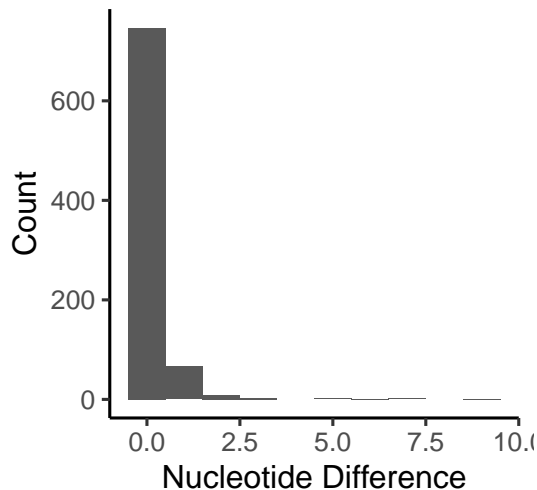


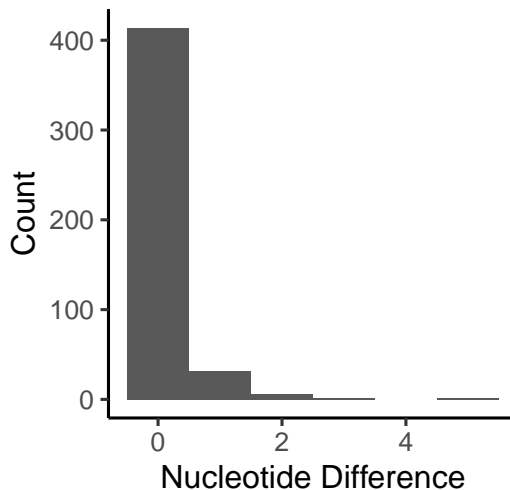
### IGHV1-2\*02

831 sequences assigned  
747 (89.9%) exact matches, in which:  
717 unique CDR3  
6 unique J



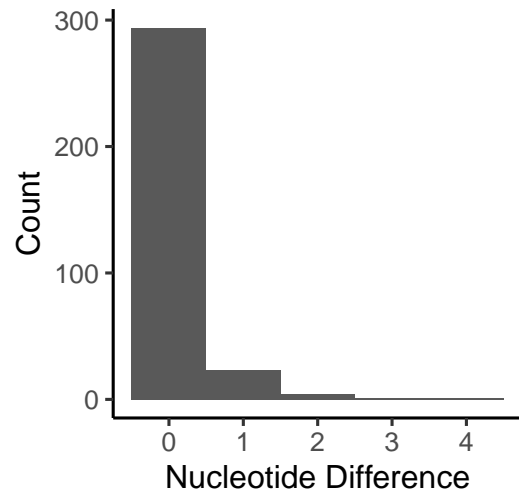
### IGHV1-8\*01

456 sequences assigned  
414 (90.8%) exact matches, in which:  
406 unique CDR3  
6 unique J



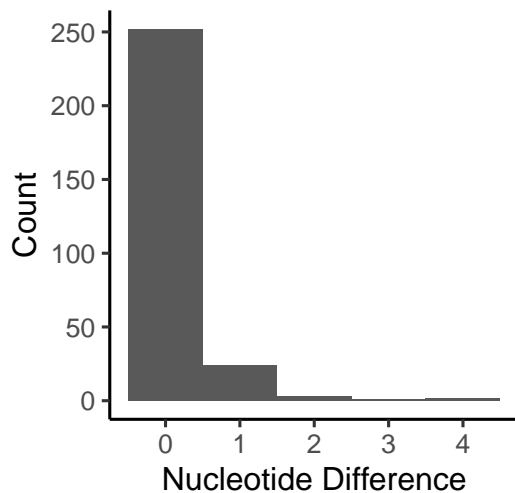
### IGHV1-24\*01

323 sequences assigned  
294 (91%) exact matches, in which:  
286 unique CDR3  
6 unique J



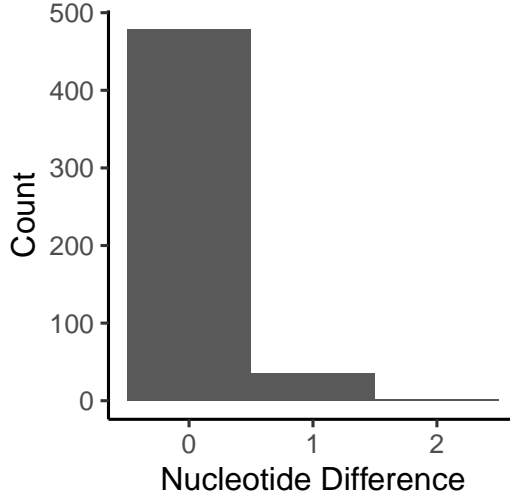
### IGHV1-2\*04

282 sequences assigned  
252 (89.4%) exact matches, in which:  
244 unique CDR3  
6 unique J



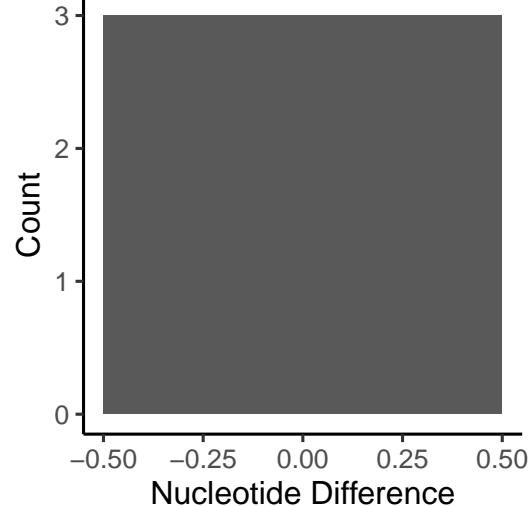
### IGHV1-18\*01

516 sequences assigned  
479 (92.8%) exact matches, in which:  
472 unique CDR3  
6 unique J



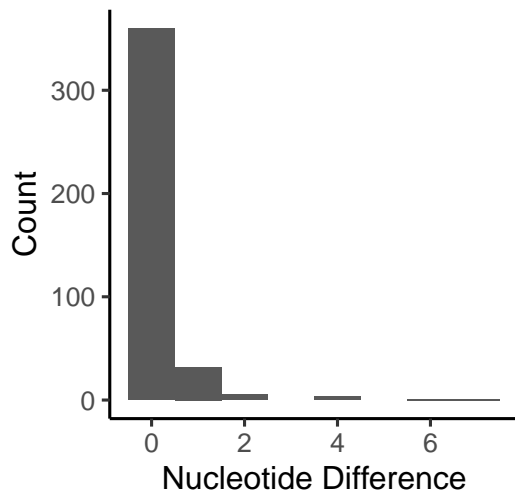
### IGHV1-45\*02

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



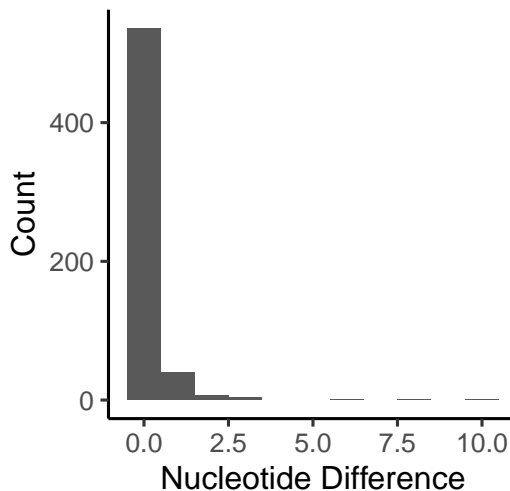
### IGHV1-3\*01

403 sequences assigned  
360 (89.3%) exact matches, in which:  
348 unique CDR3  
6 unique J



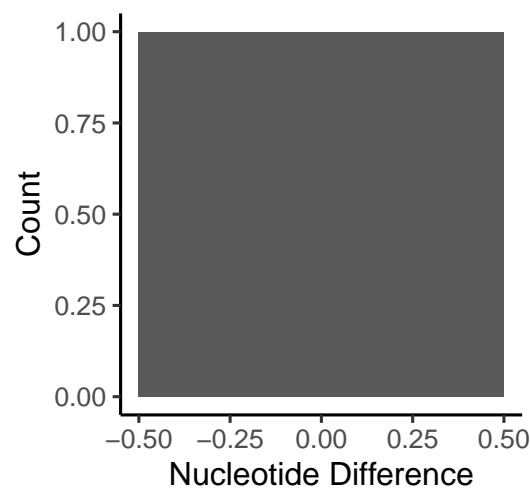
### IGHV1-18\*04

588 sequences assigned  
536 (91.2%) exact matches, in which:  
523 unique CDR3  
6 unique J



