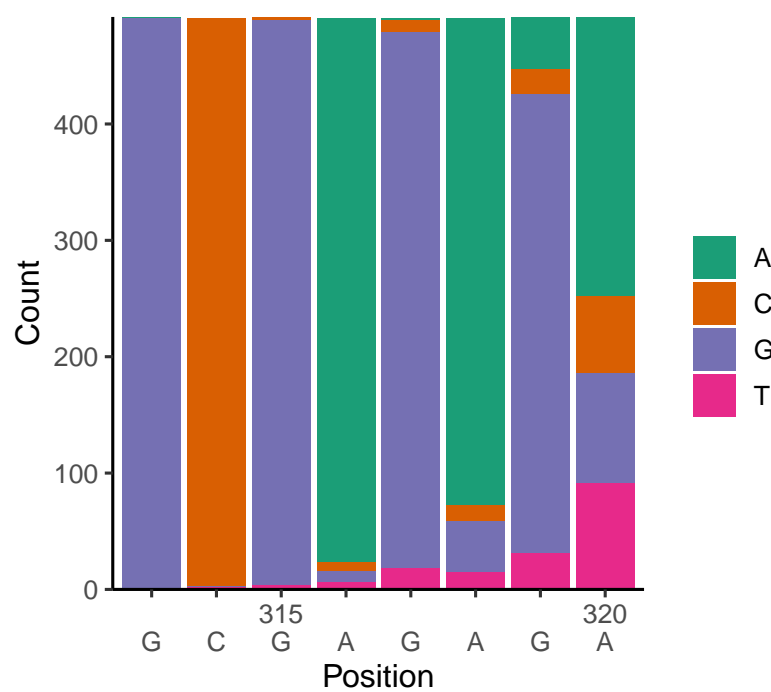
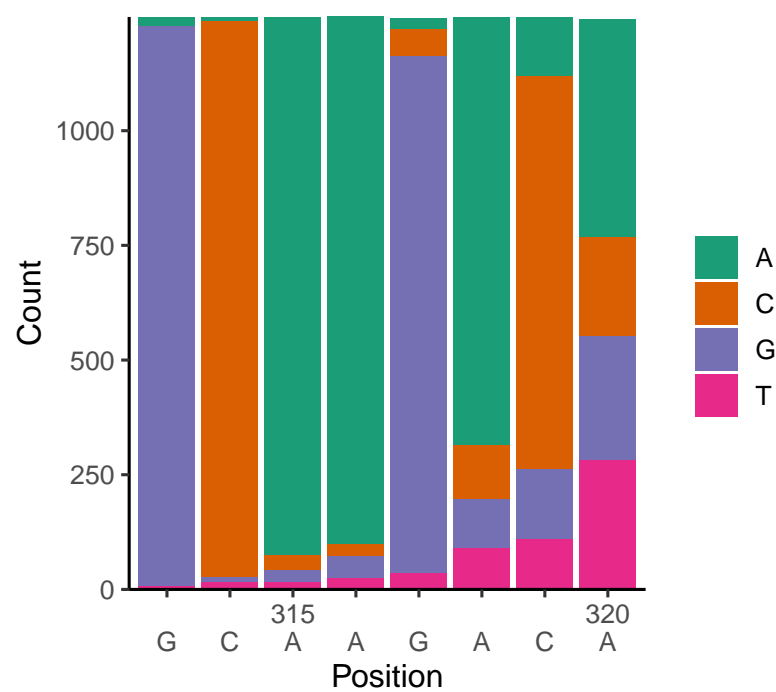


