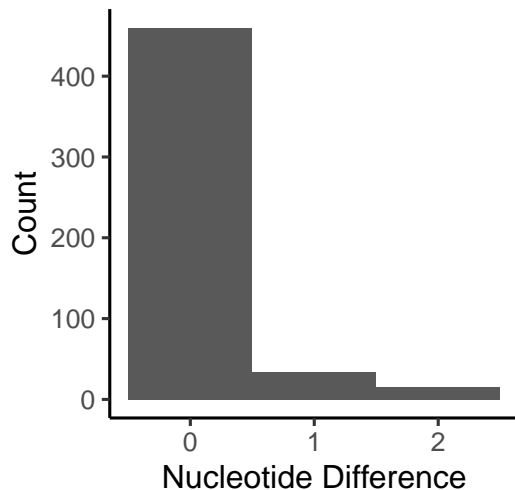


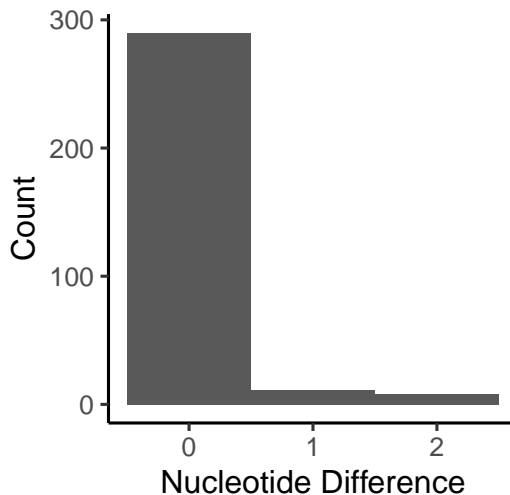
### IGHV1–2\*02

509 sequences assigned  
460 (90.4%) exact matches, in which:  
458 unique CDR3  
6 unique J



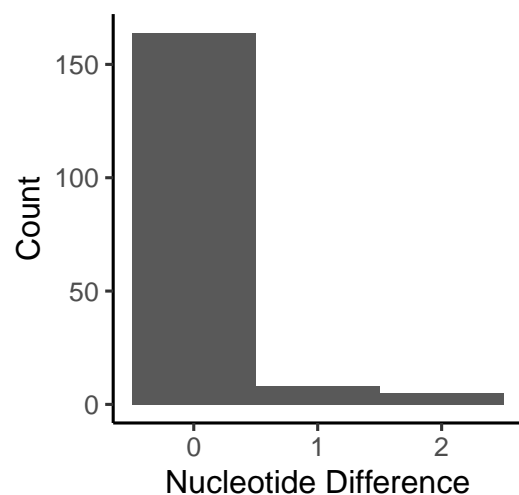
### IGHV1–8\*01

309 sequences assigned  
290 (93.9%) exact matches, in which:  
289 unique CDR3  
6 unique J



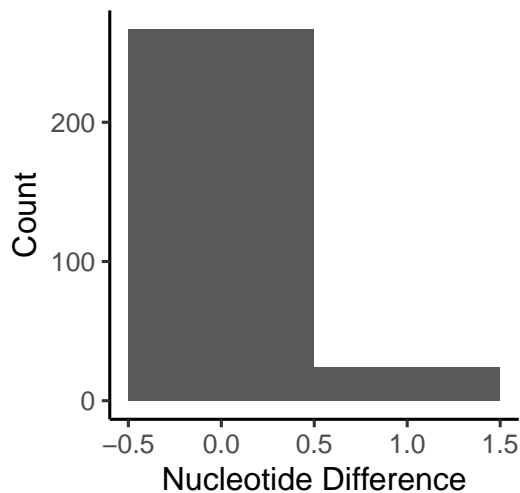
### IGHV1–46\*01

177 sequences assigned  
164 (92.7%) exact matches, in which:  
164 unique CDR3  
5 unique J



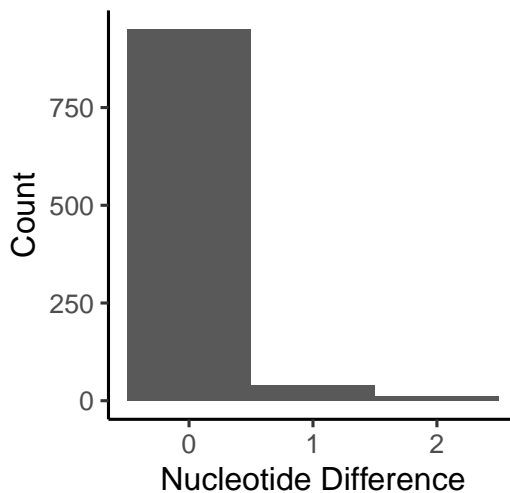
### IGHV1–2\*06

291 sequences assigned  
267 (91.8%) exact matches, in which:  
263 unique CDR3  
6 unique J



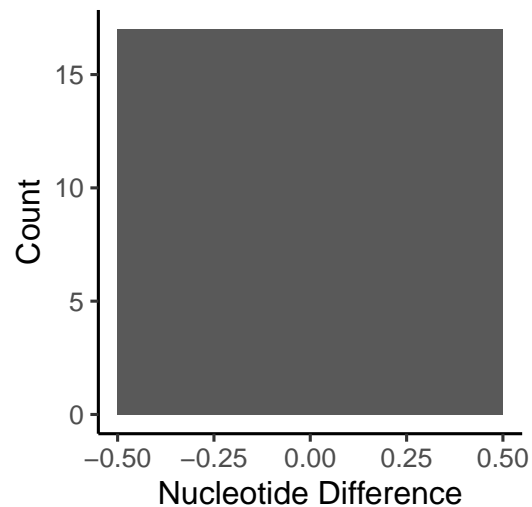
### IGHV1–18\*01

1001 sequences assigned  
951 (95%) exact matches, in which:  
947 unique CDR3  
6 unique J



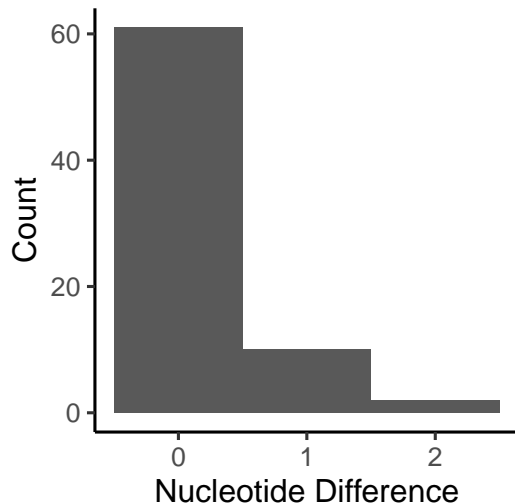
### IGHV1–58\*02

17 sequences assigned  
17 (100%) exact matches, in which:  
17 unique CDR3  
5 unique J



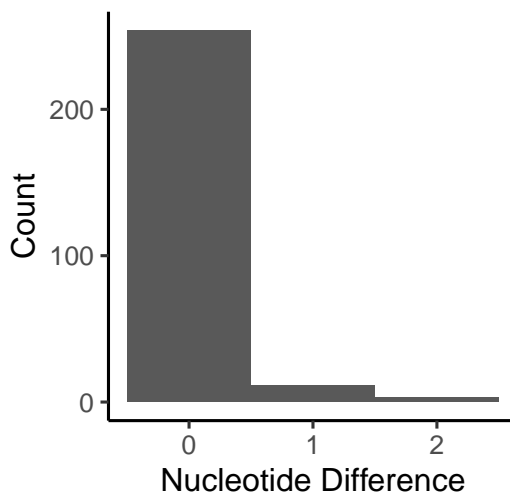
### IGHV1–3\*01\_05

73 sequences assigned  
61 (83.6%) exact matches, in which:  
61 unique CDR3  
6 unique J



