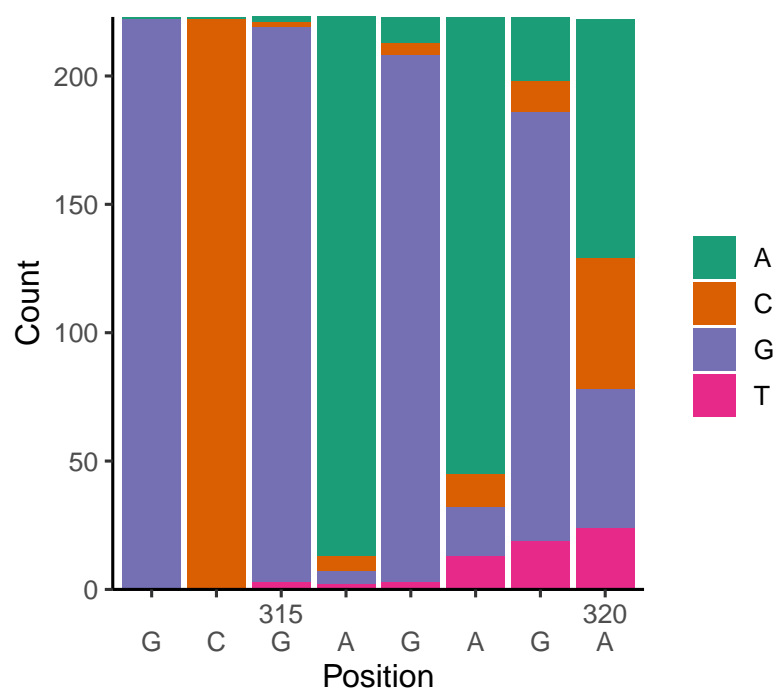
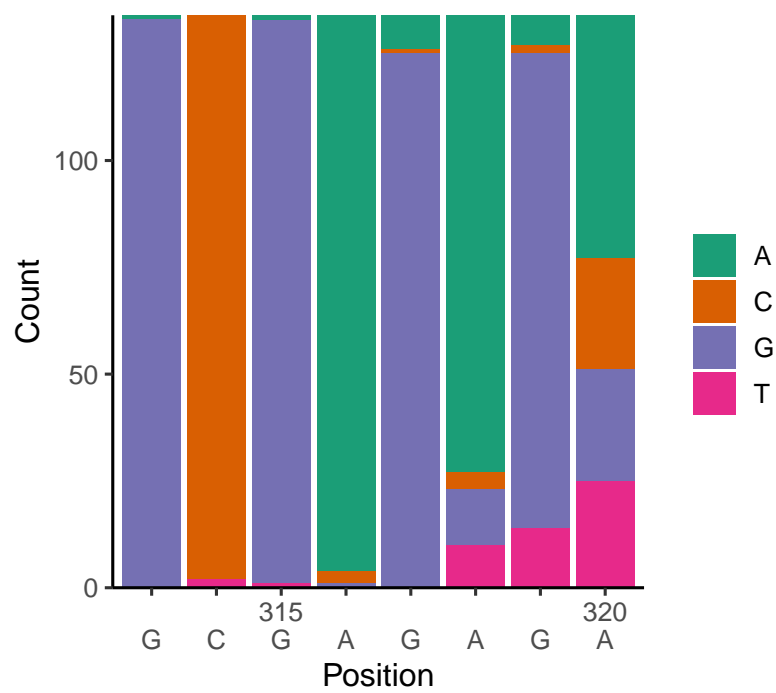


