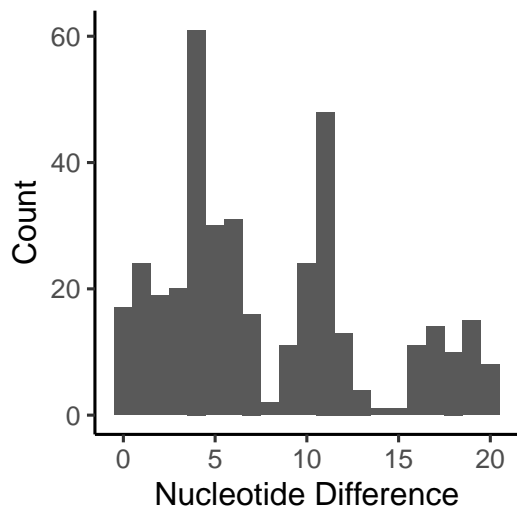


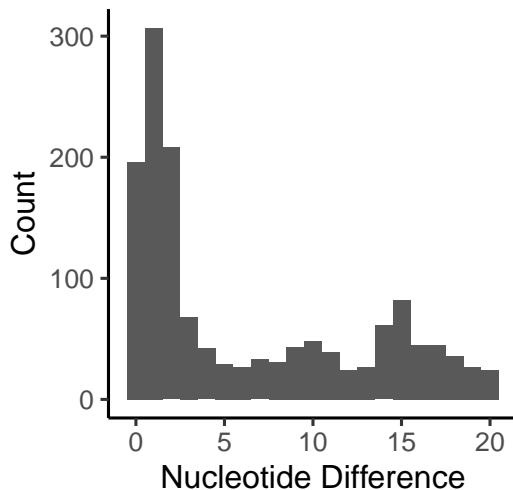
### IGHV1-2\*04

419 sequences assigned  
17 (4.1%) exact matches, in which:  
11 unique CDR3  
4 unique J



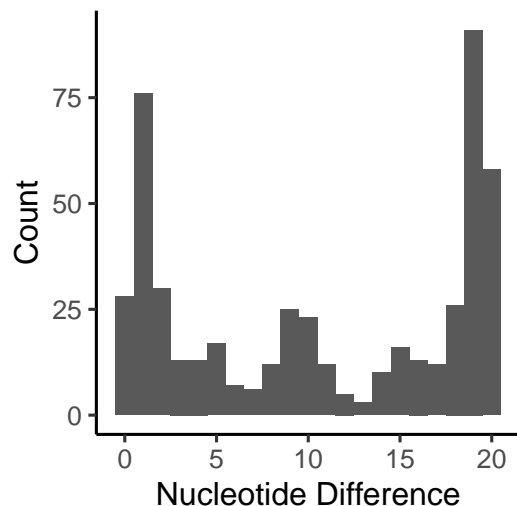
### IGHV1-18\*01

1990 sequences assigned  
196 (9.8%) exact matches, in which:  
109 unique CDR3  
6 unique J



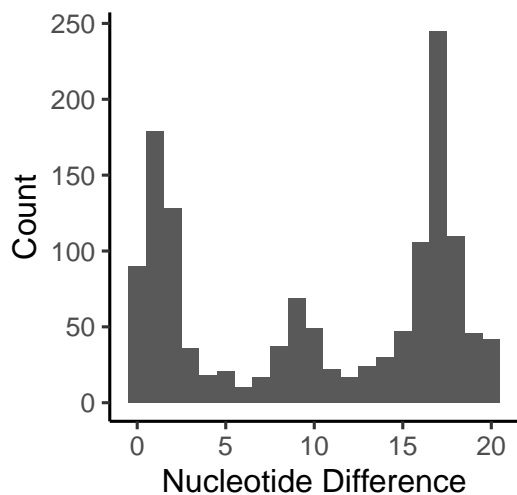
### IGHV1-46\*01

778 sequences assigned  
28 (3.6%) exact matches, in which:  
19 unique CDR3  
5 unique J



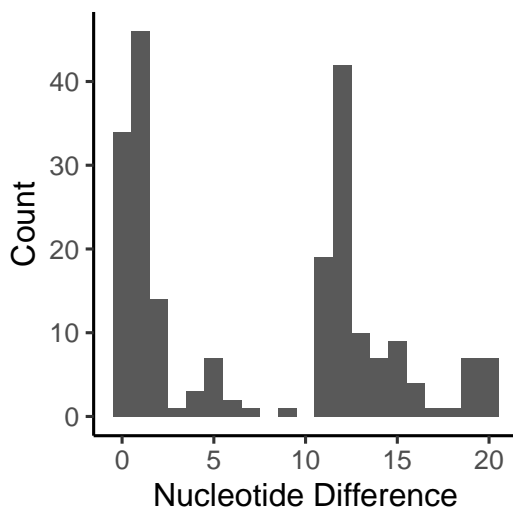
### IGHV1-3\*01

1726 sequences assigned  
90 (5.2%) exact matches, in which:  
62 unique CDR3  
5 unique J



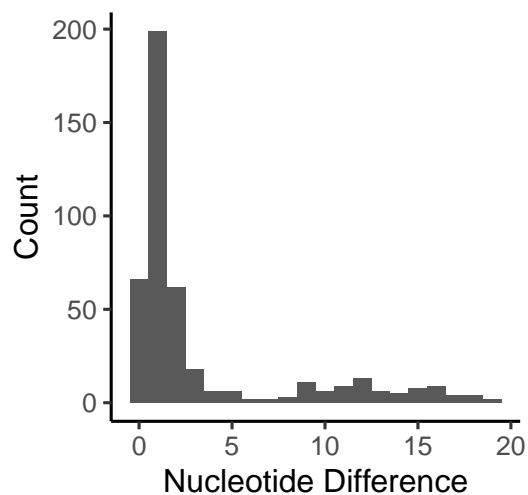
### IGHV1-24\*01

222 sequences assigned  
34 (15.3%) exact matches, in which:  
25 unique CDR3  
4 unique J



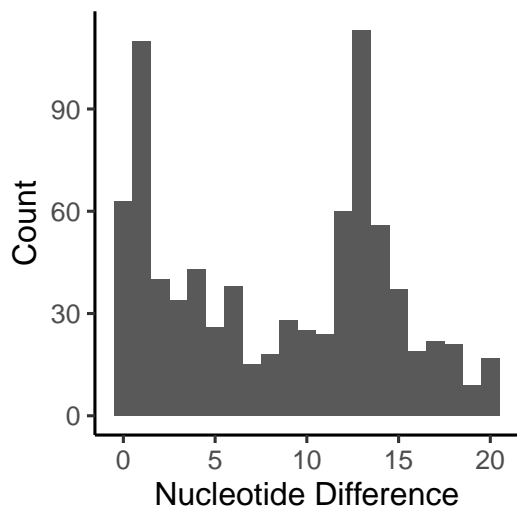
### IGHV1-46\*03

514 sequences assigned  
66 (12.8%) exact matches, in which:  
41 unique CDR3  
4 unique J



