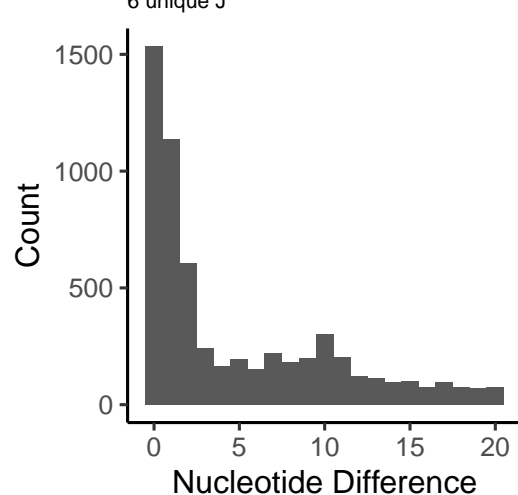


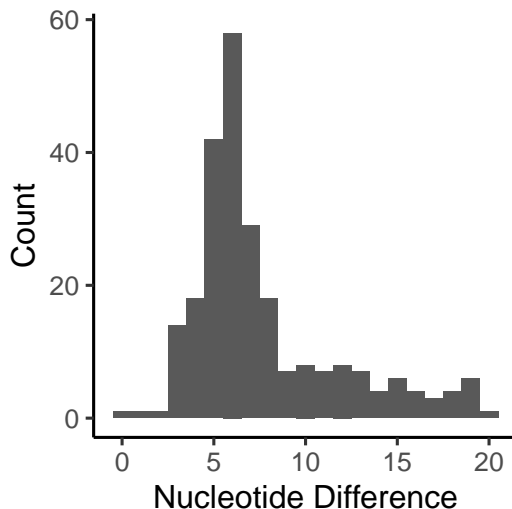
### IGHV1-2\*02

7267 sequences assigned  
1534 (21.1%) exact matches, in which:  
1431 unique CDR3  
6 unique J



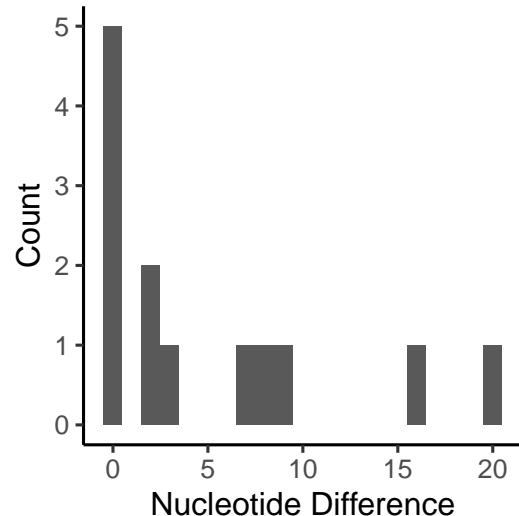
### IGHV1-8\*02

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



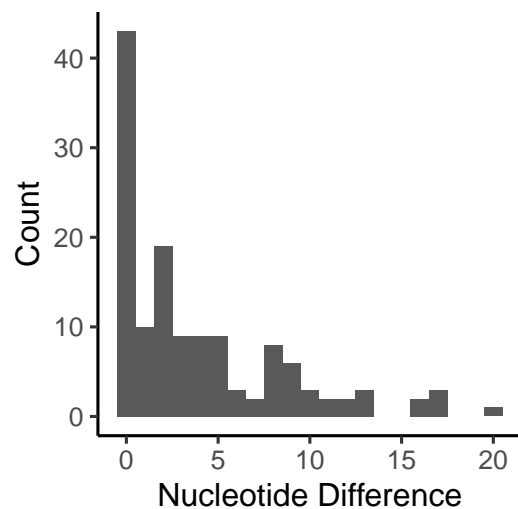
### IGHV1-45\*02

13 sequences assigned  
5 (38.5%) exact matches, in which:  
5 unique CDR3  
3 unique J



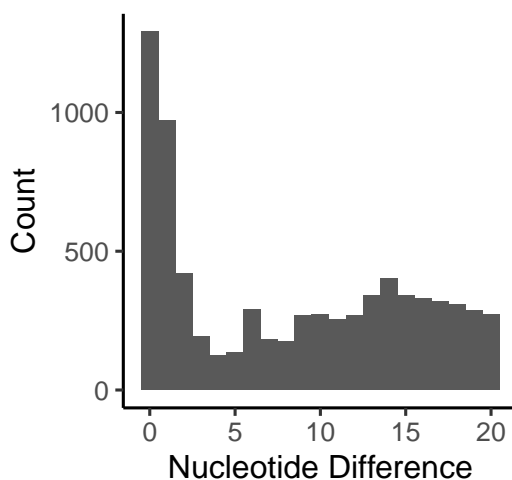
### IGHV1-3\*02

145 sequences assigned  
43 (29.7%) exact matches, in which:  
37 unique CDR3  
5 unique J



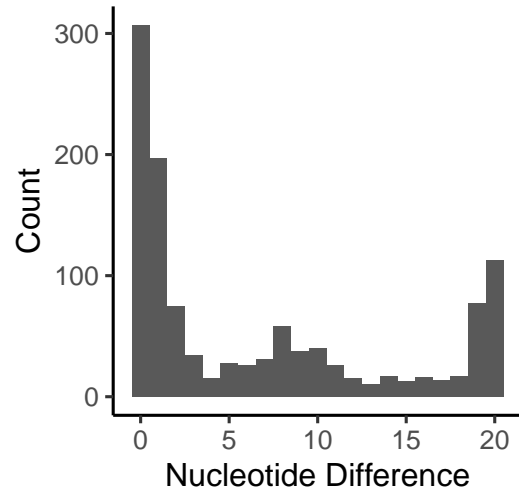
### IGHV1-18\*01

8946 sequences assigned  
1291 (14.4%) exact matches, in which:  
1201 unique CDR3  
6 unique J



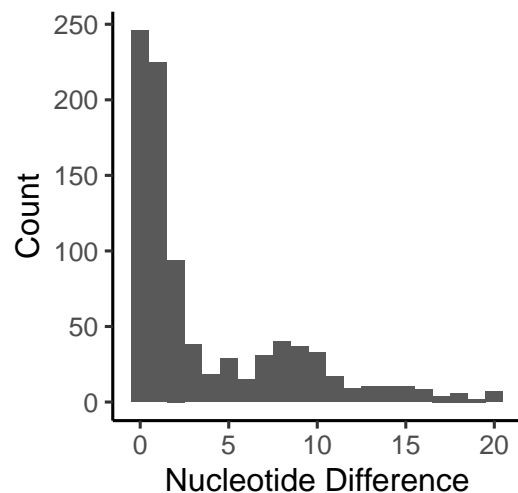
### IGHV1-46\*01

1343 sequences assigned  
307 (22.9%) exact matches, in which:  
297 unique CDR3  
6 unique J



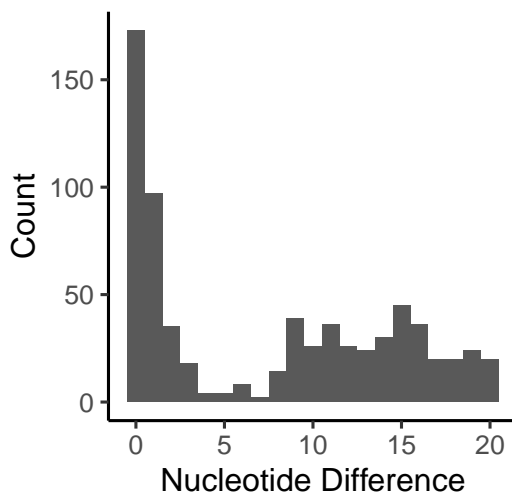
### IGHV1-8\*01

913 sequences assigned  
246 (26.9%) exact matches, in which:  
240 unique CDR3  
5 unique J



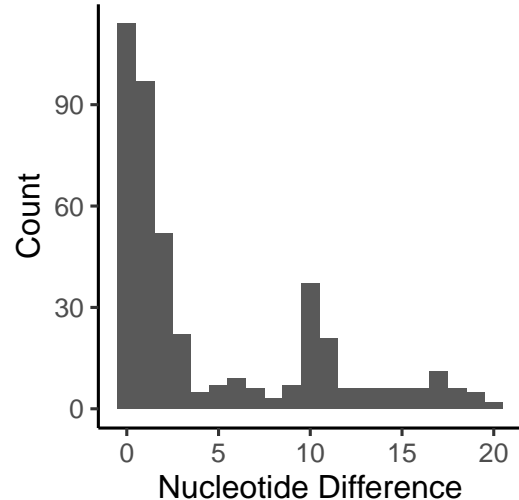
### IGHV1-24\*01

876 sequences assigned  
173 (19.7%) exact matches, in which:  
171 unique CDR3  
6 unique J



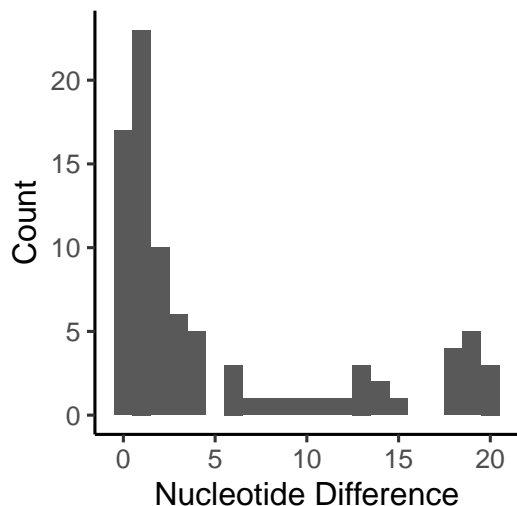
### IGHV1-46\*03

451 sequences assigned  
114 (25.3%) exact matches, in which:  
100 unique CDR3  
5 unique J



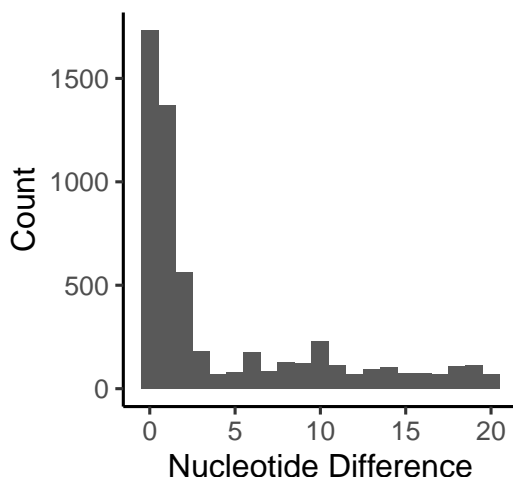
### IGHV1-58\*02

90 sequences assigned  
17 (18.9%) exact matches, in which:  
17 unique CDR3  
4 unique J



