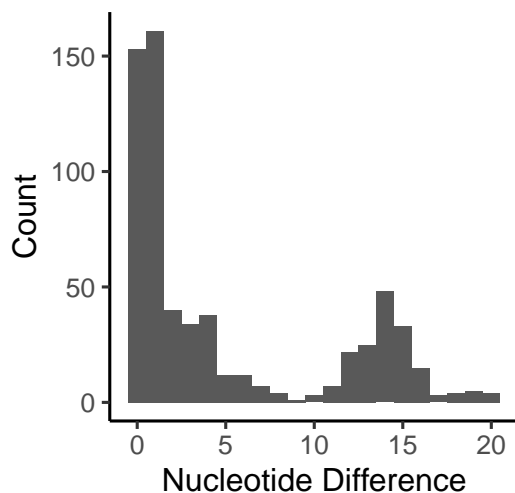


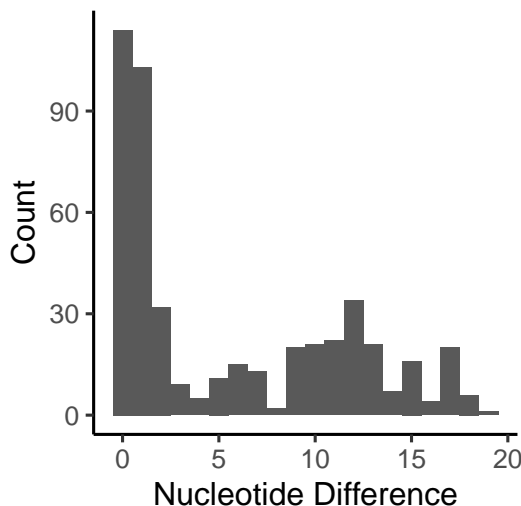
### IGHV1-2\*02

743 sequences assigned  
153 (20.6%) exact matches, in which:  
120 unique CDR3  
6 unique J



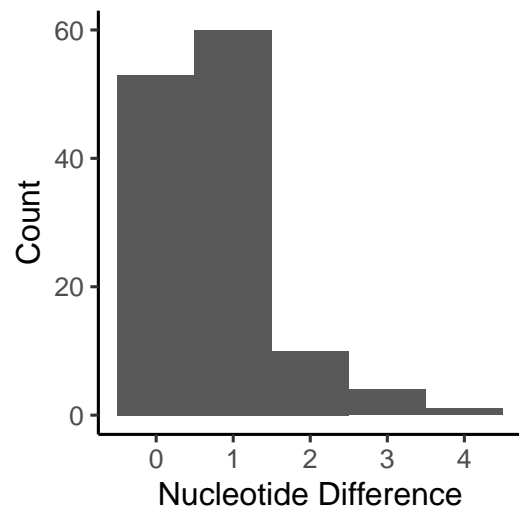
### IGHV1-8\*01

502 sequences assigned  
114 (22.7%) exact matches, in which:  
82 unique CDR3  
6 unique J



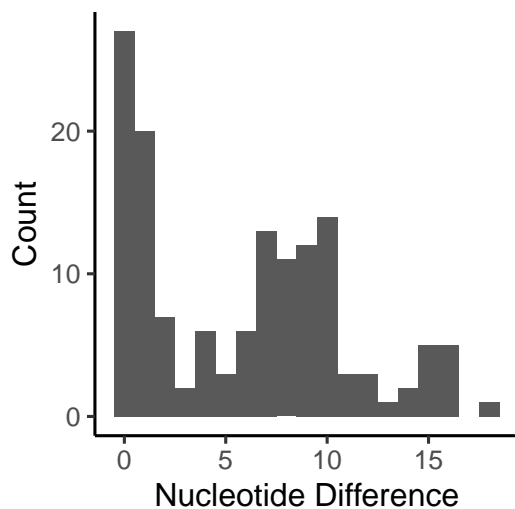
### IGHV1-24\*01

128 sequences assigned  
53 (41.4%) exact matches, in which:  
44 unique CDR3  
6 unique J



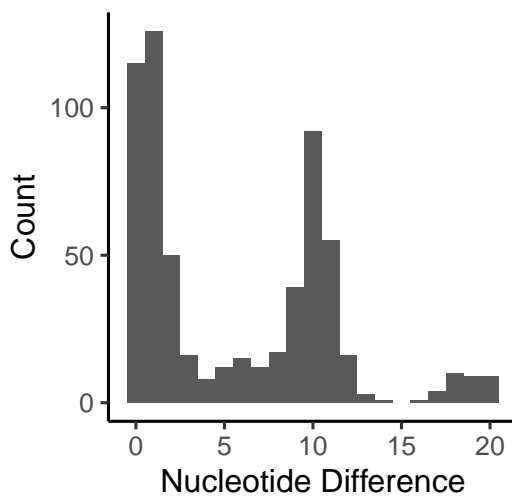
### IGHV1-2\*04

141 sequences assigned  
27 (19.1%) exact matches, in which:  
20 unique CDR3  
5 unique J



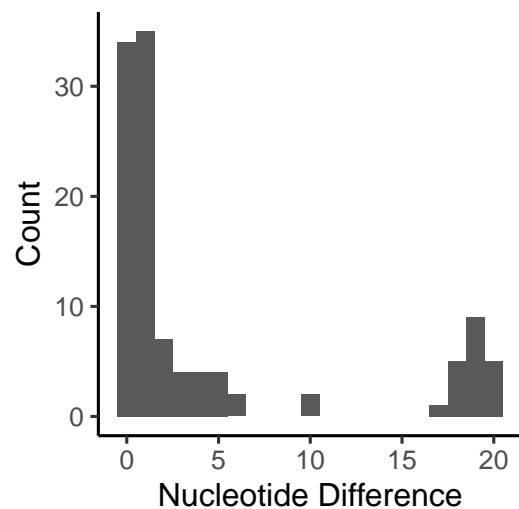
### IGHV1-18\*01

656 sequences assigned  
115 (17.5%) exact matches, in which:  
85 unique CDR3  
5 unique J



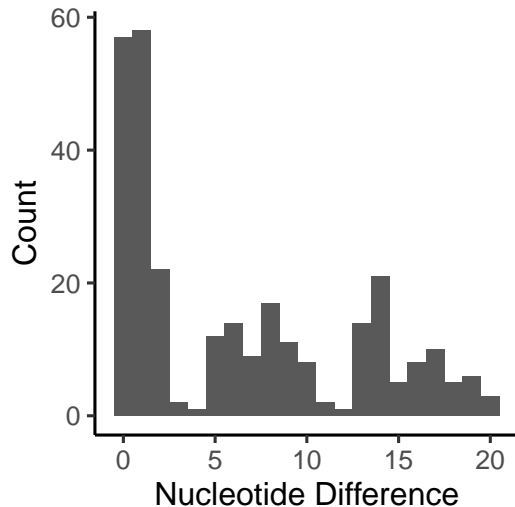
### IGHV1-46\*01

114 sequences assigned  
34 (29.8%) exact matches, in which:  
23 unique CDR3  
5 unique J



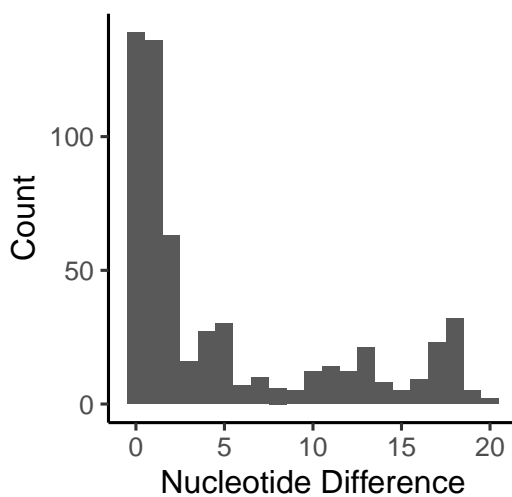
### IGHV1-3\*01

318 sequences assigned  
57 (17.9%) exact matches, in which:  
49 unique CDR3  
6 unique J