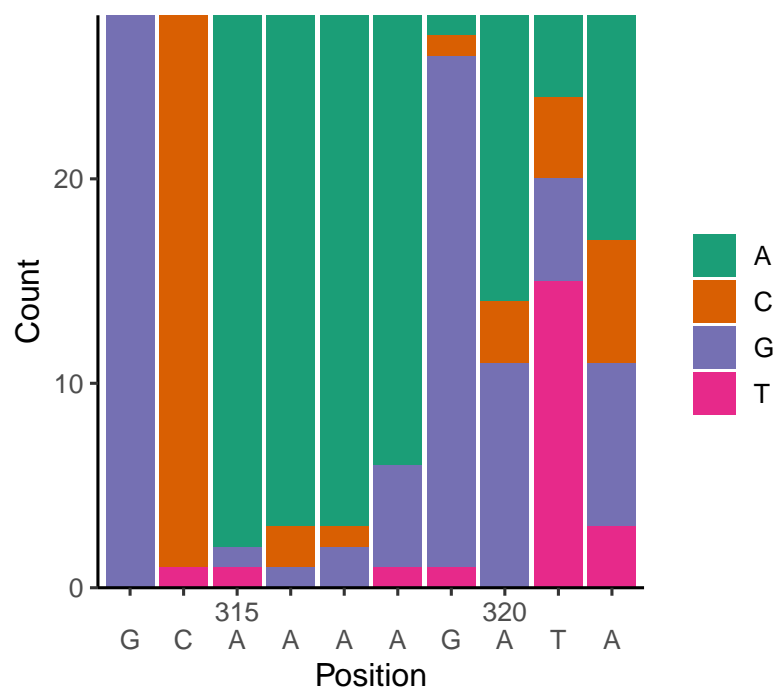
Gene IGHV1-18\*01\_A196G



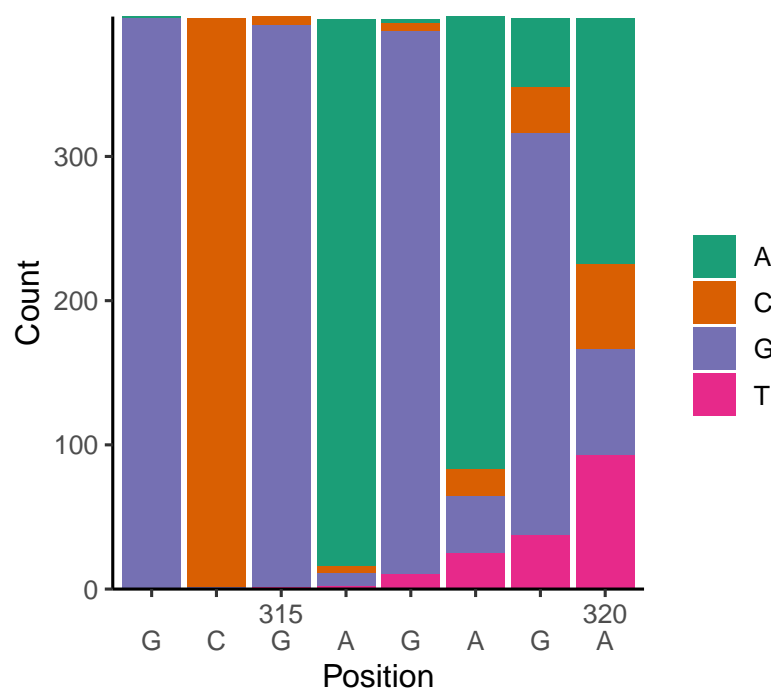
Gene IGHV4-39\*01\_G315A



Gene IGHV3-43\*01\_T177A



Gene IGHV4-38-2\*02\_A70G



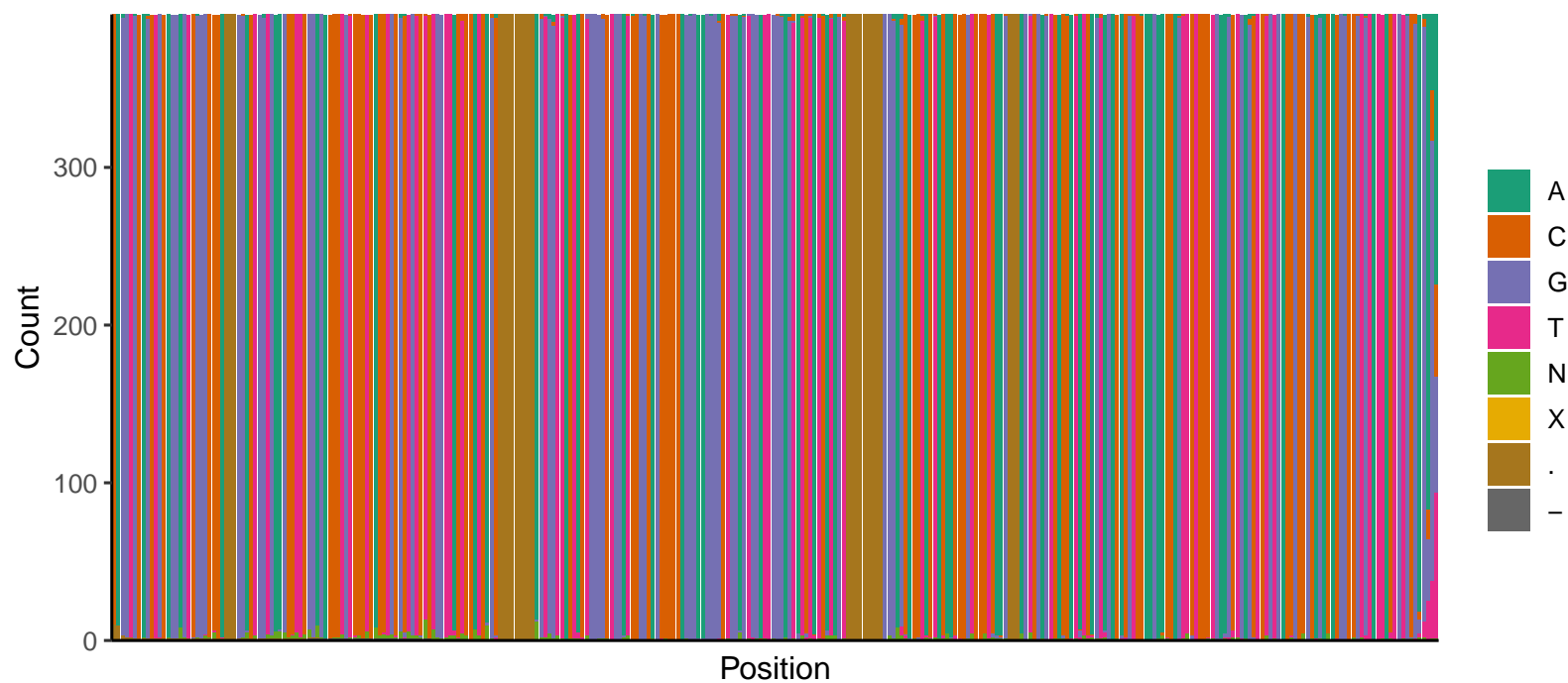
Gene IGHV1-18\*01\_A196G



Gene IGHV3-43\*01\_T177A



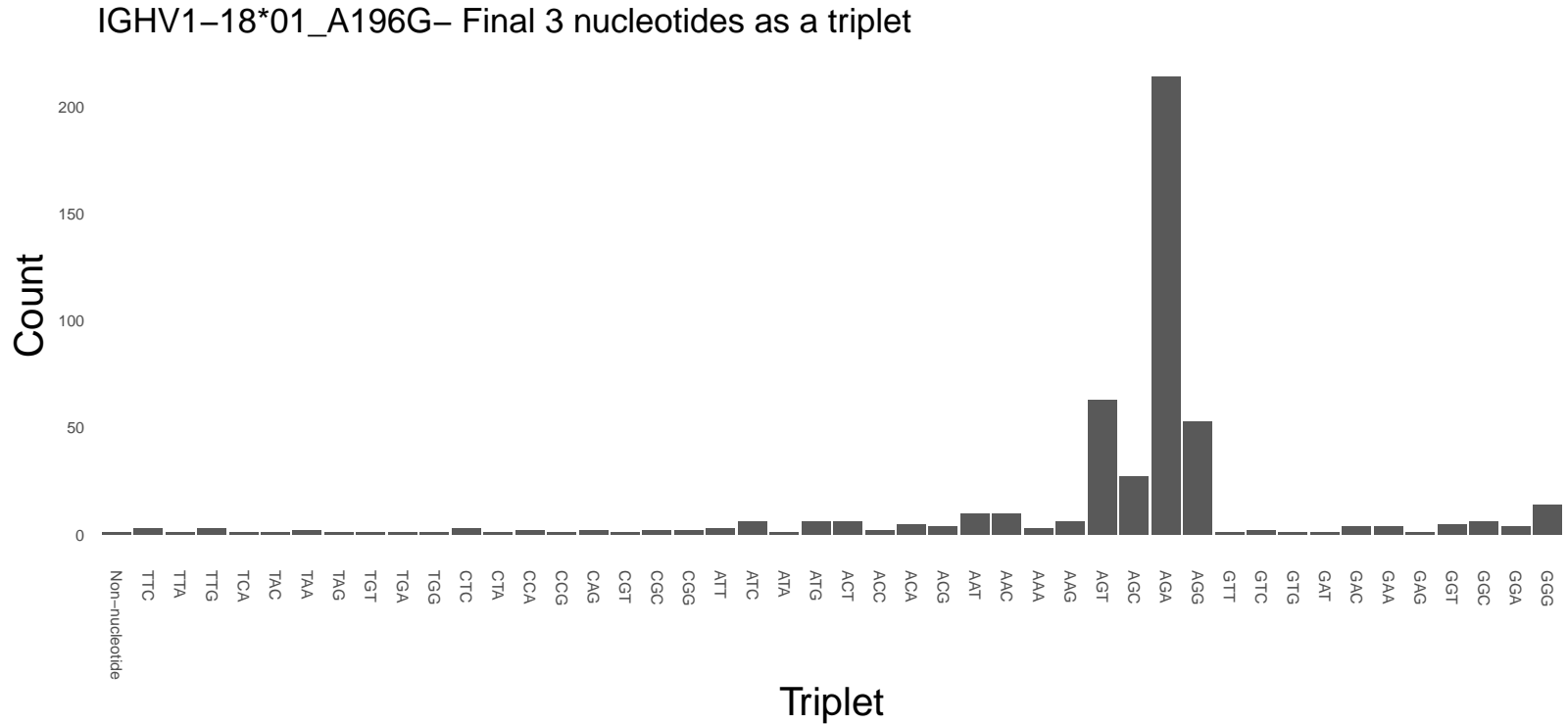
Gene IGHV4-38-2\*02\_A70G



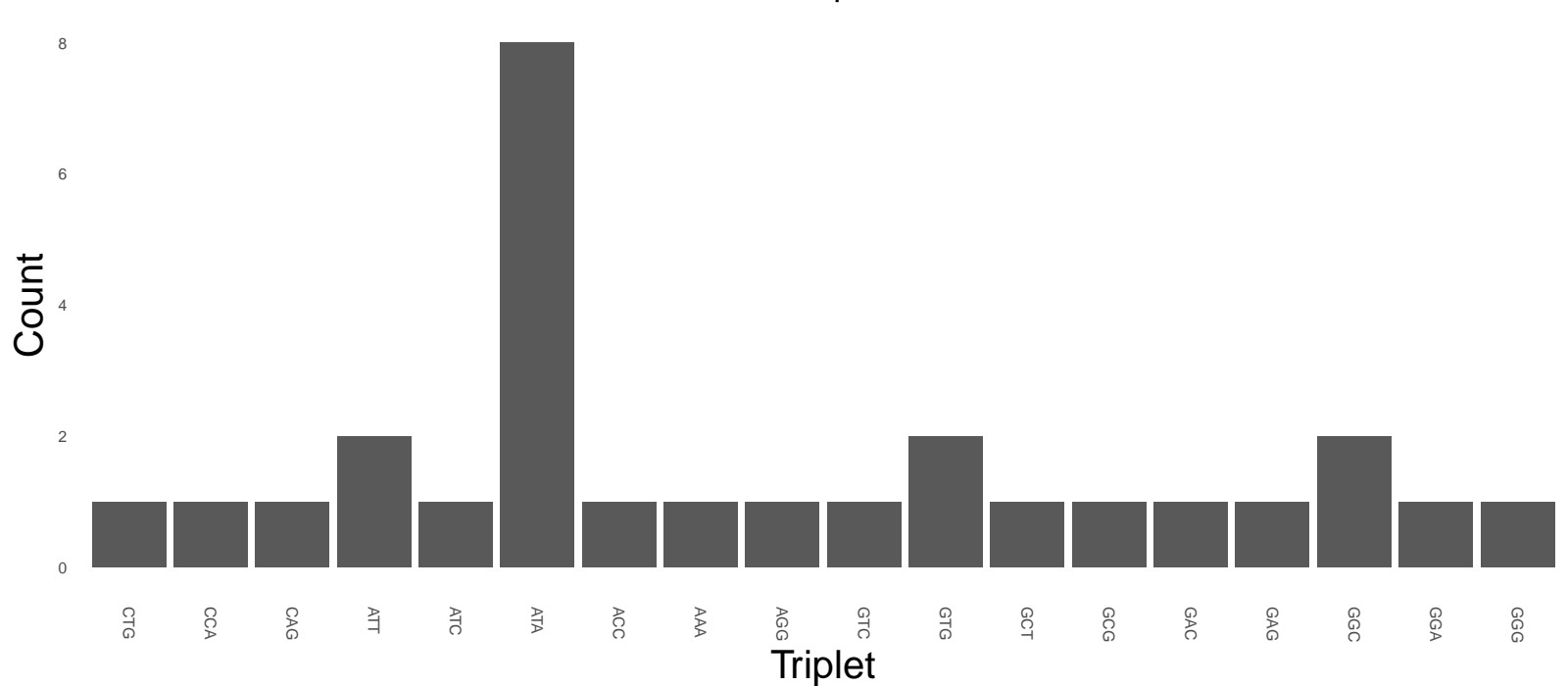
# Gene IGHV4-39\*01\_G315A



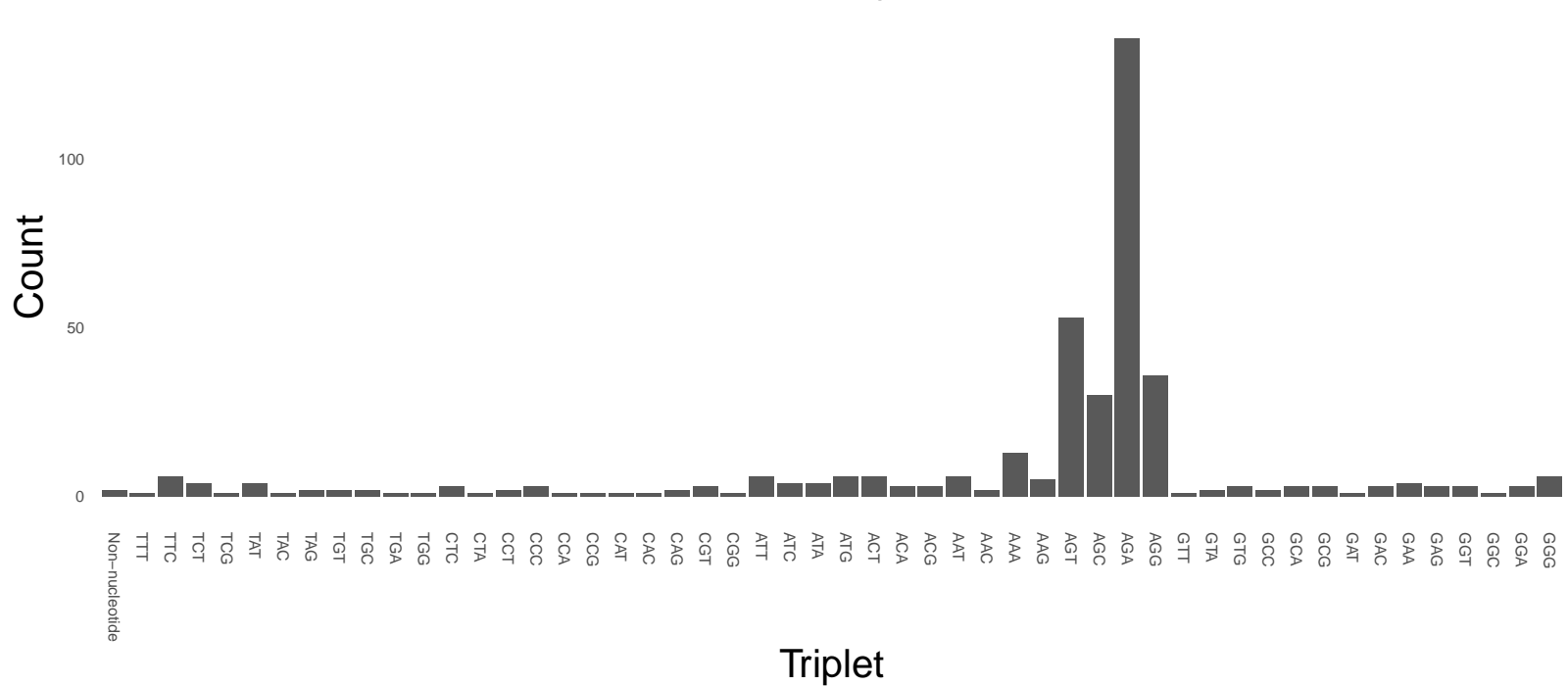
IGHV1-18\*01\_A196G- Final 3 nucleotides as a triplet



