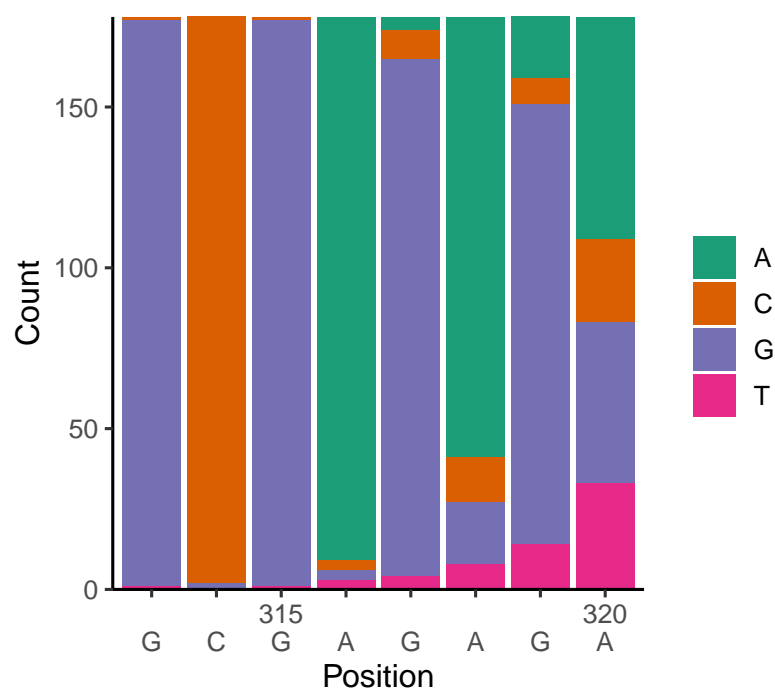
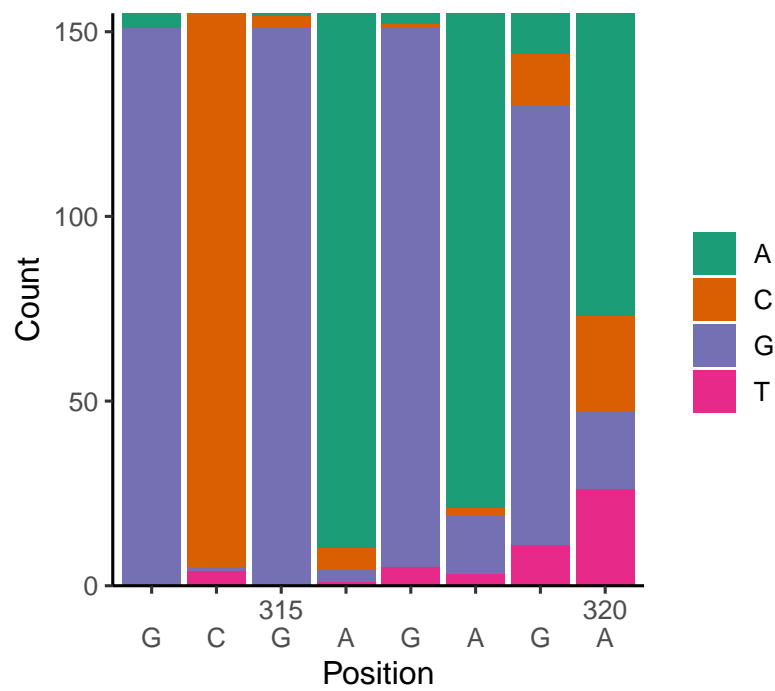


