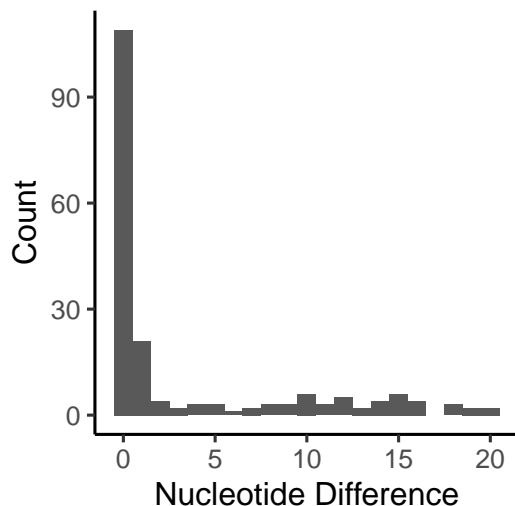


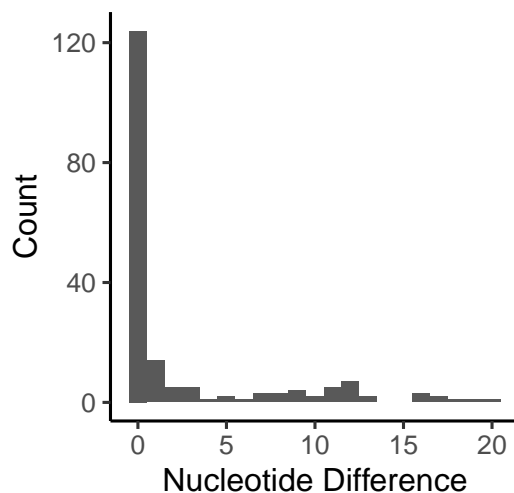
### IGHV1-2\*02

212 sequences assigned  
109 (51.4%) exact matches, in which:  
107 unique CDR3  
6 unique J



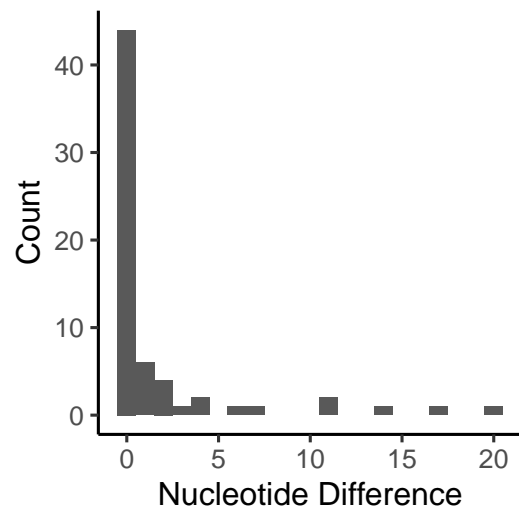
### IGHV1-8\*01

193 sequences assigned  
124 (64.2%) exact matches, in which:  
124 unique CDR3  
5 unique J



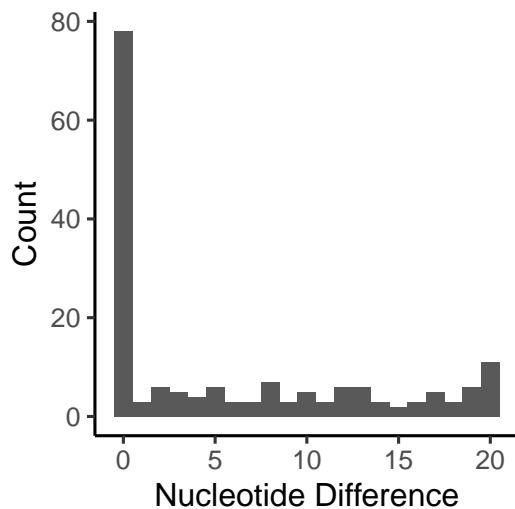
### IGHV1-24\*01

66 sequences assigned  
44 (66.7%) exact matches, in which:  
43 unique CDR3  
5 unique J



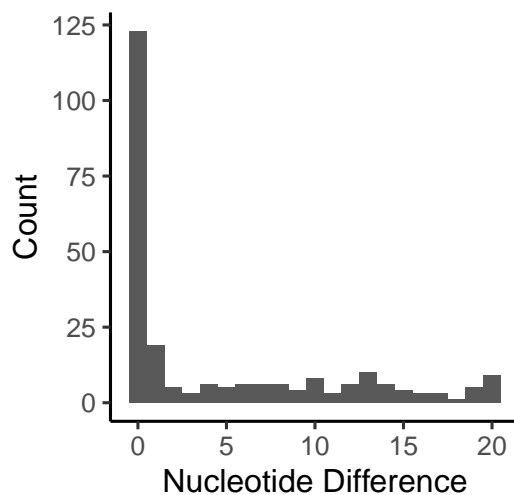
### IGHV1-2\*06

185 sequences assigned  
78 (42.2%) exact matches, in which:  
78 unique CDR3  
6 unique J



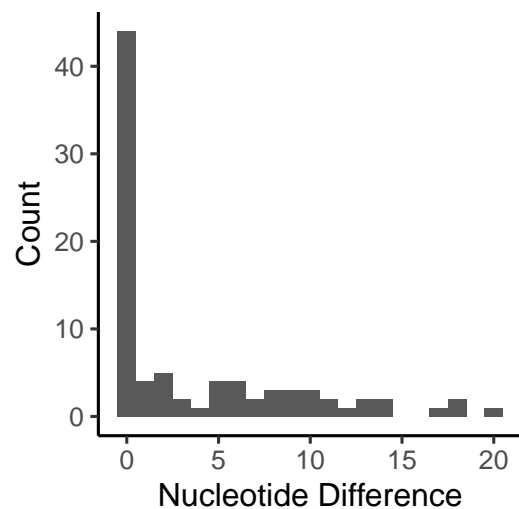
### IGHV1-18\*01

270 sequences assigned  
123 (45.6%) exact matches, in which:  
122 unique CDR3  
6 unique J



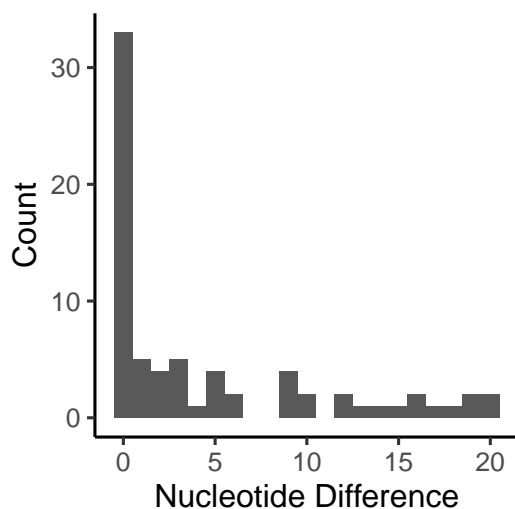
### IGHV1-46\*01

95 sequences assigned  
44 (46.3%) exact matches, in which:  
44 unique CDR3  
4 unique J



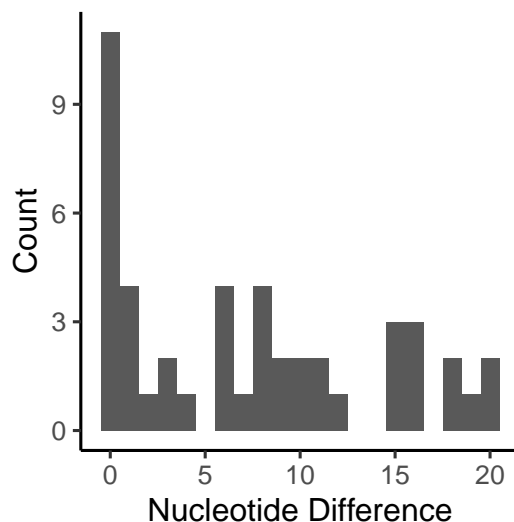
### IGHV1-3\*01\_05

78 sequences assigned  
33 (42.3%) exact matches, in which:  
33 unique CDR3  
5 unique J



