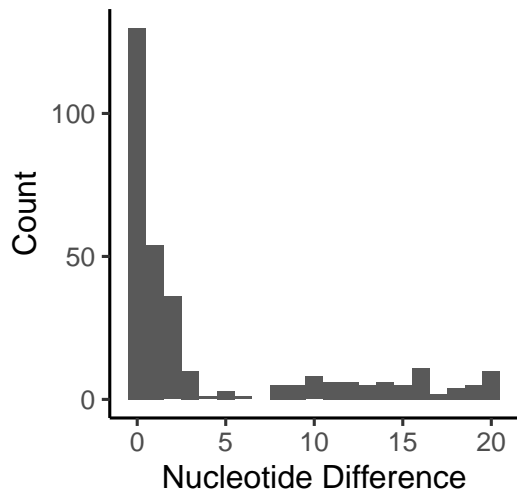


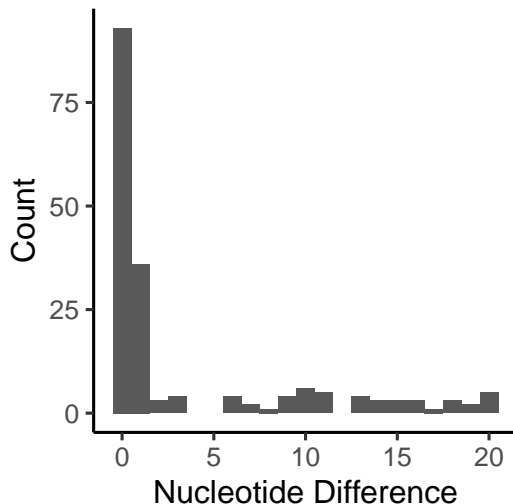
### IGHV1-2\*06

569 sequences assigned  
130 (22.8%) exact matches, in which:  
128 unique CDR3  
6 unique J



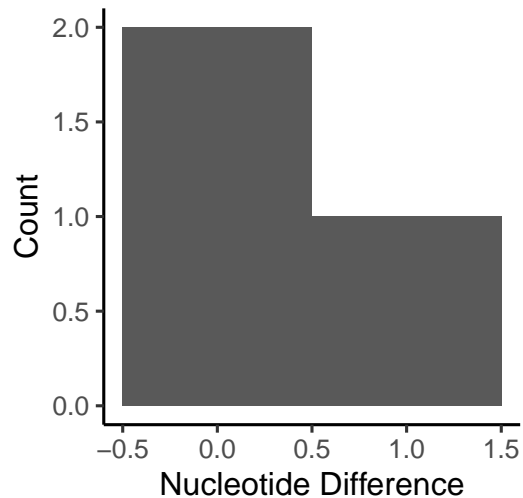
### IGHV1-18\*01

367 sequences assigned  
93 (25.3%) exact matches, in which:  
93 unique CDR3  
6 unique J



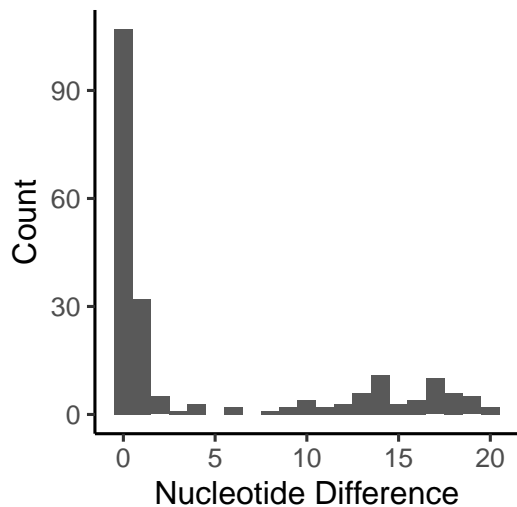
### IGHV1-45\*02

18 sequences assigned  
2 (11.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



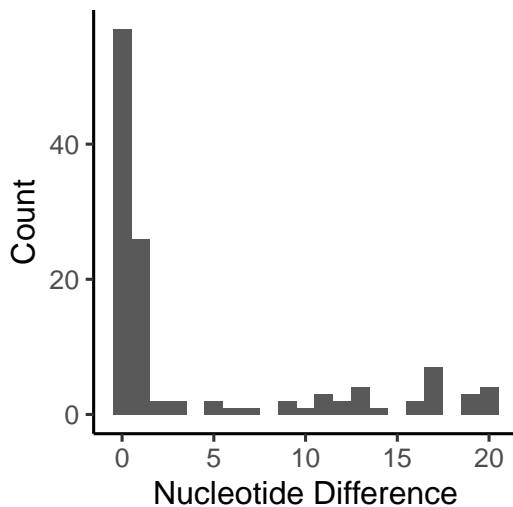
### IGHV1-3\*01

462 sequences assigned  
107 (23.2%) exact matches, in which:  
107 unique CDR3  
7 unique J



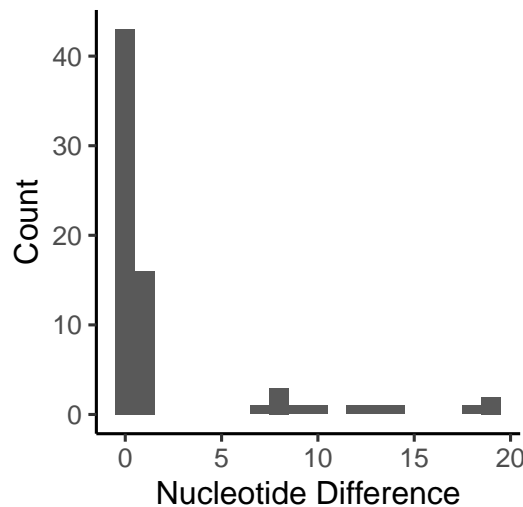
### IGHV1-18\*04

226 sequences assigned  
57 (25.2%) exact matches, in which:  
57 unique CDR3  
4 unique J



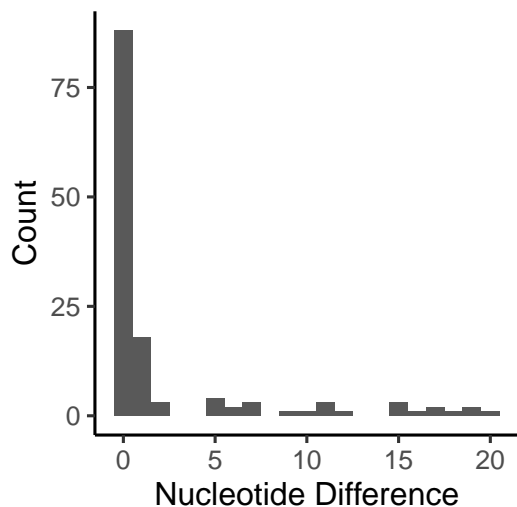
### IGHV1-46\*01

149 sequences assigned  
43 (28.9%) exact matches, in which:  
43 unique CDR3  
5 unique J



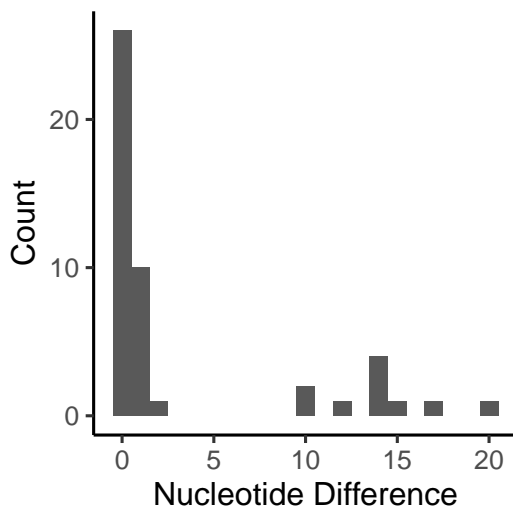
### IGHV1-8\*01

178 sequences assigned  
88 (49.4%) exact matches, in which:  
88 unique CDR3  
6 unique J