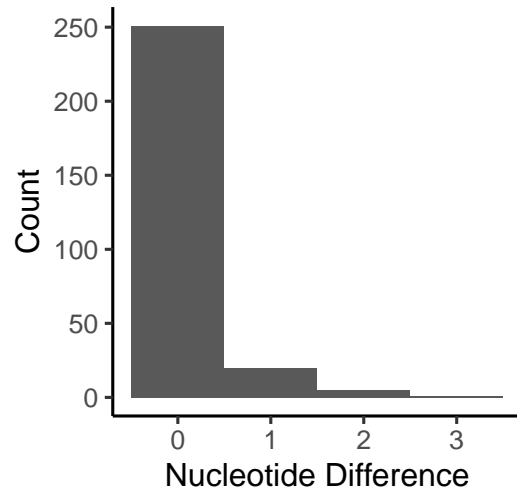
### IGHV1-45\*03

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



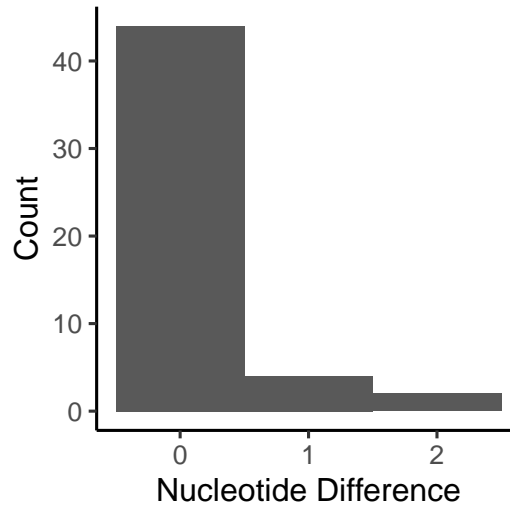
### IGHV1-46\*01

277 sequences assigned  
251 (90.6%) exact matches, in which:  
243 unique CDR3  
6 unique J



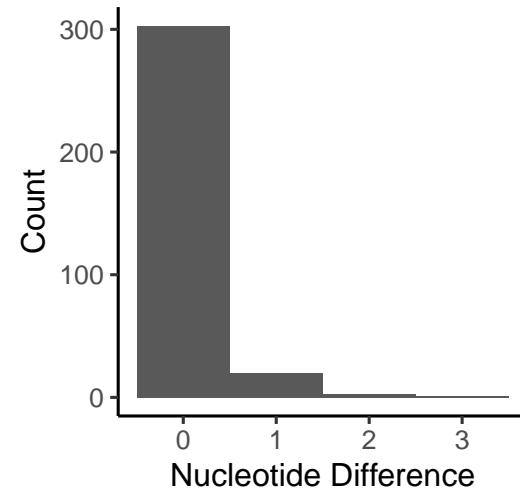
### IGHV1-58\*02

50 sequences assigned  
44 (88%) exact matches, in which:  
41 unique CDR3  
4 unique J



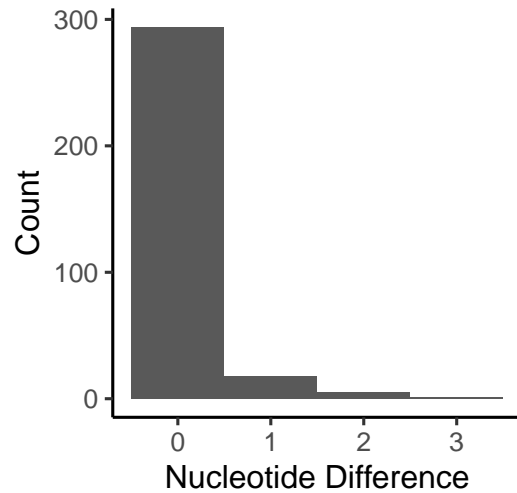
### IGHV2-5\*01

327 sequences assigned  
303 (92.7%) exact matches, in which:  
297 unique CDR3  
6 unique J



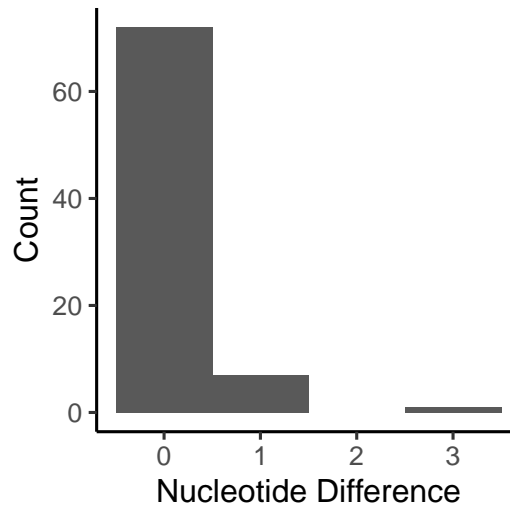
### IGHV1-46\*03

318 sequences assigned  
294 (92.5%) exact matches, in which:  
285 unique CDR3  
6 unique J



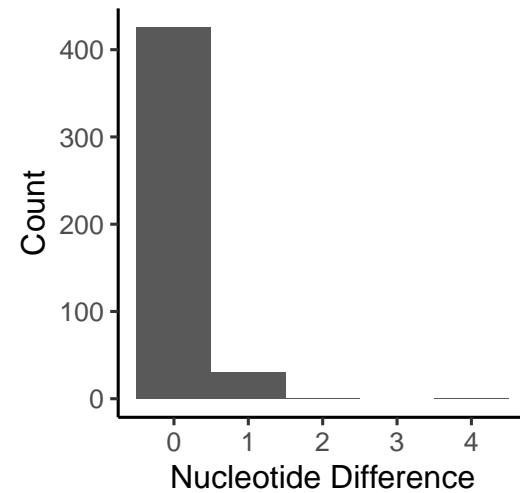
### IGHV1-69-2\*01

80 sequences assigned  
72 (90%) exact matches, in which:  
71 unique CDR3  
6 unique J



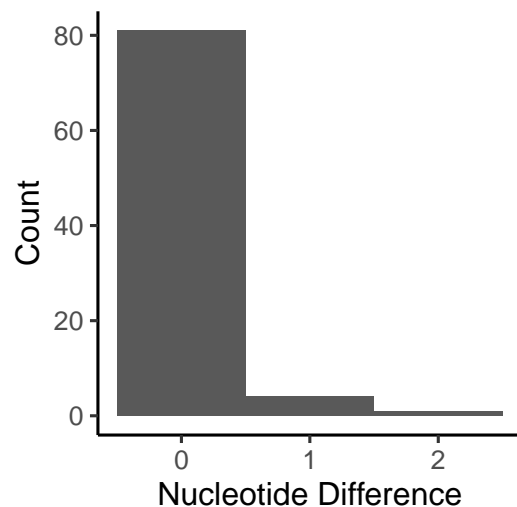
### IGHV2-5\*02

458 sequences assigned  
426 (93%) exact matches, in which:  
420 unique CDR3  
6 unique J



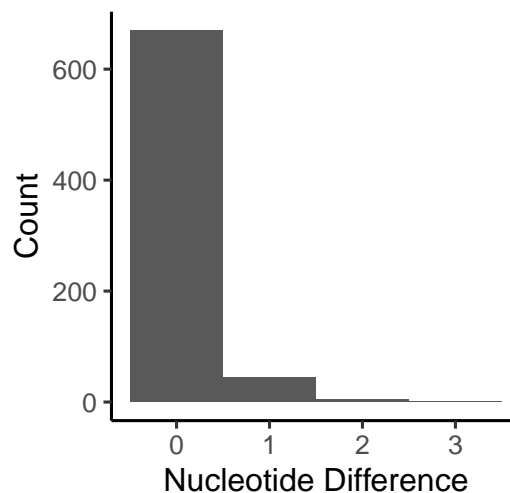
### IGHV1-58\*01

86 sequences assigned  
81 (94.2%) exact matches, in which:  
81 unique CDR3  
5 unique J