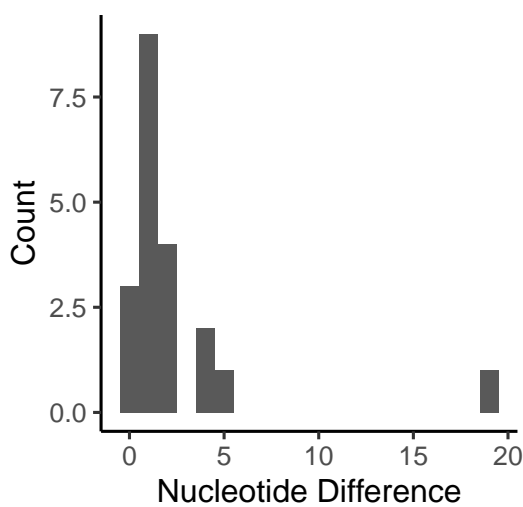
### IGHV1-8\*01

931 sequences assigned  
63 (6.8%) exact matches, in which:  
47 unique CDR3  
5 unique J



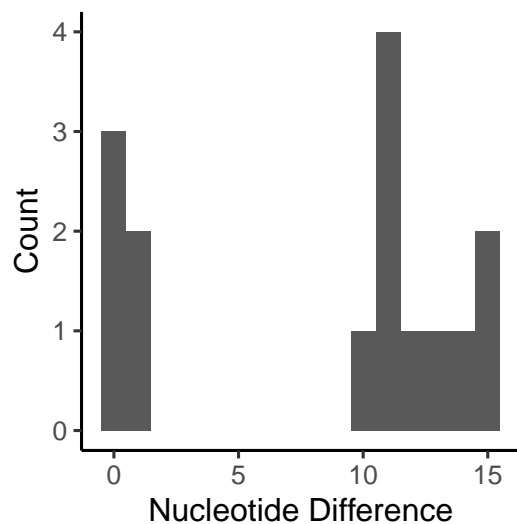
### IGHV1-45\*02

20 sequences assigned  
3 (15%) exact matches, in which:  
2 unique CDR3  
2 unique J



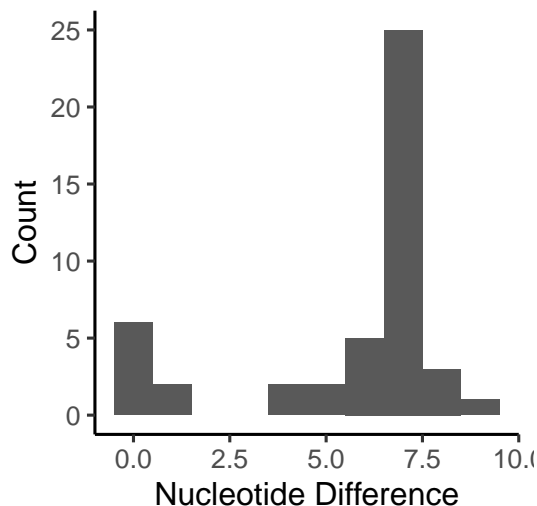
### IGHV1-58\*01

16 sequences assigned  
3 (18.8%) exact matches, in which:  
2 unique CDR3  
1 unique J



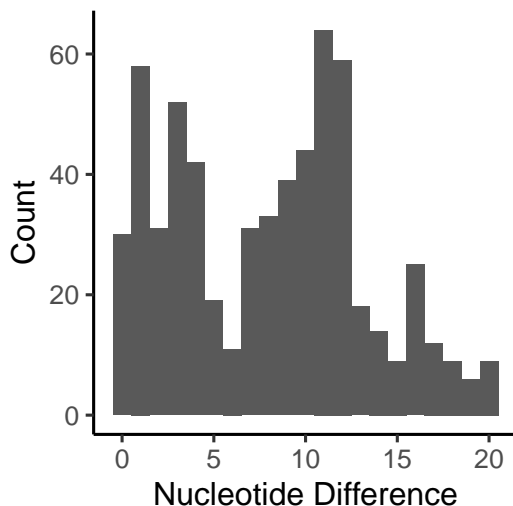
### IGHV1-58\*02

54 sequences assigned  
6 (11.1%) exact matches, in which:  
4 unique CDR3  
1 unique J



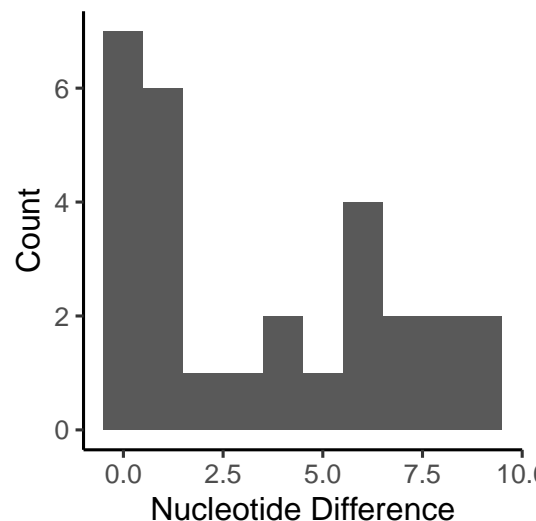
### IGHV2-5\*02

684 sequences assigned  
30 (4.4%) exact matches, in which:  
23 unique CDR3  
5 unique J



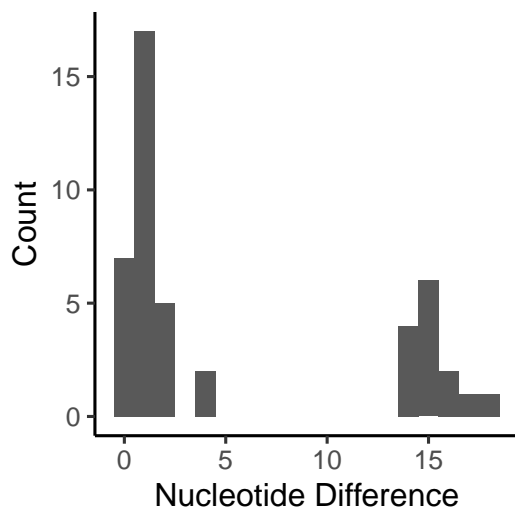
### IGHV2-70\*15

28 sequences assigned  
7 (25%) exact matches, in which:  
7 unique CDR3  
2 unique J



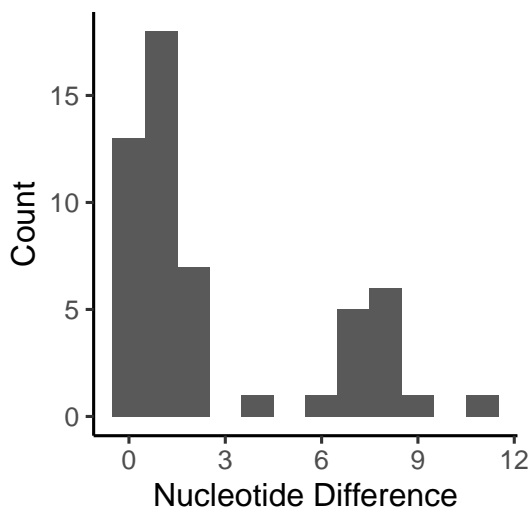
### IGHV1-69-2\*01

55 sequences assigned  
7 (12.7%) exact matches, in which:  
5 unique CDR3  
2 unique J



