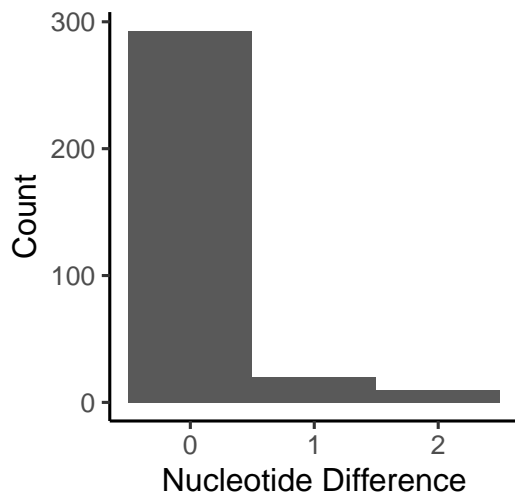


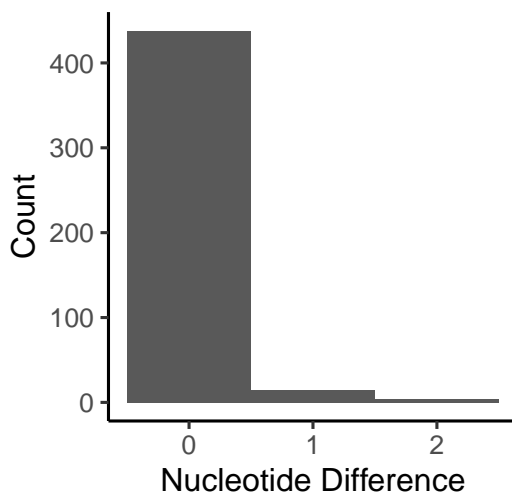
### IGHV1-2\*02

323 sequences assigned  
293 (90.7%) exact matches, in which:  
293 unique CDR3  
6 unique J



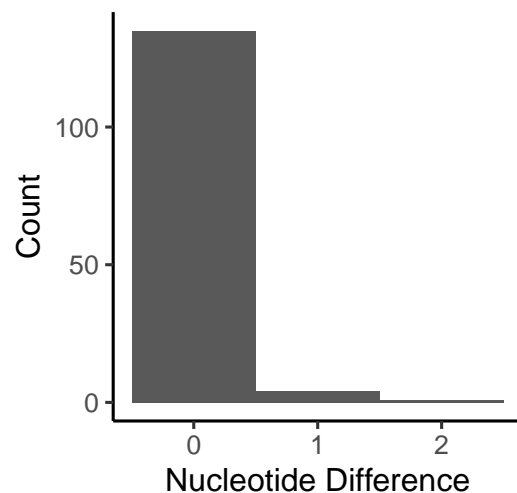
### IGHV1-8\*01

457 sequences assigned  
438 (95.8%) exact matches, in which:  
433 unique CDR3  
6 unique J



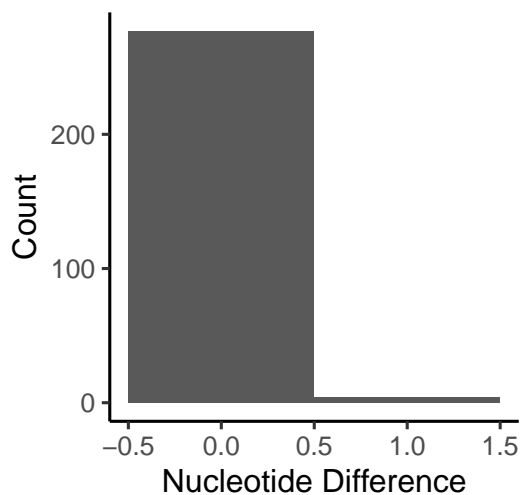
### IGHV1-46\*01

140 sequences assigned  
135 (96.4%) exact matches, in which:  
135 unique CDR3  
6 unique J



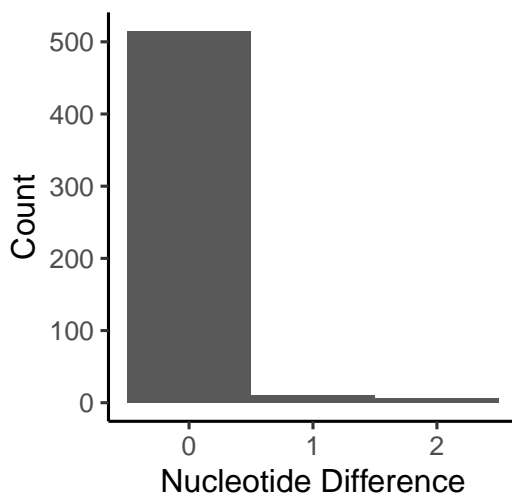
### IGHV1-2\*06

281 sequences assigned  
277 (98.6%) exact matches, in which:  
275 unique CDR3  
6 unique J



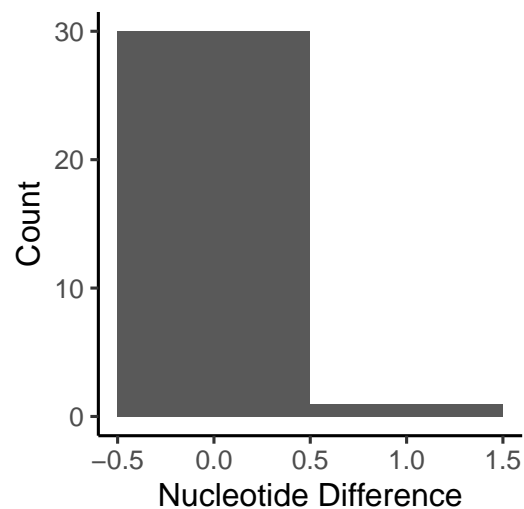
### IGHV1-18\*01

532 sequences assigned  
515 (96.8%) exact matches, in which:  
512 unique CDR3  
6 unique J



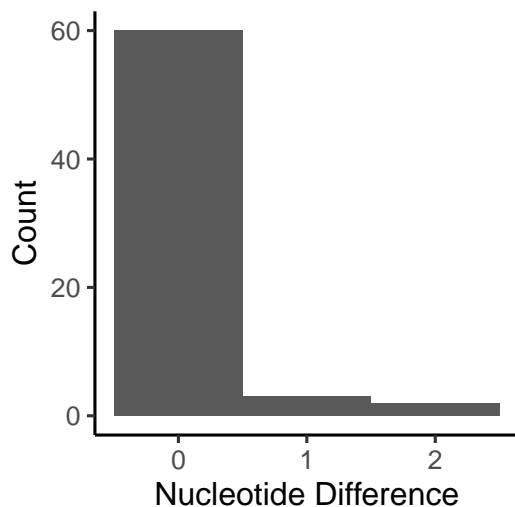
### IGHV1-58\*01\_03

31 sequences assigned  
30 (96.8%) exact matches, in which:  
30 unique CDR3  
5 unique J



