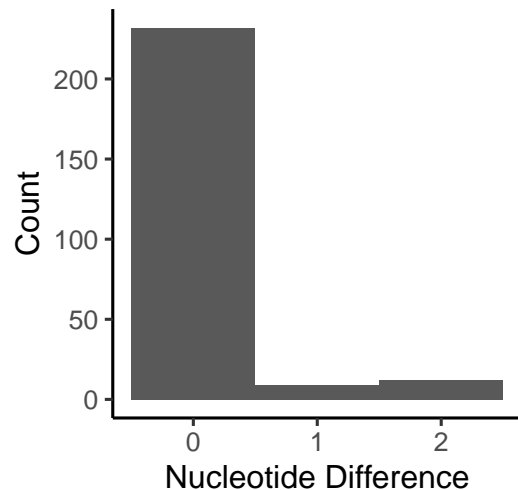


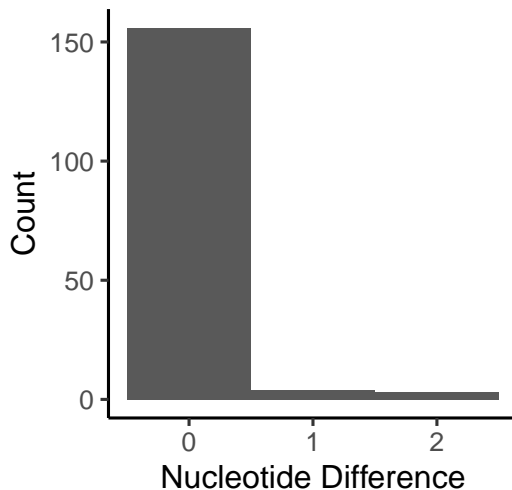
### IGHV1-2\*02

253 sequences assigned  
232 (91.7%) exact matches, in which:  
232 unique CDR3  
6 unique J



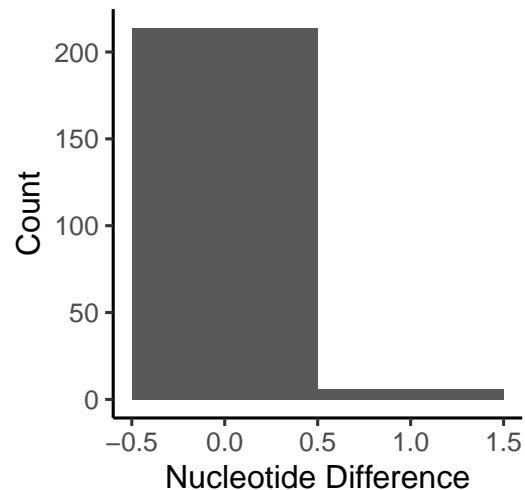
### IGHV1-8\*01

163 sequences assigned  
156 (95.7%) exact matches, in which:  
154 unique CDR3  
5 unique J



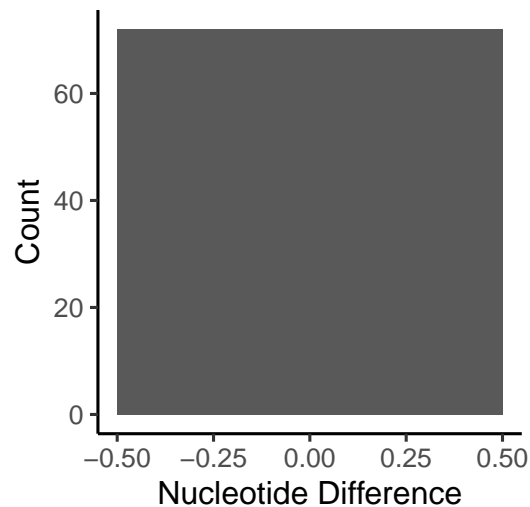
### IGHV1-24\*01

220 sequences assigned  
214 (97.3%) exact matches, in which:  
213 unique CDR3  
6 unique J



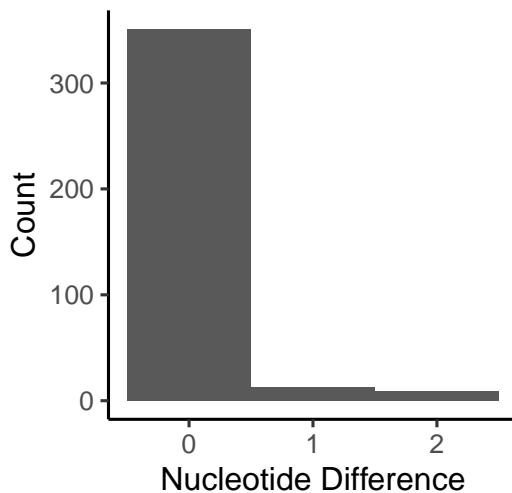
### IGHV1-2\*04

72 sequences assigned  
72 (100%) exact matches, in which:  
72 unique CDR3  
5 unique J



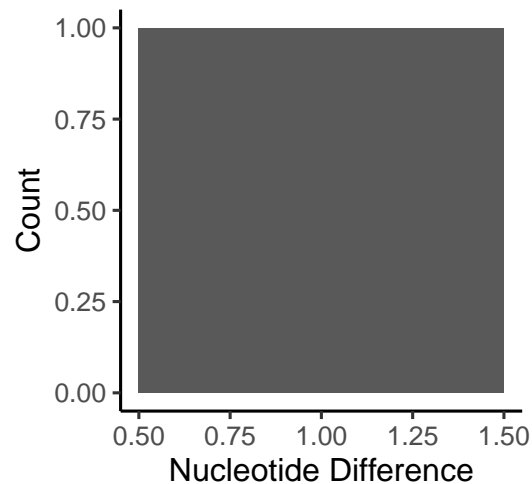
### IGHV1-18\*01

373 sequences assigned  
351 (94.1%) exact matches, in which:  
351 unique CDR3  
6 unique J



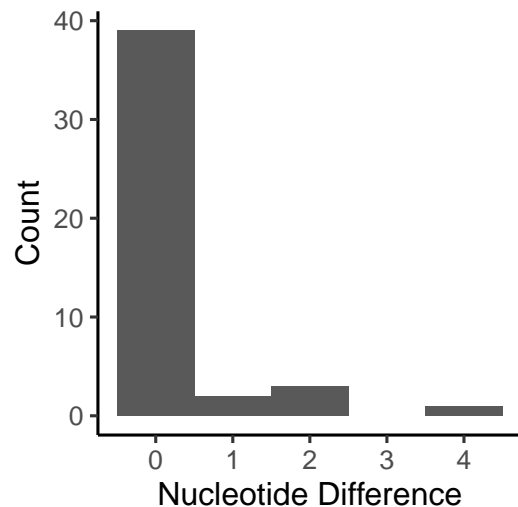
### IGHV1-45\*02

1 sequences assigned  
No exact matches.



