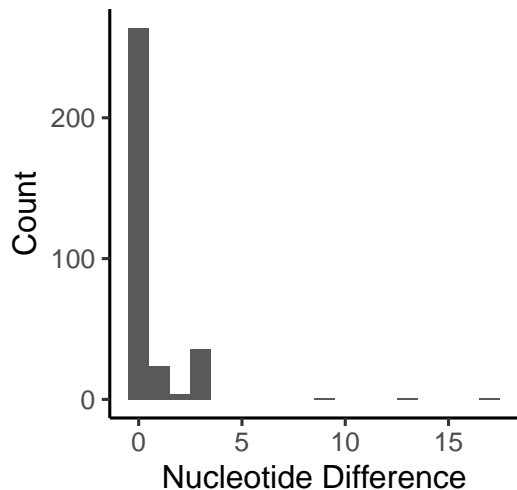


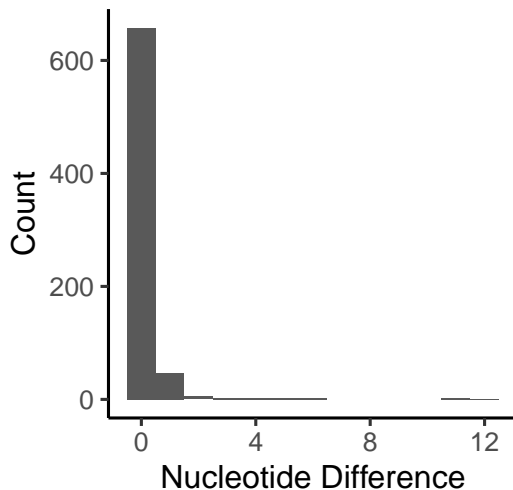
### IGHV1–2\*04

331 sequences assigned  
264 (79.8%) exact matches, in which:  
254 unique CDR3  
7 unique J



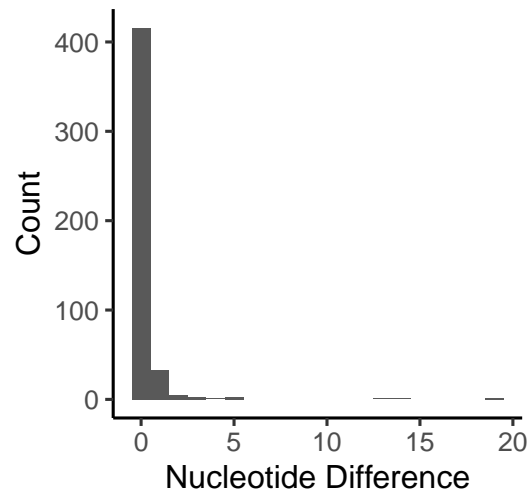
### IGHV1–18\*04

725 sequences assigned  
658 (90.8%) exact matches, in which:  
644 unique CDR3  
6 unique J



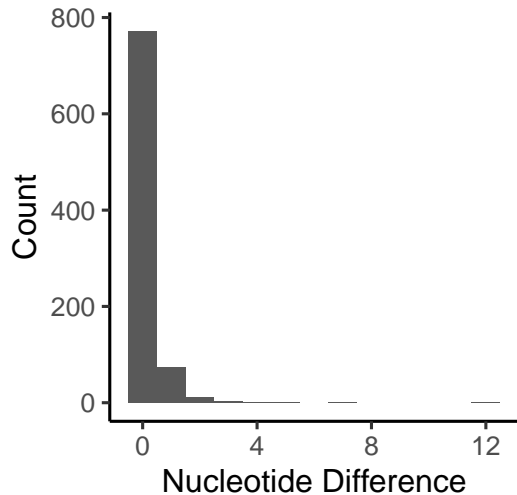
### IGHV1–46\*01

465 sequences assigned  
416 (89.5%) exact matches, in which:  
392 unique CDR3  
7 unique J



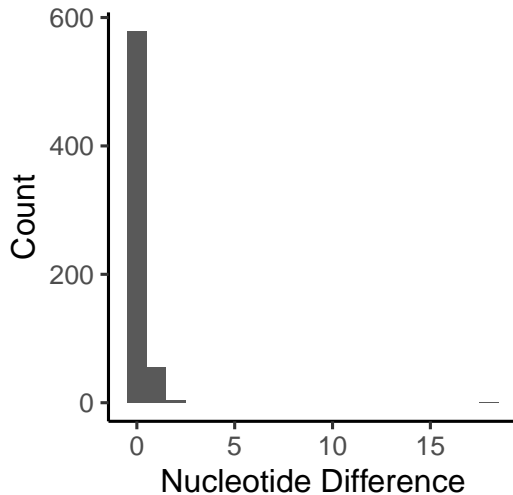
### IGHV1–3\*01

868 sequences assigned  
772 (88.9%) exact matches, in which:  
745 unique CDR3  
7 unique J



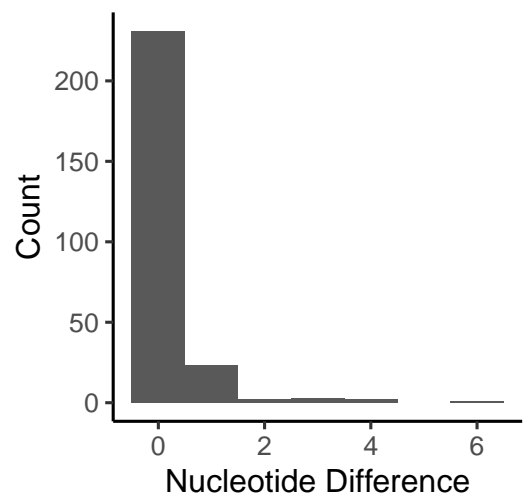
### IGHV1–24\*01

639 sequences assigned  
579 (90.6%) exact matches, in which:  
556 unique CDR3  
7 unique J



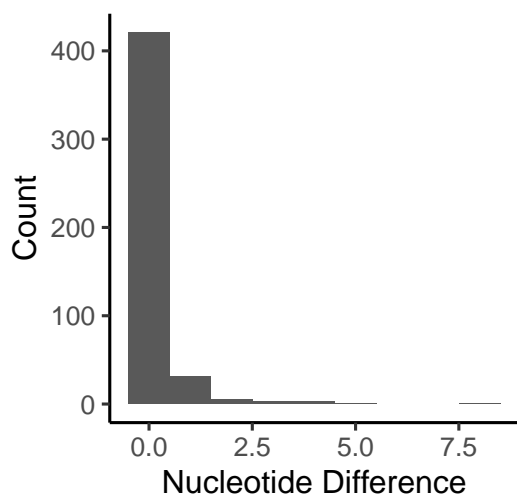
### IGHV1–46\*03

262 sequences assigned  
231 (88.2%) exact matches, in which:  
225 unique CDR3  
6 unique J



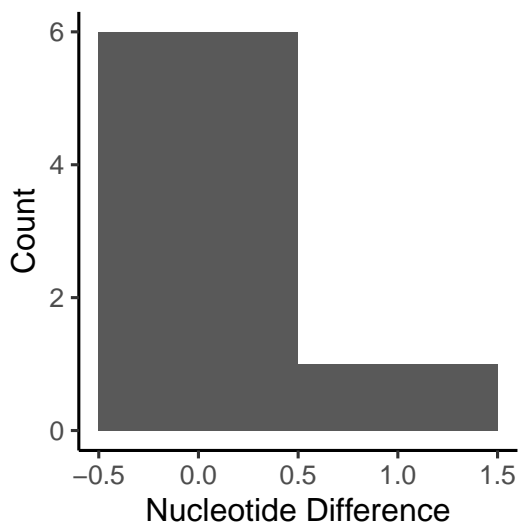
### IGHV1–18\*01

465 sequences assigned  
421 (90.5%) exact matches, in which:  
415 unique CDR3  
7 unique J



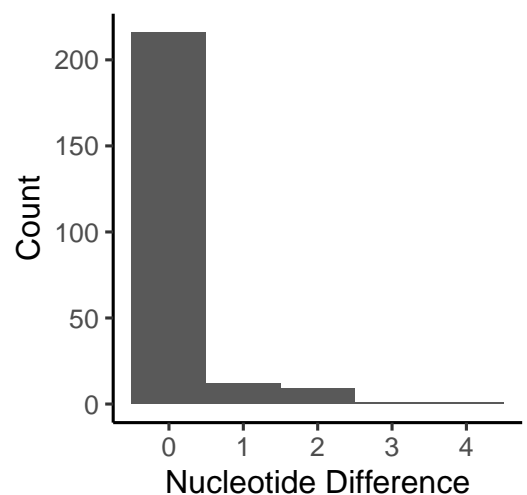
### IGHV1–45\*02

7 sequences assigned  
6 (85.7%) exact matches, in which:  
6 unique CDR3  
2 unique J