IGHV3-43\*01\_T177A- Final 3 nucleotides as a triplet



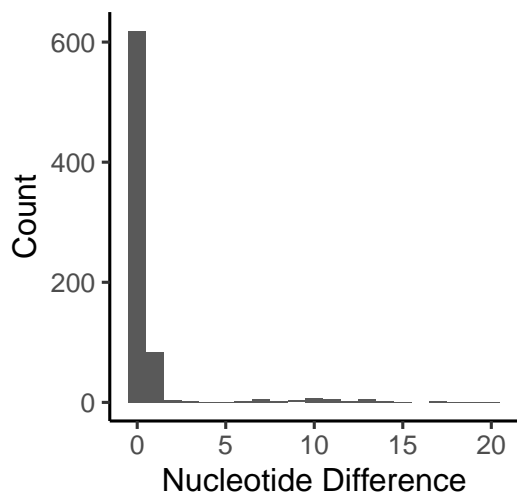
IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet





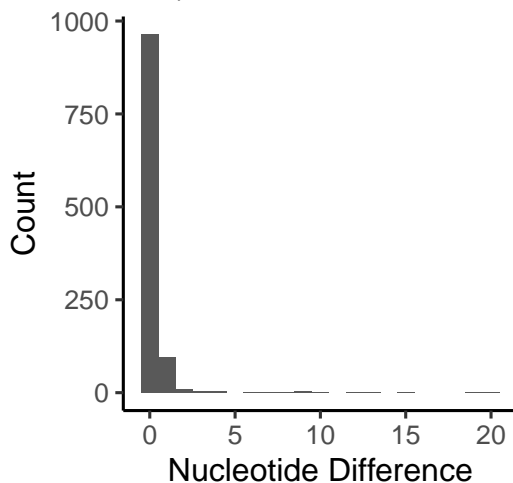
### IGHV1-2\*02

760 sequences assigned  
619 (81.4%) exact matches, in which:  
589 unique CDR3  
6 unique J



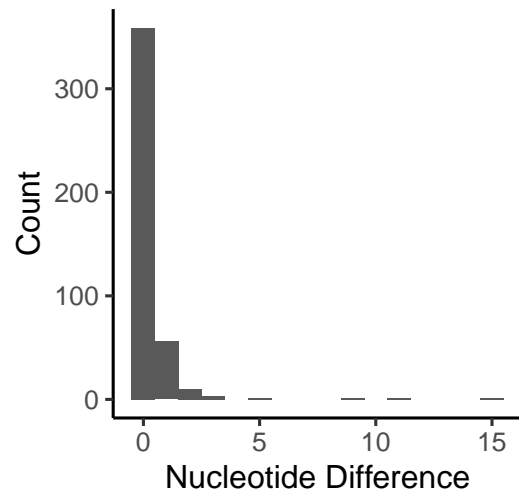
### IGHV1-8\*01

1091 sequences assigned  
964 (88.4%) exact matches, in which:  
929 unique CDR3  
7 unique J



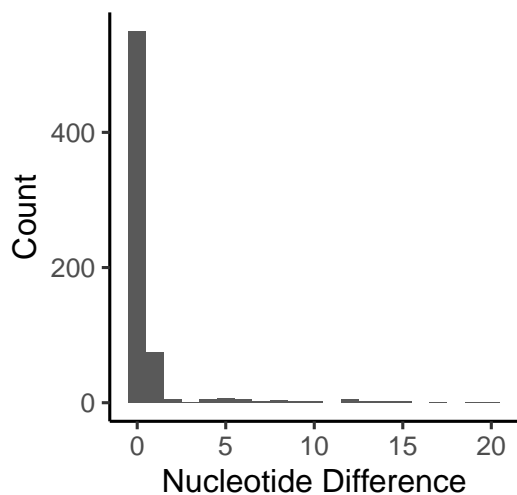
### IGHV1-24\*01

432 sequences assigned  
359 (83.1%) exact matches, in which:  
343 unique CDR3  
7 unique J



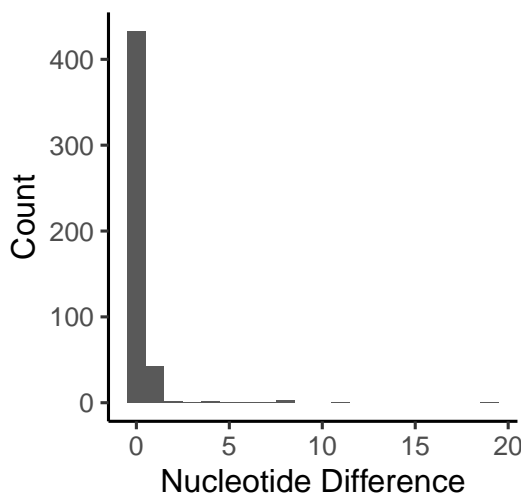
### IGHV1-2\*06

674 sequences assigned  
550 (81.6%) exact matches, in which:  
520 unique CDR3  
6 unique J



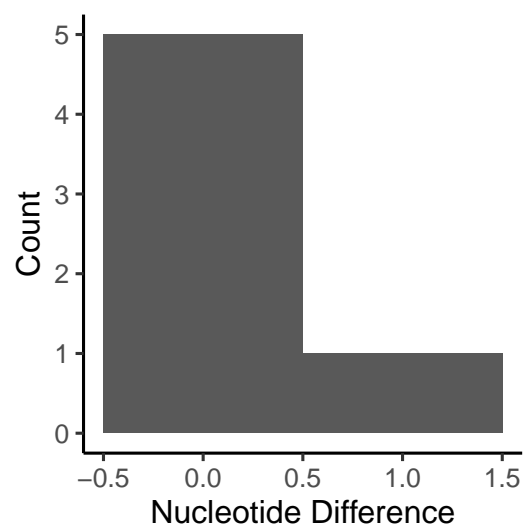
### IGHV1-18\*01

490 sequences assigned  
433 (88.4%) exact matches, in which:  
421 unique CDR3  
6 unique J



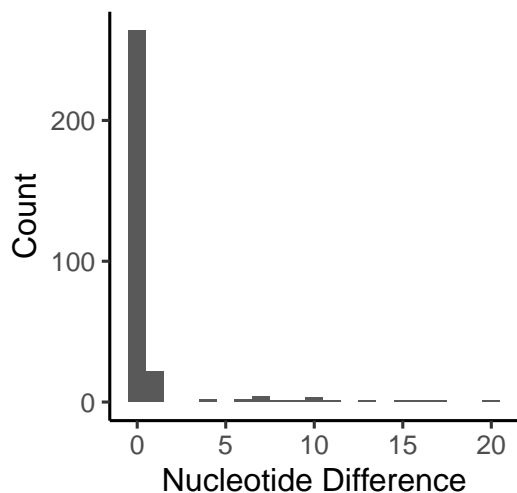
### IGHV1-45\*02

7 sequences assigned  
5 (71.4%) exact matches, in which:  
5 unique CDR3  
3 unique J



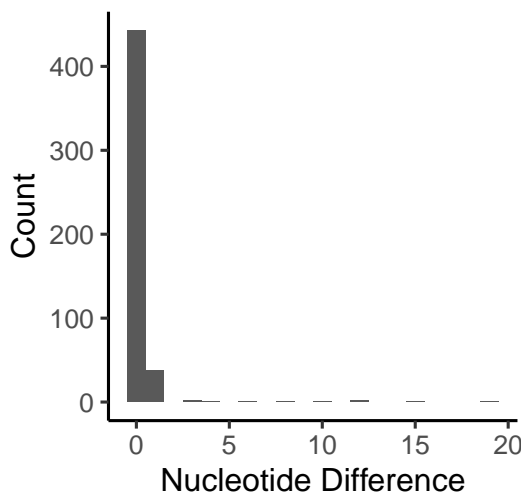
### IGHV1-3\*01

307 sequences assigned  
264 (86%) exact matches, in which:  
260 unique CDR3  
6 unique J



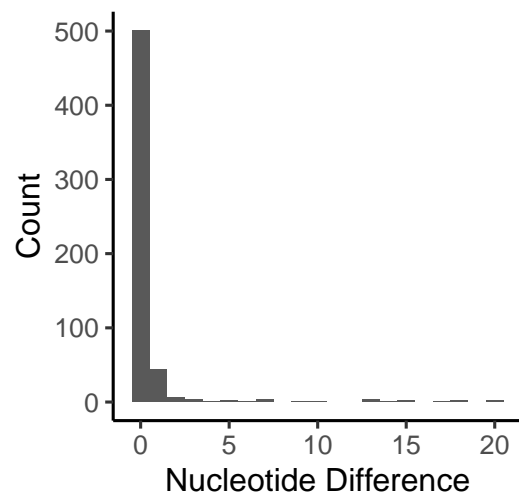
### IGHV1-18\*01\_A196G

492 sequences assigned  
443 (90%) exact matches, in which:  
429 unique CDR3  
6 unique J



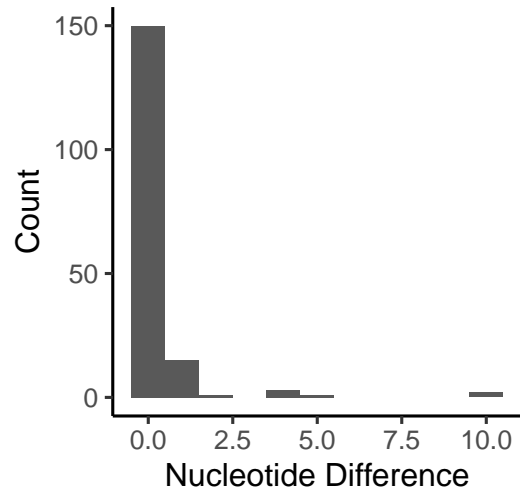
### IGHV1-46\*01

575 sequences assigned  
501 (87.1%) exact matches, in which:  
471 unique CDR3  
7 unique J



