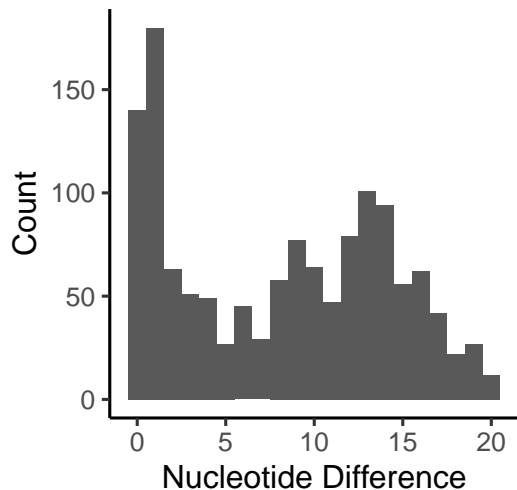


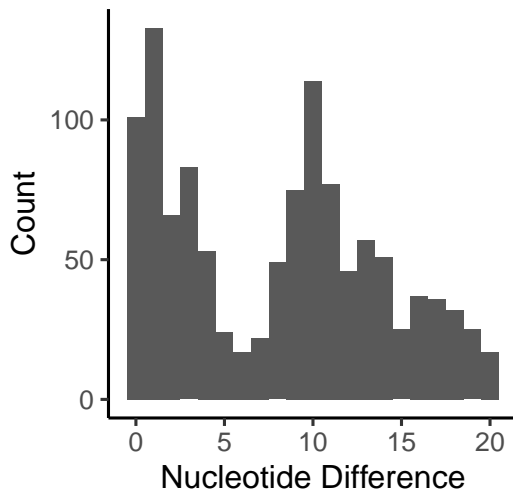
### IGHV1-2\*02

1747 sequences assigned  
140 (8%) exact matches, in which:  
110 unique CDR3  
6 unique J



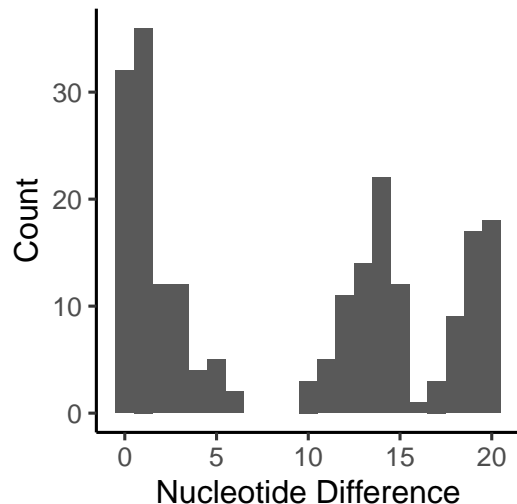
### IGHV1-18\*01

1432 sequences assigned  
101 (7.1%) exact matches, in which:  
80 unique CDR3  
5 unique J



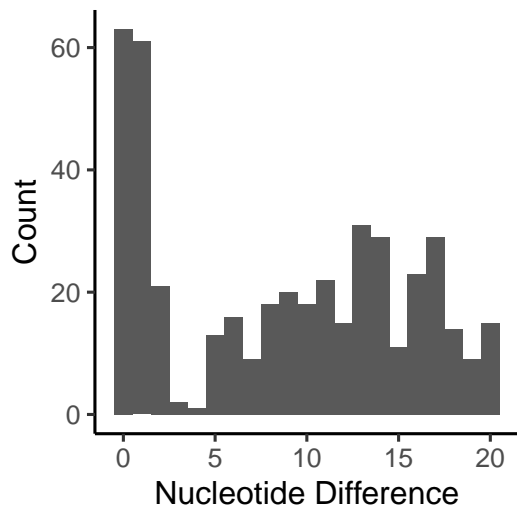
### IGHV1-46\*01

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



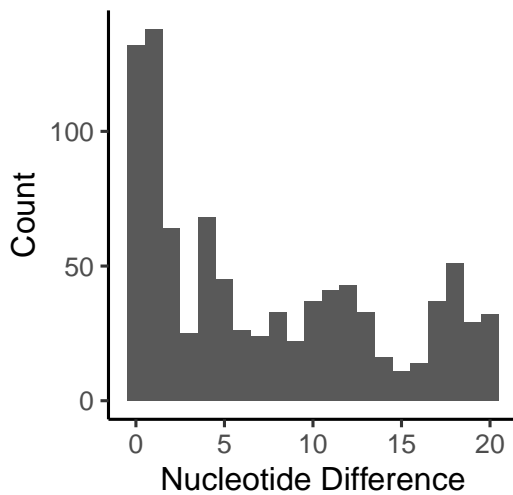
### IGHV1-3\*01

674 sequences assigned  
63 (9.3%) exact matches, in which:  
50 unique CDR3  
6 unique J



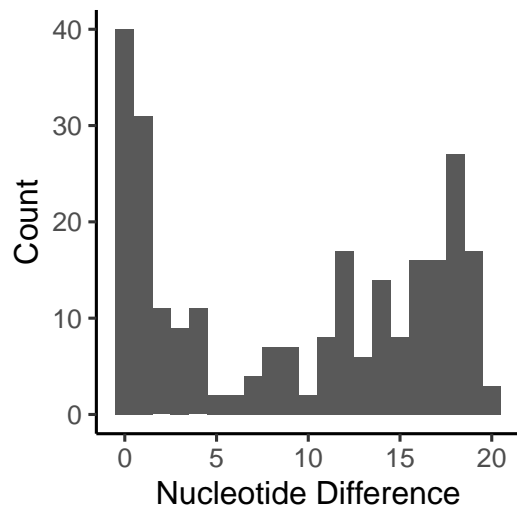
### IGHV1-18\*04

1184 sequences assigned  
132 (11.1%) exact matches, in which:  
100 unique CDR3  
6 unique J



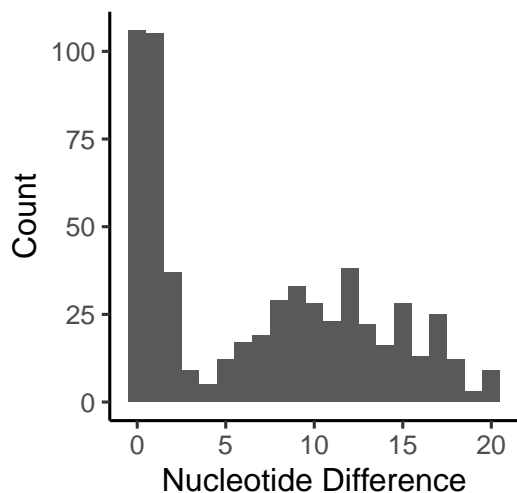
### IGHV1-46\*03

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



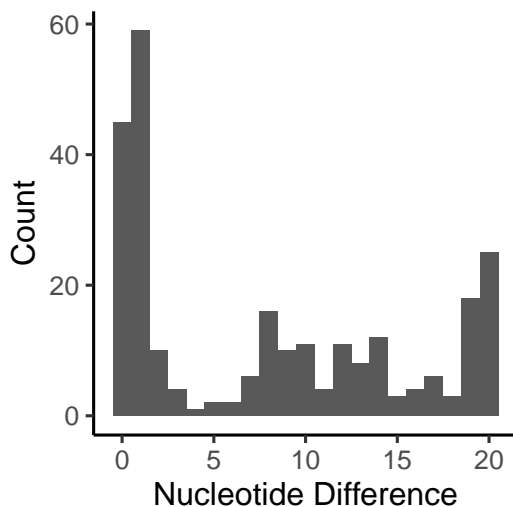
### IGHV1-8\*01

749 sequences assigned  
106 (14.2%) exact matches, in which:  
78 unique CDR3  
6 unique J