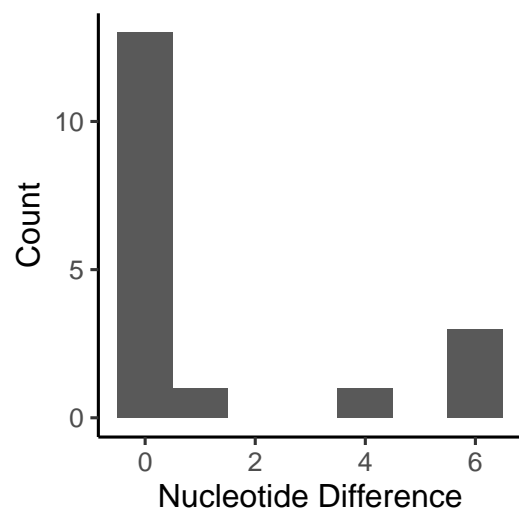
### IGHV1-18\*04

48 sequences assigned  
11 (22.9%) exact matches, in which:  
11 unique CDR3  
4 unique J



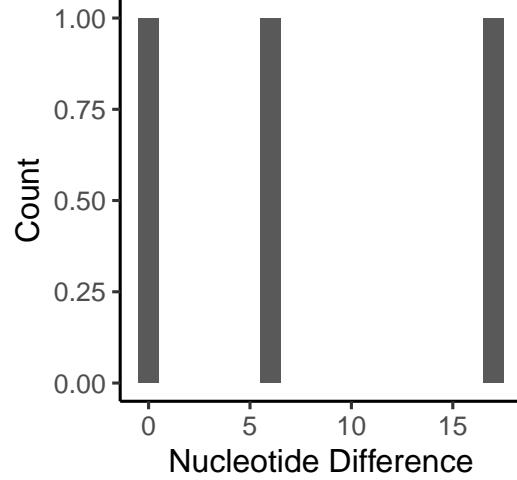
### IGHV1-58\*02

19 sequences assigned  
13 (68.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



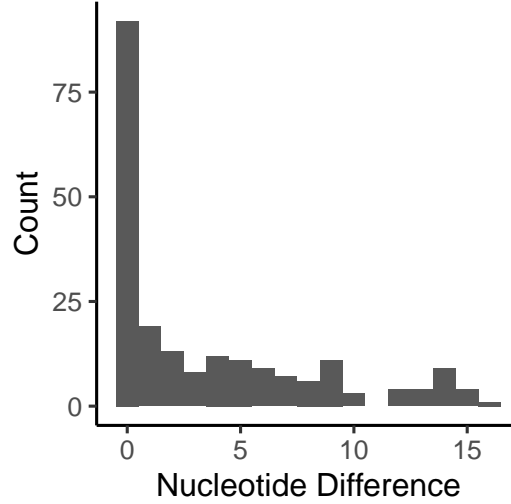
### IGHV1-69-2\*01

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



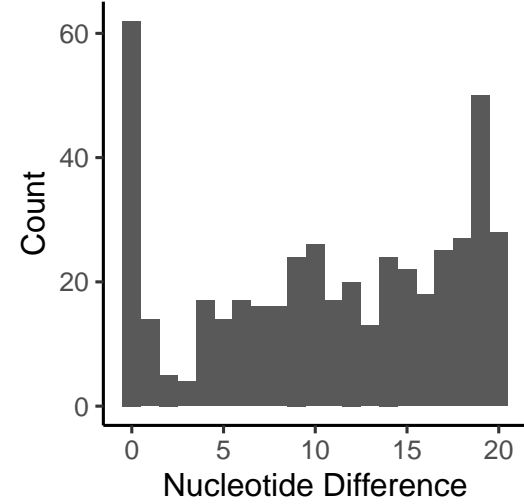
### IGHV2-5\*02

230 sequences assigned  
92 (40%) exact matches, in which:  
92 unique CDR3  
5 unique J



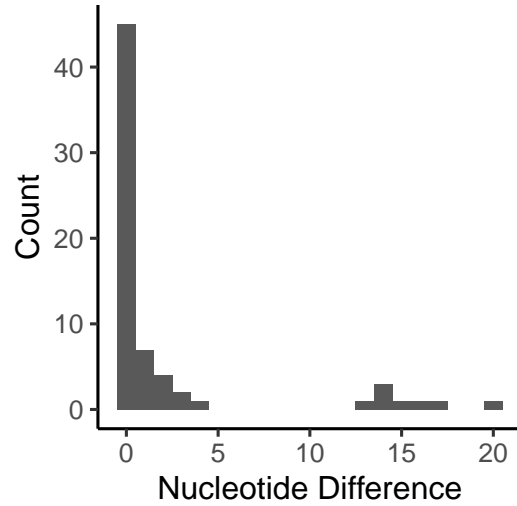
### IGHV3-7\*01

580 sequences assigned  
62 (10.7%) exact matches, in which:  
62 unique CDR3  
5 unique J



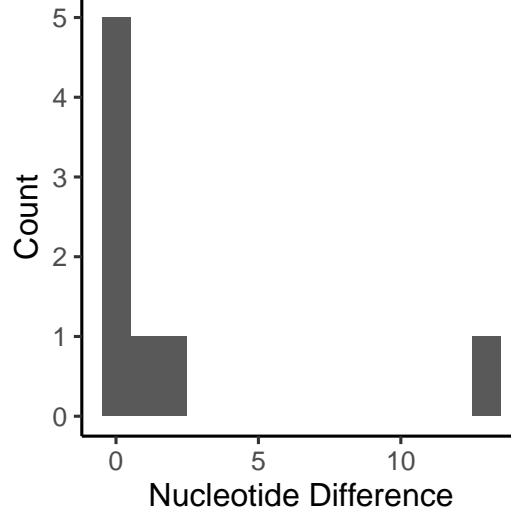
### IGHV1-69\*01\_12\_13

67 sequences assigned  
45 (67.2%) exact matches, in which:  
45 unique CDR3  
4 unique J



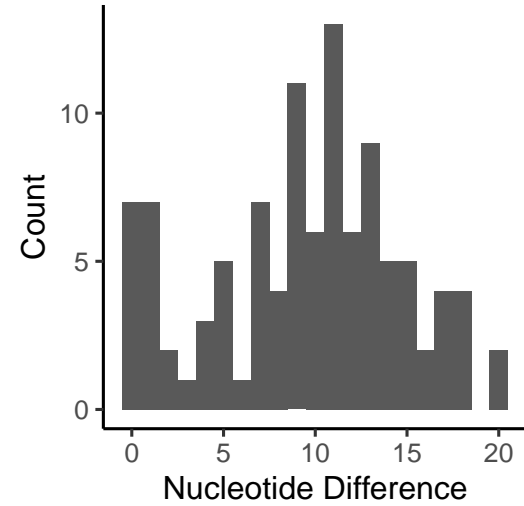
### IGHV2-26\*01

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



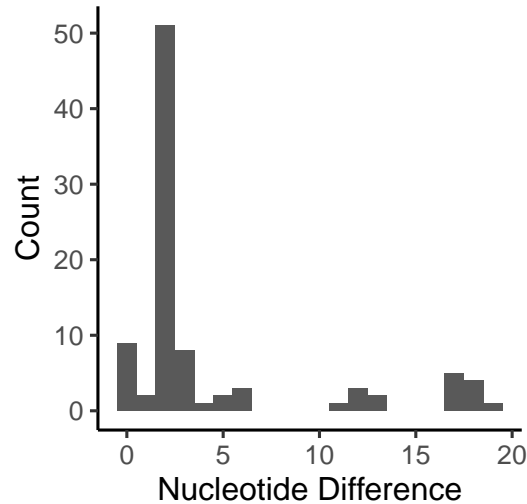
### IGHV3-7\*03

114 sequences assigned  
7 (6.1%) exact matches, in which:  
7 unique CDR3  
4 unique J



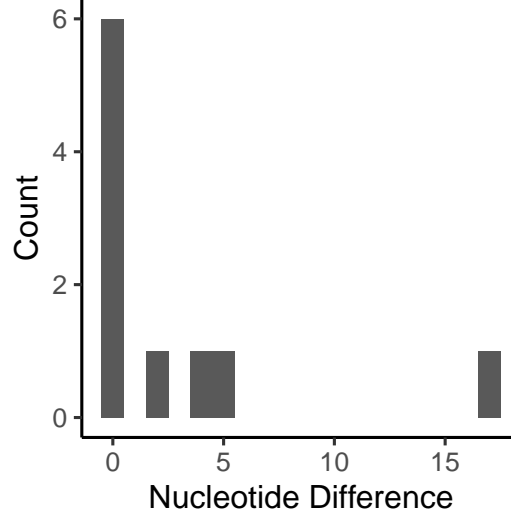
### IGHV1-69\*06\_14

94 sequences assigned  
9 (9.6%) exact matches, in which:  
9 unique CDR3  
2 unique J



