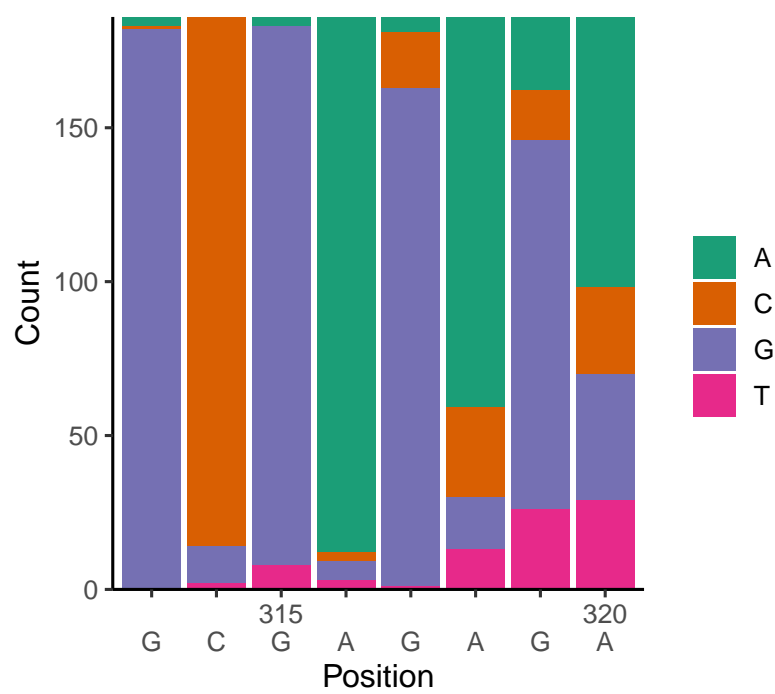
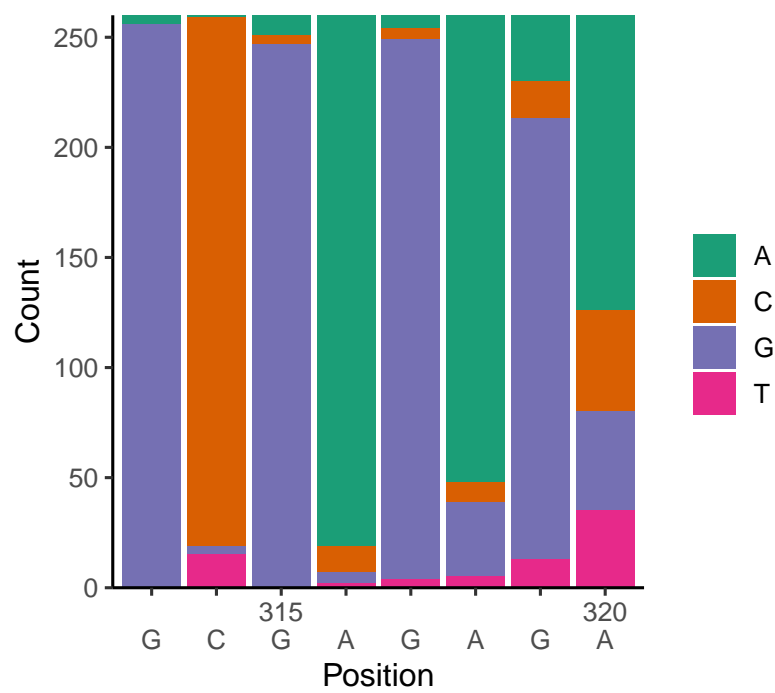