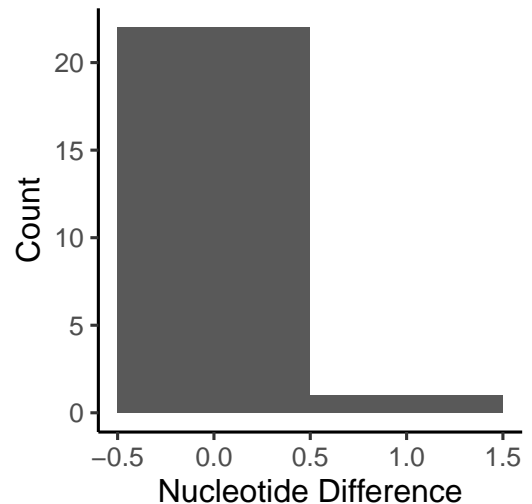
### IGHV1–24\*01

268 sequences assigned  
254 (94.8%) exact matches, in which:  
253 unique CDR3  
6 unique J



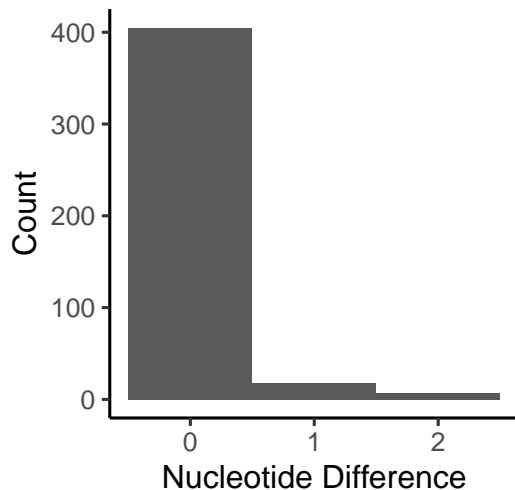
### IGHV1–58\*01\_03

23 sequences assigned  
22 (95.7%) exact matches, in which:  
22 unique CDR3  
4 unique J



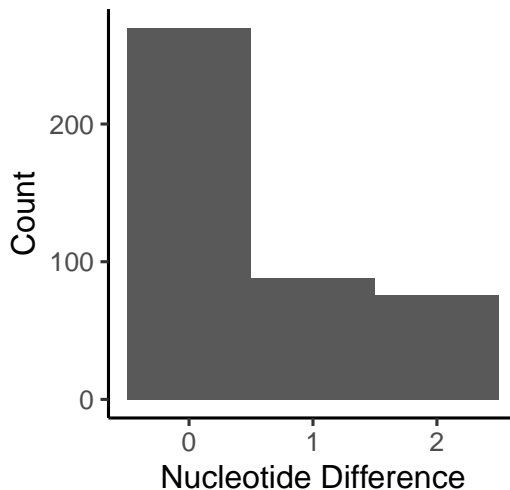
### IGHV1-69\*01\_12\_13

430 sequences assigned  
405 (94.2%) exact matches, in which:  
405 unique CDR3  
6 unique J



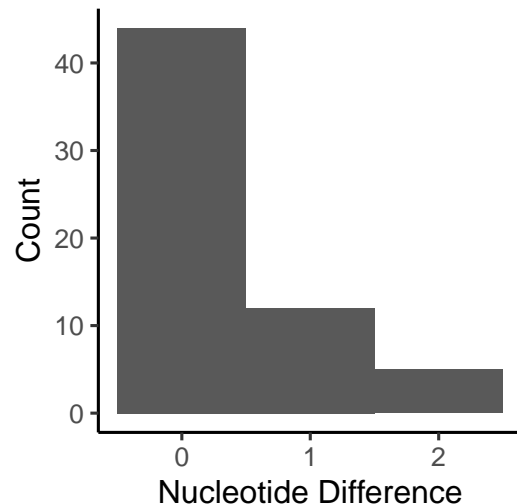
### IGHV2-5\*02

434 sequences assigned  
270 (62.2%) exact matches, in which:  
243 unique CDR3  
6 unique J



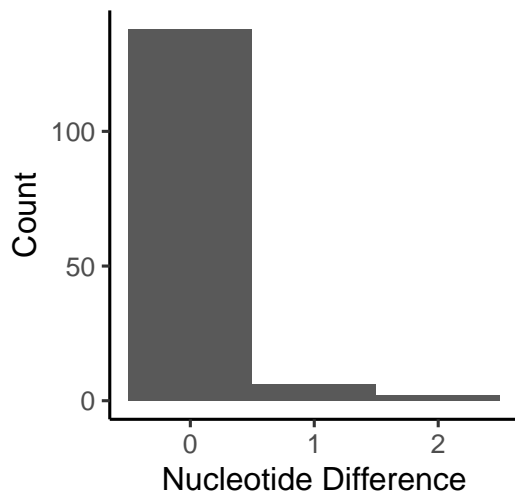
### IGHV2-70\*11\_15

61 sequences assigned  
44 (72.1%) exact matches, in which:  
44 unique CDR3  
5 unique J



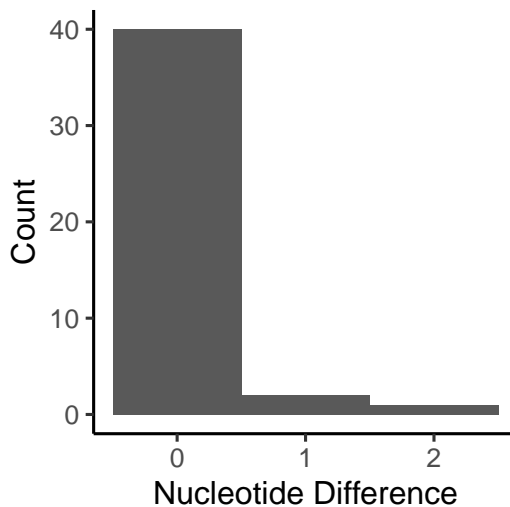
### IGHV1-69\*04\_09

146 sequences assigned  
138 (94.5%) exact matches, in which:  
138 unique CDR3  
6 unique J



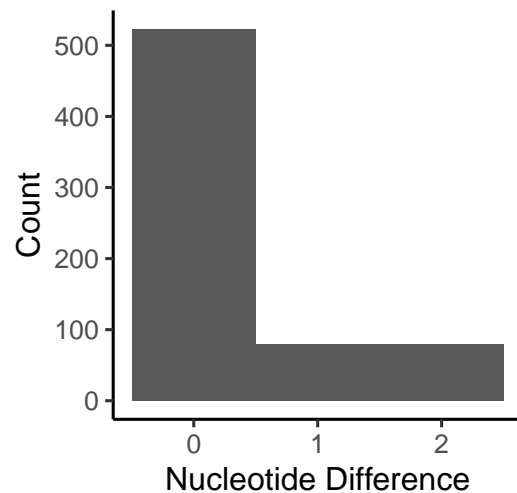
### IGHV2-26\*01

43 sequences assigned  
40 (93%) exact matches, in which:  
40 unique CDR3  
6 unique J