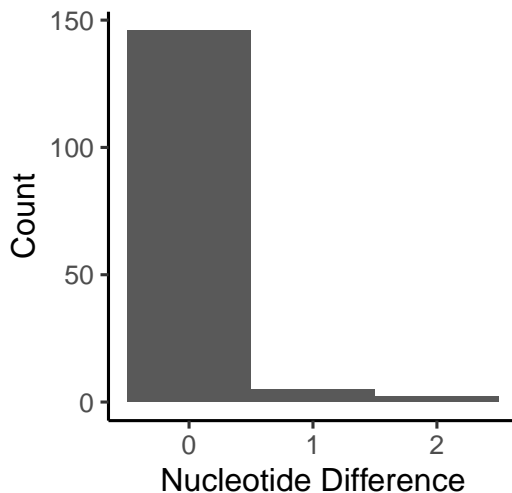
### IGHV1-3\*01\_05

45 sequences assigned  
39 (86.7%) exact matches, in which:  
39 unique CDR3  
6 unique J



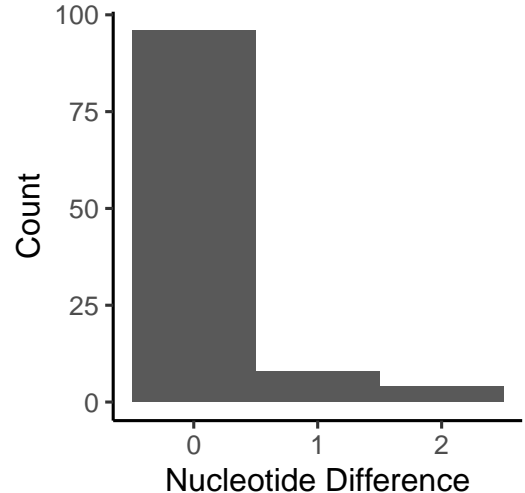
### IGHV1-18\*04

153 sequences assigned  
146 (95.4%) exact matches, in which:  
146 unique CDR3  
6 unique J



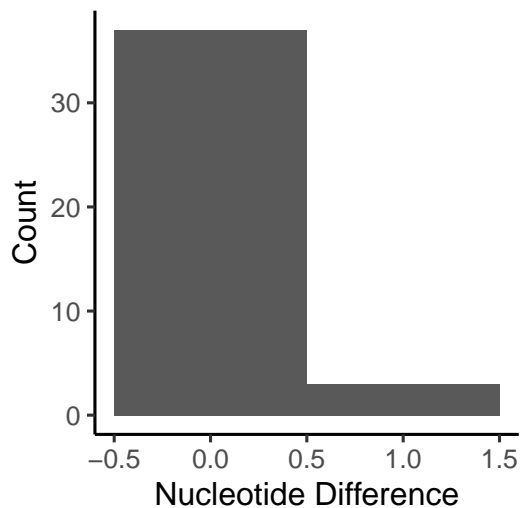
### IGHV1-46\*01

108 sequences assigned  
96 (88.9%) exact matches, in which:  
96 unique CDR3  
6 unique J



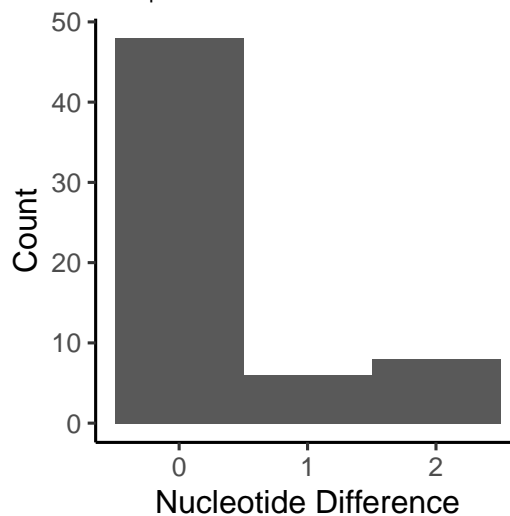
### IGHV1–58\*01\_03

40 sequences assigned  
37 (92.5%) exact matches, in which:  
37 unique CDR3  
6 unique J



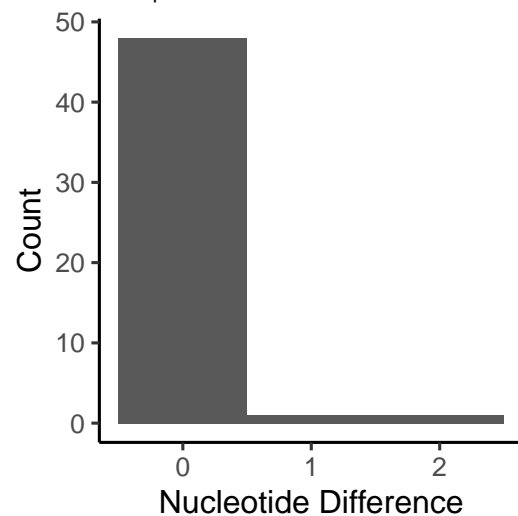
### IGHV2–5\*01

62 sequences assigned  
48 (77.4%) exact matches, in which:  
48 unique CDR3  
5 unique J



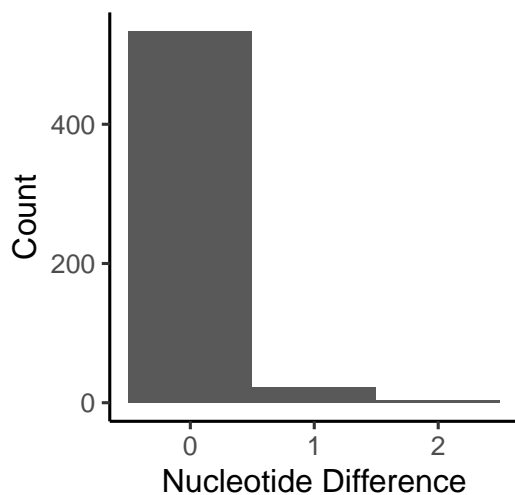
### IGHV2–70\*01

50 sequences assigned  
48 (96%) exact matches, in which:  
47 unique CDR3  
4 unique J



