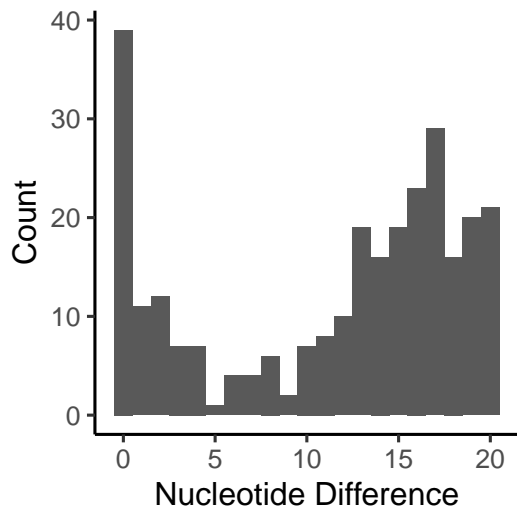


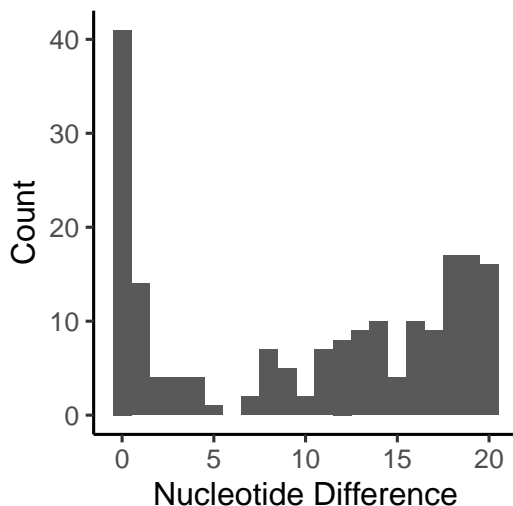
### IGHV1-2\*06

672 sequences assigned  
39 (5.8%) exact matches, in which:  
38 unique CDR3  
4 unique J



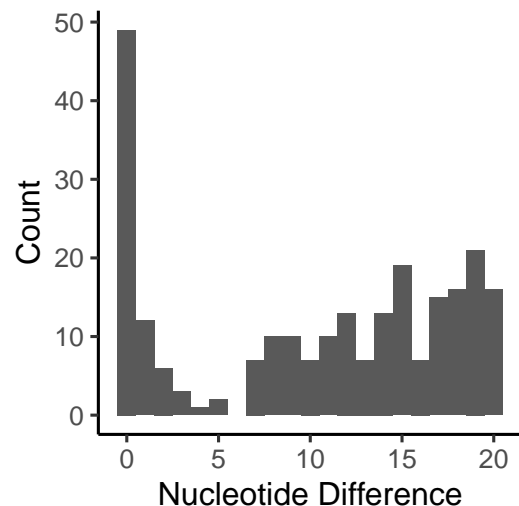
### IGHV1-18\*01

505 sequences assigned  
41 (8.1%) exact matches, in which:  
41 unique CDR3  
7 unique J



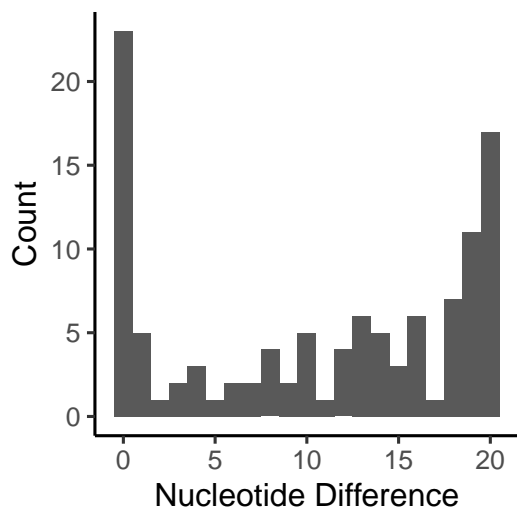
### IGHV1-46\*01

641 sequences assigned  
49 (7.6%) exact matches, in which:  
49 unique CDR3  
6 unique J



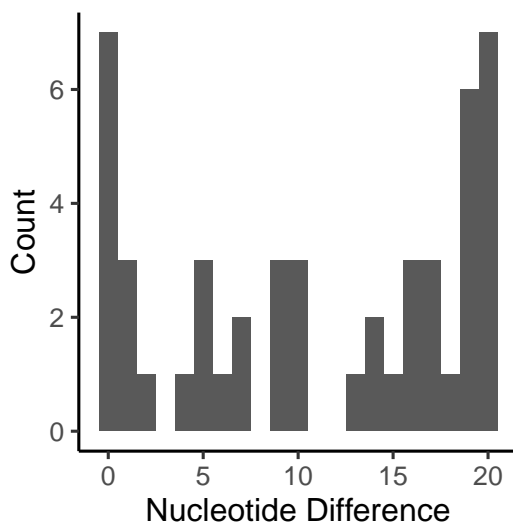
### IGHV1-3\*01

298 sequences assigned  
23 (7.7%) exact matches, in which:  
23 unique CDR3  
5 unique J



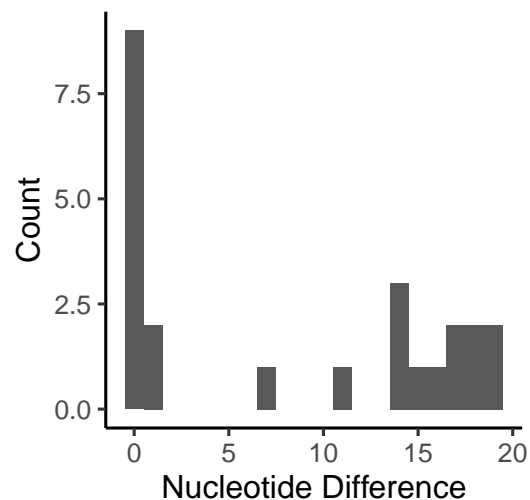
### IGHV1-24\*01

78 sequences assigned  
7 (9%) exact matches, in which:  
7 unique CDR3  
4 unique J



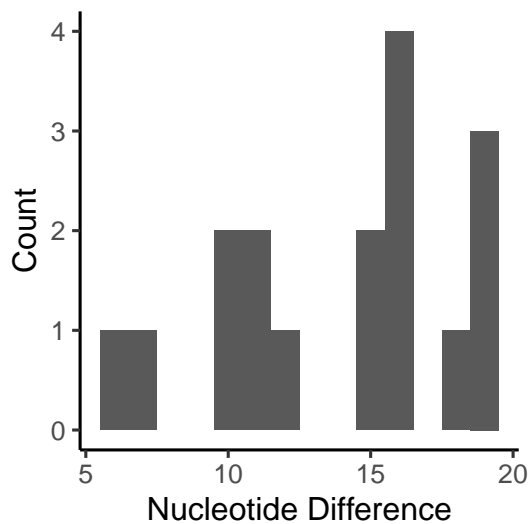
### IGHV1-58\*01

51 sequences assigned  
9 (17.6%) exact matches, in which:  
9 unique CDR3  
3 unique J



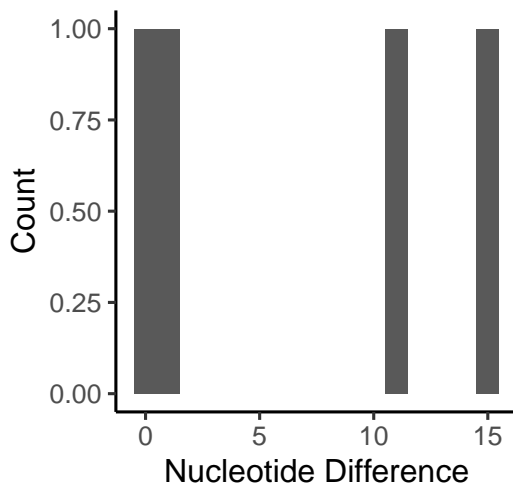
### IGHV1-3\*04

59 sequences assigned  
No exact matches.



