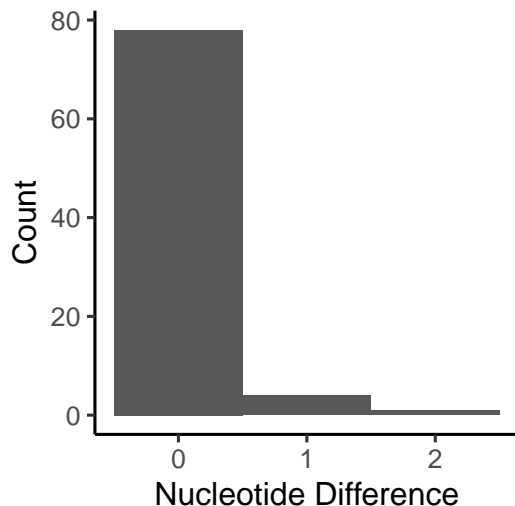


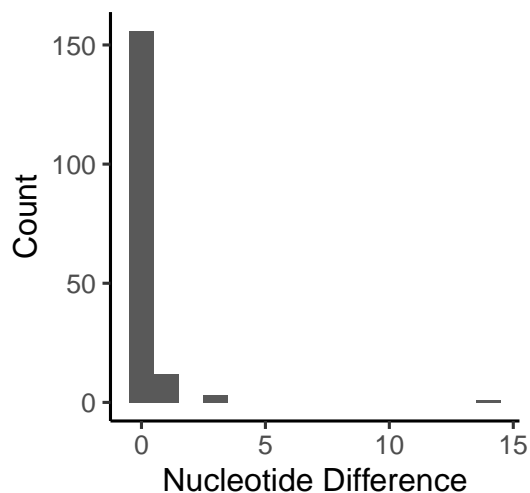
### IGHV1-2\*04

83 sequences assigned  
78 (94%) exact matches, in which:  
77 unique CDR3  
6 unique J



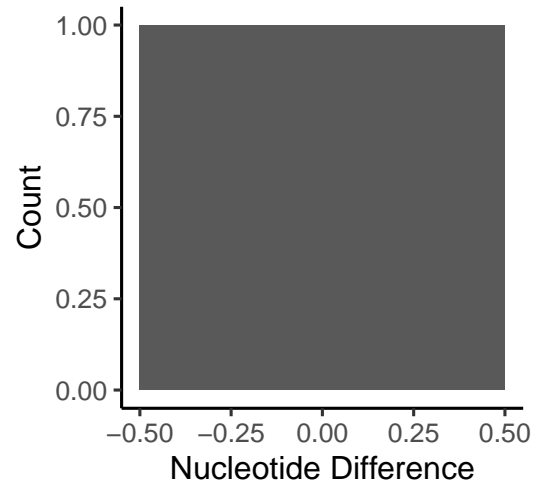
### IGHV1-8\*01

172 sequences assigned  
156 (90.7%) exact matches, in which:  
154 unique CDR3  
5 unique J



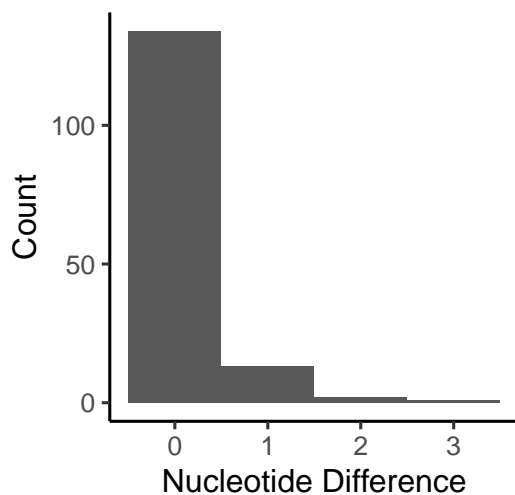
### IGHV1-45\*02

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



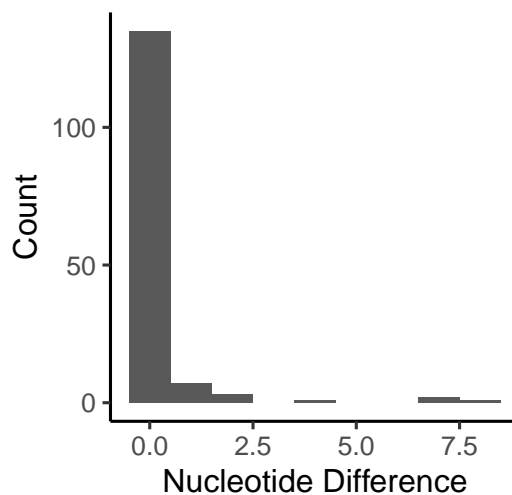
### IGHV1-2\*06

150 sequences assigned  
134 (89.3%) exact matches, in which:  
132 unique CDR3  
6 unique J



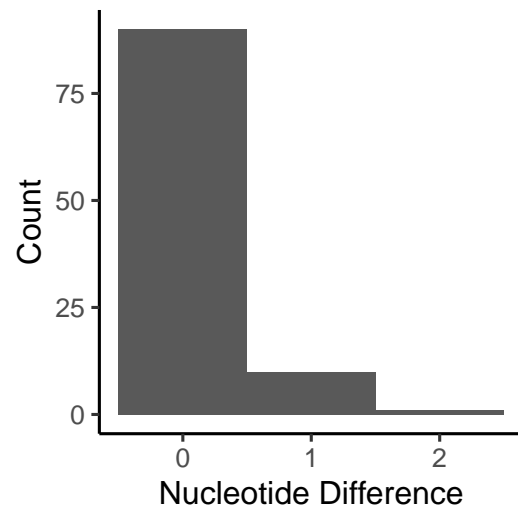
### IGHV1-18\*01

149 sequences assigned  
135 (90.6%) exact matches, in which:  
135 unique CDR3  
6 unique J



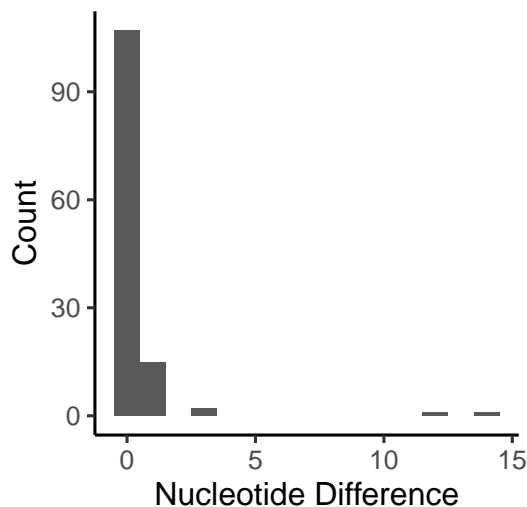
### IGHV1-46\*01

101 sequences assigned  
90 (89.1%) exact matches, in which:  
89 unique CDR3  
6 unique J



