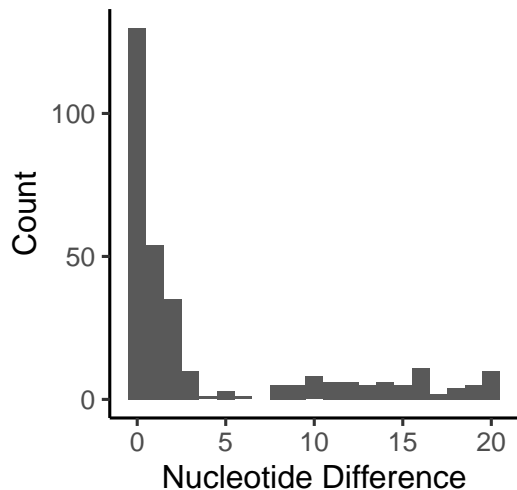


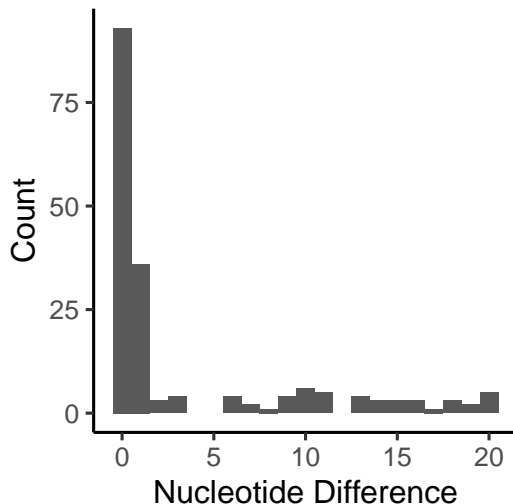
### IGHV1-2\*06

566 sequences assigned  
130 (23%) exact matches, in which:  
128 unique CDR3  
6 unique J



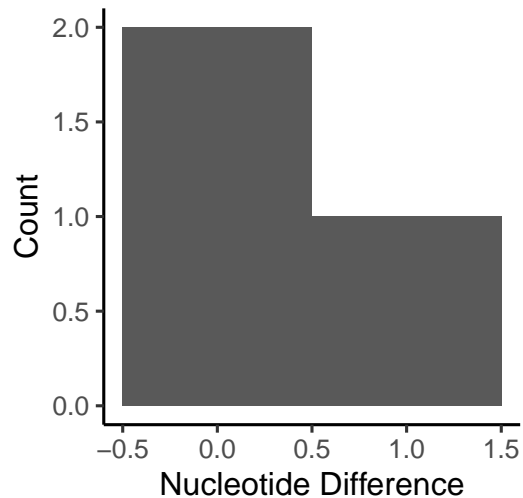
### IGHV1-18\*01

365 sequences assigned  
93 (25.5%) exact matches, in which:  
93 unique CDR3  
6 unique J



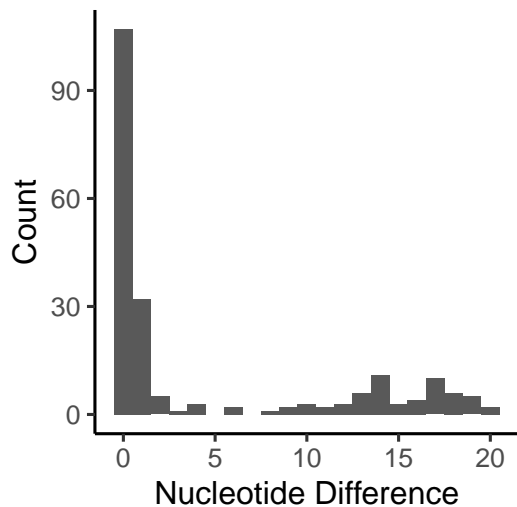
### IGHV1-45\*02

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



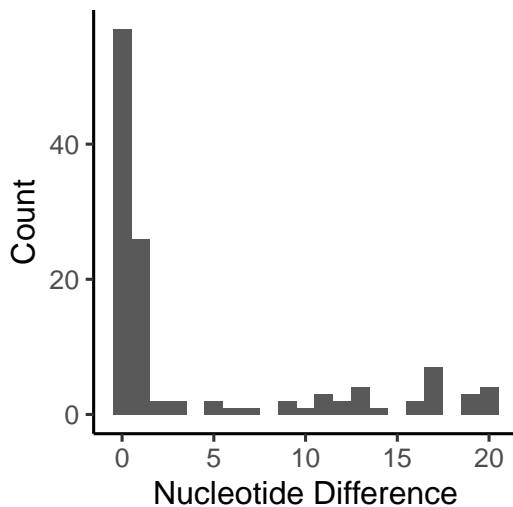
### IGHV1-3\*01

460 sequences assigned  
107 (23.3%) exact matches, in which:  
107 unique CDR3  
7 unique J



