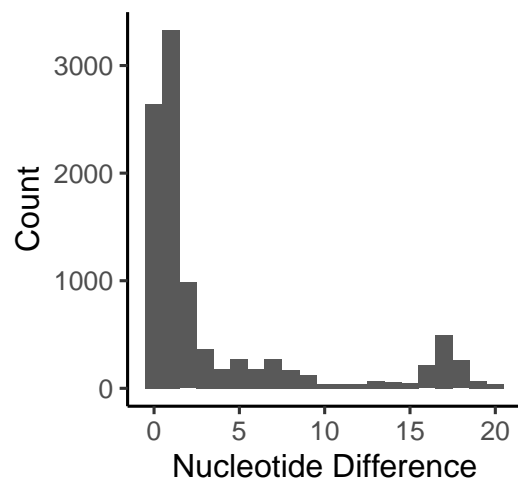
### IGHV1-45\*03

11 sequences assigned  
4 (36.4%) exact matches, in which:  
4 unique CDR3  
2 unique J



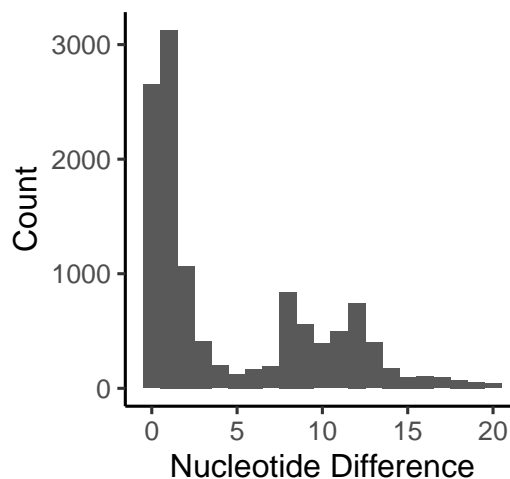
### IGHV1-8\*01

10112 sequences assigned  
2641 (26.1%) exact matches, in which:  
2126 unique CDR3  
6 unique J



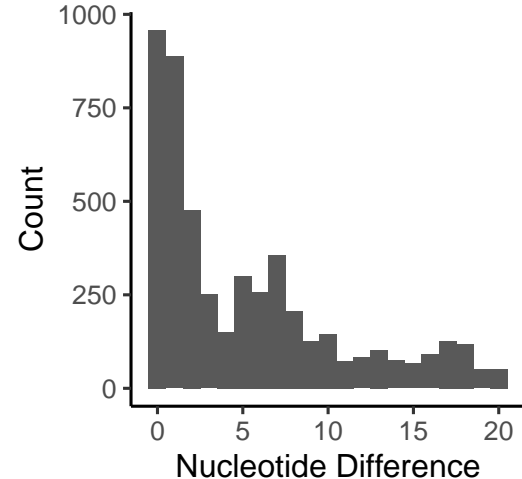
### IGHV1-18\*04

12740 sequences assigned  
2651 (20.8%) exact matches, in which:  
2137 unique CDR3  
6 unique J



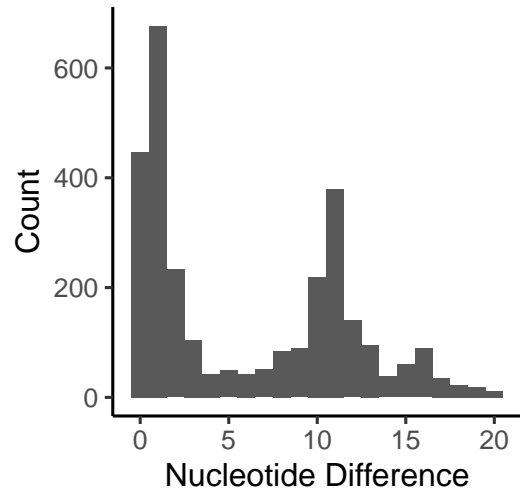
### IGHV1-46\*01

5232 sequences assigned  
958 (18.3%) exact matches, in which:  
850 unique CDR3  
6 unique J



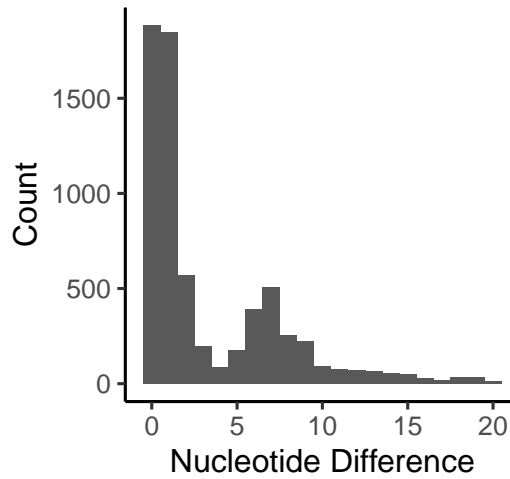
### IGHV1-46\*03

2979 sequences assigned  
447 (15%) exact matches, in which:  
320 unique CDR3  
6 unique J



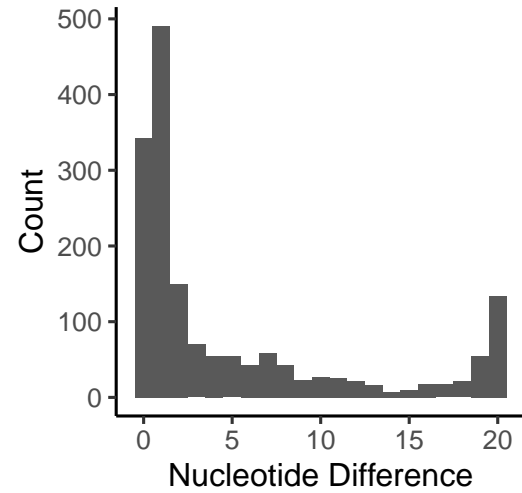
### IGHV1-69\*04\_09

6750 sequences assigned  
1883 (27.9%) exact matches, in which:  
1597 unique CDR3  
6 unique J



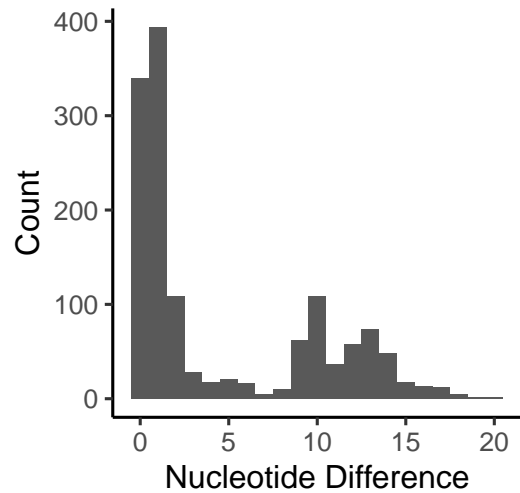
### IGHV2-5\*02

1885 sequences assigned  
343 (18.2%) exact matches, in which:  
247 unique CDR3  
6 unique J



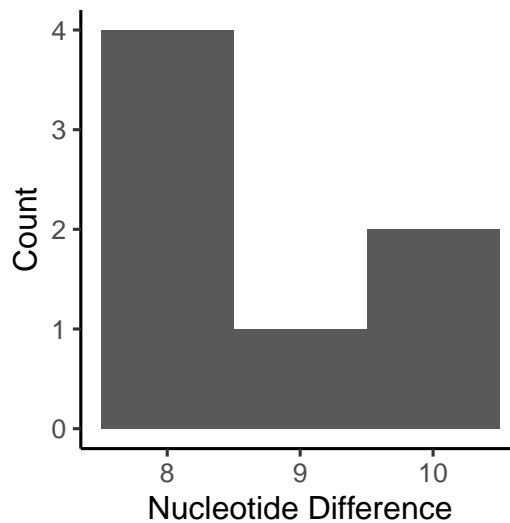
### IGHV1-58\*02

1421 sequences assigned  
340 (23.9%) exact matches, in which:  
281 unique CDR3  
6 unique J



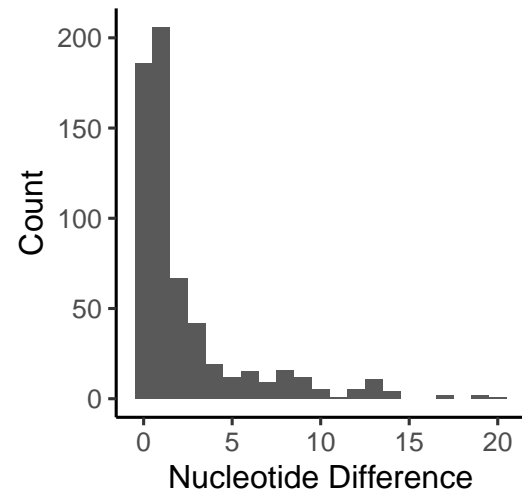
### IGHV1-NL1\*01

7 sequences assigned  
No exact matches.



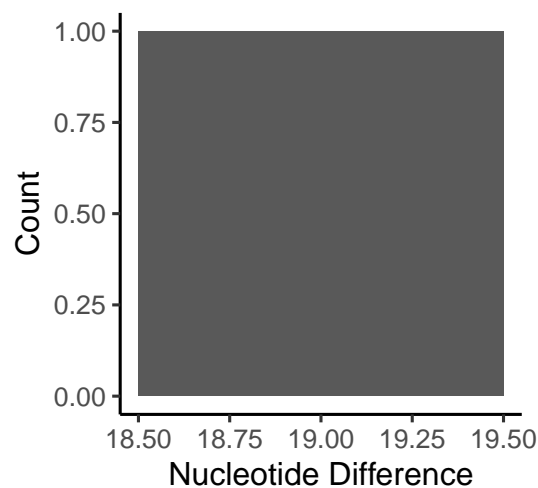
### IGHV2-26\*01

625 sequences assigned  
186 (29.8%) exact matches, in which:  
141 unique CDR3  
6 unique J



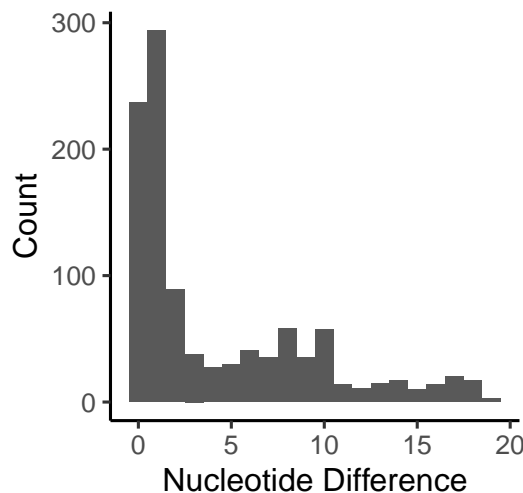
### IGHV1-69-2\*01

1 sequences assigned  
No exact matches.