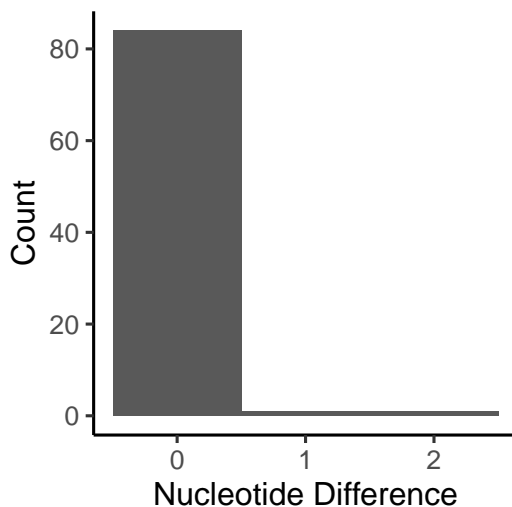
### IGHV1-3\*01\_05

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



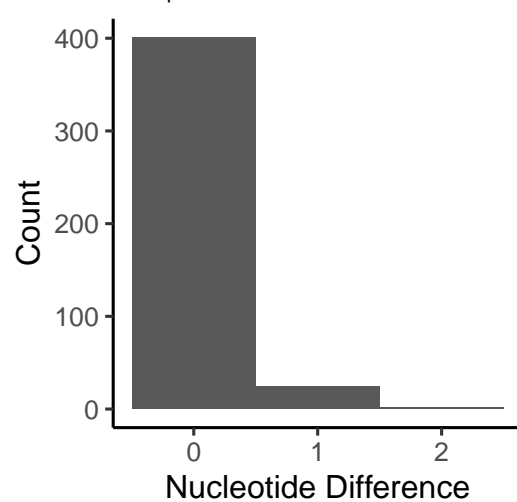
### IGHV1-24\*01

86 sequences assigned  
84 (97.7%) exact matches, in which:  
83 unique CDR3  
6 unique J



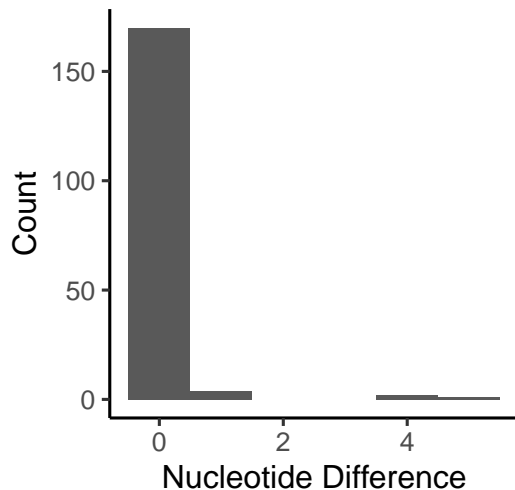
### IGHV1-69\*01\_12\_13

427 sequences assigned  
401 (93.9%) exact matches, in which:  
401 unique CDR3  
6 unique J



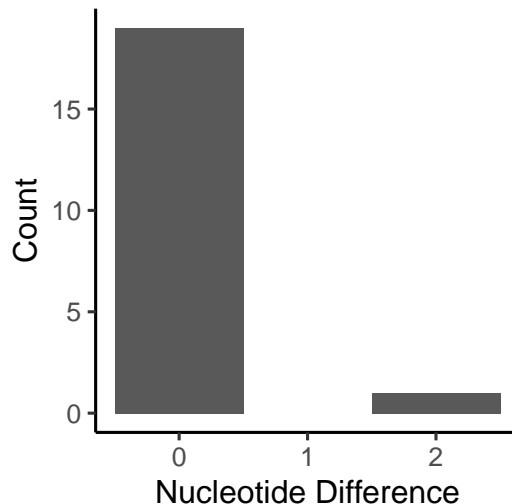
### IGHV1–69\*06\_14

177 sequences assigned  
170 (96%) exact matches, in which:  
170 unique CDR3  
6 unique J



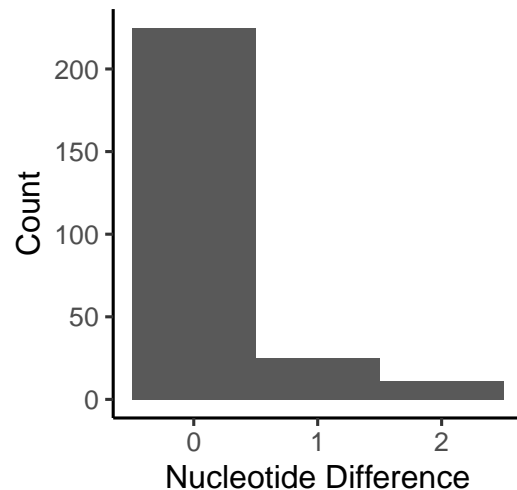
### IGHV2–26\*01

20 sequences assigned  
19 (95%) exact matches, in which:  
19 unique CDR3  
5 unique J



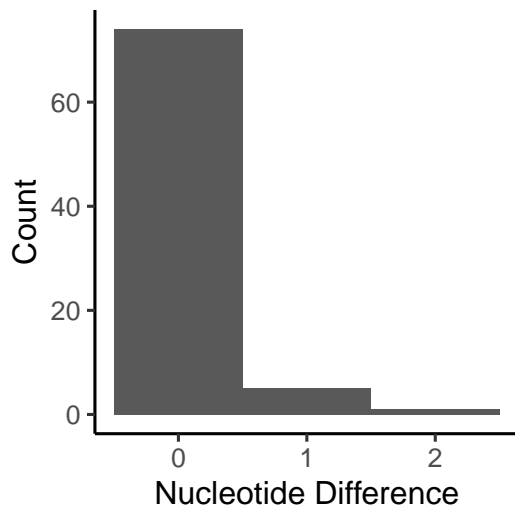
### IGHV3–7\*01

261 sequences assigned  
225 (86.2%) exact matches, in which:  
220 unique CDR3  
6 unique J



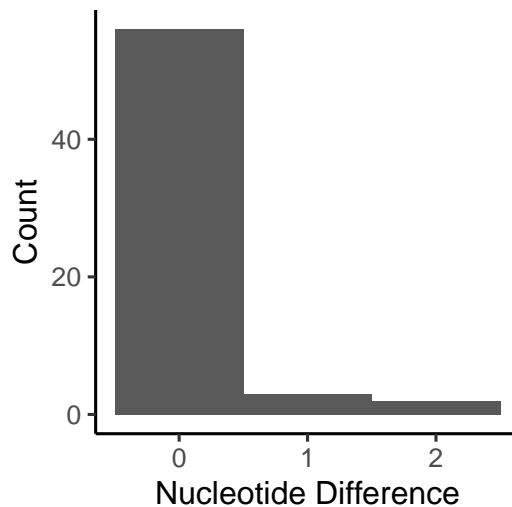
### IGHV2–5\*01

80 sequences assigned  
74 (92.5%) exact matches, in which:  
73 unique CDR3  
6 unique J