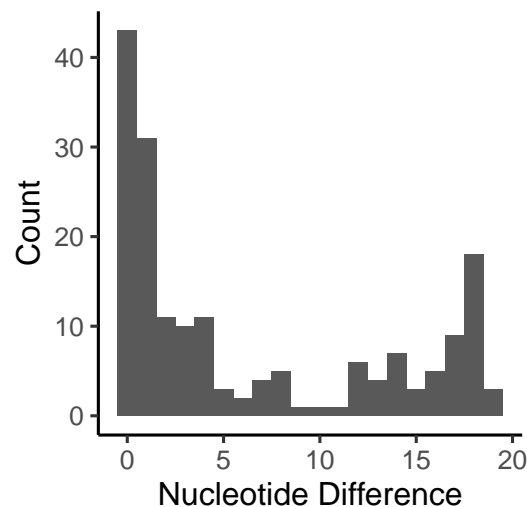
### IGHV1-18\*04

607 sequences assigned  
139 (22.9%) exact matches, in which:  
104 unique CDR3  
6 unique J



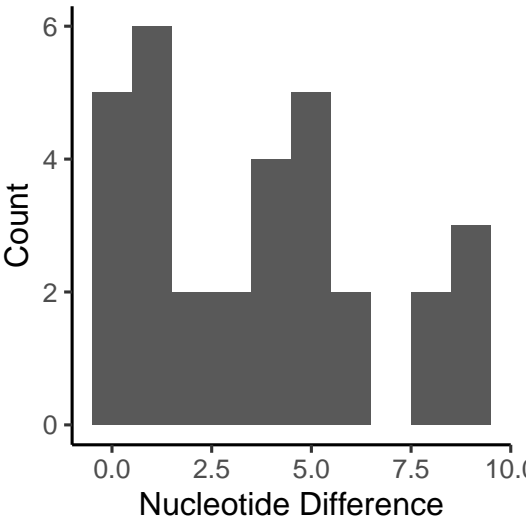
### IGHV1-46\*03

178 sequences assigned  
43 (24.2%) exact matches, in which:  
30 unique CDR3  
5 unique J



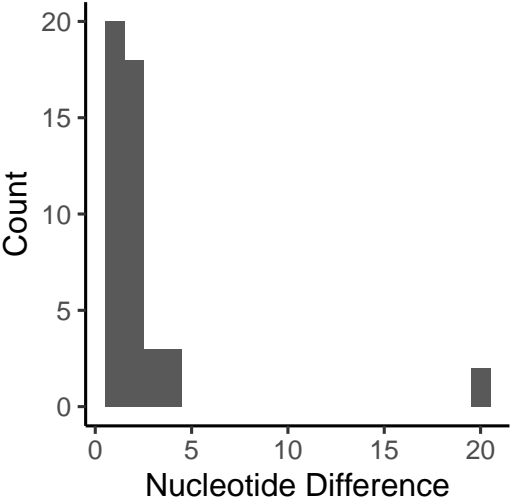
IGHV1-58\*02

31 sequences assigned  
5 (16.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



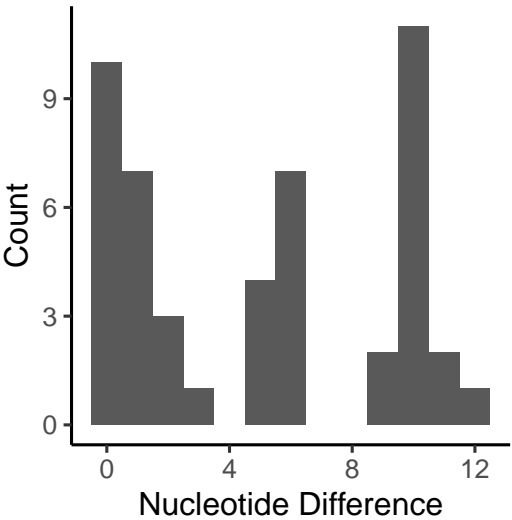
IGHV1-69\*08

84 sequences assigned  
No exact matches.



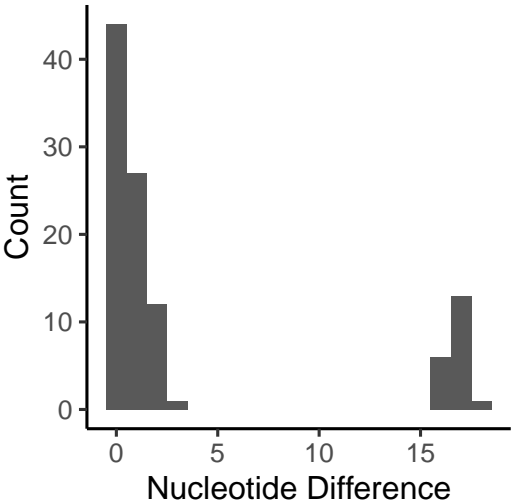
IGHV2-26\*01

48 sequences assigned  
10 (20.8%) exact matches, in which:  
8 unique CDR3  
3 unique J



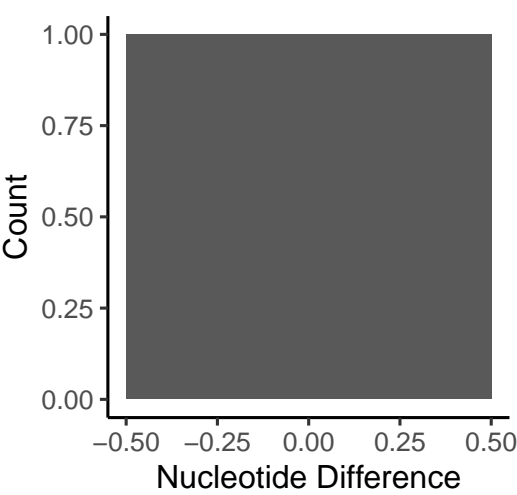
IGHV1-69\*02

105 sequences assigned  
44 (41.9%) exact matches, in which:  
36 unique CDR3  
6 unique J



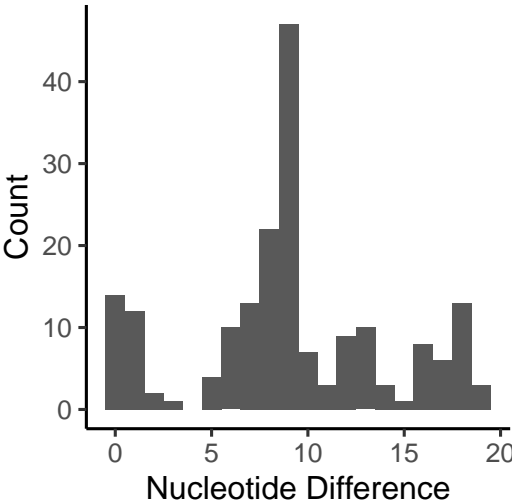
IGHV1-69D\*01

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



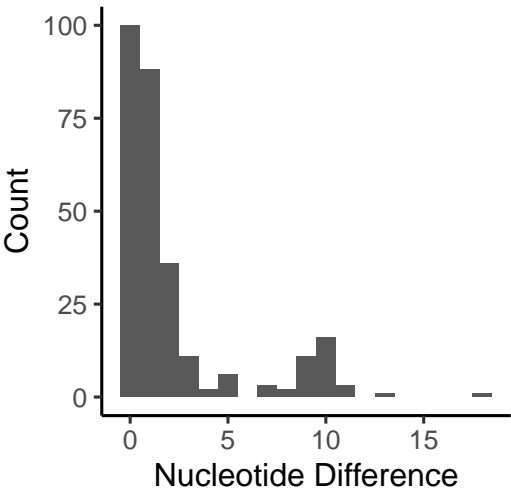
IGHV2-70\*15

191 sequences assigned  
14 (7.3%) exact matches, in which:  
14 unique CDR3  
4 unique J



