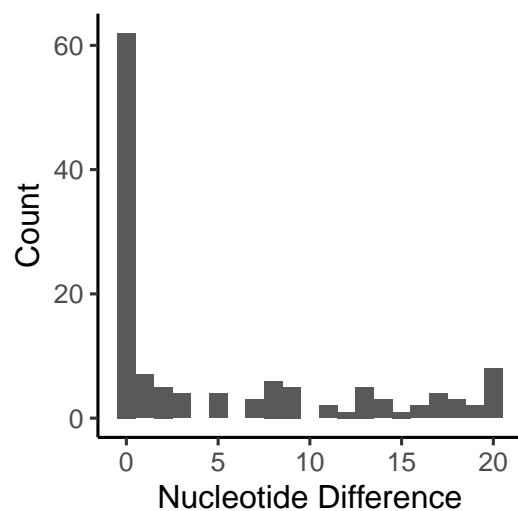


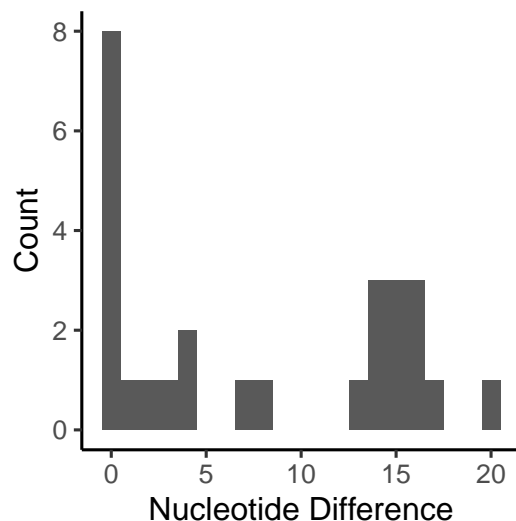
### IGHV1-2\*04

141 sequences assigned  
62 (44%) exact matches, in which:  
62 unique CDR3  
7 unique J



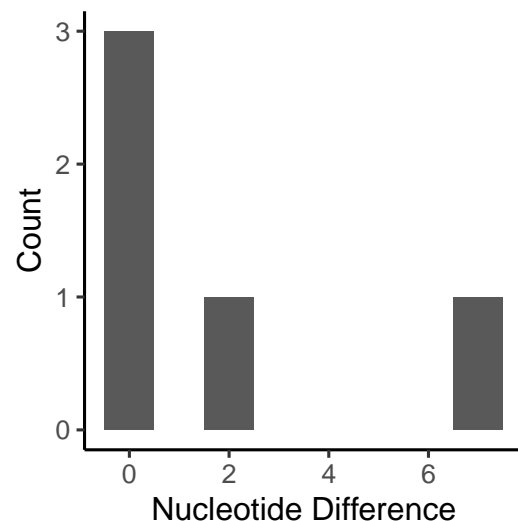
### IGHV1-24\*01

30 sequences assigned  
8 (26.7%) exact matches, in which:  
8 unique CDR3  
2 unique J



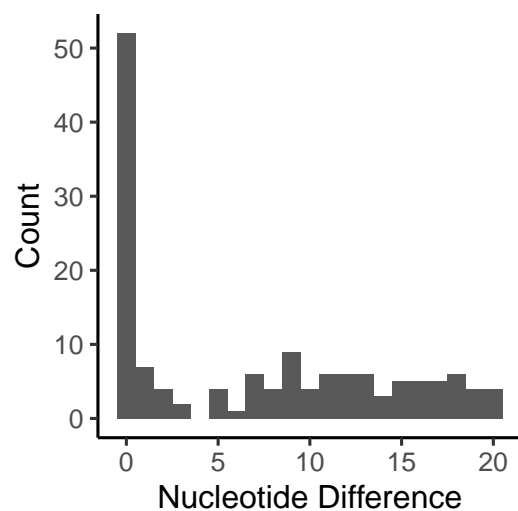
### IGHV1-58\*02

6 sequences assigned  
3 (50%) exact matches, in which:  
3 unique CDR3  
3 unique J



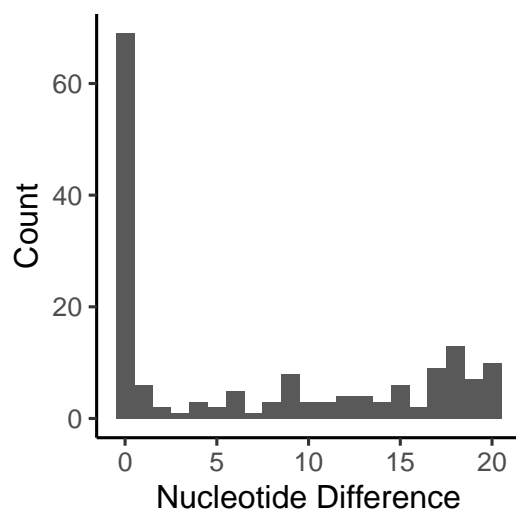
### IGHV1-3\*01

180 sequences assigned  
52 (28.9%) exact matches, in which:  
52 unique CDR3  
6 unique J



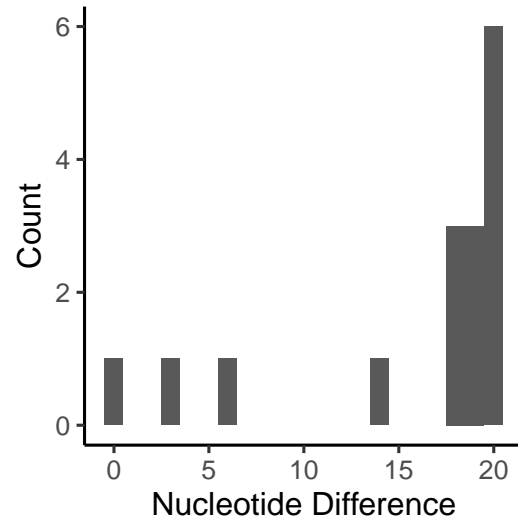
### IGHV1-46\*01

208 sequences assigned  
69 (33.2%) exact matches, in which:  
69 unique CDR3  
6 unique J