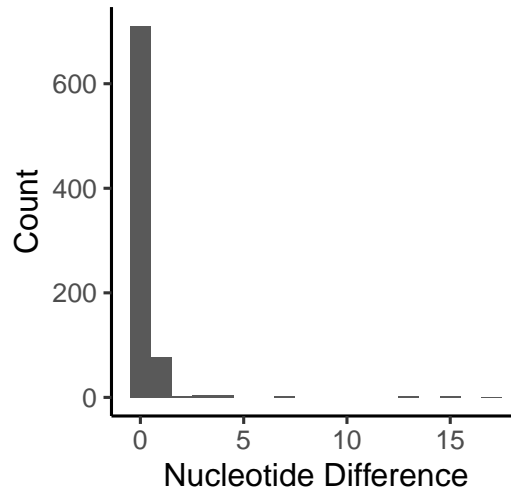
### IGHV1–58\*01

174 sequences assigned  
150 (86.2%) exact matches, in which:  
142 unique CDR3  
6 unique J



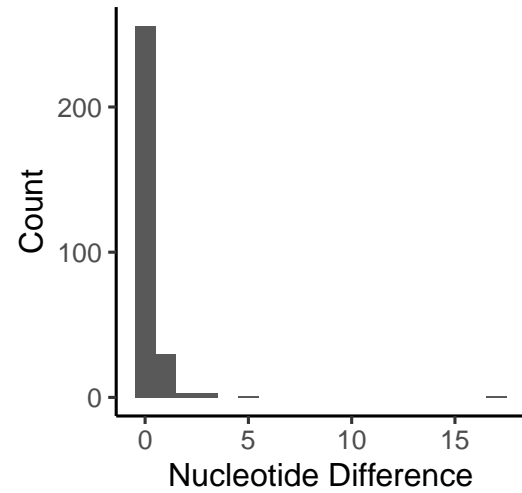
### IGHV1–69\*06

810 sequences assigned  
711 (87.8%) exact matches, in which:  
674 unique CDR3  
7 unique J



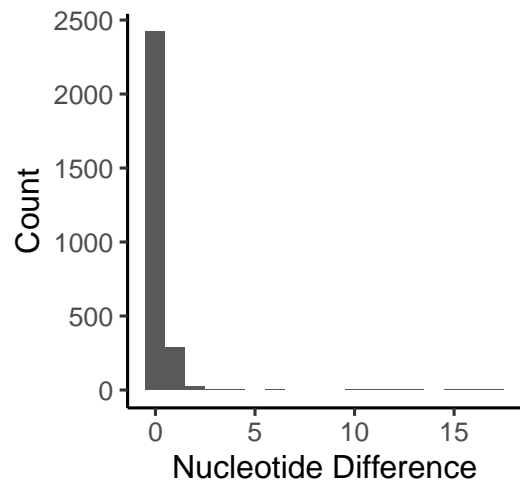
### IGHV2–26\*01

294 sequences assigned  
256 (87.1%) exact matches, in which:  
247 unique CDR3  
7 unique J



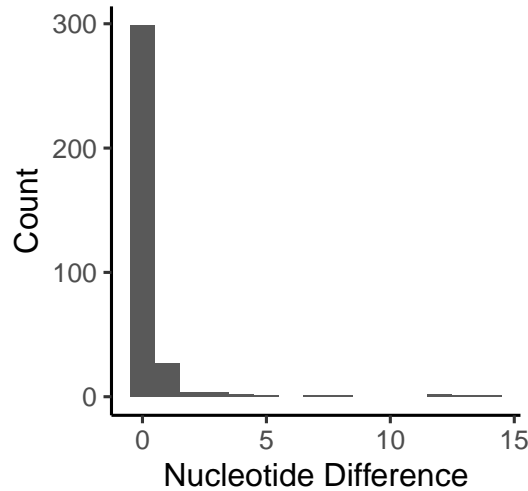
### IGHV1–69\*01

2751 sequences assigned  
2421 (88%) exact matches, in which:  
2324 unique CDR3  
7 unique J



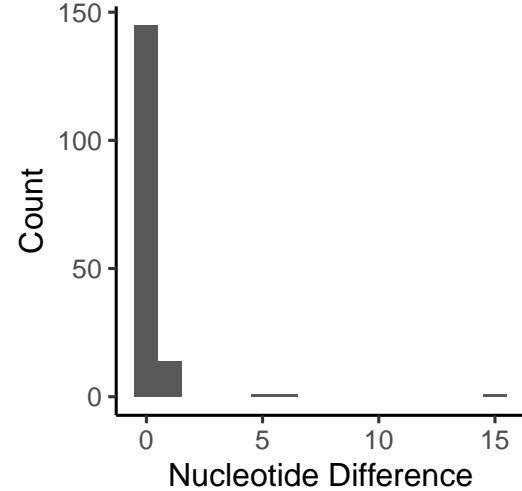
### IGHV2–5\*01

343 sequences assigned  
299 (87.2%) exact matches, in which:  
287 unique CDR3  
6 unique J



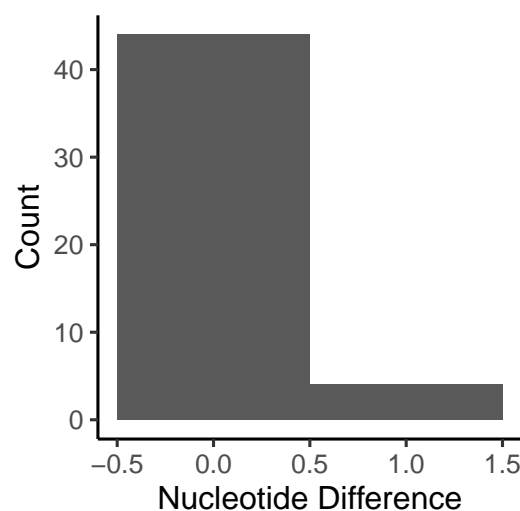
### IGHV2–70\*01

162 sequences assigned  
145 (89.5%) exact matches, in which:  
144 unique CDR3  
6 unique J



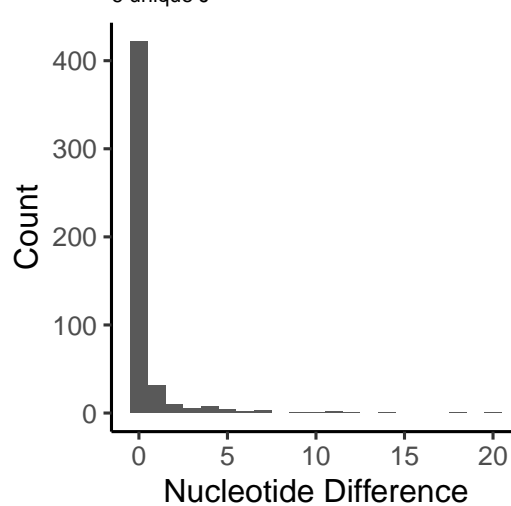
### IGHV1–69–2\*01

48 sequences assigned  
44 (91.7%) exact matches, in which:  
42 unique CDR3  
6 unique J



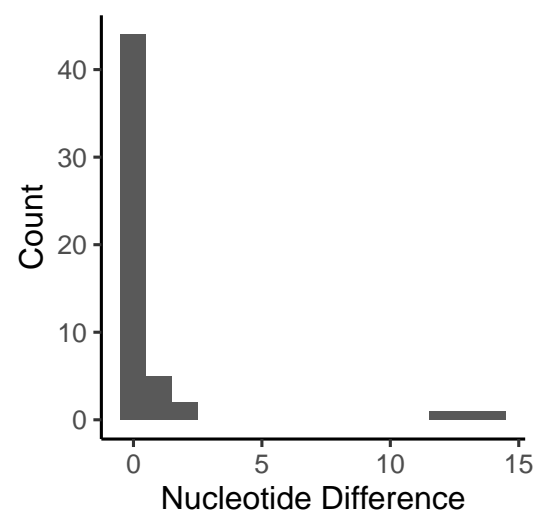
### IGHV2–5\*02

493 sequences assigned  
422 (85.6%) exact matches, in which:  
400 unique CDR3  
6 unique J



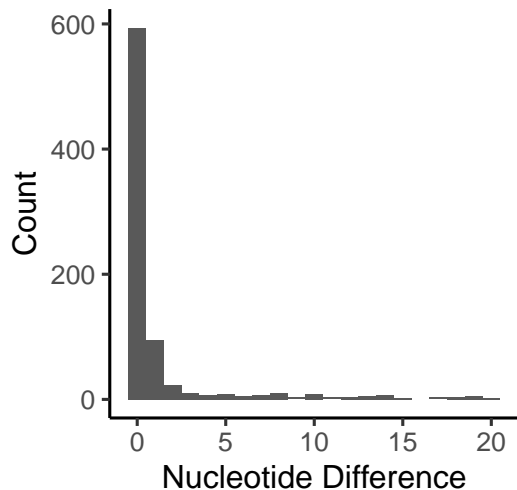
### IGHV2–70\*04

54 sequences assigned  
44 (81.5%) exact matches, in which:  
43 unique CDR3  
4 unique J



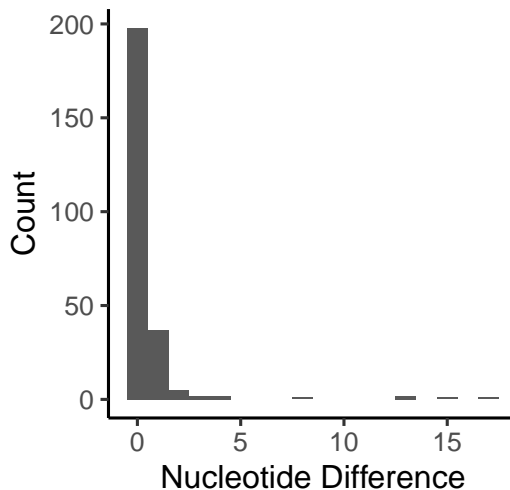
### IGHV3-7\*01

817 sequences assigned  
594 (72.7%) exact matches, in which:  
569 unique CDR3  
7 unique J



