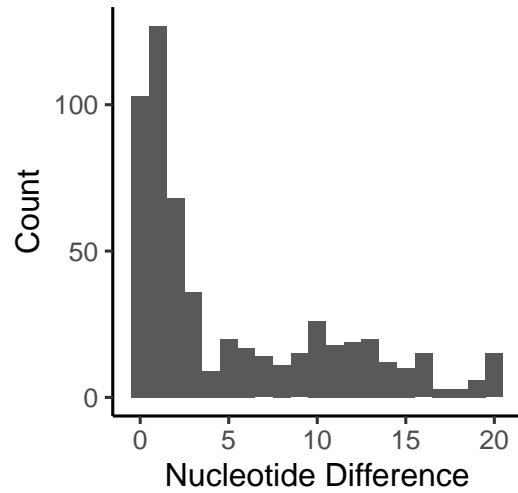


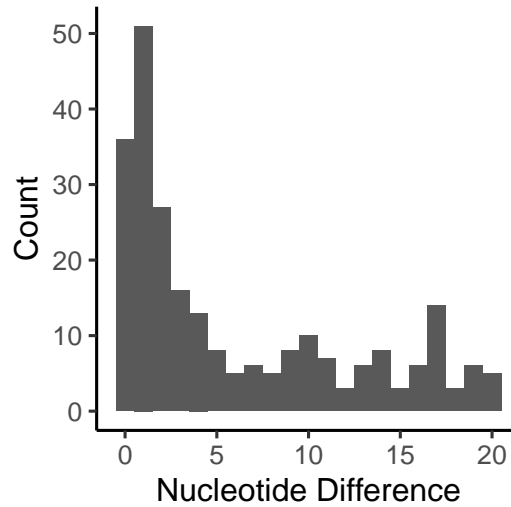
### IGHV1-2\*02

616 sequences assigned  
103 (16.7%) exact matches, in which:  
92 unique CDR3  
6 unique J



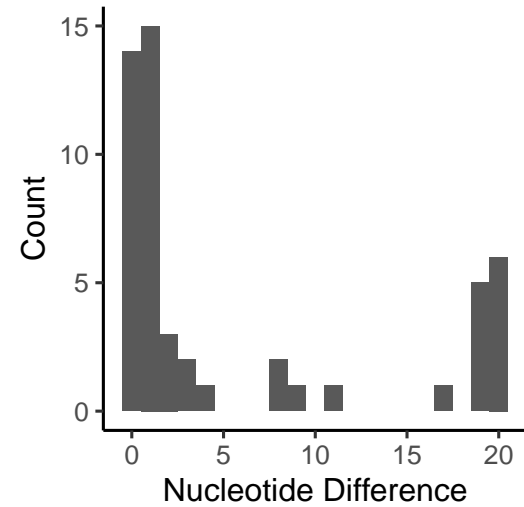
### IGHV1-3\*01\_05

282 sequences assigned  
36 (12.8%) exact matches, in which:  
34 unique CDR3  
4 unique J



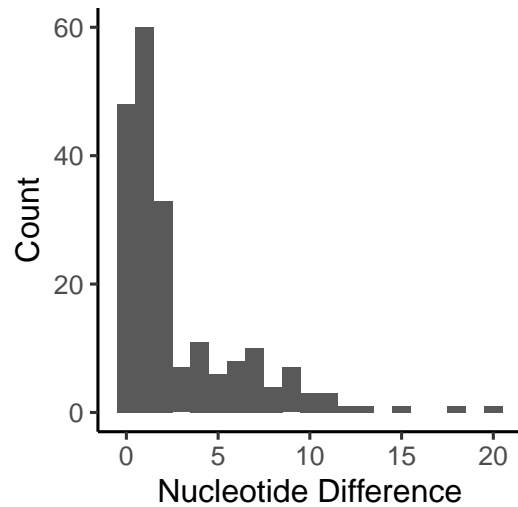
### IGHV1-24\*01

53 sequences assigned  
14 (26.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



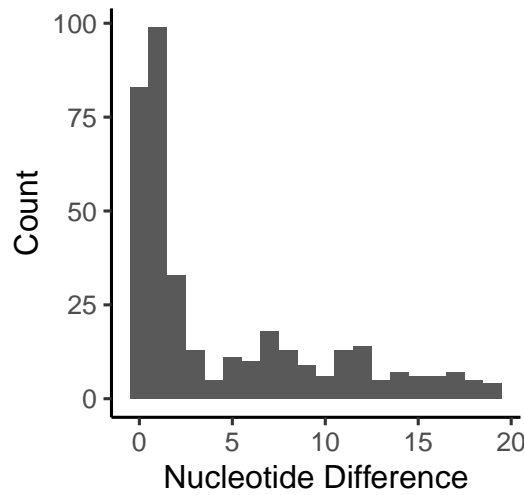
### IGHV1-2\*04

206 sequences assigned  
48 (23.3%) exact matches, in which:  
43 unique CDR3  
5 unique J



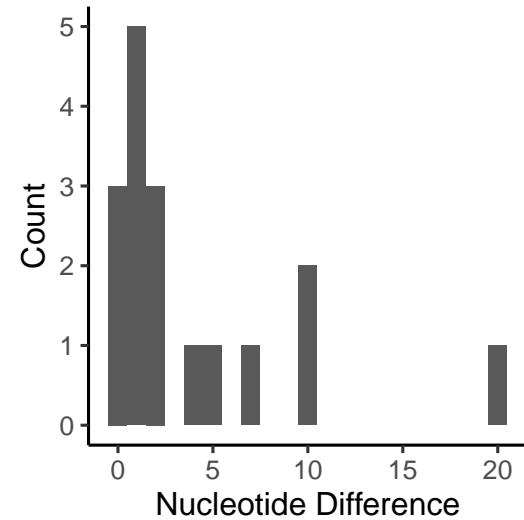
### IGHV1-8\*01

372 sequences assigned  
83 (22.3%) exact matches, in which:  
72 unique CDR3  
4 unique J



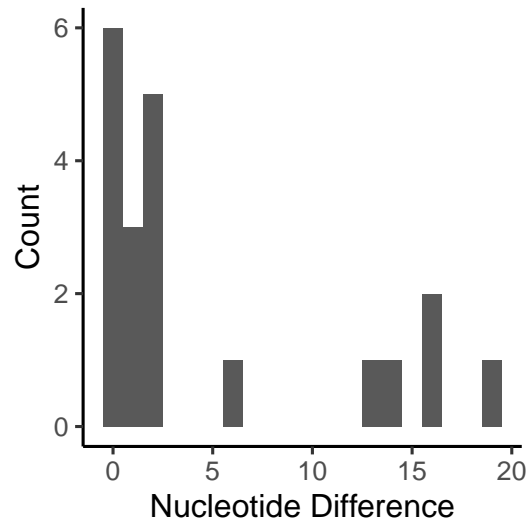
### IGHV1-45\*02

17 sequences assigned  
3 (17.6%) exact matches, in which:  
3 unique CDR3  
1 unique J



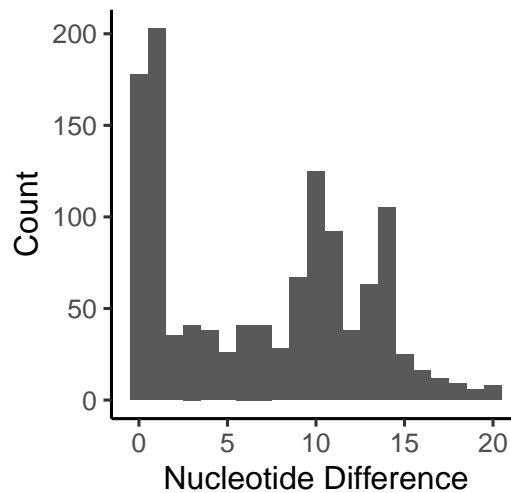
### IGHV1-2\*06

23 sequences assigned  
6 (26.1%) exact matches, in which:  
6 unique CDR3  
3 unique J



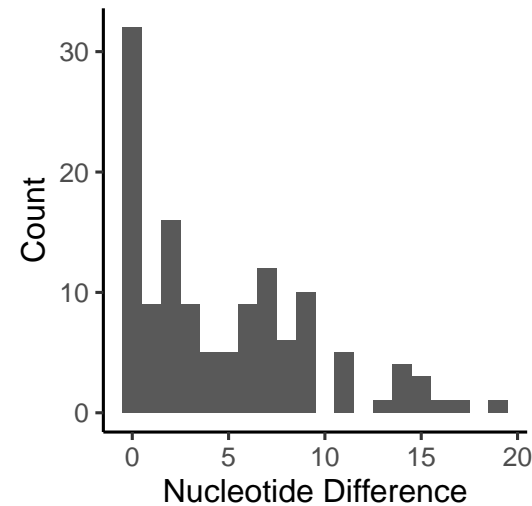
### IGHV1-18\*01

1209 sequences assigned  
178 (14.7%) exact matches, in which:  
148 unique CDR3  
4 unique J



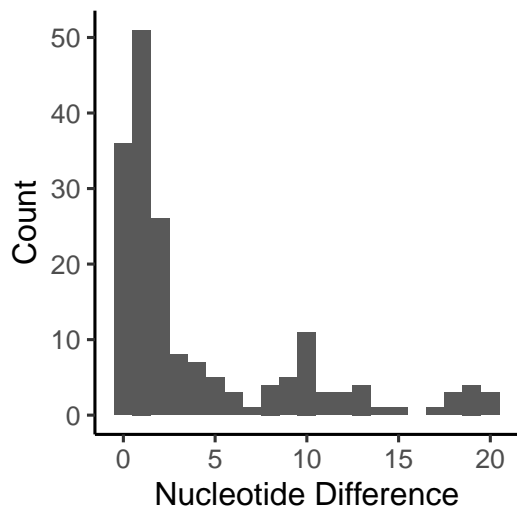
### IGHV1-46\*01

133 sequences assigned  
32 (24.1%) exact matches, in which:  
32 unique CDR3  
5 unique J



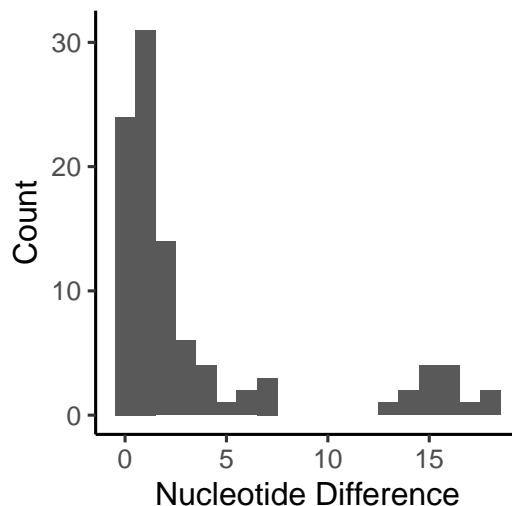
### IGHV1-46\*03

181 sequences assigned  
36 (19.9%) exact matches, in which:  
31 unique CDR3  
4 unique J



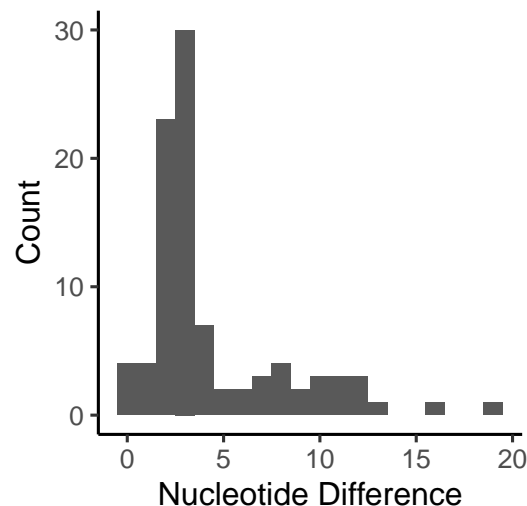
### IGHV1-69\*02

99 sequences assigned  
24 (24.2%) exact matches, in which:  
24 unique CDR3  
4 unique J



