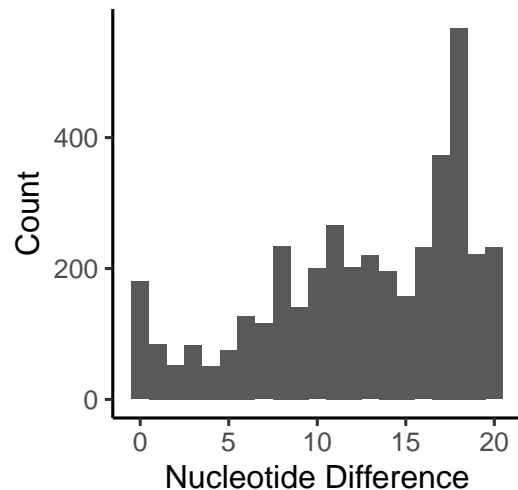


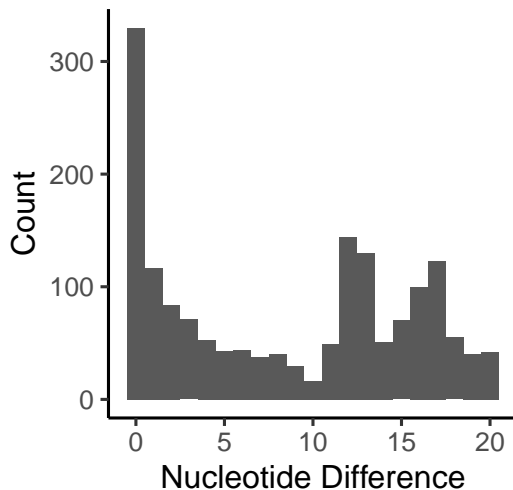
### IGHV1-2\*02

6825 sequences assigned  
180 (2.6%) exact matches, in which:  
142 unique CDR3  
6 unique J



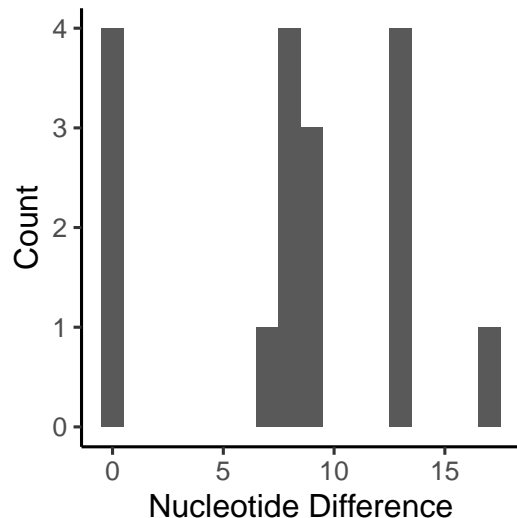
### IGHV1-8\*01

2221 sequences assigned  
330 (14.9%) exact matches, in which:  
224 unique CDR3  
6 unique J



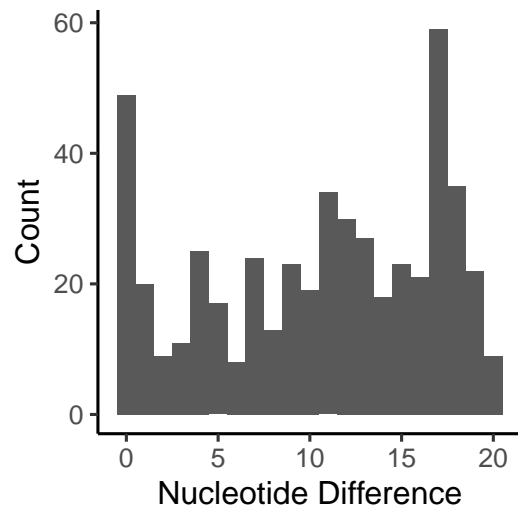
### IGHV1-45\*02

41 sequences assigned  
4 (9.8%) exact matches, in which:  
3 unique CDR3  
3 unique J



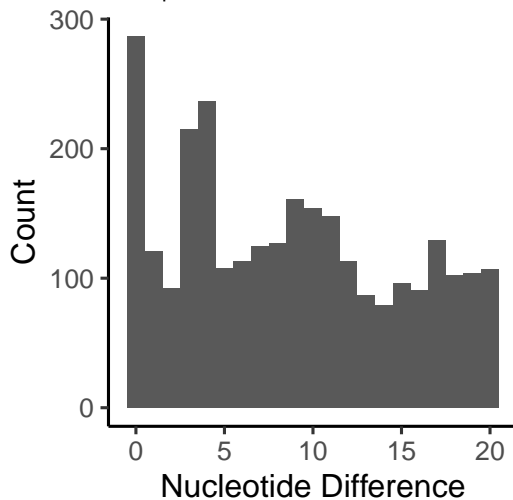
### IGHV1-3\*01

780 sequences assigned  
49 (6.3%) exact matches, in which:  
33 unique CDR3  
4 unique J



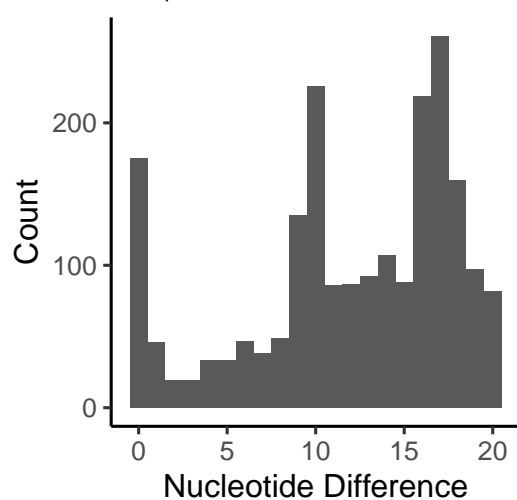
### IGHV1-18\*01

3986 sequences assigned  
287 (7.2%) exact matches, in which:  
229 unique CDR3  
6 unique J



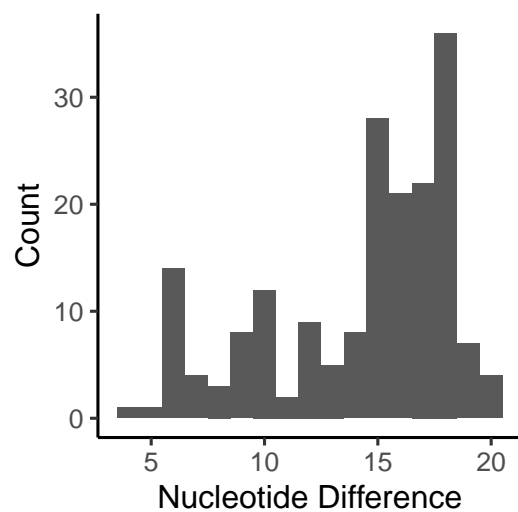
### IGHV1-46\*01

3717 sequences assigned  
175 (4.7%) exact matches, in which:  
131 unique CDR3  
5 unique J