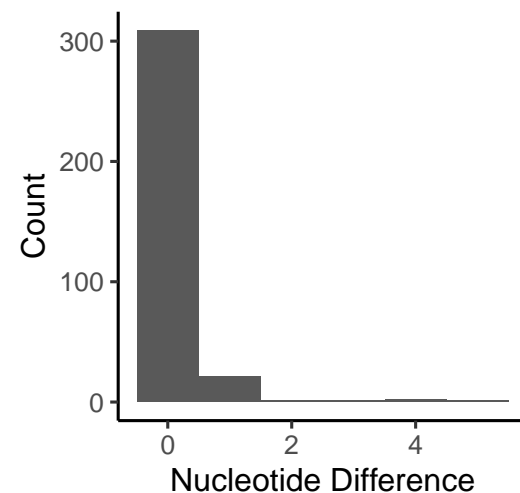
### IGHV1-69\*04

720 sequences assigned  
670 (93.1%) exact matches, in which:  
659 unique CDR3  
6 unique J



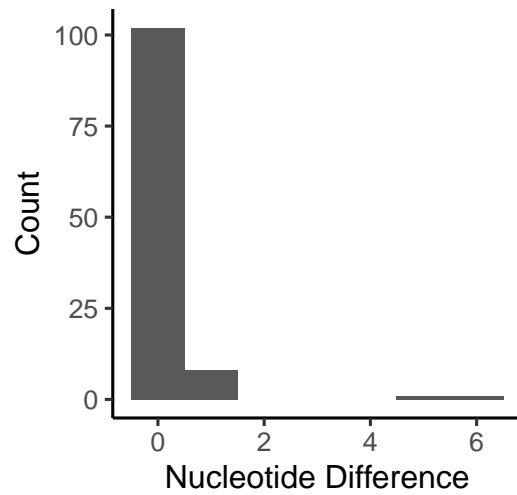
### IGHV2-26\*01

335 sequences assigned  
309 (92.2%) exact matches, in which:  
306 unique CDR3  
6 unique J



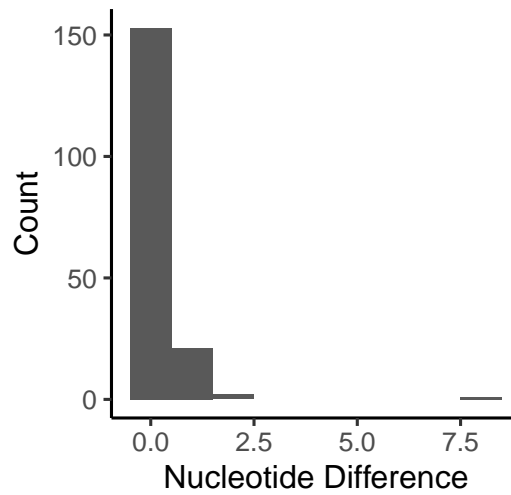
### IGHV2-70\*01

112 sequences assigned  
102 (91.1%) exact matches, in which:  
102 unique CDR3  
6 unique J



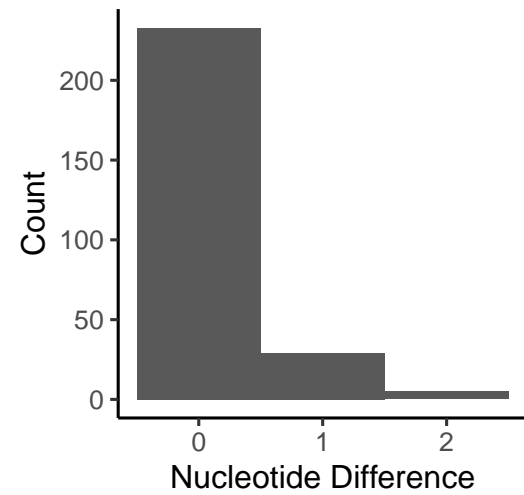
### IGHV3-7\*05

177 sequences assigned  
153 (86.4%) exact matches, in which:  
147 unique CDR3  
6 unique J



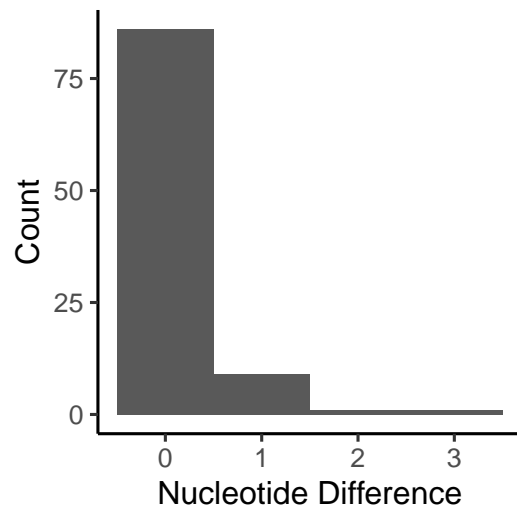
### IGHV3-11\*06

267 sequences assigned  
233 (87.3%) exact matches, in which:  
226 unique CDR3  
6 unique J



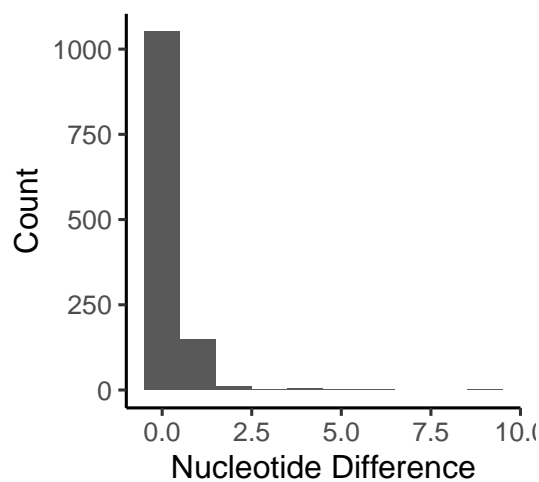
### IGHV2-70\*15

97 sequences assigned  
86 (88.7%) exact matches, in which:  
86 unique CDR3  
6 unique J



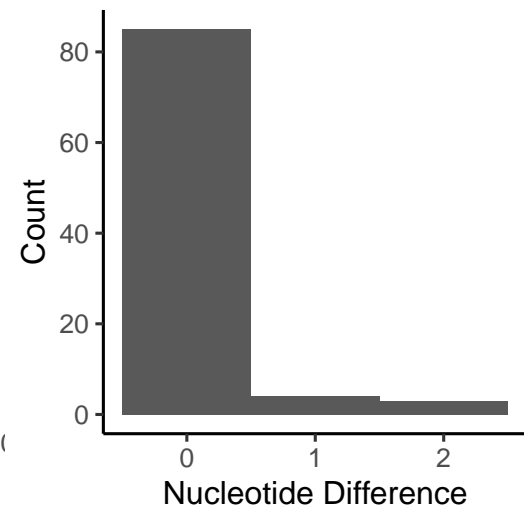
### IGHV3-9\*01

1219 sequences assigned  
1051 (86.2%) exact matches, in which:  
1010 unique CDR3  
6 unique J



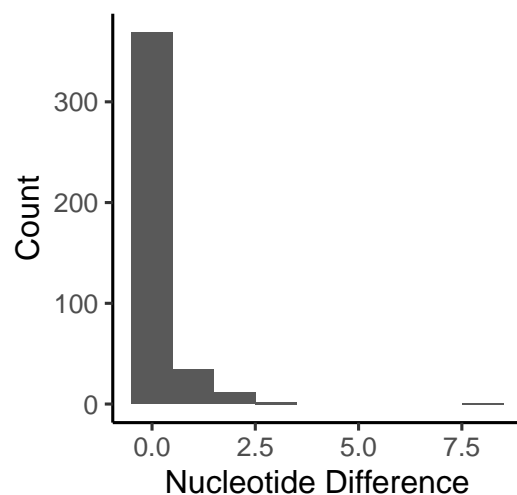
### IGHV3-13\*01

92 sequences assigned  
85 (92.4%) exact matches, in which:  
83 unique CDR3  
6 unique J