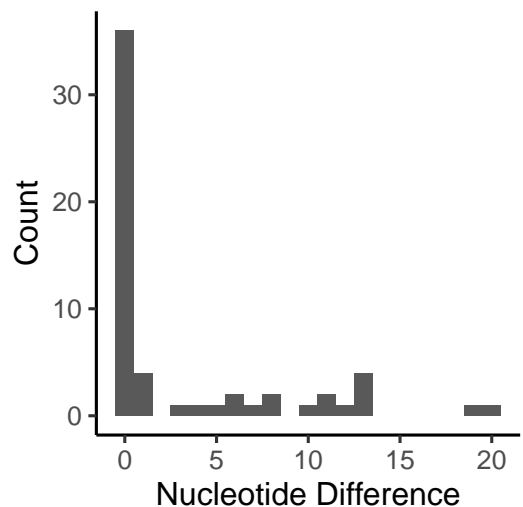
### IGHV1-24\*01

62 sequences assigned  
26 (41.9%) exact matches, in which:  
26 unique CDR3  
5 unique J



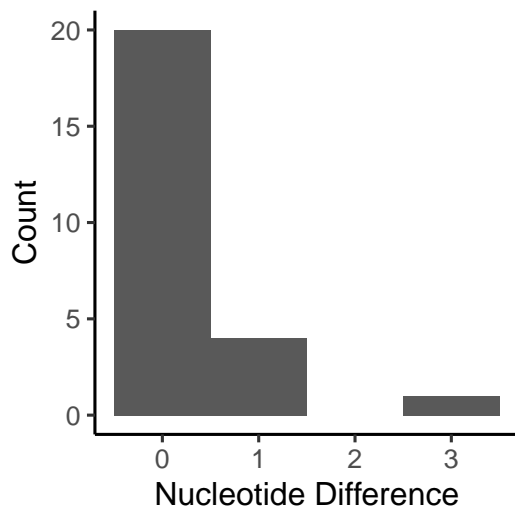
### IGHV1-46\*03

145 sequences assigned  
36 (24.8%) exact matches, in which:  
36 unique CDR3  
5 unique J



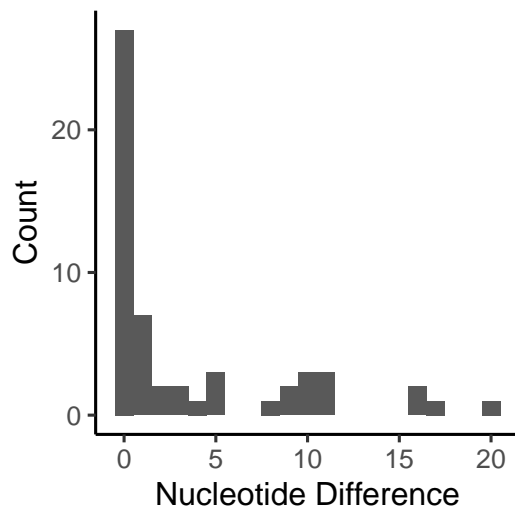
### IGHV1-58\*01

36 sequences assigned  
20 (55.6%) exact matches, in which:  
20 unique CDR3  
5 unique J



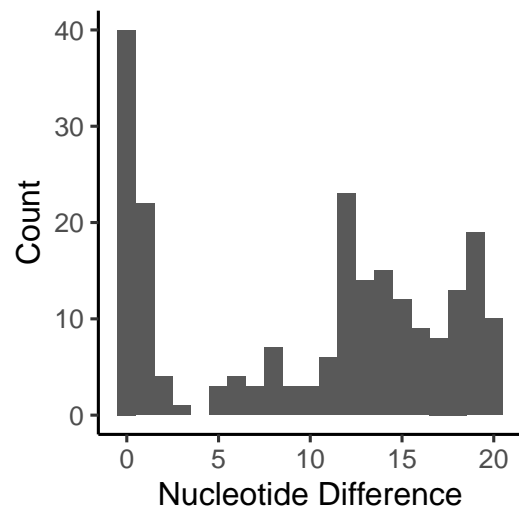
### IGHV2-26\*01

70 sequences assigned  
27 (38.6%) exact matches, in which:  
27 unique CDR3  
5 unique J



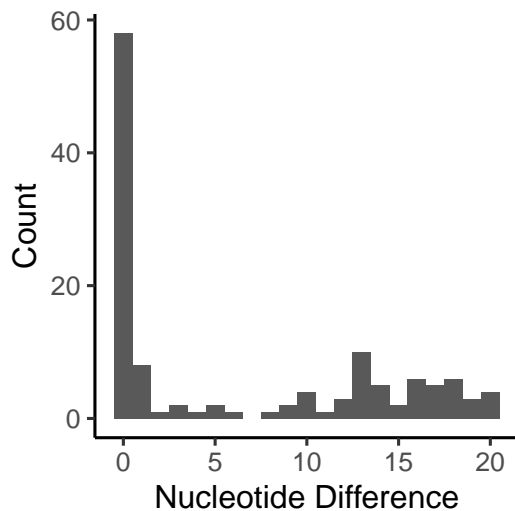
### IGHV3-7\*01

384 sequences assigned  
40 (10.4%) exact matches, in which:  
40 unique CDR3  
4 unique J



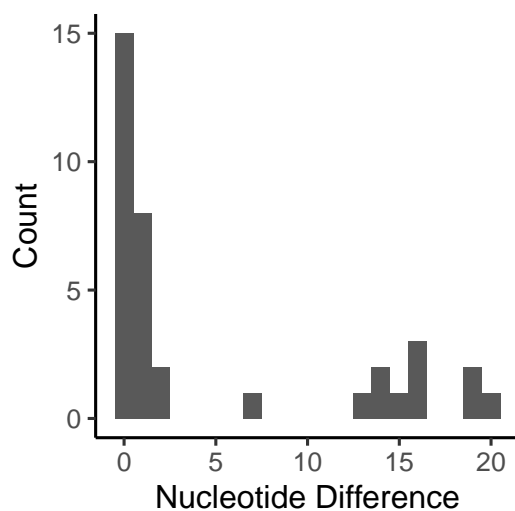
### IGHV2-5\*01

166 sequences assigned  
58 (34.9%) exact matches, in which:  
58 unique CDR3  
6 unique J



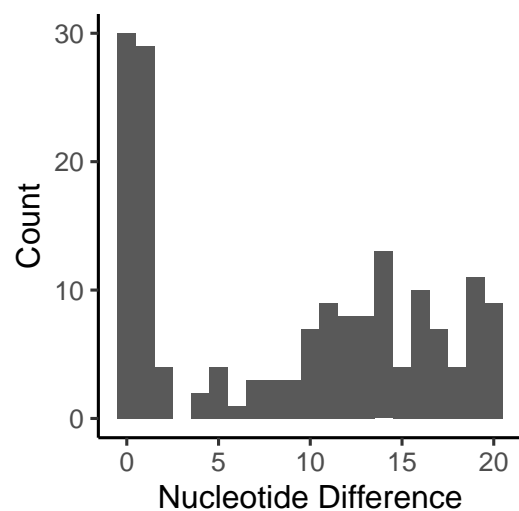
### IGHV2-70\*01

52 sequences assigned  
15 (28.8%) exact matches, in which:  
15 unique CDR3  
5 unique J



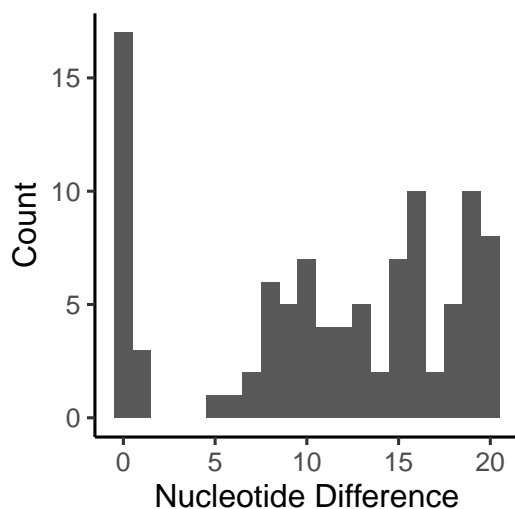
### IGHV3-7\*03

357 sequences assigned  
30 (8.4%) exact matches, in which:  
27 unique CDR3  
5 unique J