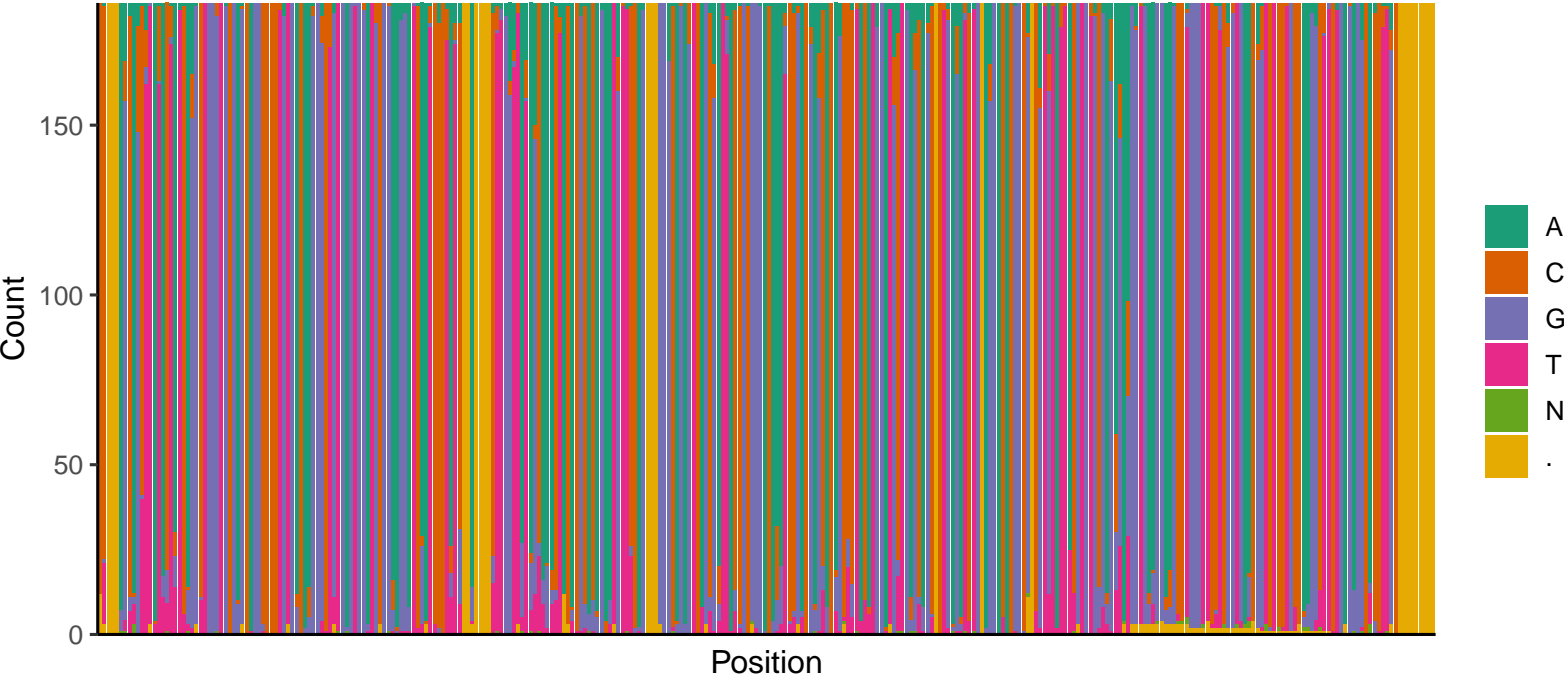
Gene IGHV1-69\*08\_C191T



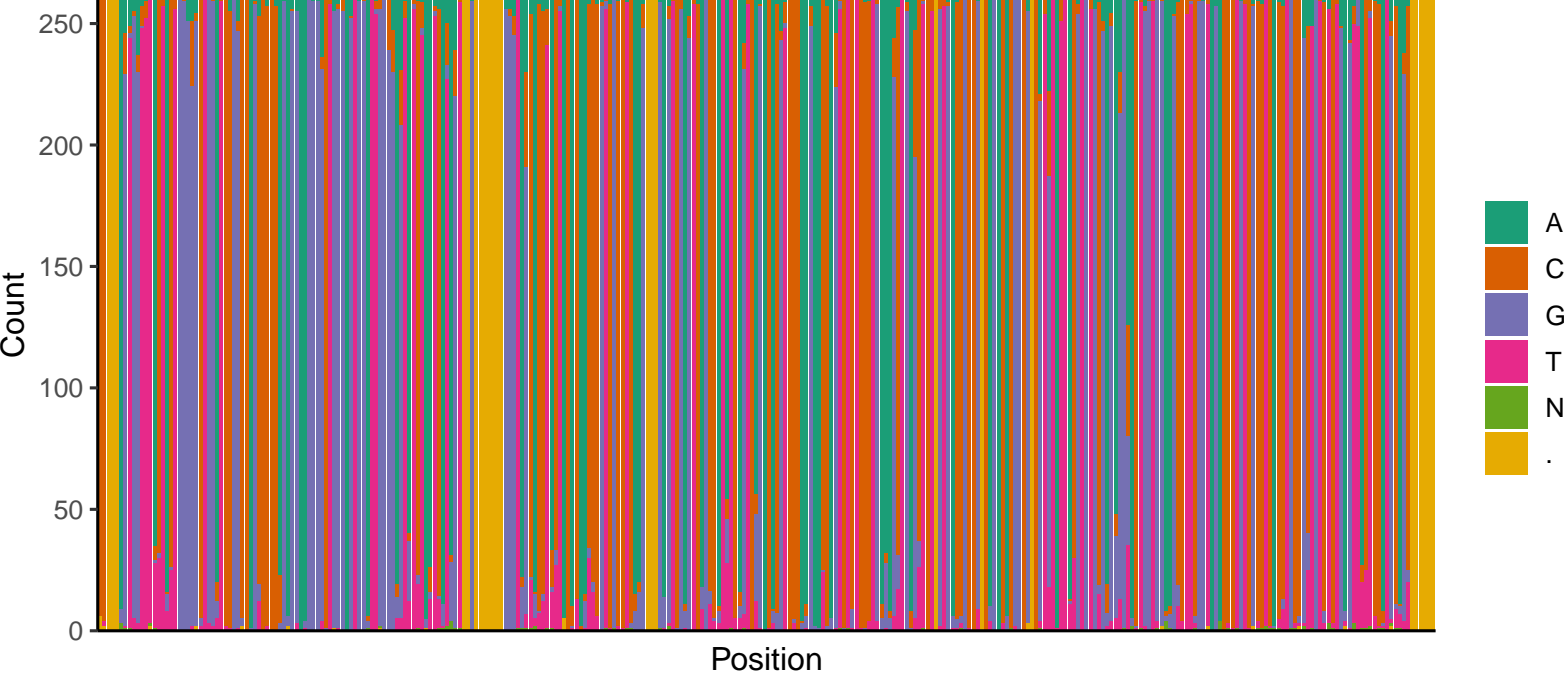
Gene IGHV4-38-2\*02\_A70G



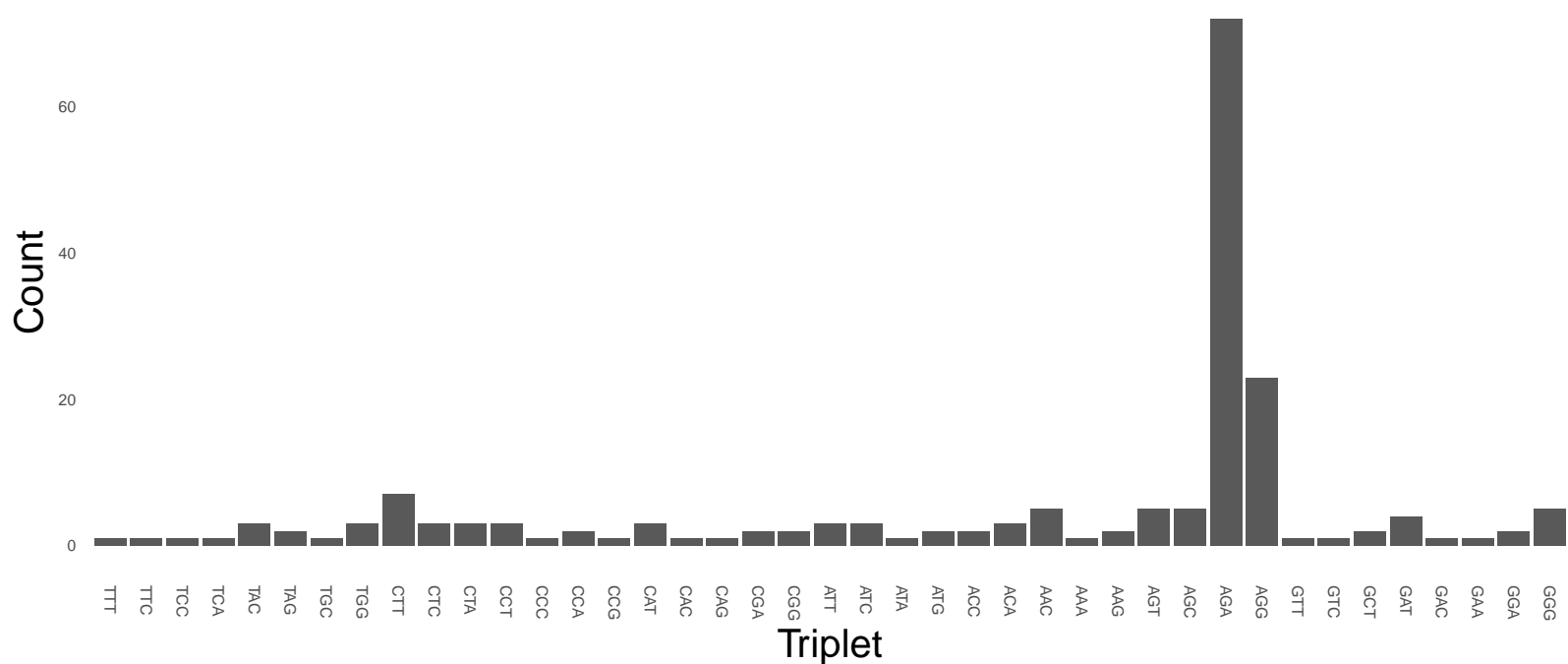
Gene IGHV1-69\*08\_C191T



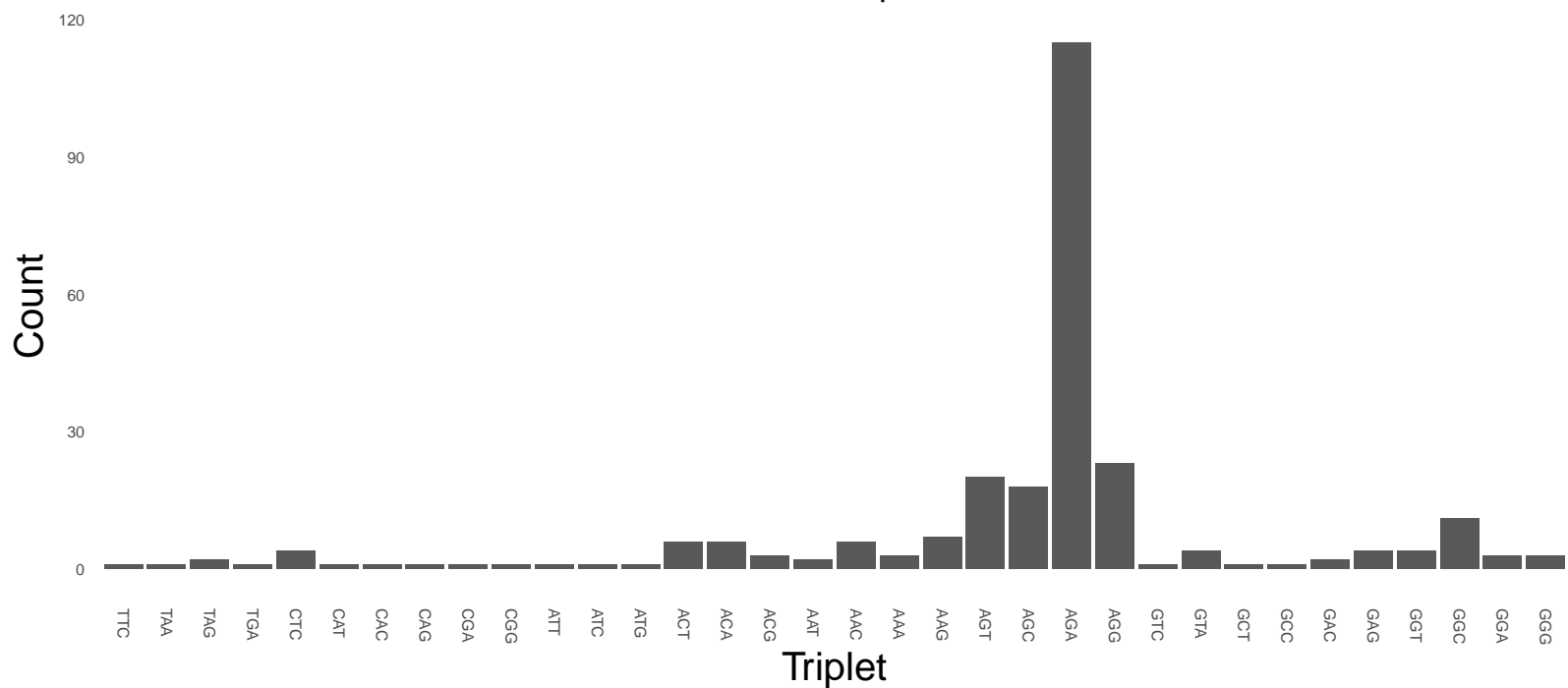
Gene IGHV4-38-2\*02\_A70G



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

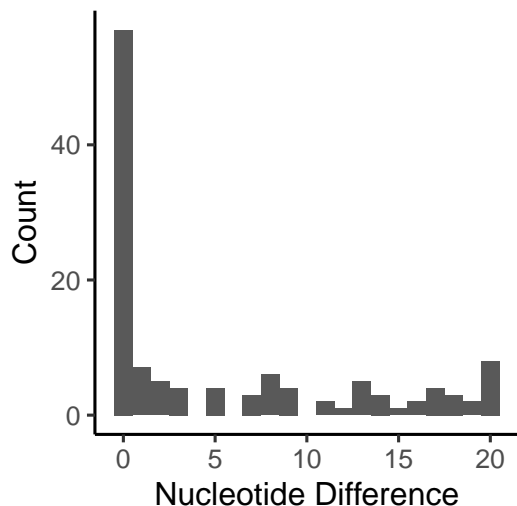


IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



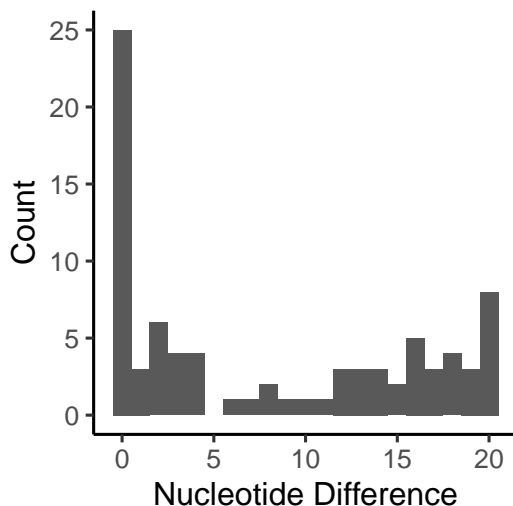
### IGHV1-2\*04

135 sequences assigned  
57 (42.2%) exact matches, in which:  
57 unique CDR3  
7 unique J



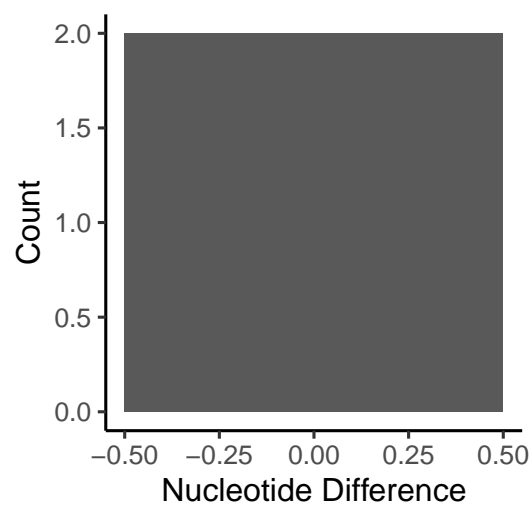
### IGHV1-18\*04

119 sequences assigned  
25 (21%) exact matches, in which:  
25 unique CDR3  
4 unique J



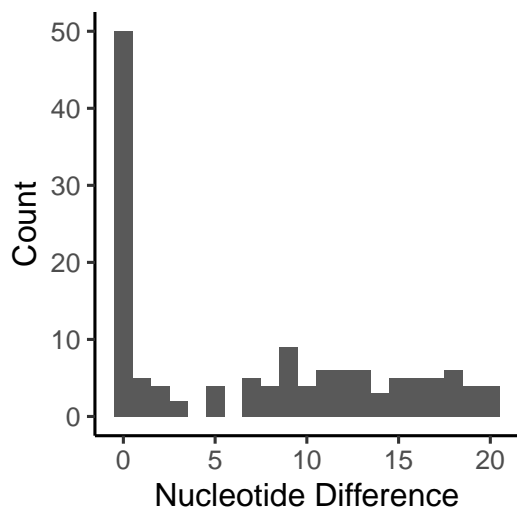
