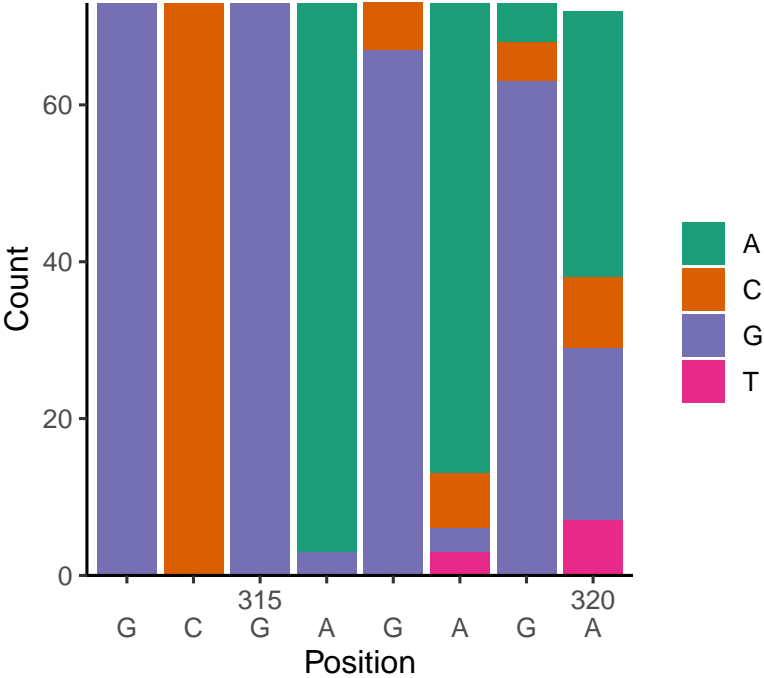
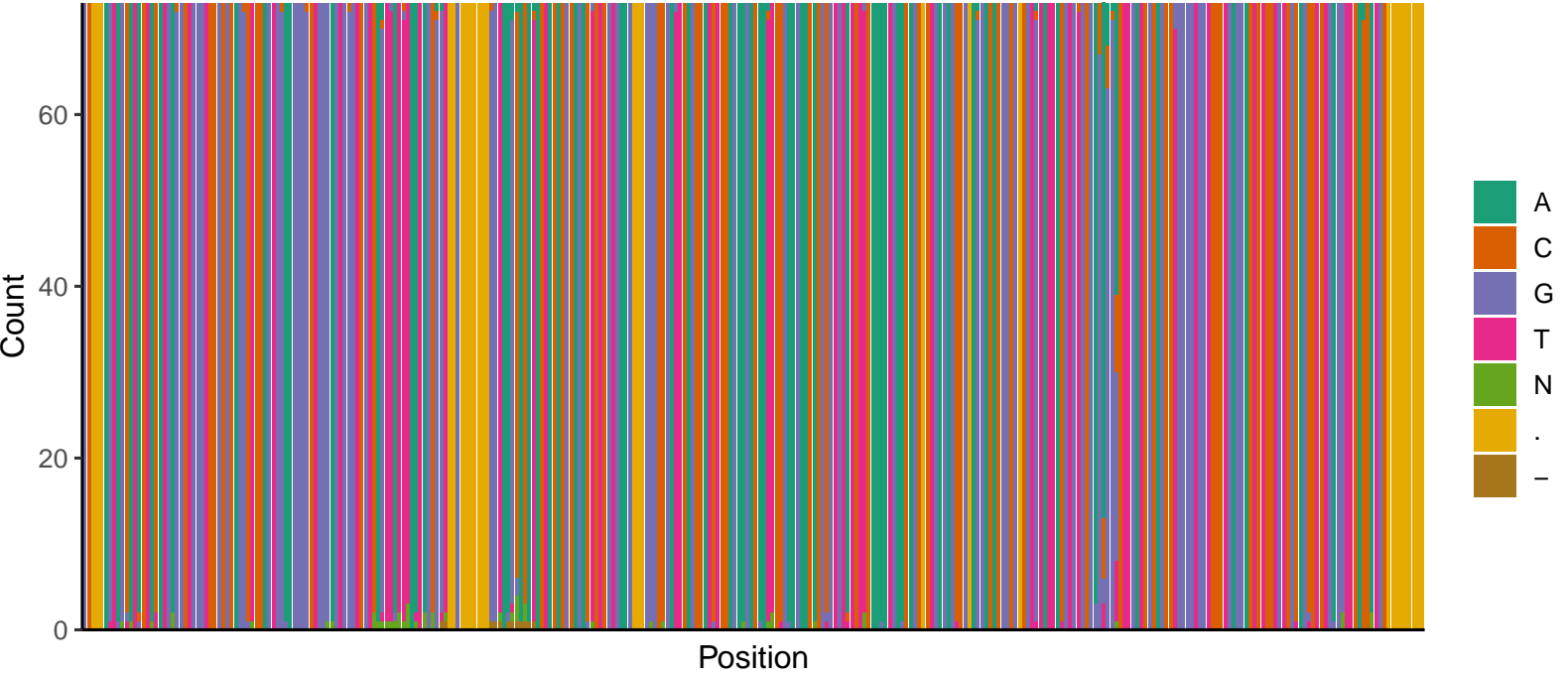