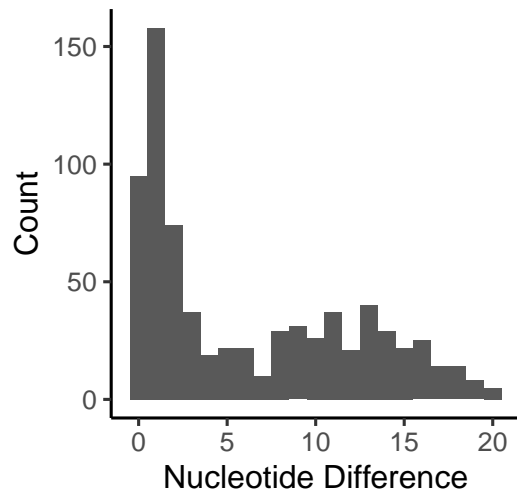
### IGHV1-69\*01\_12\_13

6282 sequences assigned  
1732 (27.6%) exact matches, in which:  
1616 unique CDR3  
6 unique J



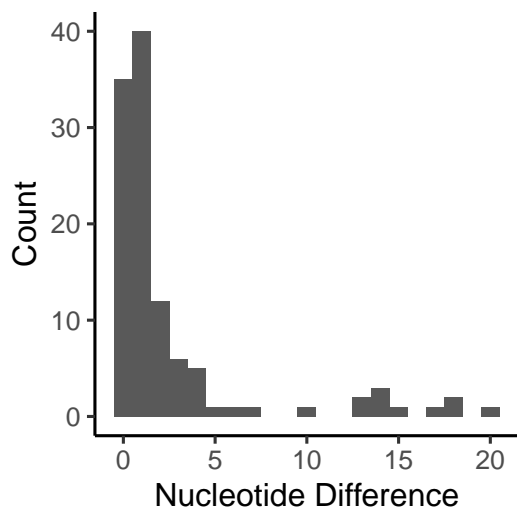
### IGHV2-5\*02

779 sequences assigned  
95 (12.2%) exact matches, in which:  
85 unique CDR3  
5 unique J



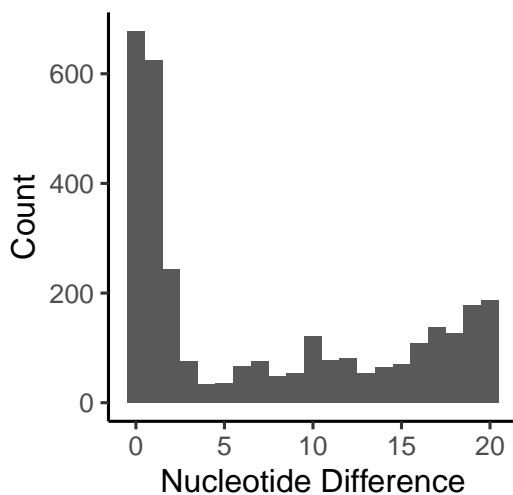
### IGHV1-58\*01\_03

129 sequences assigned  
35 (27.1%) exact matches, in which:  
34 unique CDR3  
5 unique J



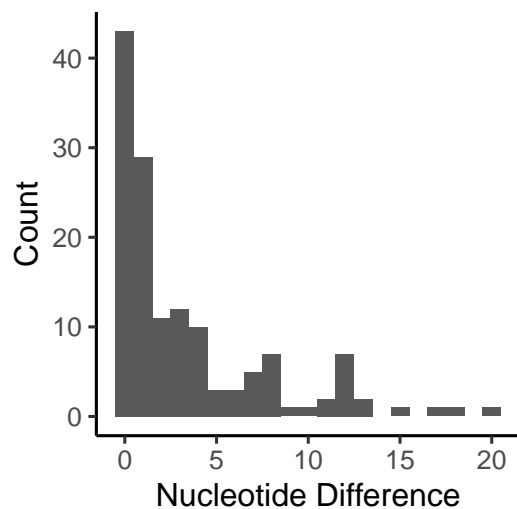
### IGHV1-69\*10

4278 sequences assigned  
678 (15.8%) exact matches, in which:  
648 unique CDR3  
6 unique J



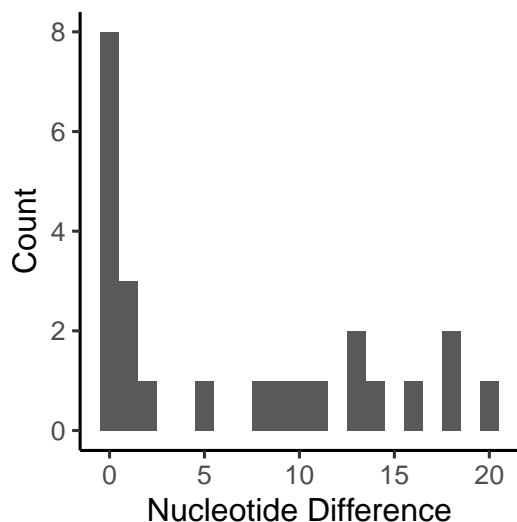
### IGHV2-26\*01

140 sequences assigned  
43 (30.7%) exact matches, in which:  
39 unique CDR3  
5 unique J



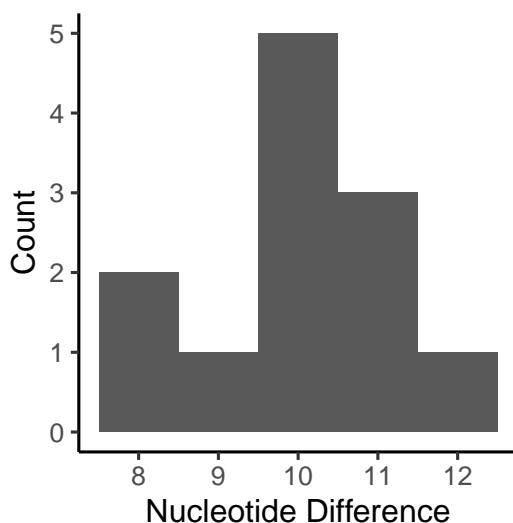
### IGHV1-69-2\*01

34 sequences assigned  
8 (23.5%) exact matches, in which:  
8 unique CDR3  
2 unique J



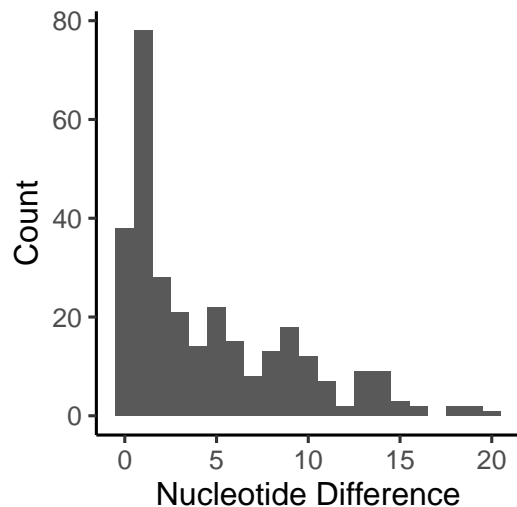
### IGHV1-NL1\*01

12 sequences assigned  
No exact matches.



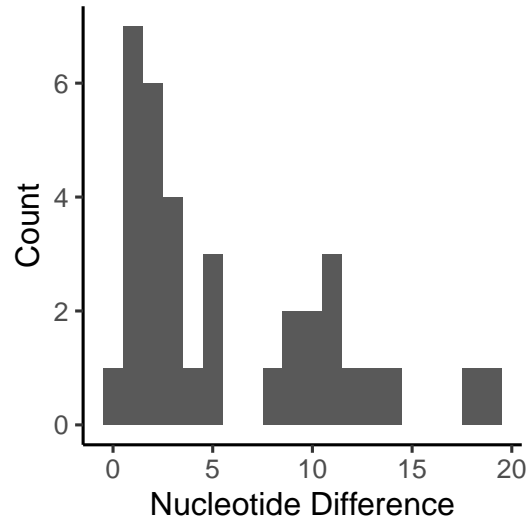
### IGHV2-70\*01

308 sequences assigned  
38 (12.3%) exact matches, in which:  
34 unique CDR3  
4 unique J



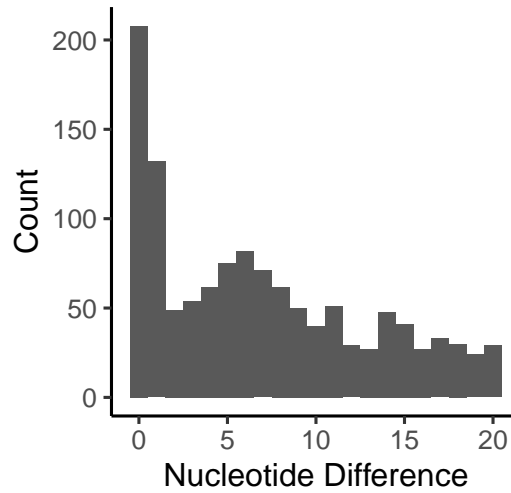
## IGHV2-70\*12

35 sequences assigned  
1 (2.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



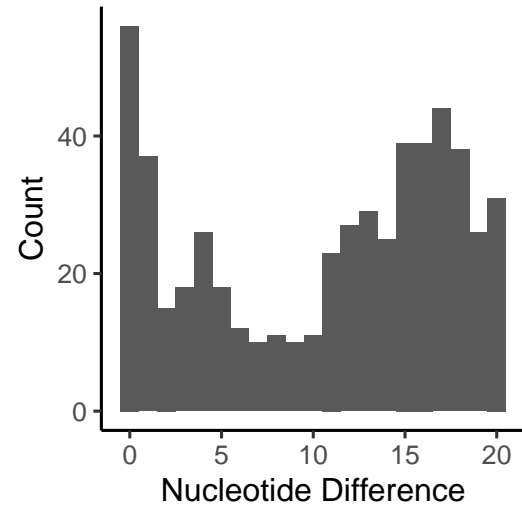
## IGHV3-9\*01

1442 sequences assigned  
208 (14.4%) exact matches, in which:  
159 unique CDR3  
6 unique J



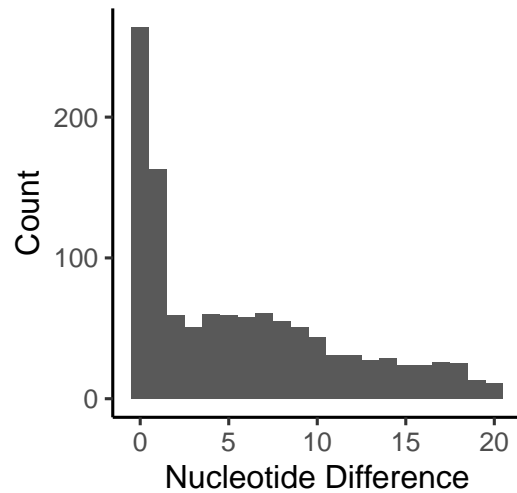
## IGHV3-11\*06

653 sequences assigned  
56 (8.6%) exact matches, in which:  
44 unique CDR3  
5 unique J