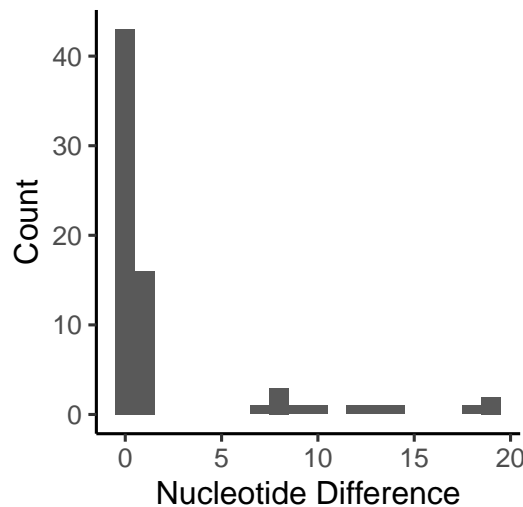
### IGHV1-18\*04

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



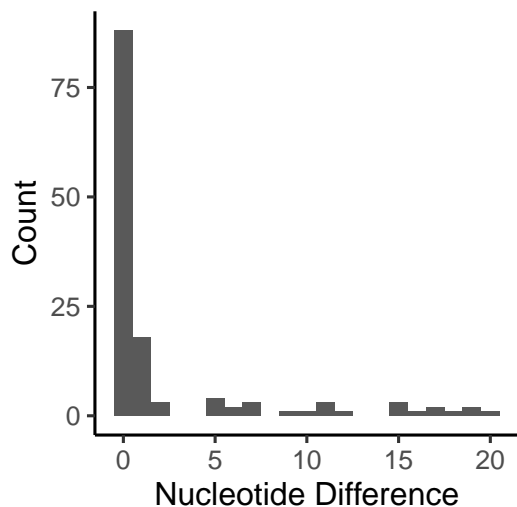
### IGHV1-46\*01

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



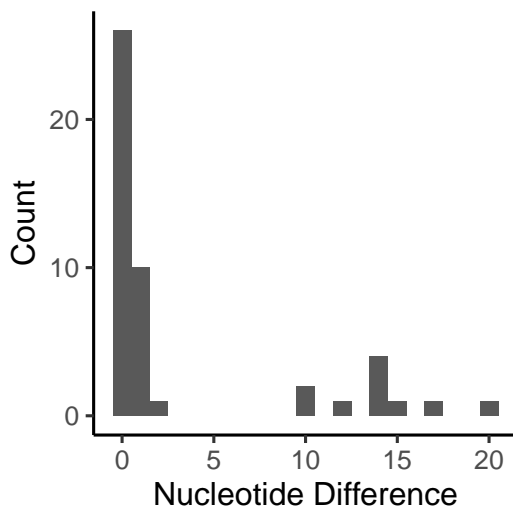
### IGHV1-8\*01

177 sequences assigned  
88 (49.7%) exact matches, in which:  
88 unique CDR3  
6 unique J