Gene IGHV1-69\*08\_C191T



Gene IGHV4-38-2\*02\_A70G



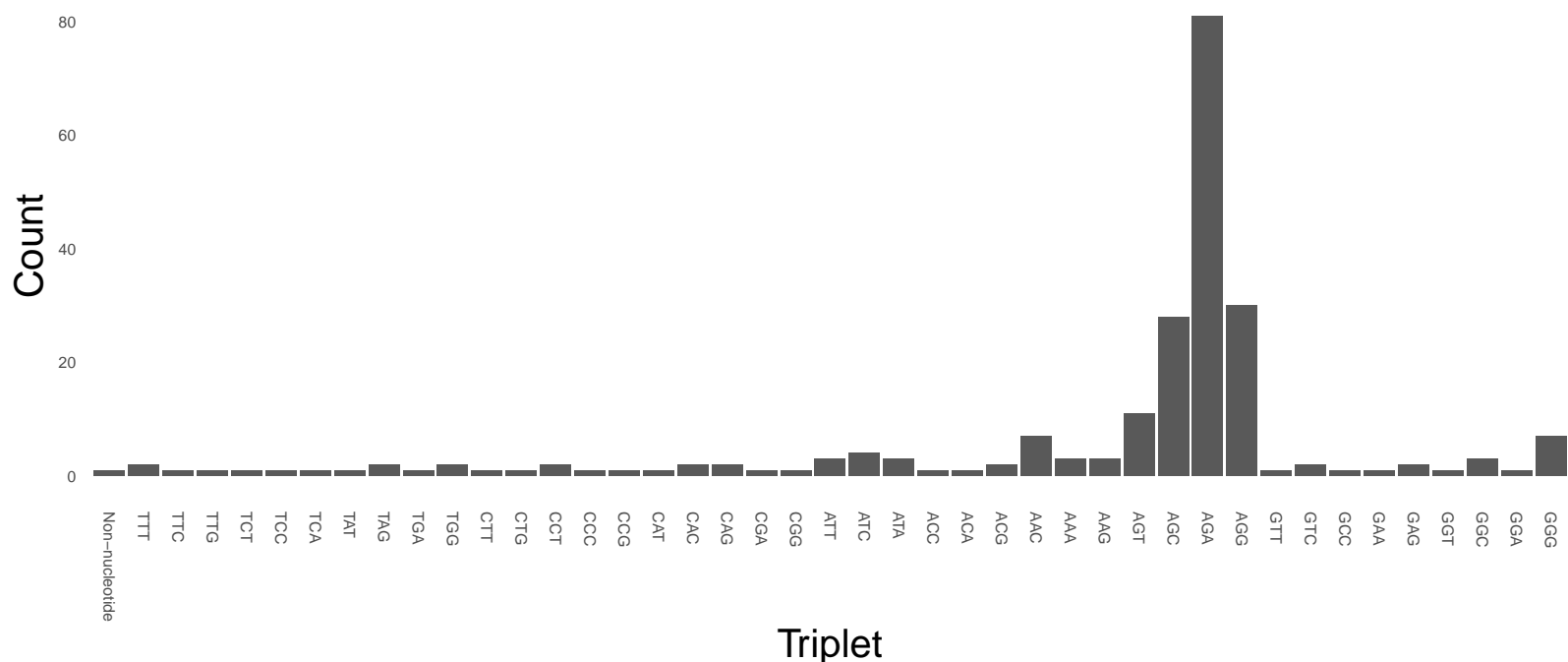
Gene IGHV1-69\*08\_C191T



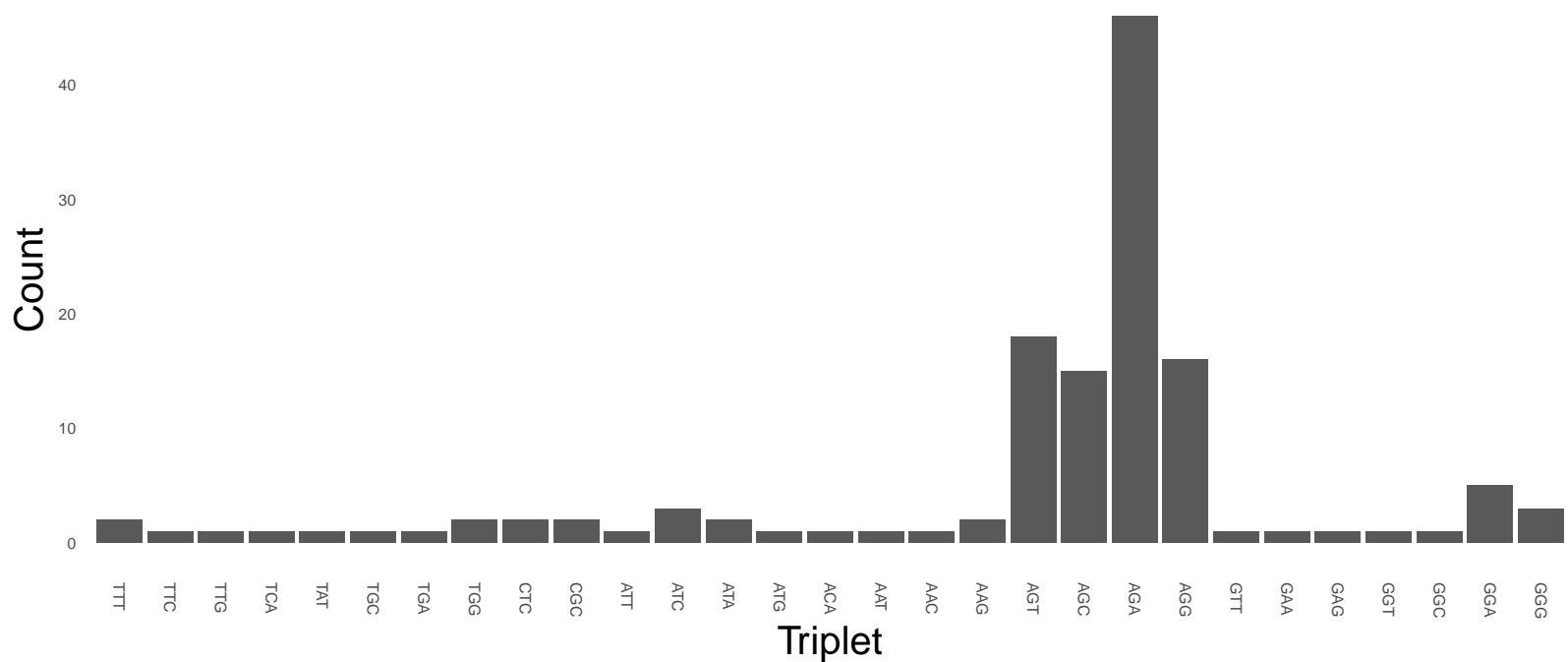
Gene IGHV4-38-2\*02\_A70G



IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet

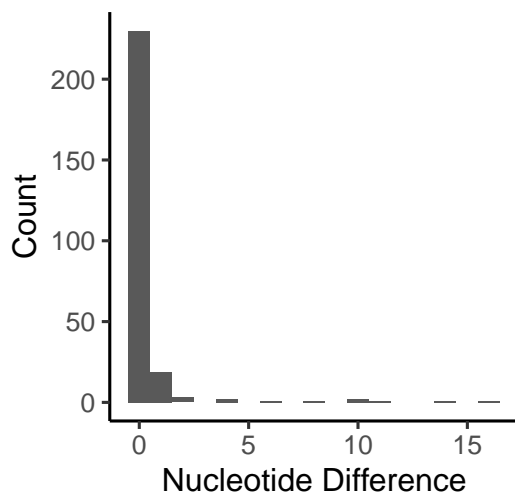


IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



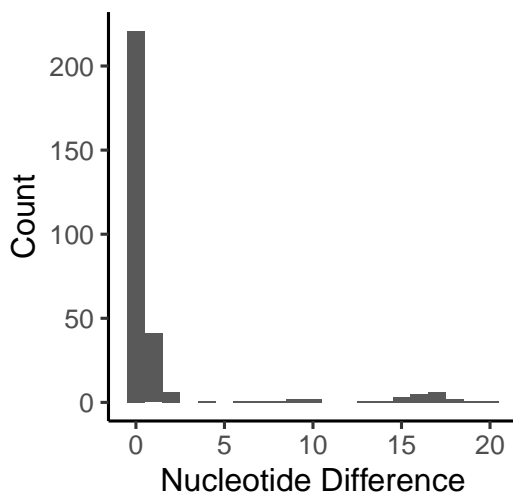
### IGHV1-2\*04

266 sequences assigned  
230 (86.5%) exact matches, in which:  
229 unique CDR3  
6 unique J



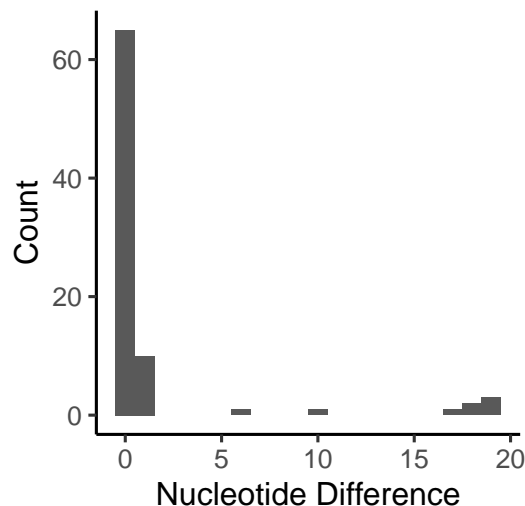
### IGHV1-18\*01

325 sequences assigned  
221 (68%) exact matches, in which:  
220 unique CDR3  
6 unique J



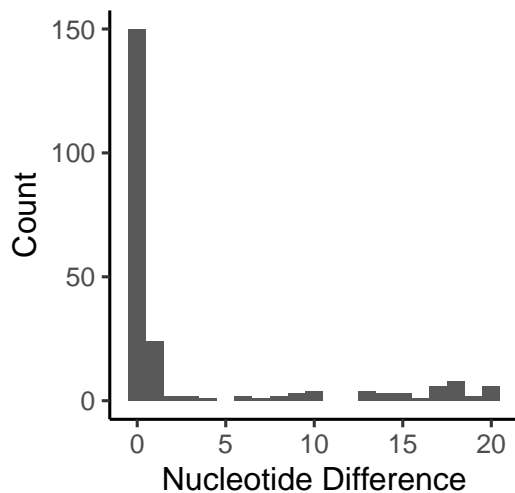
### IGHV1-46\*01

87 sequences assigned  
65 (74.7%) exact matches, in which:  
65 unique CDR3  
5 unique J



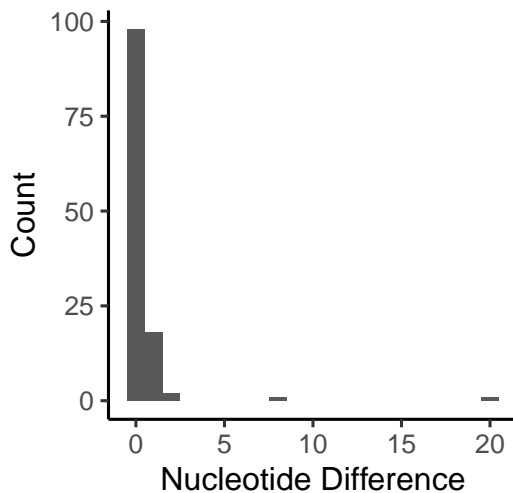
### IGHV1-3\*01

310 sequences assigned  
150 (48.4%) exact matches, in which:  
149 unique CDR3  
6 unique J



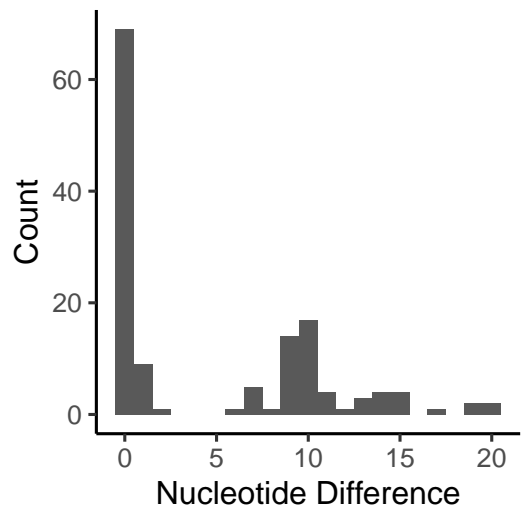
### IGHV1-24\*01

123 sequences assigned  
98 (79.7%) exact matches, in which:  
97 unique CDR3  
6 unique J