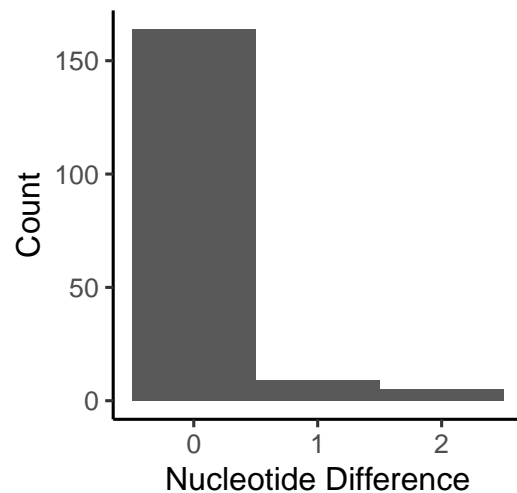
### IGHV2–70\*01

61 sequences assigned  
56 (91.8%) exact matches, in which:  
54 unique CDR3  
5 unique J



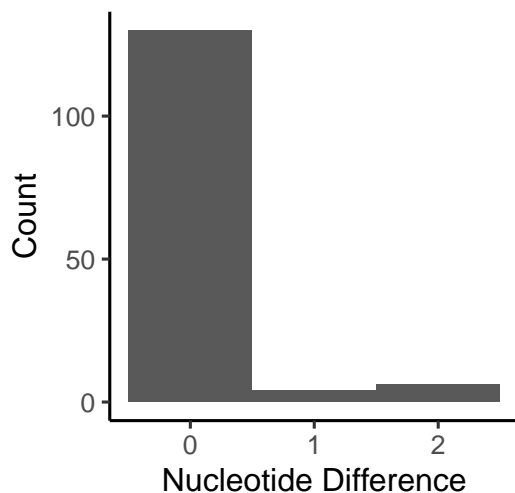
### IGHV3–9\*01

178 sequences assigned  
164 (92.1%) exact matches, in which:  
162 unique CDR3  
6 unique J



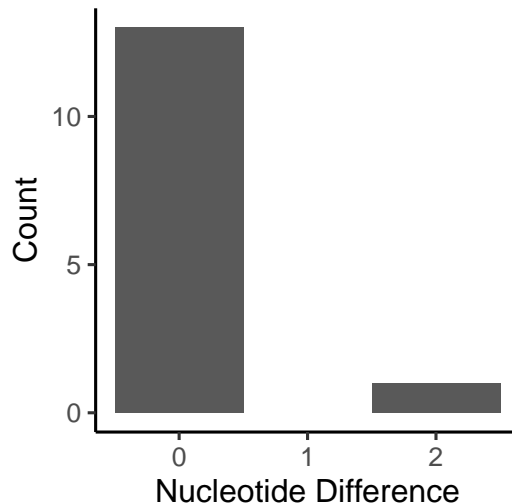
### IGHV2–5\*02

140 sequences assigned  
130 (92.9%) exact matches, in which:  
130 unique CDR3  
5 unique J



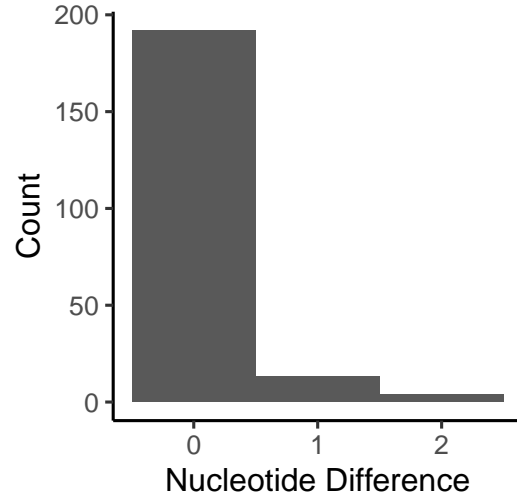
### IGHV2–70\*04

14 sequences assigned  
13 (92.9%) exact matches, in which:  
13 unique CDR3  
4 unique J



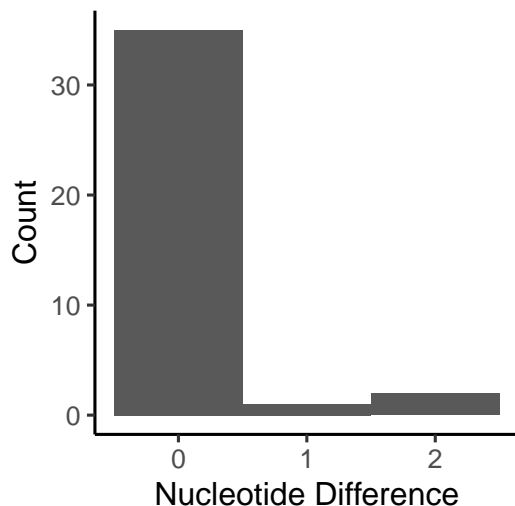
### IGHV3–11\*01

209 sequences assigned  
192 (91.9%) exact matches, in which:  
192 unique CDR3  
6 unique J



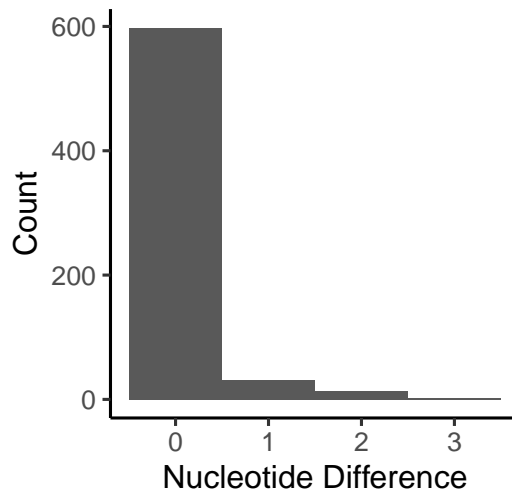
### IGHV3-13\*01

38 sequences assigned  
35 (92.1%) exact matches, in which:  
34 unique CDR3  
5 unique J



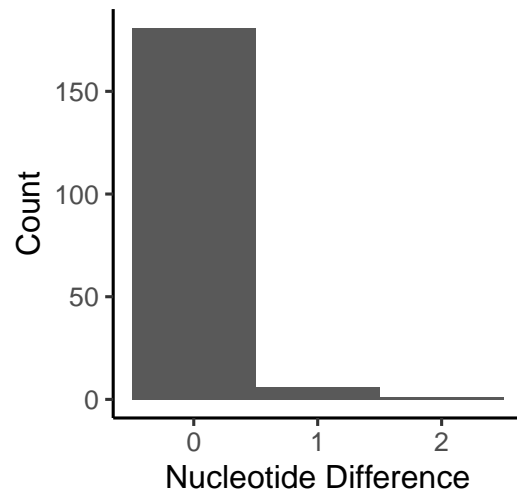
### IGHV3-21\*01\_02

645 sequences assigned  
598 (92.7%) exact matches, in which:  
580 unique CDR3  
6 unique J