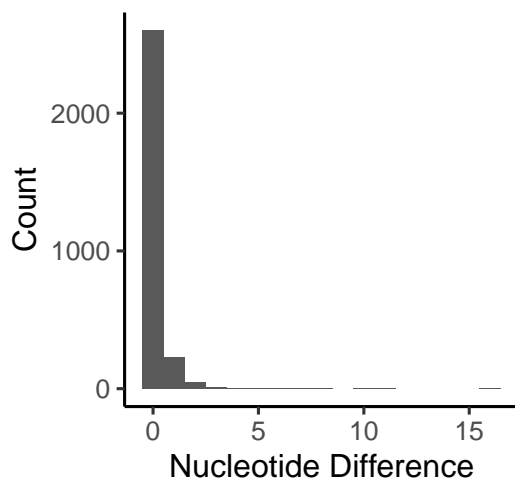
### IGHV1–58\*01

239 sequences assigned  
216 (90.4%) exact matches, in which:  
209 unique CDR3  
7 unique J



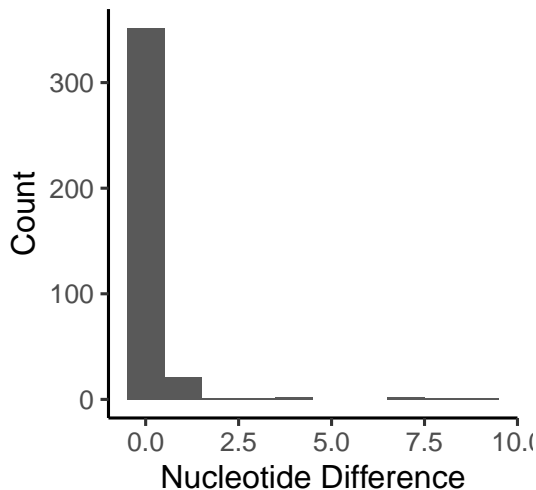
### IGHV1-69\*01

2909 sequences assigned  
2601 (89.4%) exact matches, in which:  
2471 unique CDR3  
7 unique J



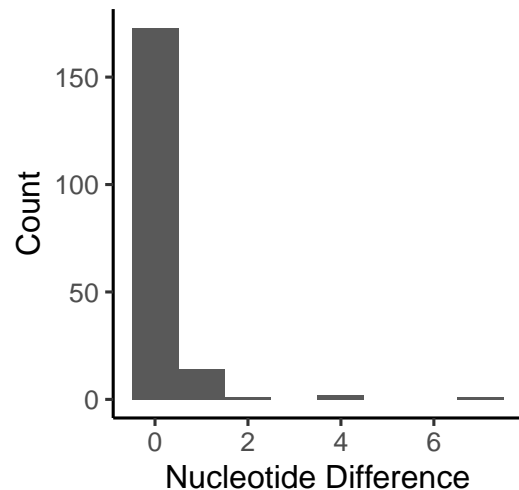
### IGHV2-5\*01

381 sequences assigned  
352 (92.4%) exact matches, in which:  
340 unique CDR3  
6 unique J



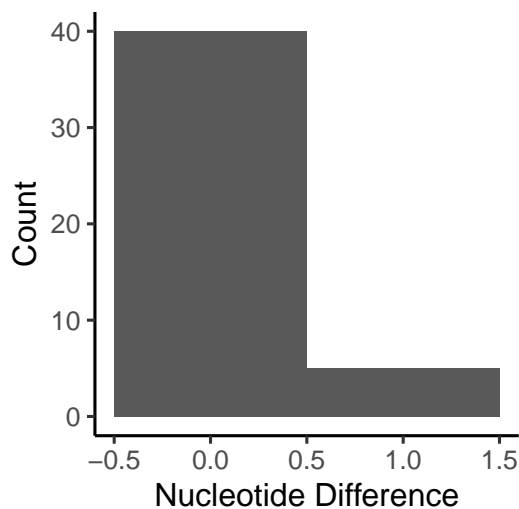
### IGHV2-70\*01

191 sequences assigned  
173 (90.6%) exact matches, in which:  
170 unique CDR3  
6 unique J



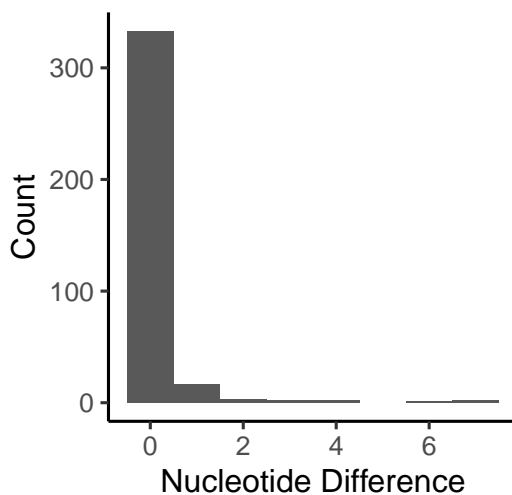
### IGHV1-69-2\*01

45 sequences assigned  
40 (88.9%) exact matches, in which:  
39 unique CDR3  
6 unique J



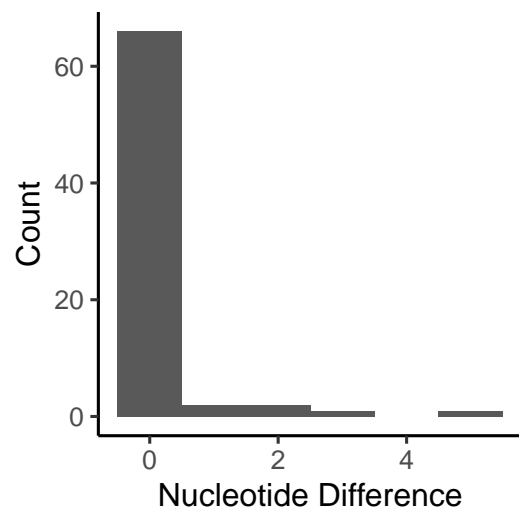
### IGHV2-5\*02

360 sequences assigned  
333 (92.5%) exact matches, in which:  
322 unique CDR3  
6 unique J



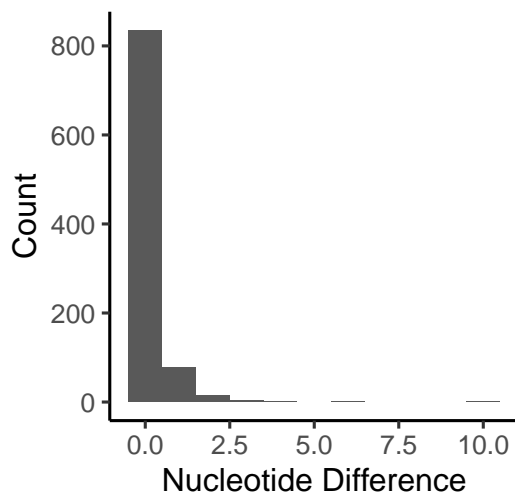
### IGHV2-70\*04

72 sequences assigned  
66 (91.7%) exact matches, in which:  
66 unique CDR3  
5 unique J



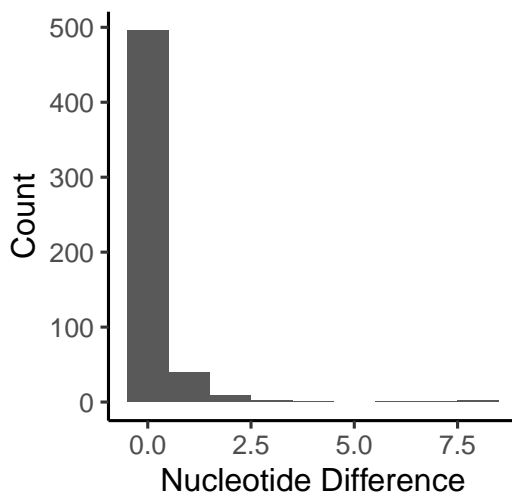
### IGHV1-69\*06

936 sequences assigned  
835 (89.2%) exact matches, in which:  
802 unique CDR3  
7 unique J