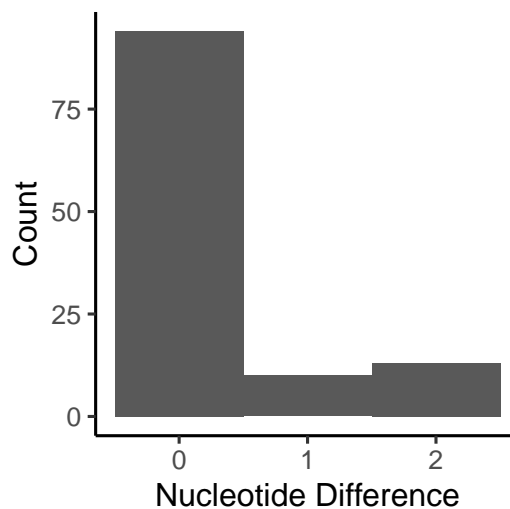
### IGHV1–69\*01\_12\_13

559 sequences assigned  
534 (95.5%) exact matches, in which:  
530 unique CDR3  
6 unique J



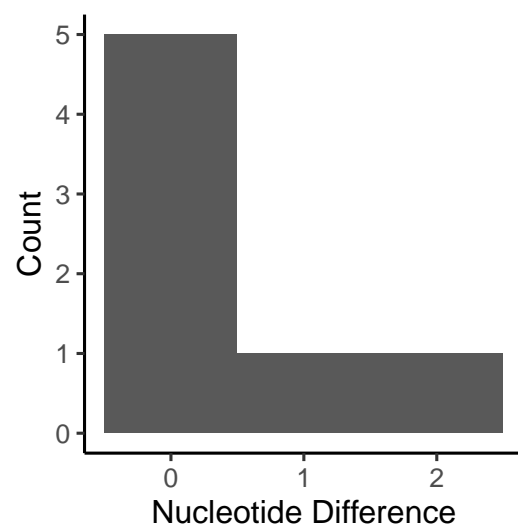
### IGHV2–5\*02

117 sequences assigned  
94 (80.3%) exact matches, in which:  
93 unique CDR3  
6 unique J



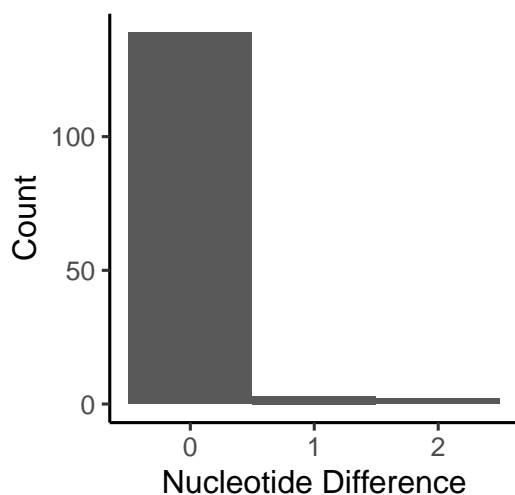
### IGHV2–70D\*04

7 sequences assigned  
5 (71.4%) exact matches, in which:  
5 unique CDR3  
2 unique J



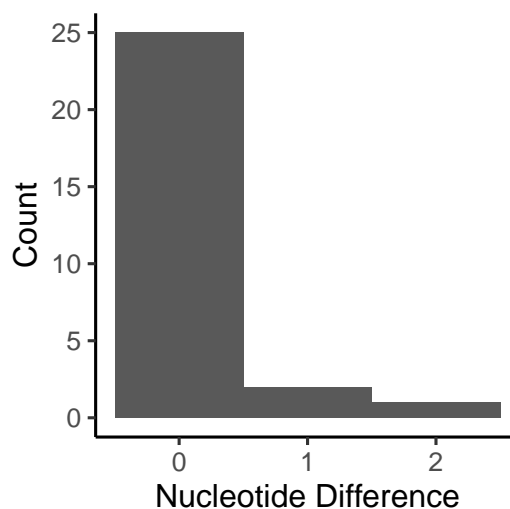
### IGHV1–69\*06\_14

144 sequences assigned  
139 (96.5%) exact matches, in which:  
139 unique CDR3  
6 unique J



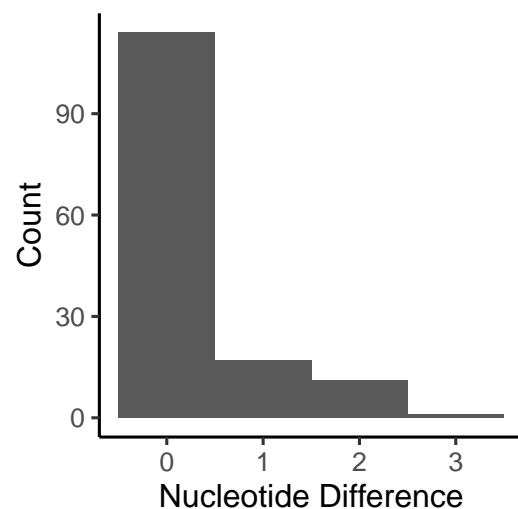
### IGHV2–26\*01

28 sequences assigned  
25 (89.3%) exact matches, in which:  
25 unique CDR3  
4 unique J



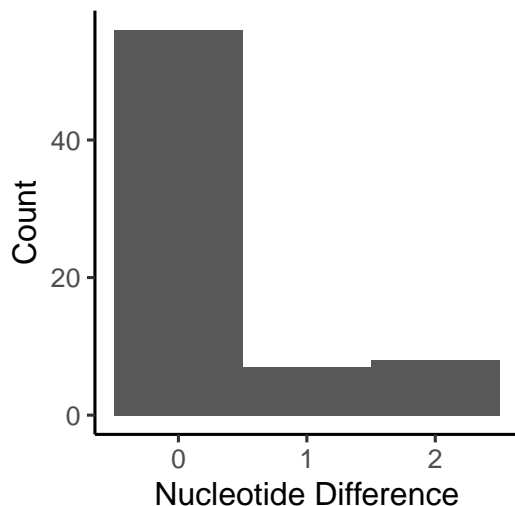
### IGHV3–7\*01

143 sequences assigned  
114 (79.7%) exact matches, in which:  
112 unique CDR3  
6 unique J