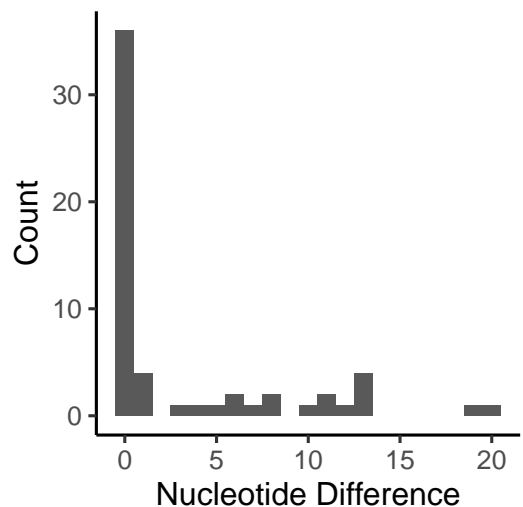
### IGHV1-24\*01

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



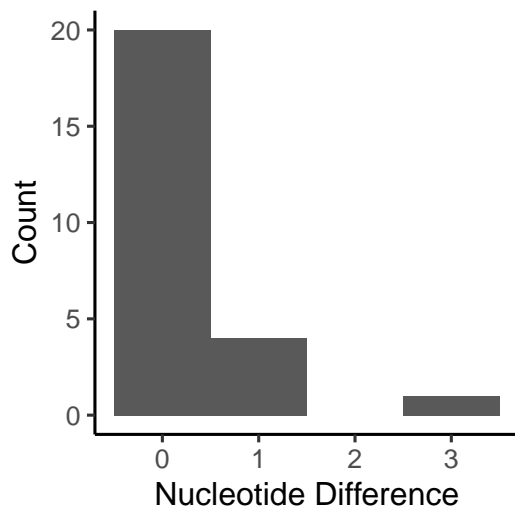
### IGHV1-46\*03

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



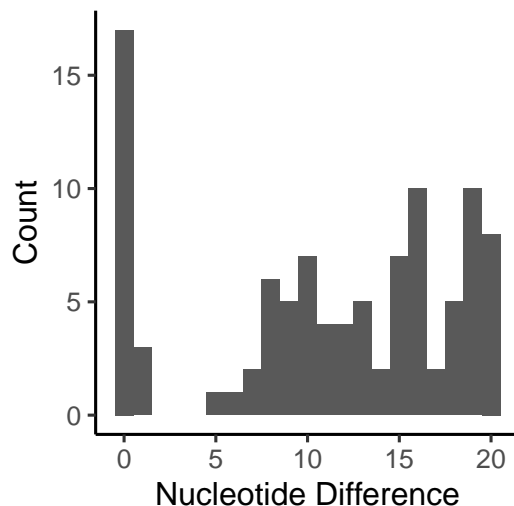
### IGHV1-58\*01

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



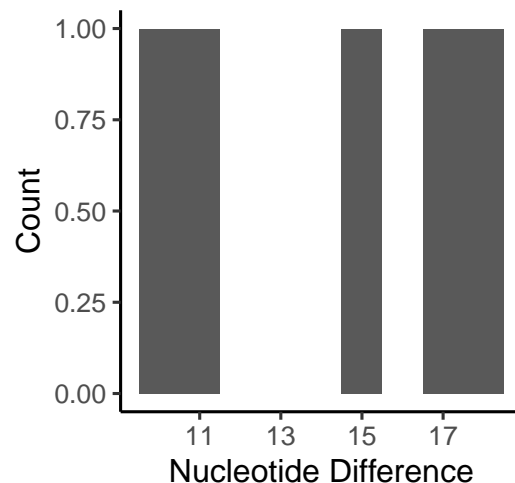
### IGHV2-5\*02

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



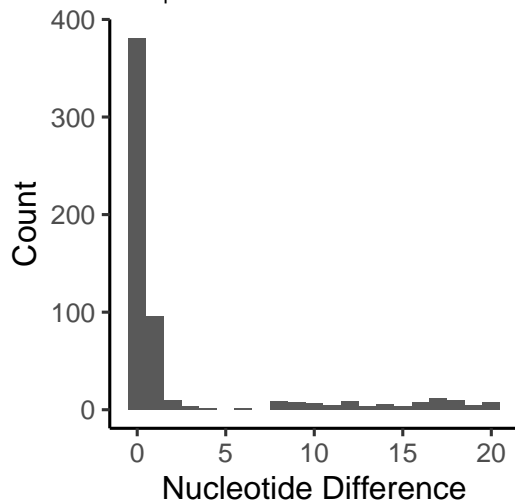
### IGHV2-70\*13

11 sequences assigned  
No exact matches.



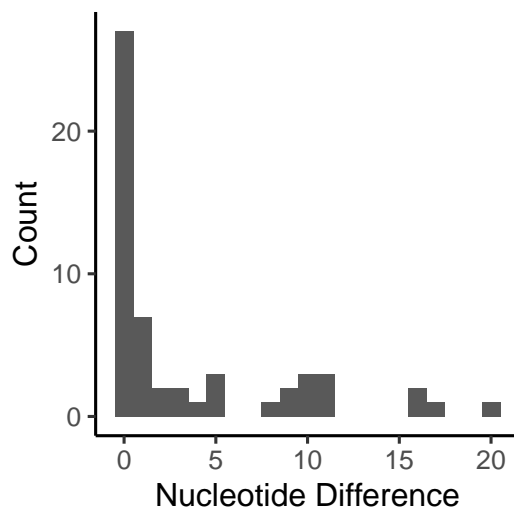
### IGHV1-69\*01

1018 sequences assigned  
381 (37.4%) exact matches, in which:  
379 unique CDR3  
7 unique J