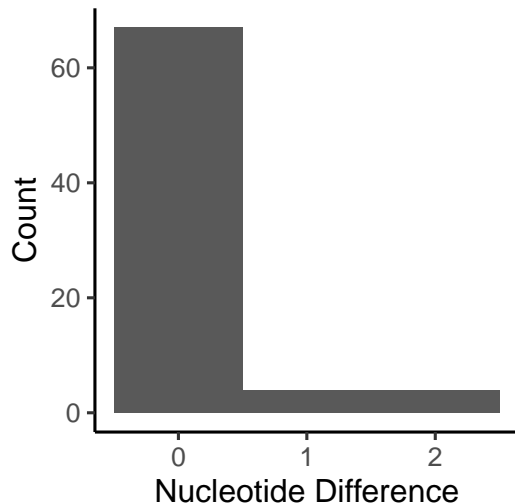
### IGHV3-7\*01

682 sequences assigned  
523 (76.7%) exact matches, in which:  
455 unique CDR3  
6 unique J



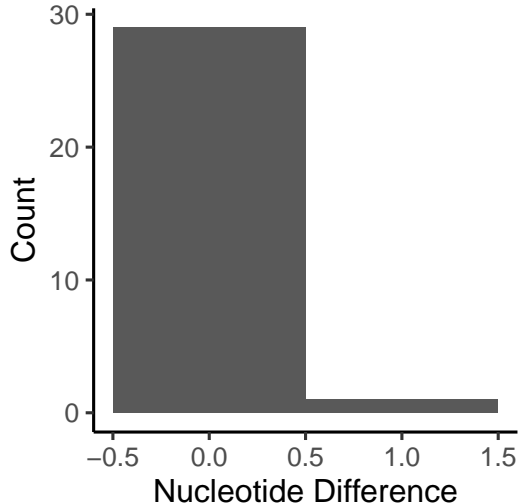
### IGHV2-5\*01

75 sequences assigned  
67 (89.3%) exact matches, in which:  
67 unique CDR3  
6 unique J



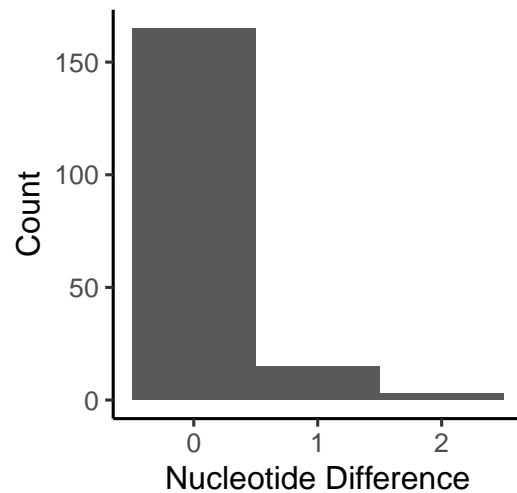
### IGHV2-70\*01

30 sequences assigned  
29 (96.7%) exact matches, in which:  
29 unique CDR3  
5 unique J



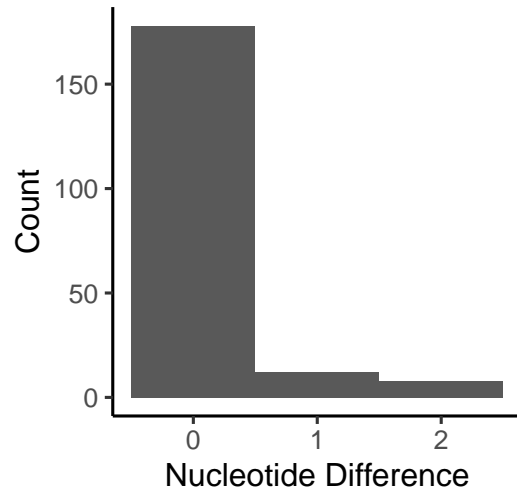
### IGHV3-9\*01

183 sequences assigned  
165 (90.2%) exact matches, in which:  
157 unique CDR3  
6 unique J



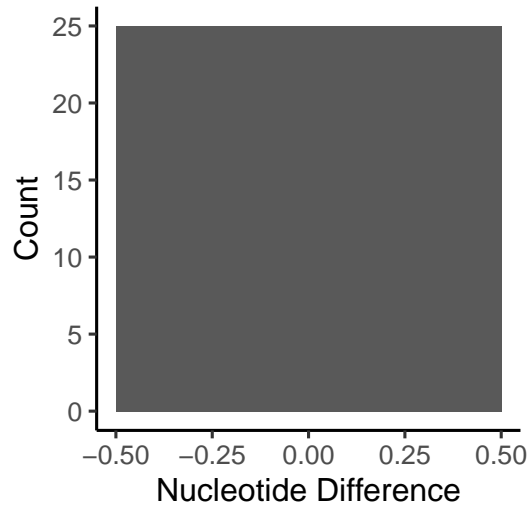
### IGHV3-11\*01

198 sequences assigned  
178 (89.9%) exact matches, in which:  
164 unique CDR3  
6 unique J



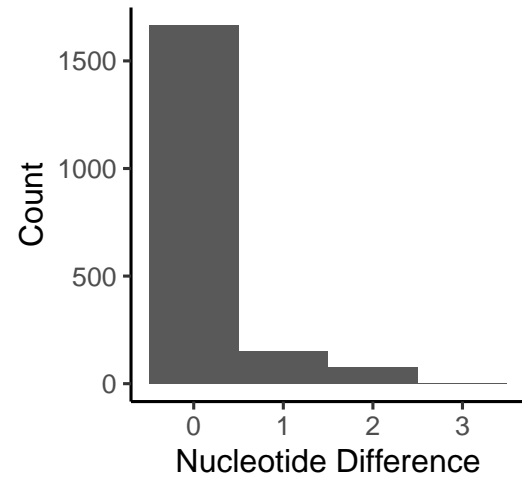
### IGHV3-13\*05

25 sequences assigned  
25 (100%) exact matches, in which:  
25 unique CDR3  
5 unique J



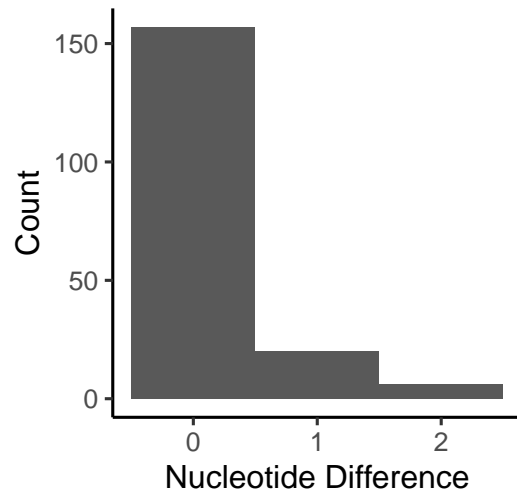
### IGHV3-21\*01\_02

1899 sequences assigned  
1665 (87.7%) exact matches, in which:  
1385 unique CDR3  
6 unique J



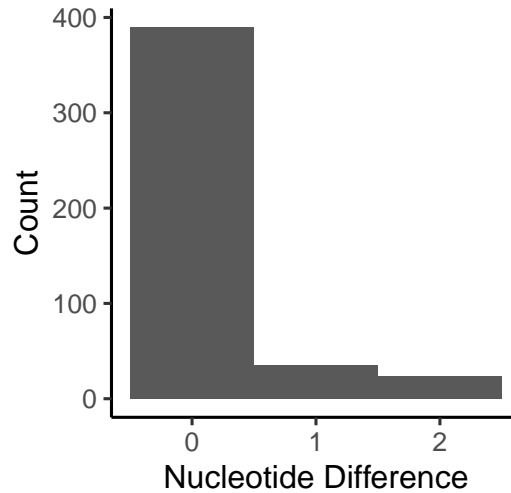
### IGHV3-11\*06

183 sequences assigned  
157 (85.8%) exact matches, in which:  
143 unique CDR3  
6 unique J