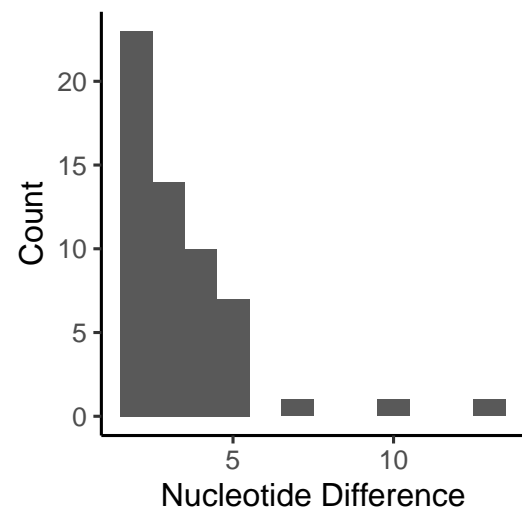
### IGHV2-5\*01

1098 sequences assigned  
237 (21.6%) exact matches, in which:  
182 unique CDR3  
6 unique J



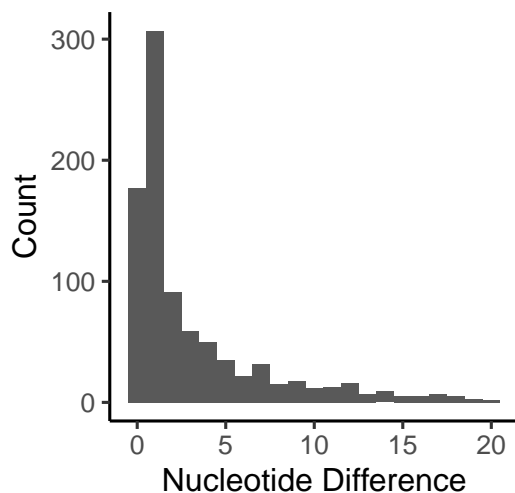
### IGHV2-70\*12

57 sequences assigned  
No exact matches.



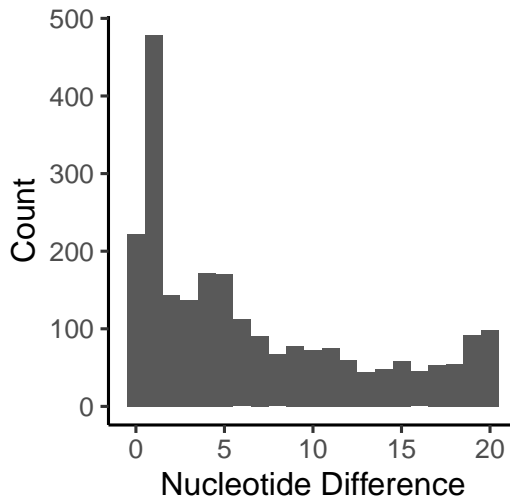
### IGHV2-70\*11\_15

987 sequences assigned  
177 (17.9%) exact matches, in which:  
118 unique CDR3  
6 unique J



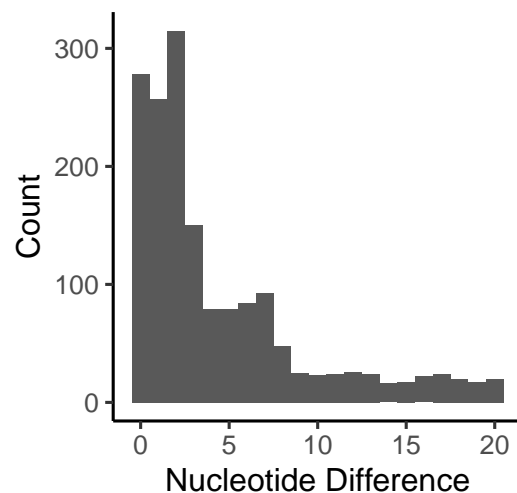
### IGHV3-7\*03

3119 sequences assigned  
222 (7.1%) exact matches, in which:  
163 unique CDR3  
6 unique J



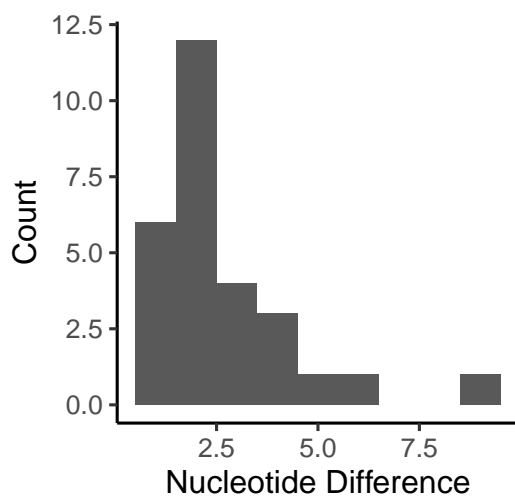
### IGHV3-11\*04

1742 sequences assigned  
278 (16%) exact matches, in which:  
258 unique CDR3  
6 unique J



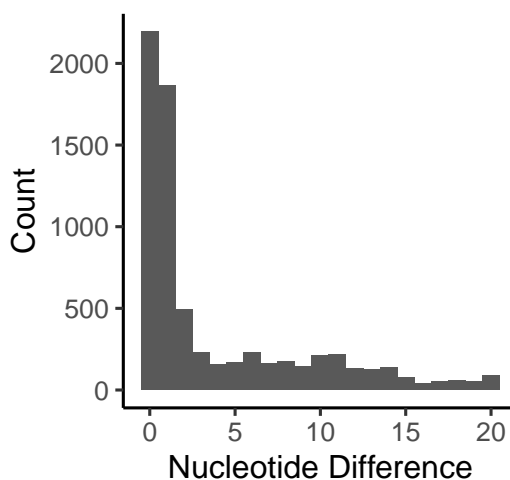
### IGHV2-70D\*04

28 sequences assigned  
No exact matches.



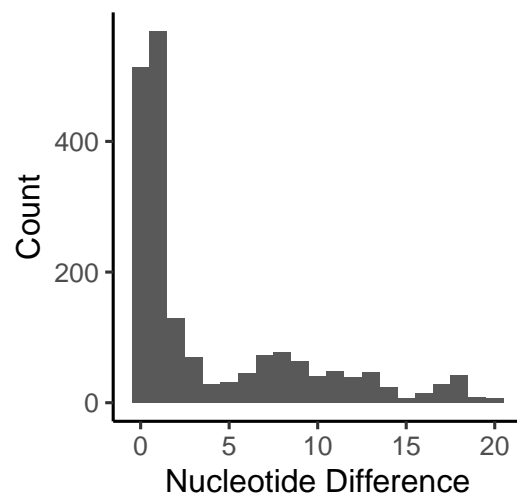
### IGHV3-9\*01

8929 sequences assigned  
2194 (24.6%) exact matches, in which:  
1272 unique CDR3  
6 unique J



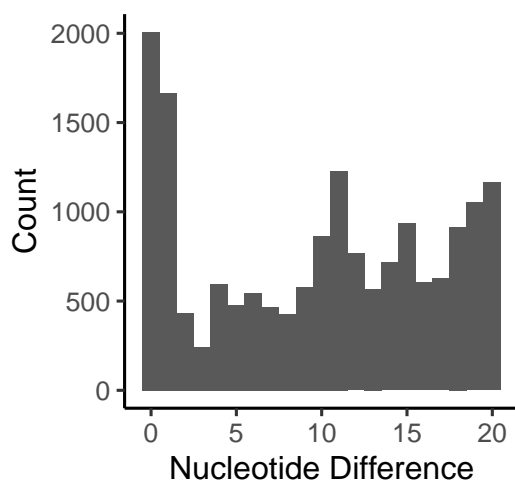
### IGHV3-13\*01

1943 sequences assigned  
513 (26.4%) exact matches, in which:  
317 unique CDR3  
6 unique J



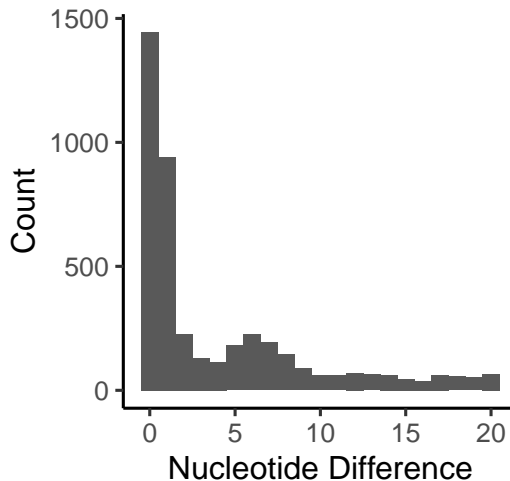
### IGHV3-7\*01

21074 sequences assigned  
2007 (9.5%) exact matches, in which:  
1373 unique CDR3  
6 unique J



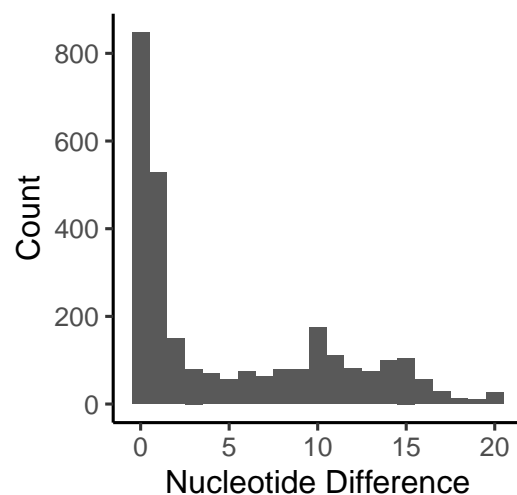
### IGHV3-11\*01

5018 sequences assigned  
1445 (28.8%) exact matches, in which:  
958 unique CDR3  
6 unique J



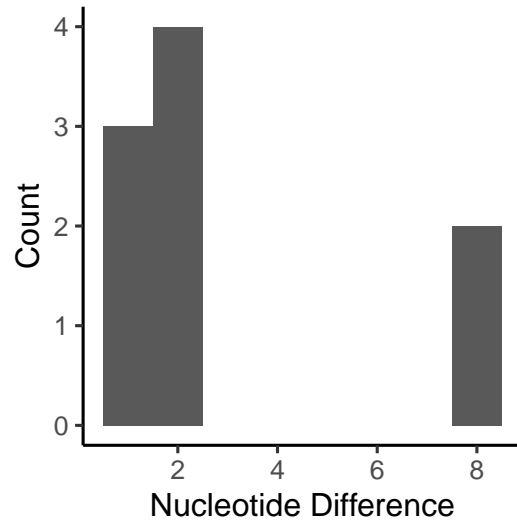
### IGHV3-15\*01\_02

3537 sequences assigned  
848 (24%) exact matches, in which:  
516 unique CDR3  
6 unique J



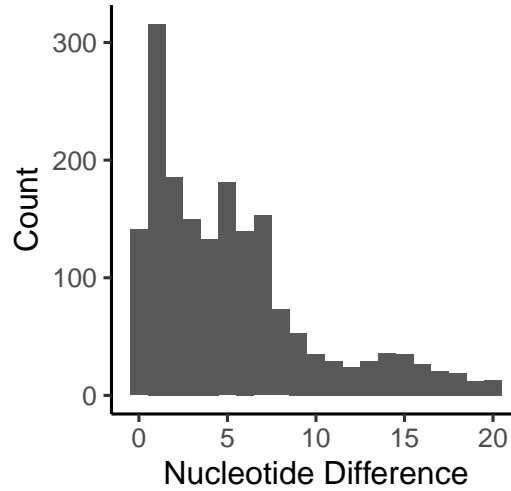
### IGHV3-19\*01

9 sequences assigned  
No exact matches.