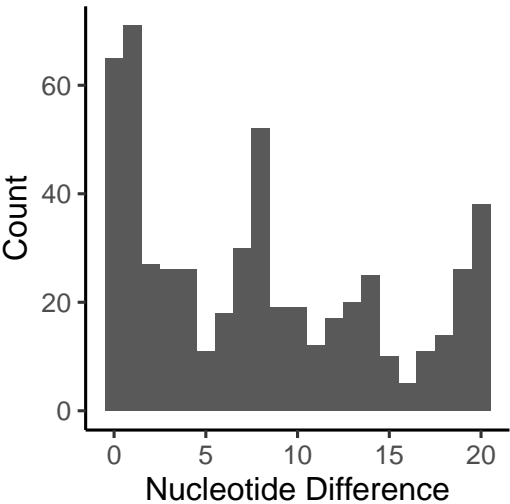
IGHV1-69\*04

281 sequences assigned  
100 (35.6%) exact matches, in which:  
83 unique CDR3  
5 unique J



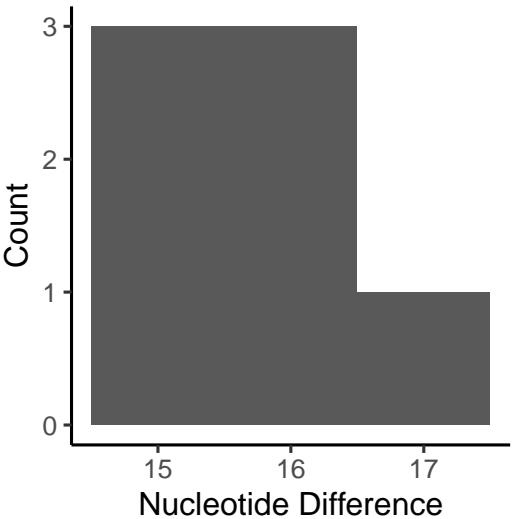
IGHV2-5\*02

582 sequences assigned  
65 (11.2%) exact matches, in which:  
55 unique CDR3  
5 unique J



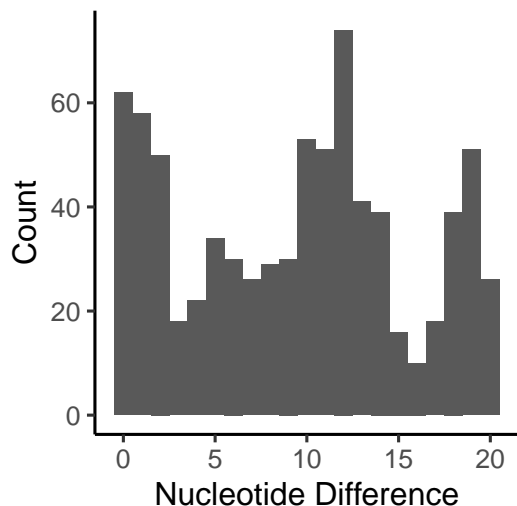
IGHV2-70D\*04

7 sequences assigned  
No exact matches.



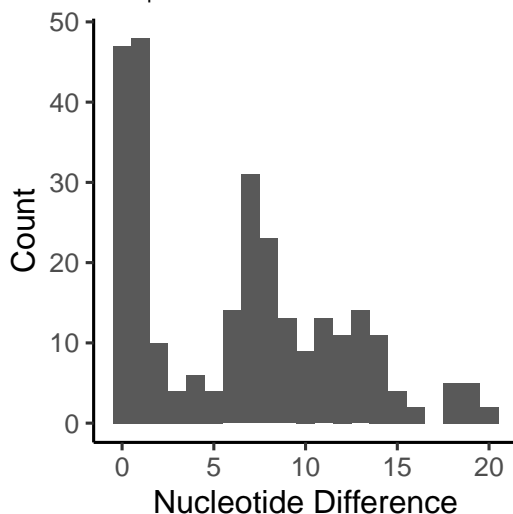
### IGHV3-7\*01

926 sequences assigned  
62 (6.7%) exact matches, in which:  
48 unique CDR3  
6 unique J



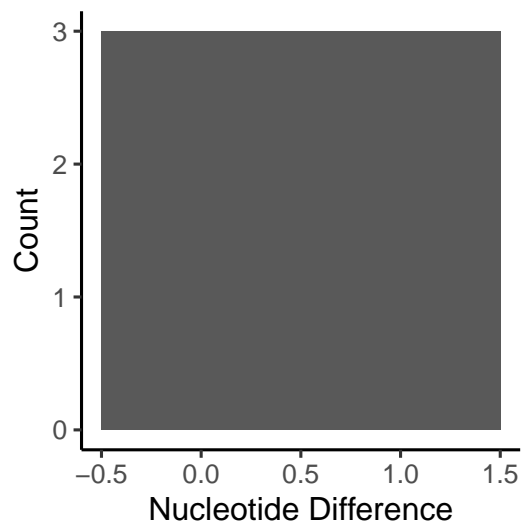
### IGHV3-11\*01

295 sequences assigned  
47 (15.9%) exact matches, in which:  
36 unique CDR3  
4 unique J



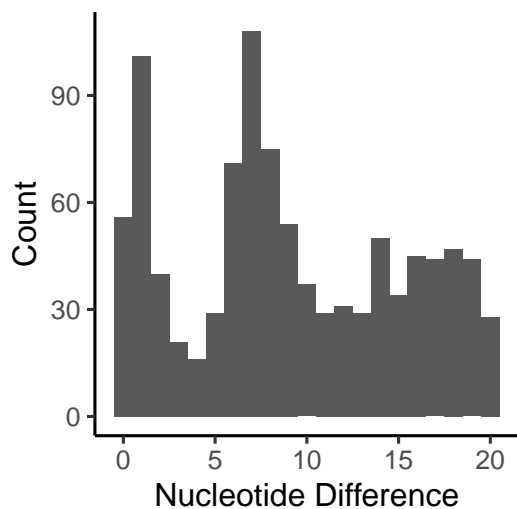
### IGHV3-13\*05

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



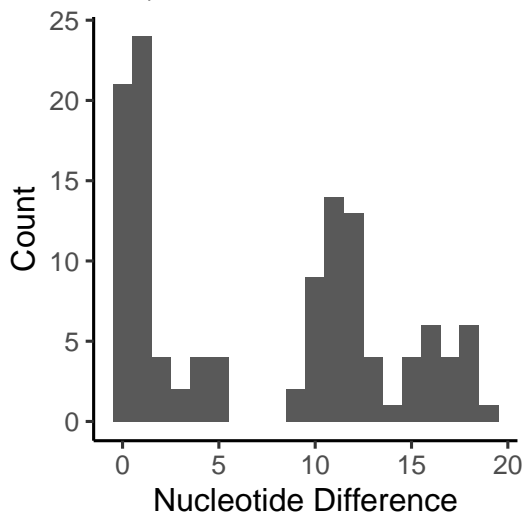
### IGHV3-7\*03

1215 sequences assigned  
56 (4.6%) exact matches, in which:  
42 unique CDR3  
5 unique J