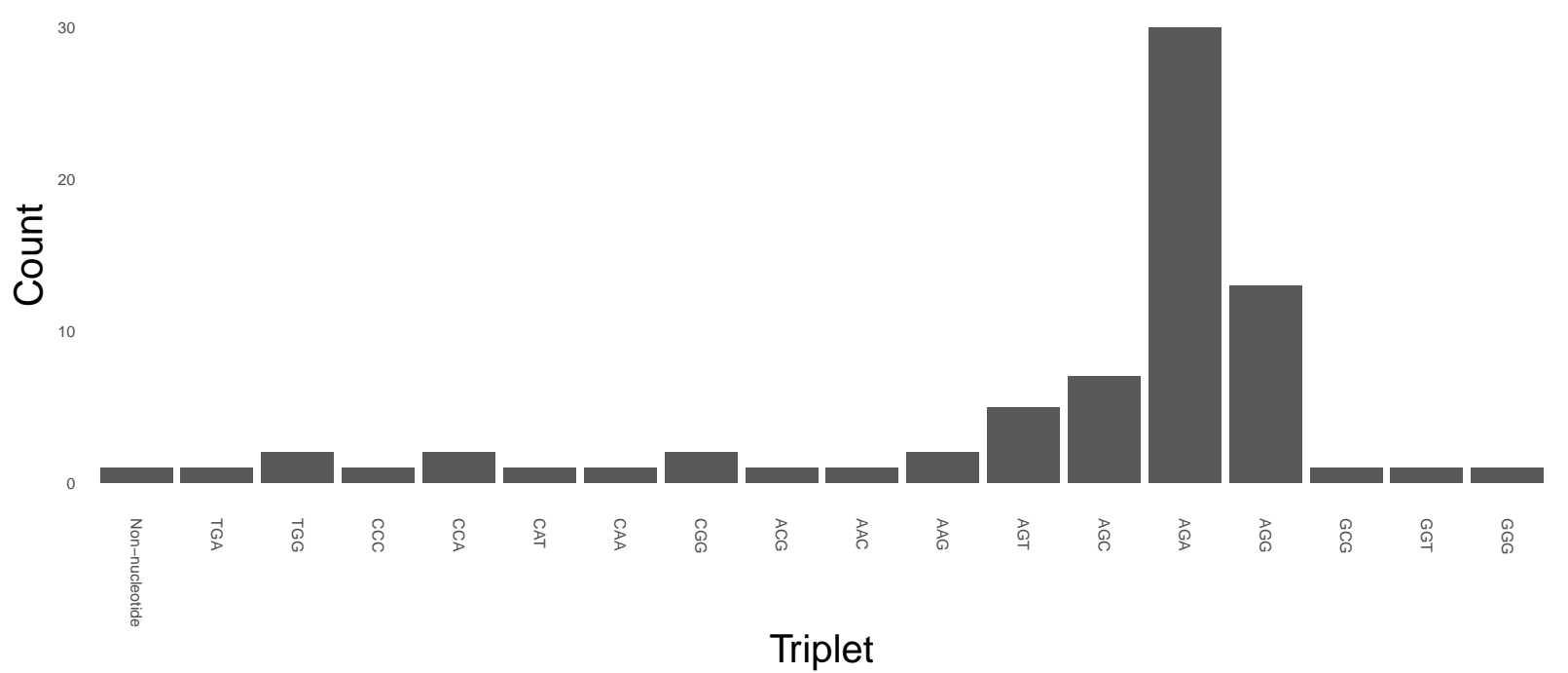
Gene IGHV3-53\*02\_G88A



Gene IGHV3-53\*02\_G88A

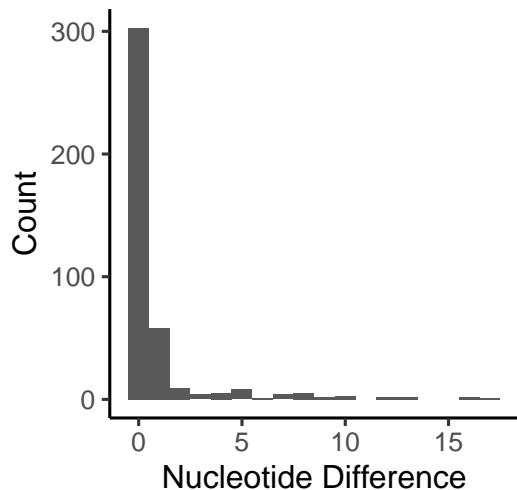


IGHV3-53\*02\_G88A- Final 3 nucleotides as a triplet



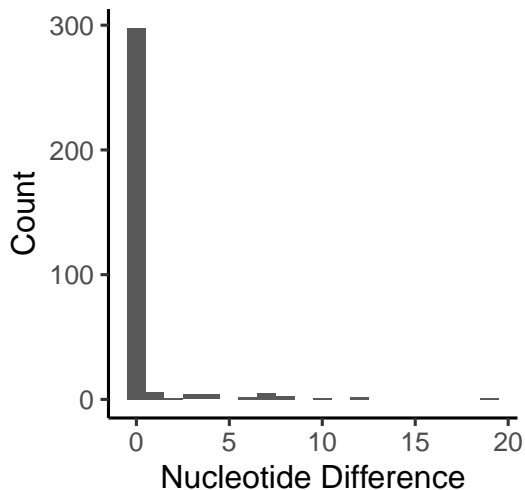
### IGHV1–2\*02

414 sequences assigned  
303 (73.2%) exact matches, in which:  
299 unique CDR3  
6 unique J



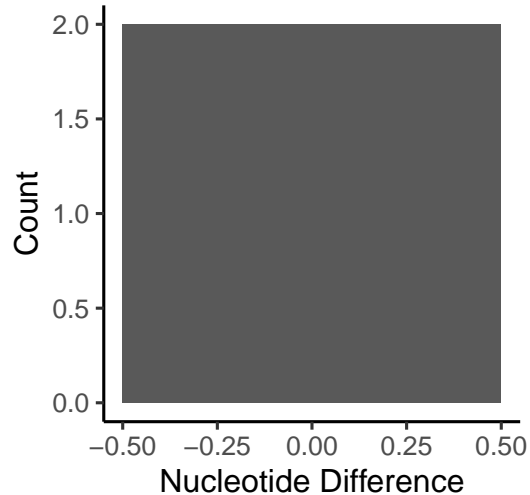
### IGHV1–18\*01

327 sequences assigned  
298 (91.1%) exact matches, in which:  
297 unique CDR3  
6 unique J



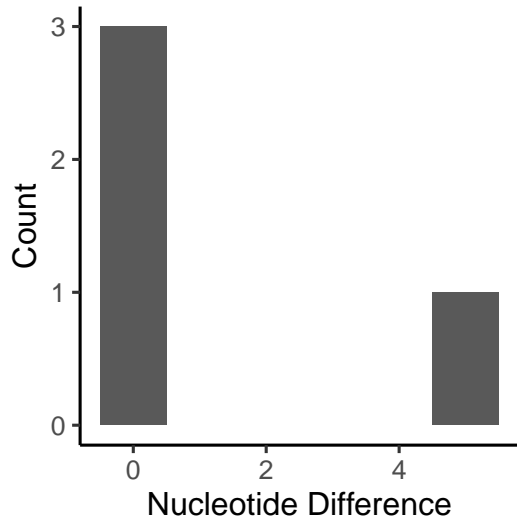
### IGHV1–45\*02

2 sequences assigned  
2 (100%) exact matches, in which:  
2 unique CDR3  
1 unique J



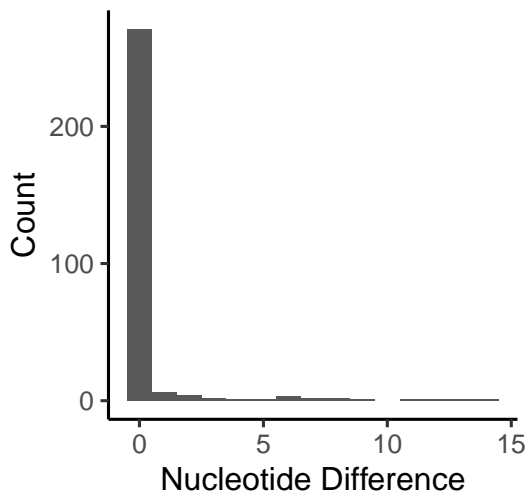
### IGHV1–3\*02

4 sequences assigned  
3 (75%) exact matches, in which:  
3 unique CDR3  
2 unique J



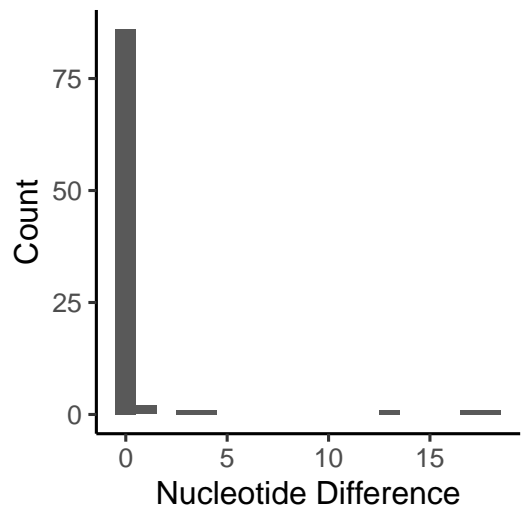
### IGHV1–18\*04

297 sequences assigned  
271 (91.2%) exact matches, in which:  
269 unique CDR3  
6 unique J



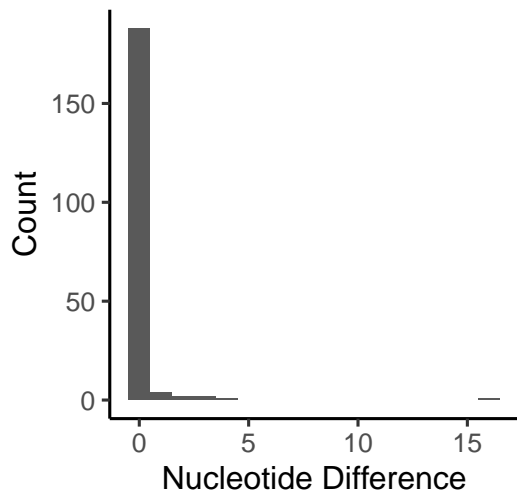
### IGHV1–46\*01

94 sequences assigned  
86 (91.5%) exact matches, in which:  
86 unique CDR3  
5 unique J