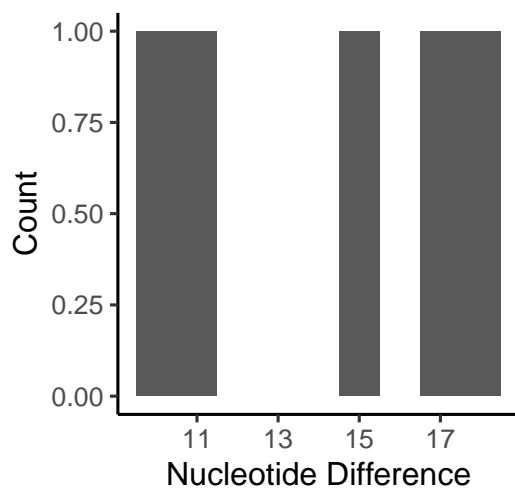
### IGHV2-5\*02

131 sequences assigned  
17 (13%) exact matches, in which:  
17 unique CDR3  
4 unique J



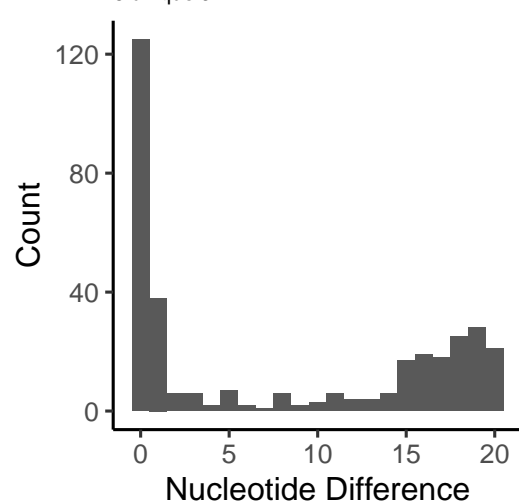
### IGHV2-70\*13

11 sequences assigned  
No exact matches.



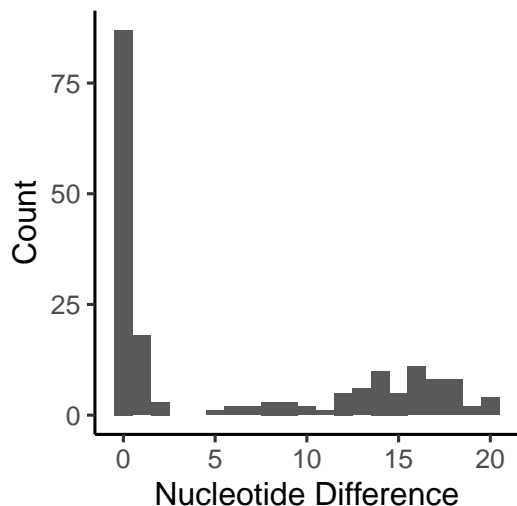
### IGHV3-9\*01

658 sequences assigned  
125 (19%) exact matches, in which:  
125 unique CDR3  
6 unique J



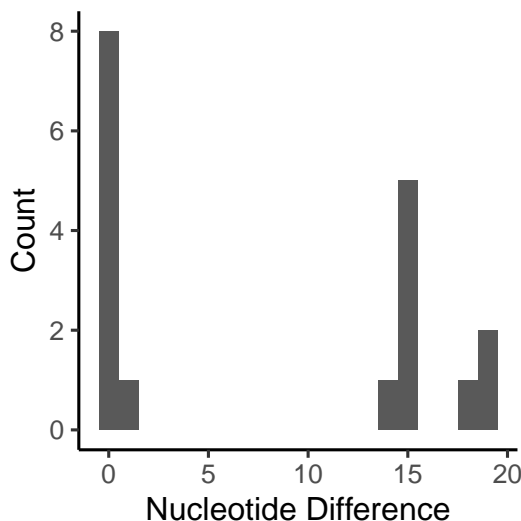
### IGHV3-11\*01

350 sequences assigned  
87 (24.9%) exact matches, in which:  
87 unique CDR3  
5 unique J



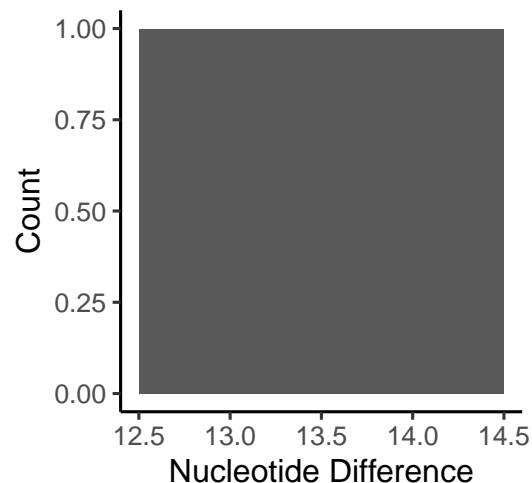
### IGHV3-13\*05

22 sequences assigned  
8 (36.4%) exact matches, in which:  
8 unique CDR3  
4 unique J



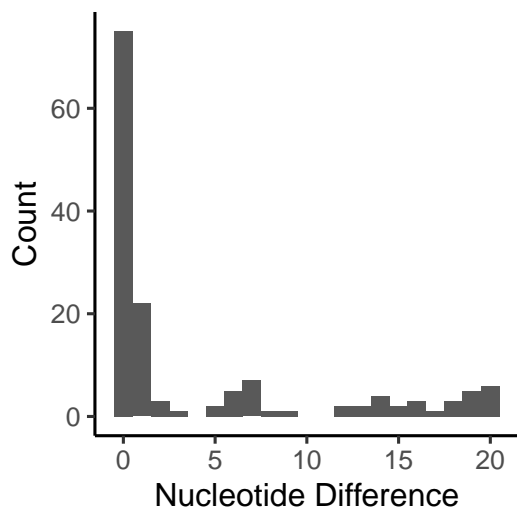
### IGHV3-20\*04

6 sequences assigned  
No exact matches.



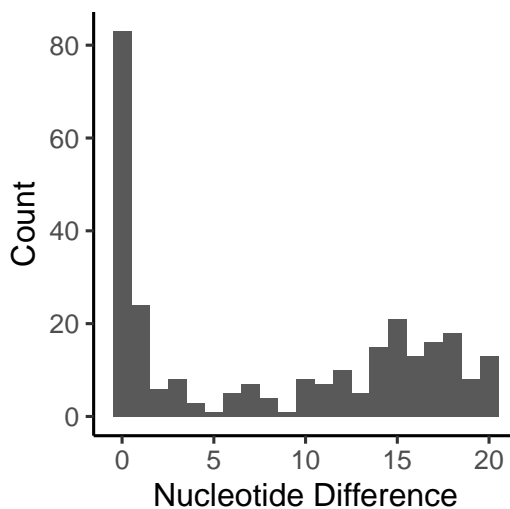
### IGHV3-11\*06

292 sequences assigned  
75 (25.7%) exact matches, in which:  
75 unique CDR3  
7 unique J



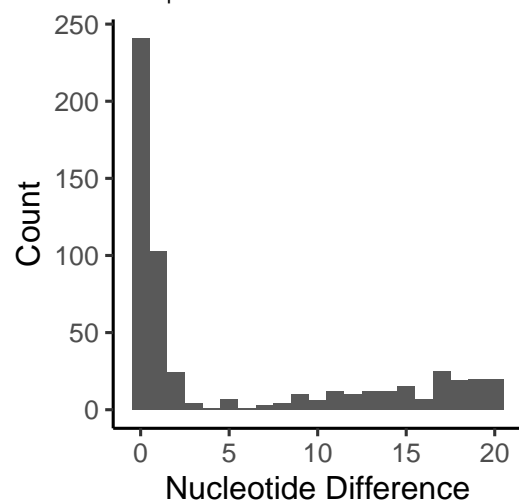
### IGHV3-15\*01

497 sequences assigned  
83 (16.7%) exact matches, in which:  
83 unique CDR3  
6 unique J