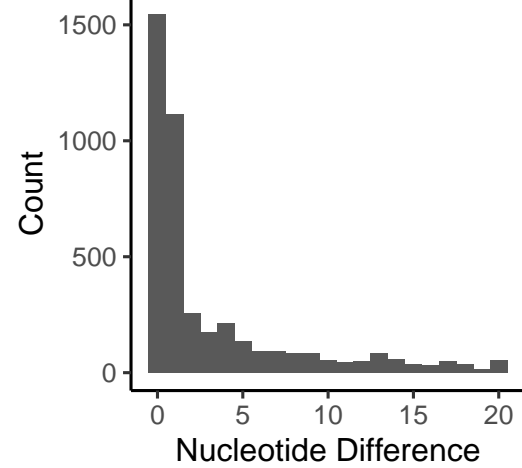
### IGHV3-21\*04

1895 sequences assigned  
141 (7.4%) exact matches, in which:  
133 unique CDR3  
6 unique J



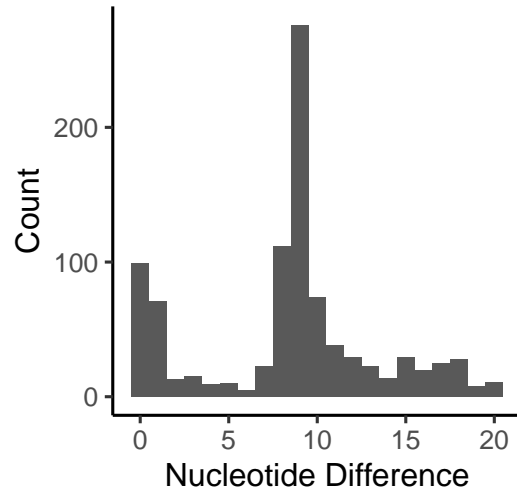
### IGHV3-30-3\*01

4592 sequences assigned  
1545 (33.6%) exact matches, in which:  
1022 unique CDR3  
6 unique J



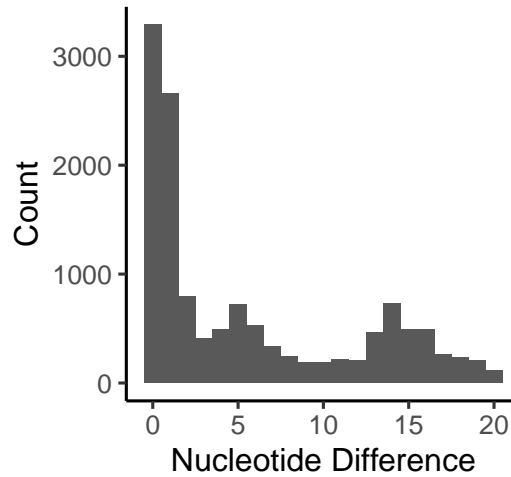
### IGHV3-20\*01\_02

959 sequences assigned  
99 (10.3%) exact matches, in which:  
60 unique CDR3  
5 unique J



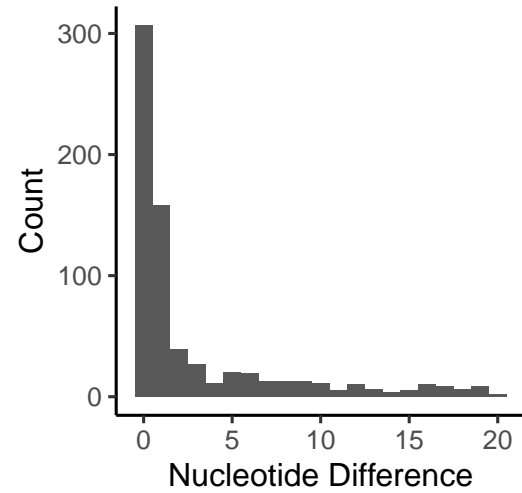
### IGHV3-21\*01\_02

13829 sequences assigned  
3290 (23.8%) exact matches, in which:  
2062 unique CDR3  
6 unique J



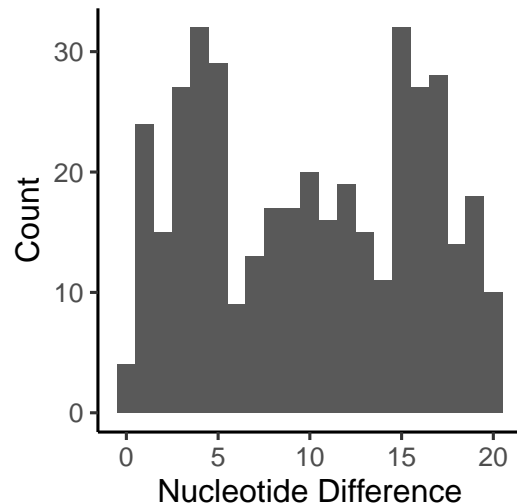
### IGHV3-30\*03

762 sequences assigned  
307 (40.3%) exact matches, in which:  
283 unique CDR3  
6 unique J



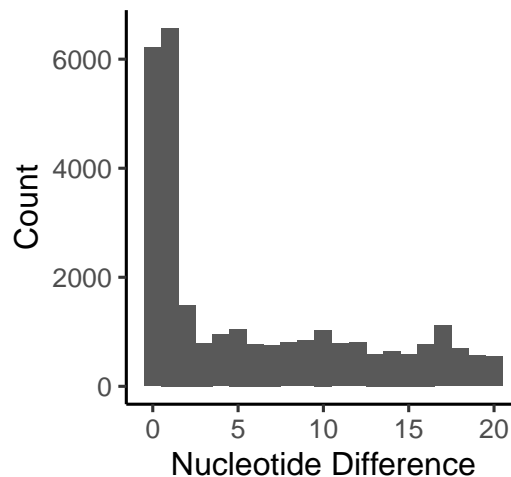
### IGHV3-20\*03\_04

457 sequences assigned  
4 (0.9%) exact matches, in which:  
4 unique CDR3  
2 unique J



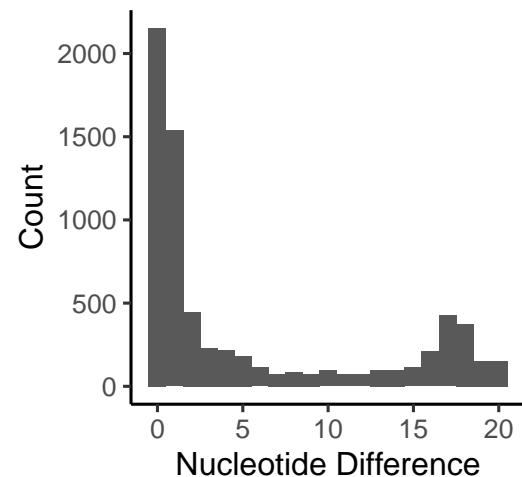
### IGHV3-23\*01\_04

32530 sequences assigned  
6213 (19.1%) exact matches, in which:  
3449 unique CDR3  
6 unique J



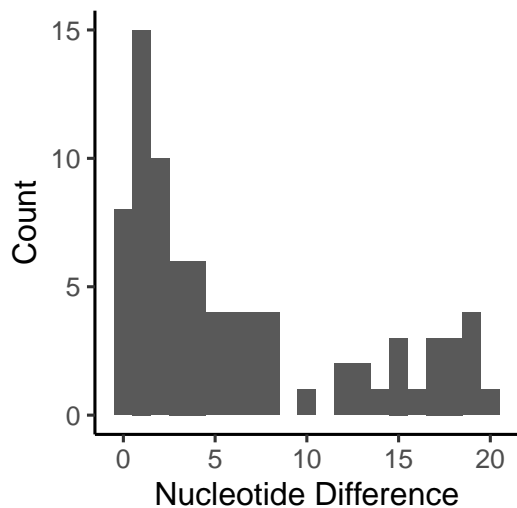
### IGHV3-33\*01

7596 sequences assigned  
2153 (28.3%) exact matches, in which:  
1443 unique CDR3  
6 unique J



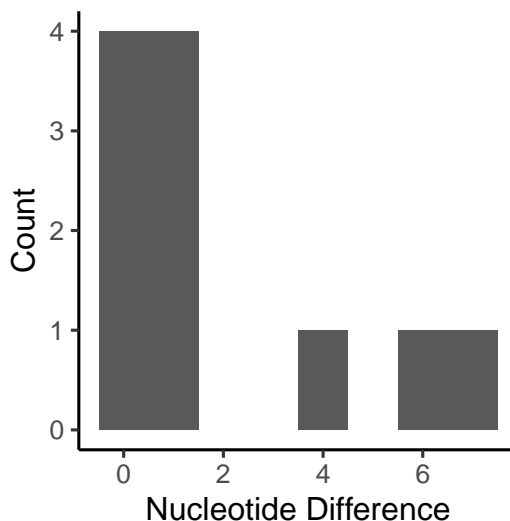
### IGHV3-33\*05

89 sequences assigned  
8 (9%) exact matches, in which:  
8 unique CDR3  
2 unique J



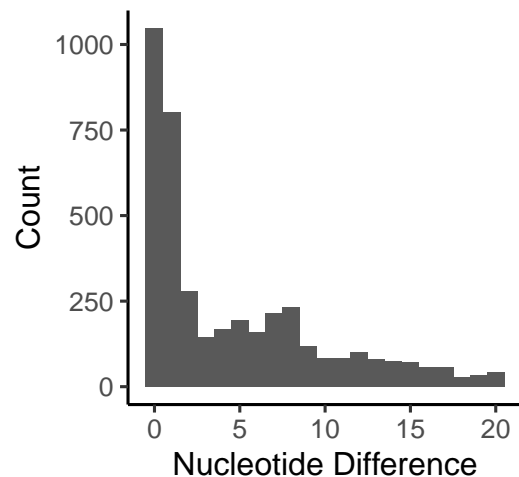
### IGHV3-38\*02

11 sequences assigned  
4 (36.4%) exact matches, in which:  
3 unique CDR3  
3 unique J