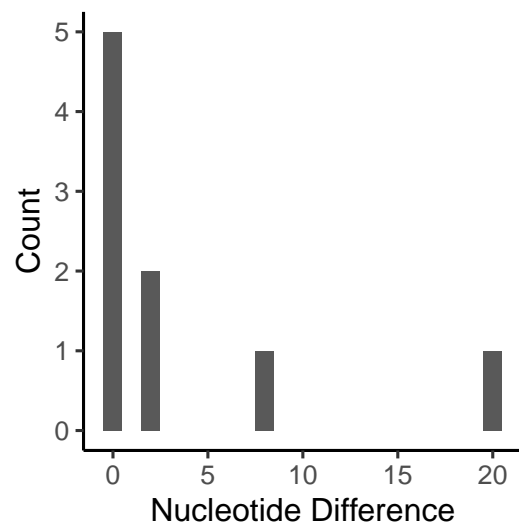
### IGHV1-45\*02

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



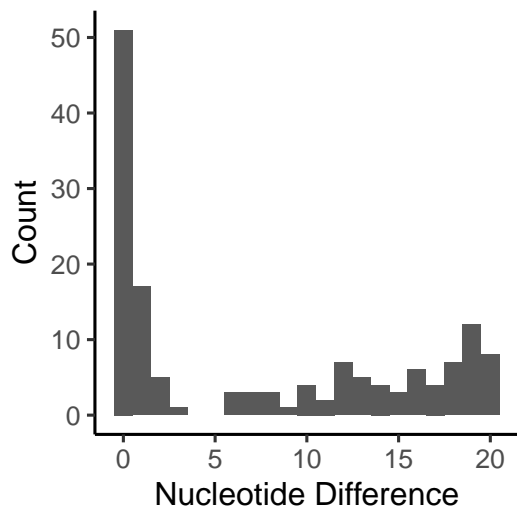
### IGHV1-69-2\*01

19 sequences assigned  
5 (26.3%) exact matches, in which:  
5 unique CDR3  
3 unique J



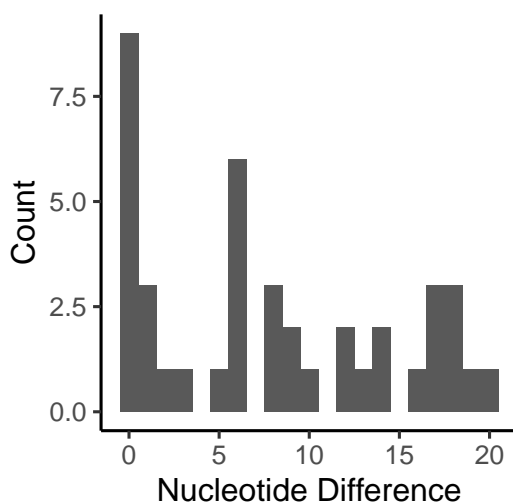
### IGHV1-69\*06

336 sequences assigned  
51 (15.2%) exact matches, in which:  
51 unique CDR3  
5 unique J



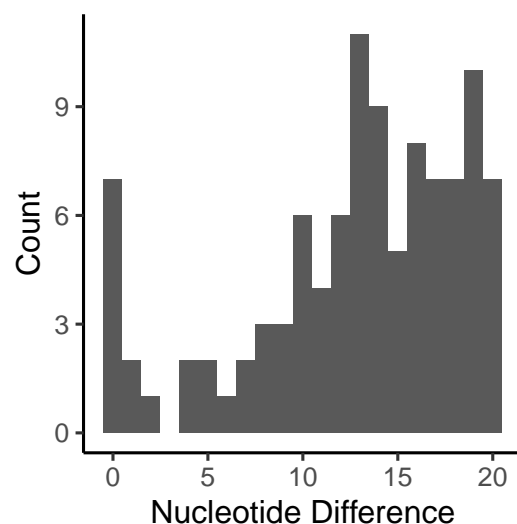
### IGHV2-70\*01

78 sequences assigned  
9 (11.5%) exact matches, in which:  
9 unique CDR3  
5 unique J



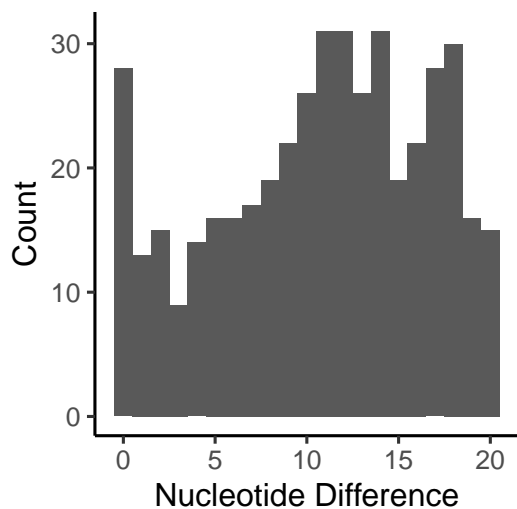
### IGHV3-7\*04

185 sequences assigned  
7 (3.8%) exact matches, in which:  
7 unique CDR3  
4 unique J



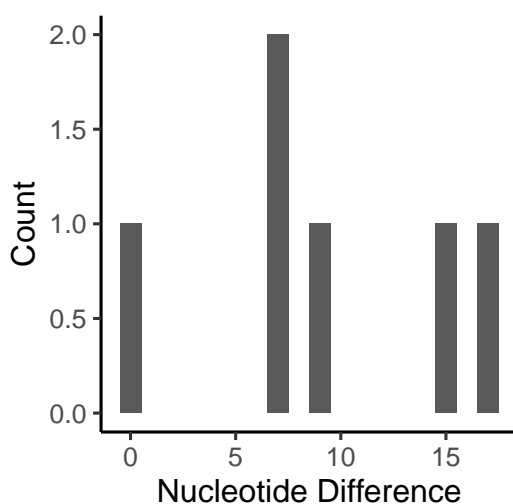
### IGHV2-5\*02

781 sequences assigned  
28 (3.6%) exact matches, in which:  
28 unique CDR3  
5 unique J



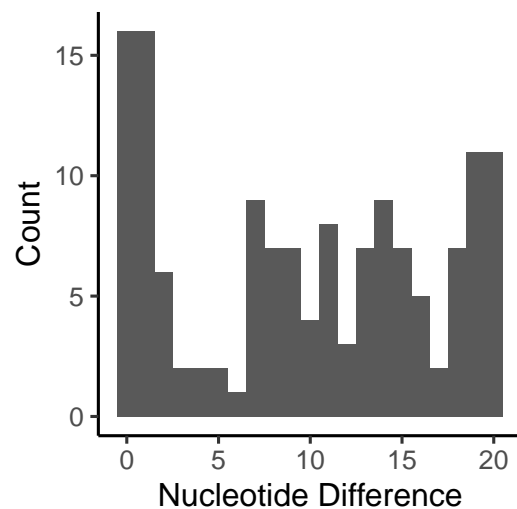
### IGHV2-70\*13

27 sequences assigned  
1 (3.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



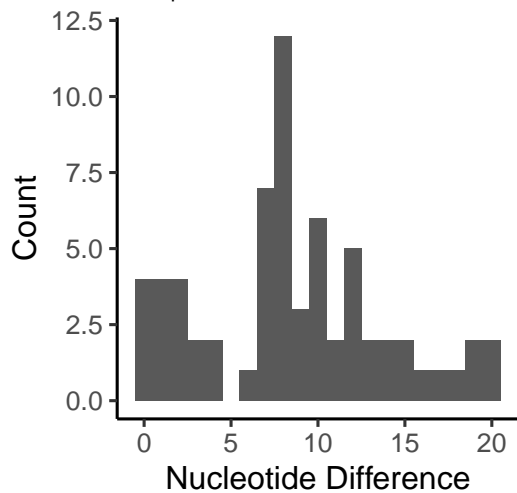
### IGHV3-11\*05

319 sequences assigned  
16 (5%) exact matches, in which:  
16 unique CDR3  
3 unique J



