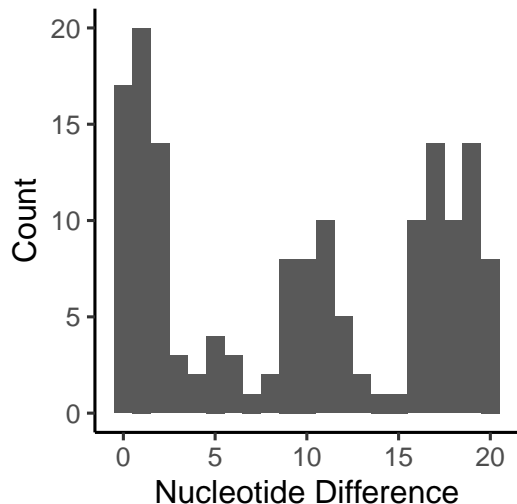


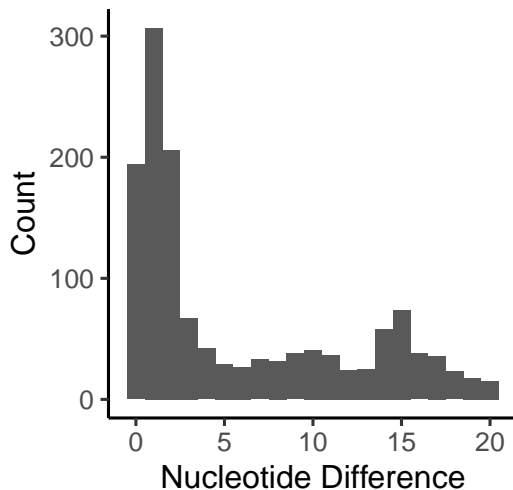
### IGHV1-2\*04

195 sequences assigned  
17 (8.7%) exact matches, in which:  
11 unique CDR3  
4 unique J



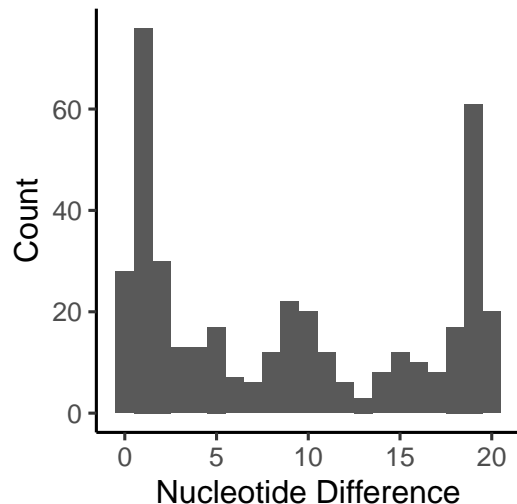
### IGHV1-18\*01

1873 sequences assigned  
194 (10.4%) exact matches, in which:  
109 unique CDR3  
6 unique J



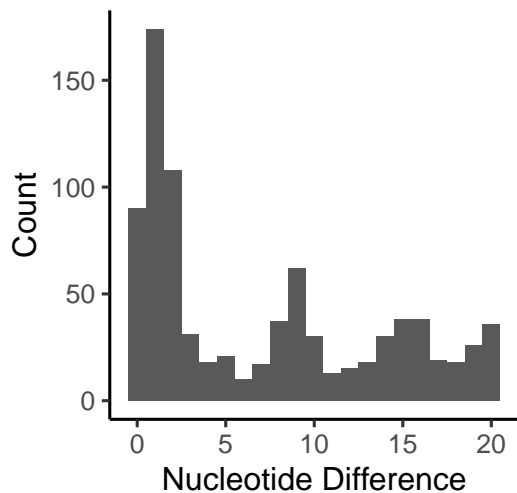
### IGHV1-46\*01

639 sequences assigned  
28 (4.4%) exact matches, in which:  
19 unique CDR3  
5 unique J



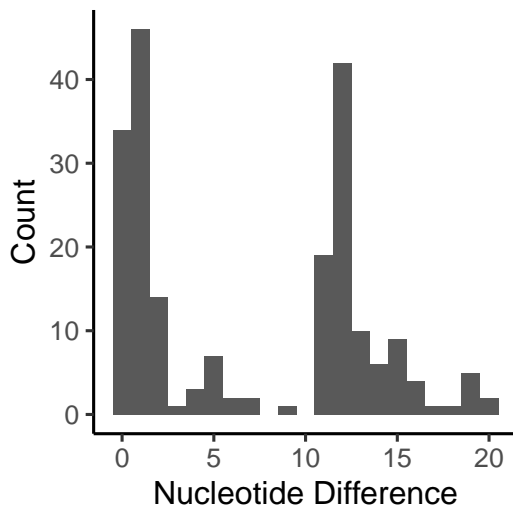
### IGHV1-3\*01

1068 sequences assigned  
90 (8.4%) exact matches, in which:  
62 unique CDR3  
5 unique J



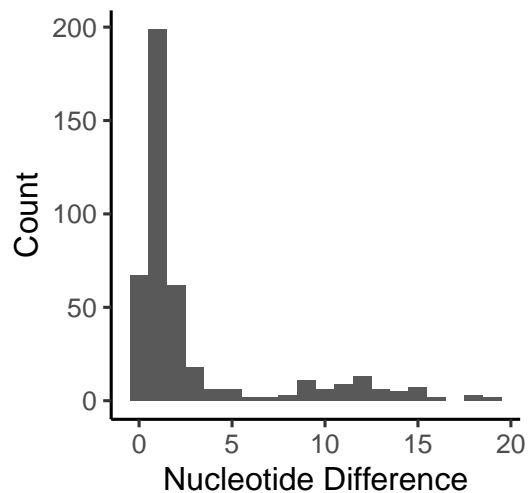
### IGHV1-24\*01

213 sequences assigned  
34 (16%) exact matches, in which:  
25 unique CDR3  
4 unique J



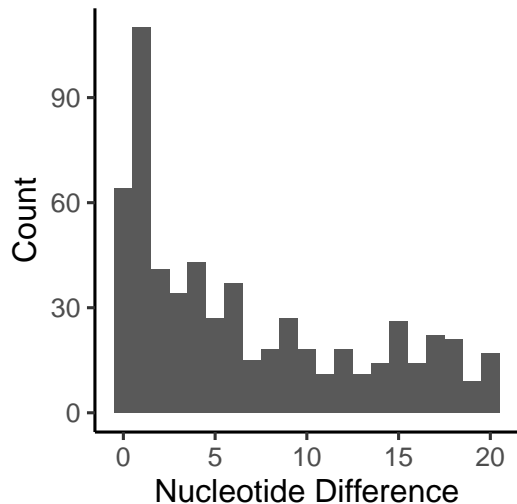
### IGHV1-46\*03

478 sequences assigned  
67 (14%) exact matches, in which:  
41 unique CDR3  
4 unique J