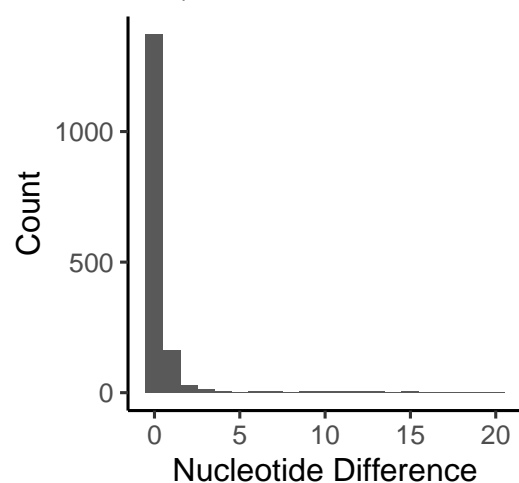
### IGHV3-13\*01

249 sequences assigned  
198 (79.5%) exact matches, in which:  
191 unique CDR3  
7 unique J



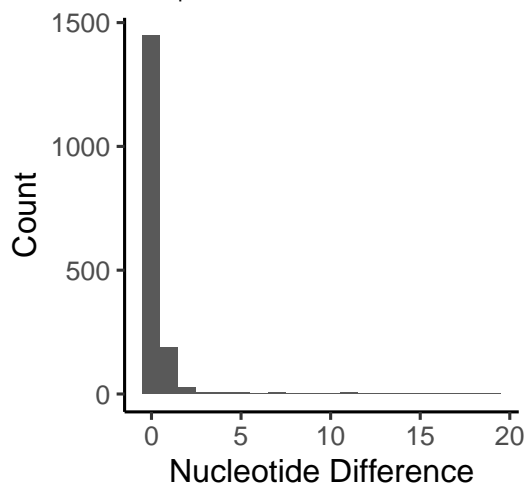
### IGHV3-21\*01

1638 sequences assigned  
1372 (83.8%) exact matches, in which:  
1315 unique CDR3  
7 unique J



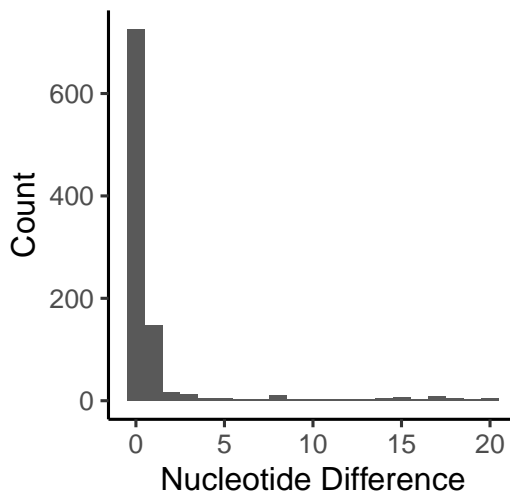
### IGHV3-9\*01

1719 sequences assigned  
1447 (84.2%) exact matches, in which:  
1361 unique CDR3  
7 unique J



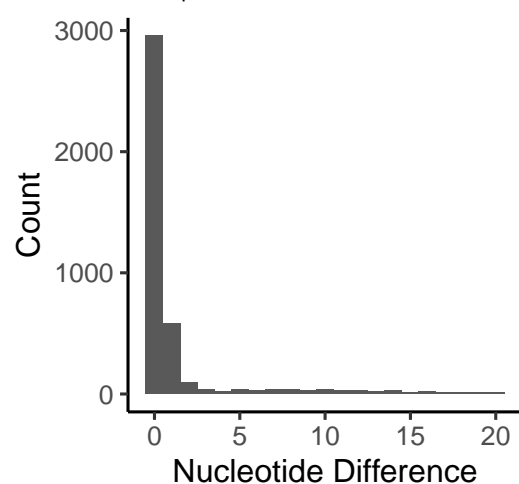
### IGHV3-15\*01

996 sequences assigned  
726 (72.9%) exact matches, in which:  
697 unique CDR3  
7 unique J



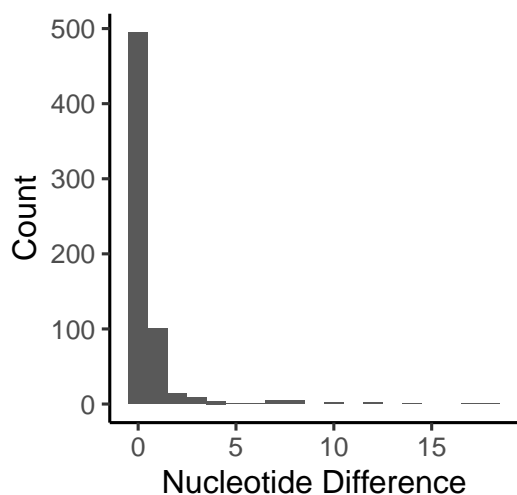
### IGHV3-23\*01

4135 sequences assigned  
2957 (71.5%) exact matches, in which:  
2837 unique CDR3  
7 unique J



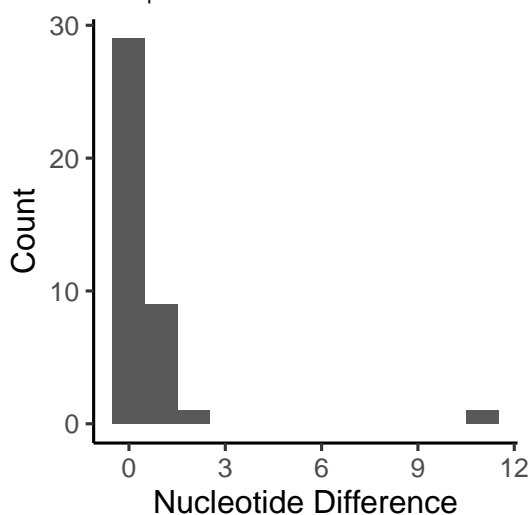
### IGHV3-11\*01

643 sequences assigned  
495 (77%) exact matches, in which:  
479 unique CDR3  
7 unique J



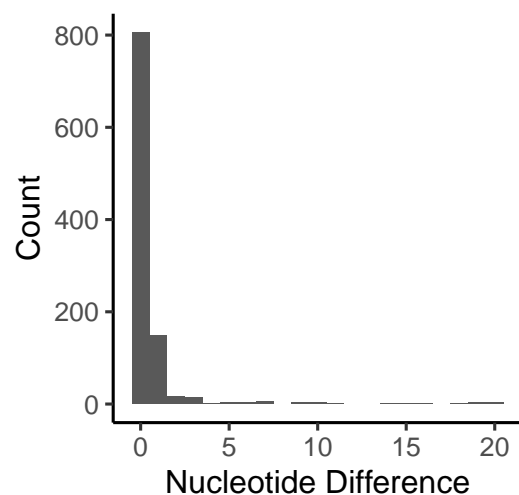
### IGHV3-20\*01

40 sequences assigned  
29 (72.5%) exact matches, in which:  
27 unique CDR3  
4 unique J



### IGHV3-30-3\*01

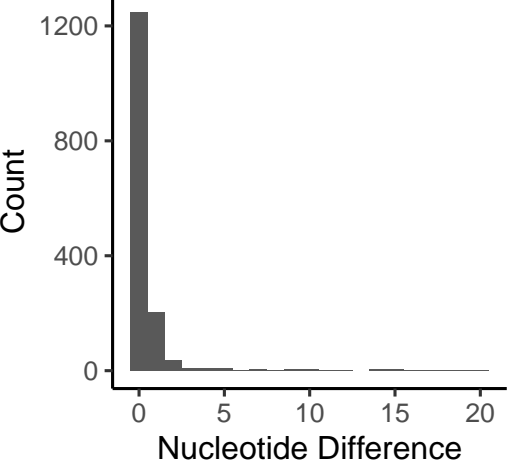
1021 sequences assigned  
806 (78.9%) exact matches, in which:  
769 unique CDR3  
7 unique J





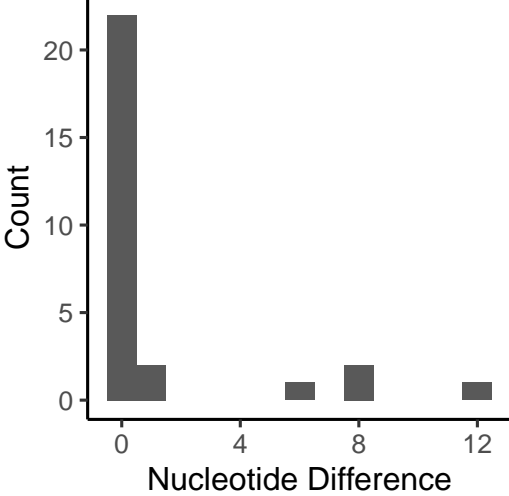
IGHV3-30\*18

1564 sequences assigned  
1247 (79.7%) exact matches, in which:  
1194 unique CDR3  
7 unique J



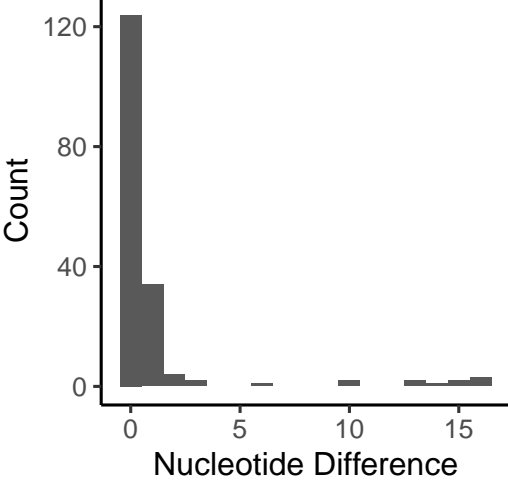
IGHV3-43\*01\_T177A

28 sequences assigned  
22 (78.6%) exact matches, in which:  
21 unique CDR3  
4 unique J