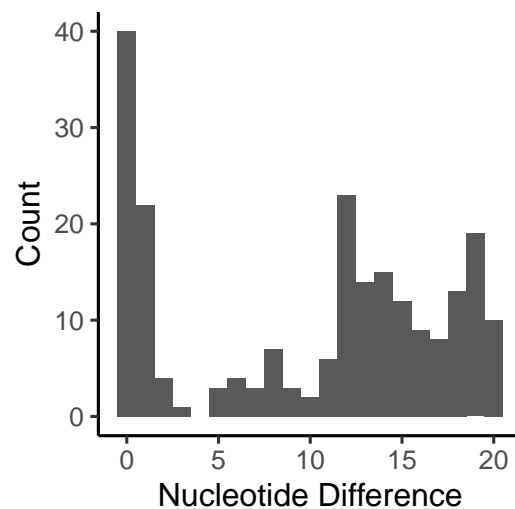
### IGHV2-26\*01

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



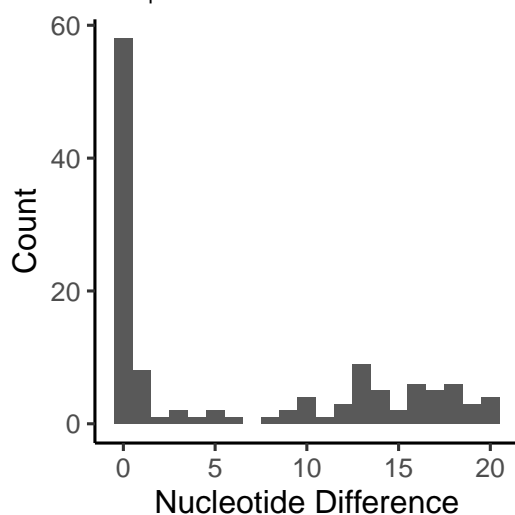
### IGHV3-7\*01

382 sequences assigned  
40 (10.5%) exact matches, in which:  
40 unique CDR3  
4 unique J



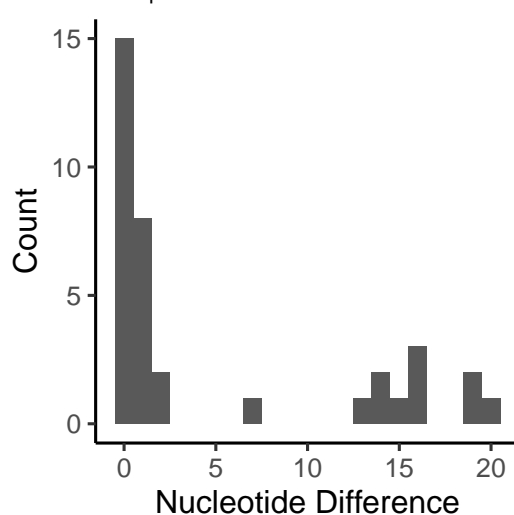
### IGHV2-5\*01

165 sequences assigned  
58 (35.2%) exact matches, in which:  
58 unique CDR3  
6 unique J