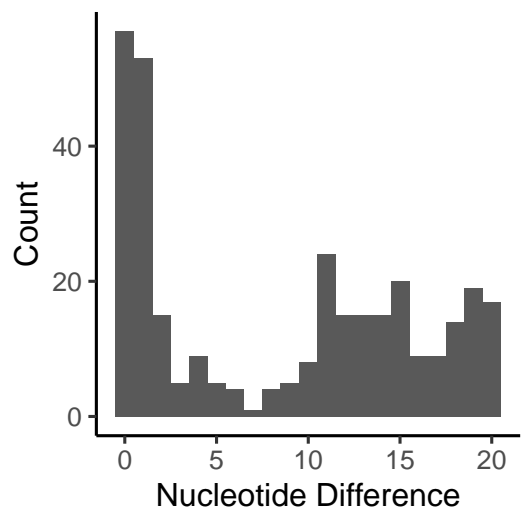
### IGHV3-11\*06

123 sequences assigned  
21 (17.1%) exact matches, in which:  
20 unique CDR3  
5 unique J



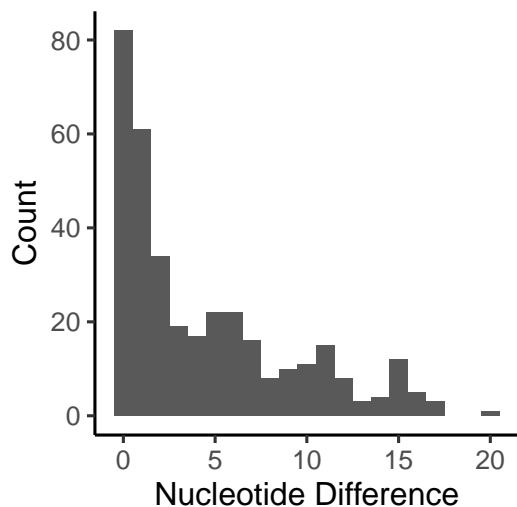
### IGHV3-15\*01

365 sequences assigned  
57 (15.6%) exact matches, in which:  
51 unique CDR3  
5 unique J



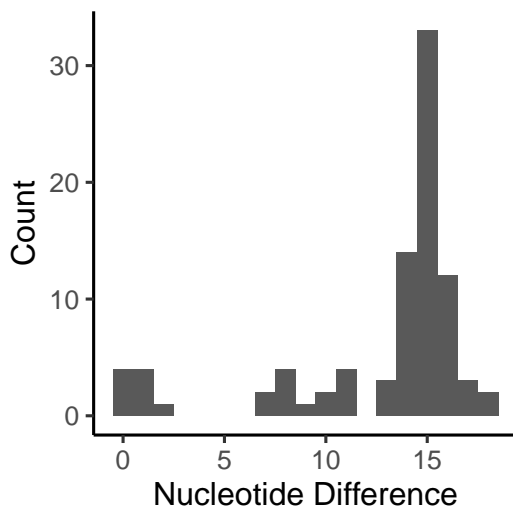
### IGHV3-9\*01

357 sequences assigned  
82 (23%) exact matches, in which:  
70 unique CDR3  
5 unique J



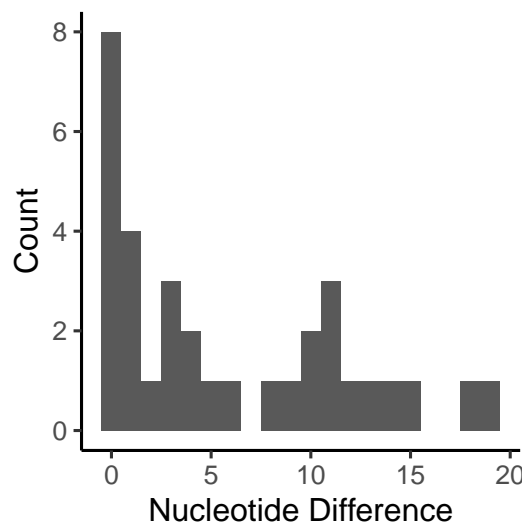
### IGHV3-13\*01

96 sequences assigned  
4 (4.2%) exact matches, in which:  
3 unique CDR3  
2 unique J



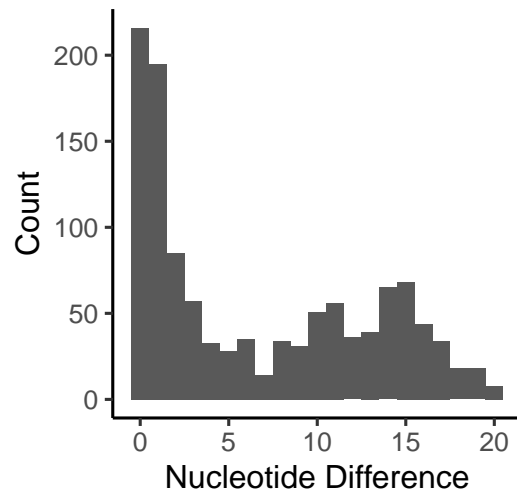
### IGHV3-20\*01

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



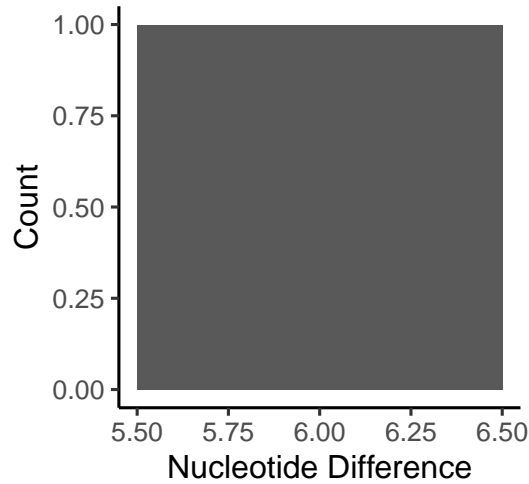
### IGHV3-21\*01

1446 sequences assigned  
216 (14.9%) exact matches, in which:  
174 unique CDR3  
6 unique J



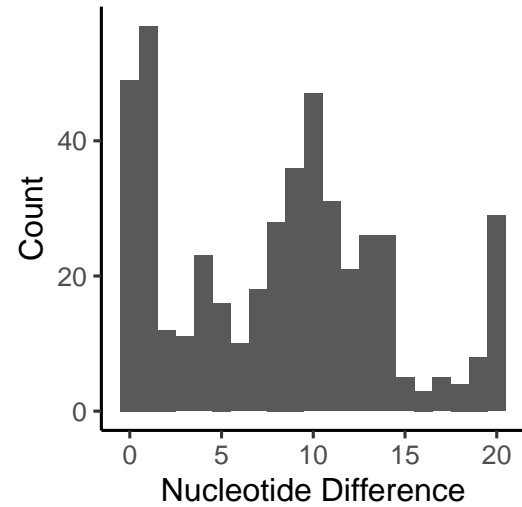
### IGHV3-38-3\*01

1 sequences assigned  
No exact matches.