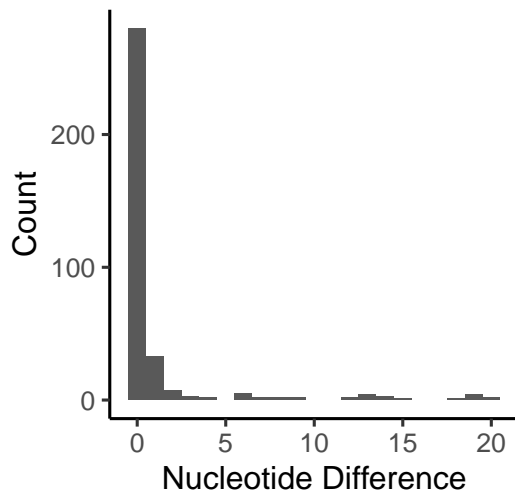
### IGHV1-46\*03

180 sequences assigned  
69 (38.3%) exact matches, in which:  
69 unique CDR3  
5 unique J



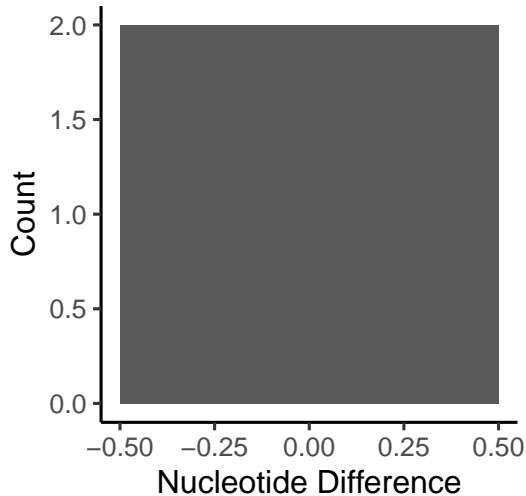
### IGHV1-8\*01

363 sequences assigned  
280 (77.1%) exact matches, in which:  
278 unique CDR3  
6 unique J



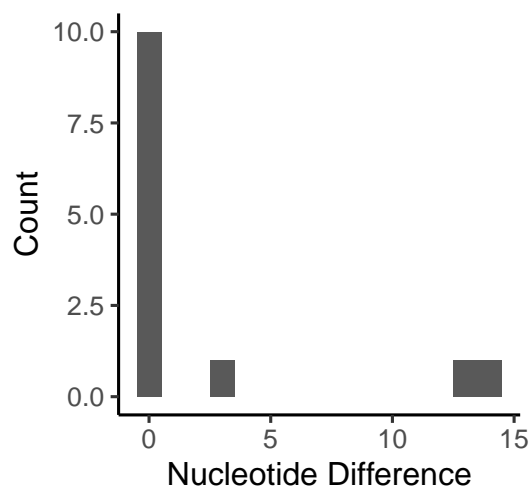
### IGHV1-45\*02

23 sequences assigned  
2 (8.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



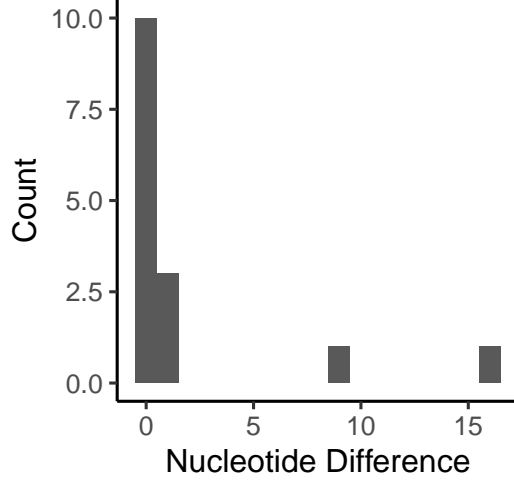
### IGHV1-58\*01

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



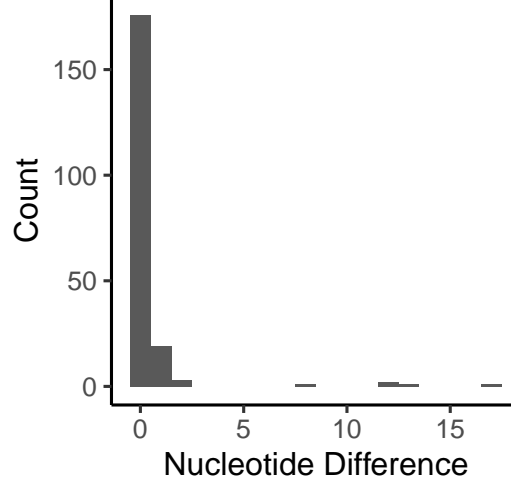
### IGHV1-58\*02

17 sequences assigned  
10 (58.8%) exact matches, in which:  
10 unique CDR3  
3 unique J



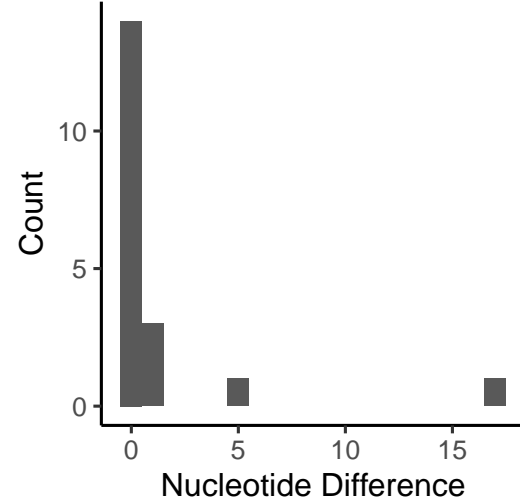
### IGHV1-69\*08\_C191T

223 sequences assigned  
176 (78.9%) exact matches, in which:  
176 unique CDR3  
6 unique J



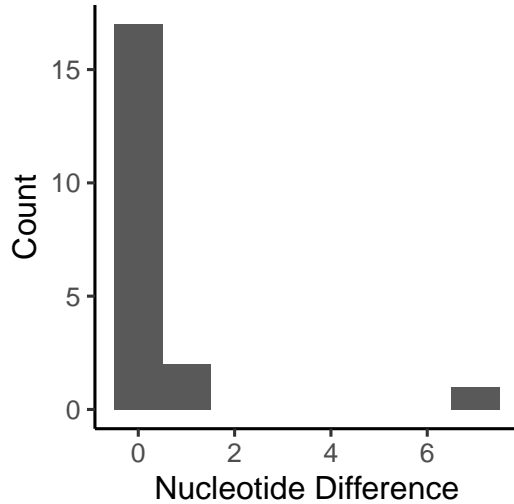
### IGHV2-70\*01

20 sequences assigned  
14 (70%) exact matches, in which:  
14 unique CDR3  
3 unique J



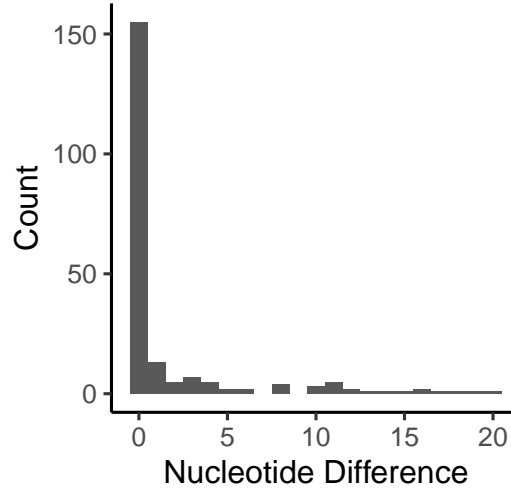
### IGHV1-69-2\*01

23 sequences assigned  
17 (73.9%) exact matches, in which:  
17 unique CDR3  
3 unique J