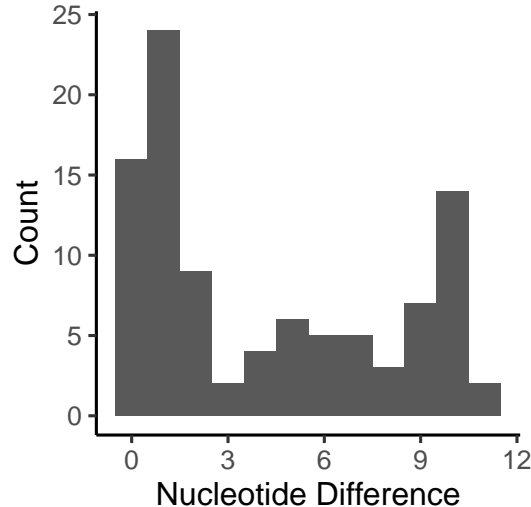
### IGHV1-24\*01

362 sequences assigned  
45 (12.4%) exact matches, in which:  
38 unique CDR3  
6 unique J



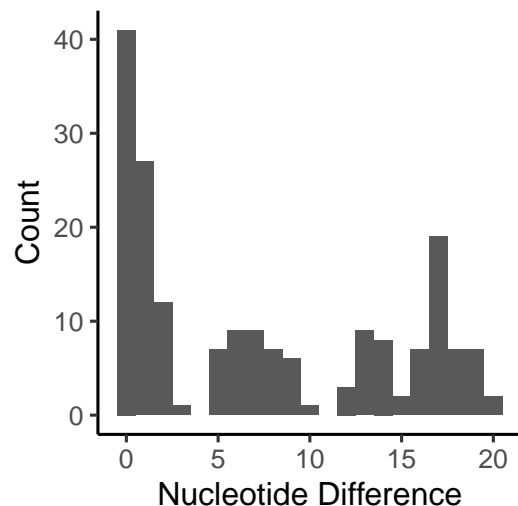
### IGHV1-58\*02

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



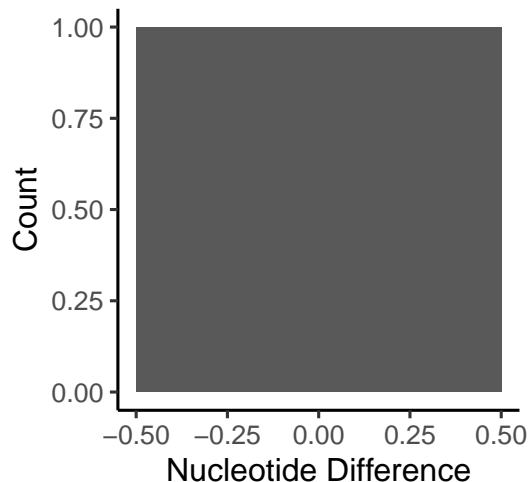
### IGHV1-69\*02

230 sequences assigned  
41 (17.8%) exact matches, in which:  
35 unique CDR3  
6 unique J



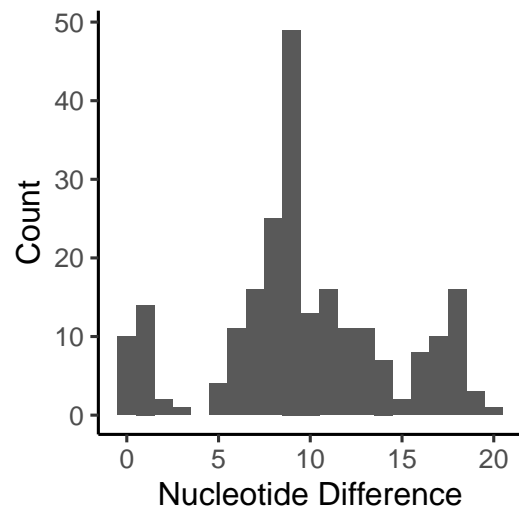
### IGHV1-69D\*01

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



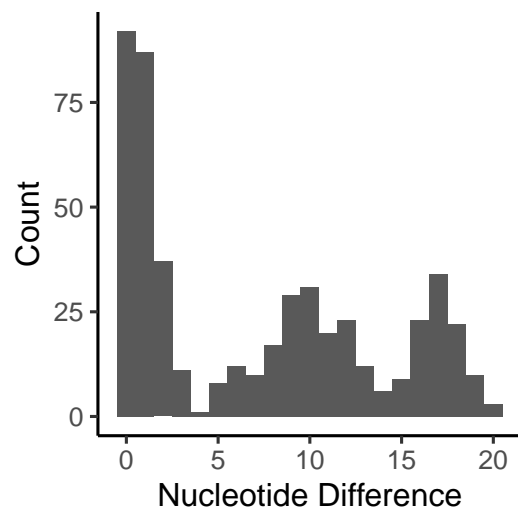
### IGHV2-70\*15

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



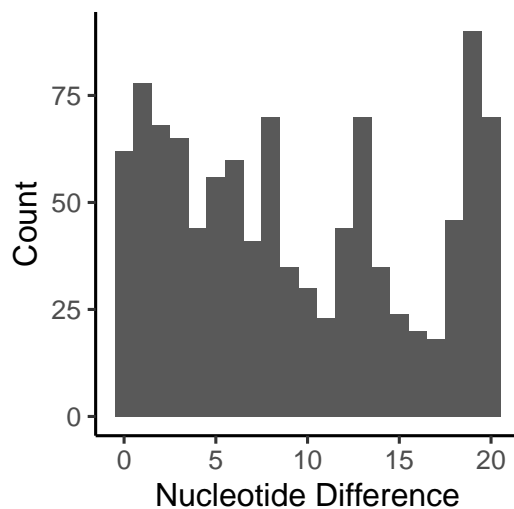
### IGHV1-69\*04

743 sequences assigned  
92 (12.4%) exact matches, in which:  
78 unique CDR3  
5 unique J



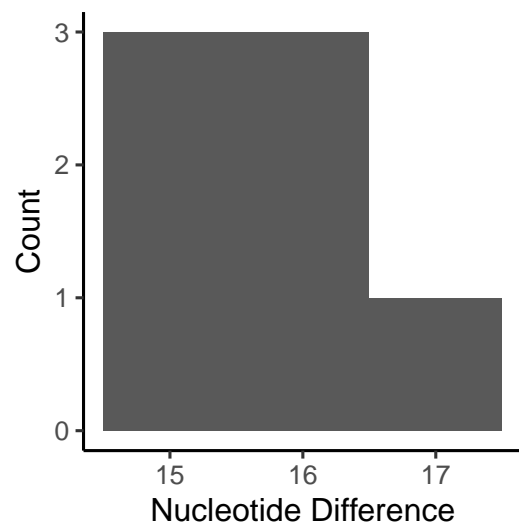
### IGHV2-5\*02

1164 sequences assigned  
62 (5.3%) exact matches, in which:  
51 unique CDR3  
5 unique J



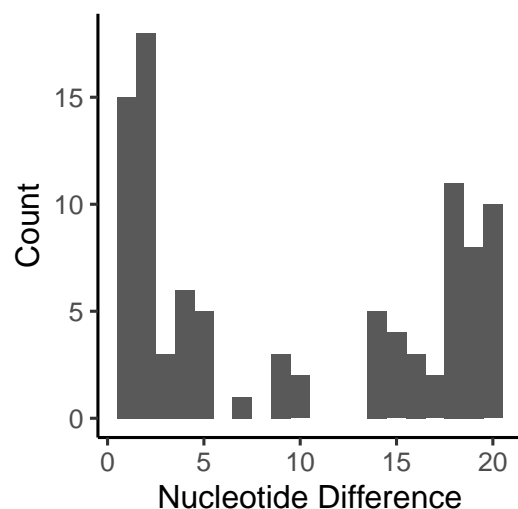
### IGHV2-70D\*04

7 sequences assigned  
No exact matches.