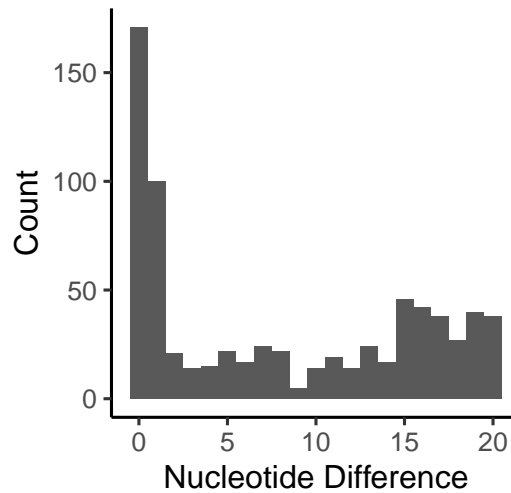
## IGHV3-7\*01

1222 sequences assigned  
264 (21.6%) exact matches, in which:  
236 unique CDR3  
6 unique J



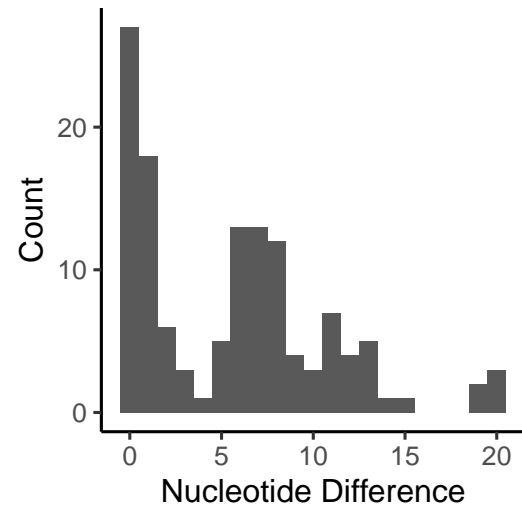
## IGHV3-11\*01

905 sequences assigned  
171 (18.9%) exact matches, in which:  
132 unique CDR3  
5 unique J



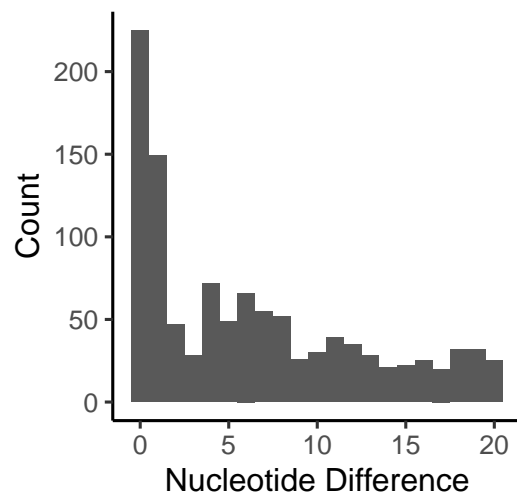
## IGHV3-13\*01

132 sequences assigned  
27 (20.5%) exact matches, in which:  
23 unique CDR3  
3 unique J



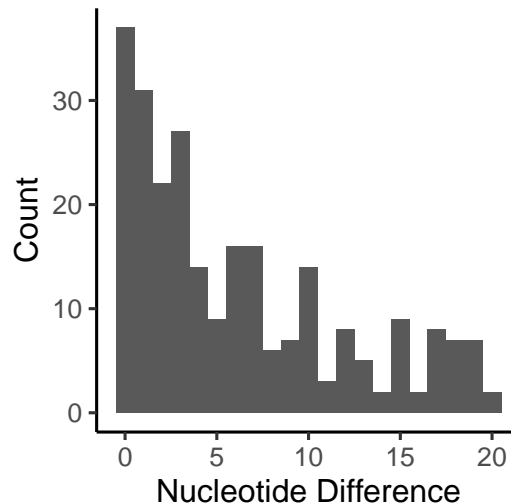
## IGHV3-7\*03

1284 sequences assigned  
225 (17.5%) exact matches, in which:  
188 unique CDR3  
6 unique J



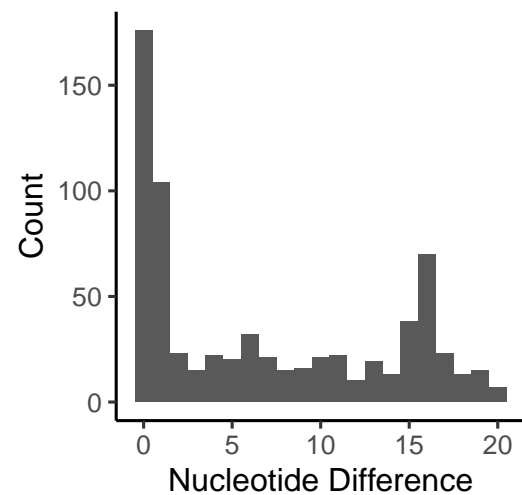
## IGHV3-11\*04

278 sequences assigned  
37 (13.3%) exact matches, in which:  
36 unique CDR3  
4 unique J



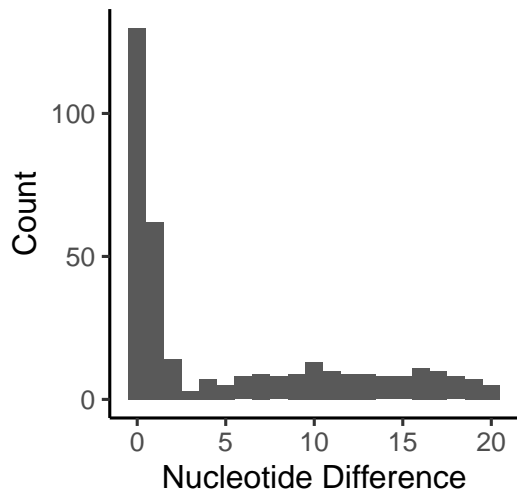
## IGHV3-15\*07

782 sequences assigned  
176 (22.5%) exact matches, in which:  
115 unique CDR3  
5 unique J



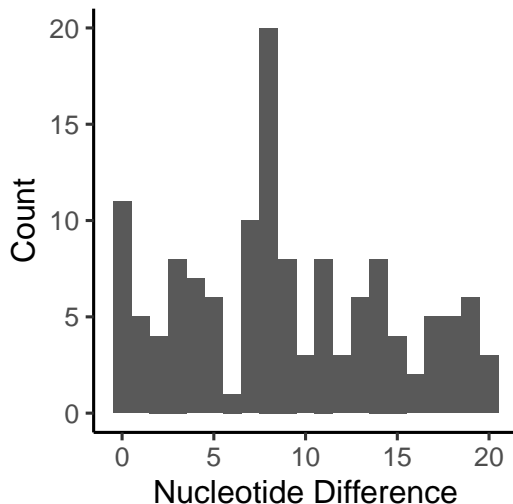
### IGHV3-15\*01\_02

433 sequences assigned  
130 (30%) exact matches, in which:  
89 unique CDR3  
5 unique J



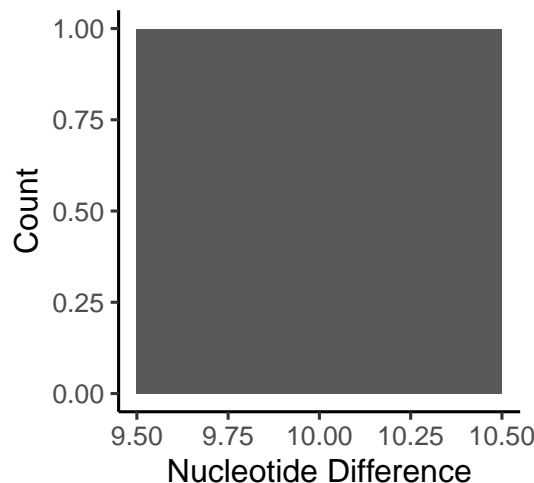
### IGHV3-20\*03\_04

144 sequences assigned  
11 (7.6%) exact matches, in which:  
9 unique CDR3  
2 unique J



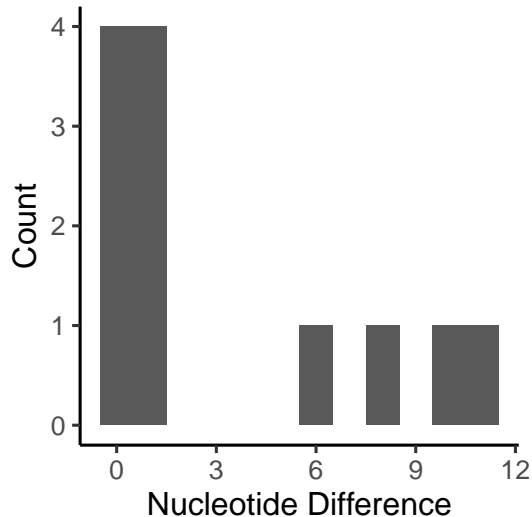
### IGHV3-22\*01\_02

1 sequences assigned  
No exact matches.



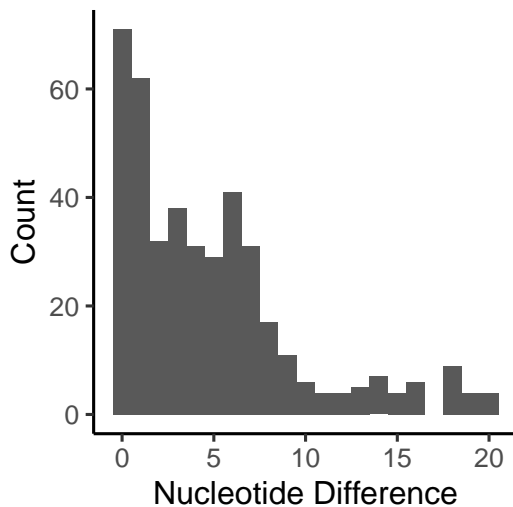
### IGHV3-19\*01

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



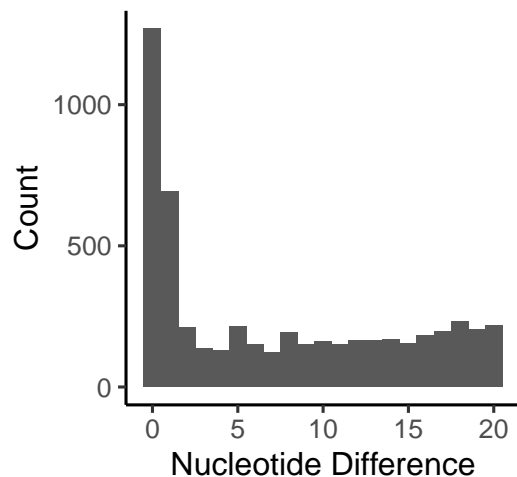
### IGHV3-21\*04

458 sequences assigned  
71 (15.5%) exact matches, in which:  
68 unique CDR3  
5 unique J