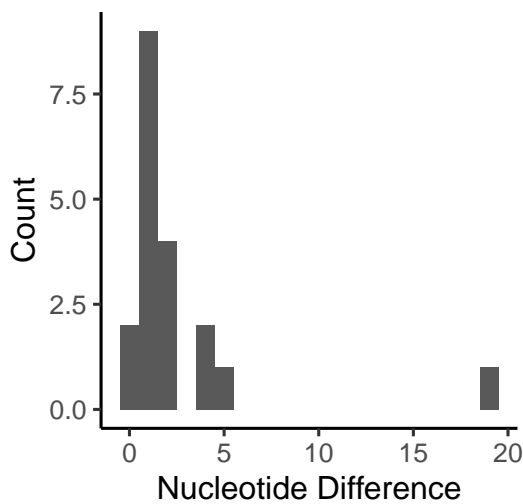
### IGHV1-8\*01

701 sequences assigned  
64 (9.1%) exact matches, in which:  
48 unique CDR3  
5 unique J



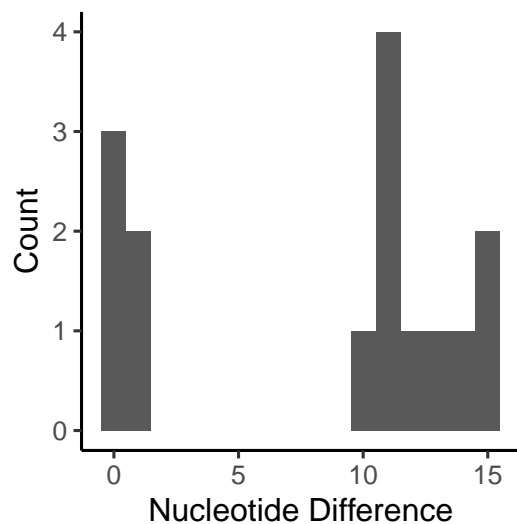
### IGHV1-45\*02

19 sequences assigned  
2 (10.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



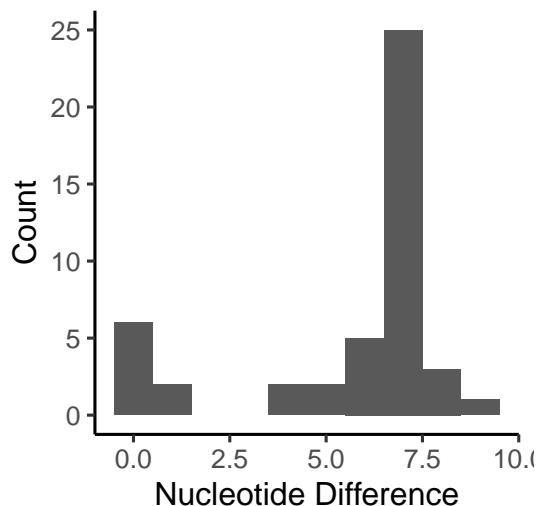
### IGHV1-58\*01

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



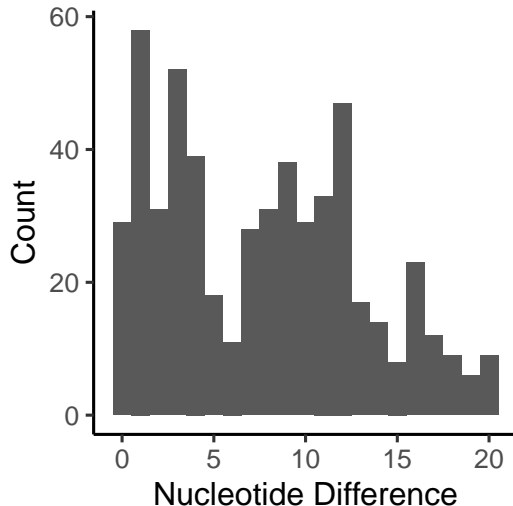
### IGHV1-58\*02

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



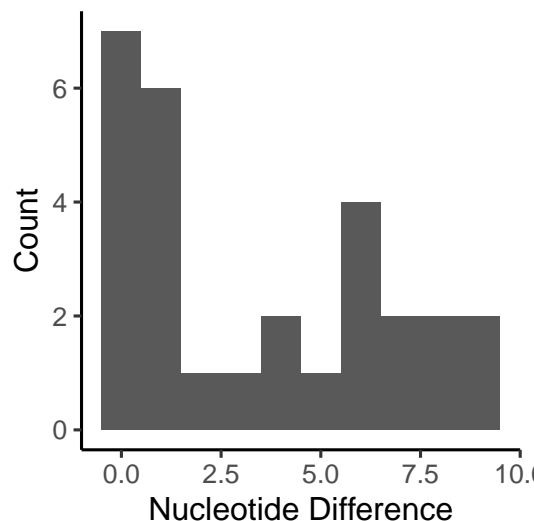
### IGHV2-5\*02

612 sequences assigned  
29 (4.7%) exact matches, in which:  
22 unique CDR3  
5 unique J