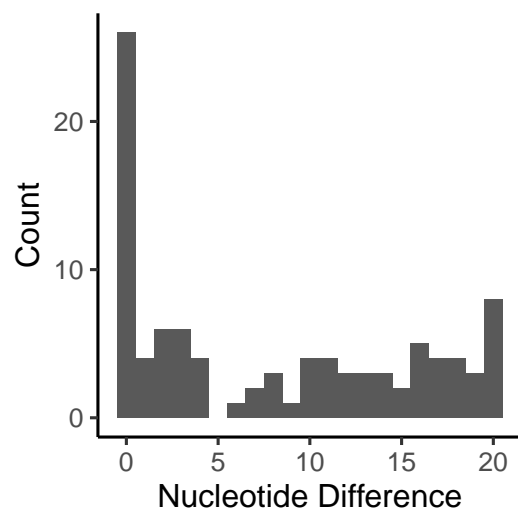
### IGHV1-69-2\*01

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



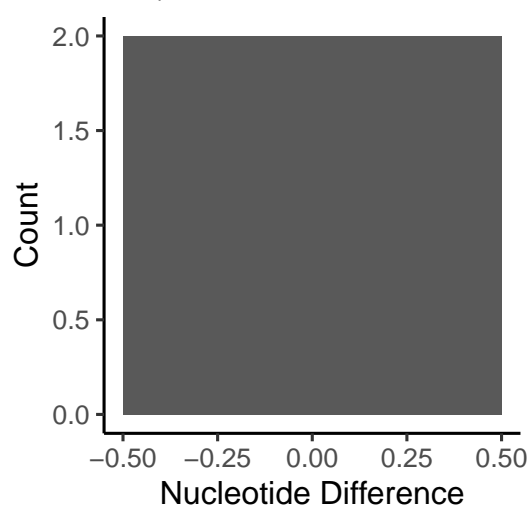
### IGHV1-18\*04

152 sequences assigned  
26 (17.1%) exact matches, in which:  
26 unique CDR3  
4 unique J



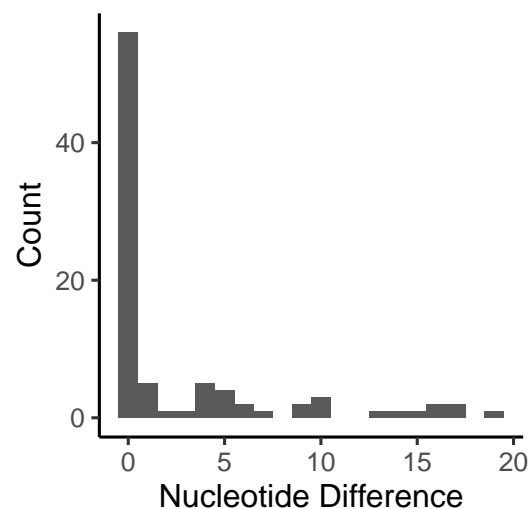
### IGHV1-58\*01

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



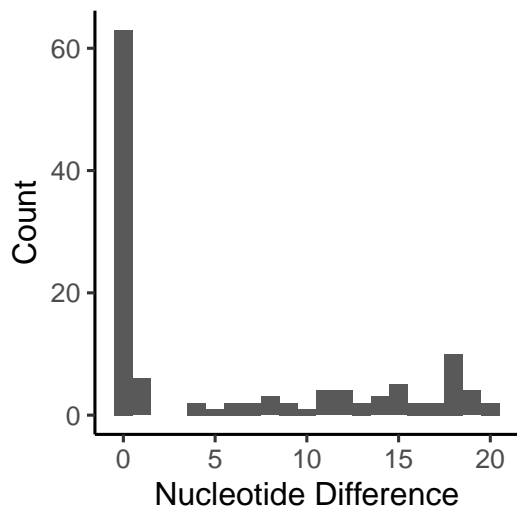
### IGHV1-69\*02

103 sequences assigned  
56 (54.4%) exact matches, in which:  
56 unique CDR3  
6 unique J



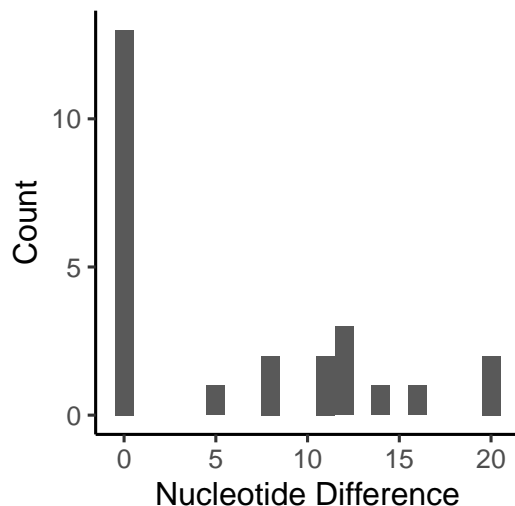
### IGHV1-69\*06

159 sequences assigned  
63 (39.6%) exact matches, in which:  
63 unique CDR3  
5 unique J



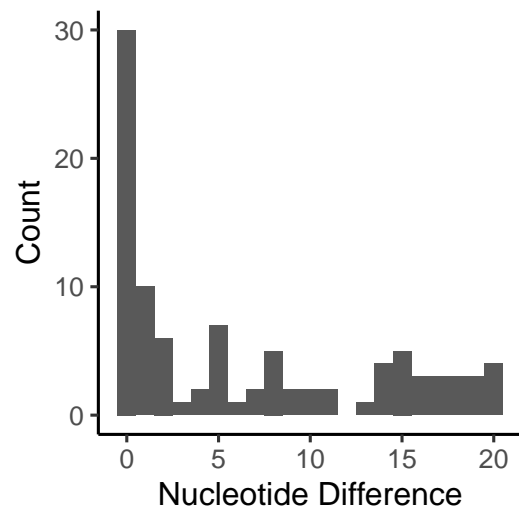
### IGHV2-26\*01

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



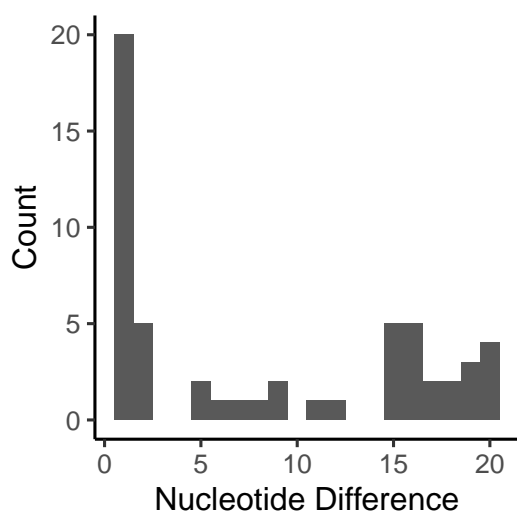
### IGHV3-11\*06

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



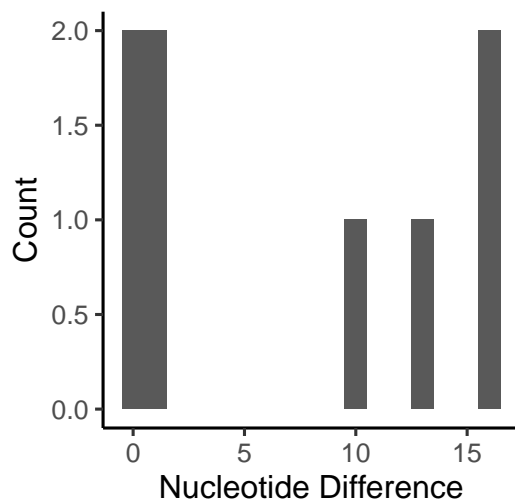
### IGHV1-69\*08

76 sequences assigned  
No exact matches.