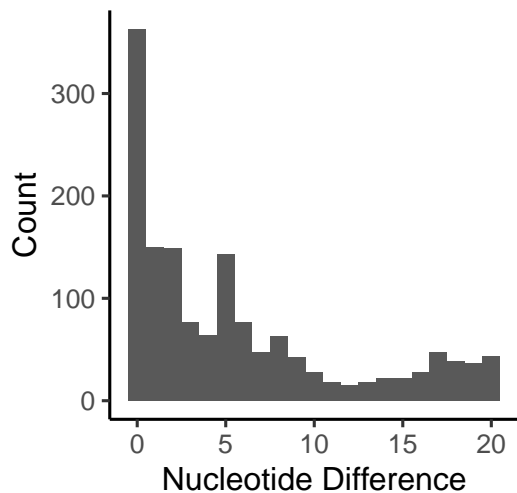
### IGHV3-48\*01

4158 sequences assigned  
1047 (25.2%) exact matches, in which:  
683 unique CDR3  
6 unique J



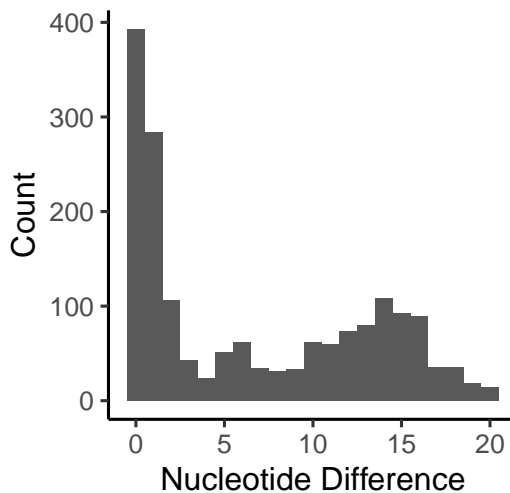
### IGHV3-33\*08

1670 sequences assigned  
363 (21.7%) exact matches, in which:  
281 unique CDR3  
6 unique J



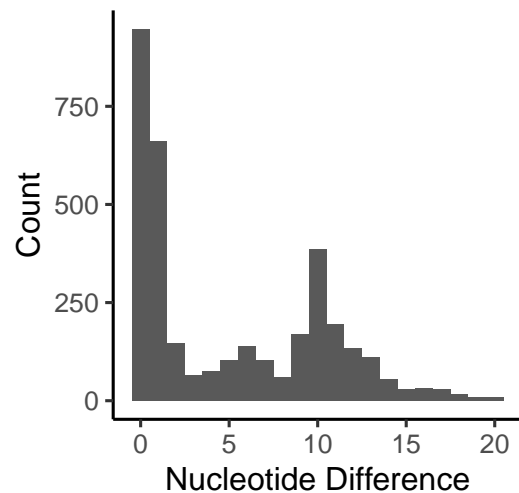
### IGHV3-43\*02

2346 sequences assigned  
393 (16.8%) exact matches, in which:  
242 unique CDR3  
6 unique J



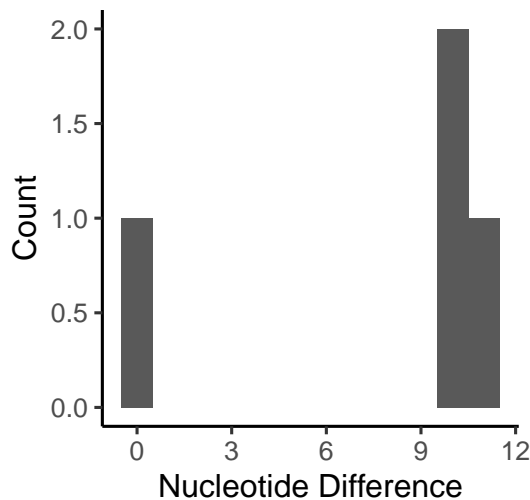
### IGHV3-48\*03

3747 sequences assigned  
947 (25.3%) exact matches, in which:  
570 unique CDR3  
6 unique J



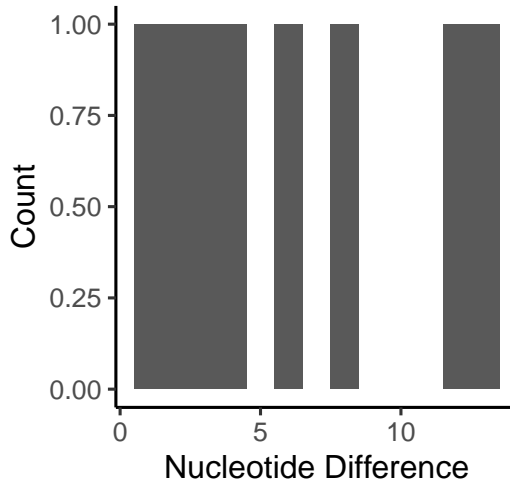
### IGHV3-35\*01

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



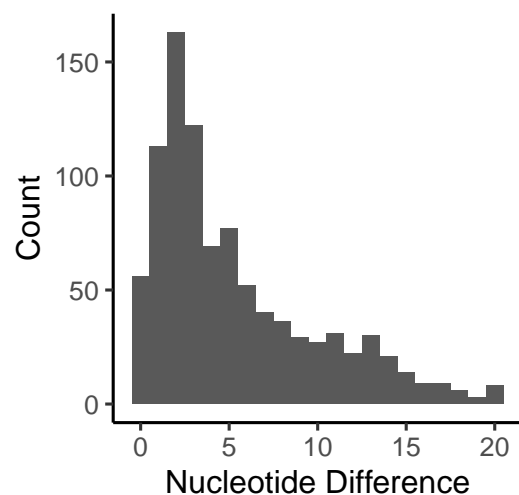
### IGHV3-47\*02

8 sequences assigned  
No exact matches.



### IGHV3-48\*04

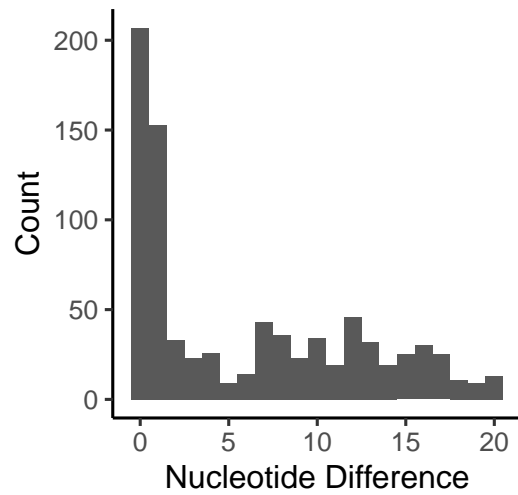
965 sequences assigned  
56 (5.8%) exact matches, in which:  
53 unique CDR3  
6 unique J





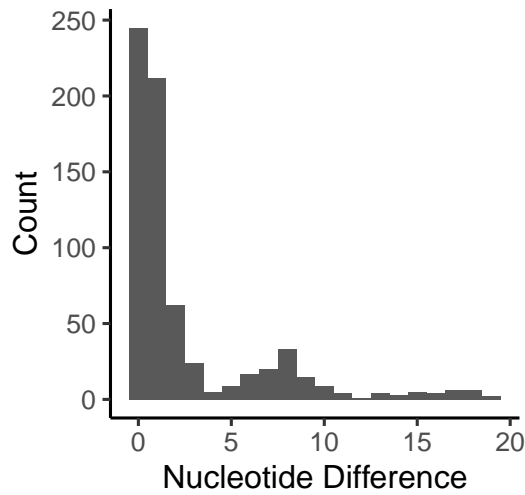
### IGHV3-49\*04

897 sequences assigned  
207 (23.1%) exact matches, in which:  
132 unique CDR3  
6 unique J



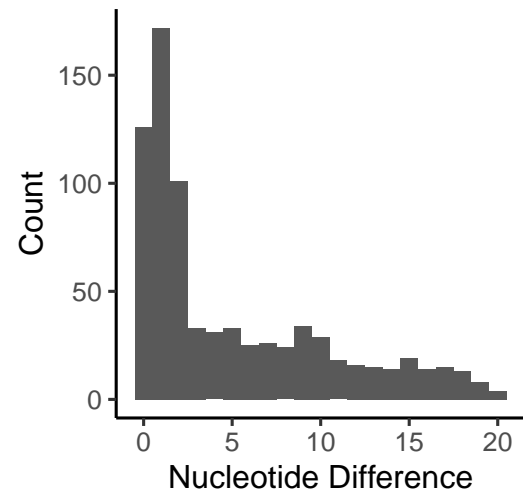
### IGHV3-53\*04

691 sequences assigned  
245 (35.5%) exact matches, in which:  
164 unique CDR3  
6 unique J



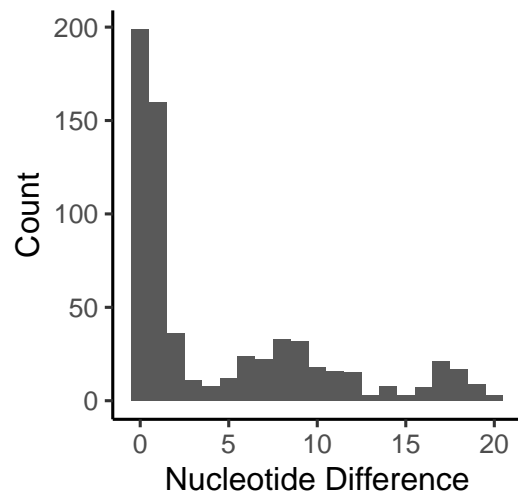
### IGHV3-53\*01\_02\_G81A\_

820 sequences assigned  
126 (15.4%) exact matches, in which:  
121 unique CDR3  
6 unique J



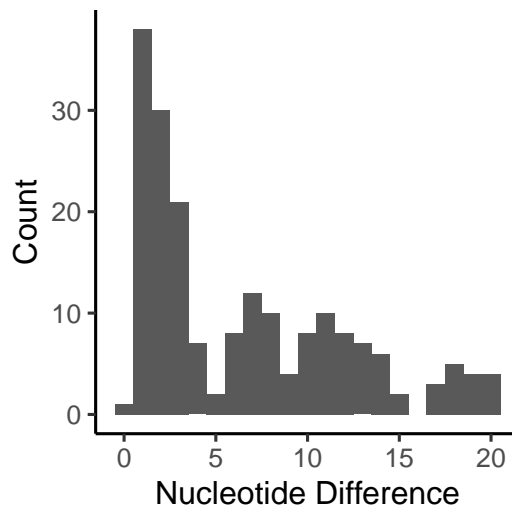
### IGHV3-49\*03\_05

675 sequences assigned  
199 (29.5%) exact matches, in which:  
132 unique CDR3  
5 unique J