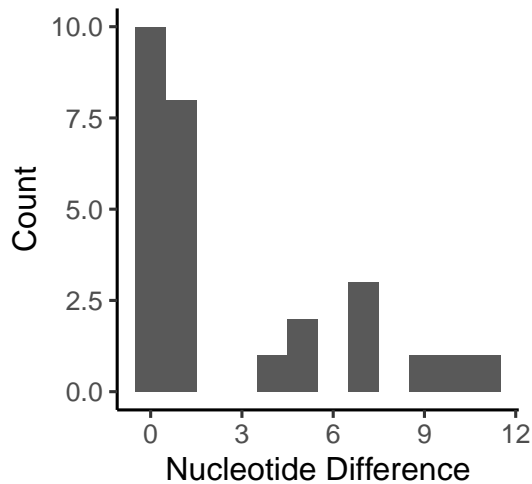
### IGHV3-23\*01\_04

6978 sequences assigned  
1269 (18.2%) exact matches, in which:  
1000 unique CDR3  
6 unique J



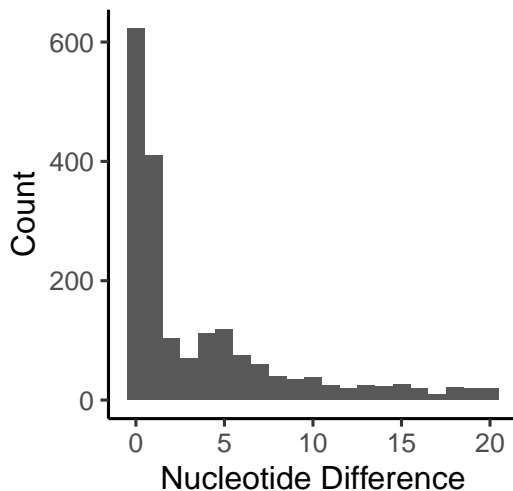
### IGHV3-20\*01\_02

27 sequences assigned  
10 (37%) exact matches, in which:  
8 unique CDR3  
3 unique J



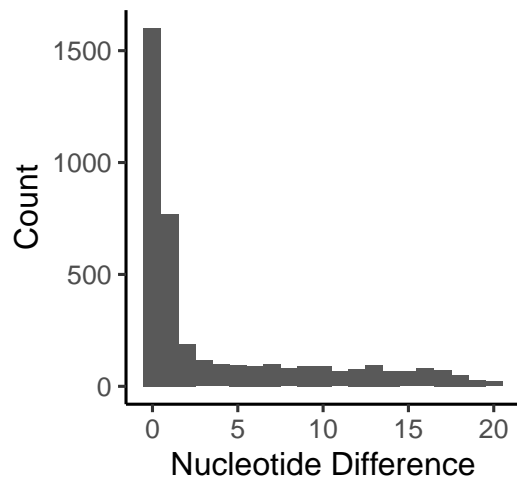
### IGHV3-21\*01\_02

2021 sequences assigned  
623 (30.8%) exact matches, in which:  
491 unique CDR3  
6 unique J



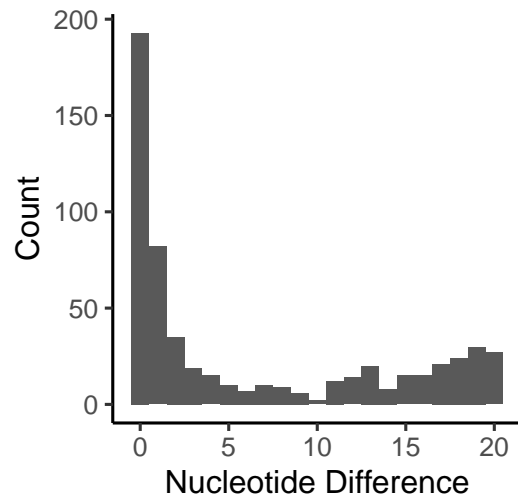
### IGHV3-30-3\*01

4100 sequences assigned  
1601 (39%) exact matches, in which:  
1254 unique CDR3  
6 unique J



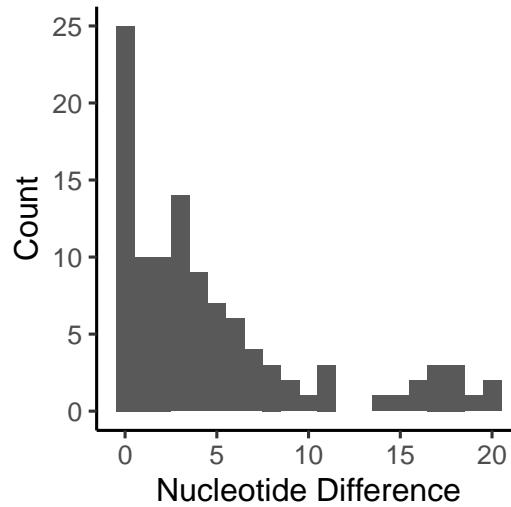
### IGHV3-30\*03

646 sequences assigned  
193 (29.9%) exact matches, in which:  
179 unique CDR3  
6 unique J



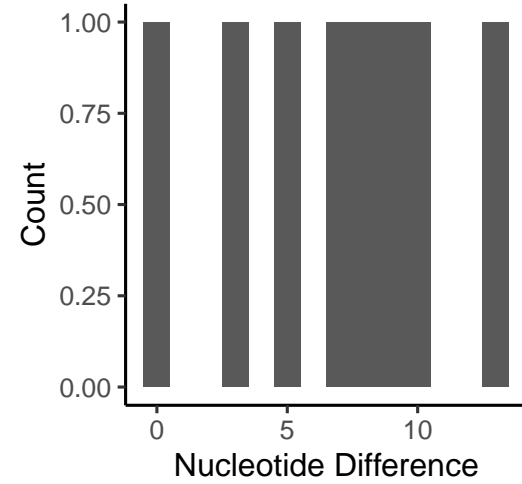
### IGHV3-33\*05

121 sequences assigned  
25 (20.7%) exact matches, in which:  
22 unique CDR3  
3 unique J



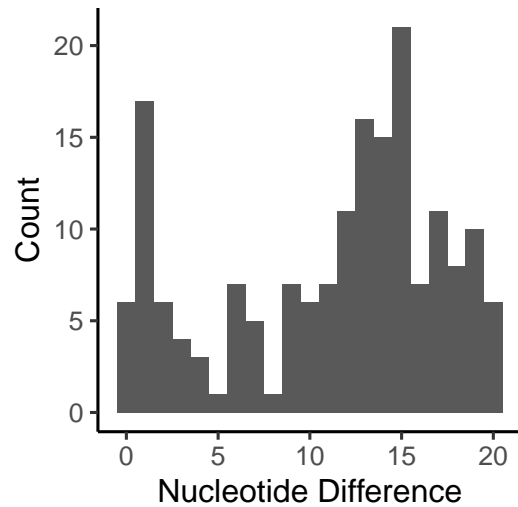
### IGHV3-35\*01

8 sequences assigned  
1 (12.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



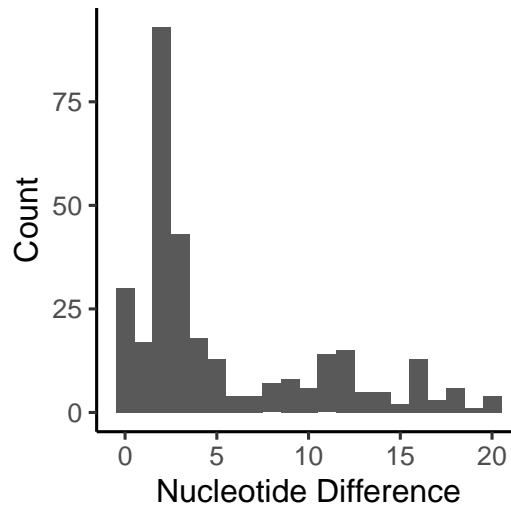
### IGHV3-30\*04

225 sequences assigned  
6 (2.7%) exact matches, in which:  
6 unique CDR3  
2 unique J



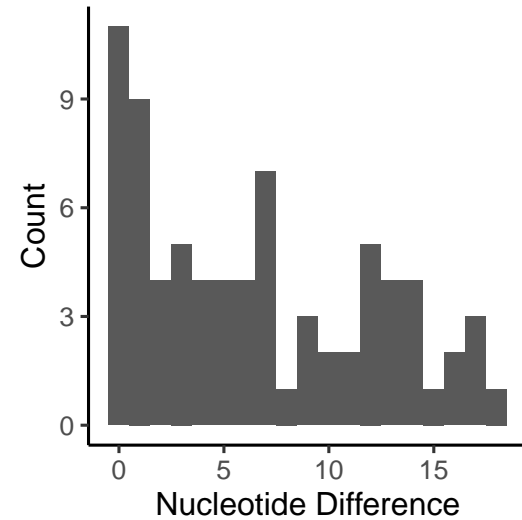
### IGHV3-33\*06

370 sequences assigned  
30 (8.1%) exact matches, in which:  
30 unique CDR3  
6 unique J



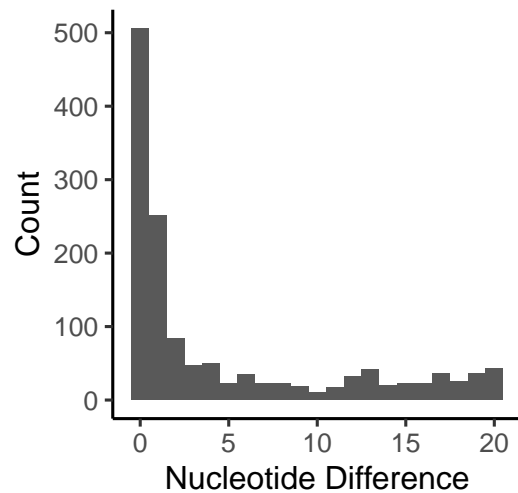
### IGHV3-43\*01

103 sequences assigned  
11 (10.7%) exact matches, in which:  
9 unique CDR3  
3 unique J



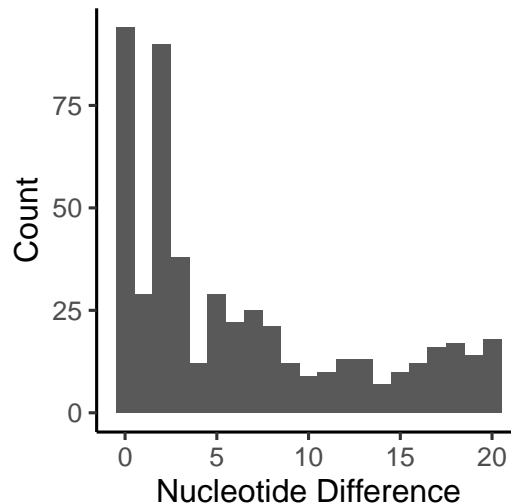
### IGHV3-33\*01

1665 sequences assigned  
506 (30.4%) exact matches, in which:  
402 unique CDR3  
6 unique J



