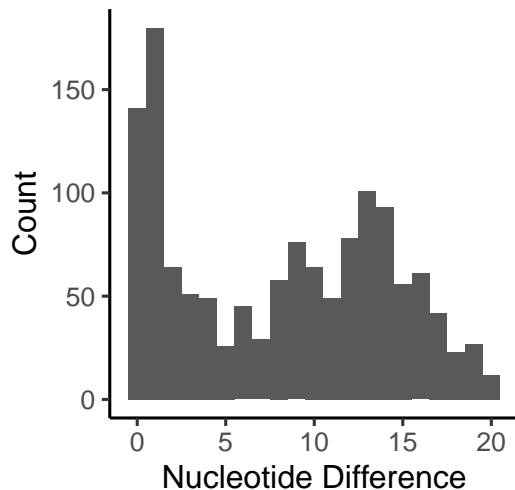


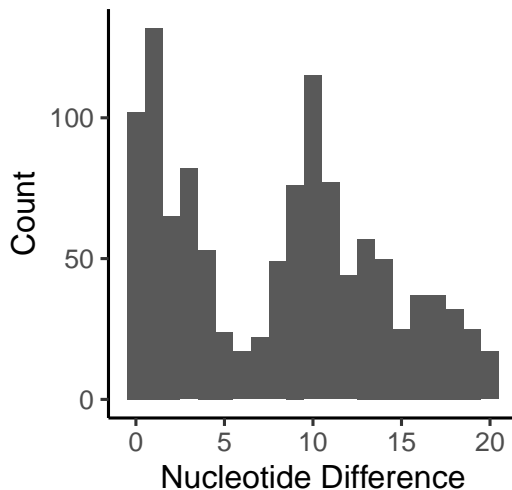
### IGHV1-2\*02

1746 sequences assigned  
141 (8.1%) exact matches, in which:  
111 unique CDR3  
6 unique J



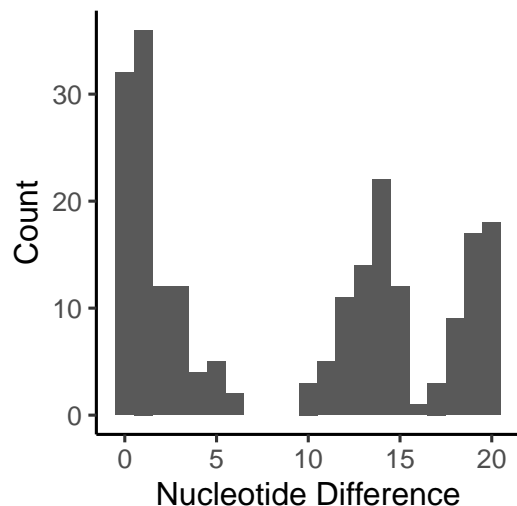
### IGHV1-18\*01

1426 sequences assigned  
102 (7.2%) exact matches, in which:  
81 unique CDR3  
5 unique J



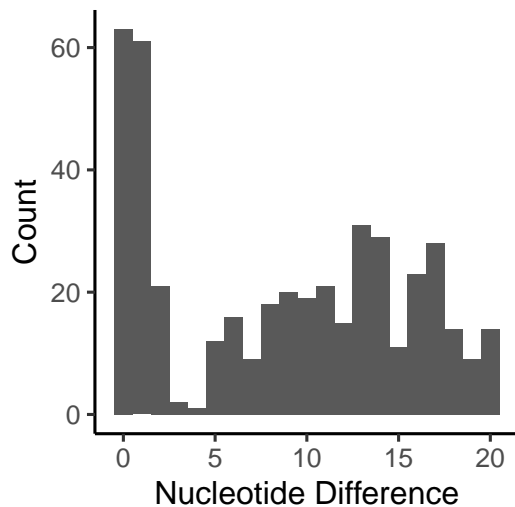
### IGHV1-46\*01

293 sequences assigned  
32 (10.9%) exact matches, in which:  
23 unique CDR3  
5 unique J



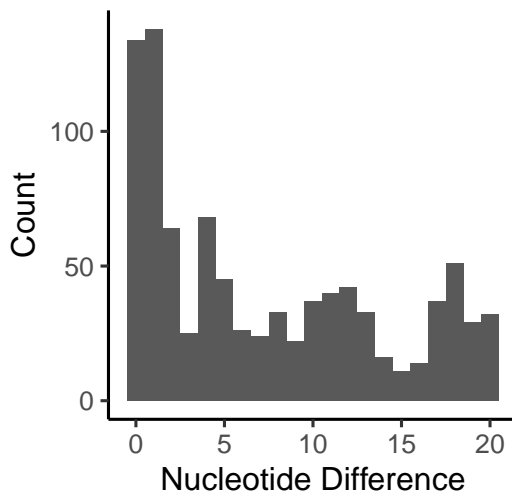
### IGHV1-3\*01

673 sequences assigned  
63 (9.4%) exact matches, in which:  
50 unique CDR3  
6 unique J



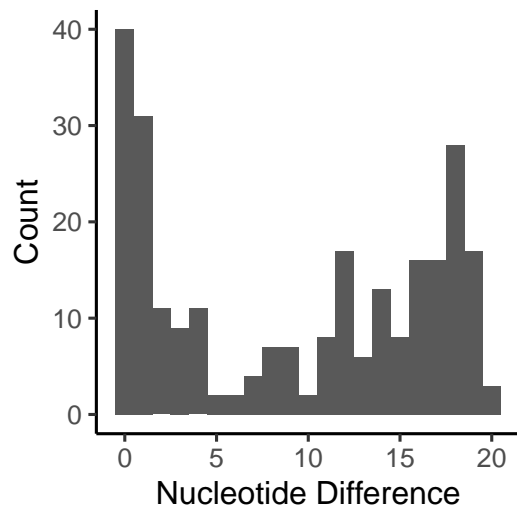
### IGHV1-18\*04

1185 sequences assigned  
134 (11.3%) exact matches, in which:  
100 unique CDR3  
6 unique J



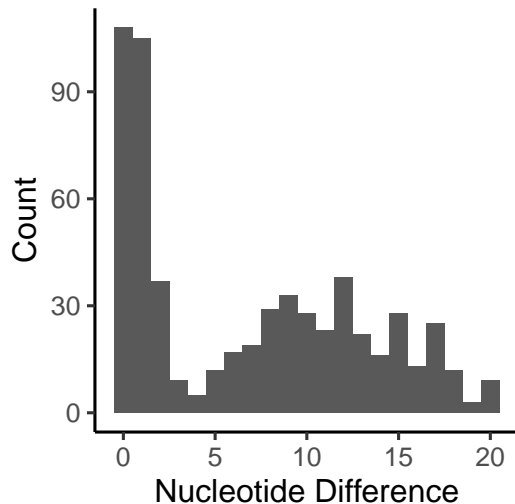
### IGHV1-46\*03

370 sequences assigned  
40 (10.8%) exact matches, in which:  
28 unique CDR3  
5 unique J



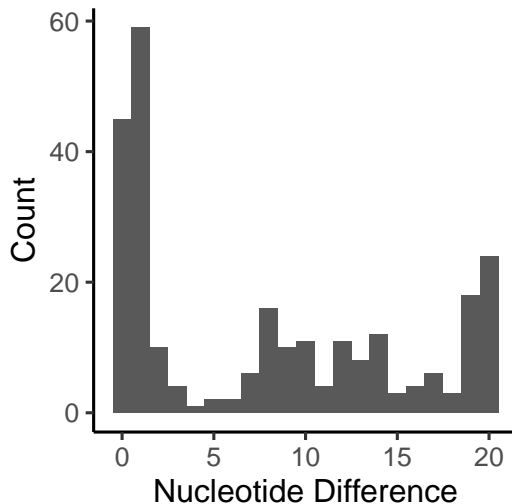
### IGHV1-8\*01

751 sequences assigned  
108 (14.4%) exact matches, in which:  
78 unique CDR3  
6 unique J