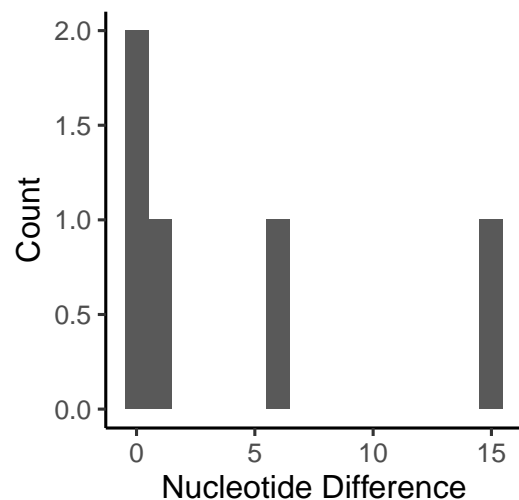
### IGHV2-70\*01

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



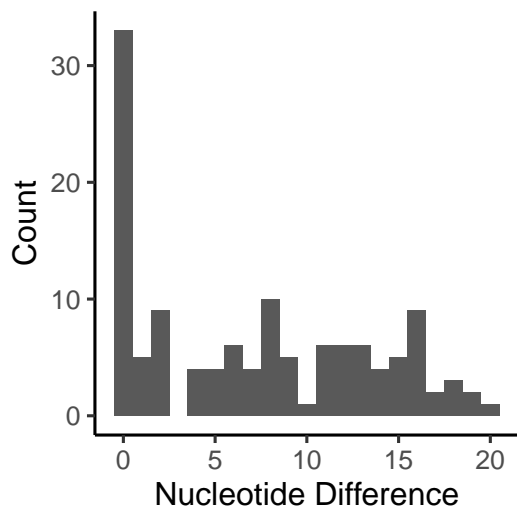
### IGHV3-13\*05

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



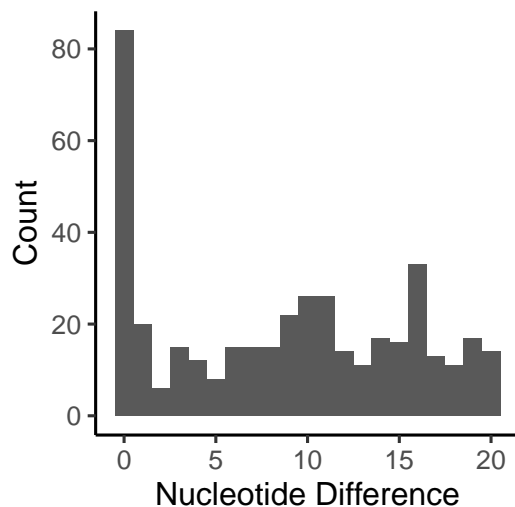
### IGHV2-5\*02

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



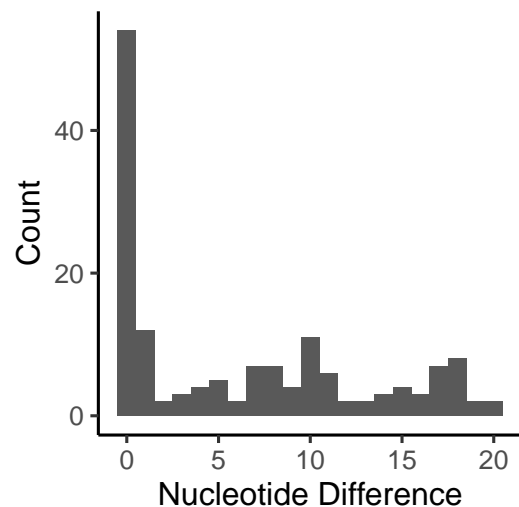
### IGHV3-7\*03

453 sequences assigned  
84 (18.5%) exact matches, in which:  
84 unique CDR3  
7 unique J



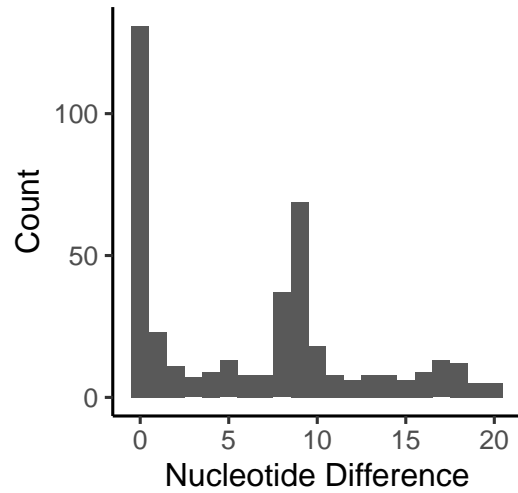
### IGHV3-15\*01

167 sequences assigned  
54 (32.3%) exact matches, in which:  
54 unique CDR3  
6 unique J



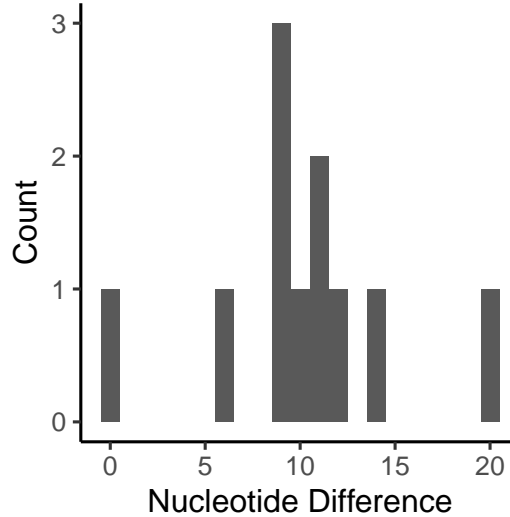
### IGHV3-21\*01

502 sequences assigned  
131 (26.1%) exact matches, in which:  
131 unique CDR3  
6 unique J



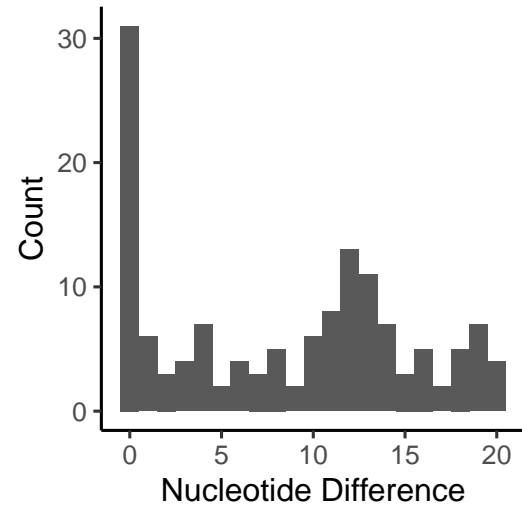
### IGHV3-43\*01

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



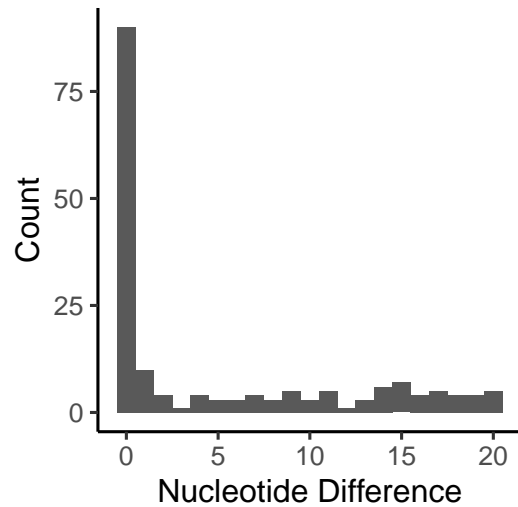
### IGHV3-49\*04

158 sequences assigned  
31 (19.6%) exact matches, in which:  
31 unique CDR3  
4 unique J