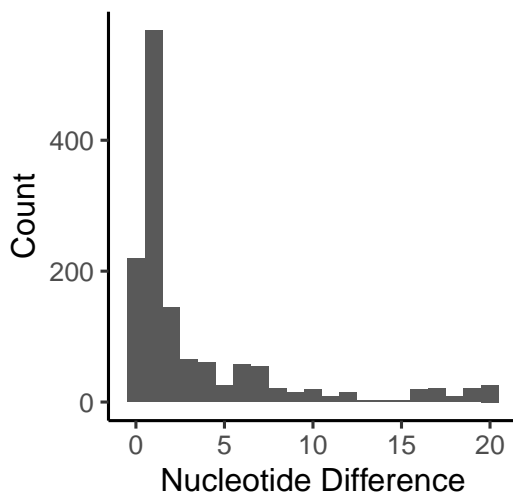
### IGHV1-3\*04

220 sequences assigned  
No exact matches.



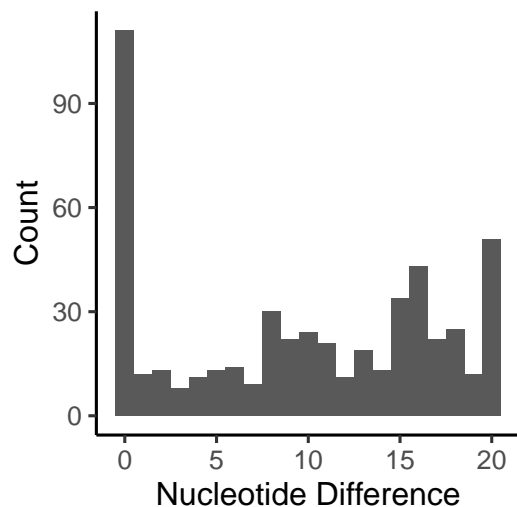
### IGHV1-24\*01

1459 sequences assigned  
219 (15%) exact matches, in which:  
89 unique CDR3  
3 unique J



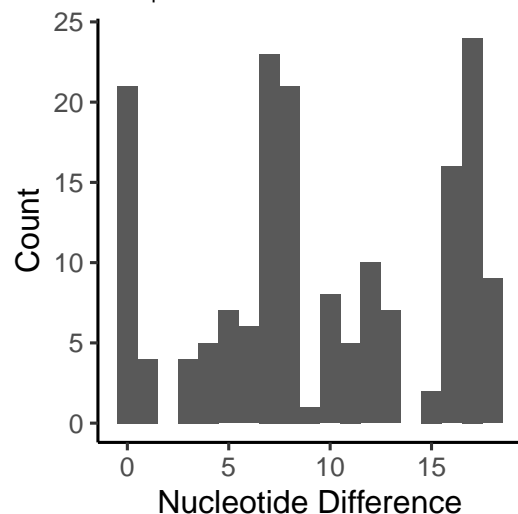
### IGHV1-46\*03

835 sequences assigned  
111 (13.3%) exact matches, in which:  
75 unique CDR3  
5 unique J



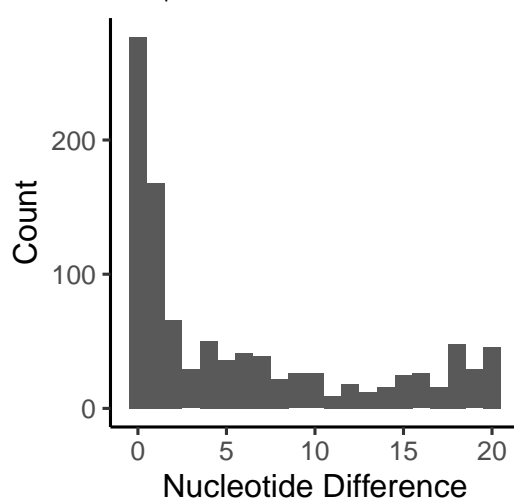
### IGHV1-58\*01

239 sequences assigned  
21 (8.8%) exact matches, in which:  
20 unique CDR3  
4 unique J



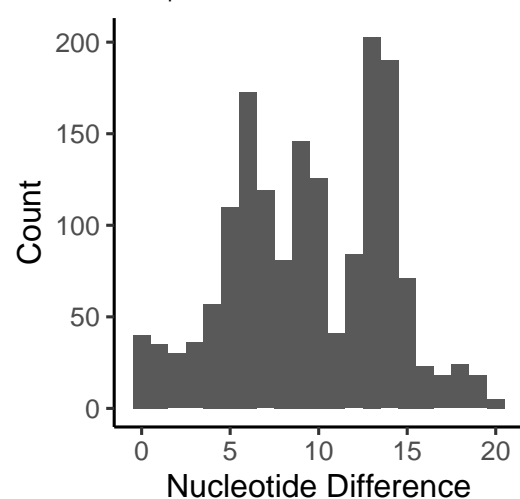
### IGHV1-69\*17

2277 sequences assigned  
277 (12.2%) exact matches, in which:  
171 unique CDR3  
6 unique J



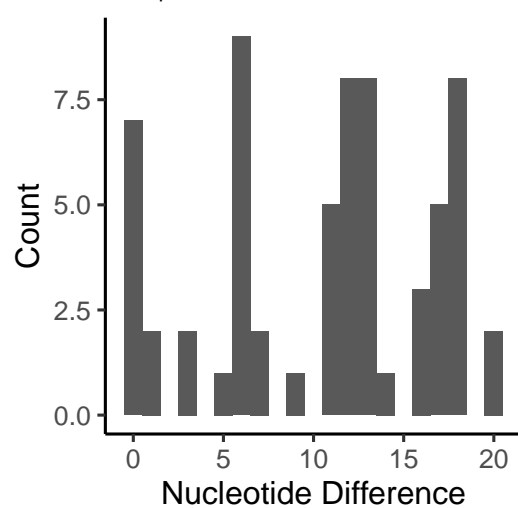
### IGHV2-26\*01

1638 sequences assigned  
40 (2.4%) exact matches, in which:  
34 unique CDR3  
5 unique J