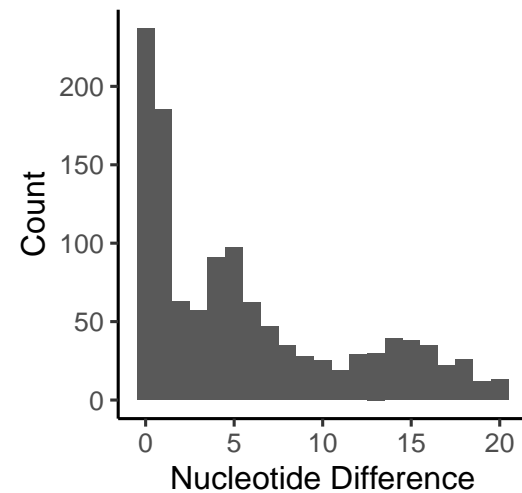
### IGHV3-33\*08

634 sequences assigned  
94 (14.8%) exact matches, in which:  
84 unique CDR3  
5 unique J



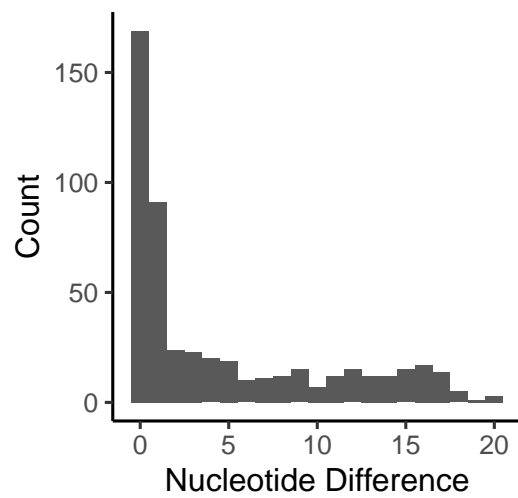
### IGHV3-48\*01

1240 sequences assigned  
237 (19.1%) exact matches, in which:  
193 unique CDR3  
6 unique J



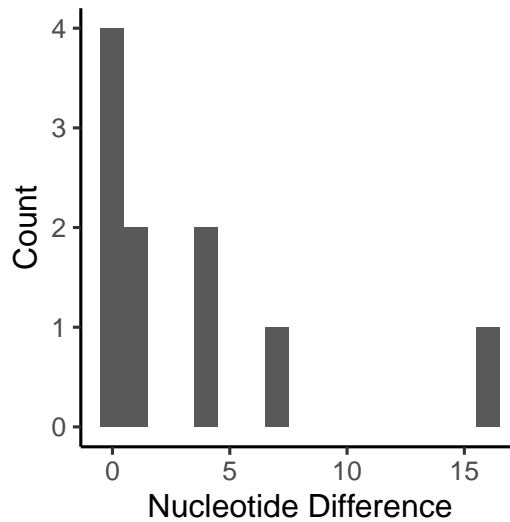
### IGHV3-48\*02

544 sequences assigned  
169 (31.1%) exact matches, in which:  
130 unique CDR3  
5 unique J



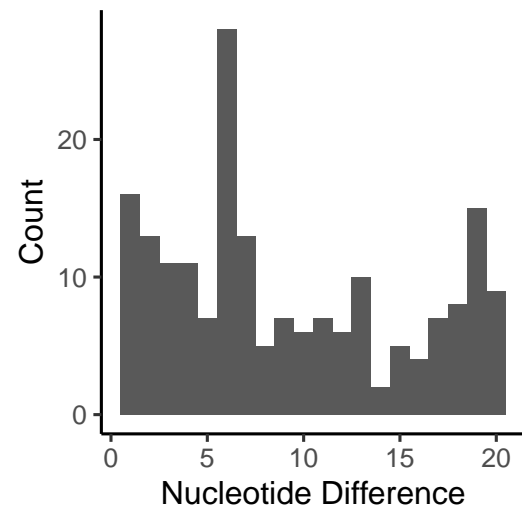
### IGHV3-52\*01\_03

10 sequences assigned  
4 (40%) exact matches, in which:  
3 unique CDR3  
1 unique J



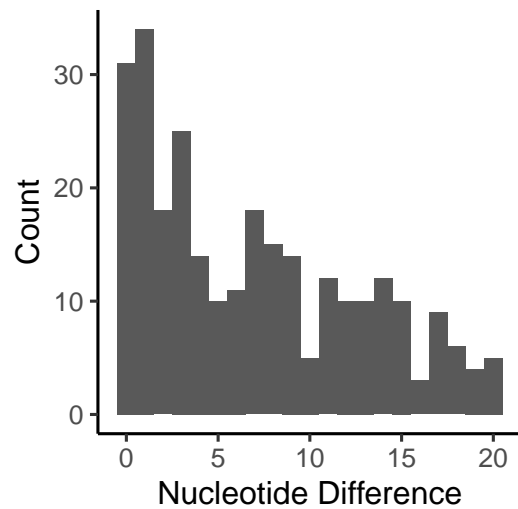
### IGHV3-64\*04

225 sequences assigned  
No exact matches.



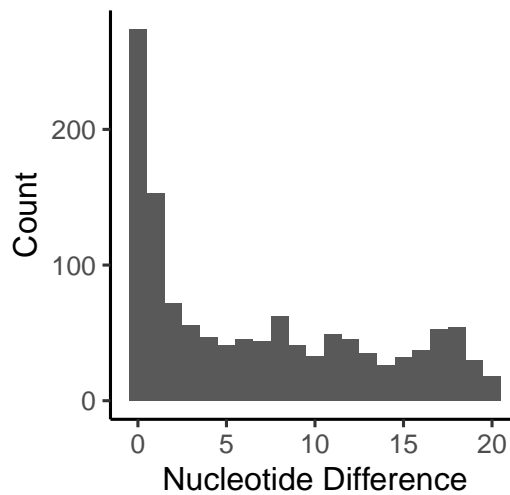
### IGHV3-48\*04

311 sequences assigned  
31 (10%) exact matches, in which:  
30 unique CDR3  
3 unique J



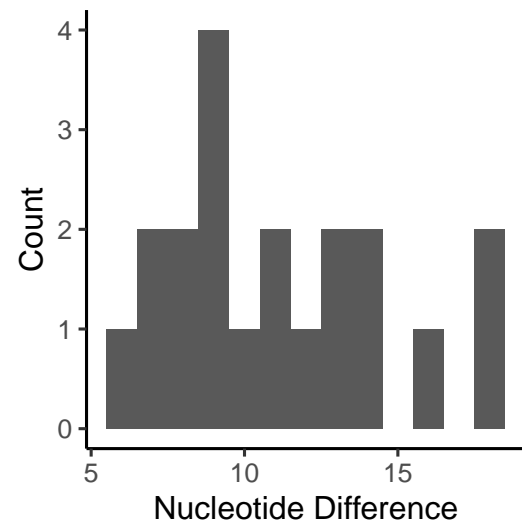
### IGHV3-53\*01\_02

1427 sequences assigned  
274 (19.2%) exact matches, in which:  
225 unique CDR3  
6 unique J



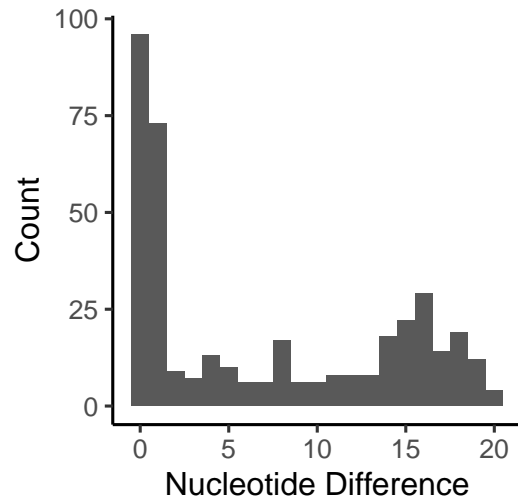
### IGHV3-66\*01

25 sequences assigned  
No exact matches.



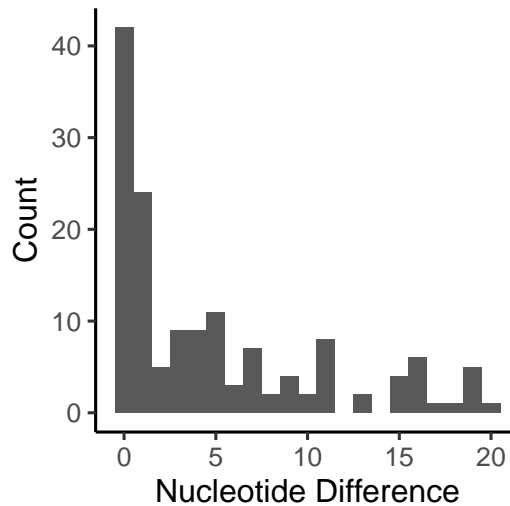
### IGHV3-49\*03\_05

477 sequences assigned  
96 (20.1%) exact matches, in which:  
70 unique CDR3  
4 unique J



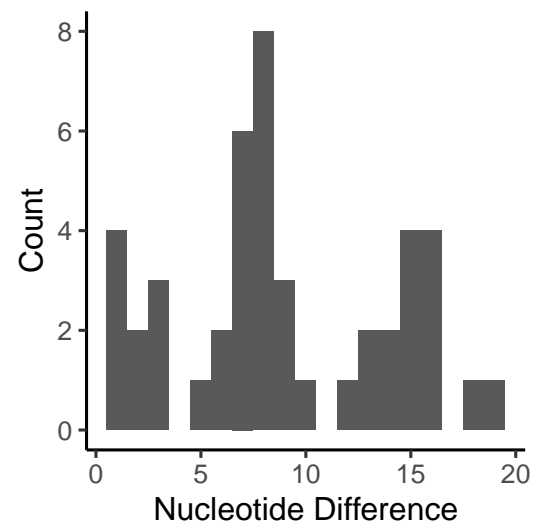
### IGHV3-64\*01

184 sequences assigned  
42 (22.8%) exact matches, in which:  
29 unique CDR3  
5 unique J



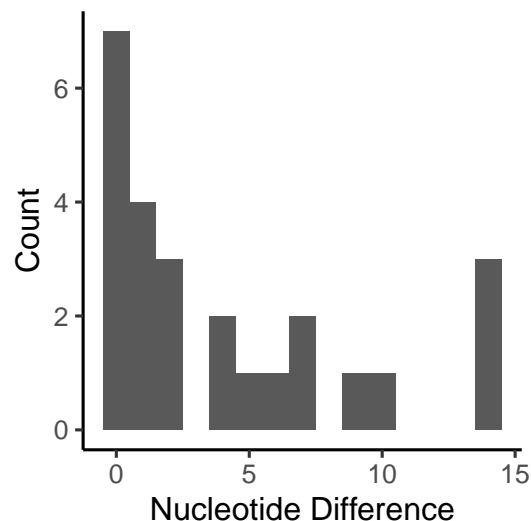
### IGHV3-66\*02

52 sequences assigned  
No exact matches.