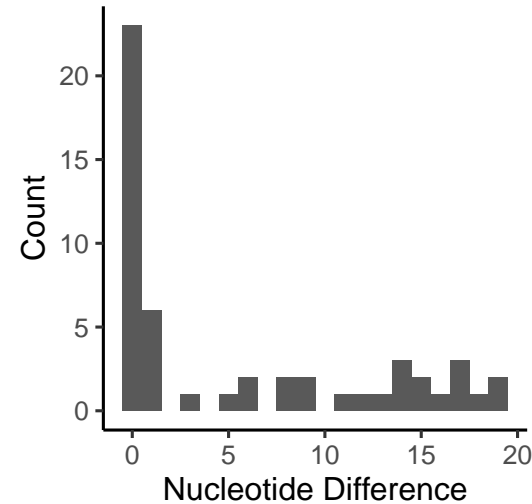
### IGHV2-70\*01

10 sequences assigned  
6 (60%) exact matches, in which:  
6 unique CDR3  
3 unique J



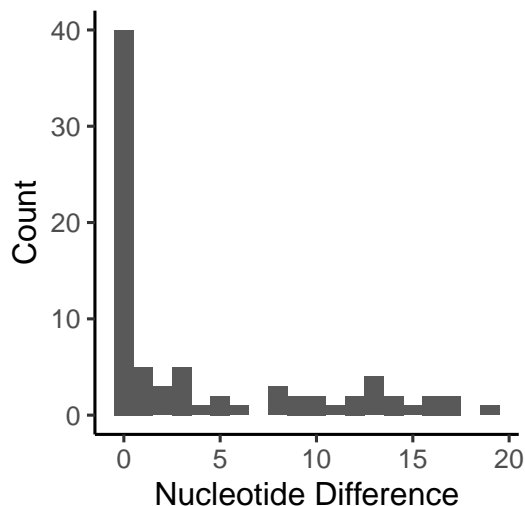
### IGHV3-9\*01

59 sequences assigned  
23 (39%) exact matches, in which:  
23 unique CDR3  
5 unique J



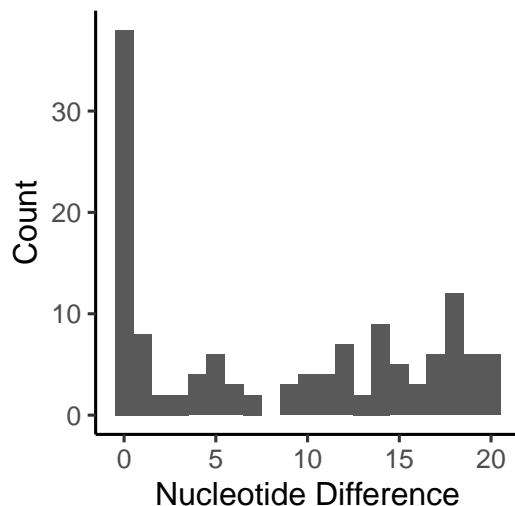
### IGHV3-11\*01

81 sequences assigned  
40 (49.4%) exact matches, in which:  
40 unique CDR3  
5 unique J



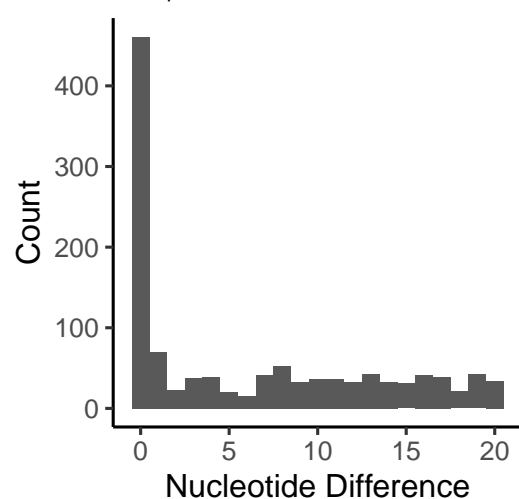
### IGHV3-15\*01\_02

146 sequences assigned  
38 (26%) exact matches, in which:  
38 unique CDR3  
4 unique J



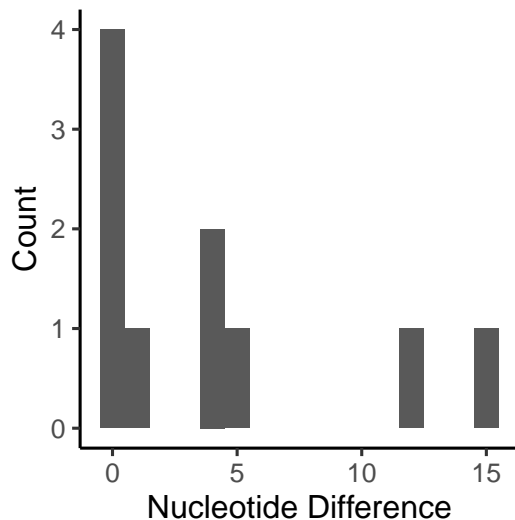
### IGHV3-23\*01\_04

1331 sequences assigned  
461 (34.6%) exact matches, in which:  
460 unique CDR3  
6 unique J



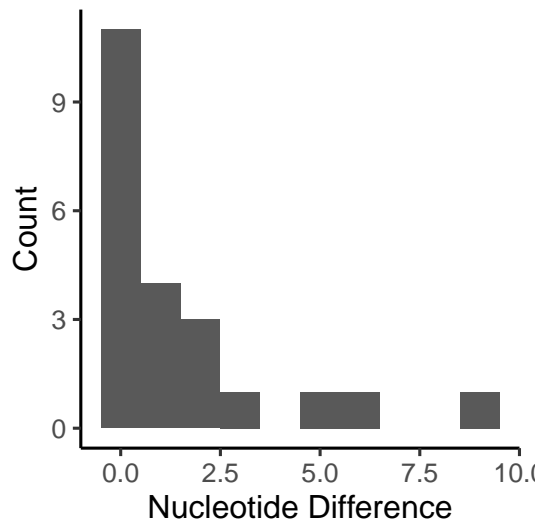
### IGHV3-11\*06

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



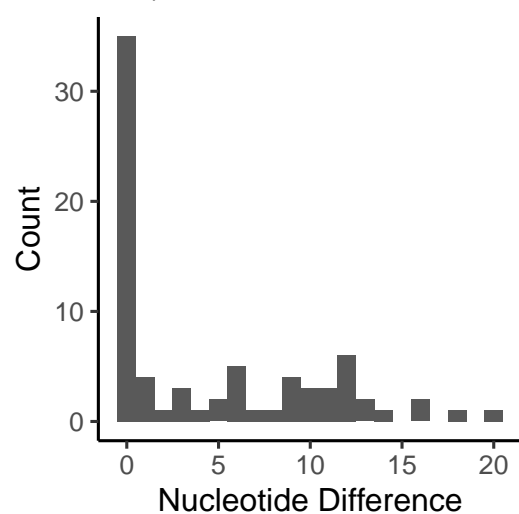
### IGHV3-20\*01\_02

23 sequences assigned  
11 (47.8%) exact matches, in which:  
11 unique CDR3  
3 unique J



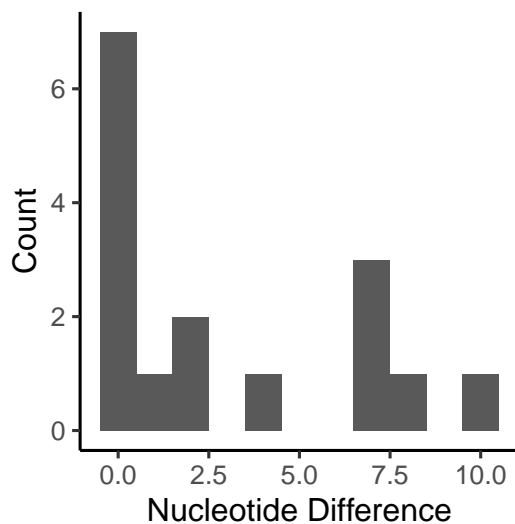
### IGHV3-30-3\*01

82 sequences assigned  
35 (42.7%) exact matches, in which:  
34 unique CDR3  
4 unique J