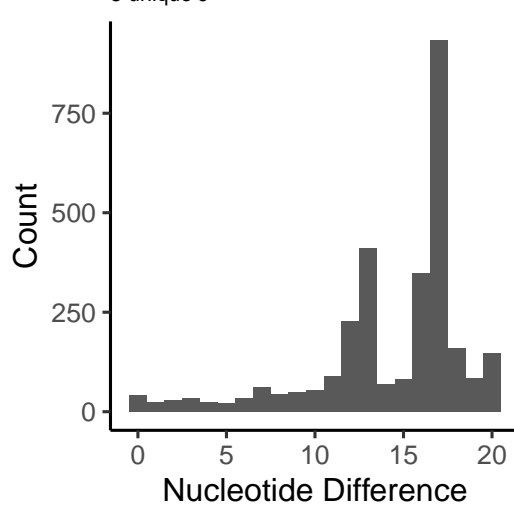
### IGHV1-58\*02

83 sequences assigned  
7 (8.4%) exact matches, in which:  
7 unique CDR3  
3 unique J



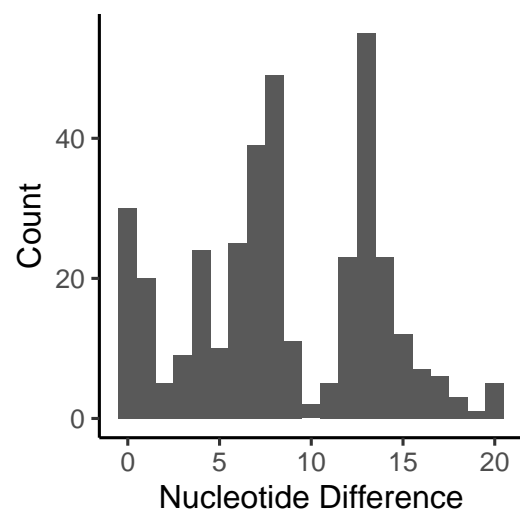
### IGHV2-5\*01

3662 sequences assigned  
42 (1.1%) exact matches, in which:  
30 unique CDR3  
5 unique J



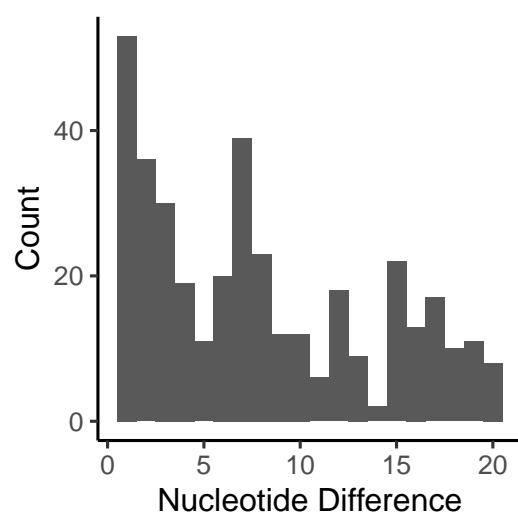
### IGHV2-70\*01

406 sequences assigned  
30 (7.4%) exact matches, in which:  
22 unique CDR3  
3 unique J



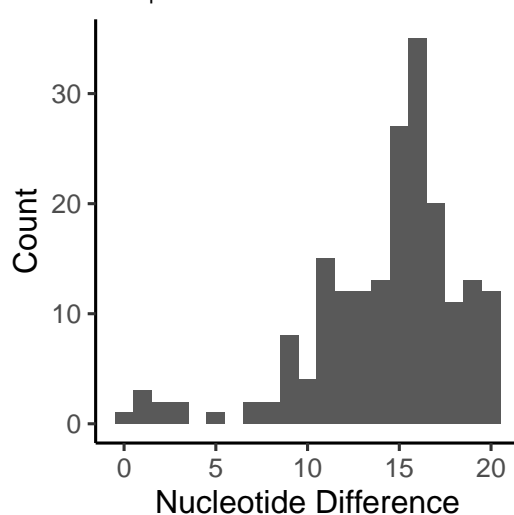
### IGHV1-69\*08

736 sequences assigned  
No exact matches.



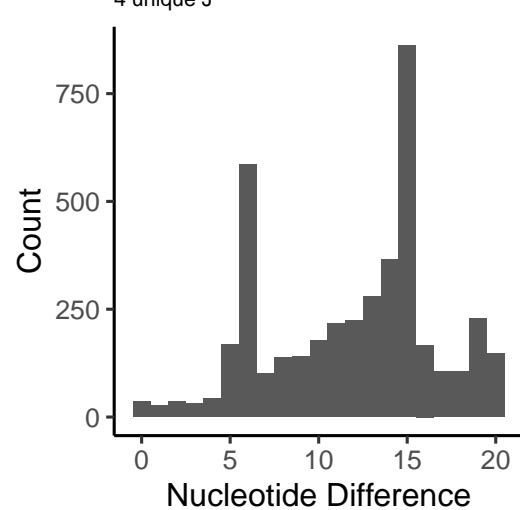
### IGHV2-5\*02

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



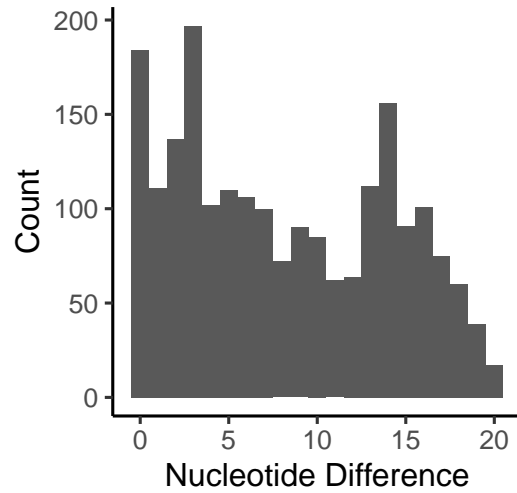
### IGHV3-7\*01

4516 sequences assigned  
37 (0.8%) exact matches, in which:  
21 unique CDR3  
4 unique J



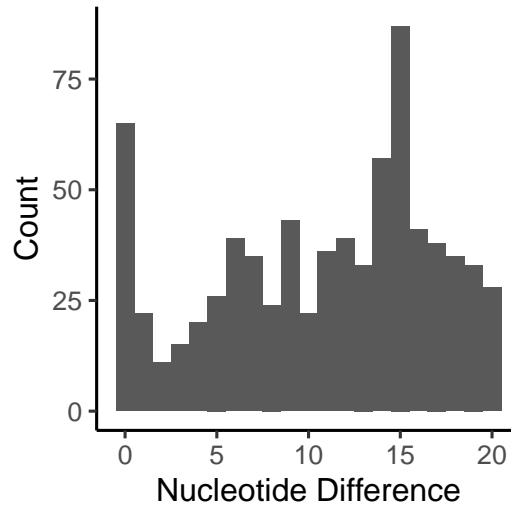
### IGHV3-9\*01

2332 sequences assigned  
184 (7.9%) exact matches, in which:  
102 unique CDR3  
6 unique J