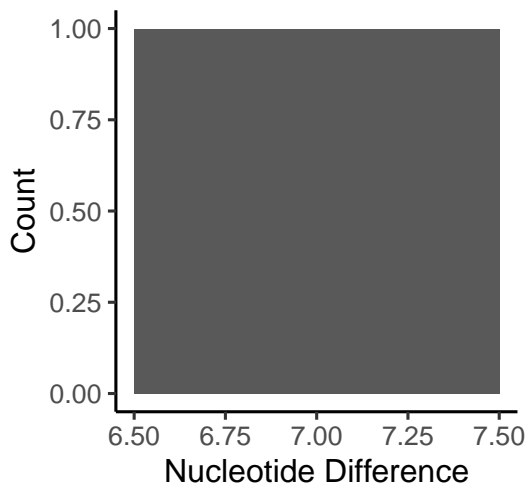
### IGHV3-66\*03

30 sequences assigned  
7 (23.3%) exact matches, in which:  
7 unique CDR3  
2 unique J



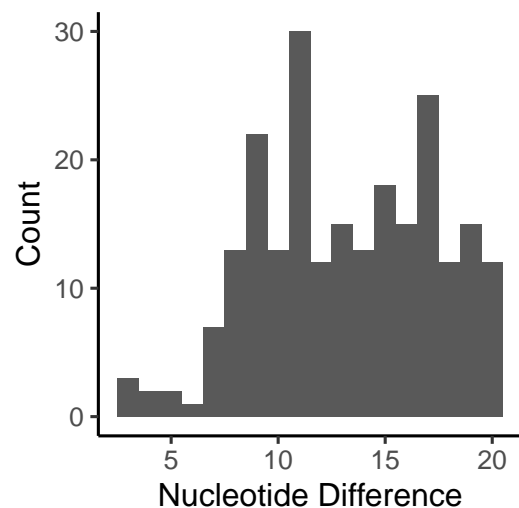
### IGHV3-71\*03

2 sequences assigned  
No exact matches.



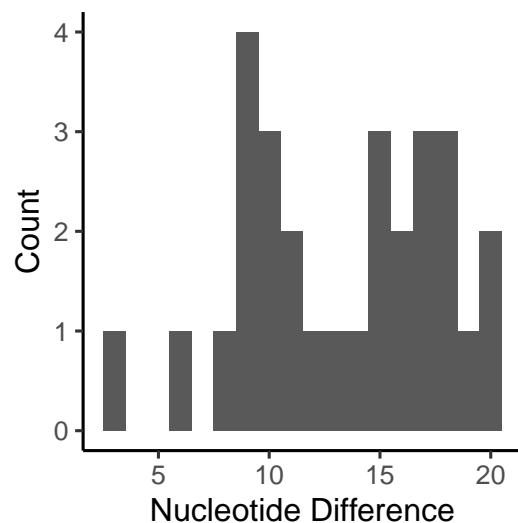
### IGHV3-74\*03

364 sequences assigned  
No exact matches.



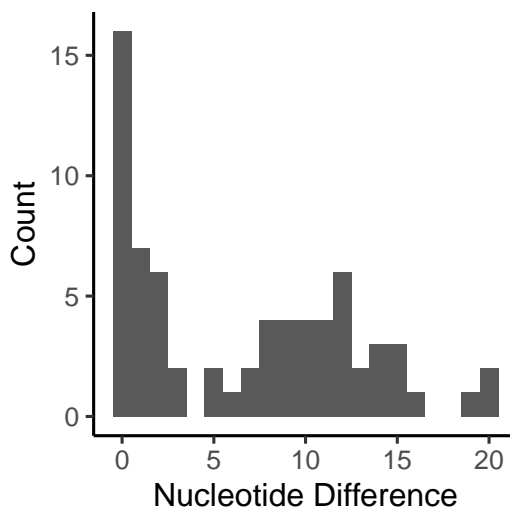
### IGHV3-66\*04

39 sequences assigned  
No exact matches.



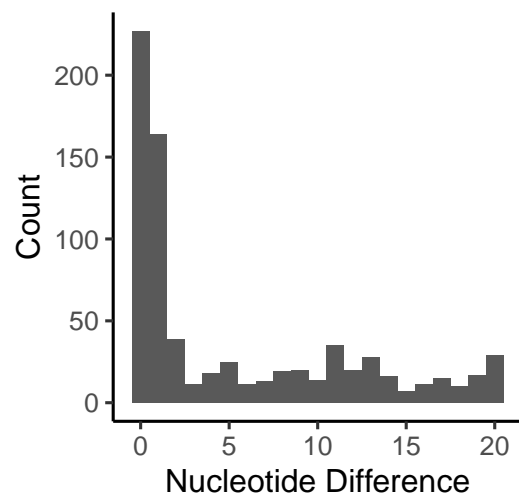
### IGHV3-72\*01

83 sequences assigned  
16 (19.3%) exact matches, in which:  
14 unique CDR3  
4 unique J



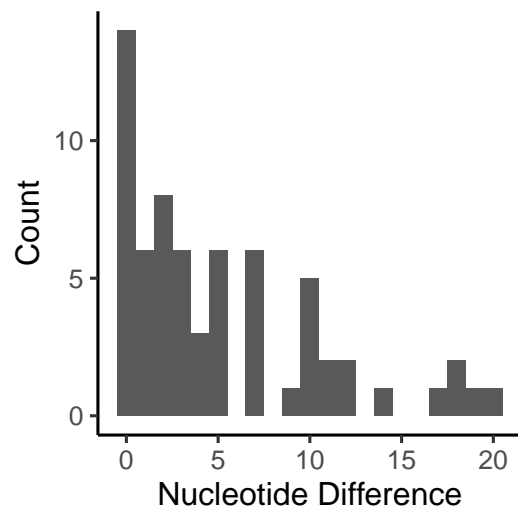
### IGHV3-74\*01\_02

863 sequences assigned  
227 (26.3%) exact matches, in which:  
176 unique CDR3  
6 unique J



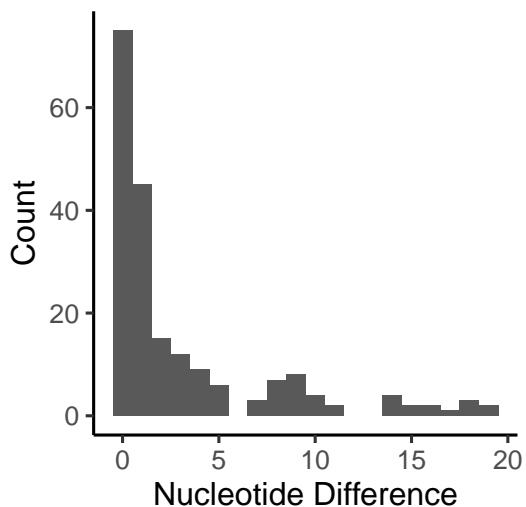
### IGHV3-69-1\*01

72 sequences assigned  
14 (19.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



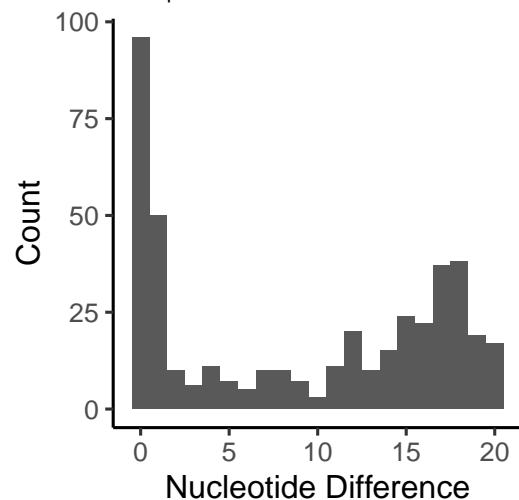
### IGHV3-73\*01\_02

207 sequences assigned  
75 (36.2%) exact matches, in which:  
53 unique CDR3  
4 unique J



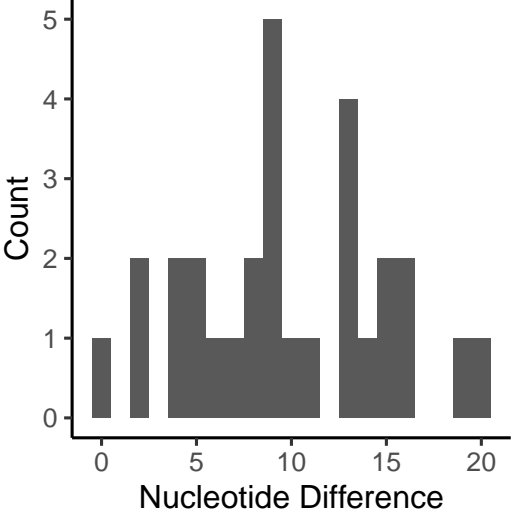
### IGHV3-64D\*06

854 sequences assigned  
96 (11.2%) exact matches, in which:  
66 unique CDR3  
5 unique J



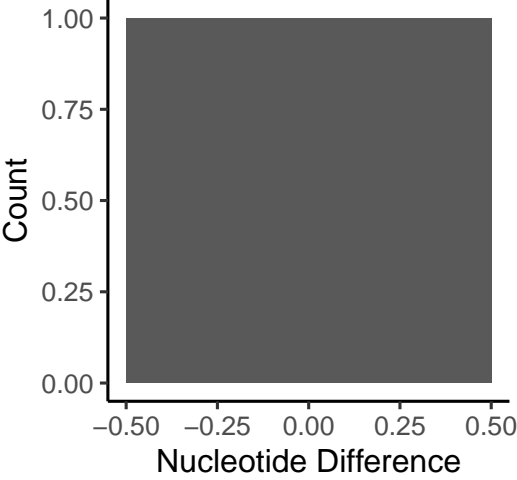
IGHV3–NL1\*01

43 sequences assigned  
1 (2.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



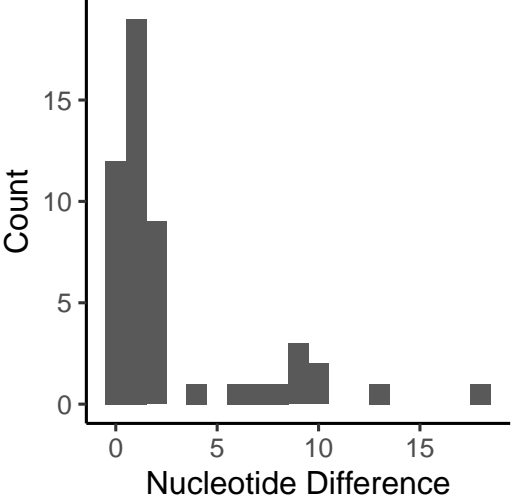
IGHV4–28\*01\_07

1 sequences assigned  
1 (100%) exact matches, in which:  
1 unique CDR3  
1 unique J



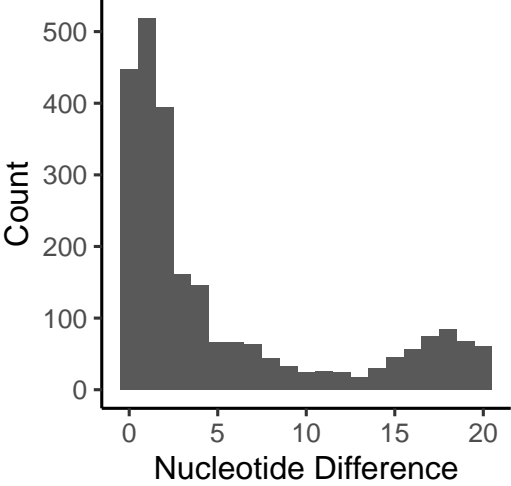
IGHV4–30–2\*02

53 sequences assigned  
12 (22.6%) exact matches, in which:  
12 unique CDR3  
4 unique J



