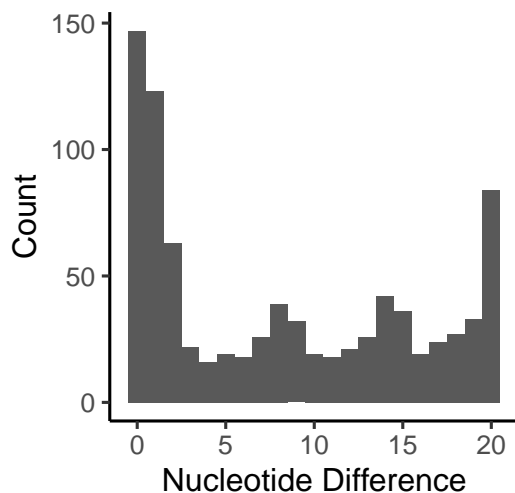


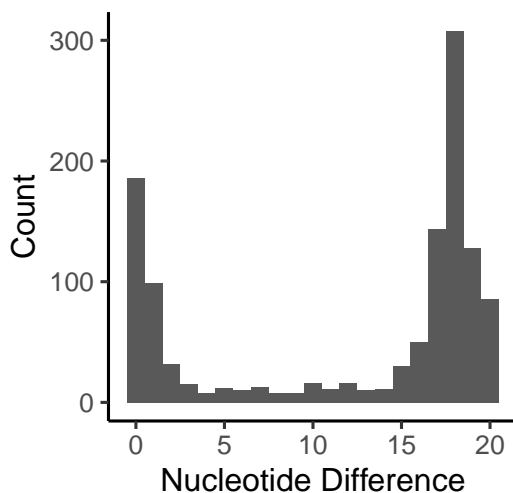
### IGHV1-2\*02

1411 sequences assigned  
147 (10.4%) exact matches, in which:  
141 unique CDR3  
6 unique J



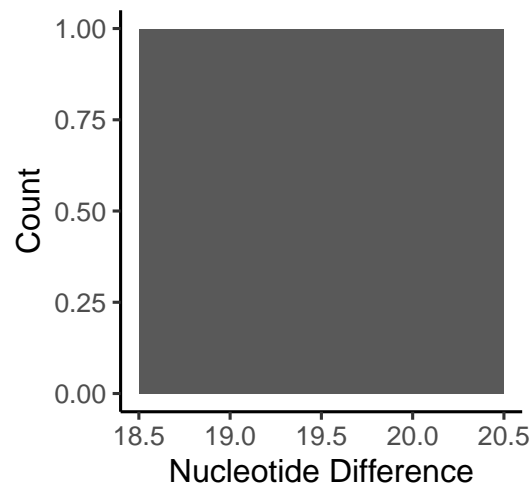
### IGHV1-18\*01

1619 sequences assigned  
186 (11.5%) exact matches, in which:  
170 unique CDR3  
5 unique J



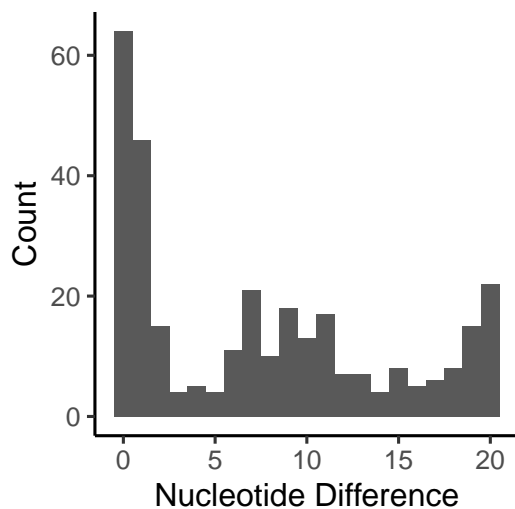
### IGHV1-45\*02

2 sequences assigned  
No exact matches.



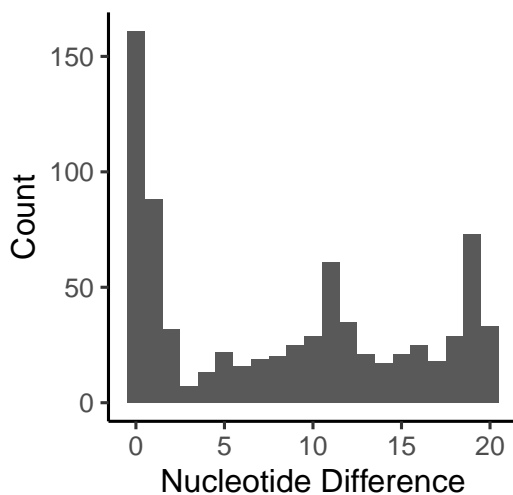
### IGHV1-3\*01

544 sequences assigned  
64 (11.8%) exact matches, in which:  
63 unique CDR3  
4 unique J



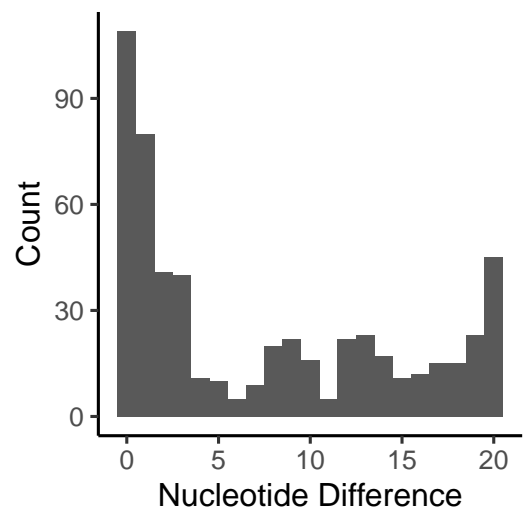
### IGHV1-18\*04

896 sequences assigned  
161 (18%) exact matches, in which:  
151 unique CDR3  
5 unique J



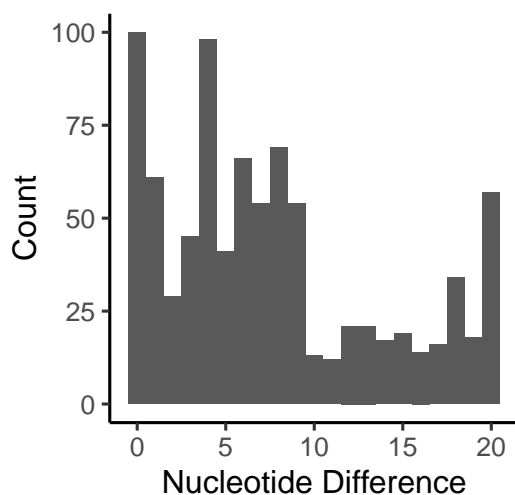
### IGHV1-46\*01

980 sequences assigned  
109 (11.1%) exact matches, in which:  
94 unique CDR3  
5 unique J



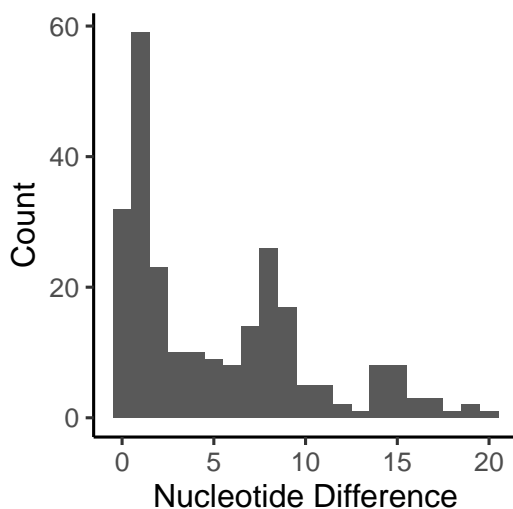
### IGHV1-8\*01

980 sequences assigned  
100 (10.2%) exact matches, in which:  
97 unique CDR3  
5 unique J