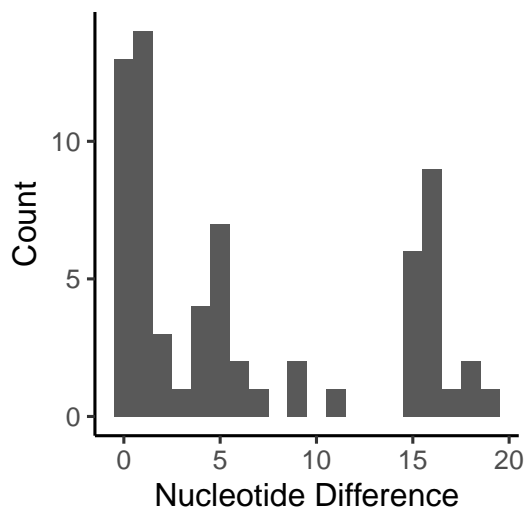
### IGHV1-69\*06\_14

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



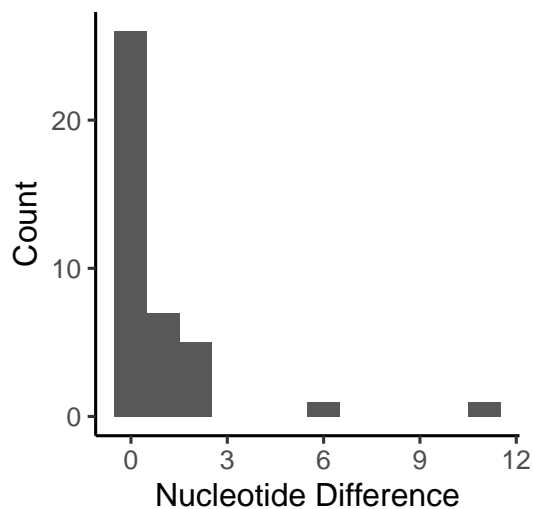
### IGHV1-58\*02

69 sequences assigned  
13 (18.8%) exact matches, in which:  
9 unique CDR3  
3 unique J



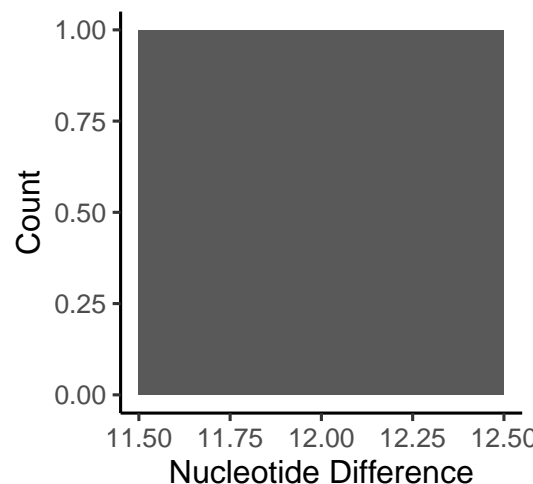
### IGHV1-69\*01\_12\_13

40 sequences assigned  
26 (65%) exact matches, in which:  
26 unique CDR3  
4 unique J



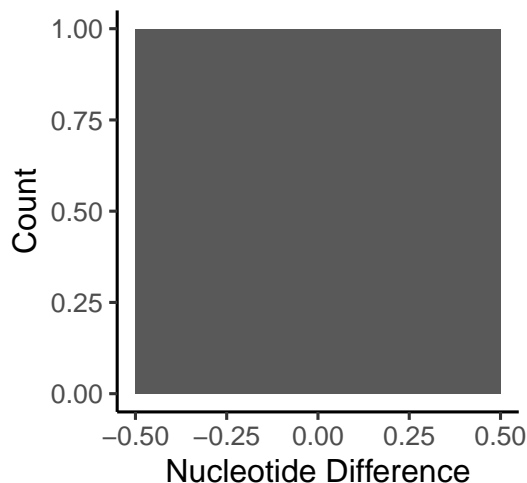
### IGHV1-NL1\*01

1 sequences assigned  
No exact matches.



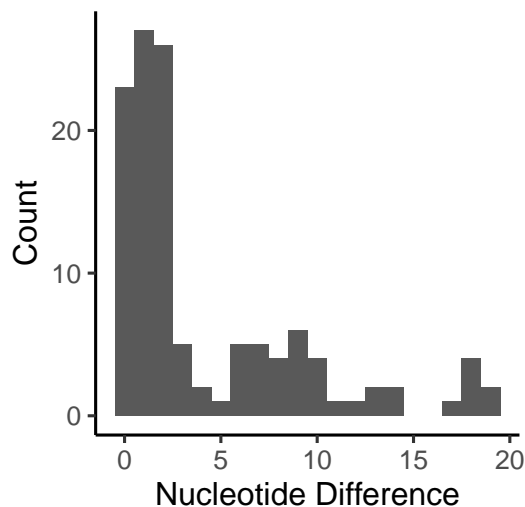
### IGHV1-69-2\*01

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



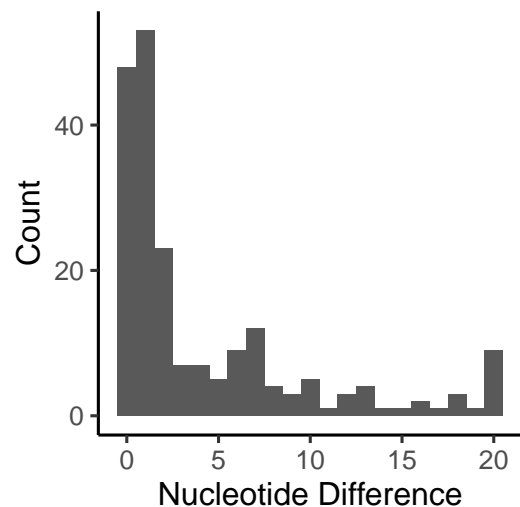
### IGHV1-69\*04\_09

121 sequences assigned  
23 (19%) exact matches, in which:  
18 unique CDR3  
4 unique J



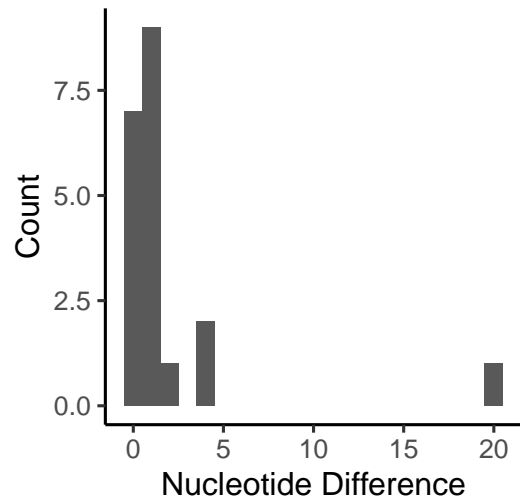
### IGHV2-5\*02

226 sequences assigned  
48 (21.2%) exact matches, in which:  
40 unique CDR3  
4 unique J



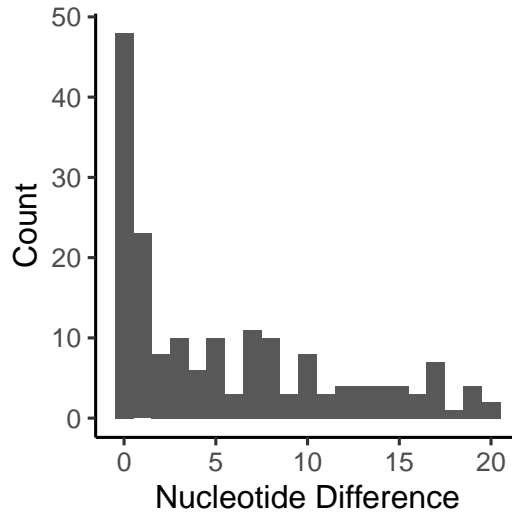
### IGHV2-26\*01

20 sequences assigned  
7 (35%) exact matches, in which:  
6 unique CDR3  
3 unique J



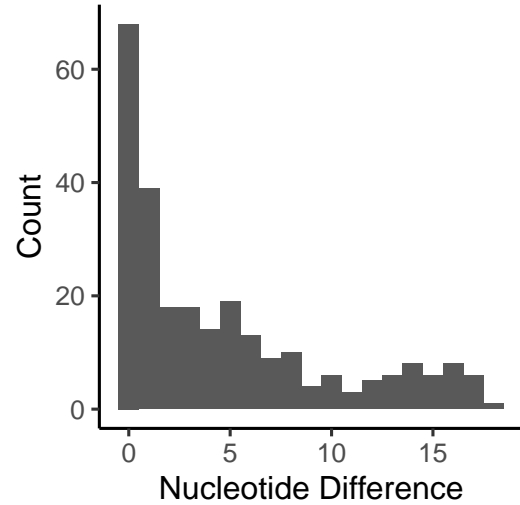
### IGHV3-7\*01

214 sequences assigned  
48 (22.4%) exact matches, in which:  
40 unique CDR3  
4 unique J



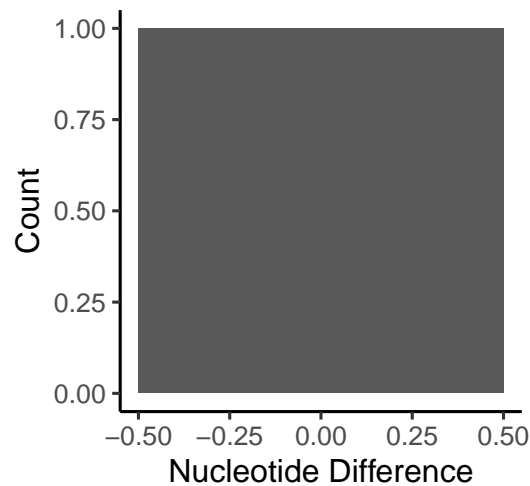
### IGHV3-9\*01

277 sequences assigned  
68 (24.5%) exact matches, in which:  
48 unique CDR3  
5 unique J



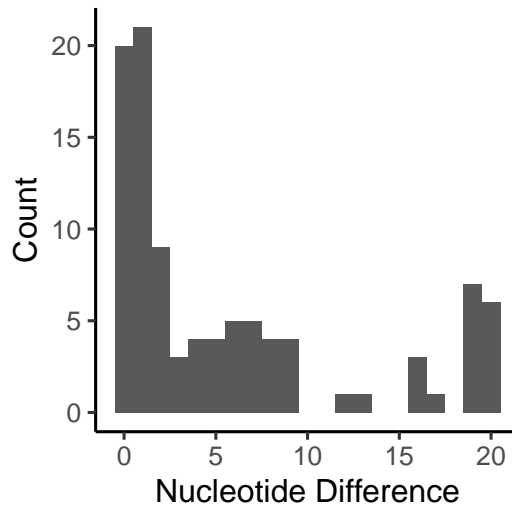
### IGHV2-70\*01

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



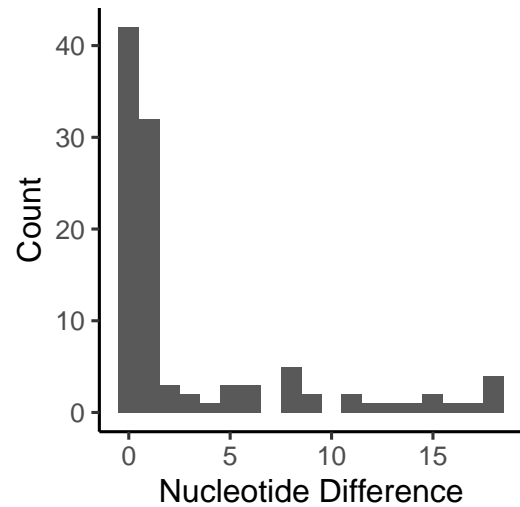
### IGHV3-7\*03

145 sequences assigned  
20 (13.8%) exact matches, in which:  
16 unique CDR3  
3 unique J