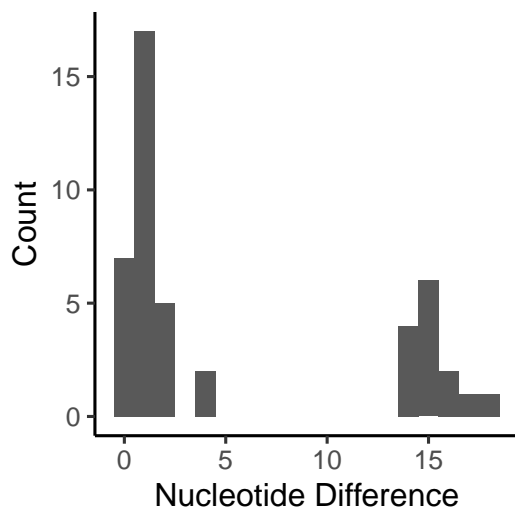
### IGHV2-70\*15

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



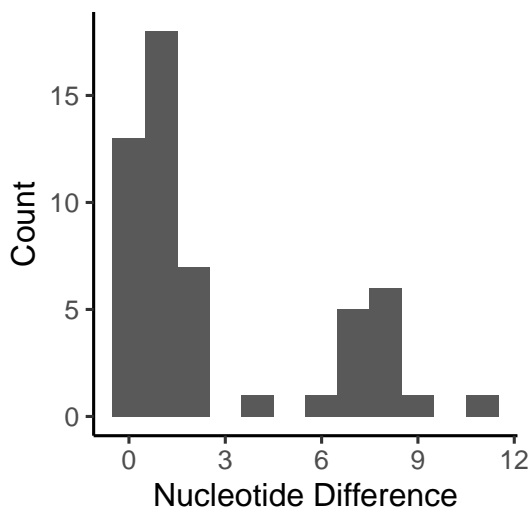
### IGHV1-69-2\*01

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



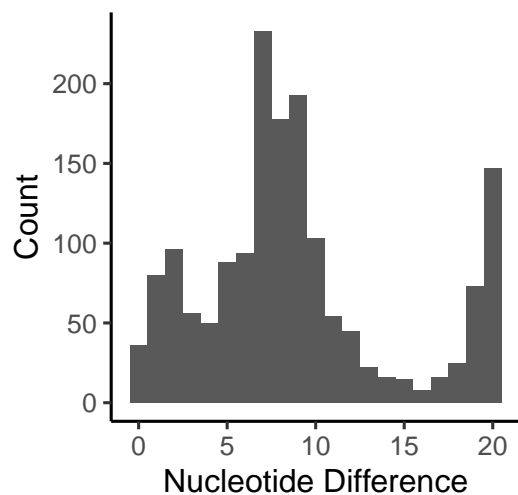
### IGHV2-26\*01

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



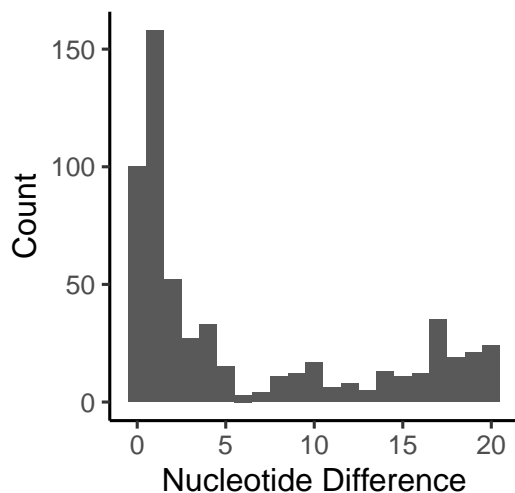
### IGHV3-7\*01

2088 sequences assigned  
36 (1.7%) exact matches, in which:  
32 unique CDR3  
4 unique J



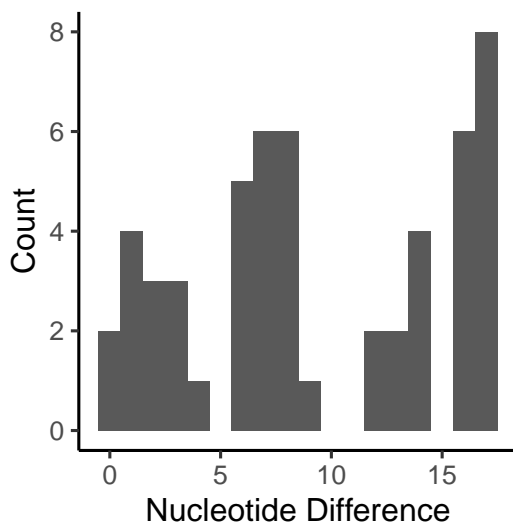
### IGHV1-69\*06

715 sequences assigned  
100 (14%) exact matches, in which:  
69 unique CDR3  
5 unique J



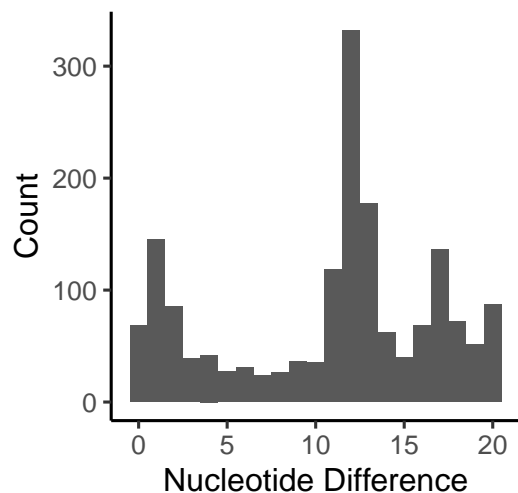
### IGHV2-70\*01

53 sequences assigned  
2 (3.8%) exact matches, in which:  
2 unique CDR3  
1 unique J



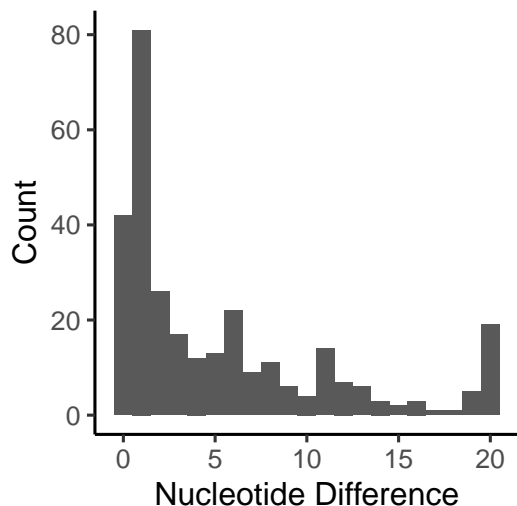
### IGHV3-7\*03

1885 sequences assigned  
68 (3.6%) exact matches, in which:  
47 unique CDR3  
5 unique J



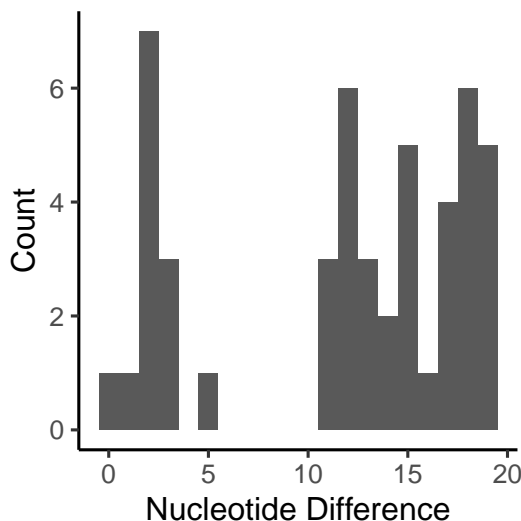
### IGHV3-9\*01

417 sequences assigned  
42 (10.1%) exact matches, in which:  
36 unique CDR3  
6 unique J



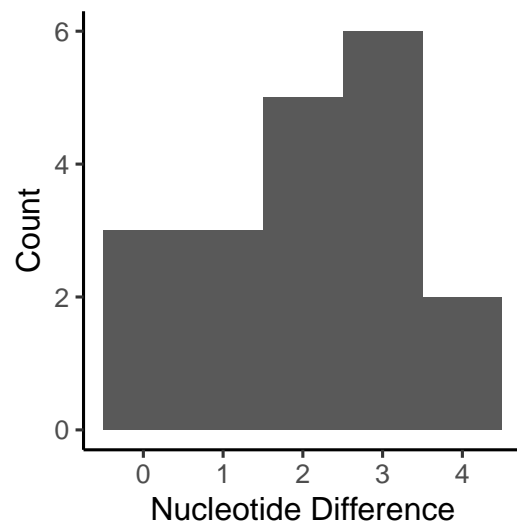
### IGHV3-13\*01

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



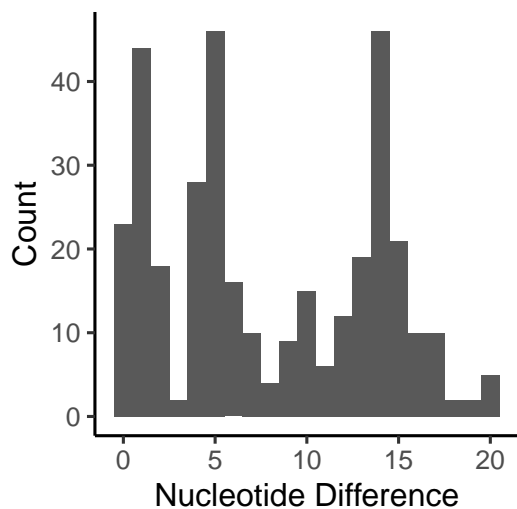
### IGHV3-20\*01

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



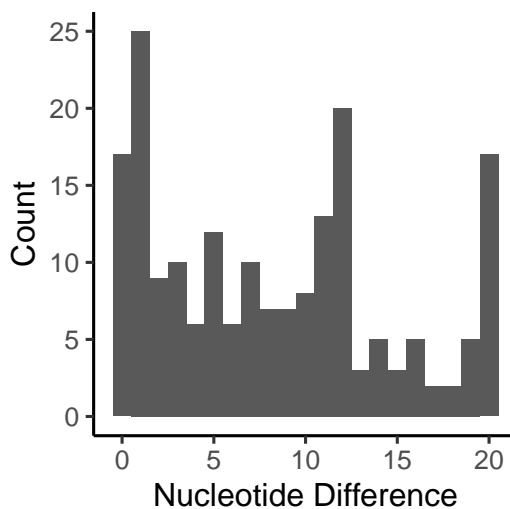
### IGHV3-11\*01

374 sequences assigned  
23 (6.1%) exact matches, in which:  
19 unique CDR3  
3 unique J