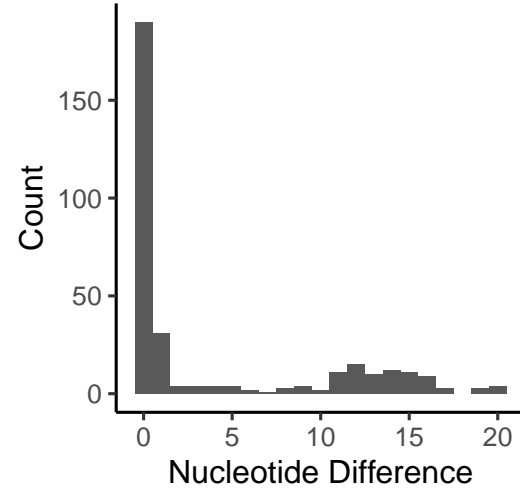
### IGHV2-5\*02

234 sequences assigned  
155 (66.2%) exact matches, in which:  
155 unique CDR3  
6 unique J



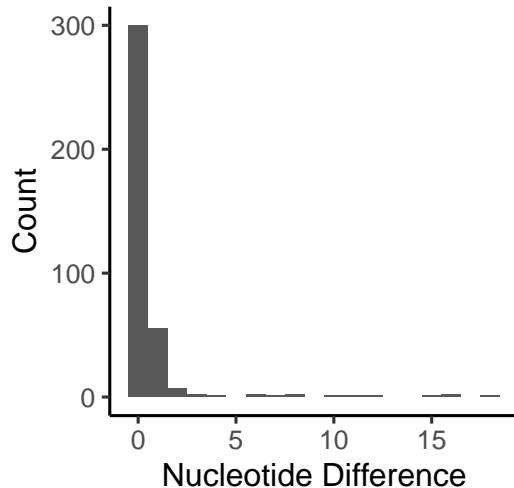
### IGHV3-7\*01

341 sequences assigned  
190 (55.7%) exact matches, in which:  
190 unique CDR3  
6 unique J



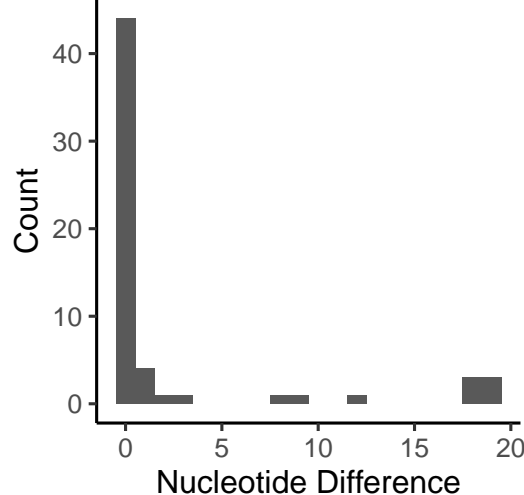
### IGHV1-69\*06

395 sequences assigned  
300 (75.9%) exact matches, in which:  
298 unique CDR3  
6 unique J



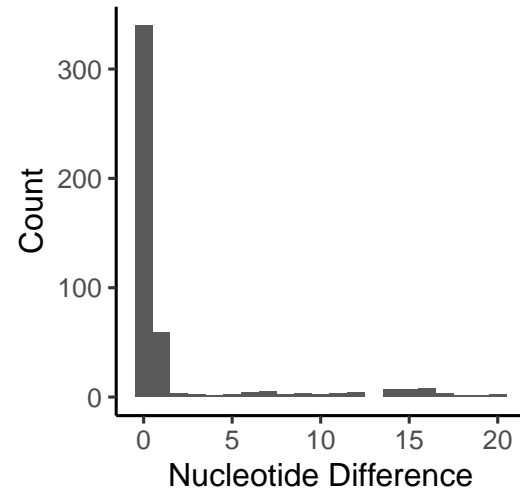
### IGHV2-26\*01

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



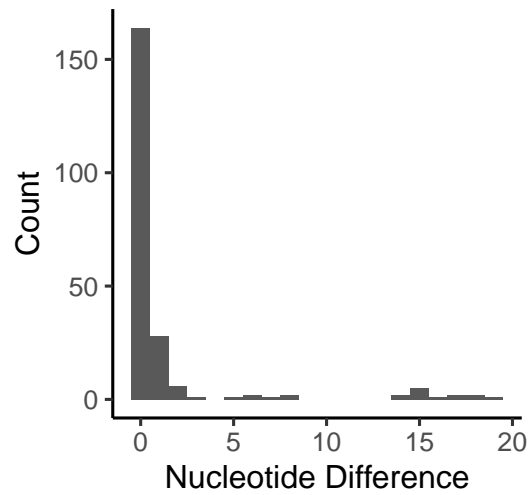
### IGHV3-9\*01

487 sequences assigned  
340 (69.8%) exact matches, in which:  
339 unique CDR3  
6 unique J



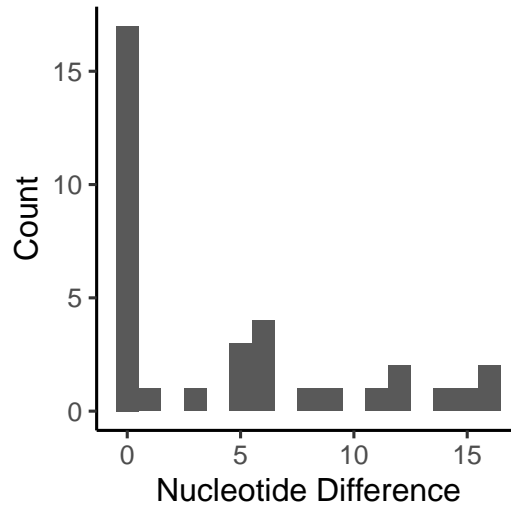
### IGHV3-11\*01

232 sequences assigned  
164 (70.7%) exact matches, in which:  
164 unique CDR3  
5 unique J



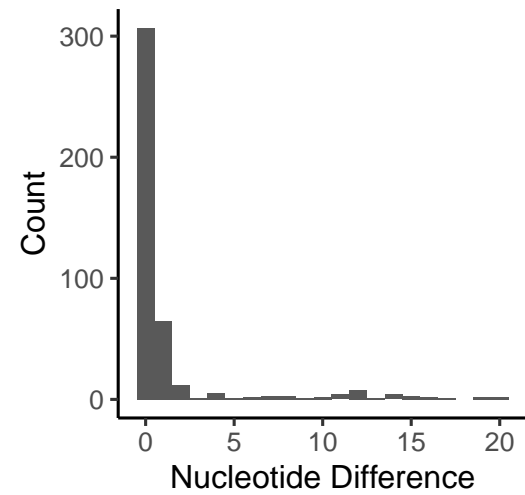
### IGHV3-20\*01

36 sequences assigned  
17 (47.2%) exact matches, in which:  
17 unique CDR3  
4 unique J



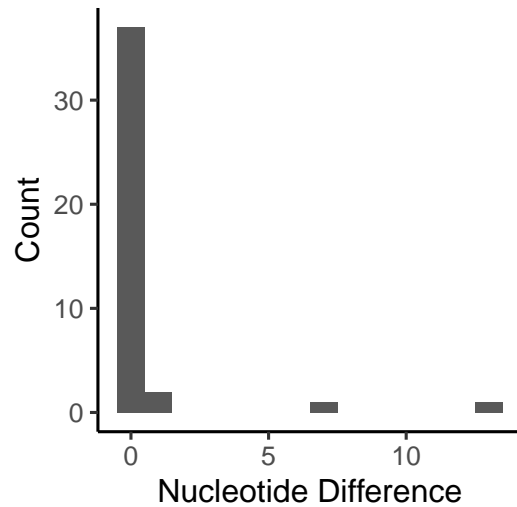
### IGHV3-33\*01

458 sequences assigned  
307 (67%) exact matches, in which:  
304 unique CDR3  
6 unique J