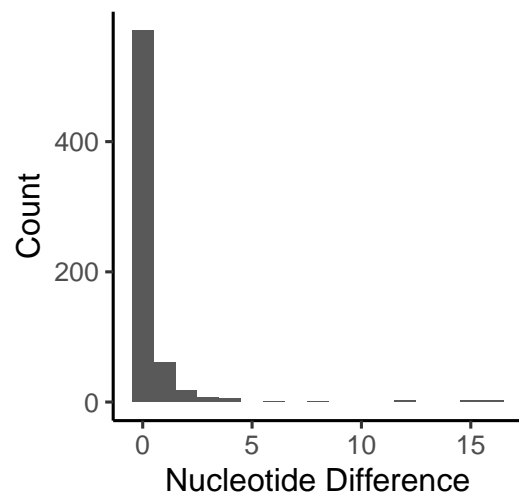
### IGHV2-26\*01

552 sequences assigned  
496 (89.9%) exact matches, in which:  
492 unique CDR3  
7 unique J



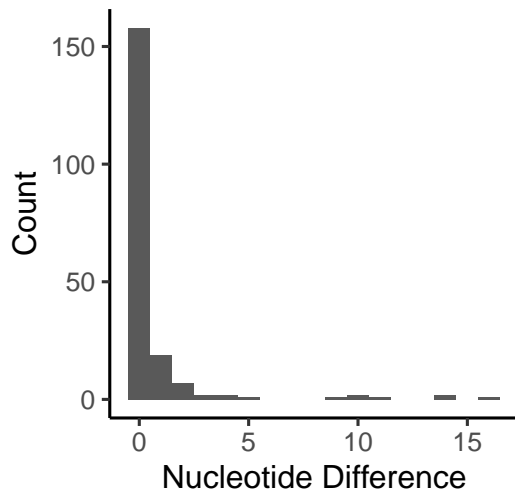
### IGHV3-7\*03

673 sequences assigned  
571 (84.8%) exact matches, in which:  
536 unique CDR3  
7 unique J



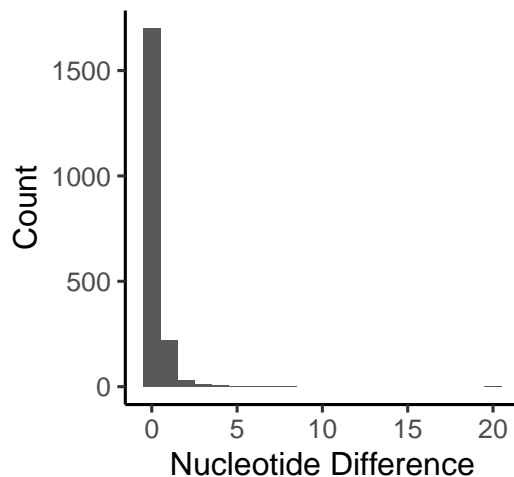
### IGHV3-7\*05

197 sequences assigned  
158 (80.2%) exact matches, in which:  
155 unique CDR3  
6 unique J



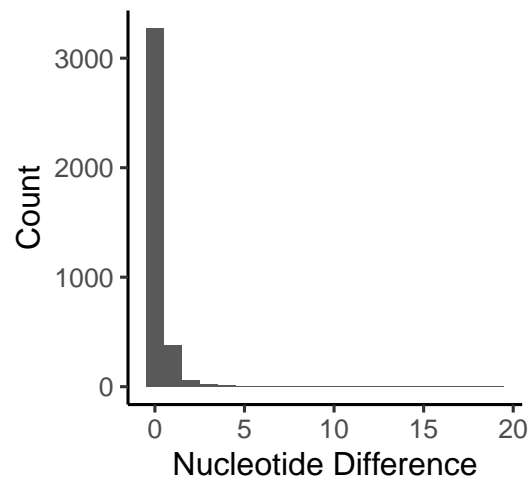
### IGHV3-15\*01

1980 sequences assigned  
1700 (85.9%) exact matches, in which:  
1622 unique CDR3  
7 unique J



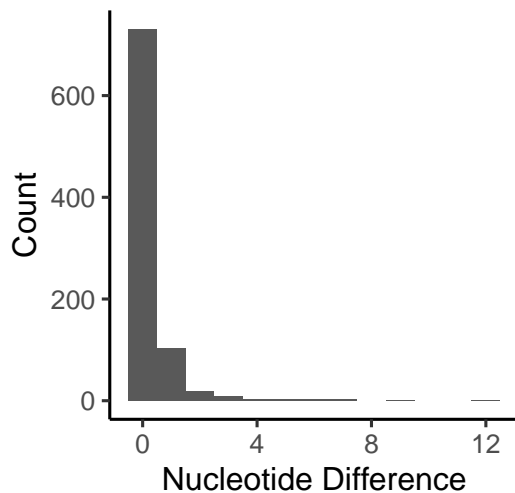
### IGHV3-23\*01

3817 sequences assigned  
3272 (85.7%) exact matches, in which:  
3071 unique CDR3  
7 unique J



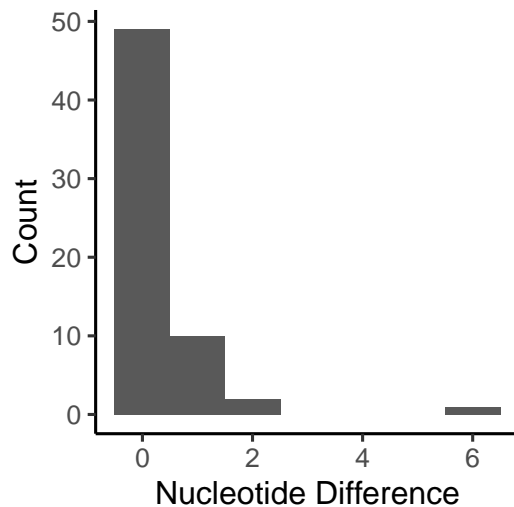
### IGHV3-11\*06

872 sequences assigned  
731 (83.8%) exact matches, in which:  
695 unique CDR3  
7 unique J



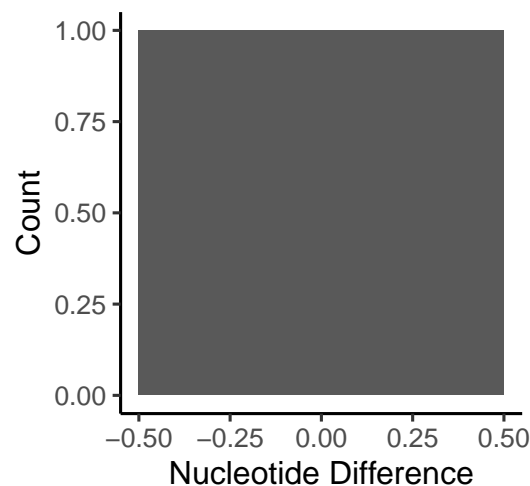
### IGHV3-20\*01

62 sequences assigned  
49 (79%) exact matches, in which:  
47 unique CDR3  
6 unique J



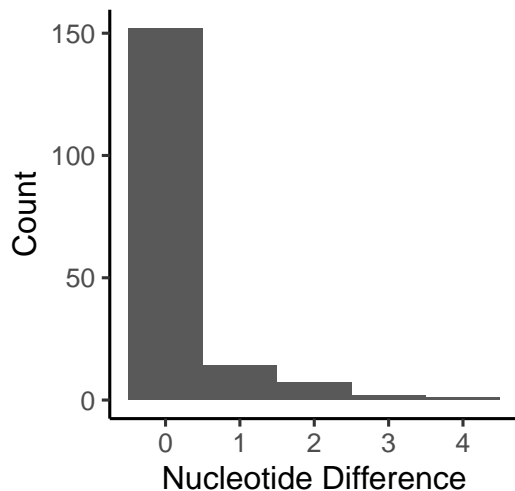
### IGHV3-30-3\*01

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



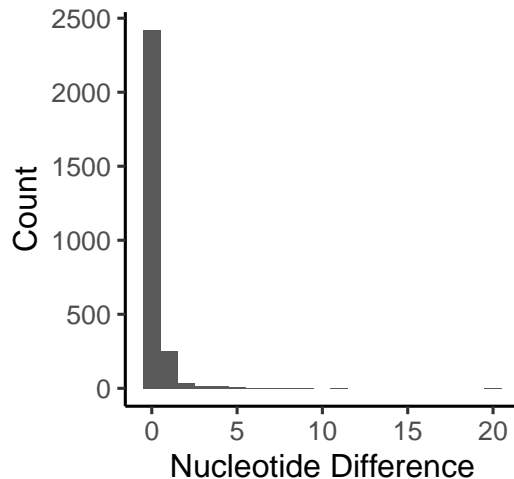
### IGHV3-13\*05

176 sequences assigned  
152 (86.4%) exact matches, in which:  
142 unique CDR3  
6 unique J