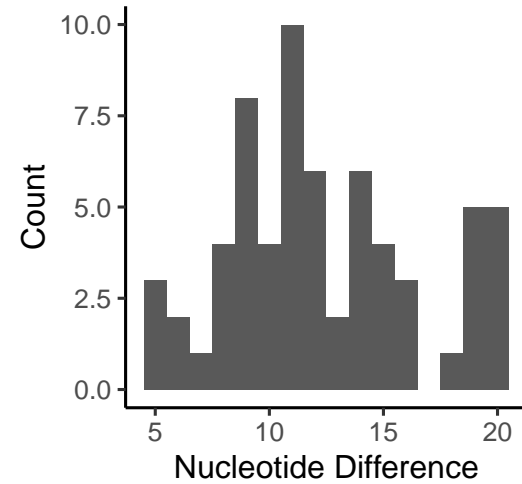
### IGHV3-15\*01

942 sequences assigned  
65 (6.9%) exact matches, in which:  
31 unique CDR3  
5 unique J



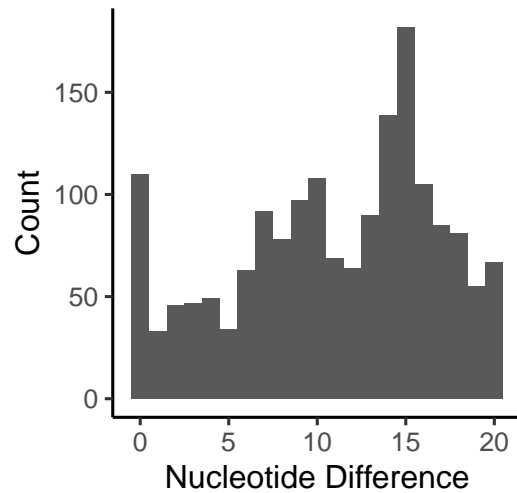
### IGHV3-21\*06

113 sequences assigned  
No exact matches.



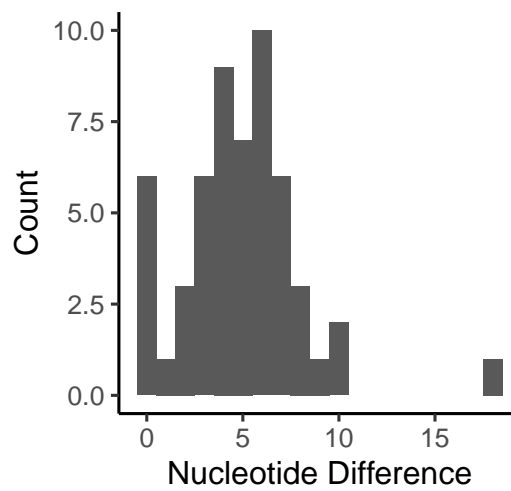
### IGHV3-11\*01

1884 sequences assigned  
110 (5.8%) exact matches, in which:  
62 unique CDR3  
6 unique J



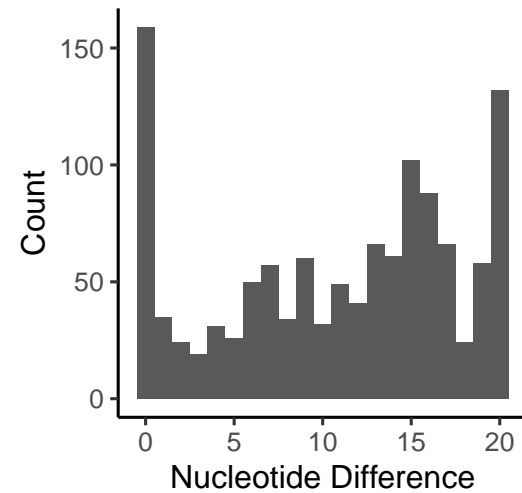
### IGHV3-20\*01

67 sequences assigned  
6 (9%) exact matches, in which:  
3 unique CDR3  
3 unique J



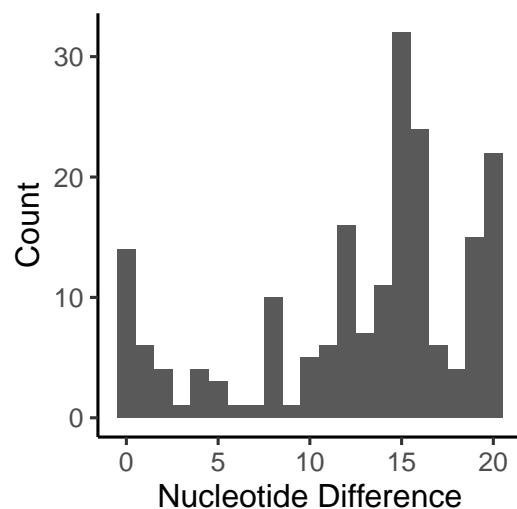
### IGHV3-30-3\*01

2018 sequences assigned  
159 (7.9%) exact matches, in which:  
116 unique CDR3  
6 unique J



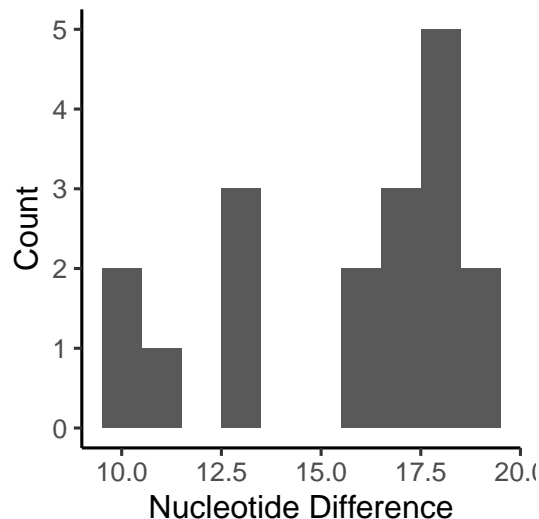
### IGHV3-13\*01

279 sequences assigned  
14 (5%) exact matches, in which:  
8 unique CDR3  
3 unique J



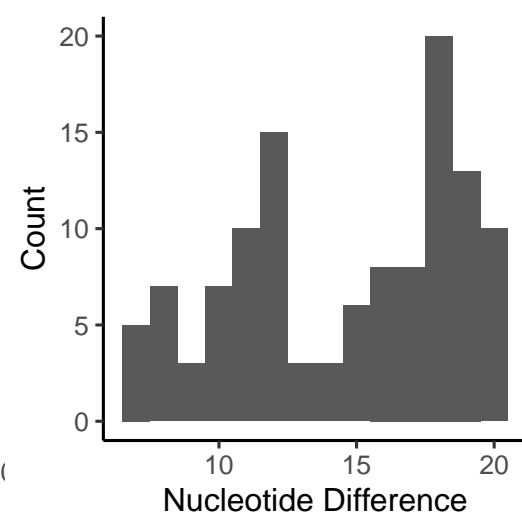
### IGHV3-20\*04

30 sequences assigned  
No exact matches.