### IGHV1-58\*01

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



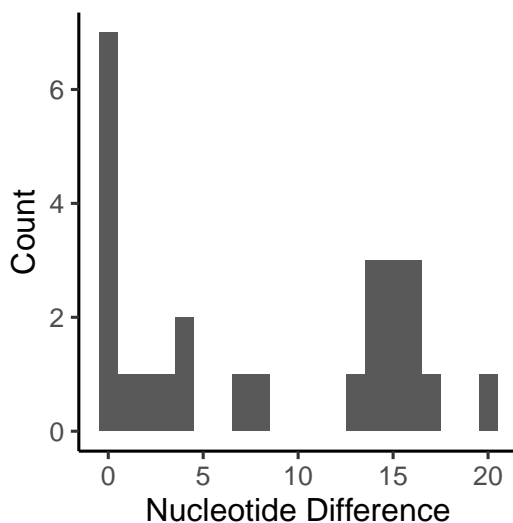
### IGHV1-3\*01

174 sequences assigned  
50 (28.7%) exact matches, in which:  
50 unique CDR3  
6 unique J



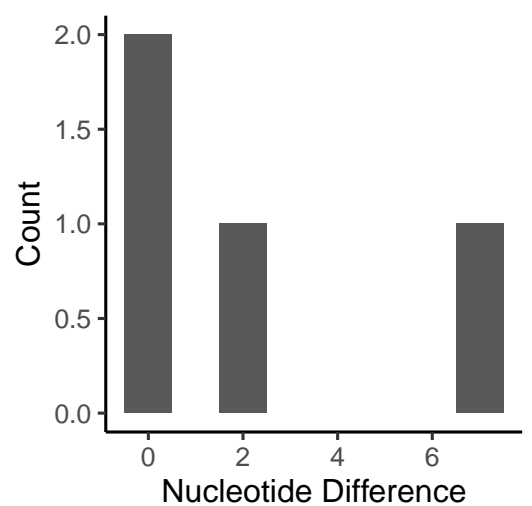
### IGHV1-24\*01

29 sequences assigned  
7 (24.1%) exact matches, in which:  
7 unique CDR3  
2 unique J



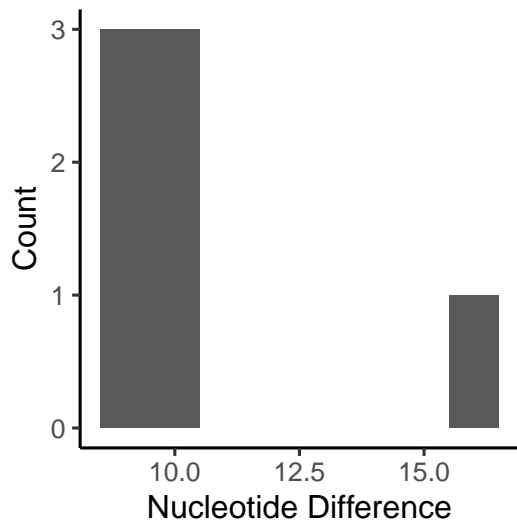
### IGHV1-58\*02

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
2 unique J



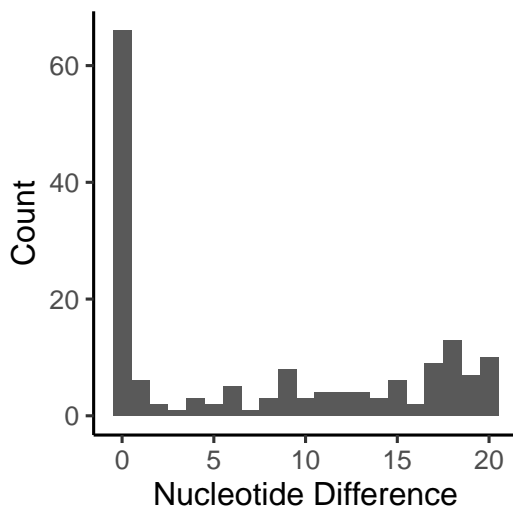
### IGHV1-18\*01

27 sequences assigned  
No exact matches.



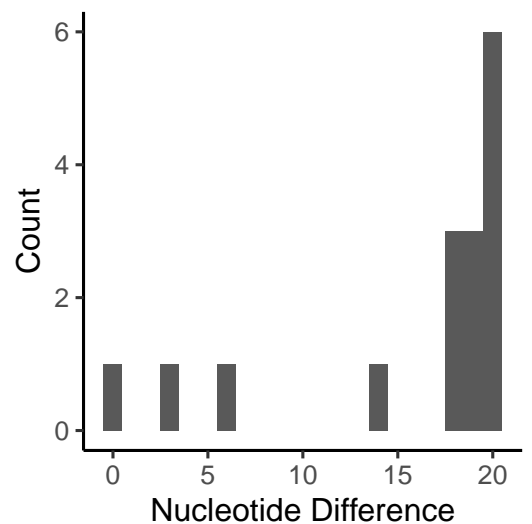
### IGHV1-46\*01

206 sequences assigned  
66 (32%) exact matches, in which:  
66 unique CDR3  
6 unique J