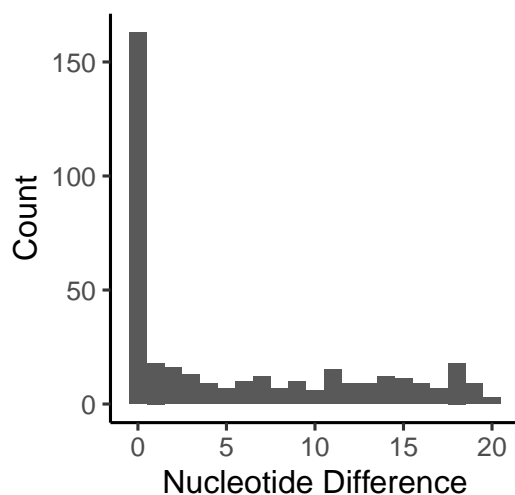
### IGHV3-13\*01

16 sequences assigned  
7 (43.8%) exact matches, in which:  
7 unique CDR3  
3 unique J



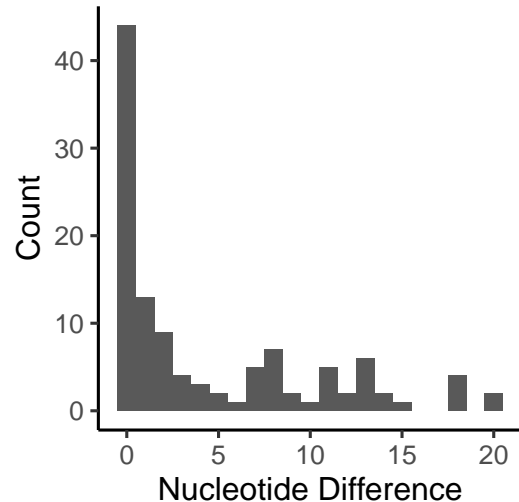
### IGHV3-21\*01\_02

408 sequences assigned  
163 (40%) exact matches, in which:  
163 unique CDR3  
6 unique J



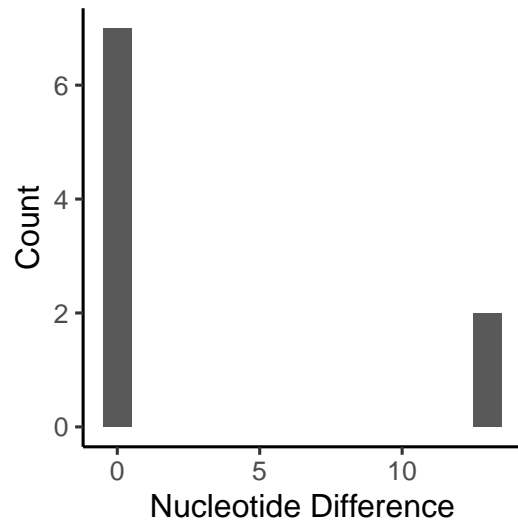
### IGHV3-33\*01

118 sequences assigned  
44 (37.3%) exact matches, in which:  
44 unique CDR3  
6 unique J



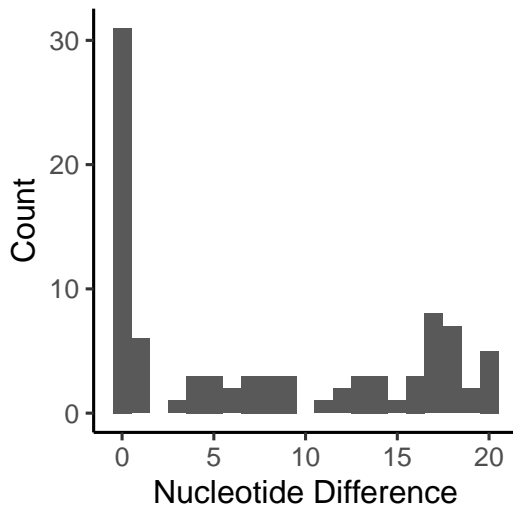
### IGHV3-43\*01

9 sequences assigned  
7 (77.8%) exact matches, in which:  
6 unique CDR3  
3 unique J



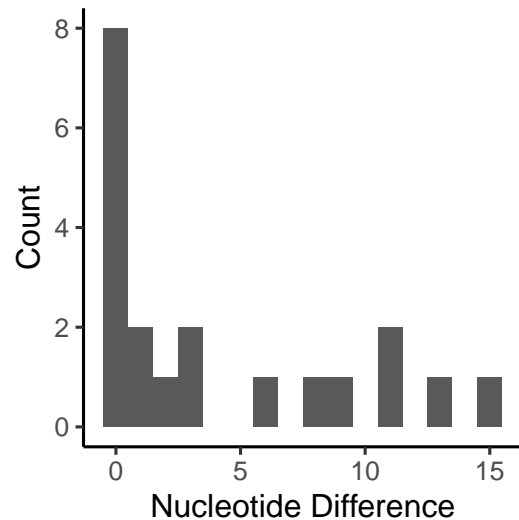
### IGHV3-48\*02

130 sequences assigned  
31 (23.8%) exact matches, in which:  
30 unique CDR3  
5 unique J



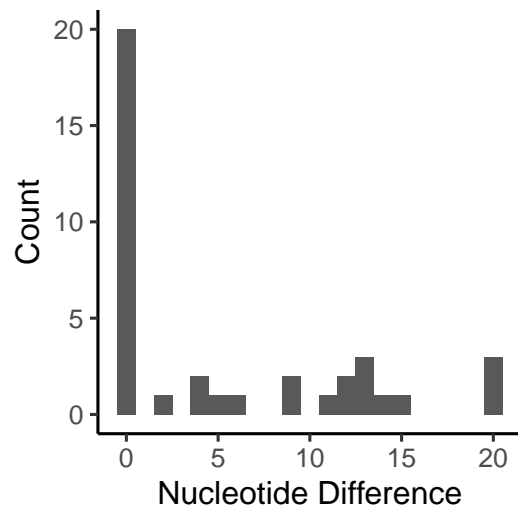
### IGHV3-49\*03\_05

20 sequences assigned  
8 (40%) exact matches, in which:  
8 unique CDR3  
2 unique J



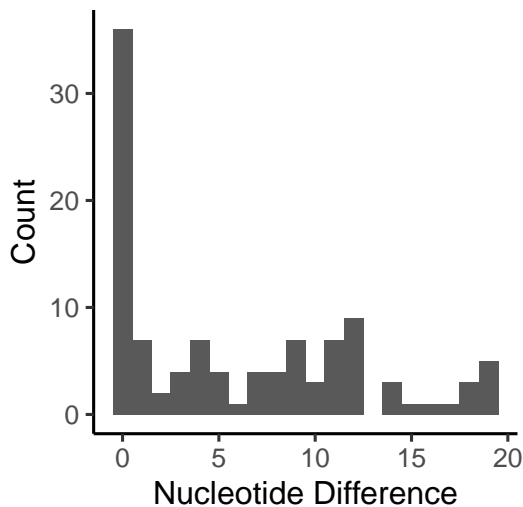
### IGHV3-43\*02

39 sequences assigned  
20 (51.3%) exact matches, in which:  
18 unique CDR3  
3 unique J



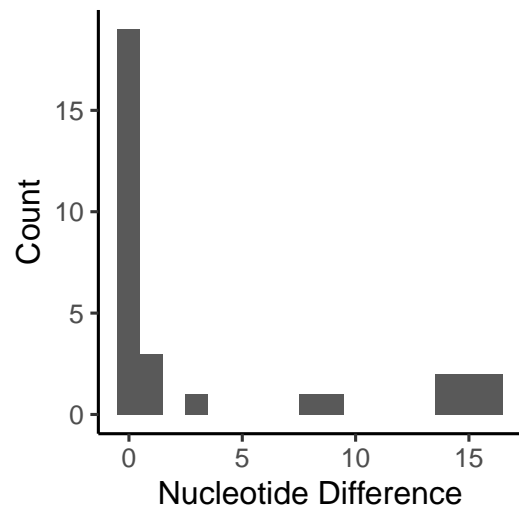
### IGHV3-48\*03

125 sequences assigned  
36 (28.8%) exact matches, in which:  
35 unique CDR3  
5 unique J