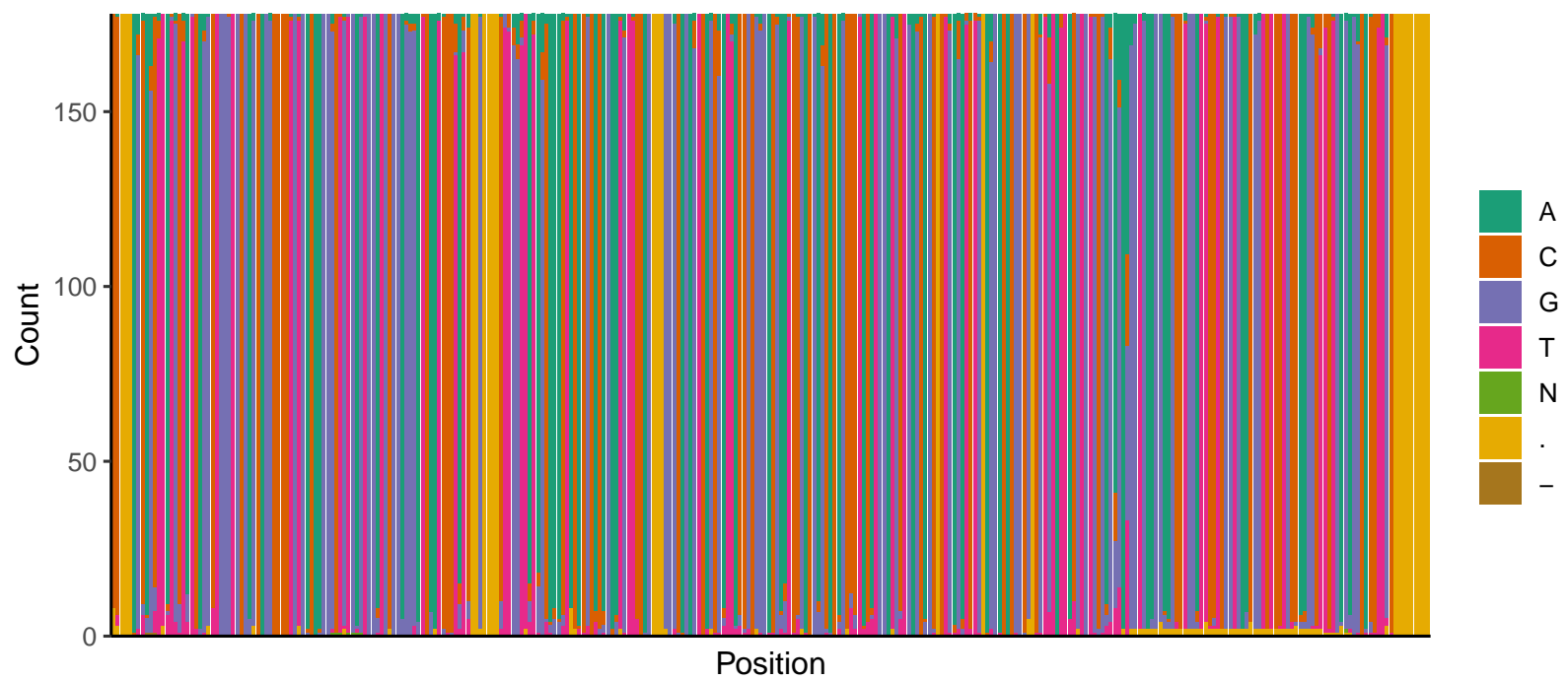
Gene IGHV1-69\*04\_G48A\_A163G\_A244G



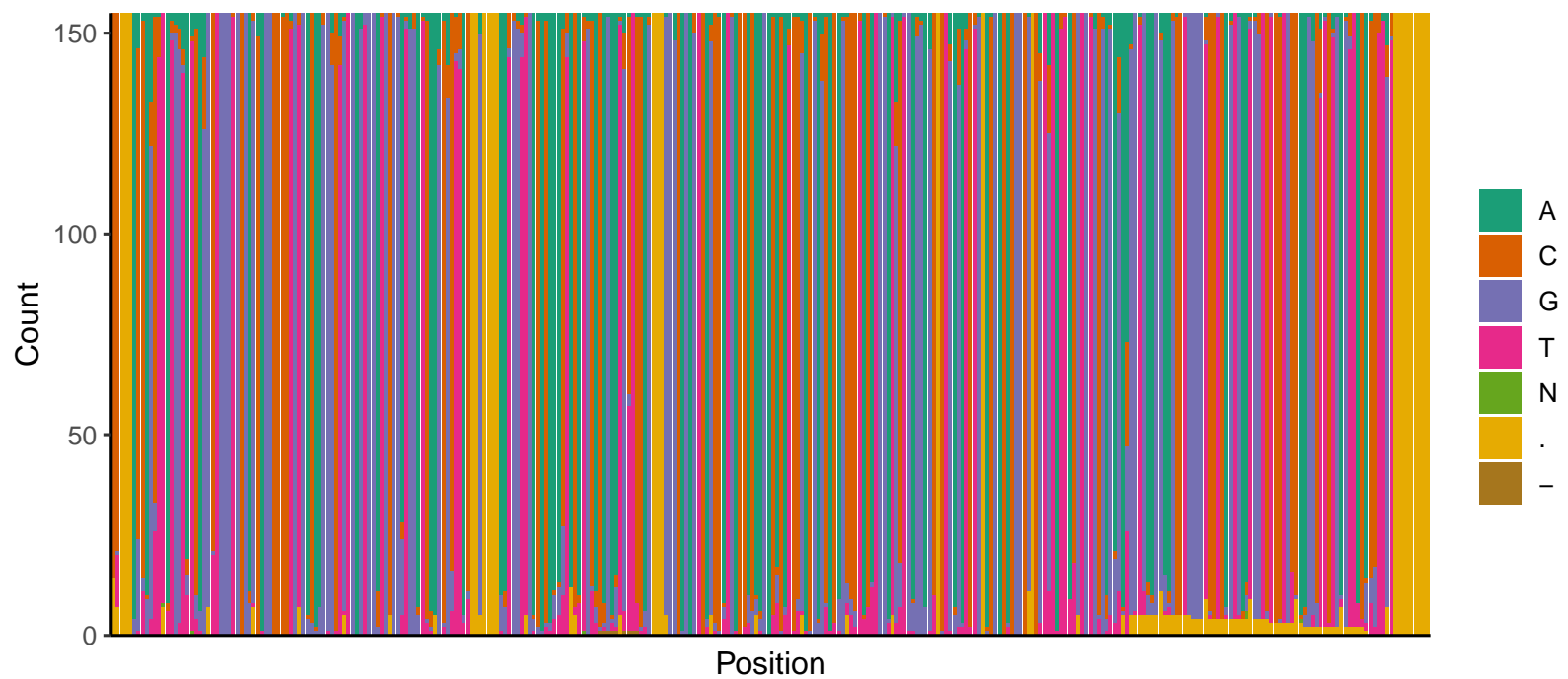
Gene IGHV1-18\*01\_A190G



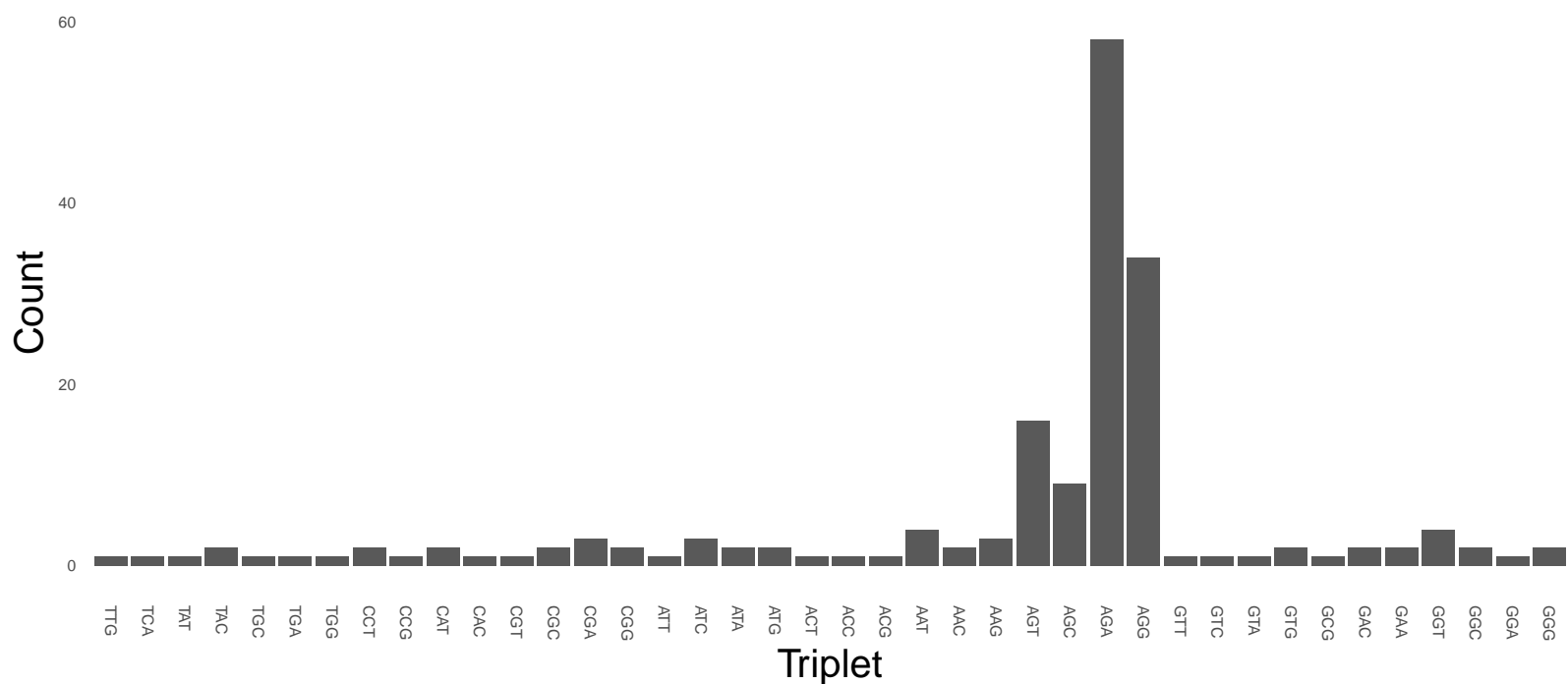
Gene IGHV1-69\*04\_G48A\_A163G\_A244G



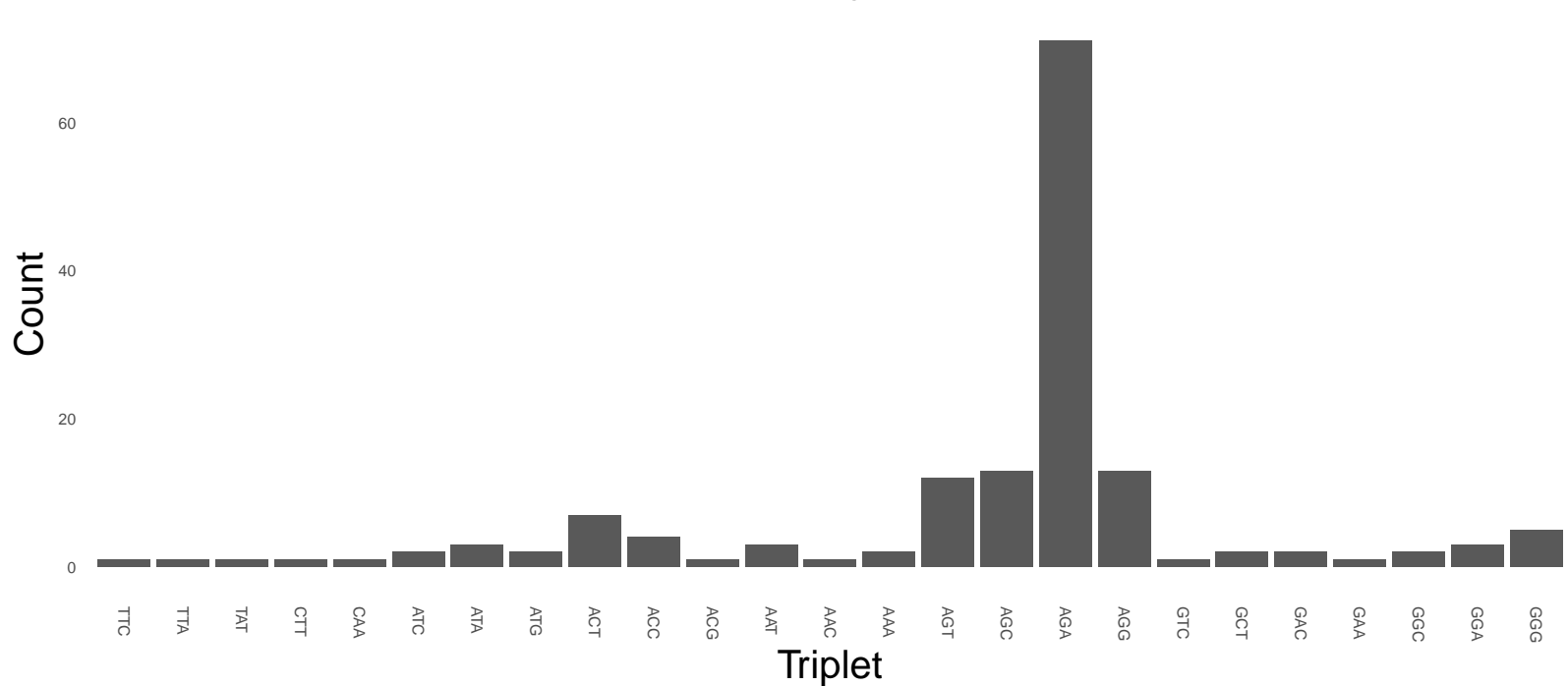
Gene IGHV1-18\*01\_A190G



IGHV1-69\*04\_G48A\_A163G\_A244G- Final 3 nucleotides as a triplet

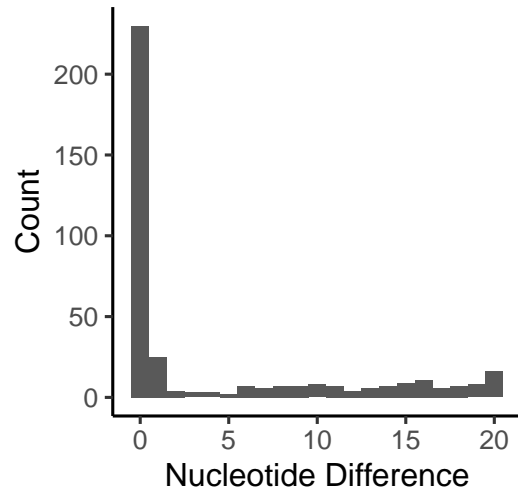


IGHV1-18\*01\_A190G- Final 3 nucleotides as a triplet



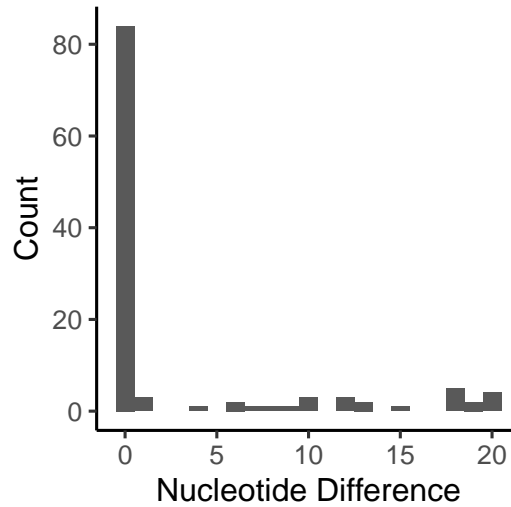
### IGHV1-2\*02

479 sequences assigned  
230 (48%) exact matches, in which:  
230 unique CDR3  
6 unique J