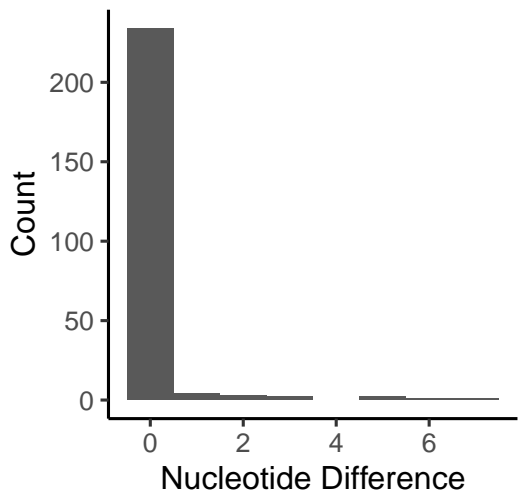
### IGHV1–8\*01

198 sequences assigned  
188 (94.9%) exact matches, in which:  
187 unique CDR3  
6 unique J



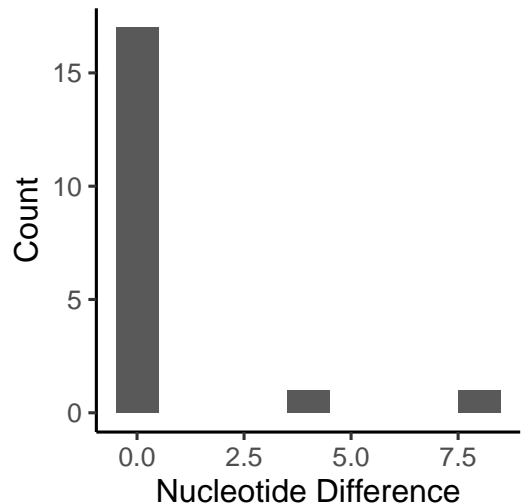
### IGHV1–24\*01

247 sequences assigned  
234 (94.7%) exact matches, in which:  
232 unique CDR3  
6 unique J



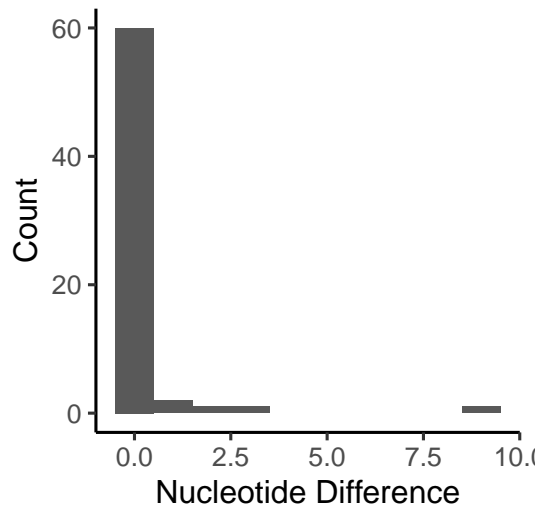
### IGHV1–58\*01

19 sequences assigned  
17 (89.5%) exact matches, in which:  
17 unique CDR3  
4 unique J



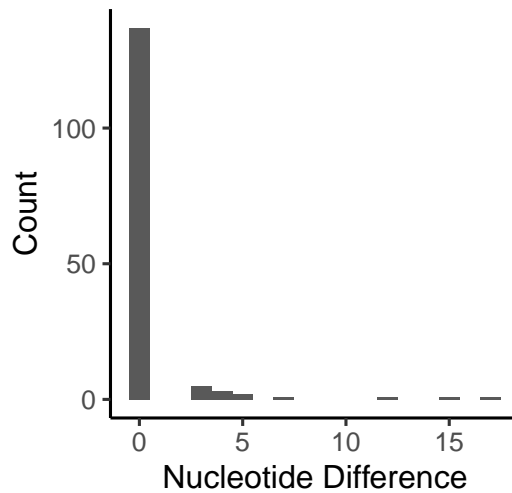
### IGHV1-69-2\*01

65 sequences assigned  
60 (92.3%) exact matches, in which:  
60 unique CDR3  
4 unique J



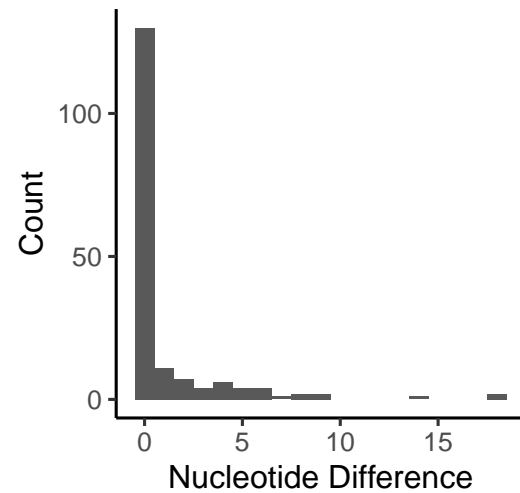
### IGHV2-5\*02

152 sequences assigned  
137 (90.1%) exact matches, in which:  
137 unique CDR3  
6 unique J



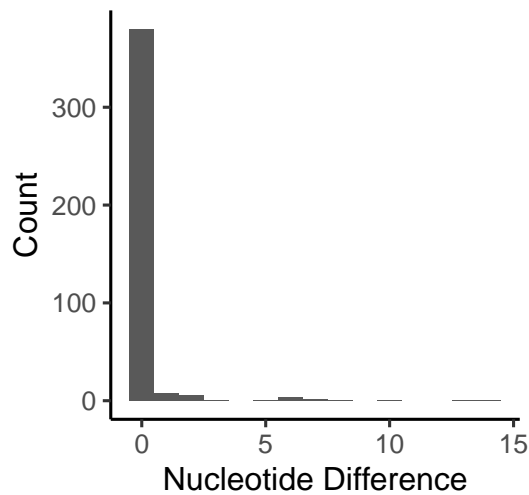
### IGHV3-7\*01

175 sequences assigned  
130 (74.3%) exact matches, in which:  
125 unique CDR3  
5 unique J



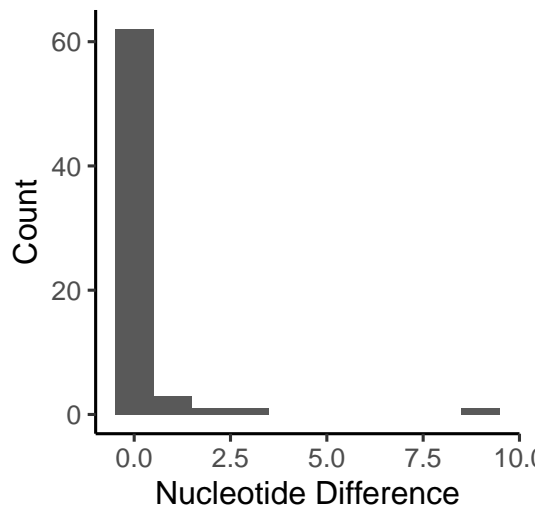
### IGHV1-69\*06

406 sequences assigned  
380 (93.6%) exact matches, in which:  
377 unique CDR3  
6 unique J