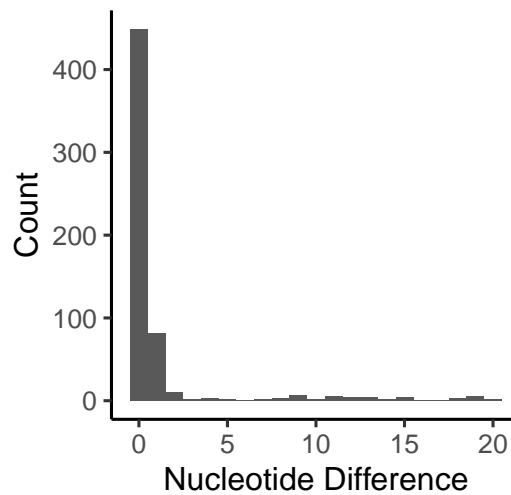
### IGHV3-13\*01

48 sequences assigned  
37 (77.1%) exact matches, in which:  
37 unique CDR3  
5 unique J



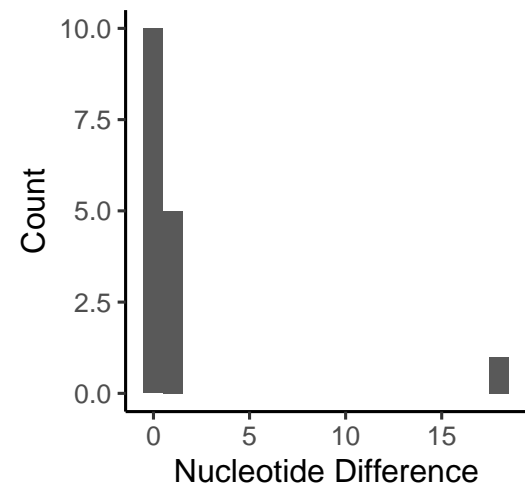
### IGHV3-21\*01

615 sequences assigned  
449 (73%) exact matches, in which:  
446 unique CDR3  
6 unique J



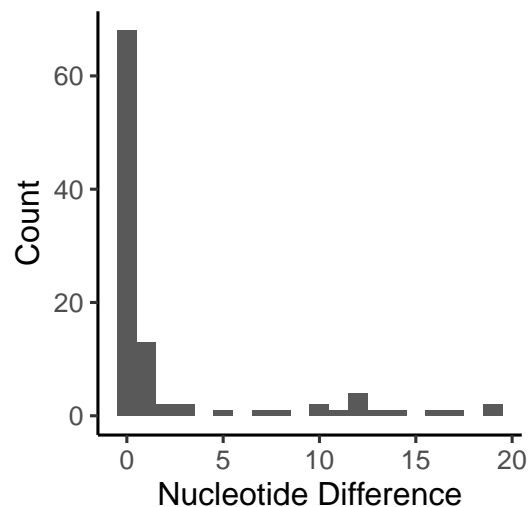
### IGHV3-43\*01

16 sequences assigned  
10 (62.5%) exact matches, in which:  
10 unique CDR3  
2 unique J



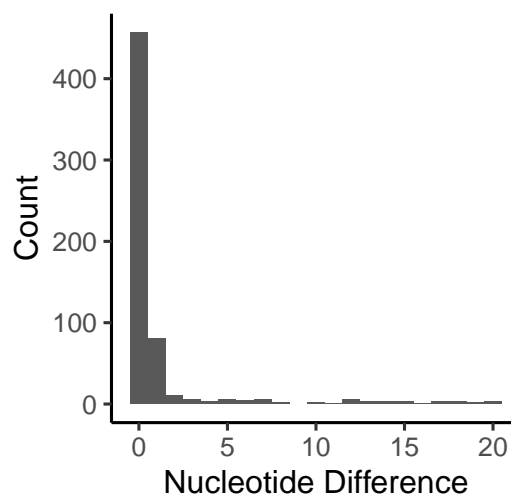
### IGHV3-15\*01

107 sequences assigned  
68 (63.6%) exact matches, in which:  
68 unique CDR3  
5 unique J



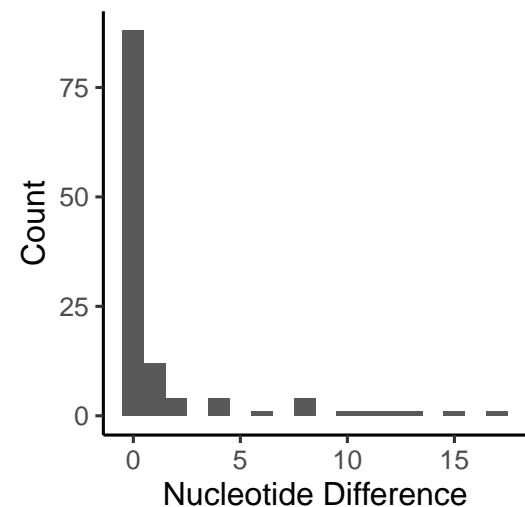
### IGHV3-30-3\*01

632 sequences assigned  
457 (72.3%) exact matches, in which:  
454 unique CDR3  
6 unique J



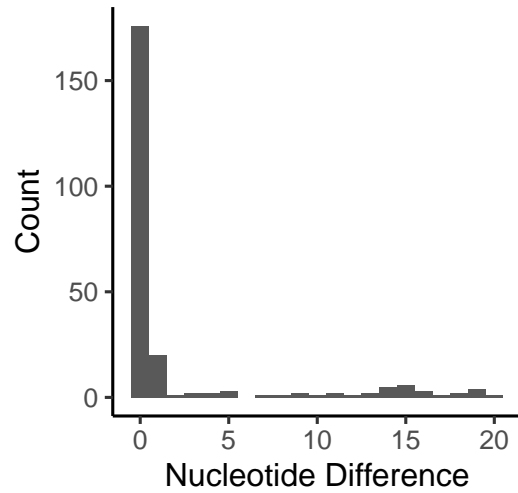
### IGHV3-48\*01

128 sequences assigned  
88 (68.8%) exact matches, in which:  
87 unique CDR3  
5 unique J



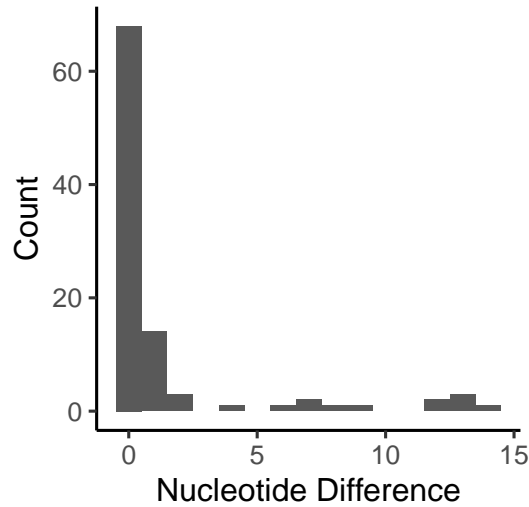
### IGHV3-48\*03

243 sequences assigned  
176 (72.4%) exact matches, in which:  
173 unique CDR3  
6 unique J



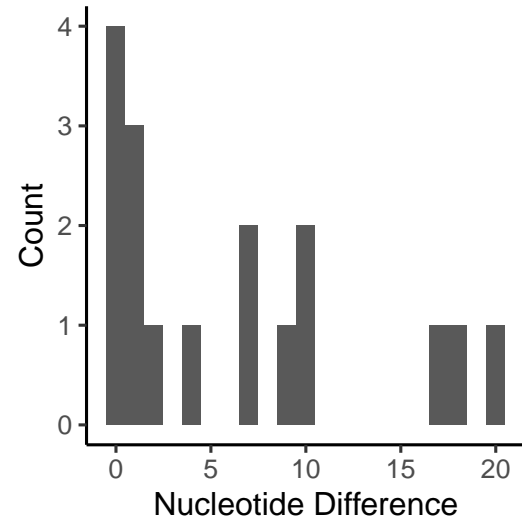
### IGHV3-53\*02

98 sequences assigned  
68 (69.4%) exact matches, in which:  
68 unique CDR3  
4 unique J