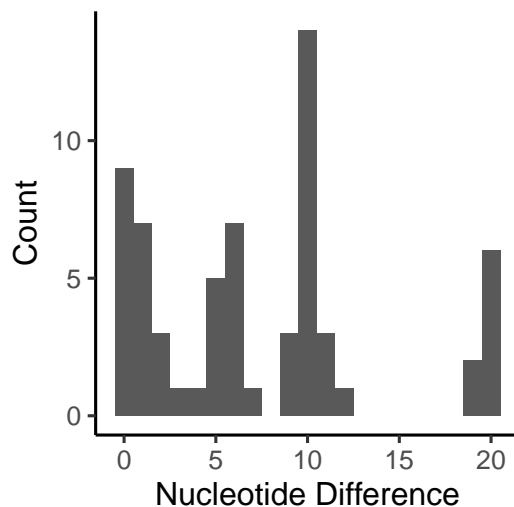
### IGHV1-69\*08

219 sequences assigned  
No exact matches.



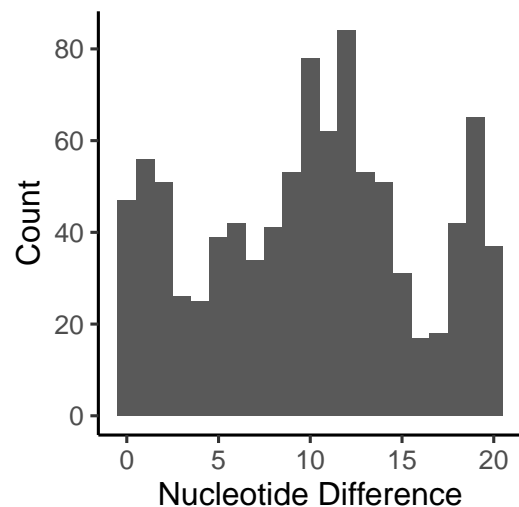
### IGHV2-26\*01

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



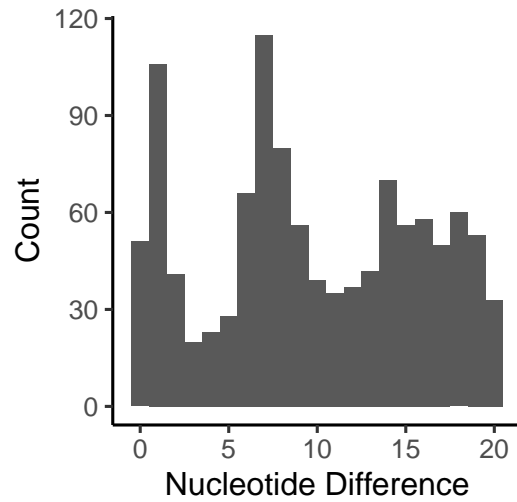
### IGHV3-7\*01

1189 sequences assigned  
47 (4%) exact matches, in which:  
40 unique CDR3  
6 unique J



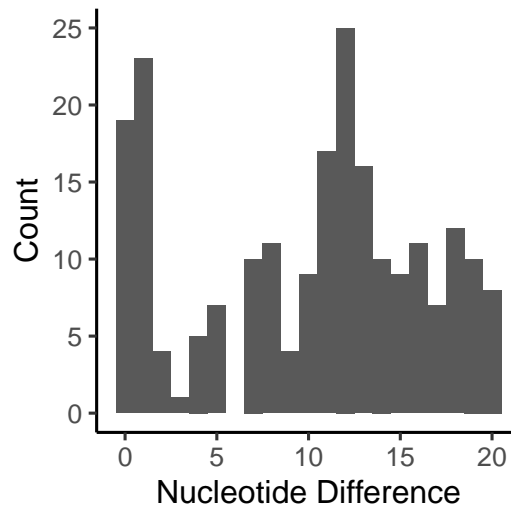
### IGHV3-7\*03

1438 sequences assigned  
51 (3.5%) exact matches, in which:  
39 unique CDR3  
5 unique J



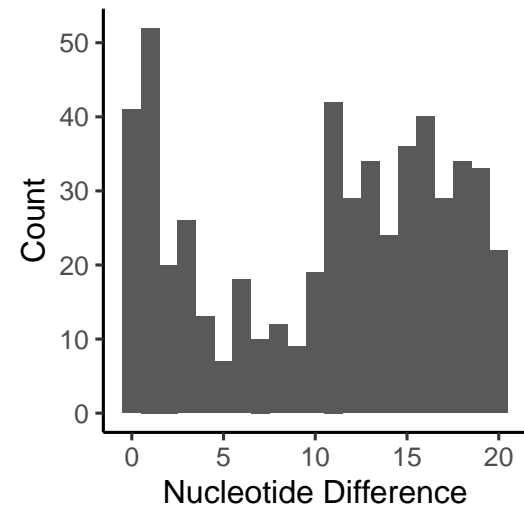
### IGHV3-11\*06

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



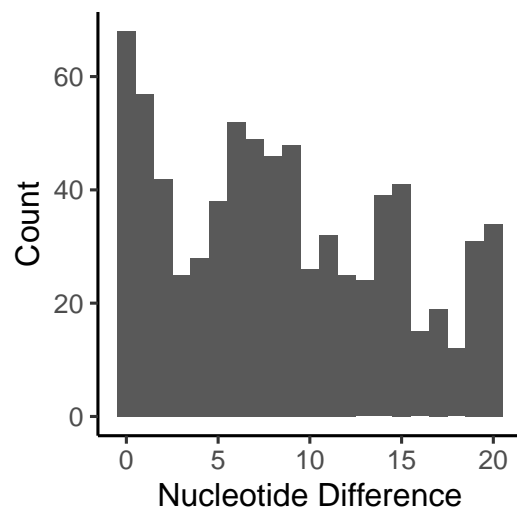
### IGHV3-15\*01

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



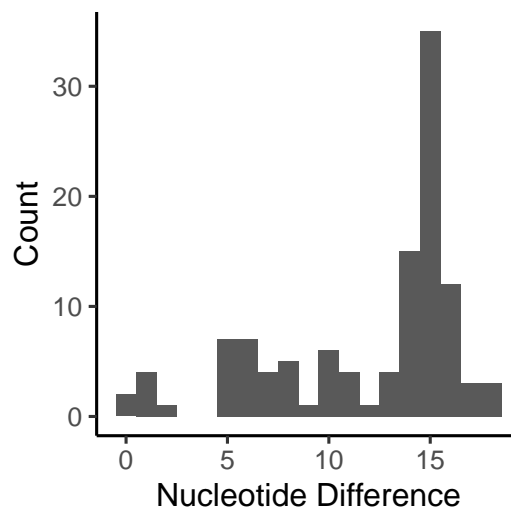
### IGHV3-9\*01

859 sequences assigned  
68 (7.9%) exact matches, in which:  
61 unique CDR3  
5 unique J



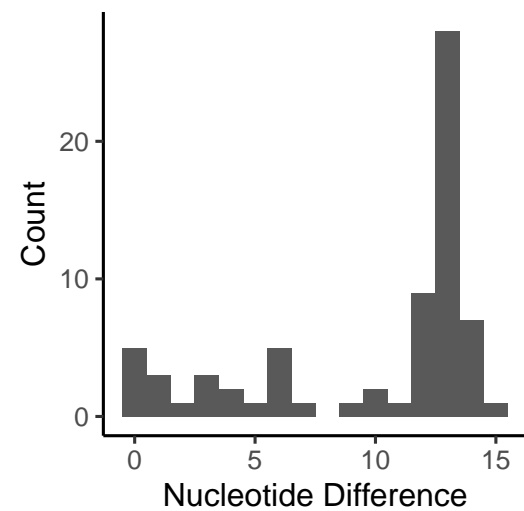
### IGHV3-13\*01

132 sequences assigned  
2 (1.5%) exact matches, in which:  
2 unique CDR3  
2 unique J