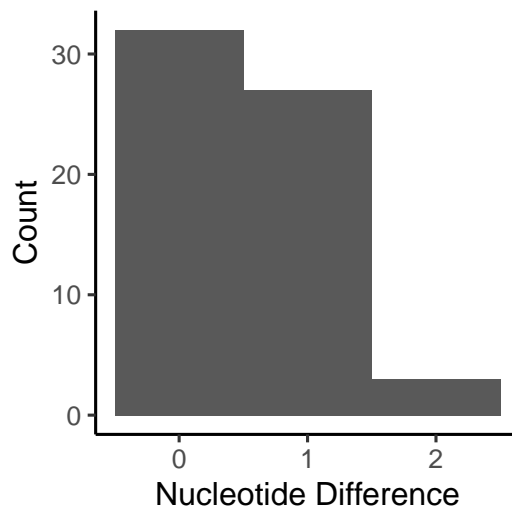
### IGHV3-7\*04

71 sequences assigned  
56 (78.9%) exact matches, in which:  
56 unique CDR3  
6 unique J



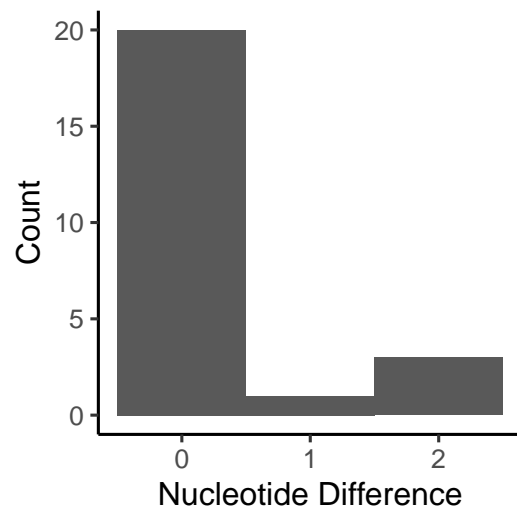
### IGHV3-11\*06

62 sequences assigned  
32 (51.6%) exact matches, in which:  
30 unique CDR3  
5 unique J



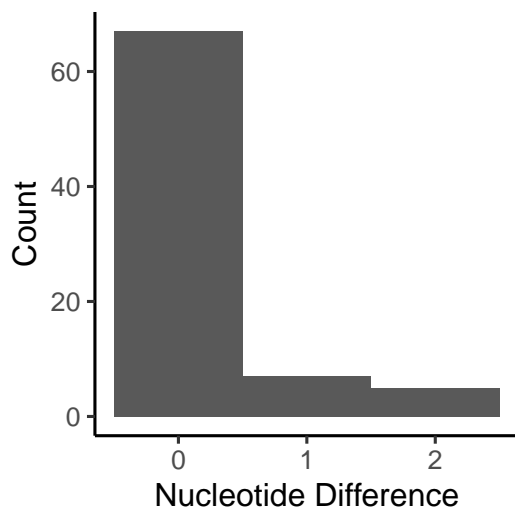
### IGHV3-13\*04

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



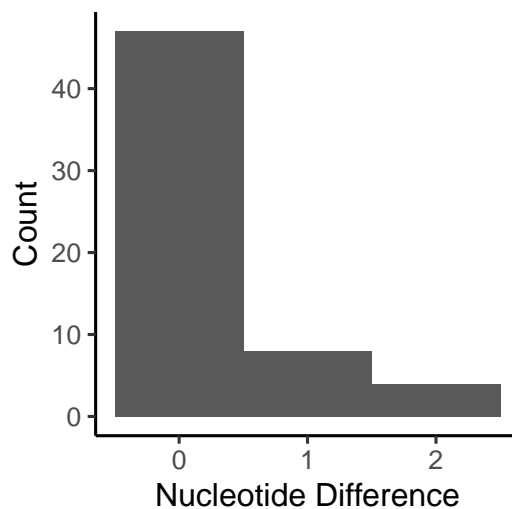
### IGHV3-9\*01

79 sequences assigned  
67 (84.8%) exact matches, in which:  
67 unique CDR3  
5 unique J



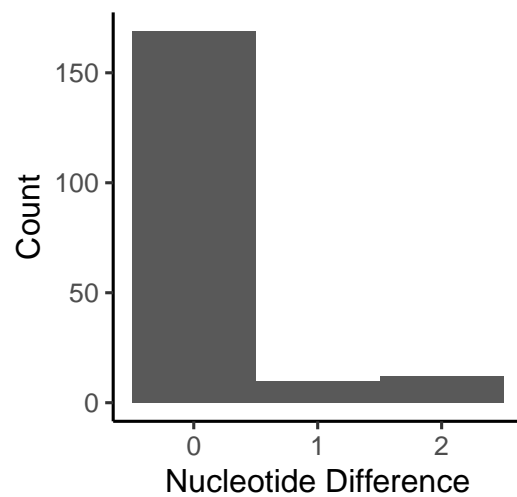
### IGHV3-11\*03\_05

59 sequences assigned  
47 (79.7%) exact matches, in which:  
46 unique CDR3  
5 unique J



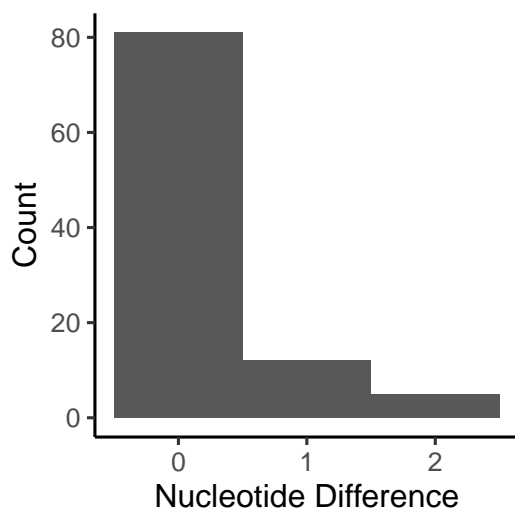
### IGHV3-15\*01\_02

191 sequences assigned  
169 (88.5%) exact matches, in which:  
166 unique CDR3  
6 unique J



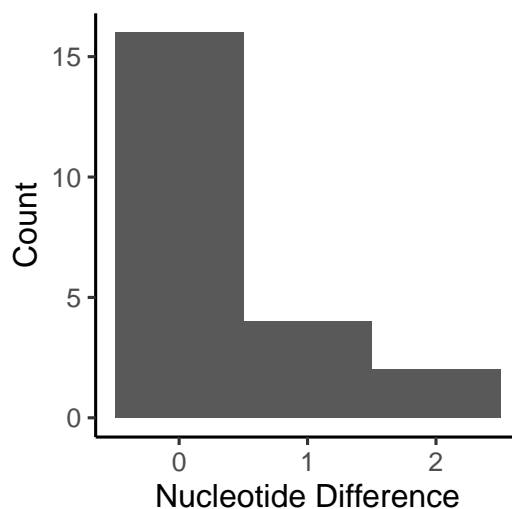
### IGHV3-11\*01

98 sequences assigned  
81 (82.7%) exact matches, in which:  
79 unique CDR3  
5 unique J