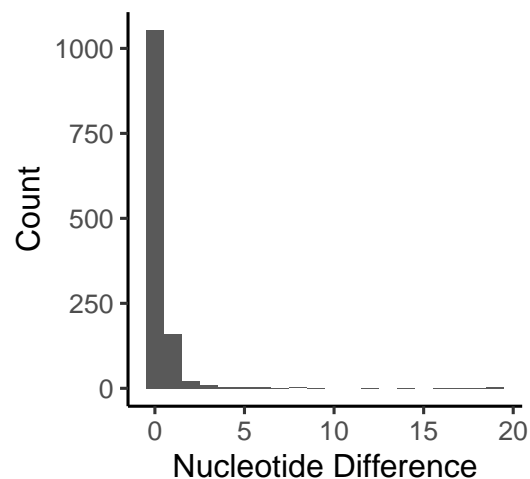
### IGHV3-21\*01

2764 sequences assigned  
2420 (87.6%) exact matches, in which:  
2280 unique CDR3  
7 unique J



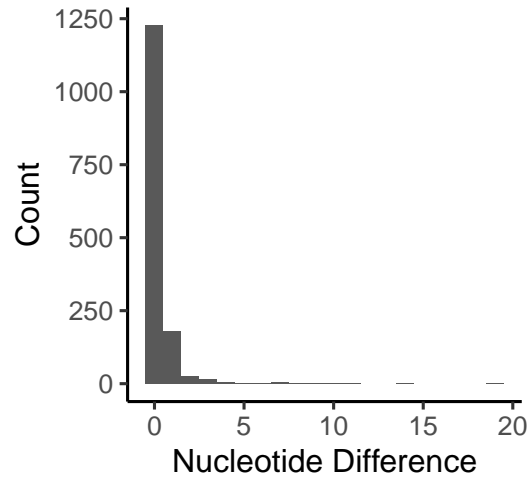
### IGHV3-30\*02

1270 sequences assigned  
1054 (83%) exact matches, in which:  
998 unique CDR3  
7 unique J



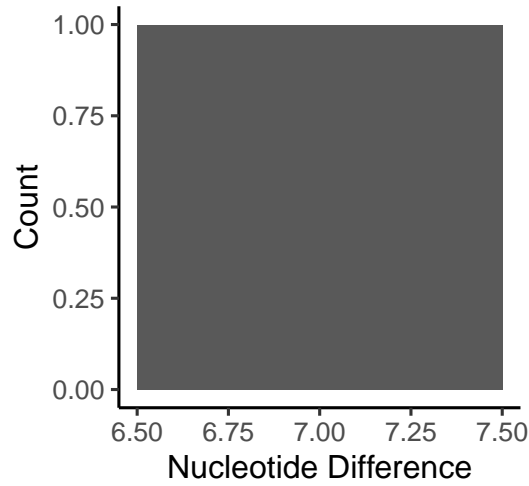
### IGHV3-30\*04

1470 sequences assigned  
1227 (83.5%) exact matches, in which:  
1161 unique CDR3  
7 unique J



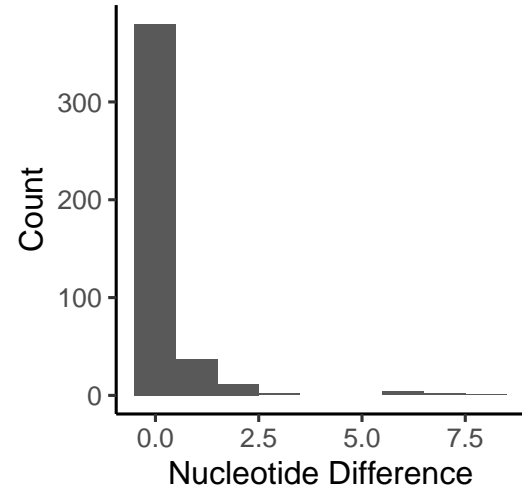
### IGHV3-41\*02

1 sequences assigned  
No exact matches.



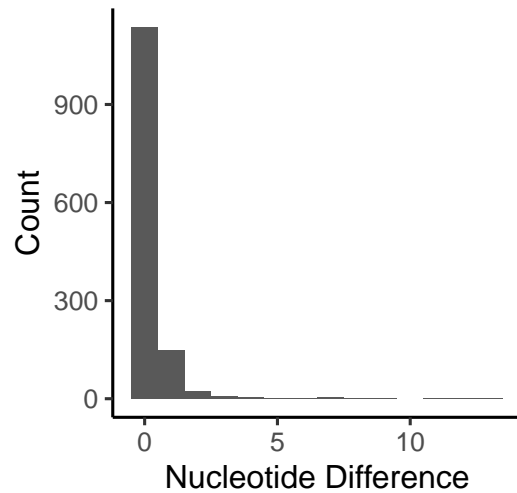
### IGHV3-49\*04

441 sequences assigned  
380 (86.2%) exact matches, in which:  
356 unique CDR3  
6 unique J



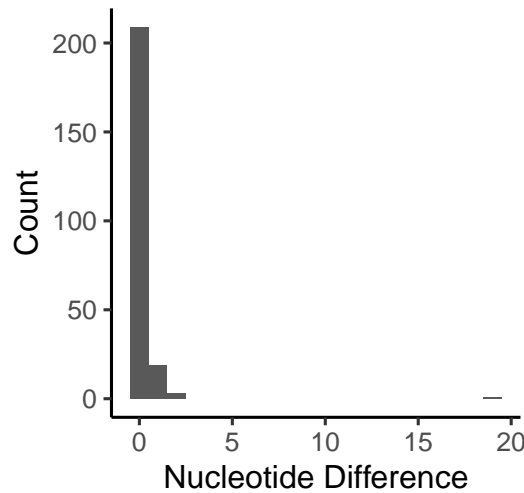
### IGHV3-30\*18

1341 sequences assigned  
1137 (84.8%) exact matches, in which:  
1097 unique CDR3  
7 unique J



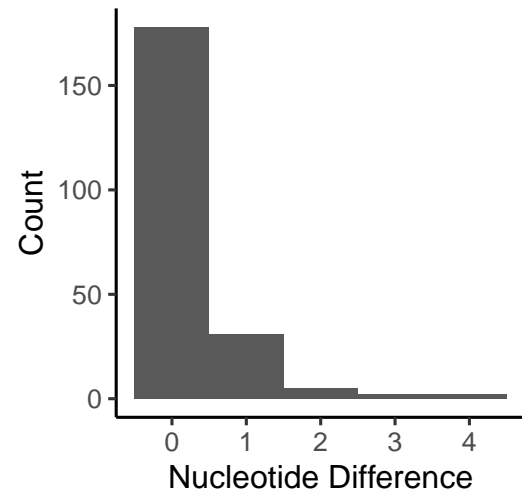
### IGHV3-43\*01

232 sequences assigned  
209 (90.1%) exact matches, in which:  
195 unique CDR3  
7 unique J



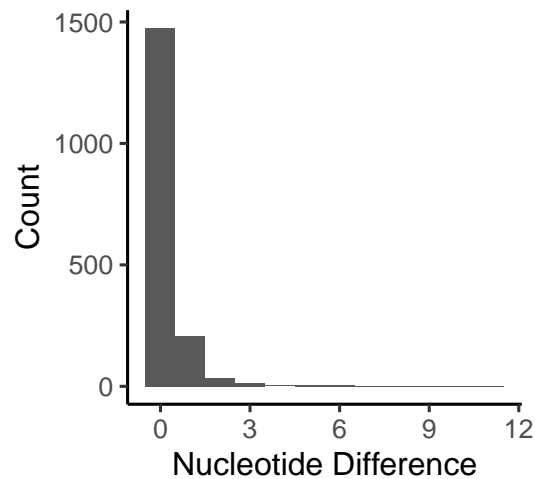
### IGHV3-49\*05

218 sequences assigned  
178 (81.7%) exact matches, in which:  
176 unique CDR3  
6 unique J



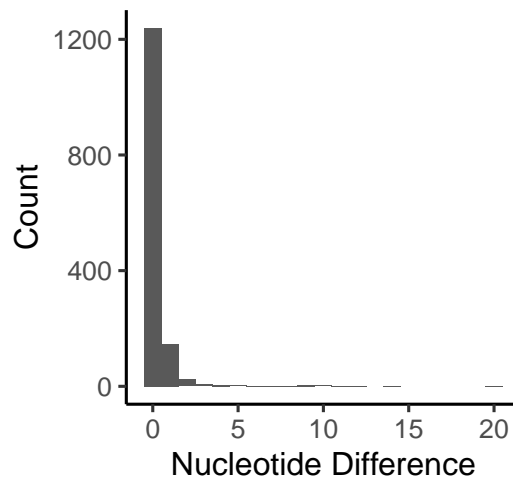
### IGHV3-33\*01

1749 sequences assigned  
1475 (84.3%) exact matches, in which:  
1412 unique CDR3  
7 unique J