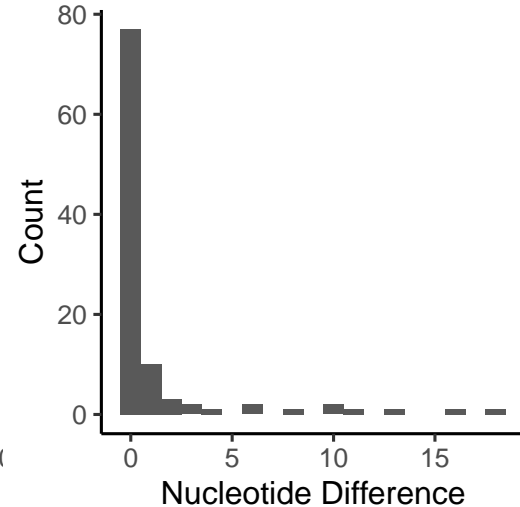
### IGHV2-26\*01

68 sequences assigned  
62 (91.2%) exact matches, in which:  
62 unique CDR3  
5 unique J



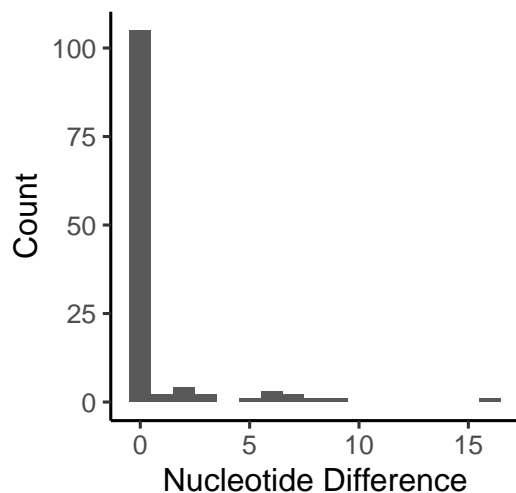
### IGHV3-7\*04

102 sequences assigned  
77 (75.5%) exact matches, in which:  
75 unique CDR3  
6 unique J



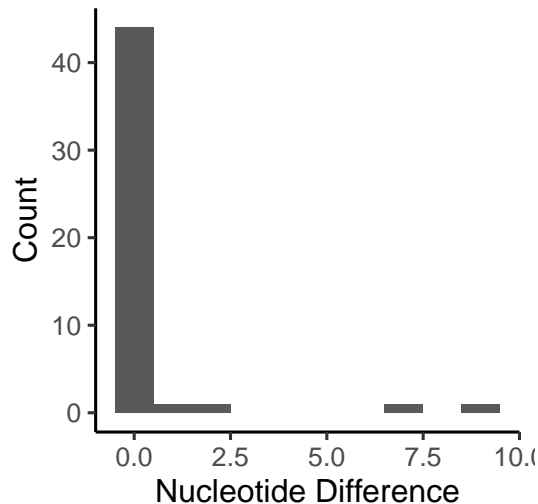
### IGHV2-5\*01

122 sequences assigned  
105 (86.1%) exact matches, in which:  
105 unique CDR3  
6 unique J



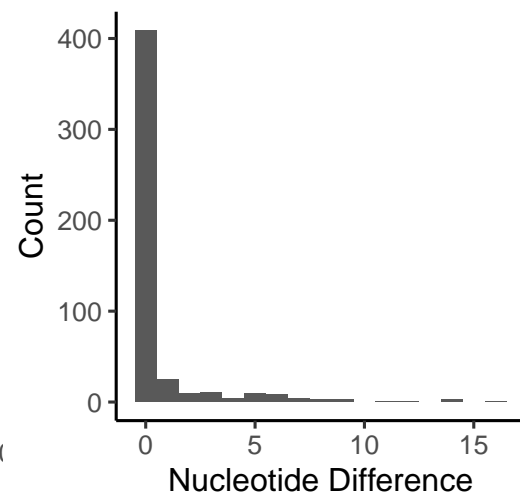
### IGHV2-70\*01

48 sequences assigned  
44 (91.7%) exact matches, in which:  
44 unique CDR3  
6 unique J



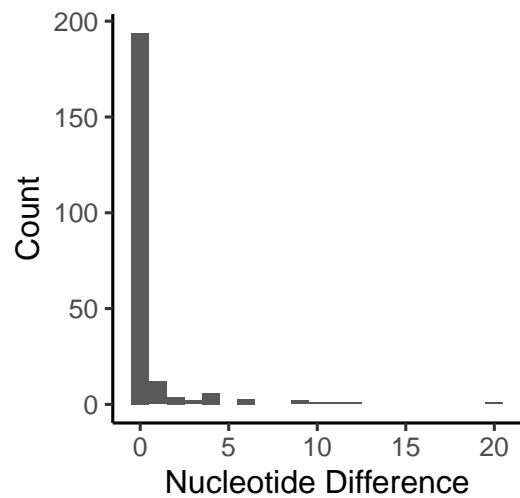
### IGHV3-9\*01

490 sequences assigned  
409 (83.5%) exact matches, in which:  
405 unique CDR3  
6 unique J



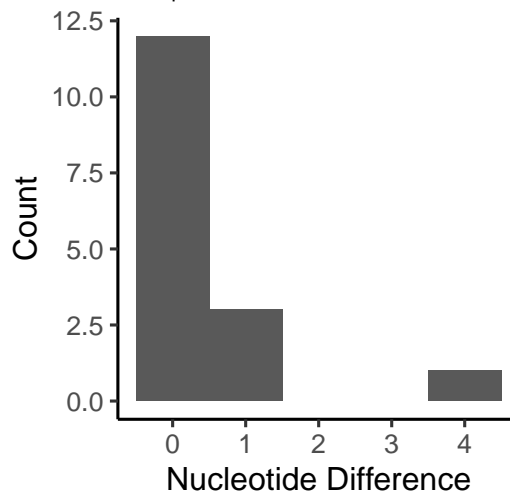
### IGHV3–11\*01

227 sequences assigned  
194 (85.5%) exact matches, in which:  
191 unique CDR3  
6 unique J



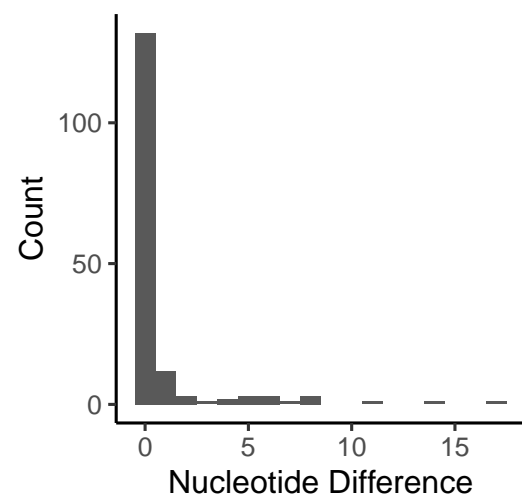
### IGHV3–20\*01

16 sequences assigned  
12 (75%) exact matches, in which:  
12 unique CDR3  
5 unique J



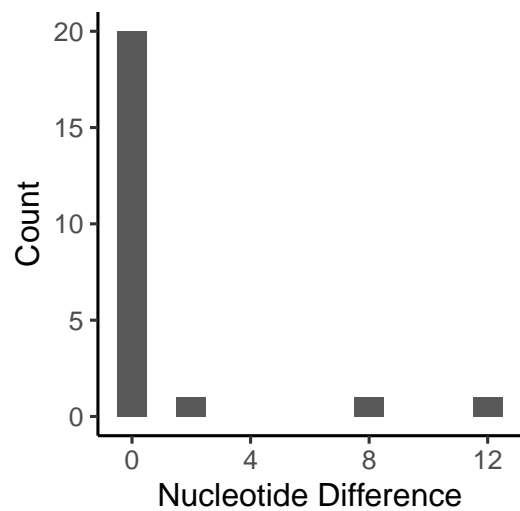
### IGHV3–33\*01

163 sequences assigned  
132 (81%) exact matches, in which:  
131 unique CDR3  
6 unique J