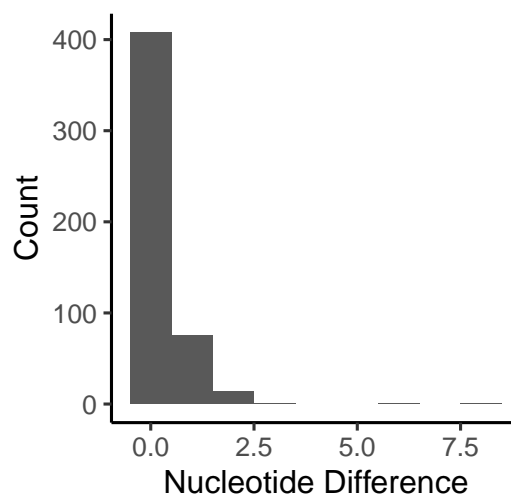
### IGHV3-7\*01

417 sequences assigned  
369 (88.5%) exact matches, in which:  
353 unique CDR3  
6 unique J



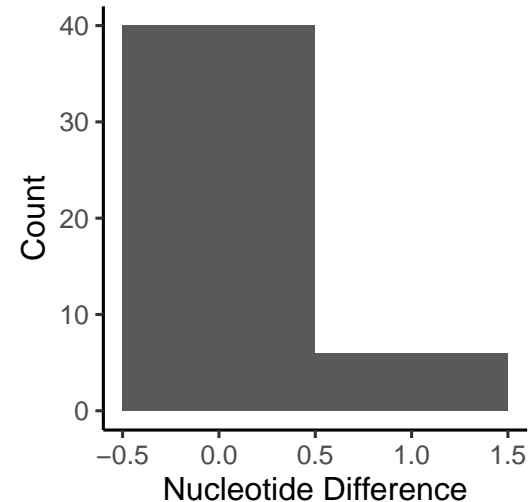
### IGHV3-11\*01

500 sequences assigned  
408 (81.6%) exact matches, in which:  
394 unique CDR3  
6 unique J



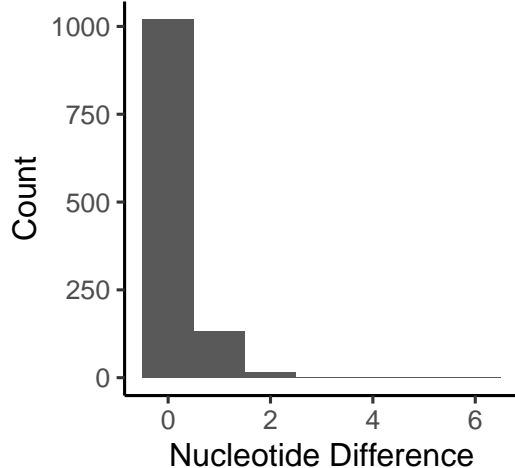
### IGHV3-13\*05

46 sequences assigned  
40 (87%) exact matches, in which:  
38 unique CDR3  
5 unique J



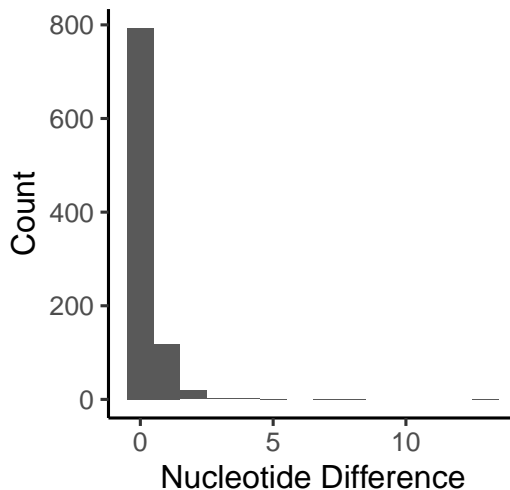
### IGHV3-15\*01

1176 sequences assigned  
1020 (86.7%) exact matches, in which:  
989 unique CDR3  
6 unique J



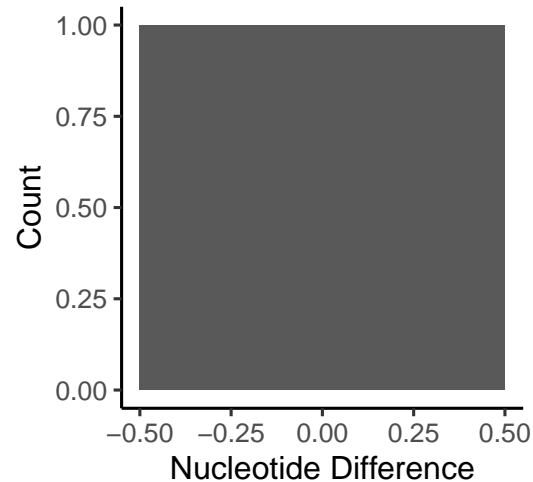
### IGHV3-30-3\*01

940 sequences assigned  
794 (84.5%) exact matches, in which:  
758 unique CDR3  
6 unique J



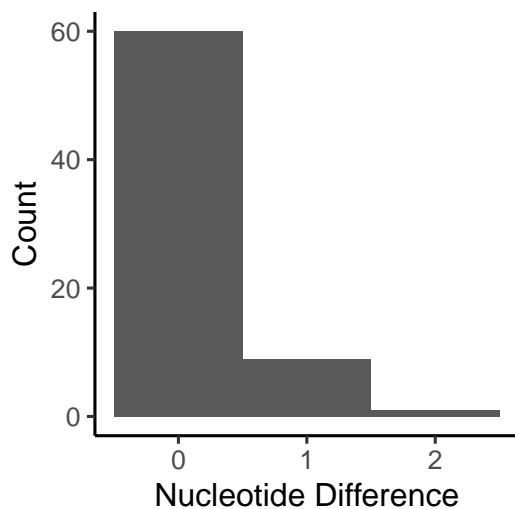
### IGHV3-47\*02

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



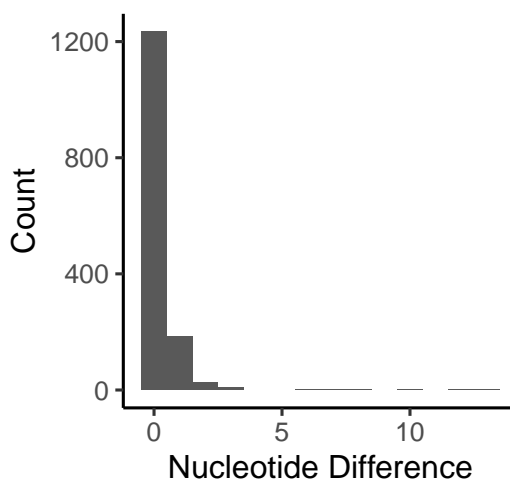
### IGHV3-20\*01

70 sequences assigned  
60 (85.7%) exact matches, in which:  
59 unique CDR3  
5 unique J



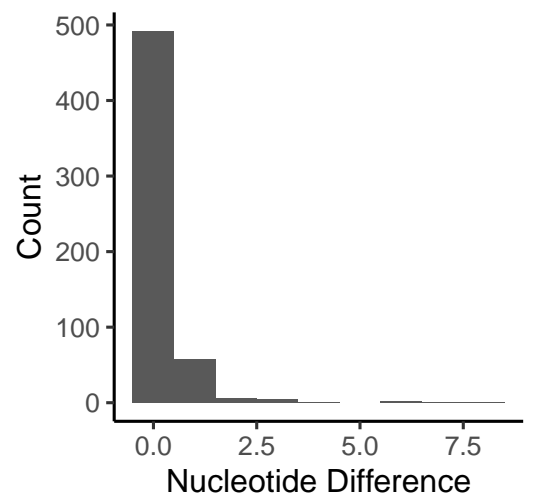
### IGHV3-33\*01

1465 sequences assigned  
1234 (84.2%) exact matches, in which:  
1180 unique CDR3  
6 unique J



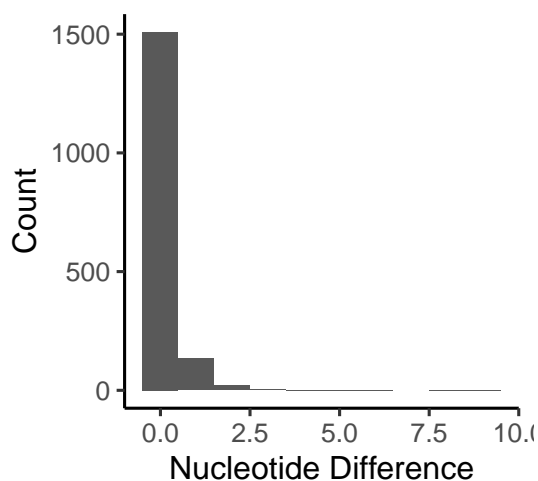
### IGHV3-48\*02

565 sequences assigned  
492 (87.1%) exact matches, in which:  
484 unique CDR3  
6 unique J