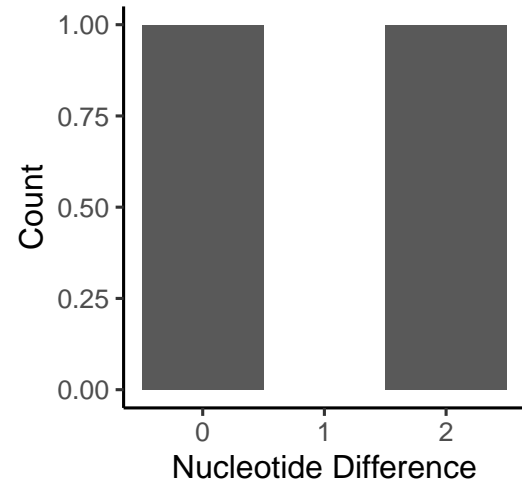
### IGHV3-48\*02

1459 sequences assigned  
1239 (84.9%) exact matches, in which:  
1167 unique CDR3  
7 unique J



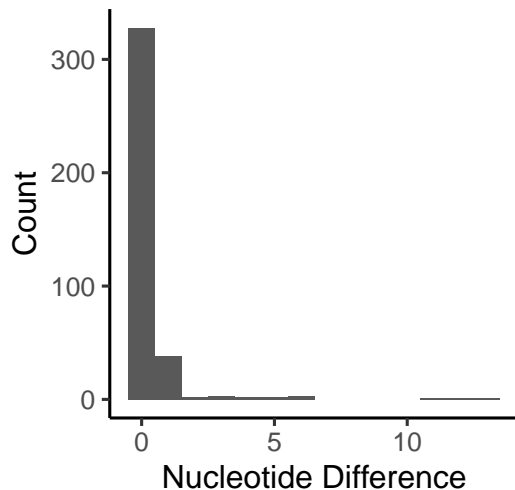
### IGHV3-52\*01

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



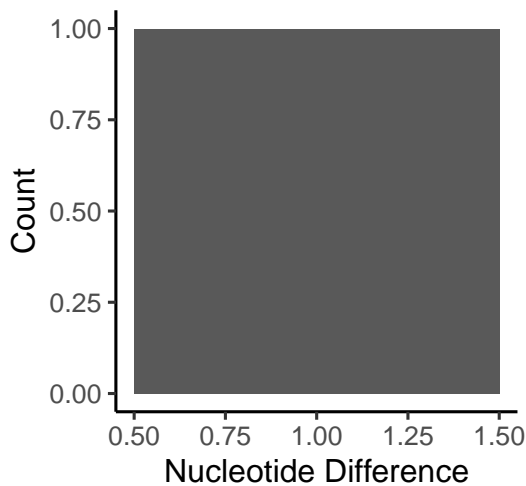
### IGHV3-53\*01

382 sequences assigned  
328 (85.9%) exact matches, in which:  
313 unique CDR3  
6 unique J



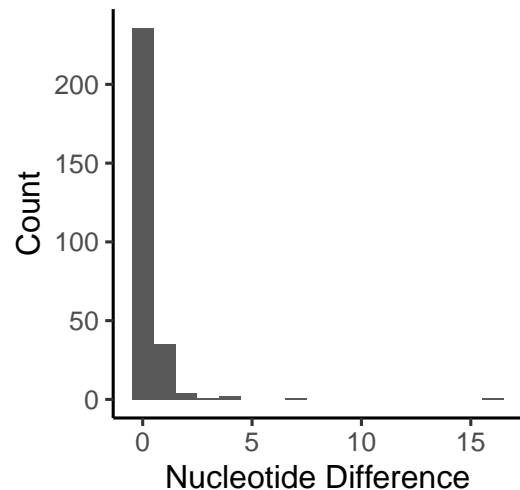
### IGHV3-66\*04

1 sequences assigned  
No exact matches.



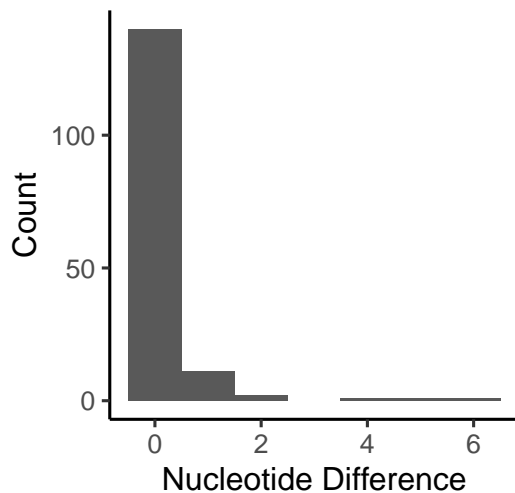
### IGHV3-73\*02

280 sequences assigned  
236 (84.3%) exact matches, in which:  
220 unique CDR3  
7 unique J



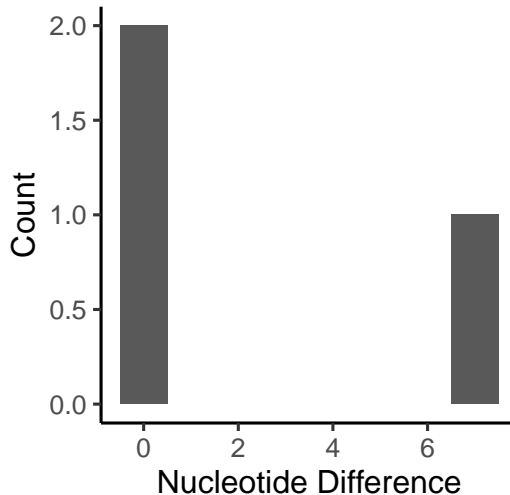
### IGHV3-53\*02

156 sequences assigned  
140 (89.7%) exact matches, in which:  
137 unique CDR3  
7 unique J



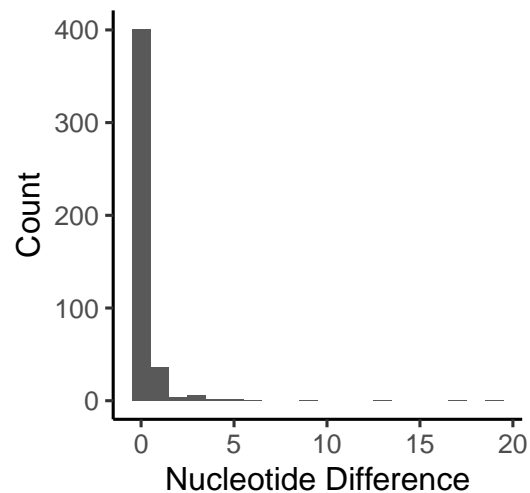
### IGHV3-69-1\*01

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



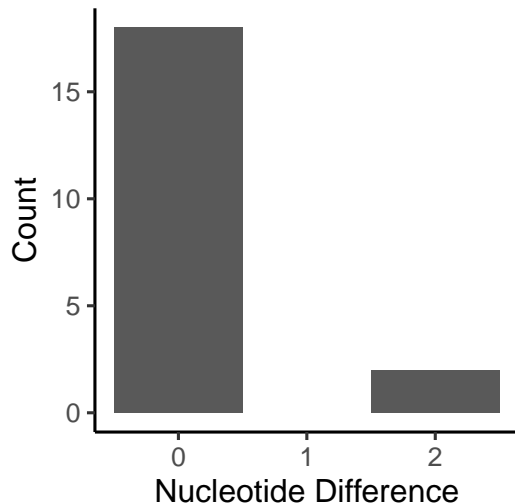
### IGHV3-74\*01

459 sequences assigned  
401 (87.4%) exact matches, in which:  
376 unique CDR3  
7 unique J



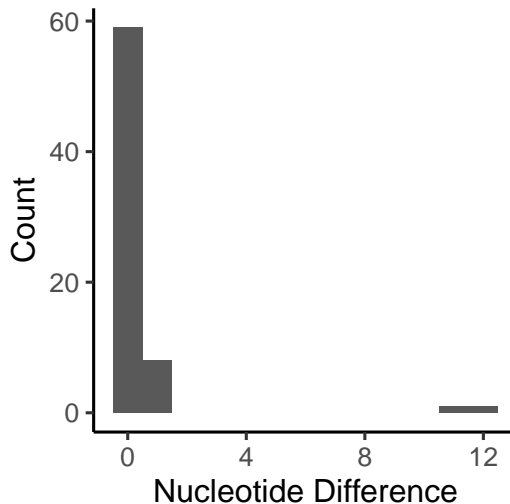
### IGHV3-64\*02

21 sequences assigned  
18 (85.7%) exact matches, in which:  
17 unique CDR3  
6 unique J