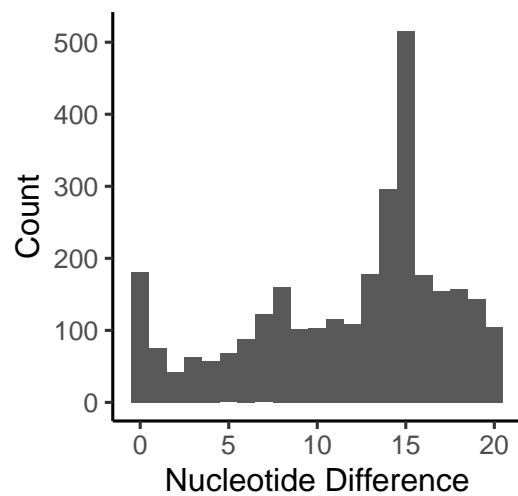
### IGHV3-30\*04

195 sequences assigned  
No exact matches.



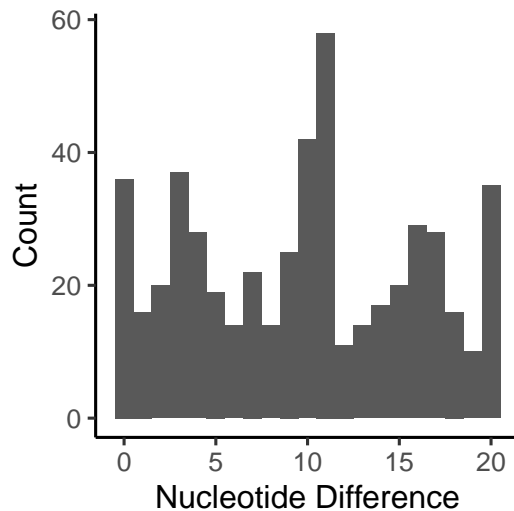
### IGHV3–33\*01

3954 sequences assigned  
181 (4.6%) exact matches, in which:  
117 unique CDR3  
6 unique J



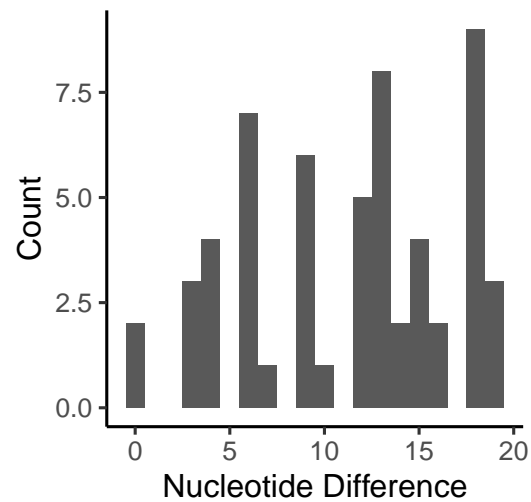
### IGHV3–48\*02

668 sequences assigned  
36 (5.4%) exact matches, in which:  
19 unique CDR3  
5 unique J



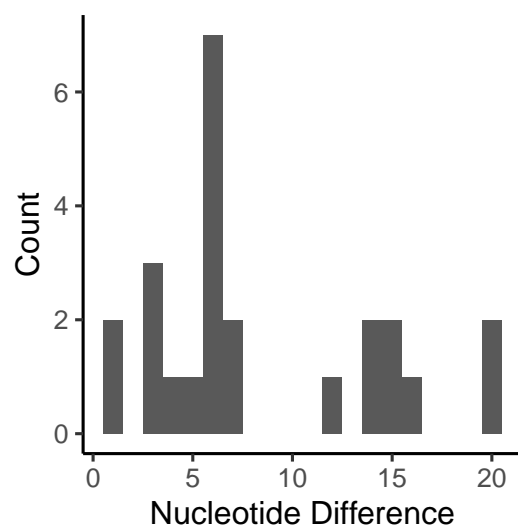
### IGHV3–64\*01

61 sequences assigned  
2 (3.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



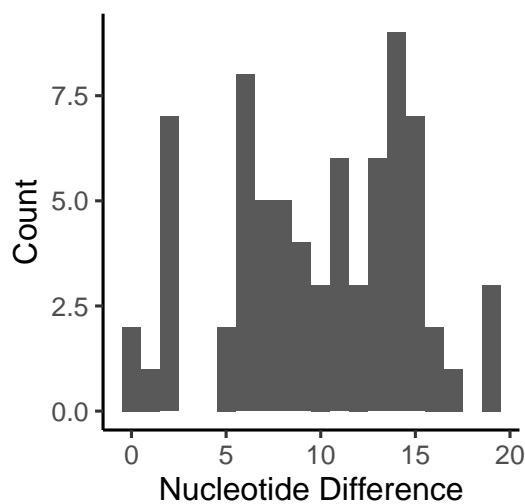
### IGHV3–43\*01

27 sequences assigned  
No exact matches.



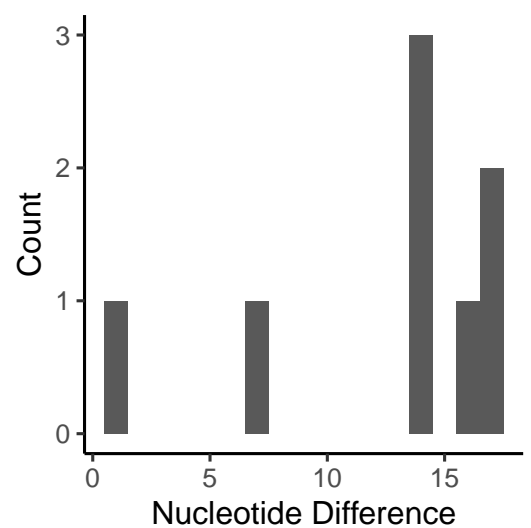
### IGHV3–49\*03

116 sequences assigned  
2 (1.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



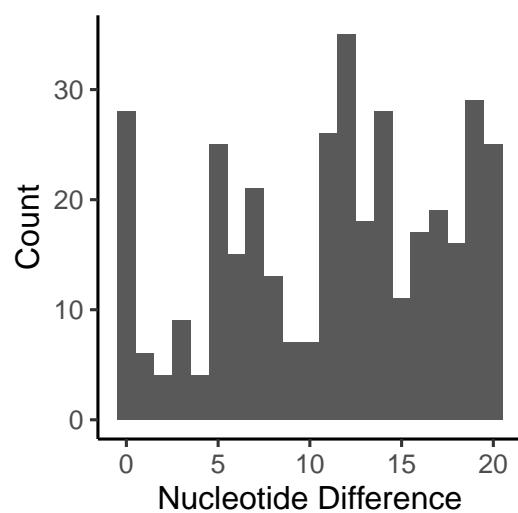
### IGHV3–64\*07

18 sequences assigned  
No exact matches.