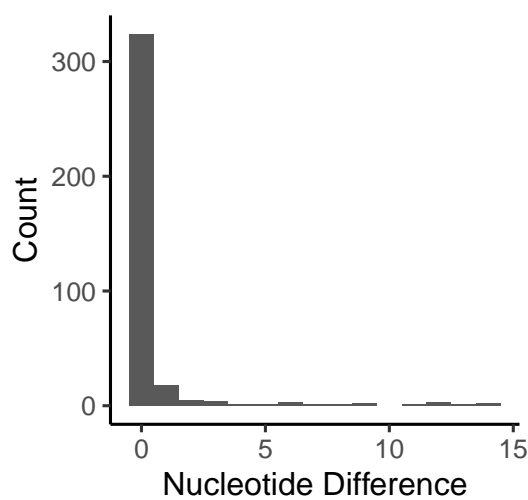
### IGHV3–13\*01

23 sequences assigned  
20 (87%) exact matches, in which:  
19 unique CDR3  
4 unique J



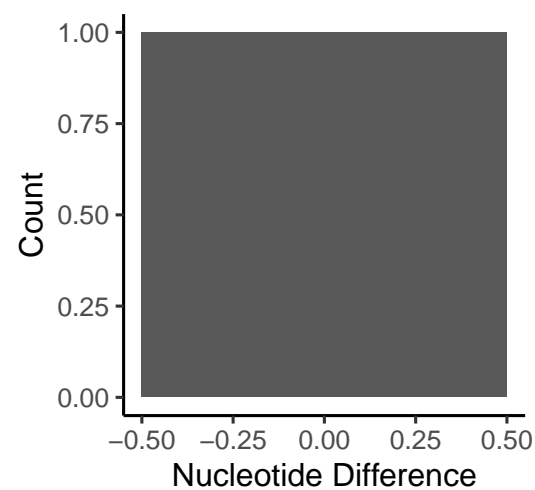
### IGHV3–21\*01

368 sequences assigned  
324 (88%) exact matches, in which:  
318 unique CDR3  
6 unique J



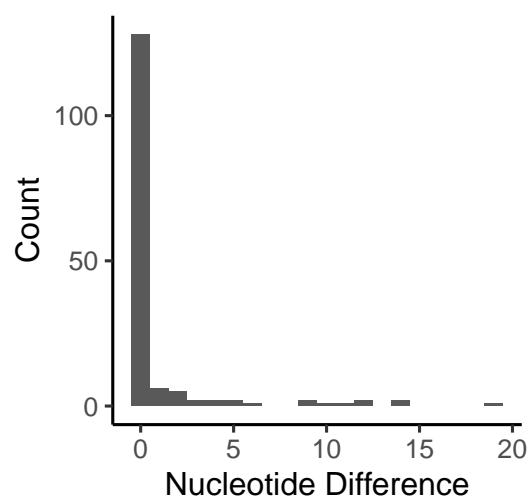
### IGHV3–35\*01

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



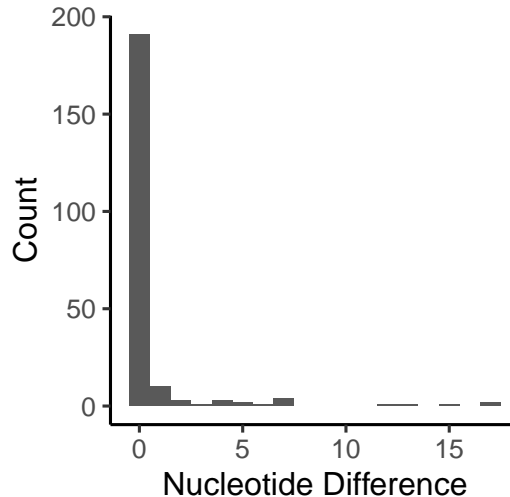
### IGHV3–15\*01

155 sequences assigned  
128 (82.6%) exact matches, in which:  
127 unique CDR3  
6 unique J



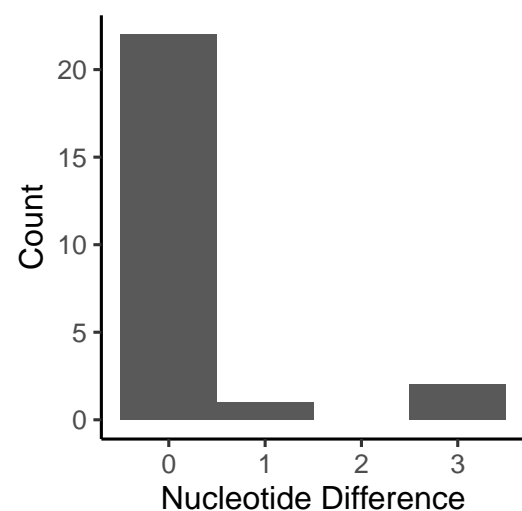
### IGHV3–30–3\*01

220 sequences assigned  
191 (86.8%) exact matches, in which:  
190 unique CDR3  
6 unique J



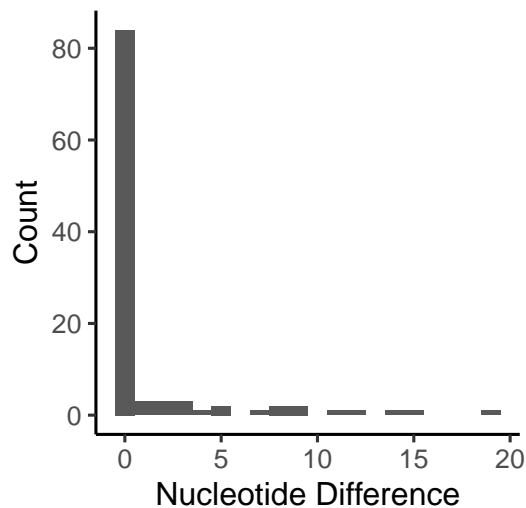
### IGHV3–43\*01

25 sequences assigned  
22 (88%) exact matches, in which:  
22 unique CDR3  
4 unique J



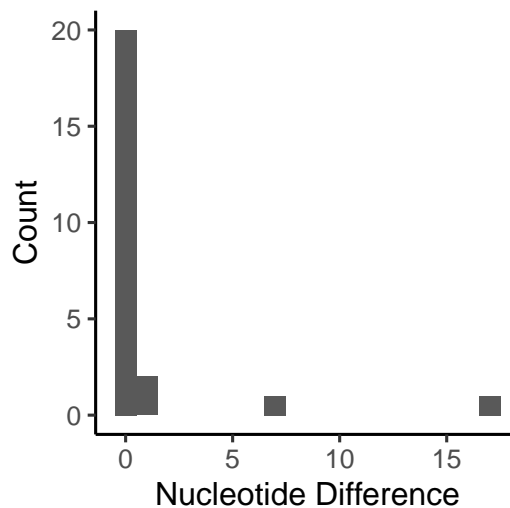
### IGHV3-48\*02

107 sequences assigned  
84 (78.5%) exact matches, in which:  
84 unique CDR3  
5 unique J



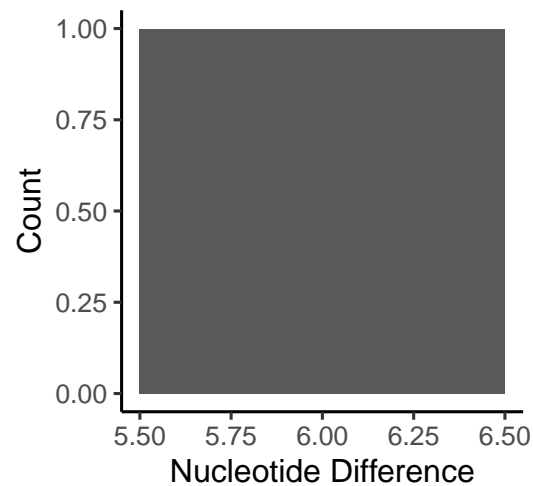
### IGHV3-49\*05

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



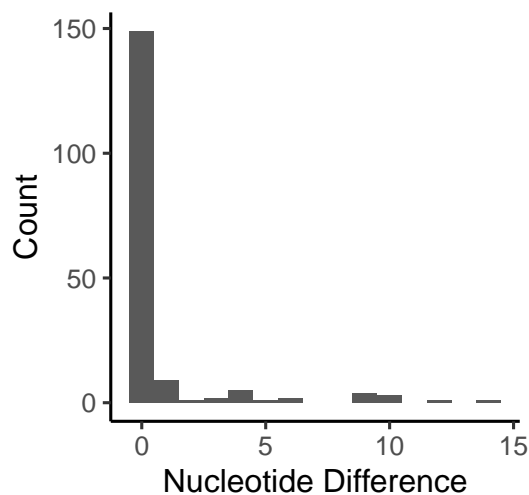
### IGHV3-64\*02

1 sequences assigned  
No exact matches.