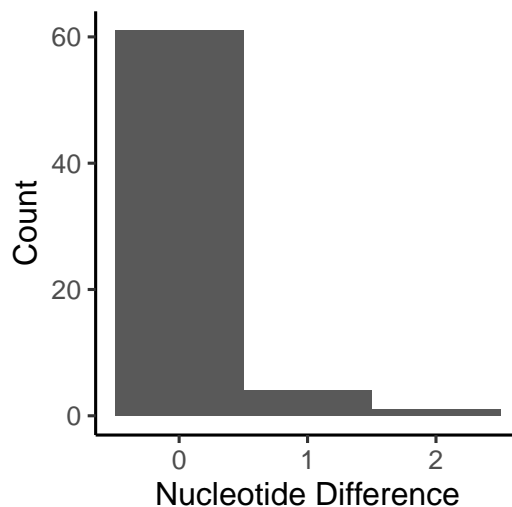
### IGHV1-3\*01

126 sequences assigned  
107 (84.9%) exact matches, in which:  
107 unique CDR3  
5 unique J



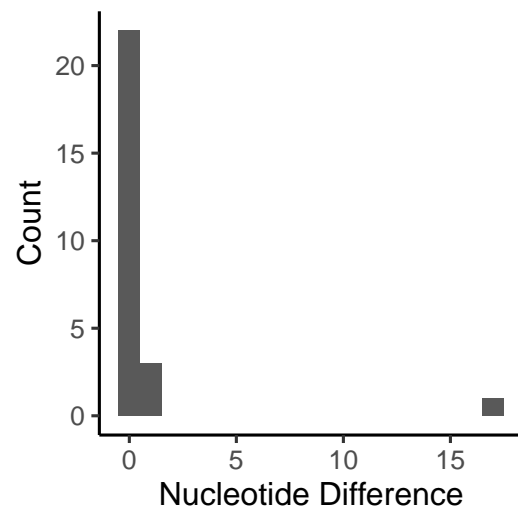
### IGHV1-24\*01

66 sequences assigned  
61 (92.4%) exact matches, in which:  
61 unique CDR3  
5 unique J



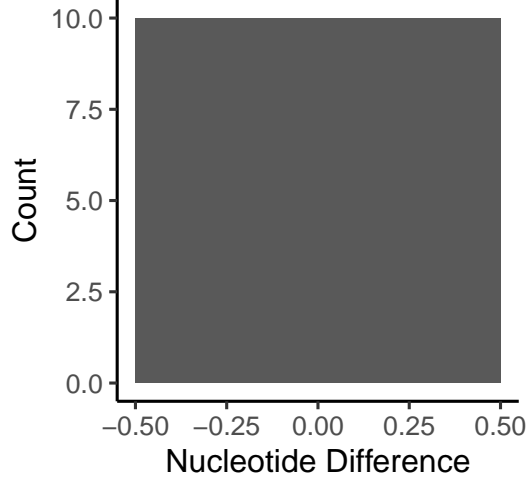
### IGHV1-58\*01

26 sequences assigned  
22 (84.6%) exact matches, in which:  
22 unique CDR3  
4 unique J



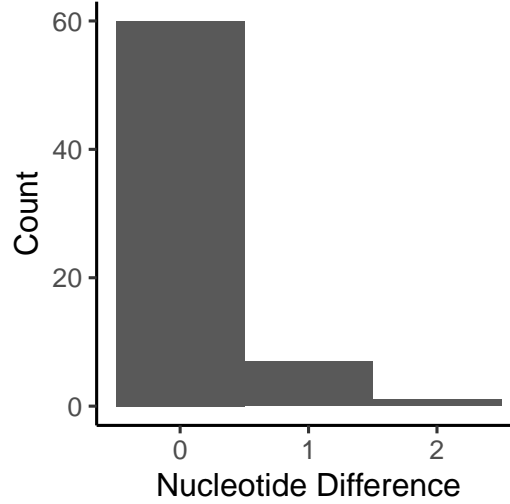
### IGHV1-69-2\*01

10 sequences assigned  
10 (100%) exact matches, in which:  
10 unique CDR3  
3 unique J



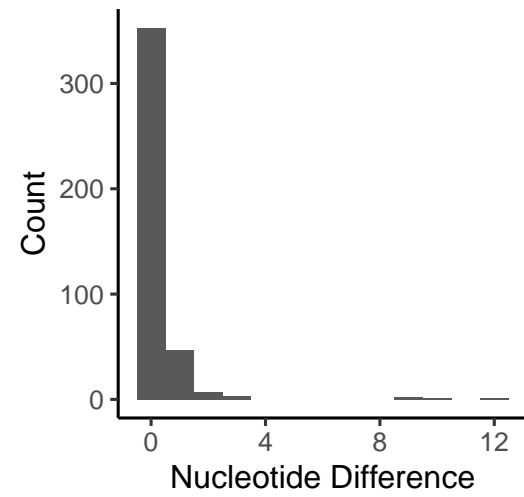
### IGHV2-26\*01

68 sequences assigned  
60 (88.2%) exact matches, in which:  
60 unique CDR3  
6 unique J



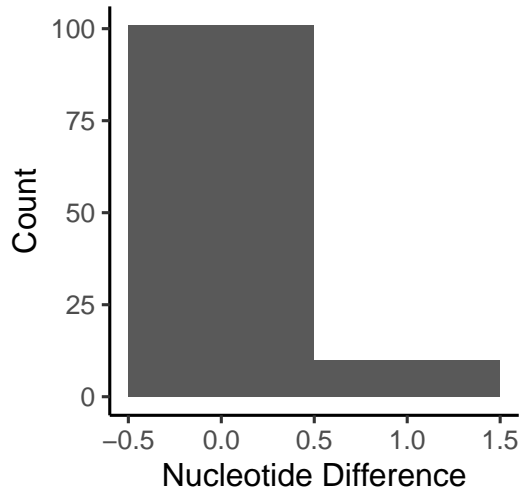
### IGHV3-9\*01

414 sequences assigned  
353 (85.3%) exact matches, in which:  
348 unique CDR3  
6 unique J