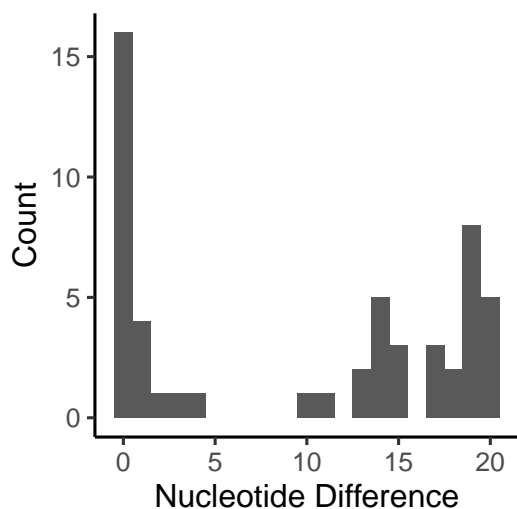
### IGHV3-21\*01

910 sequences assigned  
241 (26.5%) exact matches, in which:  
238 unique CDR3  
7 unique J



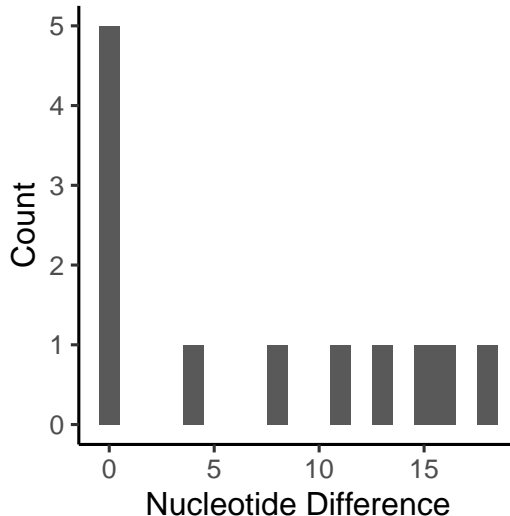
### IGHV3-13\*01

109 sequences assigned  
16 (14.7%) exact matches, in which:  
16 unique CDR3  
3 unique J



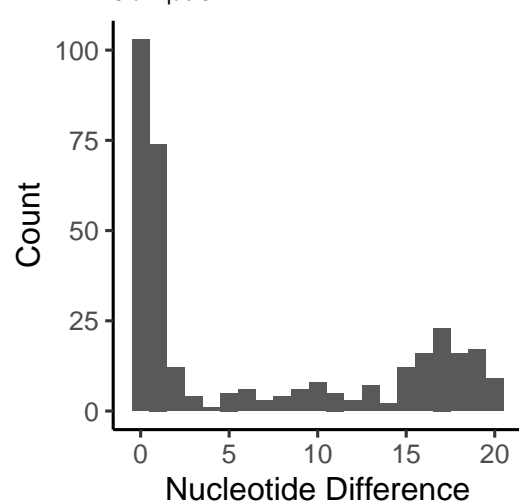
### IGHV3-20\*01

15 sequences assigned  
5 (33.3%) exact matches, in which:  
5 unique CDR3  
3 unique J



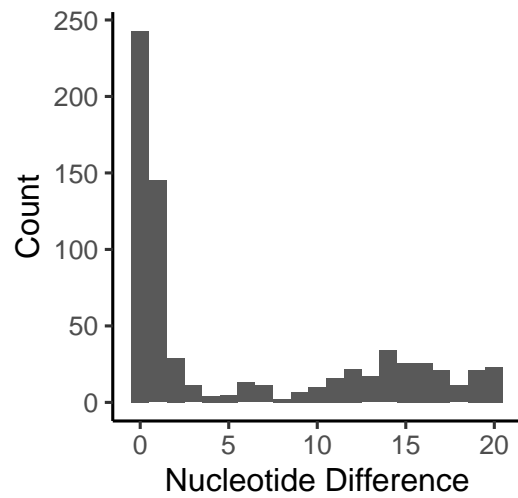
### IGHV3-30-3\*01

641 sequences assigned  
103 (16.1%) exact matches, in which:  
102 unique CDR3  
5 unique J



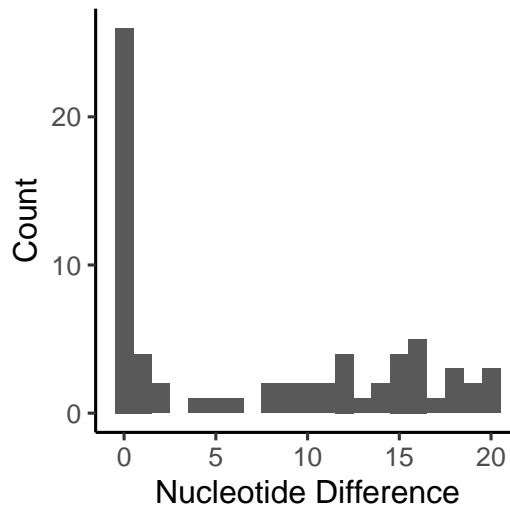
### IGHV3-33\*01

1346 sequences assigned  
243 (18.1%) exact matches, in which:  
237 unique CDR3  
7 unique J



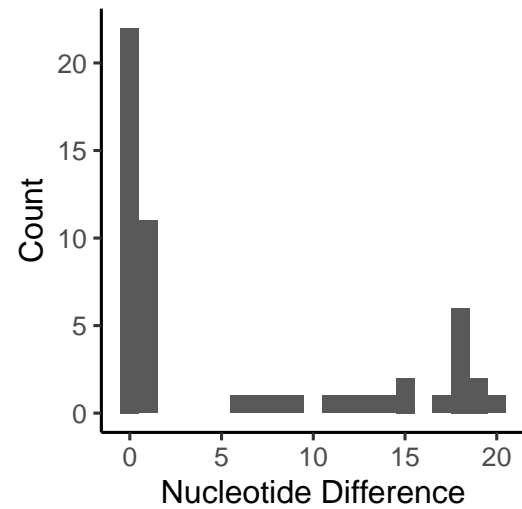
### IGHV3-48\*02

119 sequences assigned  
26 (21.8%) exact matches, in which:  
26 unique CDR3  
4 unique J



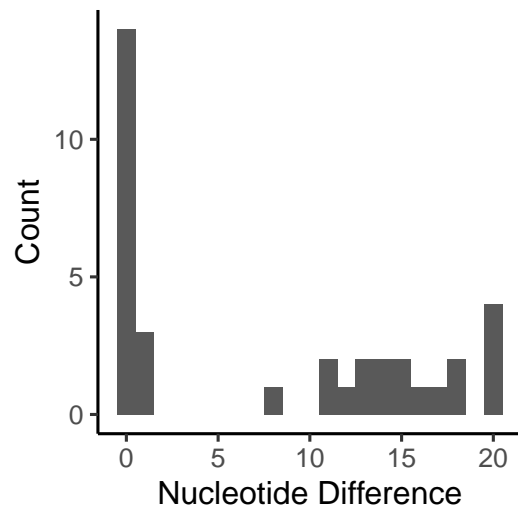
### IGHV3-53\*02

110 sequences assigned  
22 (20%) exact matches, in which:  
22 unique CDR3  
6 unique J



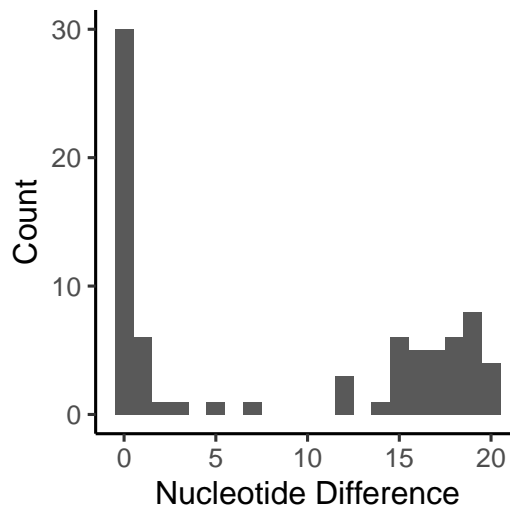
### IGHV3-43\*01

111 sequences assigned  
14 (12.6%) exact matches, in which:  
14 unique CDR3  
4 unique J