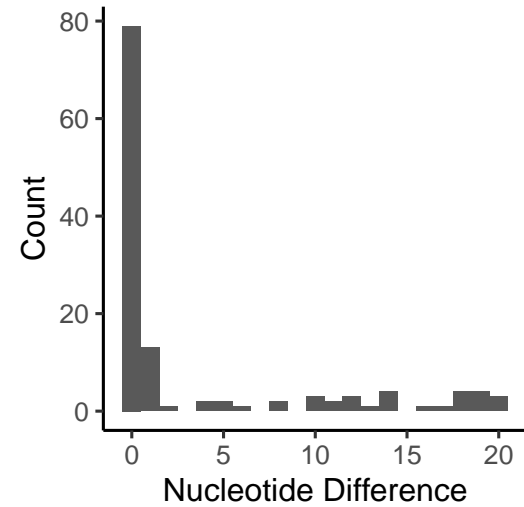
### IGHV1-18\*01

137 sequences assigned  
84 (61.3%) exact matches, in which:  
83 unique CDR3  
6 unique J



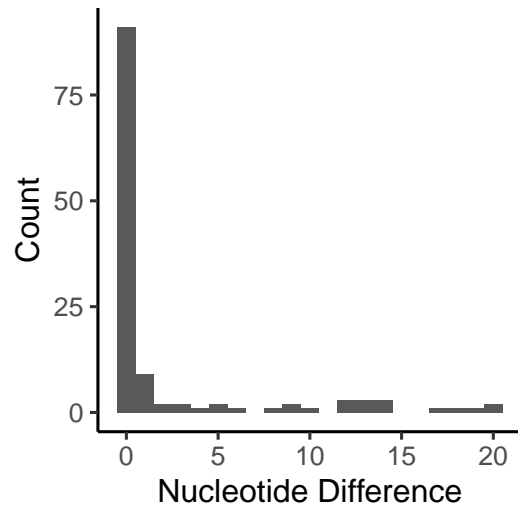
### IGHV1-46\*01

177 sequences assigned  
79 (44.6%) exact matches, in which:  
79 unique CDR3  
7 unique J



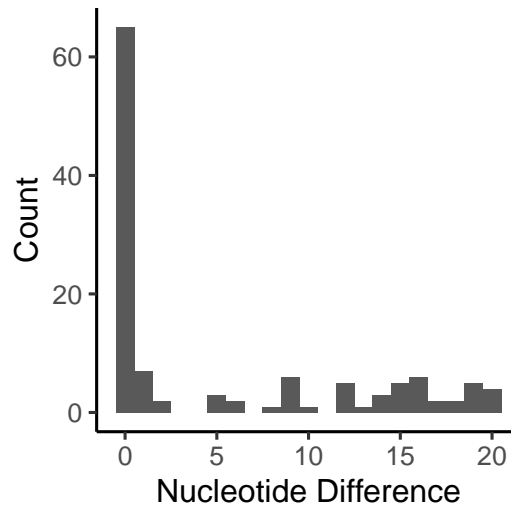
### IGHV1-8\*01

138 sequences assigned  
91 (65.9%) exact matches, in which:  
89 unique CDR3  
7 unique J



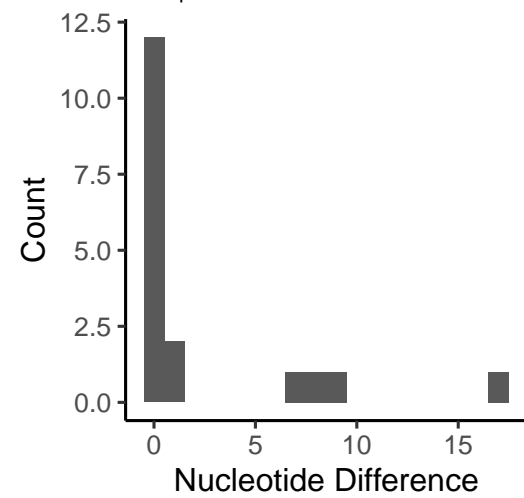
### IGHV1-18\*01\_A190G

155 sequences assigned  
65 (41.9%) exact matches, in which:  
65 unique CDR3  
5 unique J



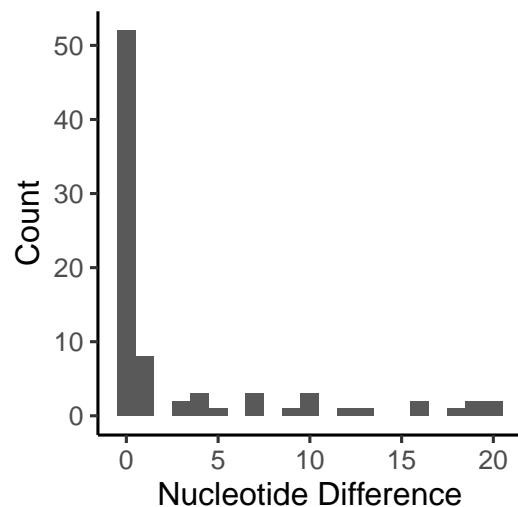
### IGHV1-58\*02

25 sequences assigned  
12 (48%) exact matches, in which:  
12 unique CDR3  
5 unique J



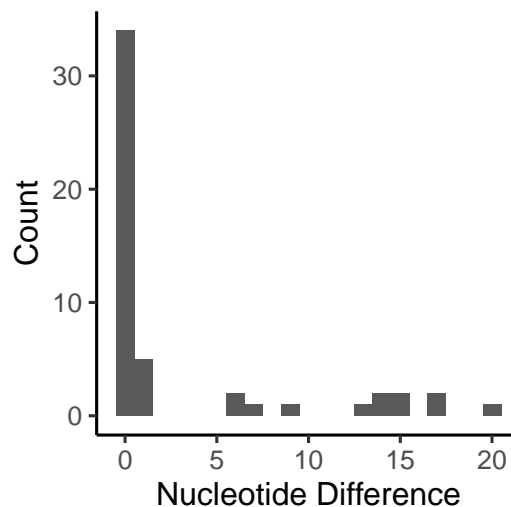
### IGHV1-8\*02

99 sequences assigned  
52 (52.5%) exact matches, in which:  
52 unique CDR3  
6 unique J



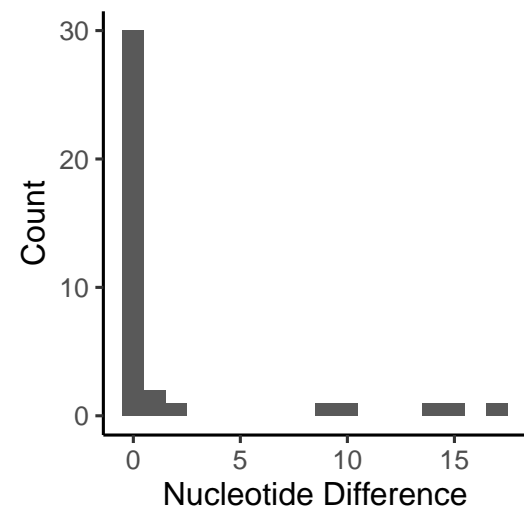
### IGHV1-24\*01

56 sequences assigned  
34 (60.7%) exact matches, in which:  
34 unique CDR3  
6 unique J



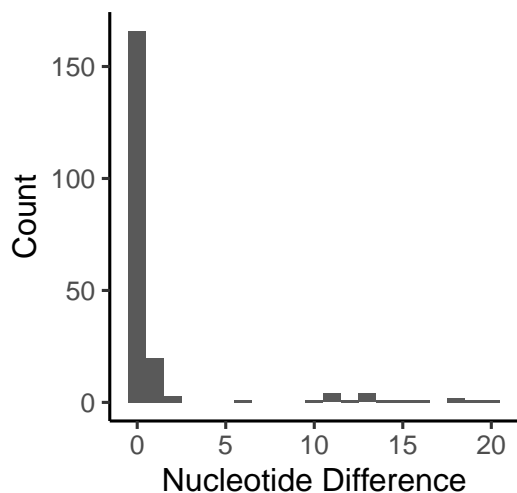
### IGHV1-69-2\*01

43 sequences assigned  
30 (69.8%) exact matches, in which:  
30 unique CDR3  
5 unique J



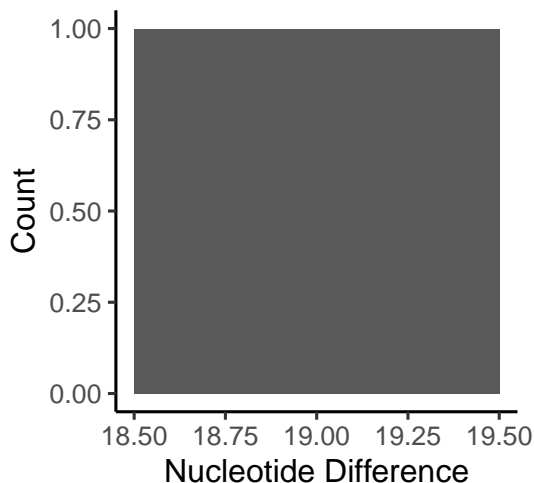
### IGHV1–69\*04

245 sequences assigned  
166 (67.8%) exact matches, in which:  
164 unique CDR3  
6 unique J



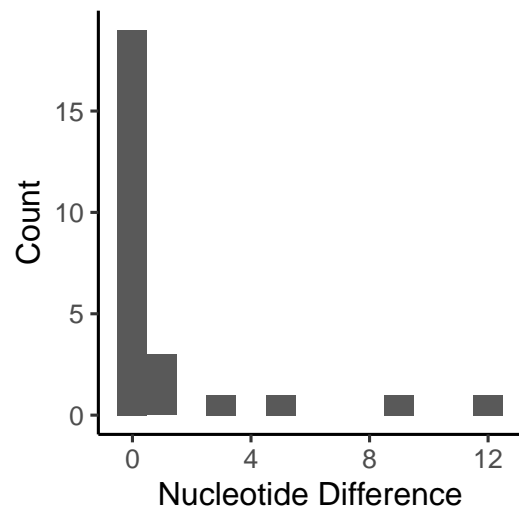
### IGHV1–NL1\*01

1 sequences assigned  
No exact matches.