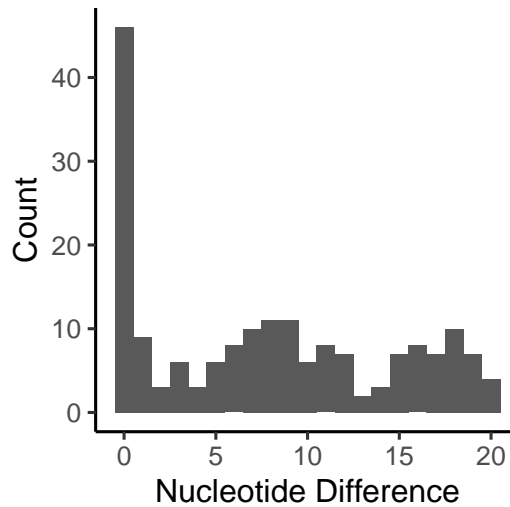
### IGHV3-30-3\*01

205 sequences assigned  
90 (43.9%) exact matches, in which:  
89 unique CDR3  
5 unique J



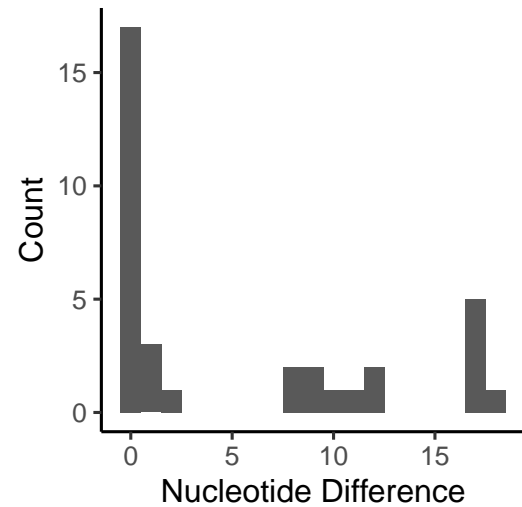
### IGHV3-48\*02

211 sequences assigned  
46 (21.8%) exact matches, in which:  
46 unique CDR3  
5 unique J



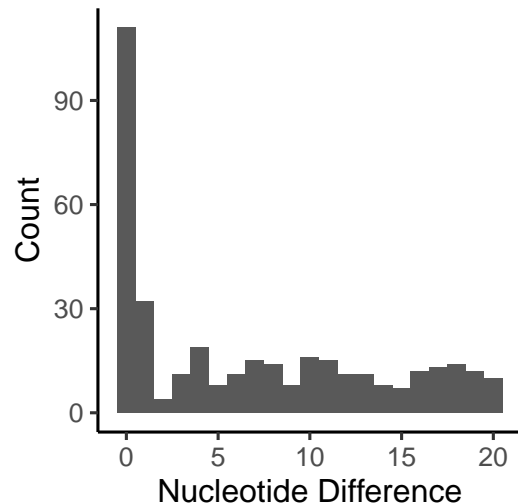
### IGHV3-49\*05

43 sequences assigned  
17 (39.5%) exact matches, in which:  
17 unique CDR3  
2 unique J



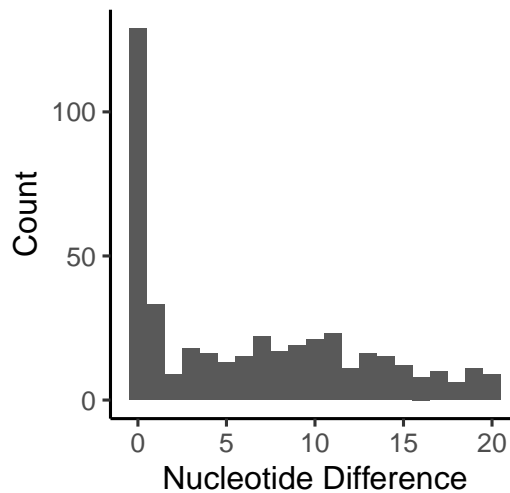
### IGHV3-33\*01

425 sequences assigned  
111 (26.1%) exact matches, in which:  
110 unique CDR3  
5 unique J



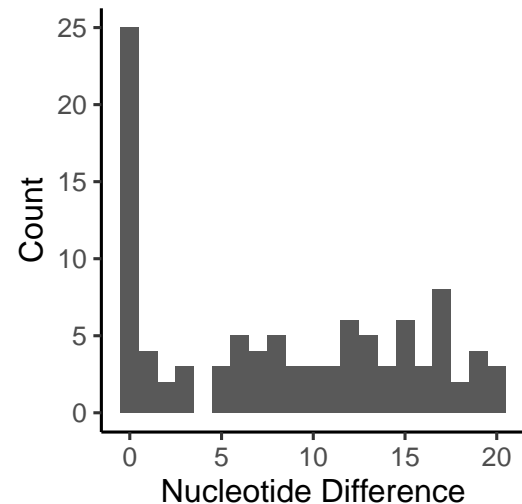
### IGHV3-48\*03

485 sequences assigned  
129 (26.6%) exact matches, in which:  
129 unique CDR3  
5 unique J



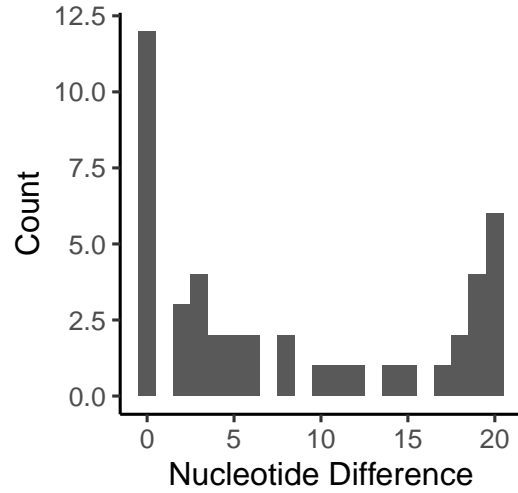
### IGHV3-53\*01

133 sequences assigned  
25 (18.8%) exact matches, in which:  
25 unique CDR3  
4 unique J