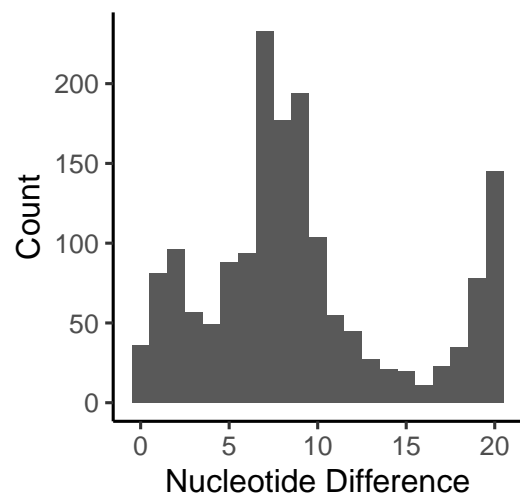
### IGHV2-26\*01

54 sequences assigned  
13 (24.1%) exact matches, in which:  
5 unique CDR3  
3 unique J



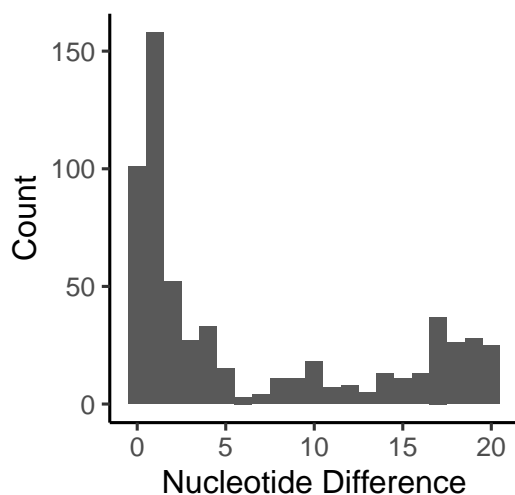
### IGHV3-7\*01

2130 sequences assigned  
36 (1.7%) exact matches, in which:  
32 unique CDR3  
4 unique J



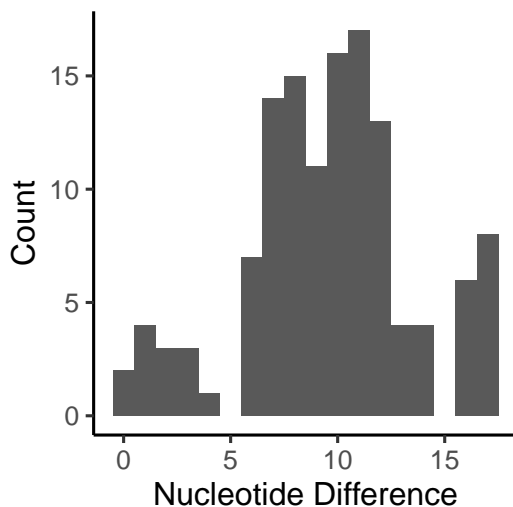
### IGHV1-69\*06

937 sequences assigned  
101 (10.8%) exact matches, in which:  
69 unique CDR3  
5 unique J



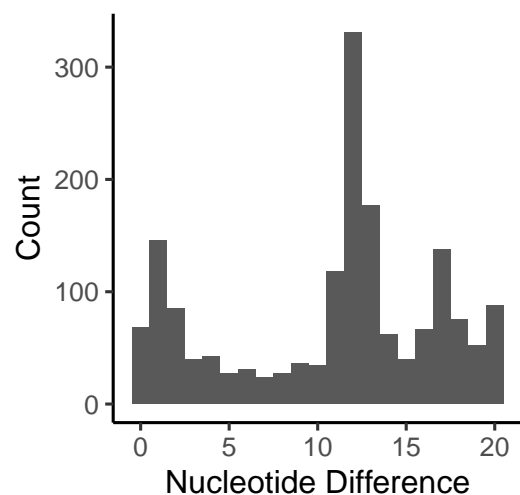
### IGHV2-70\*01

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



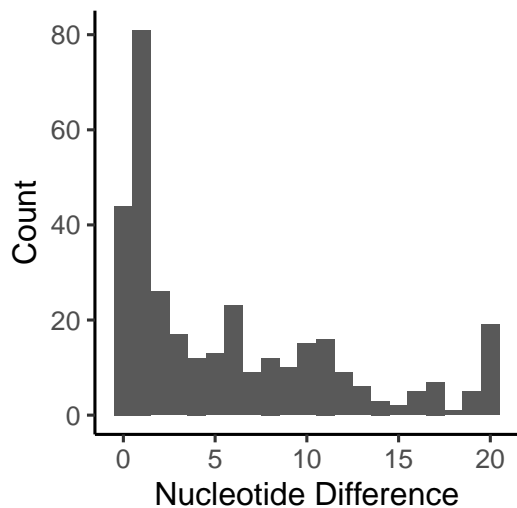
### IGHV3-7\*03

1908 sequences assigned  
68 (3.6%) exact matches, in which:  
47 unique CDR3  
5 unique J



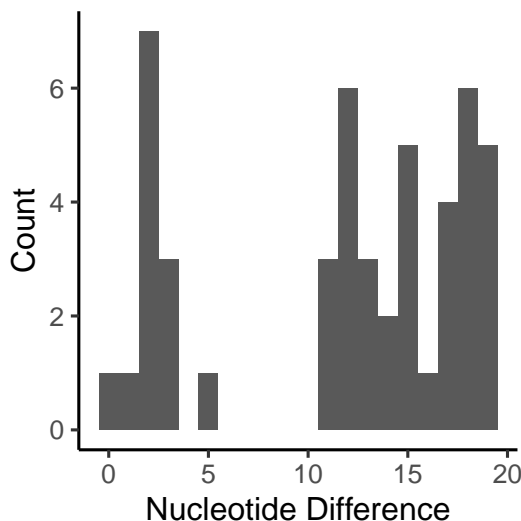
### IGHV3-9\*01

452 sequences assigned  
44 (9.7%) exact matches, in which:  
38 unique CDR3  
6 unique J



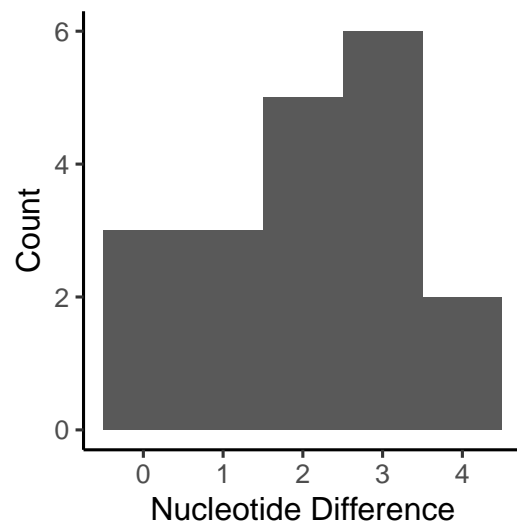
### IGHV3-13\*01

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



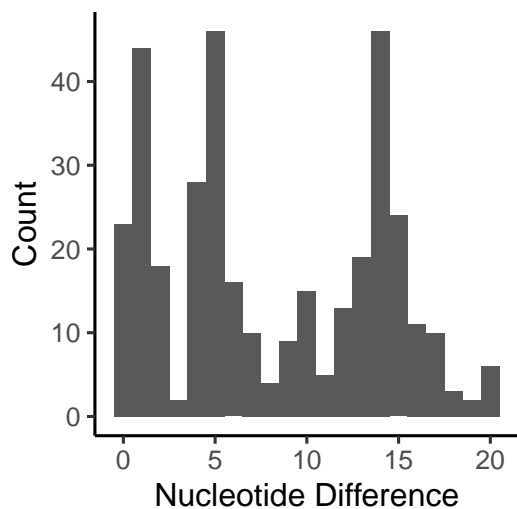
### IGHV3-20\*01

19 sequences assigned  
3 (15.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