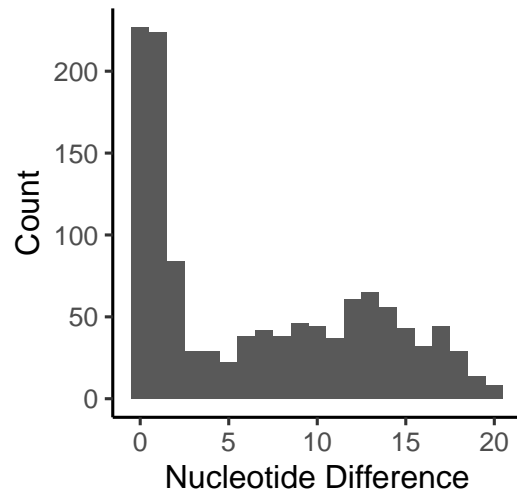
### IGHV3-48\*01

526 sequences assigned  
49 (9.3%) exact matches, in which:  
34 unique CDR3  
4 unique J



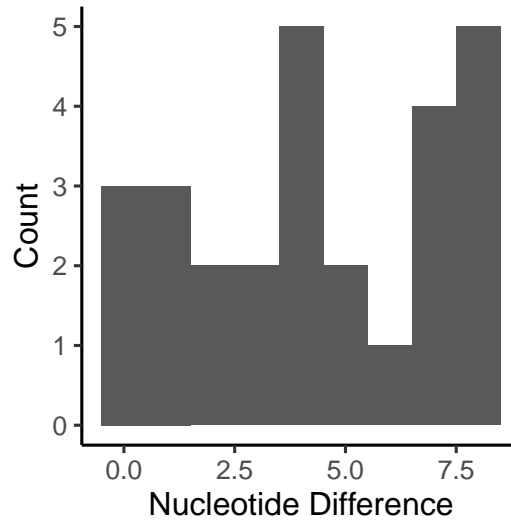
### IGHV3-30-3\*01

1296 sequences assigned  
227 (17.5%) exact matches, in which:  
175 unique CDR3  
6 unique J



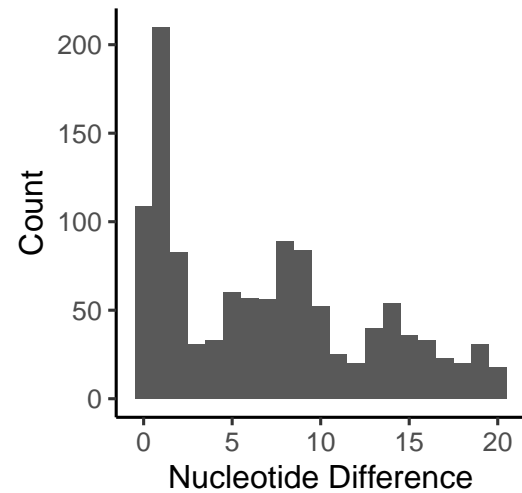
### IGHV3-43\*01

67 sequences assigned  
3 (4.5%) exact matches, in which:  
2 unique CDR3  
2 unique J



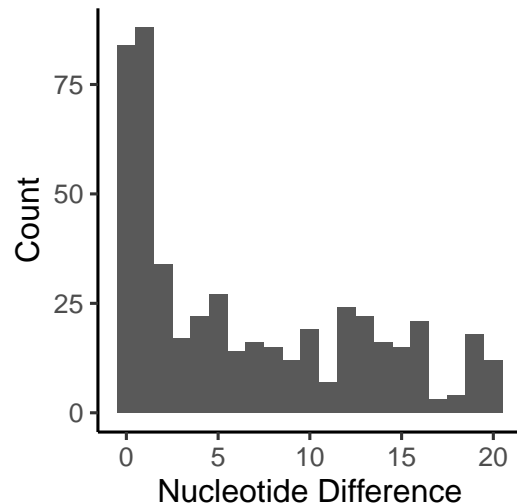
### IGHV3-48\*03

1222 sequences assigned  
109 (8.9%) exact matches, in which:  
79 unique CDR3  
4 unique J



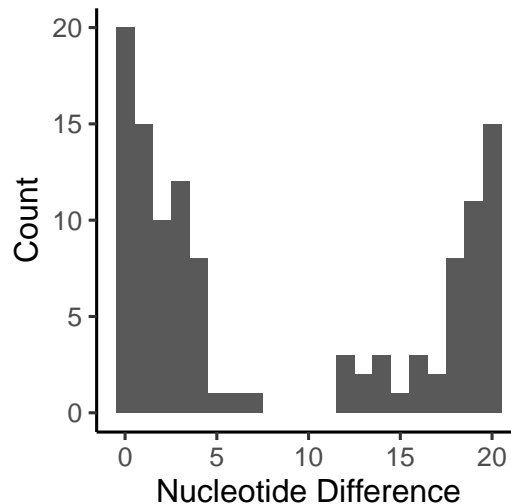
### IGHV3-33\*01

528 sequences assigned  
84 (15.9%) exact matches, in which:  
53 unique CDR3  
5 unique J



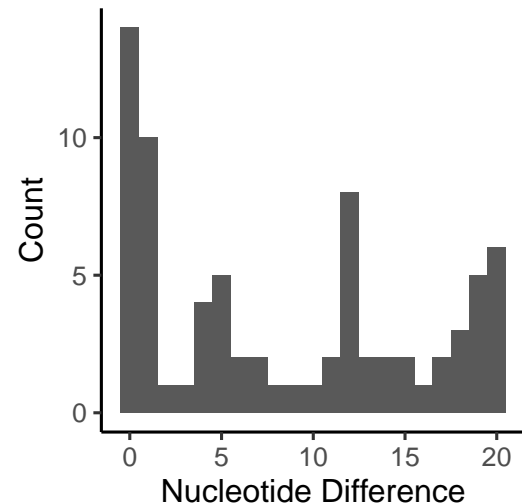
### IGHV3-43\*02

122 sequences assigned  
20 (16.4%) exact matches, in which:  
18 unique CDR3  
4 unique J



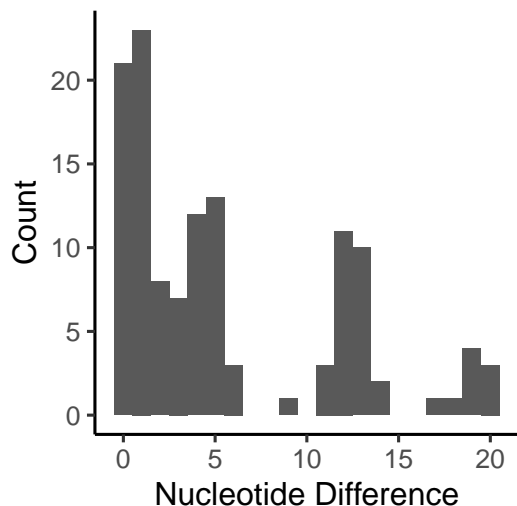
### IGHV3-49\*03

112 sequences assigned  
14 (12.5%) exact matches, in which:  
13 unique CDR3  
3 unique J



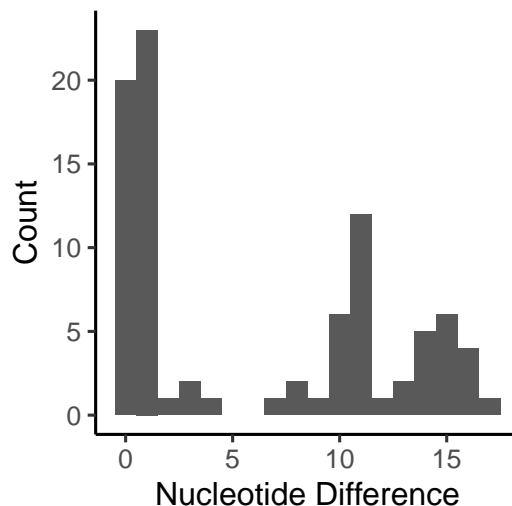
### IGHV3-49\*04

153 sequences assigned  
21 (13.7%) exact matches, in which:  
20 unique CDR3  
5 unique J



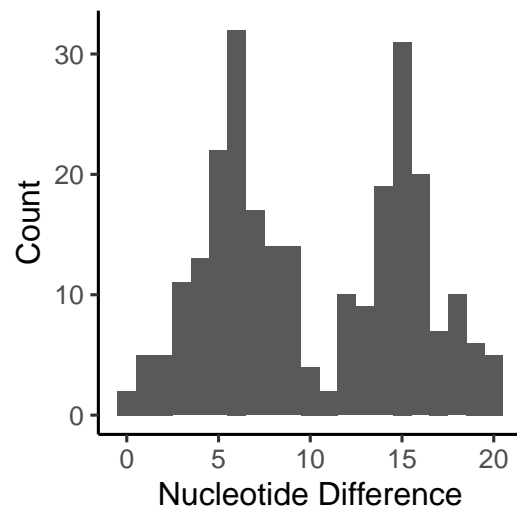
### IGHV3-64\*01

90 sequences assigned  
20 (22.2%) exact matches, in which:  
12 unique CDR3  
3 unique J