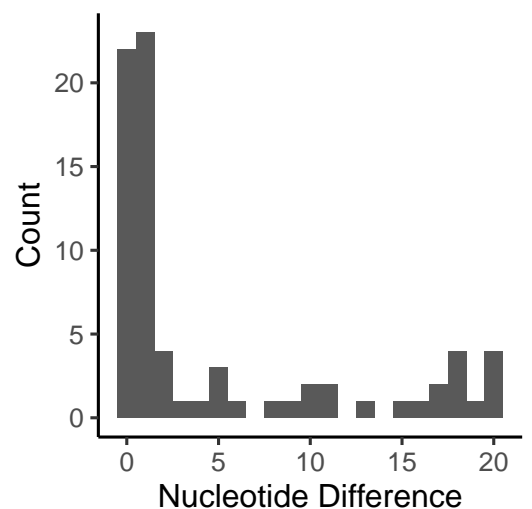
### IGHV1-24\*01

309 sequences assigned  
32 (10.4%) exact matches, in which:  
26 unique CDR3  
4 unique J



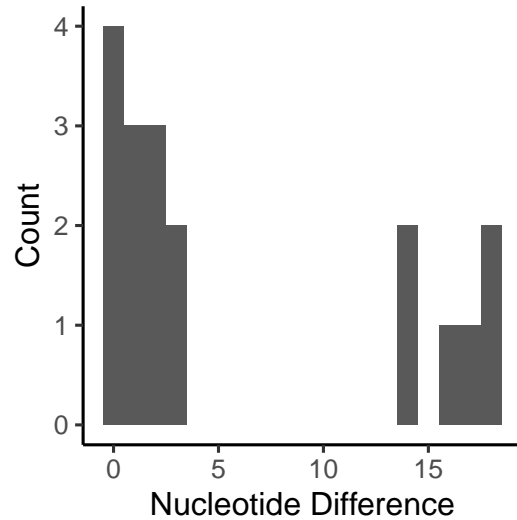
### IGHV1-58\*01

98 sequences assigned  
22 (22.4%) exact matches, in which:  
20 unique CDR3  
6 unique J



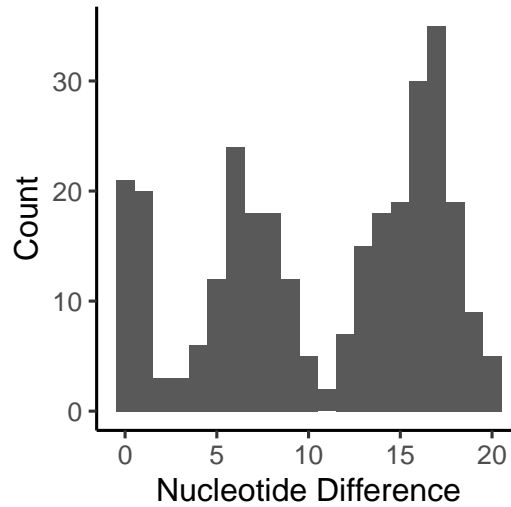
### IGHV1-69-2\*01

27 sequences assigned  
4 (14.8%) exact matches, in which:  
4 unique CDR3  
1 unique J



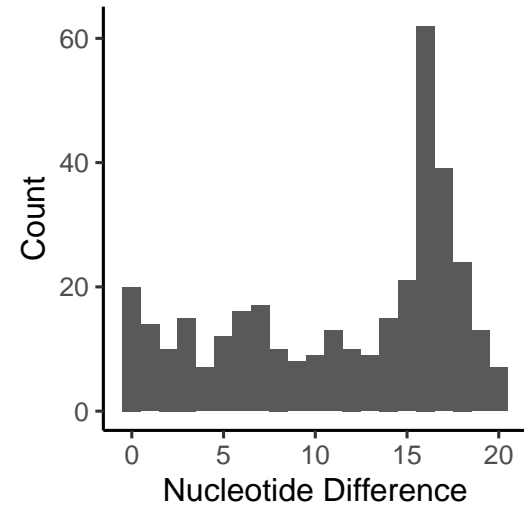
### IGHV2-5\*02

549 sequences assigned  
21 (3.8%) exact matches, in which:  
19 unique CDR3  
5 unique J



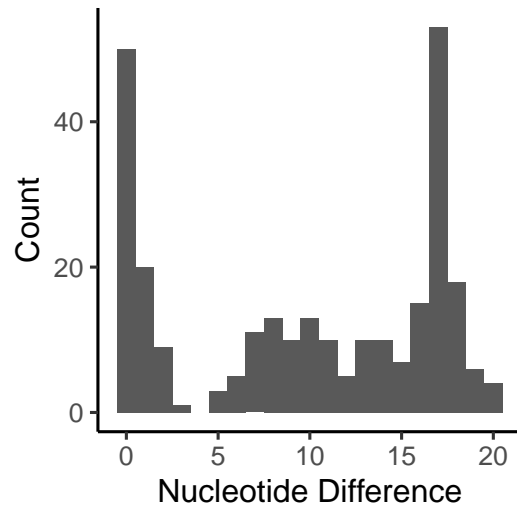
### IGHV3-7\*01

552 sequences assigned  
20 (3.6%) exact matches, in which:  
19 unique CDR3  
5 unique J



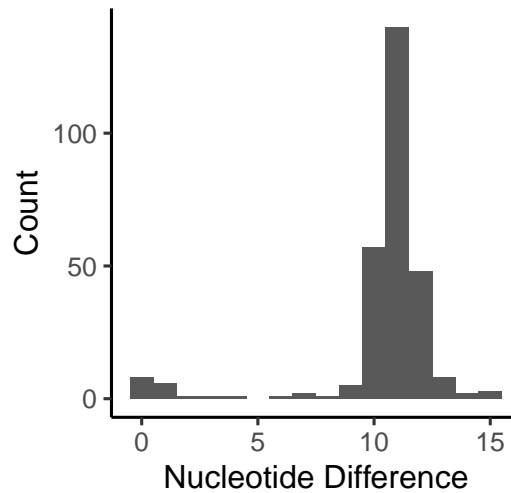
### IGHV1-69\*06

672 sequences assigned  
50 (7.4%) exact matches, in which:  
50 unique CDR3  
5 unique J



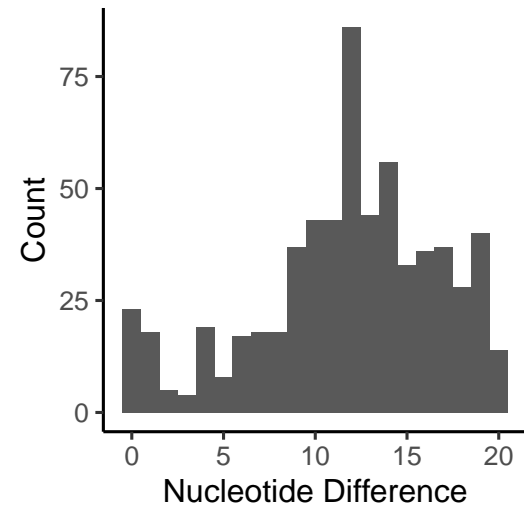
### IGHV2-26\*01

288 sequences assigned  
8 (2.8%) exact matches, in which:  
8 unique CDR3  
3 unique J