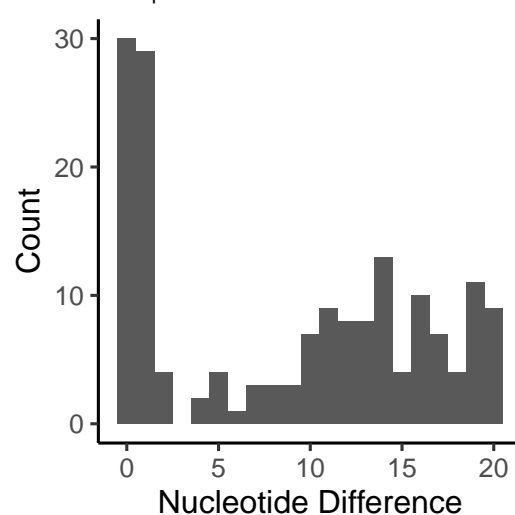
### IGHV2-70\*01

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



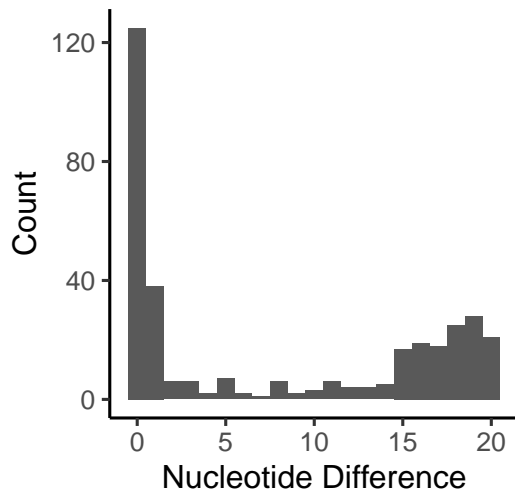
### IGHV3-7\*03

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



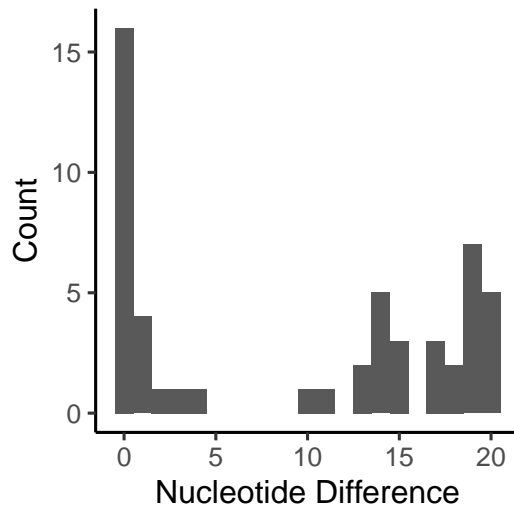
### IGHV3-9\*01

656 sequences assigned  
125 (19.1%) exact matches, in which:  
125 unique CDR3  
6 unique J



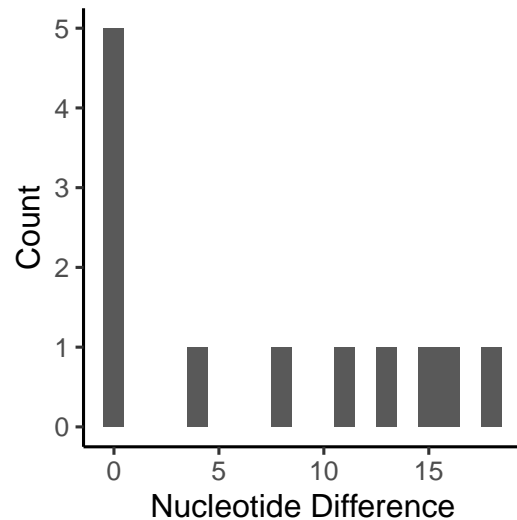
### IGHV3-13\*01

108 sequences assigned  
16 (14.8%) exact matches, in which:  
16 unique CDR3  
3 unique J



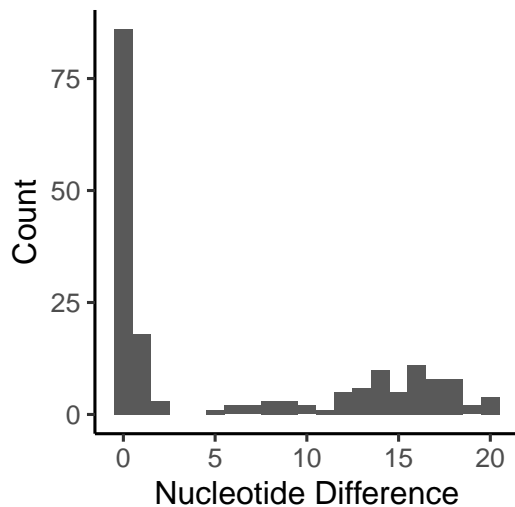
### IGHV3-20\*01

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



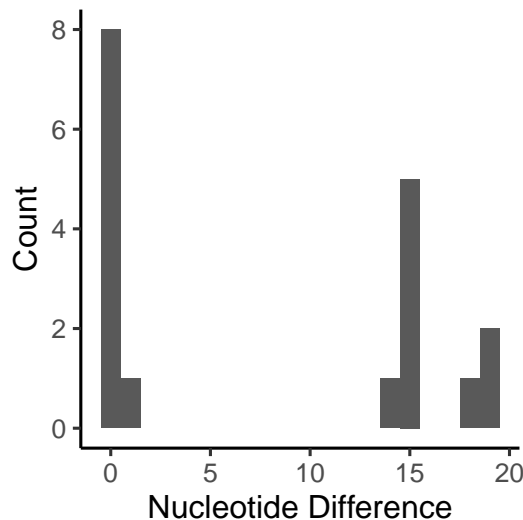
### IGHV3-11\*01

347 sequences assigned  
86 (24.8%) exact matches, in which:  
86 unique CDR3  
5 unique J