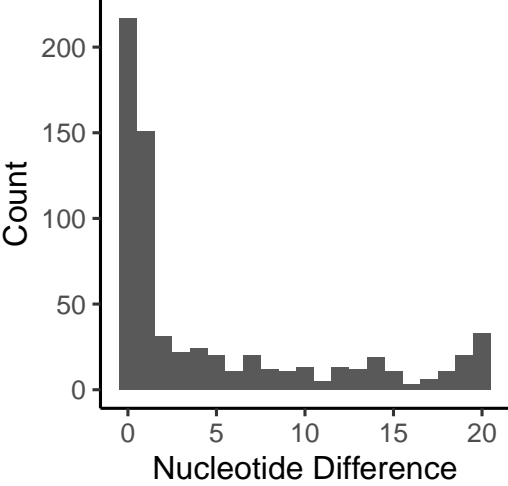
IGHV4–4\*07

2666 sequences assigned  
447 (16.8%) exact matches, in which:  
412 unique CDR3  
6 unique J



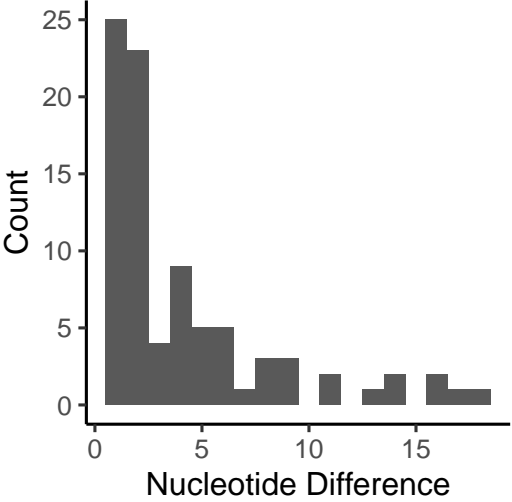
IGHV4–30–4\*01

944 sequences assigned  
217 (23%) exact matches, in which:  
191 unique CDR3  
6 unique J



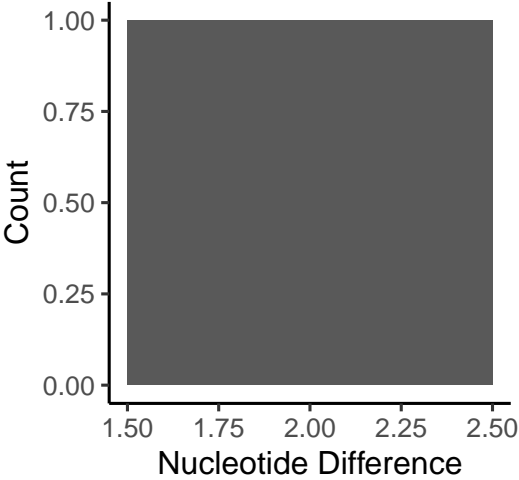
IGHV4–30–2\*03

98 sequences assigned  
No exact matches.



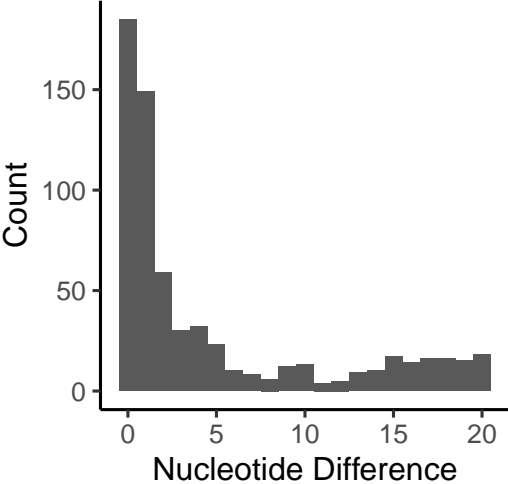
IGHV4–28\*03

1 sequences assigned  
No exact matches.



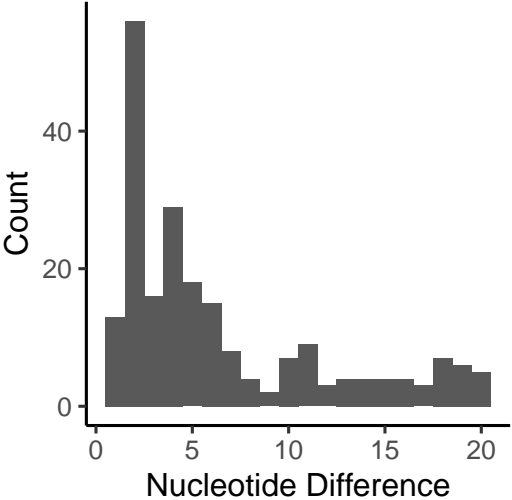
IGHV4–30–2\*01

752 sequences assigned  
185 (24.6%) exact matches, in which:  
154 unique CDR3  
5 unique J



IGHV4–30–4\*08

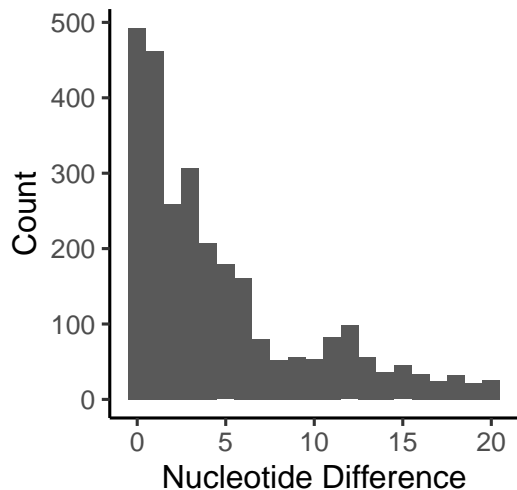
252 sequences assigned  
No exact matches.





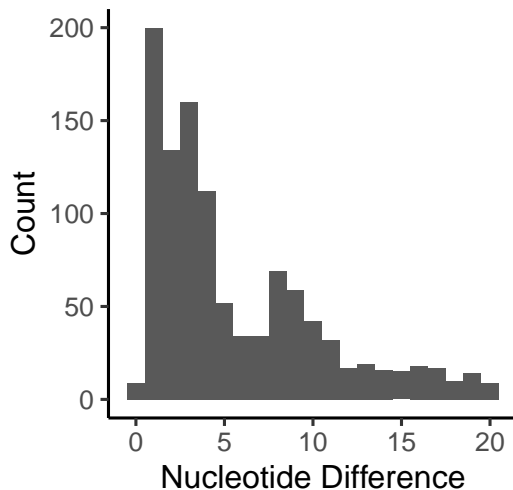
### IGHV4-31\*02

3444 sequences assigned  
493 (14.3%) exact matches, in which:  
431 unique CDR3  
6 unique J



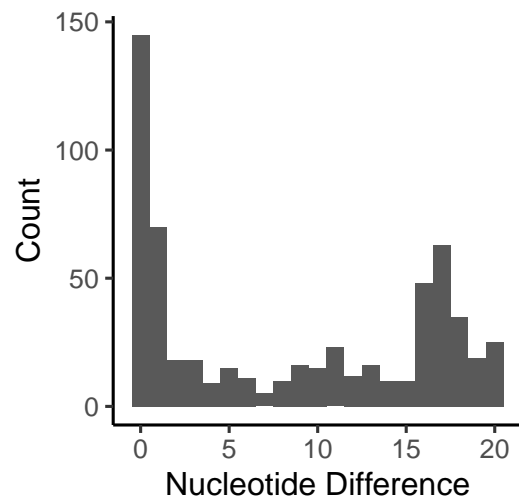
### IGHV4-39\*07

1172 sequences assigned  
9 (0.8%) exact matches, in which:  
9 unique CDR3  
3 unique J



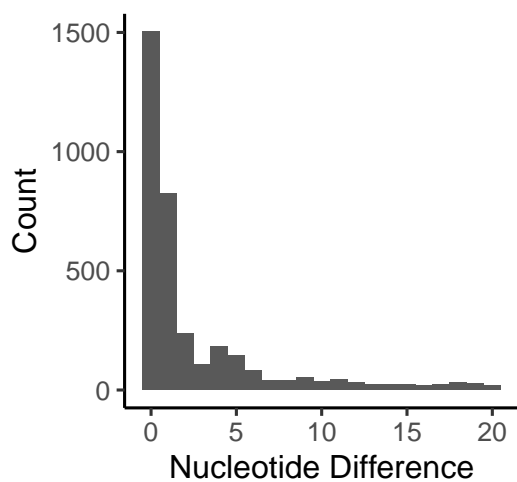
### IGHV4-61\*01

750 sequences assigned  
145 (19.3%) exact matches, in which:  
142 unique CDR3  
6 unique J



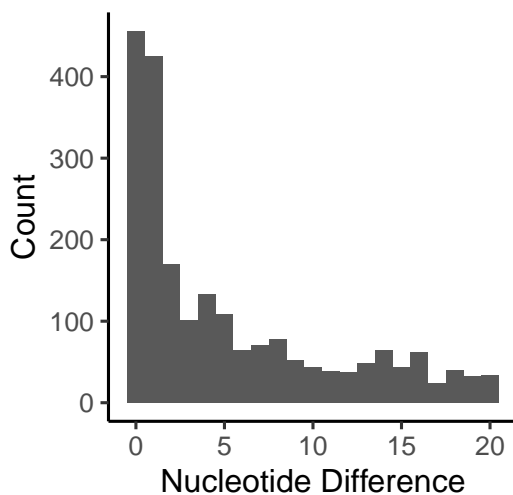
### IGHV4-34\*01\_02

3719 sequences assigned  
1503 (40.4%) exact matches, in which:  
1268 unique CDR3  
6 unique J



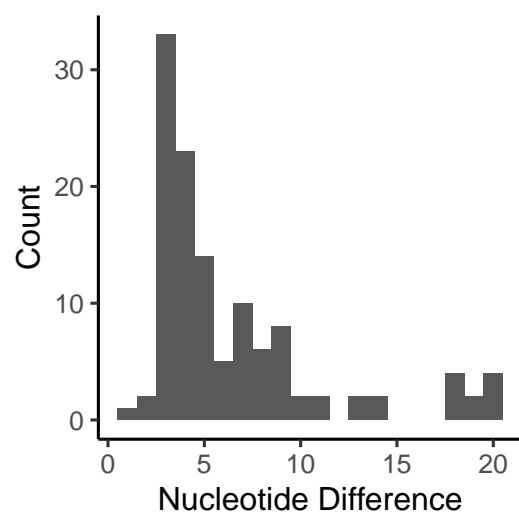
### IGHV4-59\*08

2417 sequences assigned  
456 (18.9%) exact matches, in which:  
415 unique CDR3  
6 unique J



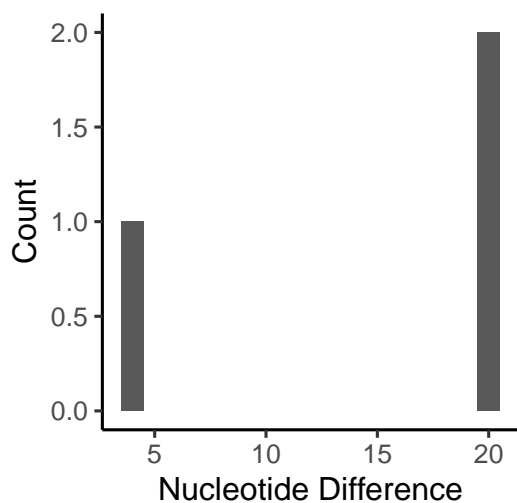
### IGHV4-61\*02

142 sequences assigned  
No exact matches.