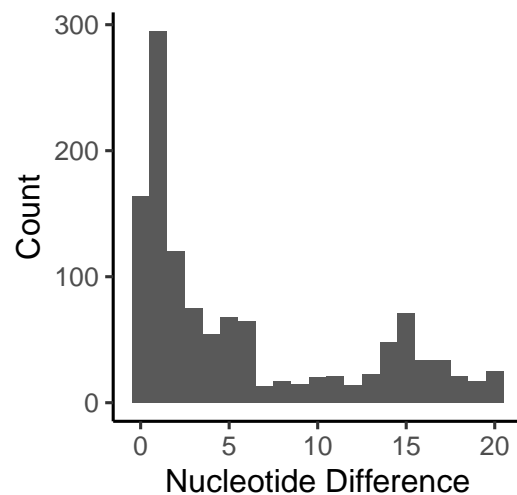
### IGHV3-15\*01

307 sequences assigned  
17 (5.5%) exact matches, in which:  
15 unique CDR3  
3 unique J



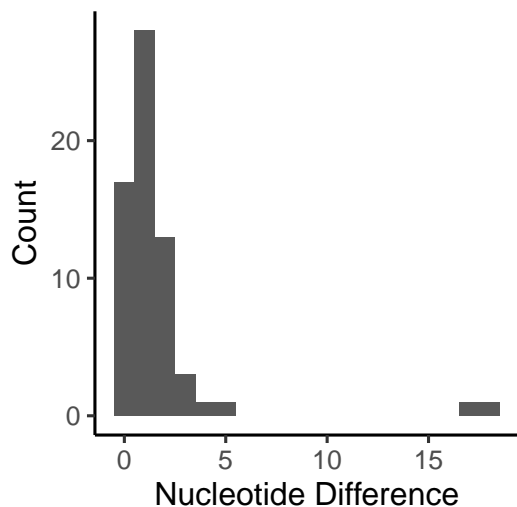
### IGHV3-21\*01

1262 sequences assigned  
164 (13%) exact matches, in which:  
97 unique CDR3  
5 unique J



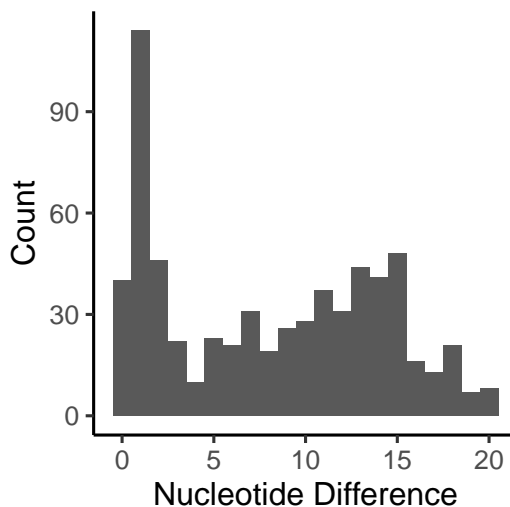
### IGHV3-11\*06

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



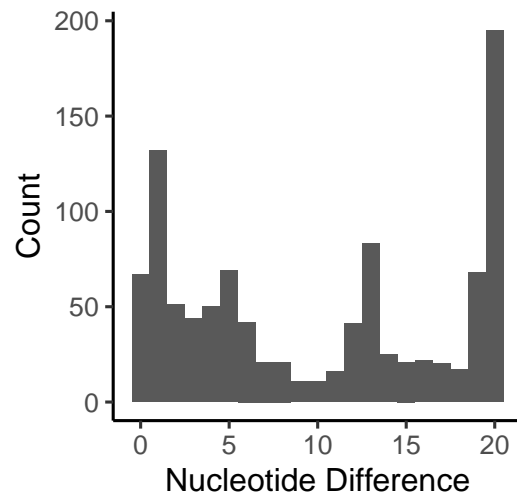
### IGHV3-15\*07

744 sequences assigned  
40 (5.4%) exact matches, in which:  
32 unique CDR3  
6 unique J



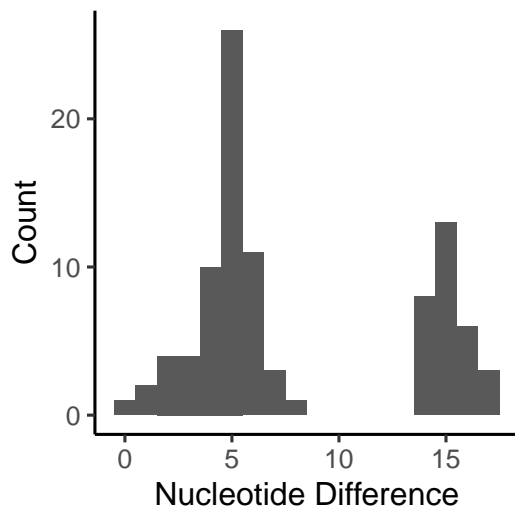
### IGHV3-33\*01

1204 sequences assigned  
67 (5.6%) exact matches, in which:  
48 unique CDR3  
5 unique J