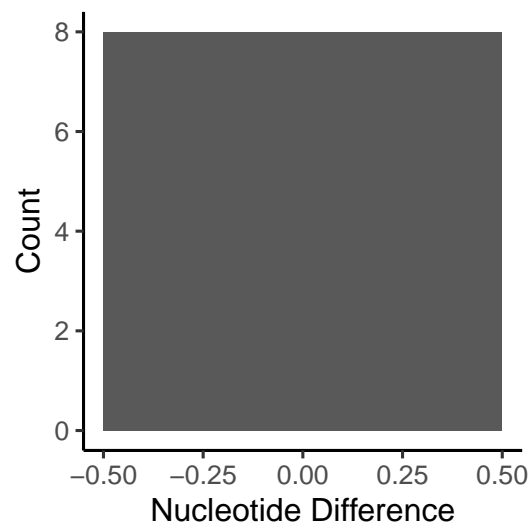
### IGHV3-13\*01

22 sequences assigned  
16 (72.7%) exact matches, in which:  
15 unique CDR3  
3 unique J



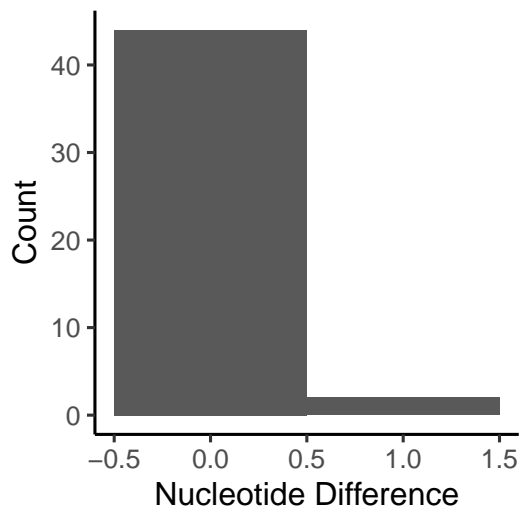
### IGHV3-20\*01\_02

8 sequences assigned  
8 (100%) exact matches, in which:  
8 unique CDR3  
3 unique J



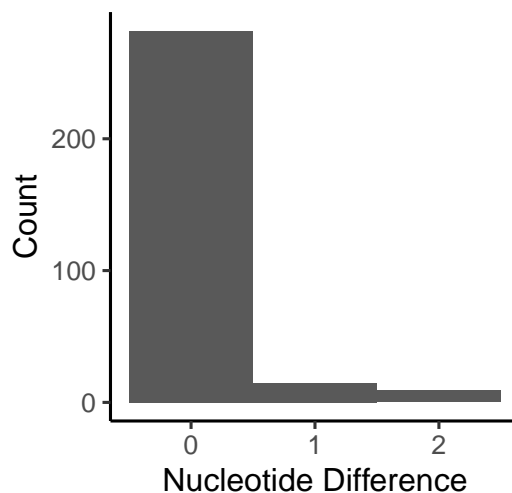
### IGHV3-20\*03\_04

46 sequences assigned  
44 (95.7%) exact matches, in which:  
44 unique CDR3  
5 unique J



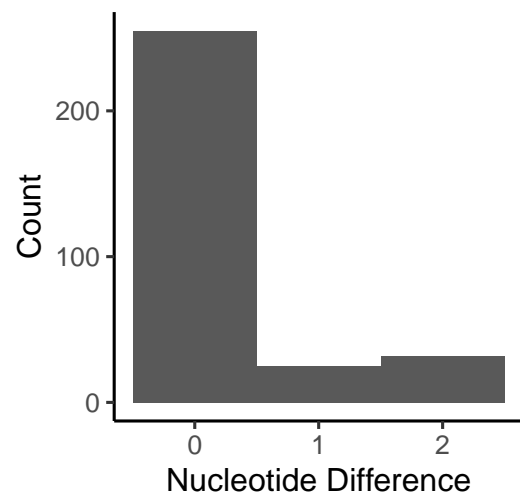
### IGHV3-30-3\*01

306 sequences assigned  
282 (92.2%) exact matches, in which:  
277 unique CDR3  
6 unique J



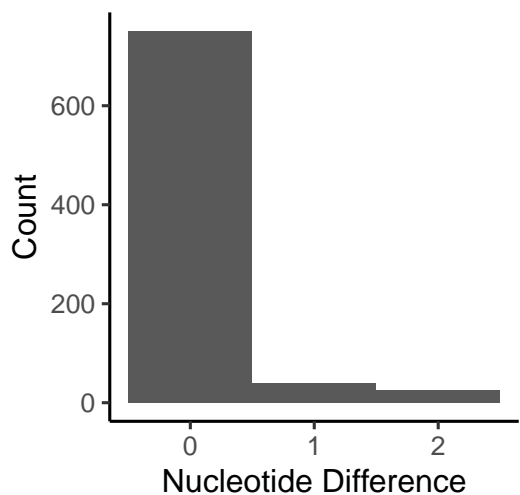
### IGHV3-48\*02

312 sequences assigned  
255 (81.7%) exact matches, in which:  
250 unique CDR3  
6 unique J



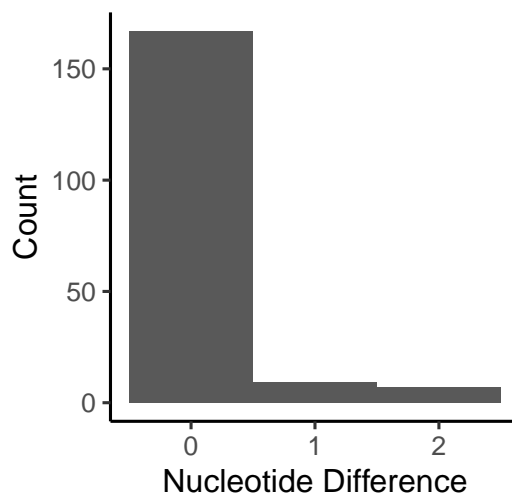
### IGHV3-21\*01\_02

816 sequences assigned  
751 (92%) exact matches, in which:  
733 unique CDR3  
6 unique J



