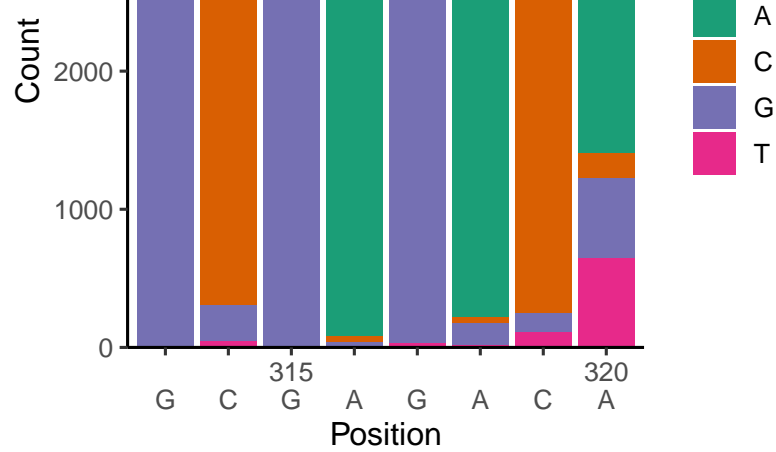
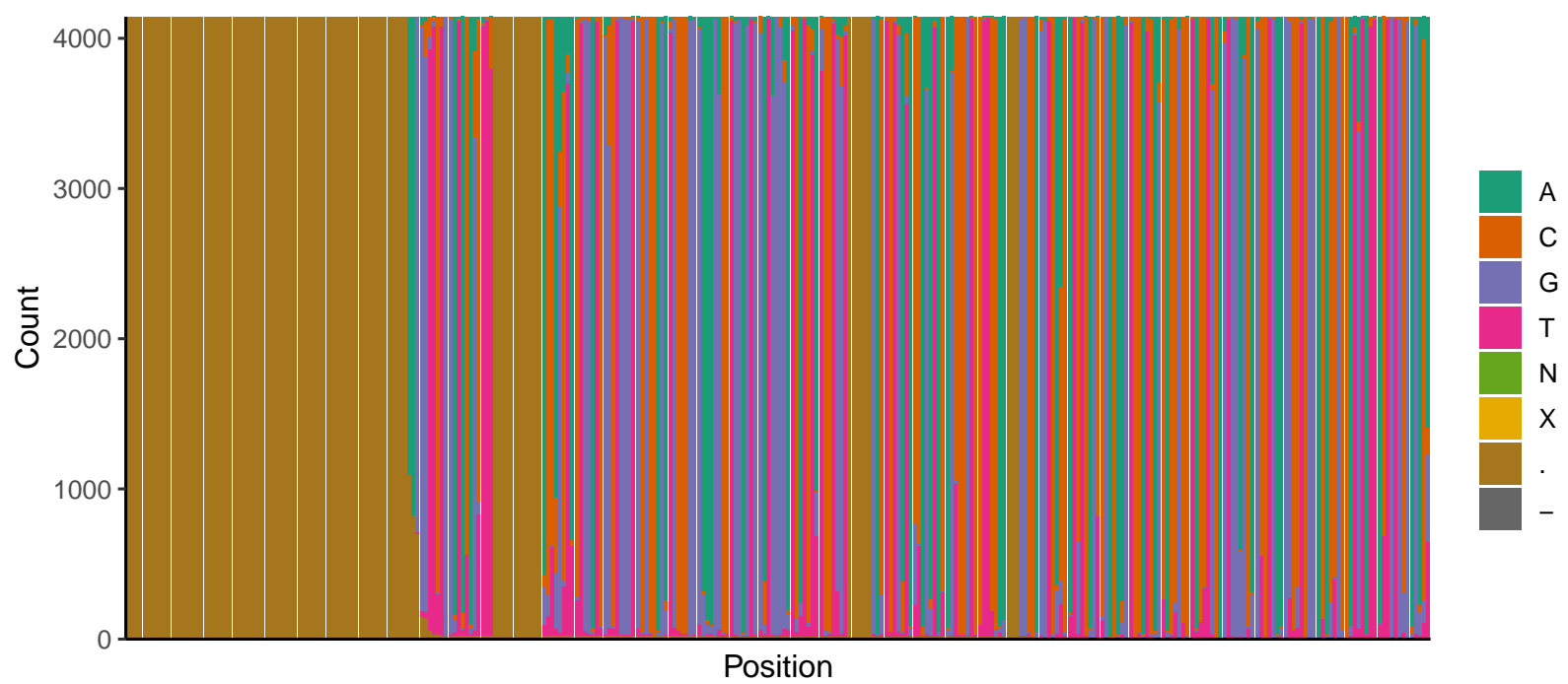


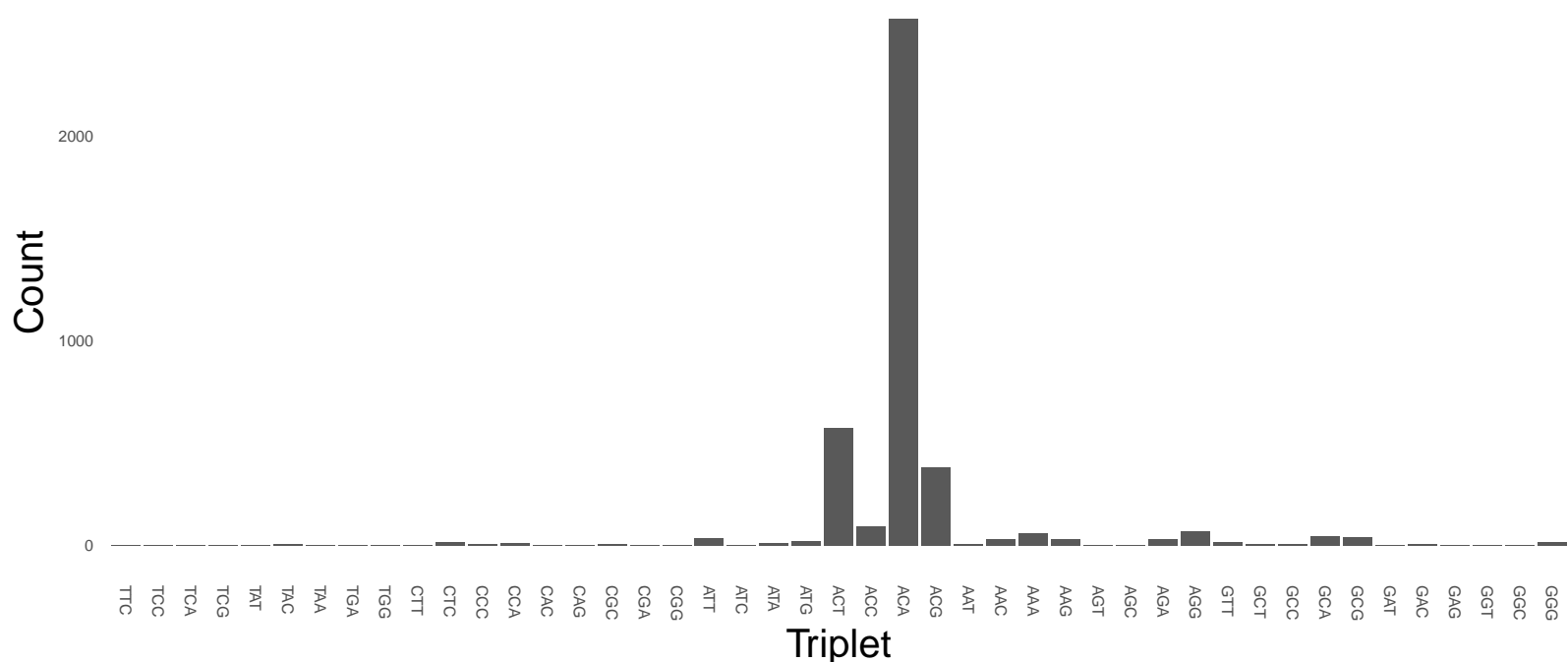
# Gene IGHV5-51\*07\_A128G\_C230A



# Gene IGHV5-51\*07\_A128G\_C230A

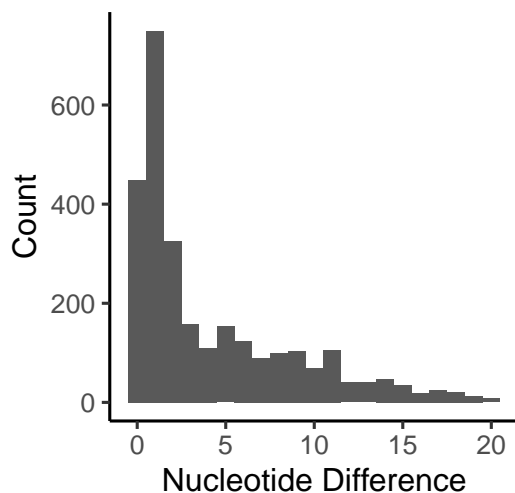


IGHV5-51\*07\_A128G\_C230A- Final 3 nucleotides as a triplet



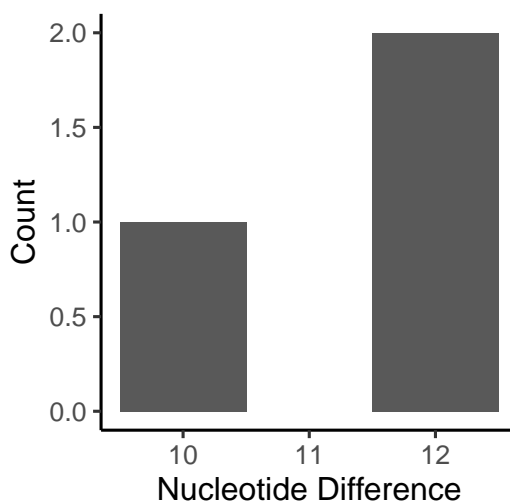
### IGHV1-2\*04

3052 sequences assigned  
448 (14.7%) exact matches, in which:  
354 unique CDR3  
5 unique J



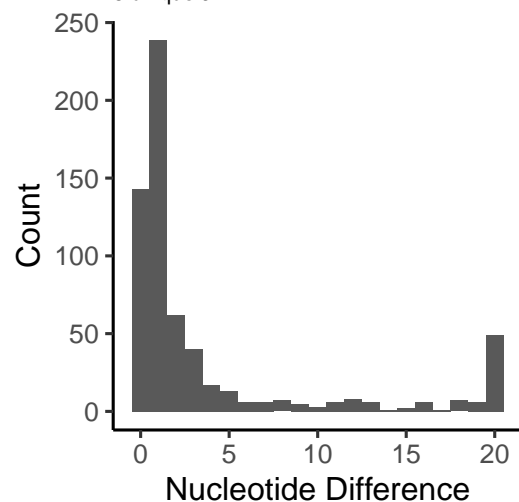
### IGHV1-8\*02

3 sequences assigned  
No exact matches.



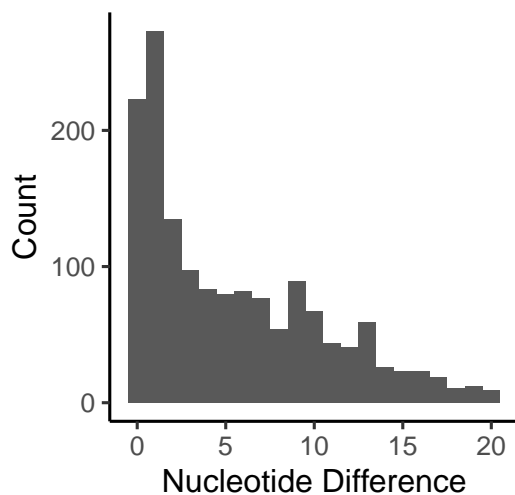
### IGHV1-24\*01

824 sequences assigned  
143 (17.4%) exact matches, in which:  
83 unique CDR3  
5 unique J



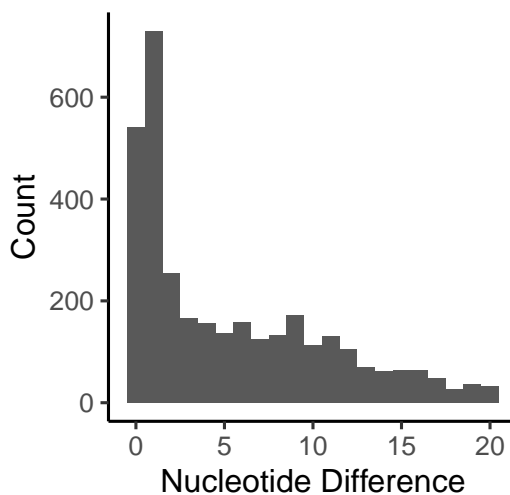
### IGHV1-3\*01\_05

1807 sequences assigned  
223 (12.3%) exact matches, in which:  
169 unique CDR3  
5 unique J