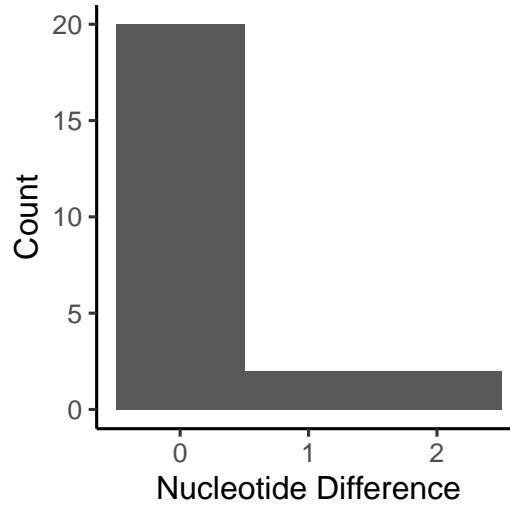
### IGHV1-69\*06

111 sequences assigned  
101 (91%) exact matches, in which:  
101 unique CDR3  
5 unique J



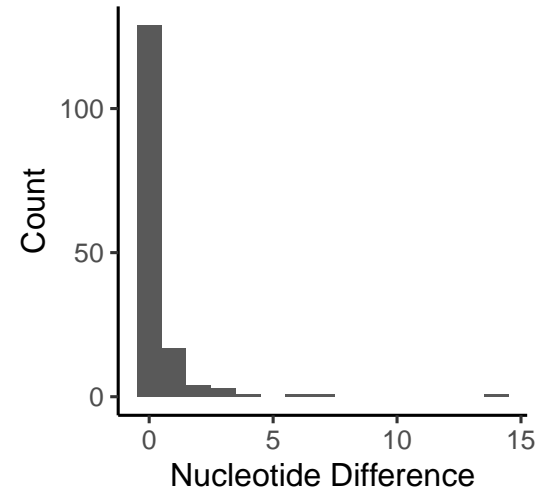
### IGHV2-70\*01

24 sequences assigned  
20 (83.3%) exact matches, in which:  
20 unique CDR3  
4 unique J



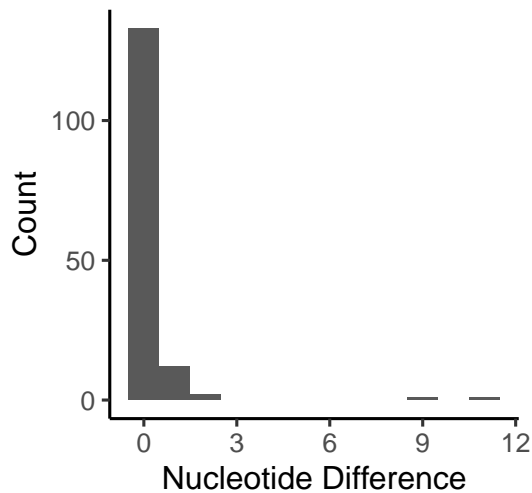
### IGHV3-11\*01

157 sequences assigned  
129 (82.2%) exact matches, in which:  
128 unique CDR3  
5 unique J



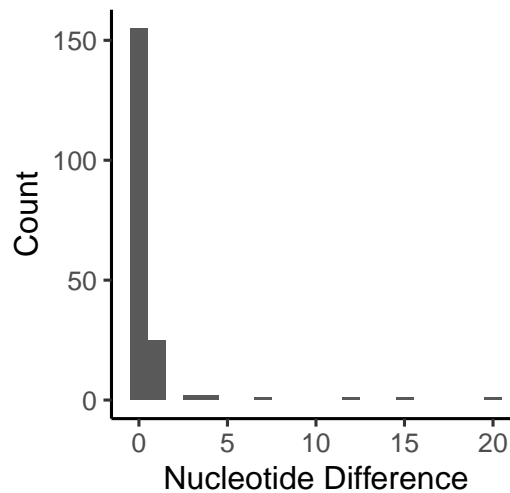
### IGHV2-5\*02

149 sequences assigned  
133 (89.3%) exact matches, in which:  
132 unique CDR3  
5 unique J



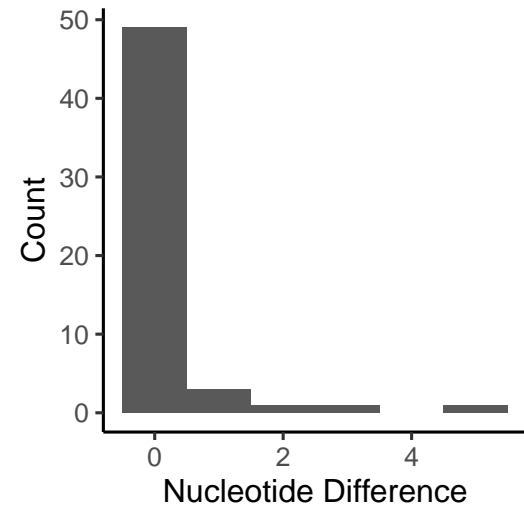
### IGHV3-7\*01

188 sequences assigned  
155 (82.4%) exact matches, in which:  
154 unique CDR3  
5 unique J

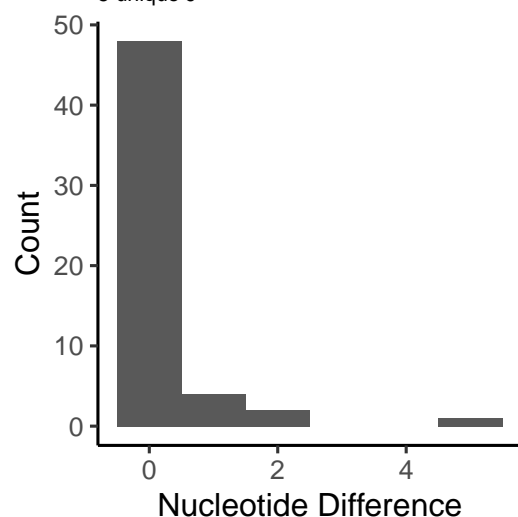


### IGHV3-13\*01

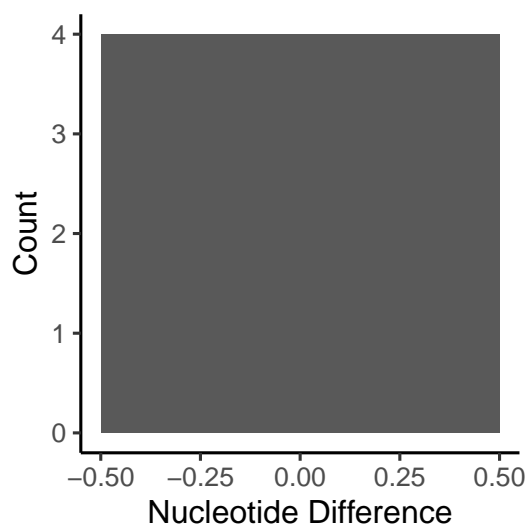
55 sequences assigned  
49 (89.1%) exact matches, in which:  
49 unique CDR3  
4 unique J



