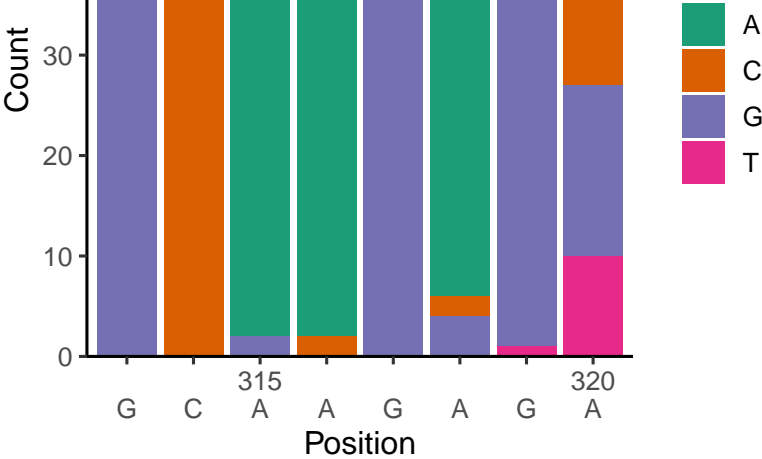
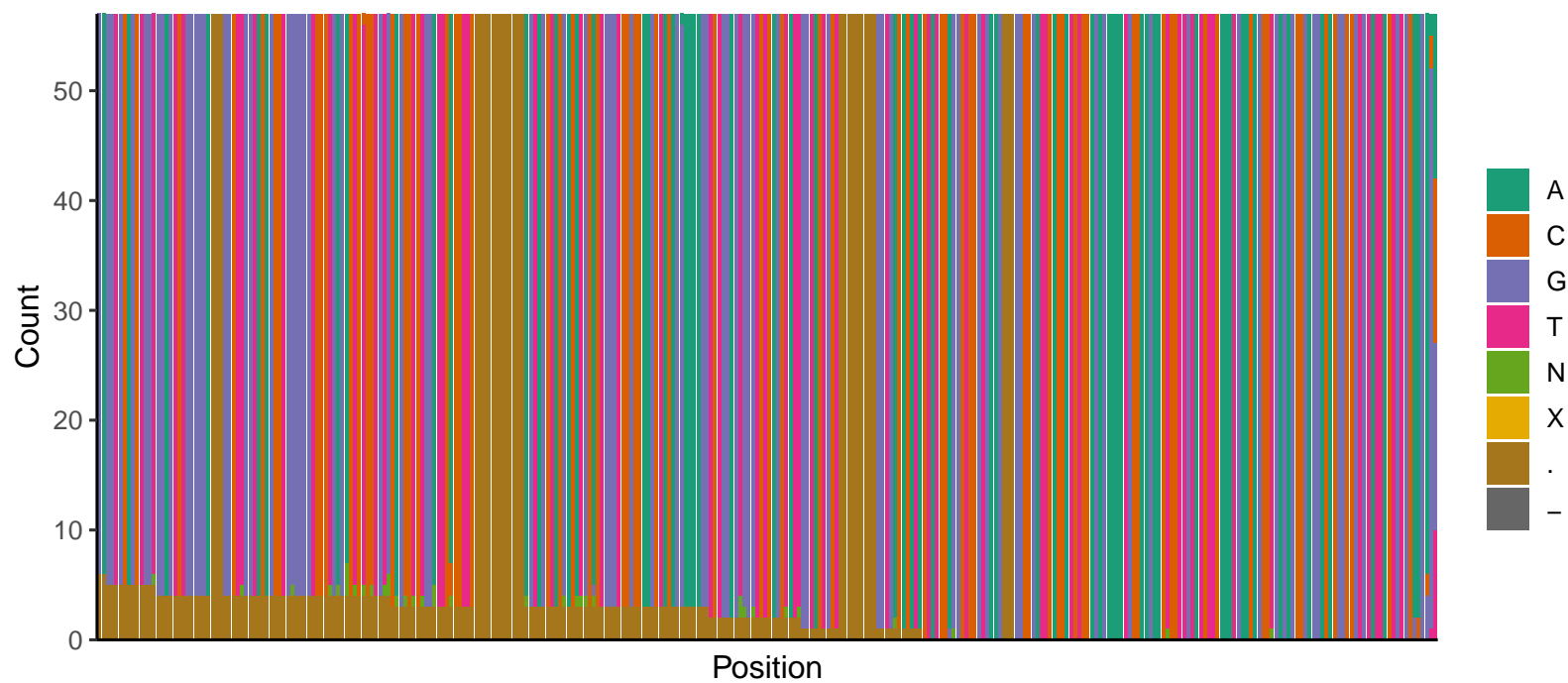