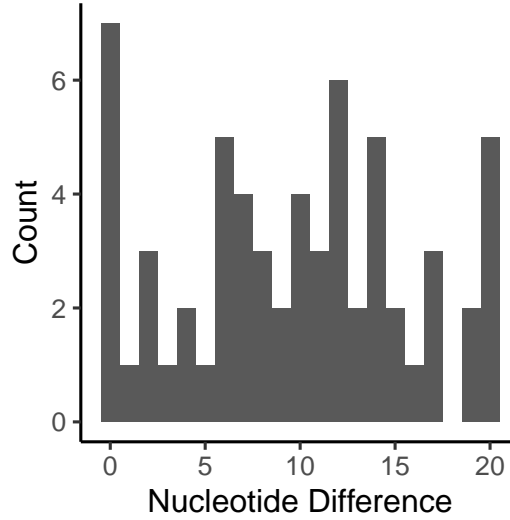
### IGHV3-53\*02

53 sequences assigned  
12 (22.6%) exact matches, in which:  
12 unique CDR3  
3 unique J



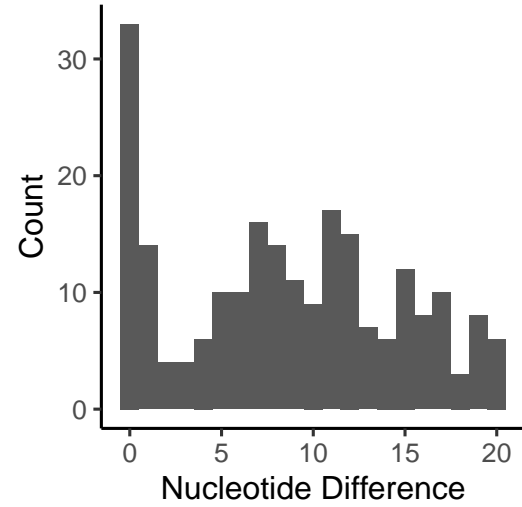
### IGHV3-72\*01

81 sequences assigned  
7 (8.6%) exact matches, in which:  
7 unique CDR3  
5 unique J



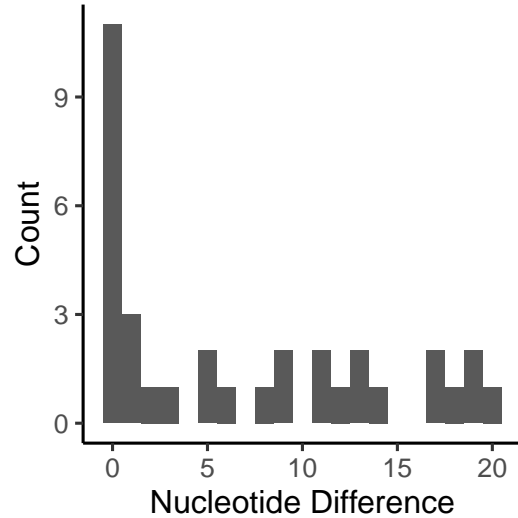
### IGHV3-74\*01

278 sequences assigned  
33 (11.9%) exact matches, in which:  
33 unique CDR3  
5 unique J



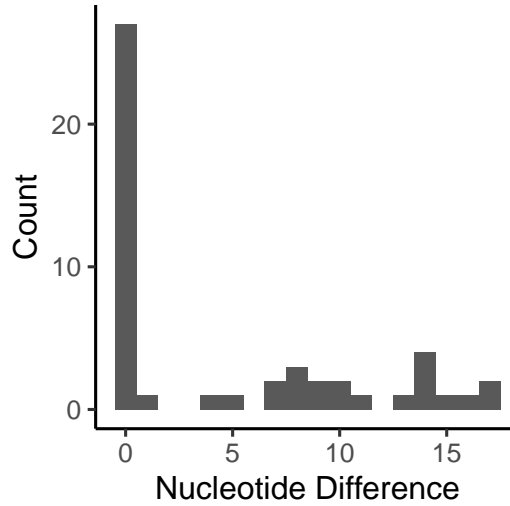
### IGHV3-64\*01

47 sequences assigned  
11 (23.4%) exact matches, in which:  
11 unique CDR3  
5 unique J



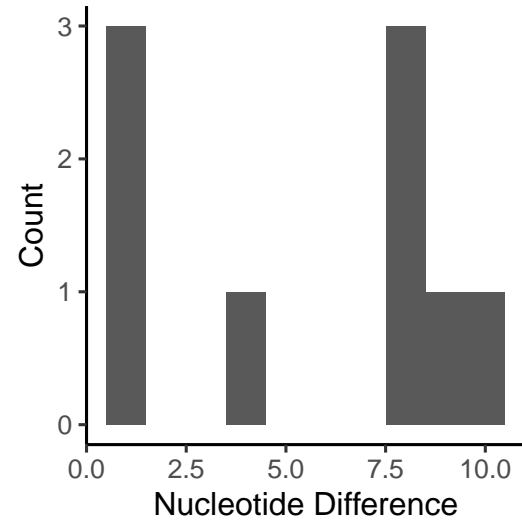
### IGHV3-73\*01

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



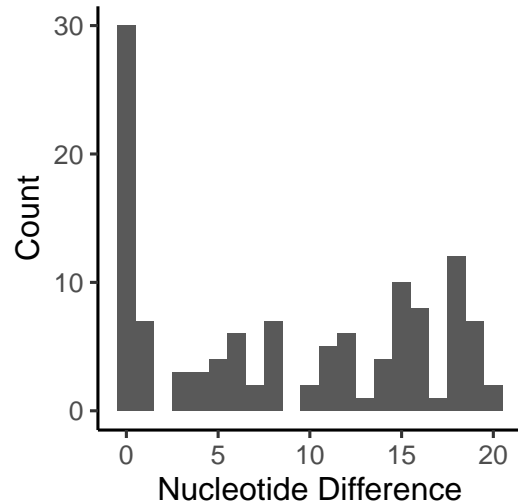
### IGHV3-43D\*04

15 sequences assigned  
No exact matches.