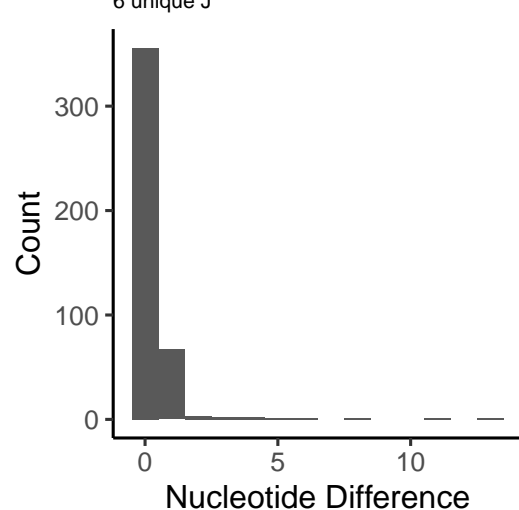
55 sequences assigned  
48 (87.3%) exact matches, in which:  
48 unique CDR3  
5 unique J



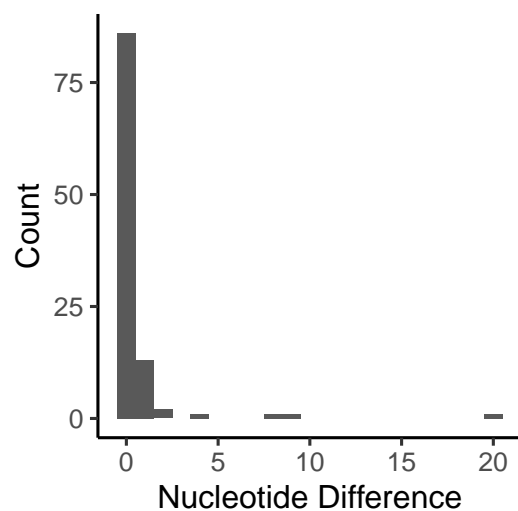
4 sequences assigned  
4 (100%) exact matches, in which:  
4 unique CDR3  
3 unique J



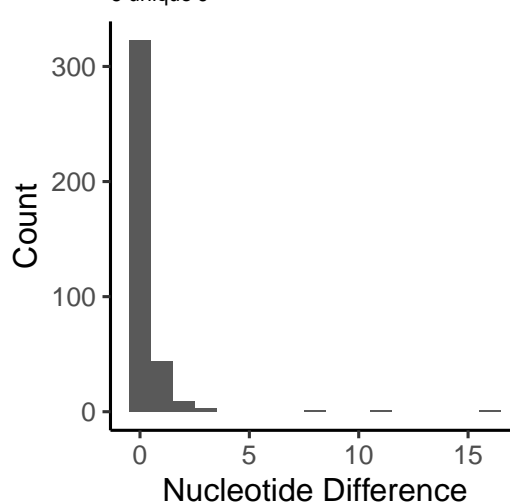
436 sequences assigned  
356 (81.7%) exact matches, in which:  
352 unique CDR3  
6 unique J



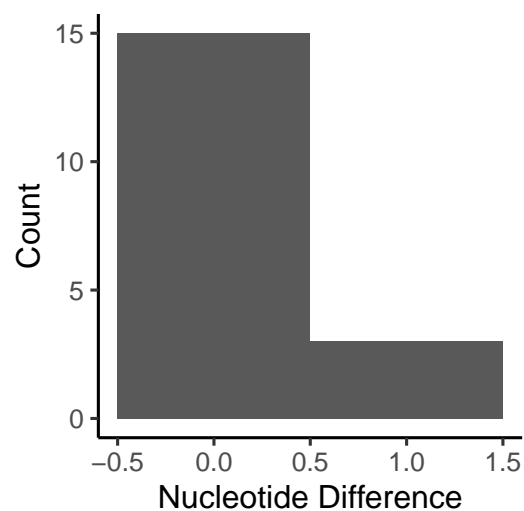
106 sequences assigned  
86 (81.1%) exact matches, in which:  
85 unique CDR3  
6 unique J



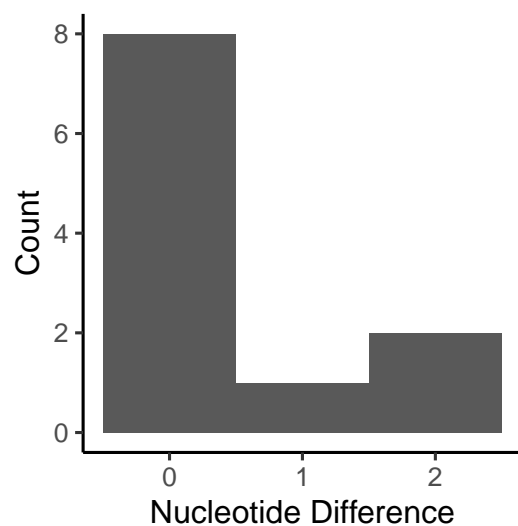
382 sequences assigned  
323 (84.6%) exact matches, in which:  
317 unique CDR3  
6 unique J



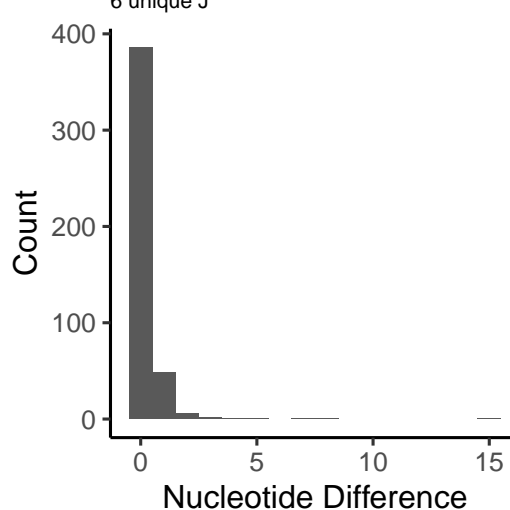
18 sequences assigned  
15 (83.3%) exact matches, in which:  
15 unique CDR3  
3 unique J



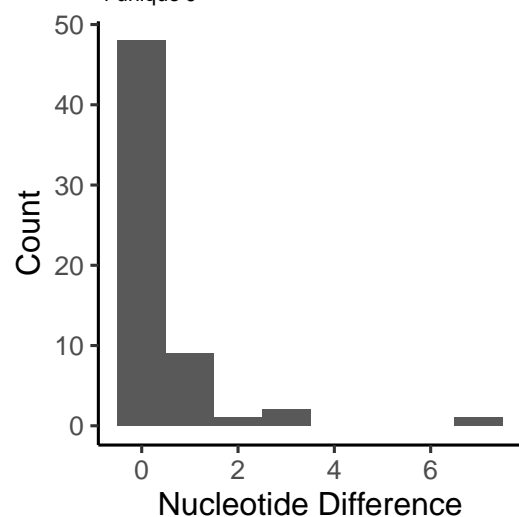
11 sequences assigned  
8 (72.7%) exact matches, in which:  
8 unique CDR3  
2 unique J