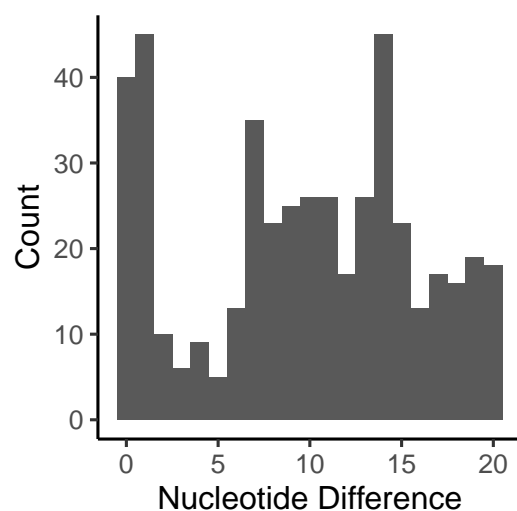
### IGHV3-20\*01

72 sequences assigned  
5 (6.9%) exact matches, in which:  
5 unique CDR3  
3 unique J



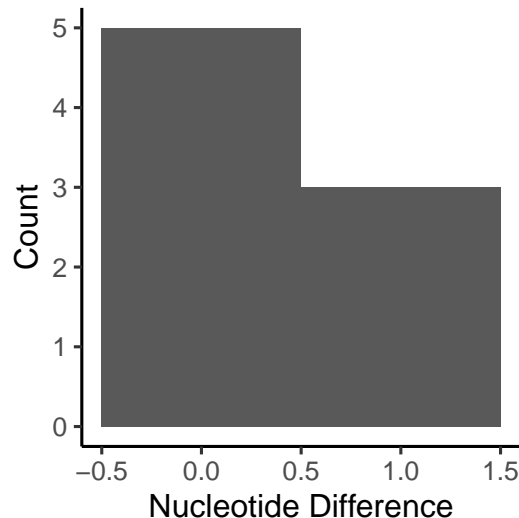
### IGHV3-11\*01

661 sequences assigned  
40 (6.1%) exact matches, in which:  
35 unique CDR3  
4 unique J



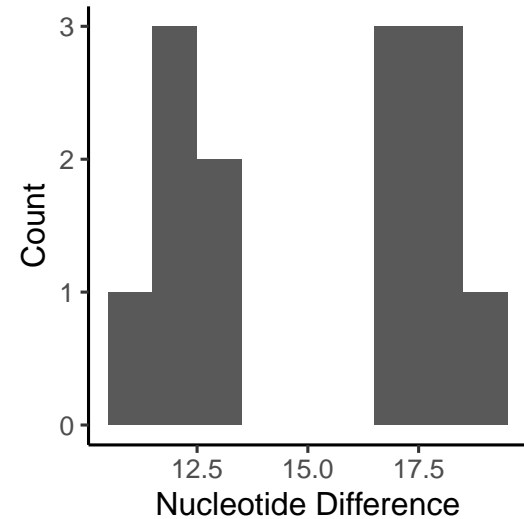
### IGHV3-13\*05

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



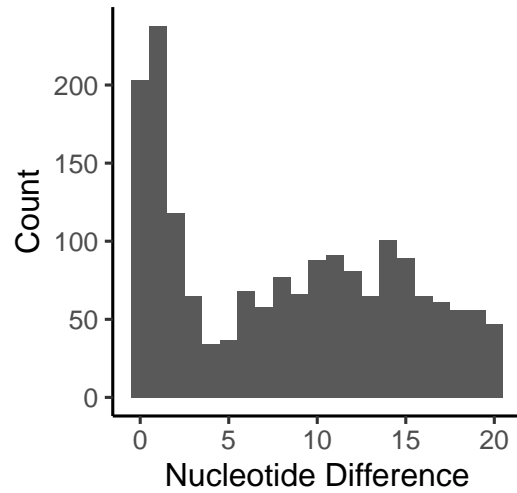
### IGHV3-20\*04

16 sequences assigned  
No exact matches.



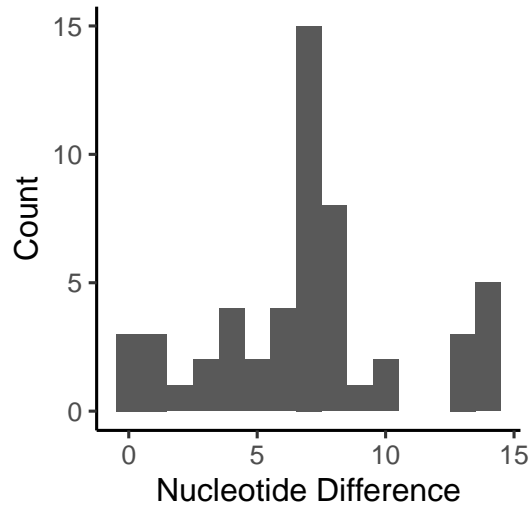
### IGHV3-21\*01

2373 sequences assigned  
203 (8.6%) exact matches, in which:  
162 unique CDR3  
6 unique J



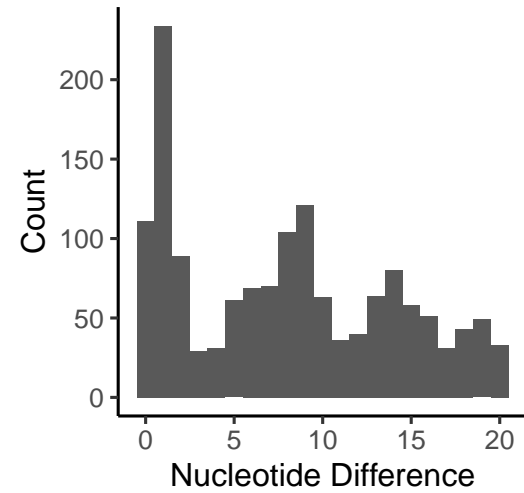
### IGHV3-43\*01

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



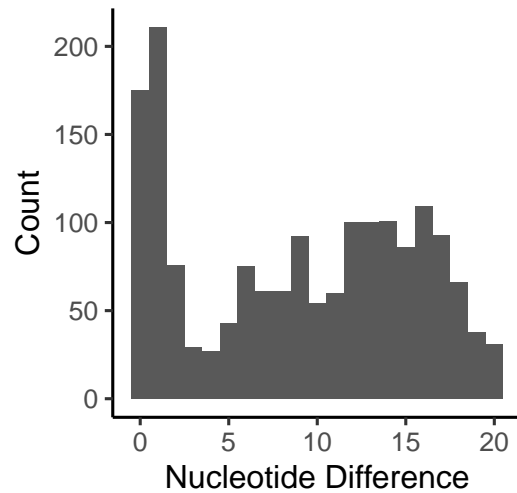
### IGHV3-48\*03

1703 sequences assigned  
111 (6.5%) exact matches, in which:  
81 unique CDR3  
4 unique J