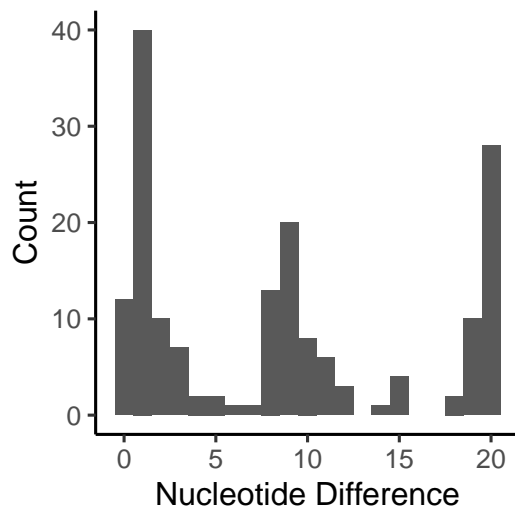
### IGHV3-43\*01

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



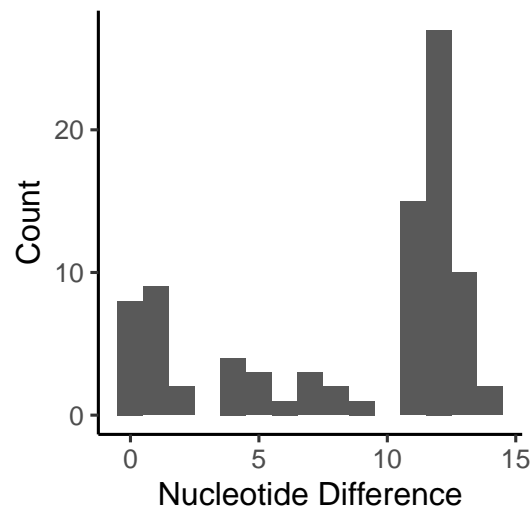
### IGHV3-49\*05

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



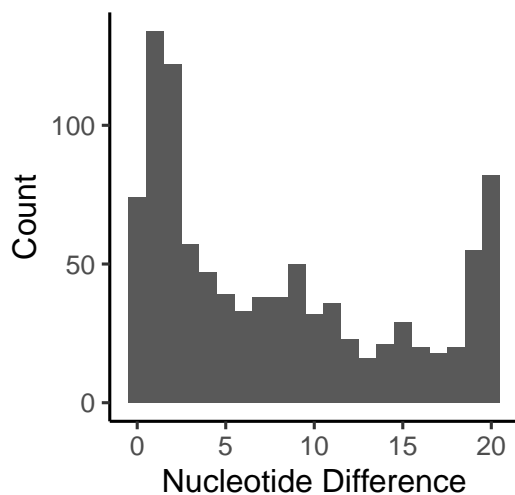
### IGHV3-64\*01

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



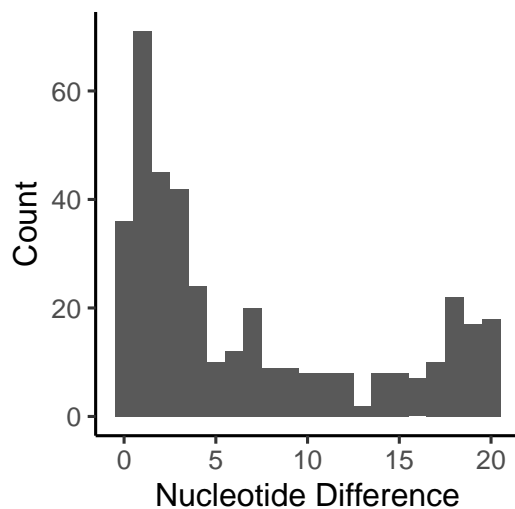
### IGHV3-48\*02

1126 sequences assigned  
74 (6.6%) exact matches, in which:  
57 unique CDR3  
6 unique J



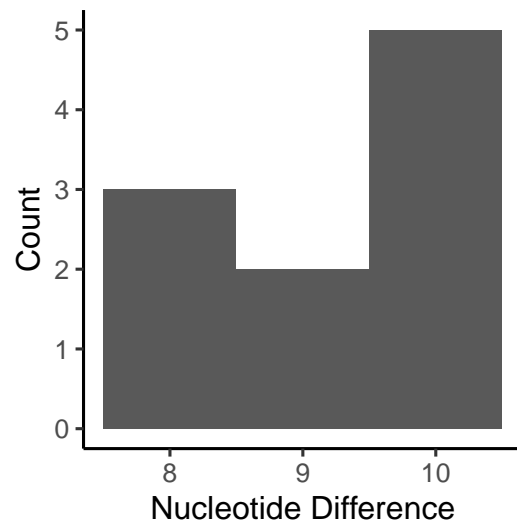
### IGHV3-53\*01

431 sequences assigned  
36 (8.4%) exact matches, in which:  
29 unique CDR3  
4 unique J



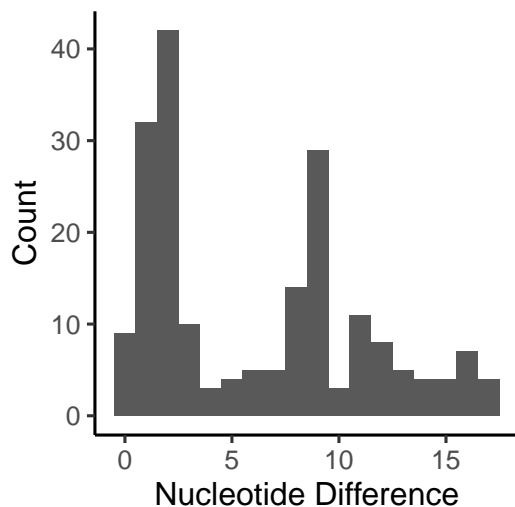
### IGHV3-64\*07

11 sequences assigned  
No exact matches.



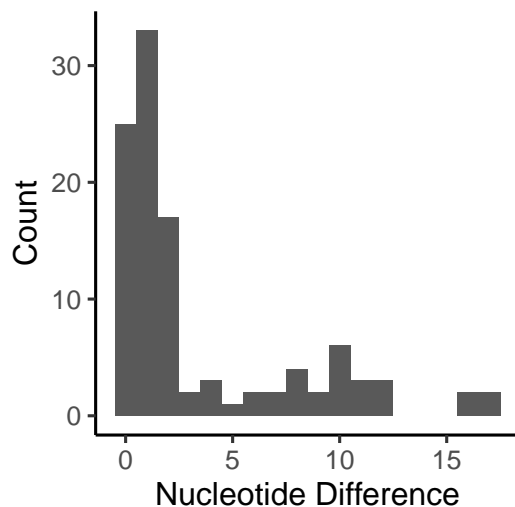
### IGHV3-49\*04

267 sequences assigned  
9 (3.4%) exact matches, in which:  
4 unique CDR3  
3 unique J



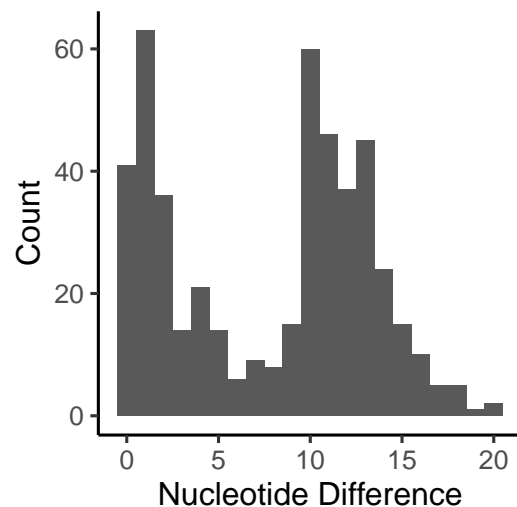
### IGHV3-53\*04

112 sequences assigned  
25 (22.3%) exact matches, in which:  
21 unique CDR3  
4 unique J