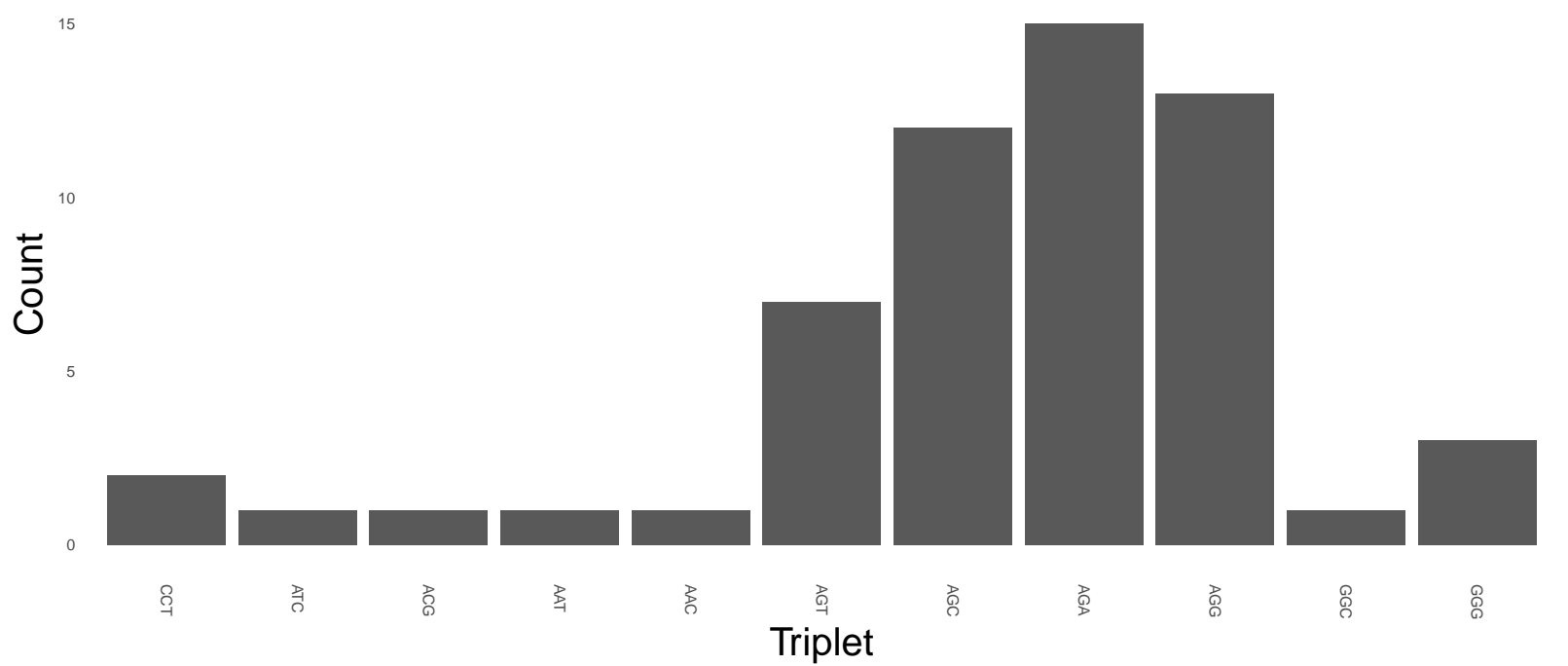
Gene IGHV3-13\*01\_G290A\_T300C



Gene IGHV3-13\*01\_G290A\_T300C

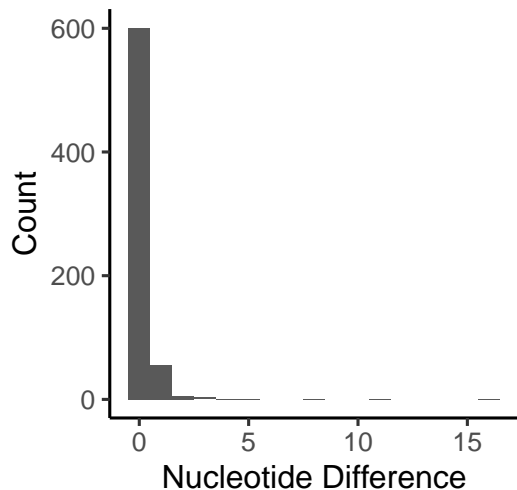


IGHV3-13\*01\_G290A\_T300C- Final 3 nucleotides as a triplet



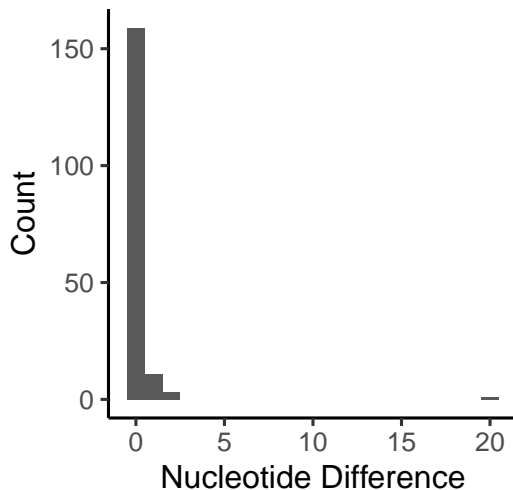
### IGHV1-2\*04

670 sequences assigned  
601 (89.7%) exact matches, in which:  
581 unique CDR3  
6 unique J



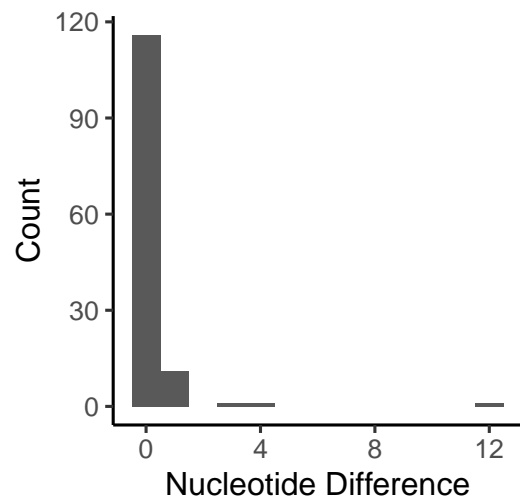
### IGHV1-24\*01

174 sequences assigned  
159 (91.4%) exact matches, in which:  
154 unique CDR3  
6 unique J



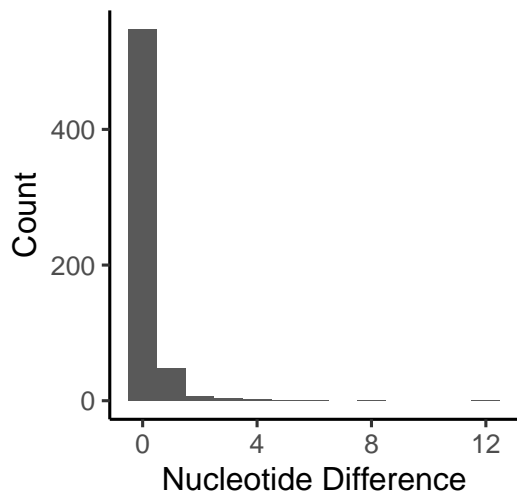
### IGHV1-58\*02

130 sequences assigned  
116 (89.2%) exact matches, in which:  
114 unique CDR3  
6 unique J



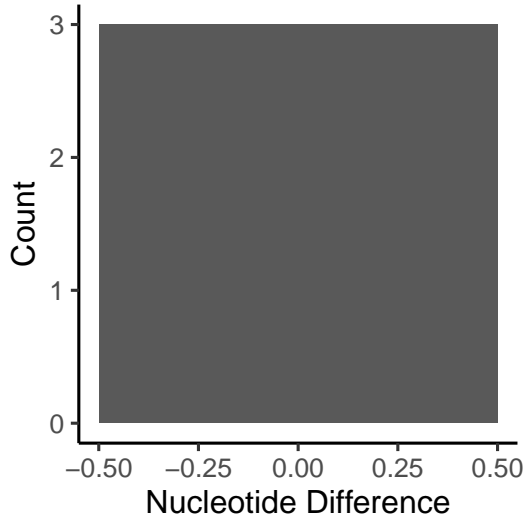
### IGHV1-3\*01

613 sequences assigned  
548 (89.4%) exact matches, in which:  
543 unique CDR3  
6 unique J



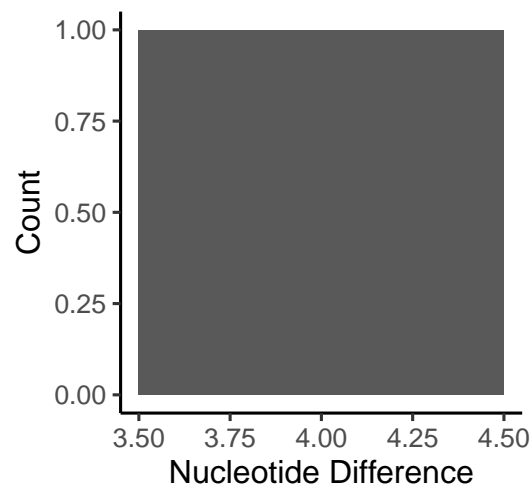
### IGHV1-45\*02

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



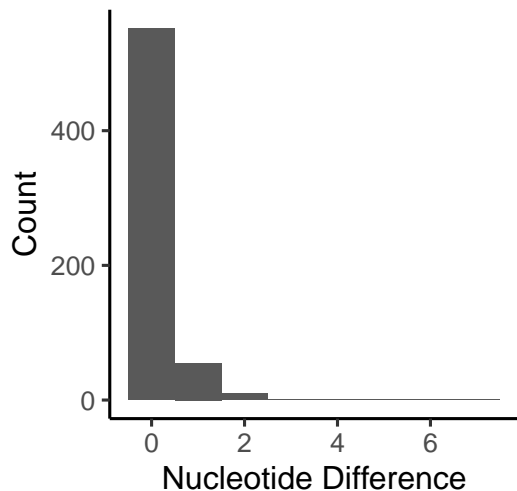
### IGHV1-68\*02

1 sequences assigned  
No exact matches.



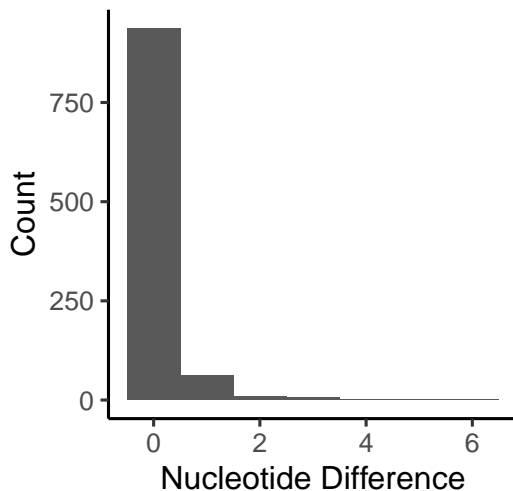
### IGHV1-18\*01

623 sequences assigned  
552 (88.6%) exact matches, in which:  
545 unique CDR3  
6 unique J



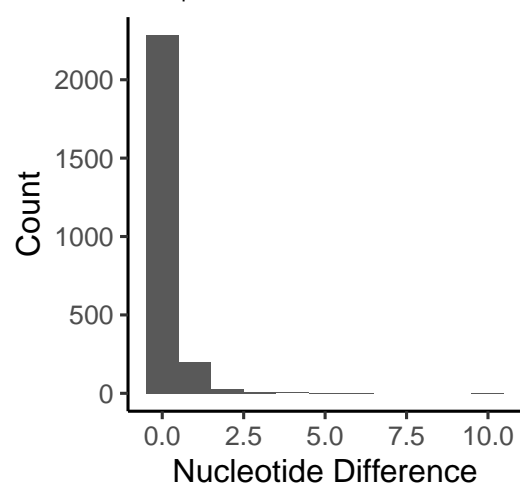
### IGHV1-46\*01

1022 sequences assigned  
937 (91.7%) exact matches, in which:  
915 unique CDR3  
6 unique J