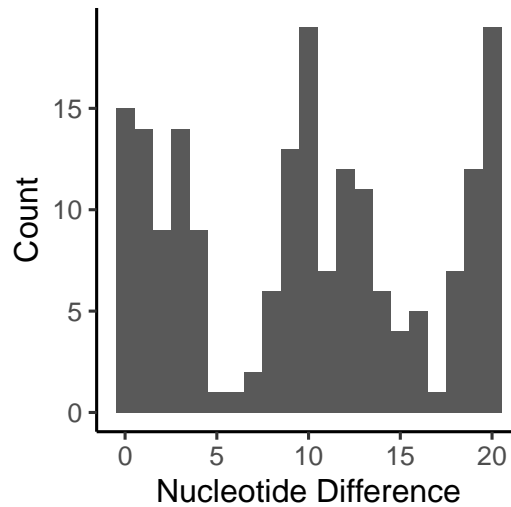
### IGHV3-30-3\*01

2164 sequences assigned  
175 (8.1%) exact matches, in which:  
148 unique CDR3  
6 unique J



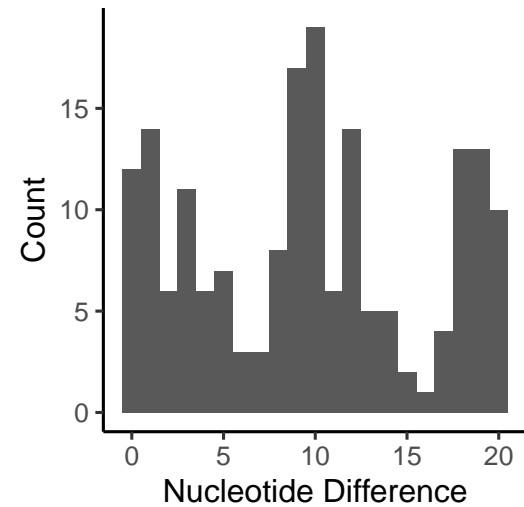
### IGHV3-43\*02

231 sequences assigned  
15 (6.5%) exact matches, in which:  
14 unique CDR3  
3 unique J



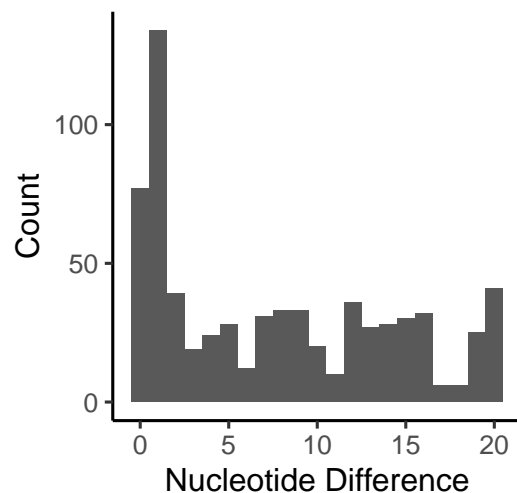
### IGHV3-49\*03

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



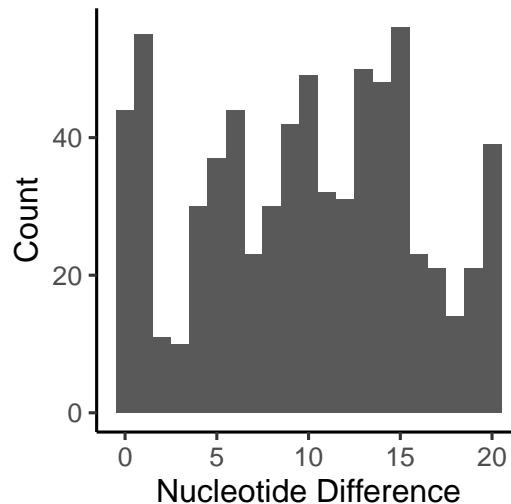
### IGHV3-33\*01

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



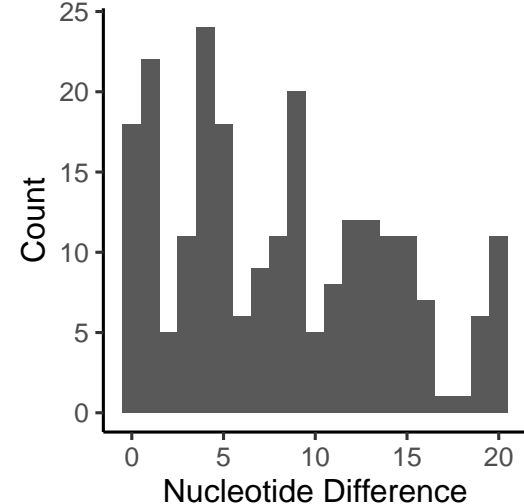
### IGHV3-48\*01

893 sequences assigned  
44 (4.9%) exact matches, in which:  
33 unique CDR3  
4 unique J



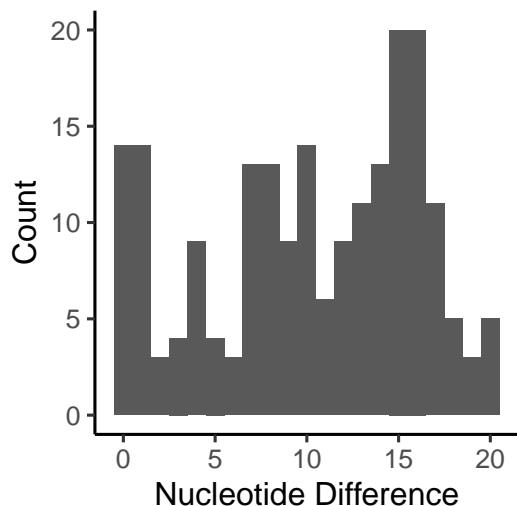
### IGHV3-49\*04

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



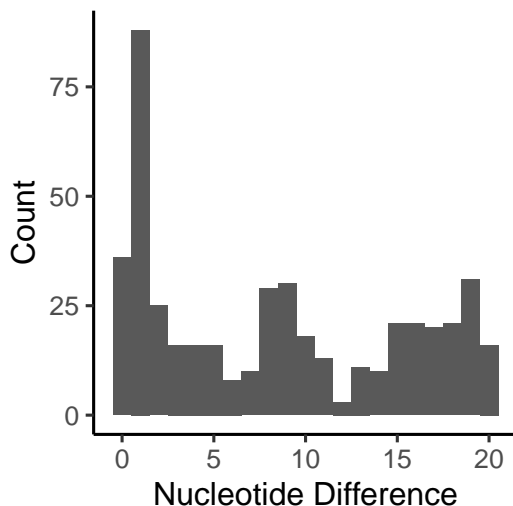
### IGHV3-53\*02

416 sequences assigned  
14 (3.4%) exact matches, in which:  
13 unique CDR3  
5 unique J



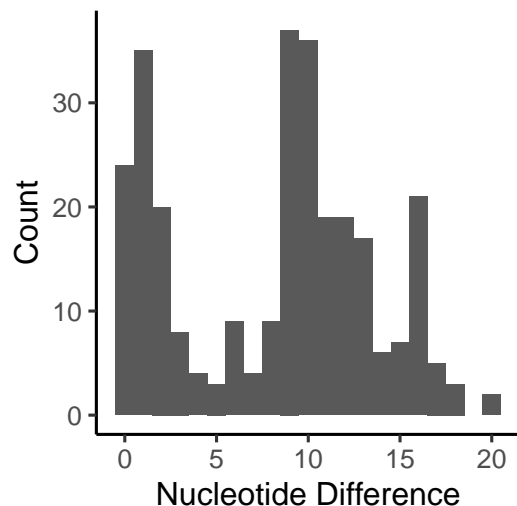
### IGHV3-66\*01

547 sequences assigned  
36 (6.6%) exact matches, in which:  
27 unique CDR3  
5 unique J