447 sequences assigned  
386 (86.4%) exact matches, in which:  
378 unique CDR3  
6 unique J

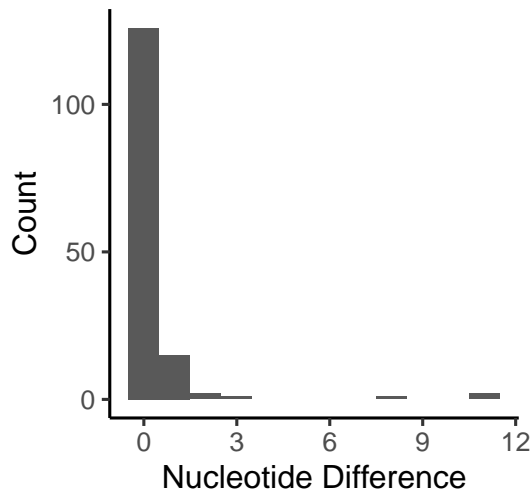


61 sequences assigned  
48 (78.7%) exact matches, in which:  
47 unique CDR3  
4 unique J



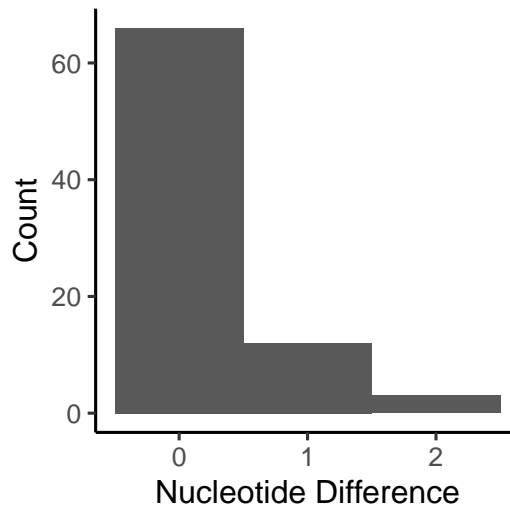
### IGHV3-48\*03

147 sequences assigned  
126 (85.7%) exact matches, in which:  
125 unique CDR3  
6 unique J



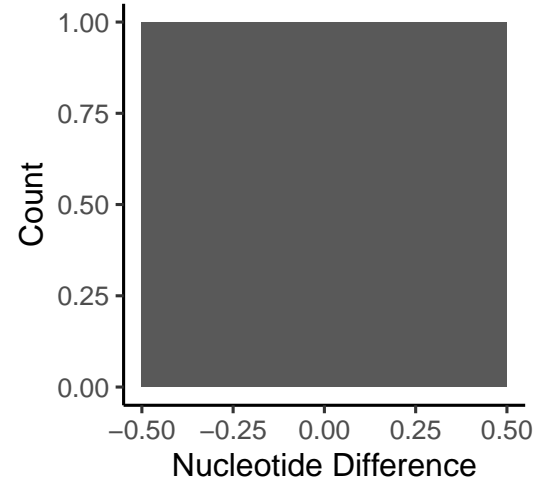
### IGHV3-53\*01

81 sequences assigned  
66 (81.5%) exact matches, in which:  
66 unique CDR3  
5 unique J



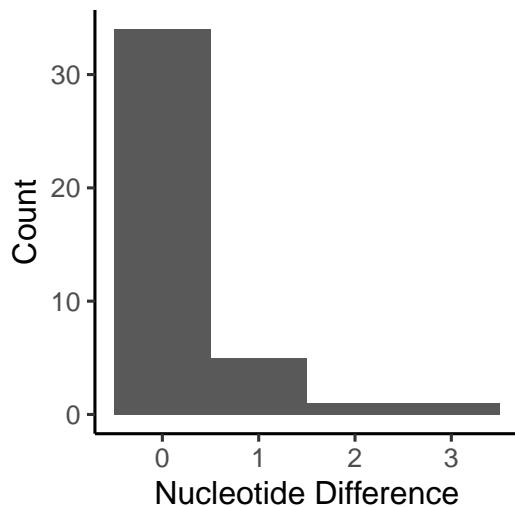
### IGHV3-69-1\*02

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



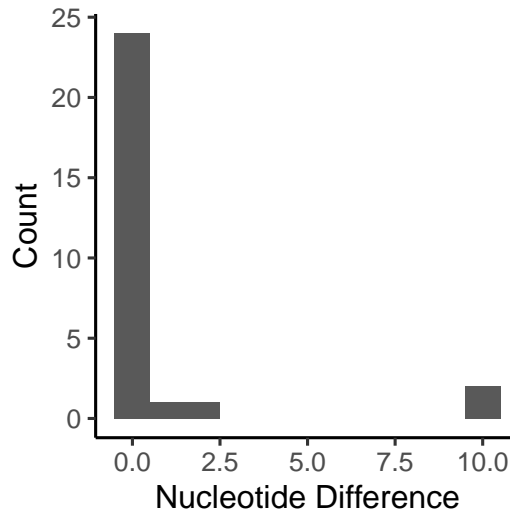
### IGHV3-49\*04

41 sequences assigned  
34 (82.9%) exact matches, in which:  
34 unique CDR3  
5 unique J



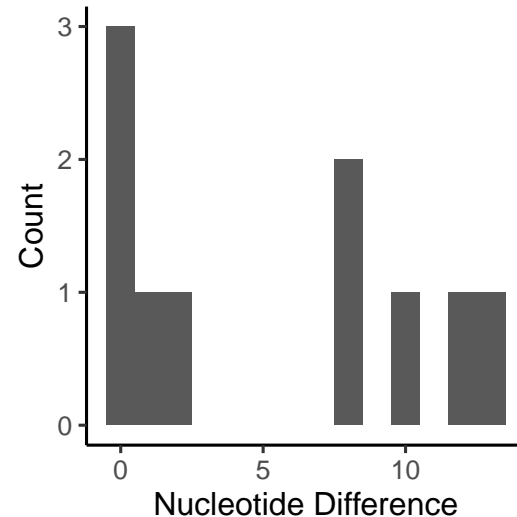
### IGHV3-53\*02

29 sequences assigned  
24 (82.8%) exact matches, in which:  
24 unique CDR3  
5 unique J