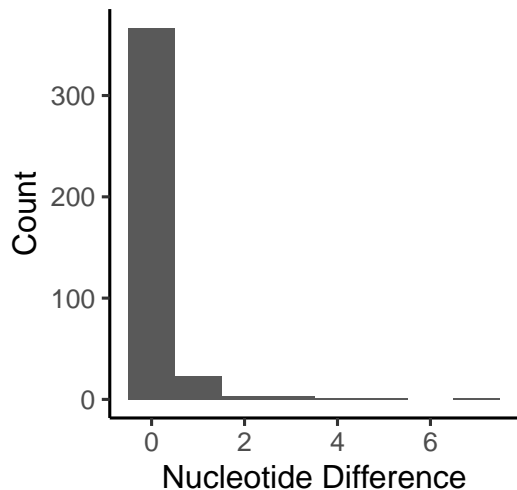
### IGHV1-69\*04

2530 sequences assigned  
2285 (90.3%) exact matches, in which:  
2213 unique CDR3  
6 unique J



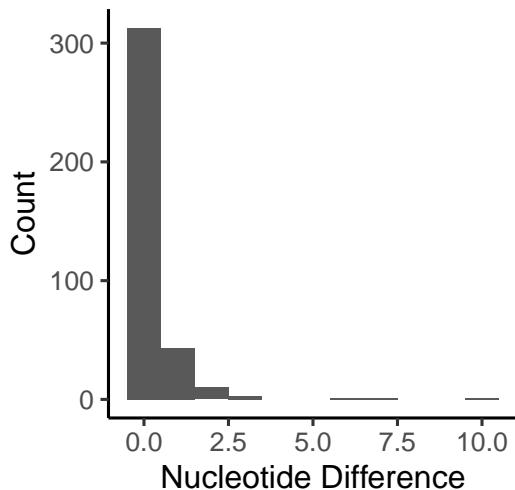
### IGHV2-5\*02

399 sequences assigned  
367 (92%) exact matches, in which:  
362 unique CDR3  
6 unique J



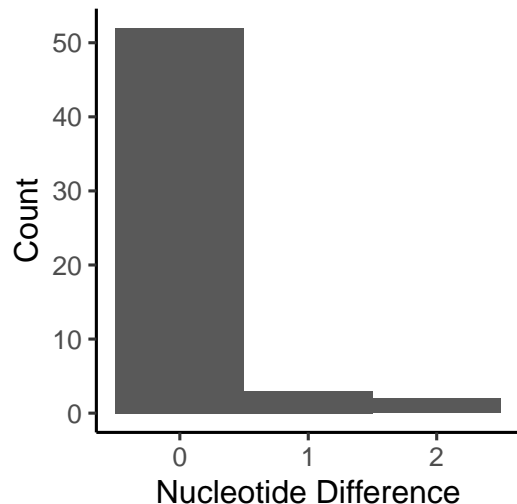
### IGHV3-7\*03

373 sequences assigned  
313 (83.9%) exact matches, in which:  
307 unique CDR3  
6 unique J



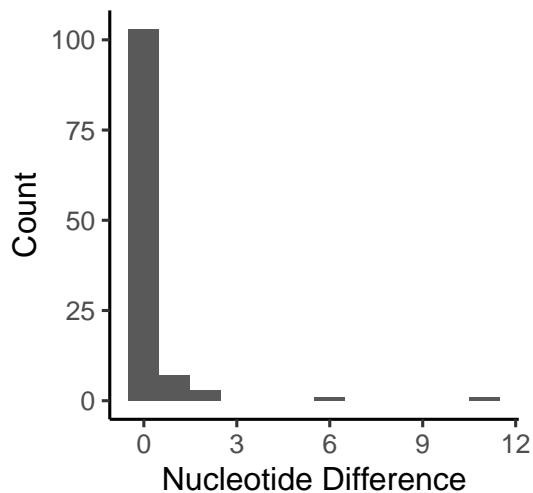
### IGHV3-13\*01\_G290A\_T33

57 sequences assigned  
52 (91.2%) exact matches, in which:  
50 unique CDR3  
5 unique J



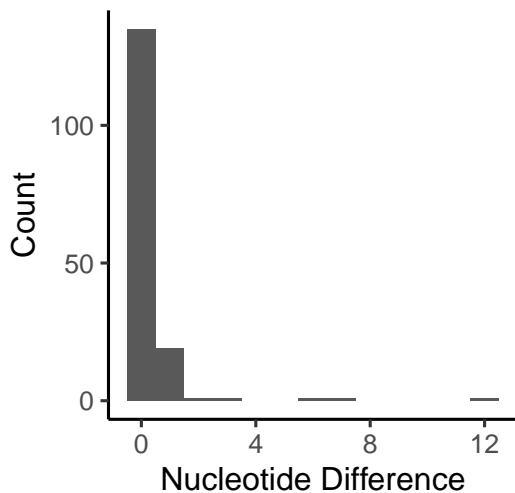
### IGHV2-26\*01

115 sequences assigned  
103 (89.6%) exact matches, in which:  
103 unique CDR3  
6 unique J



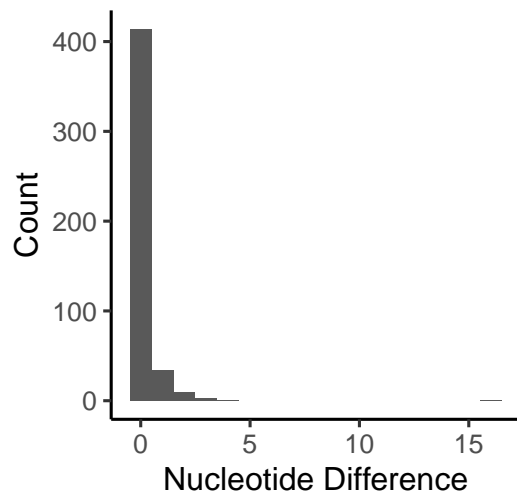
### IGHV3-7\*04

159 sequences assigned  
135 (84.9%) exact matches, in which:  
130 unique CDR3  
6 unique J



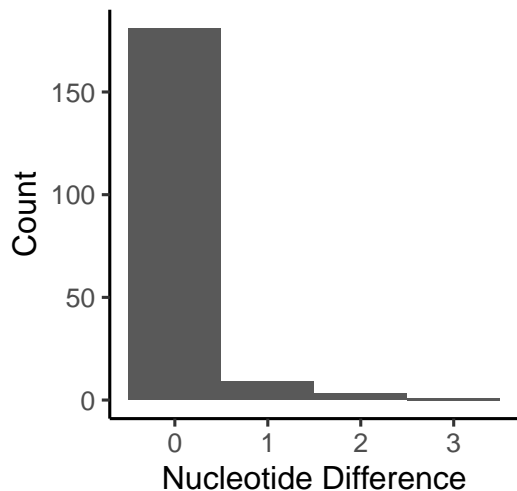
### IGHV3-15\*07

463 sequences assigned  
414 (89.4%) exact matches, in which:  
400 unique CDR3  
6 unique J



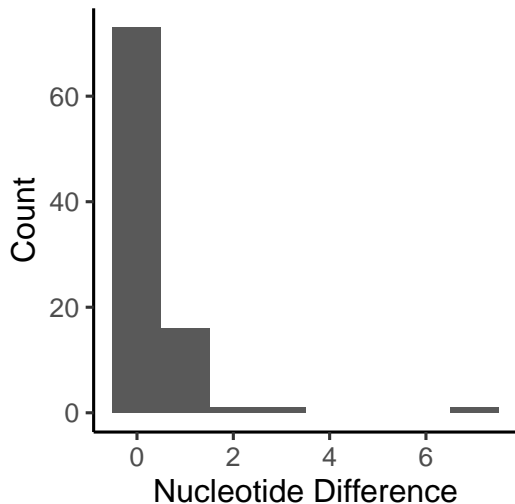
### IGHV2-70\*15

194 sequences assigned  
181 (93.3%) exact matches, in which:  
181 unique CDR3  
5 unique J