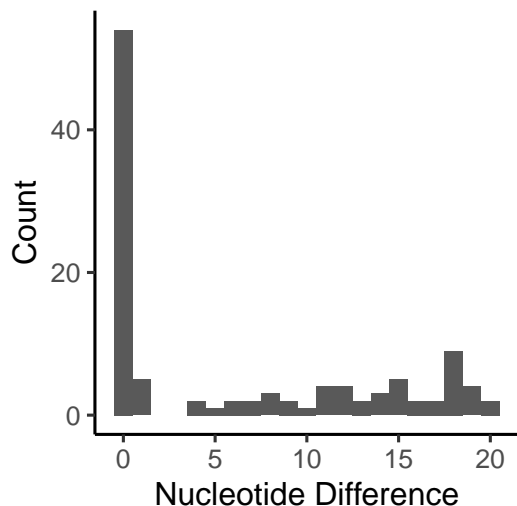
### IGHV1-69-2\*01

21 sequences assigned  
1 (4.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



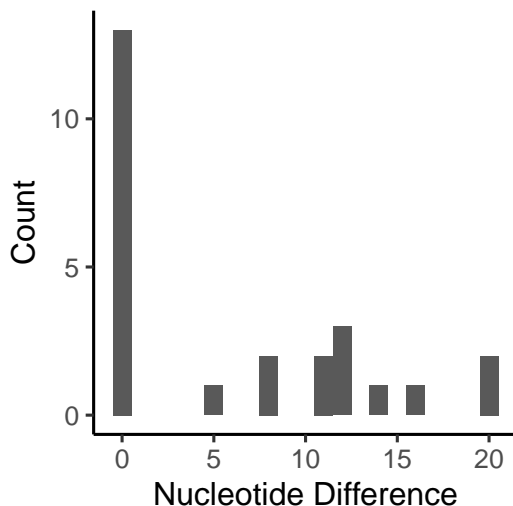
### IGHV1-69\*06

148 sequences assigned  
54 (36.5%) exact matches, in which:  
54 unique CDR3  
5 unique J



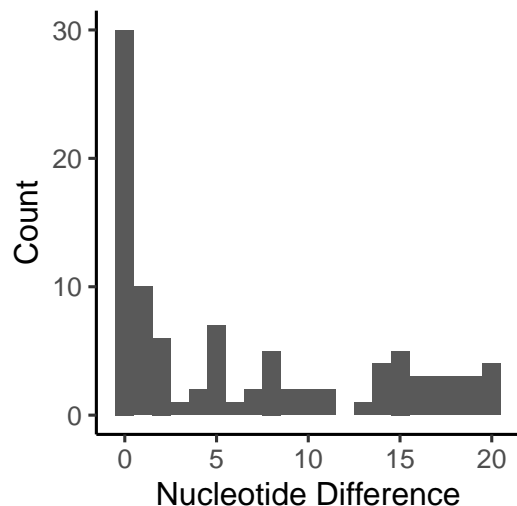
### IGHV2-26\*01

27 sequences assigned  
13 (48.1%) exact matches, in which:  
12 unique CDR3  
5 unique J



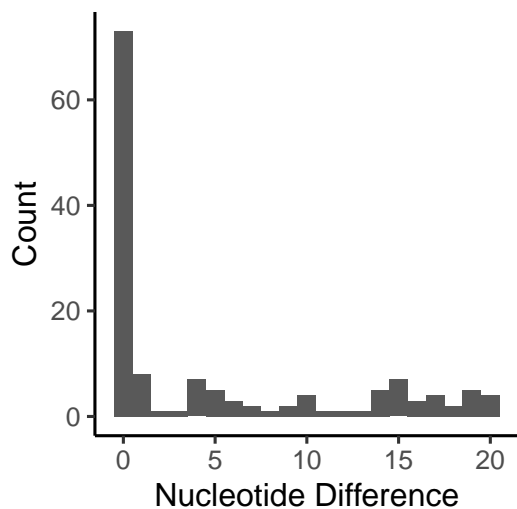
### IGHV3-11\*06

112 sequences assigned  
30 (26.8%) exact matches, in which:  
29 unique CDR3  
5 unique J



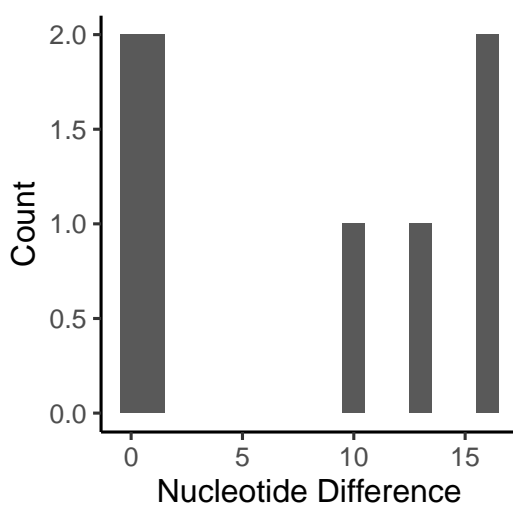
### IGHV1-69\*08\_C191T

186 sequences assigned  
73 (39.2%) exact matches, in which:  
73 unique CDR3  
6 unique J



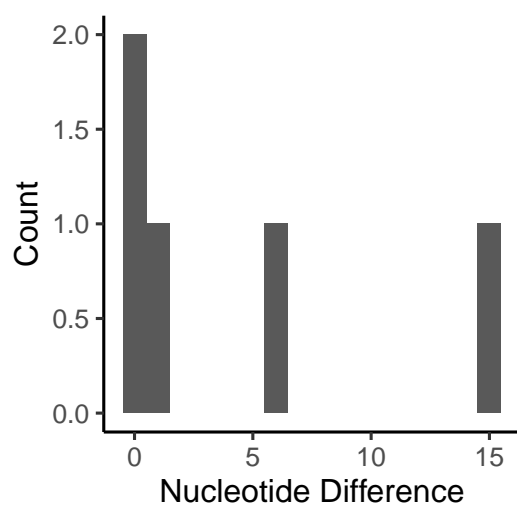
### IGHV2-70\*01

9 sequences assigned  
2 (22.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



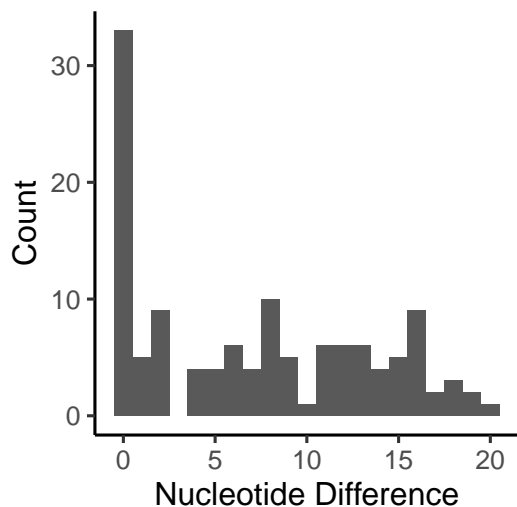
### IGHV3-13\*05

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
2 unique J



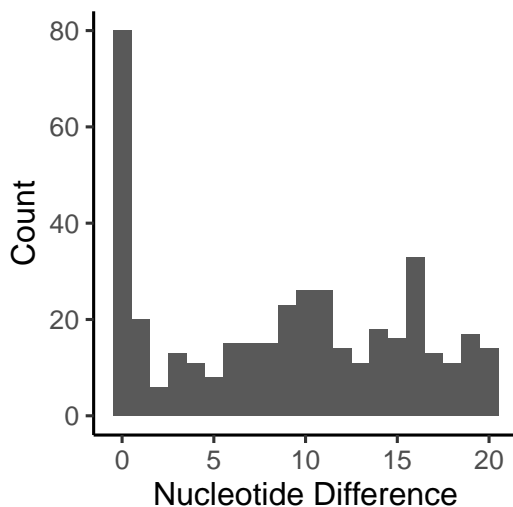
### IGHV2-5\*02

137 sequences assigned  
33 (24.1%) exact matches, in which:  
33 unique CDR3  
3 unique J



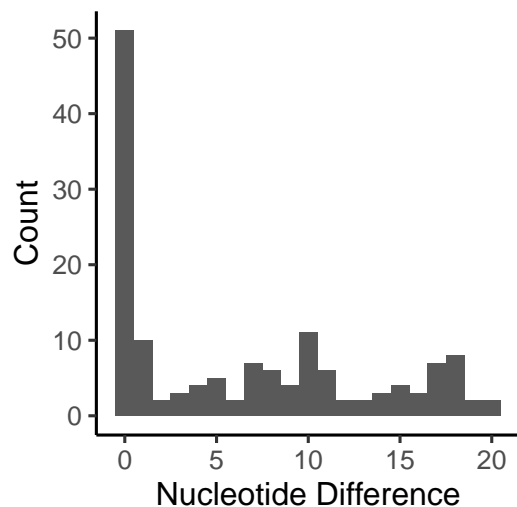
### IGHV3-7\*03

448 sequences assigned  
80 (17.9%) exact matches, in which:  
80 unique CDR3  
7 unique J