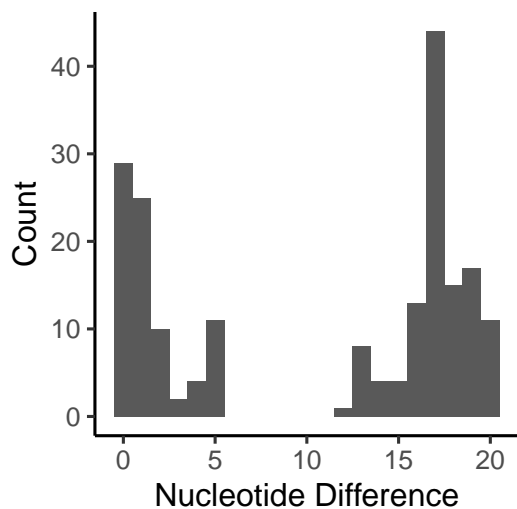
### IGHV3-73\*01

373 sequences assigned  
24 (6.4%) exact matches, in which:  
20 unique CDR3  
4 unique J



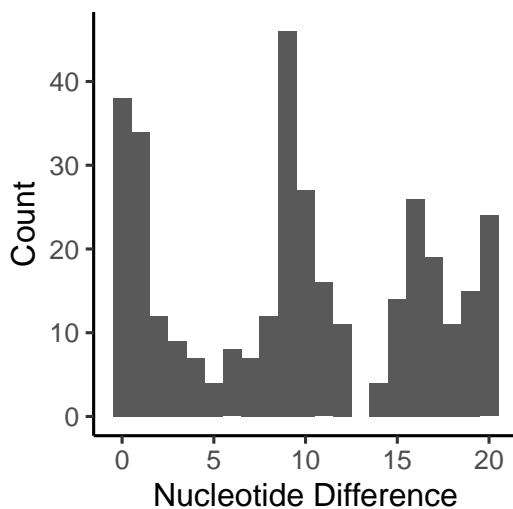
### IGHV3-53\*04

255 sequences assigned  
29 (11.4%) exact matches, in which:  
23 unique CDR3  
4 unique J



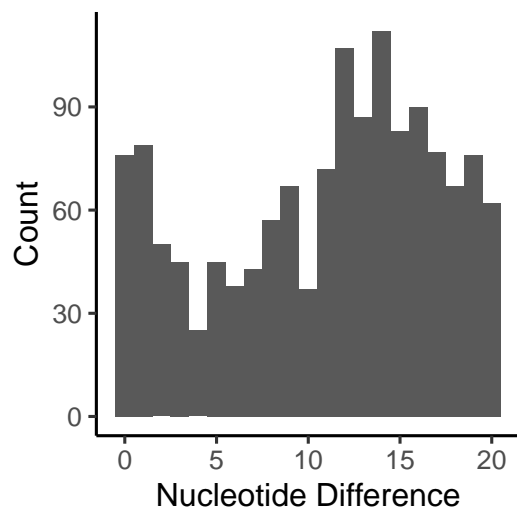
### IGHV3-66\*02

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



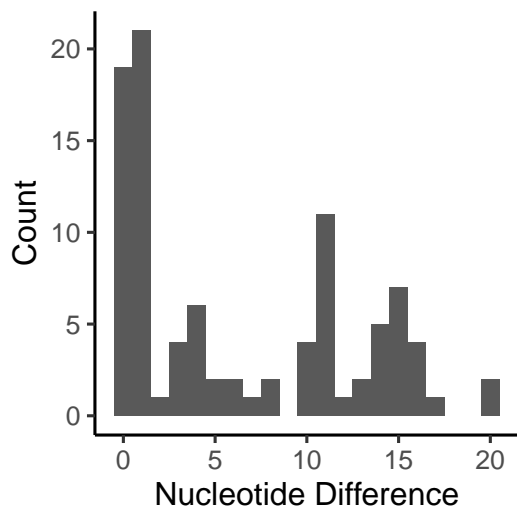
### IGHV3-74\*01

1882 sequences assigned  
76 (4%) exact matches, in which:  
64 unique CDR3  
4 unique J



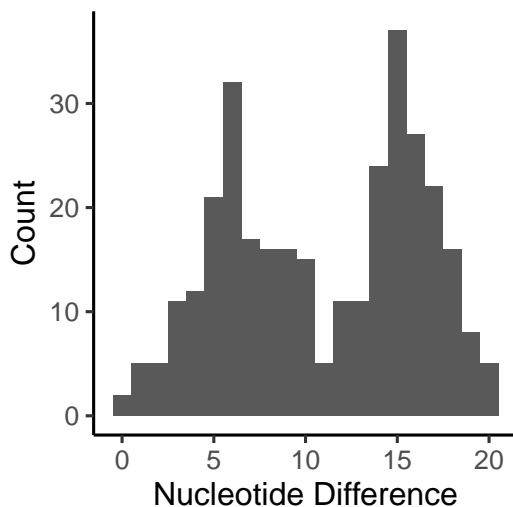
### IGHV3-64\*01

138 sequences assigned  
19 (13.8%) exact matches, in which:  
12 unique CDR3  
3 unique J



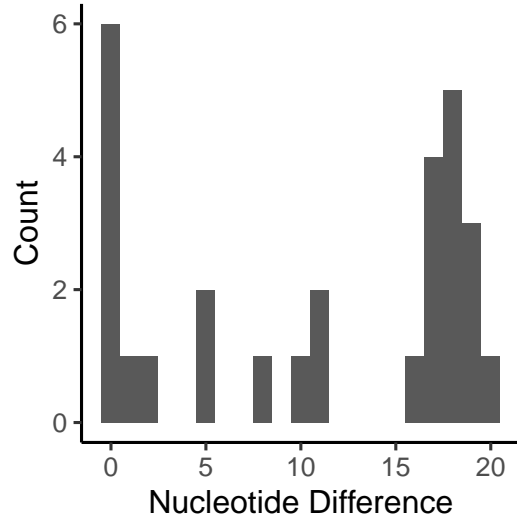
### IGHV3-72\*01

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



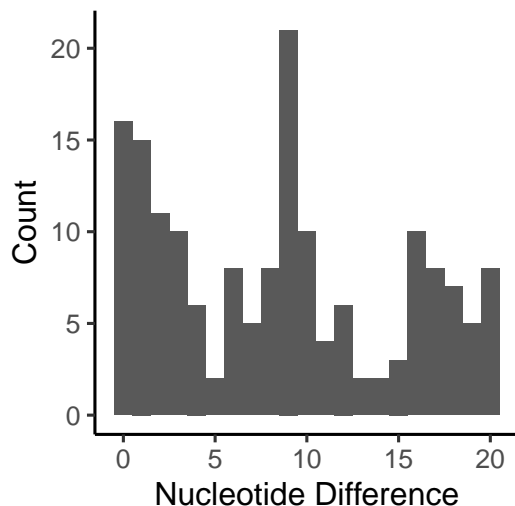
### IGHV3-43D\*03

30 sequences assigned  
6 (20%) exact matches, in which:  
6 unique CDR3  
3 unique J



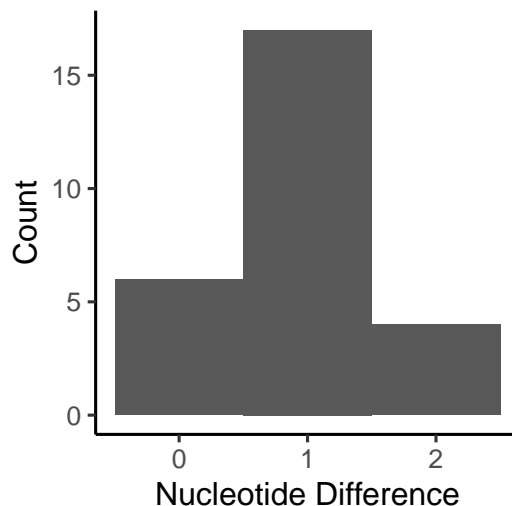
### IGHV3-64D\*06

248 sequences assigned  
16 (6.5%) exact matches, in which:  
16 unique CDR3  
4 unique J