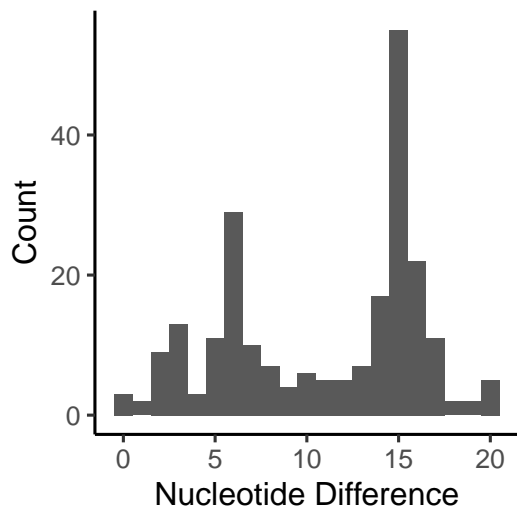
### IGHV3-66\*01

510 sequences assigned  
41 (8%) exact matches, in which:  
30 unique CDR3  
5 unique J



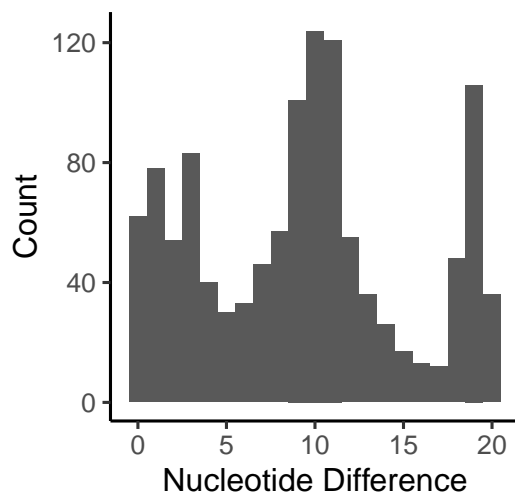
### IGHV3-72\*01

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



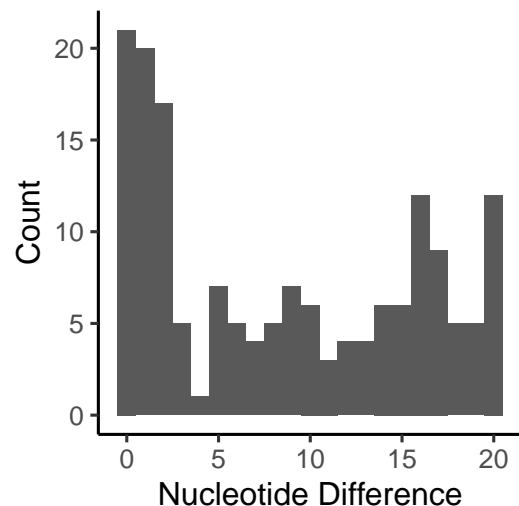
### IGHV3-74\*01

1304 sequences assigned  
62 (4.8%) exact matches, in which:  
55 unique CDR3  
5 unique J



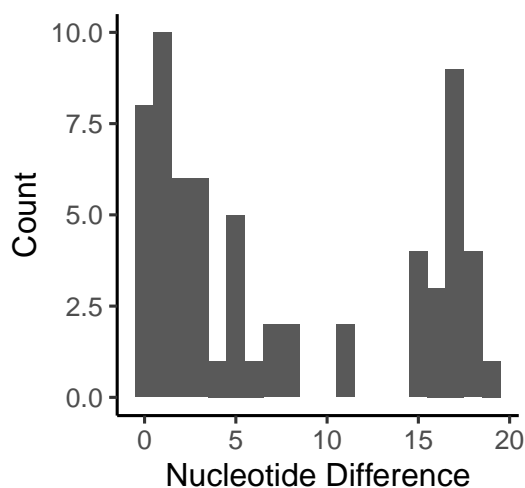
### IGHV4-4\*02

234 sequences assigned  
21 (9%) exact matches, in which:  
19 unique CDR3  
5 unique J



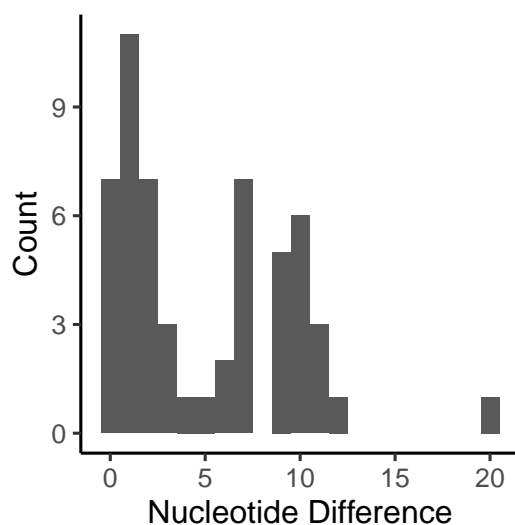
### IGHV3-73\*01

111 sequences assigned  
8 (7.2%) exact matches, in which:  
7 unique CDR3  
2 unique J



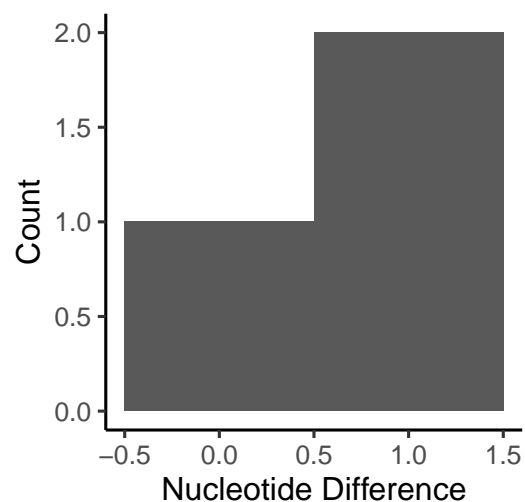
### IGHV3-43D\*03

56 sequences assigned  
7 (12.5%) exact matches, in which:  
5 unique CDR3  
2 unique J



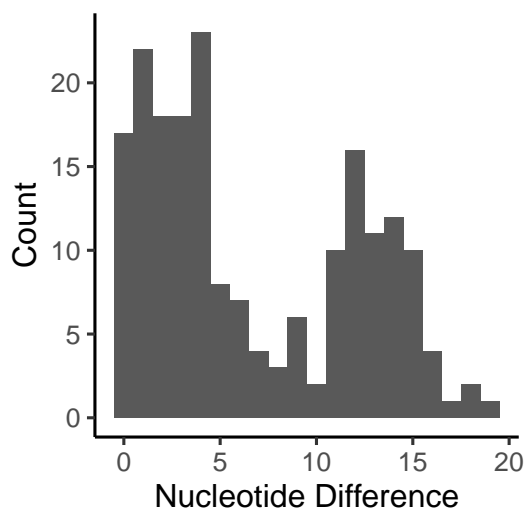
### IGHV4-28\*07

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



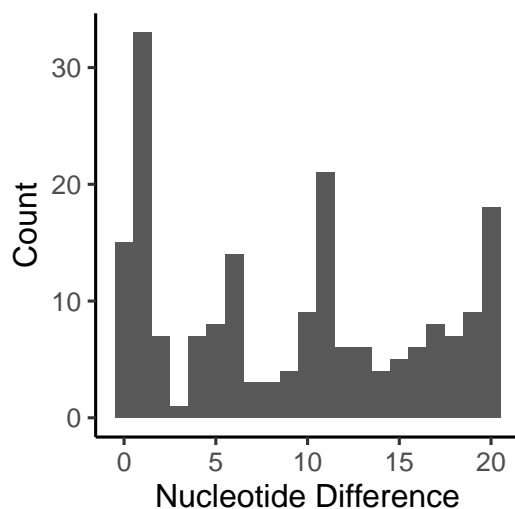
### IGHV3-73\*02

203 sequences assigned  
17 (8.4%) exact matches, in which:  
15 unique CDR3  
4 unique J