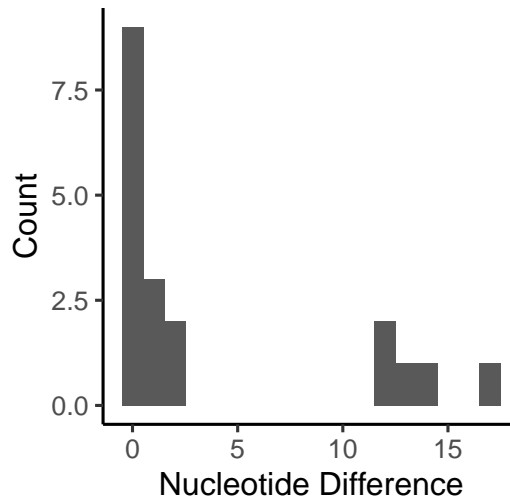
### IGHV3-66\*02

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



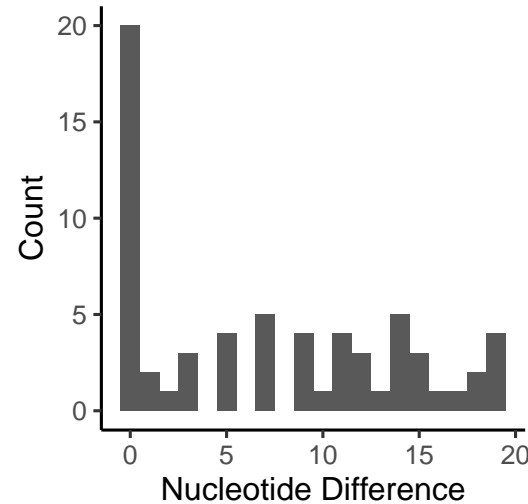
### IGHV3-73\*02

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



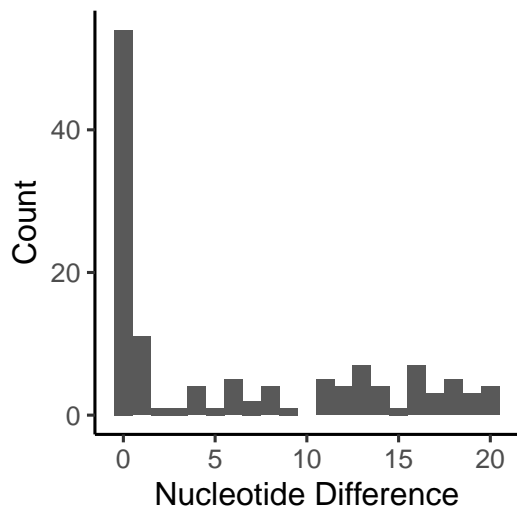
### IGHV3-64D\*09

85 sequences assigned  
20 (23.5%) exact matches, in which:  
20 unique CDR3  
4 unique J



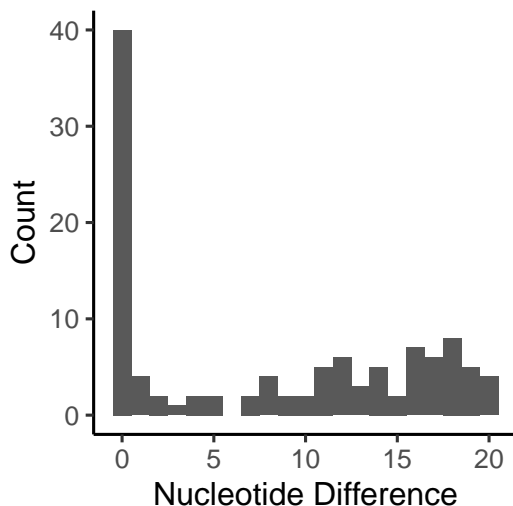
### IGHV4-4\*02

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



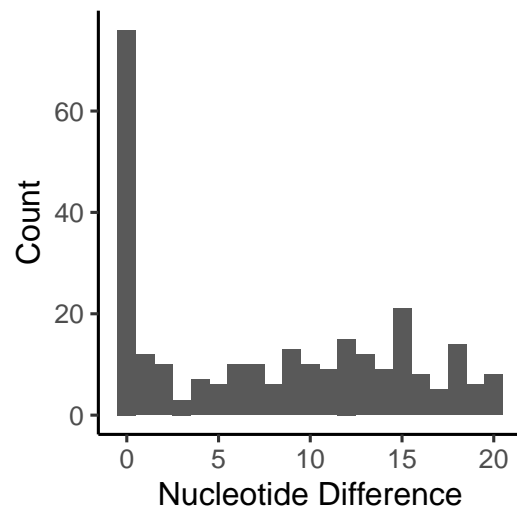
### IGHV4-31\*03

142 sequences assigned  
40 (28.2%) exact matches, in which:  
40 unique CDR3  
6 unique J



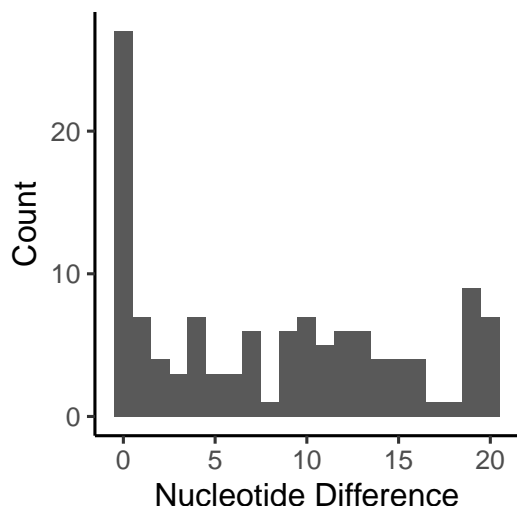
### IGHV4-39\*07

427 sequences assigned  
76 (17.8%) exact matches, in which:  
76 unique CDR3  
5 unique J



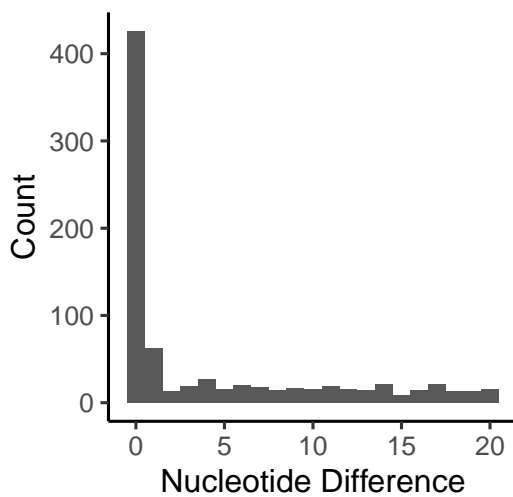
### IGHV4-30-4\*01

152 sequences assigned  
27 (17.8%) exact matches, in which:  
26 unique CDR3  
6 unique J



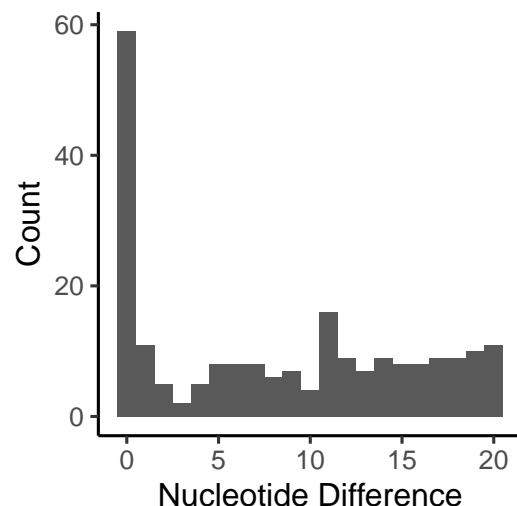
### IGHV4-34\*01

888 sequences assigned  
426 (48%) exact matches, in which:  
424 unique CDR3  
7 unique J



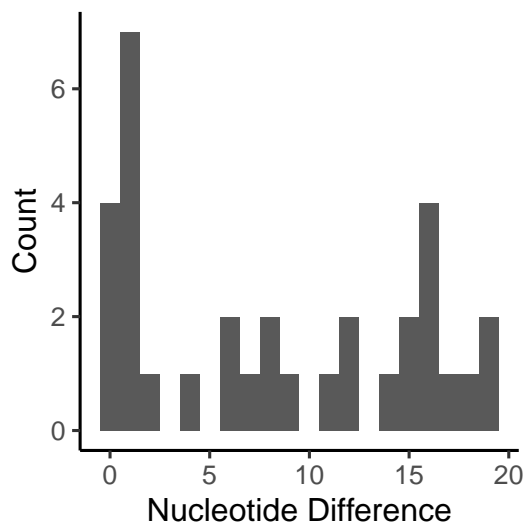
### IGHV4-59\*01

304 sequences assigned  
59 (19.4%) exact matches, in which:  
58 unique CDR3  
7 unique J