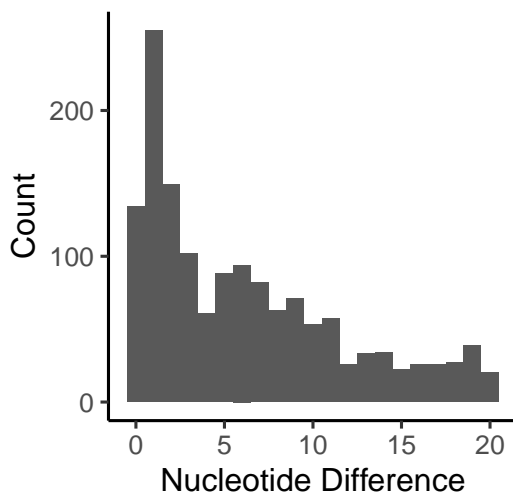
### IGHV4-38-2\*02

7 sequences assigned  
No exact matches.



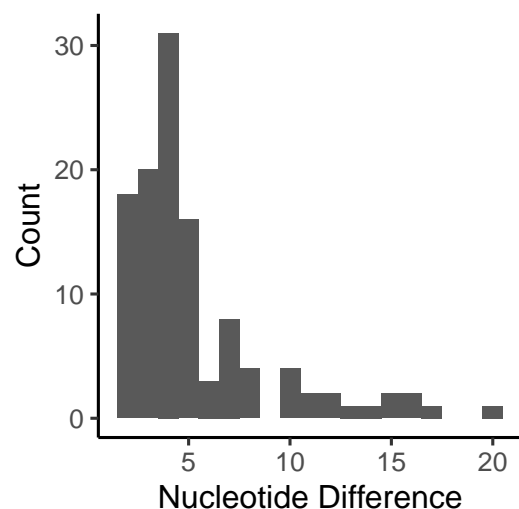
### IGHV4-59\*12

1673 sequences assigned  
134 (8%) exact matches, in which:  
131 unique CDR3  
6 unique J



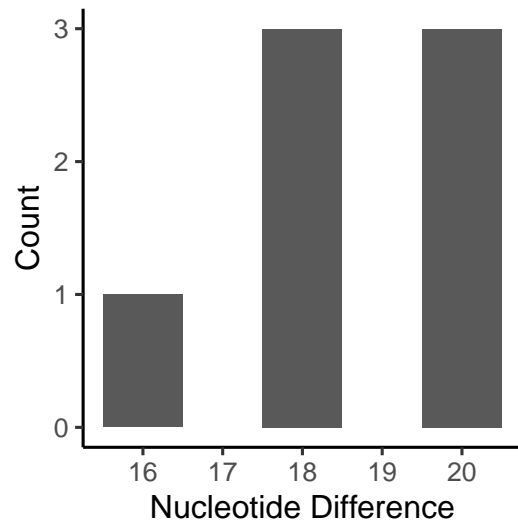
### IGHV4-61\*05

124 sequences assigned  
No exact matches.



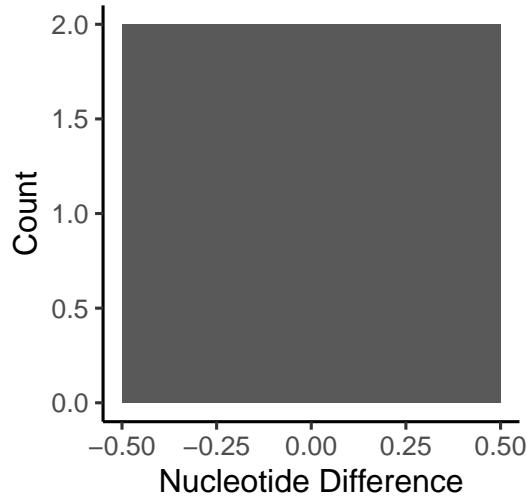
### IGHV1/OR15-2\*02\_03

21 sequences assigned  
No exact matches.



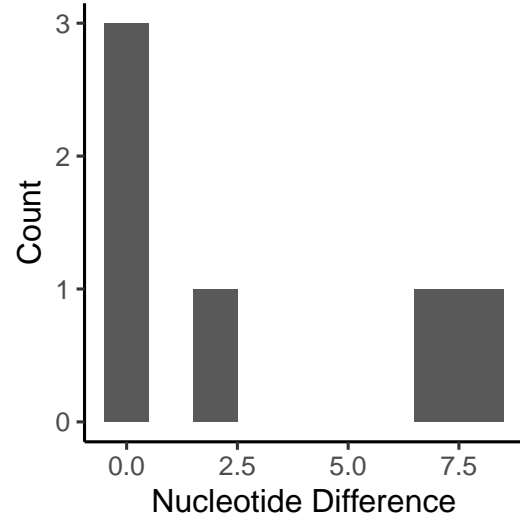
### IGHV5-51\*02

2 sequences assigned  
2 (100%) exact matches, in which:  
2 unique CDR3  
1 unique J



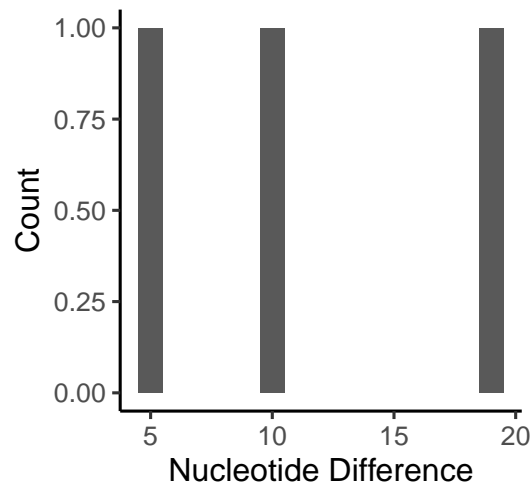
### IGHV5-51\*07

6 sequences assigned  
3 (50%) exact matches, in which:  
3 unique CDR3  
2 unique J



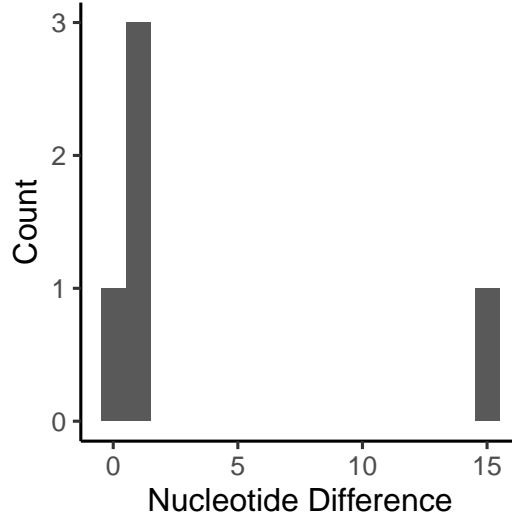
### IGHV4/OR15-8\*01

3 sequences assigned  
No exact matches.



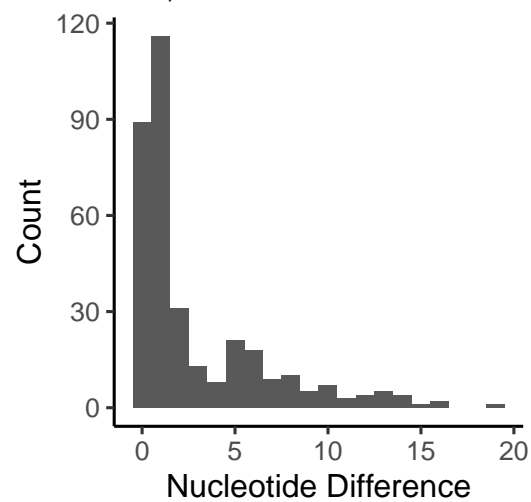
### IGHV5-51\*04

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



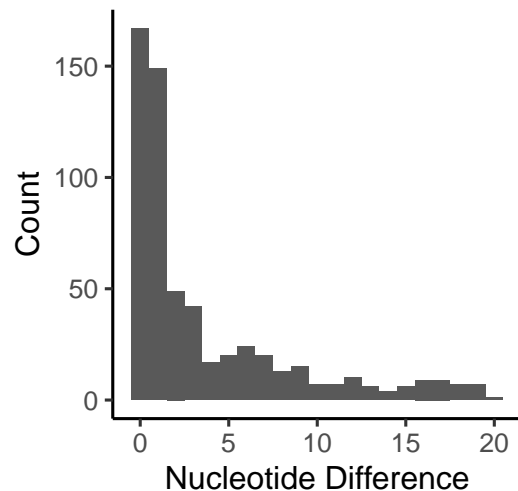
### IGHV6-1\*01\_02

364 sequences assigned  
89 (24.5%) exact matches, in which:  
78 unique CDR3  
5 unique J



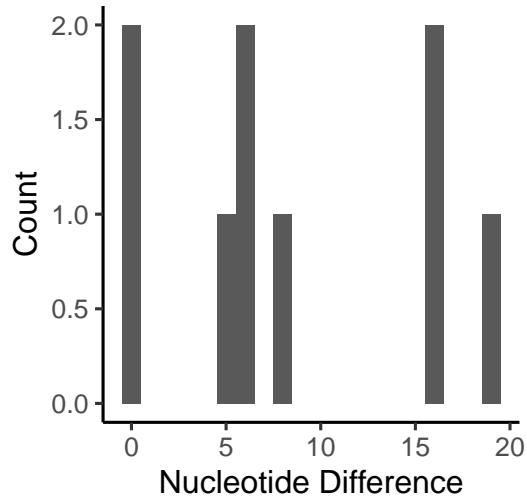
### IGHV5-10-1\*01\_03

643 sequences assigned  
167 (26%) exact matches, in which:  
135 unique CDR3  
5 unique J



### IGHV5-51\*06

9 sequences assigned  
2 (22.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



### IGHV7-4-1\*01

2 sequences assigned  
1 (50%) exact matches, in which:  
1 unique CDR3  
1 unique J