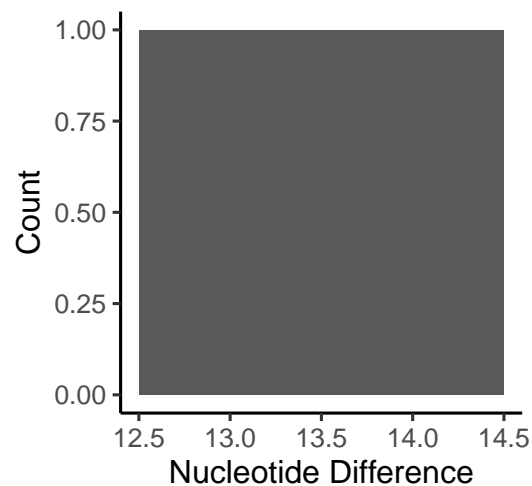
### IGHV3-13\*05

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



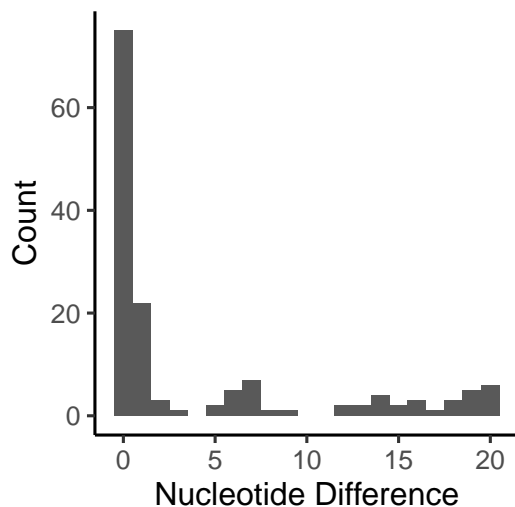
### IGHV3-20\*04

6 sequences assigned  
No exact matches.



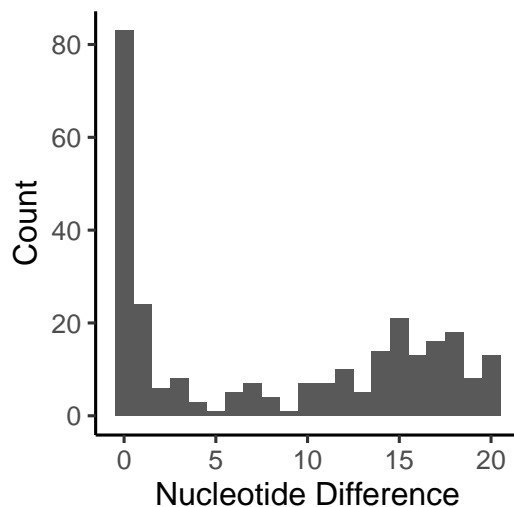
### IGHV3-11\*06

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



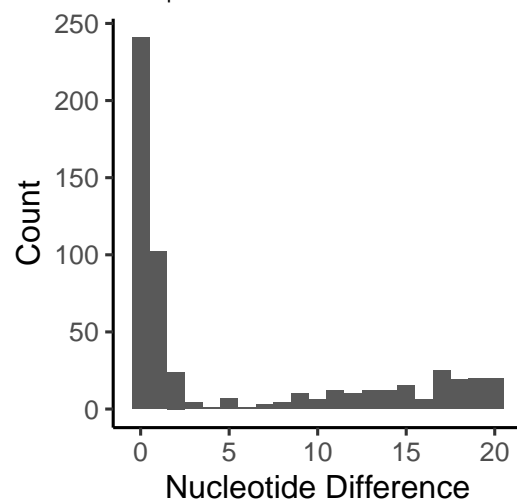
### IGHV3-15\*01

494 sequences assigned  
83 (16.8%) exact matches, in which:  
83 unique CDR3  
6 unique J



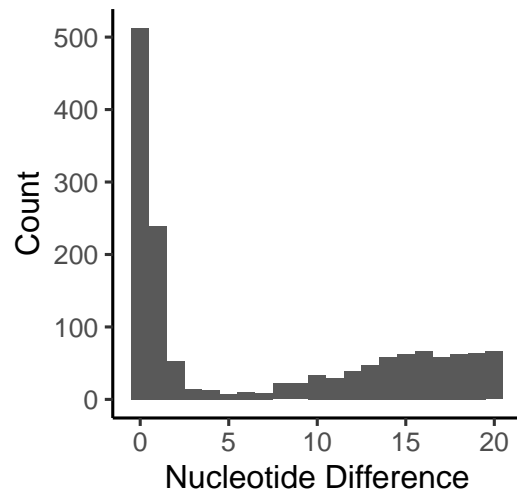
### IGHV3-21\*01

906 sequences assigned  
241 (26.6%) exact matches, in which:  
238 unique CDR3  
7 unique J