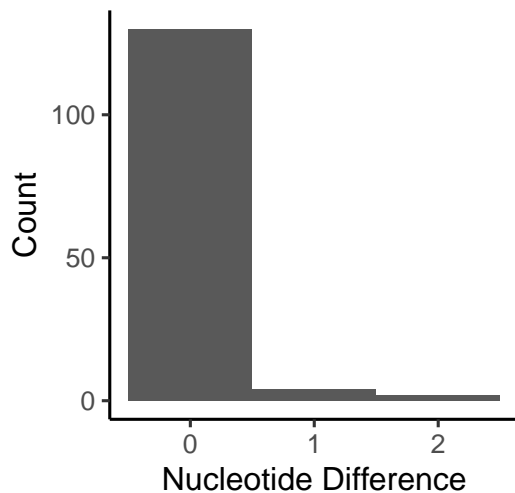
### IGHV3-30\*04

188 sequences assigned  
181 (96.3%) exact matches, in which:  
180 unique CDR3  
6 unique J



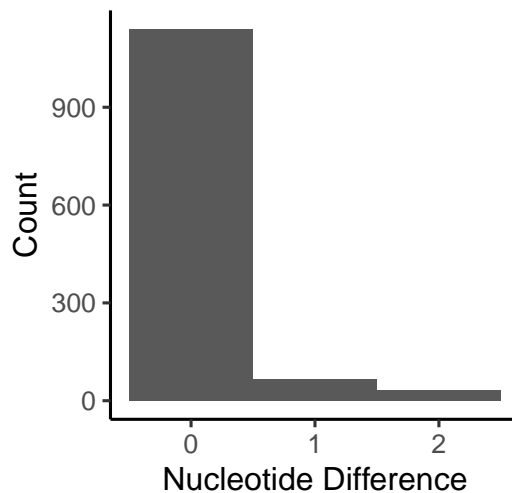
### IGHV3-15\*01\_02

136 sequences assigned  
130 (95.6%) exact matches, in which:  
127 unique CDR3  
6 unique J



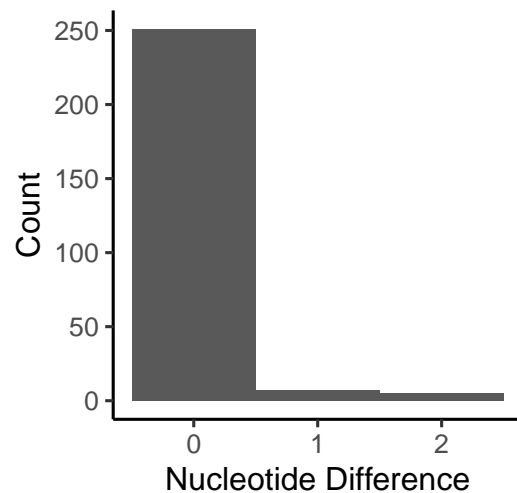
### IGHV3-23\*01\_04

1238 sequences assigned  
1140 (92.1%) exact matches, in which:  
1114 unique CDR3  
6 unique J



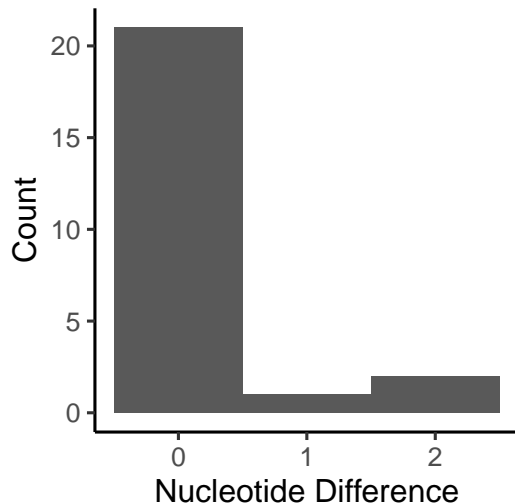
### IGHV3-30\*18

263 sequences assigned  
251 (95.4%) exact matches, in which:  
250 unique CDR3  
6 unique J



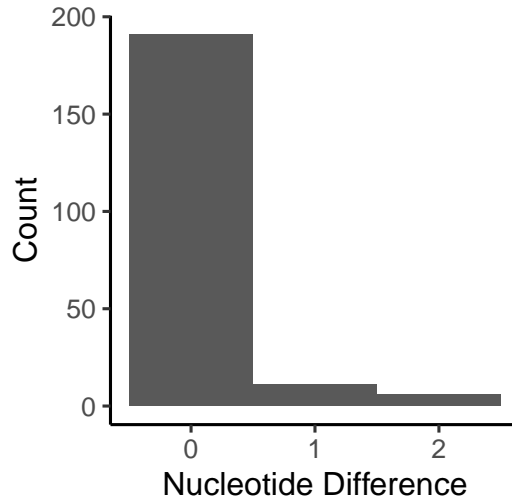
### IGHV3-20\*01\_02

24 sequences assigned  
21 (87.5%) exact matches, in which:  
21 unique CDR3  
5 unique J



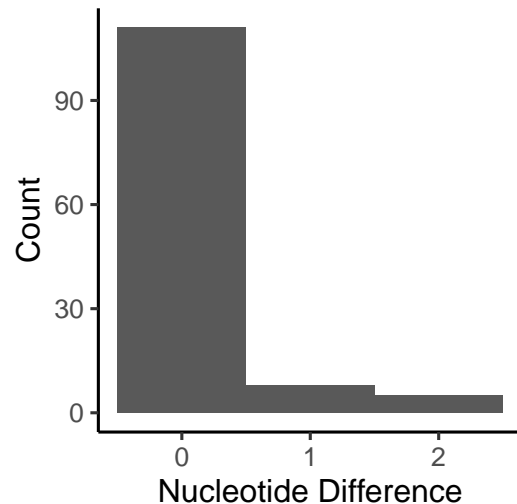
### IGHV3-30-3\*01

208 sequences assigned  
191 (91.8%) exact matches, in which:  
188 unique CDR3  
6 unique J



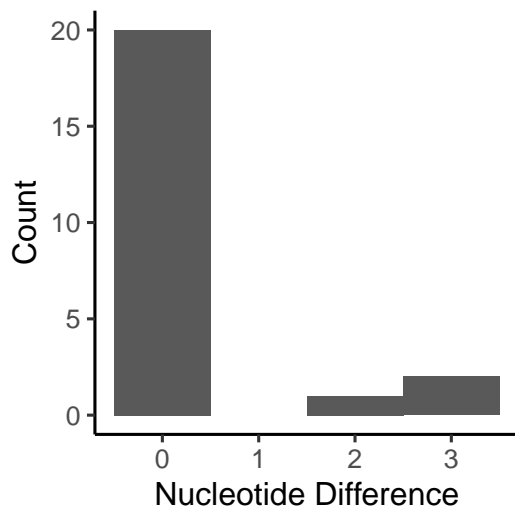
### IGHV3-33\*01

124 sequences assigned  
111 (89.5%) exact matches, in which:  
110 unique CDR3  
6 unique J