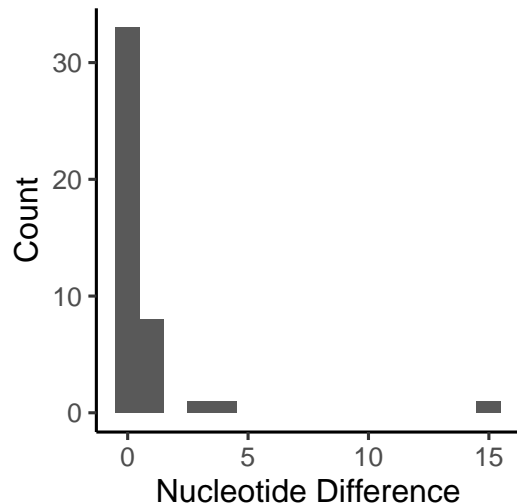
### IGHV3-11\*06

92 sequences assigned  
73 (79.3%) exact matches, in which:  
73 unique CDR3  
6 unique J



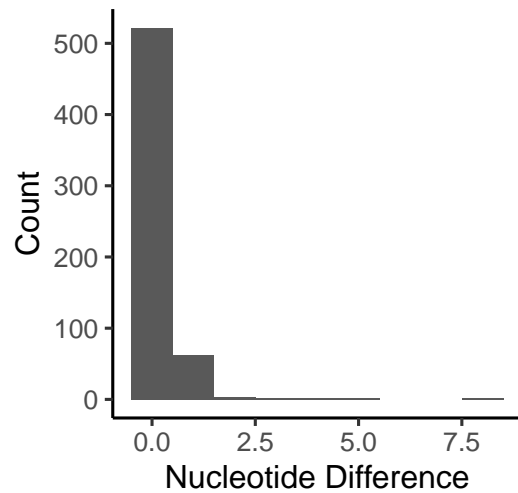
### IGHV3-20\*04

44 sequences assigned  
33 (75%) exact matches, in which:  
32 unique CDR3  
5 unique J



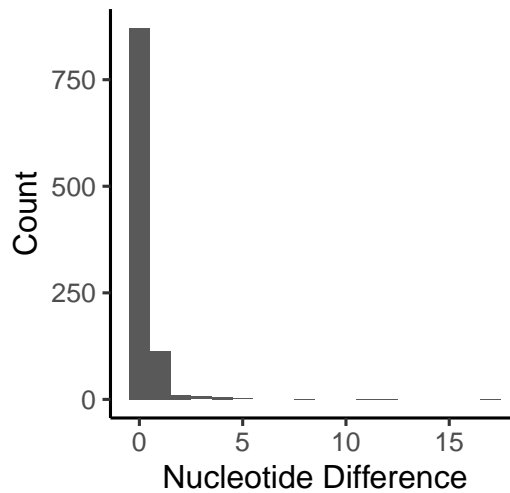
### IGHV3–21\*01

595 sequences assigned  
522 (87.7%) exact matches, in which:  
502 unique CDR3  
6 unique J



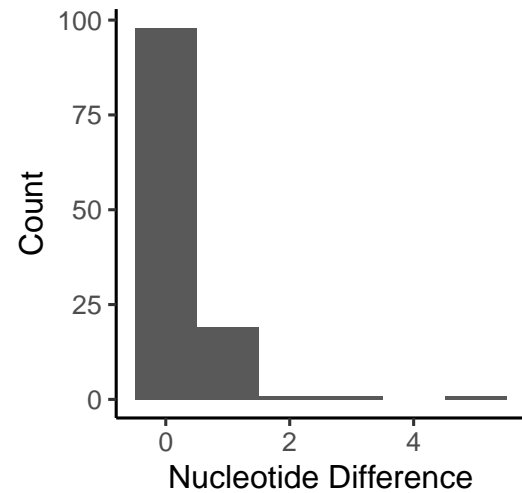
### IGHV3–30\*18

1017 sequences assigned  
872 (85.7%) exact matches, in which:  
844 unique CDR3  
6 unique J



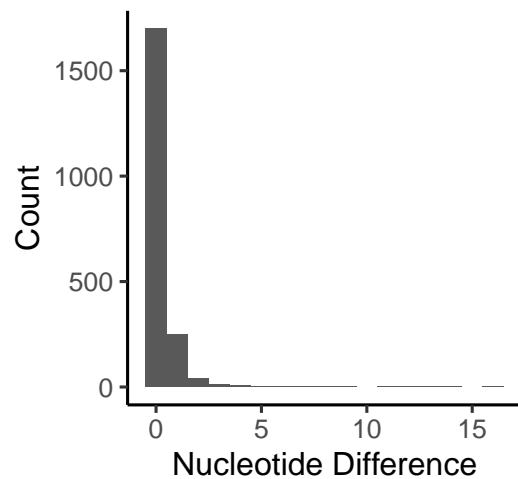
### IGHV3–43\*01

120 sequences assigned  
98 (81.7%) exact matches, in which:  
94 unique CDR3  
6 unique J



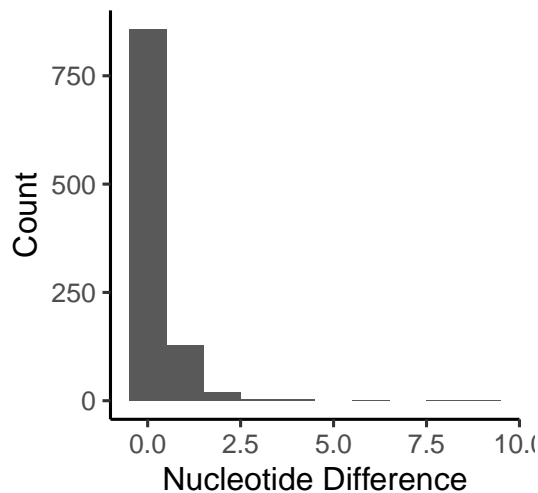
### IGHV3–23\*01

2025 sequences assigned  
1699 (83.9%) exact matches, in which:  
1624 unique CDR3  
6 unique J



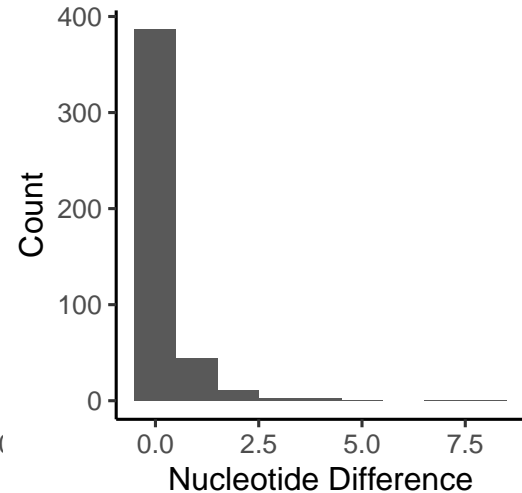
### IGHV3–33\*01

1017 sequences assigned  
858 (84.4%) exact matches, in which:  
834 unique CDR3  
6 unique J



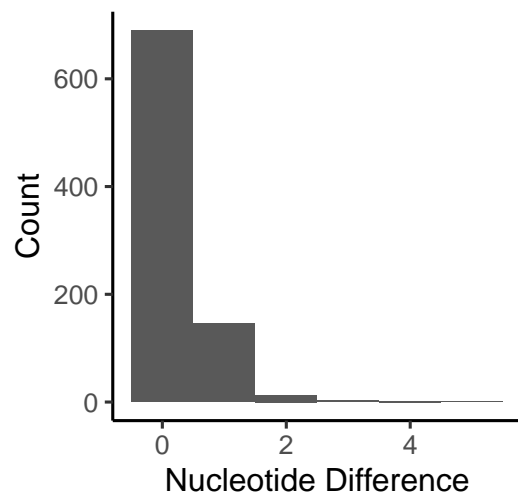
### IGHV3–43\*02

452 sequences assigned  
387 (85.6%) exact matches, in which:  
373 unique CDR3  
6 unique J