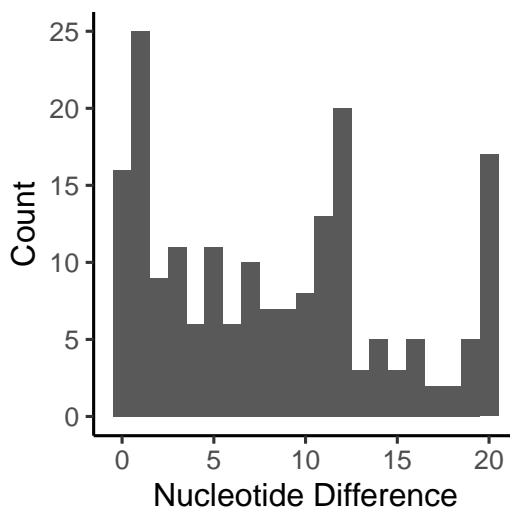
### IGHV3-11\*01

418 sequences assigned  
23 (5.5%) exact matches, in which:  
19 unique CDR3  
3 unique J



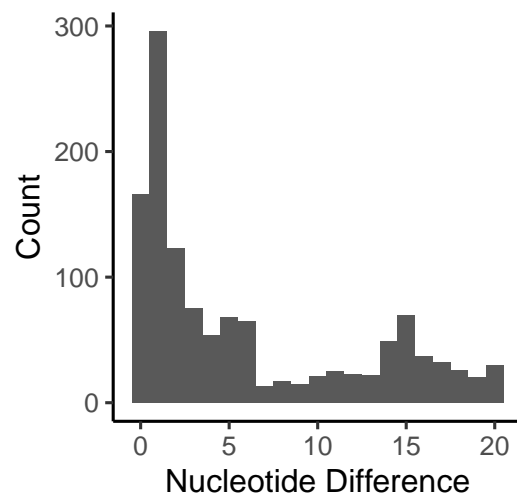
### IGHV3-15\*01

306 sequences assigned  
16 (5.2%) exact matches, in which:  
15 unique CDR3  
3 unique J



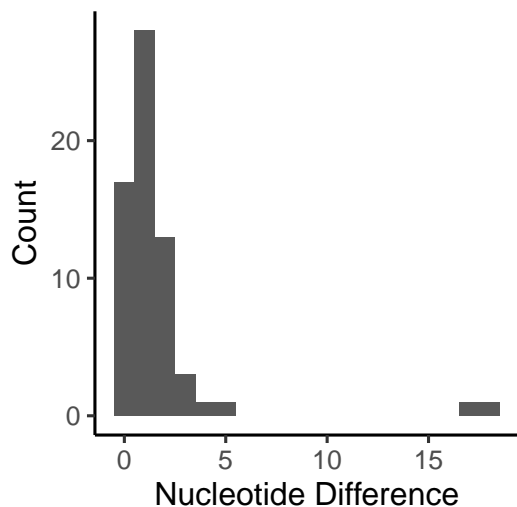
### IGHV3-21\*01

1305 sequences assigned  
166 (12.7%) exact matches, in which:  
98 unique CDR3  
5 unique J



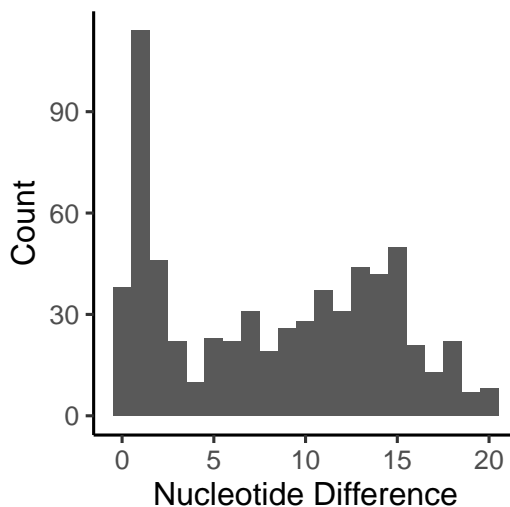
### IGHV3-11\*06

68 sequences assigned  
17 (25%) exact matches, in which:  
12 unique CDR3  
3 unique J



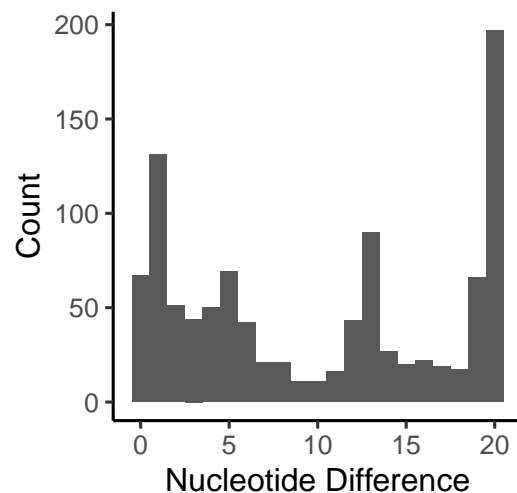
### IGHV3-15\*07

752 sequences assigned  
38 (5.1%) exact matches, in which:  
31 unique CDR3  
6 unique J



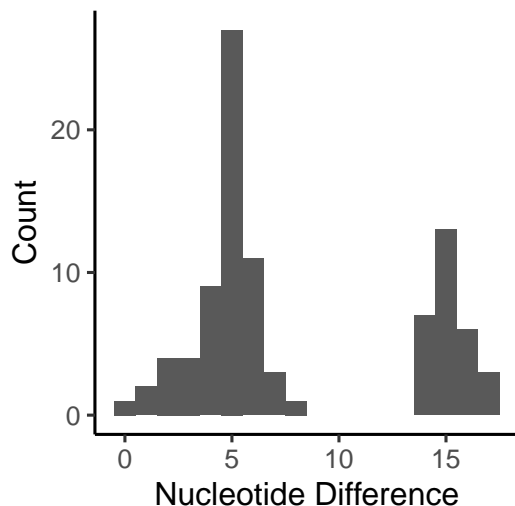
### IGHV3-33\*01

1221 sequences assigned  
67 (5.5%) exact matches, in which:  
48 unique CDR3  
5 unique J



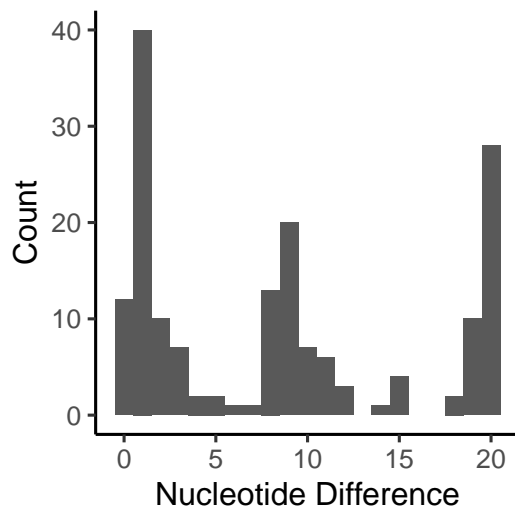
### IGHV3-43\*01

151 sequences assigned  
1 (0.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