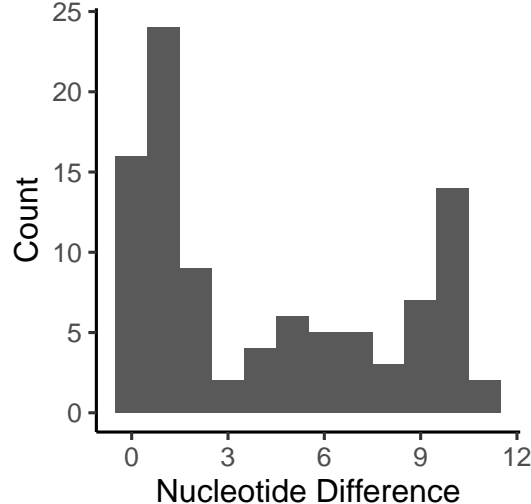
### IGHV1-24\*01

358 sequences assigned  
45 (12.6%) exact matches, in which:  
37 unique CDR3  
6 unique J



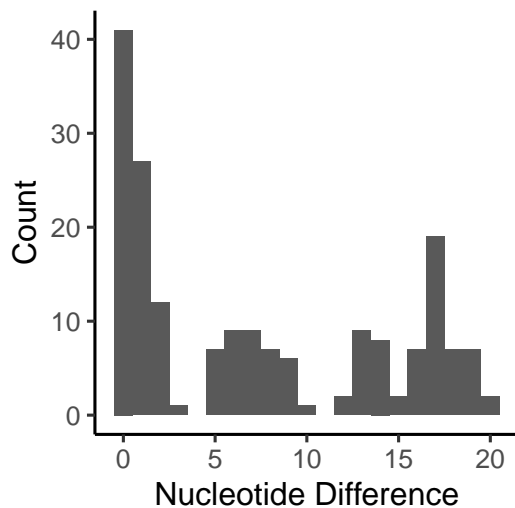
### IGHV1-58\*02

103 sequences assigned  
16 (15.5%) exact matches, in which:  
8 unique CDR3  
2 unique J



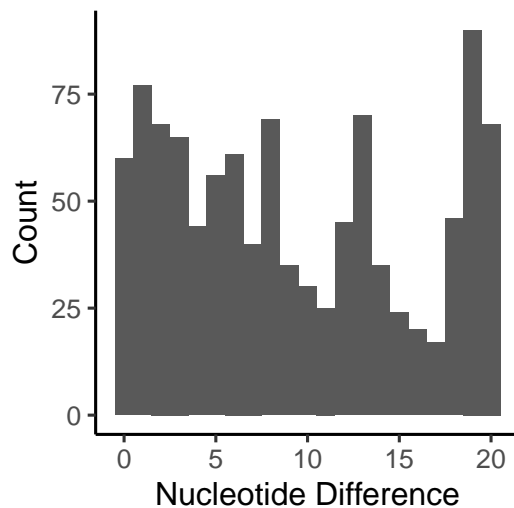
### IGHV1-69\*02

229 sequences assigned  
41 (17.9%) exact matches, in which:  
35 unique CDR3  
6 unique J



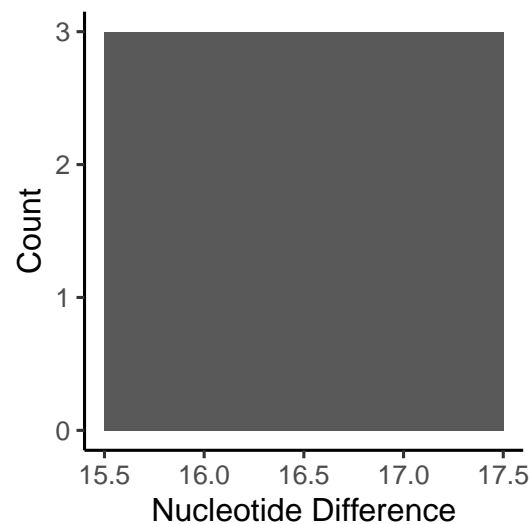
### IGHV2-5\*02

1160 sequences assigned  
60 (5.2%) exact matches, in which:  
50 unique CDR3  
5 unique J



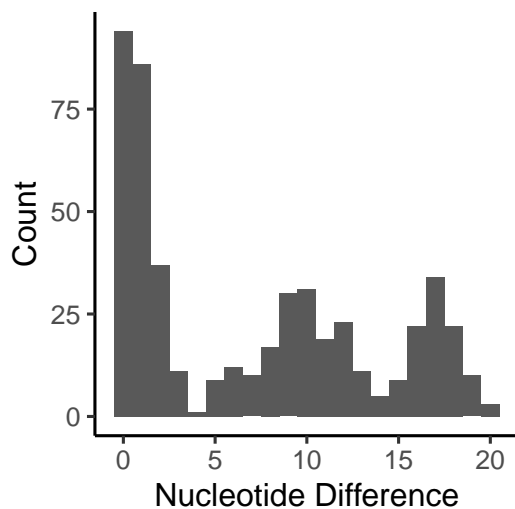
### IGHV2-70D\*14

6 sequences assigned  
No exact matches.



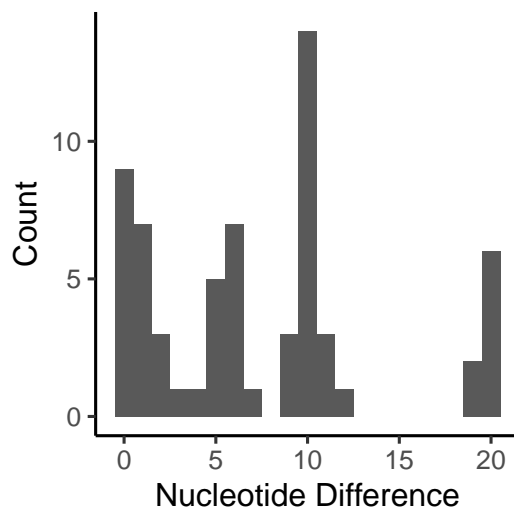
### IGHV1-69\*04

741 sequences assigned  
94 (12.7%) exact matches, in which:  
80 unique CDR3  
5 unique J



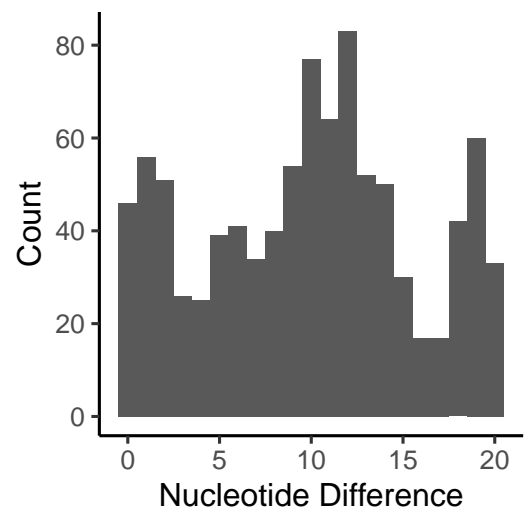
### IGHV2-26\*01

66 sequences assigned  
9 (13.6%) exact matches, in which:  
7 unique CDR3  
3 unique J



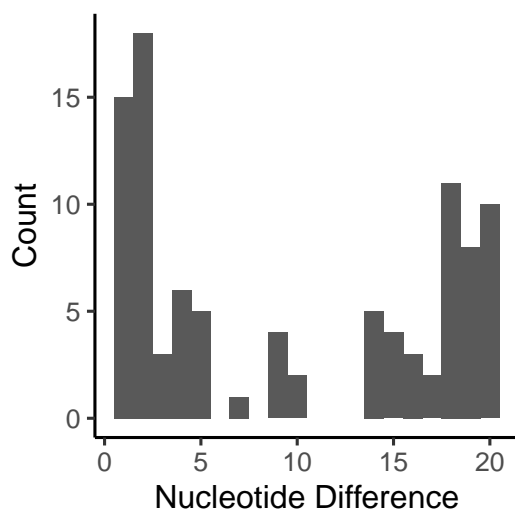
### IGHV3-7\*01

1161 sequences assigned  
46 (4%) exact matches, in which:  
39 unique CDR3  
6 unique J



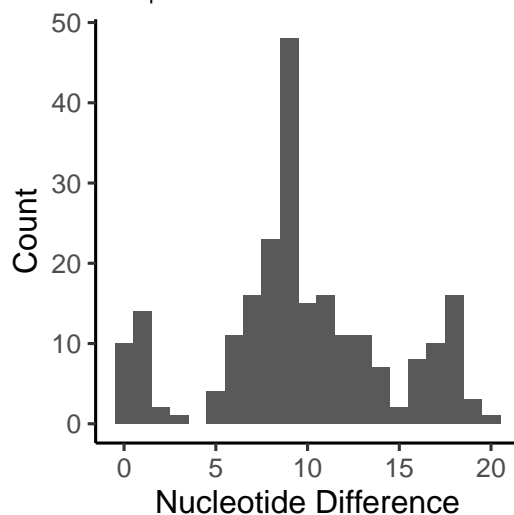
### IGHV1-69\*08

220 sequences assigned  
No exact matches.