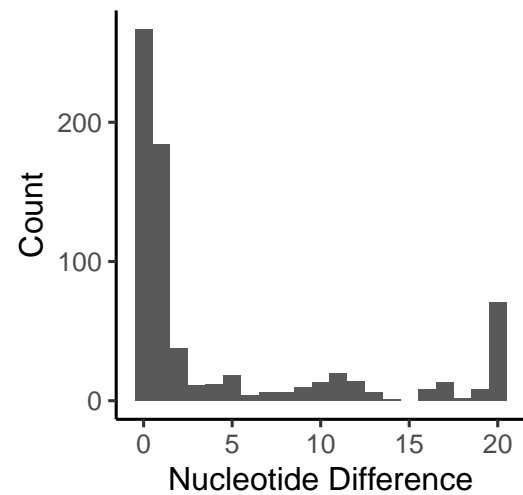
### IGHV3-53\*05

198 sequences assigned  
1 (0.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



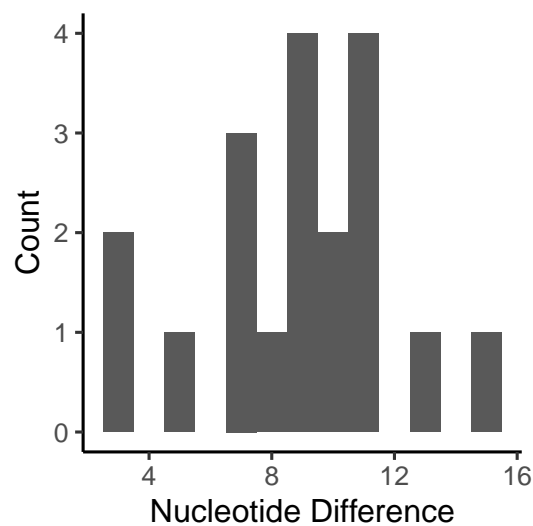
### IGHV3-64\*01

969 sequences assigned  
267 (27.6%) exact matches, in which:  
179 unique CDR3  
6 unique J



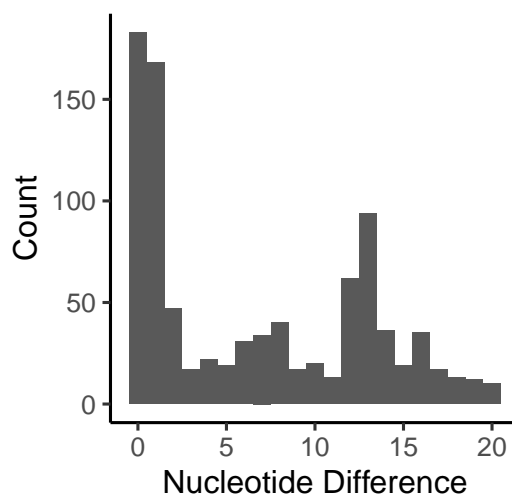
### IGHV3-52\*01\_03

19 sequences assigned  
No exact matches.



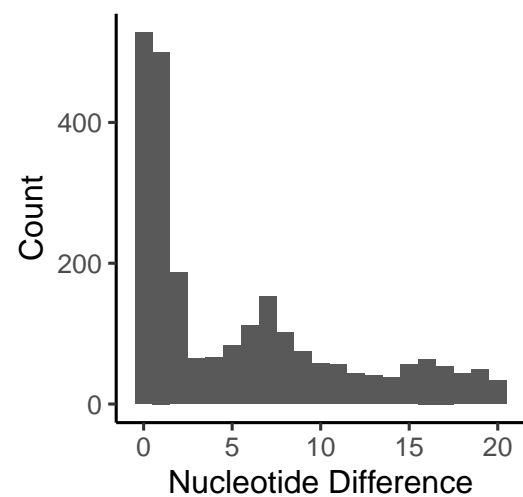
### IGHV3-53\*01\_02

964 sequences assigned  
183 (19%) exact matches, in which:  
117 unique CDR3  
6 unique J



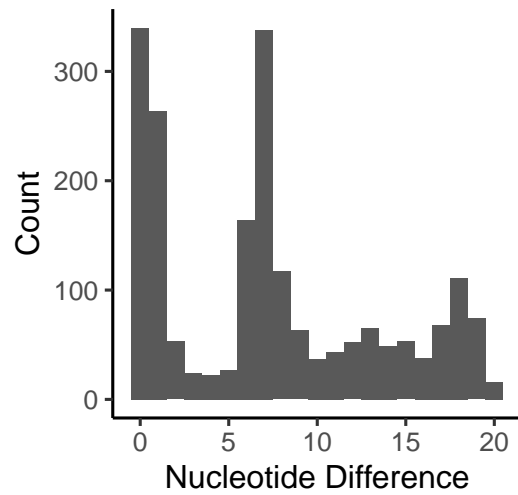
### IGHV3-66\*01

3258 sequences assigned  
528 (16.2%) exact matches, in which:  
351 unique CDR3  
6 unique J



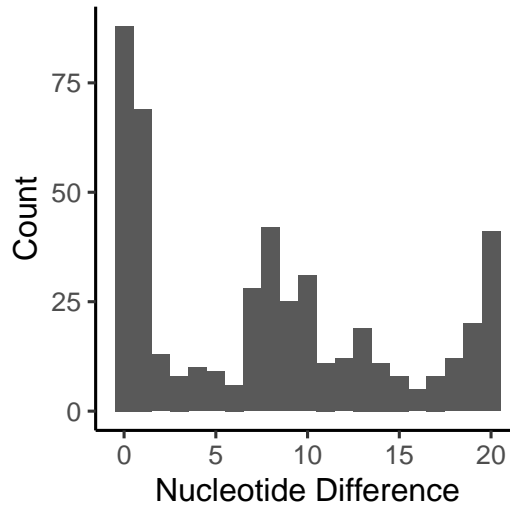
### IGHV3-66\*02

2257 sequences assigned  
340 (15.1%) exact matches, in which:  
234 unique CDR3  
6 unique J



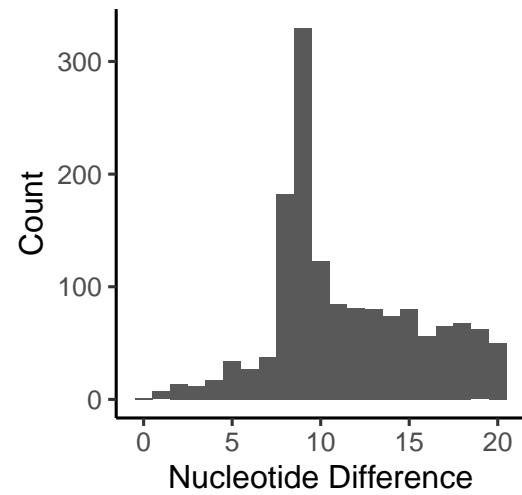
### IGHV3-72\*01

588 sequences assigned  
88 (15%) exact matches, in which:  
51 unique CDR3  
6 unique J



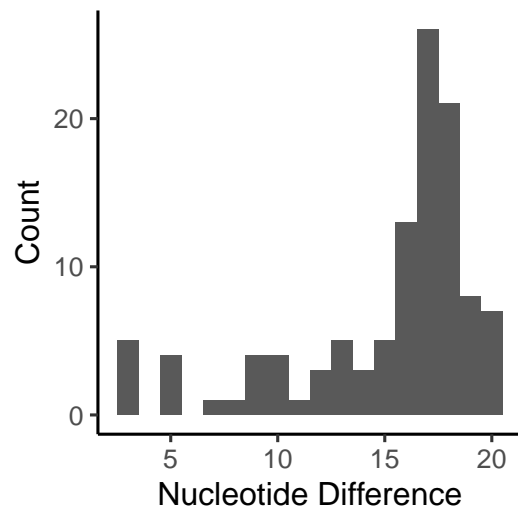
### IGHV3-74\*03

2740 sequences assigned  
1 (0%) exact matches, in which:  
1 unique CDR3  
1 unique J



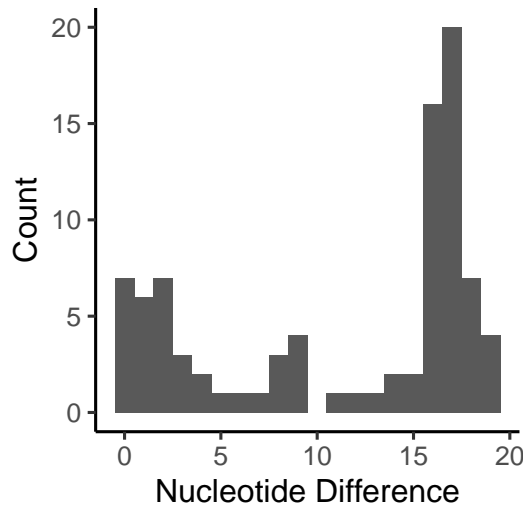
### IGHV3-69-1\*01

128 sequences assigned  
No exact matches.



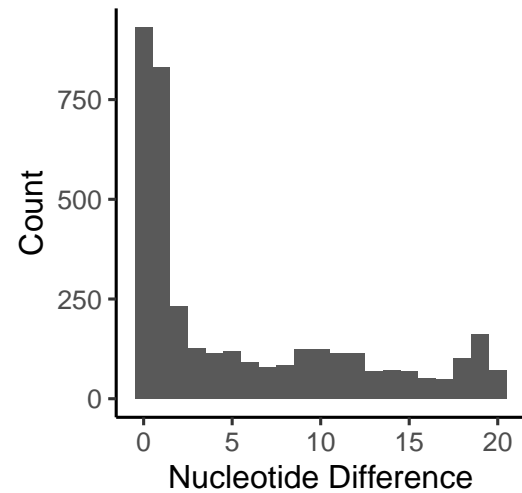
### IGHV3-72\*01\_A284G\_A284T

104 sequences assigned  
7 (6.7%) exact matches, in which:  
7 unique CDR3  
2 unique J



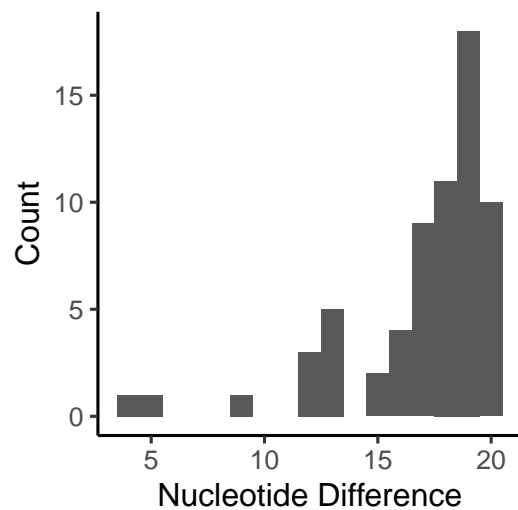
### IGHV3-74\*01\_02

4061 sequences assigned  
932 (23%) exact matches, in which:  
617 unique CDR3  
6 unique J



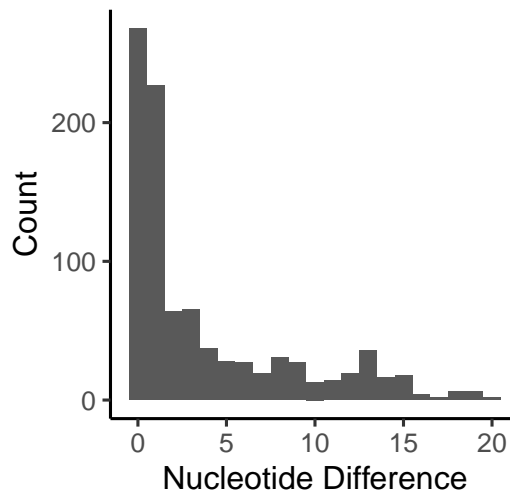
### IGHV3-69-1\*02

84 sequences assigned  
No exact matches.