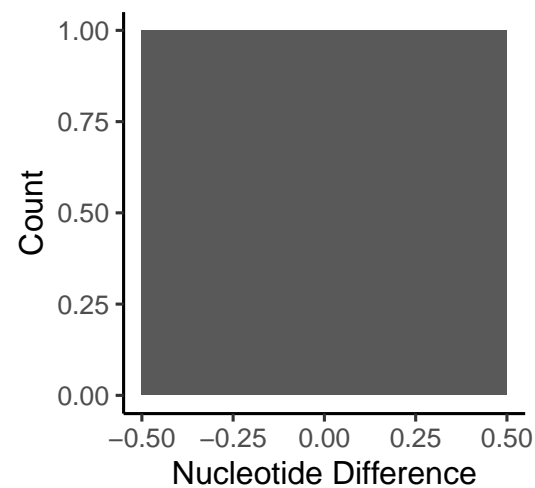
### IGHV3-49\*05

131 sequences assigned  
30 (22.9%) exact matches, in which:  
30 unique CDR3  
7 unique J



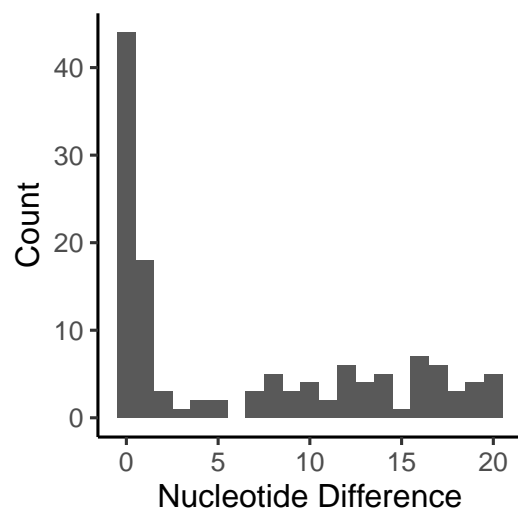
### IGHV3-64\*02

5 sequences assigned  
1 (20%) exact matches, in which:  
1 unique CDR3  
1 unique J



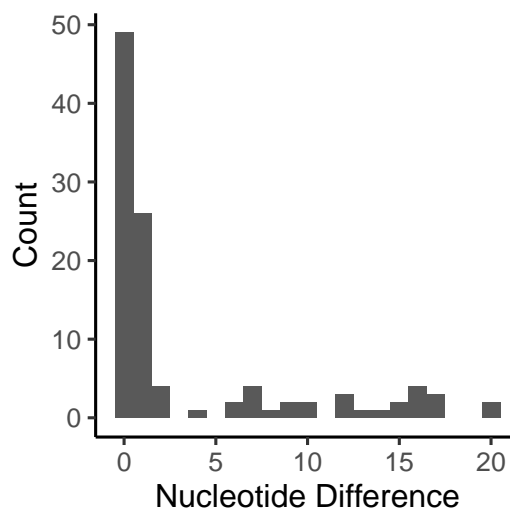
### IGHV3-48\*01

183 sequences assigned  
44 (24%) exact matches, in which:  
44 unique CDR3  
5 unique J



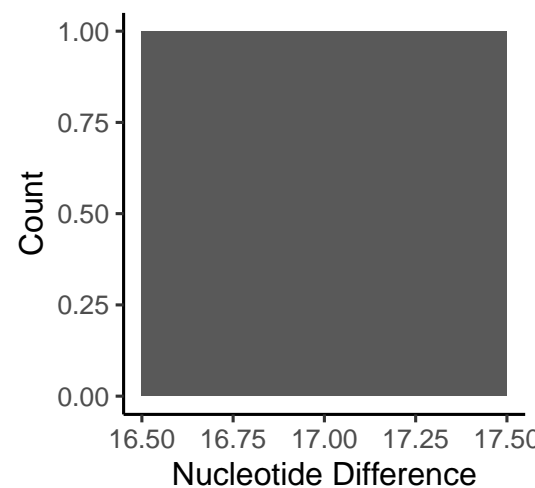
### IGHV3-53\*01

190 sequences assigned  
49 (25.8%) exact matches, in which:  
49 unique CDR3  
7 unique J



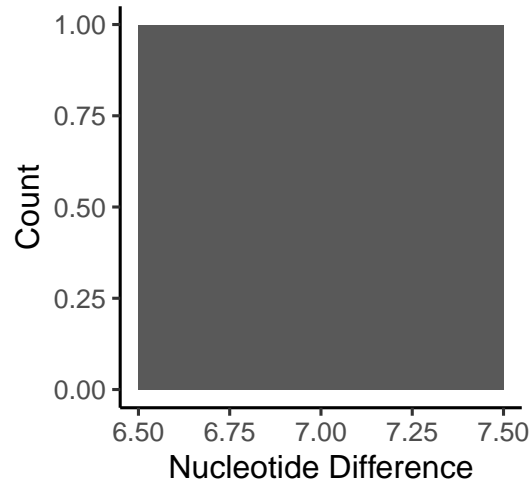
### IGHV3-64\*07

4 sequences assigned  
No exact matches.



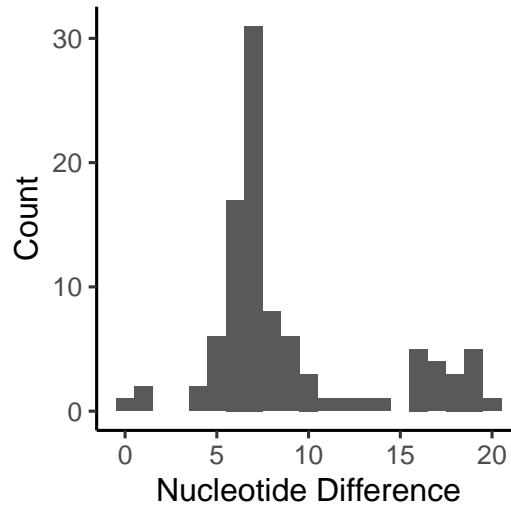
### IGHV3-66\*03

1 sequences assigned  
No exact matches.



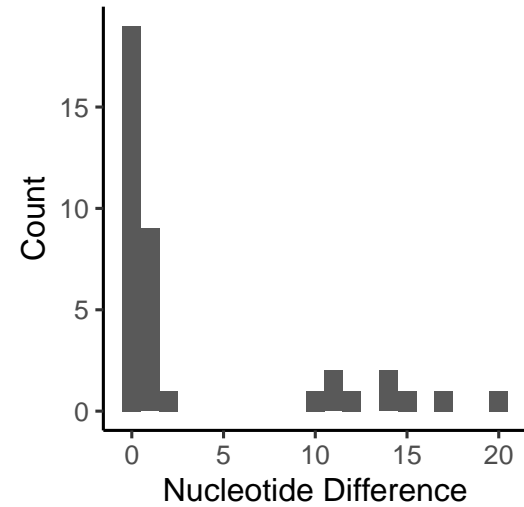
### IGHV3-72\*01

167 sequences assigned  
1 (0.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



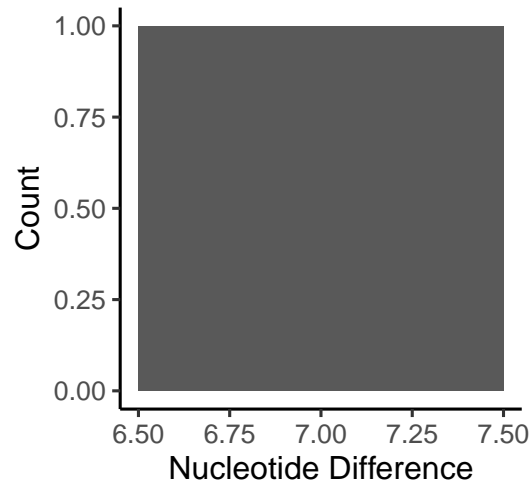
### IGHV3-64D\*06

97 sequences assigned  
19 (19.6%) exact matches, in which:  
19 unique CDR3  
3 unique J