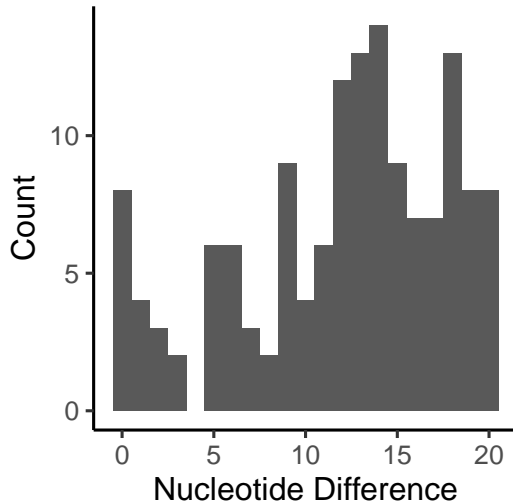
### IGHV2-26\*01

83 sequences assigned  
4 (4.8%) exact matches, in which:  
4 unique CDR3  
3 unique J



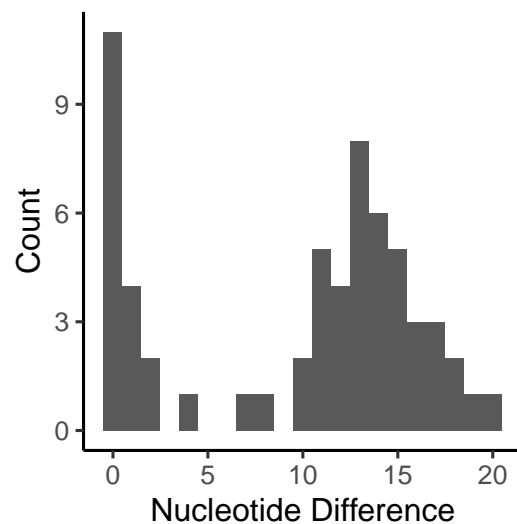
### IGHV3-7\*01

238 sequences assigned  
8 (3.4%) exact matches, in which:  
7 unique CDR3  
4 unique J



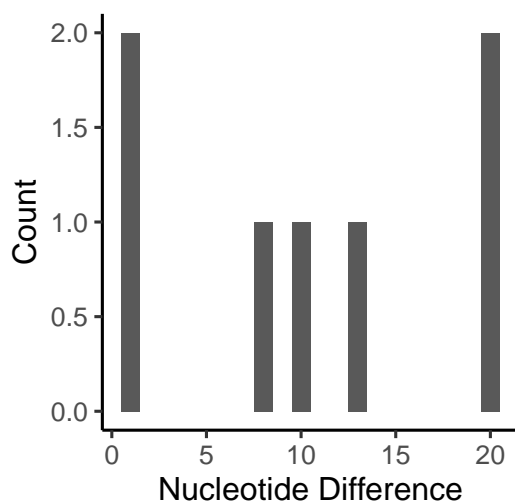
### IGHV3-11\*06

174 sequences assigned  
11 (6.3%) exact matches, in which:  
11 unique CDR3  
2 unique J



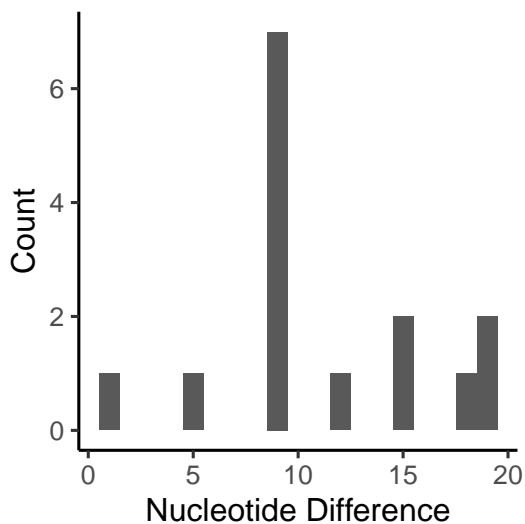
### IGHV3-13\*01

27 sequences assigned  
No exact matches.



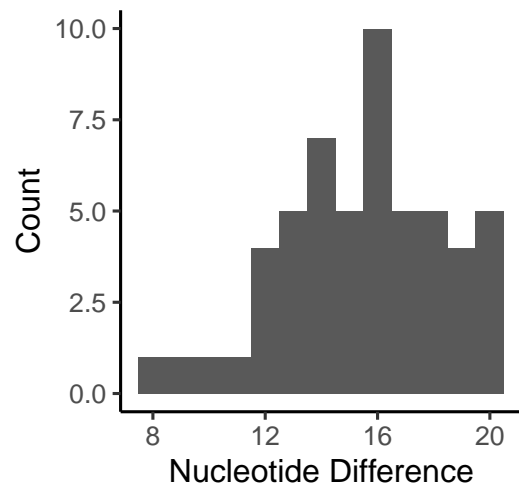
### IGHV3-20\*01

17 sequences assigned  
No exact matches.



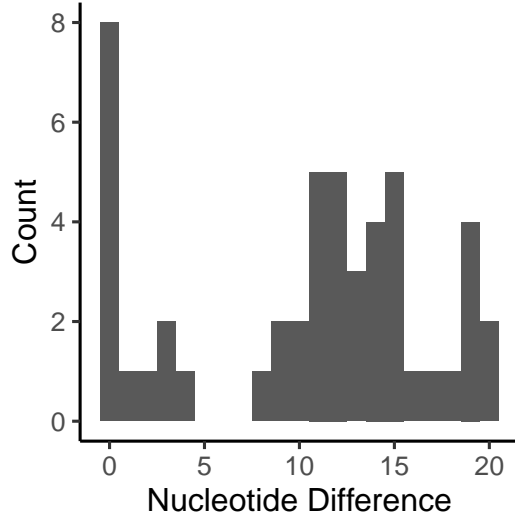
### IGHV3-21\*02

203 sequences assigned  
No exact matches.



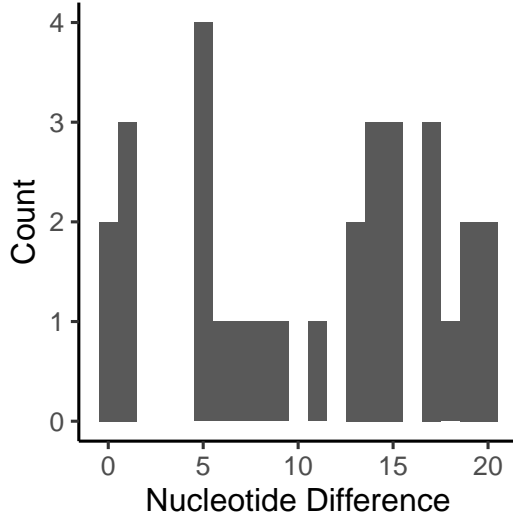
### IGHV3-13\*04

63 sequences assigned  
8 (12.7%) exact matches, in which:  
8 unique CDR3  
4 unique J



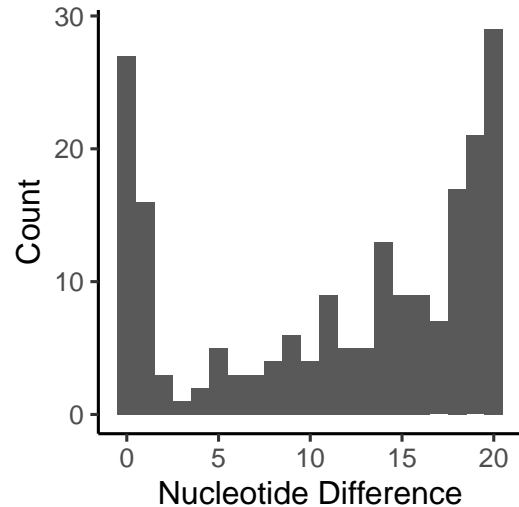
### IGHV3-20\*04

110 sequences assigned  
2 (1.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