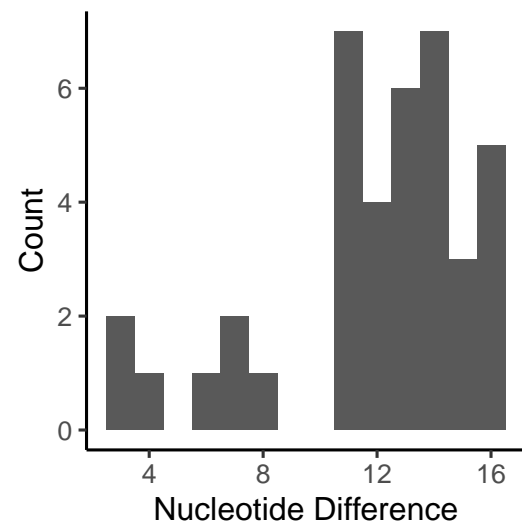
### IGHV3-73\*01\_02

936 sequences assigned  
268 (28.6%) exact matches, in which:  
160 unique CDR3  
5 unique J



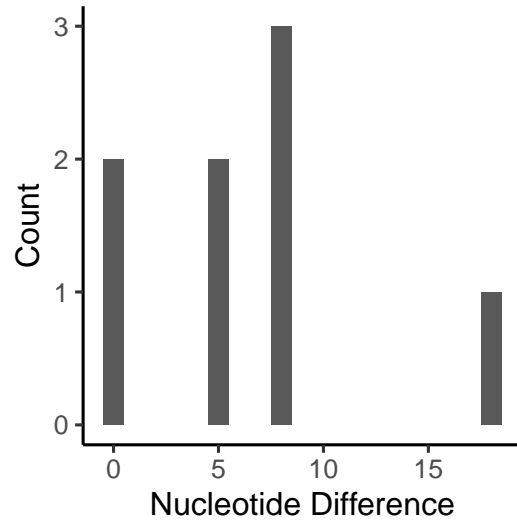
### IGHV3-43D\*04

39 sequences assigned  
No exact matches.



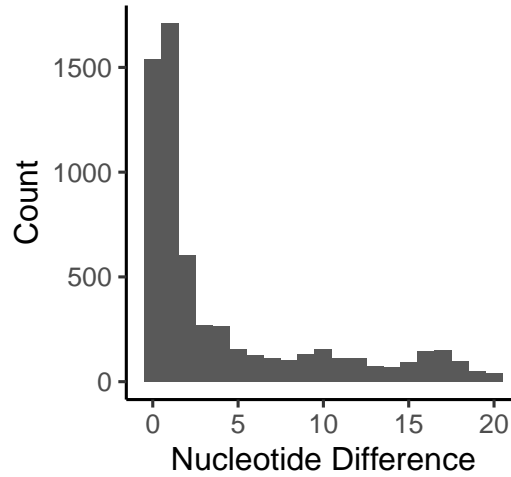
### IGHV3-64D\*06

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



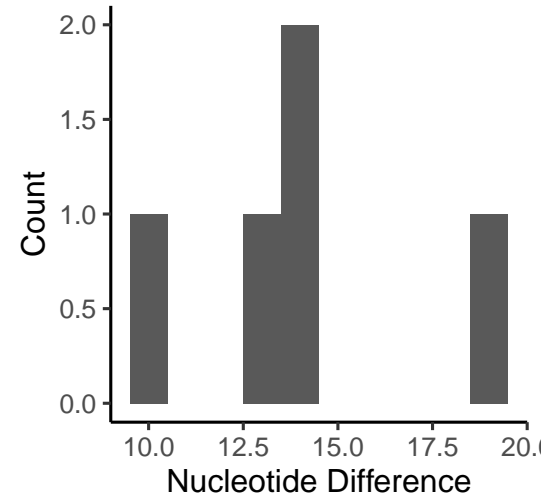
### IGHV4-4\*07

6724 sequences assigned  
1538 (22.9%) exact matches, in which:  
1237 unique CDR3  
6 unique J



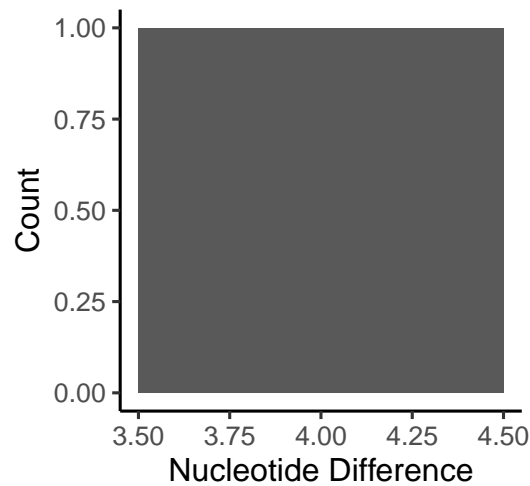
### IGHV4-30-4\*01

6 sequences assigned  
No exact matches.



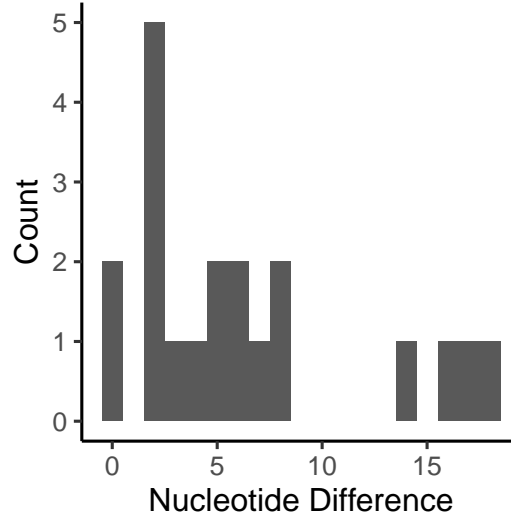
### IGHV3-64D\*09

1 sequences assigned  
No exact matches.



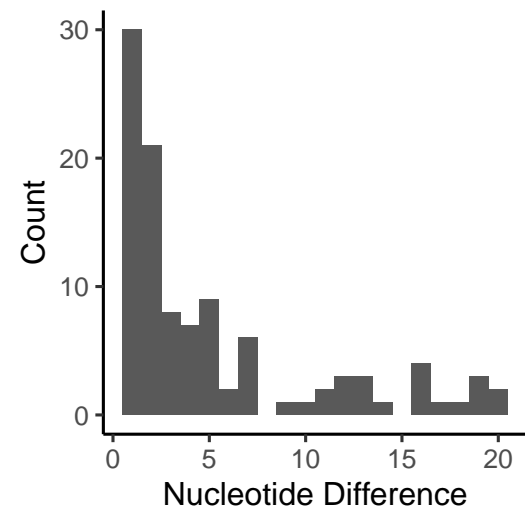
### IGHV4-28\*03

28 sequences assigned  
2 (7.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



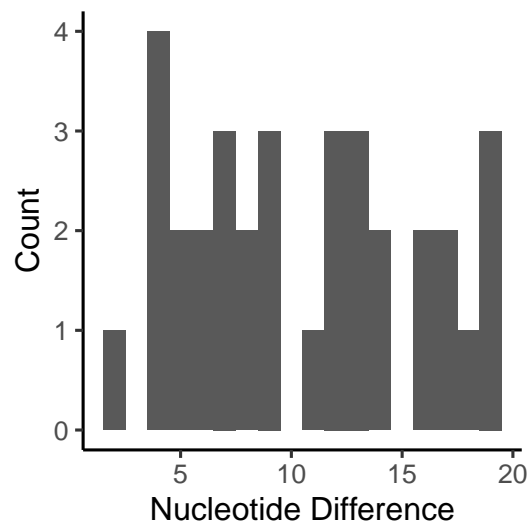
### IGHV4-30-2\*03

106 sequences assigned  
No exact matches.



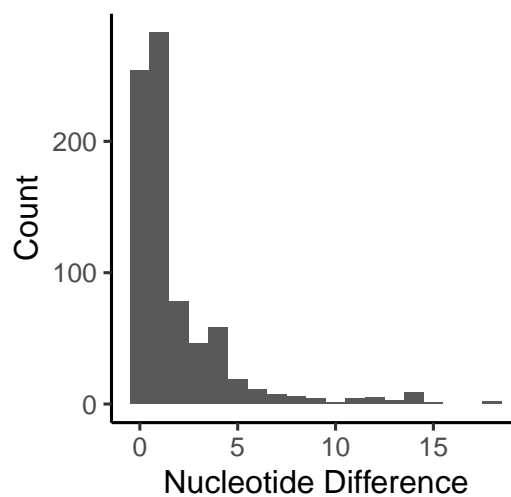
### IGHV3-NL1\*01

41 sequences assigned  
No exact matches.