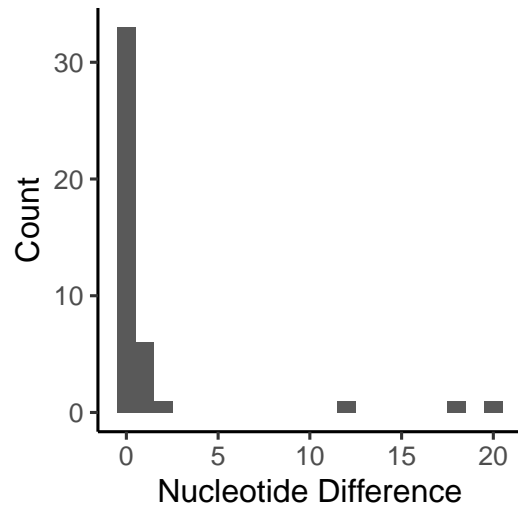
### IGHV3-72\*01

19 sequences assigned  
4 (21.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



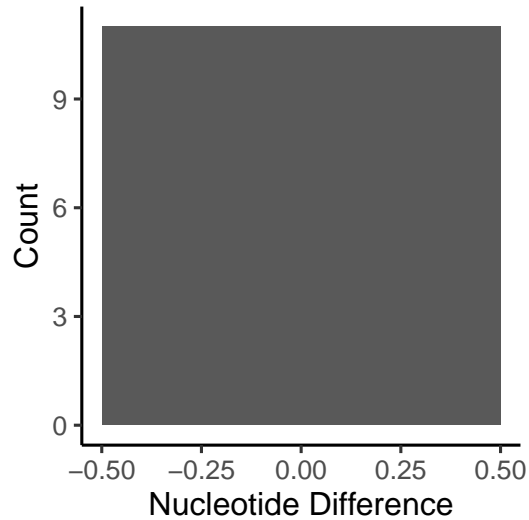
### IGHV3-49\*03

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



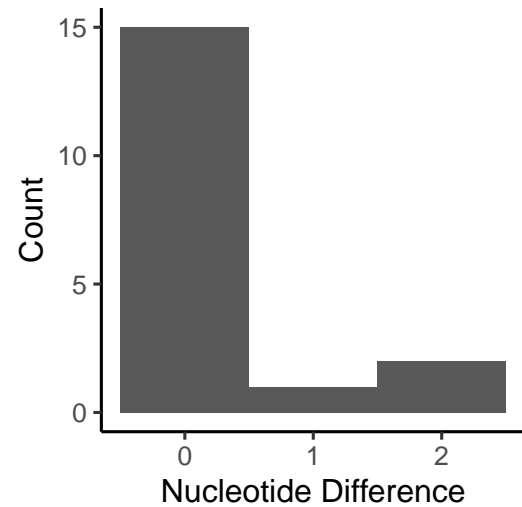
### IGHV3-64\*01

11 sequences assigned  
11 (100%) exact matches, in which:  
11 unique CDR3  
3 unique J



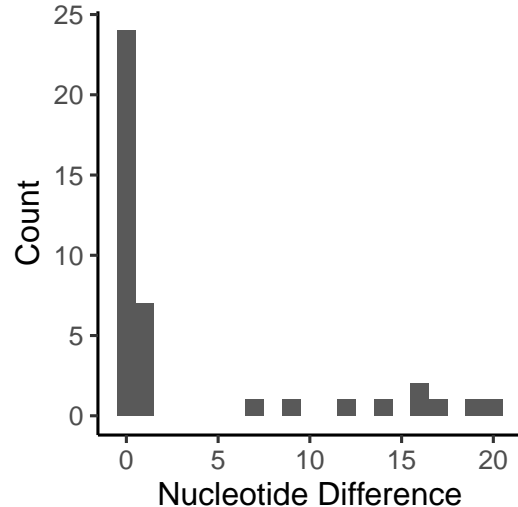
### IGHV3-73\*01

19 sequences assigned  
15 (78.9%) exact matches, in which:  
15 unique CDR3  
5 unique J



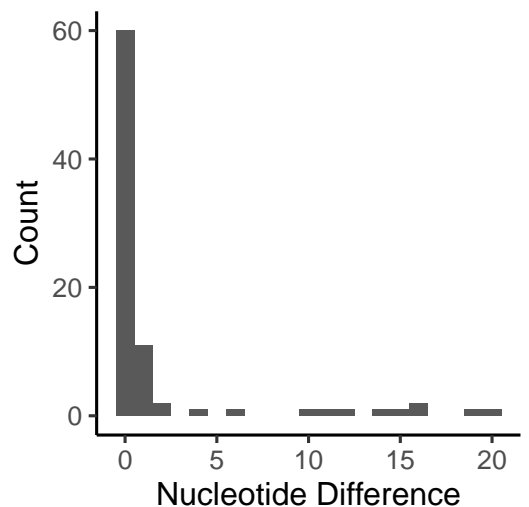
### IGHV3-49\*04

51 sequences assigned  
24 (47.1%) exact matches, in which:  
24 unique CDR3  
5 unique J



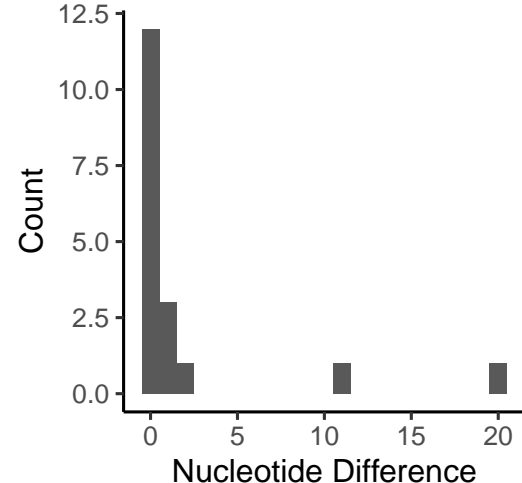
### IGHV3-66\*02

87 sequences assigned  
60 (69%) exact matches, in which:  
60 unique CDR3  
5 unique J



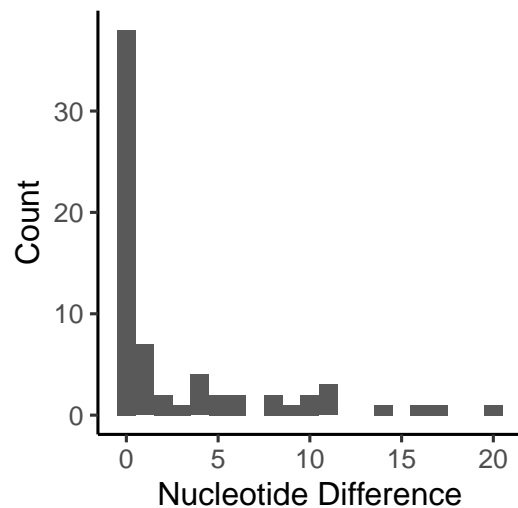
### IGHV3-73\*02

18 sequences assigned  
12 (66.7%) exact matches, in which:  
12 unique CDR3  
4 unique J