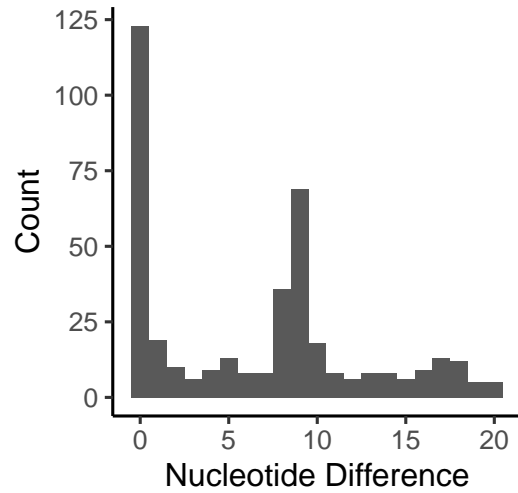
### IGHV3-15\*01

161 sequences assigned  
51 (31.7%) exact matches, in which:  
51 unique CDR3  
6 unique J



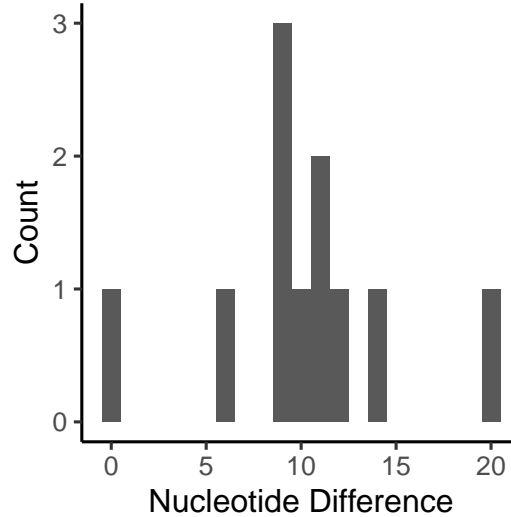
### IGHV3-21\*01

488 sequences assigned  
123 (25.2%) exact matches, in which:  
123 unique CDR3  
6 unique J



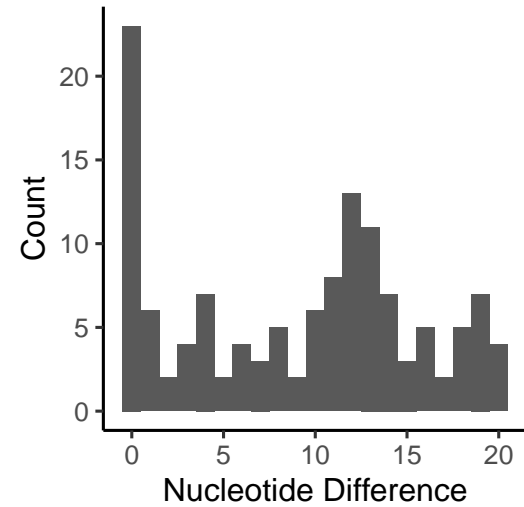
### IGHV3-43\*01

15 sequences assigned  
1 (6.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



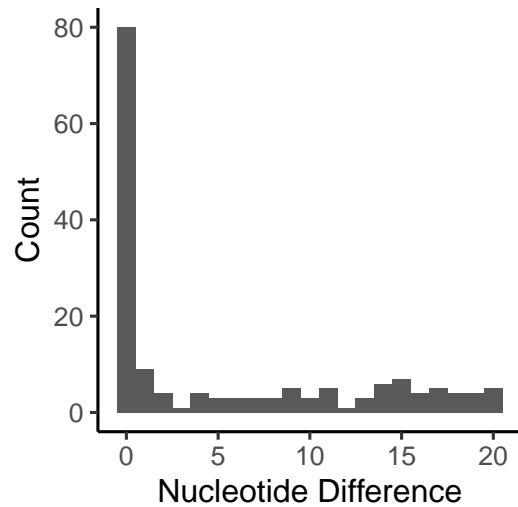
### IGHV3-49\*04

149 sequences assigned  
23 (15.4%) exact matches, in which:  
23 unique CDR3  
3 unique J



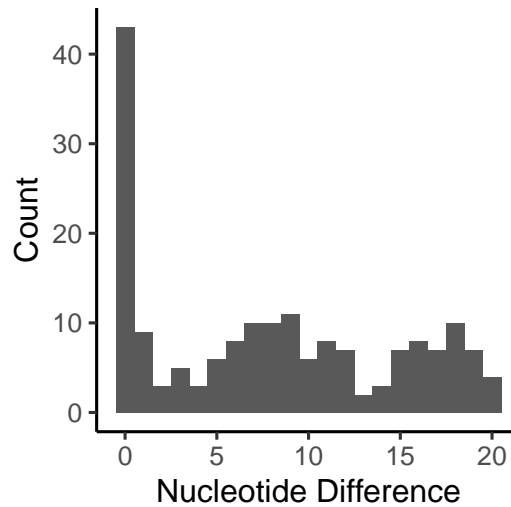
### IGHV3-30-3\*01

193 sequences assigned  
80 (41.5%) exact matches, in which:  
79 unique CDR3  
5 unique J



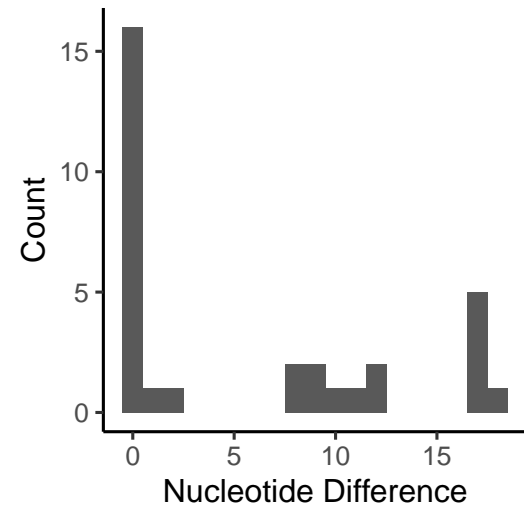
### IGHV3-48\*02

206 sequences assigned  
43 (20.9%) exact matches, in which:  
43 unique CDR3  
5 unique J



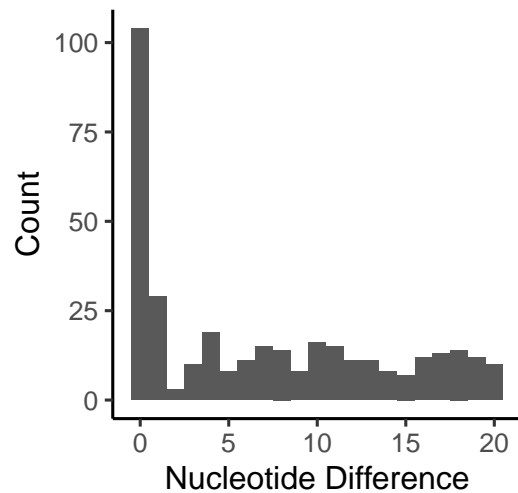
### IGHV3-49\*05

40 sequences assigned  
16 (40%) exact matches, in which:  
16 unique CDR3  
2 unique J



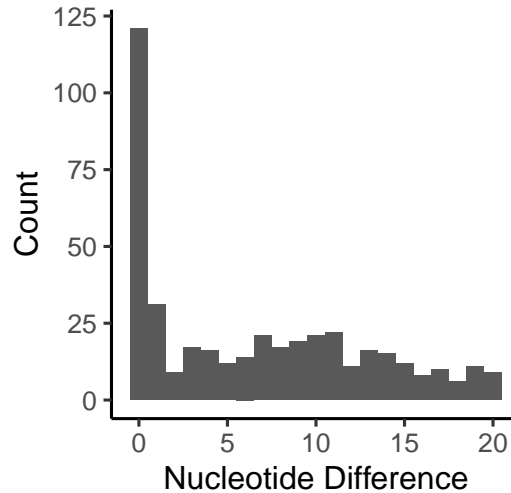
### IGHV3-33\*01

415 sequences assigned  
104 (25.1%) exact matches, in which:  
103 unique CDR3  
5 unique J



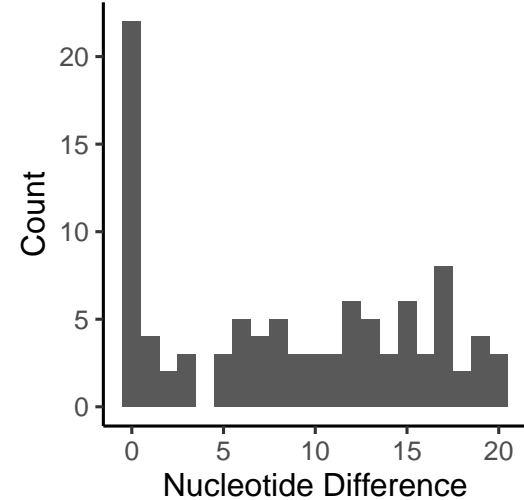
### IGHV3-48\*03

470 sequences assigned  
121 (25.7%) exact matches, in which:  
121 unique CDR3  
5 unique J