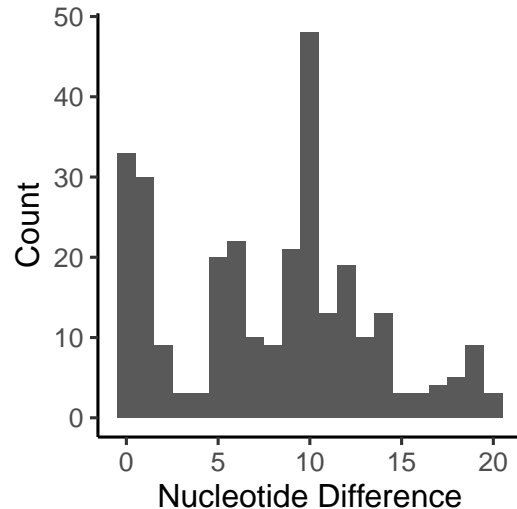
### IGHV3-7\*03

1035 sequences assigned  
23 (2.2%) exact matches, in which:  
23 unique CDR3  
5 unique J



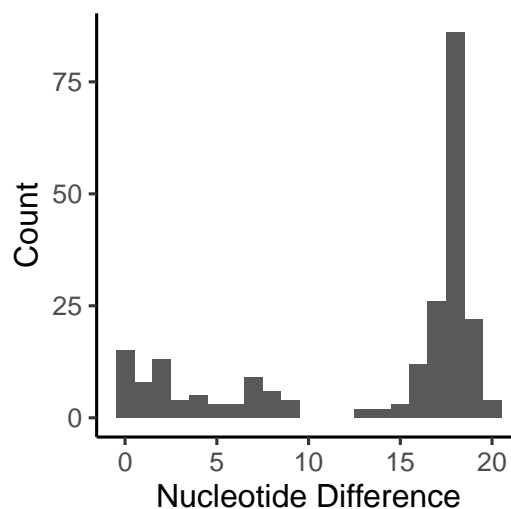
### IGHV2-5\*01

534 sequences assigned  
33 (6.2%) exact matches, in which:  
32 unique CDR3  
5 unique J



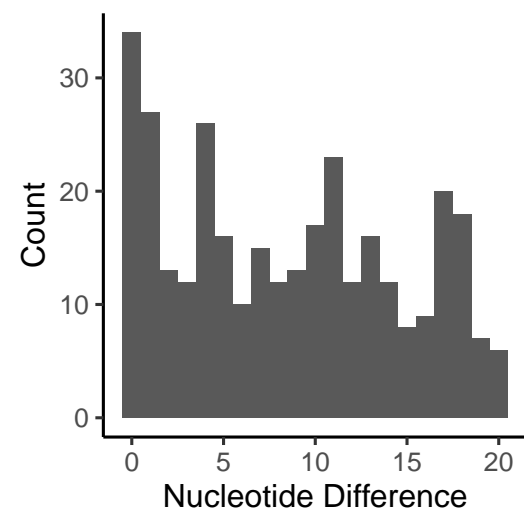
### IGHV2-70\*01

252 sequences assigned  
15 (6%) exact matches, in which:  
14 unique CDR3  
5 unique J



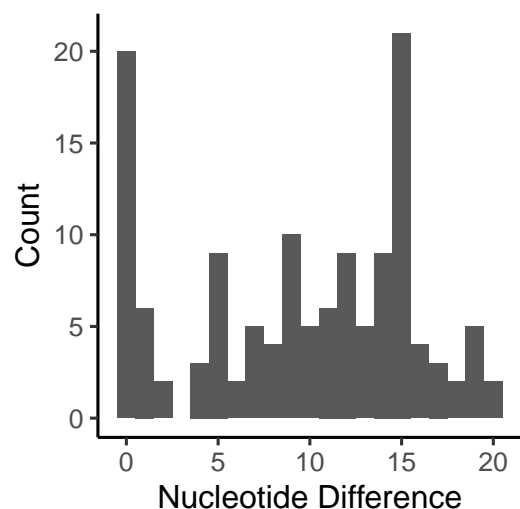
### IGHV3-9\*01

436 sequences assigned  
34 (7.8%) exact matches, in which:  
32 unique CDR3  
3 unique J



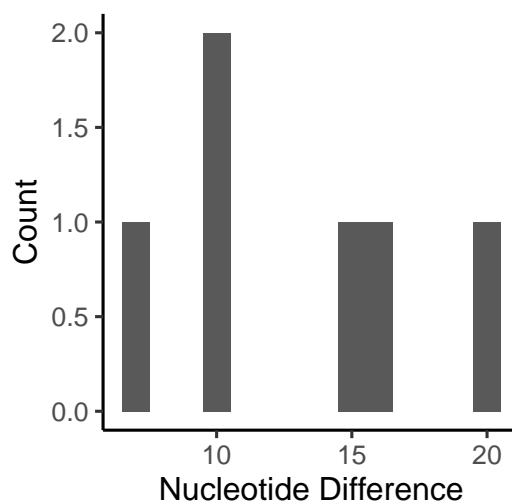
### IGHV3-11\*01

293 sequences assigned  
20 (6.8%) exact matches, in which:  
19 unique CDR3  
4 unique J



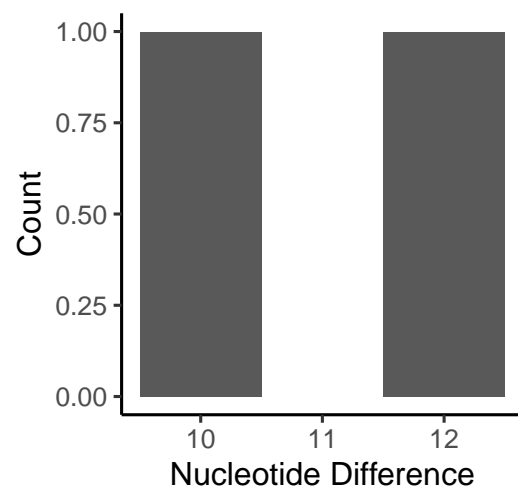
### IGHV3-13\*05

11 sequences assigned  
No exact matches.



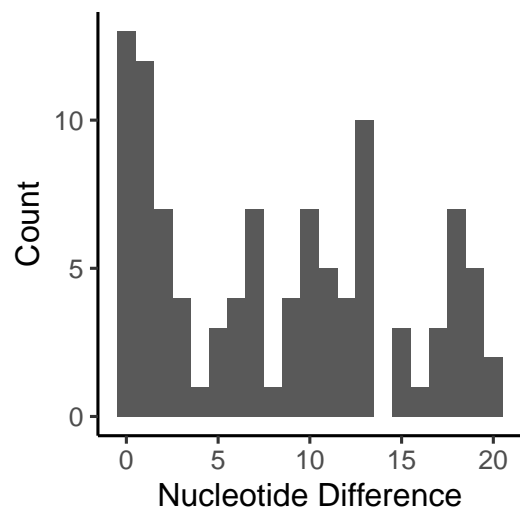
### IGHV3-20\*04

3 sequences assigned  
No exact matches.