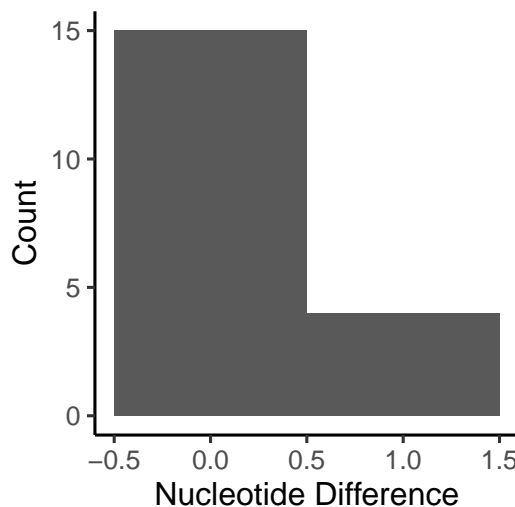
### IGHV3-72\*01

10 sequences assigned  
3 (30%) exact matches, in which:  
3 unique CDR3  
2 unique J



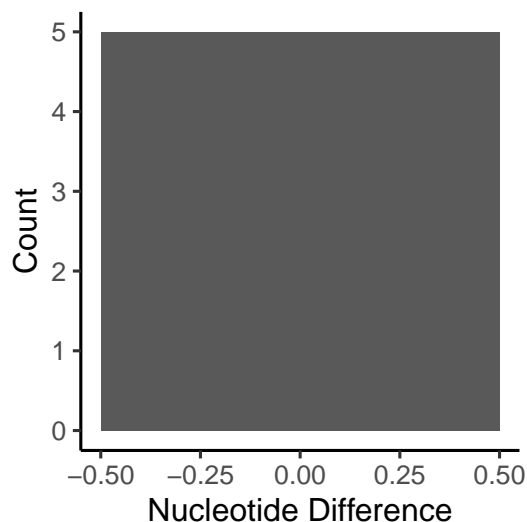
### IGHV3-49\*05

19 sequences assigned  
15 (78.9%) exact matches, in which:  
14 unique CDR3  
3 unique J



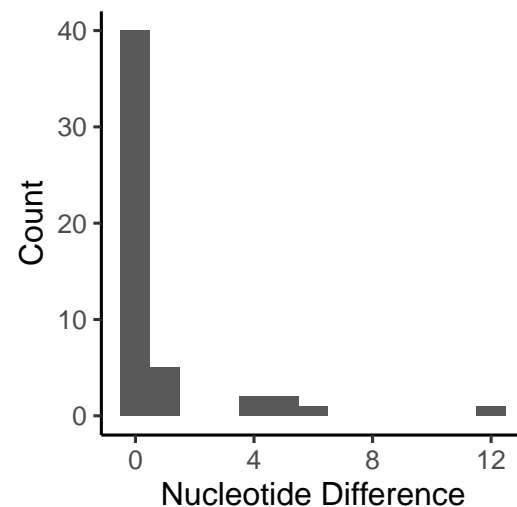
### IGHV3-64\*02

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



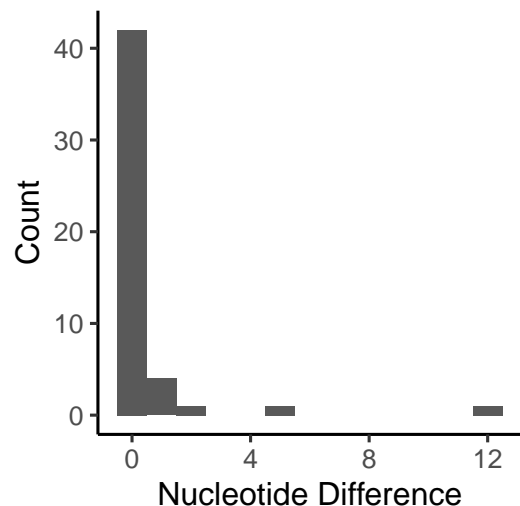
### IGHV3-73\*02

51 sequences assigned  
40 (78.4%) exact matches, in which:  
40 unique CDR3  
5 unique J



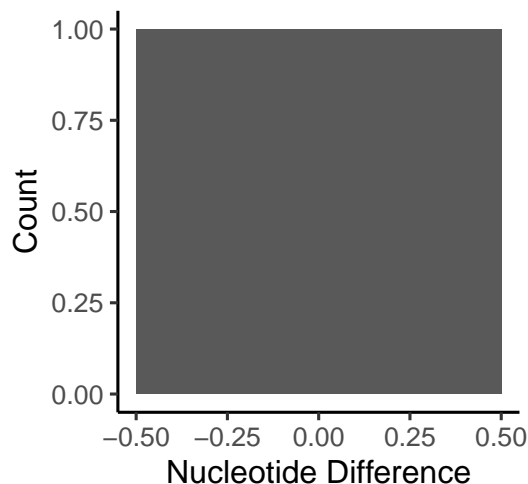
### IGHV3-74\*01

49 sequences assigned  
42 (85.7%) exact matches, in which:  
42 unique CDR3  
4 unique J



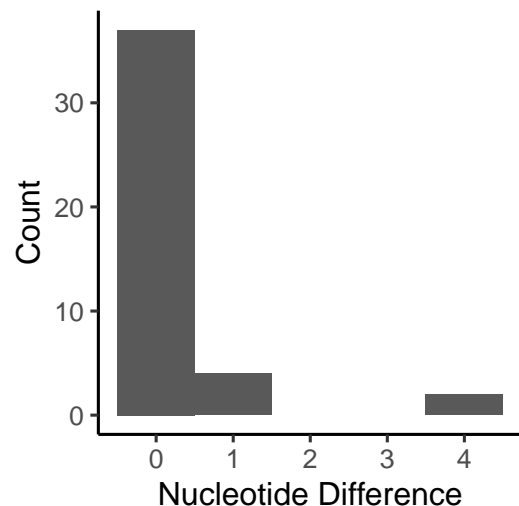
### IGHV4-28\*01

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



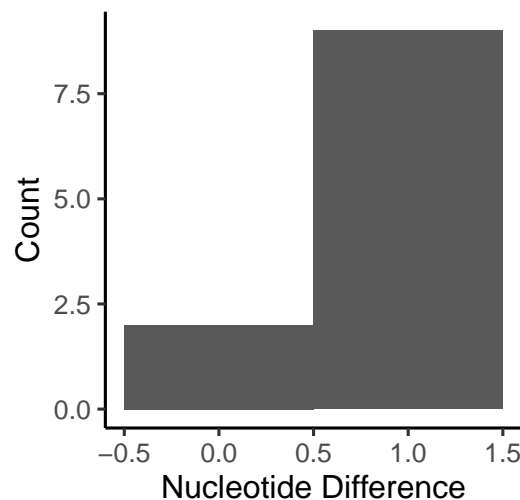
### IGHV4-30-4\*01

43 sequences assigned  
37 (86%) exact matches, in which:  
37 unique CDR3  
4 unique J