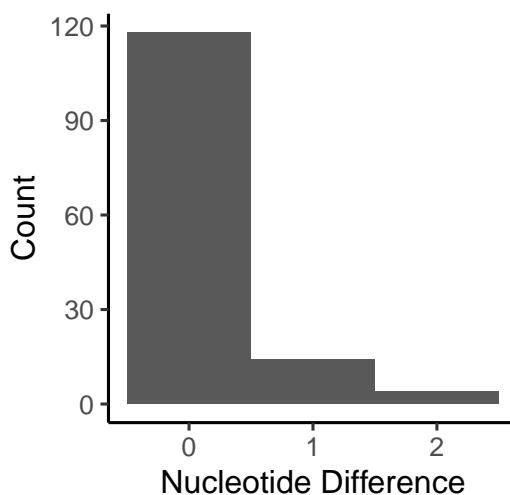
### IGHV3-21\*01

1672 sequences assigned  
1509 (90.3%) exact matches, in which:  
1448 unique CDR3  
6 unique J



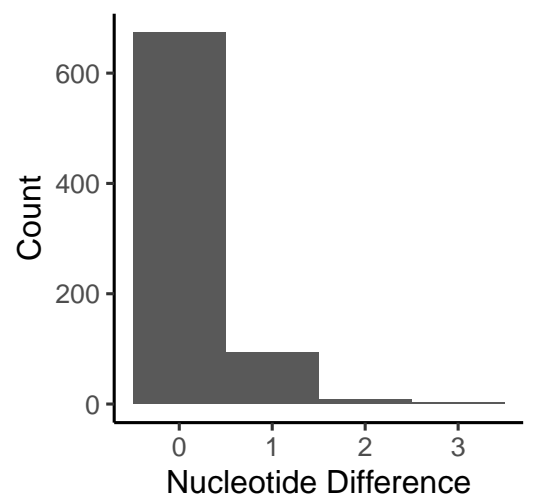
### IGHV3-43\*01

136 sequences assigned  
118 (86.8%) exact matches, in which:  
112 unique CDR3  
6 unique J



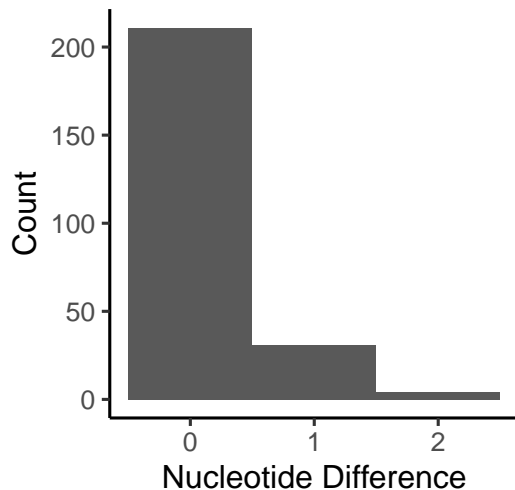
### IGHV3-48\*03

781 sequences assigned  
674 (86.3%) exact matches, in which:  
646 unique CDR3  
6 unique J



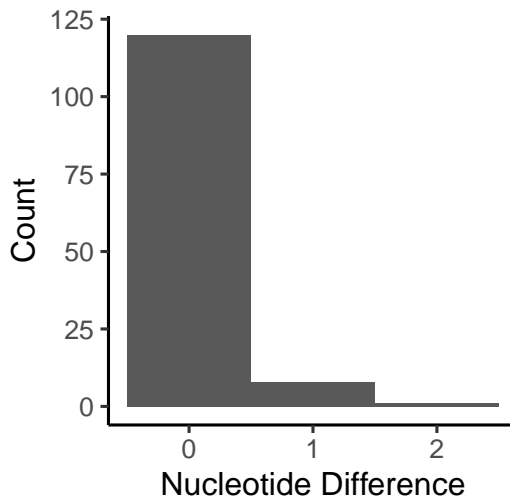
### IGHV3-49\*04

246 sequences assigned  
211 (85.8%) exact matches, in which:  
207 unique CDR3  
6 unique J



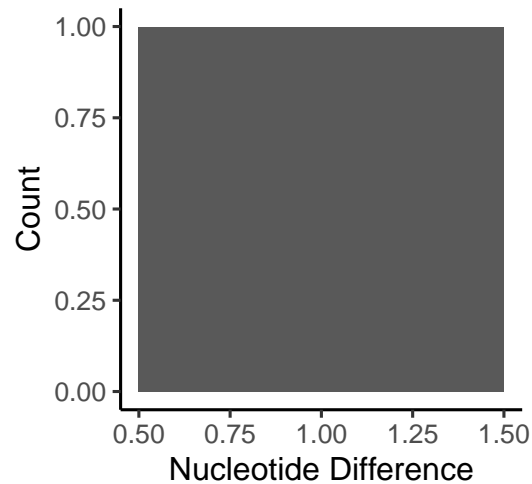
### IGHV3-53\*04

129 sequences assigned  
120 (93%) exact matches, in which:  
114 unique CDR3  
6 unique J



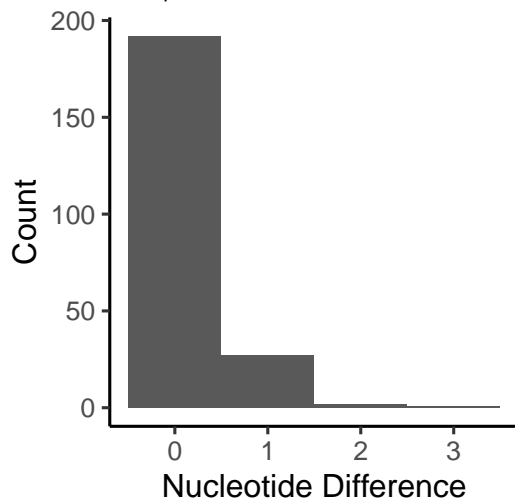
### IGHV3-69-1\*01

1 sequences assigned  
No exact matches.



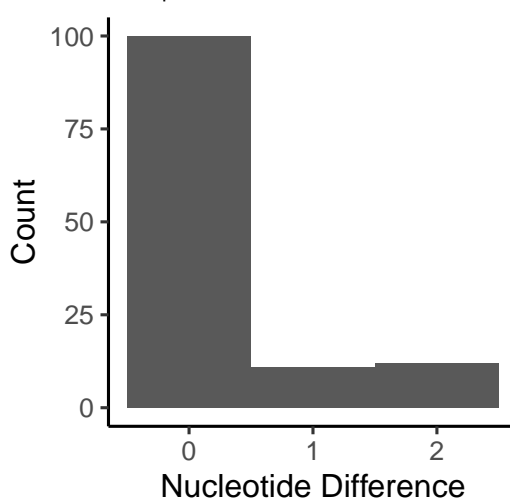
### IGHV3-49\*05

222 sequences assigned  
192 (86.5%) exact matches, in which:  
187 unique CDR3  
6 unique J



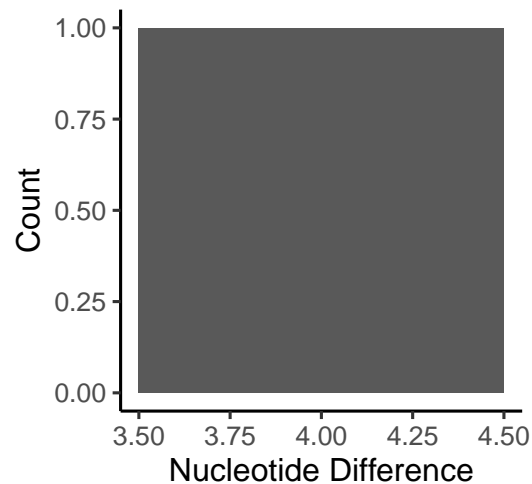
### IGHV3-64\*01

123 sequences assigned  
100 (81.3%) exact matches, in which:  
99 unique CDR3  
6 unique J



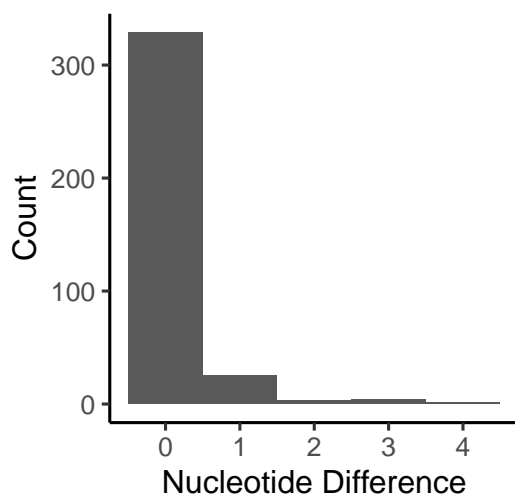
### IGHV3-69-1\*02

1 sequences assigned  
No exact matches.