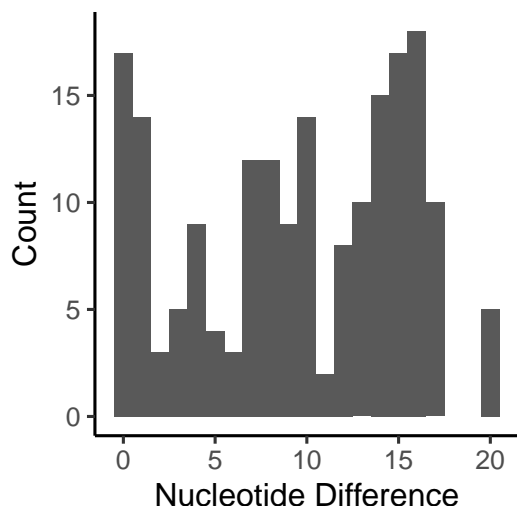
### IGHV3-72\*01

302 sequences assigned  
2 (0.7%) exact matches, in which:  
2 unique CDR3  
1 unique J



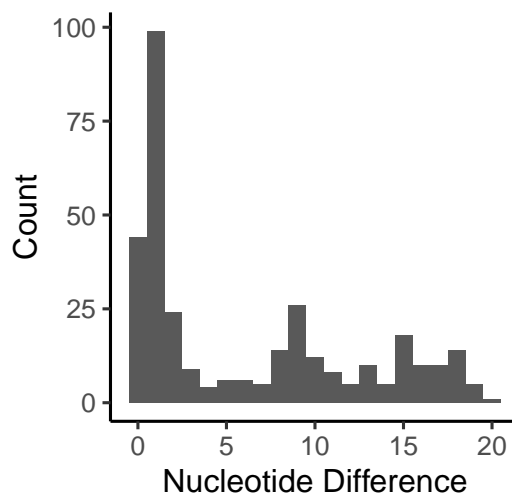
### IGHV3-53\*02

264 sequences assigned  
17 (6.4%) exact matches, in which:  
16 unique CDR3  
5 unique J



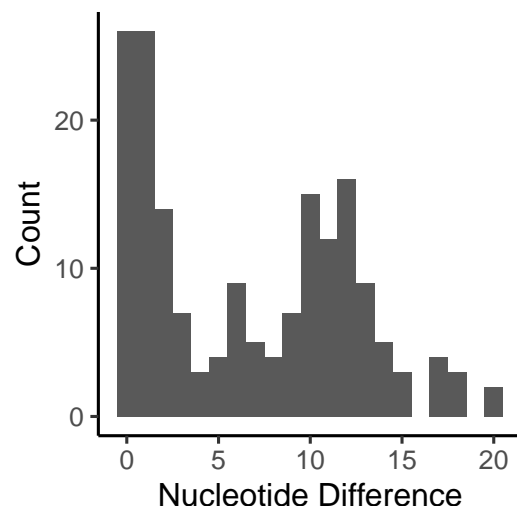
### IGHV3-66\*01

339 sequences assigned  
44 (13%) exact matches, in which:  
33 unique CDR3  
5 unique J



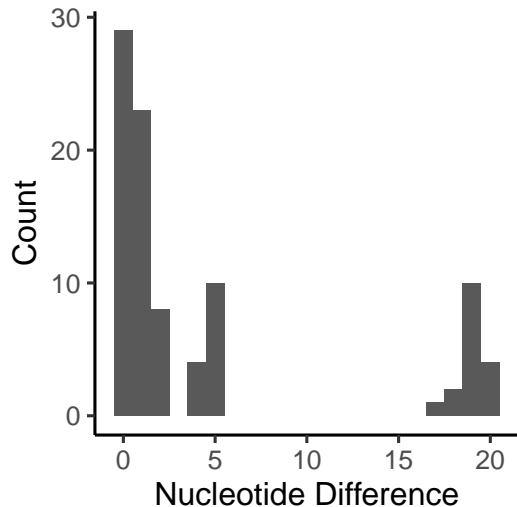
### IGHV3-73\*01

230 sequences assigned  
26 (11.3%) exact matches, in which:  
22 unique CDR3  
4 unique J



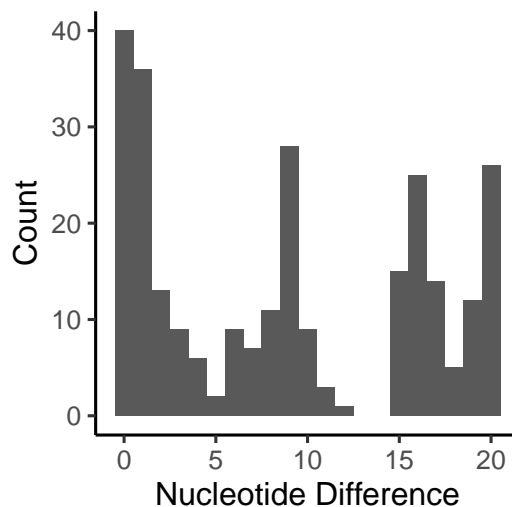
### IGHV3-53\*04

93 sequences assigned  
29 (31.2%) exact matches, in which:  
23 unique CDR3  
4 unique J



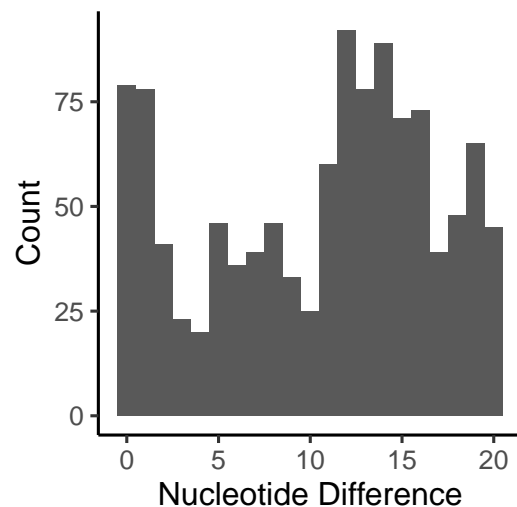
### IGHV3-66\*02

308 sequences assigned  
40 (13%) exact matches, in which:  
34 unique CDR3  
4 unique J



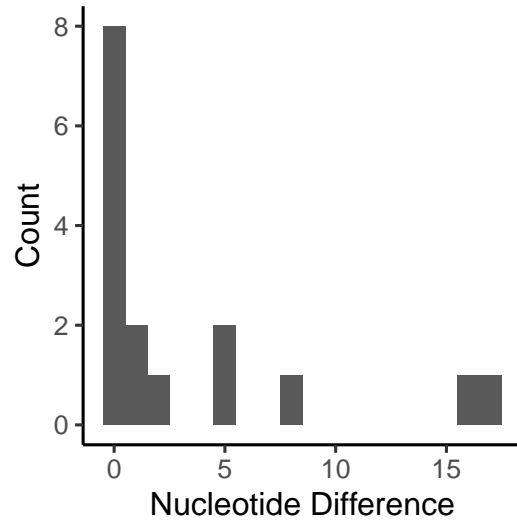
### IGHV3-74\*01

1430 sequences assigned  
79 (5.5%) exact matches, in which:  
65 unique CDR3  
4 unique J