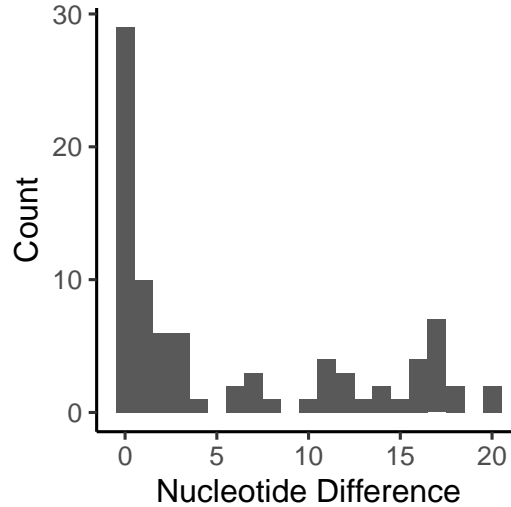
### IGHV3-66\*04

1 sequences assigned  
No exact matches.



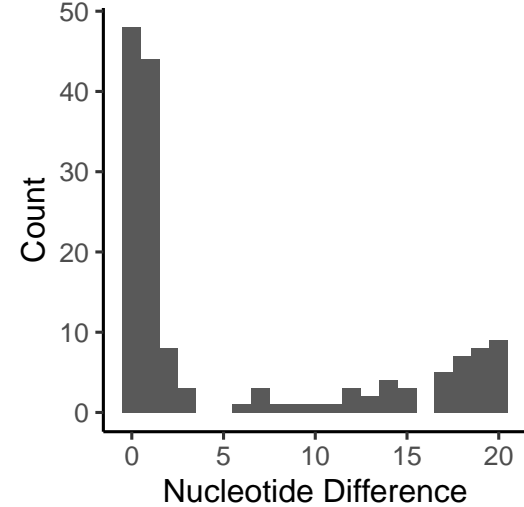
### IGHV3-73\*02

126 sequences assigned  
29 (23%) exact matches, in which:  
29 unique CDR3  
6 unique J



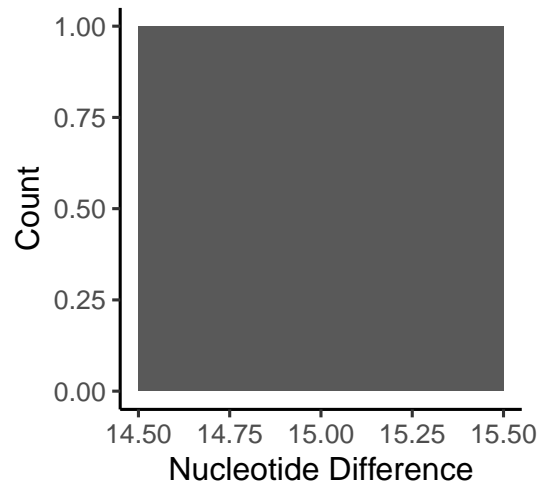
### IGHV4-4\*02

271 sequences assigned  
48 (17.7%) exact matches, in which:  
48 unique CDR3  
6 unique J



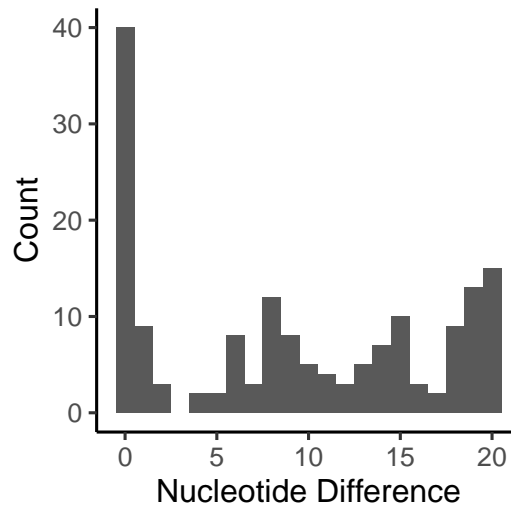
### IGHV3-69-1\*02

6 sequences assigned  
No exact matches.



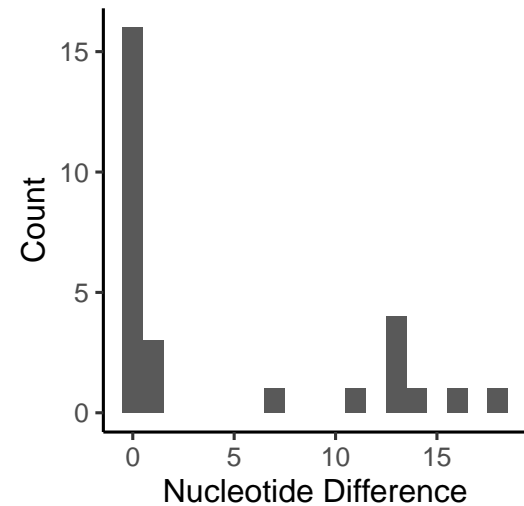
### IGHV3-74\*01

429 sequences assigned  
40 (9.3%) exact matches, in which:  
39 unique CDR3  
6 unique J



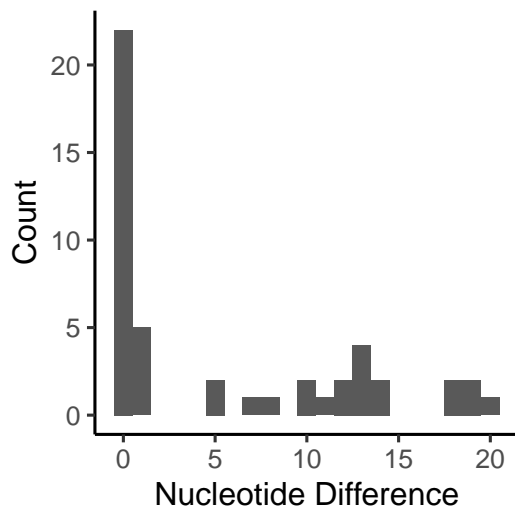
### IGHV4-30-2\*01

46 sequences assigned  
16 (34.8%) exact matches, in which:  
16 unique CDR3  
6 unique J



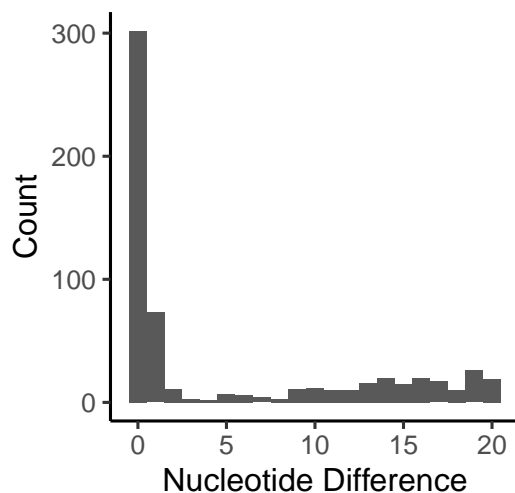
### IGHV4-30-4\*01

74 sequences assigned  
22 (29.7%) exact matches, in which:  
22 unique CDR3  
5 unique J