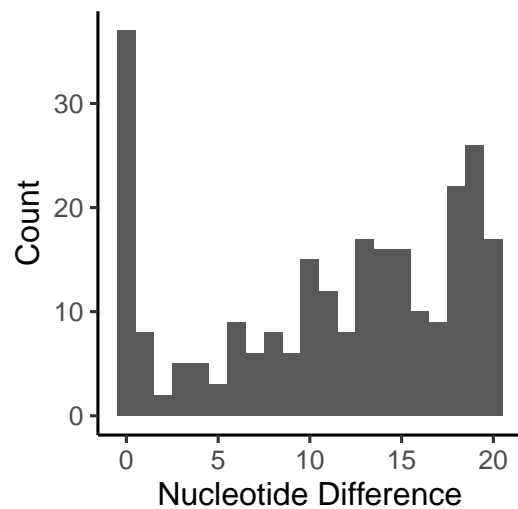
### IGHV3-53\*04

35 sequences assigned  
19 (54.3%) exact matches, in which:  
19 unique CDR3  
4 unique J



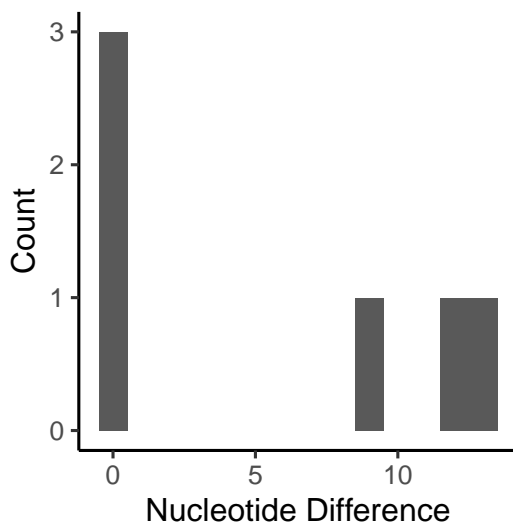
### IGHV3-48\*01

317 sequences assigned  
37 (11.7%) exact matches, in which:  
36 unique CDR3  
5 unique J



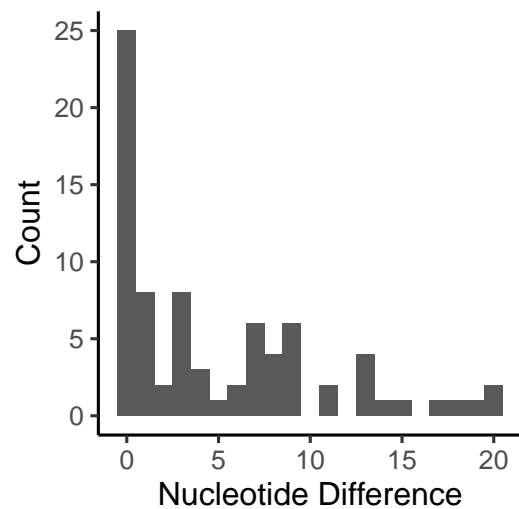
### IGHV3-49\*04

8 sequences assigned  
3 (37.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



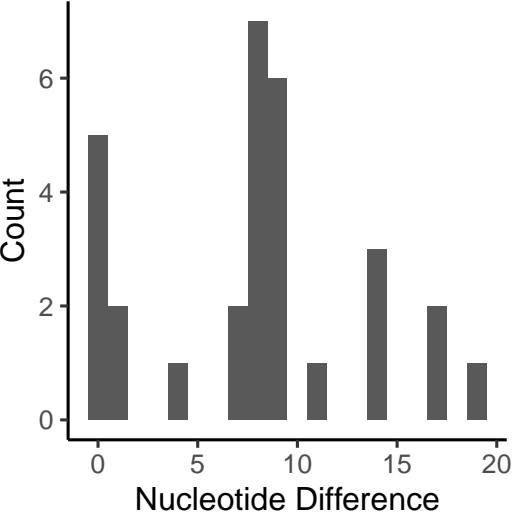
### IGHV3-53\*01\_02

81 sequences assigned  
25 (30.9%) exact matches, in which:  
25 unique CDR3  
5 unique J



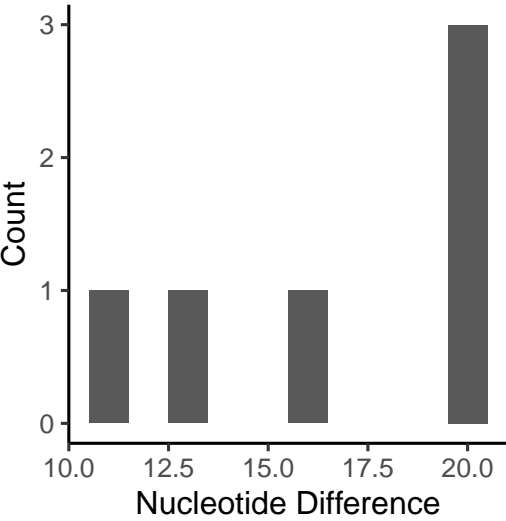
IGHV3-64\*01

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



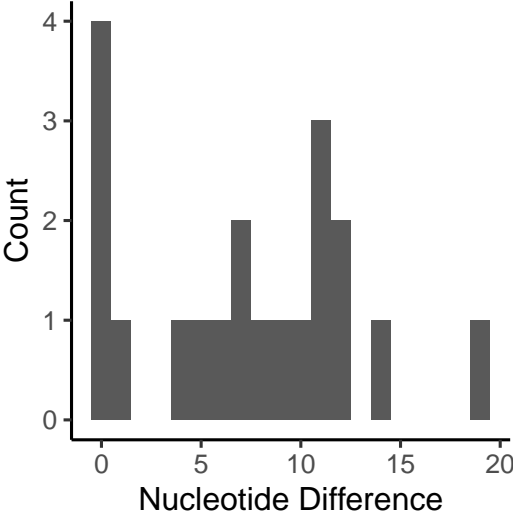
IGHV3-69-1\*01

29 sequences assigned  
No exact matches.



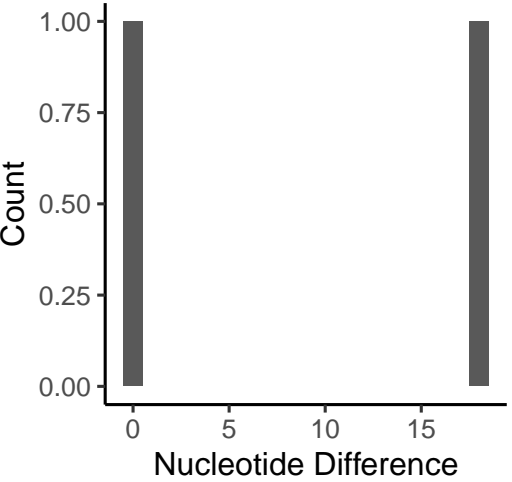
IGHV3-73\*01\_02

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



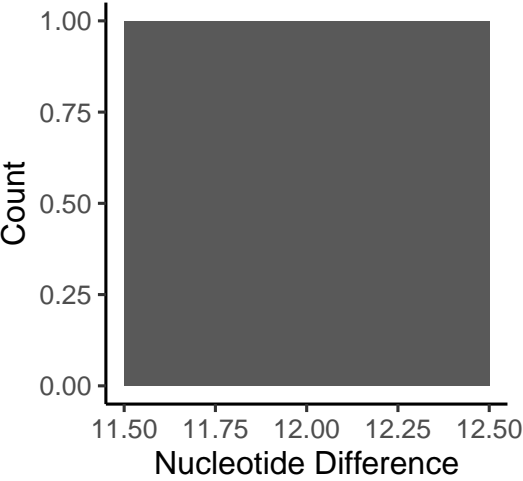
IGHV3-64\*02\_07

5 sequences assigned  
1 (20%) exact matches, in which:  
1 unique CDR3  
1 unique J



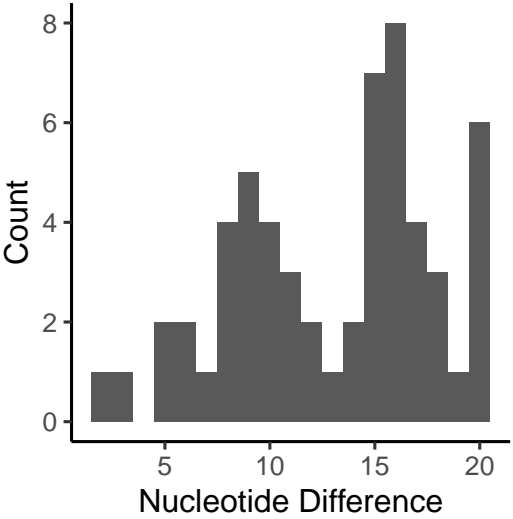
IGHV3-69-1\*02

2 sequences assigned  
No exact matches.