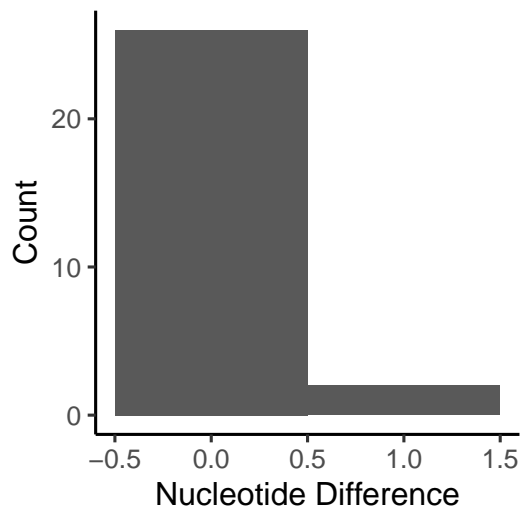
### IGHV3-43\*01

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



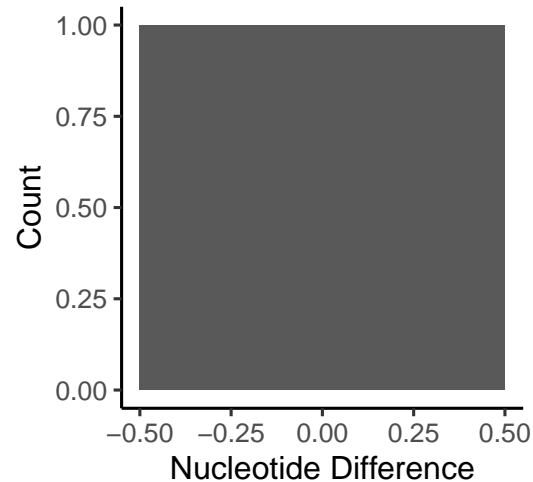
### IGHV3-49\*04

28 sequences assigned  
26 (92.9%) exact matches, in which:  
26 unique CDR3  
4 unique J



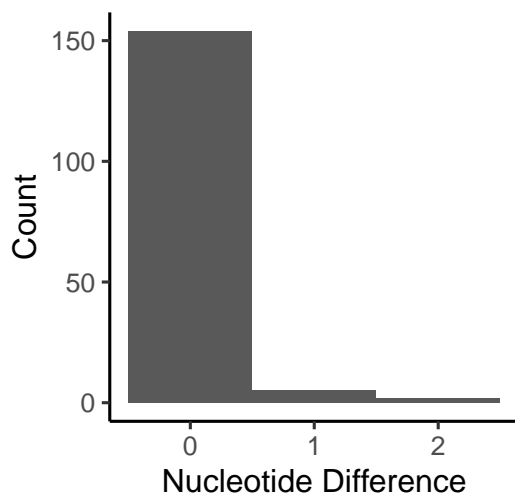
### IGHV3-64\*01

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



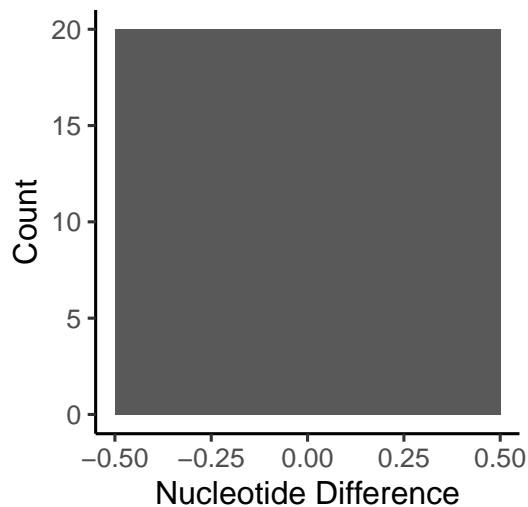
### IGHV3-48\*03

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



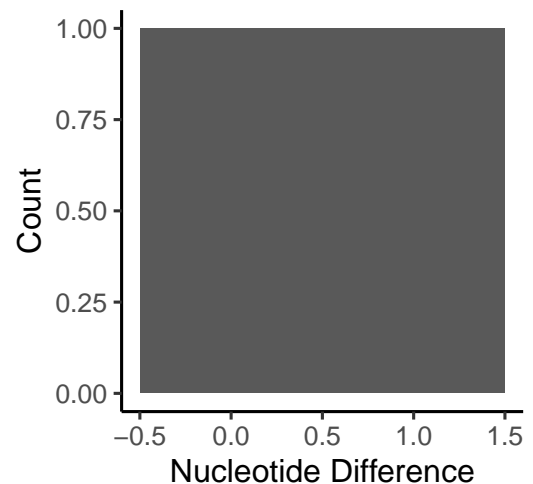
### IGHV3-49\*03\_05

20 sequences assigned  
20 (100%) exact matches, in which:  
20 unique CDR3  
5 unique J



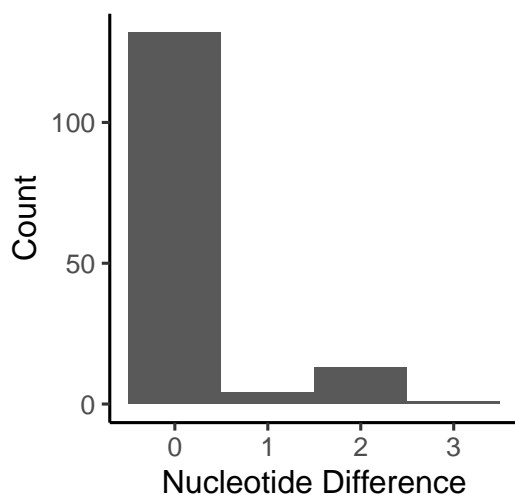
### IGHV3-64\*02\_07

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



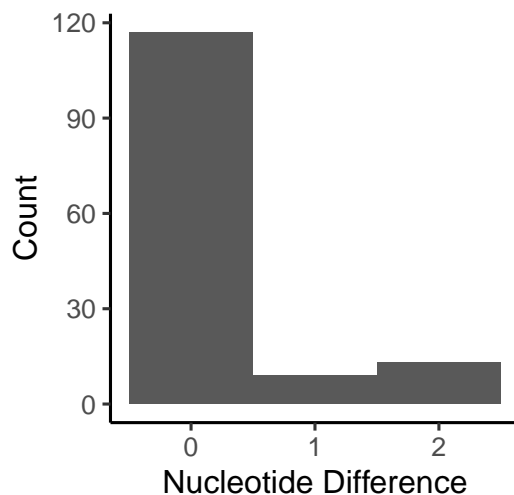
### IGHV3-48\*04

150 sequences assigned  
132 (88%) exact matches, in which:  
131 unique CDR3  
5 unique J