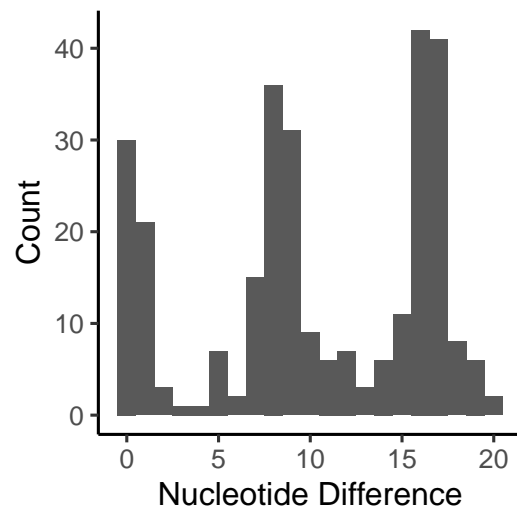
### IGHV4-28\*01

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



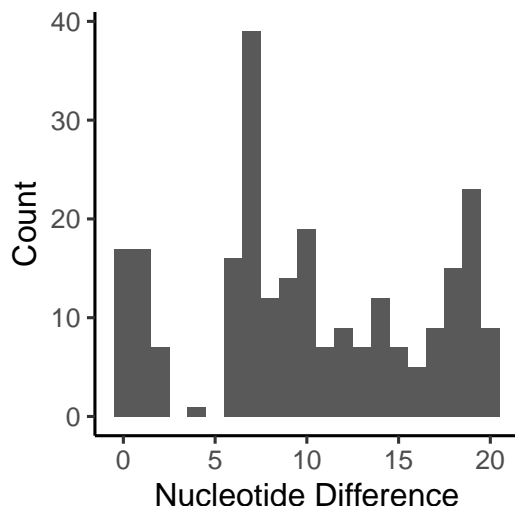
### IGHV4-31\*03

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



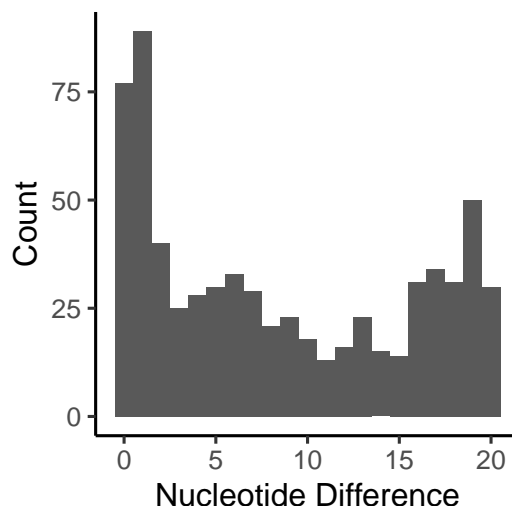
### IGHV4-4\*02

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



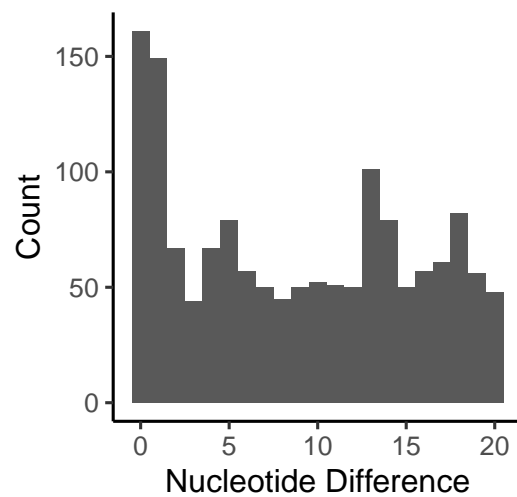
### IGHV4-30-4\*01

995 sequences assigned  
77 (7.7%) exact matches, in which:  
63 unique CDR3  
4 unique J



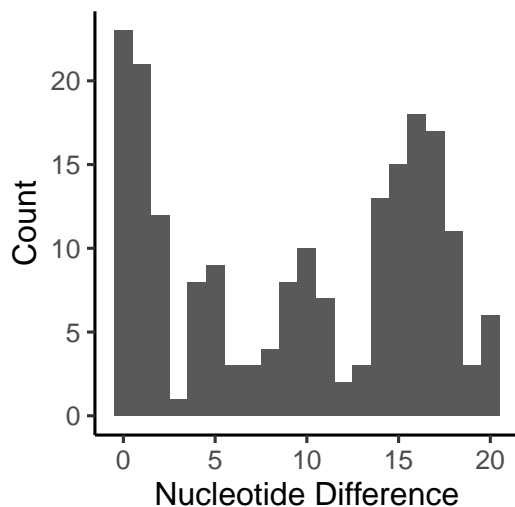
### IGHV4-34\*01

2014 sequences assigned  
161 (8%) exact matches, in which:  
144 unique CDR3  
6 unique J



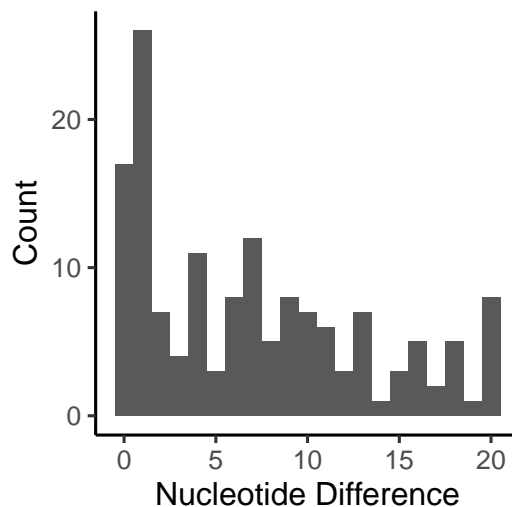
### IGHV4-4\*07

253 sequences assigned  
23 (9.1%) exact matches, in which:  
18 unique CDR3  
4 unique J



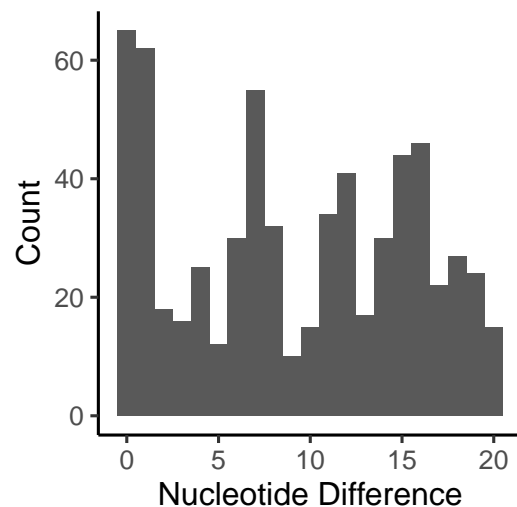
### IGHV4-30-2\*01

294 sequences assigned  
17 (5.8%) exact matches, in which:  
16 unique CDR3  
5 unique J



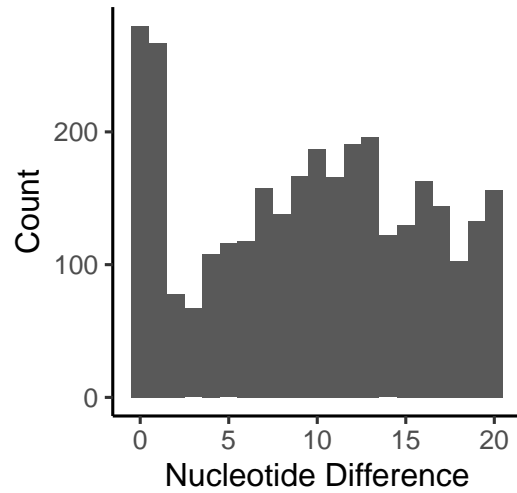
### IGHV4-38-2\*02

969 sequences assigned  
65 (6.7%) exact matches, in which:  
56 unique CDR3  
6 unique J