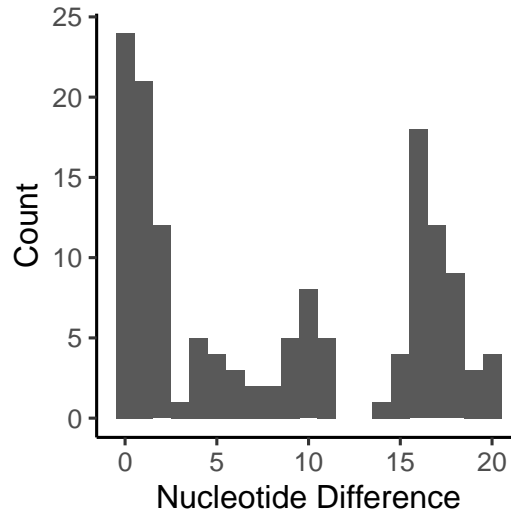
### IGHV3-43D\*03

16 sequences assigned  
8 (50%) exact matches, in which:  
8 unique CDR3  
3 unique J



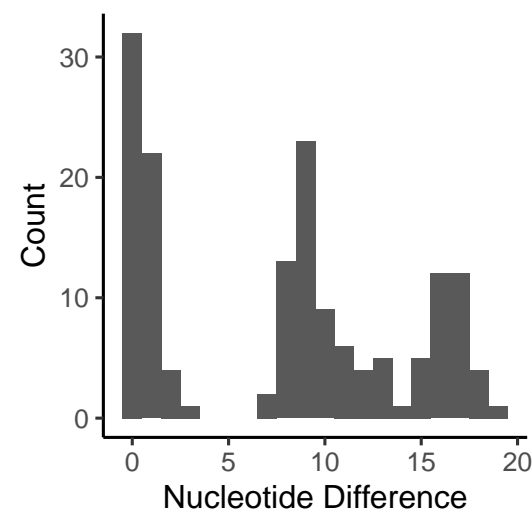
### IGHV4-4\*07

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



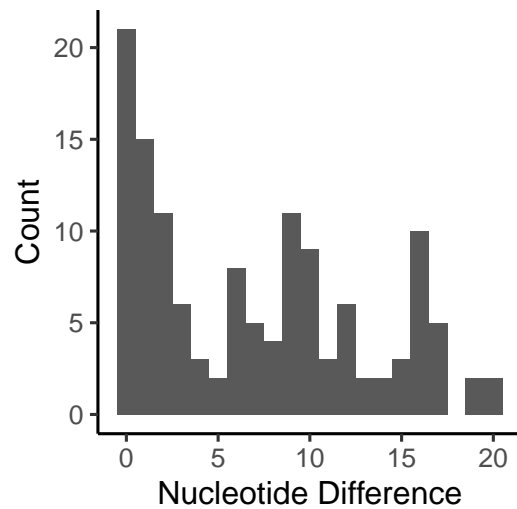
### IGHV4-31\*03

156 sequences assigned  
32 (20.5%) exact matches, in which:  
24 unique CDR3  
6 unique J



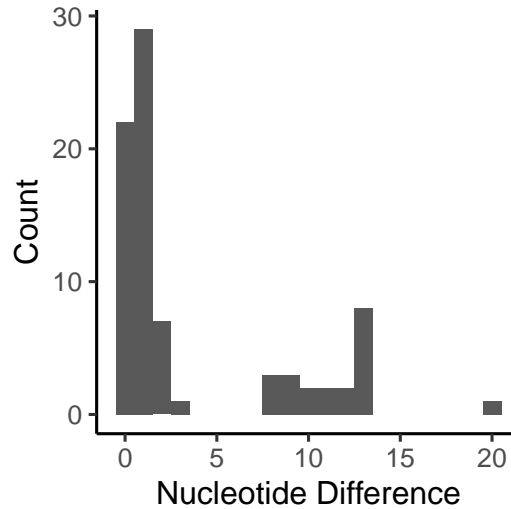
### IGHV3-64D\*06

175 sequences assigned  
21 (12%) exact matches, in which:  
20 unique CDR3  
4 unique J



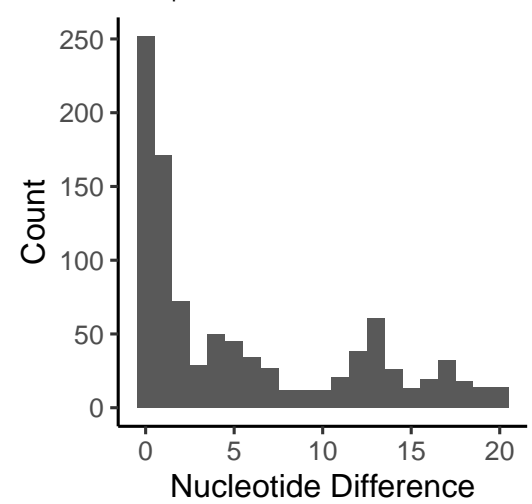
### IGHV4-30-2\*01

152 sequences assigned  
22 (14.5%) exact matches, in which:  
18 unique CDR3  
5 unique J



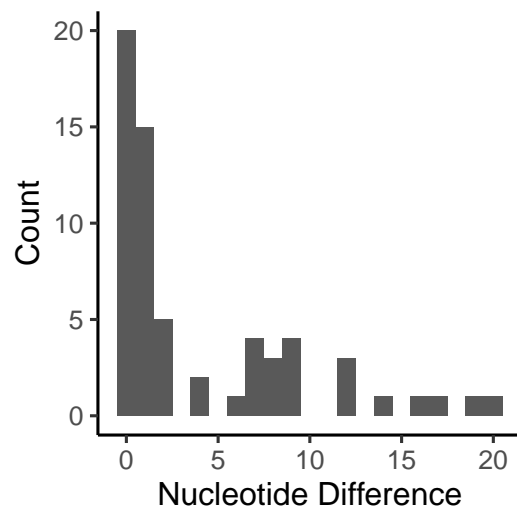
### IGHV4-34\*01

1075 sequences assigned  
252 (23.4%) exact matches, in which:  
188 unique CDR3  
6 unique J



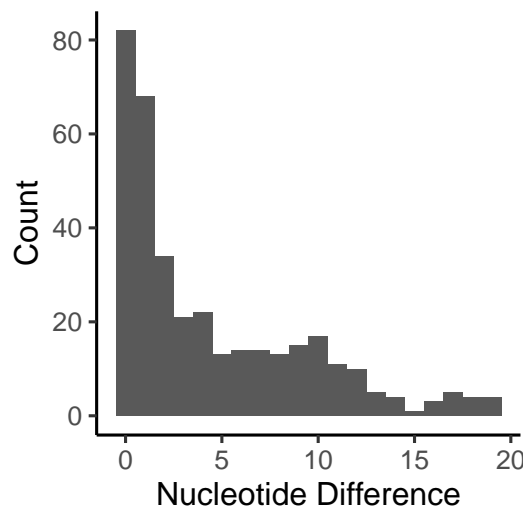
### IGHV4-4\*02

89 sequences assigned  
20 (22.5%) exact matches, in which:  
18 unique CDR3  
5 unique J



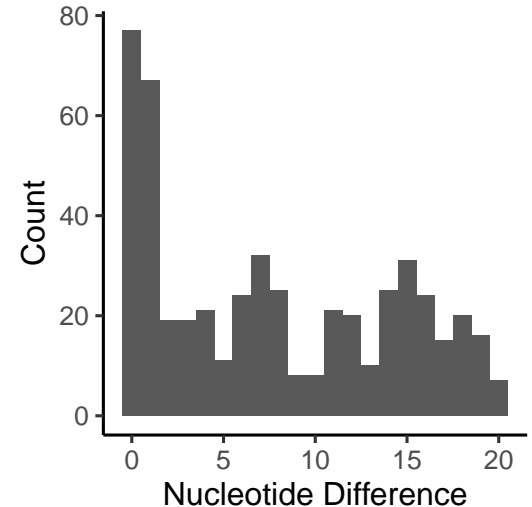
### IGHV4-30-4\*01

371 sequences assigned  
82 (22.1%) exact matches, in which:  
66 unique CDR3  
4 unique J