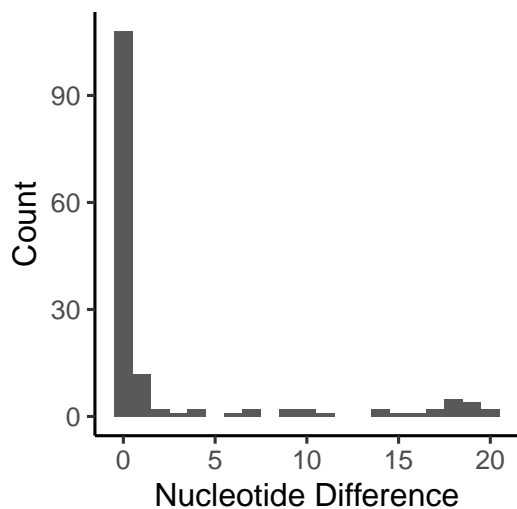
### IGHV2–26\*01

34 sequences assigned  
19 (55.9%) exact matches, in which:  
19 unique CDR3  
6 unique J



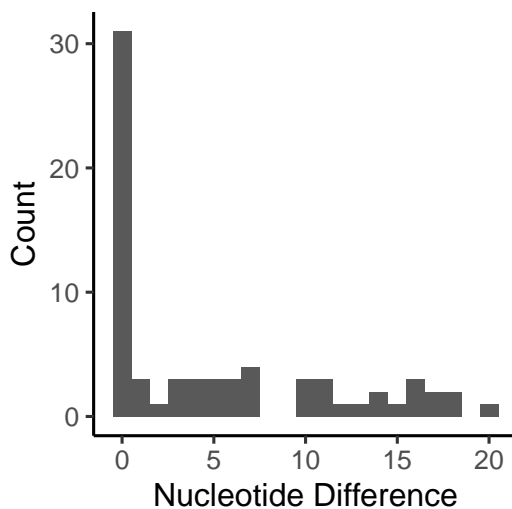
### IGHV1–69\*10

174 sequences assigned  
108 (62.1%) exact matches, in which:  
104 unique CDR3  
6 unique J



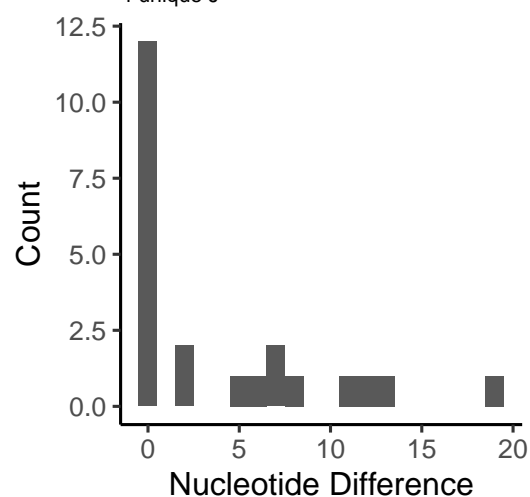
### IGHV2–5\*02

83 sequences assigned  
31 (37.3%) exact matches, in which:  
31 unique CDR3  
4 unique J



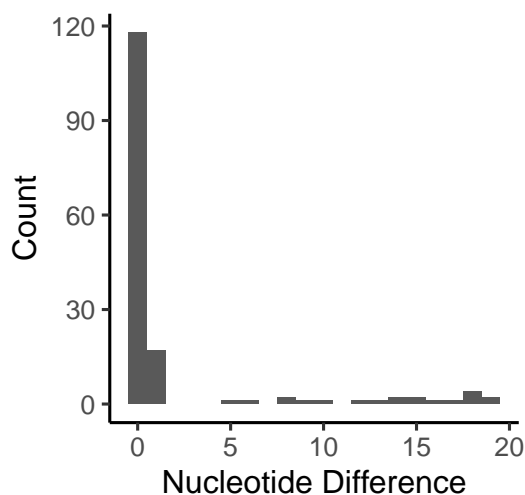
### IGHV2–70\*15

25 sequences assigned  
12 (48%) exact matches, in which:  
12 unique CDR3  
4 unique J



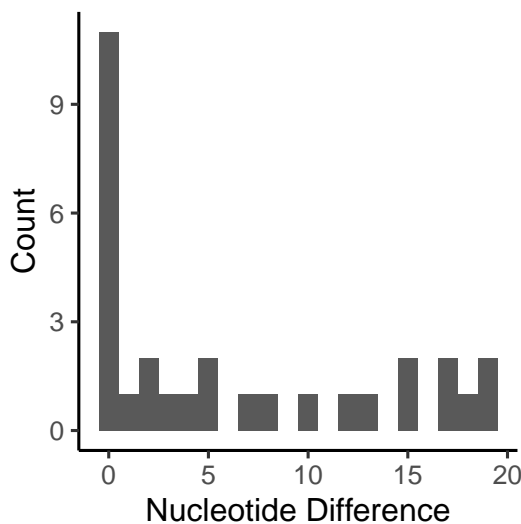
### IGHV1–69\*04\_G48A\_A16

178 sequences assigned  
118 (66.3%) exact matches, in which:  
118 unique CDR3  
6 unique J



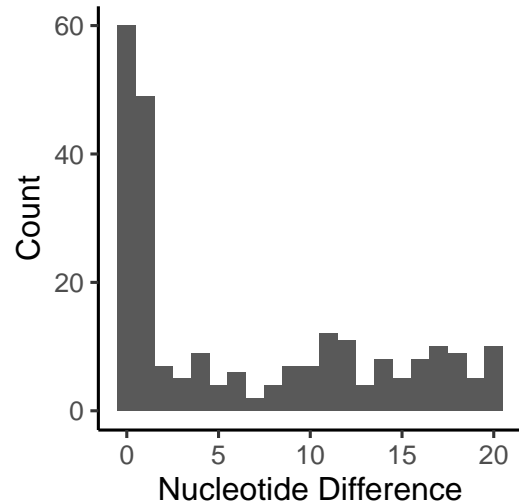
### IGHV2–5\*05

39 sequences assigned  
11 (28.2%) exact matches, in which:  
11 unique CDR3  
4 unique J



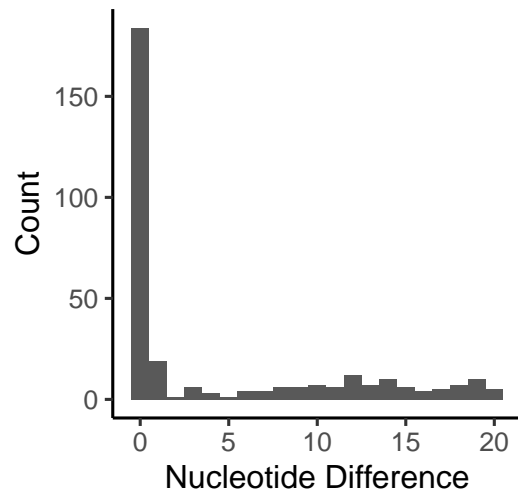
### IGHV3–7\*01

294 sequences assigned  
60 (20.4%) exact matches, in which:  
60 unique CDR3  
6 unique J



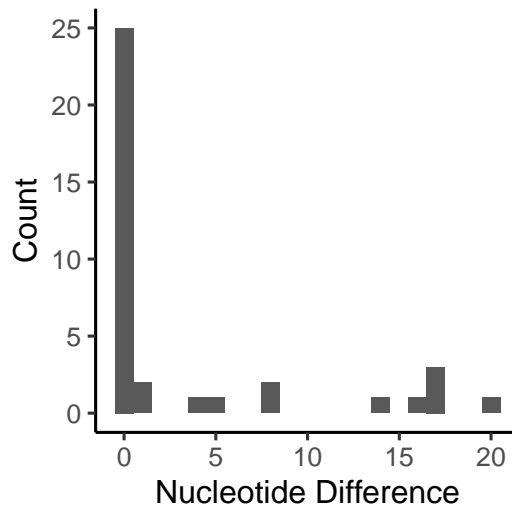
### IGHV3-9\*01

362 sequences assigned  
184 (50.8%) exact matches, in which:  
182 unique CDR3  
7 unique J



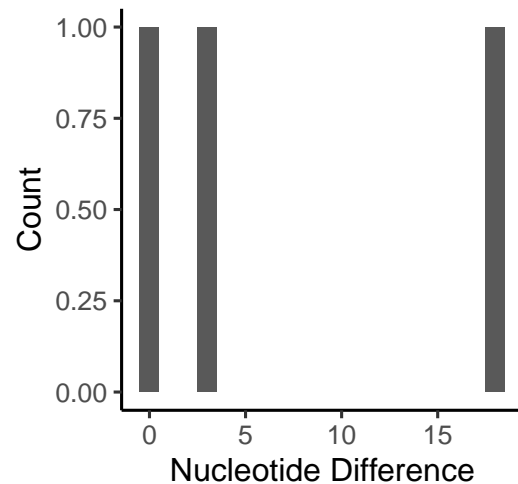
### IGHV3-13\*01

44 sequences assigned  
25 (56.8%) exact matches, in which:  
25 unique CDR3  
6 unique J



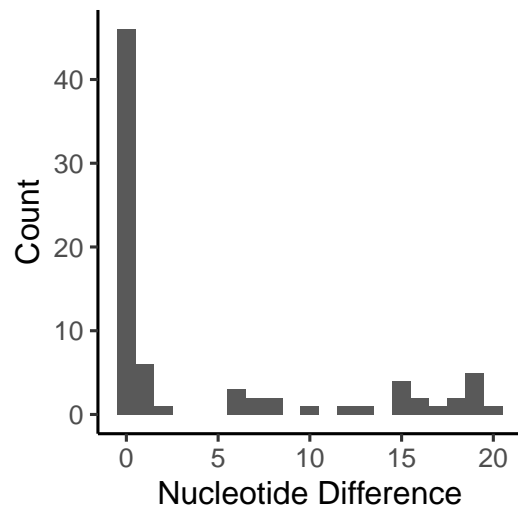
### IGHV3-20\*04

7 sequences assigned  
1 (14.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