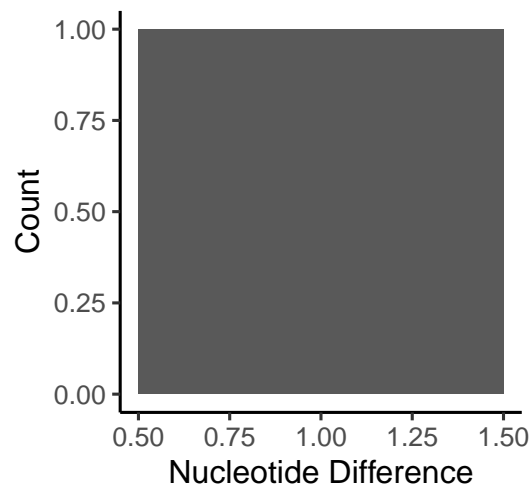
### IGHV3-11\*01

106 sequences assigned  
42 (39.6%) exact matches, in which:  
26 unique CDR3  
4 unique J



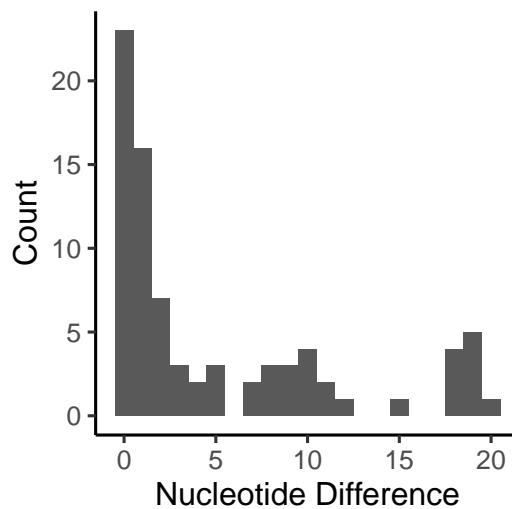
### IGHV2-70\*12

1 sequences assigned  
No exact matches.



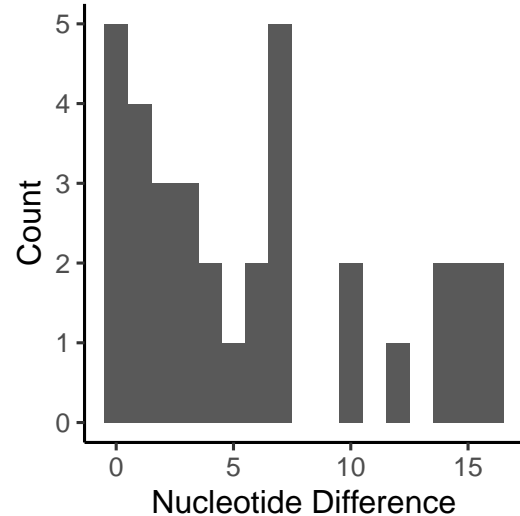
### IGHV3-7\*04

89 sequences assigned  
23 (25.8%) exact matches, in which:  
15 unique CDR3  
4 unique J



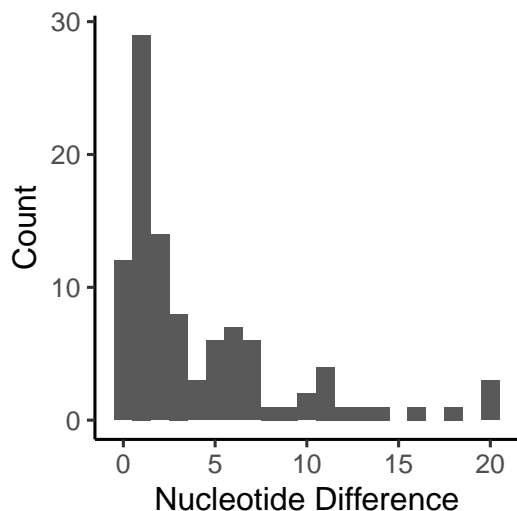
### IGHV3-11\*04

34 sequences assigned  
5 (14.7%) exact matches, in which:  
5 unique CDR3  
2 unique J



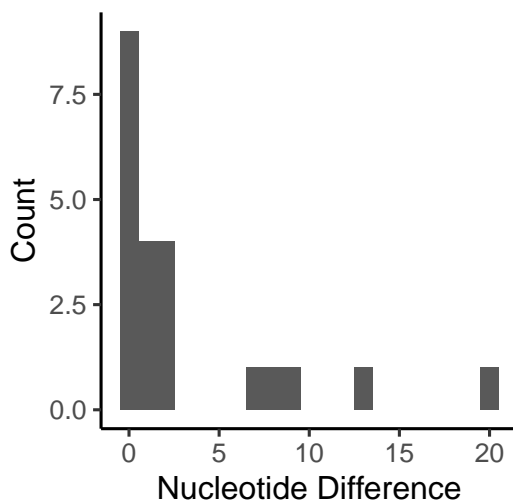
### IGHV3-11\*06

102 sequences assigned  
12 (11.8%) exact matches, in which:  
11 unique CDR3  
3 unique J



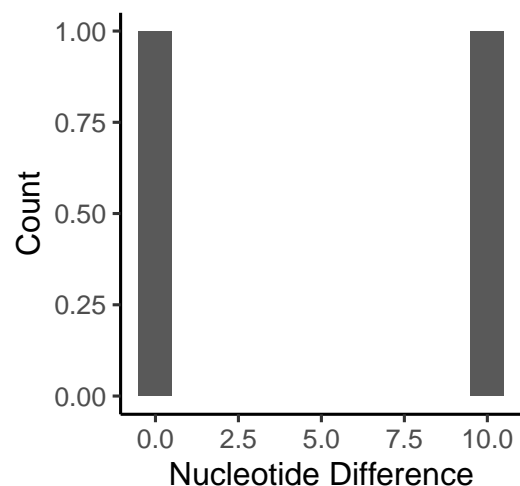
### IGHV3-13\*04

23 sequences assigned  
9 (39.1%) exact matches, in which:  
7 unique CDR3  
4 unique J



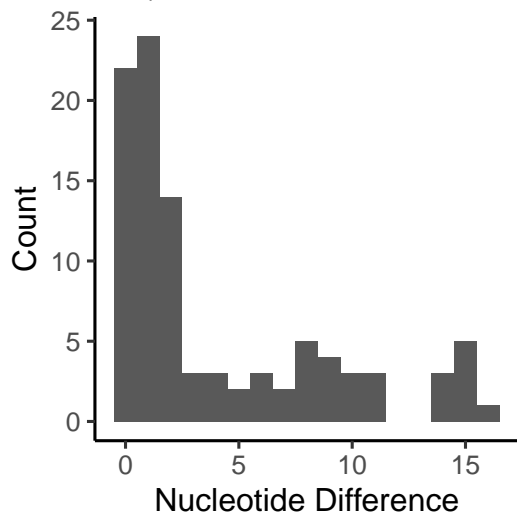
### IGHV3-19\*01

2 sequences assigned  
1 (50%) exact matches, in which:  
1 unique CDR3  
1 unique J



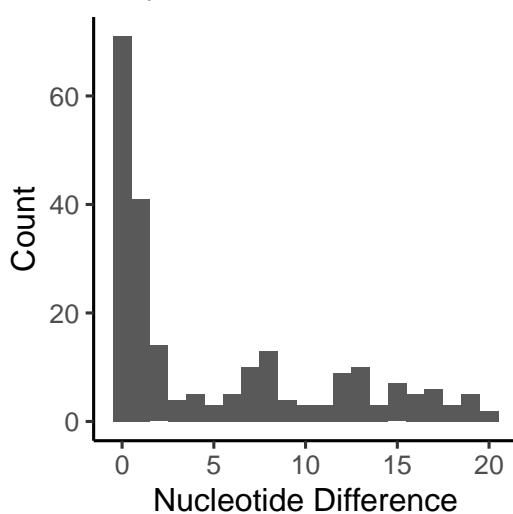
### IGHV3-11\*03\_05

100 sequences assigned  
22 (22%) exact matches, in which:  
15 unique CDR3  
4 unique J



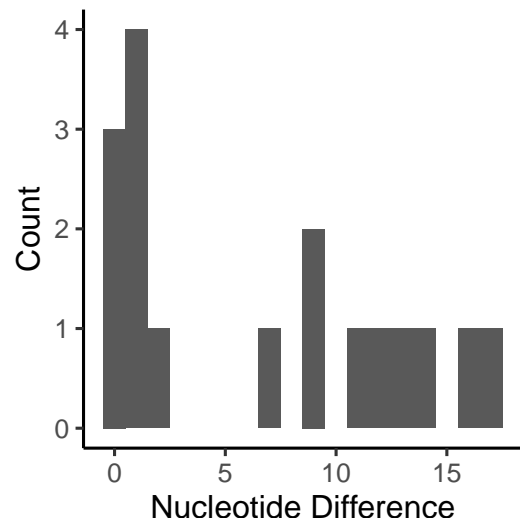
### IGHV3-15\*07

252 sequences assigned  
71 (28.2%) exact matches, in which:  
49 unique CDR3  
5 unique J



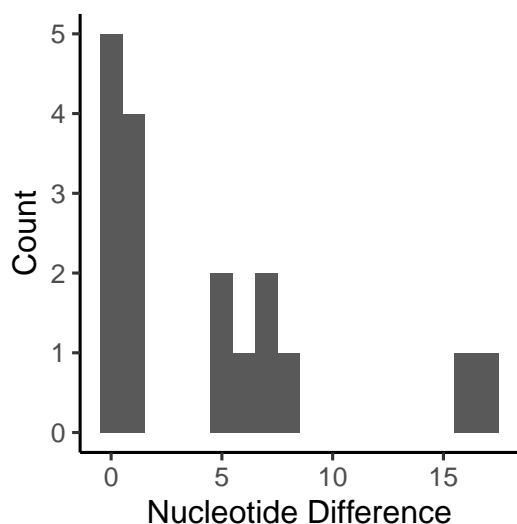
### IGHV3-20\*03\_04

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



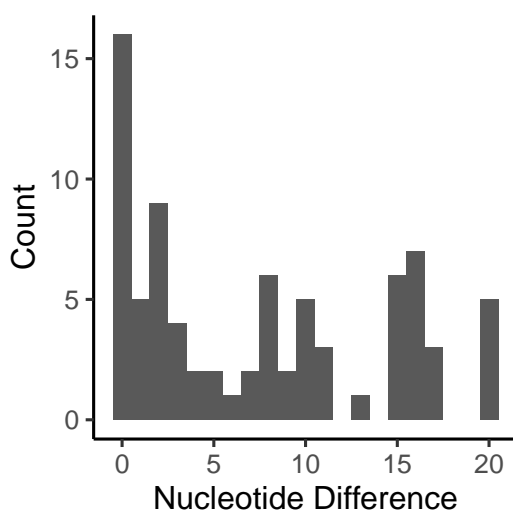
### IGHV3-13\*01

17 sequences assigned  
5 (29.4%) exact matches, in which:  
4 unique CDR3  
2 unique J