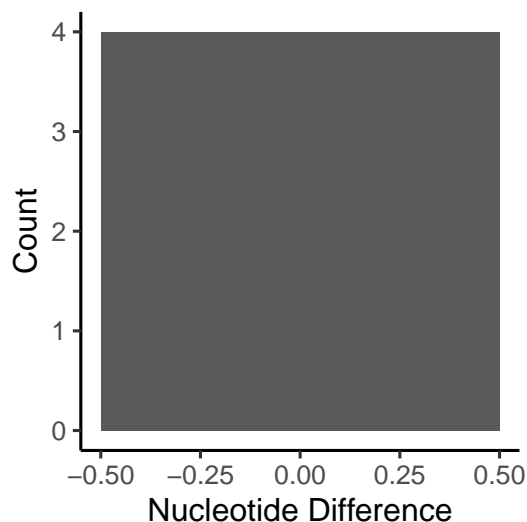
### IGHV3–30–3\*01

857 sequences assigned  
690 (80.5%) exact matches, in which:  
665 unique CDR3  
6 unique J



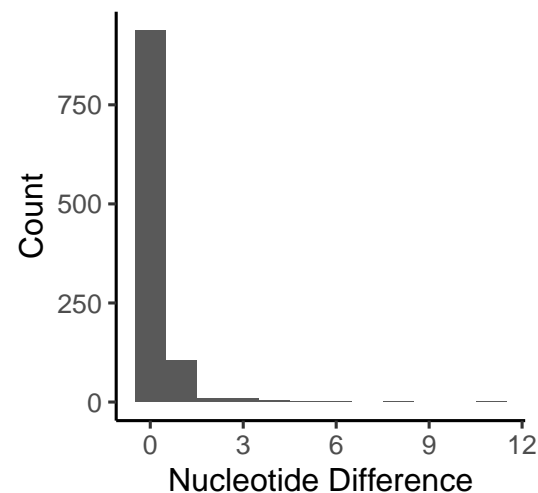
### IGHV3–38–3\*01

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



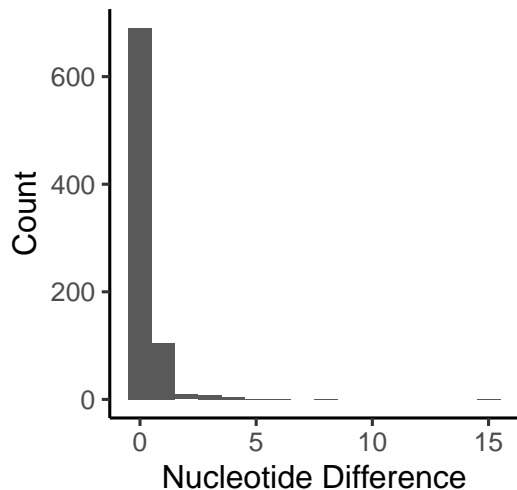
### IGHV3–48\*03

1070 sequences assigned  
938 (87.7%) exact matches, in which:  
909 unique CDR3  
6 unique J



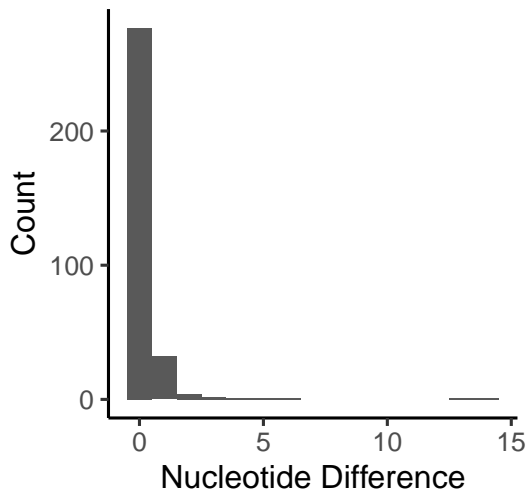
### IGHV3-48\*04

821 sequences assigned  
691 (84.2%) exact matches, in which:  
674 unique CDR3  
6 unique J



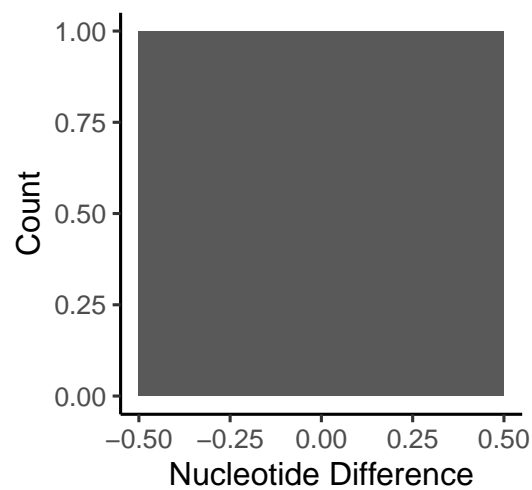
### IGHV3-53\*04

320 sequences assigned  
277 (86.6%) exact matches, in which:  
271 unique CDR3  
6 unique J



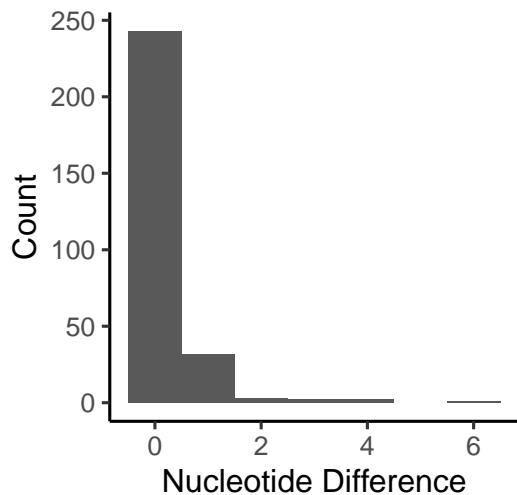
### IGHV3-69-1\*02

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



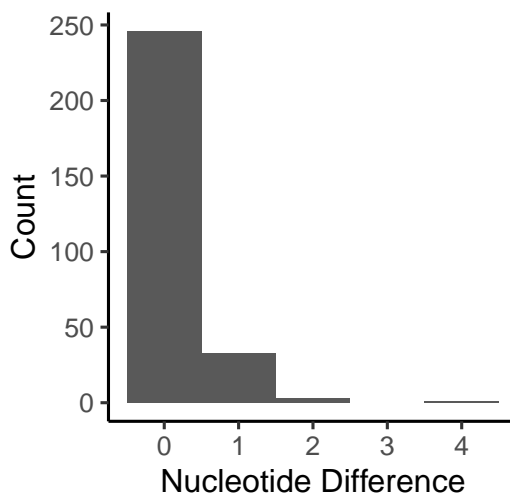
### IGHV3-49\*03

283 sequences assigned  
243 (85.9%) exact matches, in which:  
238 unique CDR3  
6 unique J



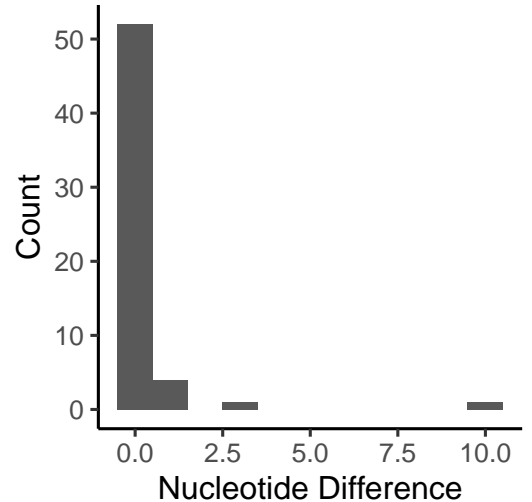
### IGHV3-64\*01

284 sequences assigned  
246 (86.6%) exact matches, in which:  
235 unique CDR3  
6 unique J