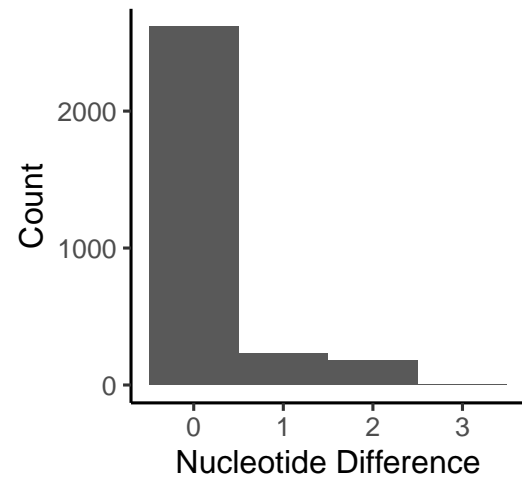
### IGHV3-15\*01\_02

449 sequences assigned  
390 (86.9%) exact matches, in which:  
334 unique CDR3  
6 unique J



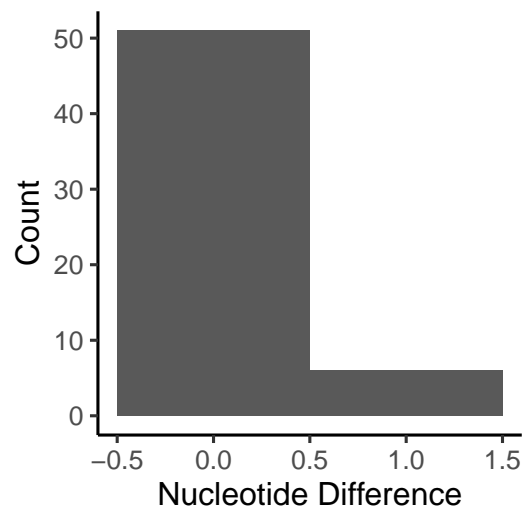
### IGHV3-23\*01\_04

3024 sequences assigned  
2616 (86.5%) exact matches, in which:  
2380 unique CDR3  
6 unique J



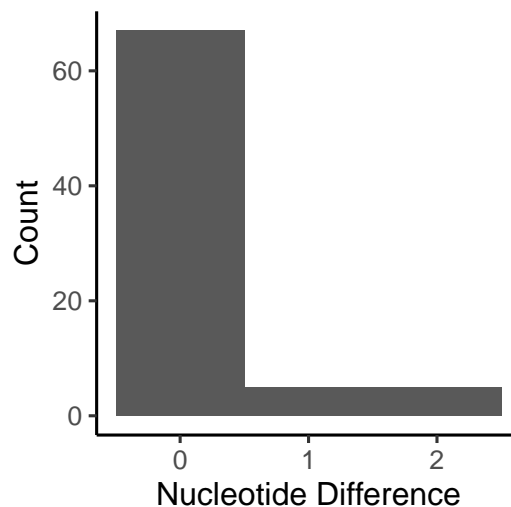
### IGHV3-13\*01

57 sequences assigned  
51 (89.5%) exact matches, in which:  
44 unique CDR3  
5 unique J



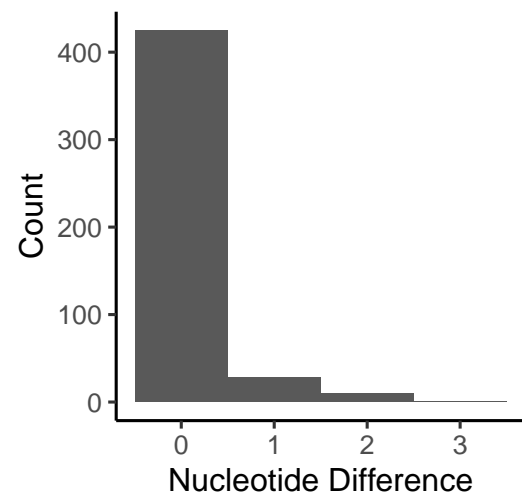
### IGHV3-20\*01\_02

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



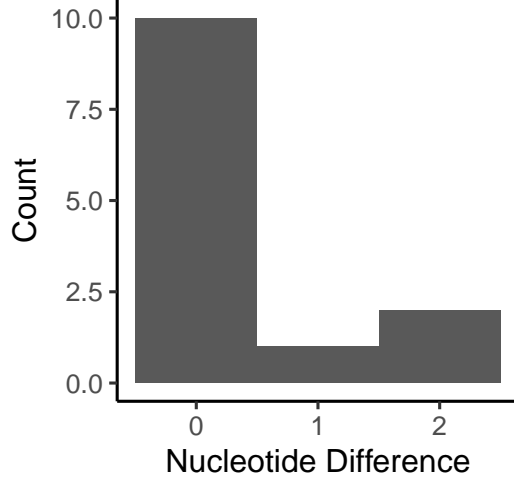
### IGHV3-30-3\*01

464 sequences assigned  
425 (91.6%) exact matches, in which:  
409 unique CDR3  
6 unique J



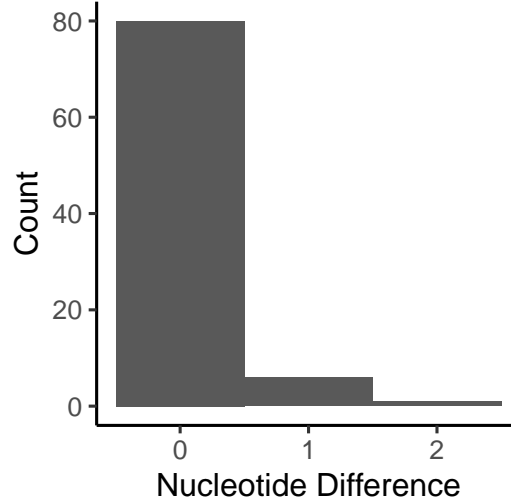
### IGHV3-30\*03

13 sequences assigned  
10 (76.9%) exact matches, in which:  
9 unique CDR3  
3 unique J



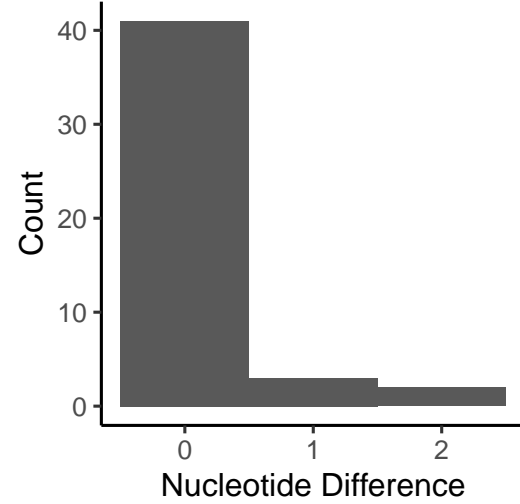
### IGHV3-43\*02

87 sequences assigned  
80 (92%) exact matches, in which:  
78 unique CDR3  
4 unique J