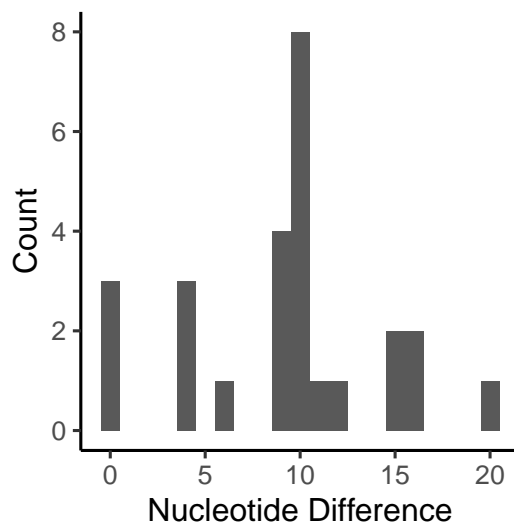
### IGHV3–48\*01

413 sequences assigned  
28 (6.8%) exact matches, in which:  
15 unique CDR3  
4 unique J



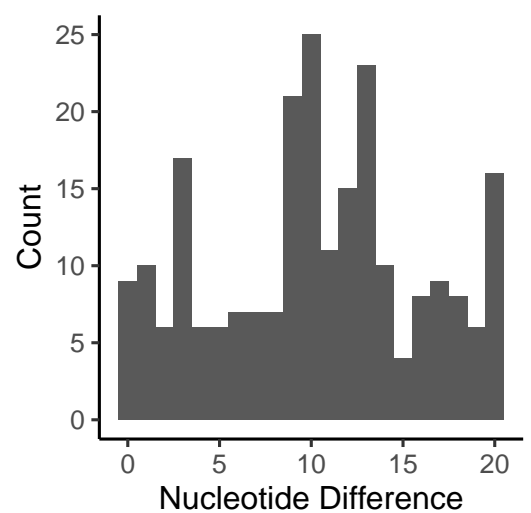
### IGHV3–49\*05

63 sequences assigned  
3 (4.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



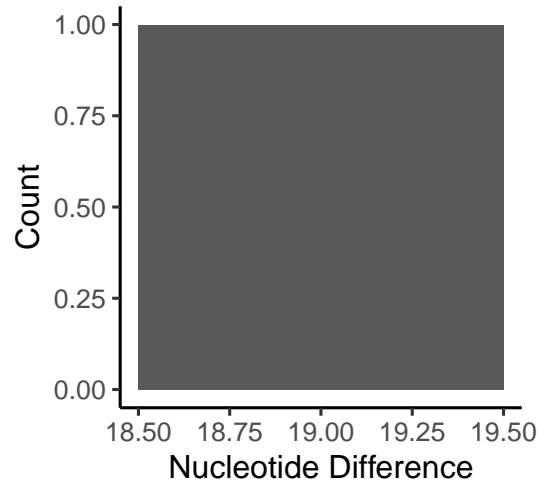
### IGHV3–66\*02

328 sequences assigned  
9 (2.7%) exact matches, in which:  
3 unique CDR3  
2 unique J



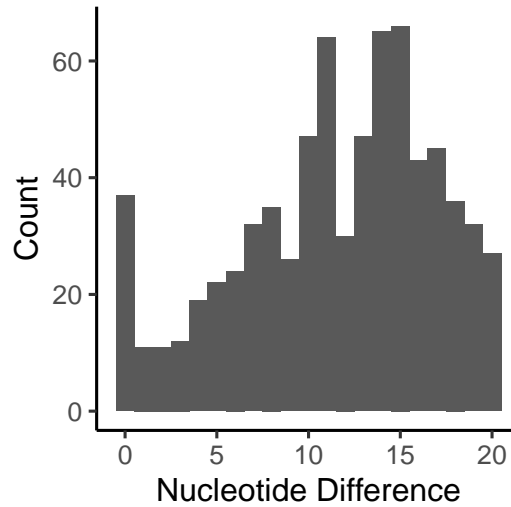
### IGHV3-69-1\*02

5 sequences assigned  
No exact matches.



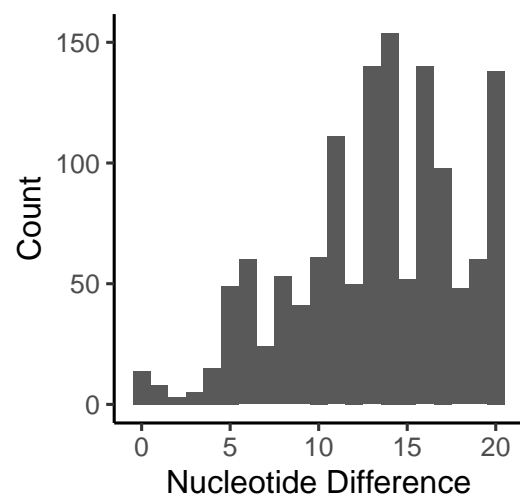
### IGHV3-74\*01

1064 sequences assigned  
37 (3.5%) exact matches, in which:  
20 unique CDR3  
3 unique J



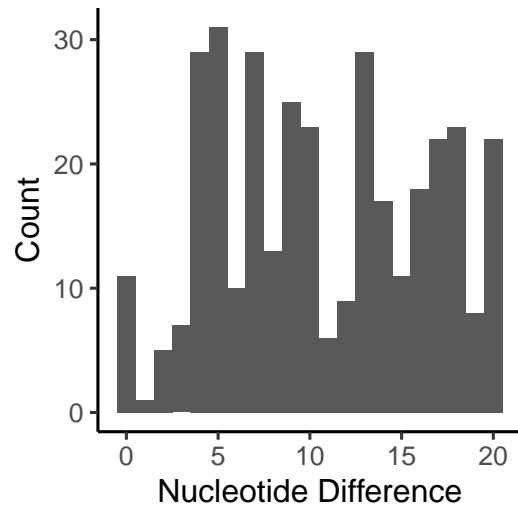
### IGHV4-30-4\*01

1749 sequences assigned  
14 (0.8%) exact matches, in which:  
9 unique CDR3  
3 unique J