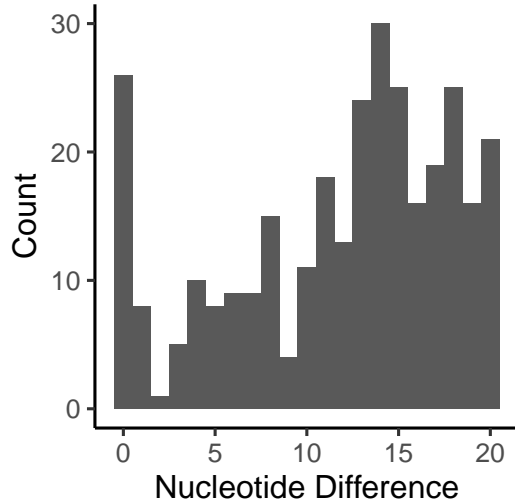
### IGHV3-30-3\*01

443 sequences assigned  
27 (6.1%) exact matches, in which:  
27 unique CDR3  
4 unique J



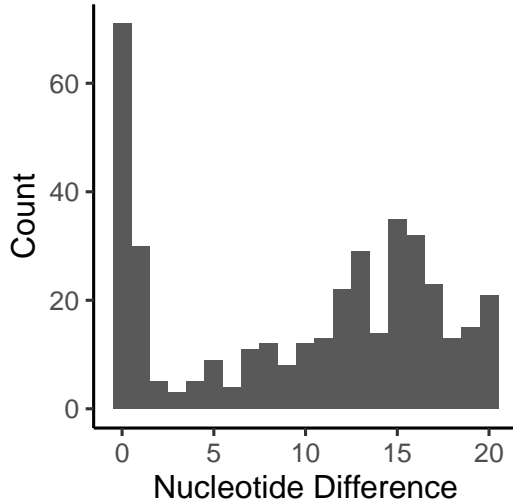
### IGHV3-15\*01

572 sequences assigned  
26 (4.5%) exact matches, in which:  
24 unique CDR3  
6 unique J



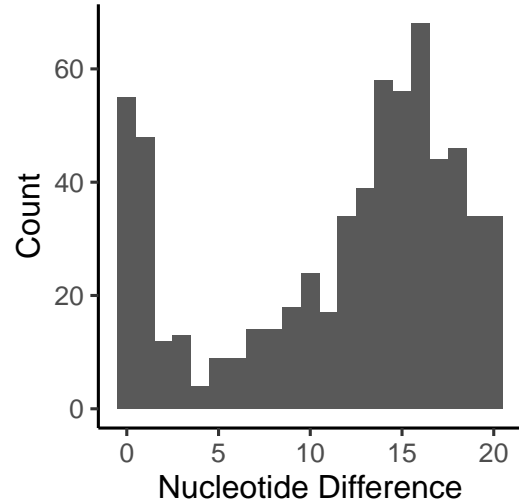
### IGHV3-21\*01

605 sequences assigned  
71 (11.7%) exact matches, in which:  
70 unique CDR3  
6 unique J



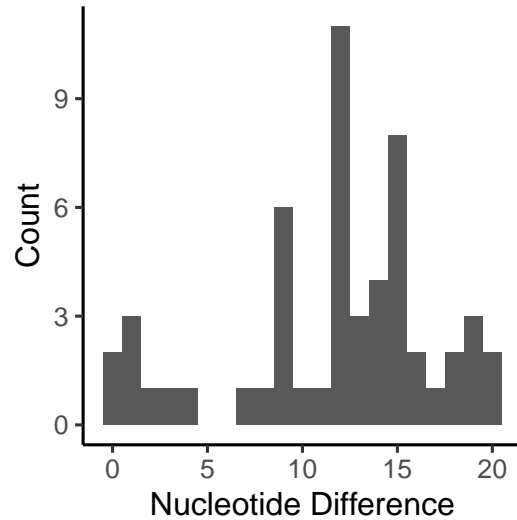
### IGHV3-33\*01

1315 sequences assigned  
55 (4.2%) exact matches, in which:  
50 unique CDR3  
6 unique J



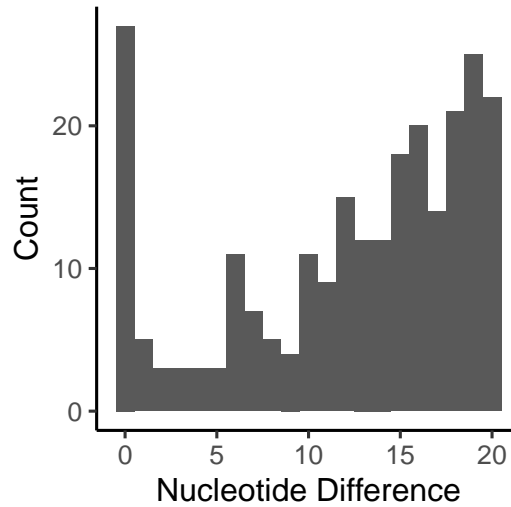
### IGHV3-43\*01

117 sequences assigned  
2 (1.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



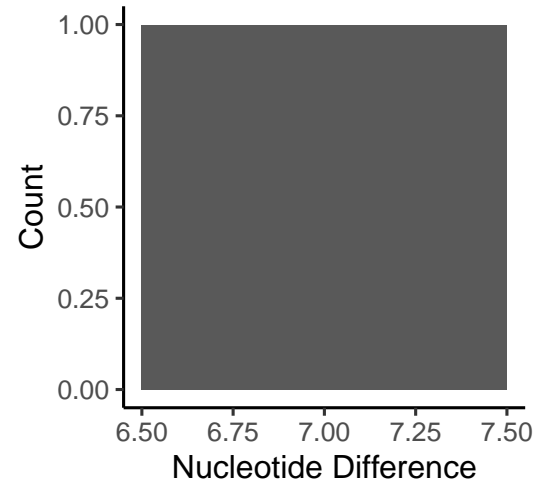
### IGHV3-53\*01

508 sequences assigned  
27 (5.3%) exact matches, in which:  
27 unique CDR3  
6 unique J



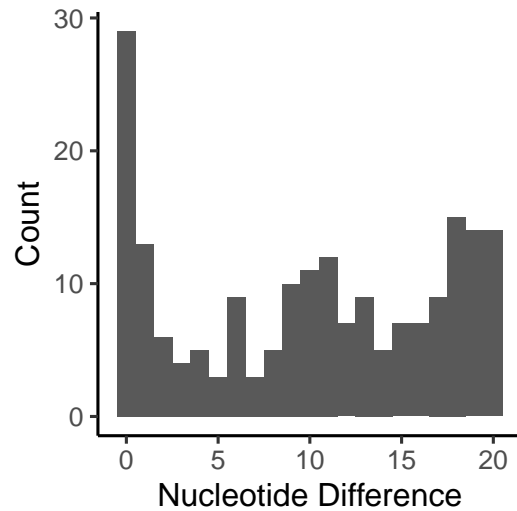
### IGHV3-69-1\*01

1 sequences assigned  
No exact matches.



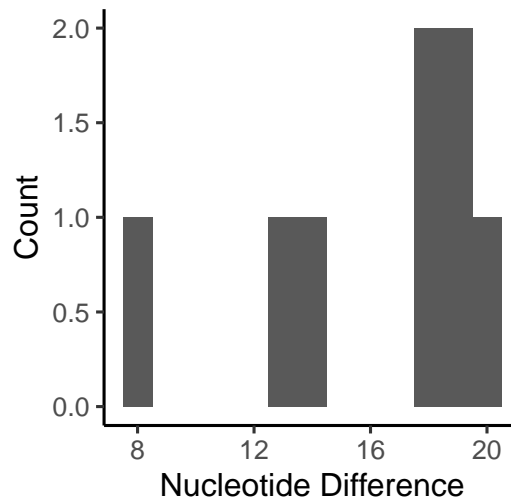
### IGHV3-48\*02

364 sequences assigned  
29 (8%) exact matches, in which:  
29 unique CDR3  
5 unique J



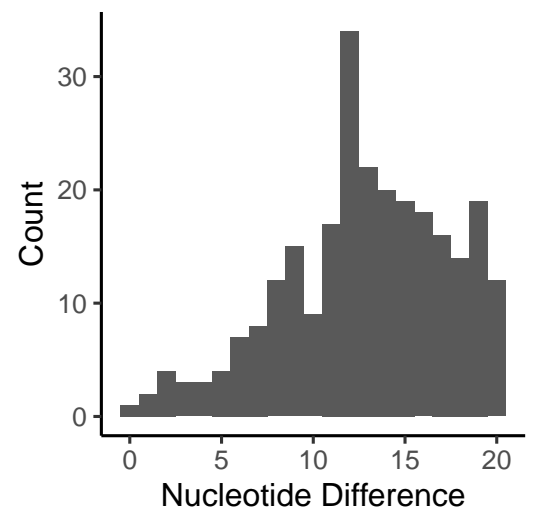
### IGHV3-64\*02

10 sequences assigned  
No exact matches.