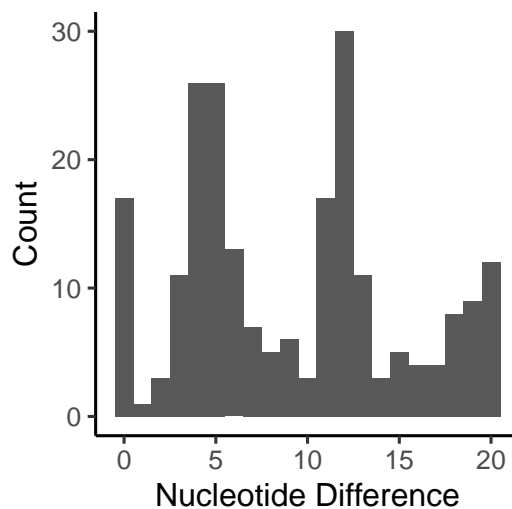
### IGHV3-11\*06

169 sequences assigned  
13 (7.7%) exact matches, in which:  
13 unique CDR3  
3 unique J



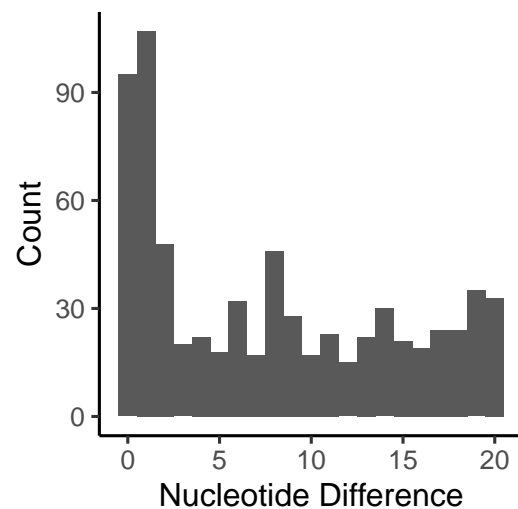
### IGHV3-15\*01

457 sequences assigned  
17 (3.7%) exact matches, in which:  
17 unique CDR3  
3 unique J



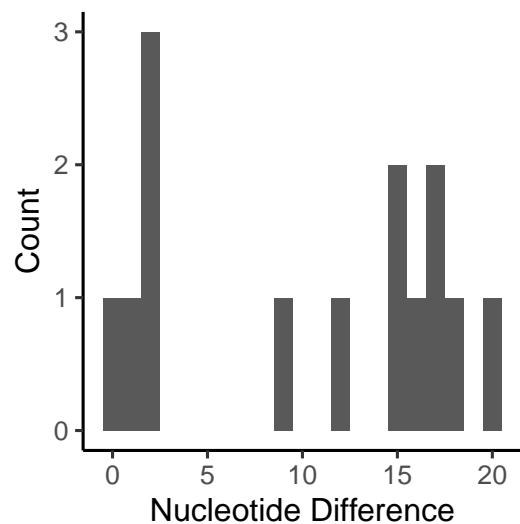
### IGHV3-21\*01

987 sequences assigned  
95 (9.6%) exact matches, in which:  
81 unique CDR3  
6 unique J



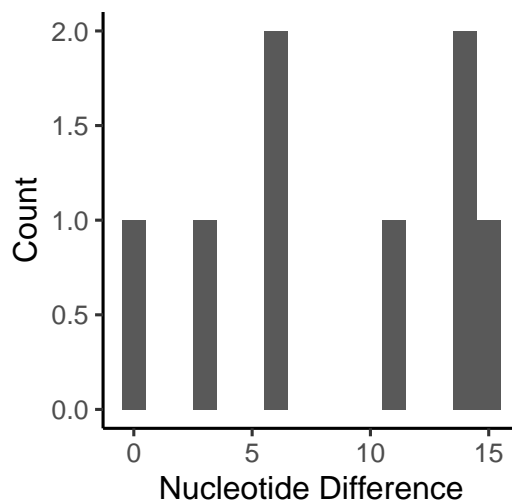
### IGHV3-13\*01

88 sequences assigned  
1 (1.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



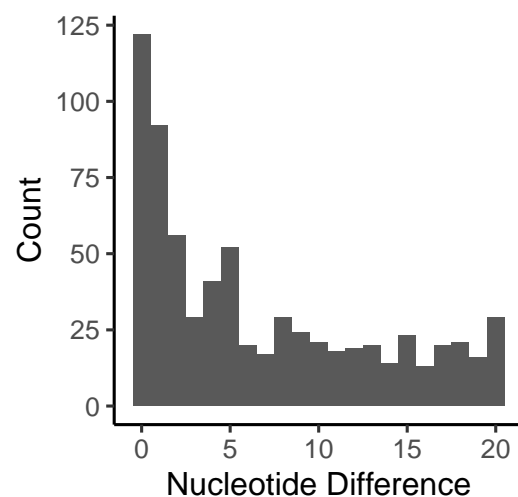
### IGHV3-20\*01

11 sequences assigned  
1 (9.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



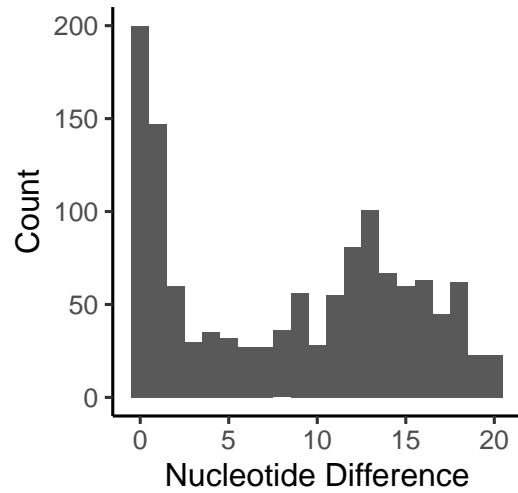
### IGHV3-30-3\*01

1299 sequences assigned  
122 (9.4%) exact matches, in which:  
118 unique CDR3  
5 unique J



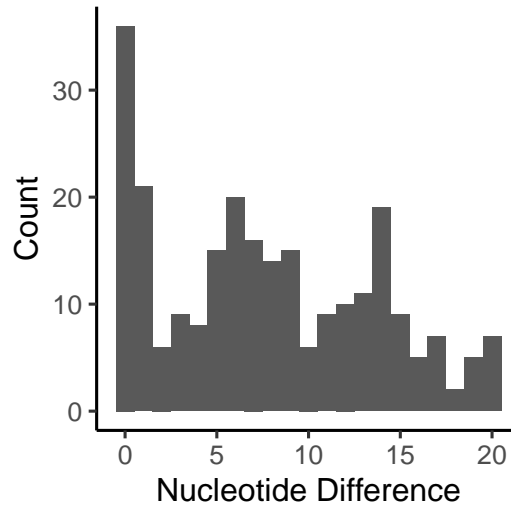
### IGHV3–33\*01

1688 sequences assigned  
200 (11.8%) exact matches, in which:  
188 unique CDR3  
6 unique J



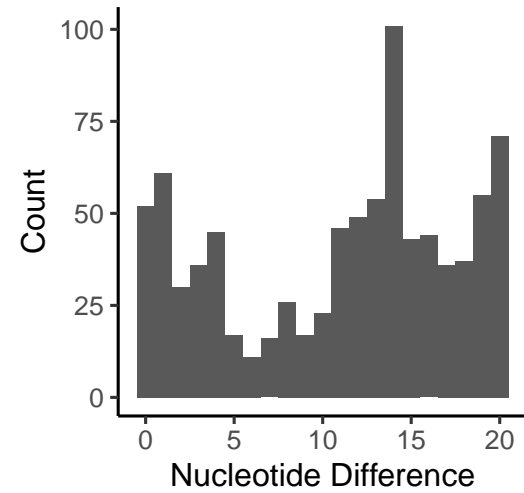
### IGHV3–48\*03

337 sequences assigned  
36 (10.7%) exact matches, in which:  
36 unique CDR3  
5 unique J