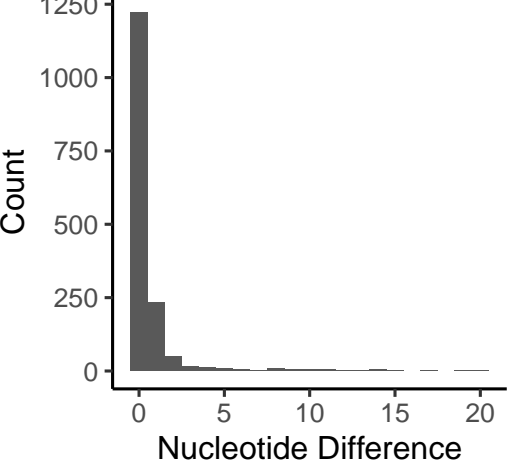
IGHV3-49\*04

177 sequences assigned  
124 (70.1%) exact matches, in which:  
123 unique CDR3  
6 unique J



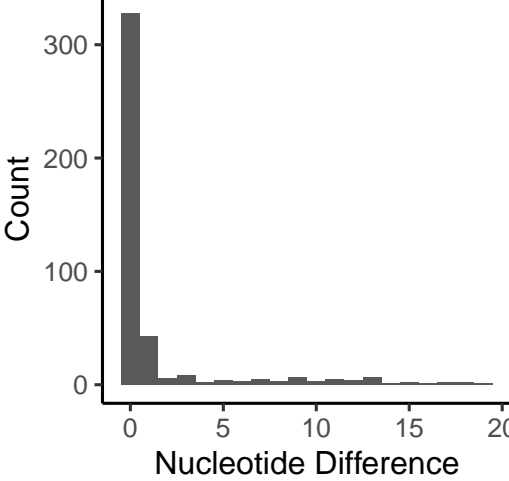
IGHV3-33\*01

1589 sequences assigned  
1221 (76.8%) exact matches, in which:  
1177 unique CDR3  
7 unique J



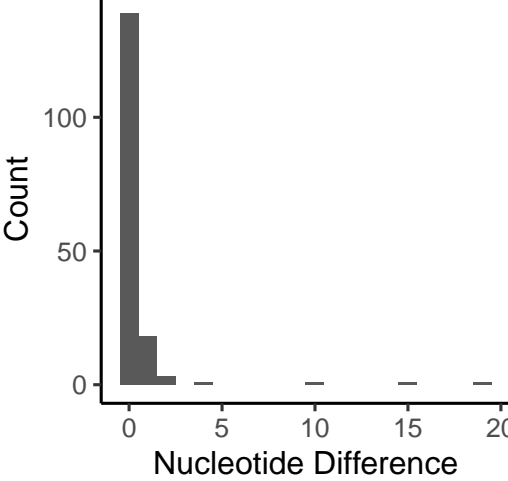
IGHV3-48\*02

438 sequences assigned  
328 (74.9%) exact matches, in which:  
319 unique CDR3  
6 unique J



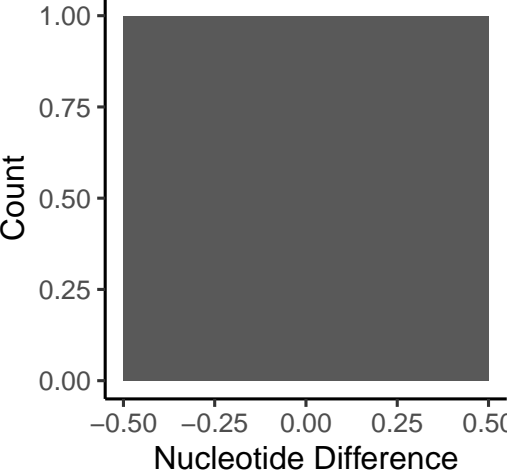
IGHV3-49\*05

167 sequences assigned  
139 (83.2%) exact matches, in which:  
135 unique CDR3  
6 unique J



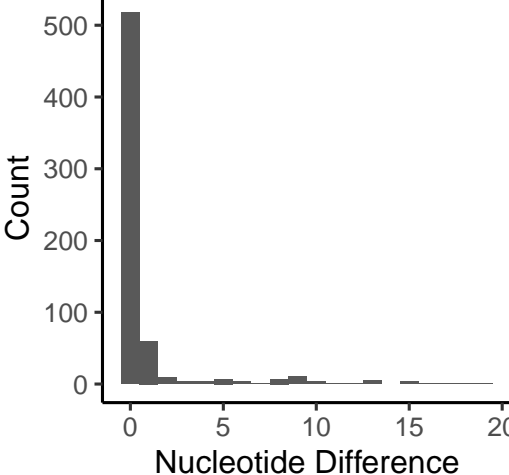
IGHV3-35\*01

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



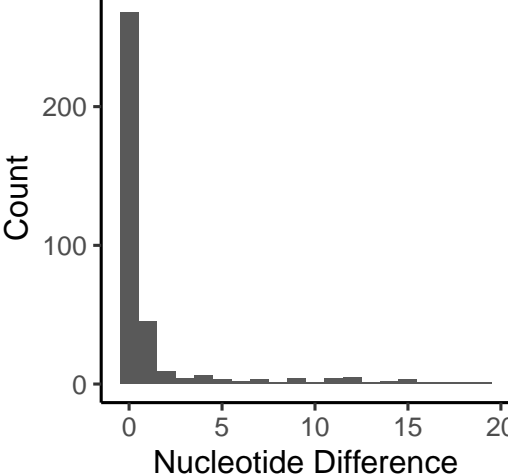
IGHV3-48\*03

642 sequences assigned  
518 (80.7%) exact matches, in which:  
498 unique CDR3  
6 unique J



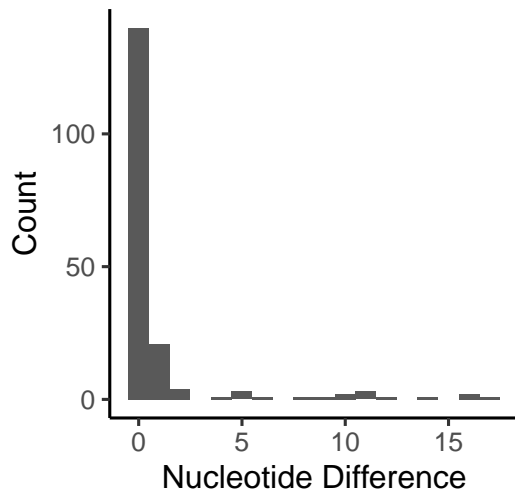
IGHV3-53\*01

368 sequences assigned  
268 (72.8%) exact matches, in which:  
257 unique CDR3  
6 unique J



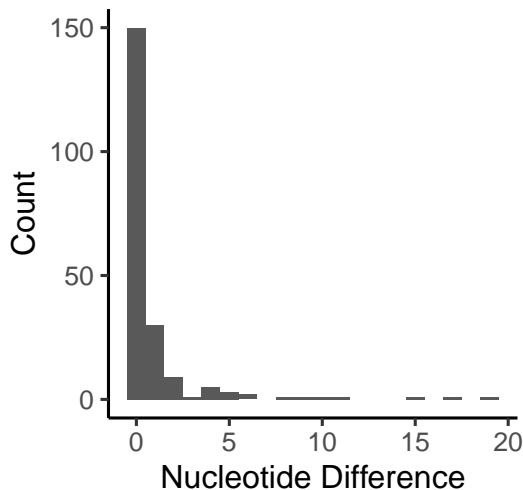
### IGHV3–53\*02

182 sequences assigned  
140 (76.9%) exact matches, in which:  
135 unique CDR3  
6 unique J



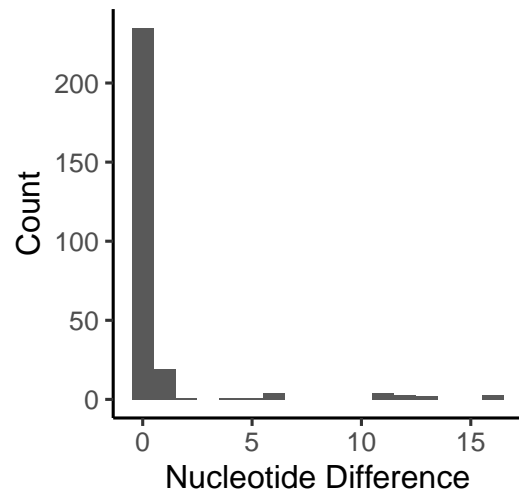
### IGHV3–73\*02

207 sequences assigned  
150 (72.5%) exact matches, in which:  
143 unique CDR3  
7 unique J



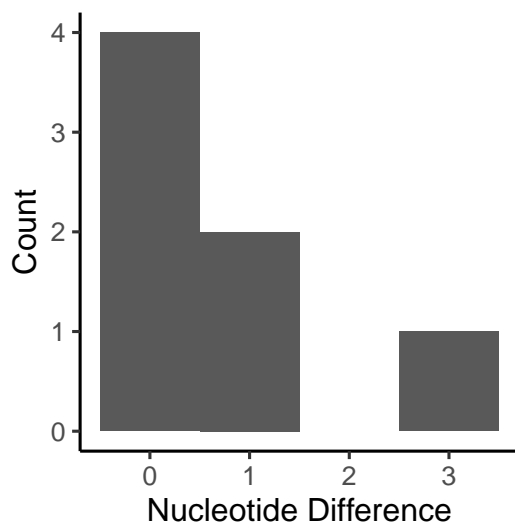
### IGHV4–4\*02

275 sequences assigned  
235 (85.5%) exact matches, in which:  
222 unique CDR3  
6 unique J



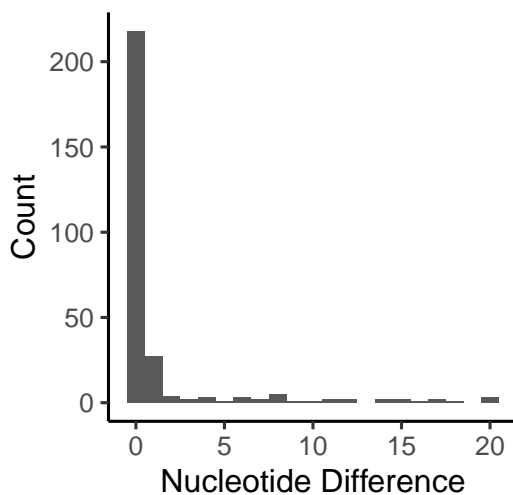
### IGHV3–64\*02

7 sequences assigned  
4 (57.1%) exact matches, in which:  
4 unique CDR3  
2 unique J