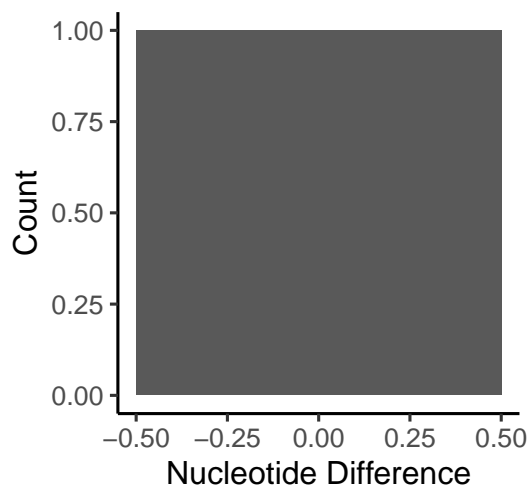
### IGHV3-43D\*04

11 sequences assigned  
2 (18.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



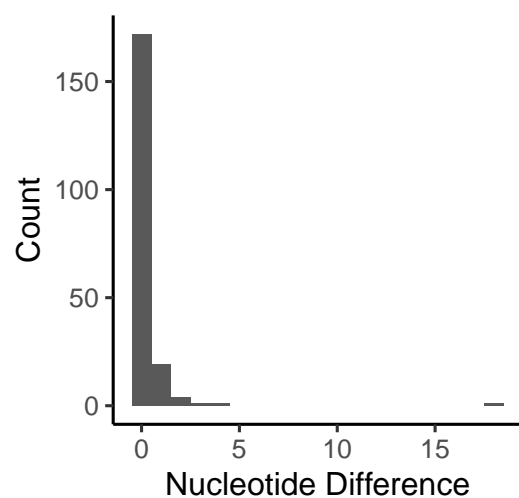
### IGHV4-28\*03

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



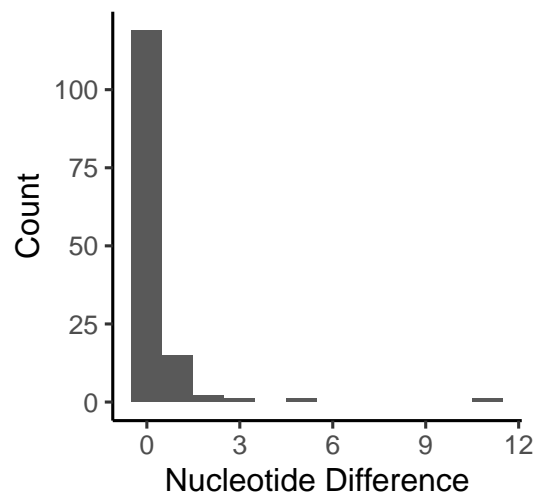
### IGHV4-31\*03

198 sequences assigned  
172 (86.9%) exact matches, in which:  
172 unique CDR3  
6 unique J



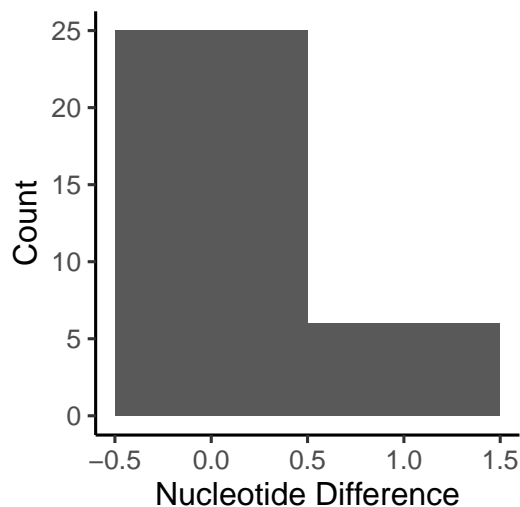
### IGHV4-4\*02

139 sequences assigned  
119 (85.6%) exact matches, in which:  
119 unique CDR3  
6 unique J



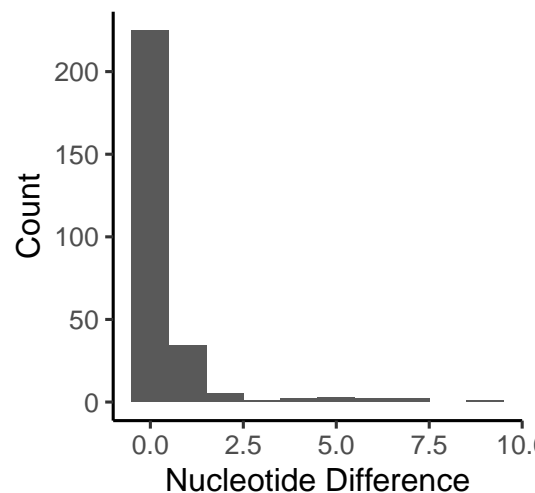
### IGHV4-30-2\*01

31 sequences assigned  
25 (80.6%) exact matches, in which:  
25 unique CDR3  
5 unique J



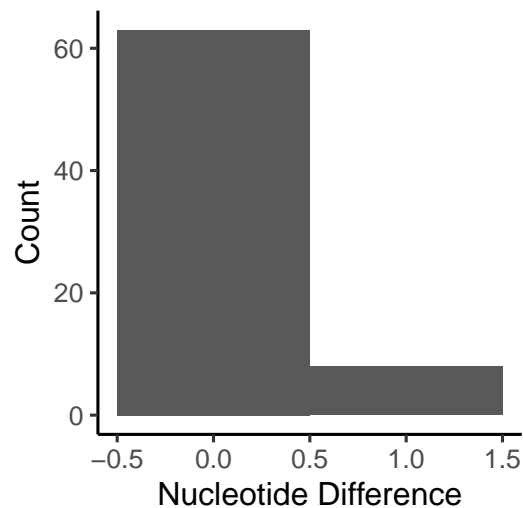
### IGHV4-34\*01

275 sequences assigned  
225 (81.8%) exact matches, in which:  
224 unique CDR3  
6 unique J



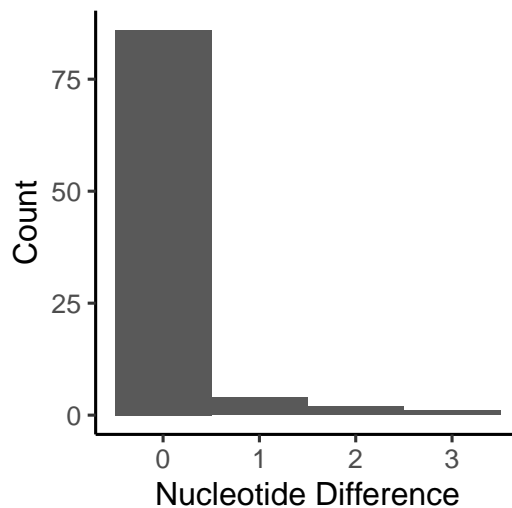
### IGHV4-38-2\*01

71 sequences assigned  
63 (88.7%) exact matches, in which:  
63 unique CDR3  
6 unique J