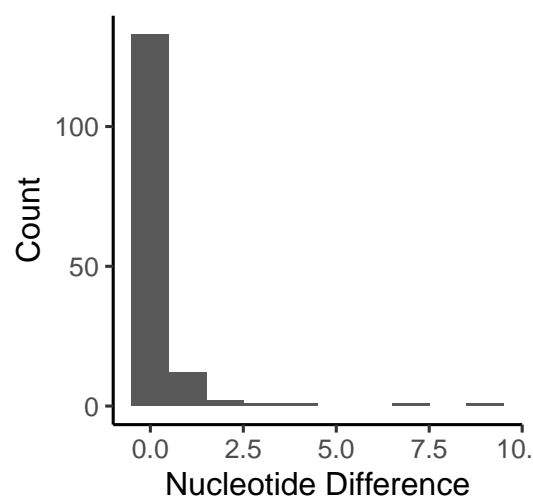
### IGHV3-72\*01

69 sequences assigned  
59 (85.5%) exact matches, in which:  
55 unique CDR3  
7 unique J



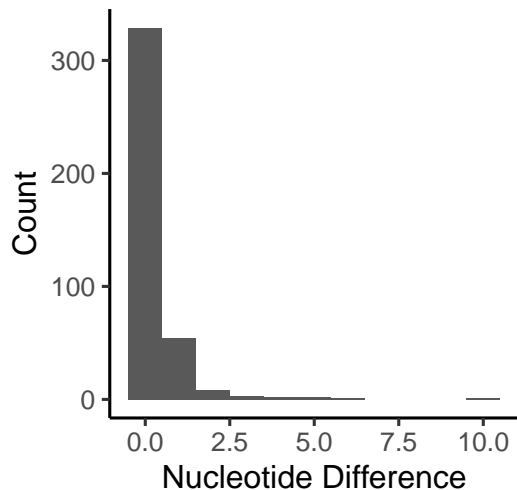
### IGHV3-43D\*03

151 sequences assigned  
133 (88.1%) exact matches, in which:  
130 unique CDR3  
6 unique J



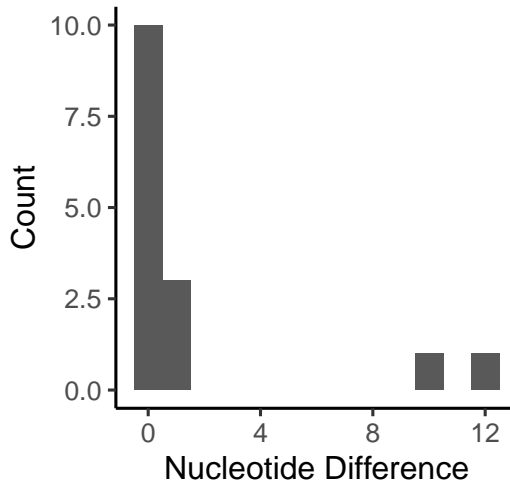
### IGHV3-64D\*06

400 sequences assigned  
329 (82.2%) exact matches, in which:  
316 unique CDR3  
6 unique J



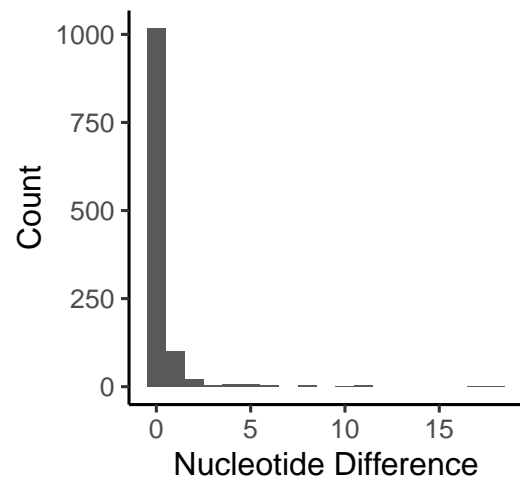
### IGHV4-28\*01

15 sequences assigned  
10 (66.7%) exact matches, in which:  
10 unique CDR3  
4 unique J



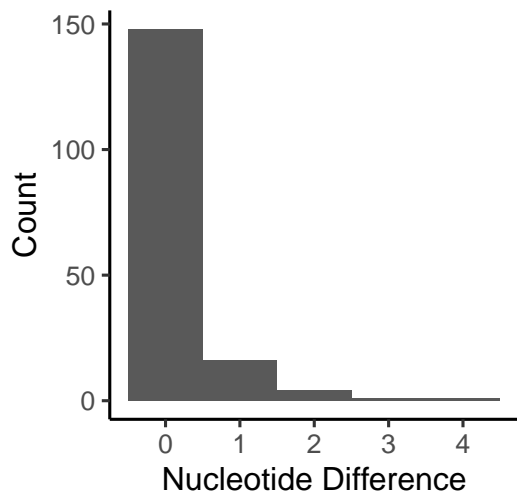
### IGHV4-31\*03

1171 sequences assigned  
1017 (86.8%) exact matches, in which:  
983 unique CDR3  
6 unique J



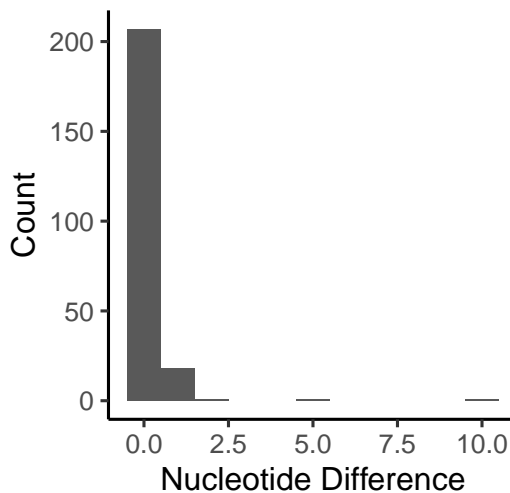
### IGHV3-64D\*08

170 sequences assigned  
148 (87.1%) exact matches, in which:  
144 unique CDR3  
7 unique J



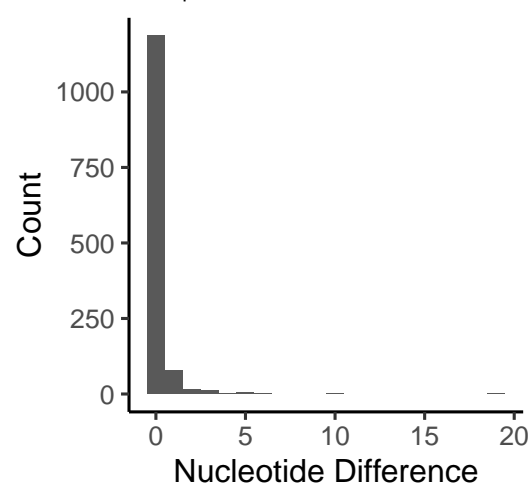
### IGHV4-30-2\*01

228 sequences assigned  
207 (90.8%) exact matches, in which:  
205 unique CDR3  
6 unique J



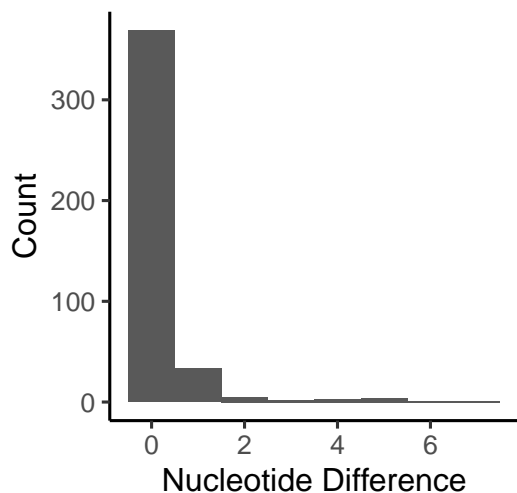
### IGHV4-34\*01

1299 sequences assigned  
1186 (91.3%) exact matches, in which:  
1127 unique CDR3  
7 unique J



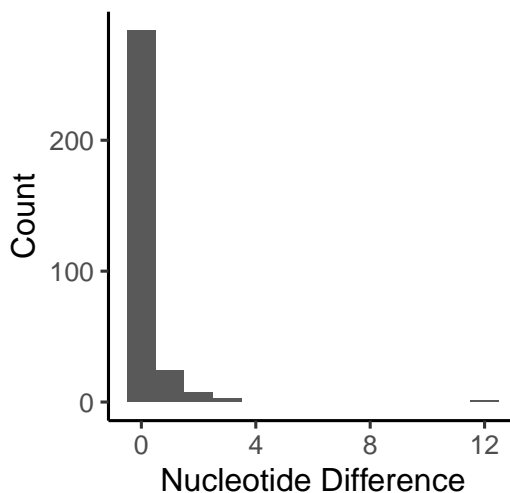
### IGHV4-4\*02

418 sequences assigned  
369 (88.3%) exact matches, in which:  
364 unique CDR3  
6 unique J