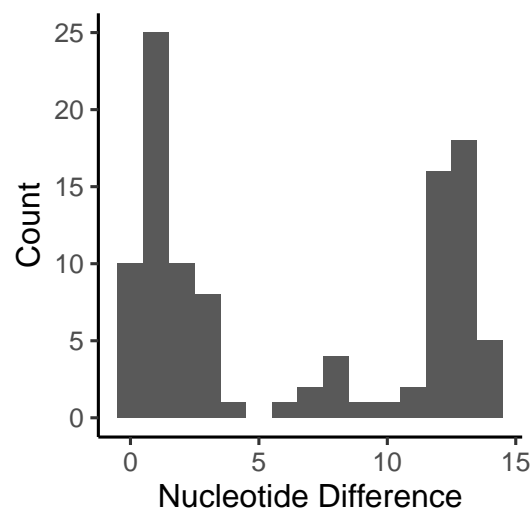
### IGHV3-64D\*06

281 sequences assigned  
15 (5.3%) exact matches, in which:  
13 unique CDR3  
4 unique J



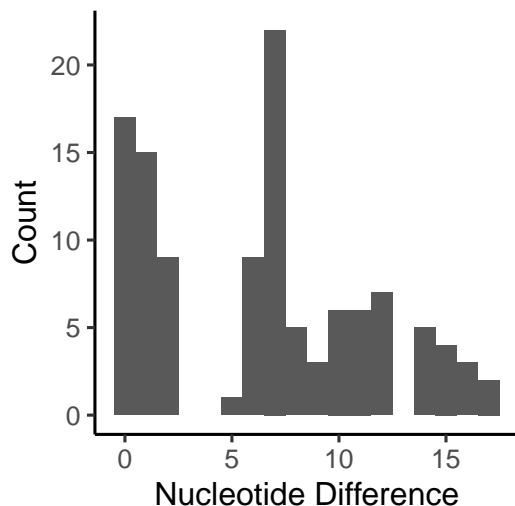
### IGHV4-30-2\*01

129 sequences assigned  
10 (7.8%) exact matches, in which:  
9 unique CDR3  
4 unique J



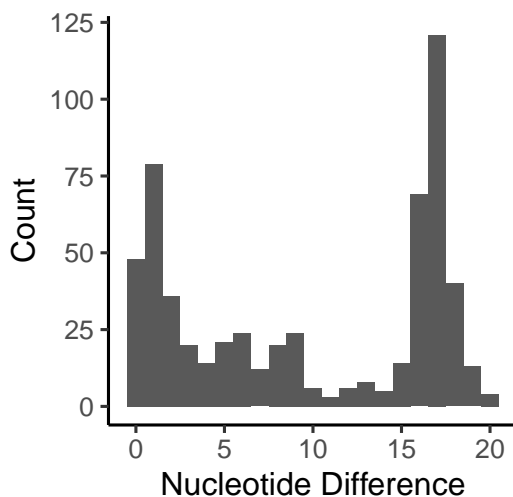
### IGHV4-30-4\*07

136 sequences assigned  
17 (12.5%) exact matches, in which:  
11 unique CDR3  
4 unique J



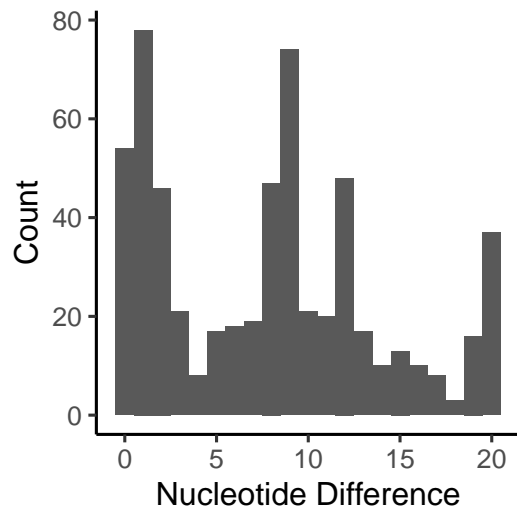
### IGHV4-38-2\*02

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



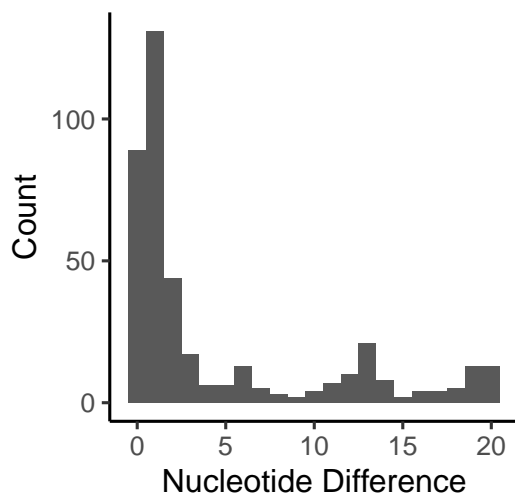
### IGHV4-59\*08

687 sequences assigned  
54 (7.9%) exact matches, in which:  
43 unique CDR3  
6 unique J



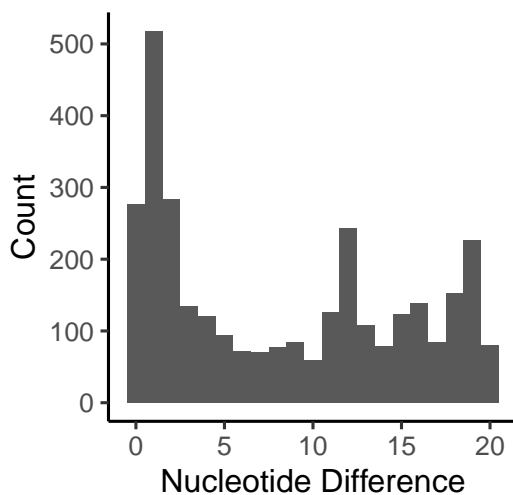
### IGHV4-31\*03

446 sequences assigned  
89 (20%) exact matches, in which:  
48 unique CDR3  
4 unique J



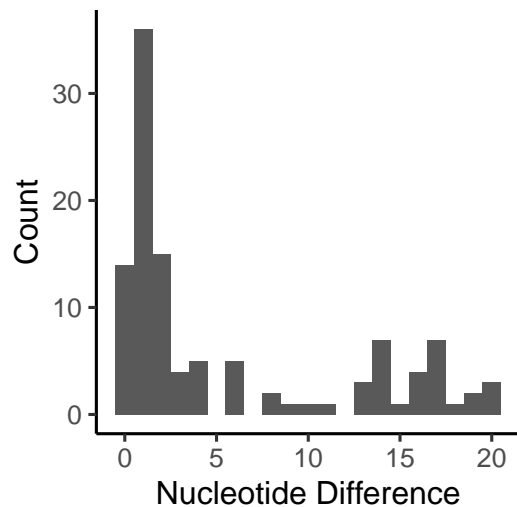
### IGHV4-39\*01

3722 sequences assigned  
277 (7.4%) exact matches, in which:  
206 unique CDR3  
5 unique J