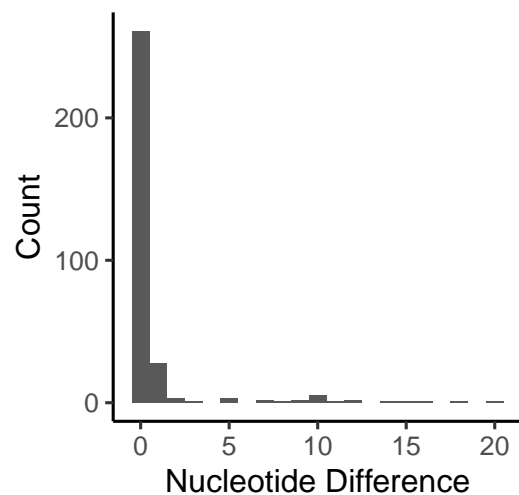
### IGHV3–74\*01

288 sequences assigned  
218 (75.7%) exact matches, in which:  
213 unique CDR3  
7 unique J



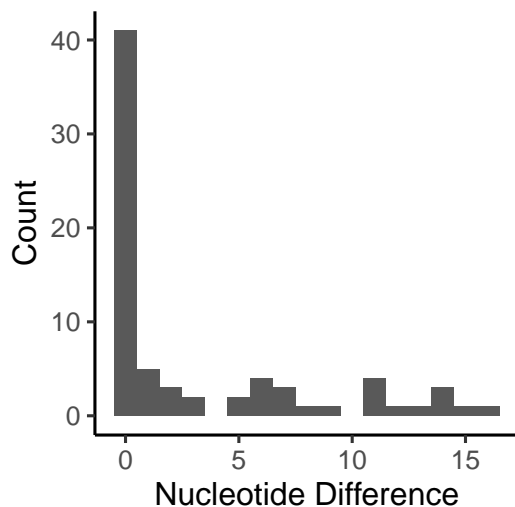
### IGHV4–4\*07

317 sequences assigned  
261 (82.3%) exact matches, in which:  
252 unique CDR3  
6 unique J



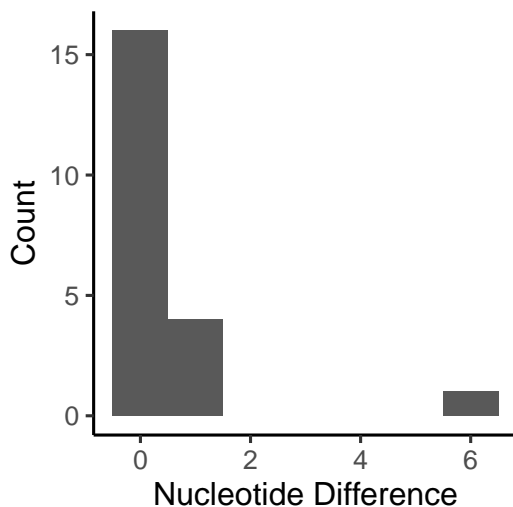
### IGHV3–72\*01

74 sequences assigned  
41 (55.4%) exact matches, in which:  
40 unique CDR3  
7 unique J



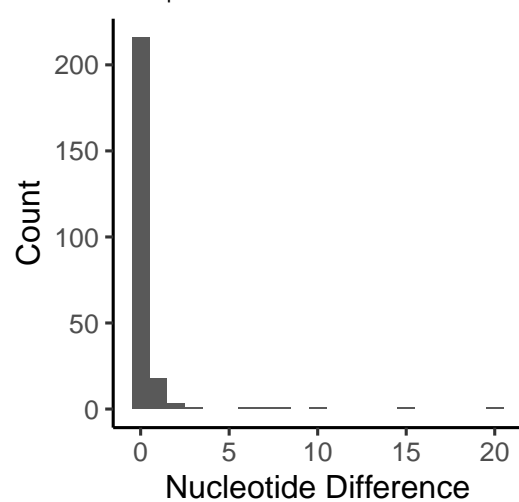
### IGHV3–43D\*04

21 sequences assigned  
16 (76.2%) exact matches, in which:  
16 unique CDR3  
6 unique J



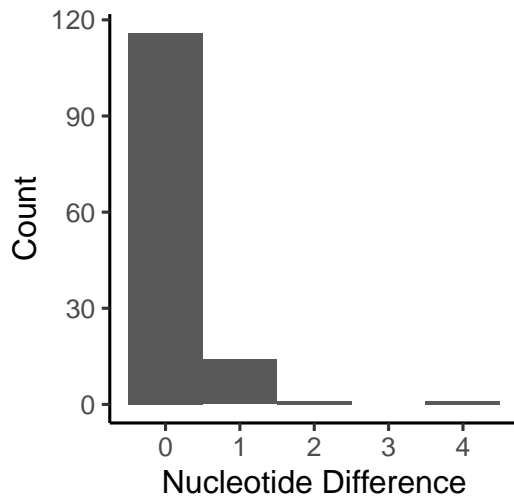
### IGHV4–30–4\*01

244 sequences assigned  
216 (88.5%) exact matches, in which:  
208 unique CDR3  
7 unique J



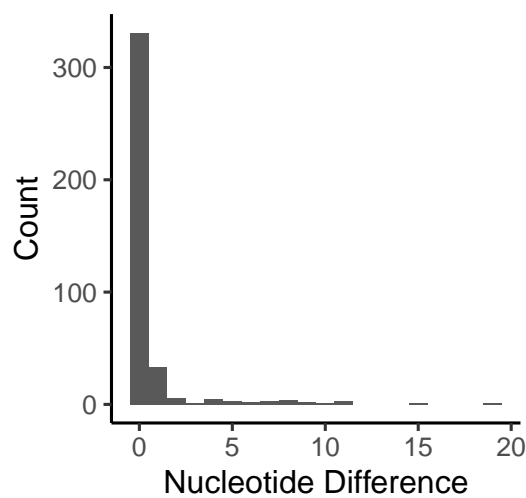
### IGHV4-30-2\*01

132 sequences assigned  
116 (87.9%) exact matches, in which:  
110 unique CDR3  
5 unique J



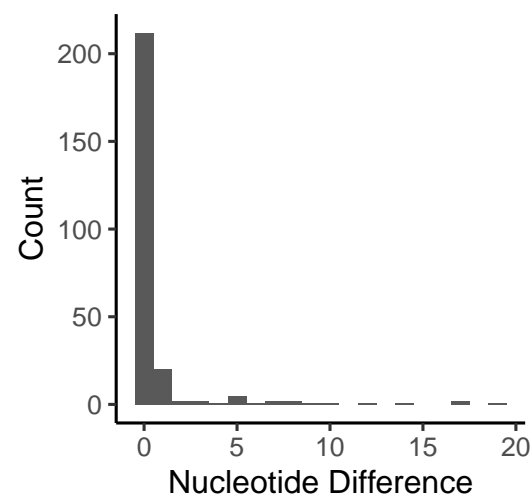
### IGHV4-38-2\*02\_A70G

397 sequences assigned  
331 (83.4%) exact matches, in which:  
303 unique CDR3  
6 unique J



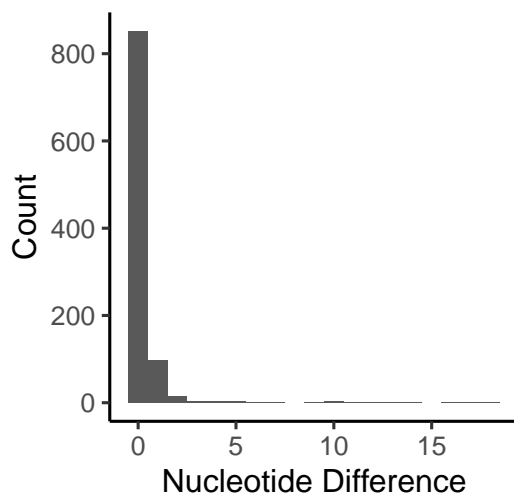
### IGHV4-61\*01

255 sequences assigned  
212 (83.1%) exact matches, in which:  
209 unique CDR3  
7 unique J



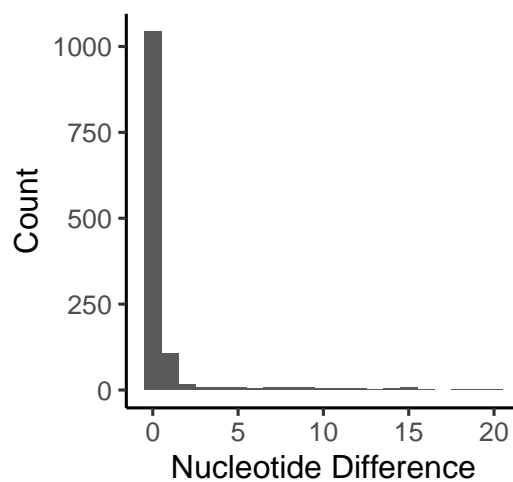
### IGHV4-31\*03

994 sequences assigned  
852 (85.7%) exact matches, in which:  
821 unique CDR3  
7 unique J



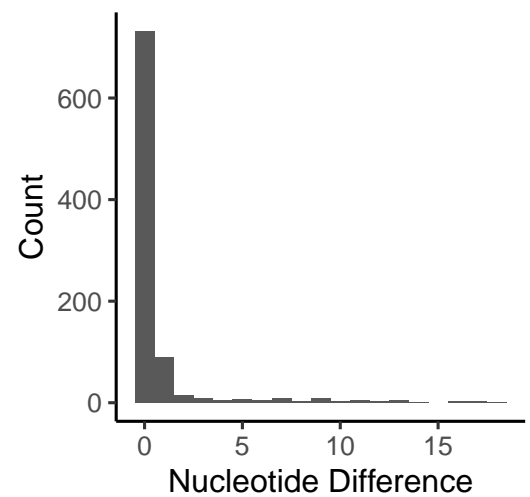
### IGHV4-39\*01\_G315A

1248 sequences assigned  
1043 (83.6%) exact matches, in which:  
998 unique CDR3  
7 unique J