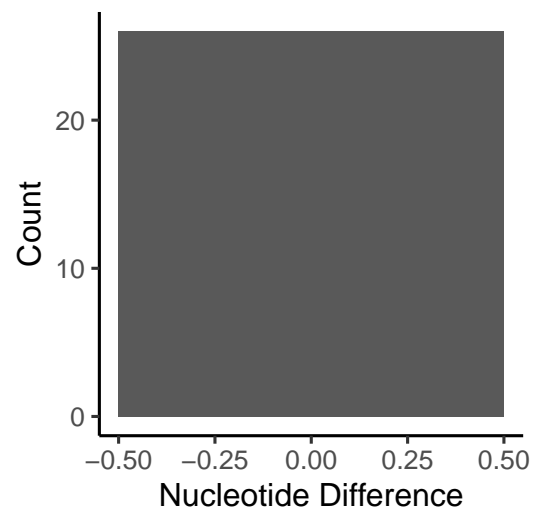
### IGHV3-33\*01

183 sequences assigned  
167 (91.3%) exact matches, in which:  
165 unique CDR3  
6 unique J



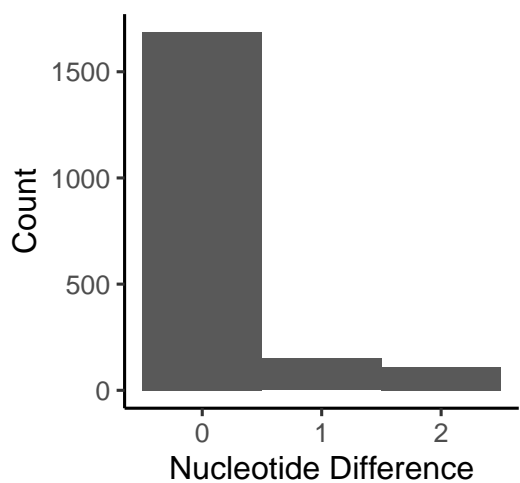
### IGHV3-49\*03\_05

26 sequences assigned  
26 (100%) exact matches, in which:  
26 unique CDR3  
5 unique J



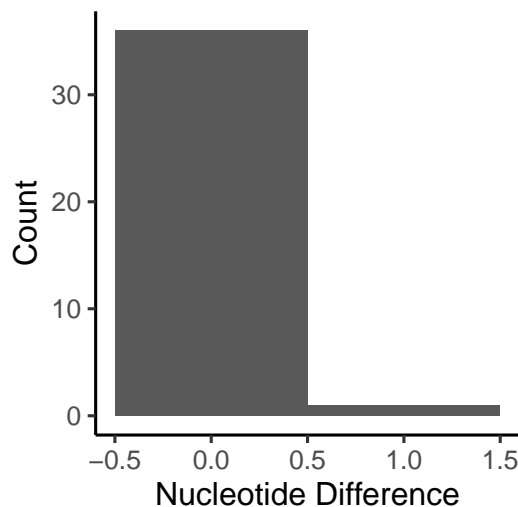
### IGHV3-23\*01\_04

1945 sequences assigned  
1687 (86.7%) exact matches, in which:  
1621 unique CDR3  
6 unique J



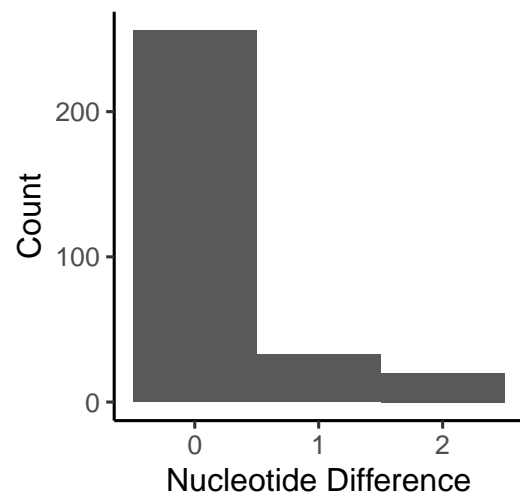
### IGHV3-43\*01

37 sequences assigned  
36 (97.3%) exact matches, in which:  
35 unique CDR3  
4 unique J



### IGHV3-53\*01\_02

309 sequences assigned  
256 (82.8%) exact matches, in which:  
247 unique CDR3  
6 unique J



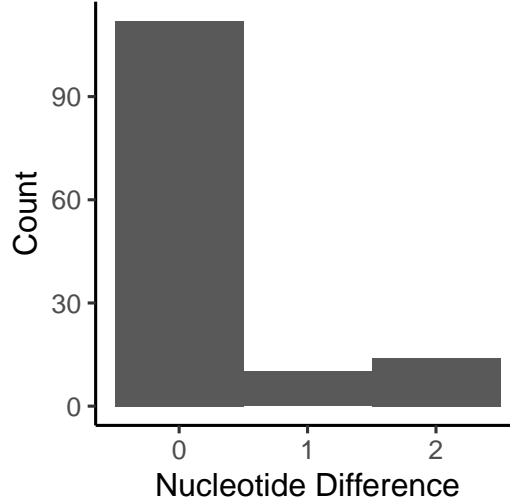
### IGHV3-64\*02\_07

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



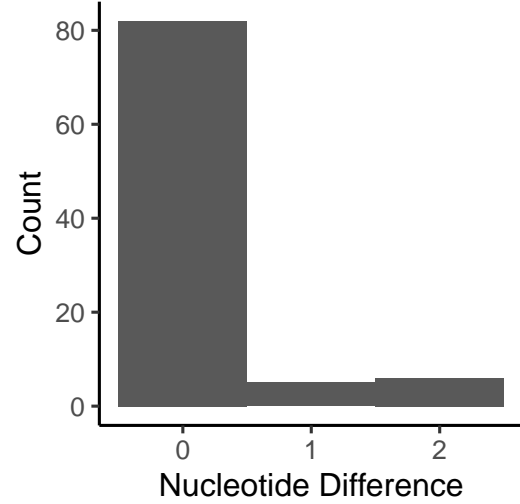
### IGHV3-74\*01\_02

136 sequences assigned  
112 (82.4%) exact matches, in which:  
108 unique CDR3  
6 unique J



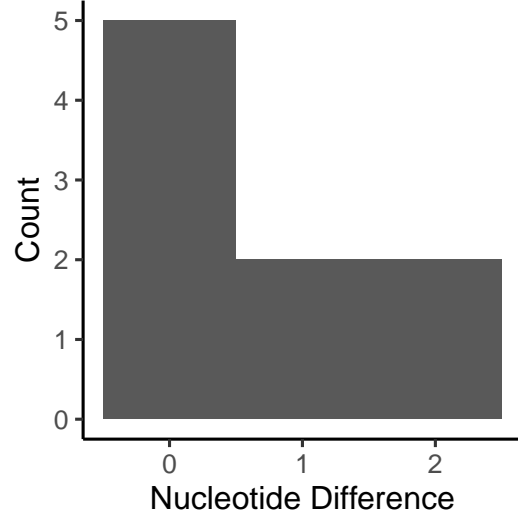
### IGHV4-30-4\*01

93 sequences assigned  
82 (88.2%) exact matches, in which:  
81 unique CDR3  
6 unique J