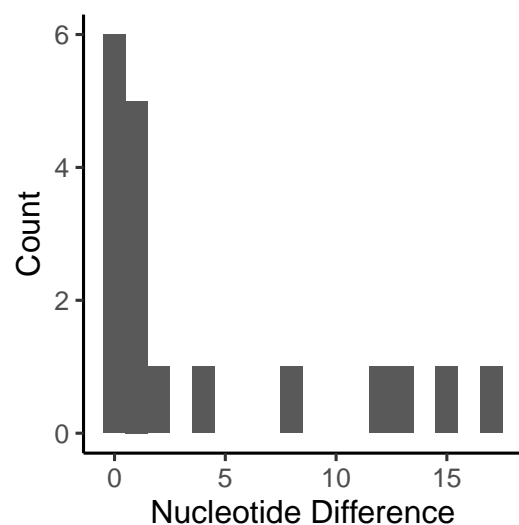
### IGHV1-18\*01

4796 sequences assigned  
541 (11.3%) exact matches, in which:  
428 unique CDR3  
6 unique J



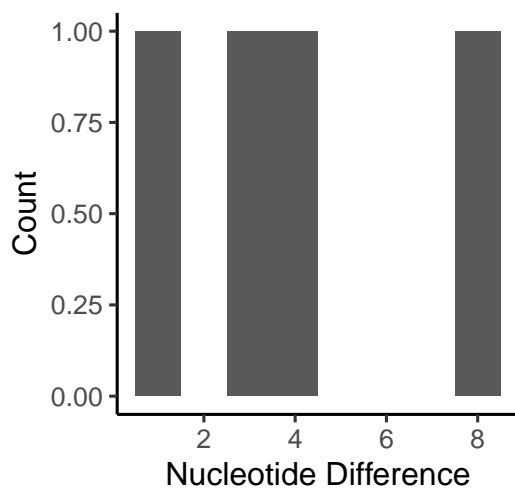
### IGHV1-45\*02

18 sequences assigned  
6 (33.3%) exact matches, in which:  
3 unique CDR3  
2 unique J



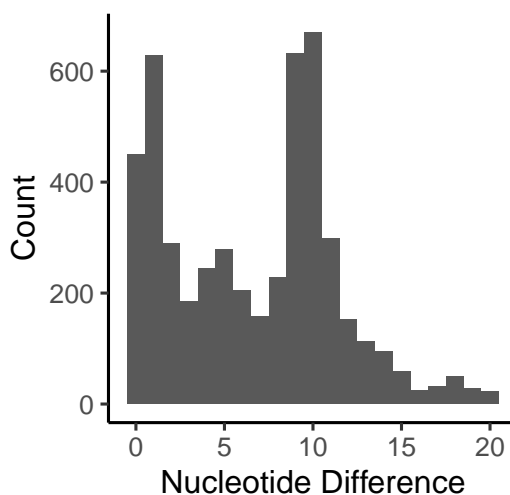
### IGHV1-8\*01

4 sequences assigned  
No exact matches.



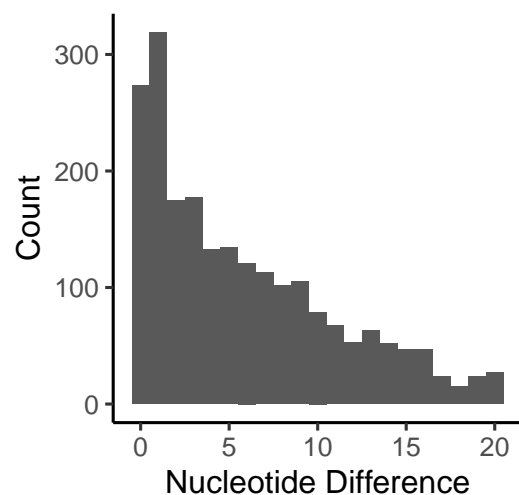
### IGHV1-18\*04

5397 sequences assigned  
449 (8.3%) exact matches, in which:  
368 unique CDR3  
6 unique J



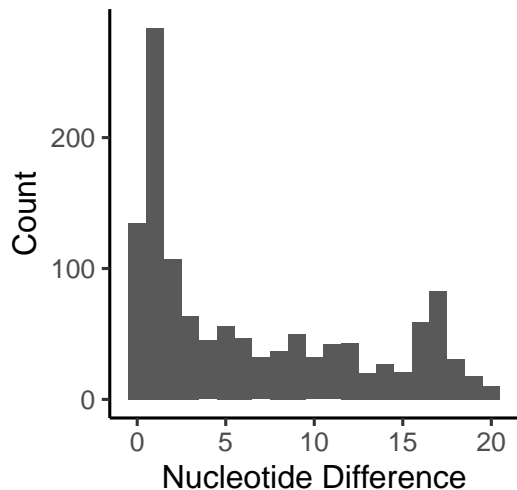
### IGHV1-46\*01

2774 sequences assigned  
273 (9.8%) exact matches, in which:  
216 unique CDR3  
6 unique J



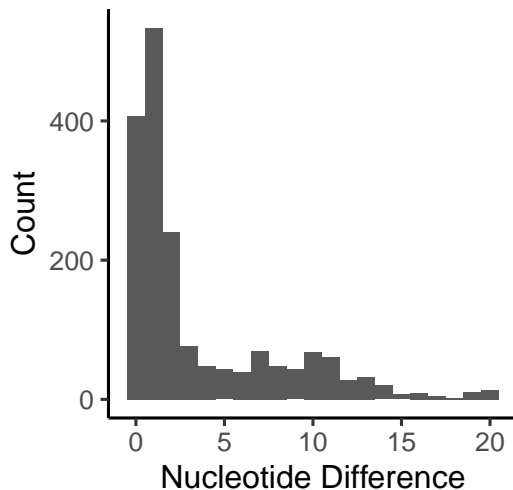
### IGHV1-46\*03

1303 sequences assigned  
135 (10.4%) exact matches, in which:  
101 unique CDR3  
6 unique J



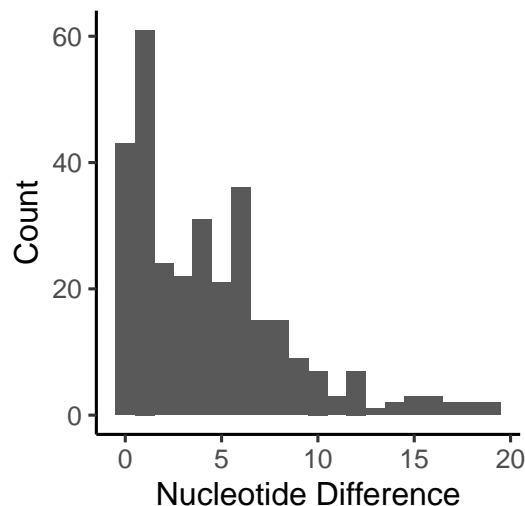
### IGHV1-69\*04\_09

2410 sequences assigned  
407 (16.9%) exact matches, in which:  
338 unique CDR3  
6 unique J



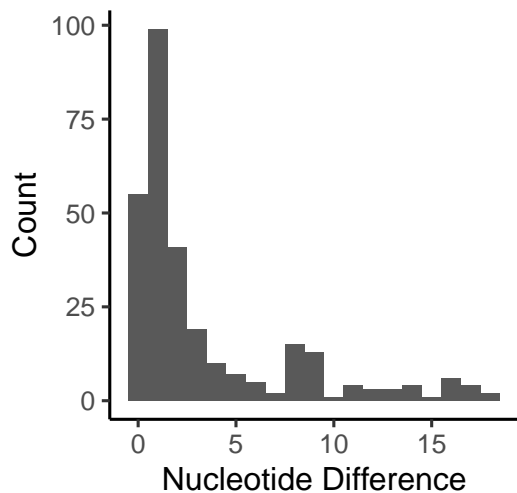
### IGHV2-5\*02

538 sequences assigned  
43 (8%) exact matches, in which:  
30 unique CDR3  
4 unique J



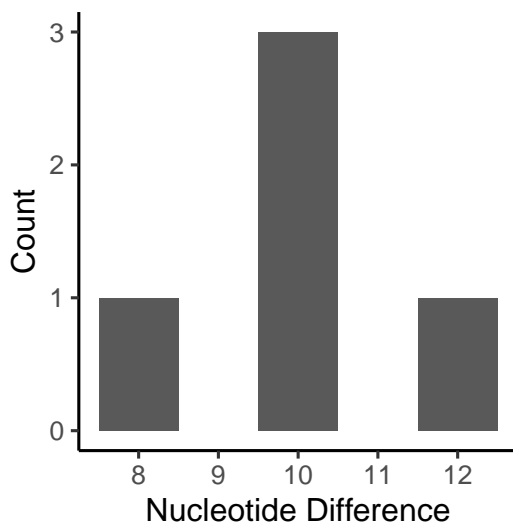
### IGHV1-58\*02

386 sequences assigned  
55 (14.2%) exact matches, in which:  
46 unique CDR3  
5 unique J



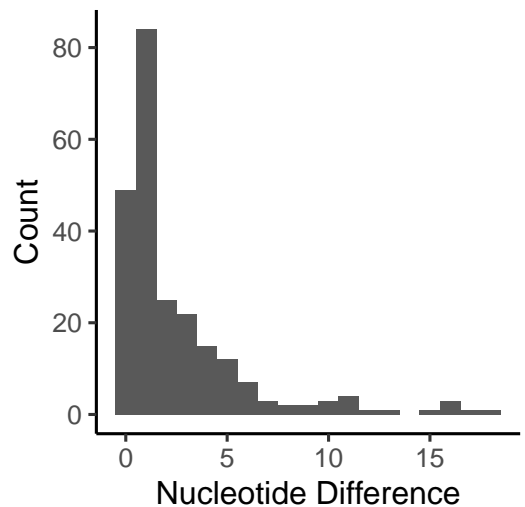
### IGHV1-NL1\*01

5 sequences assigned  
No exact matches.



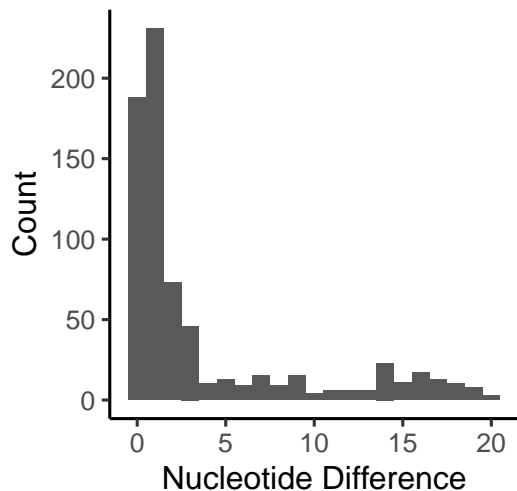
### IGHV2-26\*01

236 sequences assigned  
49 (20.8%) exact matches, in which:  
42 unique CDR3  
5 unique J



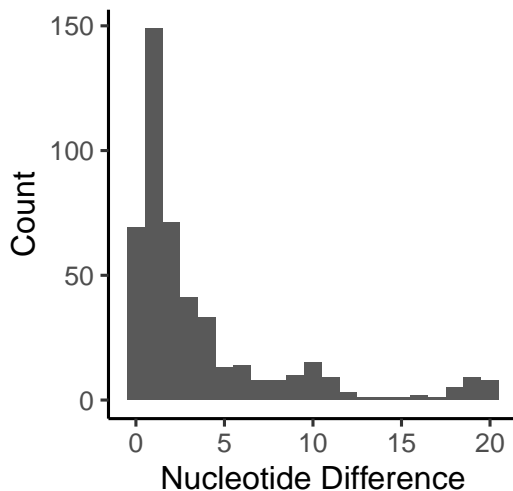
### IGHV1-69\*02

988 sequences assigned  
188 (19%) exact matches, in which:  
161 unique CDR3  
5 unique J



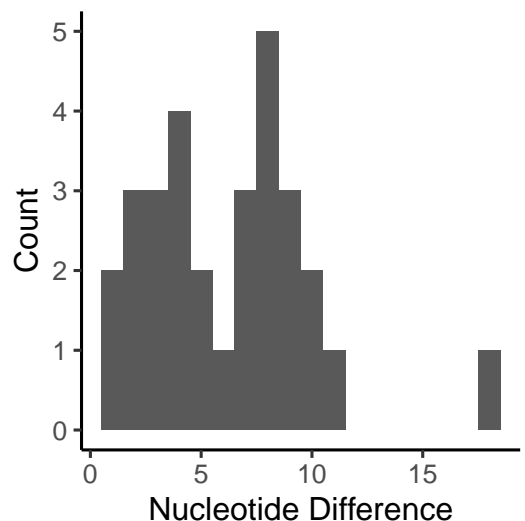
### IGHV2-5\*01

844 sequences assigned  
69 (8.2%) exact matches, in which:  
52 unique CDR3  
6 unique J



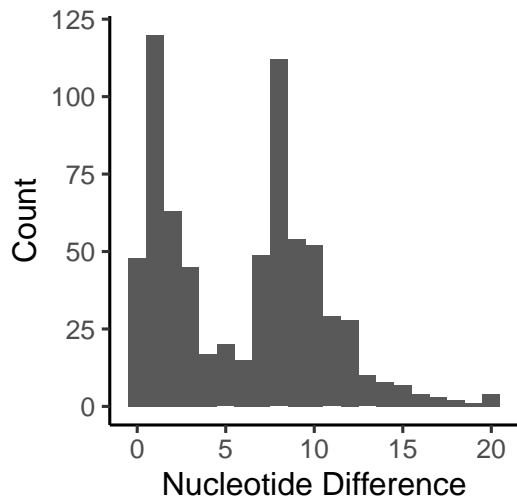
### IGHV2-70\*12

35 sequences assigned  
No exact matches.