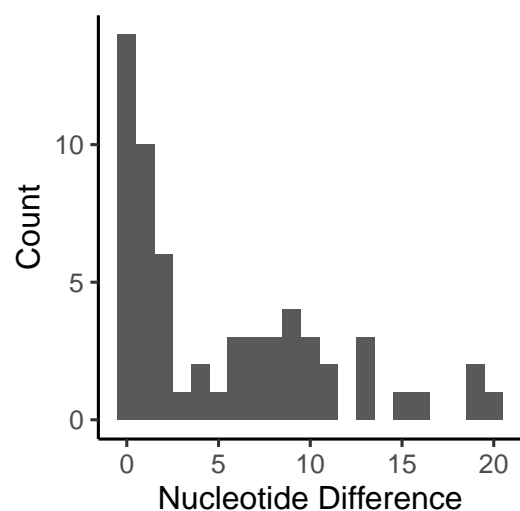
### IGHV3-15\*01\_02

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



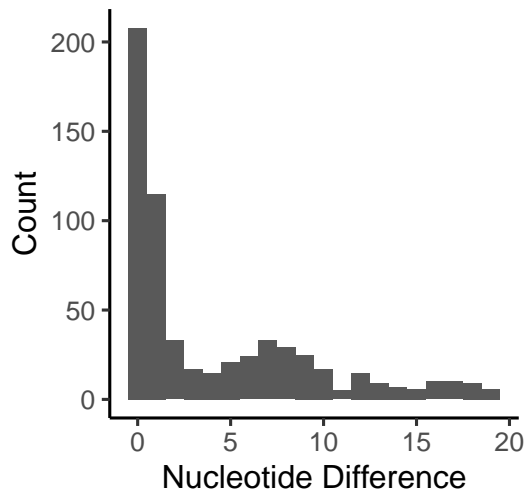
### IGHV3-21\*04

68 sequences assigned  
14 (20.6%) exact matches, in which:  
14 unique CDR3  
3 unique J



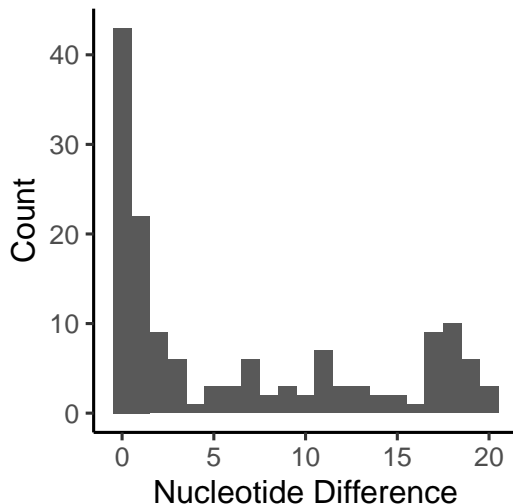
### IGHV3-21\*01\_02

680 sequences assigned  
208 (30.6%) exact matches, in which:  
149 unique CDR3  
6 unique J



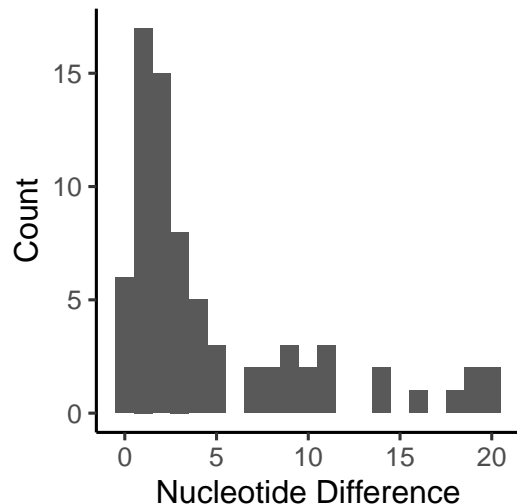
### IGHV3-30\*03

206 sequences assigned  
43 (20.9%) exact matches, in which:  
42 unique CDR3  
5 unique J



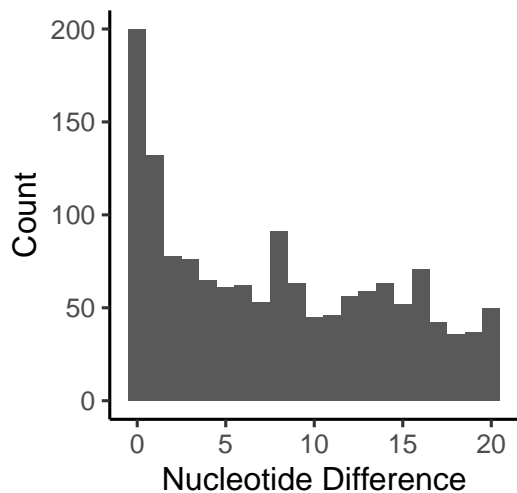
### IGHV3-33\*06

74 sequences assigned  
6 (8.1%) exact matches, in which:  
6 unique CDR3  
3 unique J



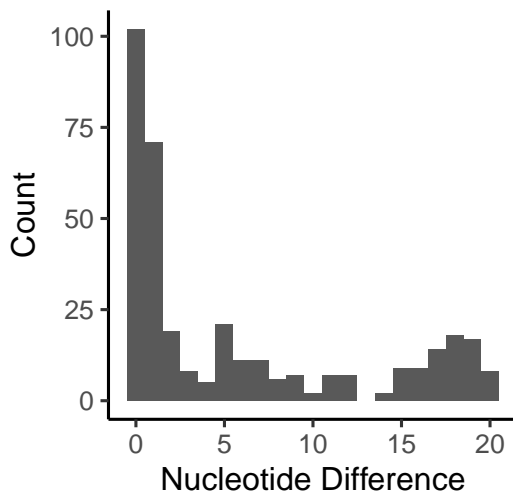
### IGHV3-23\*01\_04

1634 sequences assigned  
200 (12.2%) exact matches, in which:  
132 unique CDR3  
5 unique J



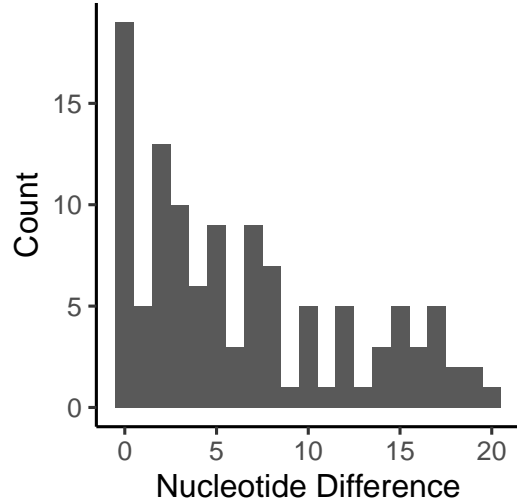
### IGHV3-33\*01

374 sequences assigned  
102 (27.3%) exact matches, in which:  
71 unique CDR3  
6 unique J



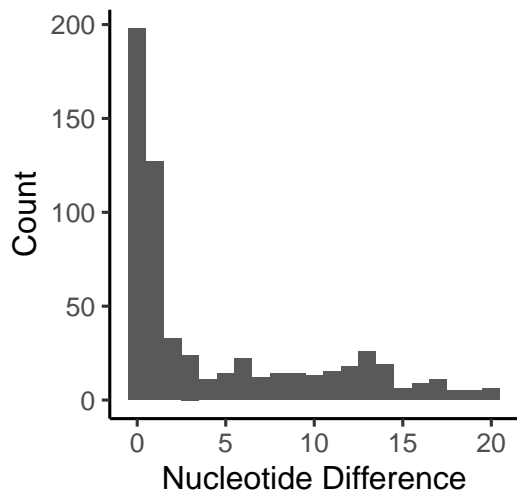
### IGHV3-33\*08

123 sequences assigned  
19 (15.4%) exact matches, in which:  
17 unique CDR3  
4 unique J



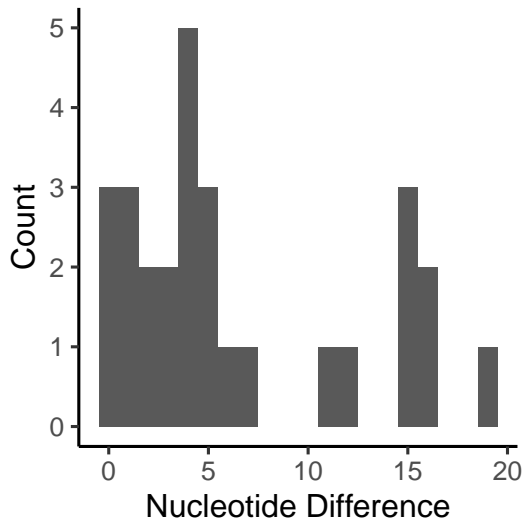
### IGHV3-30-3\*01

654 sequences assigned  
198 (30.3%) exact matches, in which:  
135 unique CDR3  
5 unique J



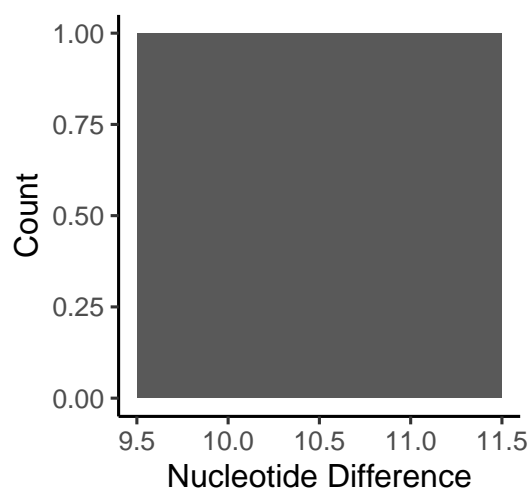
### IGHV3-33\*05

28 sequences assigned  
3 (10.7%) exact matches, in which:  
3 unique CDR3  
3 unique J



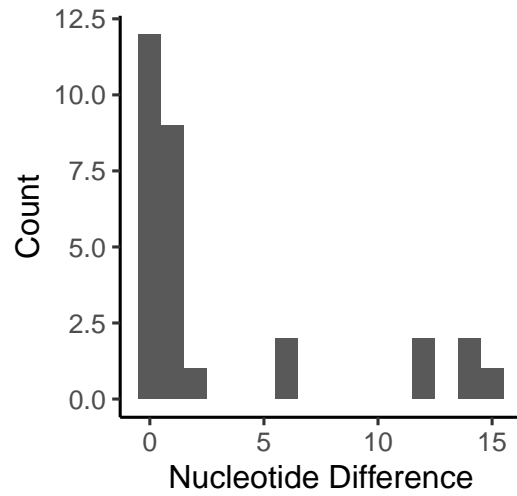
### IGHV3-35\*01

2 sequences assigned  
No exact matches.