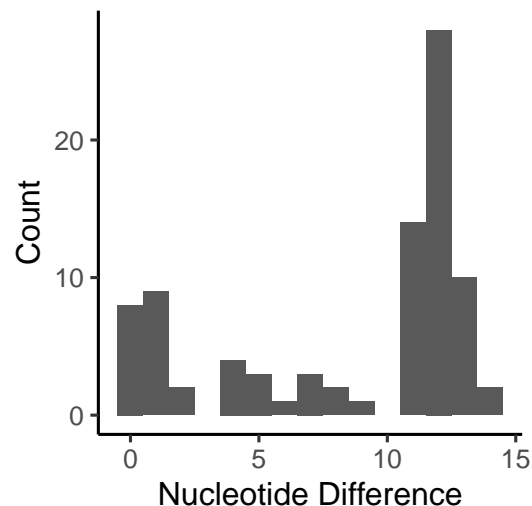
### IGHV3-49\*05

238 sequences assigned  
12 (5%) exact matches, in which:  
9 unique CDR3  
2 unique J



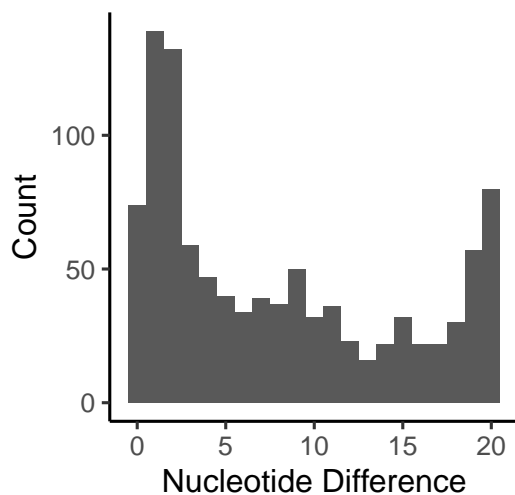
### IGHV3-64\*01

136 sequences assigned  
8 (5.9%) exact matches, in which:  
5 unique CDR3  
3 unique J



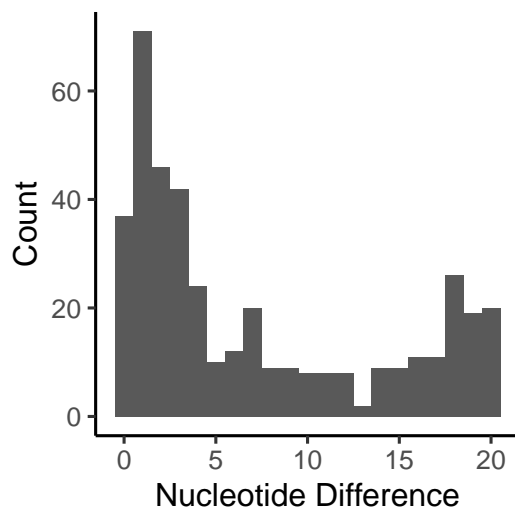
### IGHV3-48\*02

1177 sequences assigned  
74 (6.3%) exact matches, in which:  
57 unique CDR3  
6 unique J



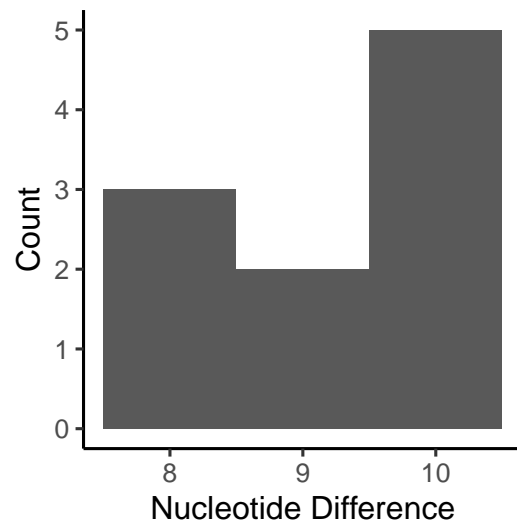
### IGHV3-53\*01

492 sequences assigned  
37 (7.5%) exact matches, in which:  
30 unique CDR3  
4 unique J



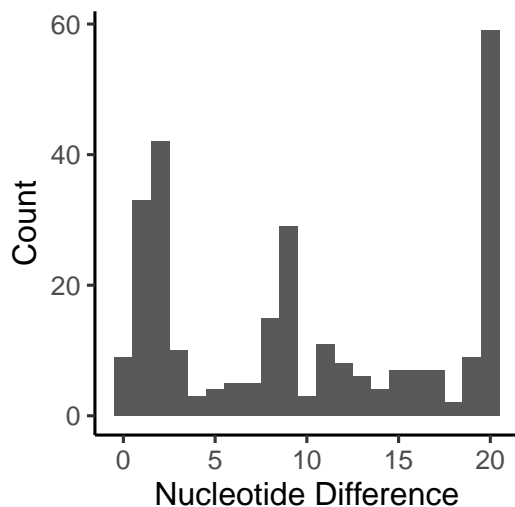
### IGHV3-64\*07

11 sequences assigned  
No exact matches.



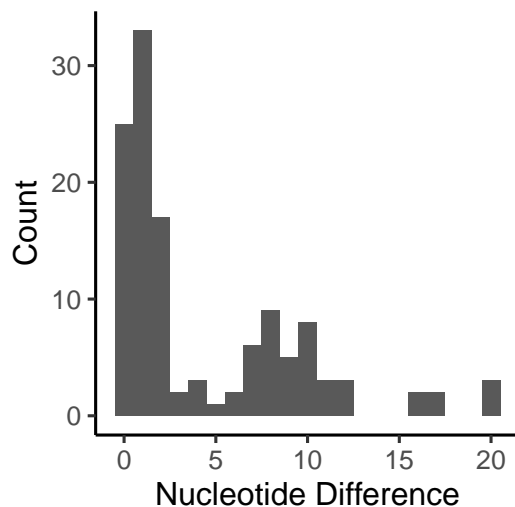
### IGHV3-49\*04

561 sequences assigned  
9 (1.6%) exact matches, in which:  
4 unique CDR3  
3 unique J



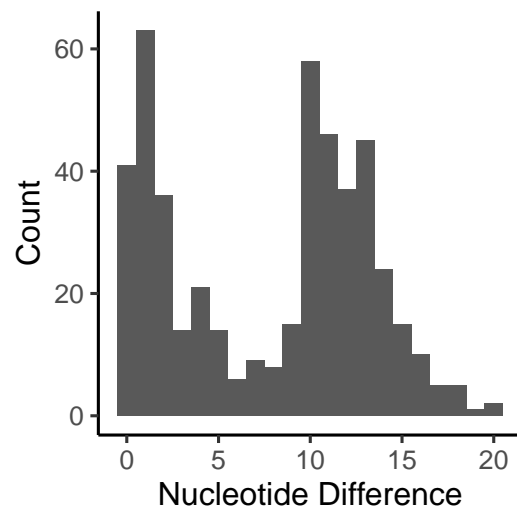
### IGHV3-53\*04

136 sequences assigned  
25 (18.4%) exact matches, in which:  
21 unique CDR3  
4 unique J