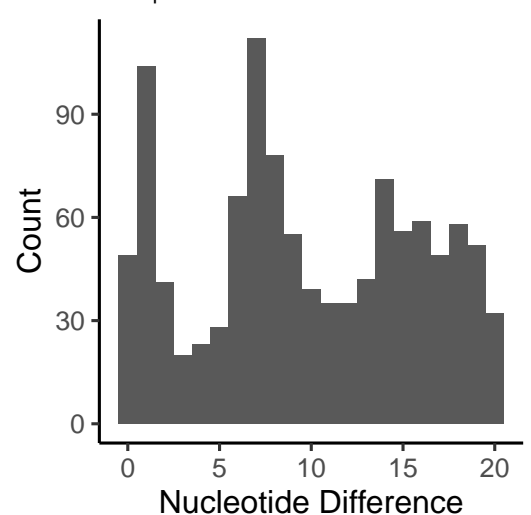
### IGHV2-70\*15

232 sequences assigned  
10 (4.3%) exact matches, in which:  
10 unique CDR3  
4 unique J



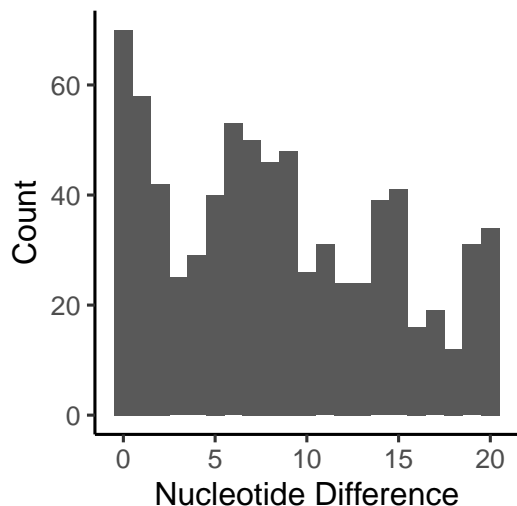
### IGHV3-7\*03

1407 sequences assigned  
49 (3.5%) exact matches, in which:  
37 unique CDR3  
5 unique J



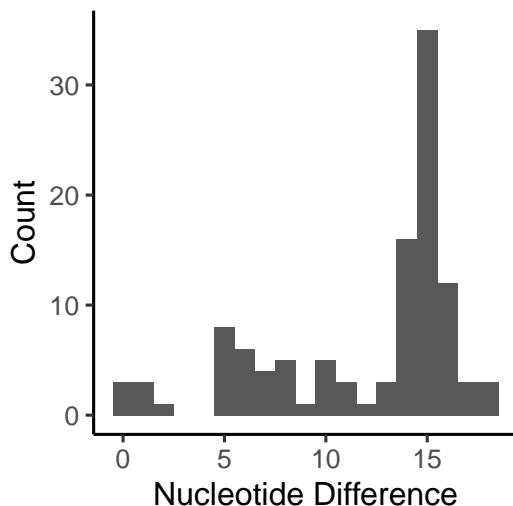
### IGHV3-9\*01

868 sequences assigned  
70 (8.1%) exact matches, in which:  
62 unique CDR3  
5 unique J



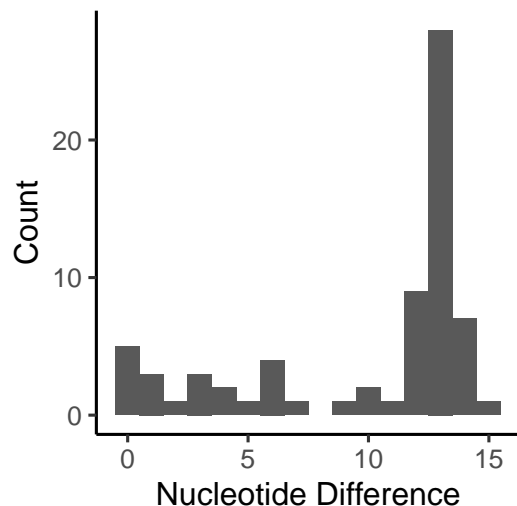
### IGHV3-13\*01

130 sequences assigned  
3 (2.3%) exact matches, in which:  
3 unique CDR3  
3 unique J



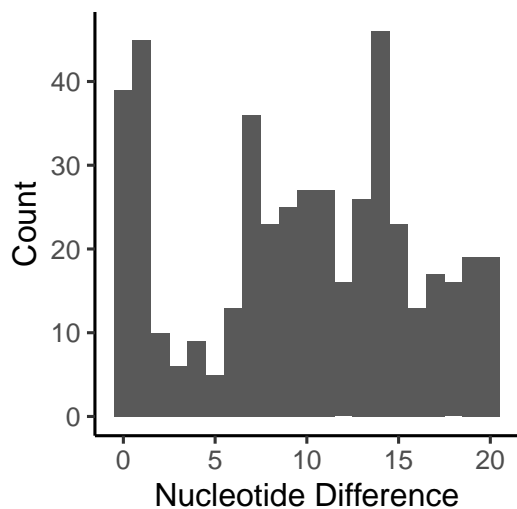
### IGHV3-20\*01

71 sequences assigned  
5 (7%) exact matches, in which:  
5 unique CDR3  
3 unique J



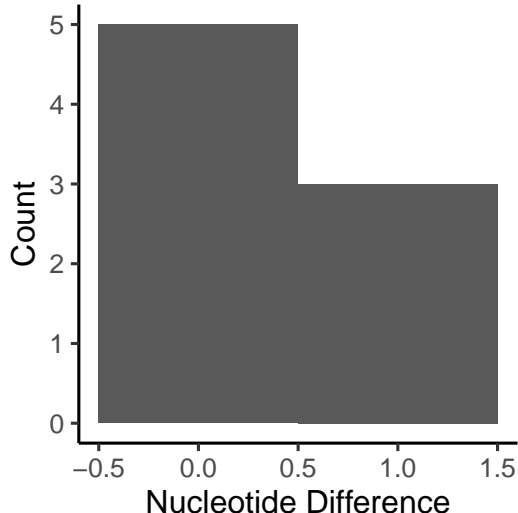
### IGHV3-11\*01

660 sequences assigned  
39 (5.9%) exact matches, in which:  
34 unique CDR3  
4 unique J



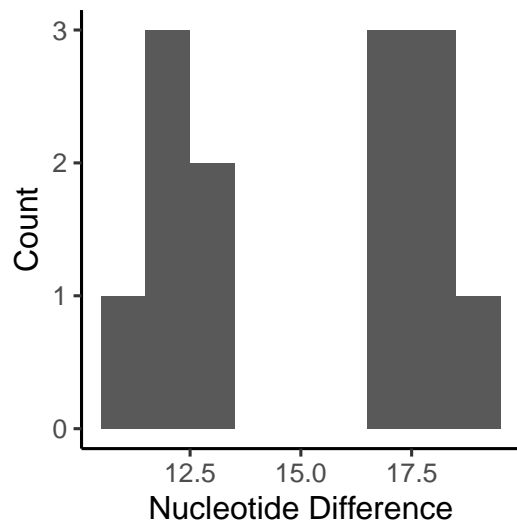
### IGHV3-13\*05

8 sequences assigned  
5 (62.5%) exact matches, in which:  
2 unique CDR3  
2 unique J



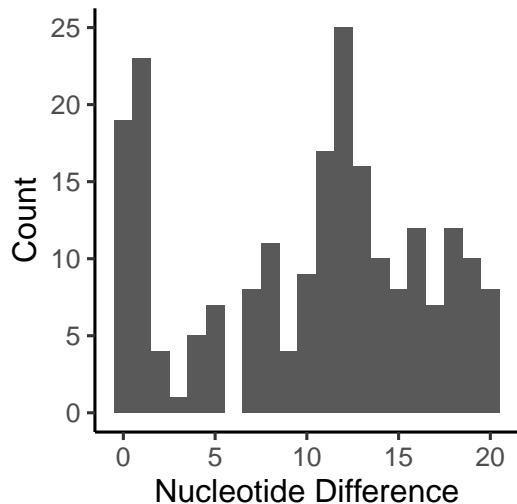
### IGHV3-20\*04

16 sequences assigned  
No exact matches.