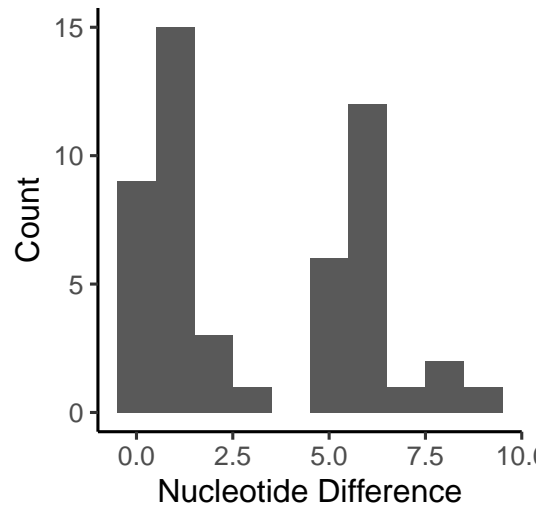
### IGHV3–53\*01

1186 sequences assigned  
52 (4.4%) exact matches, in which:  
48 unique CDR3  
5 unique J



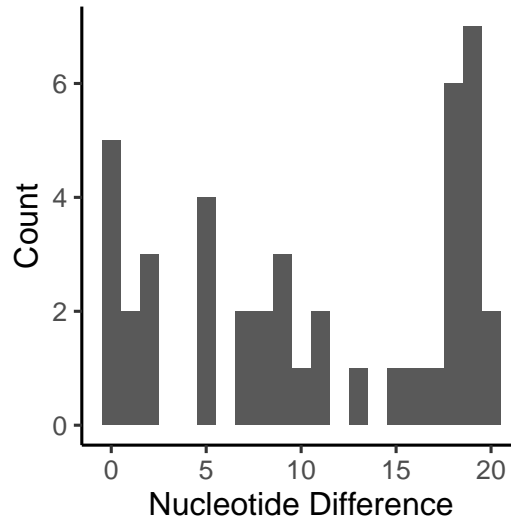
### IGHV3–43\*01

71 sequences assigned  
9 (12.7%) exact matches, in which:  
4 unique CDR3  
2 unique J



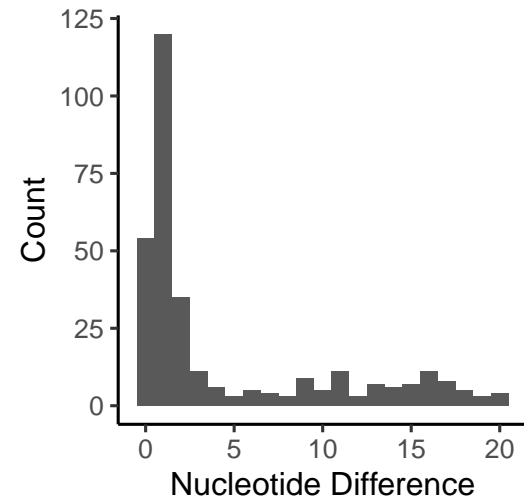
### IGHV3–49\*04

53 sequences assigned  
5 (9.4%) exact matches, in which:  
5 unique CDR3  
3 unique J



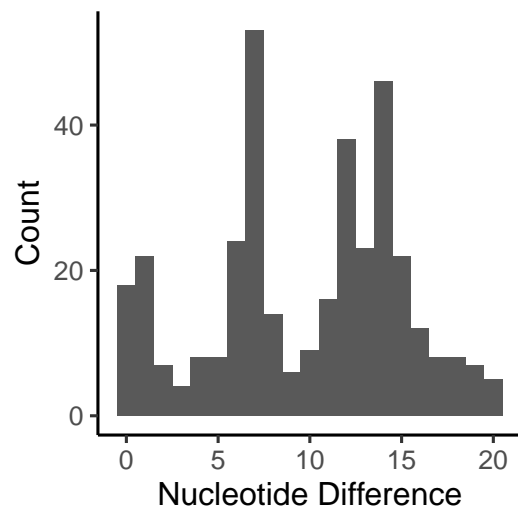
### IGHV3–53\*02

435 sequences assigned  
54 (12.4%) exact matches, in which:  
37 unique CDR3  
5 unique J



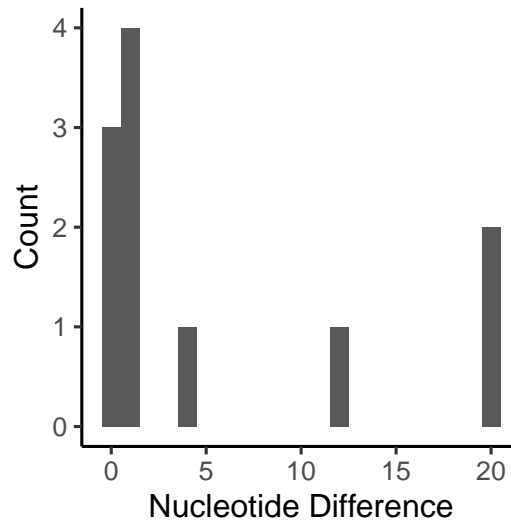
### IGHV3–48\*02

549 sequences assigned  
18 (3.3%) exact matches, in which:  
16 unique CDR3  
4 unique J



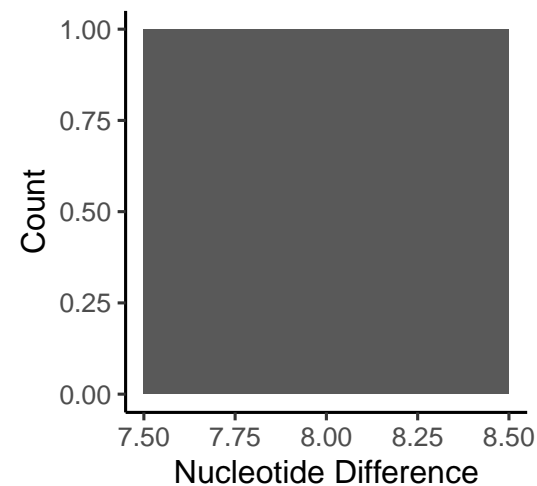
### IGHV3–49\*05

47 sequences assigned  
3 (6.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



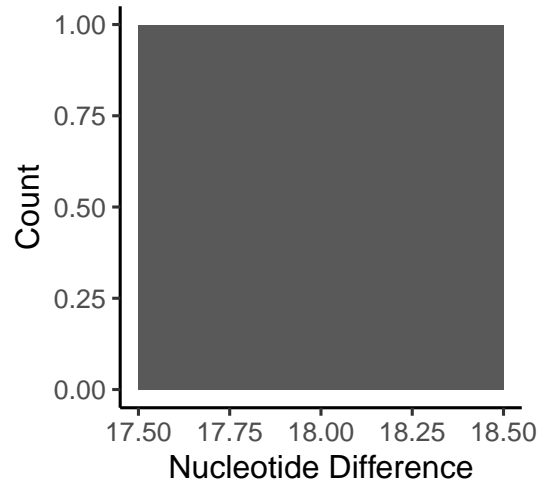
### IGHV3–64\*02

2 sequences assigned  
No exact matches.