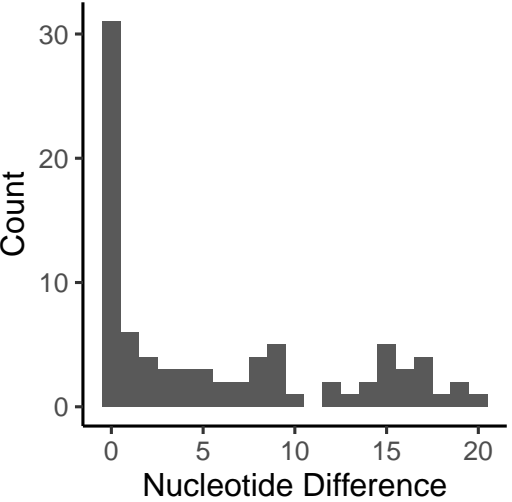
IGHV3-74\*03

77 sequences assigned  
No exact matches.



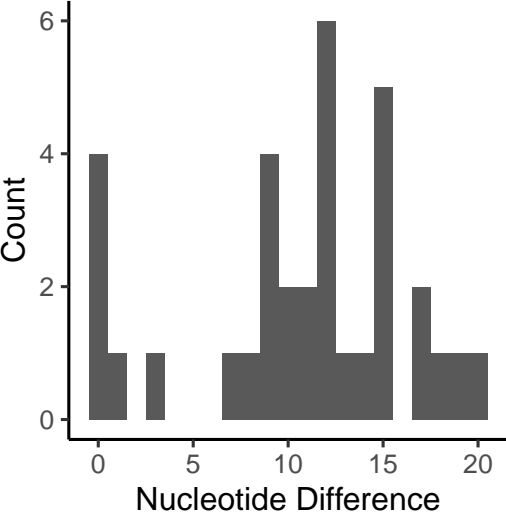
IGHV3-66\*02

102 sequences assigned  
31 (30.4%) exact matches, in which:  
30 unique CDR3  
5 unique J



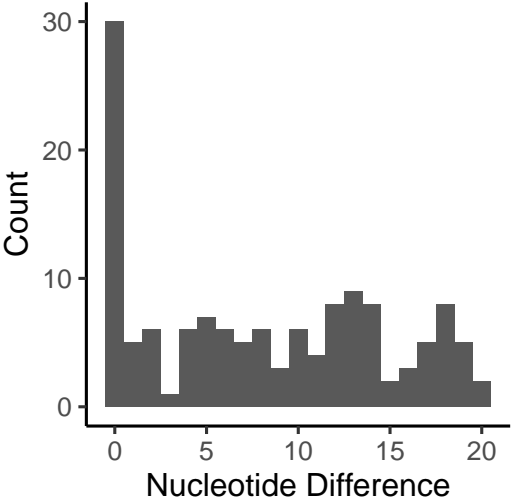
IGHV3-72\*01

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



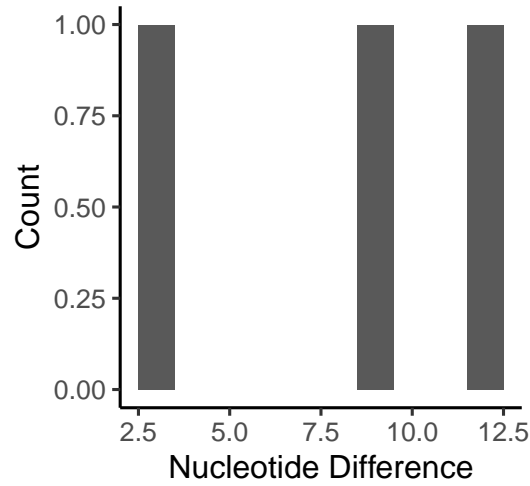
IGHV3-74\*01\_02

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



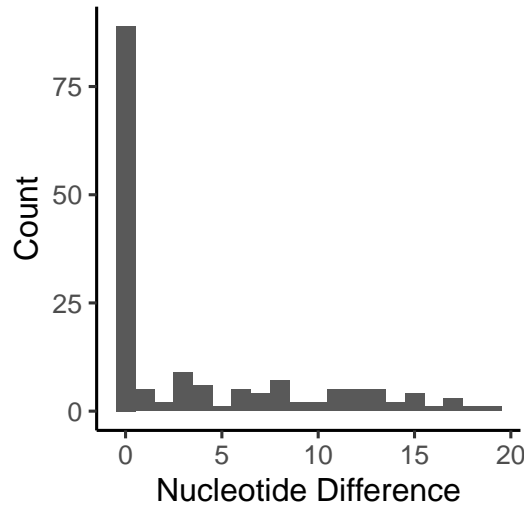
### IGHV3-43D\*04

3 sequences assigned  
No exact matches.



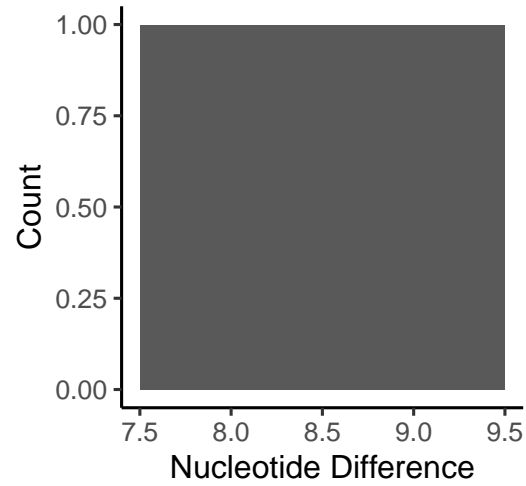
### IGHV4-4\*07

176 sequences assigned  
89 (50.6%) exact matches, in which:  
85 unique CDR3  
5 unique J



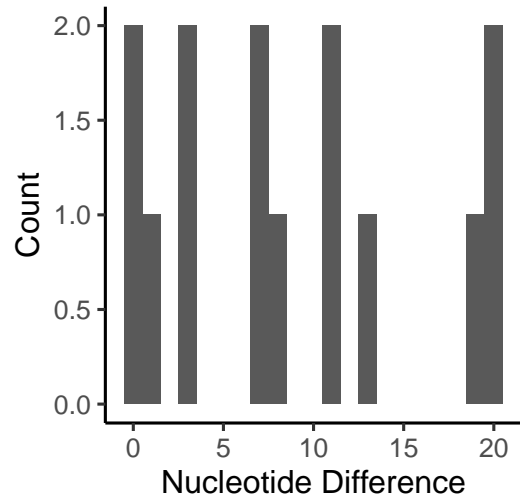
### IGHV4-28\*01\_07

2 sequences assigned  
No exact matches.



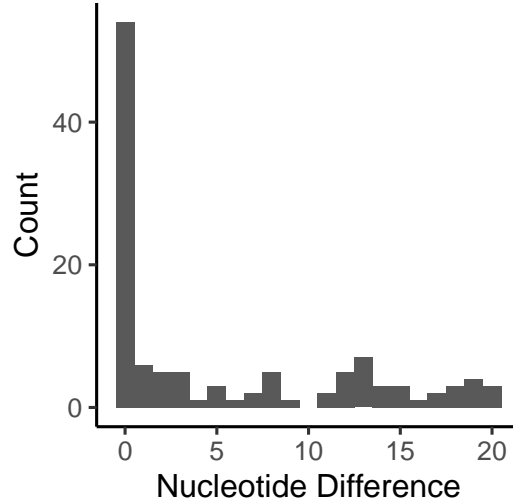
### IGHV3-64D\*06

15 sequences assigned  
2 (13.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



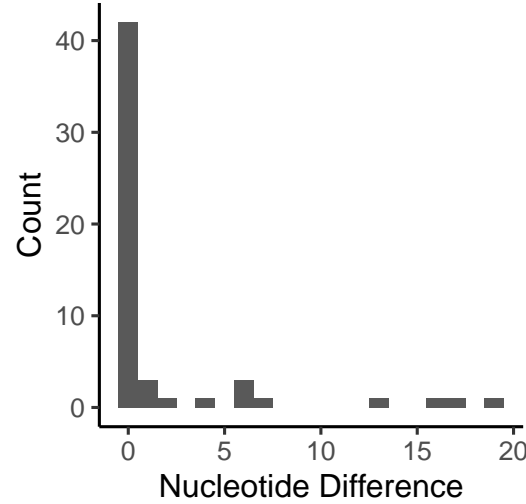
### IGHV4-4\*02\_03

122 sequences assigned  
54 (44.3%) exact matches, in which:  
53 unique CDR3  
5 unique J