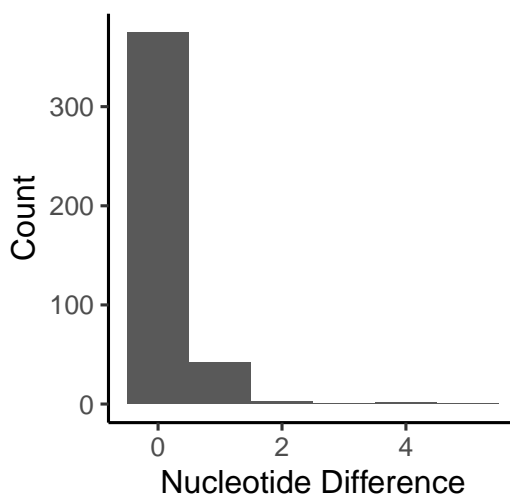
### IGHV3-53\*01

362 sequences assigned  
329 (90.9%) exact matches, in which:  
317 unique CDR3  
6 unique J



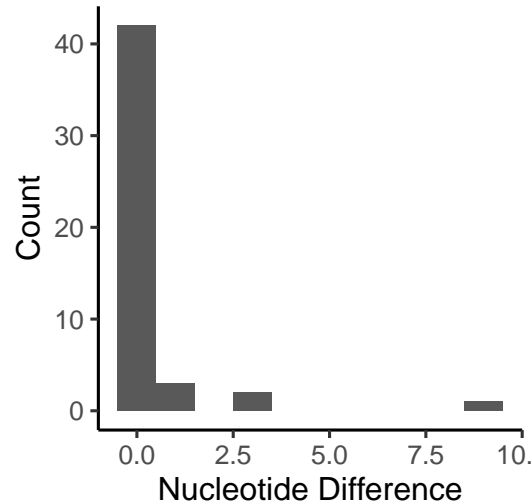
### IGHV3-66\*01

424 sequences assigned  
375 (88.4%) exact matches, in which:  
354 unique CDR3  
6 unique J



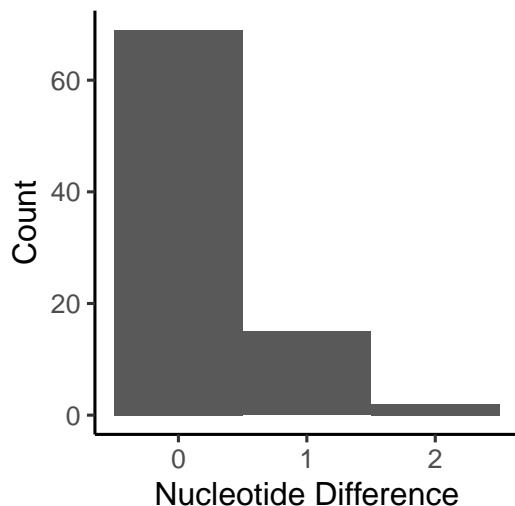
### IGHV3-72\*01

48 sequences assigned  
42 (87.5%) exact matches, in which:  
41 unique CDR3  
6 unique J



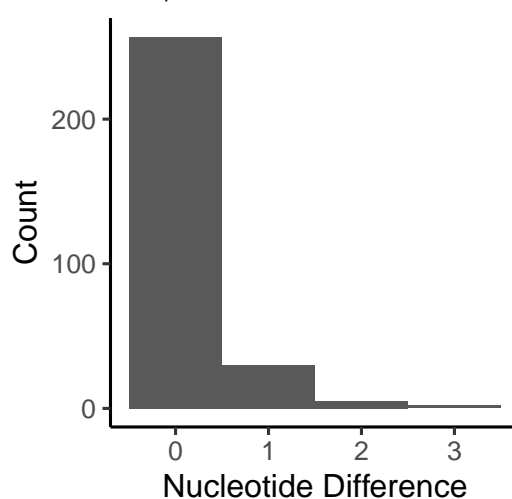
### IGHV3-73\*01

86 sequences assigned  
69 (80.2%) exact matches, in which:  
67 unique CDR3  
6 unique J



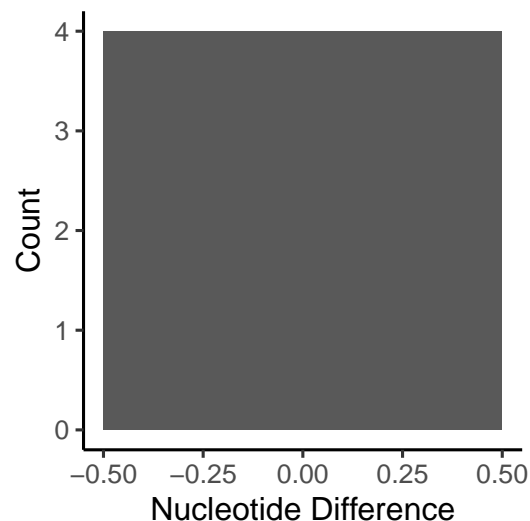
### IGHV3-64D\*06

294 sequences assigned  
257 (87.4%) exact matches, in which:  
245 unique CDR3  
6 unique J



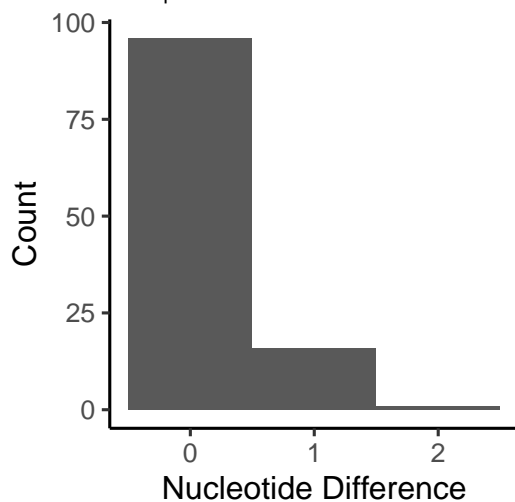
### IGHV4-28\*01

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



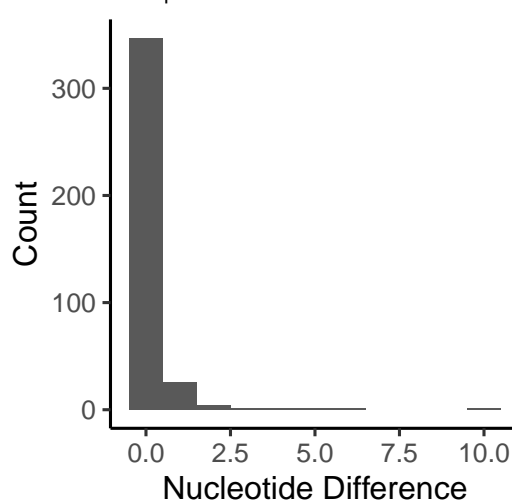
### IGHV3-73\*02

113 sequences assigned  
96 (85%) exact matches, in which:  
94 unique CDR3  
6 unique J