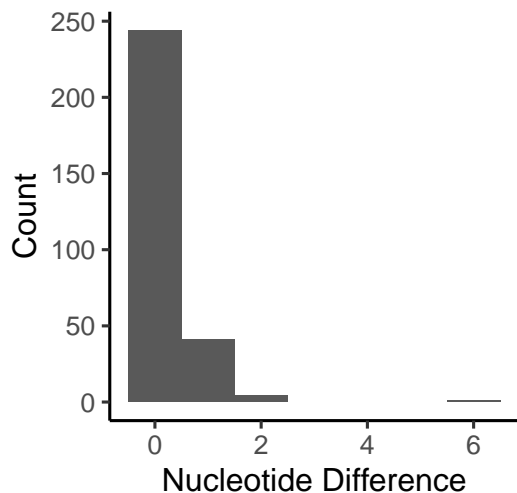
### IGHV3-72\*01

59 sequences assigned  
52 (88.1%) exact matches, in which:  
50 unique CDR3  
5 unique J



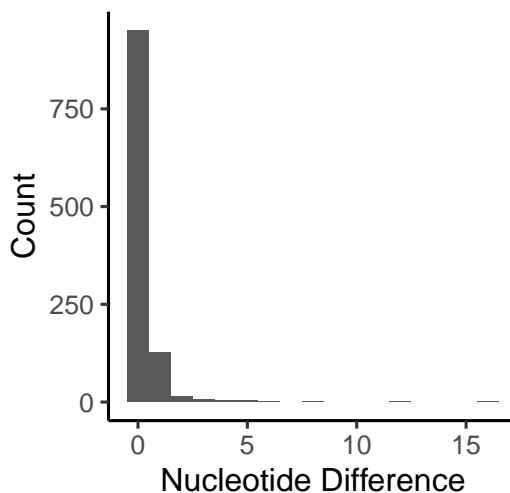
### IGHV3-49\*04

290 sequences assigned  
244 (84.1%) exact matches, in which:  
239 unique CDR3  
6 unique J



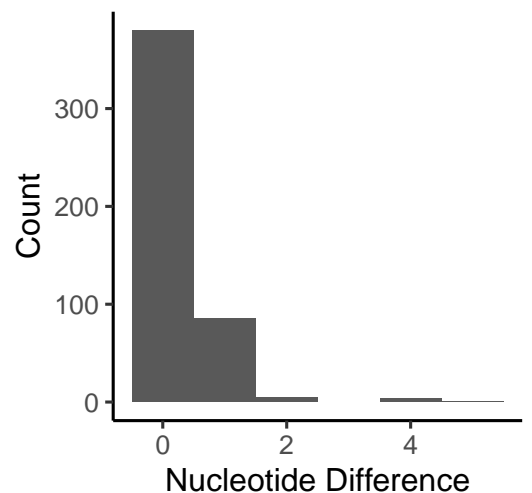
### IGHV3-66\*01

1114 sequences assigned  
951 (85.4%) exact matches, in which:  
904 unique CDR3  
6 unique J



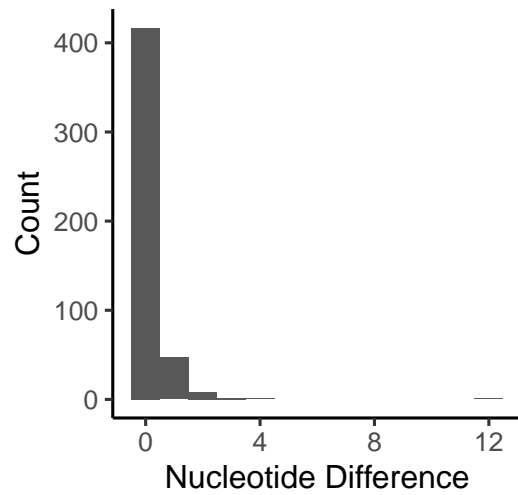
### IGHV3-73\*01

475 sequences assigned  
380 (80%) exact matches, in which:  
356 unique CDR3  
6 unique J



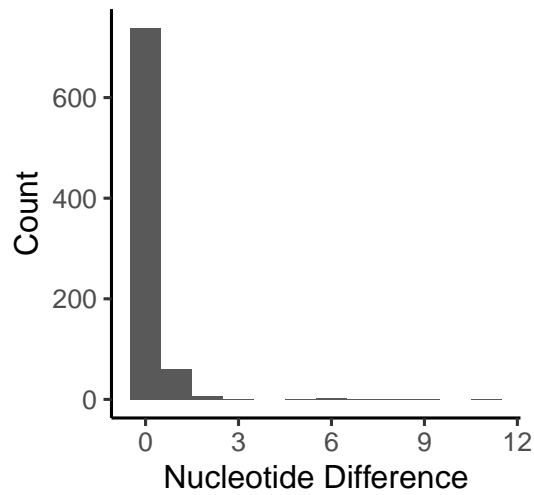
### IGHV3-74\*01

476 sequences assigned  
417 (87.6%) exact matches, in which:  
408 unique CDR3  
6 unique J



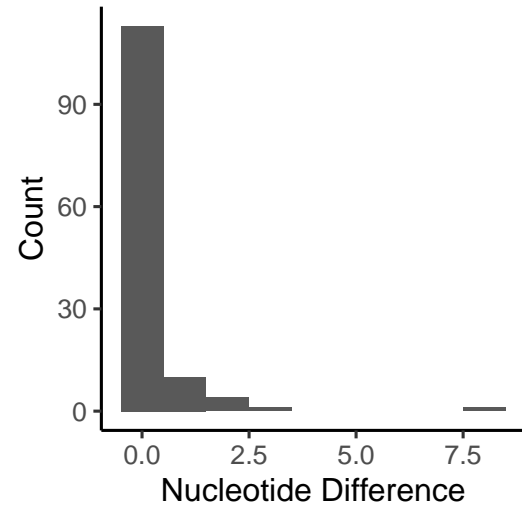
### IGHV4-4\*02

822 sequences assigned  
739 (89.9%) exact matches, in which:  
729 unique CDR3  
6 unique J



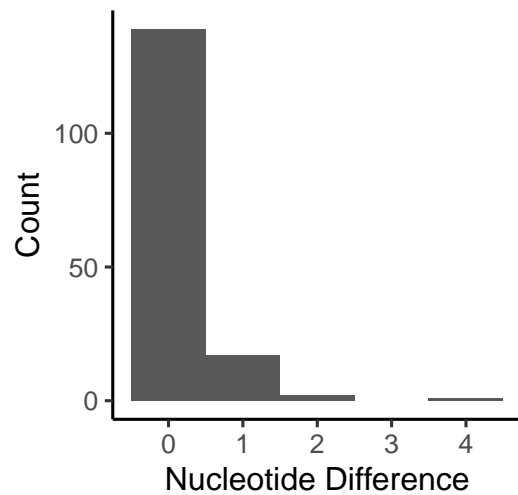
### IGHV4-30-2\*01

129 sequences assigned  
113 (87.6%) exact matches, in which:  
112 unique CDR3  
5 unique J



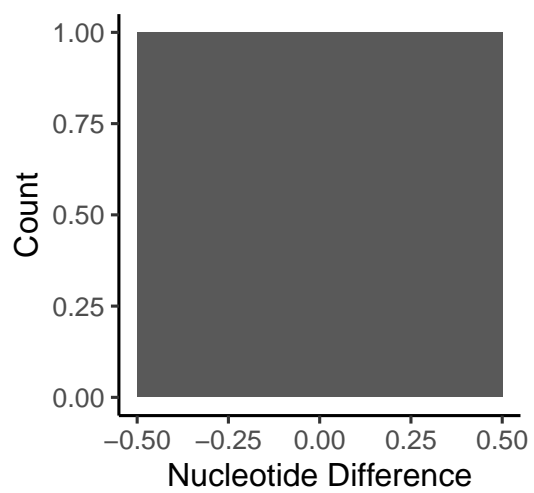
### IGHV3-43D\*03

159 sequences assigned  
139 (87.4%) exact matches, in which:  
136 unique CDR3  
5 unique J