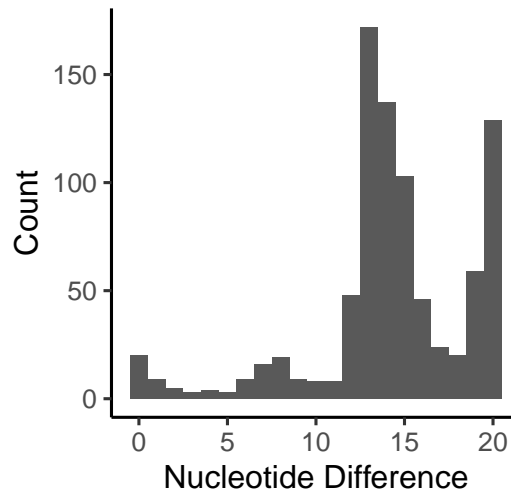
### IGHV3-72\*01

560 sequences assigned  
11 (2%) exact matches, in which:  
4 unique CDR3  
2 unique J



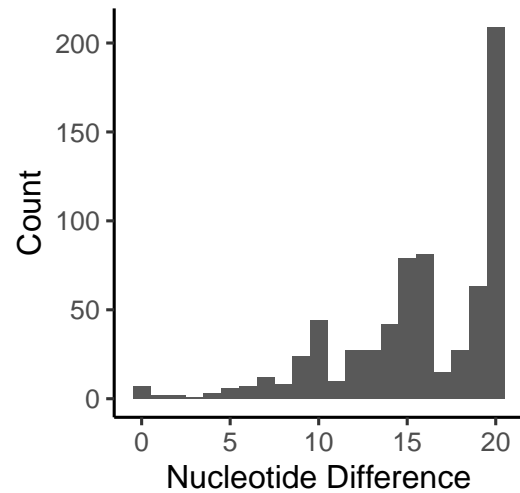
### IGHV4-4\*02

1065 sequences assigned  
20 (1.9%) exact matches, in which:  
14 unique CDR3  
3 unique J



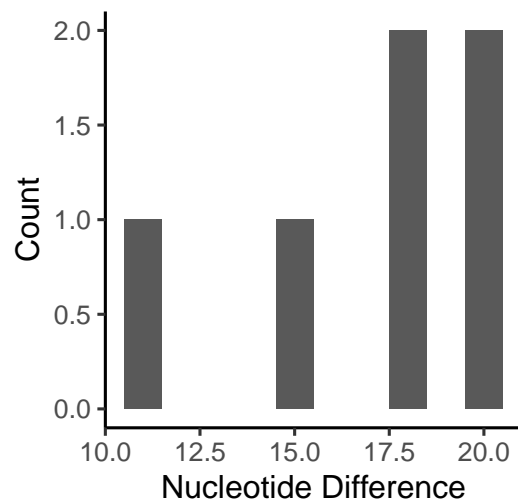
### IGHV4-30-2\*01

910 sequences assigned  
7 (0.8%) exact matches, in which:  
5 unique CDR3  
3 unique J



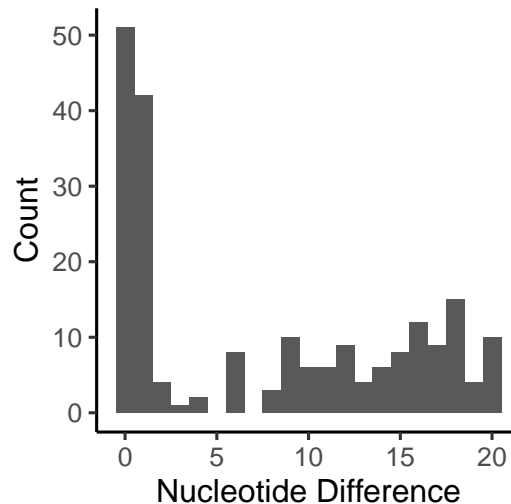
### IGHV3-73\*01

12 sequences assigned  
No exact matches.



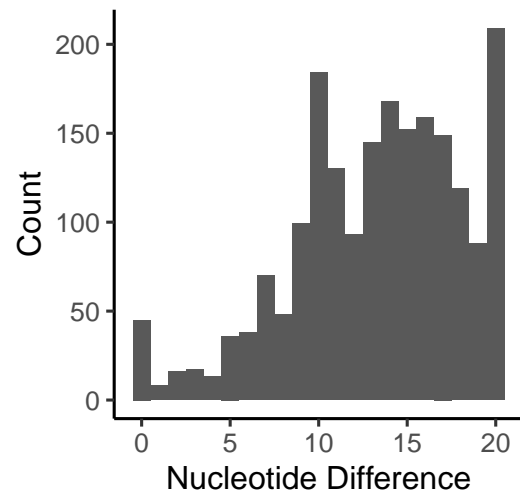
### IGHV4-4\*07

358 sequences assigned  
51 (14.2%) exact matches, in which:  
22 unique CDR3  
6 unique J



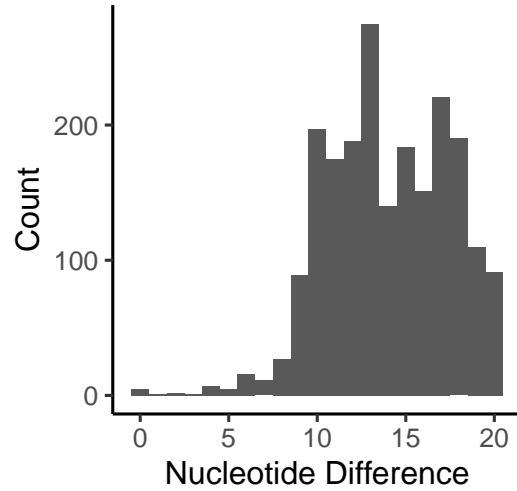
### IGHV4-31\*03

4049 sequences assigned  
45 (1.1%) exact matches, in which:  
28 unique CDR3  
5 unique J



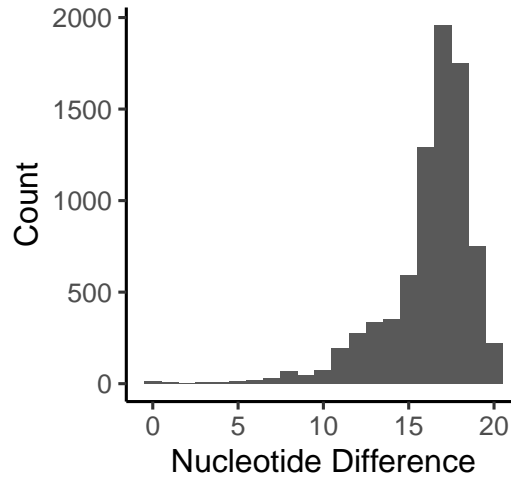
### IGHV4-39\*01

3193 sequences assigned  
5 (0.2%) exact matches, in which:  
5 unique CDR3  
2 unique J