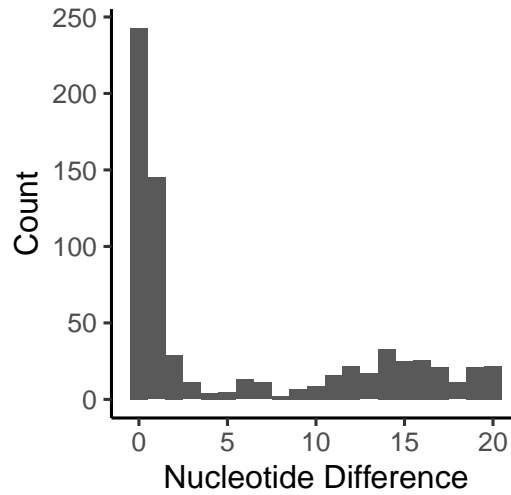
### IGHV3-23\*01

2847 sequences assigned  
513 (18%) exact matches, in which:  
510 unique CDR3  
7 unique J



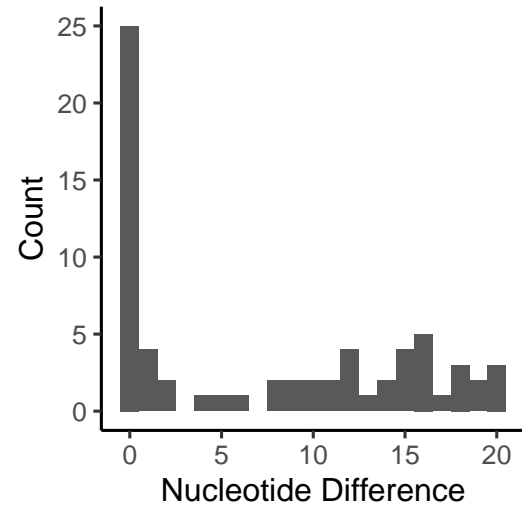
### IGHV3-33\*01

1340 sequences assigned  
243 (18.1%) exact matches, in which:  
237 unique CDR3  
7 unique J



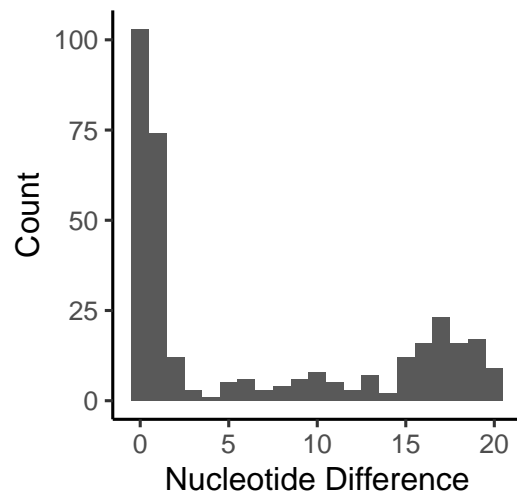
### IGHV3-48\*02

118 sequences assigned  
25 (21.2%) exact matches, in which:  
25 unique CDR3  
4 unique J



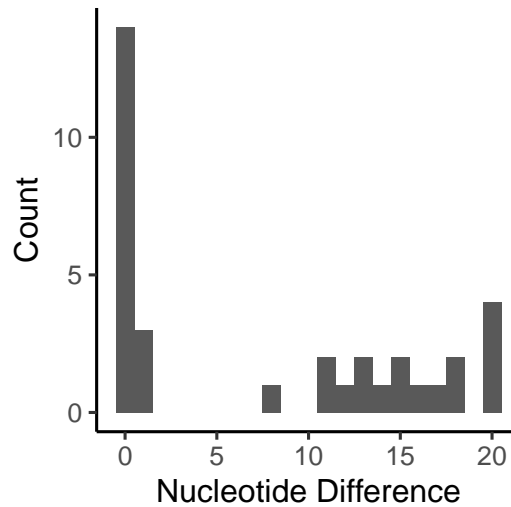
### IGHV3-30-3\*01

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



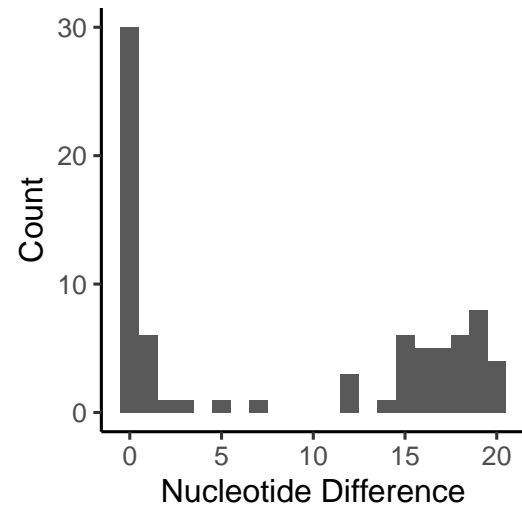
### IGHV3-43\*01

110 sequences assigned  
14 (12.7%) exact matches, in which:  
14 unique CDR3  
4 unique J