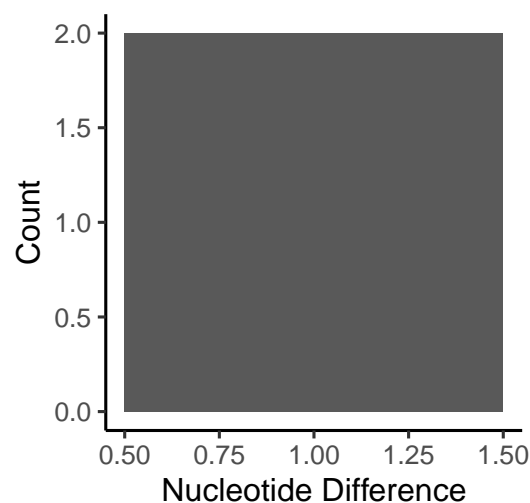
### IGHV4-4\*02

382 sequences assigned  
347 (90.8%) exact matches, in which:  
339 unique CDR3  
6 unique J



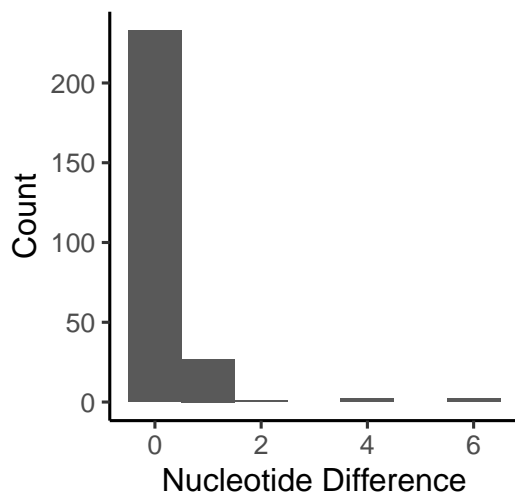
### IGHV4-28\*04

2 sequences assigned  
No exact matches.



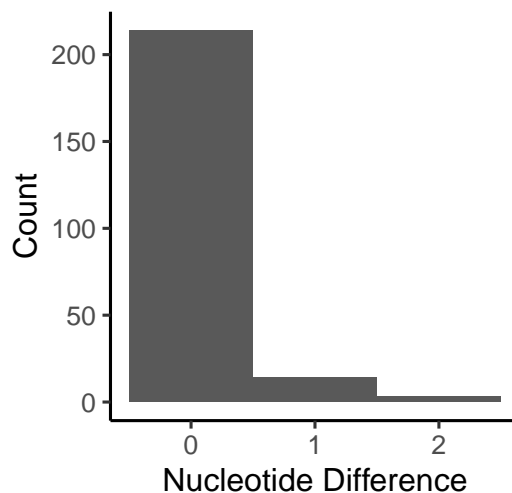
### IGHV3-74\*01

265 sequences assigned  
233 (87.9%) exact matches, in which:  
229 unique CDR3  
6 unique J



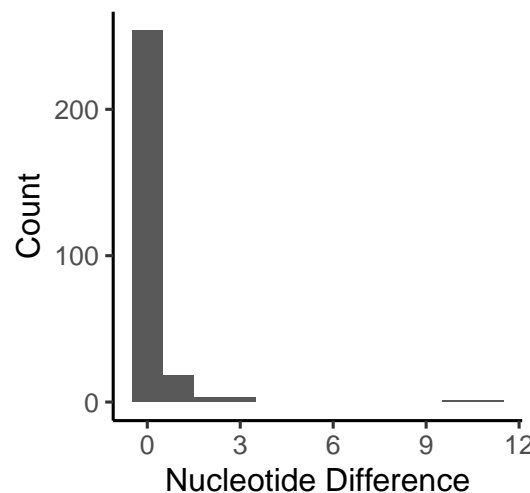
### IGHV4-4\*07

231 sequences assigned  
214 (92.6%) exact matches, in which:  
211 unique CDR3  
5 unique J



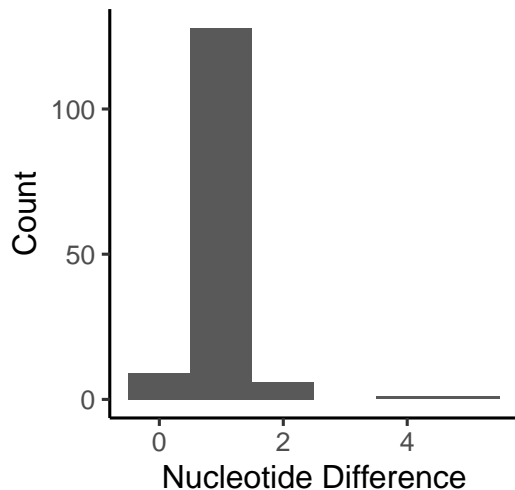
### IGHV4-30-4\*01

280 sequences assigned  
254 (90.7%) exact matches, in which:  
251 unique CDR3  
6 unique J



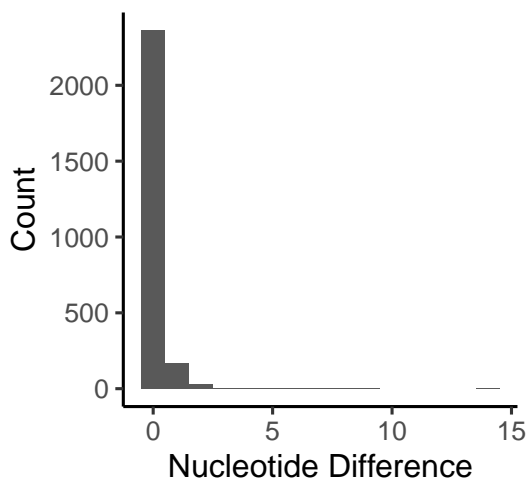
### IGHV4-30-2\*01

145 sequences assigned  
9 (6.2%) exact matches, in which:  
9 unique CDR3  
3 unique J



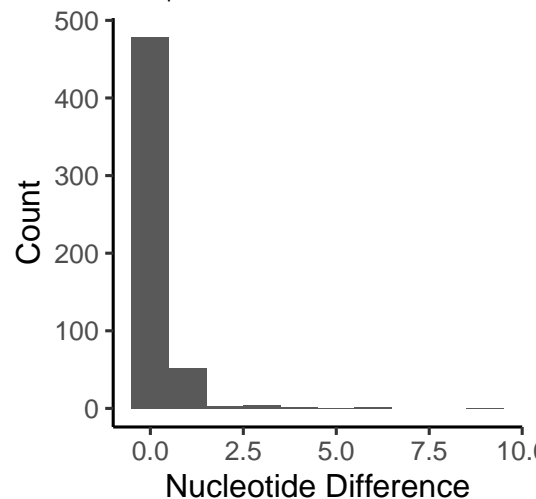
### IGHV4-39\*01

2580 sequences assigned  
2362 (91.6%) exact matches, in which:  
2296 unique CDR3  
6 unique J



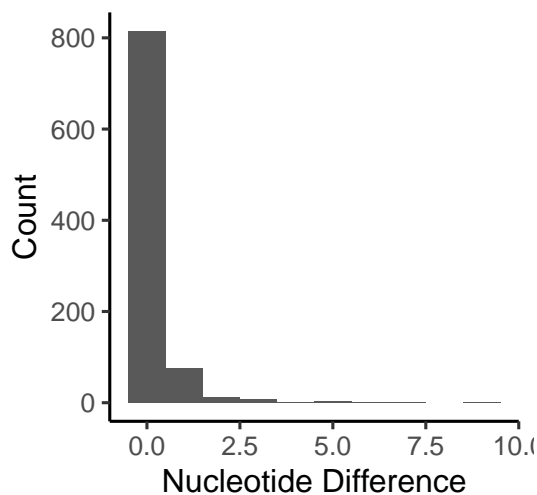
### IGHV4-59\*08

544 sequences assigned  
479 (88.1%) exact matches, in which:  
474 unique CDR3  
6 unique J



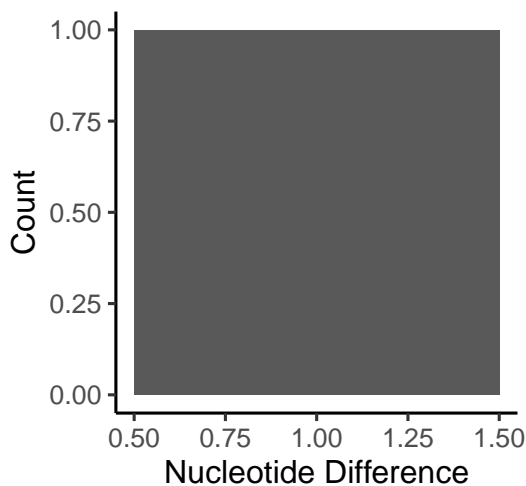
### IGHV4-31\*03

917 sequences assigned  
815 (88.9%) exact matches, in which:  
794 unique CDR3  
6 unique J



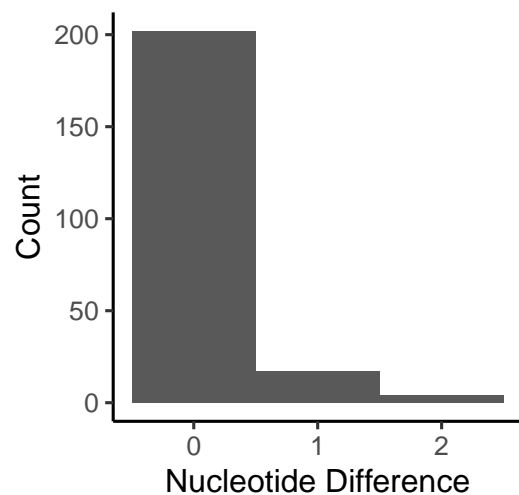
### IGHV4-55\*08

1 sequences assigned  
No exact matches.