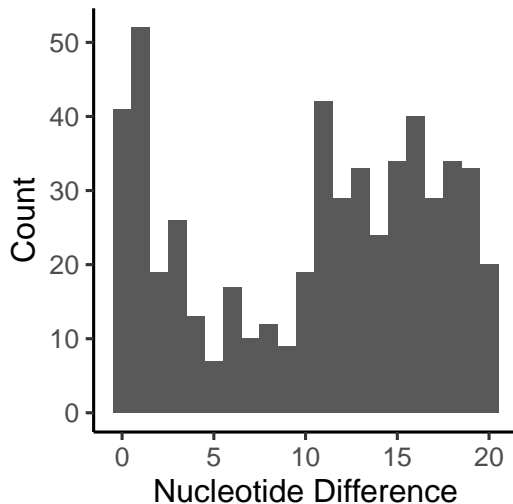
### IGHV3-11\*06

268 sequences assigned  
19 (7.1%) exact matches, in which:  
18 unique CDR3  
5 unique J



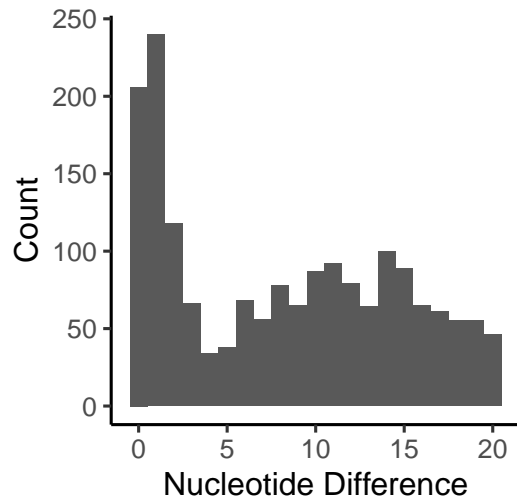
### IGHV3-15\*01

757 sequences assigned  
41 (5.4%) exact matches, in which:  
39 unique CDR3  
4 unique J



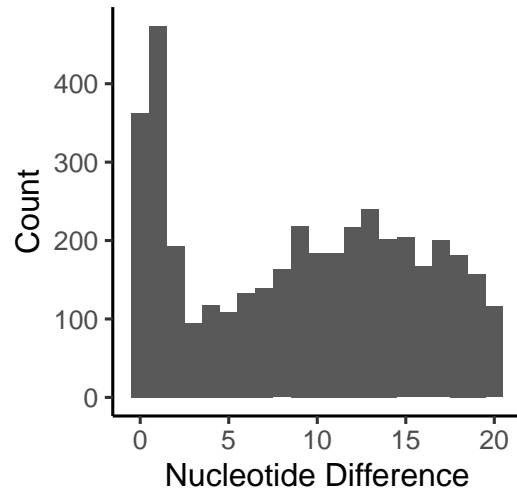
### IGHV3-21\*01

2364 sequences assigned  
206 (8.7%) exact matches, in which:  
163 unique CDR3  
6 unique J



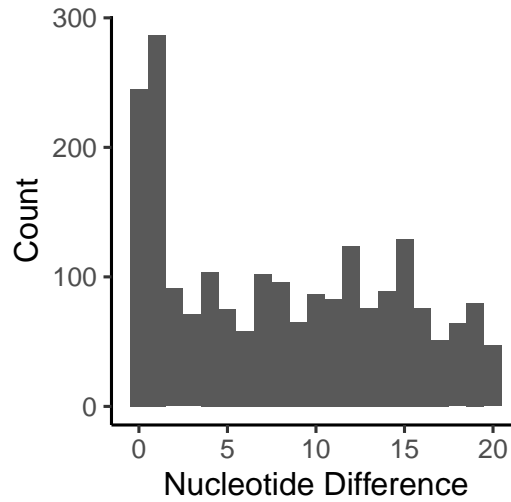
### IGHV3-23\*01

5583 sequences assigned  
363 (6.5%) exact matches, in which:  
311 unique CDR3  
6 unique J



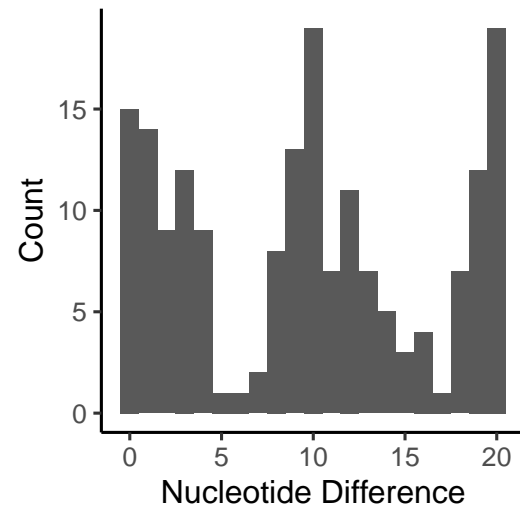
### IGHV3-30\*18

2573 sequences assigned  
245 (9.5%) exact matches, in which:  
190 unique CDR3  
6 unique J



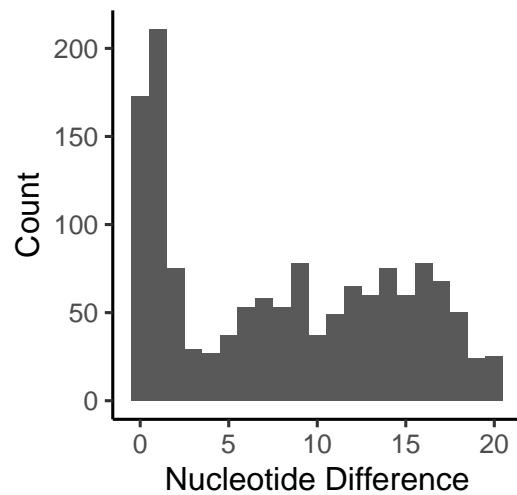
### IGHV3-43\*02

224 sequences assigned  
15 (6.7%) exact matches, in which:  
14 unique CDR3  
3 unique J



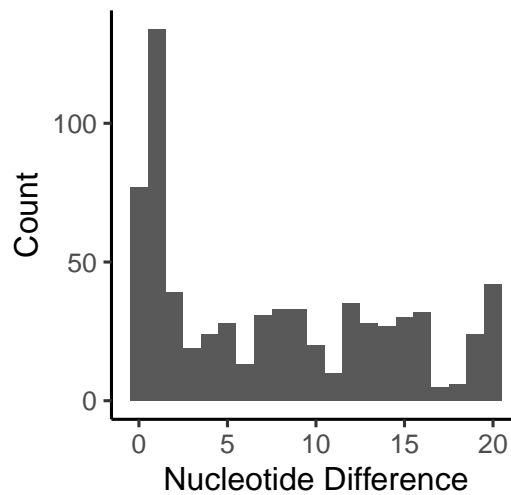
### IGHV3-30-3\*01

1679 sequences assigned  
173 (10.3%) exact matches, in which:  
146 unique CDR3  
6 unique J