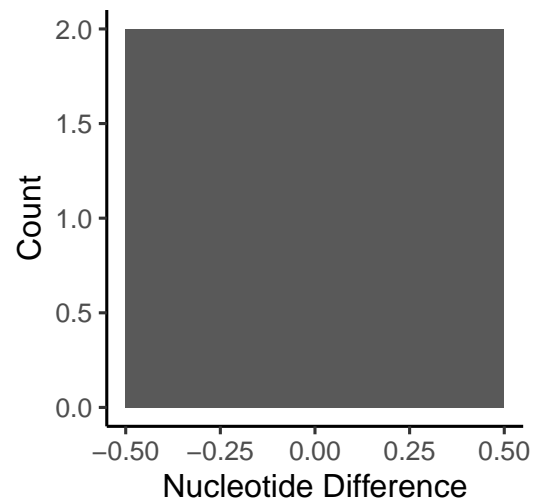
### IGHV3-53\*01\_02

139 sequences assigned  
117 (84.2%) exact matches, in which:  
113 unique CDR3  
6 unique J



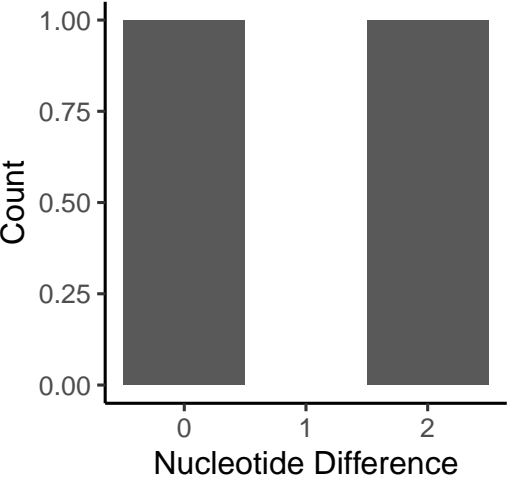
### IGHV3-66\*02

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



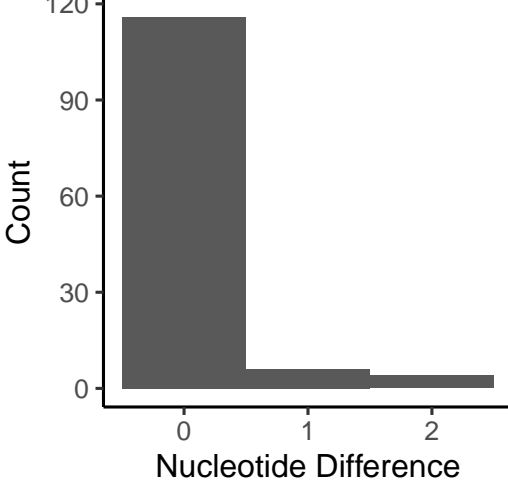
IGHV3-69-1\*01

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



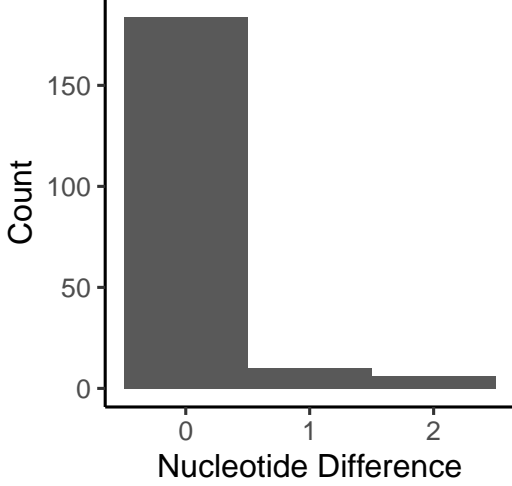
IGHV3-74\*01\_02

126 sequences assigned  
116 (92.1%) exact matches, in which:  
115 unique CDR3  
6 unique J



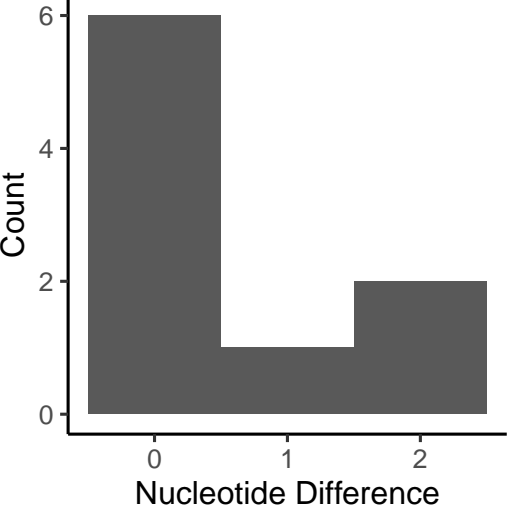
IGHV4-4\*07

200 sequences assigned  
184 (92%) exact matches, in which:  
180 unique CDR3  
6 unique J



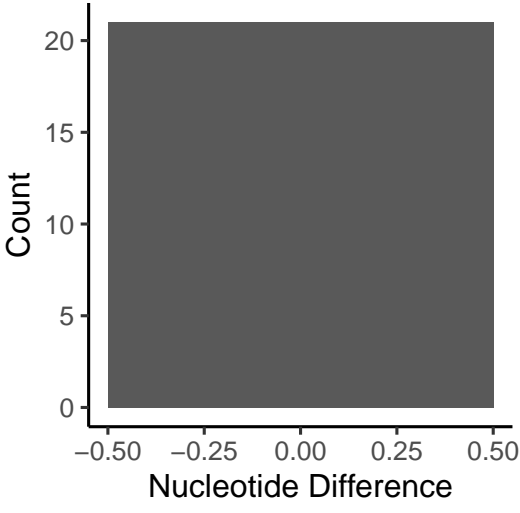
IGHV3-72\*01

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



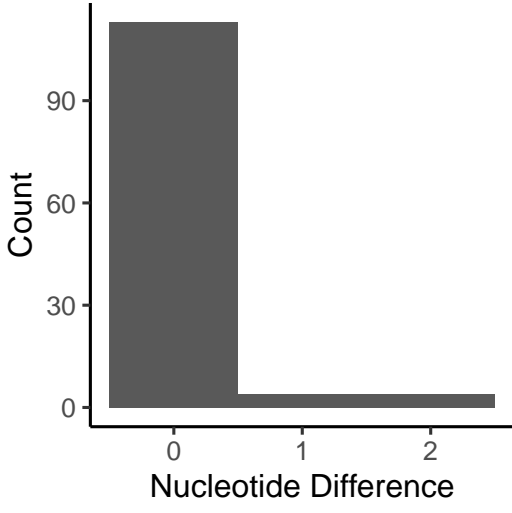
IGHV3-43D\*03

21 sequences assigned  
21 (100%) exact matches, in which:  
21 unique CDR3  
4 unique J



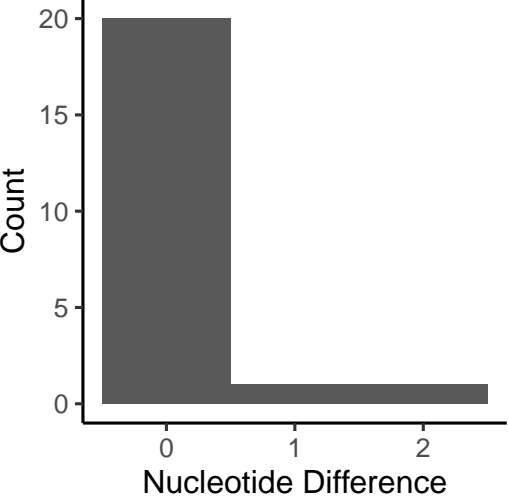
IGHV4-4\*02\_03

121 sequences assigned  
113 (93.4%) exact matches, in which:  
113 unique CDR3  
5 unique J