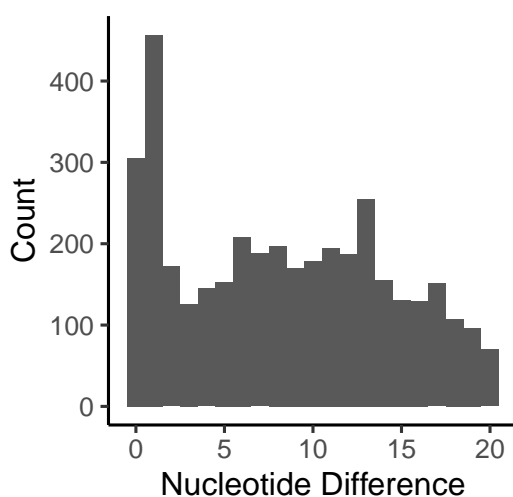
### IGHV2-70\*11\_15

776 sequences assigned  
48 (6.2%) exact matches, in which:  
36 unique CDR3  
4 unique J



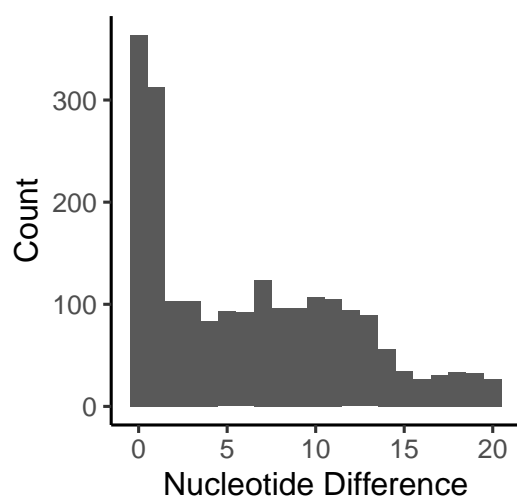
### IGHV3-7\*03

4590 sequences assigned  
305 (6.6%) exact matches, in which:  
212 unique CDR3  
5 unique J



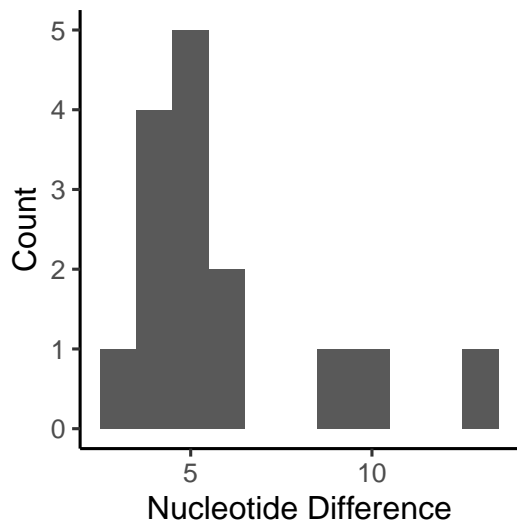
### IGHV3-11\*06

2313 sequences assigned  
364 (15.7%) exact matches, in which:  
256 unique CDR3  
5 unique J



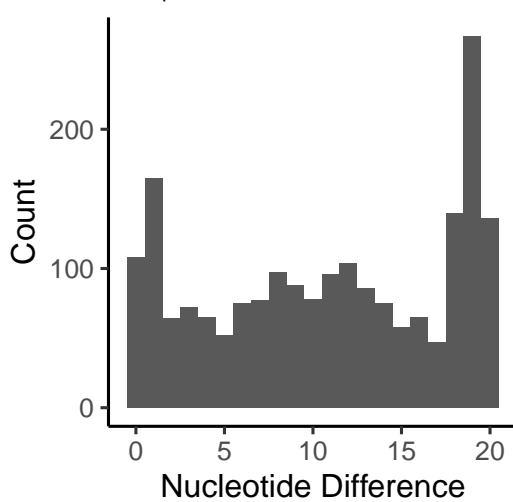
### IGHV2-70D\*14

15 sequences assigned  
No exact matches.



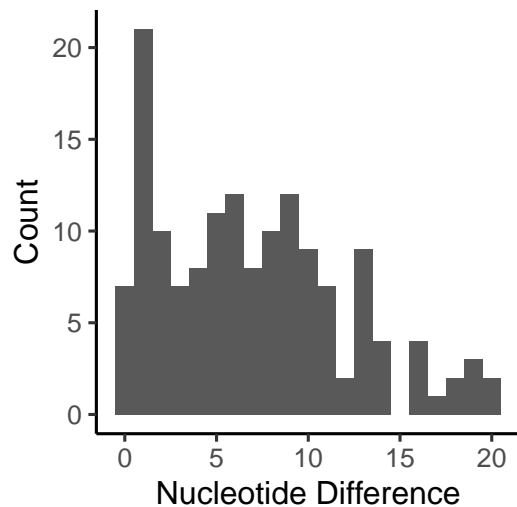
### IGHV3-7\*04

4392 sequences assigned  
108 (2.5%) exact matches, in which:  
68 unique CDR3  
5 unique J



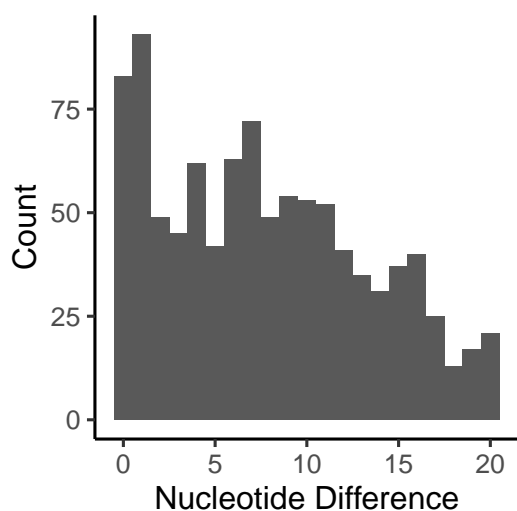
### IGHV3-11\*03\_05

167 sequences assigned  
7 (4.2%) exact matches, in which:  
7 unique CDR3  
4 unique J



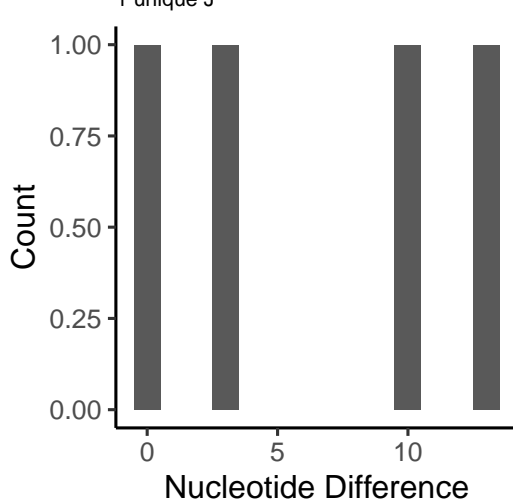
### IGHV3-7\*01

1198 sequences assigned  
83 (6.9%) exact matches, in which:  
74 unique CDR3  
5 unique J



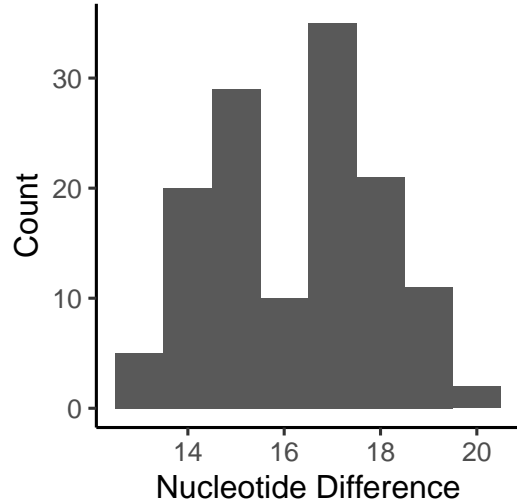
### IGHV3-9\*01

6 sequences assigned  
1 (16.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



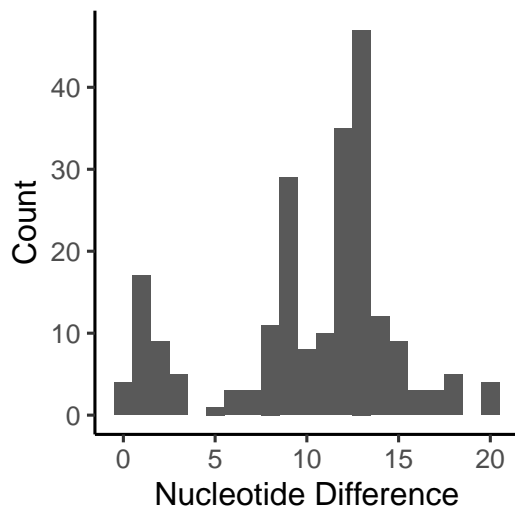
### IGHV3-13\*01

156 sequences assigned  
No exact matches.



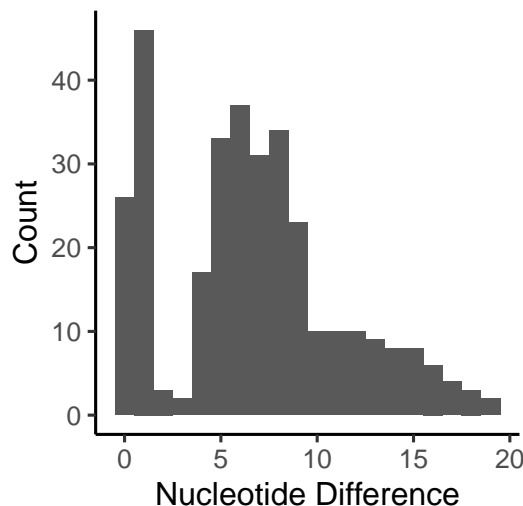
### IGHV3-13\*05

251 sequences assigned  
4 (1.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



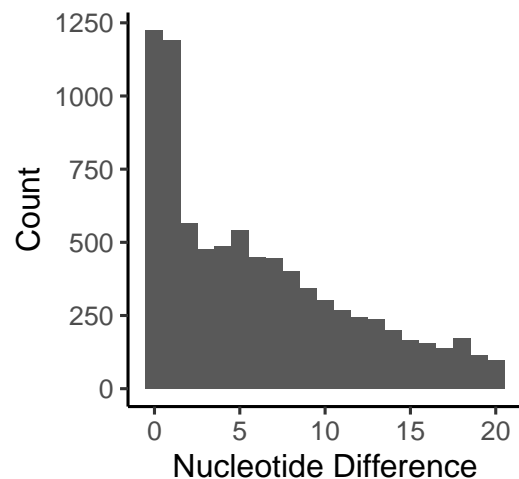
### IGHV3-20\*01\_02

328 sequences assigned  
26 (7.9%) exact matches, in which:  
17 unique CDR3  
3 unique J



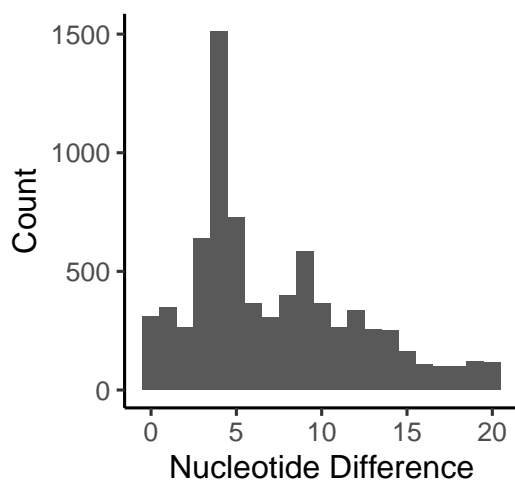
### IGHV3-21\*01\_02

9858 sequences assigned  
1224 (12.4%) exact matches, in which:  
789 unique CDR3  
6 unique J



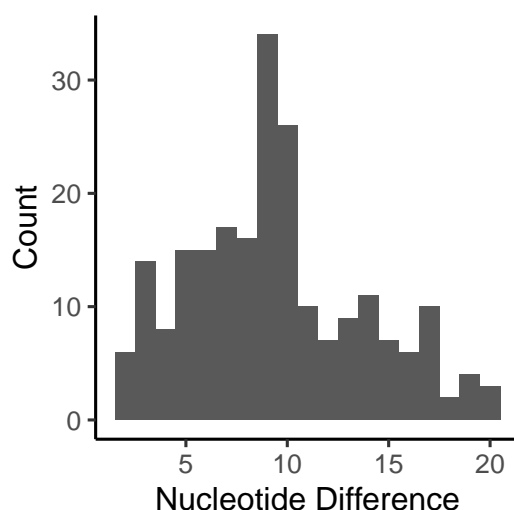
### IGHV3-15\*01\_02

9274 sequences assigned  
308 (3.3%) exact matches, in which:  
189 unique CDR3  
6 unique J



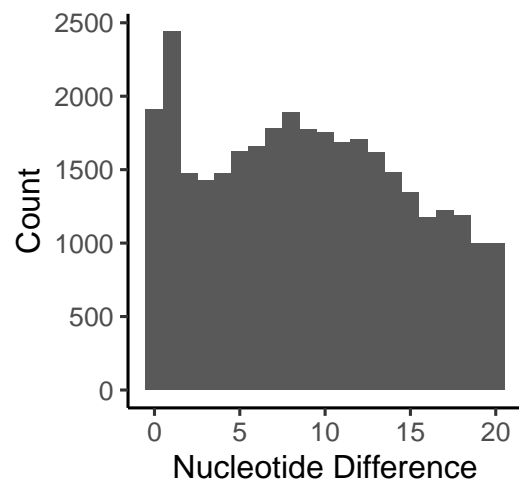
### IGHV3-20\*03\_04

818 sequences assigned  
No exact matches.