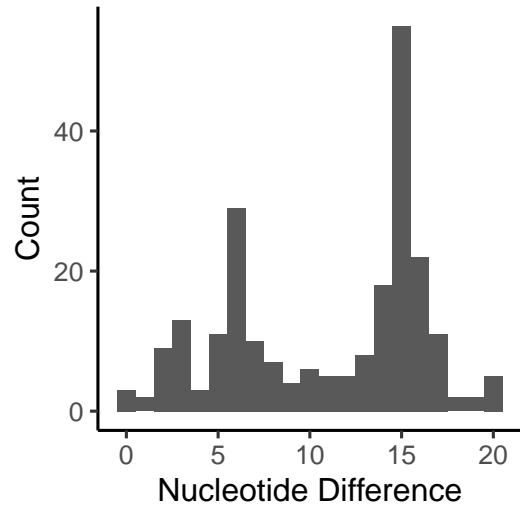
### IGHV3-66\*01

508 sequences assigned  
41 (8.1%) exact matches, in which:  
30 unique CDR3  
5 unique J



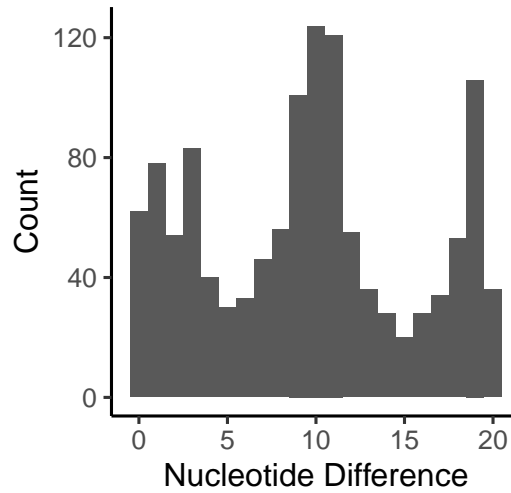
### IGHV3-72\*01

315 sequences assigned  
3 (1%) exact matches, in which:  
3 unique CDR3  
2 unique J



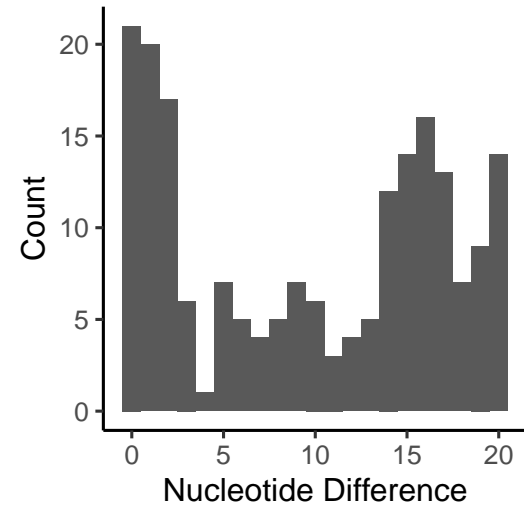
### IGHV3-74\*01

1352 sequences assigned  
62 (4.6%) exact matches, in which:  
56 unique CDR3  
5 unique J



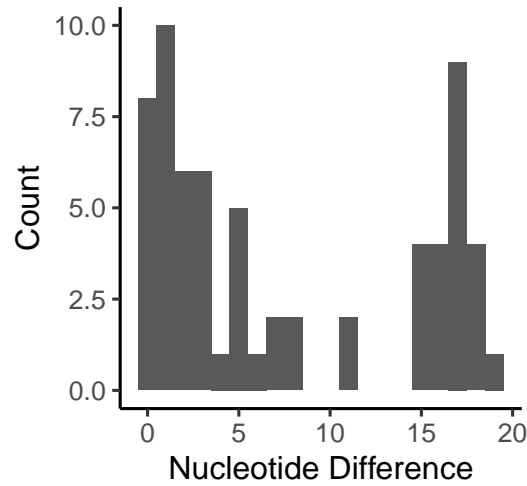
### IGHV4-4\*02

282 sequences assigned  
21 (7.4%) exact matches, in which:  
19 unique CDR3  
5 unique J



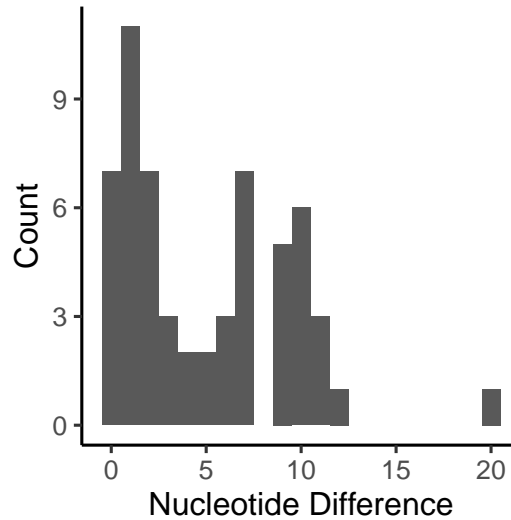
### IGHV3-73\*01

112 sequences assigned  
8 (7.1%) exact matches, in which:  
7 unique CDR3  
2 unique J



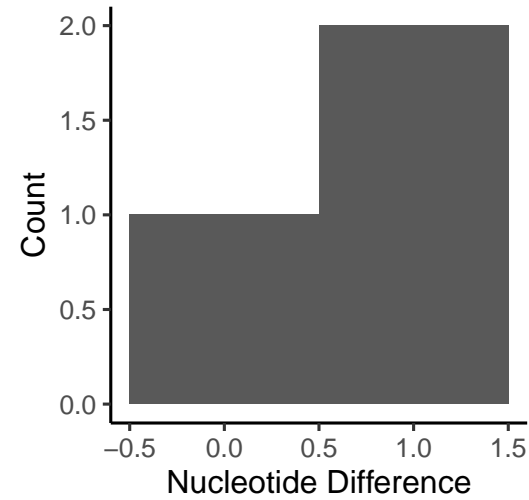
### IGHV3-43D\*03

73 sequences assigned  
7 (9.6%) exact matches, in which:  
5 unique CDR3  
2 unique J



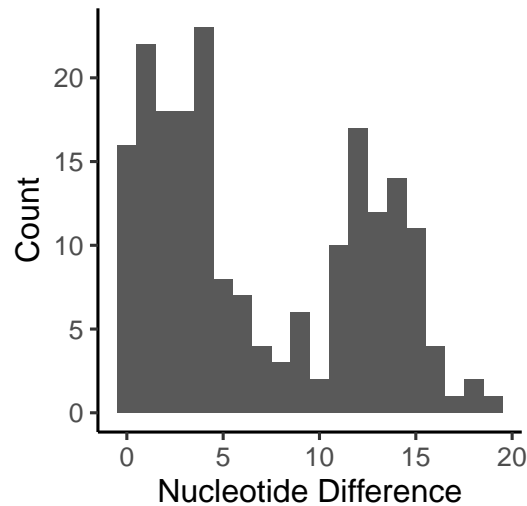
### IGHV4-28\*07

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



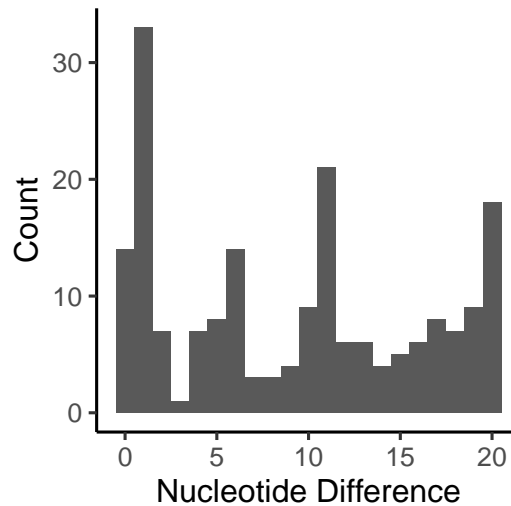
### IGHV3-73\*02

207 sequences assigned  
16 (7.7%) exact matches, in which:  
14 unique CDR3  
3 unique J