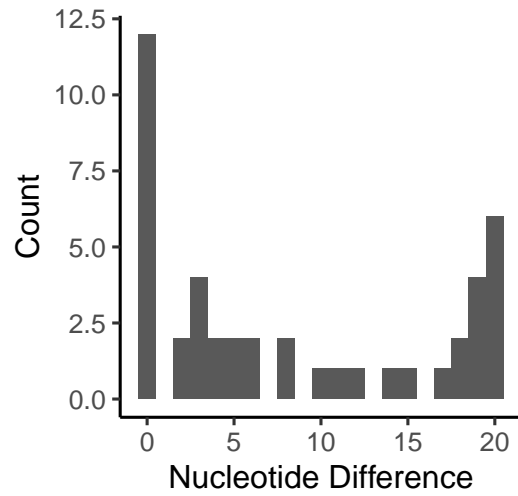
### IGHV3-53\*01

130 sequences assigned  
22 (16.9%) exact matches, in which:  
22 unique CDR3  
4 unique J



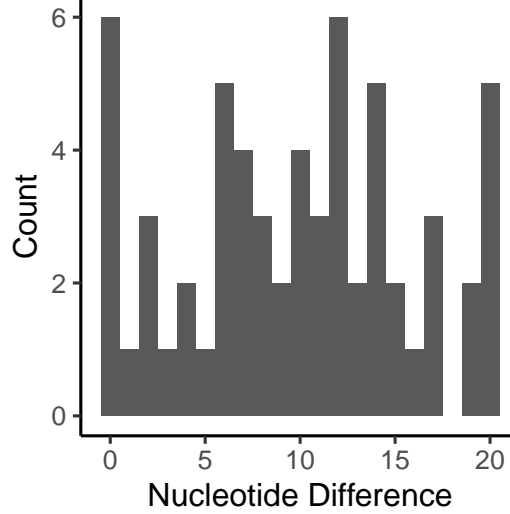
### IGHV3-53\*02

52 sequences assigned  
12 (23.1%) exact matches, in which:  
12 unique CDR3  
3 unique J



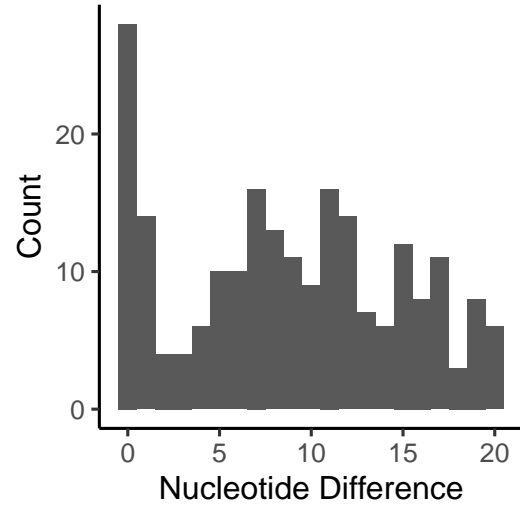
### IGHV3-72\*01

80 sequences assigned  
6 (7.5%) exact matches, in which:  
6 unique CDR3  
4 unique J



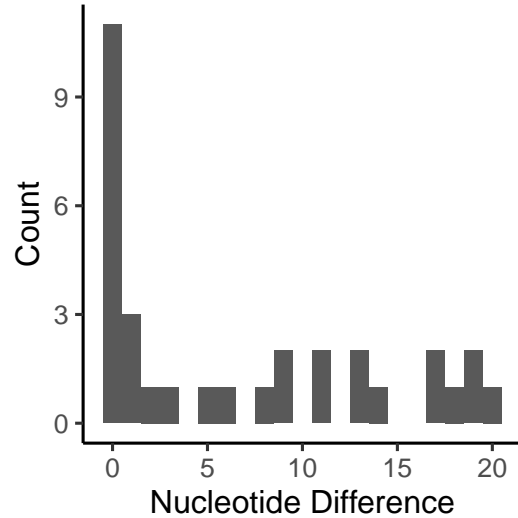
### IGHV3-74\*01

271 sequences assigned  
28 (10.3%) exact matches, in which:  
28 unique CDR3  
4 unique J



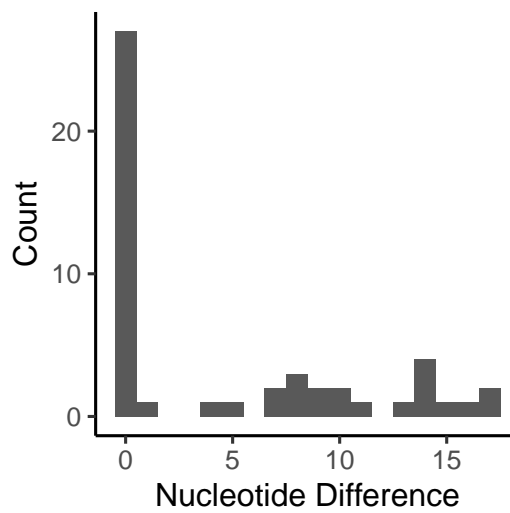
### IGHV3-64\*01

45 sequences assigned  
11 (24.4%) exact matches, in which:  
10 unique CDR3  
5 unique J



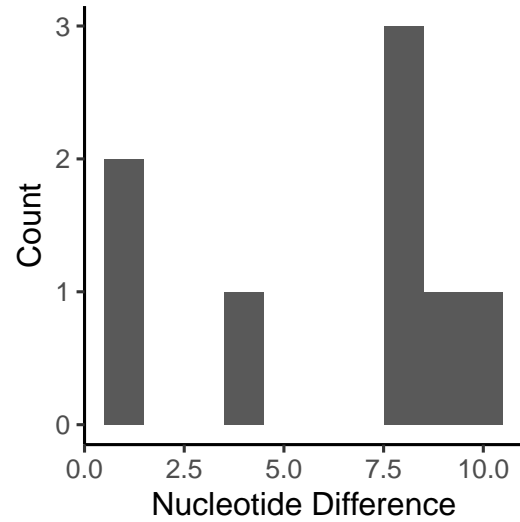
### IGHV3-73\*01

52 sequences assigned  
27 (51.9%) exact matches, in which:  
27 unique CDR3  
4 unique J



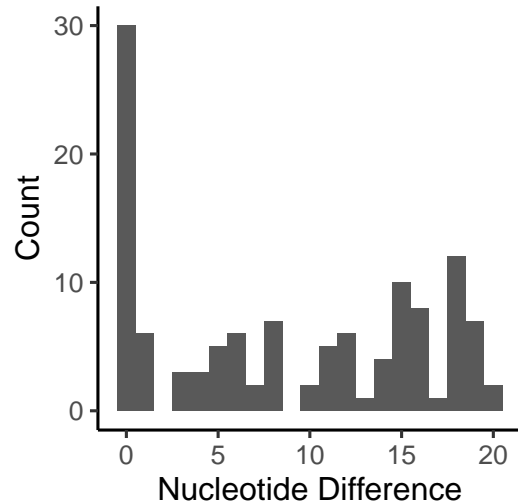
### IGHV3-43D\*04

14 sequences assigned  
No exact matches.



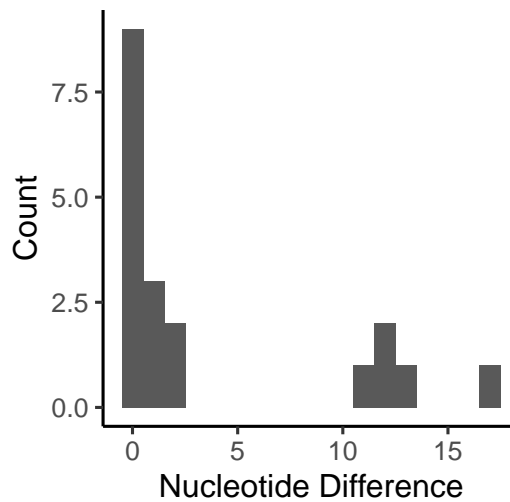
### IGHV3-66\*02

140 sequences assigned  
30 (21.4%) exact matches, in which:  
30 unique CDR3  
5 unique J



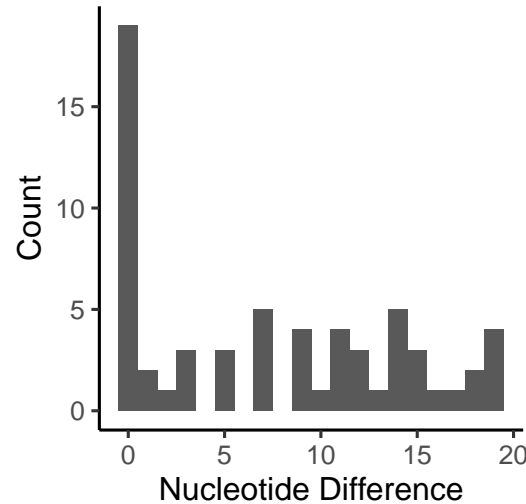
### IGHV3-73\*02

25 sequences assigned  
9 (36%) exact matches, in which:  
9 unique CDR3  
4 unique J