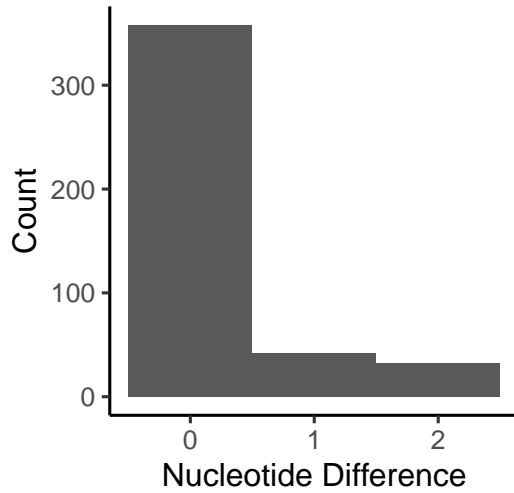
### IGHV3-49\*04

46 sequences assigned  
41 (89.1%) exact matches, in which:  
39 unique CDR3  
4 unique J



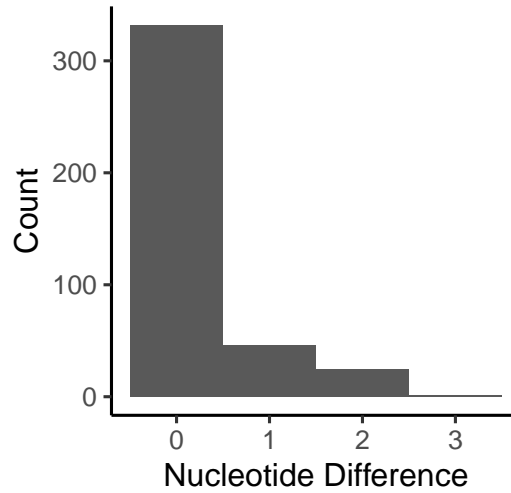
### IGHV3-33\*01

432 sequences assigned  
358 (82.9%) exact matches, in which:  
325 unique CDR3  
6 unique J



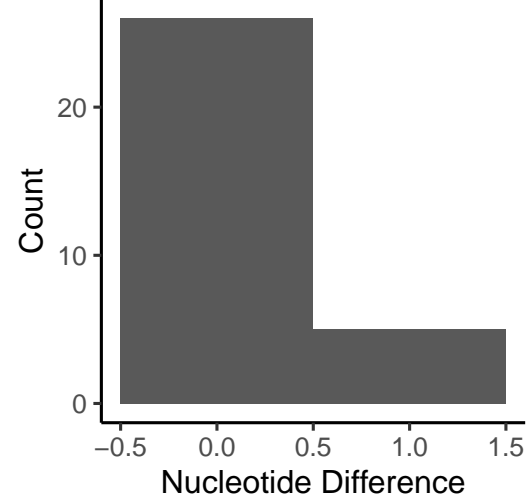
### IGHV3-48\*02

404 sequences assigned  
332 (82.2%) exact matches, in which:  
287 unique CDR3  
6 unique J



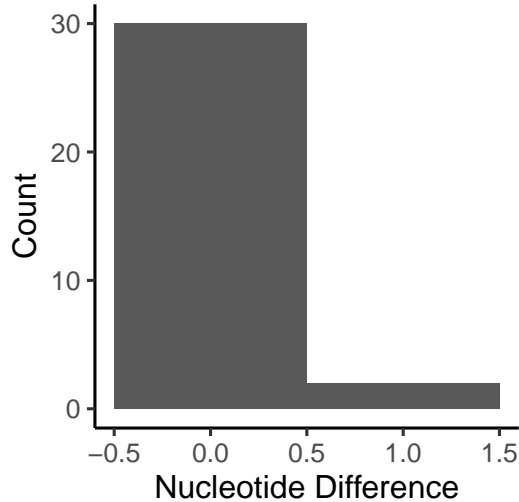
### IGHV3-49\*03\_05

31 sequences assigned  
26 (83.9%) exact matches, in which:  
25 unique CDR3  
5 unique J



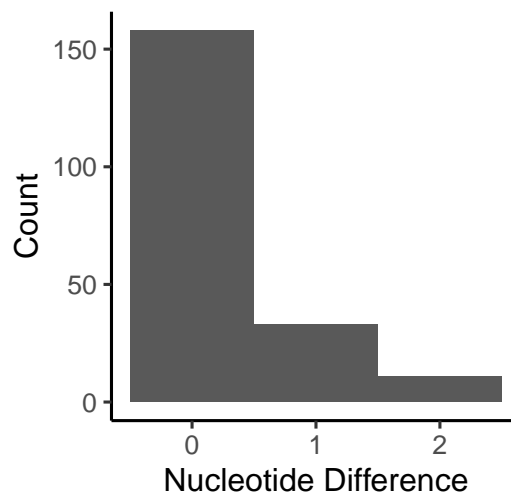
### IGHV3-43\*01

32 sequences assigned  
30 (93.8%) exact matches, in which:  
29 unique CDR3  
5 unique J



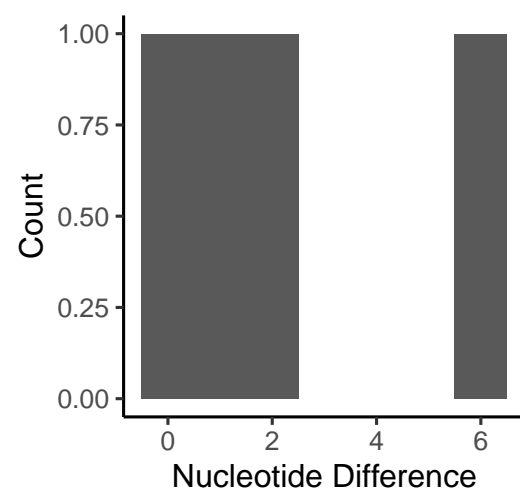
### IGHV3-48\*03

202 sequences assigned  
158 (78.2%) exact matches, in which:  
147 unique CDR3  
6 unique J



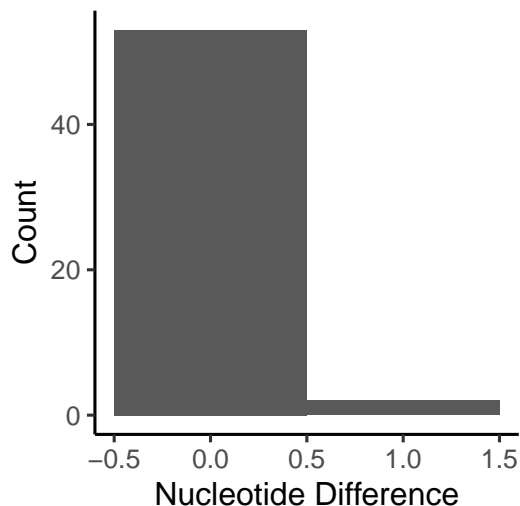
### IGHV3-52\*01\_03

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



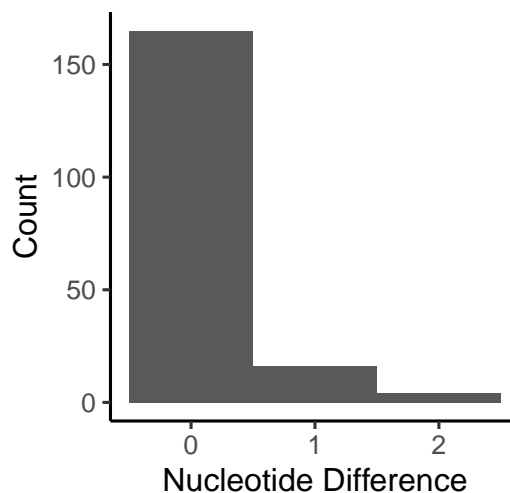
### IGHV3-53\*04

55 sequences assigned  
53 (96.4%) exact matches, in which:  
52 unique CDR3  
5 unique J