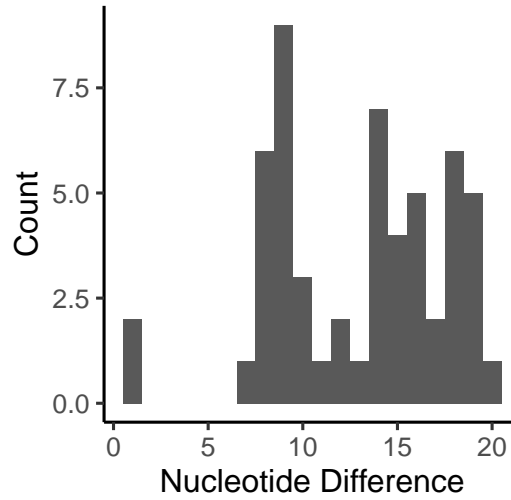
### IGHV3-66\*01

3 sequences assigned  
No exact matches.



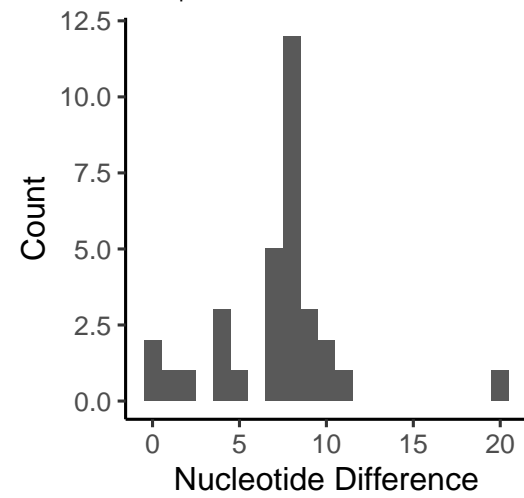
### IGHV3-72\*01

93 sequences assigned  
No exact matches.



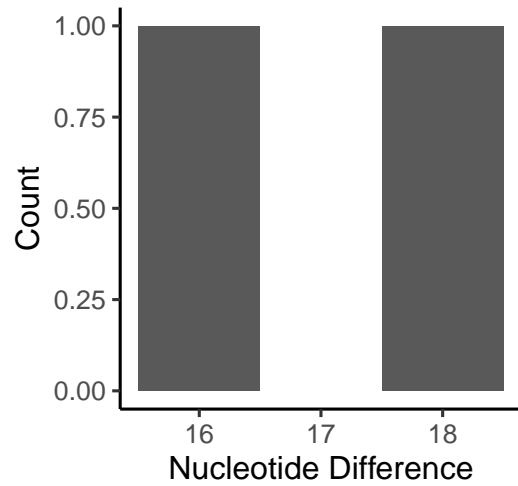
### IGHV3-43D\*04

35 sequences assigned  
2 (5.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



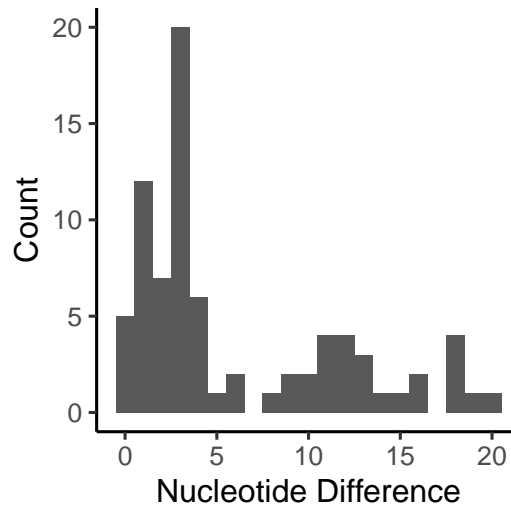
### IGHV3-66\*04

2 sequences assigned  
No exact matches.



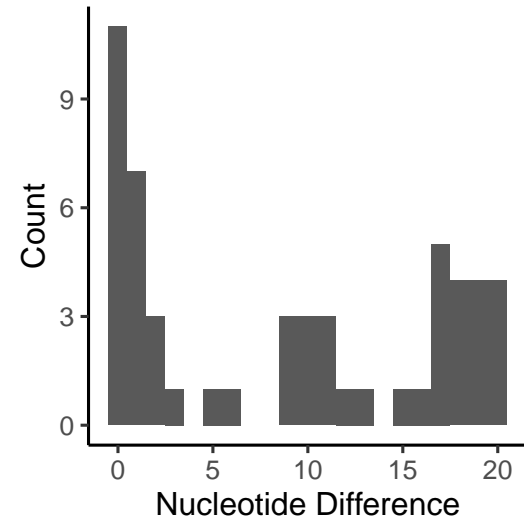
### IGHV3-73\*02

90 sequences assigned  
5 (5.6%) exact matches, in which:  
5 unique CDR3  
4 unique J



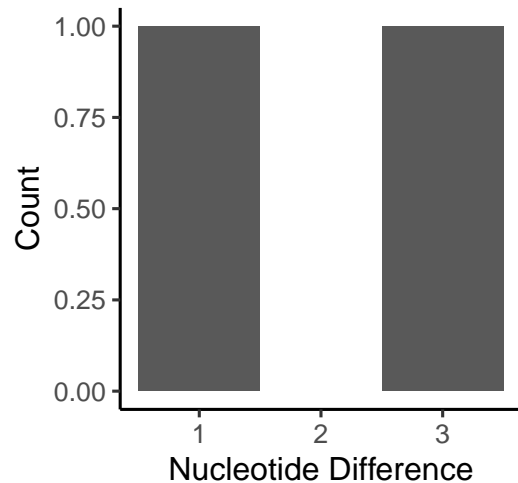
### IGHV3-64D\*06

128 sequences assigned  
11 (8.6%) exact matches, in which:  
11 unique CDR3  
4 unique J



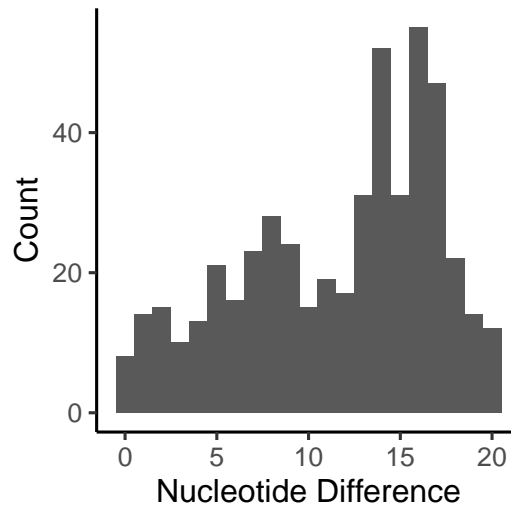
### IGHV3-69-1\*01

2 sequences assigned  
No exact matches.