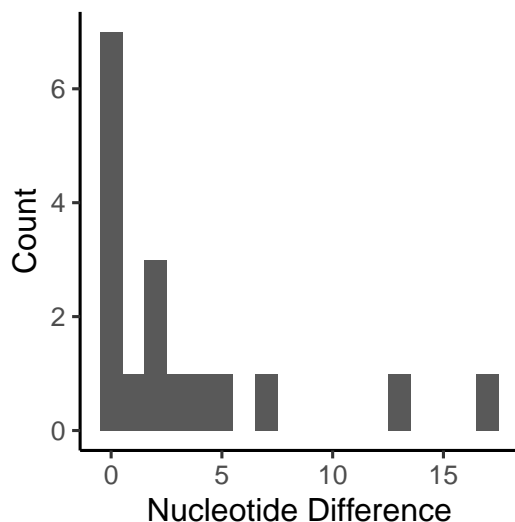
### IGHV3-23\*01\_04

42639 sequences assigned  
1908 (4.5%) exact matches, in which:  
1135 unique CDR3  
6 unique J



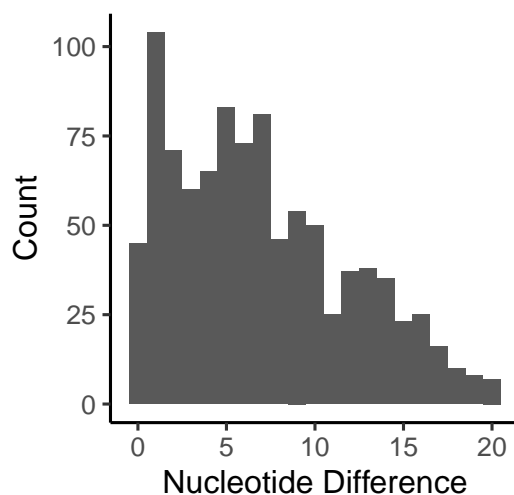
### IGHV3-19\*01

17 sequences assigned  
7 (41.2%) exact matches, in which:  
7 unique CDR3  
3 unique J



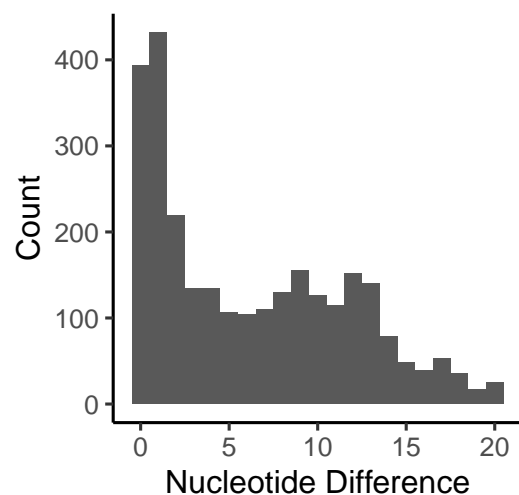
### IGHV3-21\*04

1139 sequences assigned  
45 (4%) exact matches, in which:  
40 unique CDR3  
4 unique J



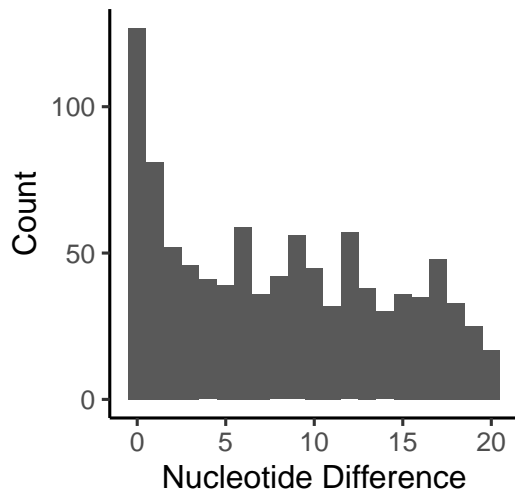
### IGHV3-30-3\*01

3531 sequences assigned  
393 (11.1%) exact matches, in which:  
268 unique CDR3  
6 unique J



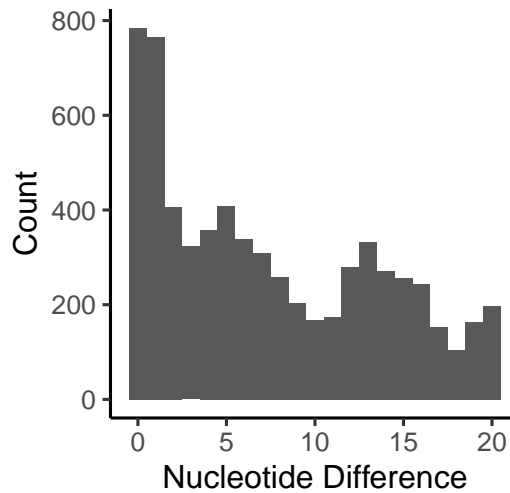
### IGHV3–30\*03

1148 sequences assigned  
127 (11.1%) exact matches, in which:  
117 unique CDR3  
5 unique J



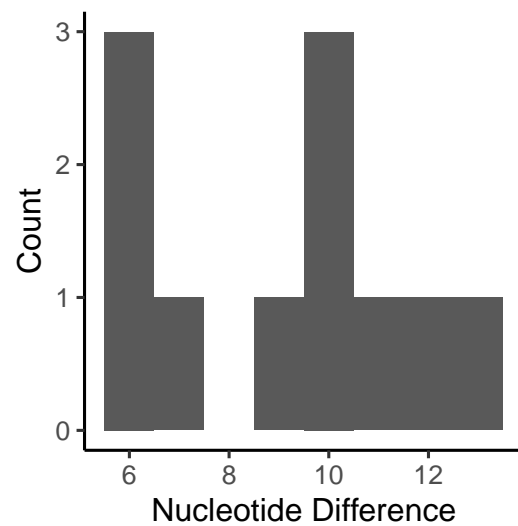
### IGHV3–33\*01

7295 sequences assigned  
785 (10.8%) exact matches, in which:  
519 unique CDR3  
6 unique J



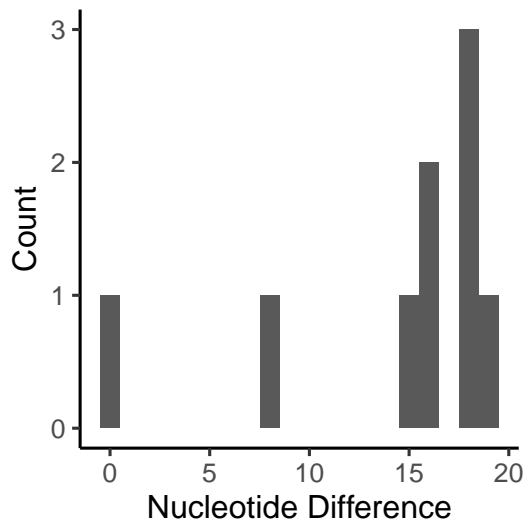
### IGHV3–35\*01

11 sequences assigned  
No exact matches.



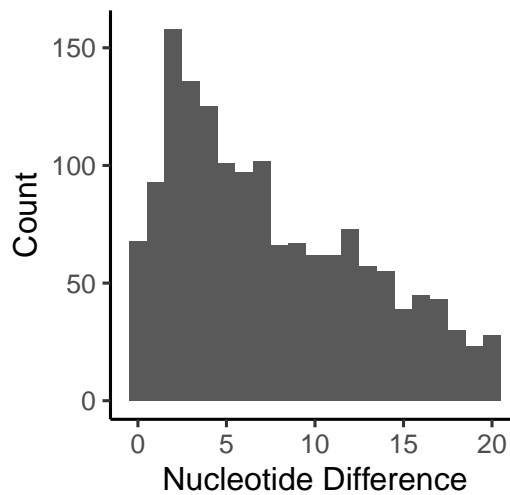
### IGHV3–30\*14

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



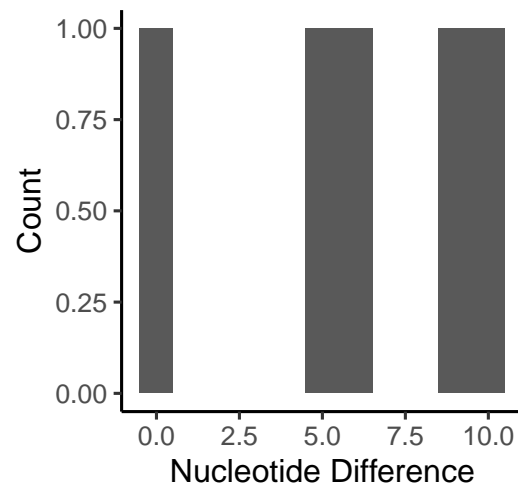
### IGHV3–33\*06

1631 sequences assigned  
68 (4.2%) exact matches, in which:  
64 unique CDR3  
6 unique J



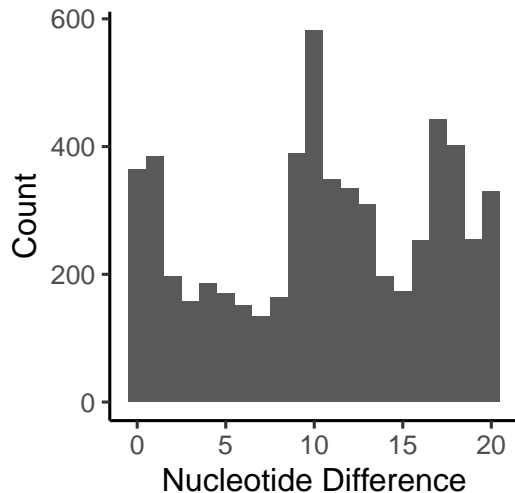
### IGHV3–38\*02

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



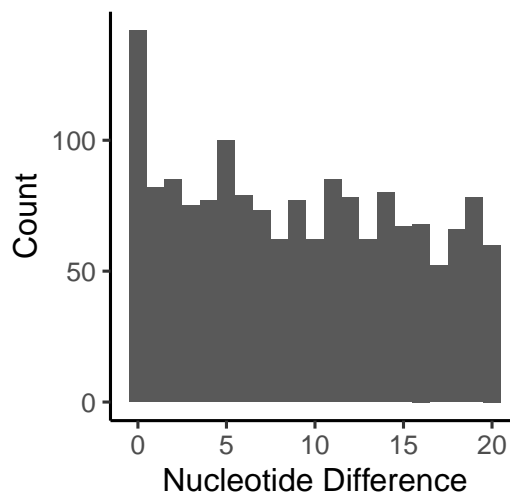
### IGHV3–30\*18

7521 sequences assigned  
364 (4.8%) exact matches, in which:  
208 unique CDR3  
6 unique J



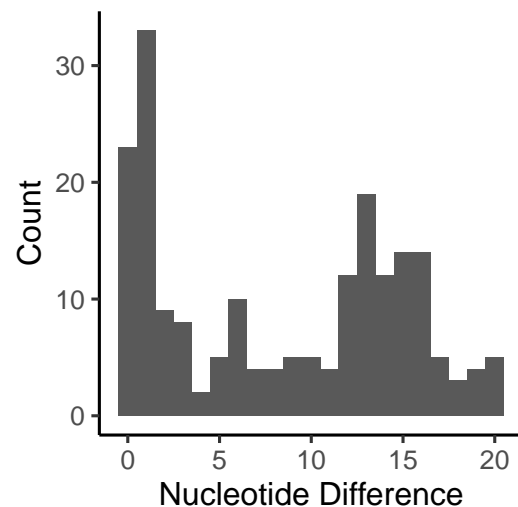
### IGHV3–33\*08

2056 sequences assigned  
142 (6.9%) exact matches, in which:  
103 unique CDR3  
5 unique J



### IGHV3–43\*01

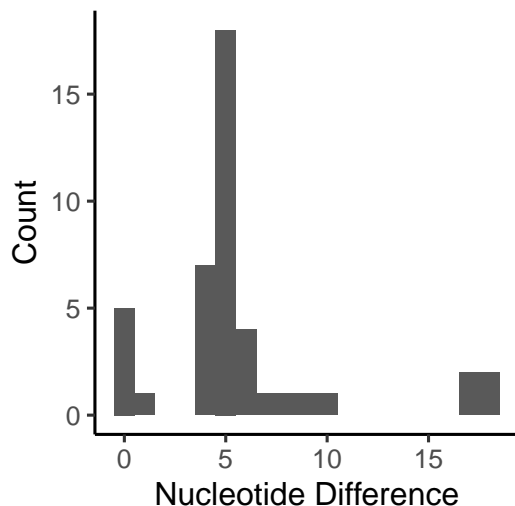
347 sequences assigned  
23 (6.6%) exact matches, in which:  
13 unique CDR3  
3 unique J