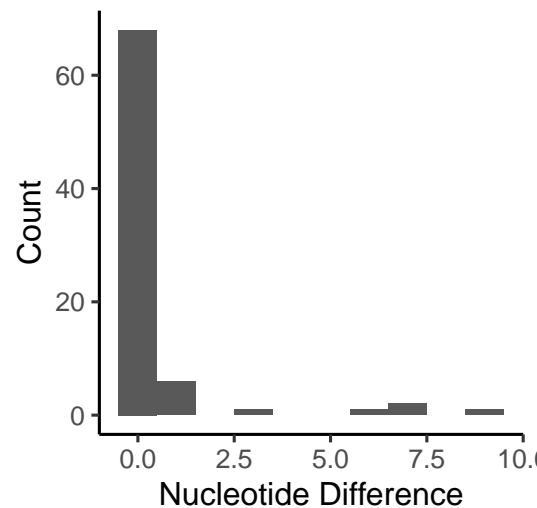
### IGHV4-59\*01

93 sequences assigned  
86 (92.5%) exact matches, in which:  
85 unique CDR3  
6 unique J



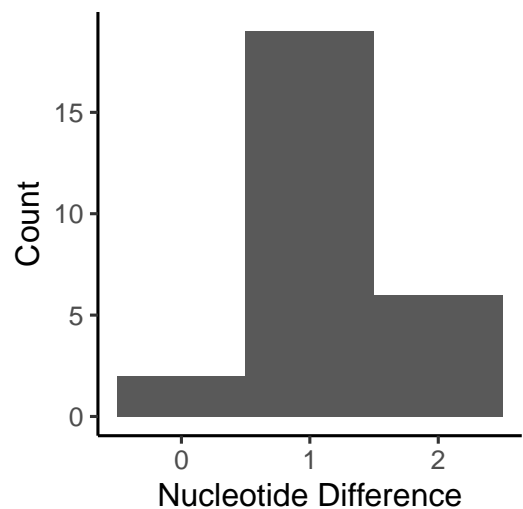
### IGHV6-1\*01

79 sequences assigned  
68 (86.1%) exact matches, in which:  
67 unique CDR3  
5 unique J



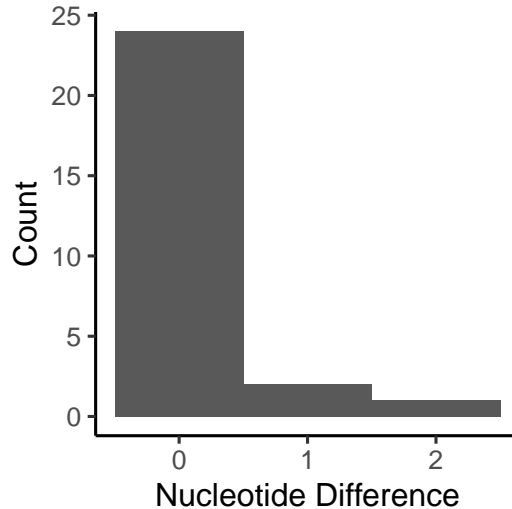
### IGHV4-38-2\*02

27 sequences assigned  
2 (7.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



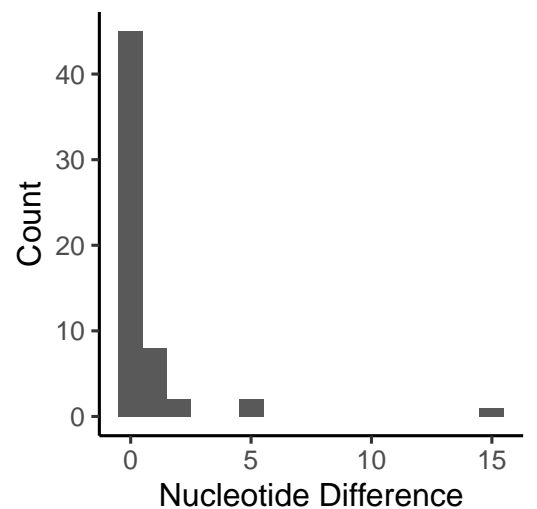
### IGHV4-61\*01

27 sequences assigned  
24 (88.9%) exact matches, in which:  
24 unique CDR3  
5 unique J



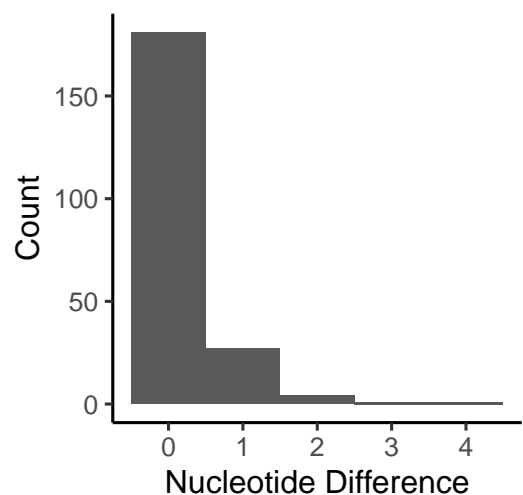
### IGHV7-4-1\*02

58 sequences assigned  
45 (77.6%) exact matches, in which:  
45 unique CDR3  
5 unique J



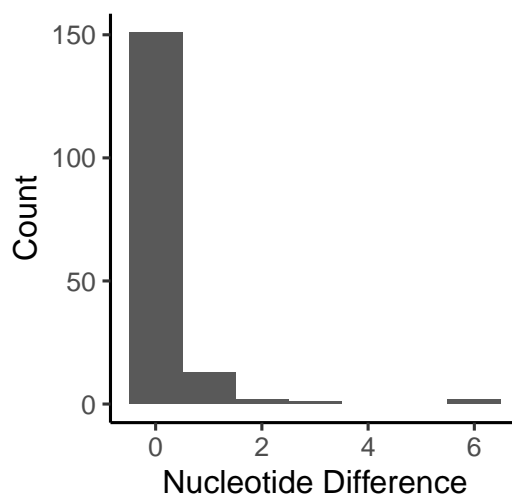
### IGHV4-39\*01

214 sequences assigned  
181 (84.6%) exact matches, in which:  
180 unique CDR3  
6 unique J



### IGHV5-51\*01

170 sequences assigned  
151 (88.8%) exact matches, in which:  
150 unique CDR3  
6 unique J





[illegible]