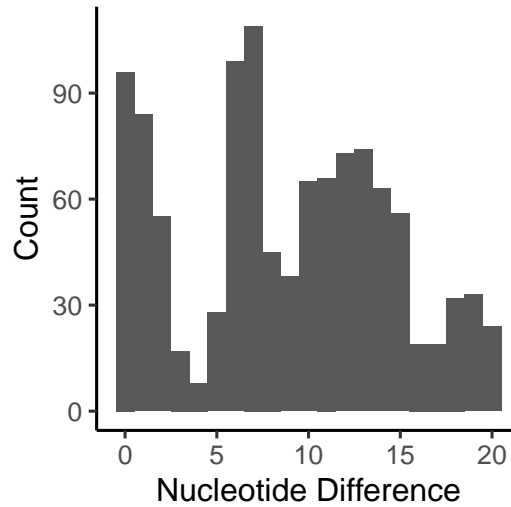
### IGHV4–39\*01

4634 sequences assigned  
280 (6%) exact matches, in which:  
262 unique CDR3  
6 unique J



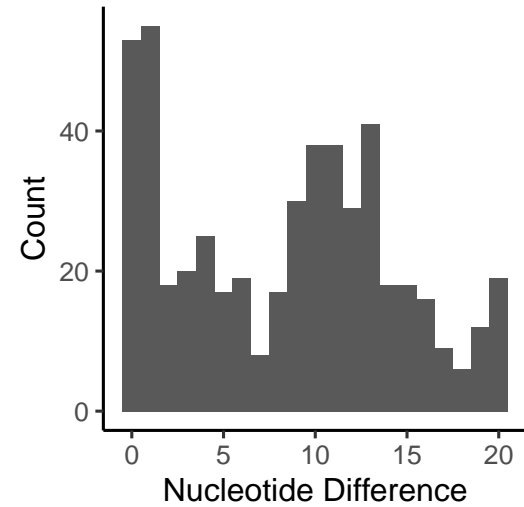
### IGHV4–61\*02

1471 sequences assigned  
96 (6.5%) exact matches, in which:  
69 unique CDR3  
6 unique J



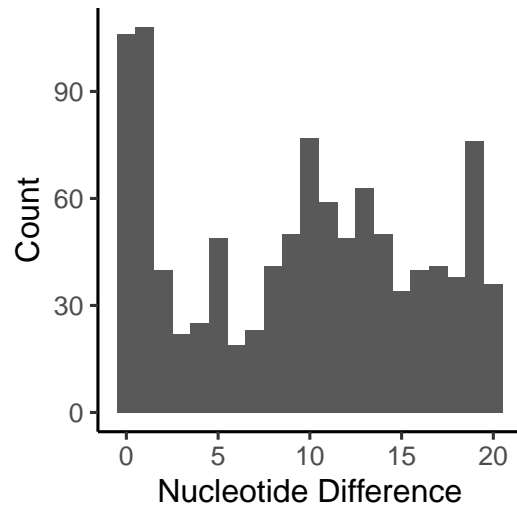
### IGHV5–51\*03

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



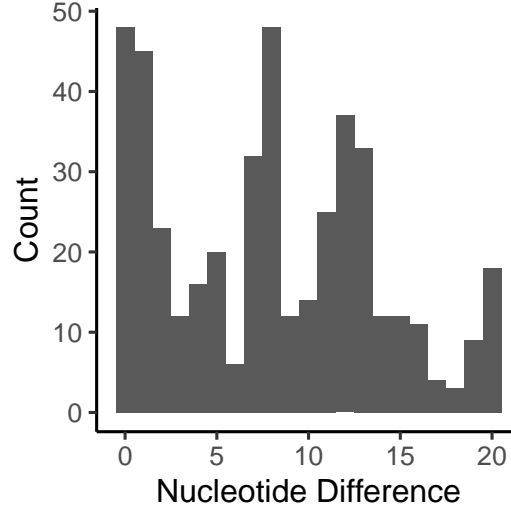
### IGHV4–59\*01

1252 sequences assigned  
106 (8.5%) exact matches, in which:  
87 unique CDR3  
6 unique J



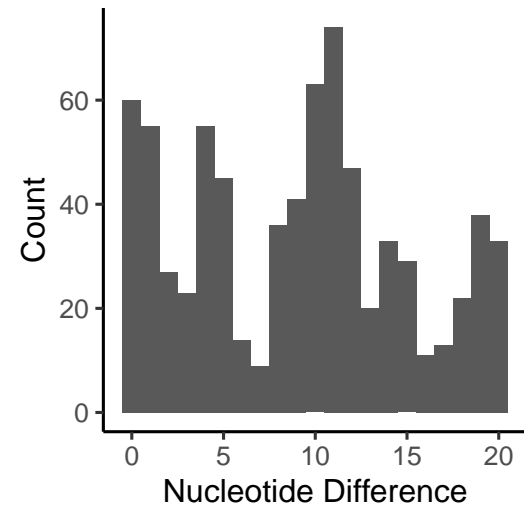
### IGHV5–10–1\*03

632 sequences assigned  
48 (7.6%) exact matches, in which:  
43 unique CDR3  
5 unique J



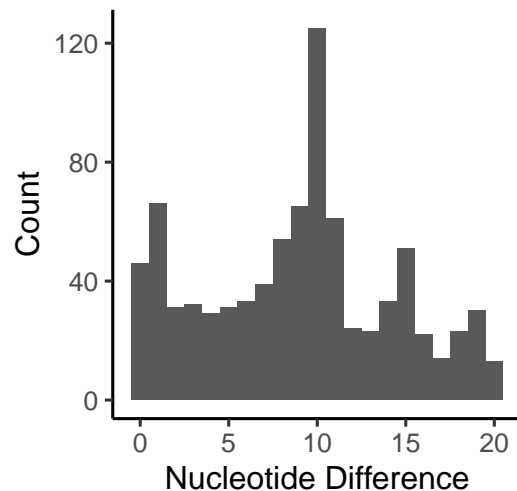
### IGHV6–1\*01

793 sequences assigned  
60 (7.6%) exact matches, in which:  
46 unique CDR3  
6 unique J



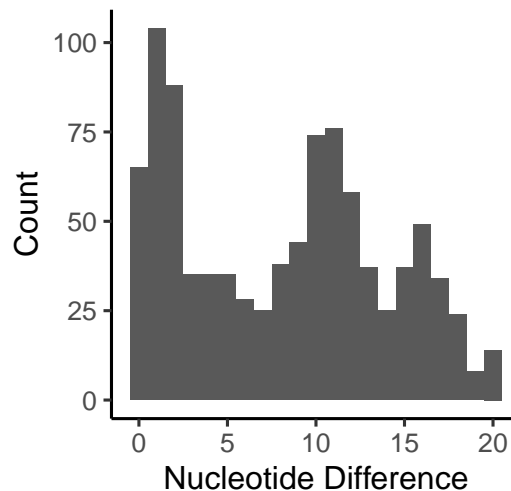
### IGHV4–59\*08

1042 sequences assigned  
46 (4.4%) exact matches, in which:  
35 unique CDR3  
5 unique J



### IGHV5–51\*01

1179 sequences assigned  
65 (5.5%) exact matches, in which:  
57 unique CDR3  
5 unique J







Warning – no inferred sequences found.