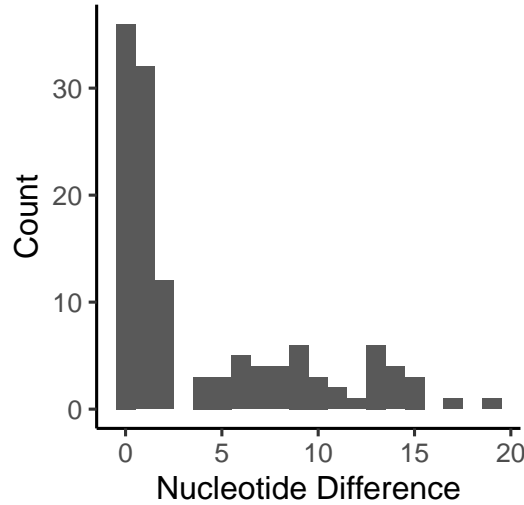
### IGHV3-43\*01

29 sequences assigned  
12 (41.4%) exact matches, in which:  
7 unique CDR3  
2 unique J



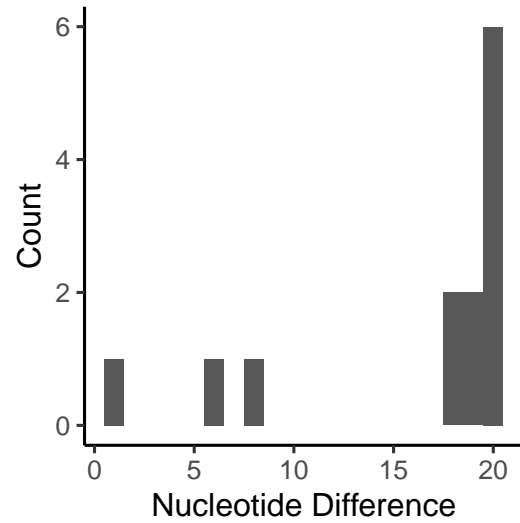
### IGHV3-49\*03\_05

149 sequences assigned  
36 (24.2%) exact matches, in which:  
20 unique CDR3  
3 unique J



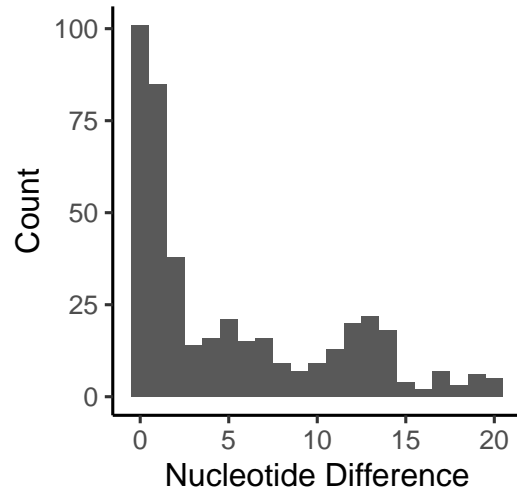
### IGHV3-53\*05

21 sequences assigned  
No exact matches.



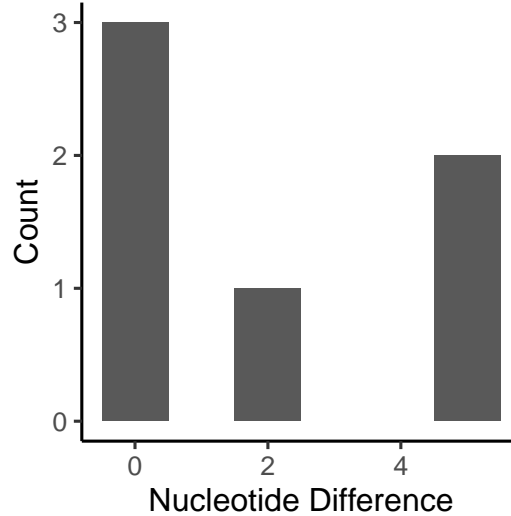
### IGHV3-48\*01

441 sequences assigned  
101 (22.9%) exact matches, in which:  
70 unique CDR3  
6 unique J



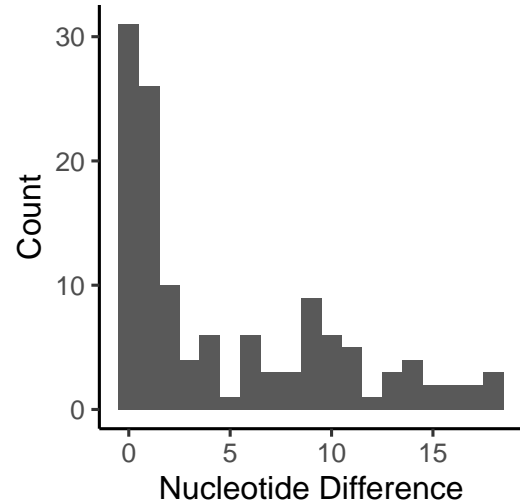
### IGHV3-52\*02

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



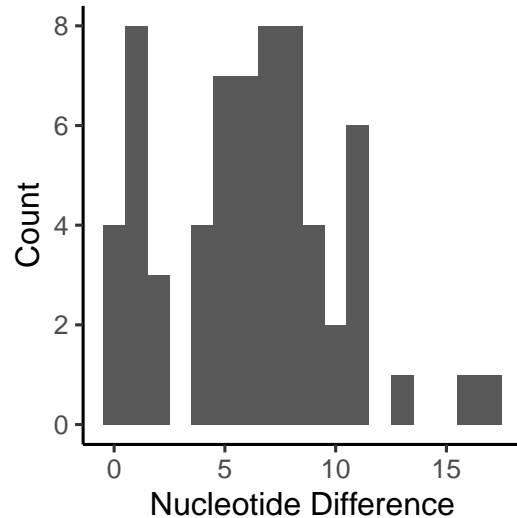
### IGHV3-53\*01\_02

131 sequences assigned  
31 (23.7%) exact matches, in which:  
22 unique CDR3  
4 unique J



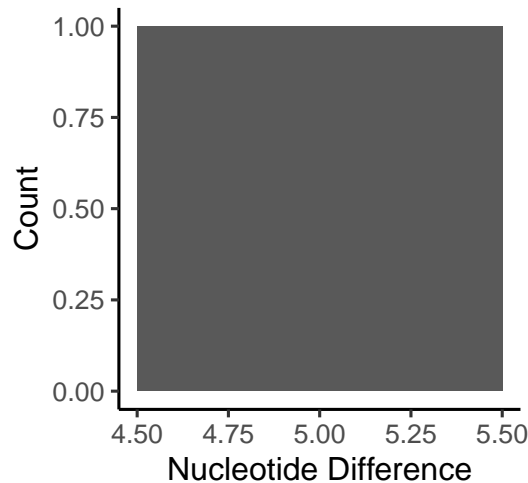
### IGHV3-48\*04

68 sequences assigned  
4 (5.9%) exact matches, in which:  
4 unique CDR3  
2 unique J



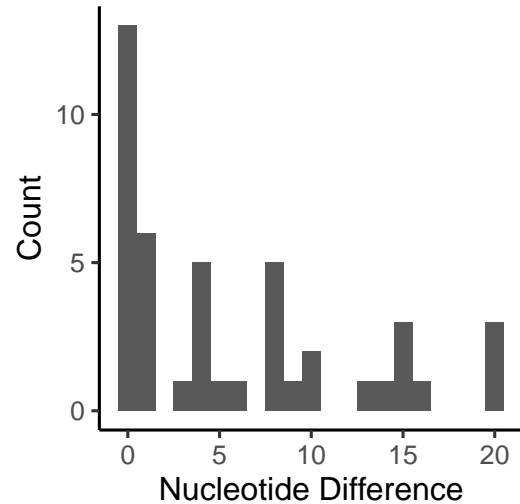
### IGHV3-52\*01\_03

1 sequences assigned  
No exact matches.



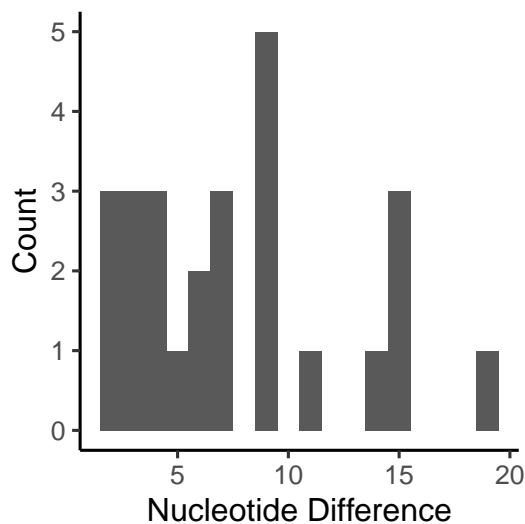
### IGHV3-64\*01

60 sequences assigned  
13 (21.7%) exact matches, in which:  
10 unique CDR3  
3 unique J



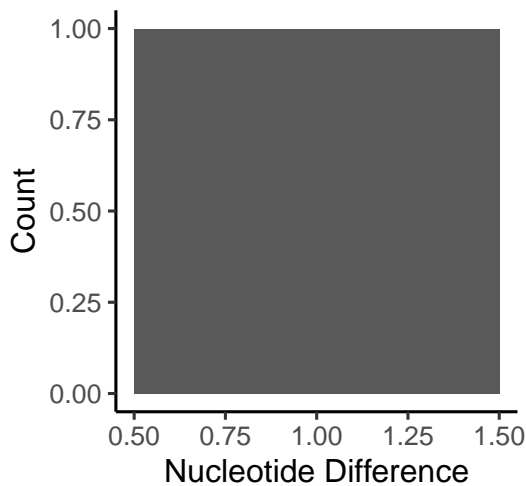
### IGHV3-64\*04

28 sequences assigned  
No exact matches.



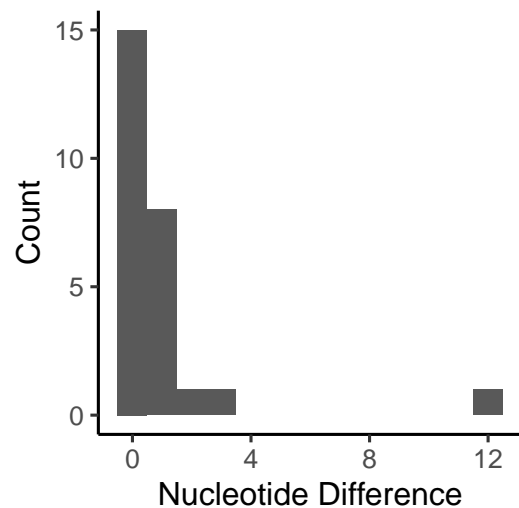
### IGHV3-66\*03

1 sequences assigned  
No exact matches.



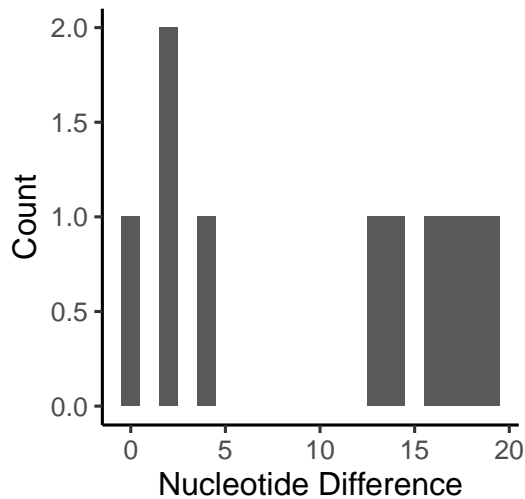
### IGHV3-73\*01\_02

28 sequences assigned  
15 (53.6%) exact matches, in which:  
11 unique CDR3  
3 unique J



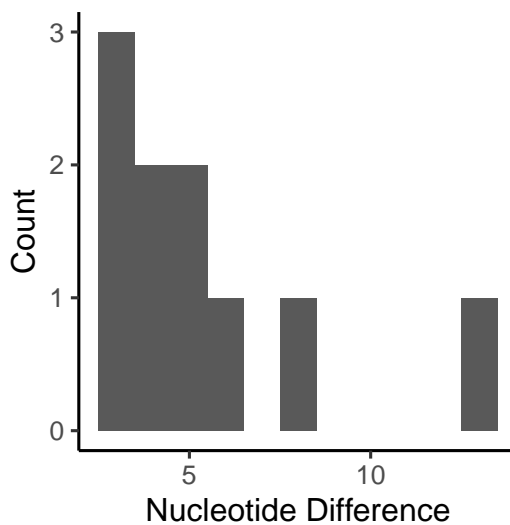
### IGHV3-66\*01

10 sequences assigned  
1 (10%) exact matches, in which:  
1 unique CDR3  
1 unique J



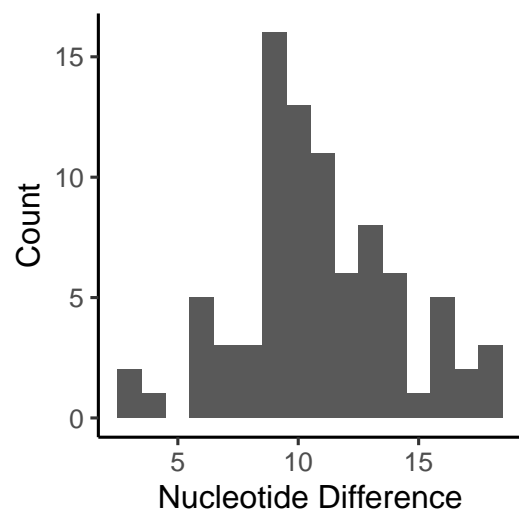
### IGHV3-69-1\*01

10 sequences assigned  
No exact matches.