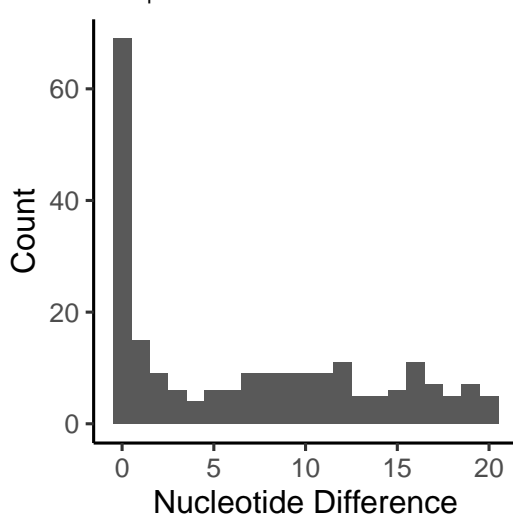
### IGHV4-30-2\*01

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



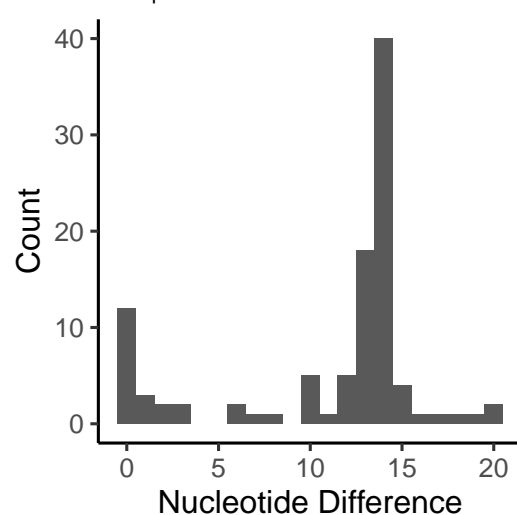
### IGHV4-38-2\*02\_A70G

269 sequences assigned  
69 (25.7%) exact matches, in which:  
69 unique CDR3  
6 unique J



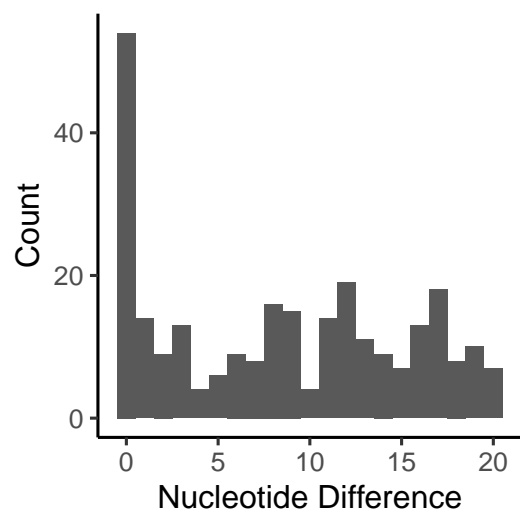
### IGHV4-61\*01

119 sequences assigned  
12 (10.1%) exact matches, in which:  
12 unique CDR3  
5 unique J



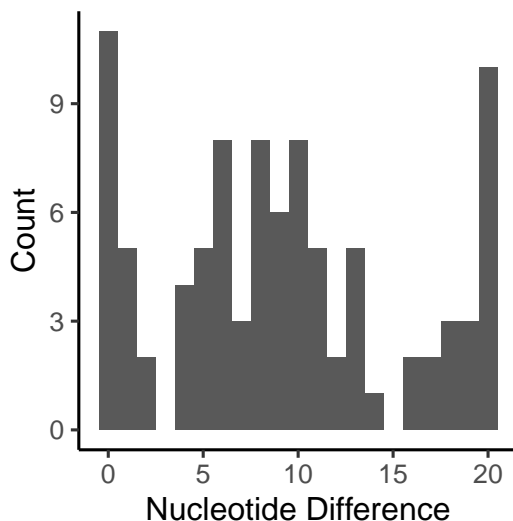
## IGHV4-61\*02

320 sequences assigned  
54 (16.9%) exact matches, in which:  
54 unique CDR3  
6 unique J



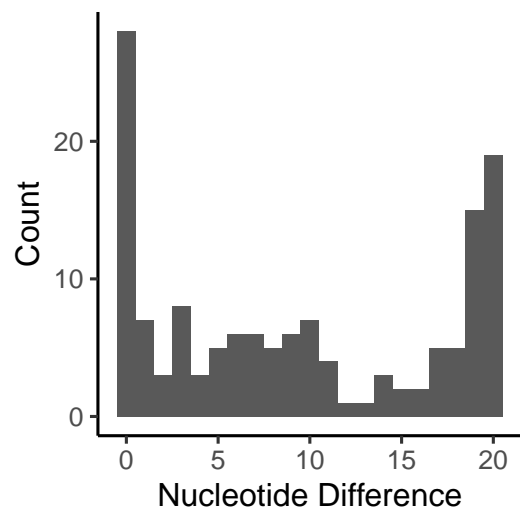
## IGHV6-1\*01

134 sequences assigned  
11 (8.2%) exact matches, in which:  
11 unique CDR3  
2 unique J



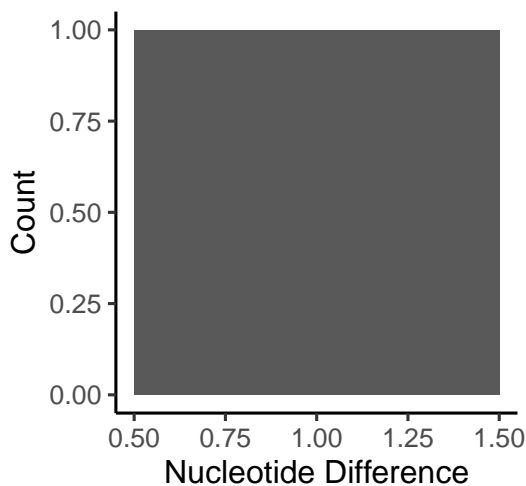
## IGHV5-10-1\*03

155 sequences assigned  
28 (18.1%) exact matches, in which:  
28 unique CDR3  
6 unique J



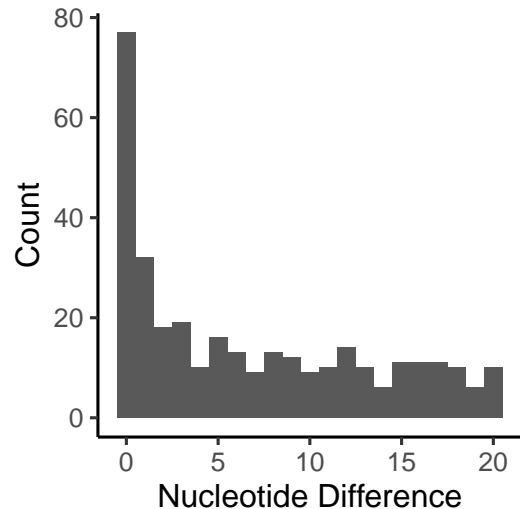
## IGHV7-4-1\*01

1 sequences assigned  
No exact matches.