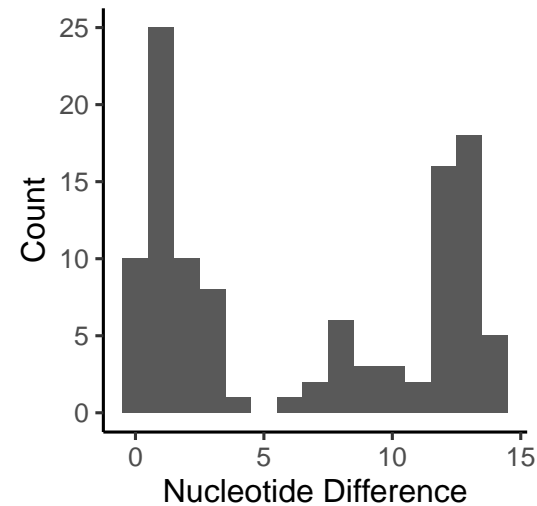
### IGHV3-64D\*06

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



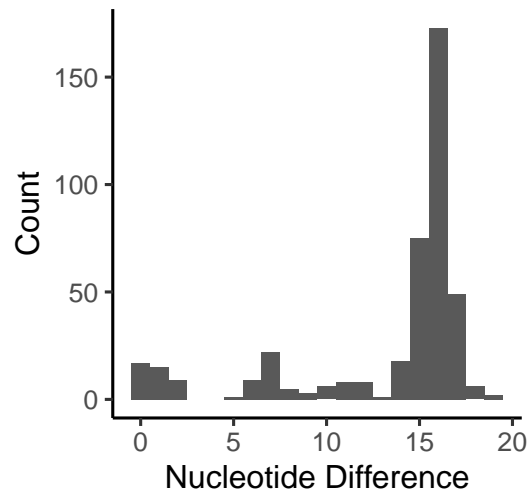
### IGHV4-30-2\*01

134 sequences assigned  
10 (7.5%) exact matches, in which:  
9 unique CDR3  
4 unique J



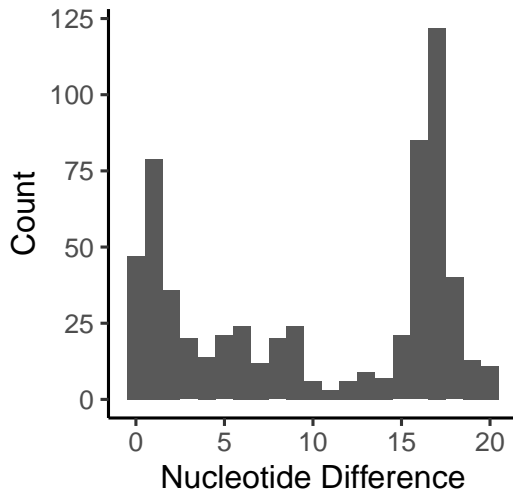
### IGHV4-30-4\*07

463 sequences assigned  
17 (3.7%) exact matches, in which:  
11 unique CDR3  
4 unique J



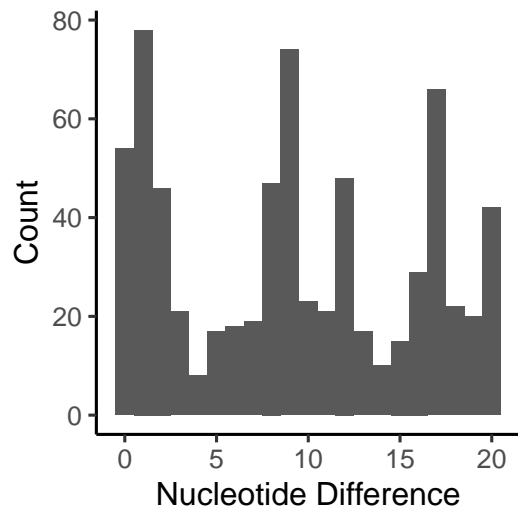
### IGHV4-38-2\*02

664 sequences assigned  
47 (7.1%) exact matches, in which:  
27 unique CDR3  
5 unique J



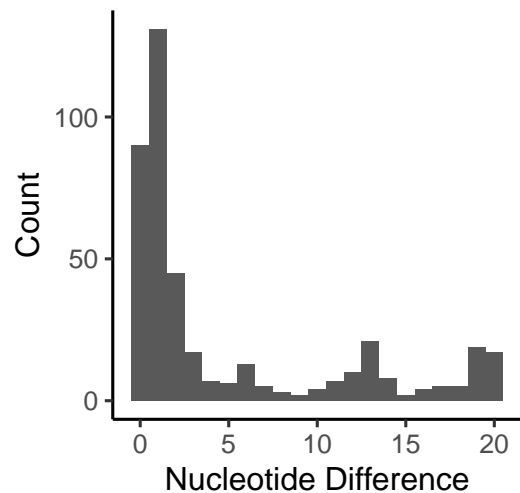
### IGHV4-59\*08

826 sequences assigned  
54 (6.5%) exact matches, in which:  
43 unique CDR3  
6 unique J



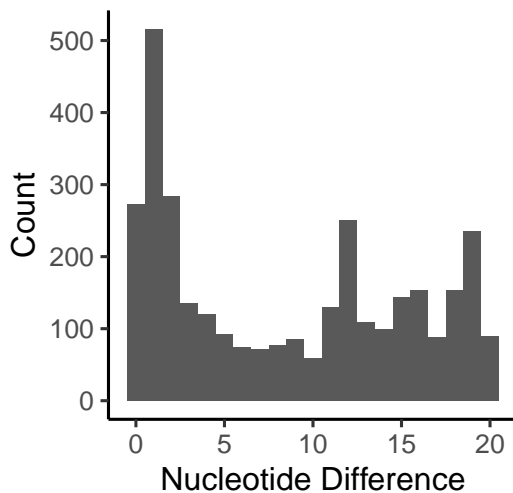
### IGHV4-31\*03

521 sequences assigned  
90 (17.3%) exact matches, in which:  
48 unique CDR3  
4 unique J



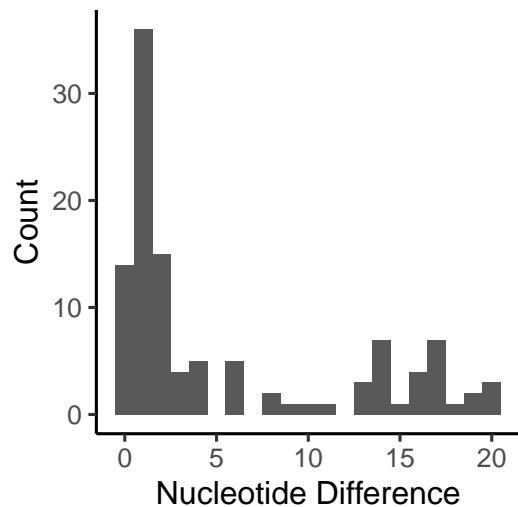
### IGHV4-39\*01

3883 sequences assigned  
273 (7%) exact matches, in which:  
205 unique CDR3  
5 unique J