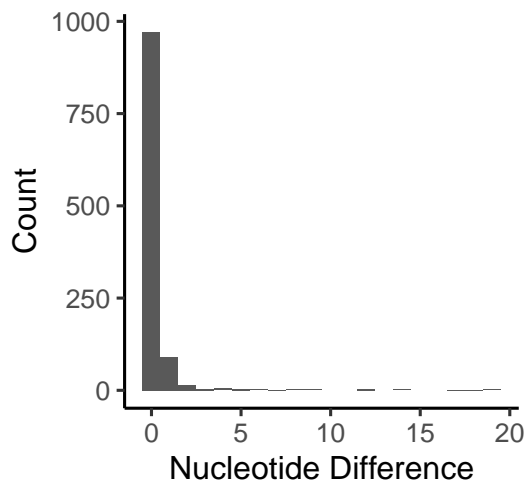
### IGHV5-51\*01

907 sequences assigned  
732 (80.7%) exact matches, in which:  
706 unique CDR3  
7 unique J



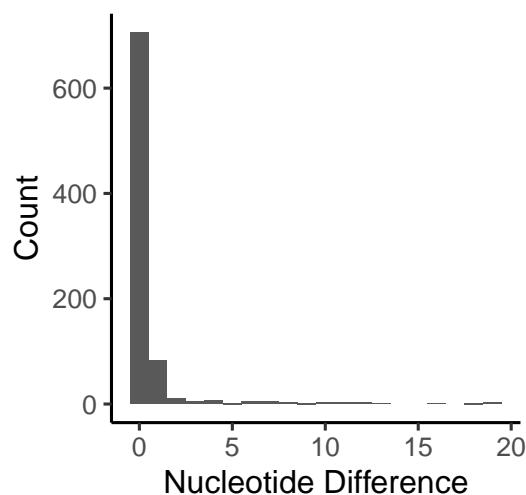
### IGHV4-34\*01

1106 sequences assigned  
971 (87.8%) exact matches, in which:  
915 unique CDR3  
7 unique J



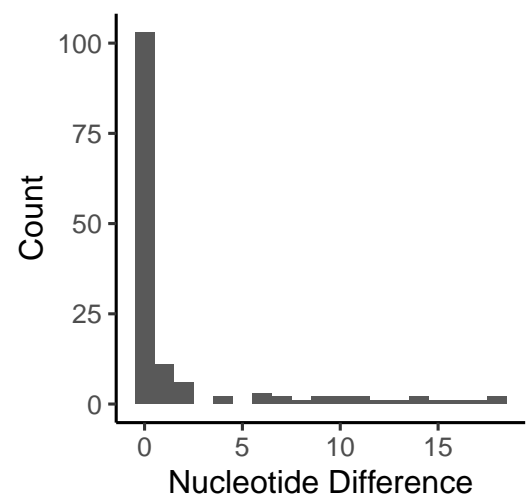
### IGHV4-59\*01

850 sequences assigned  
706 (83.1%) exact matches, in which:  
690 unique CDR3  
7 unique J



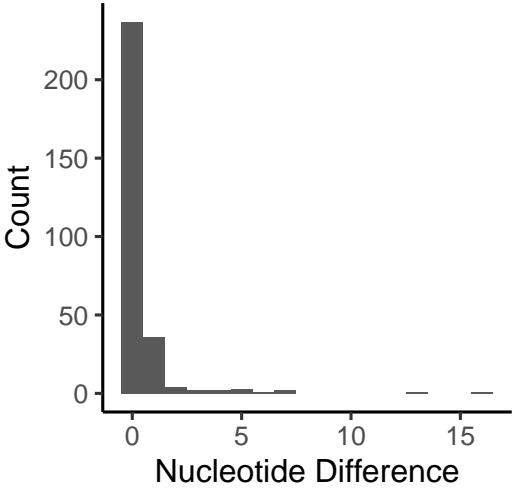
### IGHV6-1\*01

143 sequences assigned  
103 (72%) exact matches, in which:  
97 unique CDR3  
6 unique J

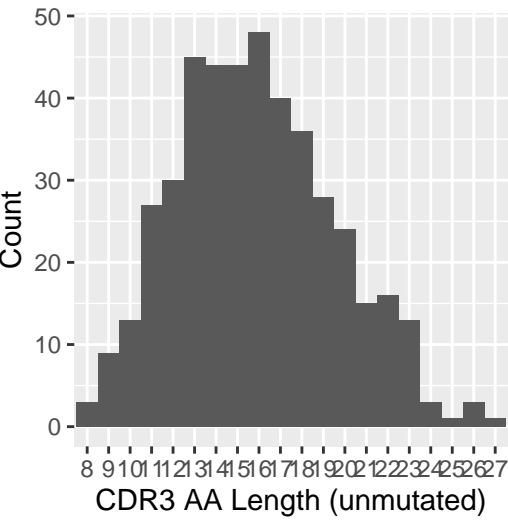


IGHV7-4-1\*02

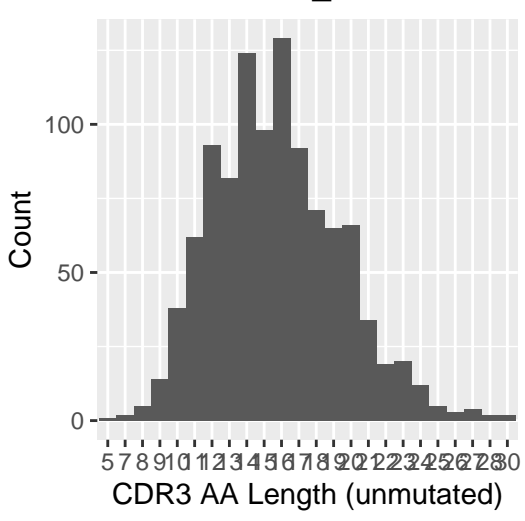
289 sequences assigned  
237 (82%) exact matches, in which:  
232 unique CDR3  
6 unique J



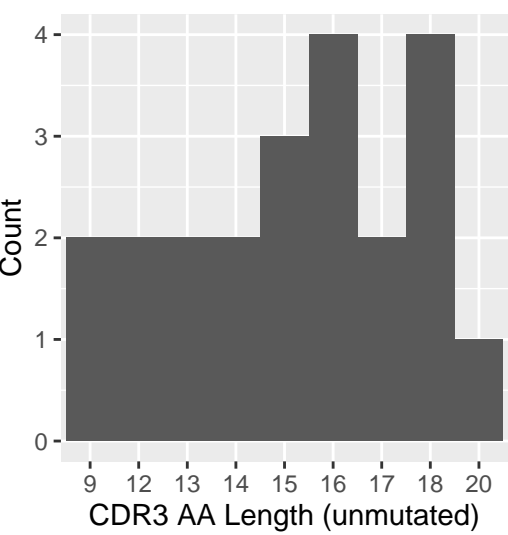
IGHV1-18\*01\_A196G



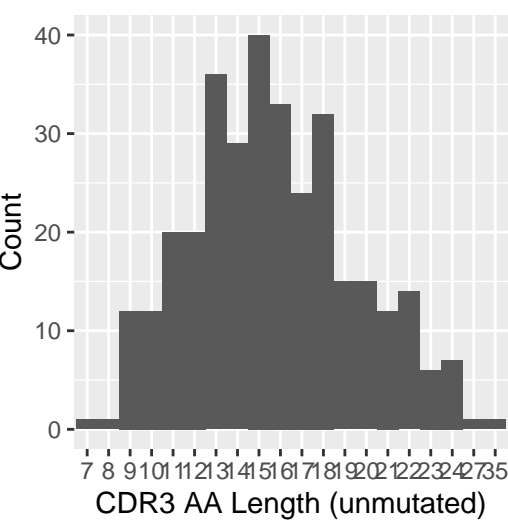
IGHV4-39\*01\_G315A



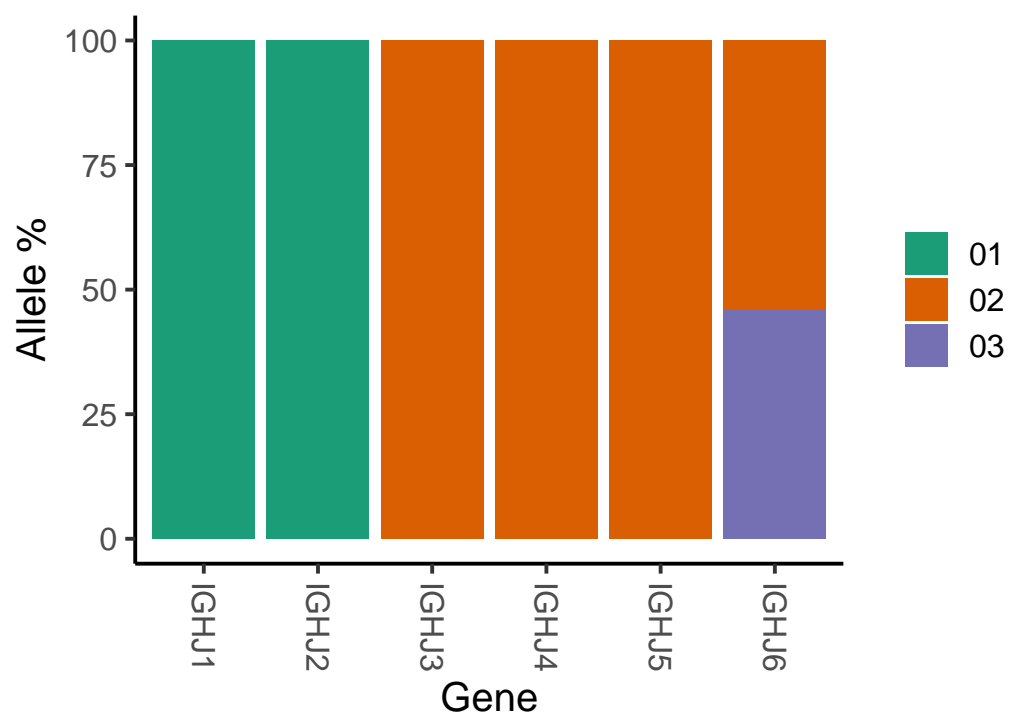
IGHV3-43\*01\_T177A



IGHV4-38-2\*02\_A70G



Allele Usage



Sequence Count by IGHJ6 allele usage