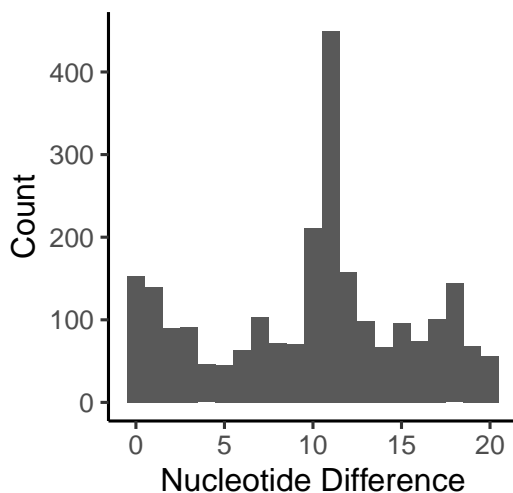
### IGHV3-47\*02

43 sequences assigned  
5 (11.6%) exact matches, in which:  
3 unique CDR3  
1 unique J



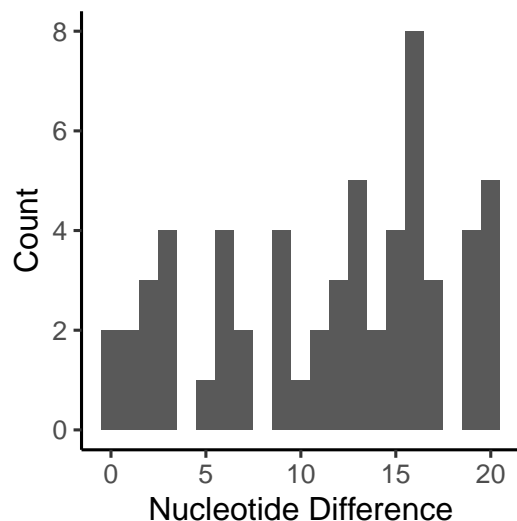
### IGHV3-49\*03\_05

2955 sequences assigned  
153 (5.2%) exact matches, in which:  
84 unique CDR3  
5 unique J



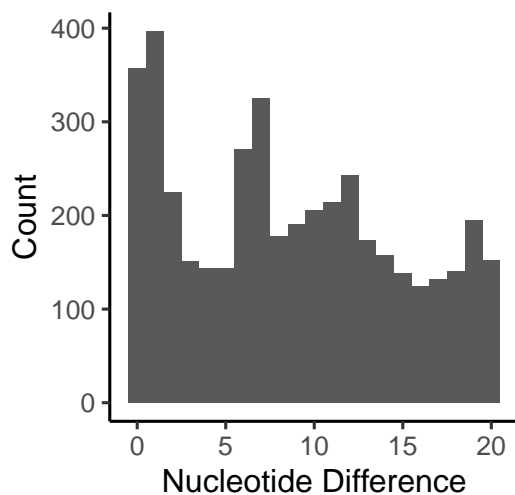
### IGHV3-53\*05

65 sequences assigned  
2 (3.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



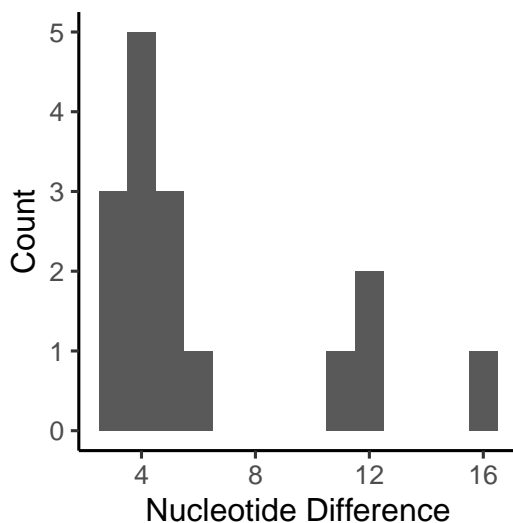
### IGHV3-48\*01

5648 sequences assigned  
357 (6.3%) exact matches, in which:  
256 unique CDR3  
6 unique J



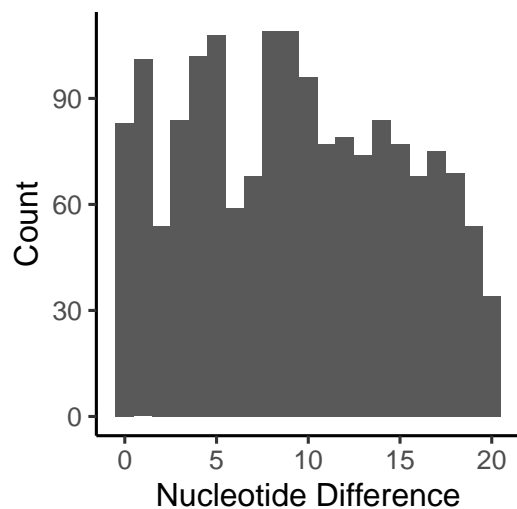
### IGHV3-52\*01\_03

16 sequences assigned  
No exact matches.



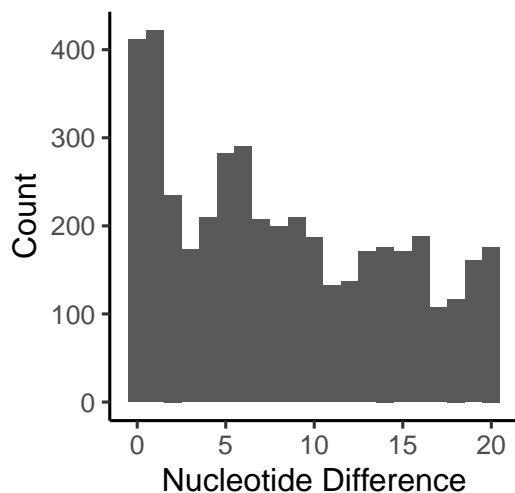
### IGHV3-53\*01\_02

1878 sequences assigned  
83 (4.4%) exact matches, in which:  
60 unique CDR3  
5 unique J



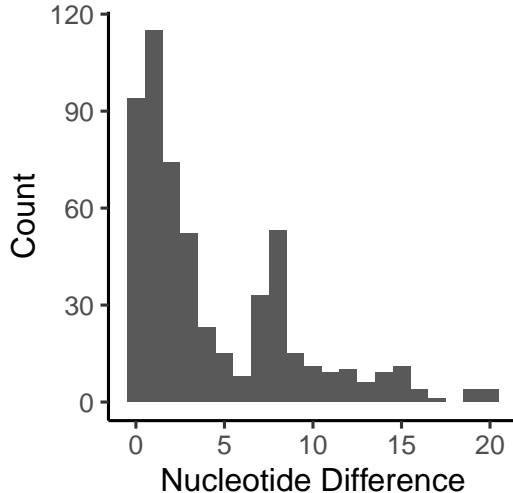
### IGHV3-48\*04

7068 sequences assigned  
412 (5.8%) exact matches, in which:  
302 unique CDR3  
6 unique J



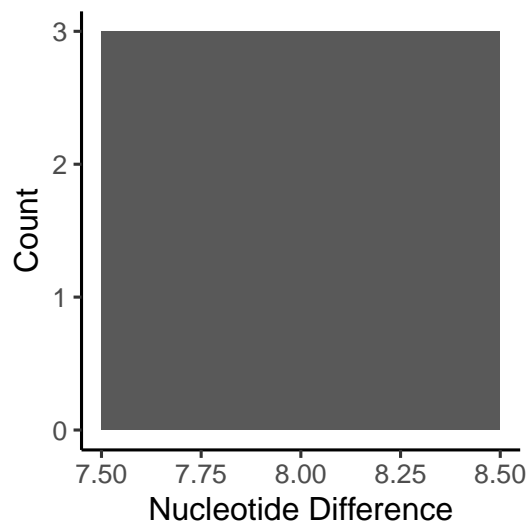
### IGHV3-53\*04

1098 sequences assigned  
94 (8.6%) exact matches, in which:  
60 unique CDR3  
5 unique J



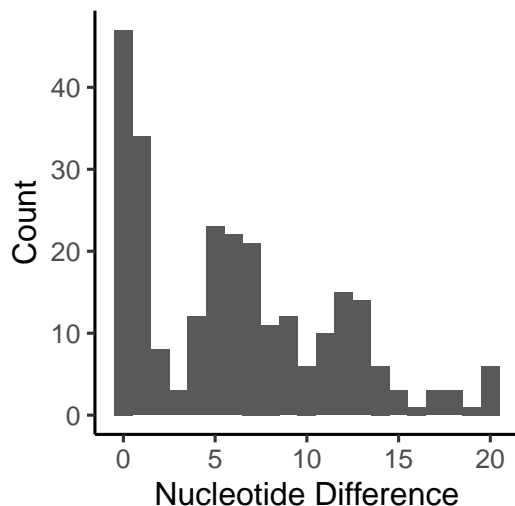
### IGHV3-62\*03

3 sequences assigned  
No exact matches.



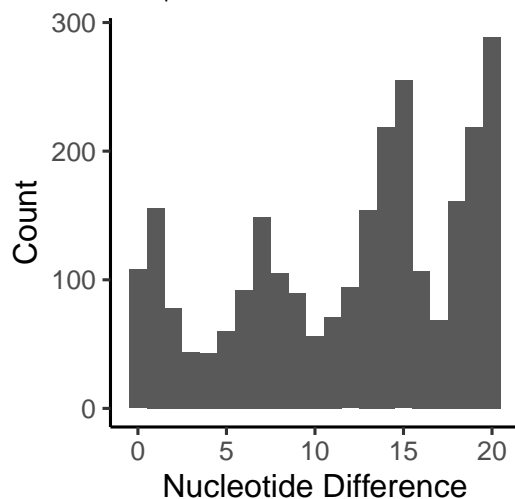
### IGHV3-64\*01

284 sequences assigned  
47 (16.5%) exact matches, in which:  
30 unique CDR3  
6 unique J



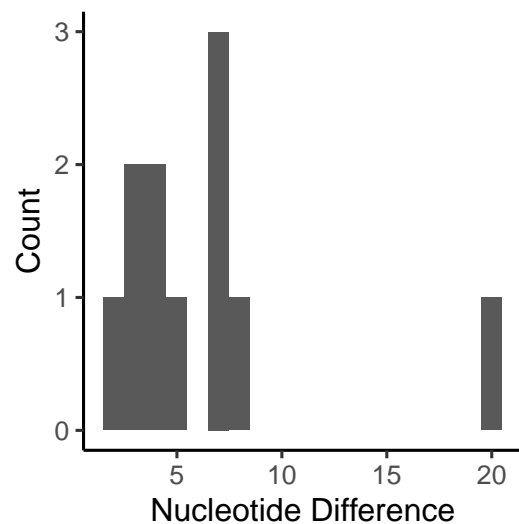
### IGHV3-66\*02

4066 sequences assigned  
108 (2.7%) exact matches, in which:  
74 unique CDR3  
5 unique J



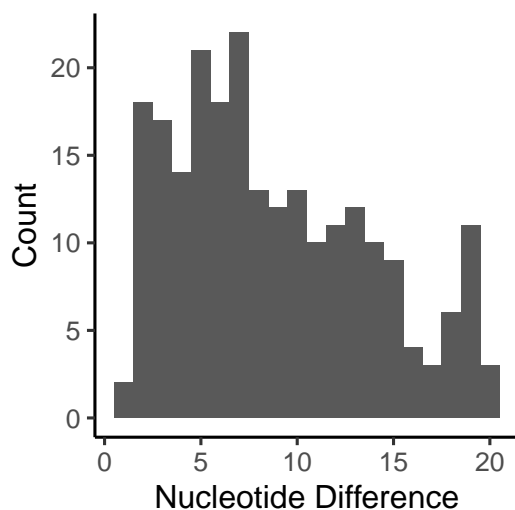
### IGHV3-69-1\*02

19 sequences assigned  
No exact matches.



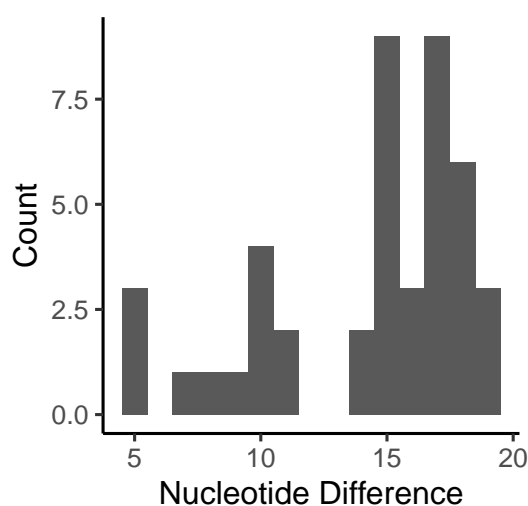
### IGHV3-64\*04

263 sequences assigned  
No exact matches.