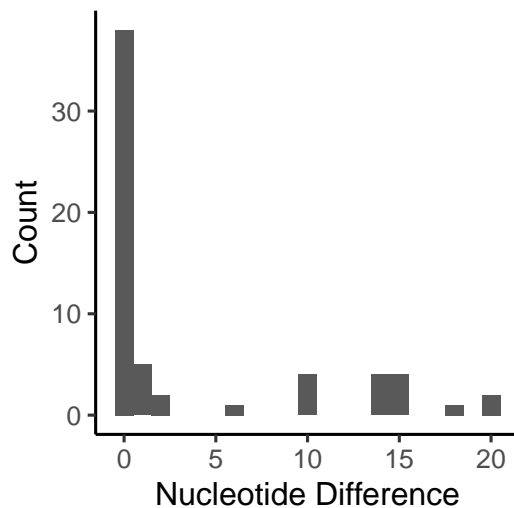
### IGHV3-74\*01

71 sequences assigned  
38 (53.5%) exact matches, in which:  
38 unique CDR3  
4 unique J



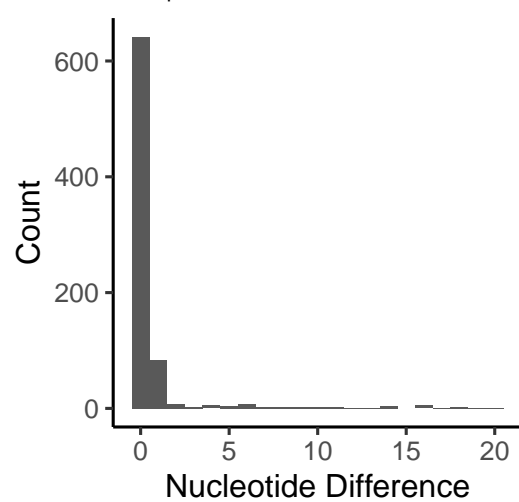
### IGHV4-30-4\*01

69 sequences assigned  
38 (55.1%) exact matches, in which:  
38 unique CDR3  
6 unique J



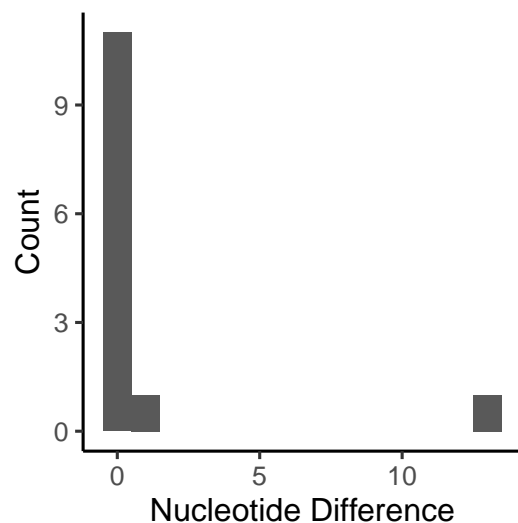
### IGHV4-34\*01

806 sequences assigned  
642 (79.7%) exact matches, in which:  
638 unique CDR3  
6 unique J



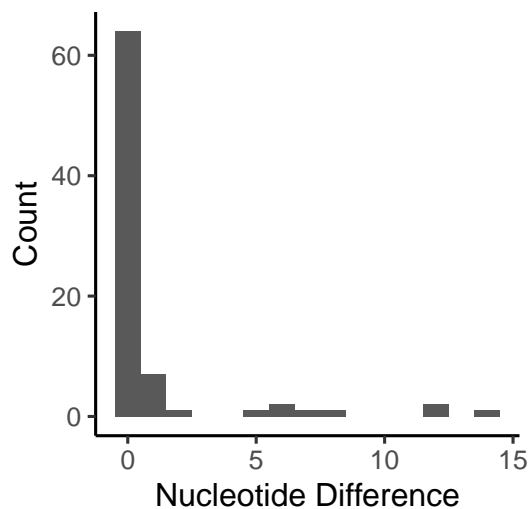
### IGHV3-43D\*04

13 sequences assigned  
11 (84.6%) exact matches, in which:  
11 unique CDR3  
4 unique J



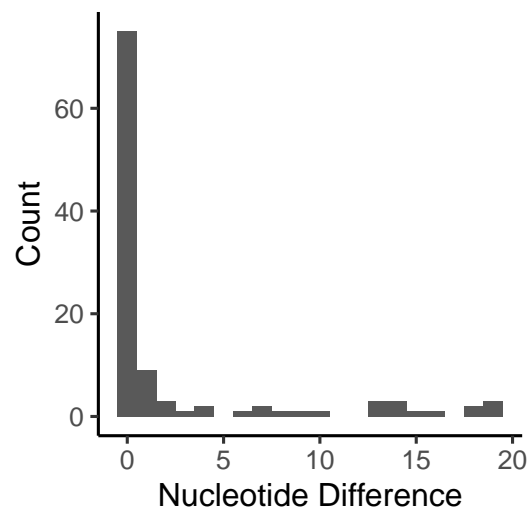
### IGHV4-30-2\*01

85 sequences assigned  
64 (75.3%) exact matches, in which:  
64 unique CDR3  
5 unique J



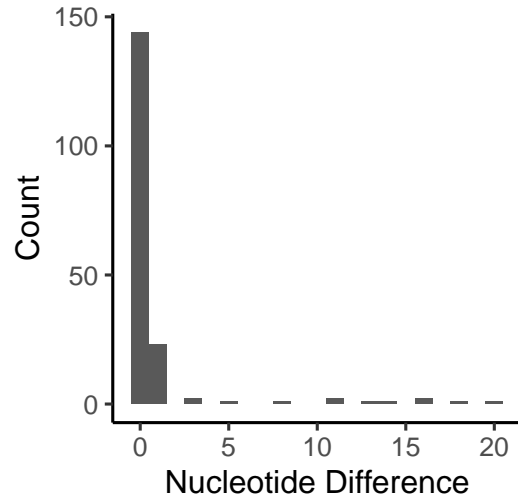
### IGHV4-38-2\*02\_A70G

134 sequences assigned  
75 (56%) exact matches, in which:  
75 unique CDR3  
5 unique J



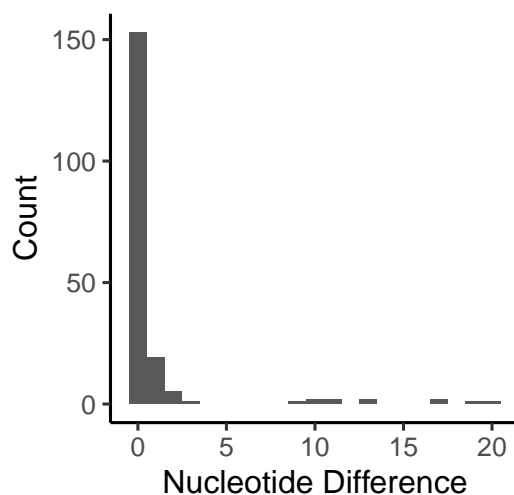
### IGHV4-4\*02

186 sequences assigned  
144 (77.4%) exact matches, in which:  
144 unique CDR3  
6 unique J



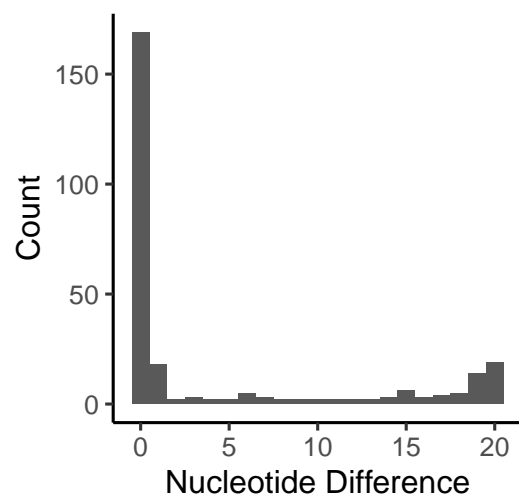
### IGHV4-31\*03

233 sequences assigned  
153 (65.7%) exact matches, in which:  
153 unique CDR3  
5 unique J