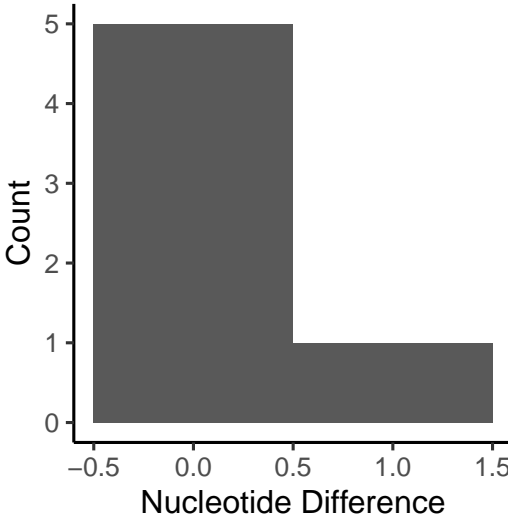
IGHV3-73\*01\_02

22 sequences assigned  
20 (90.9%) exact matches, in which:  
20 unique CDR3  
4 unique J



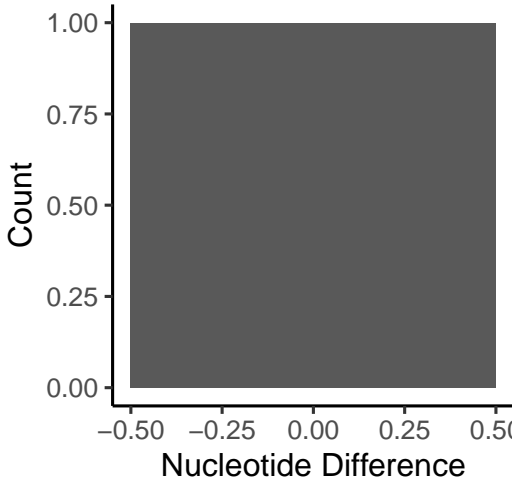
IGHV3-43D\*04

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



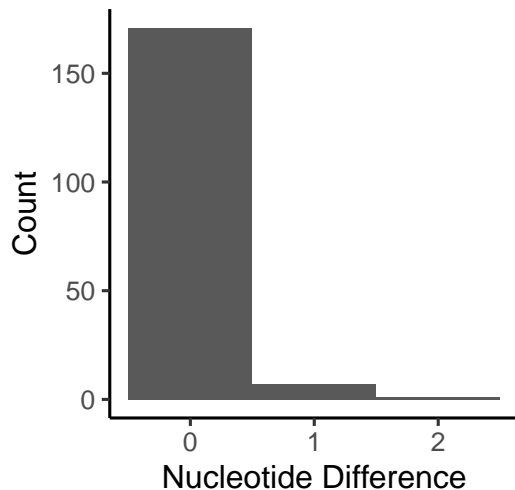
IGHV4-28\*01\_07

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



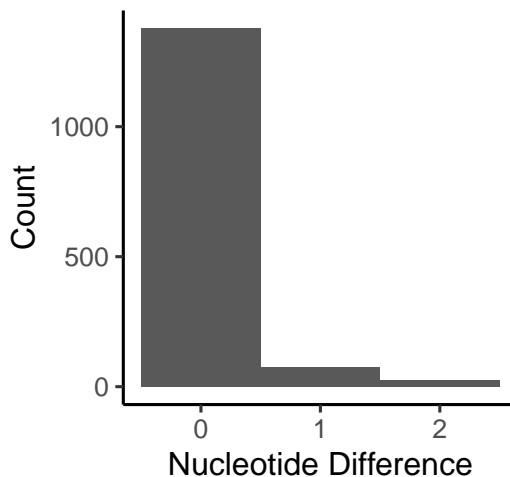
### IGHV4-30-4\*01

179 sequences assigned  
171 (95.5%) exact matches, in which:  
169 unique CDR3  
6 unique J



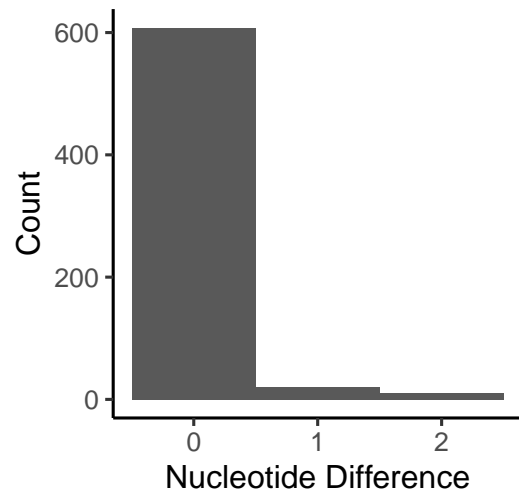
### IGHV4-34\*01\_02

1476 sequences assigned  
1378 (93.4%) exact matches, in which:  
1334 unique CDR3  
6 unique J



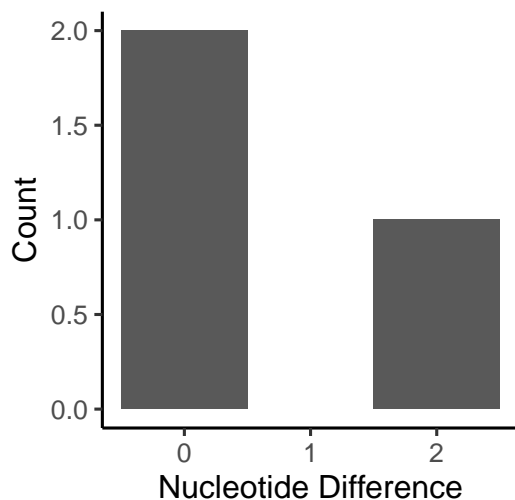
### IGHV4-39\*07

638 sequences assigned  
608 (95.3%) exact matches, in which:  
594 unique CDR3  
6 unique J