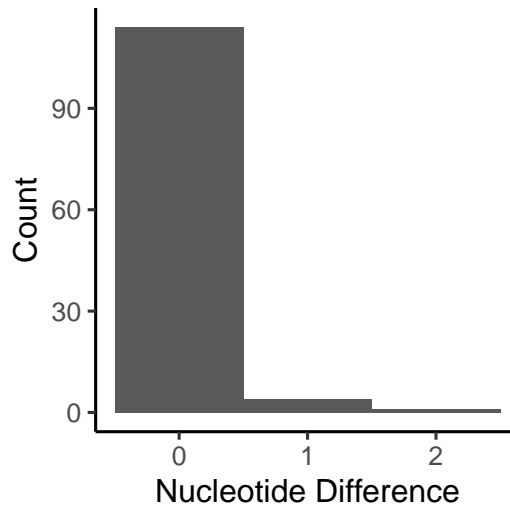
### IGHV3-72\*01

9 sequences assigned  
5 (55.6%) exact matches, in which:  
5 unique CDR3  
2 unique J



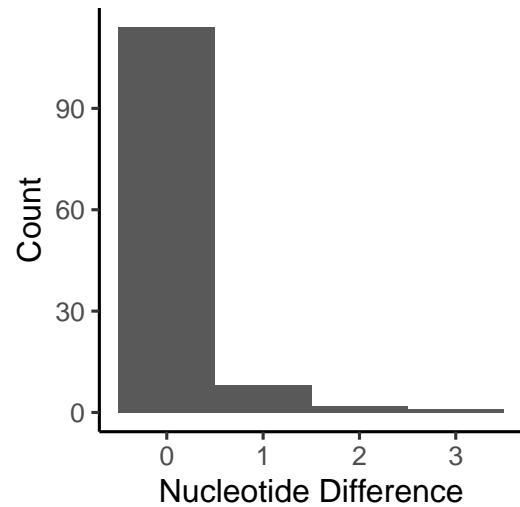
### IGHV3-64D\*06

119 sequences assigned  
114 (95.8%) exact matches, in which:  
113 unique CDR3  
6 unique J



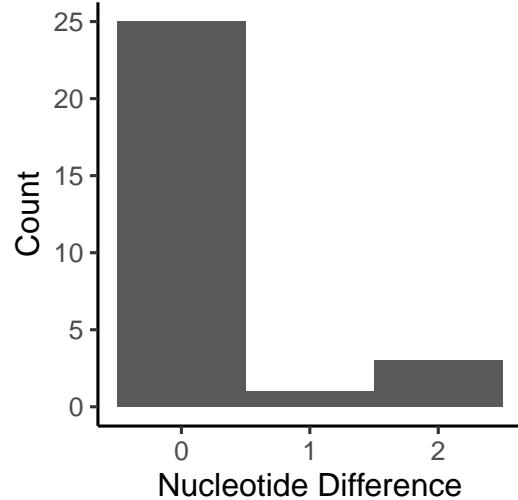
### IGHV4-30-2\*01

125 sequences assigned  
114 (91.2%) exact matches, in which:  
109 unique CDR3  
6 unique J



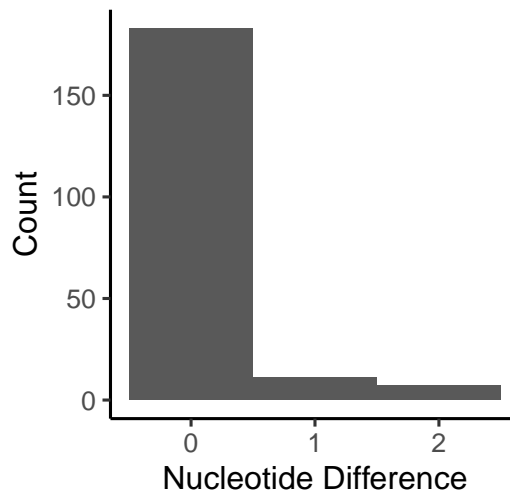
### IGHV3-73\*01\_02

29 sequences assigned  
25 (86.2%) exact matches, in which:  
25 unique CDR3  
4 unique J



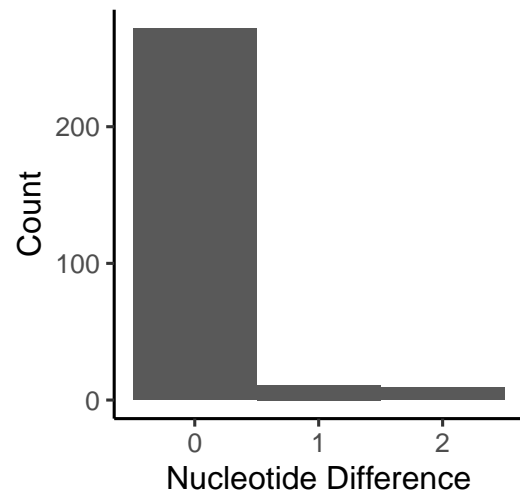
### IGHV4-4\*02\_03

201 sequences assigned  
183 (91%) exact matches, in which:  
181 unique CDR3  
6 unique J



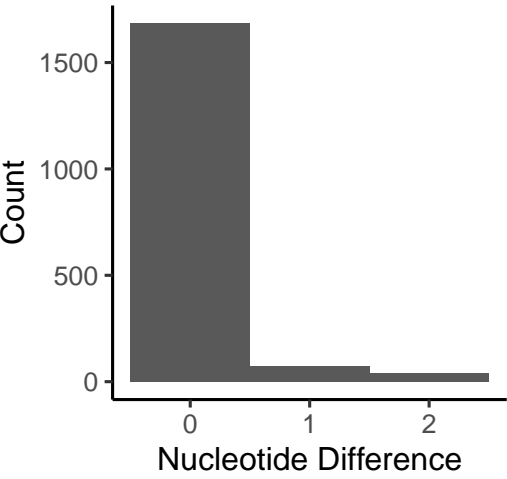
### IGHV4-31\*02

292 sequences assigned  
272 (93.2%) exact matches, in which:  
269 unique CDR3  
6 unique J