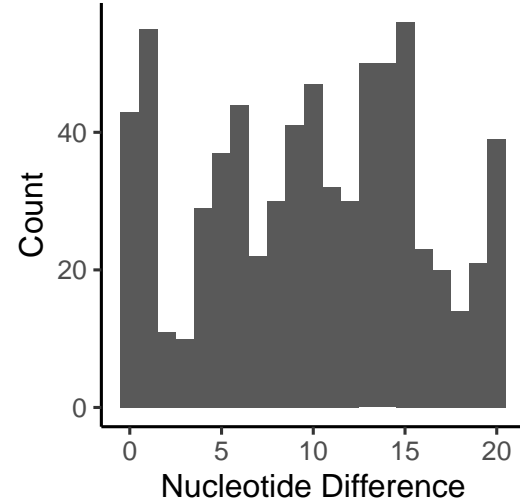
### IGHV3-33\*01

854 sequences assigned  
77 (9%) exact matches, in which:  
53 unique CDR3  
4 unique J



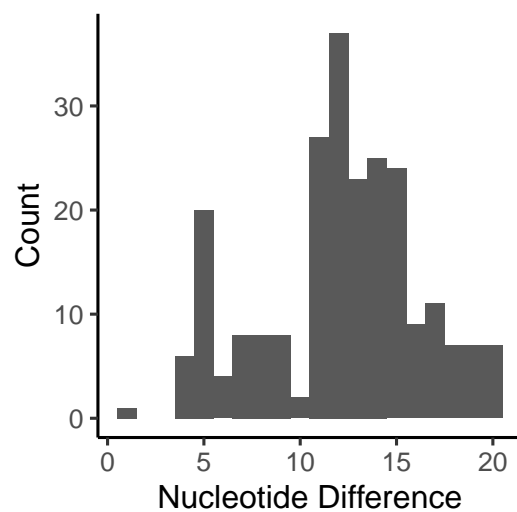
### IGHV3-48\*01

881 sequences assigned  
43 (4.9%) exact matches, in which:  
33 unique CDR3  
4 unique J



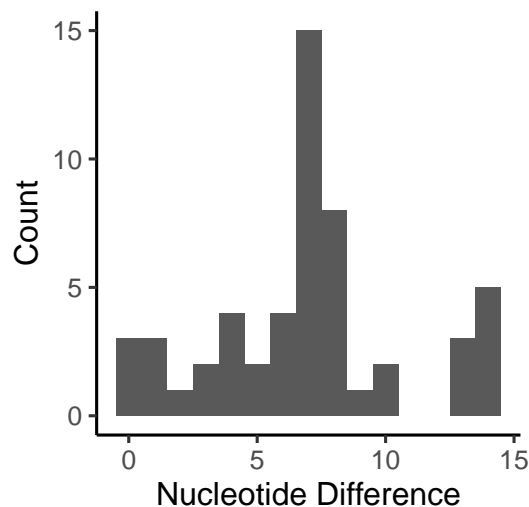
### IGHV3-30\*04

318 sequences assigned  
No exact matches.



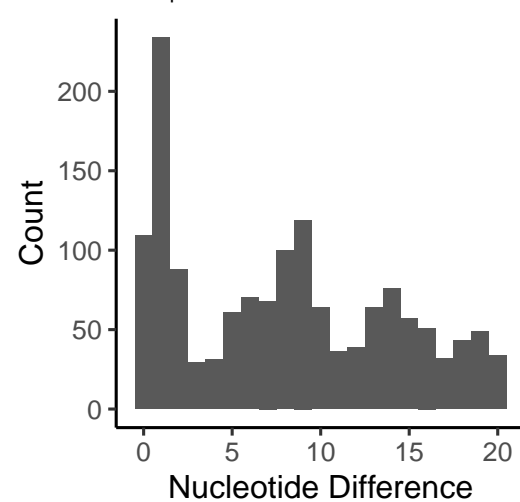
### IGHV3-43\*01

102 sequences assigned  
3 (2.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



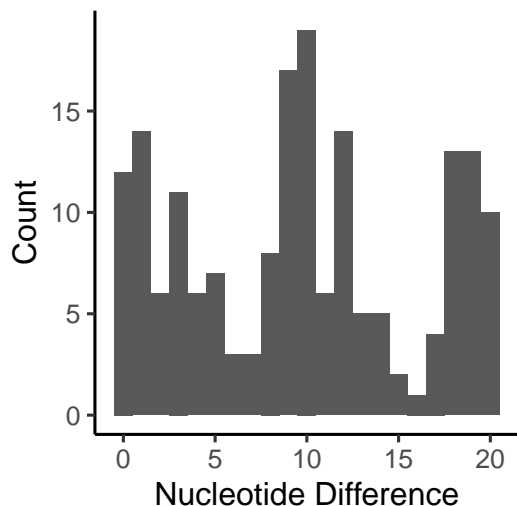
### IGHV3-48\*03

1687 sequences assigned  
109 (6.5%) exact matches, in which:  
79 unique CDR3  
3 unique J



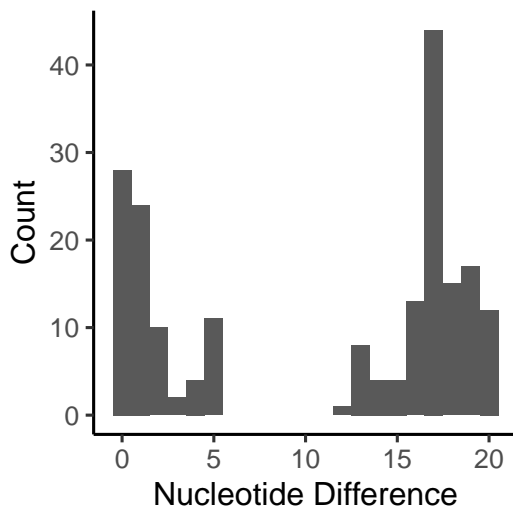
### IGHV3-49\*03

341 sequences assigned  
12 (3.5%) exact matches, in which:  
12 unique CDR3  
3 unique J



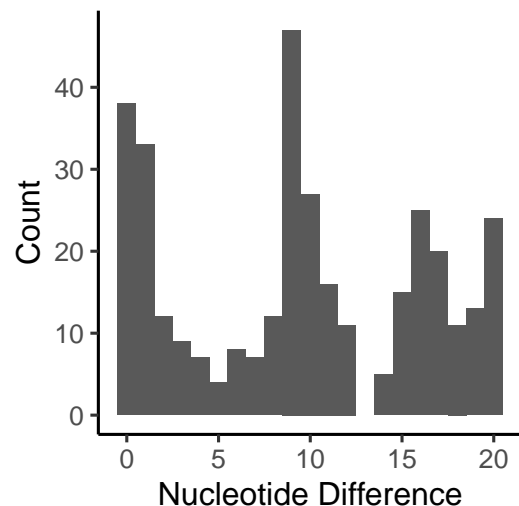
### IGHV3-53\*04

254 sequences assigned  
28 (11%) exact matches, in which:  
22 unique CDR3  
4 unique J



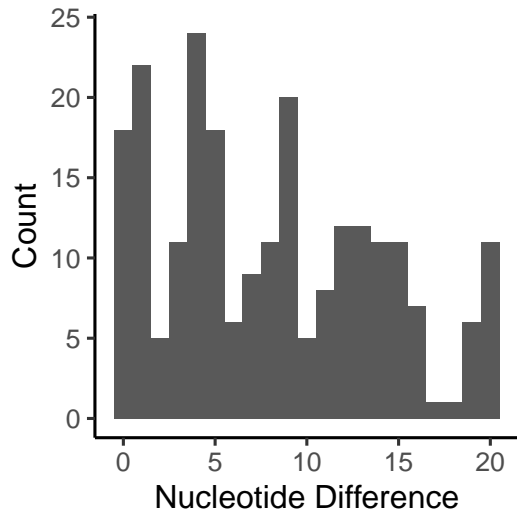
### IGHV3-66\*02

404 sequences assigned  
38 (9.4%) exact matches, in which:  
33 unique CDR3  
4 unique J