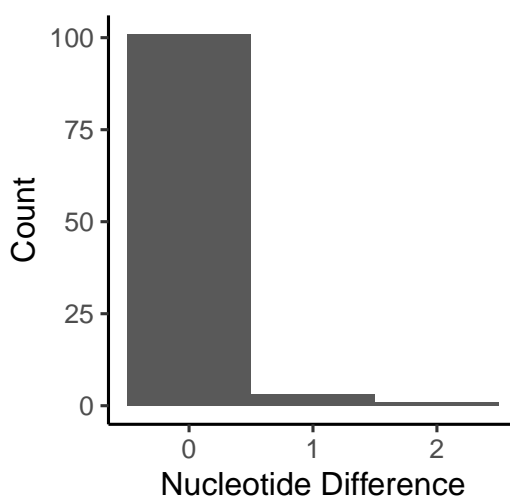
### IGHV4-30-2\*01

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



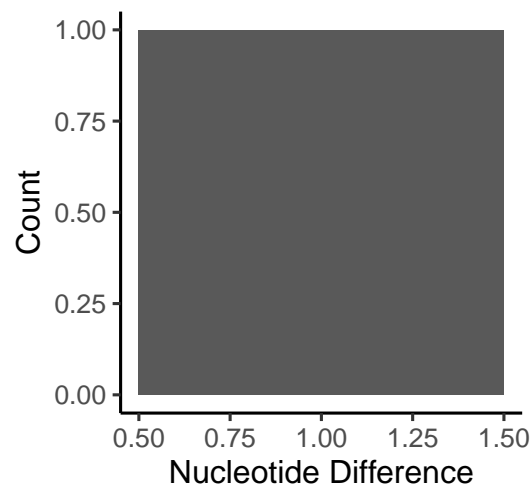
### IGHV4-38-2\*01

105 sequences assigned  
101 (96.2%) exact matches, in which:  
101 unique CDR3  
6 unique J



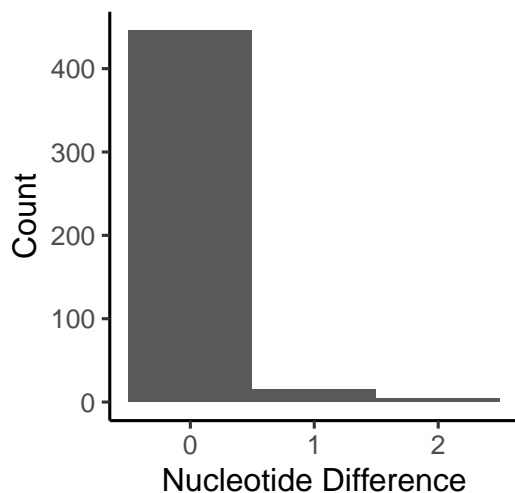
### IGHV4-59\*08

1 sequences assigned  
No exact matches.



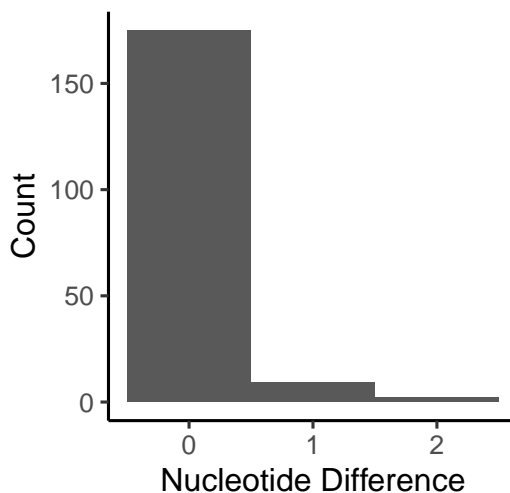
### IGHV4-31\*02

465 sequences assigned  
446 (95.9%) exact matches, in which:  
438 unique CDR3  
6 unique J



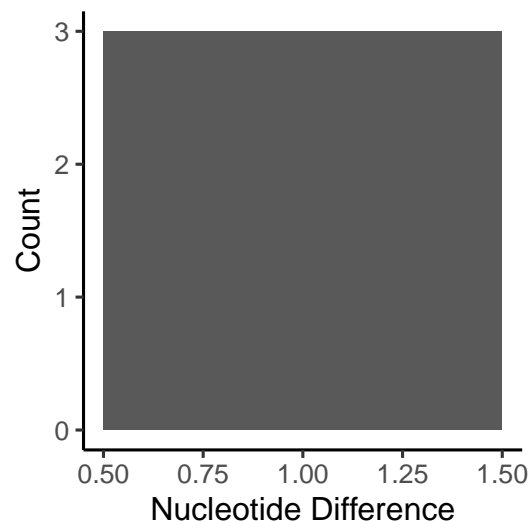
### IGHV4-38-2\*02

186 sequences assigned  
175 (94.1%) exact matches, in which:  
173 unique CDR3  
5 unique J



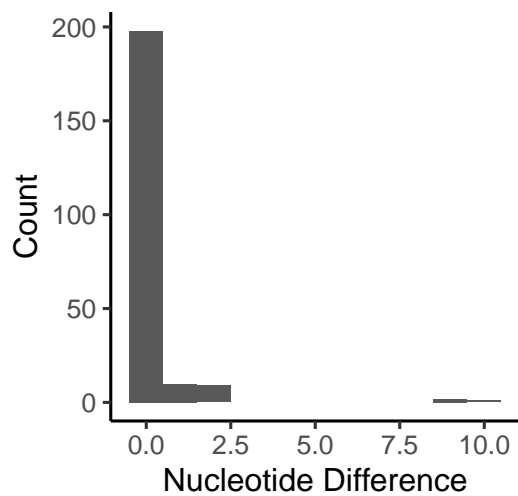
### IGHV4-59\*12

3 sequences assigned  
No exact matches.



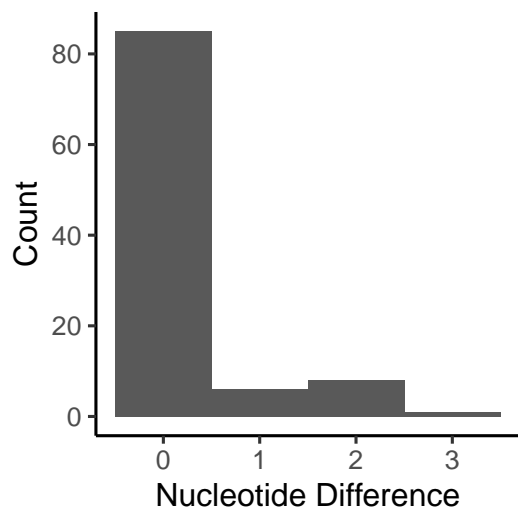
## IGHV4–61\*01

220 sequences assigned  
198 (90%) exact matches, in which:  
195 unique CDR3  
6 unique J



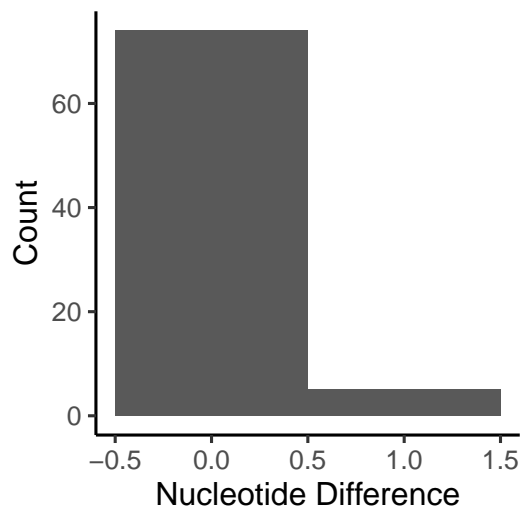
## IGHV6–1\*01\_02

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



## IGHV7–4–1\*02

79 sequences assigned  
74 (93.7%) exact matches, in which:  
73 unique CDR3  
5 unique J







Warning – no inferred sequences found.