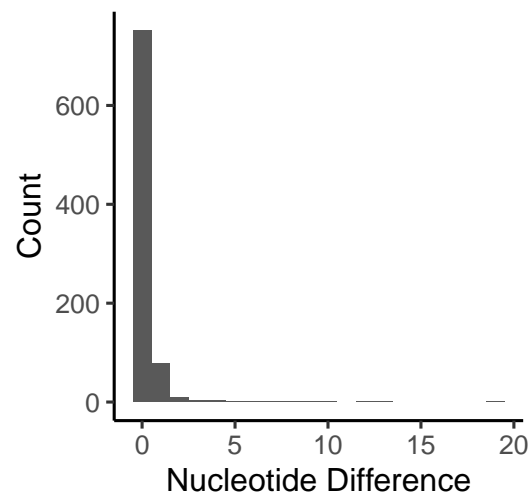
### IGHV4-30-4\*07

319 sequences assigned  
284 (89%) exact matches, in which:  
276 unique CDR3  
6 unique J



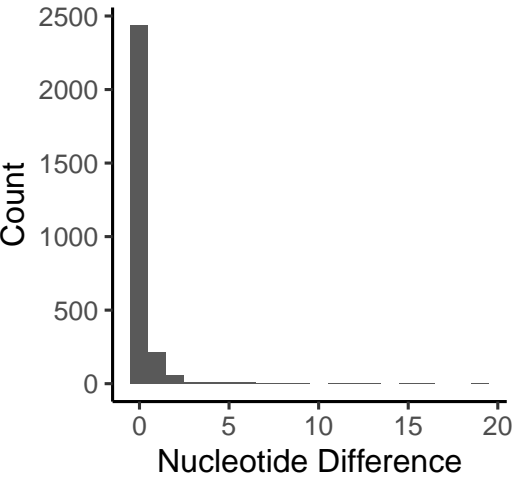
### IGHV4-38-2\*02

860 sequences assigned  
752 (87.4%) exact matches, in which:  
702 unique CDR3  
7 unique J



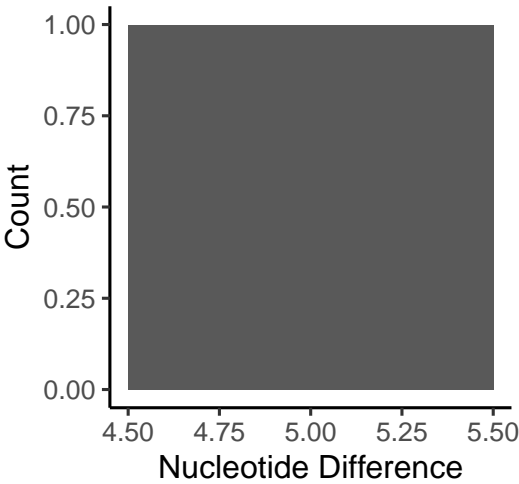
IGHV4-39\*01

2763 sequences assigned  
2436 (88.2%) exact matches, in which:  
2299 unique CDR3  
7 unique J



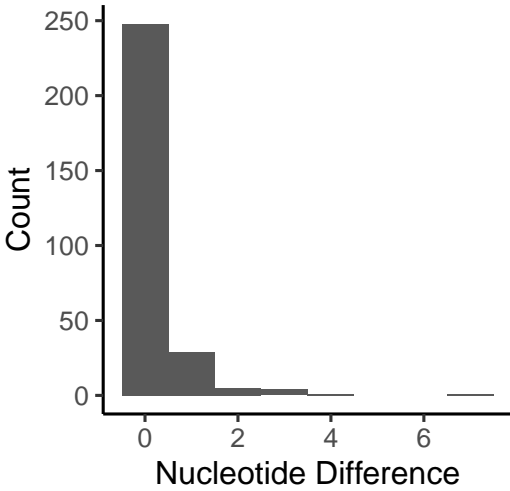
IGHV1/OR15-4\*01

1 sequences assigned  
No exact matches.



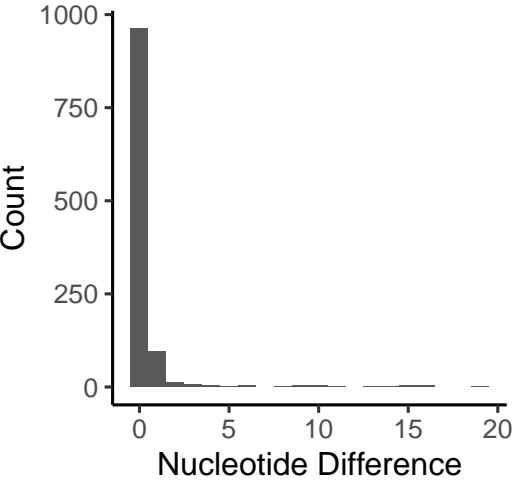
IGHV6-1\*01

288 sequences assigned  
248 (86.1%) exact matches, in which:  
240 unique CDR3  
6 unique J



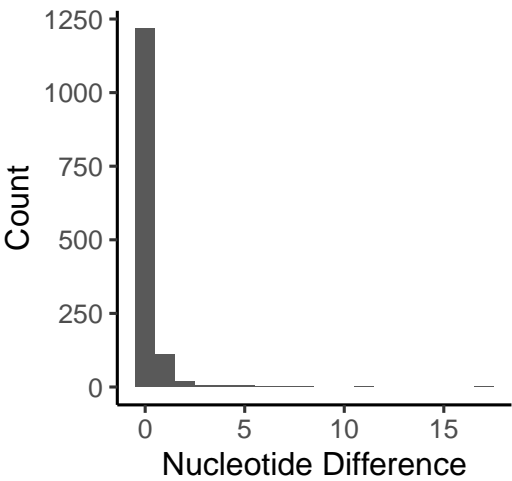
IGHV4-59\*01

1104 sequences assigned  
962 (87.1%) exact matches, in which:  
942 unique CDR3  
7 unique J



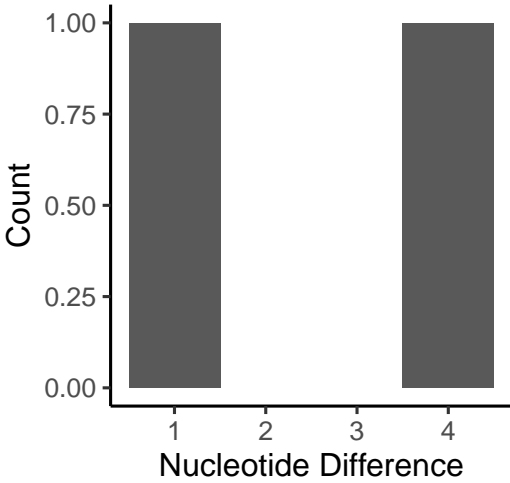
IGHV5-10-1\*03

1370 sequences assigned  
1217 (88.8%) exact matches, in which:  
1177 unique CDR3  
7 unique J



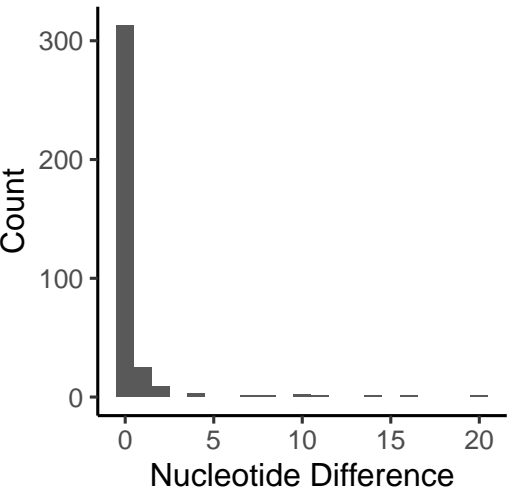
IGHV3/OR16-12\*01

2 sequences assigned  
No exact matches.