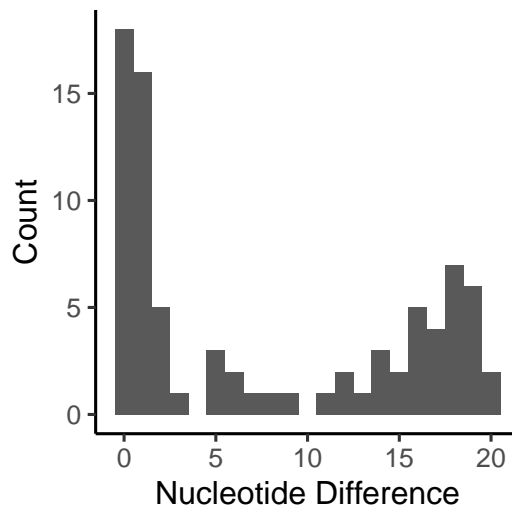
### IGHV3-11\*01

92 sequences assigned  
46 (50%) exact matches, in which:  
46 unique CDR3  
5 unique J



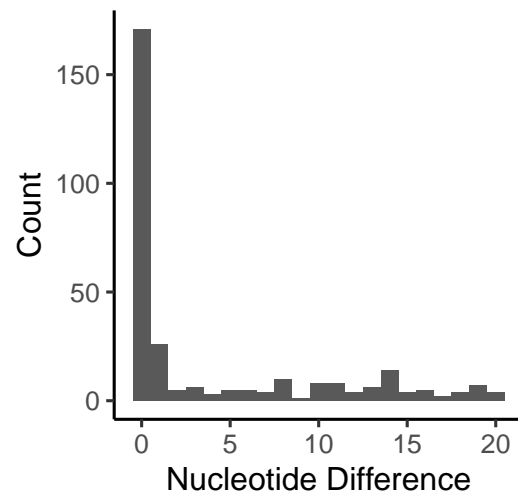
### IGHV3-15\*01

134 sequences assigned  
18 (13.4%) exact matches, in which:  
18 unique CDR3  
3 unique J



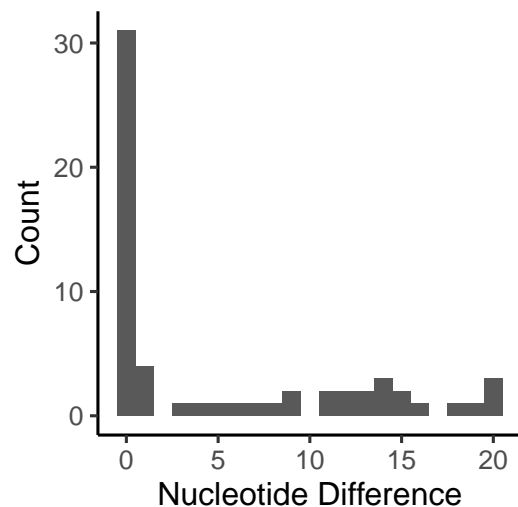
### IGHV3-21\*01

356 sequences assigned  
171 (48%) exact matches, in which:  
171 unique CDR3  
7 unique J



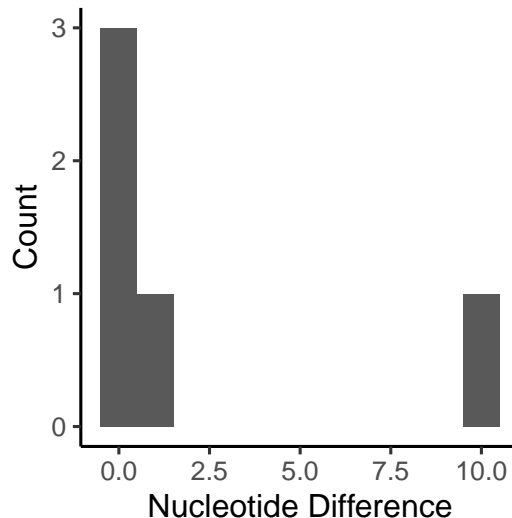
### IGHV3-11\*04

69 sequences assigned  
31 (44.9%) exact matches, in which:  
31 unique CDR3  
5 unique J



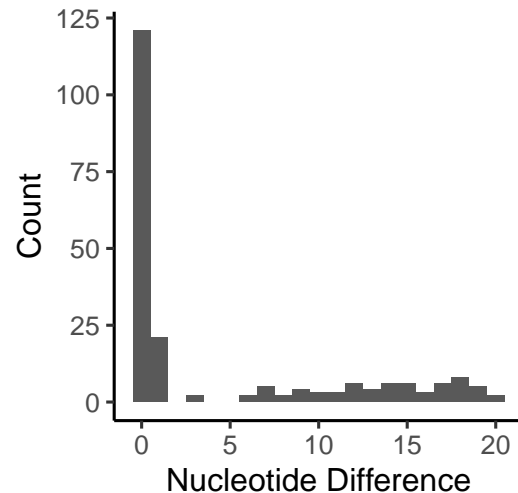
### IGHV3-20\*01

5 sequences assigned  
3 (60%) exact matches, in which:  
3 unique CDR3  
2 unique J



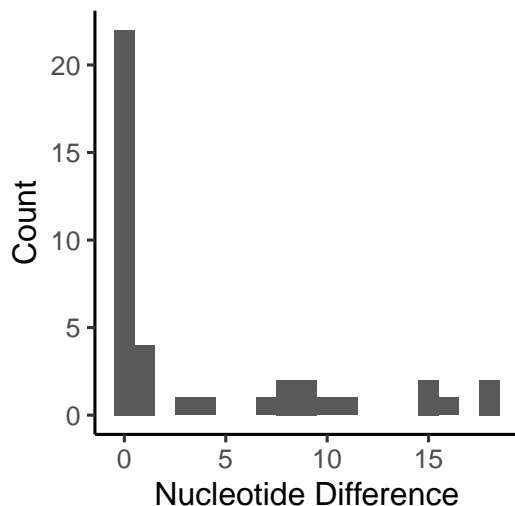
### IGHV3-33\*06

248 sequences assigned  
121 (48.8%) exact matches, in which:  
121 unique CDR3  
7 unique J



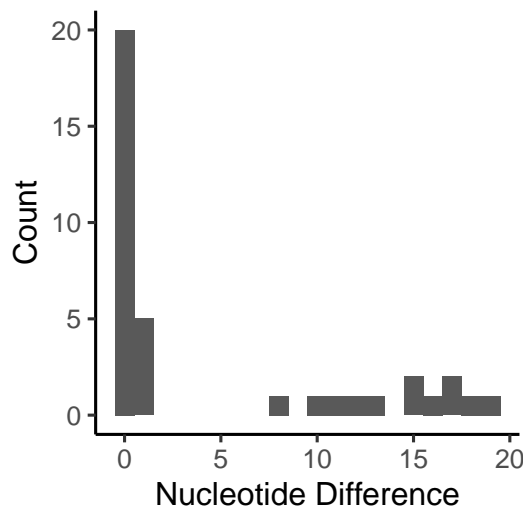
### IGHV3-43\*01

48 sequences assigned  
22 (45.8%) exact matches, in which:  
21 unique CDR3  
5 unique J



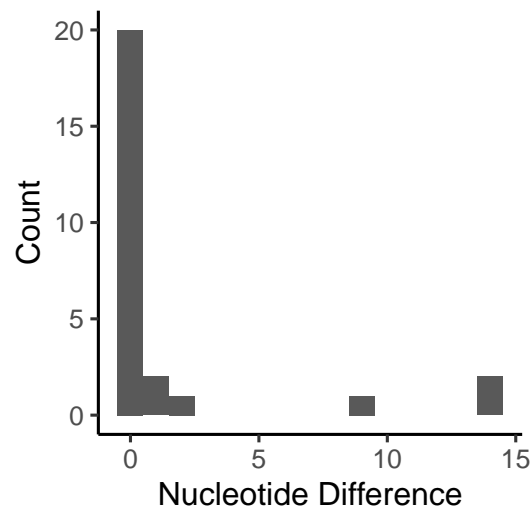
### IGHV3-49\*03

41 sequences assigned  
20 (48.8%) exact matches, in which:  
20 unique CDR3  
4 unique J



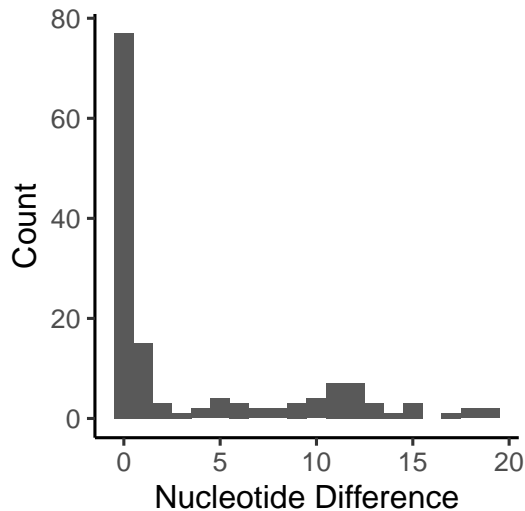
### IGHV3-53\*04

32 sequences assigned  
20 (62.5%) exact matches, in which:  
20 unique CDR3  
5 unique J



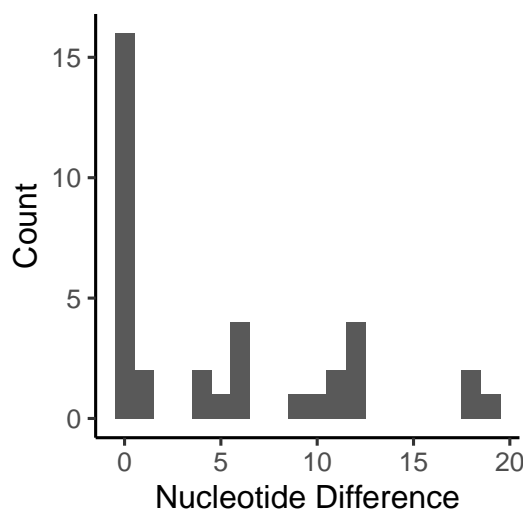
### IGHV3-48\*03

182 sequences assigned  
77 (42.3%) exact matches, in which:  
76 unique CDR3  
6 unique J