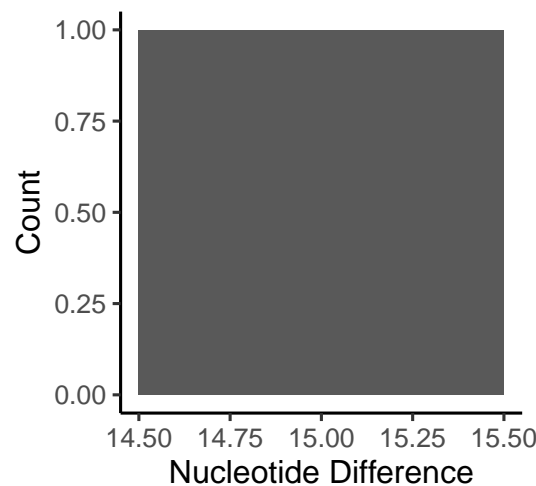
### IGHV3-66\*03

70 sequences assigned  
No exact matches.



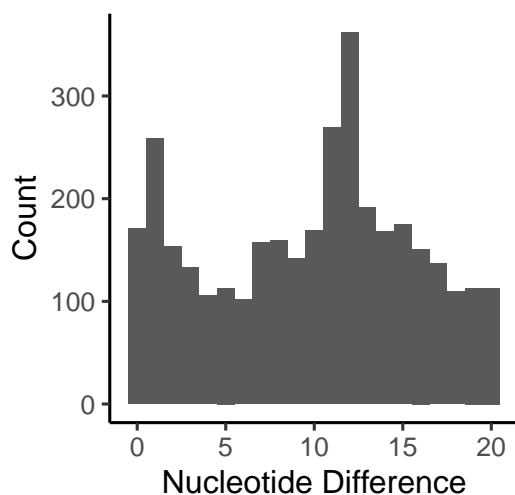
### IGHV3-71\*01\_04

1 sequences assigned  
No exact matches.



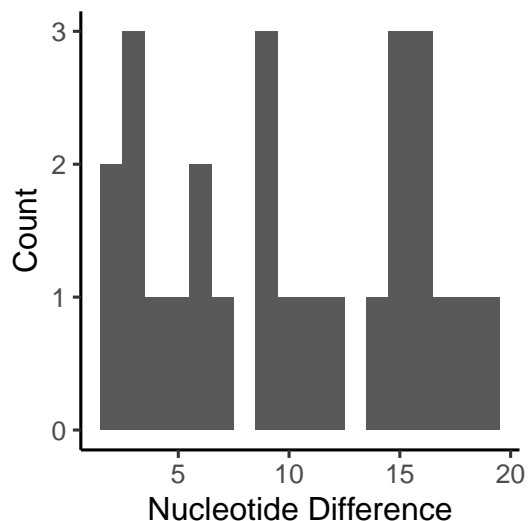
### IGHV3-66\*01

5288 sequences assigned  
171 (3.2%) exact matches, in which:  
118 unique CDR3  
6 unique J



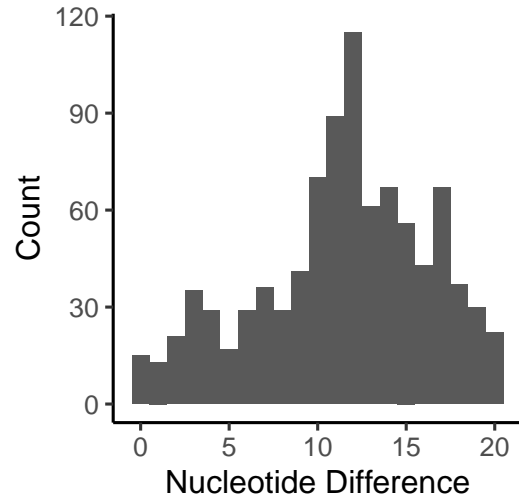
### IGHV3-69-1\*01

54 sequences assigned  
No exact matches.



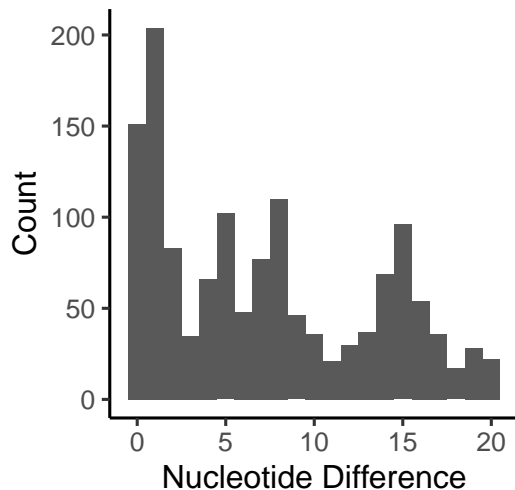
### IGHV3-72\*01

1660 sequences assigned  
15 (0.9%) exact matches, in which:  
11 unique CDR3  
3 unique J



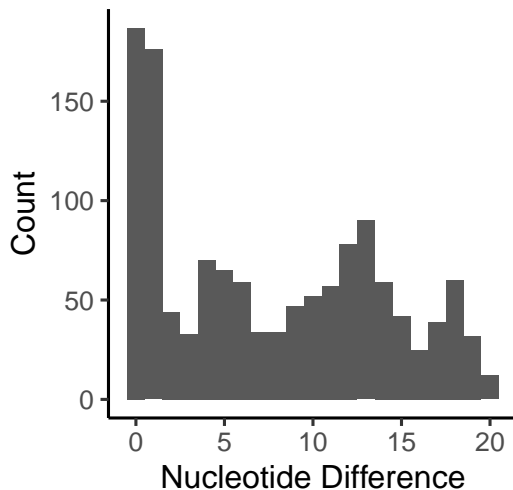
### IGHV3-73\*01\_02

1518 sequences assigned  
151 (9.9%) exact matches, in which:  
92 unique CDR3  
5 unique J



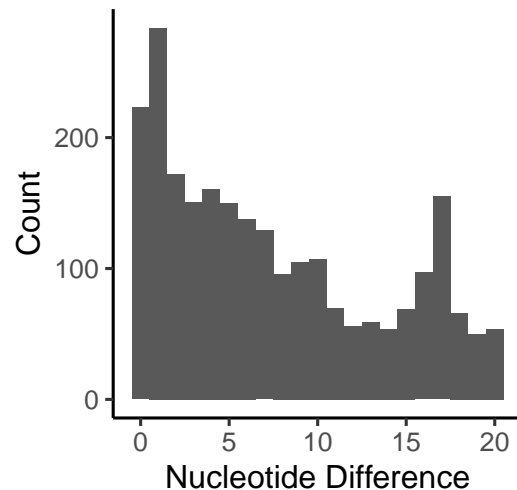
### IGHV3-64D\*06

1740 sequences assigned  
187 (10.7%) exact matches, in which:  
115 unique CDR3  
6 unique J



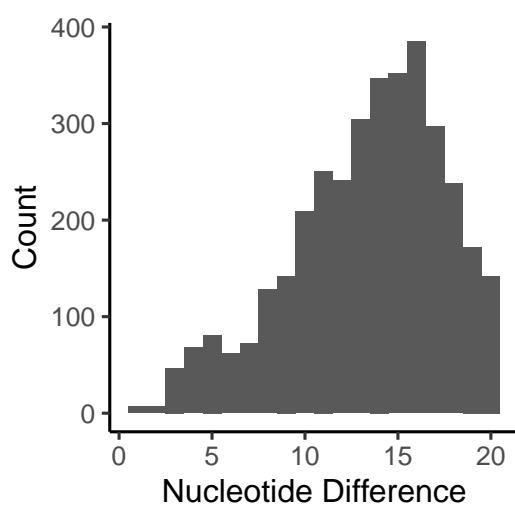
### IGHV4-4\*02\_03

2896 sequences assigned  
223 (7.7%) exact matches, in which:  
163 unique CDR3  
5 unique J



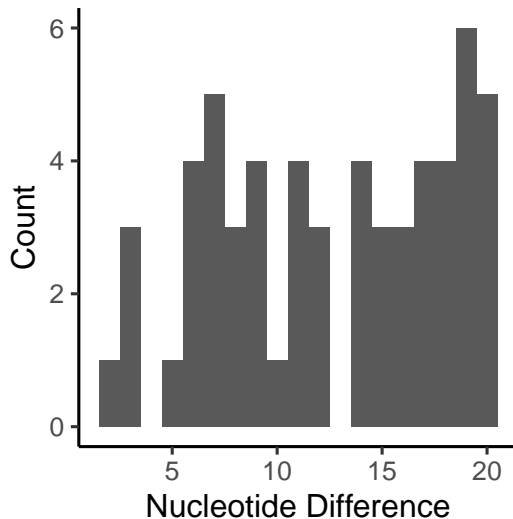
### IGHV3-74\*03

4987 sequences assigned  
No exact matches.



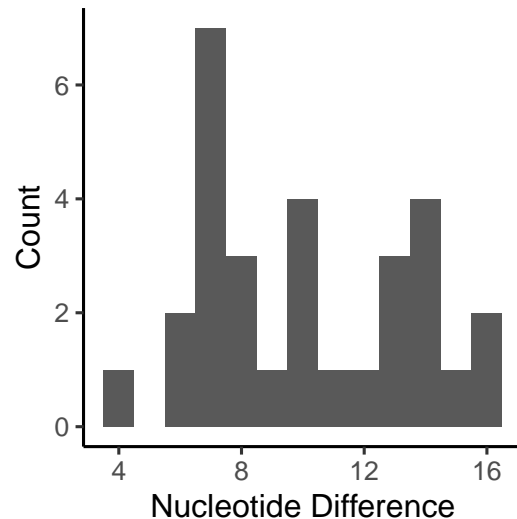
### IGHV3-NL1\*01

127 sequences assigned  
No exact matches.



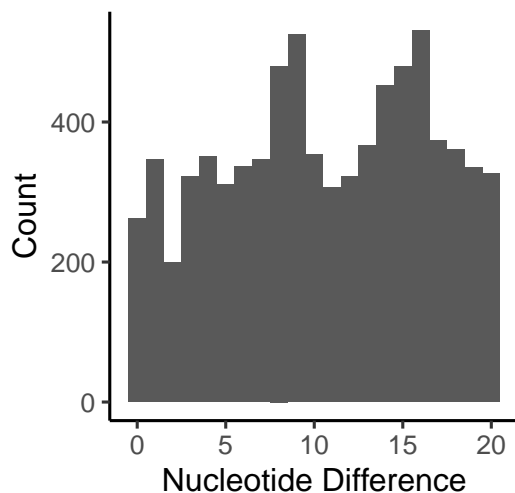
### IGHV4-28\*03

33 sequences assigned  
No exact matches.



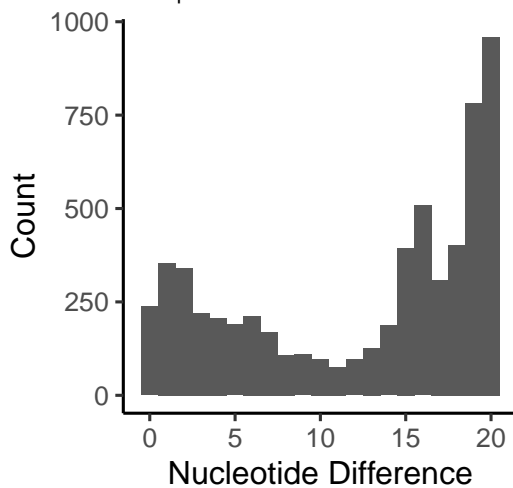
### IGHV3-74\*01\_02

8633 sequences assigned  
262 (3%) exact matches, in which:  
178 unique CDR3  
6 unique J



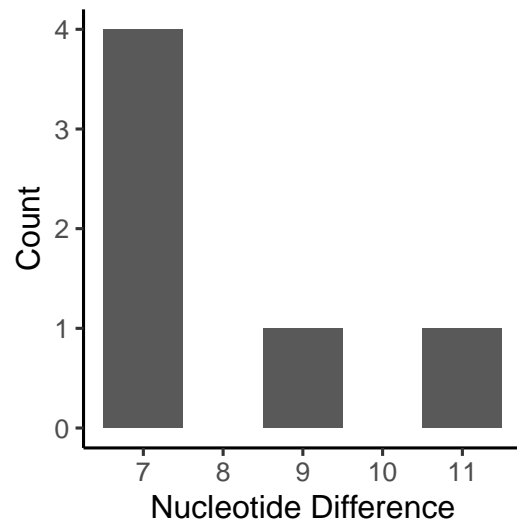
### IGHV4-4\*07

8771 sequences assigned  
238 (2.7%) exact matches, in which:  
190 unique CDR3  
6 unique J



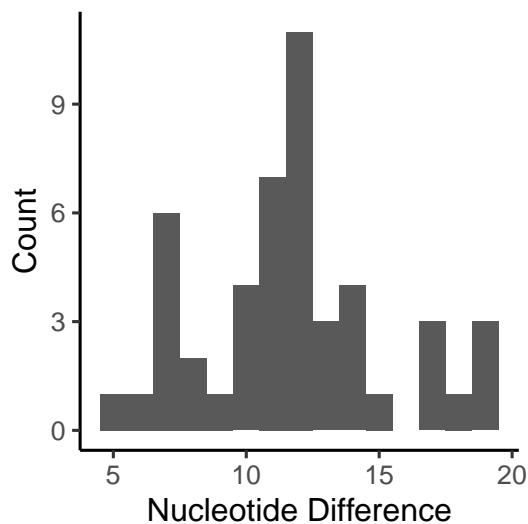
### IGHV4-28\*01\_07

23 sequences assigned  
No exact matches.