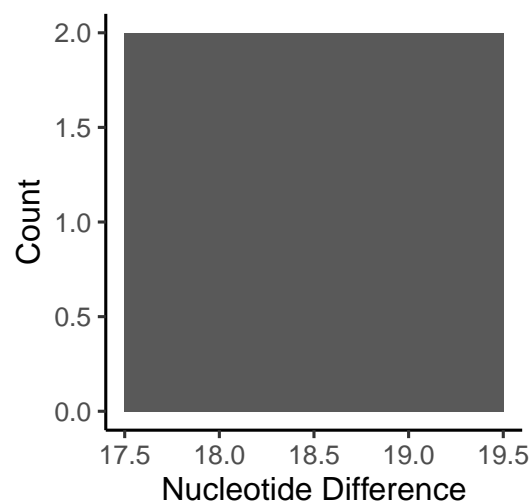
### IGHV4-39\*01

1158 sequences assigned  
302 (26.1%) exact matches, in which:  
301 unique CDR3  
7 unique J



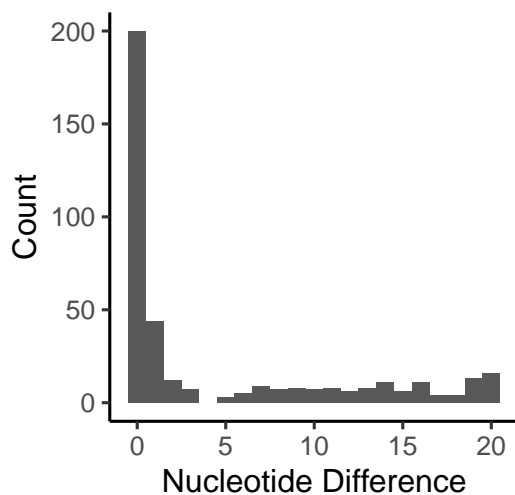
### IGHV4-61\*08

15 sequences assigned  
No exact matches.



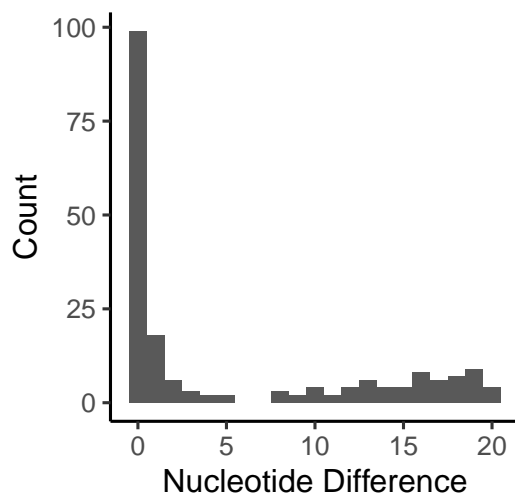
### IGHV4-31\*03

717 sequences assigned  
200 (27.9%) exact matches, in which:  
200 unique CDR3  
7 unique J



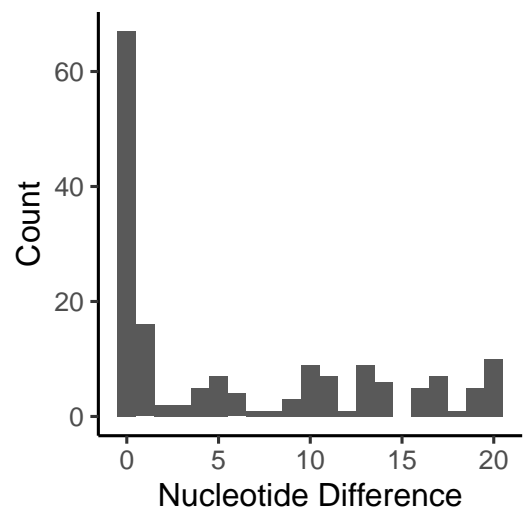
### IGHV4-59\*01

396 sequences assigned  
99 (25%) exact matches, in which:  
98 unique CDR3  
6 unique J



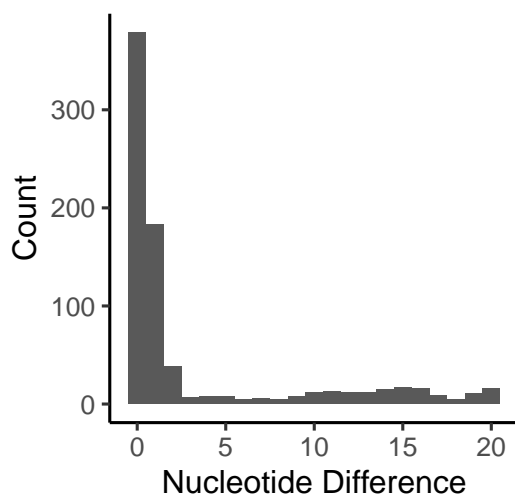
### IGHV5-10-1\*03

252 sequences assigned  
67 (26.6%) exact matches, in which:  
67 unique CDR3  
6 unique J



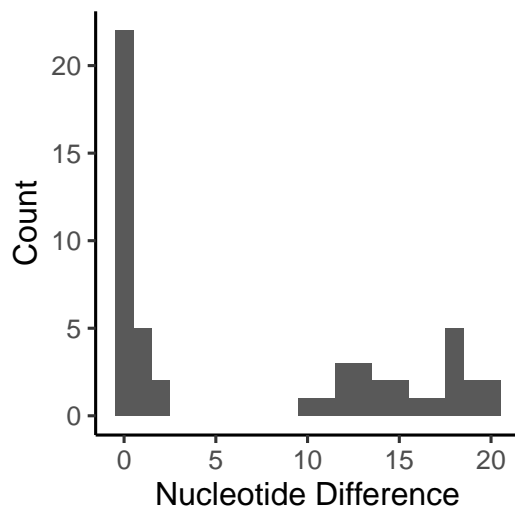
### IGHV4-34\*01

1030 sequences assigned  
379 (36.8%) exact matches, in which:  
378 unique CDR3  
7 unique J



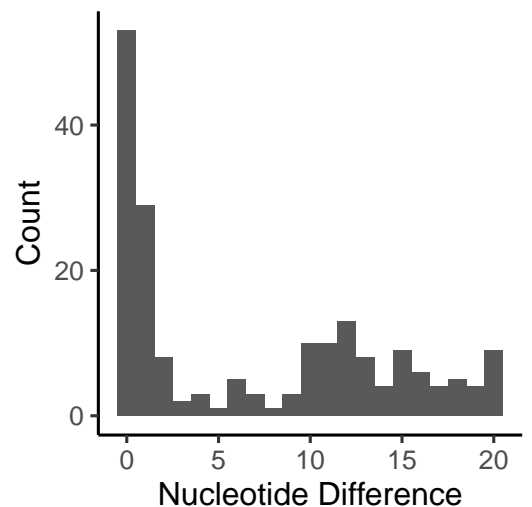
### IGHV4-61\*01

83 sequences assigned  
22 (26.5%) exact matches, in which:  
22 unique CDR3  
6 unique J



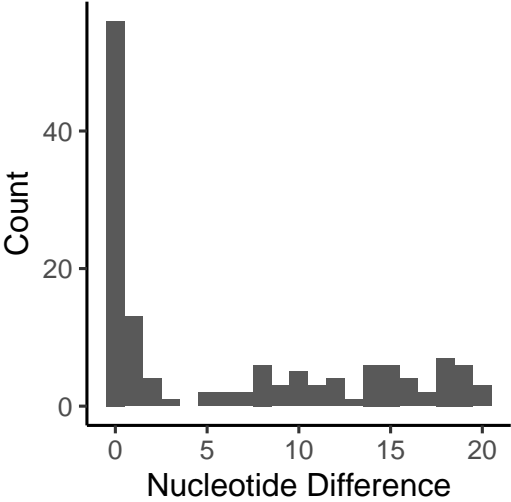
### IGHV5-51\*01

310 sequences assigned  
53 (17.1%) exact matches, in which:  
53 unique CDR3  
6 unique J