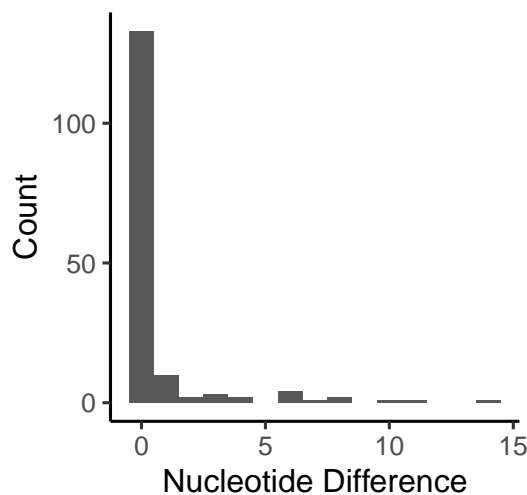
### IGHV3-48\*03

179 sequences assigned  
149 (83.2%) exact matches, in which:  
149 unique CDR3  
6 unique J



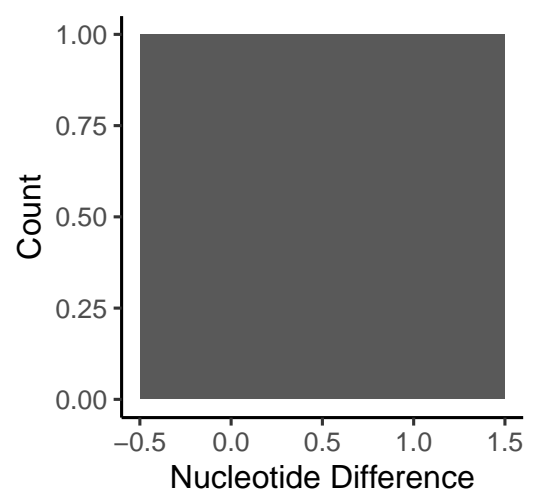
### IGHV3-53\*01

160 sequences assigned  
133 (83.1%) exact matches, in which:  
128 unique CDR3  
6 unique J



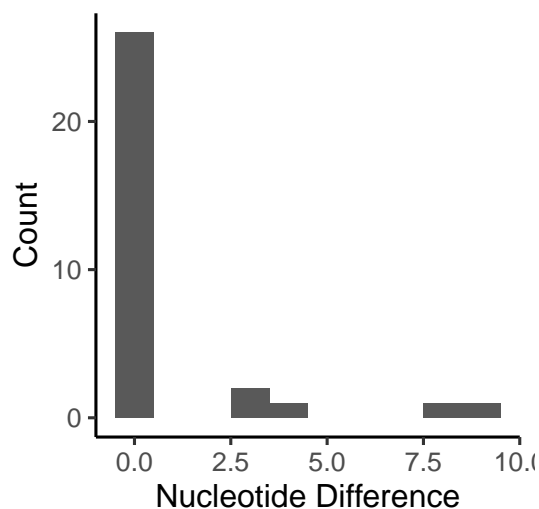
### IGHV3-69-1\*01

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



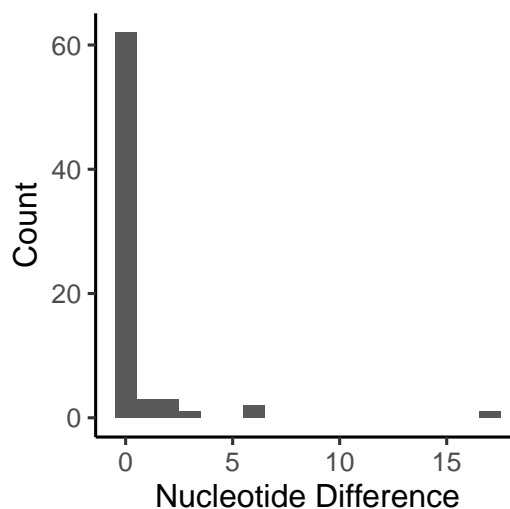
### IGHV3-49\*04

32 sequences assigned  
26 (81.2%) exact matches, in which:  
25 unique CDR3  
4 unique J



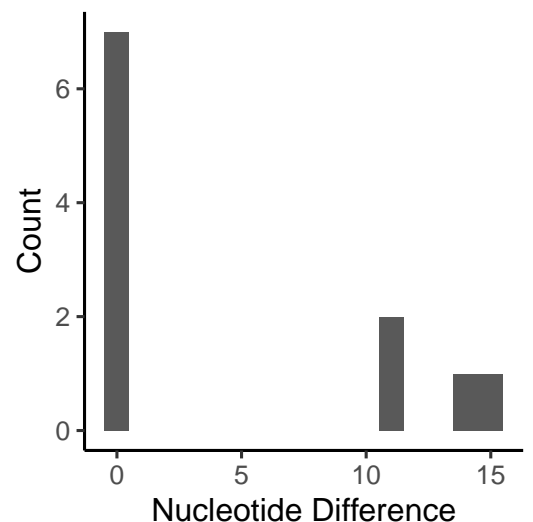
### IGHV3-53\*02\_G88A

73 sequences assigned  
62 (84.9%) exact matches, in which:  
59 unique CDR3  
5 unique J



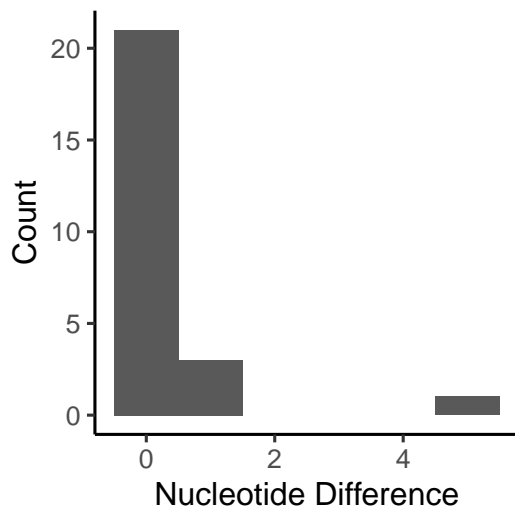
### IGHV3-72\*01

11 sequences assigned  
7 (63.6%) exact matches, in which:  
7 unique CDR3  
3 unique J



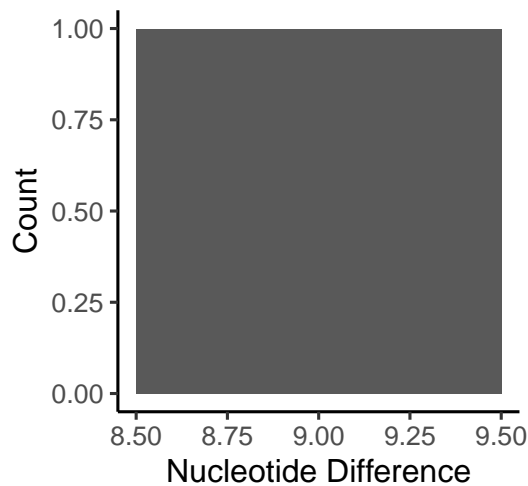
### IGHV3-73\*02

25 sequences assigned  
21 (84%) exact matches, in which:  
21 unique CDR3  
4 unique J