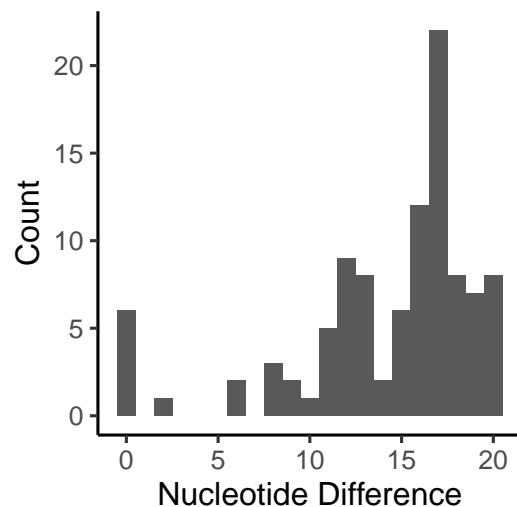
### IGHV3-72\*01

353 sequences assigned  
1 (0.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



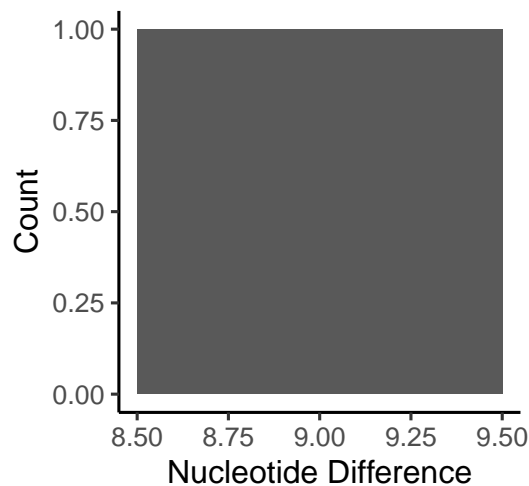
### IGHV3-49\*05

273 sequences assigned  
6 (2.2%) exact matches, in which:  
6 unique CDR3  
2 unique J



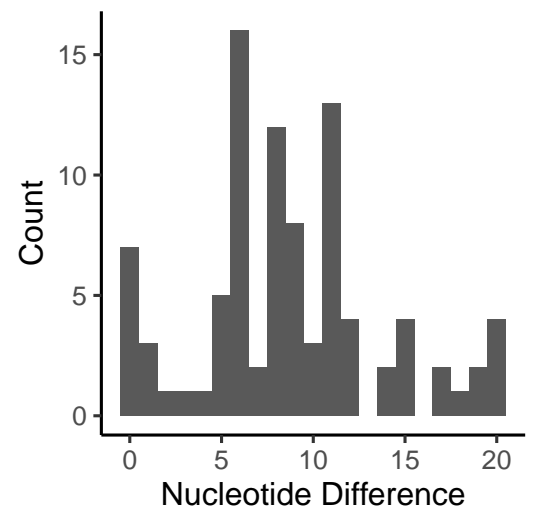
### IGHV3-66\*03

1 sequences assigned  
No exact matches.



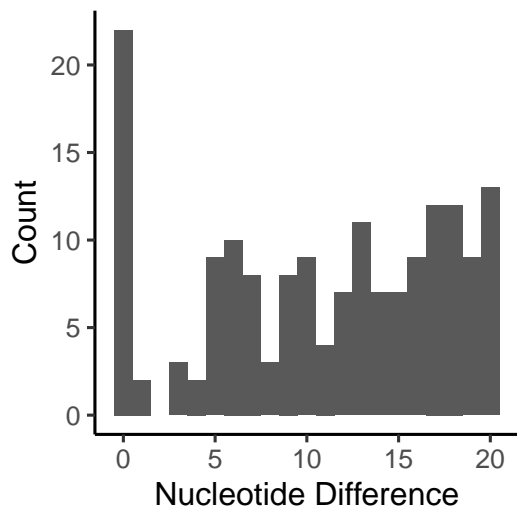
### IGHV3-73\*02

160 sequences assigned  
7 (4.4%) exact matches, in which:  
7 unique CDR3  
3 unique J



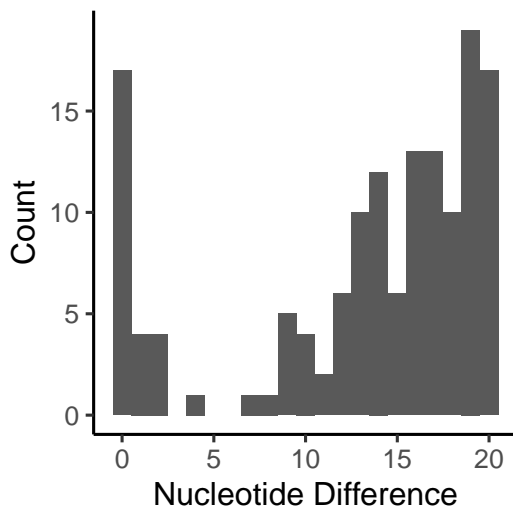
### IGHV3-74\*01

346 sequences assigned  
22 (6.4%) exact matches, in which:  
22 unique CDR3  
5 unique J



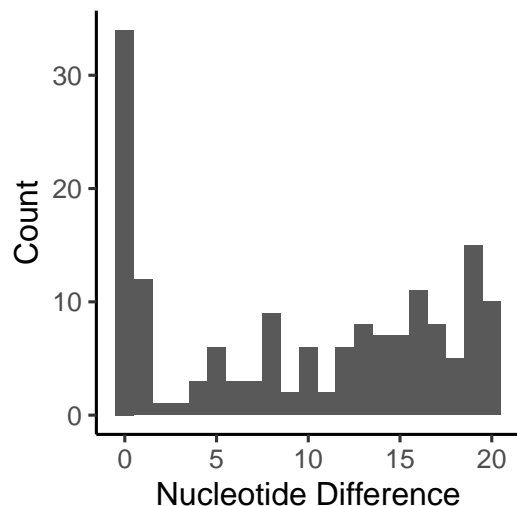
### IGHV4-4\*02

353 sequences assigned  
17 (4.8%) exact matches, in which:  
17 unique CDR3  
5 unique J



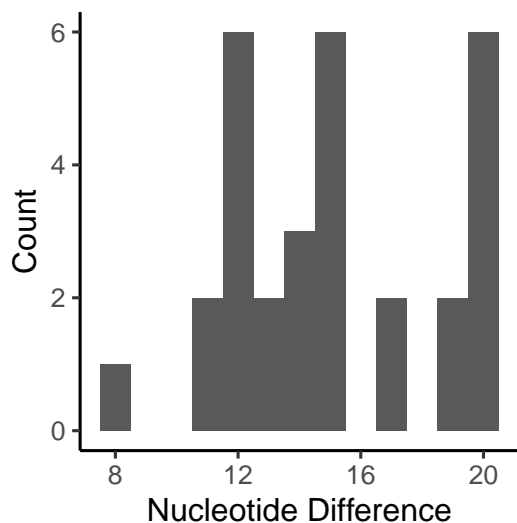
### IGHV4-31\*03

412 sequences assigned  
34 (8.3%) exact matches, in which:  
34 unique CDR3  
7 unique J



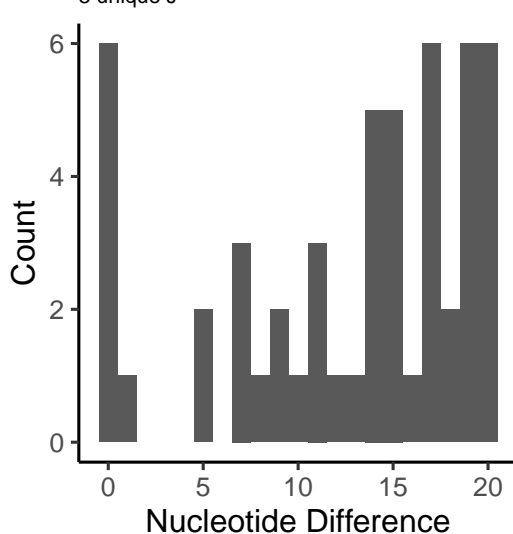
### IGHV3-74\*03

60 sequences assigned  
No exact matches.