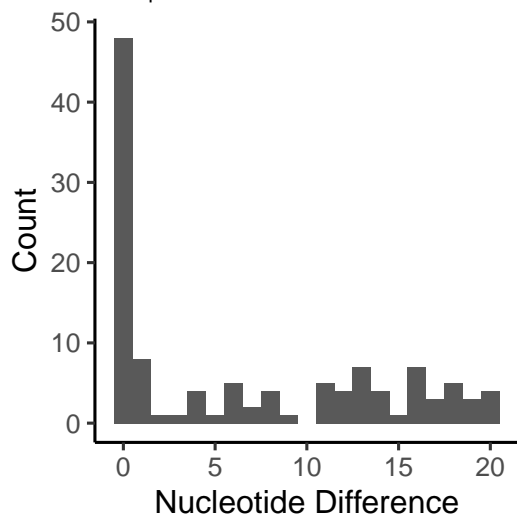
### IGHV3-64D\*09

83 sequences assigned  
19 (22.9%) exact matches, in which:  
19 unique CDR3  
4 unique J



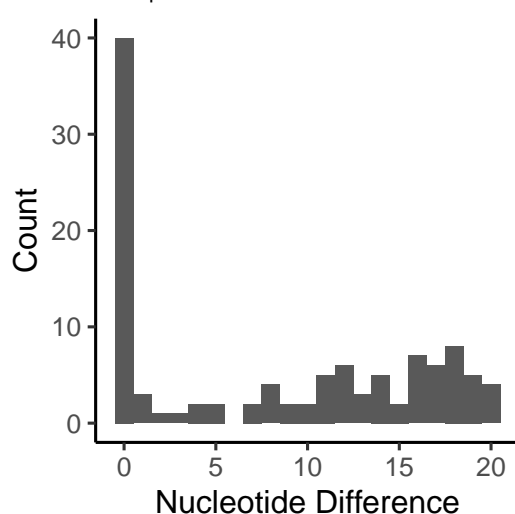
### IGHV4-4\*02

139 sequences assigned  
48 (34.5%) exact matches, in which:  
48 unique CDR3  
5 unique J



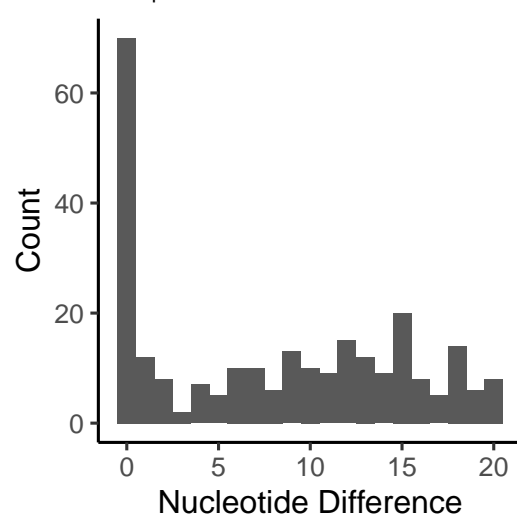
### IGHV4-31\*03

141 sequences assigned  
40 (28.4%) exact matches, in which:  
40 unique CDR3  
6 unique J



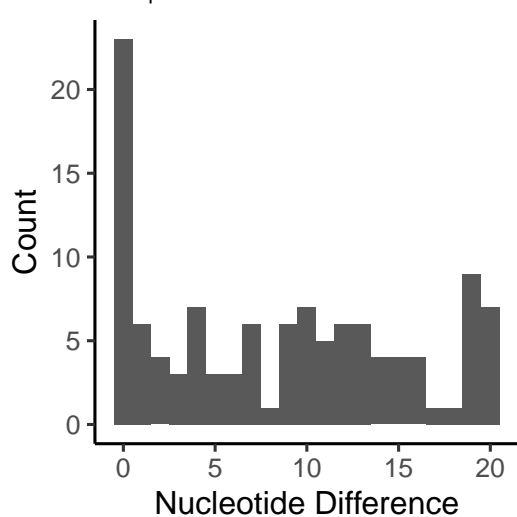
### IGHV4-39\*07

416 sequences assigned  
70 (16.8%) exact matches, in which:  
70 unique CDR3  
5 unique J



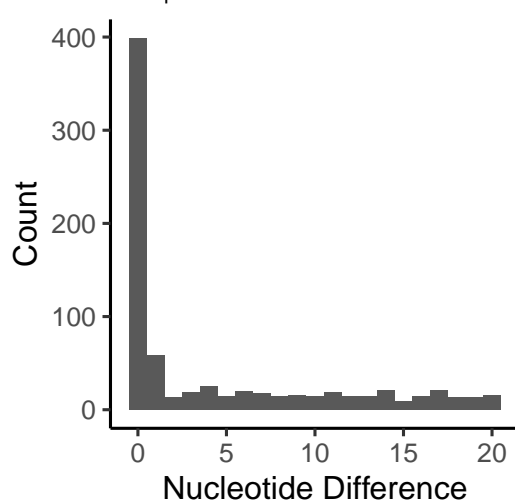
### IGHV4-30-4\*01

147 sequences assigned  
23 (15.6%) exact matches, in which:  
22 unique CDR3  
6 unique J



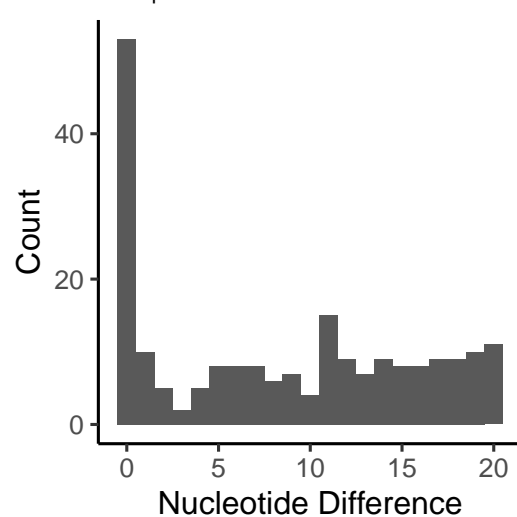
### IGHV4-34\*01

855 sequences assigned  
399 (46.7%) exact matches, in which:  
397 unique CDR3  
7 unique J



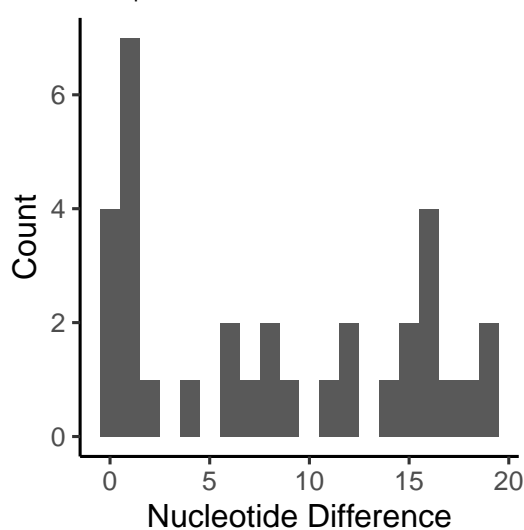
### IGHV4-59\*01

297 sequences assigned  
53 (17.8%) exact matches, in which:  
52 unique CDR3  
7 unique J



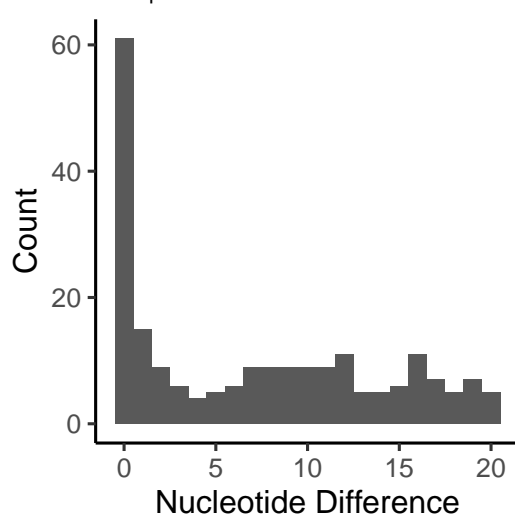
### IGHV4-30-2\*01

51 sequences assigned  
4 (7.8%) exact matches, in which:  
4 unique CDR3  
2 unique J



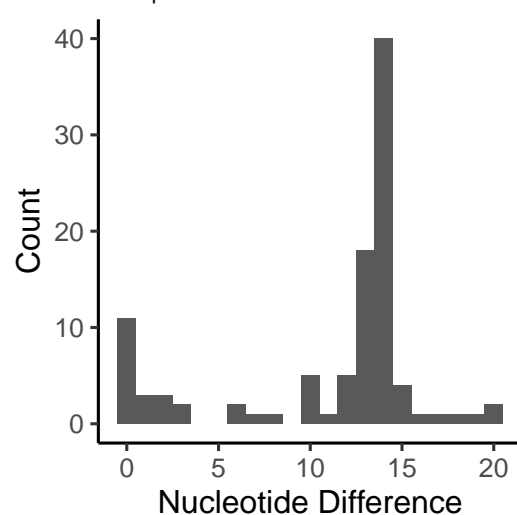
### IGHV4-38-2\*02\_A70G

260 sequences assigned  
61 (23.5%) exact matches, in which:  
61 unique CDR3  
6 unique J