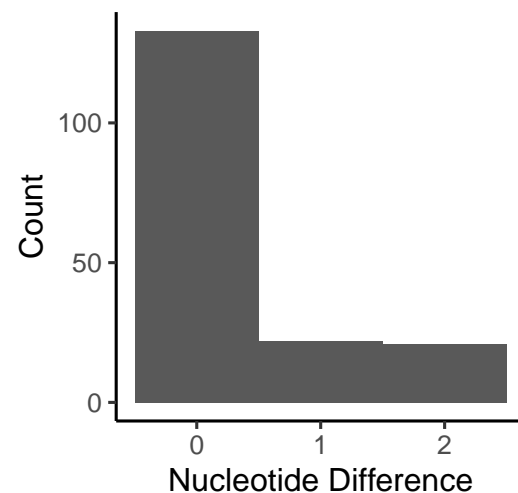
### IGHV3-66\*01

185 sequences assigned  
165 (89.2%) exact matches, in which:  
153 unique CDR3  
5 unique J



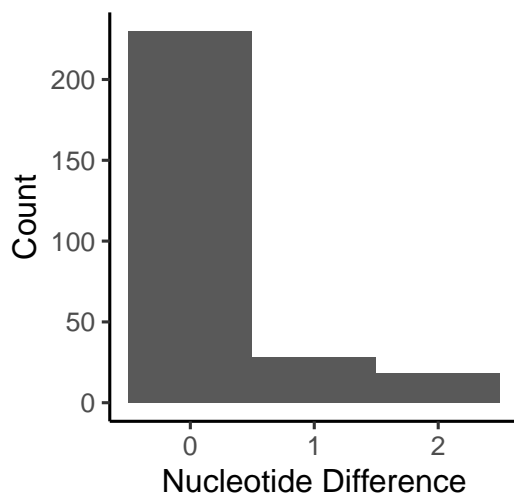
### IGHV3-74\*01\_02

176 sequences assigned  
133 (75.6%) exact matches, in which:  
112 unique CDR3  
6 unique J



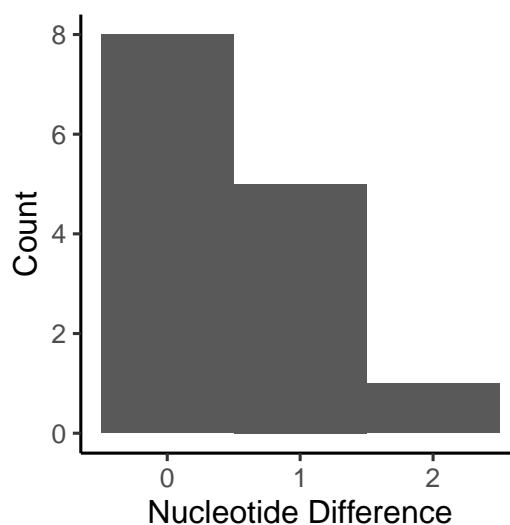
### IGHV3-53\*01\_02

276 sequences assigned  
230 (83.3%) exact matches, in which:  
209 unique CDR3  
6 unique J



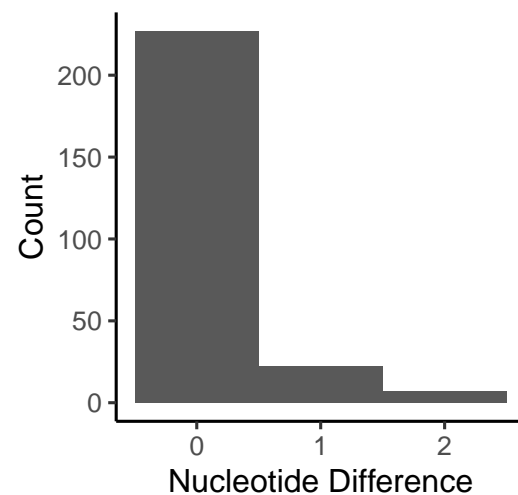
### IGHV3-72\*01

14 sequences assigned  
8 (57.1%) exact matches, in which:  
7 unique CDR3  
3 unique J



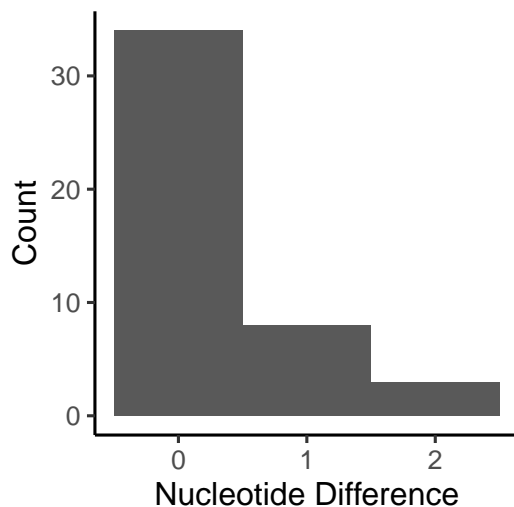
### IGHV3-64D\*06

256 sequences assigned  
227 (88.7%) exact matches, in which:  
220 unique CDR3  
6 unique J



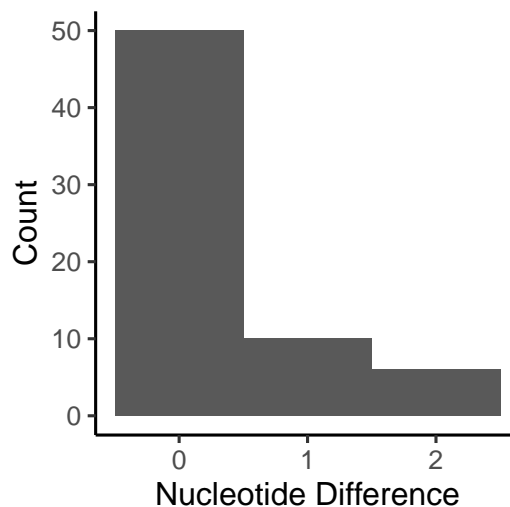
### IGHV3-64\*01

45 sequences assigned  
34 (75.6%) exact matches, in which:  
32 unique CDR3  
5 unique J



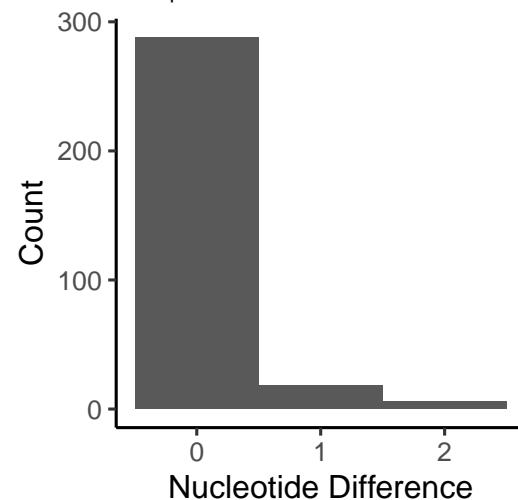
### IGHV3-73\*01\_02

66 sequences assigned  
50 (75.8%) exact matches, in which:  
37 unique CDR3  
4 unique J