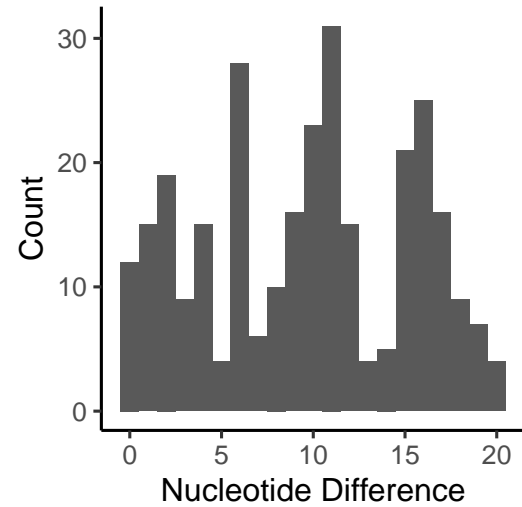
### IGHV4-61\*02

8623 sequences assigned  
11 (0.1%) exact matches, in which:  
5 unique CDR3  
3 unique J



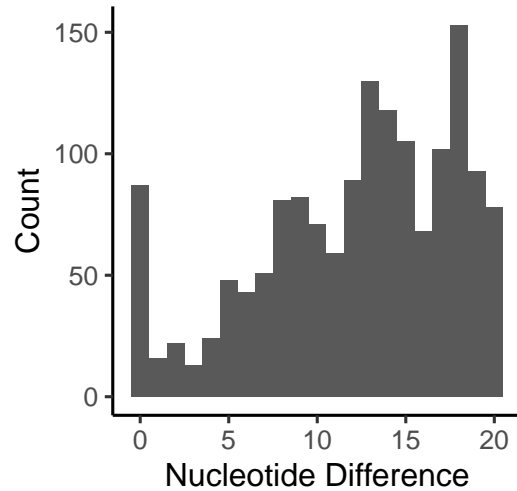
### IGHV6-1\*01

373 sequences assigned  
12 (3.2%) exact matches, in which:  
6 unique CDR3  
3 unique J



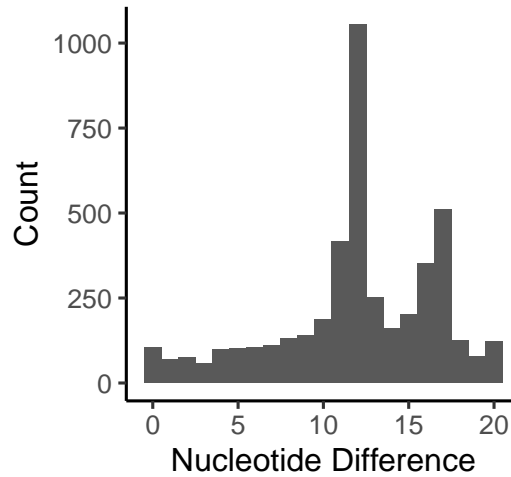
### IGHV4-59\*01

1950 sequences assigned  
87 (4.5%) exact matches, in which:  
51 unique CDR3  
5 unique J



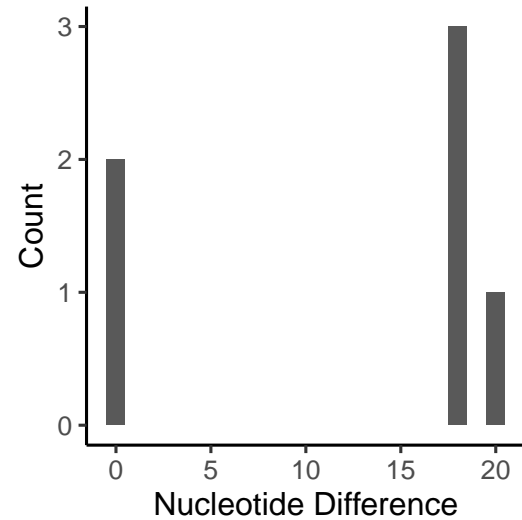
### IGHV5-51\*01

5003 sequences assigned  
104 (2.1%) exact matches, in which:  
54 unique CDR3  
4 unique J



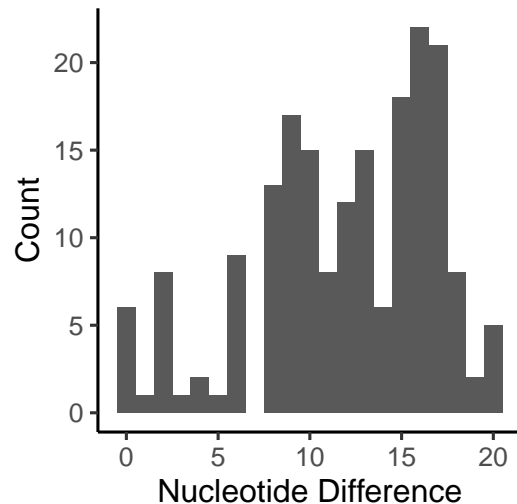
### IGHV7-4-1\*01

6 sequences assigned  
2 (33.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



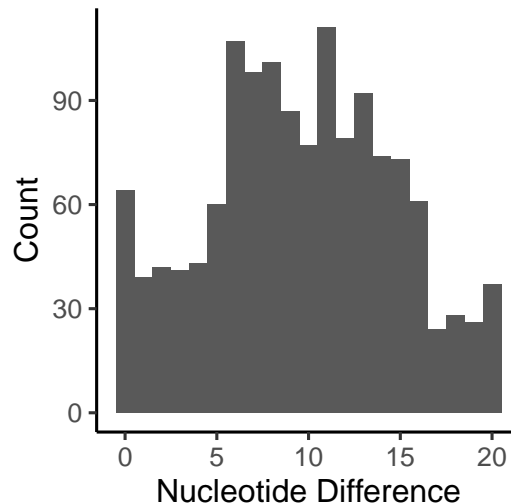
### IGHV4-61\*01

251 sequences assigned  
6 (2.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



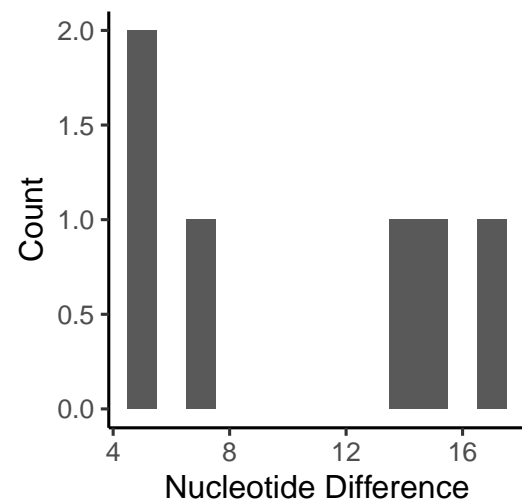
### IGHV5-51\*03

1471 sequences assigned  
64 (4.4%) exact matches, in which:  
39 unique CDR3  
4 unique J



### IGHV7-4-1\*02

7 sequences assigned  
No exact matches.





Warning – no inferred sequences found.