### IGHV4-61\*01

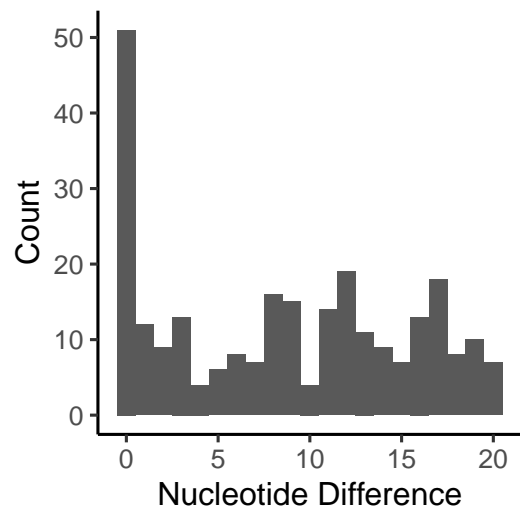
119 sequences assigned  
11 (9.2%) exact matches, in which:  
11 unique CDR3  
5 unique J





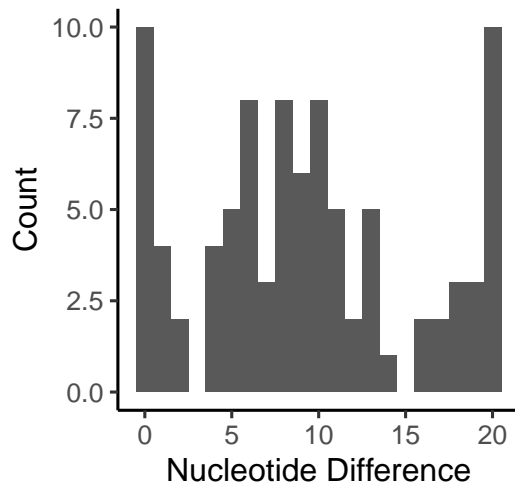
## IGHV4-61\*02

313 sequences assigned  
51 (16.3%) exact matches, in which:  
51 unique CDR3  
6 unique J



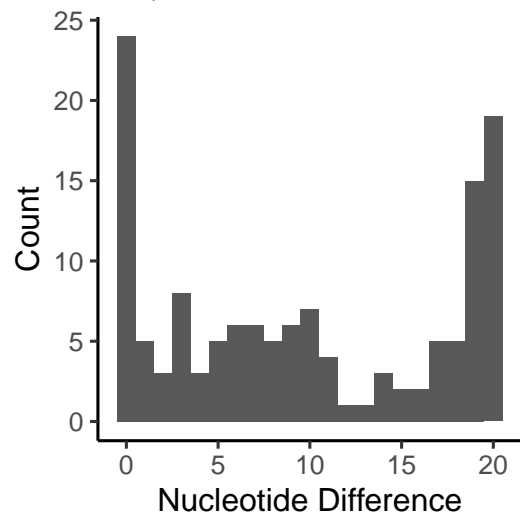
## IGHV6-1\*01

132 sequences assigned  
10 (7.6%) exact matches, in which:  
10 unique CDR3  
2 unique J



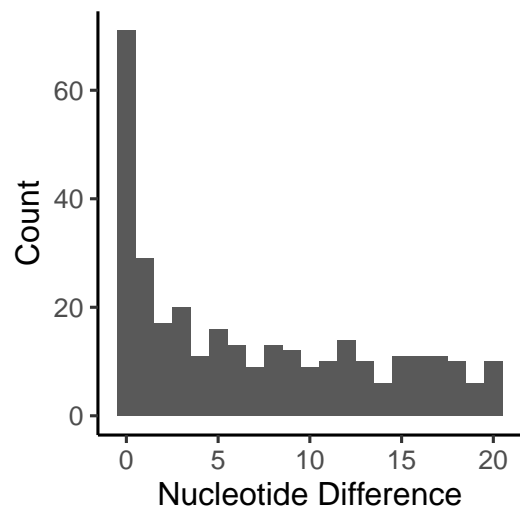
## IGHV5-10-1\*03

149 sequences assigned  
24 (16.1%) exact matches, in which:  
24 unique CDR3  
6 unique J

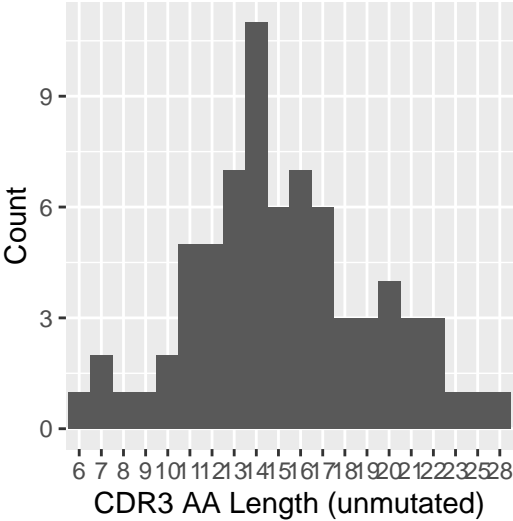


## IGHV5-51\*01

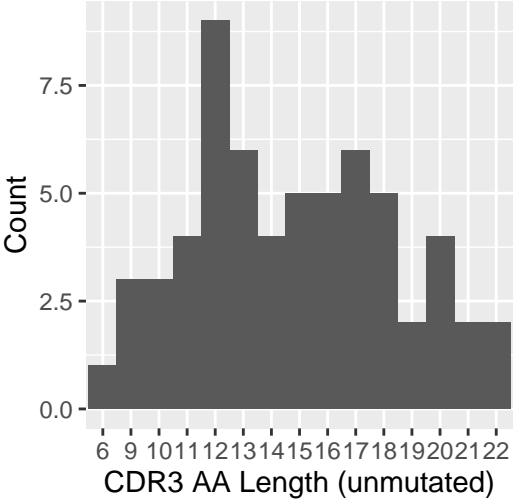
388 sequences assigned  
71 (18.3%) exact matches, in which:  
70 unique CDR3  
6 unique J



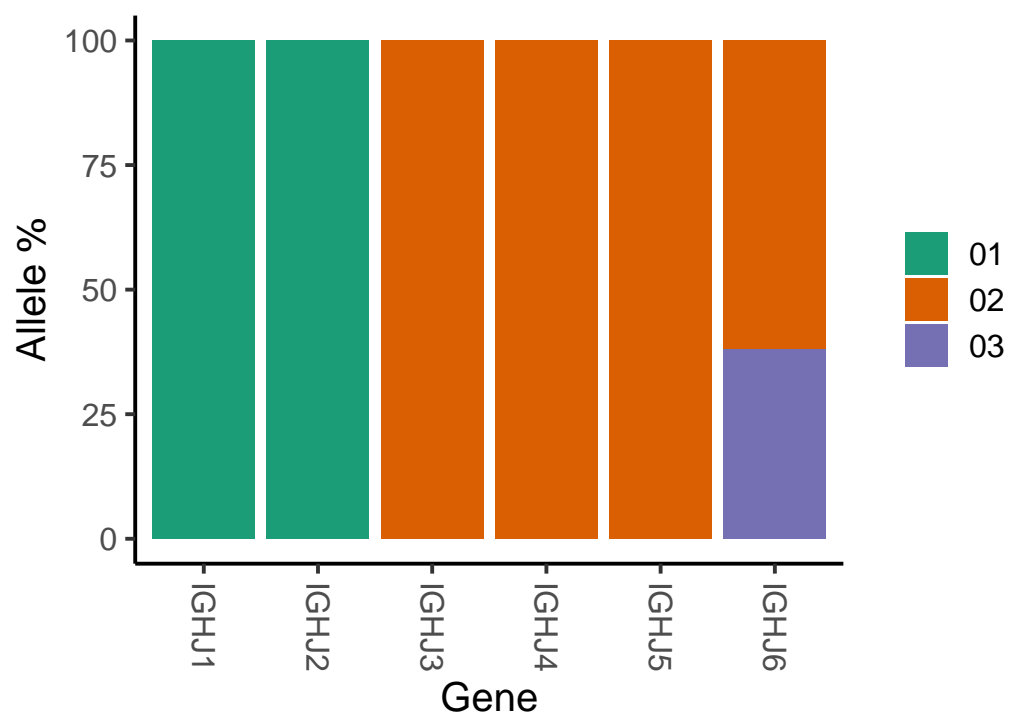
IGHV1-69\*08\_C191T



IGHV4-38-2\*02\_A70G



Allele Usage



Sequence Count by IGHJ6 allele usage