### IGHV4-39\*01

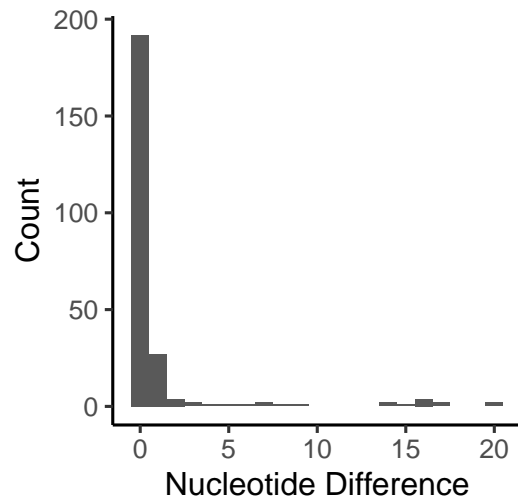
302 sequences assigned  
169 (56%) exact matches, in which:  
169 unique CDR3  
6 unique J





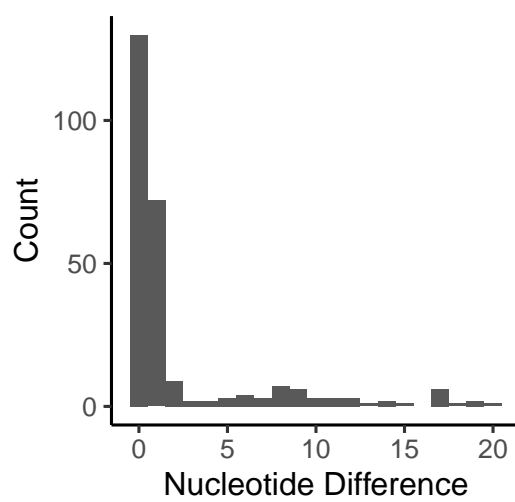
### IGHV4–59\*01

257 sequences assigned  
192 (74.7%) exact matches, in which:  
190 unique CDR3  
6 unique J



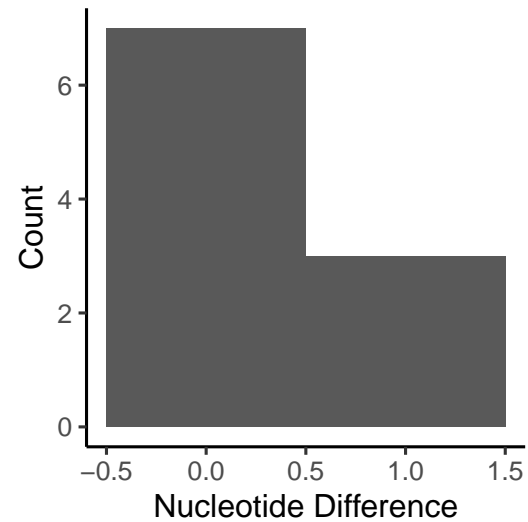
### IGHV5–51\*01

288 sequences assigned  
130 (45.1%) exact matches, in which:  
130 unique CDR3  
6 unique J



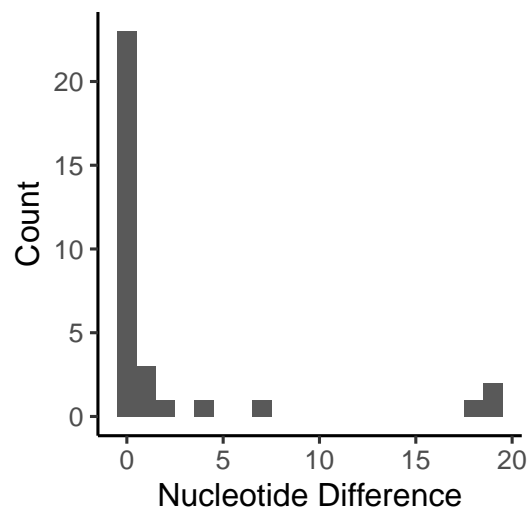
### IGHV7–4–1\*01

10 sequences assigned  
7 (70%) exact matches, in which:  
7 unique CDR3  
4 unique J



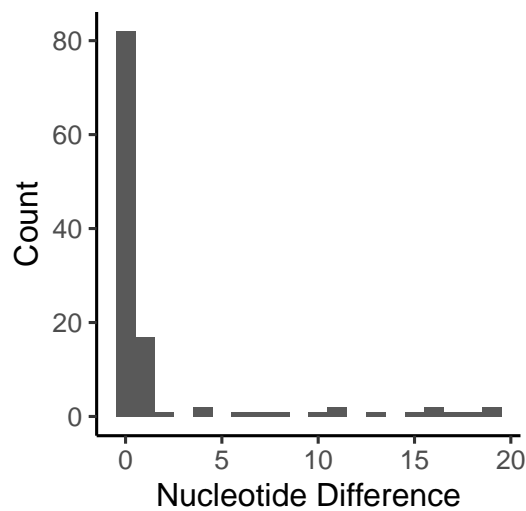
### IGHV4–61\*01

34 sequences assigned  
23 (67.6%) exact matches, in which:  
23 unique CDR3  
5 unique J



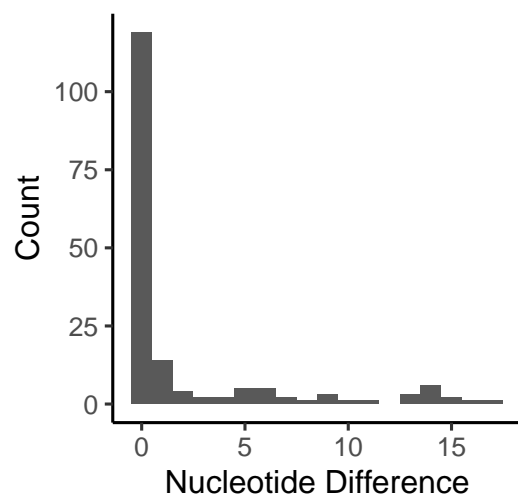
### IGHV5–51\*03

125 sequences assigned  
82 (65.6%) exact matches, in which:  
81 unique CDR3  
5 unique J



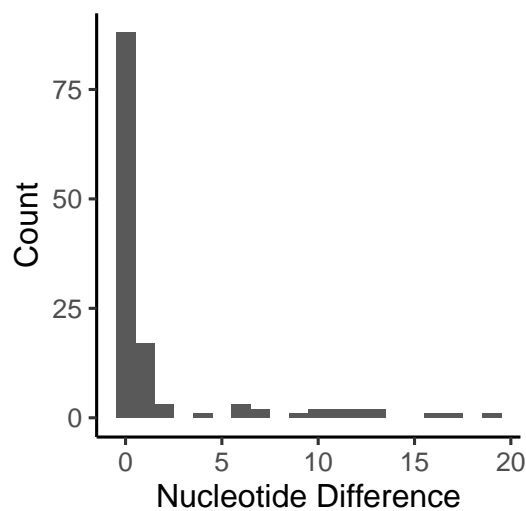
### IGHV4–61\*02

192 sequences assigned  
119 (62%) exact matches, in which:  
118 unique CDR3  
6 unique J

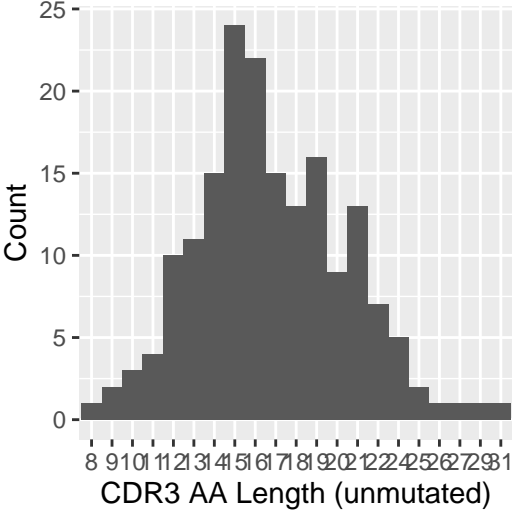


### IGHV6–1\*01

127 sequences assigned  
88 (69.3%) exact matches, in which:  
88 unique CDR3  
6 unique J



IGHV1-69\*08\_C191T



IGHV4-38-2\*02\_A70G