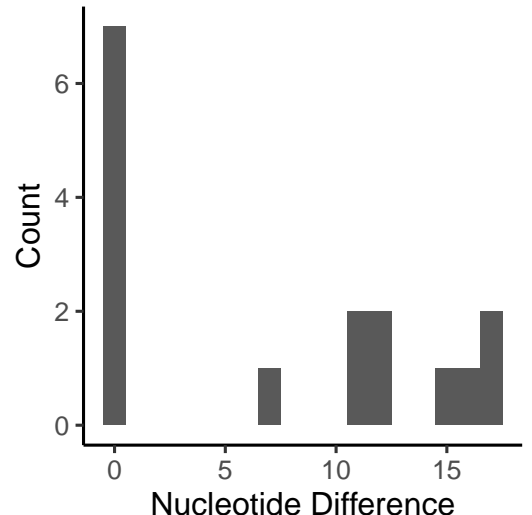
### IGHV3-49\*04

52 sequences assigned  
16 (30.8%) exact matches, in which:  
16 unique CDR3  
4 unique J



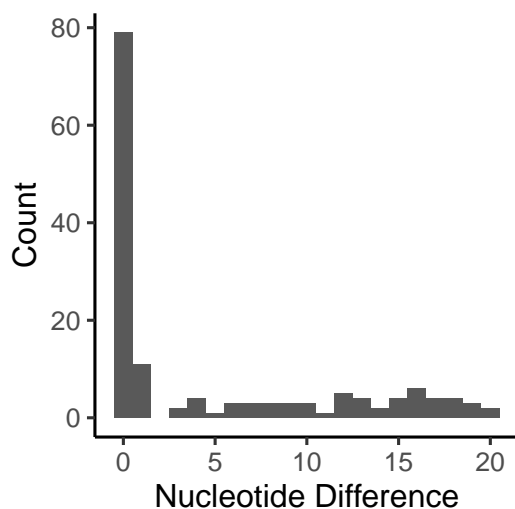
### IGHV3-64\*01

20 sequences assigned  
7 (35%) exact matches, in which:  
7 unique CDR3  
5 unique J



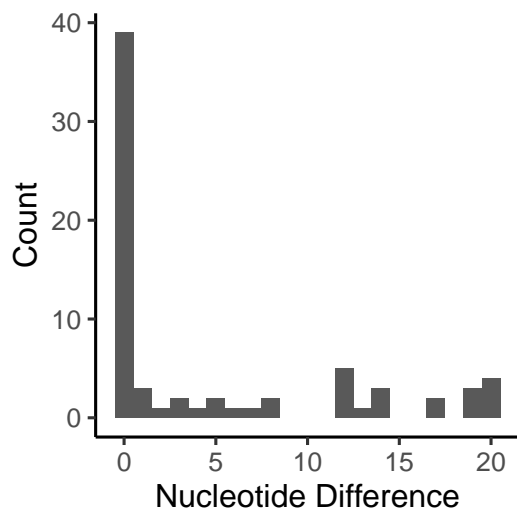
### IGHV3-48\*04

172 sequences assigned  
79 (45.9%) exact matches, in which:  
77 unique CDR3  
6 unique J



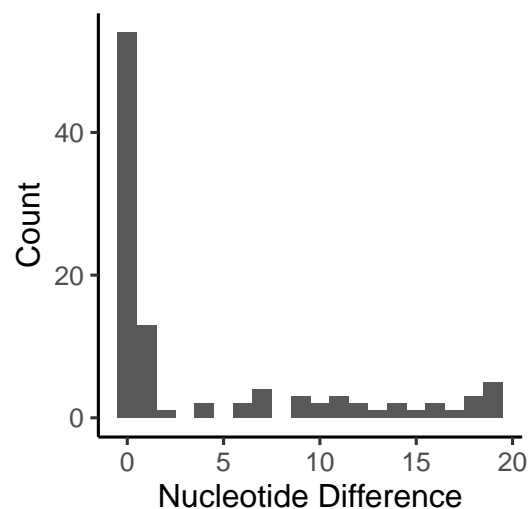
### IGHV3-53\*01

81 sequences assigned  
39 (48.1%) exact matches, in which:  
39 unique CDR3  
5 unique J



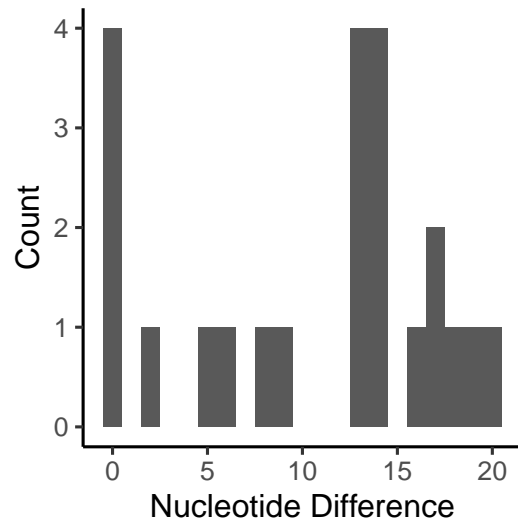
### IGHV3-66\*01

118 sequences assigned  
54 (45.8%) exact matches, in which:  
54 unique CDR3  
4 unique J



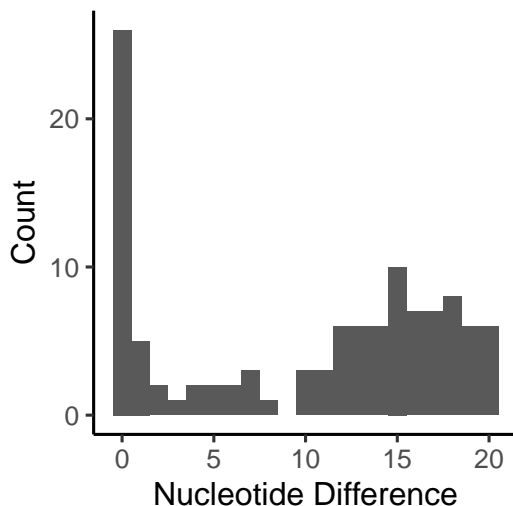
### IGHV3-72\*01

32 sequences assigned  
4 (12.5%) exact matches, in which:  
4 unique CDR3  
3 unique J



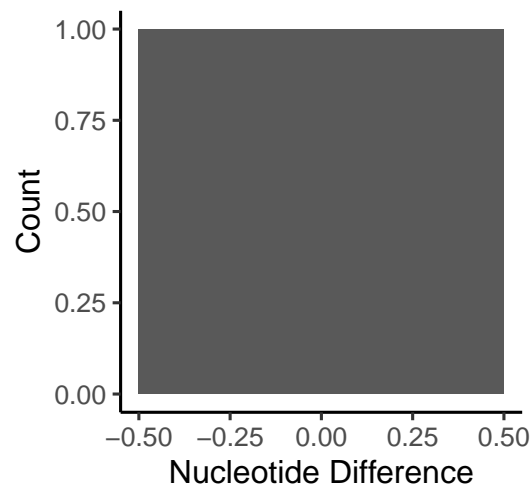
### IGHV3-74\*01

157 sequences assigned  
26 (16.6%) exact matches, in which:  
26 unique CDR3  
4 unique J



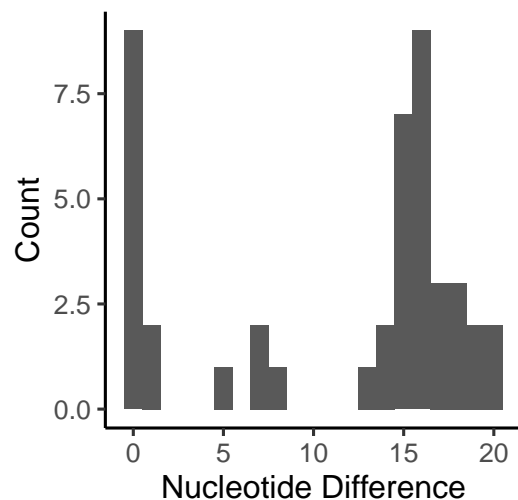
### IGHV4-28\*01

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



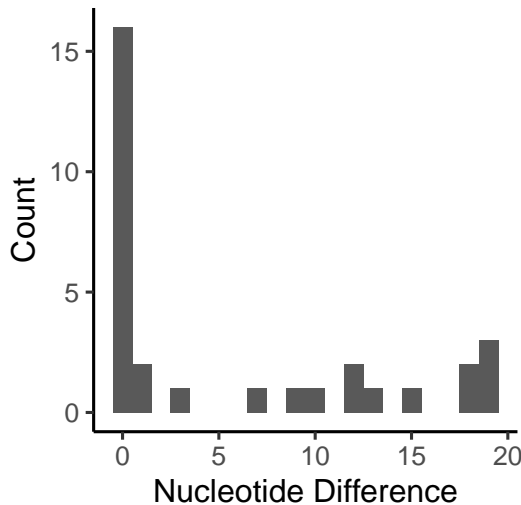
### IGHV3-73\*01

67 sequences assigned  
9 (13.4%) exact matches, in which:  
9 unique CDR3  
2 unique J