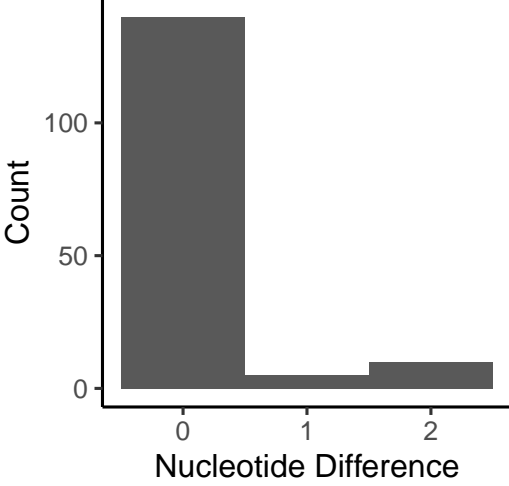
IGHV4-34\*01\_02

1800 sequences assigned  
1684 (93.6%) exact matches, in which:  
1630 unique CDR3  
6 unique J



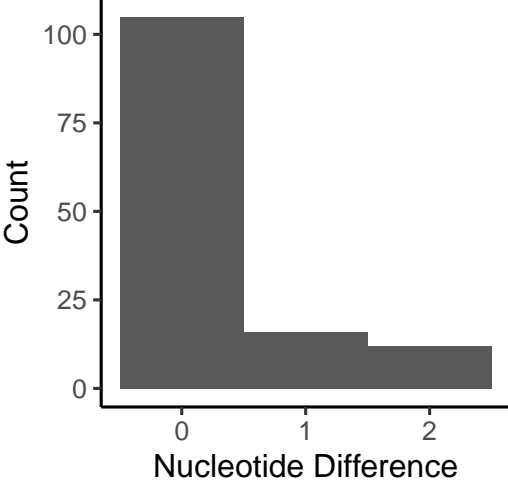
IGHV4-61\*01

155 sequences assigned  
140 (90.3%) exact matches, in which:  
137 unique CDR3  
6 unique J



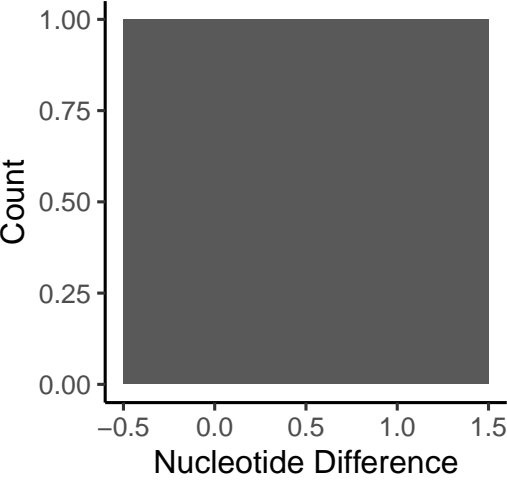
IGHV6-1\*01\_02

133 sequences assigned  
105 (78.9%) exact matches, in which:  
104 unique CDR3  
5 unique J



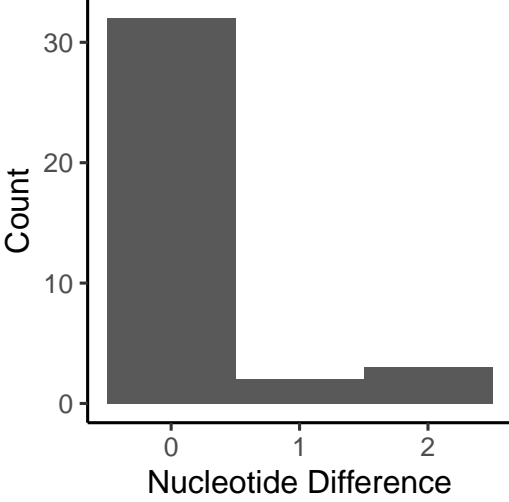
IGHV4-39\*02

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



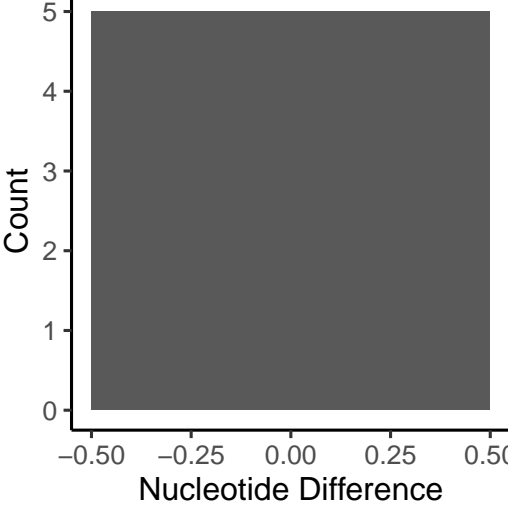
IGHV5-10-1\*01\_03

37 sequences assigned  
32 (86.5%) exact matches, in which:  
32 unique CDR3  
5 unique J



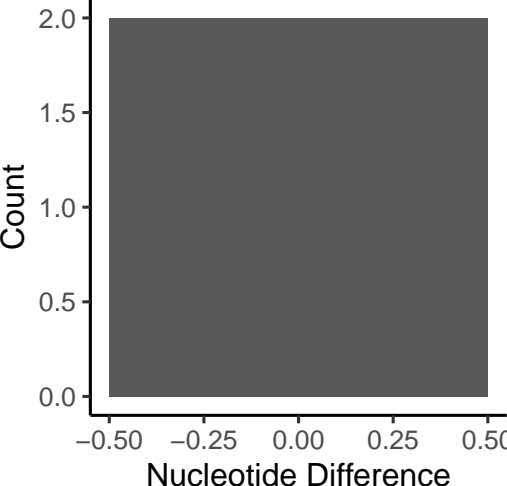
IGHV7-4-1\*01

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



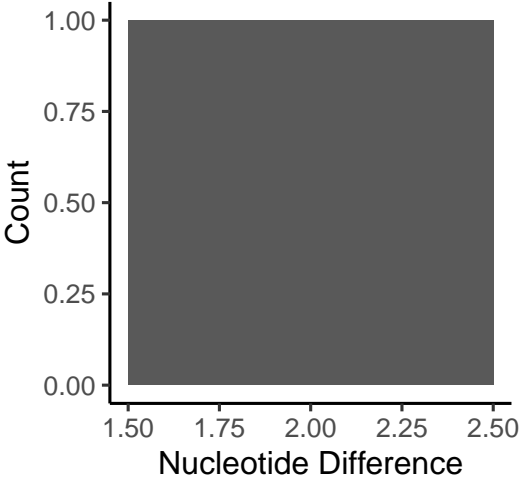
IGHV4-59\*01\_07

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



IGHV5-51\*04

1 sequences assigned  
No exact matches.





[illegible]