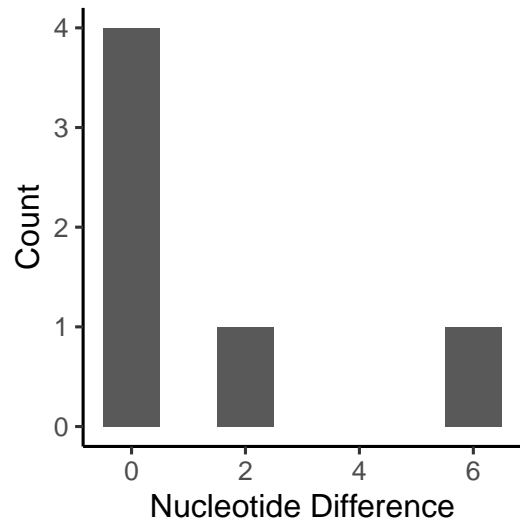
### IGHV4-30-2\*01

56 sequences assigned  
42 (75%) exact matches, in which:  
40 unique CDR3  
4 unique J



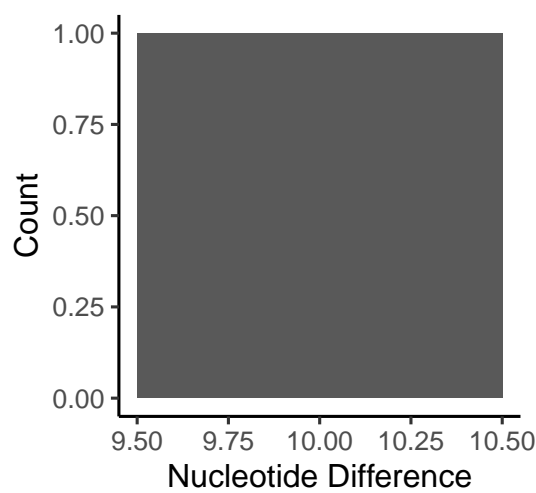
### IGHV3-64D\*08

6 sequences assigned  
4 (66.7%) exact matches, in which:  
4 unique CDR3  
3 unique J



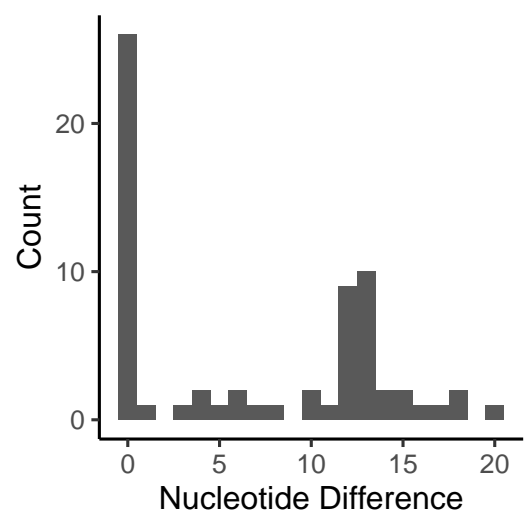
### IGHV4-28\*03

1 sequences assigned  
No exact matches.



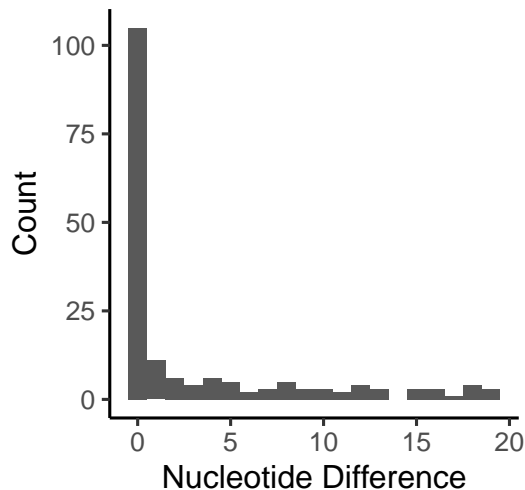
### IGHV4-30-4\*01

69 sequences assigned  
26 (37.7%) exact matches, in which:  
24 unique CDR3  
5 unique J



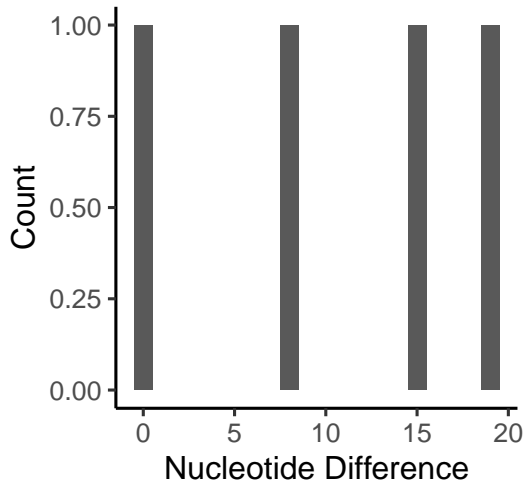
### IGHV4-31\*02

195 sequences assigned  
105 (53.8%) exact matches, in which:  
103 unique CDR3  
6 unique J



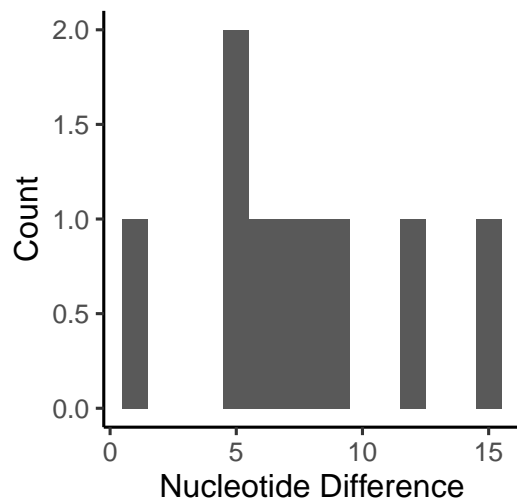
### IGHV4-38-2\*02

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



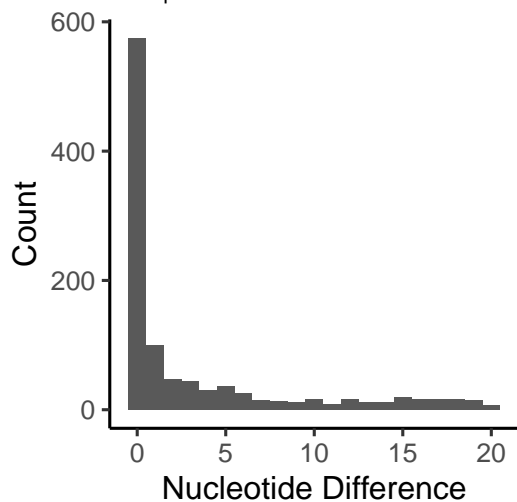
### IGHV4-59\*08

9 sequences assigned  
No exact matches.



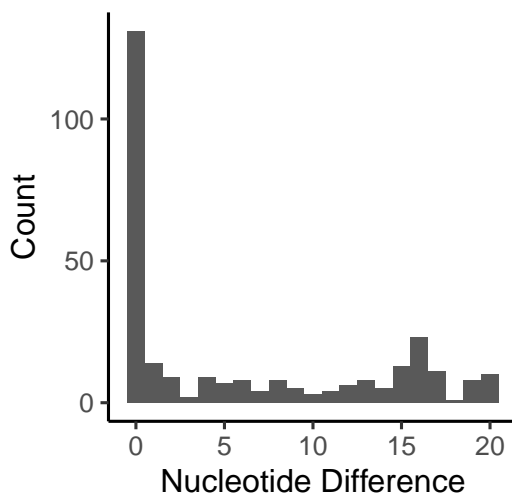
### IGHV4-34\*01\_02

1183 sequences assigned  
575 (48.6%) exact matches, in which:  
553 unique CDR3  
6 unique J



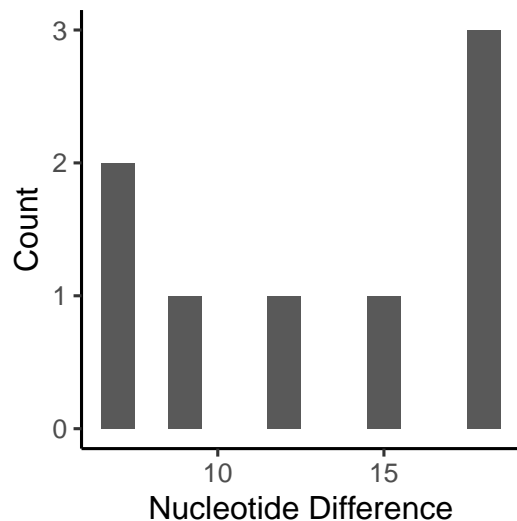
### IGHV4-39\*07

444 sequences assigned  
131 (29.5%) exact matches, in which:  
129 unique CDR3  
5 unique J