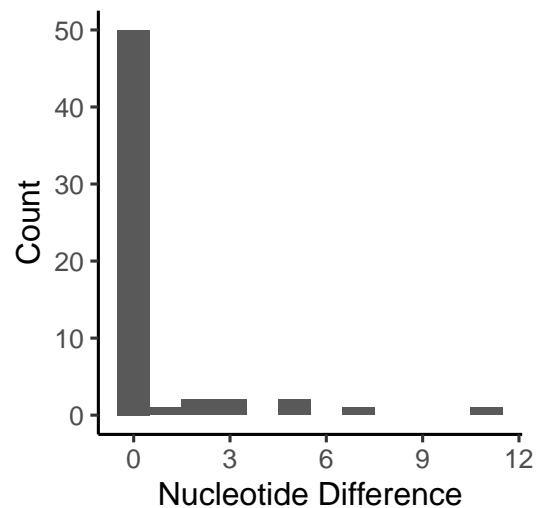
### IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



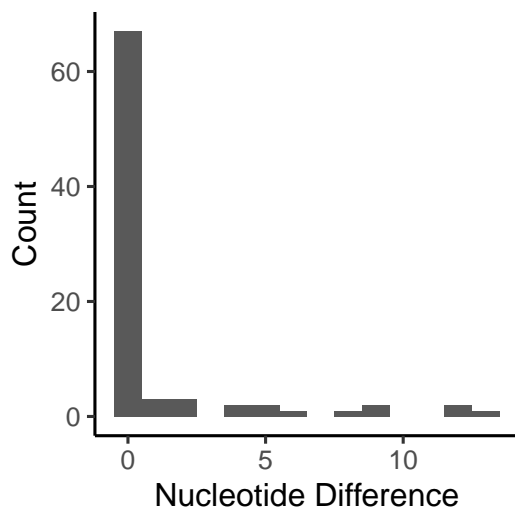
### IGHV4-30-2\*01

59 sequences assigned  
50 (84.7%) exact matches, in which:  
49 unique CDR3  
5 unique J



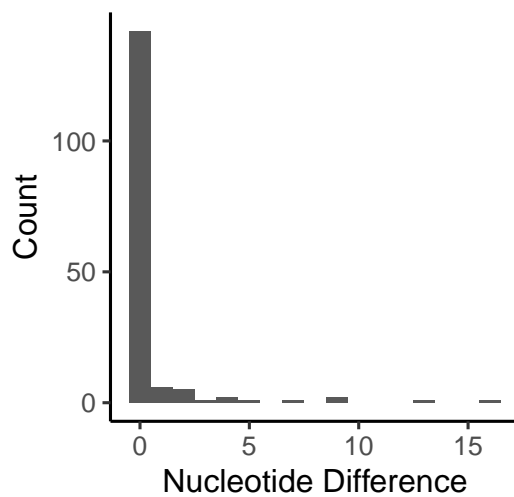
### IGHV3-74\*01

84 sequences assigned  
67 (79.8%) exact matches, in which:  
66 unique CDR3  
5 unique J



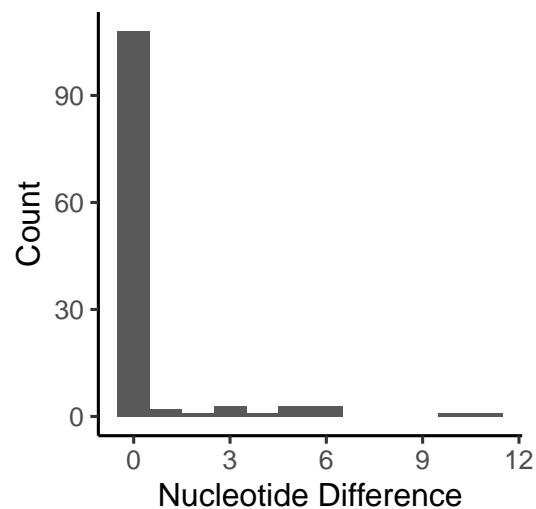
### IGHV4-4\*07

163 sequences assigned  
142 (87.1%) exact matches, in which:  
142 unique CDR3  
6 unique J



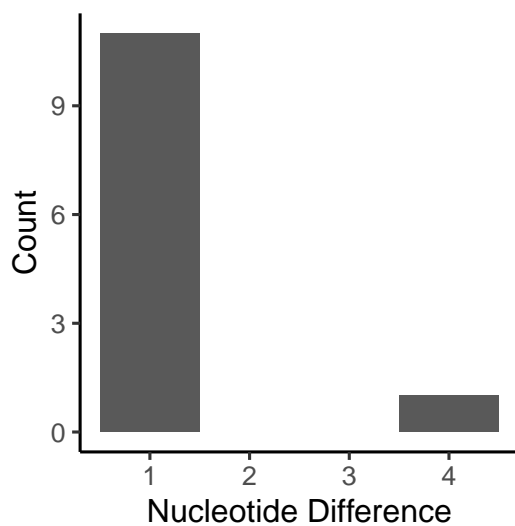
### IGHV4-30-4\*01

124 sequences assigned  
108 (87.1%) exact matches, in which:  
108 unique CDR3  
6 unique J



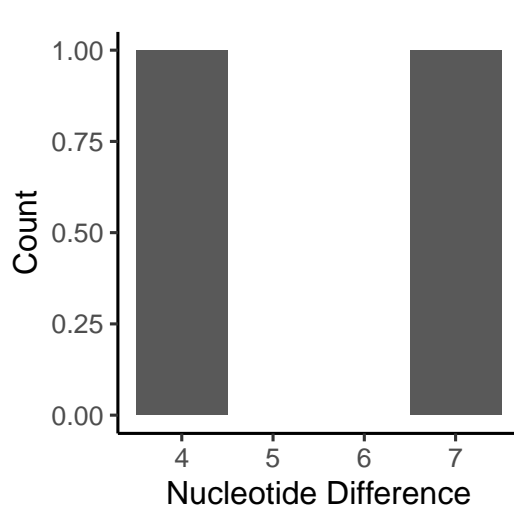
### IGHV3-43D\*04

12 sequences assigned  
No exact matches.



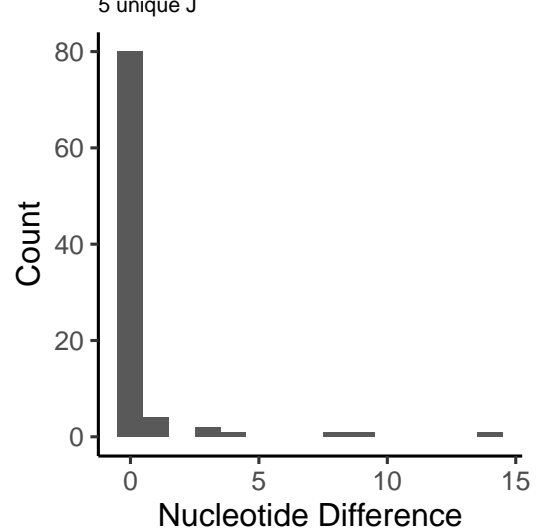
### IGHV4-28\*03

2 sequences assigned  
No exact matches.