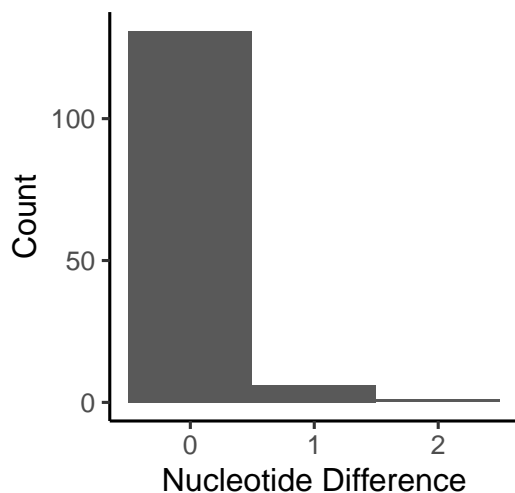
### IGHV4-4\*07

312 sequences assigned  
288 (92.3%) exact matches, in which:  
279 unique CDR3  
6 unique J



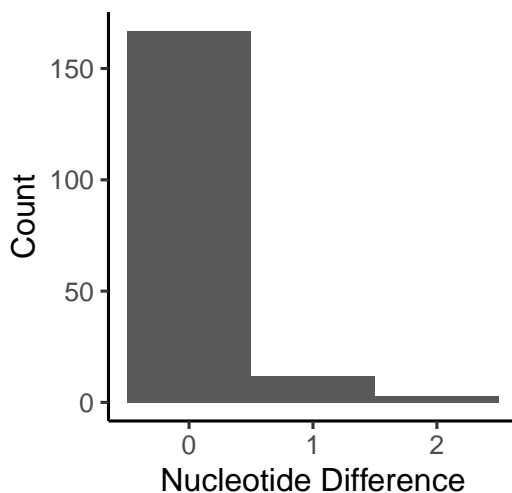
### IGHV4-4\*02\_03

138 sequences assigned  
131 (94.9%) exact matches, in which:  
127 unique CDR3  
6 unique J



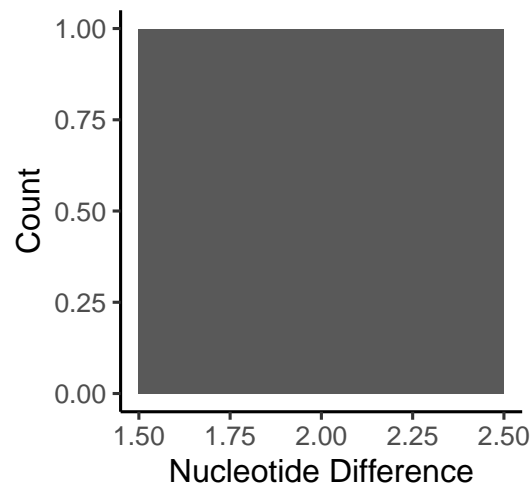
### IGHV4-30-4\*01

182 sequences assigned  
167 (91.8%) exact matches, in which:  
163 unique CDR3  
6 unique J



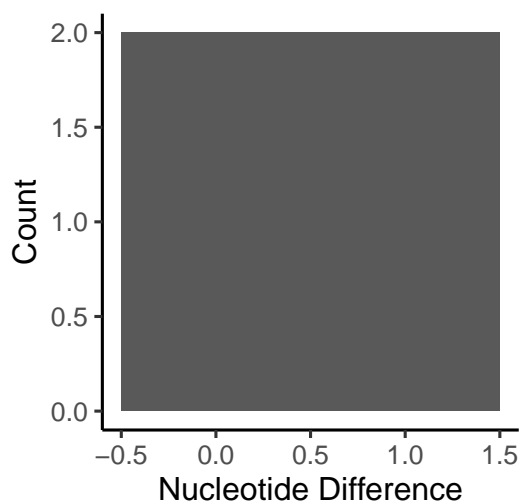
### IGHV4-39\*02

1 sequences assigned  
No exact matches.



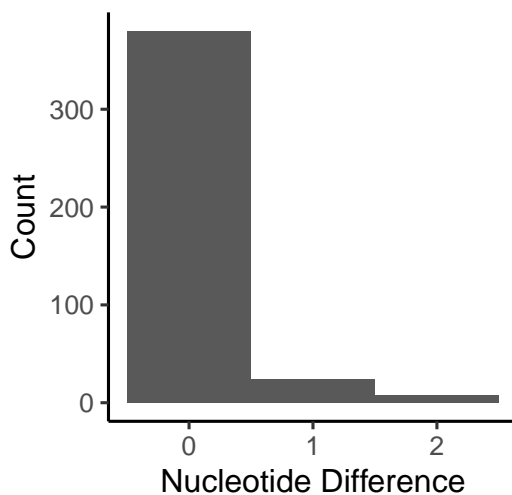
### IGHV4-28\*01\_07

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



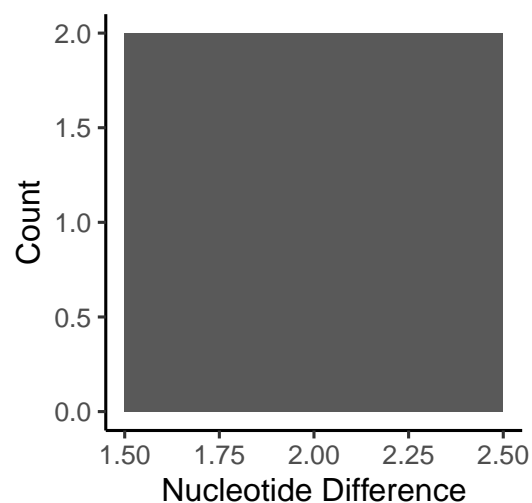
### IGHV4-31\*02

412 sequences assigned  
380 (92.2%) exact matches, in which:  
371 unique CDR3  
6 unique J



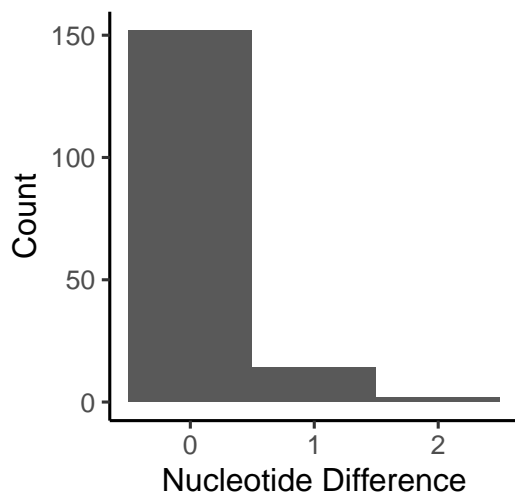
### IGHV4-39\*07

2 sequences assigned  
No exact matches.



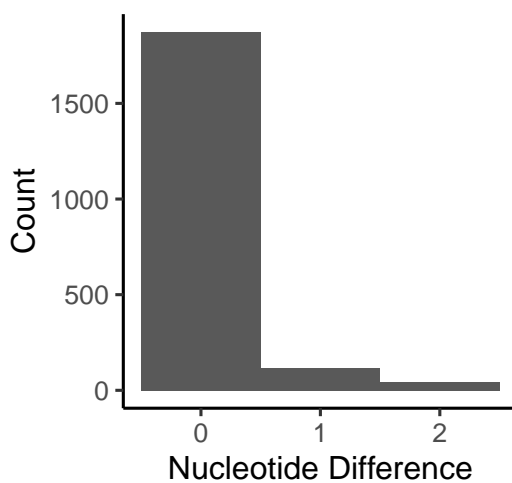
### IGHV4-30-2\*01

168 sequences assigned  
152 (90.5%) exact matches, in which:  
151 unique CDR3  
6 unique J