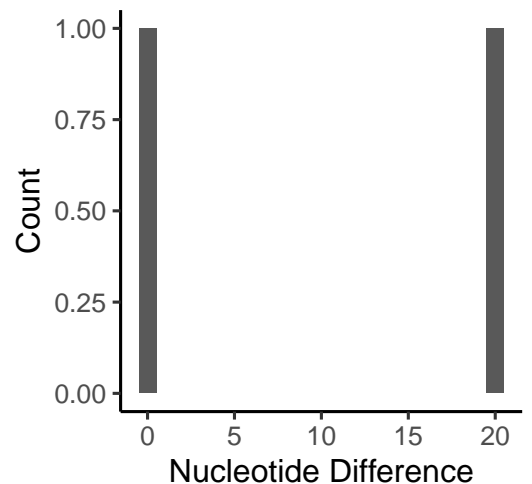
### IGHV3-43D\*03

32 sequences assigned  
16 (50%) exact matches, in which:  
16 unique CDR3  
4 unique J



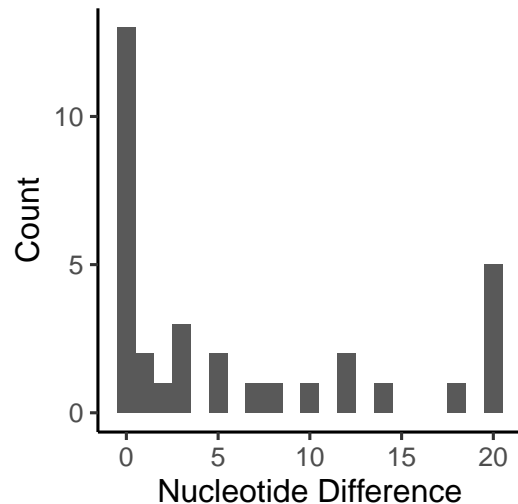
### IGHV4-28\*05

3 sequences assigned  
1 (33.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



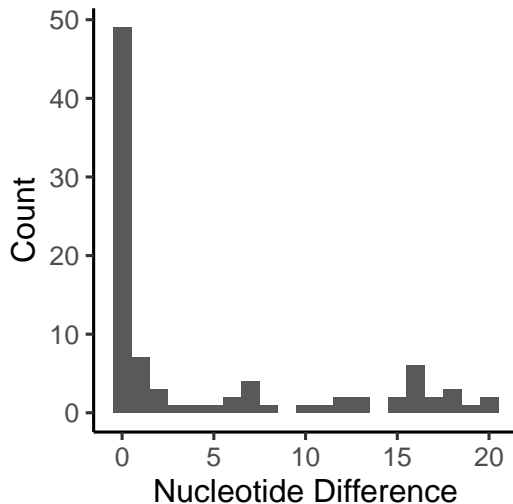
### IGHV3-73\*02

41 sequences assigned  
13 (31.7%) exact matches, in which:  
13 unique CDR3  
3 unique J



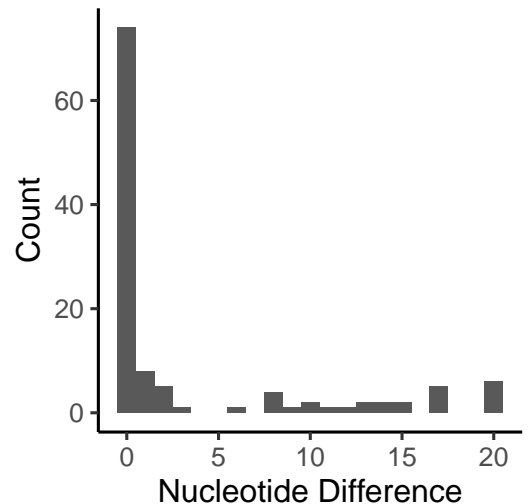
### IGHV4-4\*07

123 sequences assigned  
49 (39.8%) exact matches, in which:  
47 unique CDR3  
6 unique J



### IGHV4-31\*03

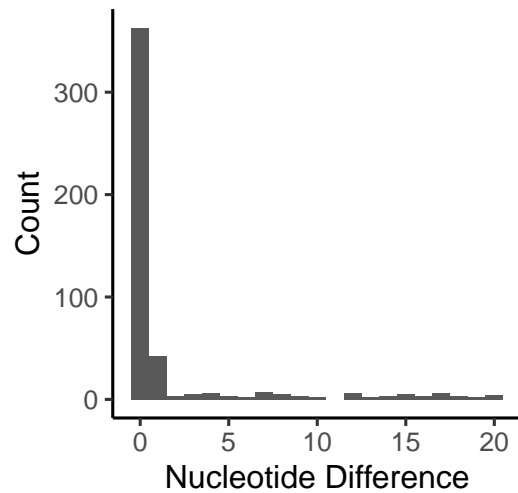
152 sequences assigned  
74 (48.7%) exact matches, in which:  
74 unique CDR3  
6 unique J





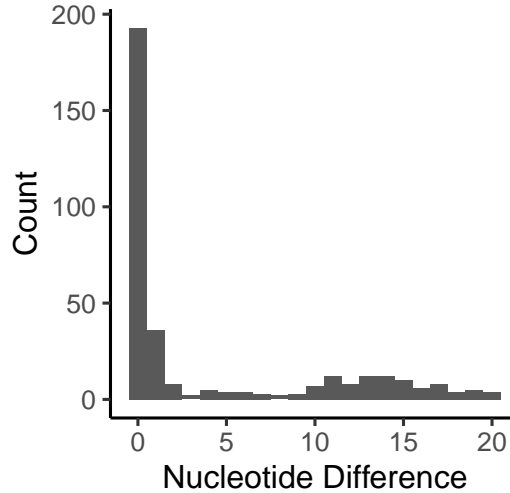
### IGHV4-34\*01

558 sequences assigned  
363 (65.1%) exact matches, in which:  
361 unique CDR3  
7 unique J



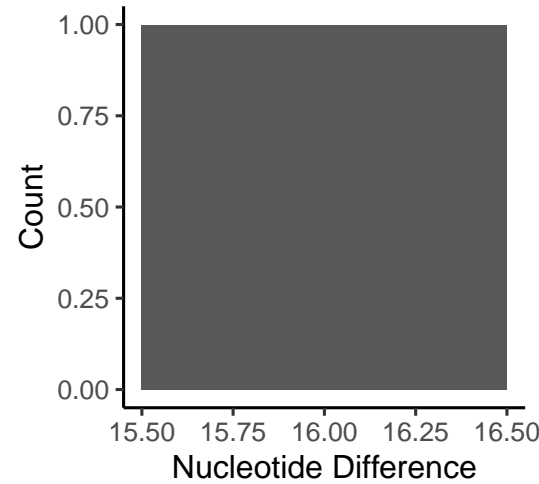
### IGHV4-39\*07

464 sequences assigned  
193 (41.6%) exact matches, in which:  
192 unique CDR3  
6 unique J



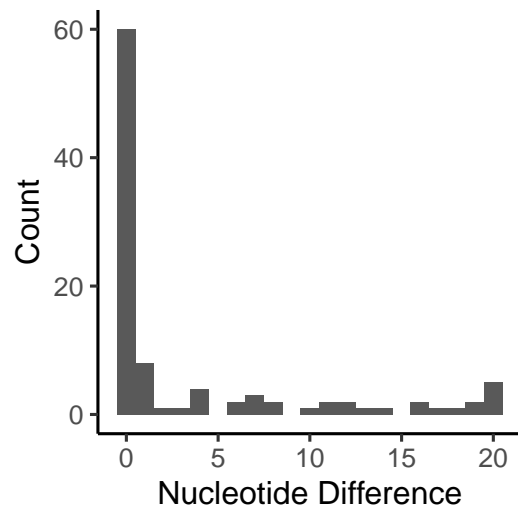
### IGHV4-61\*01

1 sequences assigned  
No exact matches.



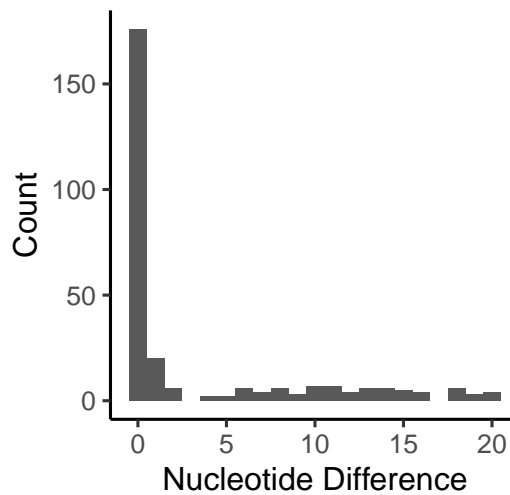
### IGHV4-38-2\*02

128 sequences assigned  
60 (46.9%) exact matches, in which:  
60 unique CDR3  
6 unique J



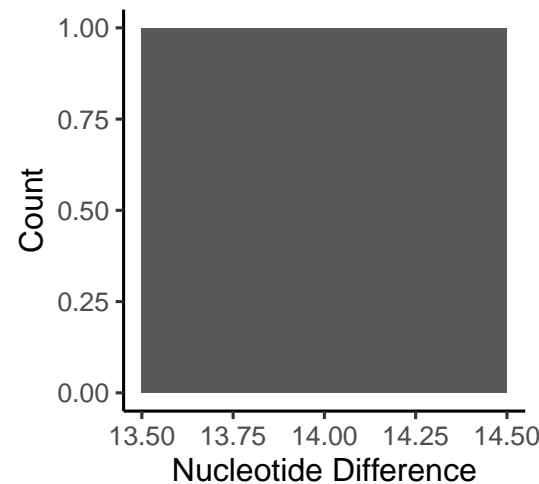
### IGHV4-59\*01

321 sequences assigned  
176 (54.8%) exact matches, in which:  
174 unique CDR3  
7 unique J



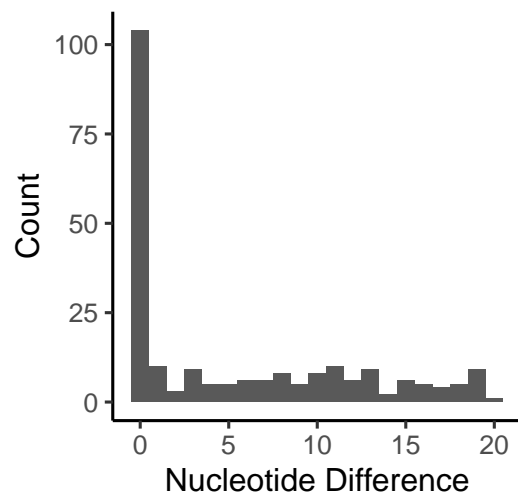
### IGHV4-61\*02

2 sequences assigned  
No exact matches.