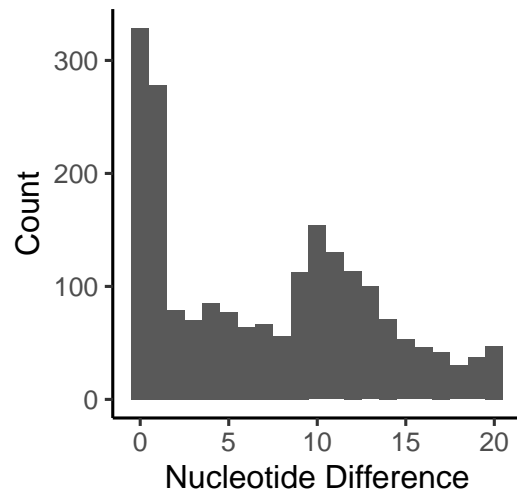
### IGHV4-38-2\*02

668 sequences assigned  
77 (11.5%) exact matches, in which:  
63 unique CDR3  
6 unique J



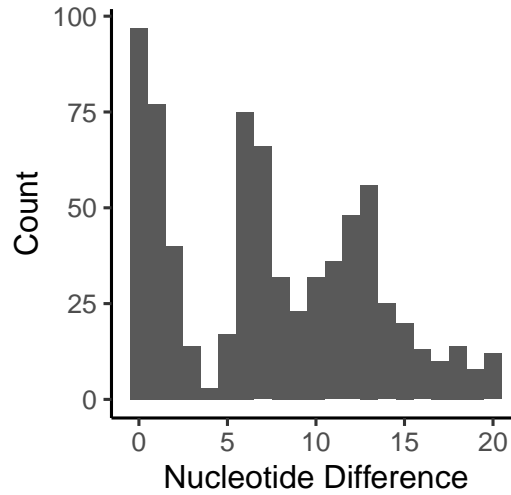
### IGHV4–39\*01

2296 sequences assigned  
329 (14.3%) exact matches, in which:  
300 unique CDR3  
6 unique J



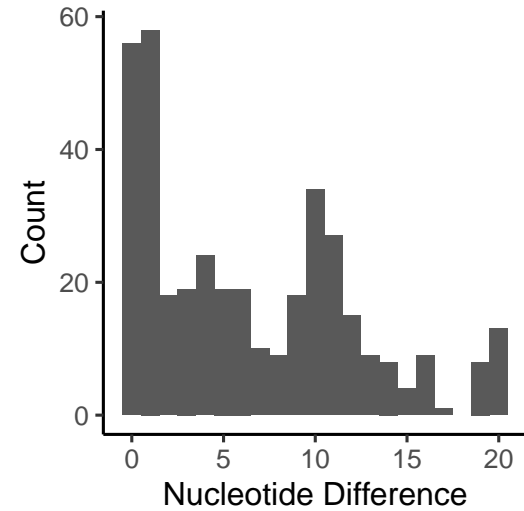
### IGHV4–61\*02

732 sequences assigned  
97 (13.3%) exact matches, in which:  
67 unique CDR3  
6 unique J



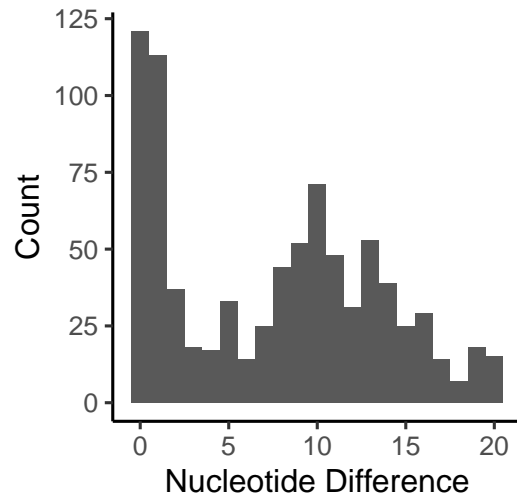
### IGHV5–51\*03

452 sequences assigned  
56 (12.4%) exact matches, in which:  
52 unique CDR3  
5 unique J



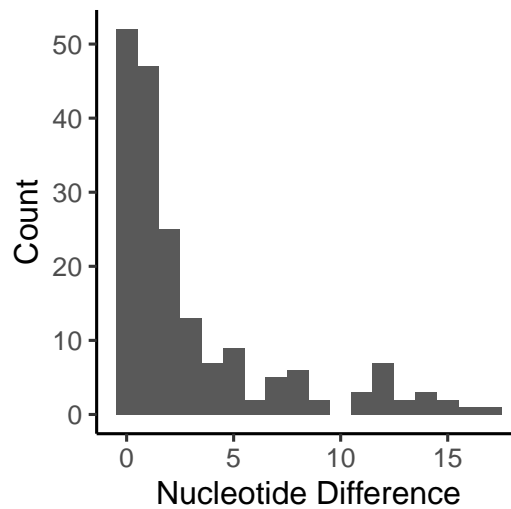
### IGHV4–59\*01

847 sequences assigned  
121 (14.3%) exact matches, in which:  
94 unique CDR3  
6 unique J



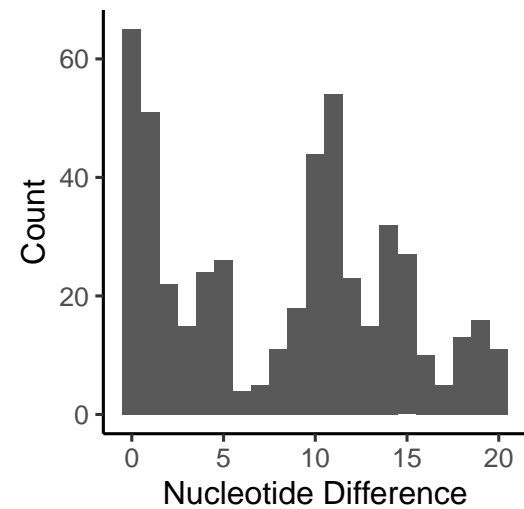
### IGHV5–10–1\*03

187 sequences assigned  
52 (27.8%) exact matches, in which:  
47 unique CDR3  
5 unique J



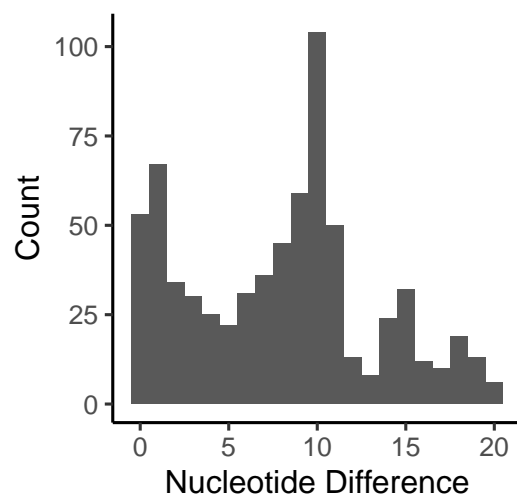
### IGHV6–1\*01

510 sequences assigned  
65 (12.7%) exact matches, in which:  
46 unique CDR3  
6 unique J



### IGHV4–59\*08

750 sequences assigned  
53 (7.1%) exact matches, in which:  
38 unique CDR3  
5 unique J



### IGHV5–51\*01

626 sequences assigned  
74 (11.8%) exact matches, in which:  
60 unique CDR3  
5 unique J