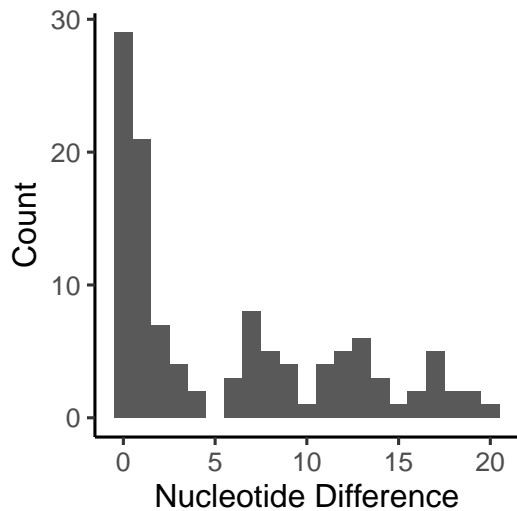
### IGHV3-74\*03

105 sequences assigned  
No exact matches.



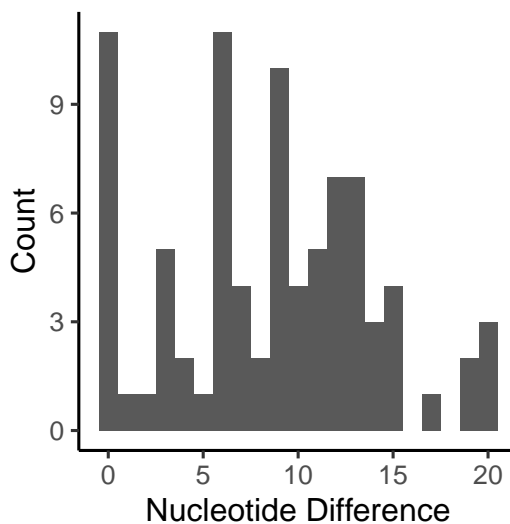
### IGHV3-66\*02

125 sequences assigned  
29 (23.2%) exact matches, in which:  
18 unique CDR3  
4 unique J



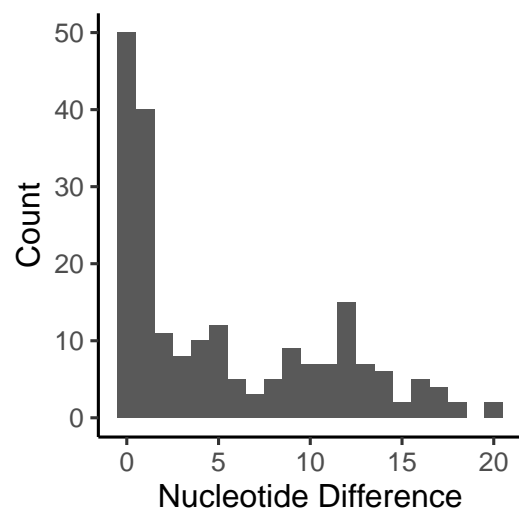
### IGHV3-72\*01

84 sequences assigned  
11 (13.1%) exact matches, in which:  
8 unique CDR3  
3 unique J



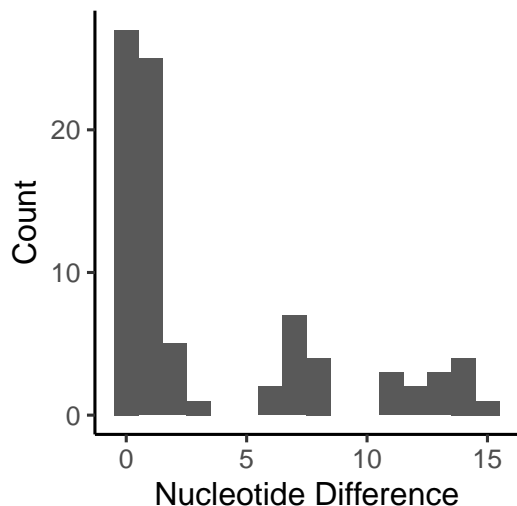
### IGHV3-74\*01\_02

221 sequences assigned  
50 (22.6%) exact matches, in which:  
34 unique CDR3  
4 unique J



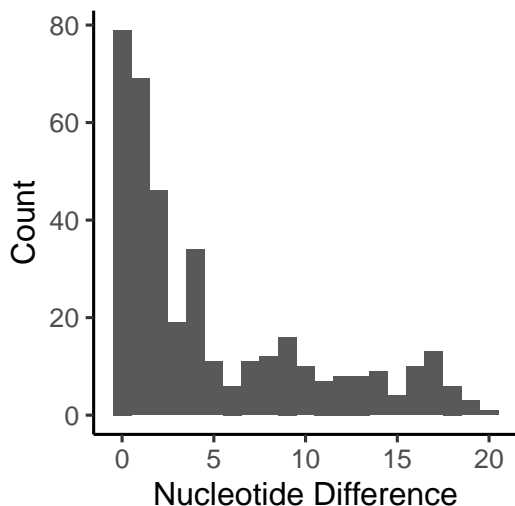
### IGHV3-64D\*06

89 sequences assigned  
27 (30.3%) exact matches, in which:  
12 unique CDR3  
2 unique J



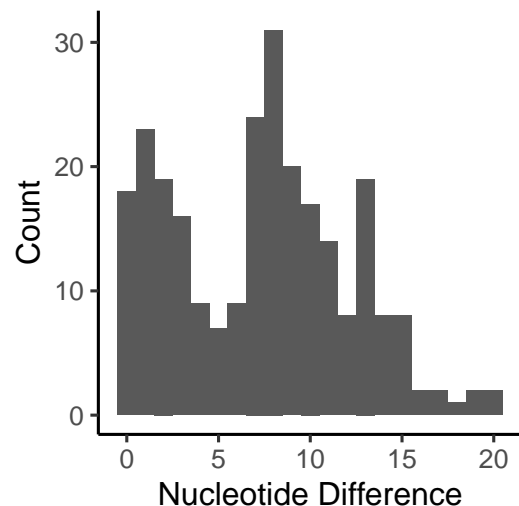
### IGHV4-4\*02\_03

399 sequences assigned  
79 (19.8%) exact matches, in which:  
59 unique CDR3  
4 unique J



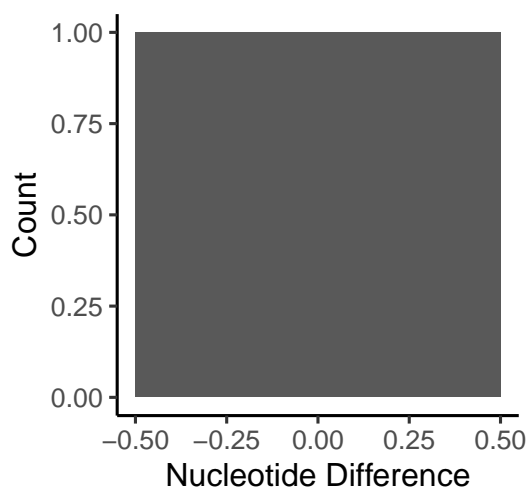
### IGHV4-30-4\*01

276 sequences assigned  
18 (6.5%) exact matches, in which:  
15 unique CDR3  
3 unique J



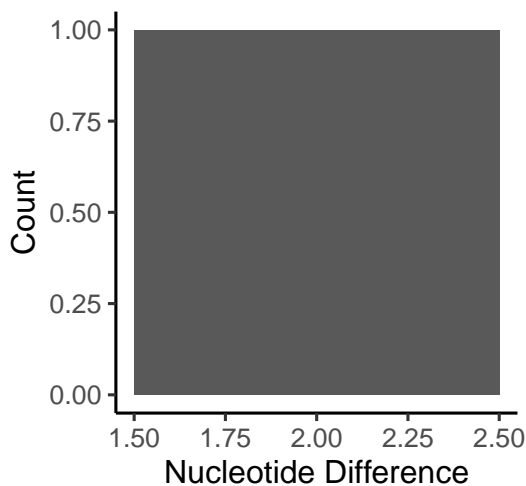
### IGHV3-64D\*09

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



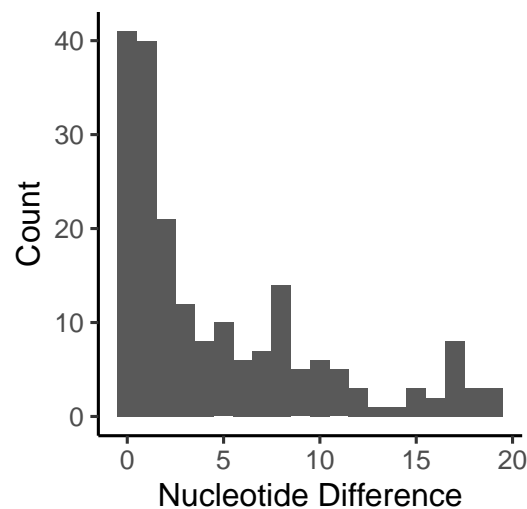
### IGHV4-28\*03

2 sequences assigned  
No exact matches.



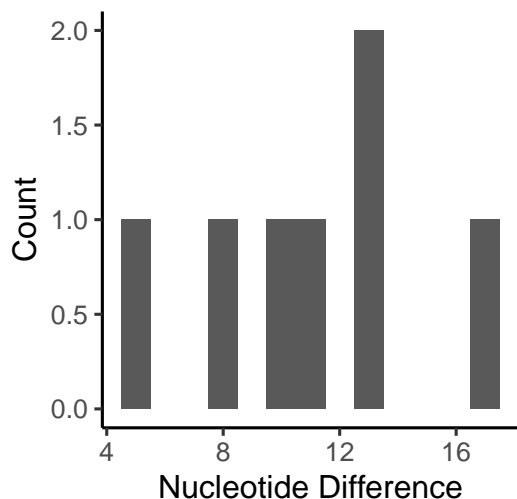
### IGHV4-30-2\*01

199 sequences assigned  
41 (20.6%) exact matches, in which:  
29 unique CDR3  
5 unique J



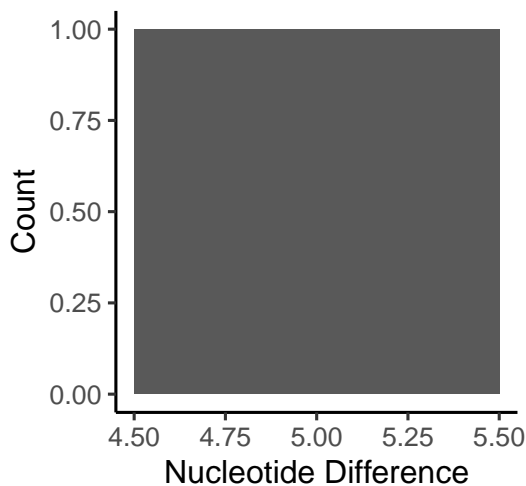
### IGHV3-NL1\*01

7 sequences assigned  
No exact matches.