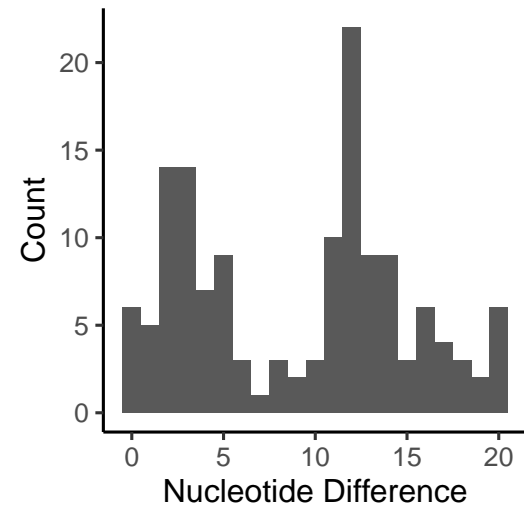
### IGHV3-74\*01

699 sequences assigned  
8 (1.1%) exact matches, in which:  
8 unique CDR3  
3 unique J



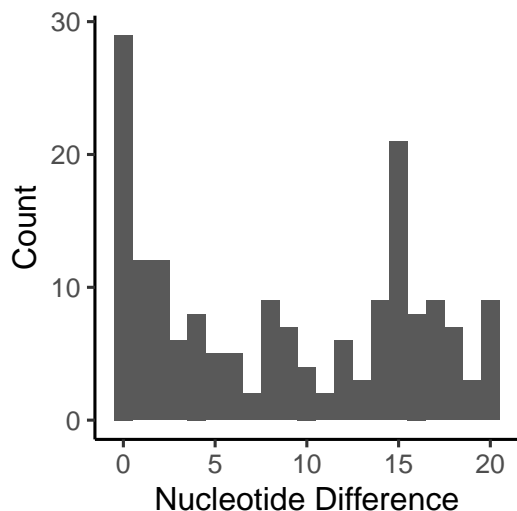
### IGHV4-4\*02

237 sequences assigned  
6 (2.5%) exact matches, in which:  
6 unique CDR3  
3 unique J



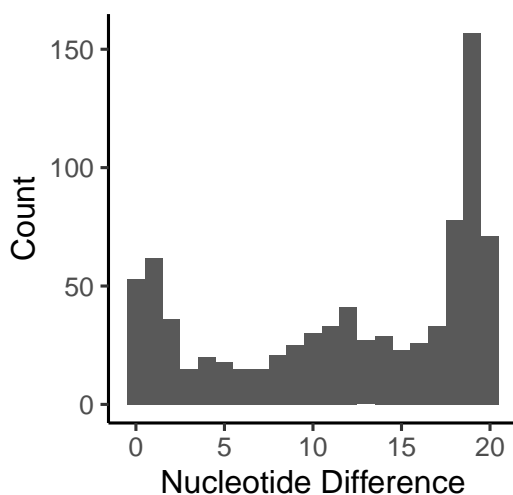
### IGHV4-4\*07

377 sequences assigned  
29 (7.7%) exact matches, in which:  
28 unique CDR3  
5 unique J



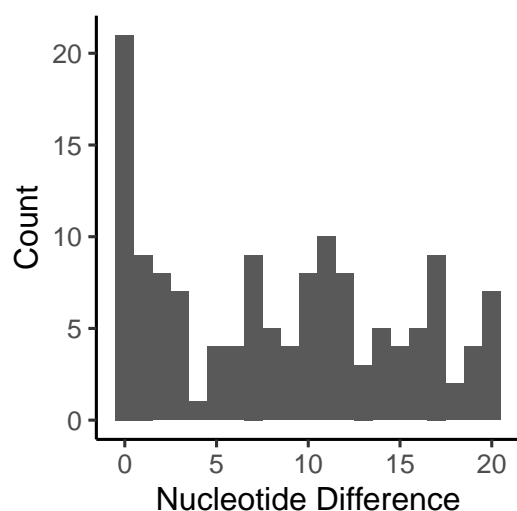
### IGHV4-31\*03

1029 sequences assigned  
53 (5.2%) exact matches, in which:  
46 unique CDR3  
5 unique J



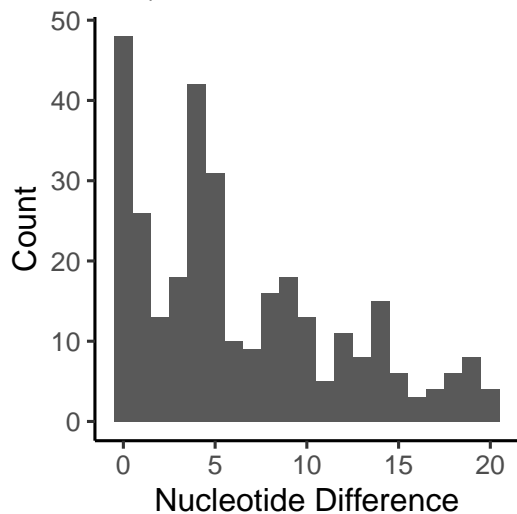
### IGHV4-38-2\*01

314 sequences assigned  
21 (6.7%) exact matches, in which:  
21 unique CDR3  
4 unique J



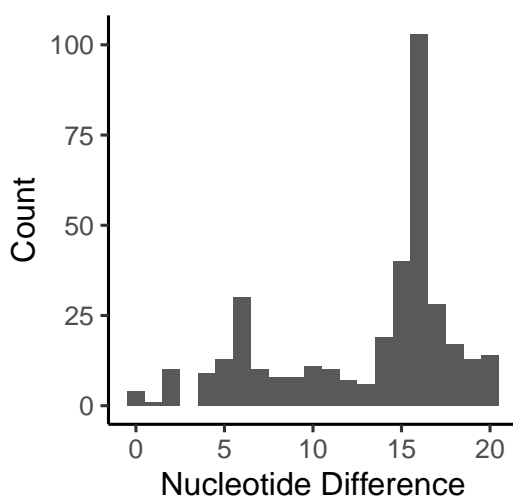
### IGHV4-30-4\*01

423 sequences assigned  
48 (11.3%) exact matches, in which:  
39 unique CDR3  
4 unique J



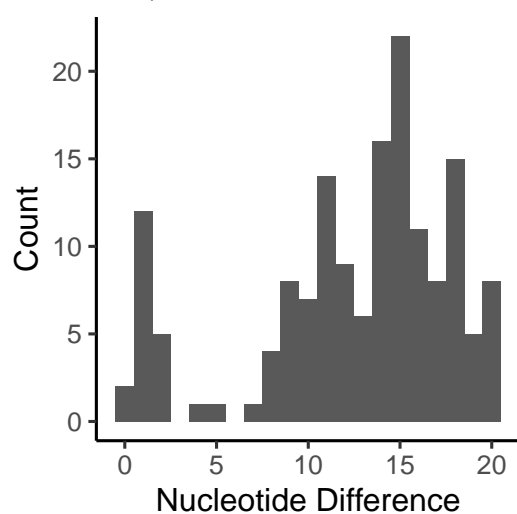
### IGHV4-34\*01

426 sequences assigned  
4 (0.9%) exact matches, in which:  
4 unique CDR3  
3 unique J