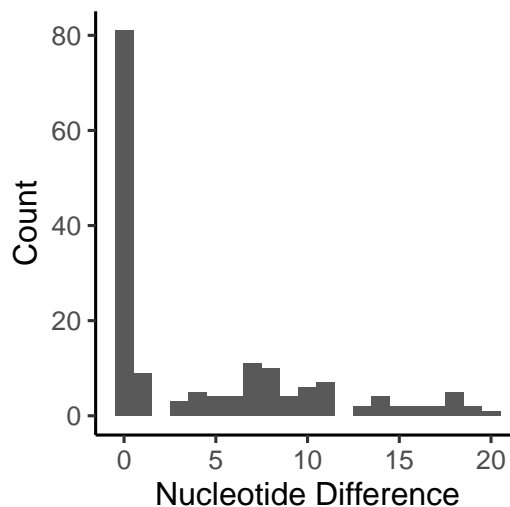
### IGHV4-39\*01

295 sequences assigned  
104 (35.3%) exact matches, in which:  
103 unique CDR3  
6 unique J



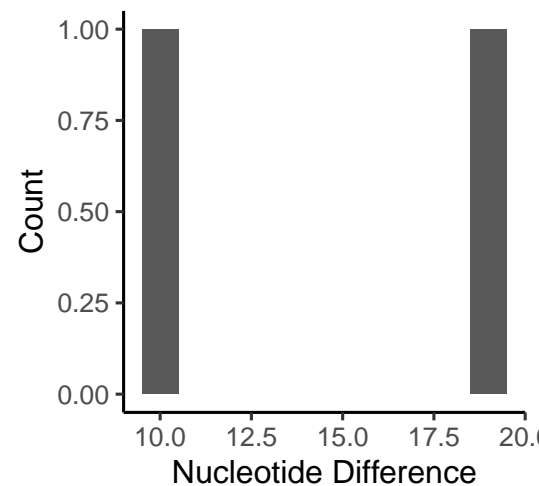
### IGHV4-59\*08

192 sequences assigned  
81 (42.2%) exact matches, in which:  
81 unique CDR3  
6 unique J



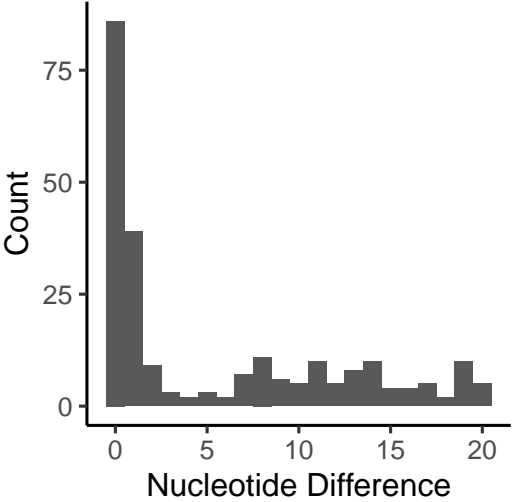
### IGHV4-61\*05

2 sequences assigned  
No exact matches.



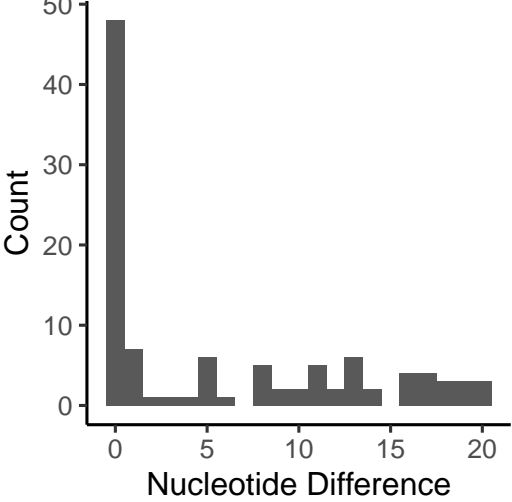
# IGHV5-51\*01

284 sequences assigned  
86 (30.3%) exact matches, in which:  
85 unique CDR3  
6 unique J



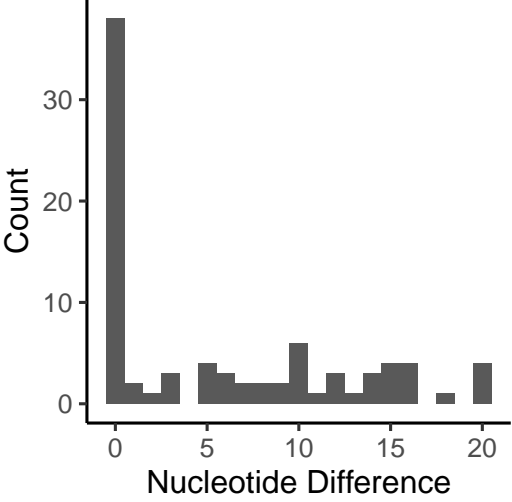
# IGHV5-51\*03

130 sequences assigned  
48 (36.9%) exact matches, in which:  
48 unique CDR3  
5 unique J

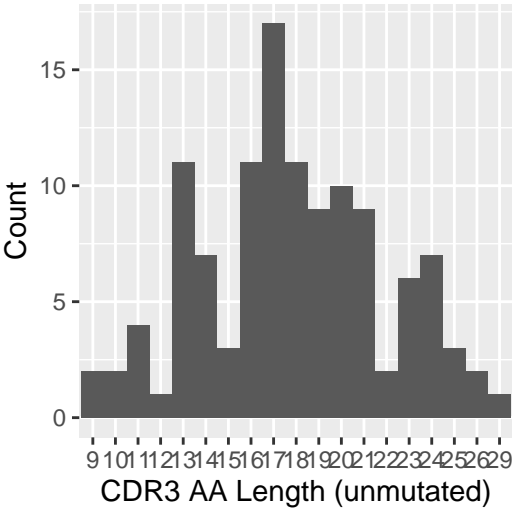


# IGHV6-1\*01

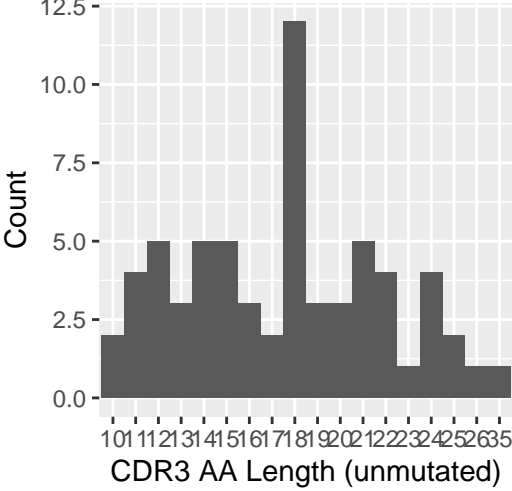
97 sequences assigned  
38 (39.2%) exact matches, in which:  
38 unique CDR3  
6 unique J



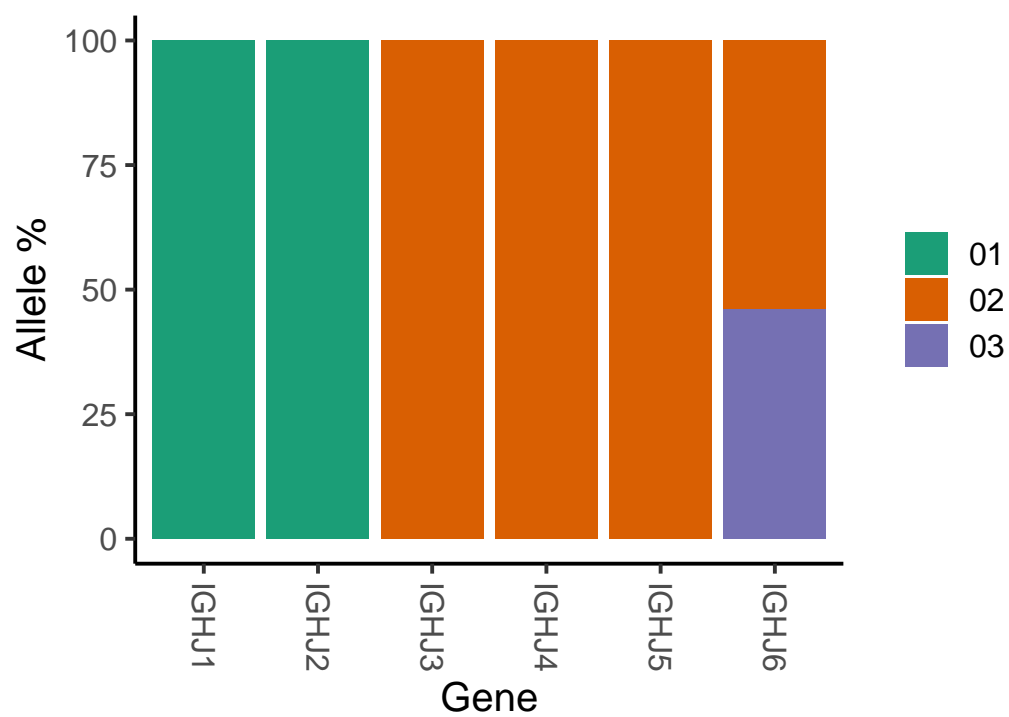
IGHV1-69\*04\_G48A\_A163G\_A244G



IGHV1-18\*01\_A190G



Allele Usage



Sequence Count by IGHJ6 allele usage