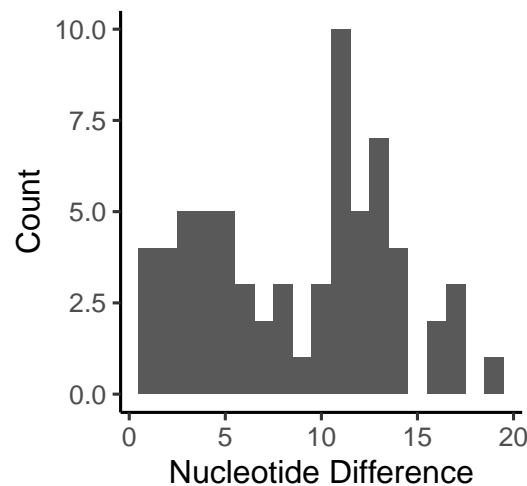
### IGHV4-28\*01\_07

1 sequences assigned  
No exact matches.



### IGHV4-30-2\*03

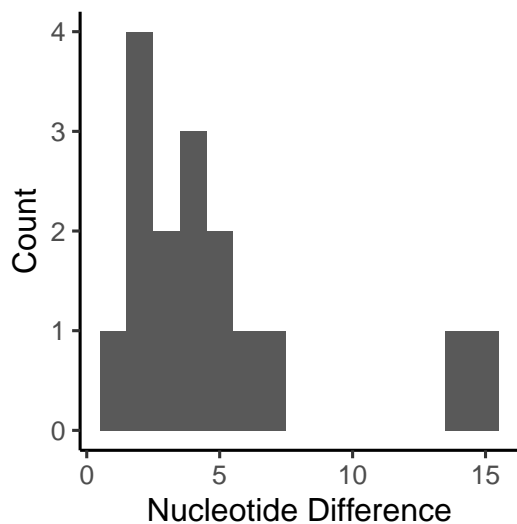
67 sequences assigned  
No exact matches.





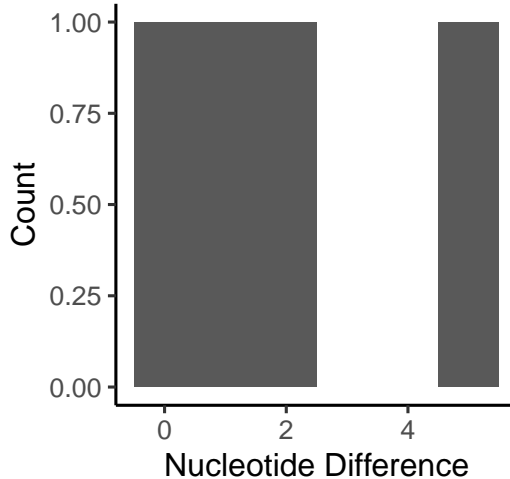
### IGHV4-30-2\*04

16 sequences assigned  
No exact matches.



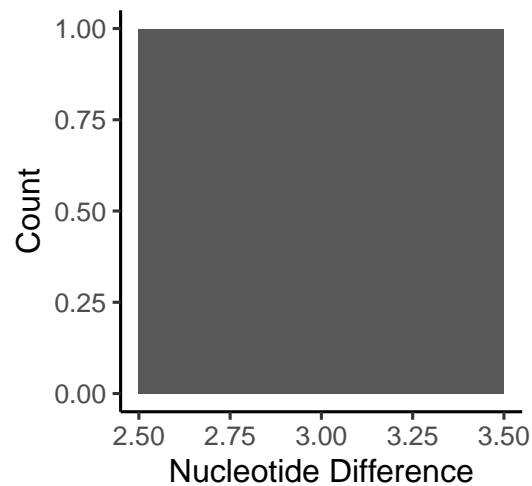
### IGHV4-38-2\*01

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



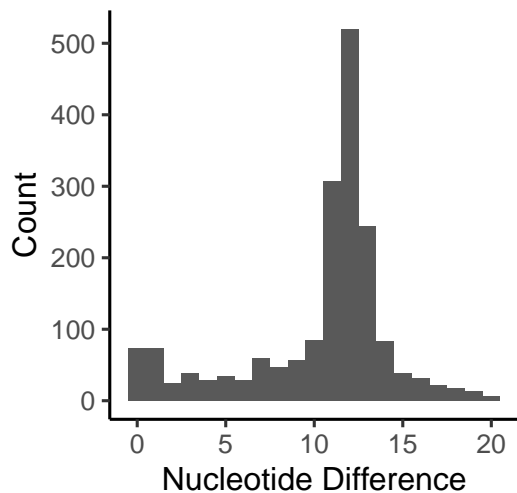
### IGHV4-55\*09

1 sequences assigned  
No exact matches.



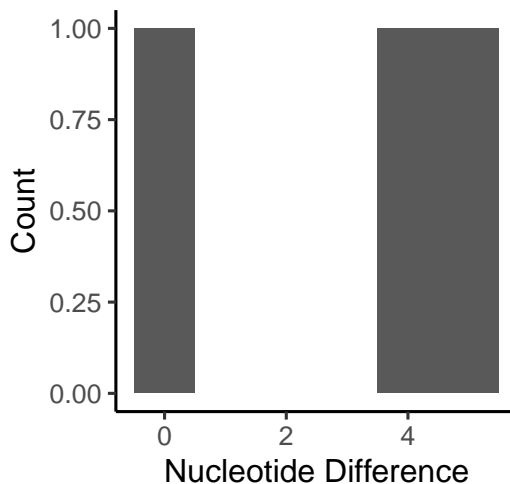
### IGHV4-31\*02

1864 sequences assigned  
73 (3.9%) exact matches, in which:  
64 unique CDR3  
5 unique J



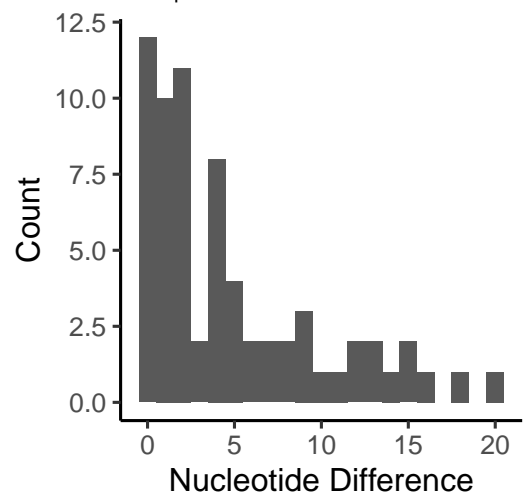
### IGHV4-38-2\*02

7 sequences assigned  
1 (14.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



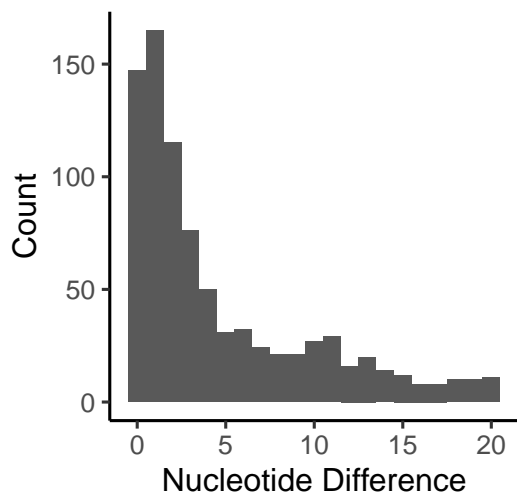
### IGHV4-59\*08

69 sequences assigned  
12 (17.4%) exact matches, in which:  
12 unique CDR3  
5 unique J



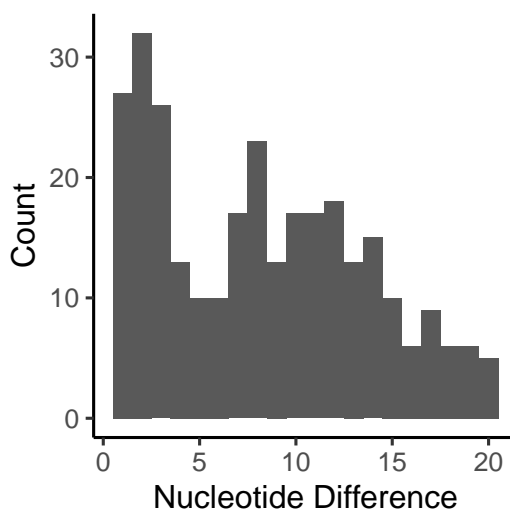
### IGHV4-34\*01\_02

877 sequences assigned  
147 (16.8%) exact matches, in which:  
102 unique CDR3  
4 unique J



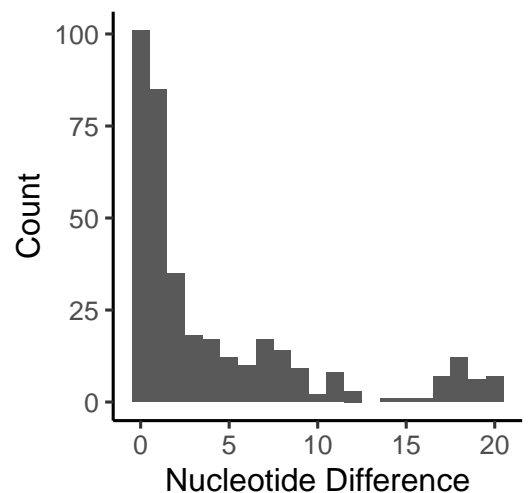
### IGHV4-39\*07

306 sequences assigned  
No exact matches.



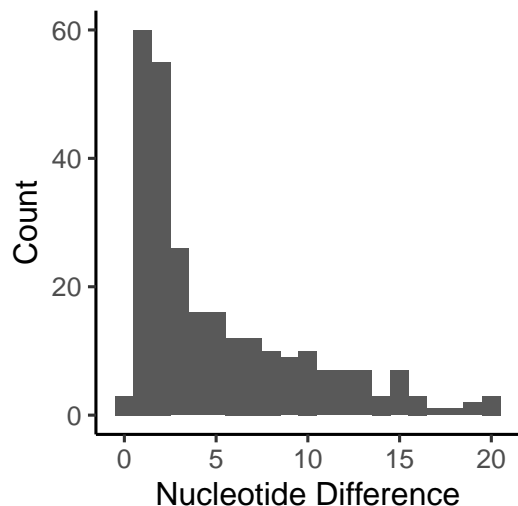
### IGHV4-59\*01\_07

396 sequences assigned  
101 (25.5%) exact matches, in which:  
87 unique CDR3  
5 unique J



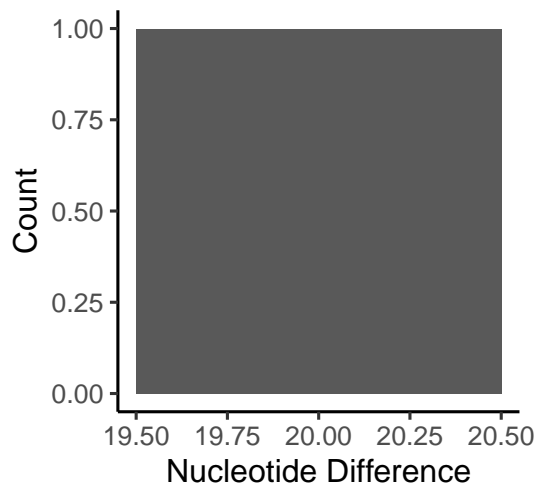
## IGHV4–59\*12

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



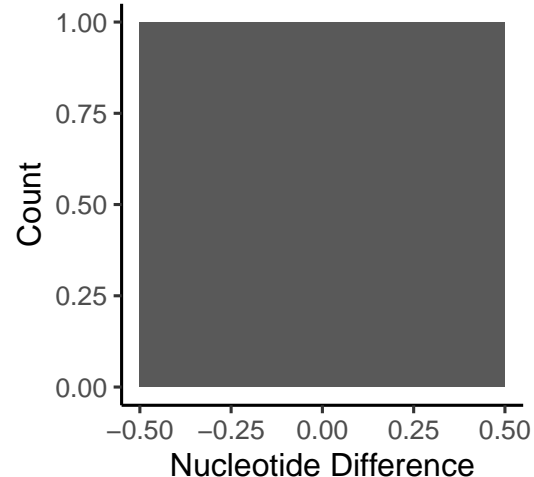
## IGHV4/OR15–8\*01

1 sequences assigned  
No exact matches.