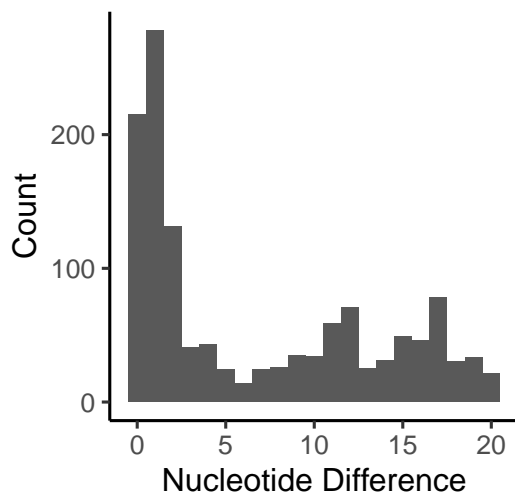
### IGHV4-61\*01

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



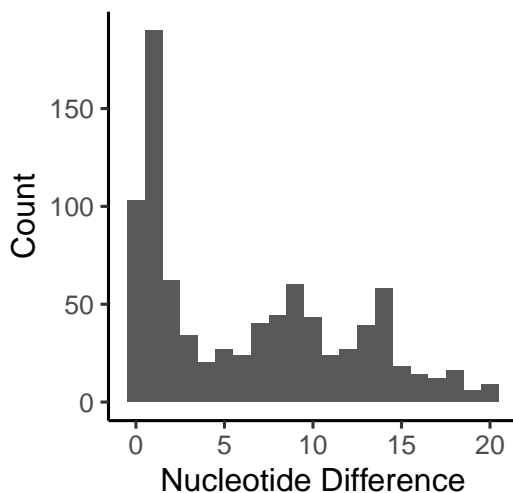
### IGHV4-34\*01

1468 sequences assigned  
215 (14.6%) exact matches, in which:  
159 unique CDR3  
5 unique J



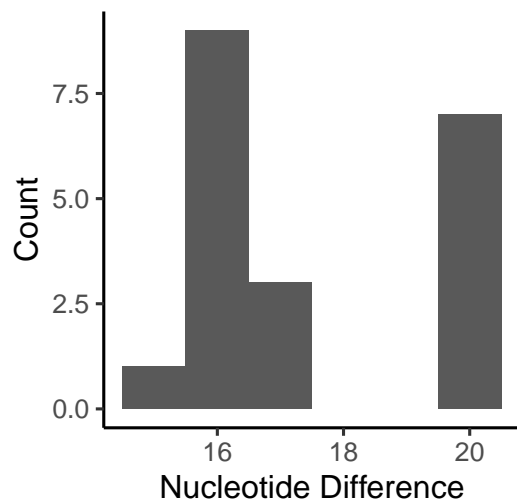
### IGHV4-59\*01

1049 sequences assigned  
103 (9.8%) exact matches, in which:  
75 unique CDR3  
6 unique J



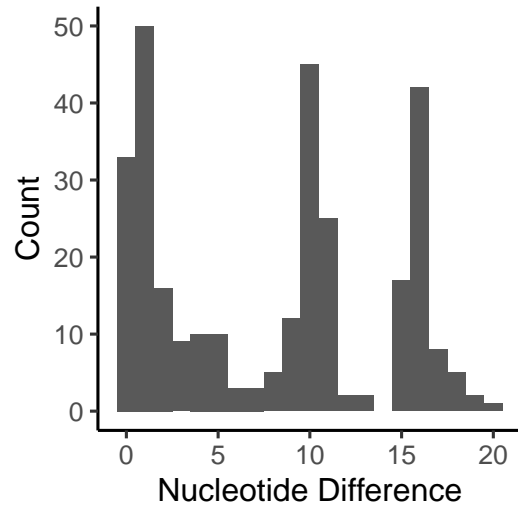
### IGHV4-61\*08

167 sequences assigned  
No exact matches.



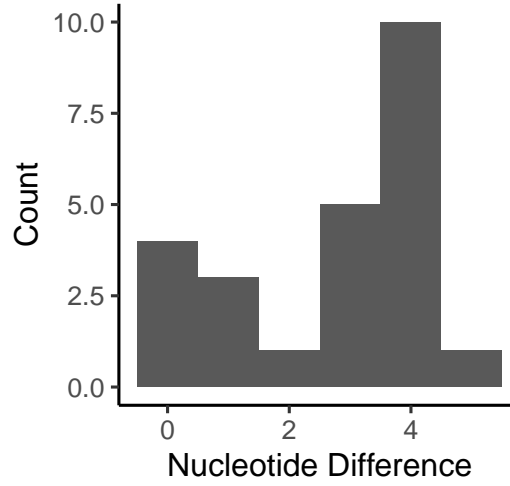
## IGHV5-10-1\*03

311 sequences assigned  
33 (10.6%) exact matches, in which:  
20 unique CDR3  
4 unique J



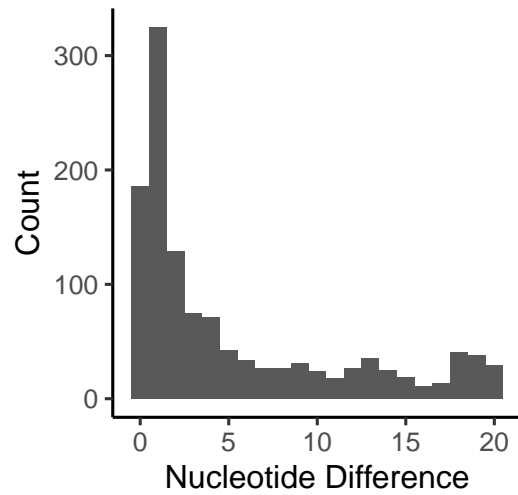
## IGHV7-4-1\*01

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



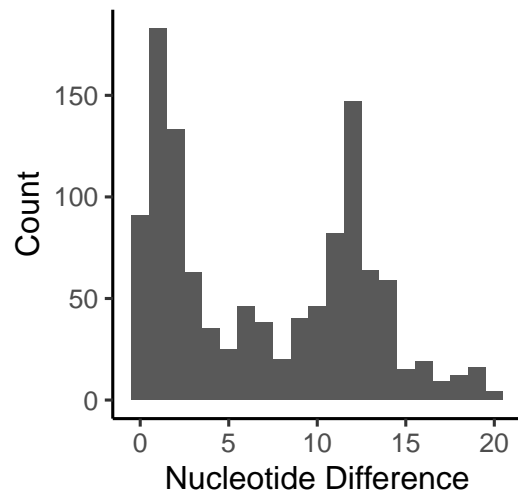
## IGHV5-51\*01

1424 sequences assigned  
186 (13.1%) exact matches, in which:  
131 unique CDR3  
6 unique J



## IGHV6-1\*01

1180 sequences assigned  
91 (7.7%) exact matches, in which:  
57 unique CDR3  
4 unique J







Warning – no inferred sequences found.