### IGHV4-31\*03

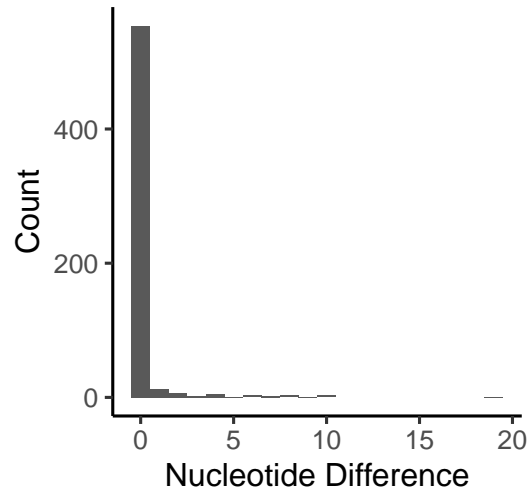
90 sequences assigned  
80 (88.9%) exact matches, in which:  
80 unique CDR3  
5 unique J





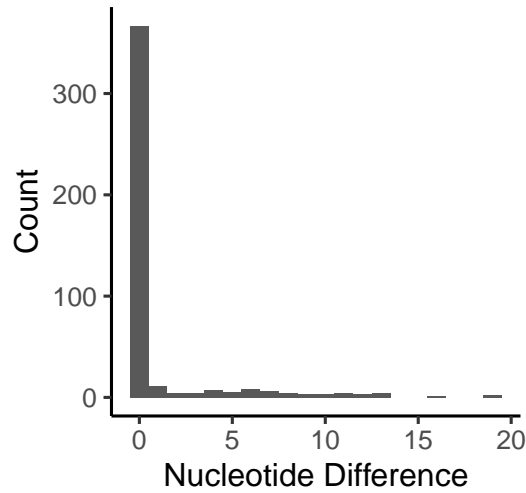
### IGHV4-34\*01

596 sequences assigned  
554 (93%) exact matches, in which:  
551 unique CDR3  
6 unique J



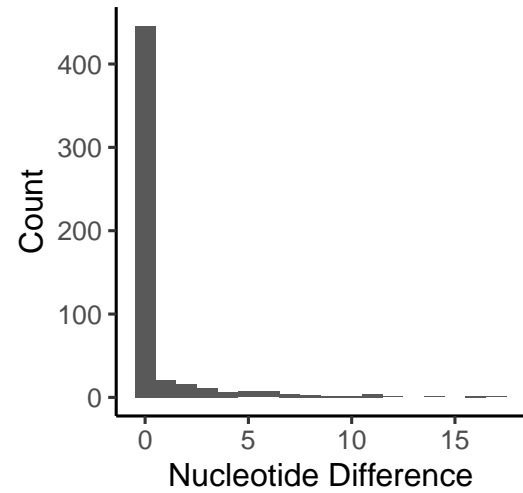
### IGHV4-39\*01

437 sequences assigned  
367 (84%) exact matches, in which:  
367 unique CDR3  
6 unique J



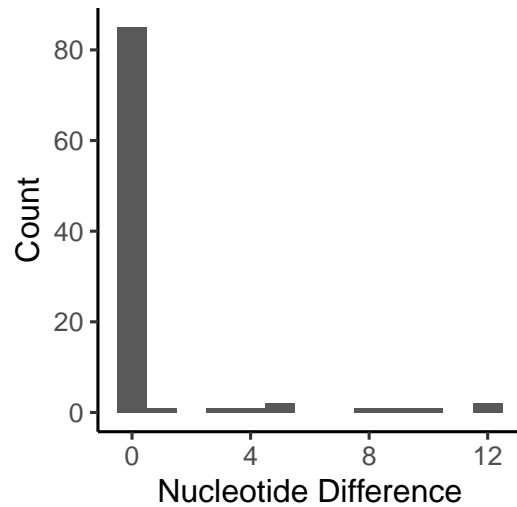
### IGHV5-51\*01

536 sequences assigned  
446 (83.2%) exact matches, in which:  
443 unique CDR3  
6 unique J



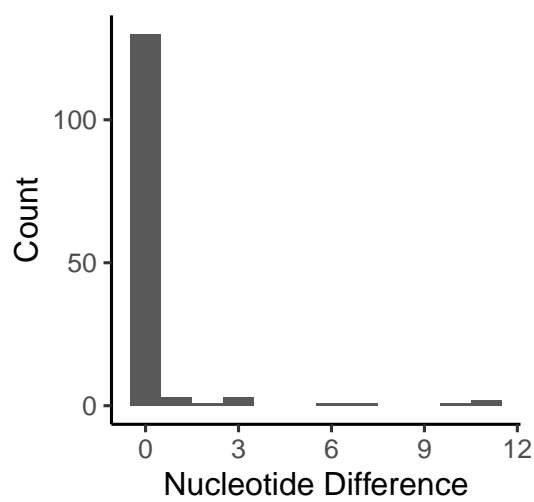
### IGHV4-38-2\*01

95 sequences assigned  
85 (89.5%) exact matches, in which:  
85 unique CDR3  
6 unique J



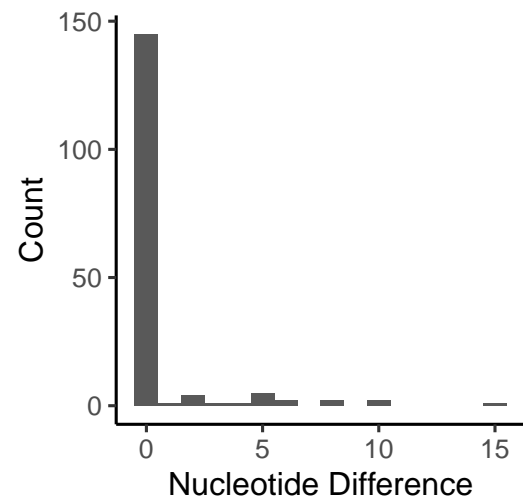
### IGHV4-59\*01

142 sequences assigned  
130 (91.5%) exact matches, in which:  
130 unique CDR3  
6 unique J



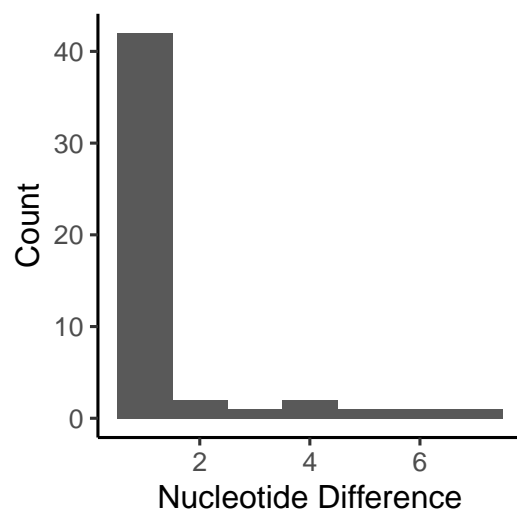
### IGHV6-1\*01

165 sequences assigned  
145 (87.9%) exact matches, in which:  
142 unique CDR3  
6 unique J



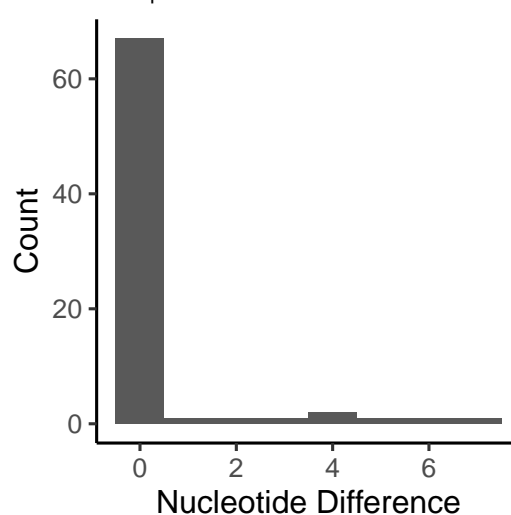
### IGHV4-38-2\*02

50 sequences assigned  
No exact matches.



### IGHV4-61\*01

77 sequences assigned  
67 (87%) exact matches, in which:  
67 unique CDR3  
5 unique J



IGHV3-53\*02\_G88A