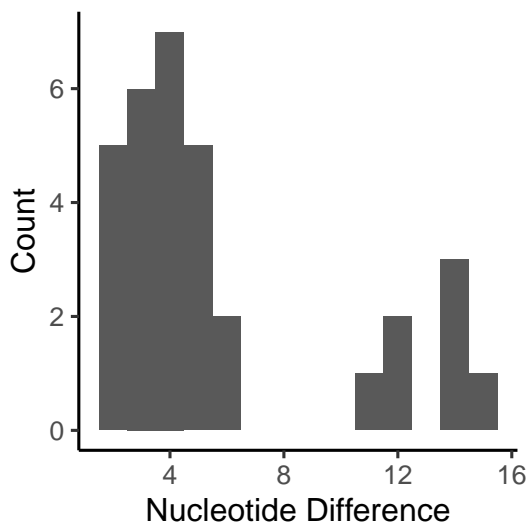
### IGHV4-30-4\*01

78 sequences assigned  
No exact matches.



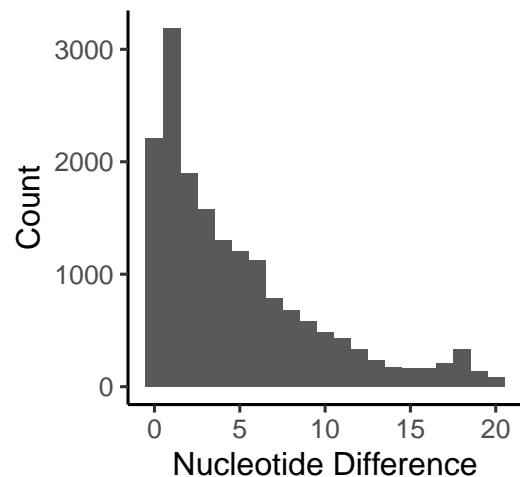
### IGHV4-30-2\*05

34 sequences assigned  
No exact matches.



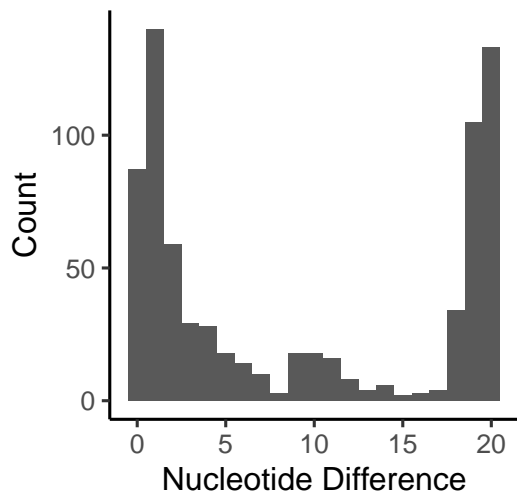
### IGHV4-34\*01\_02

18381 sequences assigned  
2213 (12%) exact matches, in which:  
1476 unique CDR3  
6 unique J



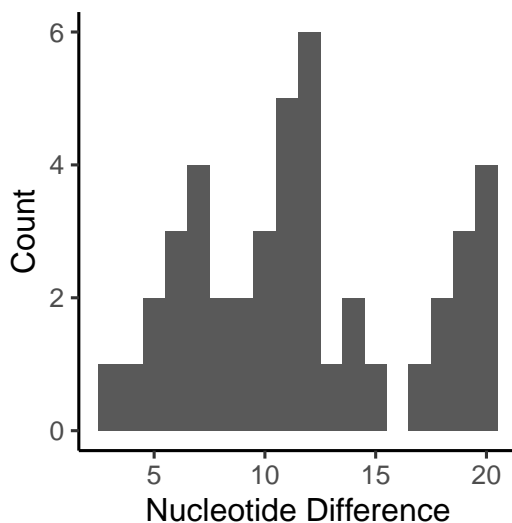
### IGHV4-30-2\*01

882 sequences assigned  
87 (9.9%) exact matches, in which:  
45 unique CDR3  
5 unique J



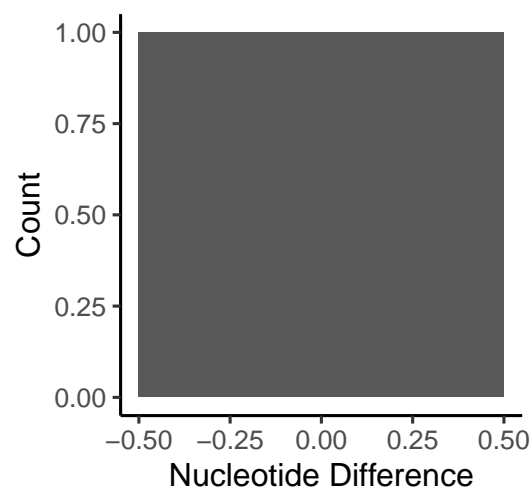
### IGHV4-30-4\*08

62 sequences assigned  
No exact matches.



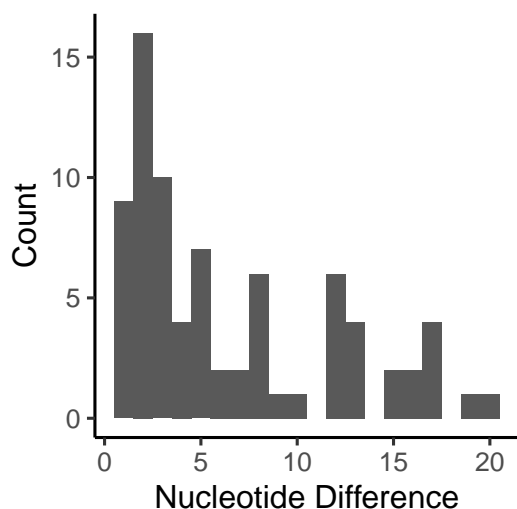
### IGHV4-38-2\*01

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



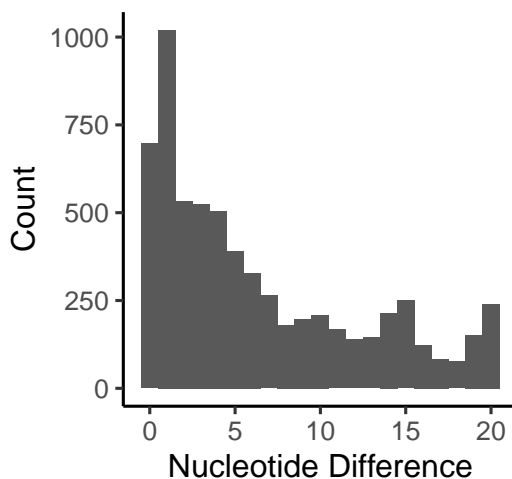
### IGHV4-30-2\*03

99 sequences assigned  
No exact matches.



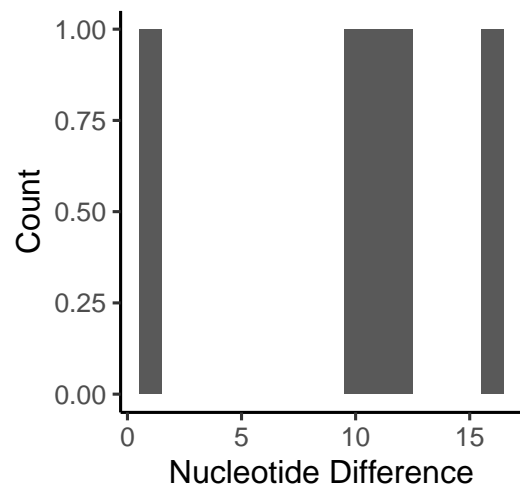
### IGHV4-31\*02

7886 sequences assigned  
697 (8.8%) exact matches, in which:  
555 unique CDR3  
6 unique J



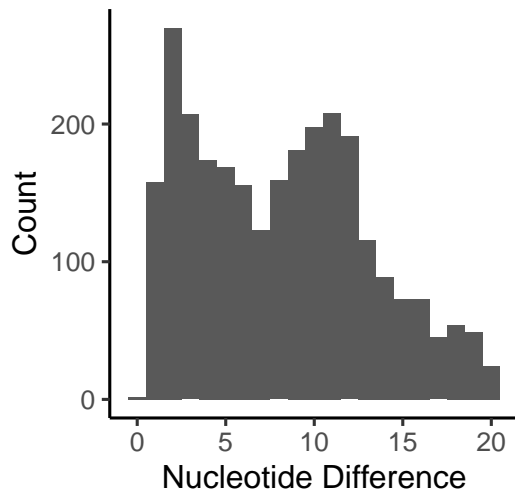
### IGHV4-38-2\*02

8 sequences assigned  
No exact matches.



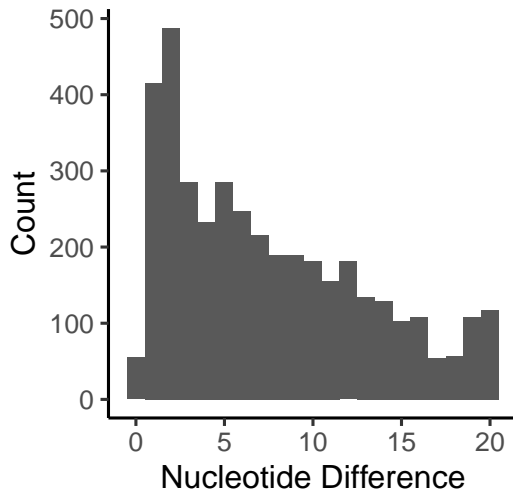
### IGHV4–39\*07

3089 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



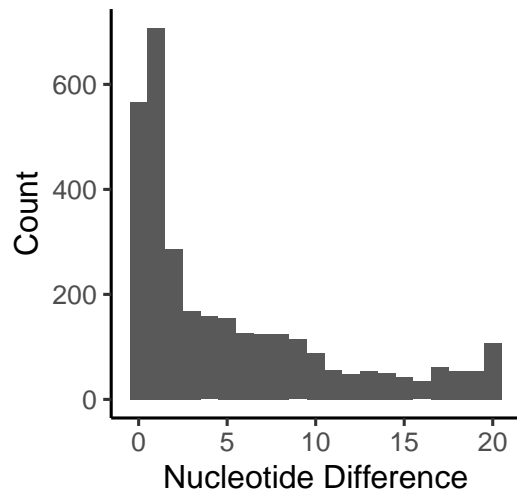
### IGHV4–59\*12

4319 sequences assigned  
55 (1.3%) exact matches, in which:  
54 unique CDR3  
4 unique J



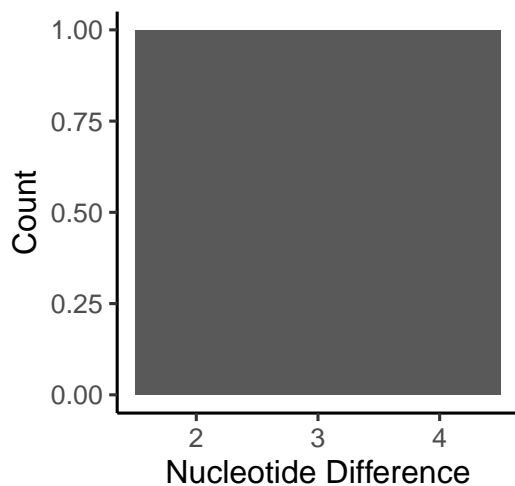
### IGHV4–61\*02

5004 sequences assigned  
566 (11.3%) exact matches, in which:  
452 unique CDR3  
6 unique J



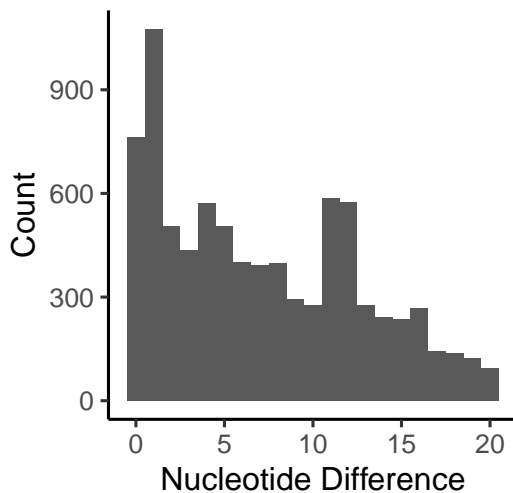
### IGHV4–55\*09

5 sequences assigned  
No exact matches.