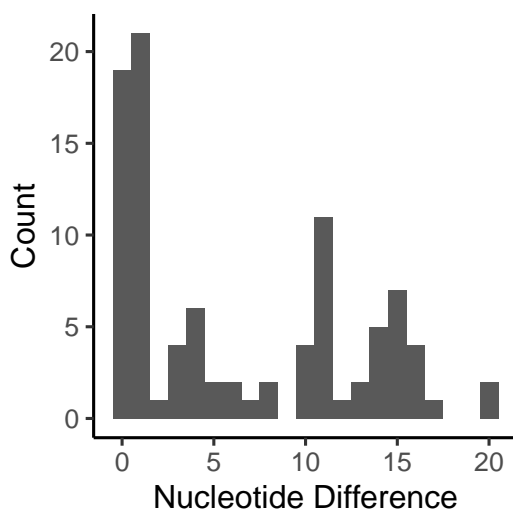
### IGHV3-49\*04

299 sequences assigned  
18 (6%) exact matches, in which:  
17 unique CDR3  
5 unique J



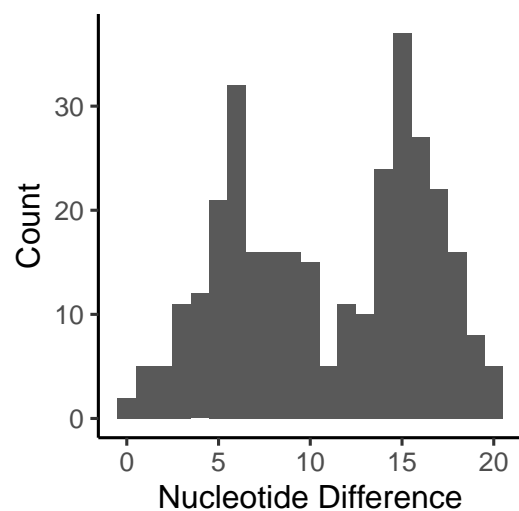
### IGHV3-64\*01

137 sequences assigned  
19 (13.9%) exact matches, in which:  
12 unique CDR3  
3 unique J



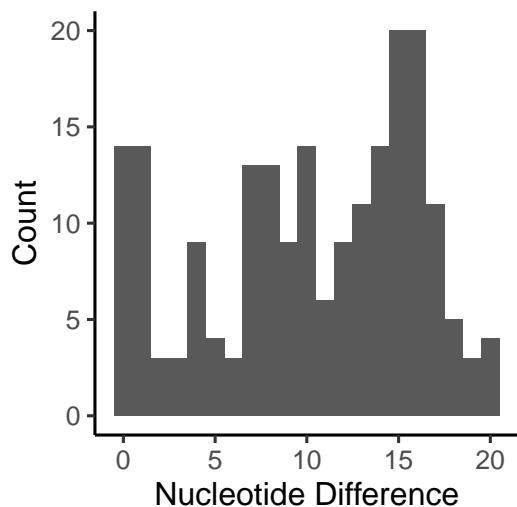
### IGHV3-72\*01

445 sequences assigned  
2 (0.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



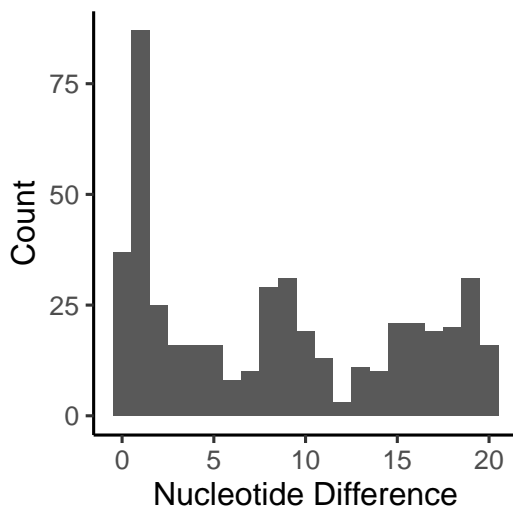
### IGHV3-53\*02

418 sequences assigned  
14 (3.3%) exact matches, in which:  
13 unique CDR3  
5 unique J



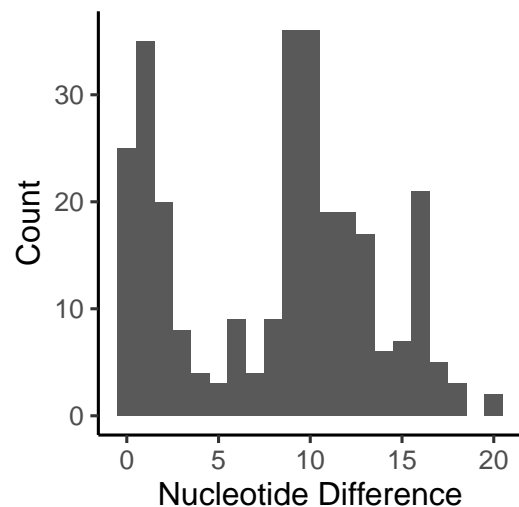
### IGHV3-66\*01

546 sequences assigned  
37 (6.8%) exact matches, in which:  
28 unique CDR3  
5 unique J



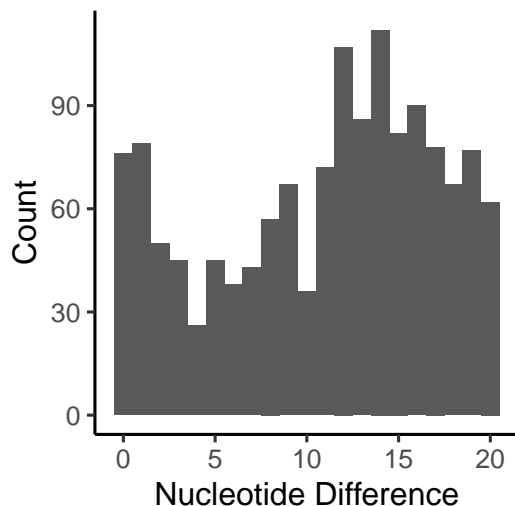
### IGHV3-73\*01

369 sequences assigned  
25 (6.8%) exact matches, in which:  
21 unique CDR3  
4 unique J



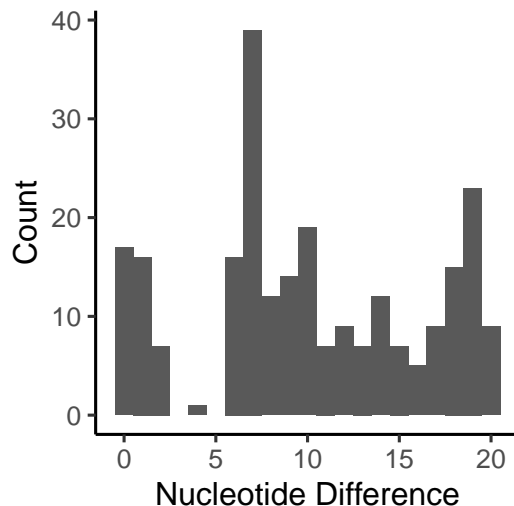
### IGHV3-74\*01

1879 sequences assigned  
76 (4%) exact matches, in which:  
64 unique CDR3  
4 unique J



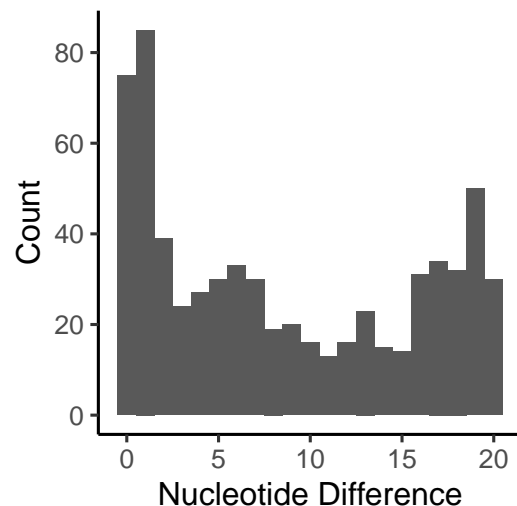
### IGHV4-4\*02

385 sequences assigned  
17 (4.4%) exact matches, in which:  
16 unique CDR3  
4 unique J