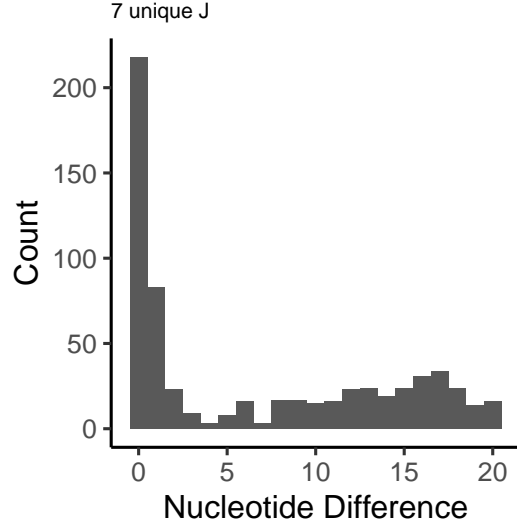
### IGHV4-30-4\*01

131 sequences assigned  
6 (4.6%) exact matches, in which:  
6 unique CDR3  
3 unique J



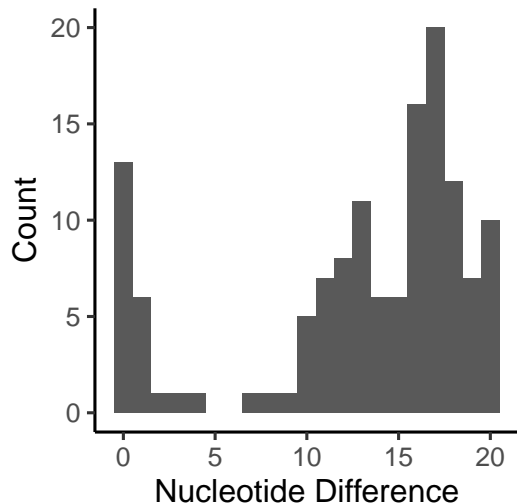
### IGHV4-34\*01

1156 sequences assigned  
218 (18.9%) exact matches, in which:  
216 unique CDR3  
7 unique J



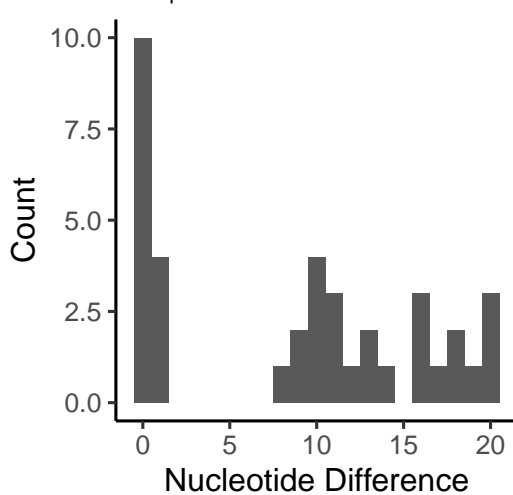
### IGHV3-64D\*06

266 sequences assigned  
13 (4.9%) exact matches, in which:  
13 unique CDR3  
6 unique J



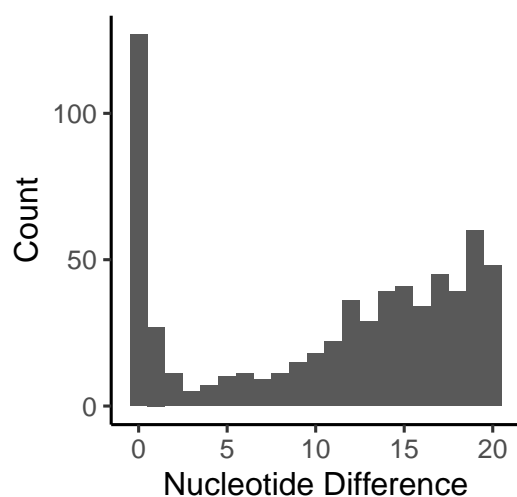
### IGHV4-30-2\*01

87 sequences assigned  
10 (11.5%) exact matches, in which:  
10 unique CDR3  
5 unique J



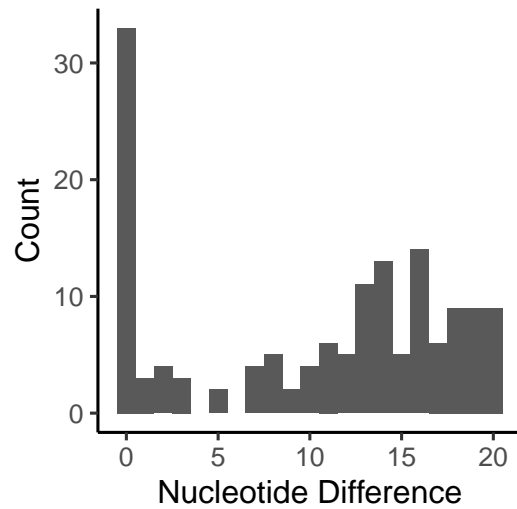
### IGHV4-39\*01

1632 sequences assigned  
127 (7.8%) exact matches, in which:  
126 unique CDR3  
6 unique J



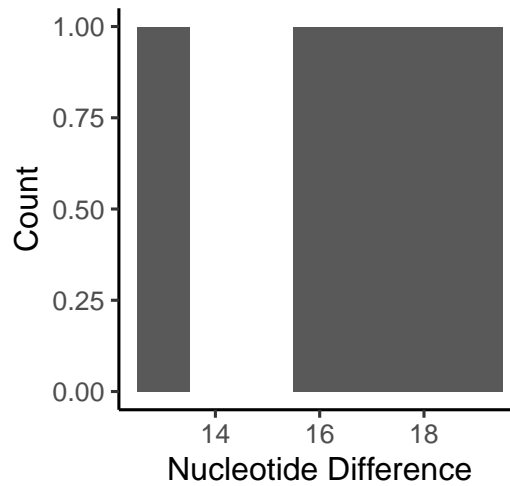
### IGHV4-59\*01

400 sequences assigned  
33 (8.2%) exact matches, in which:  
33 unique CDR3  
5 unique J



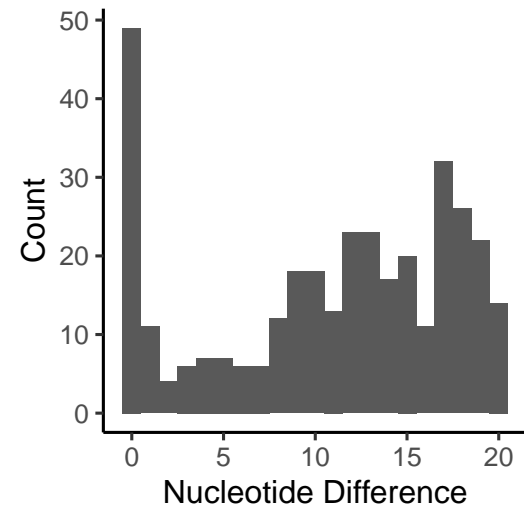
### IGHV4-61\*08

34 sequences assigned  
No exact matches.