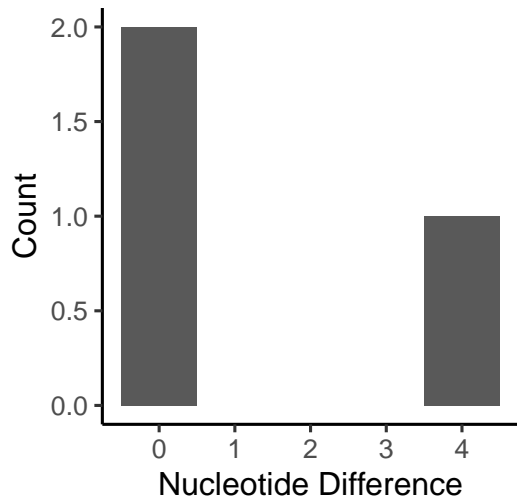
### IGHV4-59\*11

11 sequences assigned  
No exact matches.



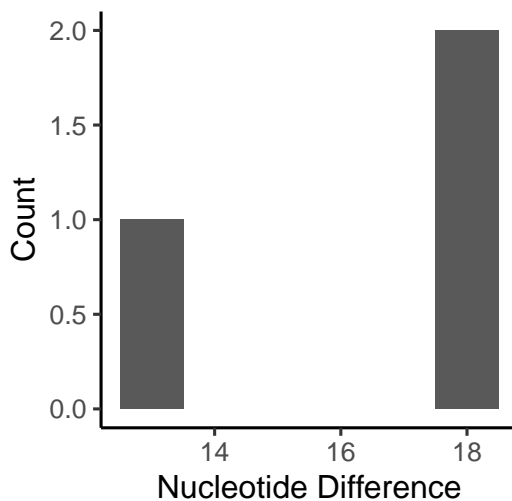
### IGHV4-38-2\*01

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



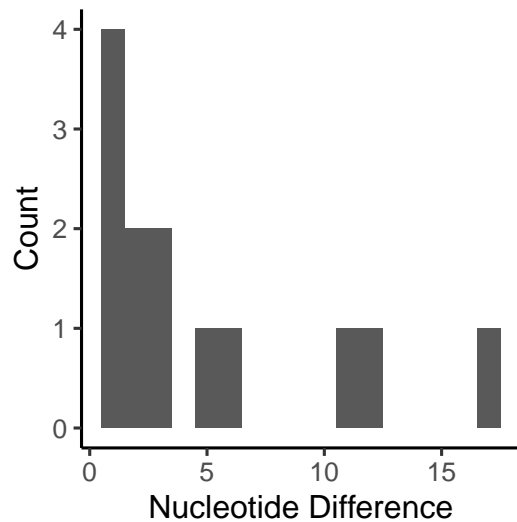
### IGHV4-59\*02

5 sequences assigned  
No exact matches.



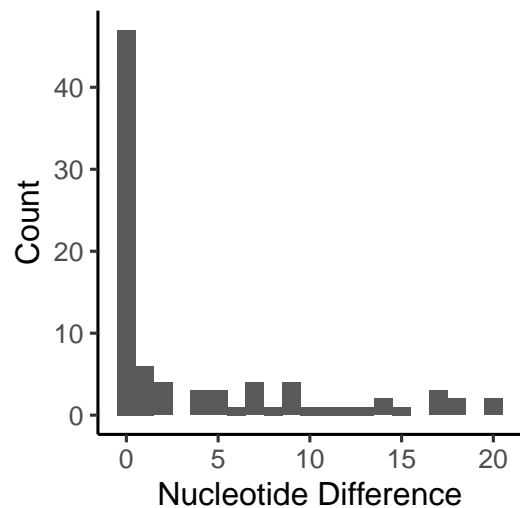
### IGHV4-59\*12

19 sequences assigned  
No exact matches.



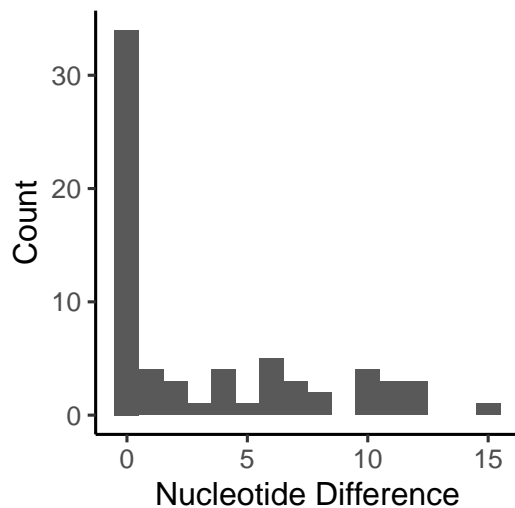
## IGHV4-61\*01

95 sequences assigned  
47 (49.5%) exact matches, in which:  
46 unique CDR3  
6 unique J



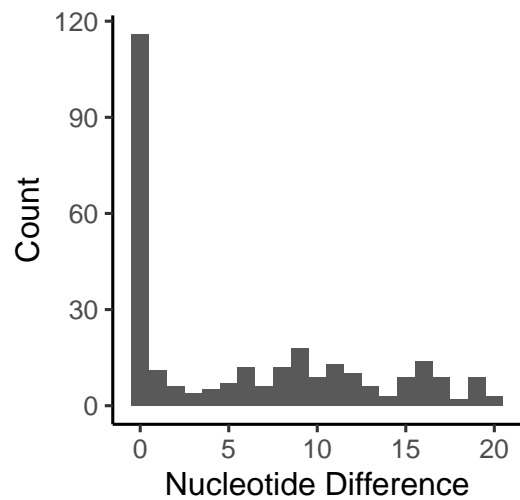
## IGHV5-51\*01\_03

71 sequences assigned  
34 (47.9%) exact matches, in which:  
34 unique CDR3  
5 unique J



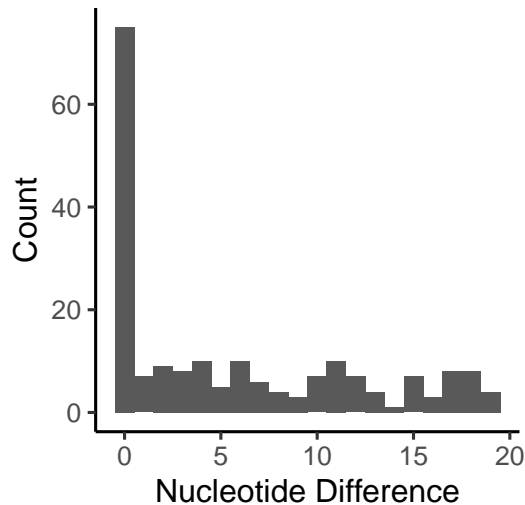
## IGHV4-61\*02

318 sequences assigned  
116 (36.5%) exact matches, in which:  
115 unique CDR3  
5 unique J



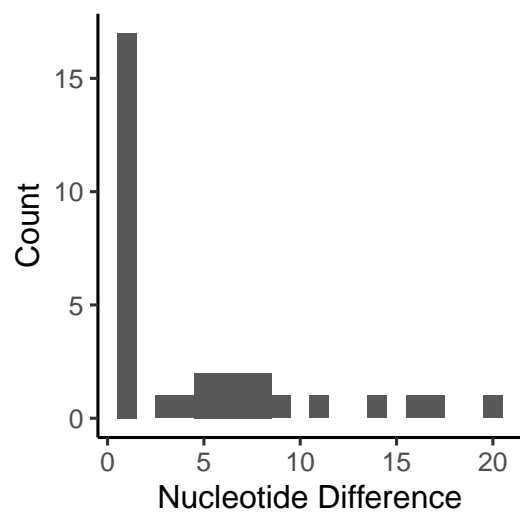
## IGHV6-1\*01\_02

198 sequences assigned  
75 (37.9%) exact matches, in which:  
75 unique CDR3  
5 unique J



## IGHV5-51\*07

37 sequences assigned  
No exact matches.



## IGHV7-4-1\*02

86 sequences assigned  
41 (47.7%) exact matches, in which:  
40 unique CDR3  
6 unique J