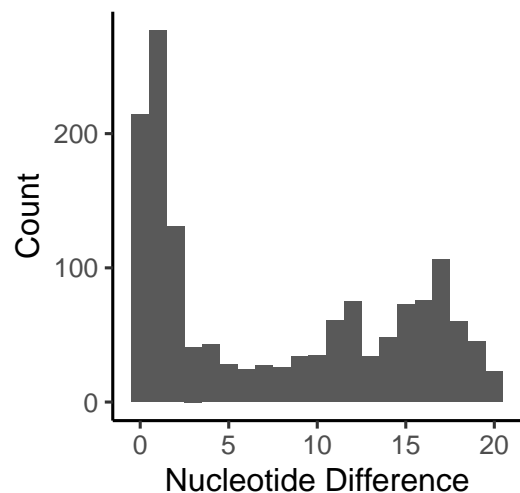
### IGHV4-61\*01

190 sequences assigned  
14 (7.4%) exact matches, in which:  
11 unique CDR3  
3 unique J



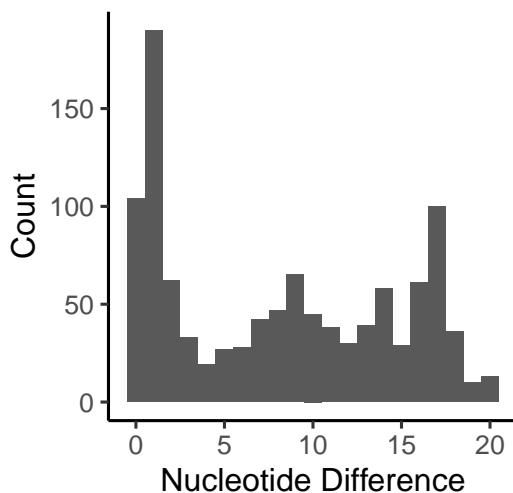
### IGHV4-34\*01

1998 sequences assigned  
214 (10.7%) exact matches, in which:  
159 unique CDR3  
5 unique J



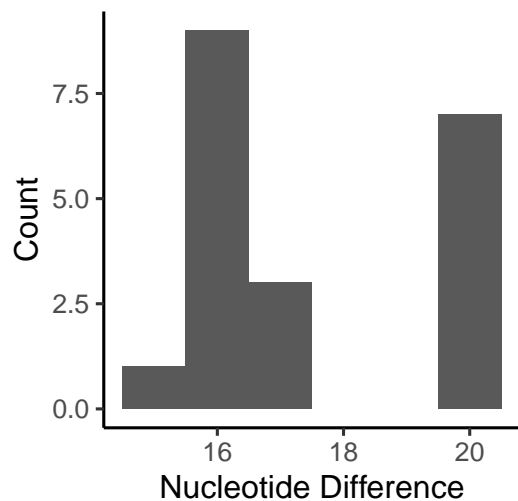
### IGHV4-59\*01

1277 sequences assigned  
104 (8.1%) exact matches, in which:  
75 unique CDR3  
6 unique J



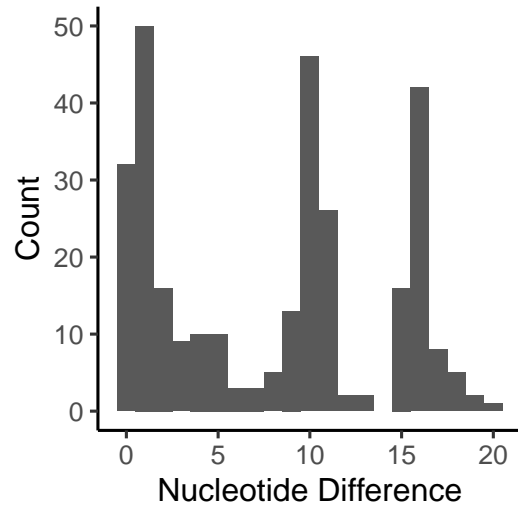
### IGHV4-61\*08

215 sequences assigned  
No exact matches.



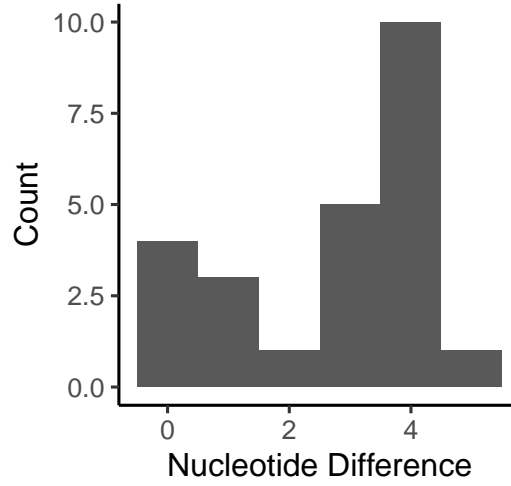
## IGHV5-10-1\*03

312 sequences assigned  
32 (10.3%) exact matches, in which:  
20 unique CDR3  
4 unique J



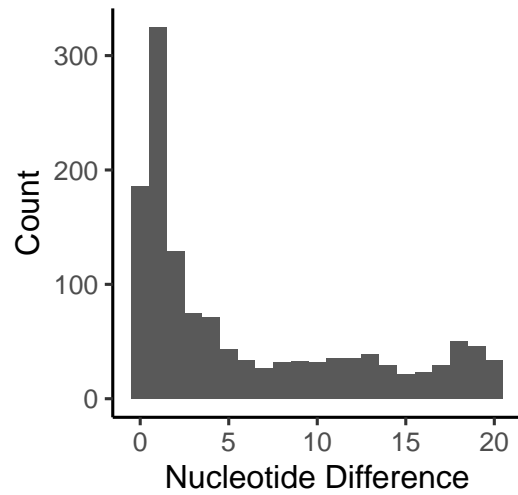
## IGHV7-4-1\*01

24 sequences assigned  
4 (16.7%) exact matches, in which:  
2 unique CDR3  
1 unique J



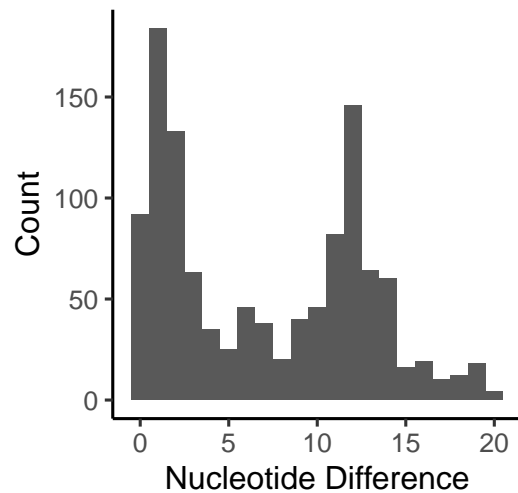
## IGHV5-51\*01

1539 sequences assigned  
186 (12.1%) exact matches, in which:  
131 unique CDR3  
6 unique J



## IGHV6-1\*01

1547 sequences assigned  
92 (5.9%) exact matches, in which:  
57 unique CDR3  
4 unique J







Warning – no inferred sequences found.