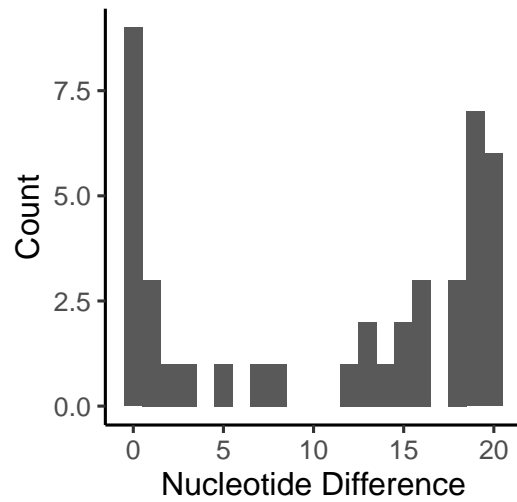
### IGHV5-51\*01

598 sequences assigned  
49 (8.2%) exact matches, in which:  
49 unique CDR3  
7 unique J



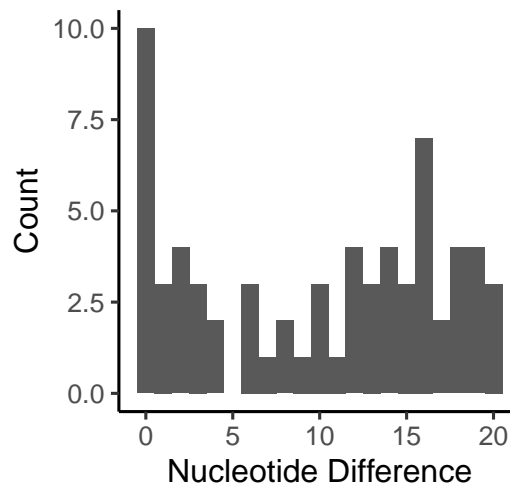
### IGHV4-61\*01

87 sequences assigned  
9 (10.3%) exact matches, in which:  
9 unique CDR3  
6 unique J



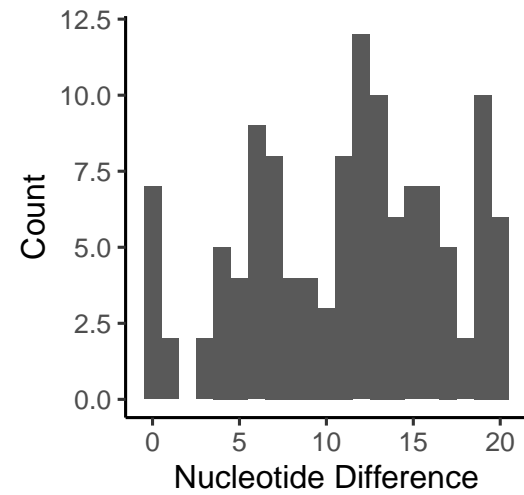
### IGHV5-10-1\*01

116 sequences assigned  
10 (8.6%) exact matches, in which:  
9 unique CDR3  
3 unique J



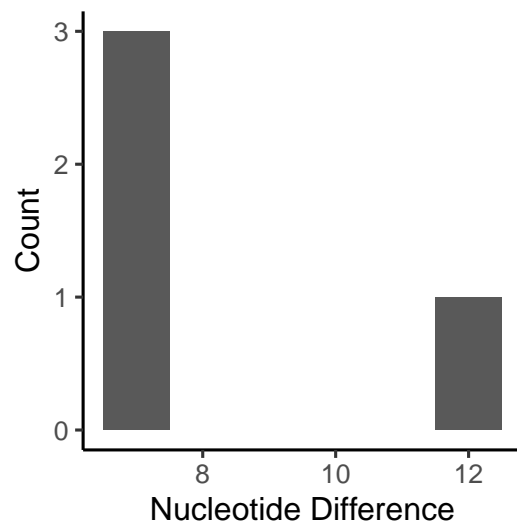
### IGHV6-1\*01

184 sequences assigned  
7 (3.8%) exact matches, in which:  
7 unique CDR3  
3 unique J



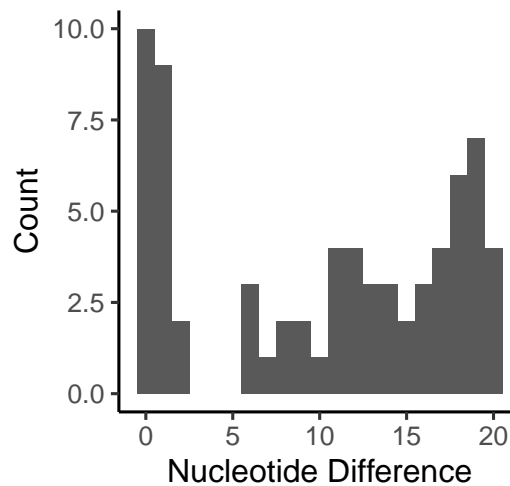
### IGHV4-61\*03

10 sequences assigned  
No exact matches.



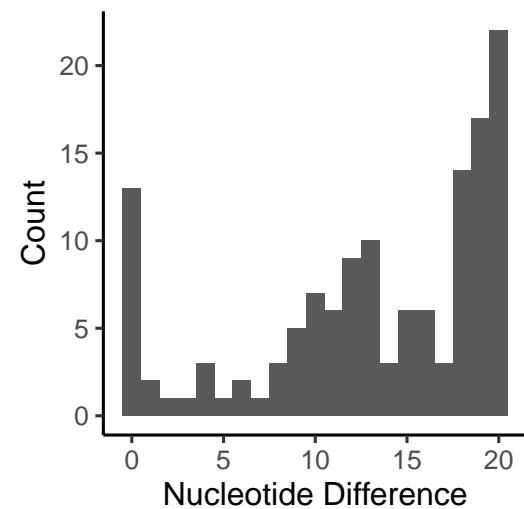
### IGHV5-10-1\*03

176 sequences assigned  
10 (5.7%) exact matches, in which:  
10 unique CDR3  
4 unique J