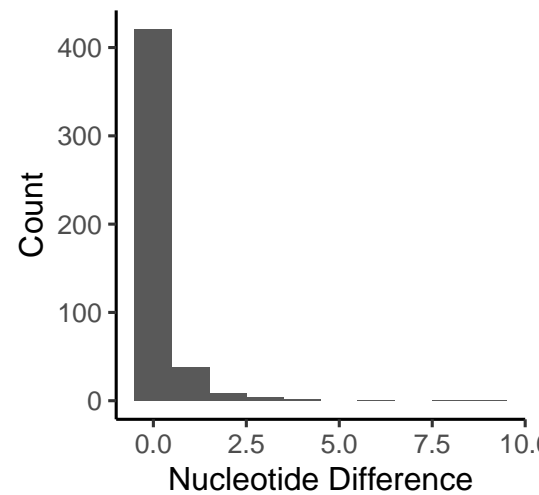
### IGHV4-28\*01

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



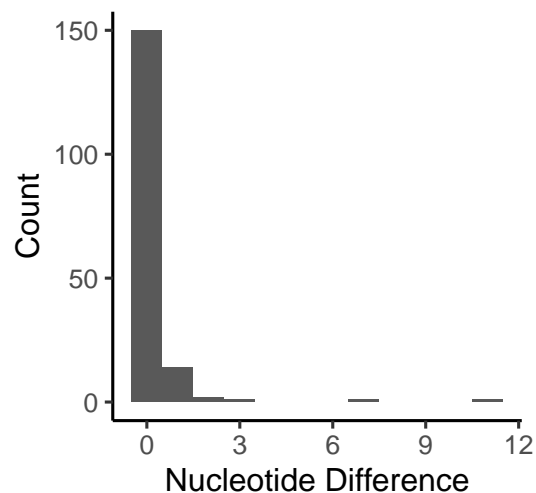
### IGHV4-31\*03

477 sequences assigned  
421 (88.3%) exact matches, in which:  
415 unique CDR3  
6 unique J



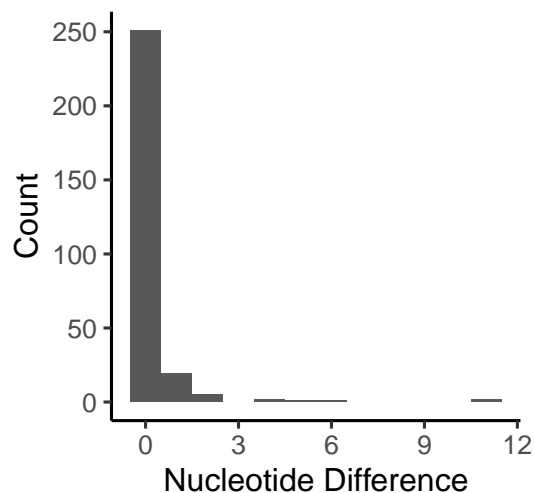
### IGHV3-64D\*06

169 sequences assigned  
150 (88.8%) exact matches, in which:  
147 unique CDR3  
6 unique J



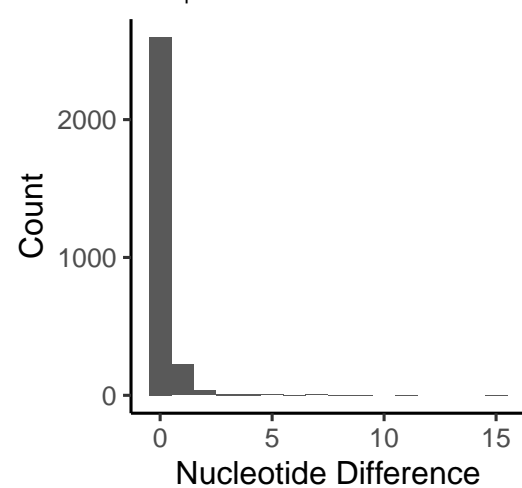
### IGHV4-30-4\*01

281 sequences assigned  
251 (89.3%) exact matches, in which:  
246 unique CDR3  
6 unique J



### IGHV4-34\*01

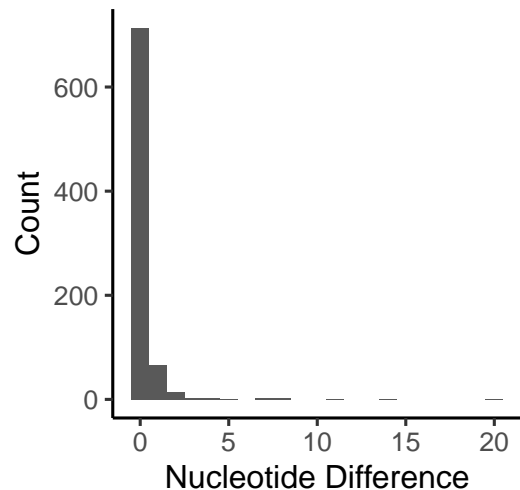
2900 sequences assigned  
2599 (89.6%) exact matches, in which:  
2521 unique CDR3  
6 unique J





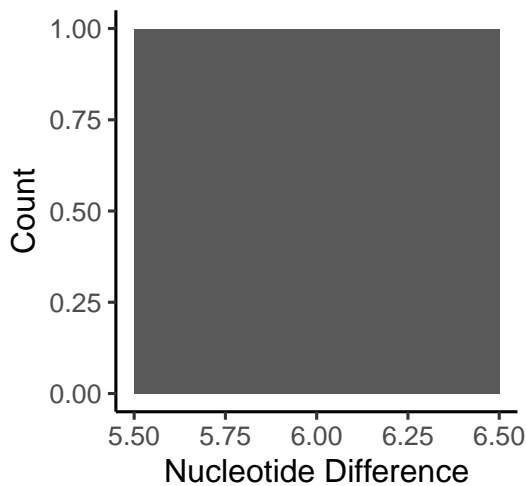
### IGHV4-38-2\*02

808 sequences assigned  
714 (88.4%) exact matches, in which:  
690 unique CDR3  
6 unique J



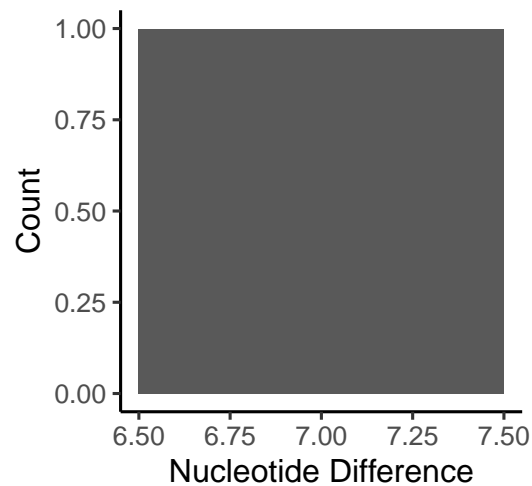
### IGHV4-55\*08

1 sequences assigned  
No exact matches.



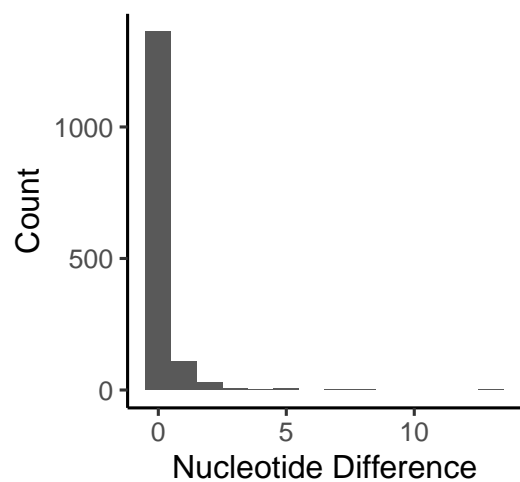
### IGHV4-61\*01

1 sequences assigned  
No exact matches.