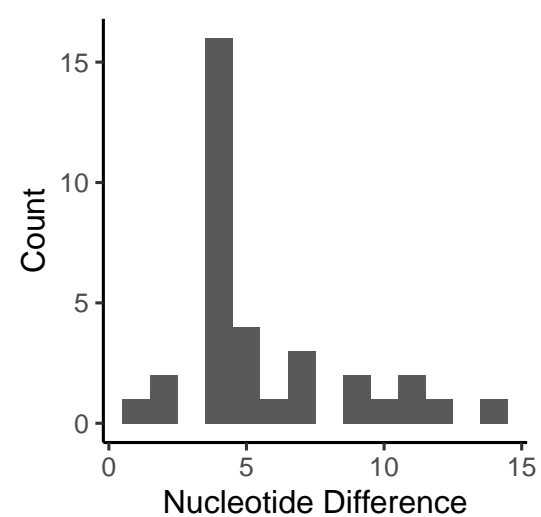
### IGHV4-30-2\*01

800 sequences assigned  
254 (31.8%) exact matches, in which:  
147 unique CDR3  
6 unique J



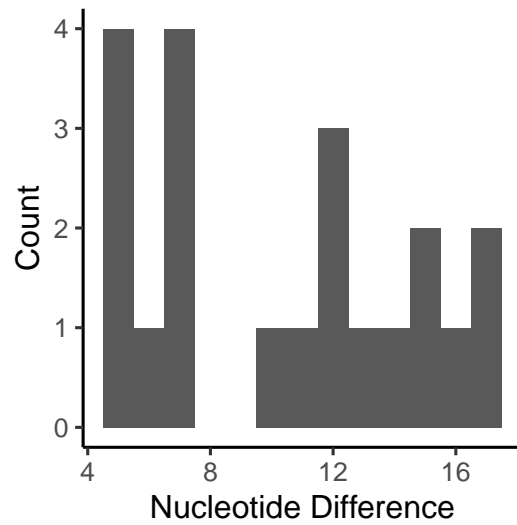
### IGHV4-30-4\*07

35 sequences assigned  
No exact matches.



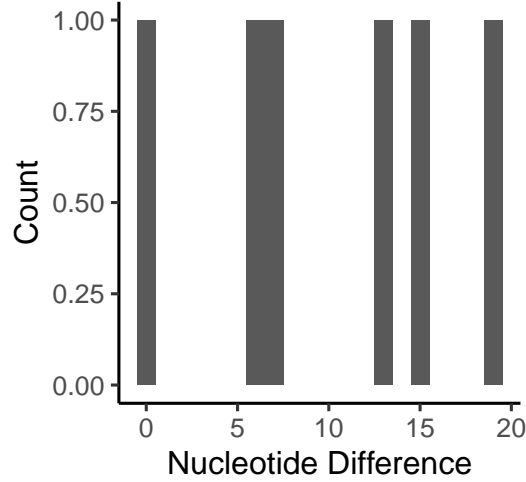
### IGHV4-30-4\*08

29 sequences assigned  
No exact matches.



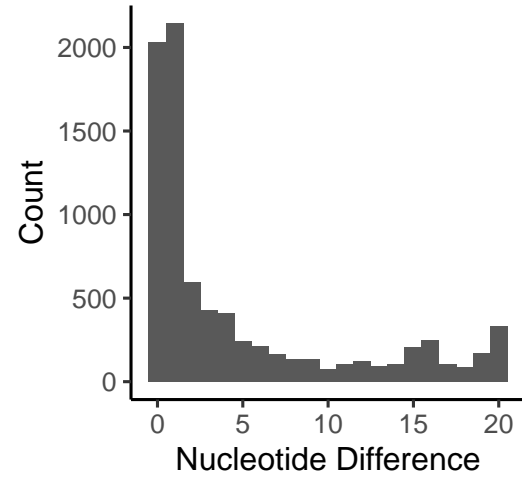
### IGHV4-38-2\*02

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



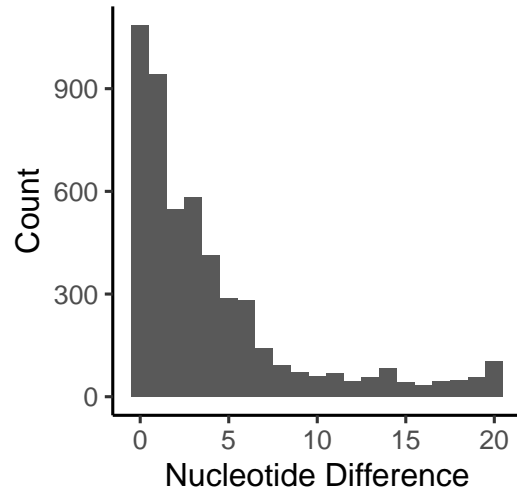
### IGHV4-59\*01\_07

9141 sequences assigned  
2029 (22.2%) exact matches, in which:  
1632 unique CDR3  
6 unique J



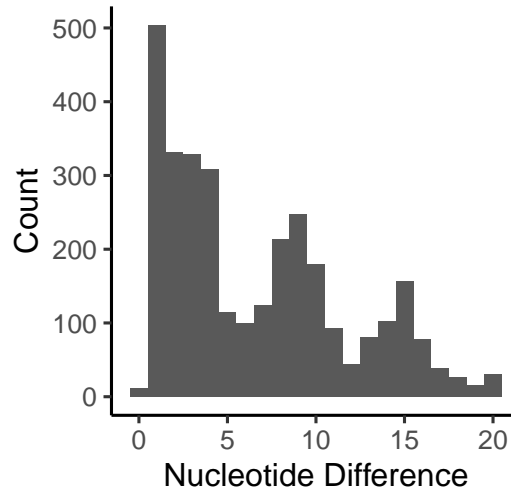
### IGHV4-31\*02

5541 sequences assigned  
1086 (19.6%) exact matches, in which:  
920 unique CDR3  
6 unique J



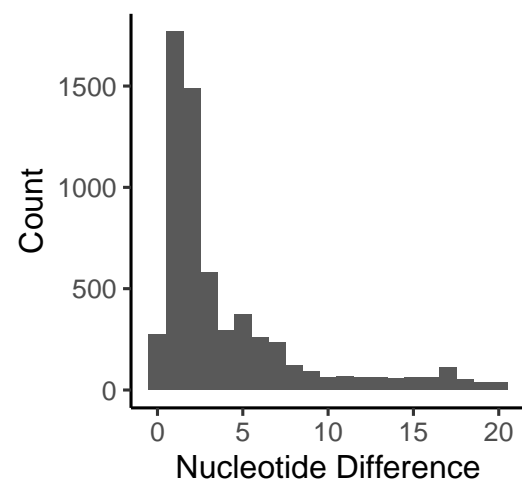
### IGHV4-39\*07

3426 sequences assigned  
11 (0.3%) exact matches, in which:  
11 unique CDR3  
4 unique J



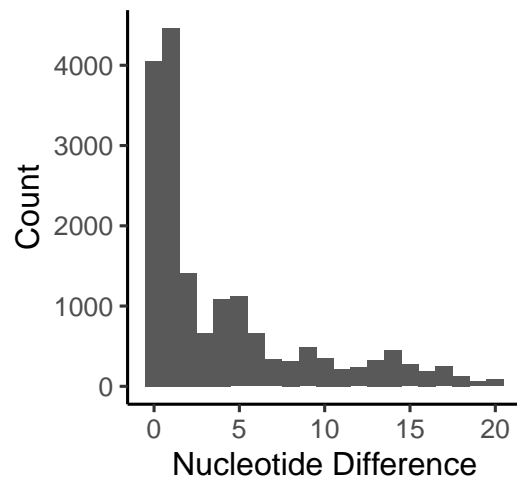
### IGHV4-59\*12

6440 sequences assigned  
273 (4.2%) exact matches, in which:  
257 unique CDR3  
6 unique J



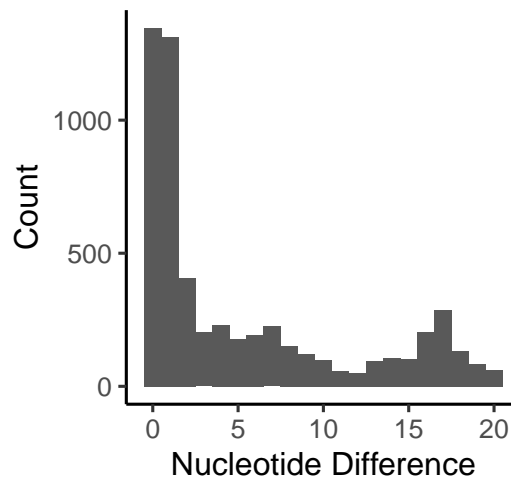
### IGHV4-34\*01\_02

17623 sequences assigned  
4057 (23%) exact matches, in which:  
2697 unique CDR3  
6 unique J



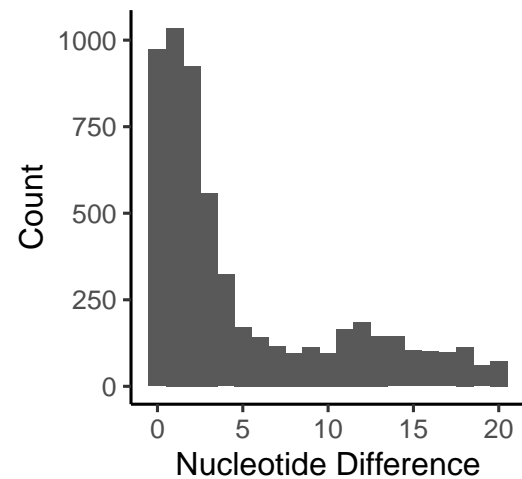
### IGHV4-59\*08

6414 sequences assigned  
1346 (21%) exact matches, in which:  
1072 unique CDR3  
6 unique J



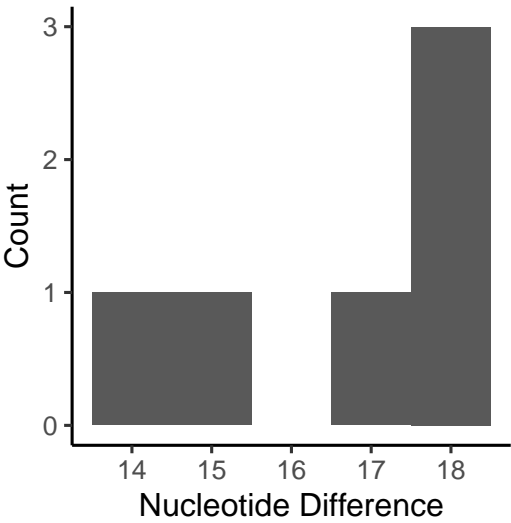
### IGHV4-61\*02

6891 sequences assigned  
973 (14.1%) exact matches, in which:  
842 unique CDR3  
6 unique J



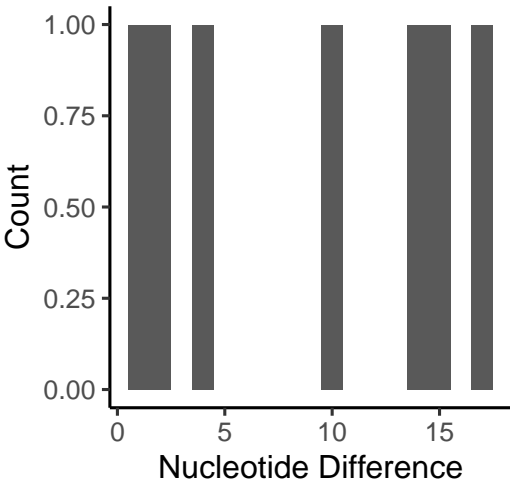
IGHV1/OR15-1\*04

6 sequences assigned  
No exact matches.