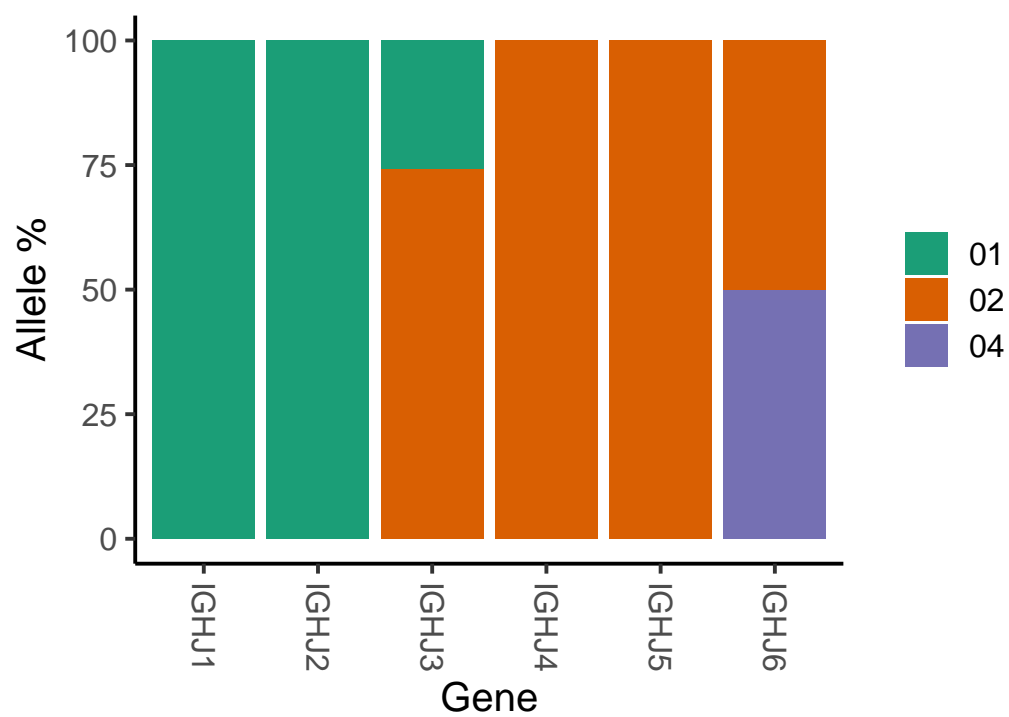


### IGHV7-4-1\*02

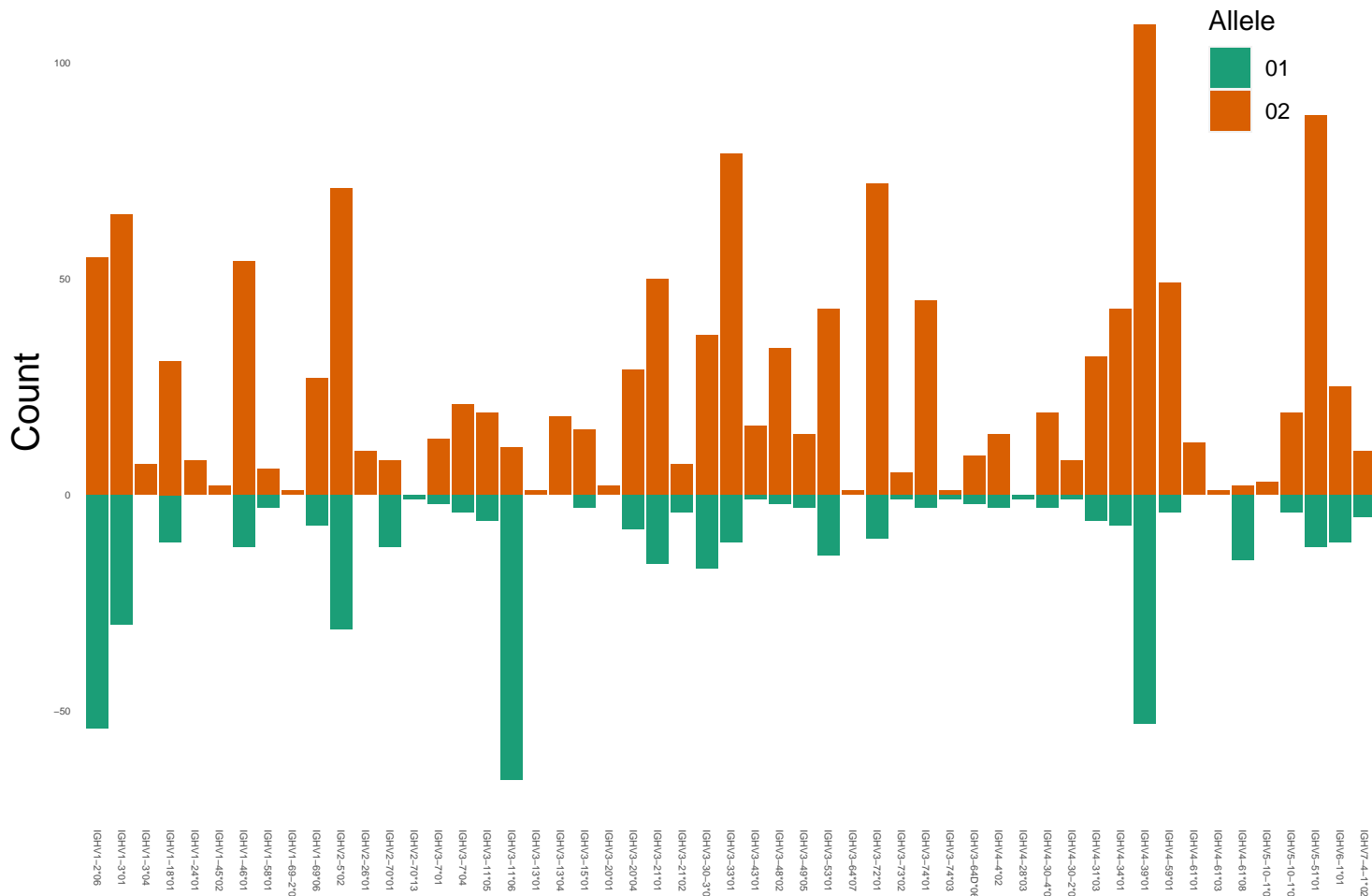
225 sequences assigned  
13 (5.8%) exact matches, in which:  
13 unique CDR3  
5 unique J



Allele Usage

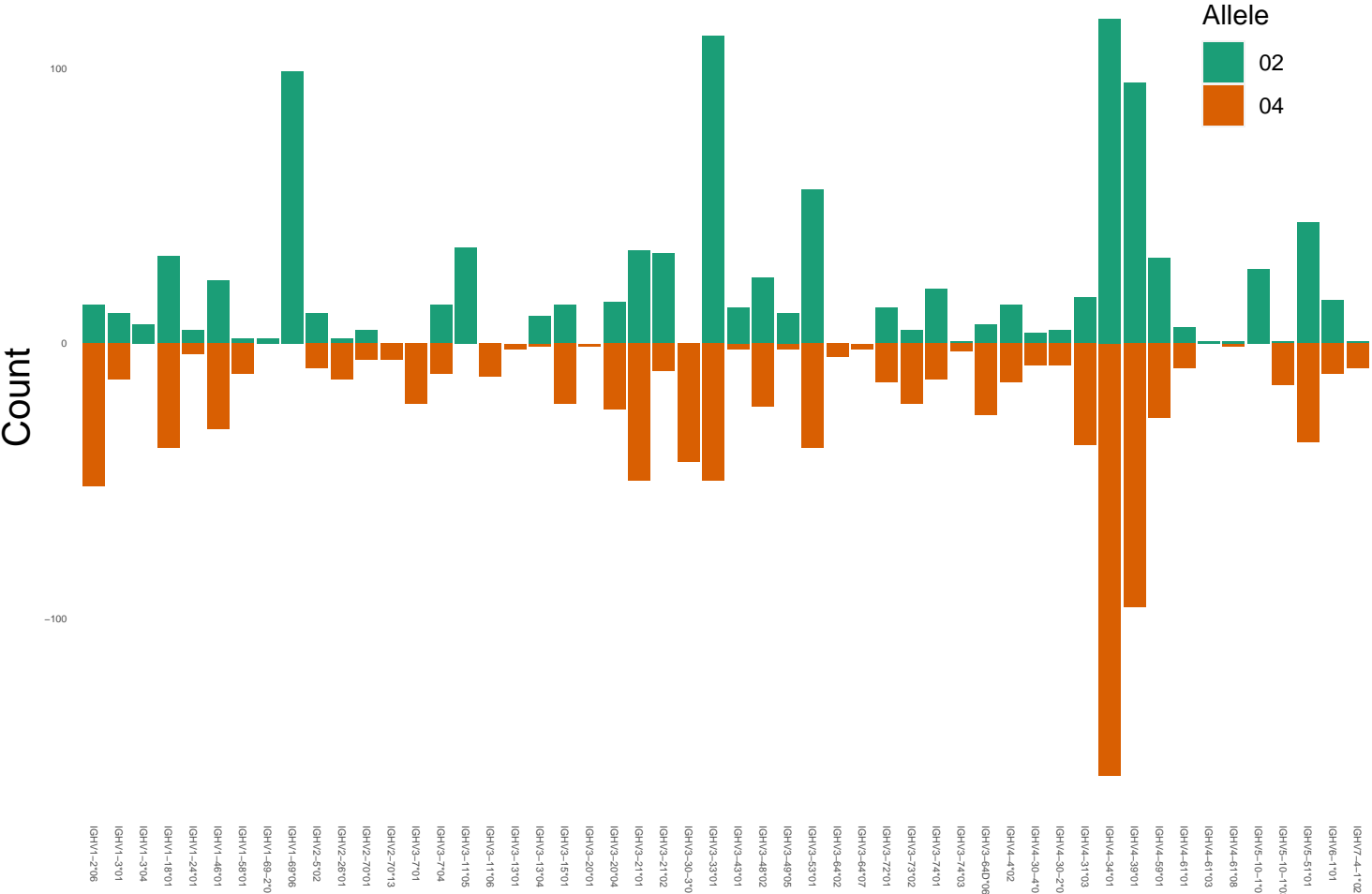


Sequence Count by IGHJ3 allele usage





Sequence Count by IGHJ6 allele usage



[illegible]