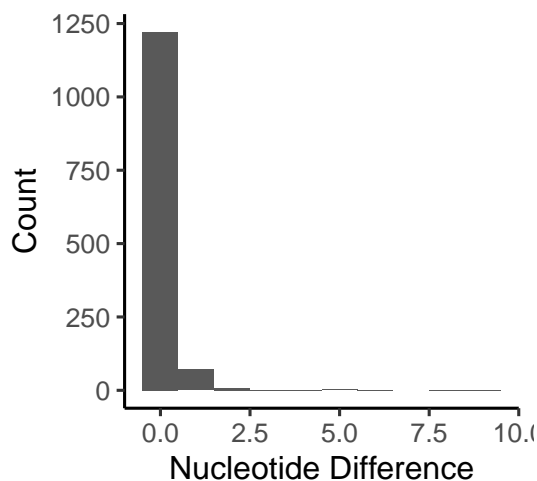
### IGHV4-61\*01

223 sequences assigned  
202 (90.6%) exact matches, in which:  
201 unique CDR3  
6 unique J



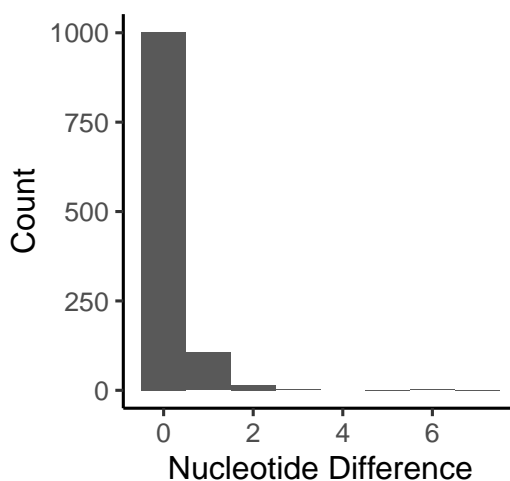
### IGHV4-34\*01

1310 sequences assigned  
1221 (93.2%) exact matches, in which:  
1174 unique CDR3  
6 unique J



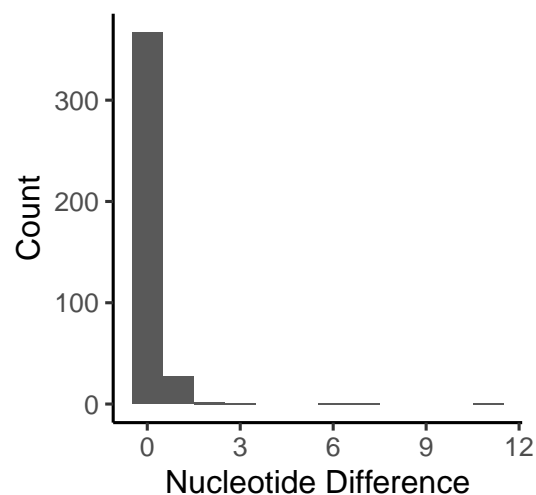
### IGHV4-59\*01

1128 sequences assigned  
1002 (88.8%) exact matches, in which:  
985 unique CDR3  
6 unique J



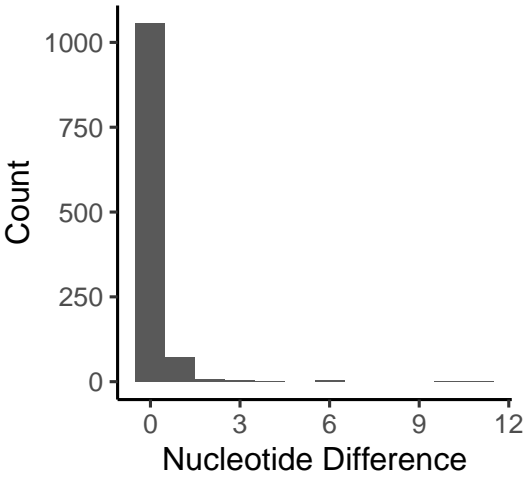
### IGHV5-10-1\*03

400 sequences assigned  
367 (91.8%) exact matches, in which:  
354 unique CDR3  
6 unique J



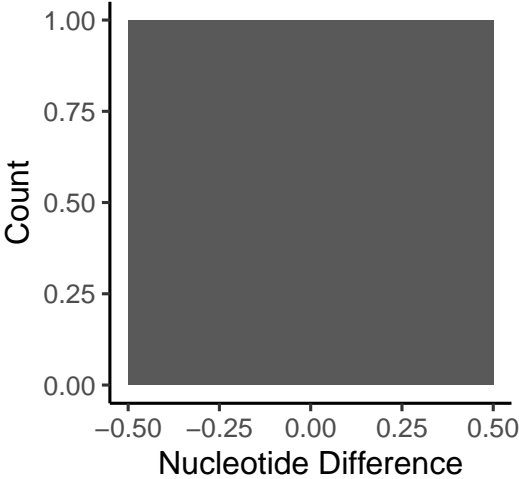
### IGHV5–51\*01

1148 sequences assigned  
1056 (92%) exact matches, in which:  
1030 unique CDR3  
6 unique J



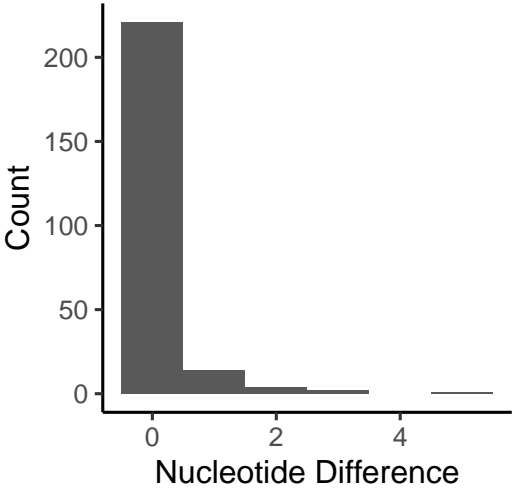
### IGHV7–81\*01

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



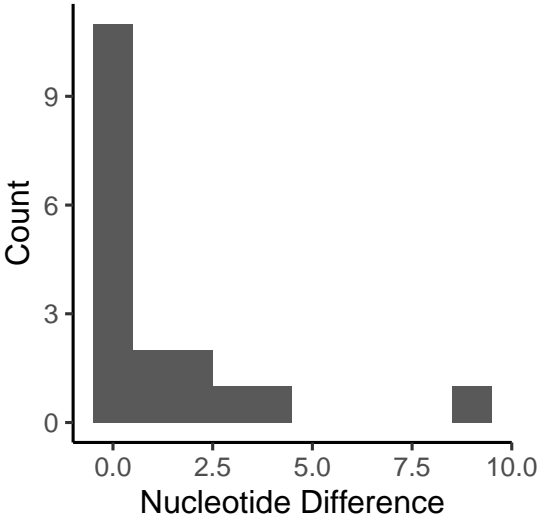
### IGHV6–1\*01

242 sequences assigned  
221 (91.3%) exact matches, in which:  
219 unique CDR3  
6 unique J



### IGHV7–4–1\*01

18 sequences assigned  
11 (61.1%) exact matches, in which:  
11 unique CDR3  
4 unique J







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