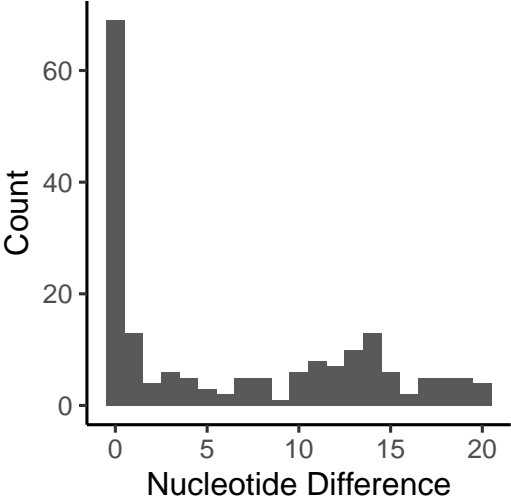
# IGHV5-51\*03

200 sequences assigned  
56 (28%) exact matches, in which:  
56 unique CDR3  
6 unique J



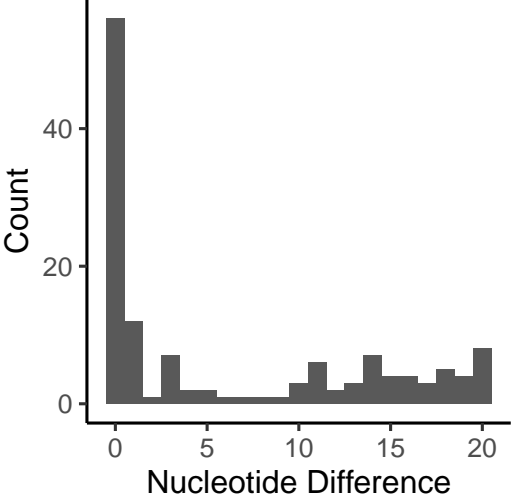
# IGHV6-1\*01

251 sequences assigned  
69 (27.5%) exact matches, in which:  
69 unique CDR3  
6 unique J

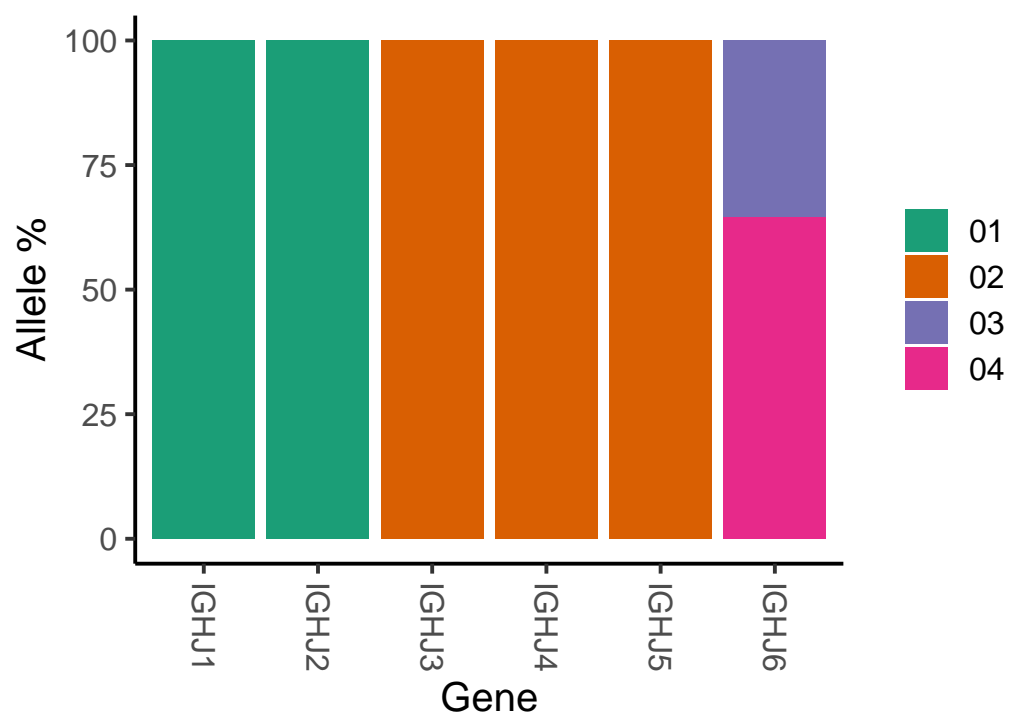


# IGHV7-4-1\*02

249 sequences assigned  
56 (22.5%) exact matches, in which:  
56 unique CDR3  
5 unique J

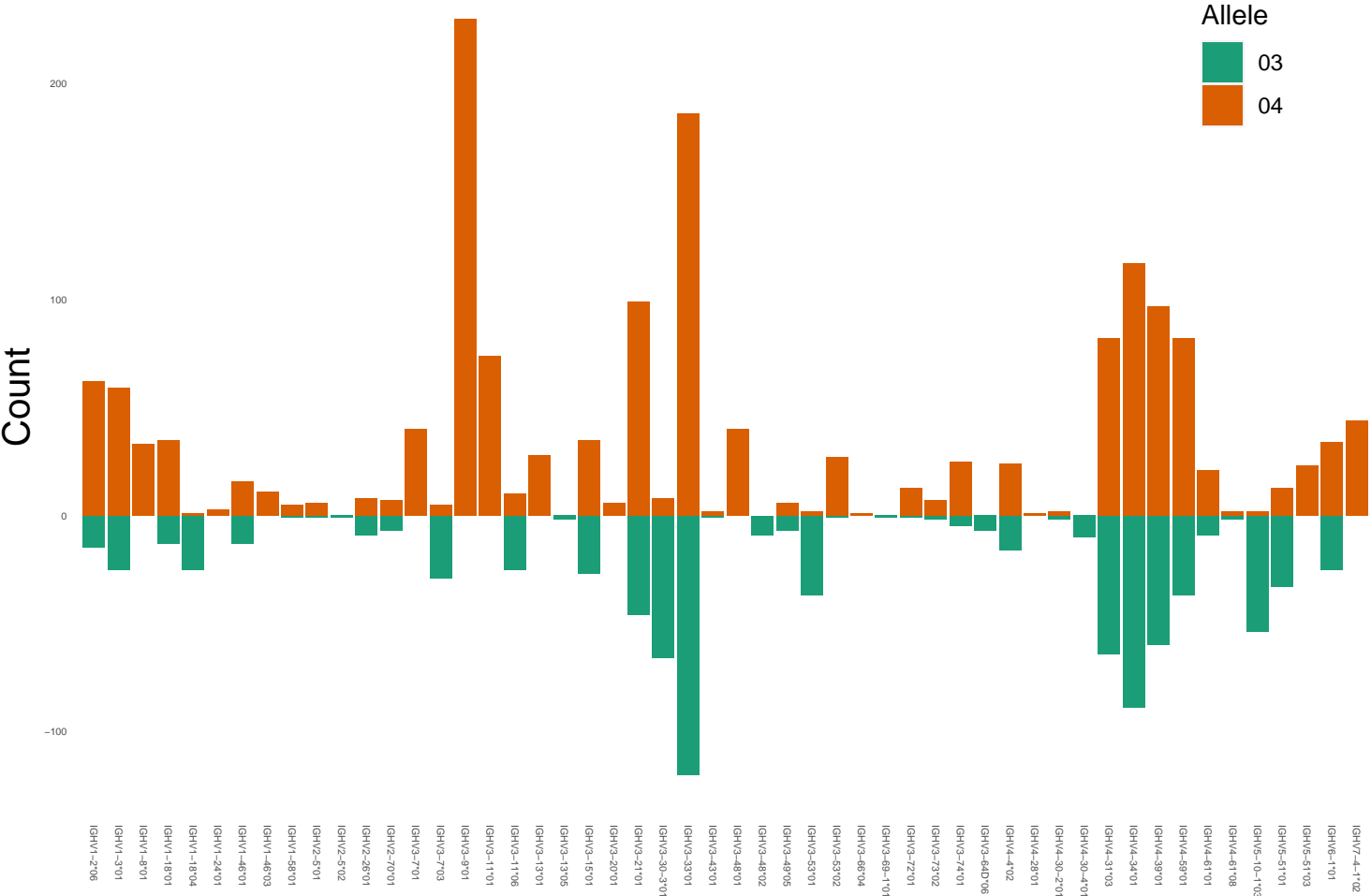


Allele Usage





Sequence Count by IGHJ6 allele usage



[illegible]