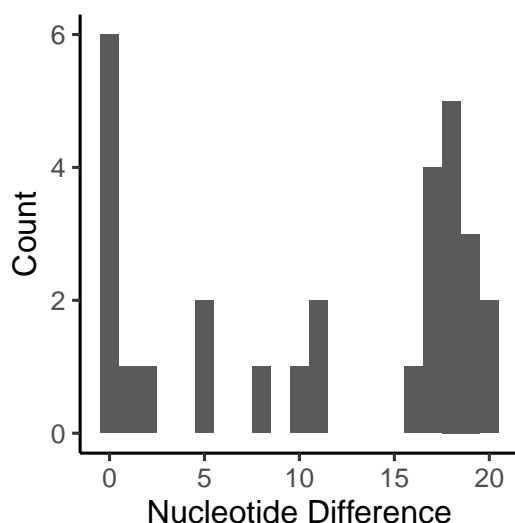
### IGHV4-30-4\*01

979 sequences assigned  
75 (7.7%) exact matches, in which:  
62 unique CDR3  
4 unique J



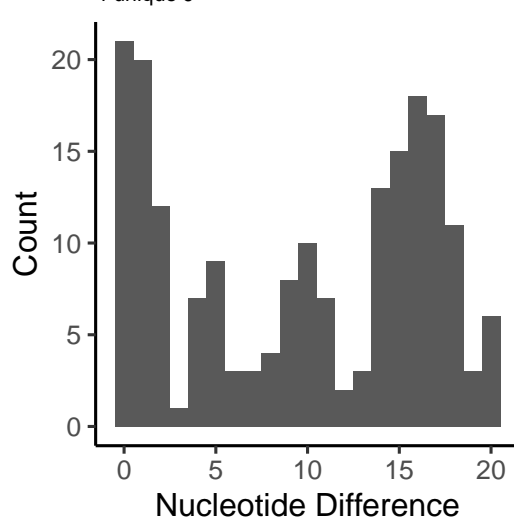
### IGHV3-43D\*03

31 sequences assigned  
6 (19.4%) exact matches, in which:  
6 unique CDR3  
3 unique J



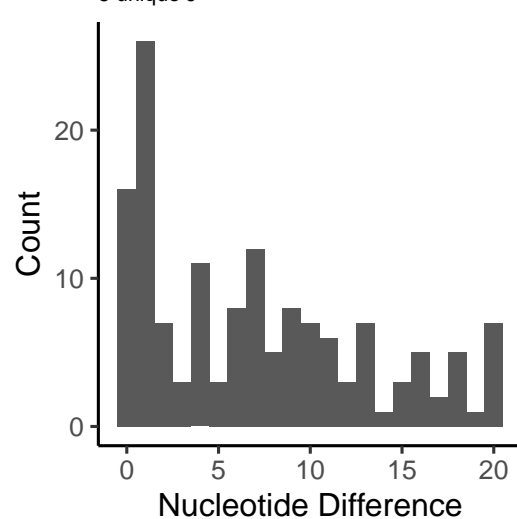
### IGHV4-4\*07

247 sequences assigned  
21 (8.5%) exact matches, in which:  
16 unique CDR3  
4 unique J



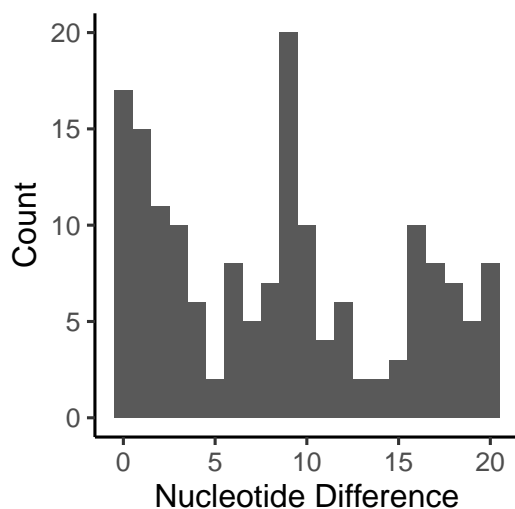
### IGHV4-30-2\*01

281 sequences assigned  
16 (5.7%) exact matches, in which:  
15 unique CDR3  
5 unique J



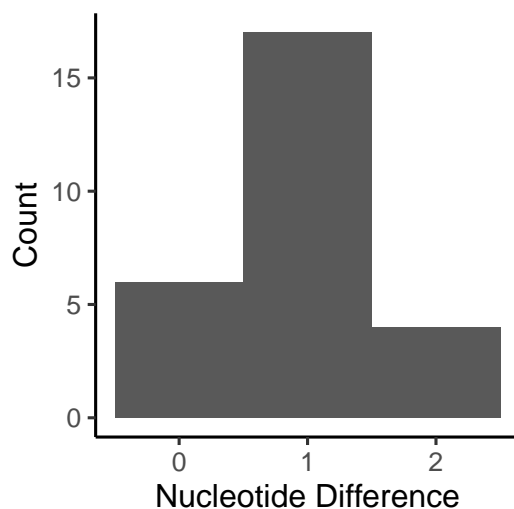
### IGHV3-64D\*06

247 sequences assigned  
17 (6.9%) exact matches, in which:  
17 unique CDR3  
4 unique J



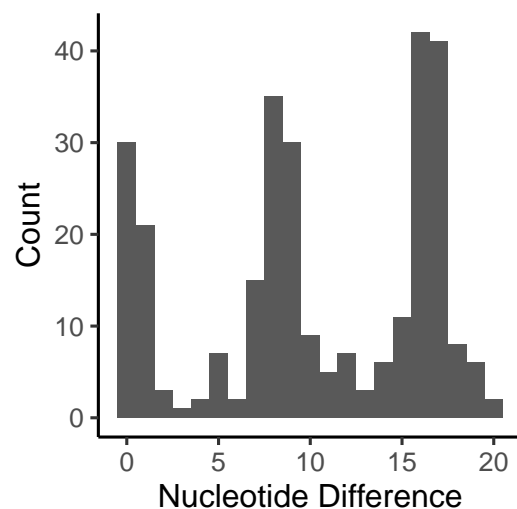
### IGHV4-28\*01

27 sequences assigned  
6 (22.2%) exact matches, in which:  
3 unique CDR3  
1 unique J



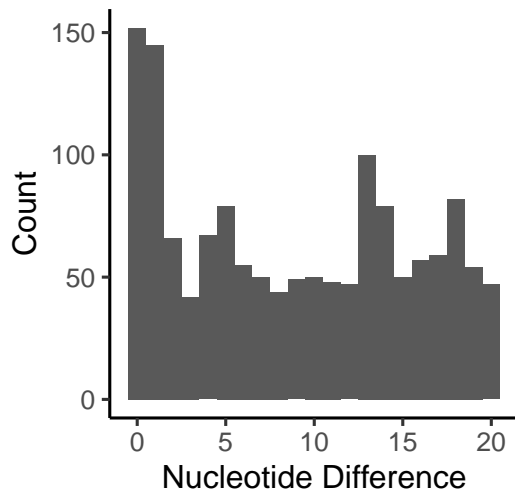
### IGHV4-31\*03

574 sequences assigned  
30 (5.2%) exact matches, in which:  
24 unique CDR3  
6 unique J



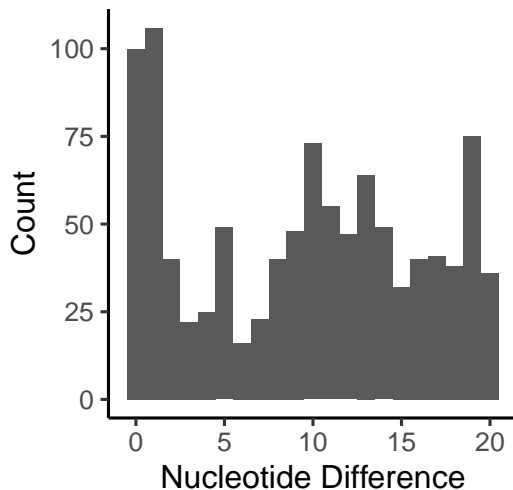
### IGHV4-34\*01

1954 sequences assigned  
152 (7.8%) exact matches, in which:  
139 unique CDR3  
6 unique J