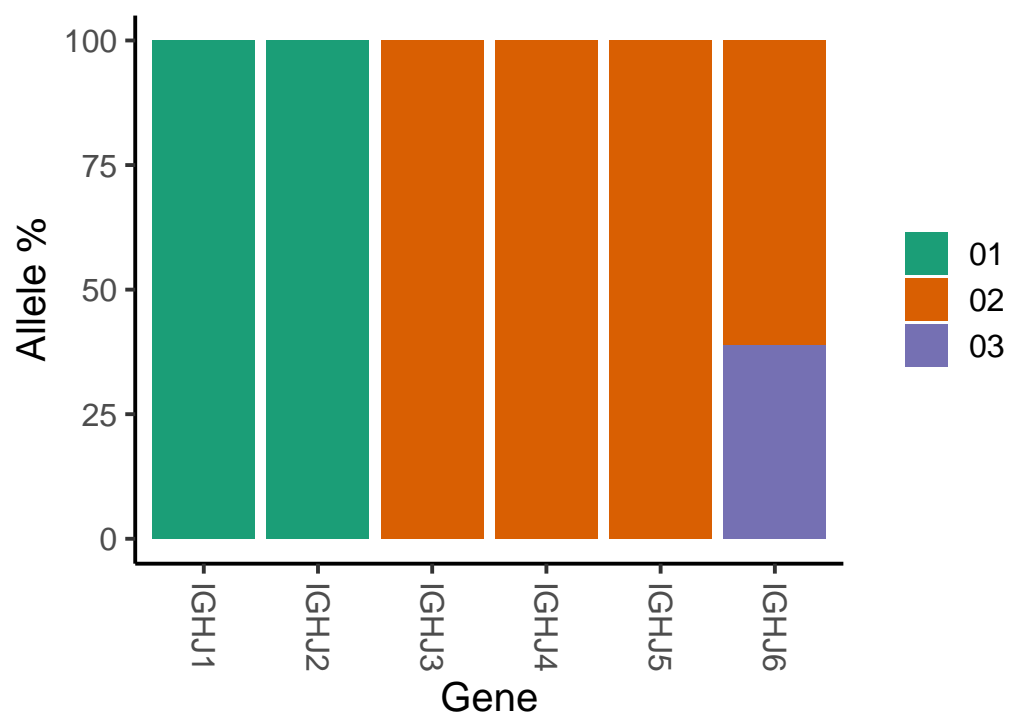


## IGHV5-51\*01

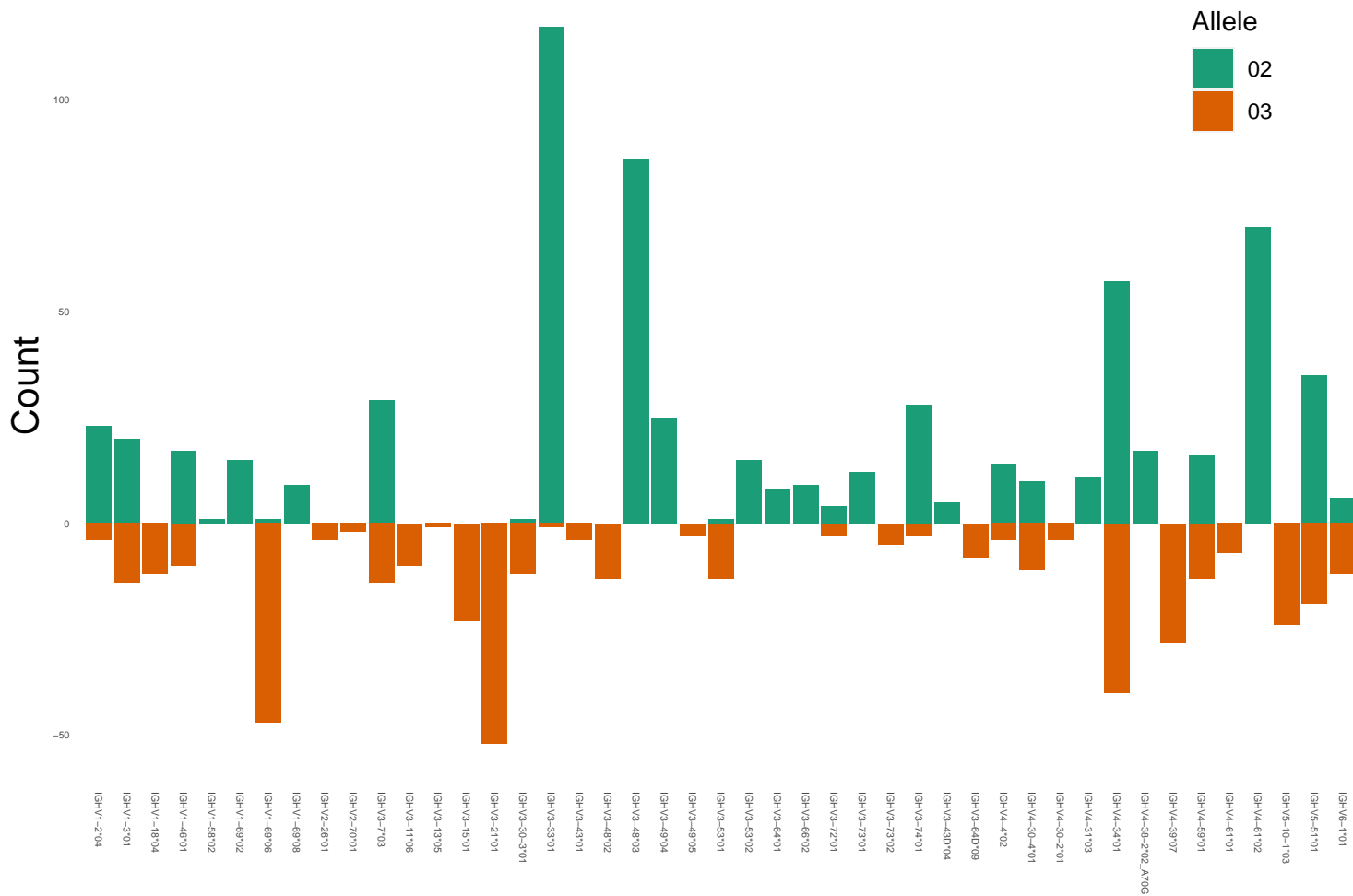
397 sequences assigned  
77 (19.4%) exact matches, in which:  
76 unique CDR3  
6 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage





Warning – no inferred sequences found.