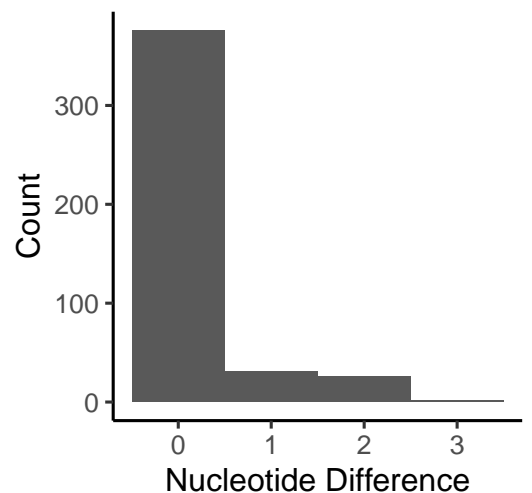
### IGHV4-34\*01\_02

2036 sequences assigned  
1873 (92%) exact matches, in which:  
1840 unique CDR3  
6 unique J



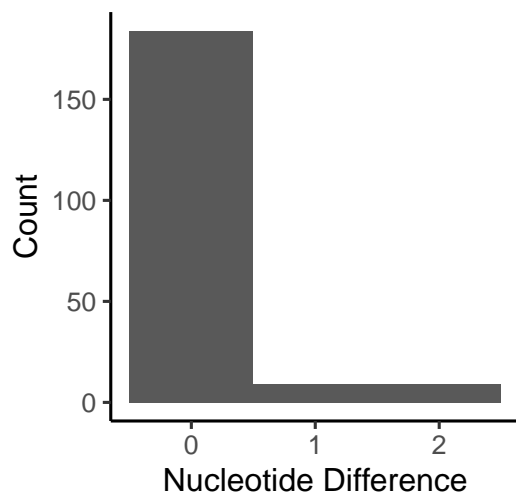
### IGHV4-59\*08

435 sequences assigned  
376 (86.4%) exact matches, in which:  
368 unique CDR3  
6 unique J



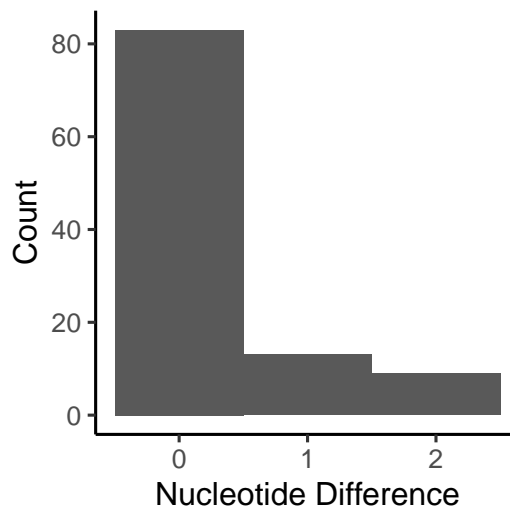
### IGHV4–61\*01

202 sequences assigned  
184 (91.1%) exact matches, in which:  
176 unique CDR3  
6 unique J



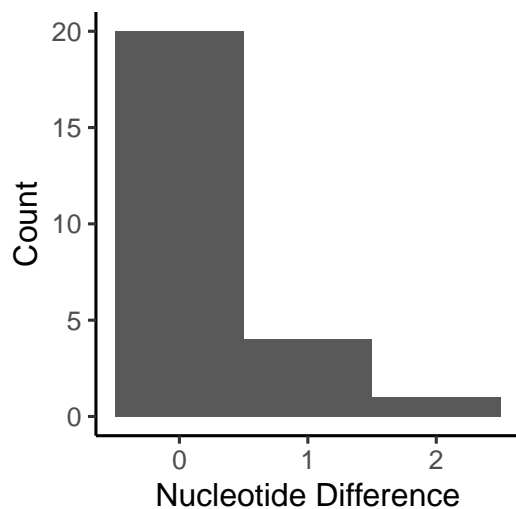
### IGHV7–4–1\*02

105 sequences assigned  
83 (79%) exact matches, in which:  
82 unique CDR3  
5 unique J



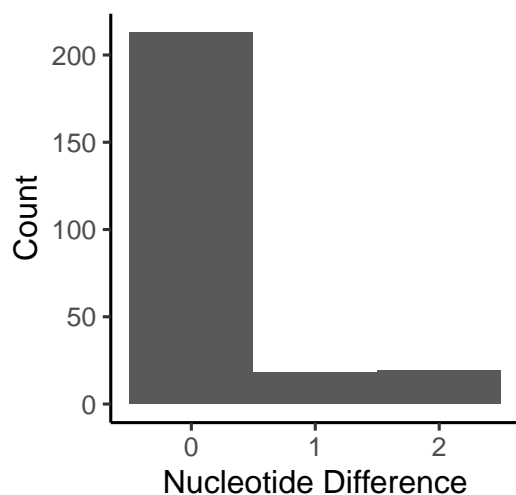
### IGHV5–10–1\*01\_03

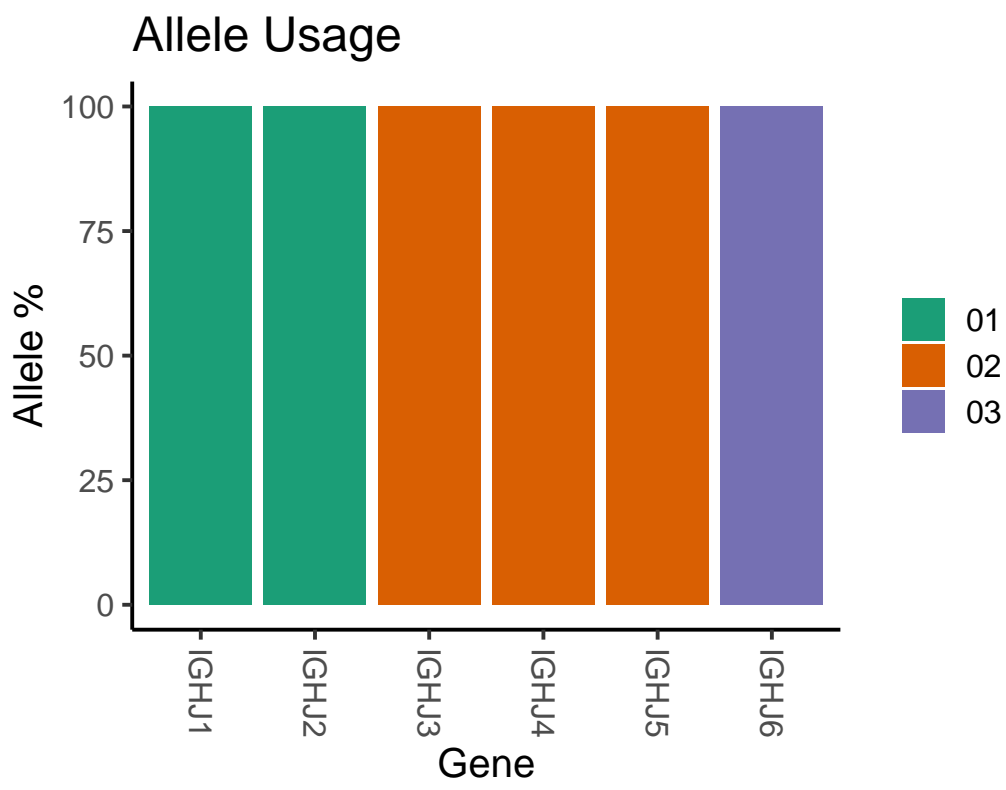
25 sequences assigned  
20 (80%) exact matches, in which:  
20 unique CDR3  
4 unique J



### IGHV6–1\*01\_02

250 sequences assigned  
213 (85.2%) exact matches, in which:  
212 unique CDR3  
6 unique J







Warning – no inferred sequences found.