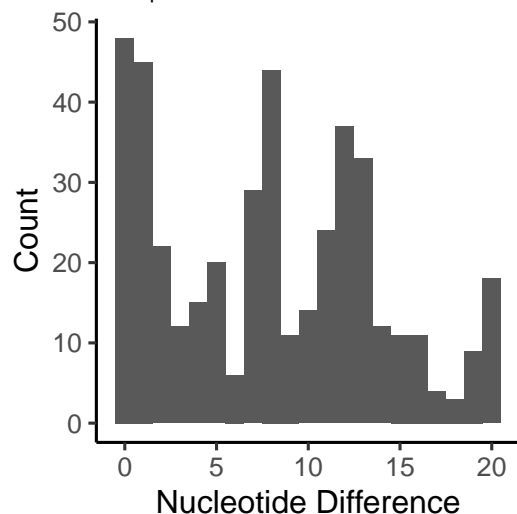
### IGHV4-59\*01

1224 sequences assigned  
100 (8.2%) exact matches, in which:  
82 unique CDR3  
6 unique J



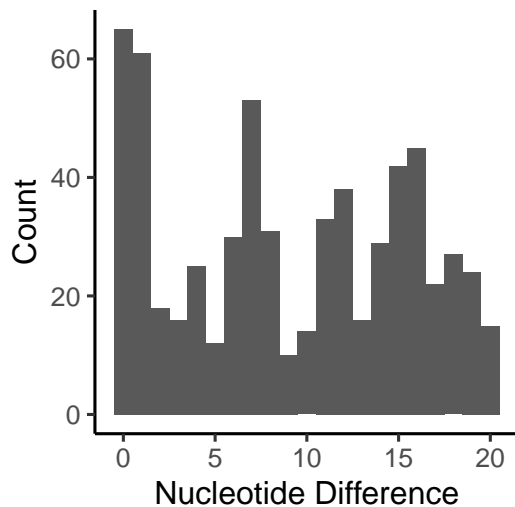
### IGHV5-10-1\*03

618 sequences assigned  
48 (7.8%) exact matches, in which:  
43 unique CDR3  
5 unique J



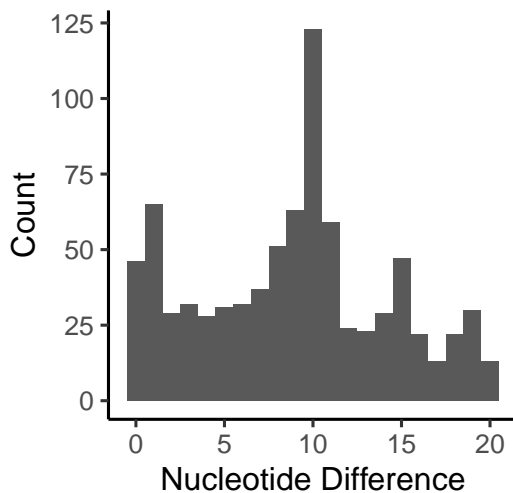
### IGHV4-38-2\*02

955 sequences assigned  
65 (6.8%) exact matches, in which:  
56 unique CDR3  
6 unique J



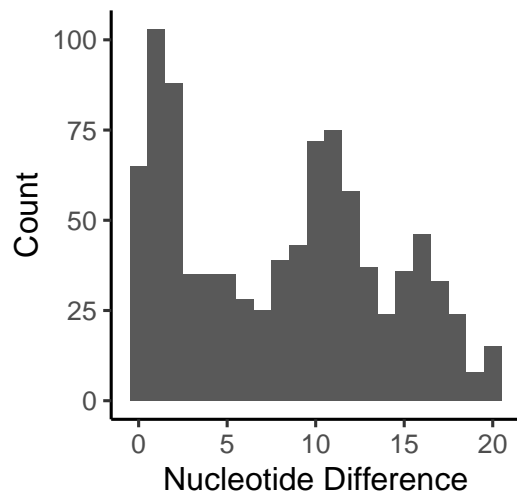
### IGHV4-59\*08

1012 sequences assigned  
46 (4.5%) exact matches, in which:  
35 unique CDR3  
5 unique J



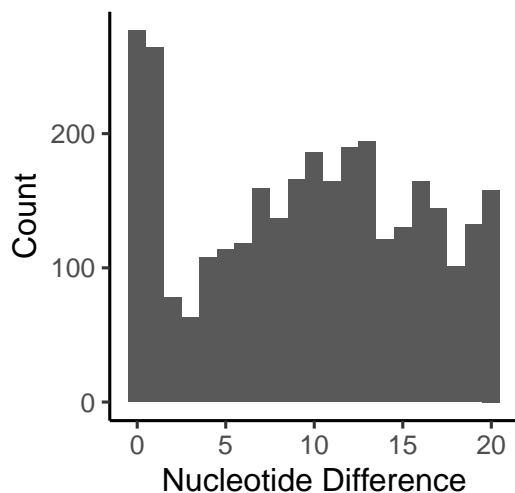
### IGHV5-51\*01

1168 sequences assigned  
65 (5.6%) exact matches, in which:  
57 unique CDR3  
5 unique J



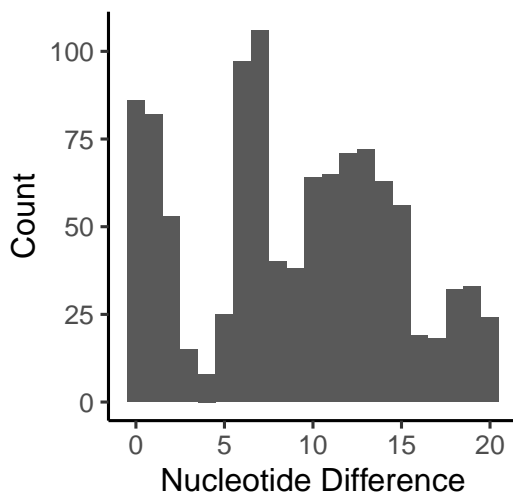
### IGHV4-39\*01

4604 sequences assigned  
277 (6%) exact matches, in which:  
259 unique CDR3  
6 unique J



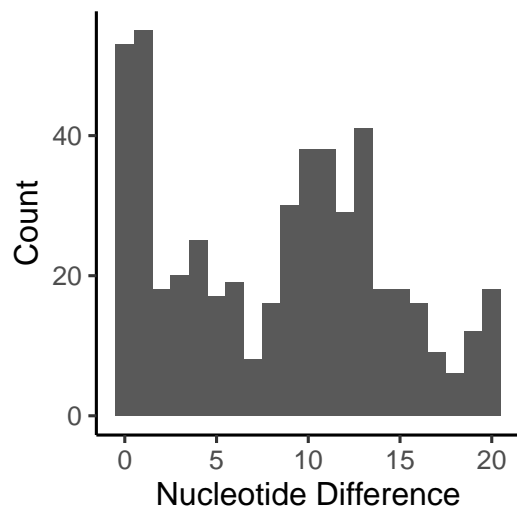
### IGHV4-61\*02

1430 sequences assigned  
86 (6%) exact matches, in which:  
65 unique CDR3  
6 unique J



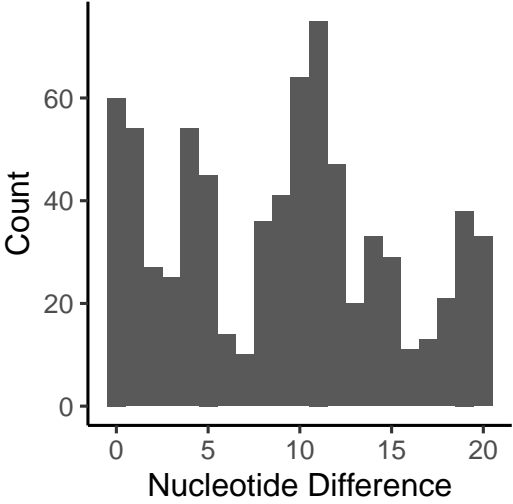
### IGHV5-51\*03

629 sequences assigned  
53 (8.4%) exact matches, in which:  
48 unique CDR3  
5 unique J



# IGHV6-1\*01

795 sequences assigned  
60 (7.5%) exact matches, in which:  
46 unique CDR3  
6 unique J







Warning – no inferred sequences found.