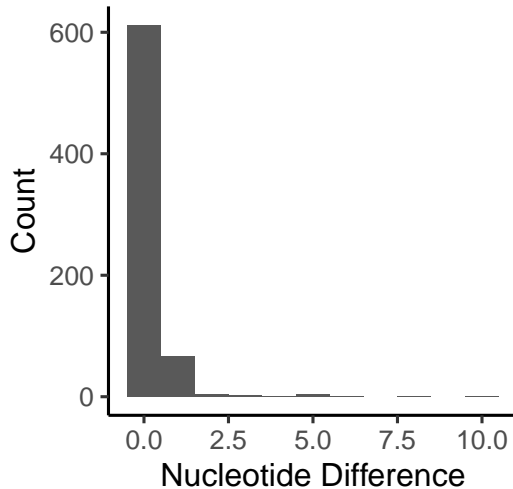
### IGHV4-39\*01

1515 sequences assigned  
1362 (89.9%) exact matches, in which:  
1314 unique CDR3  
6 unique J



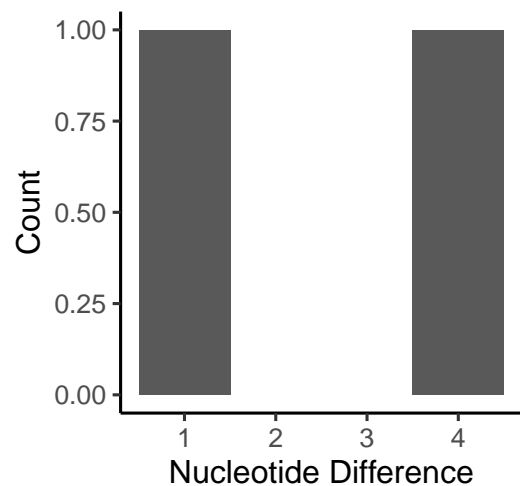
### IGHV4-59\*01

692 sequences assigned  
612 (88.4%) exact matches, in which:  
604 unique CDR3  
6 unique J



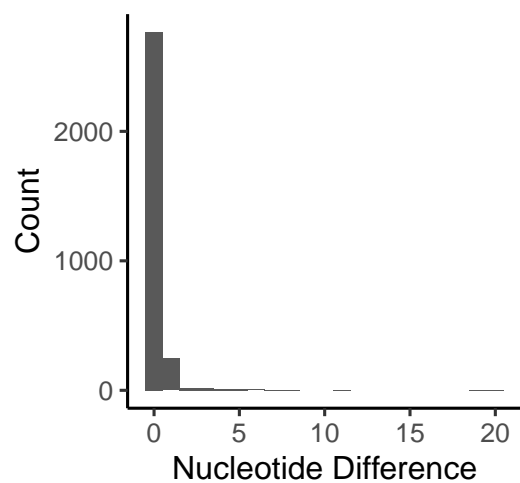
### IGHV4-61\*05

2 sequences assigned  
No exact matches.



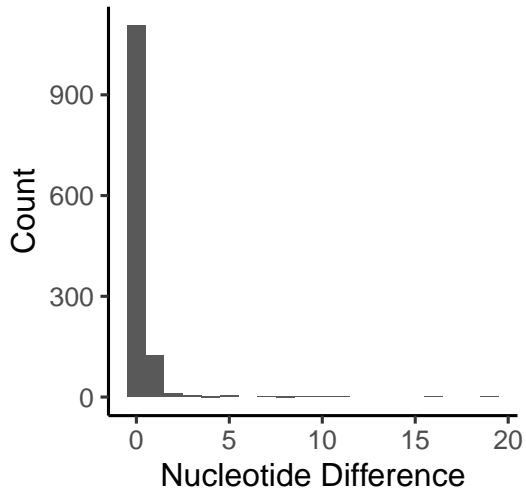
### IGHV4-39\*07

3081 sequences assigned  
2767 (89.8%) exact matches, in which:  
2679 unique CDR3  
6 unique J



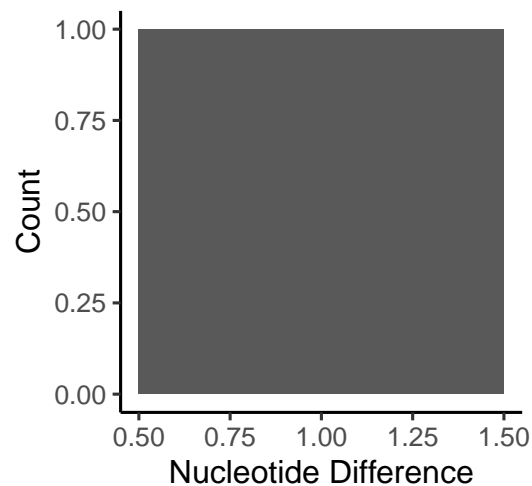
### IGHV4-59\*08

1264 sequences assigned  
1107 (87.6%) exact matches, in which:  
1084 unique CDR3  
6 unique J



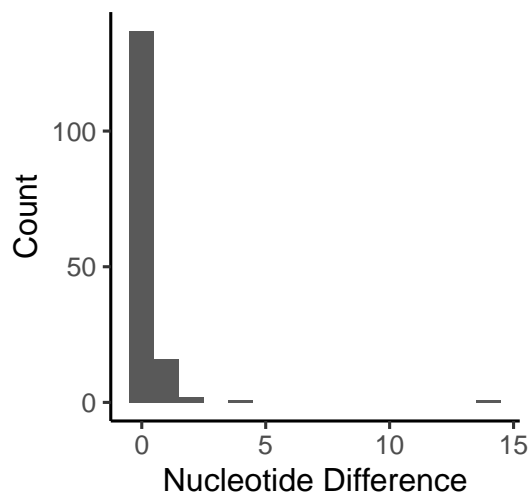
### IGHV1/OR15-4\*01

1 sequences assigned  
No exact matches.



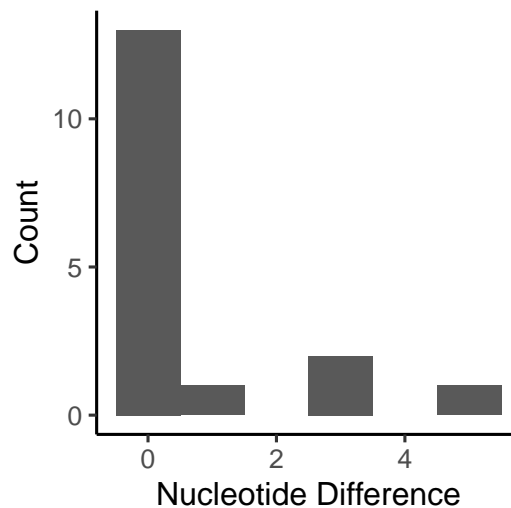
### IGHV5-10-1\*03

158 sequences assigned  
137 (86.7%) exact matches, in which:  
132 unique CDR3  
5 unique J



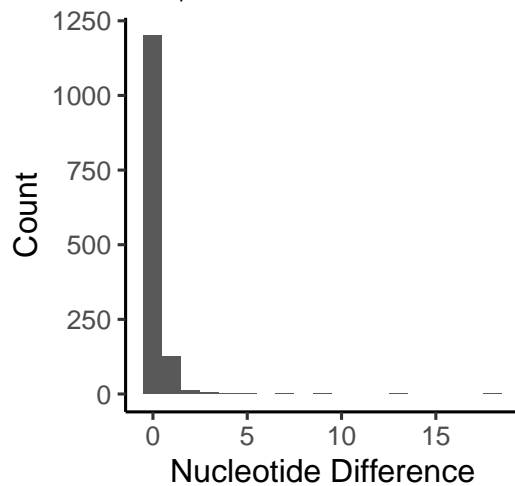
### IGHV7-4-1\*01

17 sequences assigned  
13 (76.5%) exact matches, in which:  
13 unique CDR3  
5 unique J



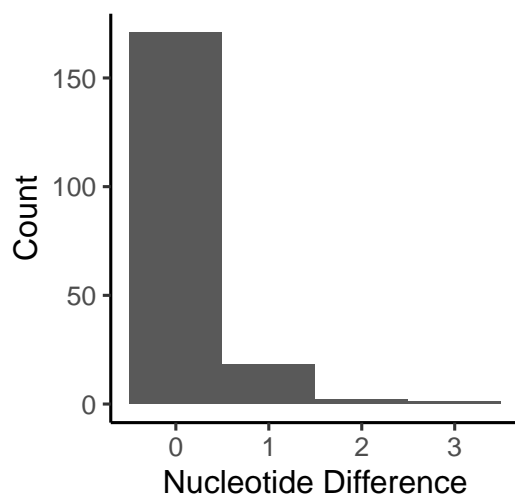
### IGHV5-51\*01

1354 sequences assigned  
1200 (88.6%) exact matches, in which:  
1166 unique CDR3  
6 unique J



### IGHV6-1\*01

192 sequences assigned  
171 (89.1%) exact matches, in which:  
166 unique CDR3  
6 unique J



IGHV3-13\*01\_G290A\_T300C