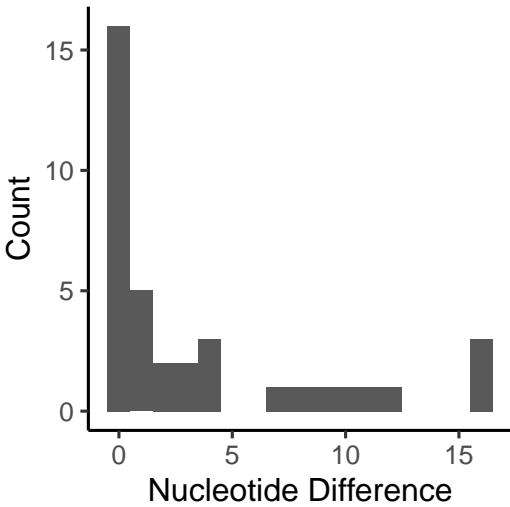
IGHV4/OR15-8\*01

11 sequences assigned  
No exact matches.



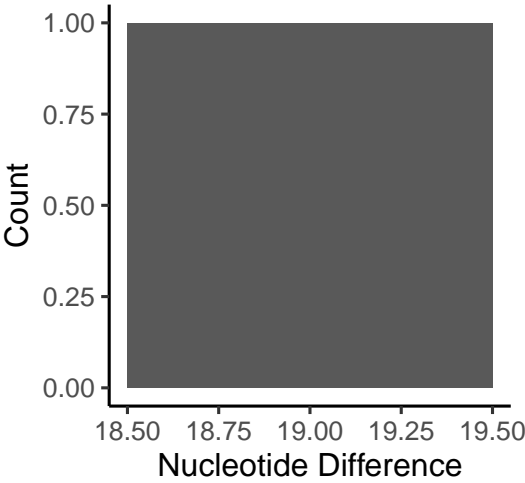
IGHV5-51\*04

65 sequences assigned  
16 (24.6%) exact matches, in which:  
15 unique CDR3  
3 unique J



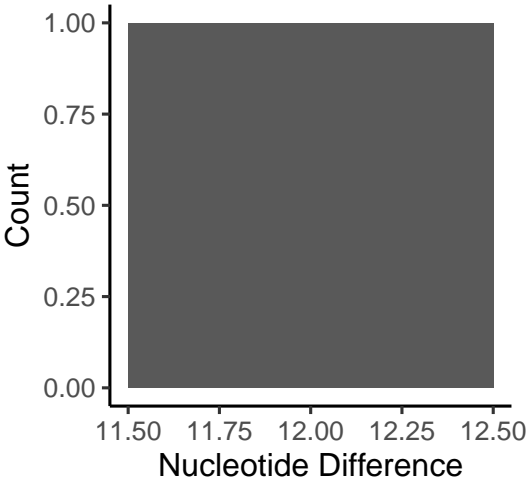
IGHV1/OR15-2\*02\_03

2 sequences assigned  
No exact matches.



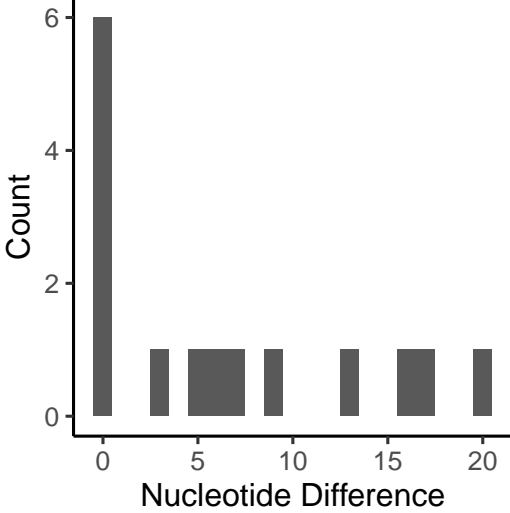
IGHV1/OR15-9\*01

1 sequences assigned  
No exact matches.



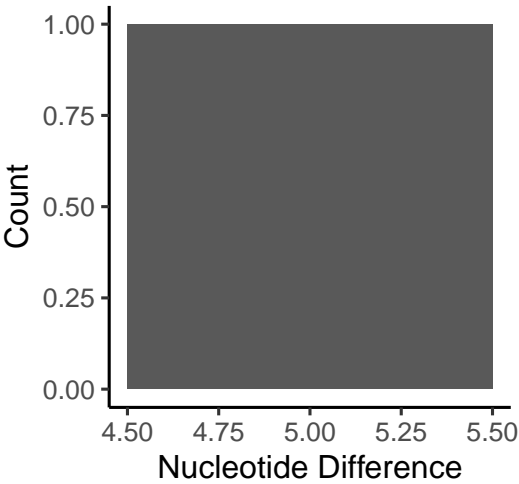
IGHV5-51\*06

15 sequences assigned  
6 (40%) exact matches, in which:  
6 unique CDR3  
4 unique J



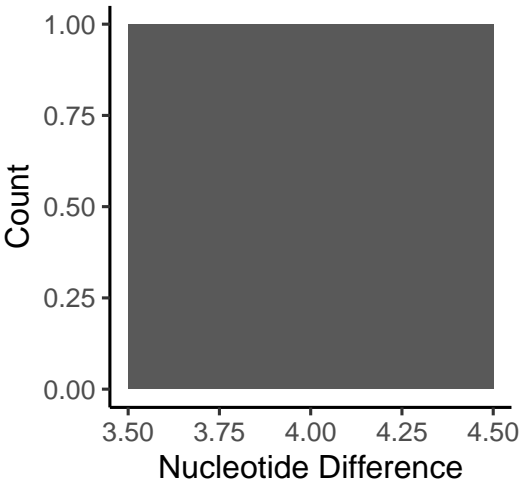
IGHV1/OR15-3\*02

1 sequences assigned  
No exact matches.



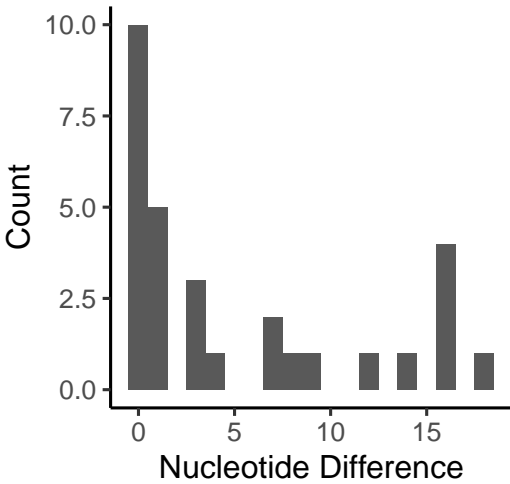
IGHV5-10-1\*01\_03

2 sequences assigned  
No exact matches.



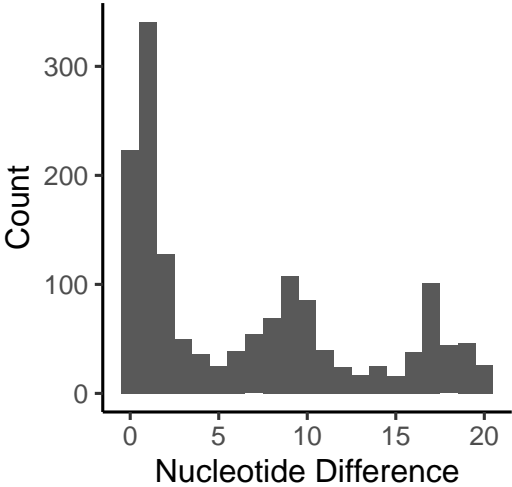
IGHV5-51\*07

32 sequences assigned  
10 (31.2%) exact matches, in which:  
10 unique CDR3  
5 unique J



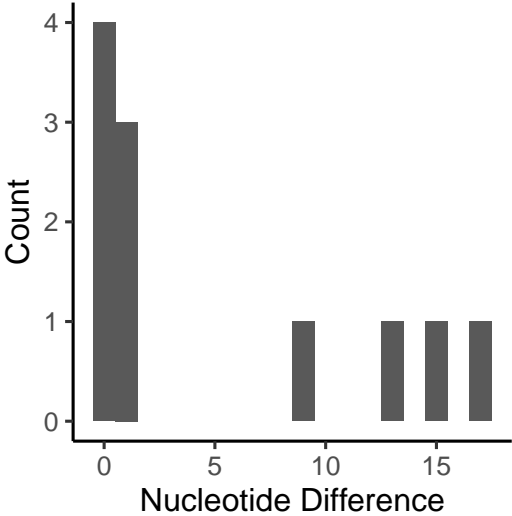
IGHV6-1\*01\_02

1626 sequences assigned  
223 (13.7%) exact matches, in which:  
181 unique CDR3  
6 unique J

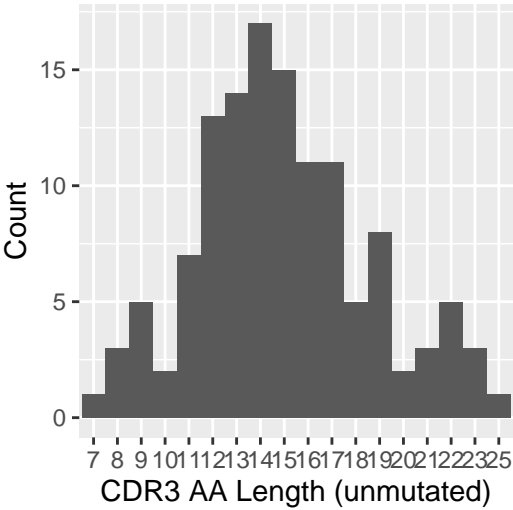


IGHV7-4-1\*02

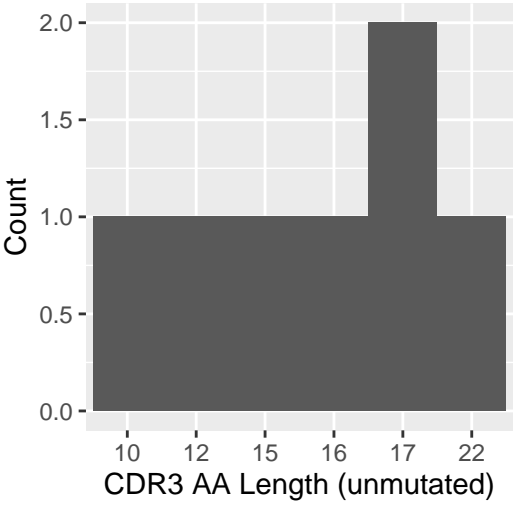
11 sequences assigned  
4 (36.4%) exact matches, in which:  
3 unique CDR3  
1 unique J



IGHV3-53\*01\_02\_G81A\_A225G\_T267G\_G303A



IGHV3-72\*01\_A284G\_A286G\_C300T







[illegible]