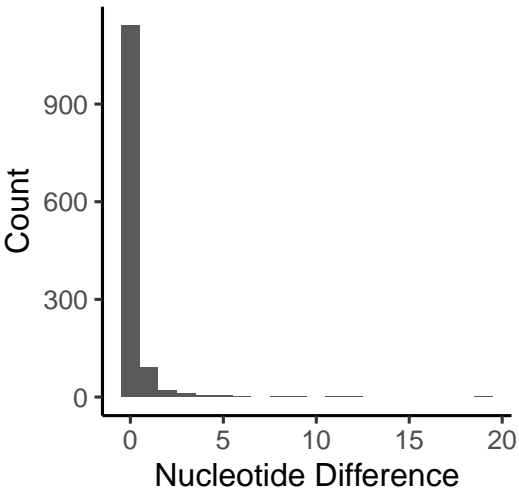
IGHV4-61\*01

366 sequences assigned  
313 (85.5%) exact matches, in which:  
305 unique CDR3  
7 unique J



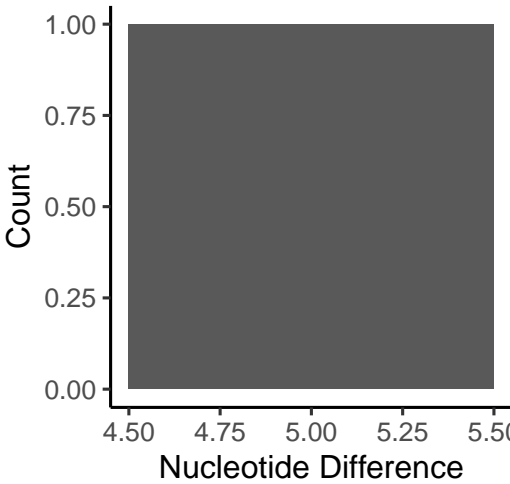
IGHV5-51\*01

1283 sequences assigned  
1142 (89%) exact matches, in which:  
1097 unique CDR3  
7 unique J



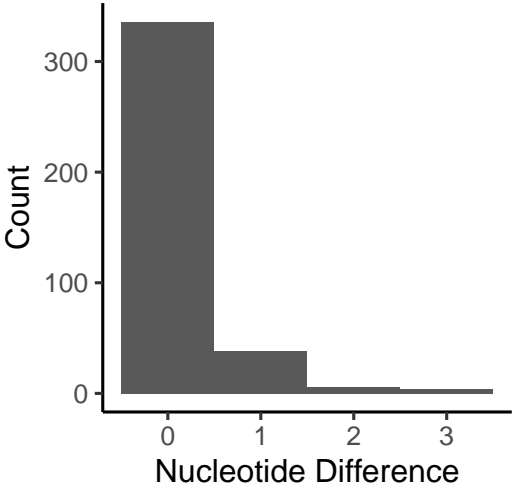
IGHV3/OR16-15\*02

1 sequences assigned  
No exact matches.



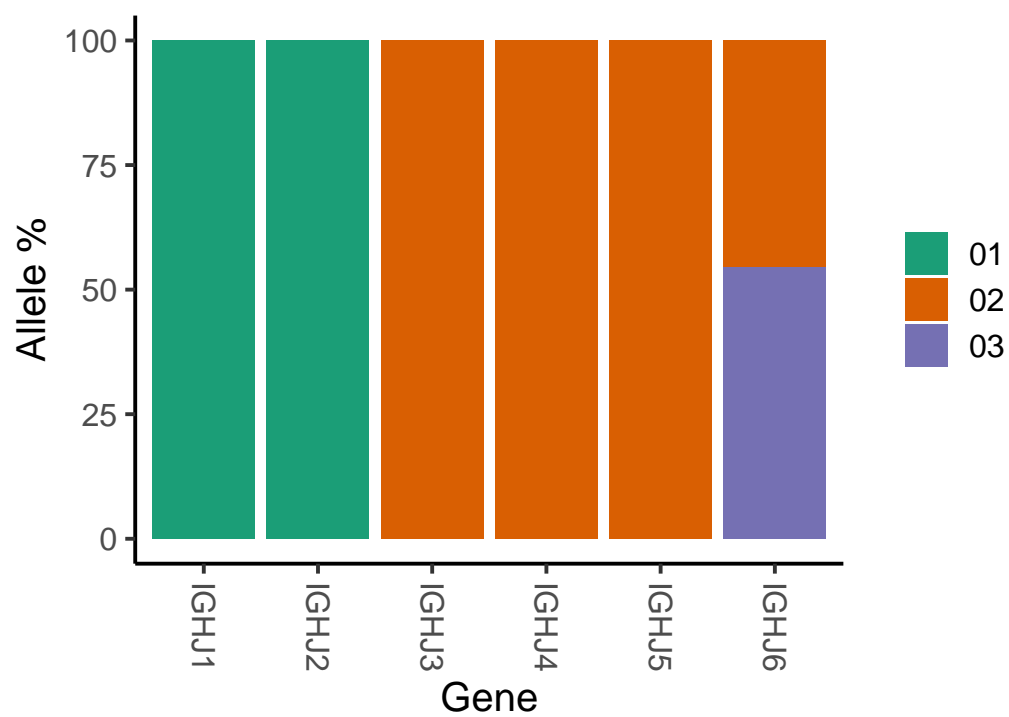
# IGHV7-4-1\*02

384 sequences assigned  
336 (87.5%) exact matches, in which:  
327 unique CDR3  
6 unique J

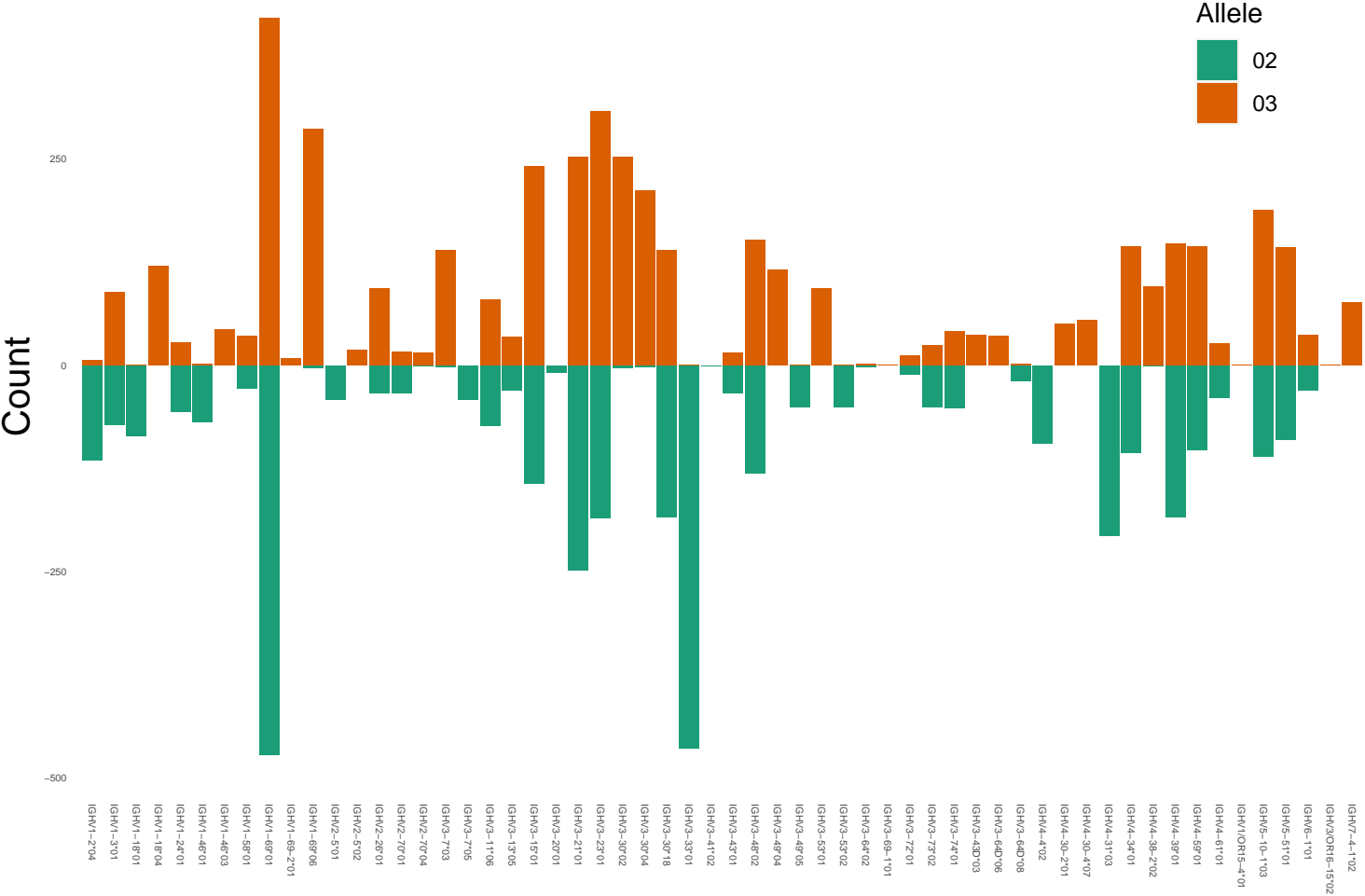




Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.