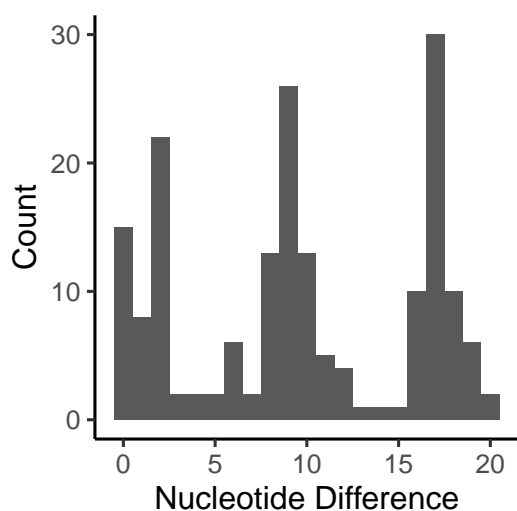
### IGHV4-38-2\*02

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



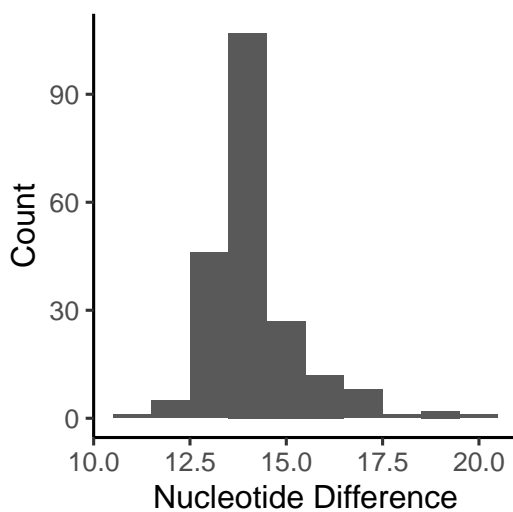
### IGHV4-30-2\*01

313 sequences assigned  
15 (4.8%) exact matches, in which:  
15 unique CDR3  
4 unique J



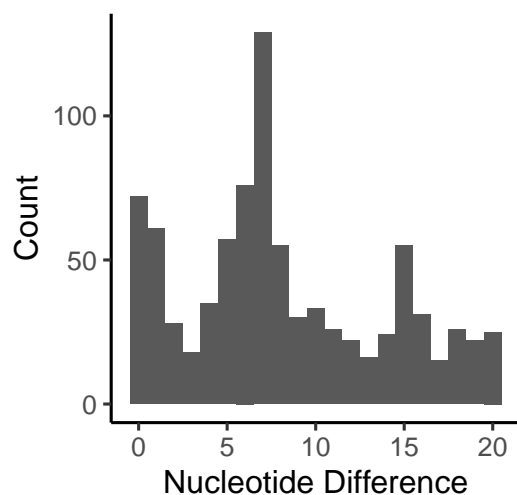
### IGHV4-34\*02

631 sequences assigned  
No exact matches.



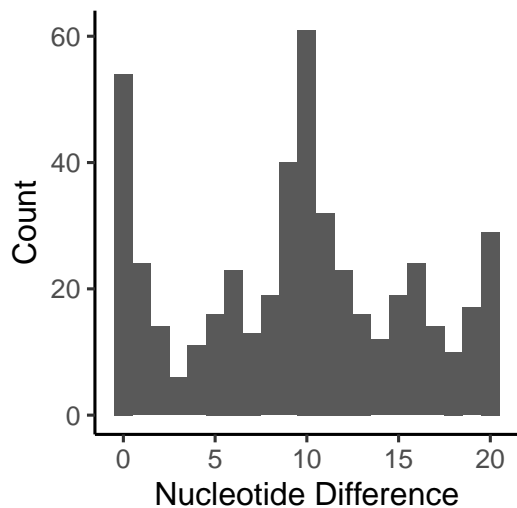
### IGHV4-39\*01

1194 sequences assigned  
72 (6%) exact matches, in which:  
71 unique CDR3  
6 unique J



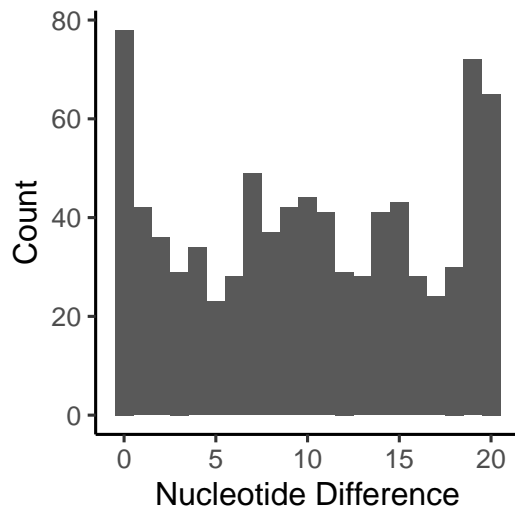
## IGHV4–59\*01

878 sequences assigned  
54 (6.2%) exact matches, in which:  
52 unique CDR3  
5 unique J



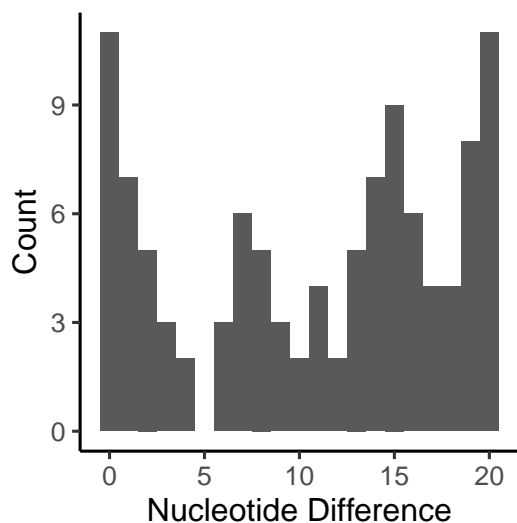
## IGHV5–51\*01

1089 sequences assigned  
78 (7.2%) exact matches, in which:  
76 unique CDR3  
4 unique J



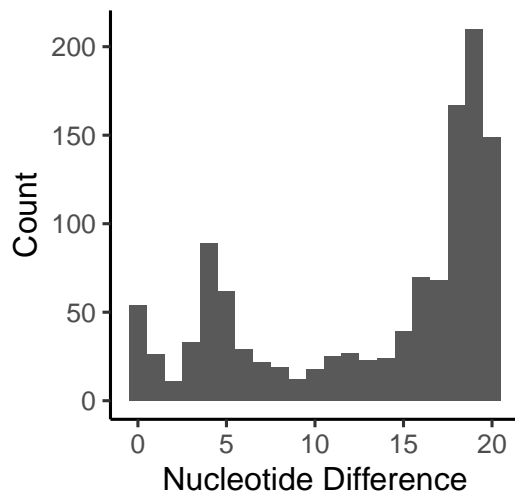
## IGHV4–61\*01

159 sequences assigned  
11 (6.9%) exact matches, in which:  
11 unique CDR3  
4 unique J



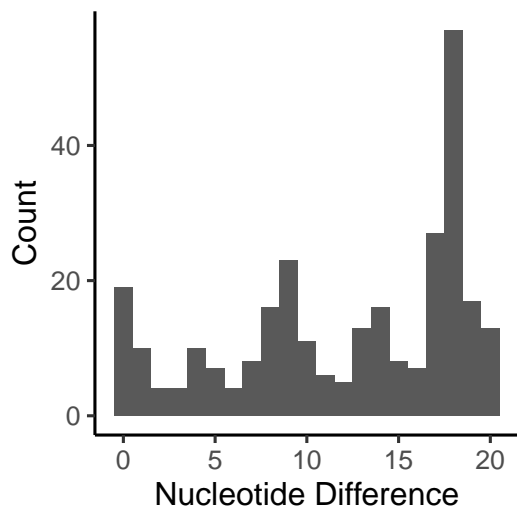
## IGHV6–1\*01

1495 sequences assigned  
54 (3.6%) exact matches, in which:  
53 unique CDR3  
5 unique J



## IGHV5–10–1\*03

415 sequences assigned  
19 (4.6%) exact matches, in which:  
19 unique CDR3  
4 unique J







[illegible]