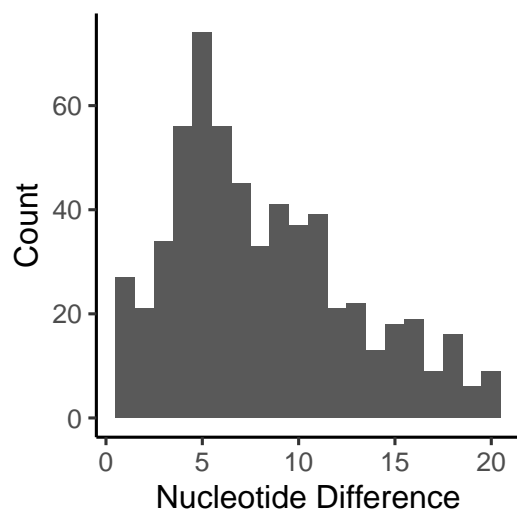
### IGHV4–59\*01\_07

9646 sequences assigned  
763 (7.9%) exact matches, in which:  
598 unique CDR3  
6 unique J



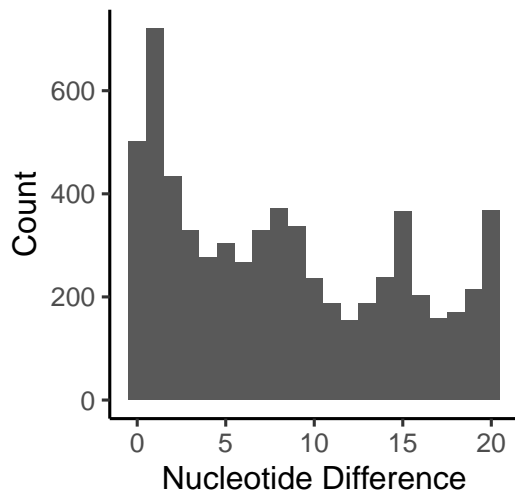
### IGHV4–61\*08

637 sequences assigned  
No exact matches.



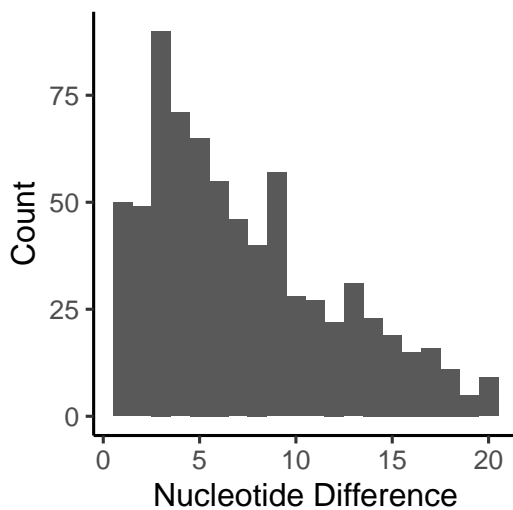
### IGHV4–59\*08

6950 sequences assigned  
501 (7.2%) exact matches, in which:  
375 unique CDR3  
6 unique J



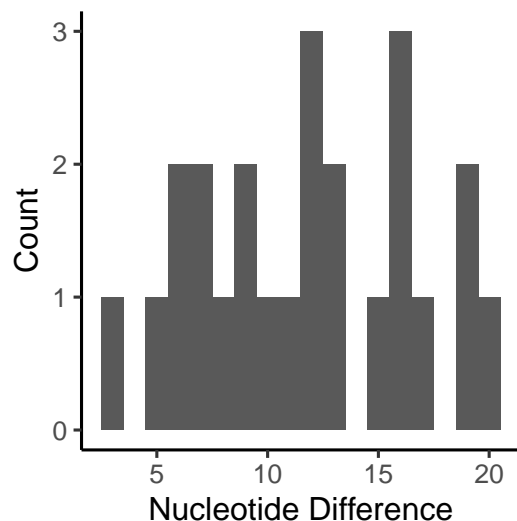
### IGHV4–61\*01

875 sequences assigned  
No exact matches.



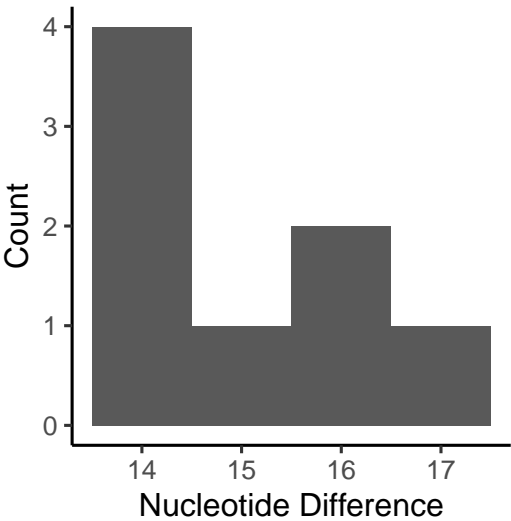
### IGHV4/OR15–8\*01

29 sequences assigned  
No exact matches.



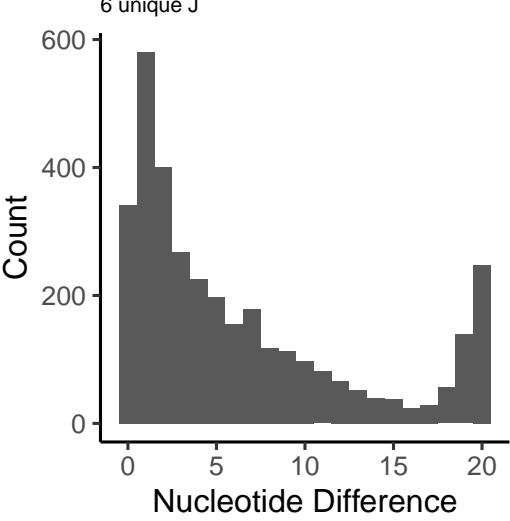
IGHV4/OR15–8\*02

34 sequences assigned  
No exact matches.



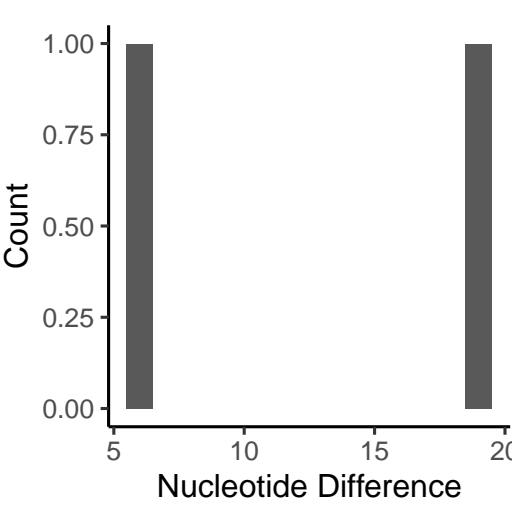
IGHV5–51\*07\_A128G\_C2

4144 sequences assigned  
341 (8.2%) exact matches, in which:  
233 unique CDR3  
6 unique J



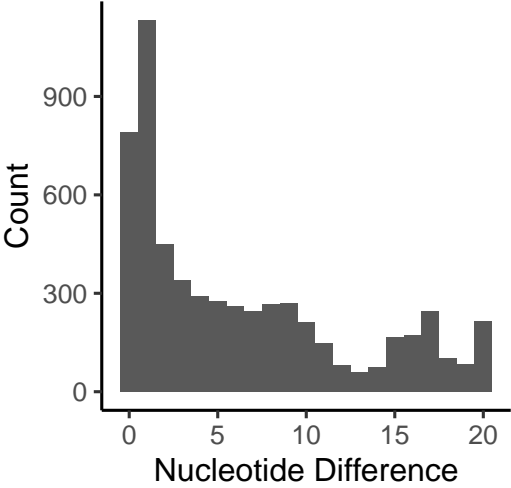
IGHV3/OR16–10\*01\_03

2 sequences assigned  
No exact matches.



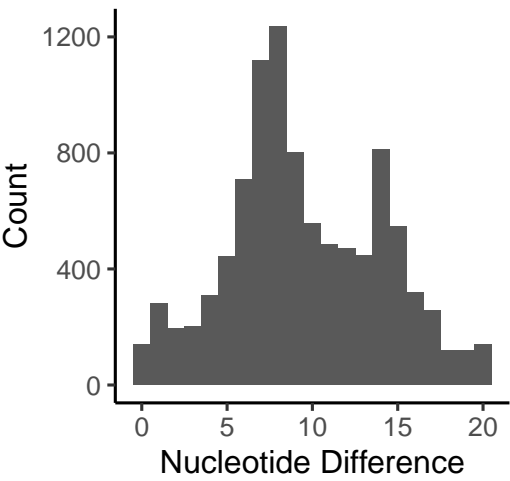
IGHV5–10–1\*01\_03

7690 sequences assigned  
790 (10.3%) exact matches, in which:  
470 unique CDR3  
6 unique J



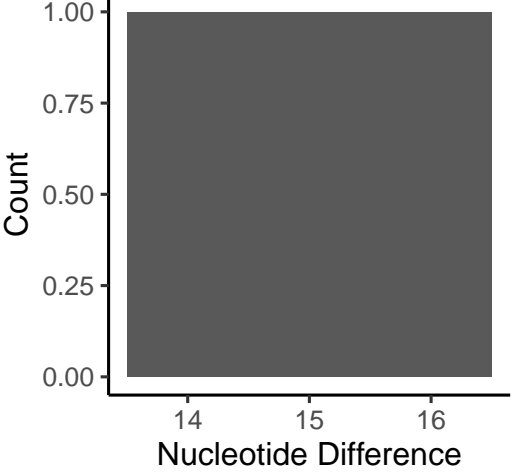
IGHV6–1\*01\_02

9961 sequences assigned  
140 (1.4%) exact matches, in which:  
112 unique CDR3  
5 unique J



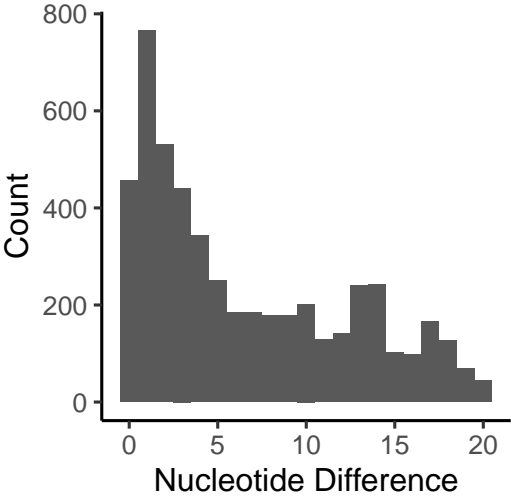
IGHV3/OR16–13\*01

3 sequences assigned  
No exact matches.



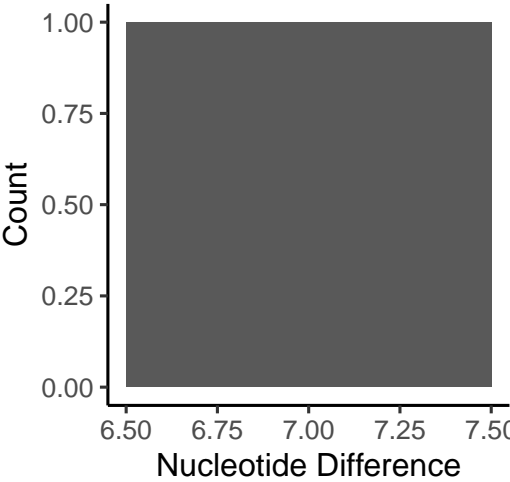
IGHV5–51\*01\_03

5763 sequences assigned  
457 (7.9%) exact matches, in which:  
259 unique CDR3  
6 unique J



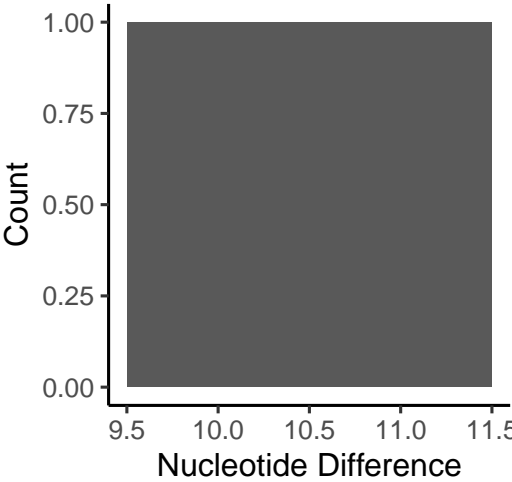
IGHV3/OR16–9\*01

1 sequences assigned  
No exact matches.

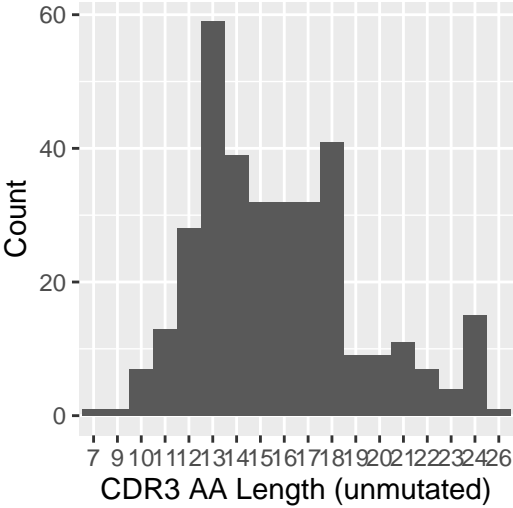


IGHV7–4–1\*02

2 sequences assigned  
No exact matches.



IGHV5-51\*07\_A128G\_C230A



Allele Usage