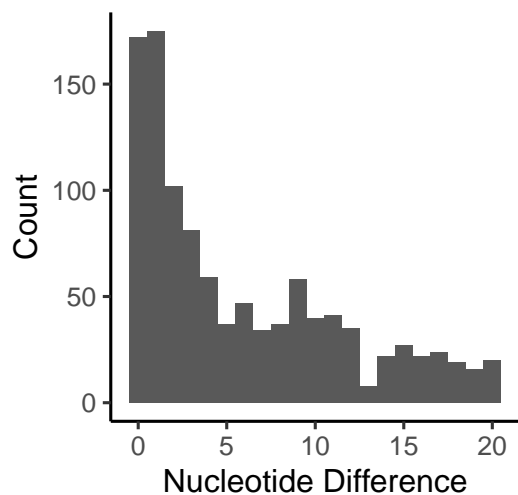
## IGHV5–51\*04

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



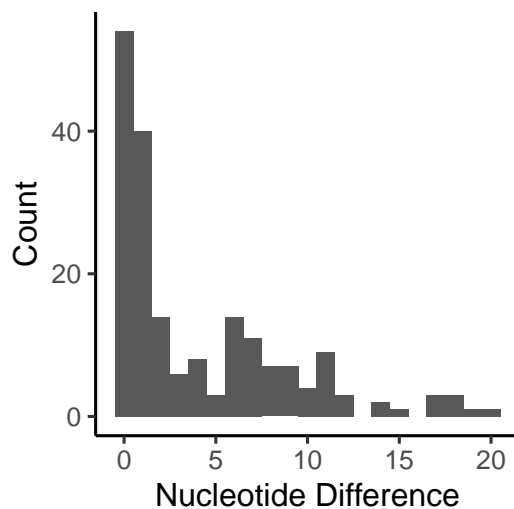
## IGHV4–61\*02

1128 sequences assigned  
172 (15.2%) exact matches, in which:  
143 unique CDR3  
6 unique J



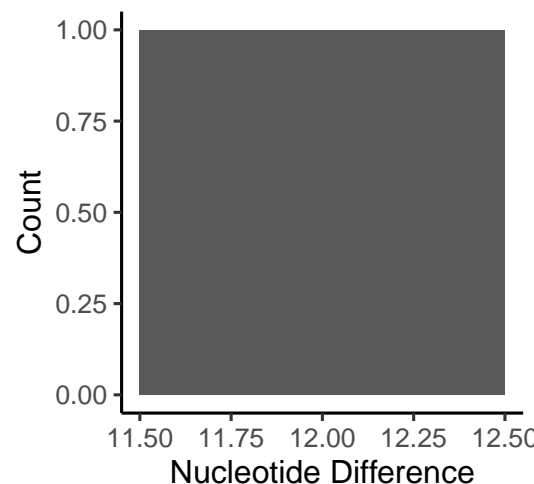
## IGHV5–10–1\*01\_03

193 sequences assigned  
54 (28%) exact matches, in which:  
38 unique CDR3  
4 unique J



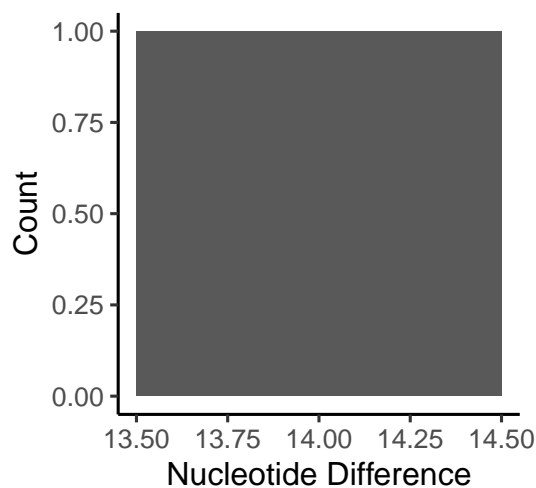
## IGHV5–51\*06

1 sequences assigned  
No exact matches.



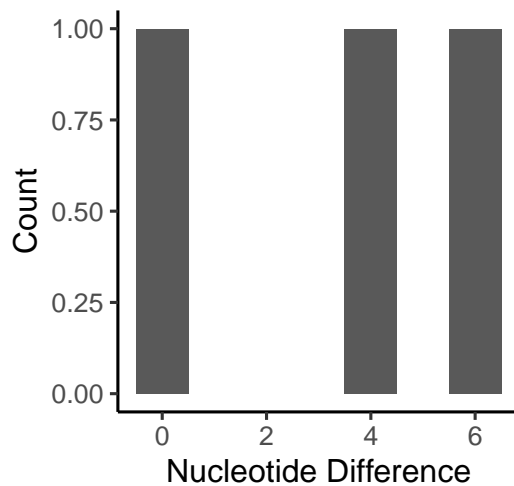
## IGHV1/OR15–2\*02\_03

1 sequences assigned  
No exact matches.



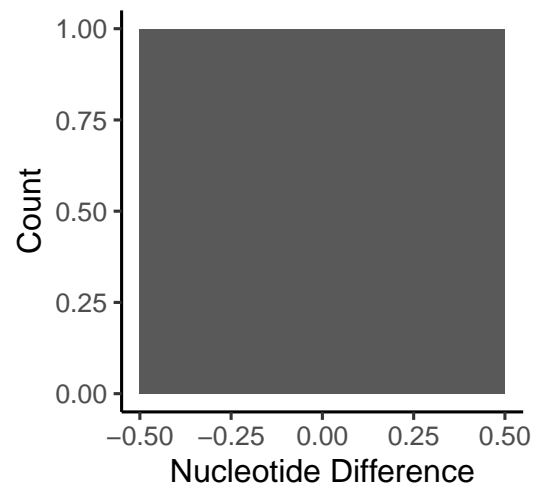
## IGHV5–51\*02

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



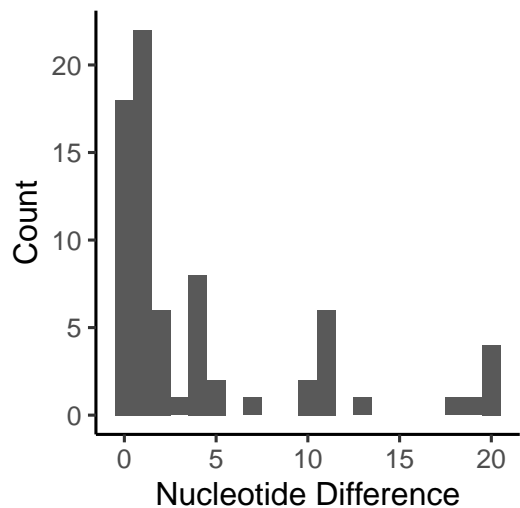
## IGHV5–51\*07

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



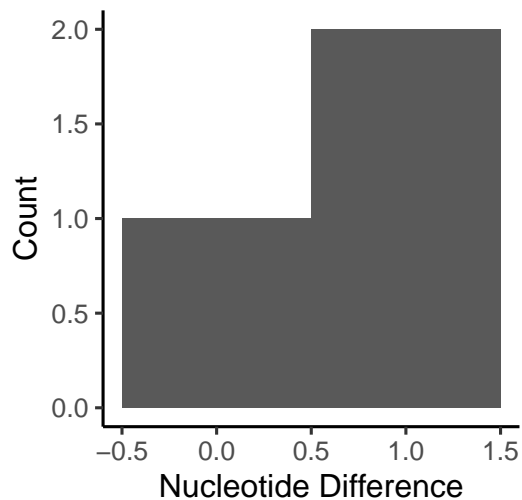
## IGHV6-1\*01\_02

87 sequences assigned  
18 (20.7%) exact matches, in which:  
15 unique CDR3  
3 unique J



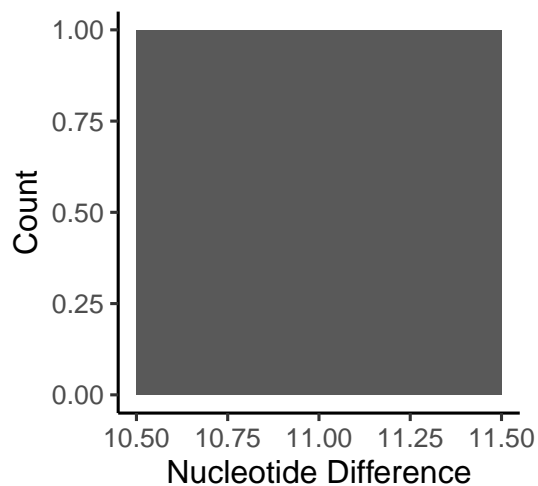
## IGHV7-4-1\*01

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



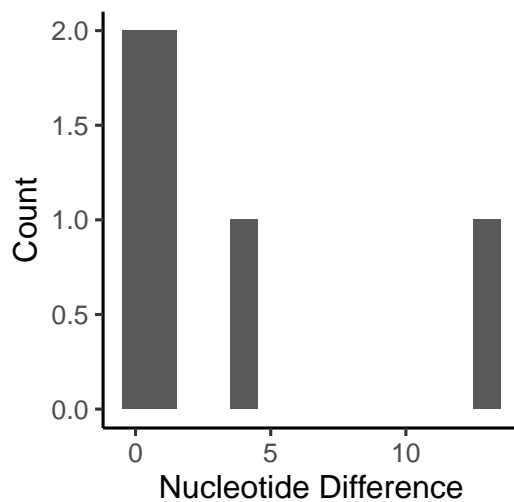
## IGHV3/OR16-6\*02

1 sequences assigned  
No exact matches.



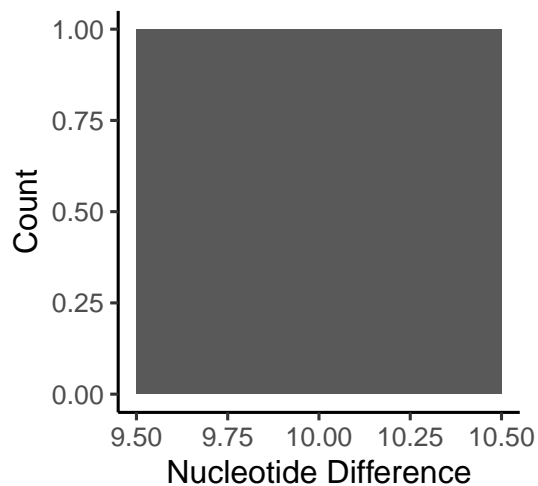
## IGHV7-4-1\*02

7 sequences assigned  
2 (28.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



## IGHV3/OR16-10\*01\_03

1 sequences assigned  
No exact matches.





[illegible]