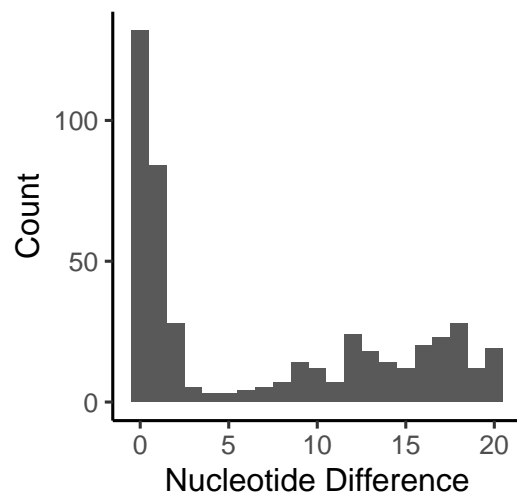
### IGHV3-49\*05

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



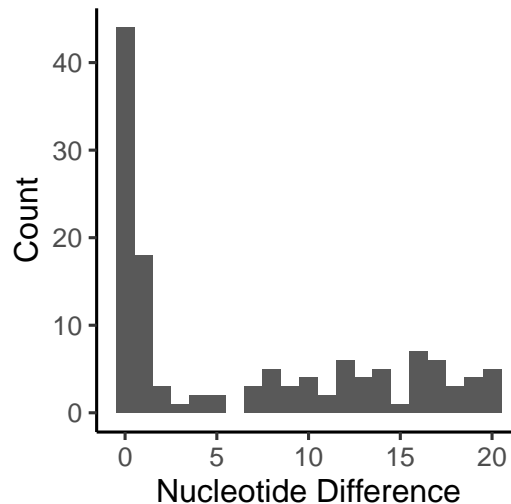
### IGHV3-30\*18

921 sequences assigned  
132 (14.3%) exact matches, in which:  
131 unique CDR3  
7 unique J



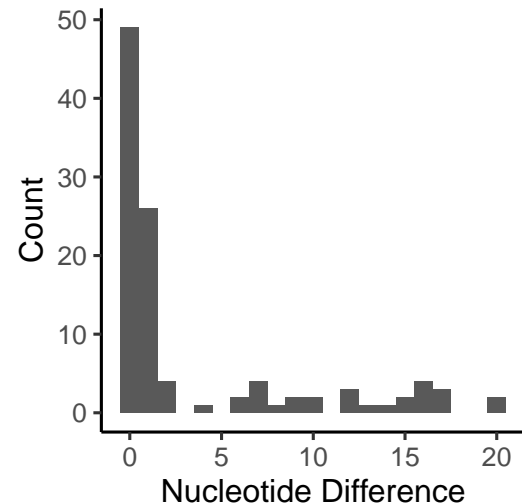
### IGHV3-48\*01

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



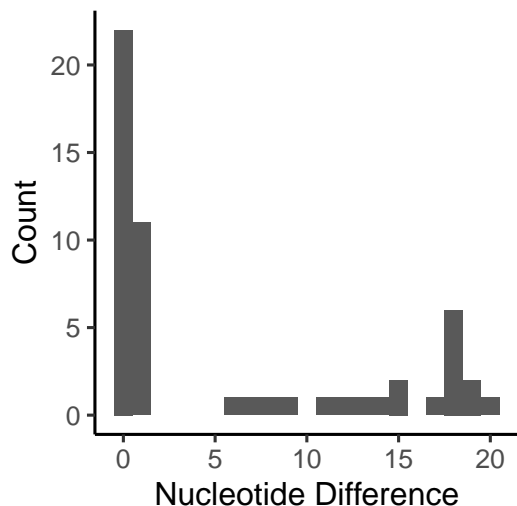
### IGHV3-53\*01

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



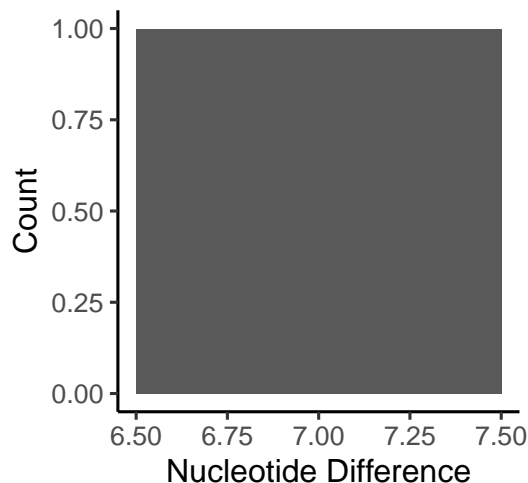
### IGHV3-53\*02

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



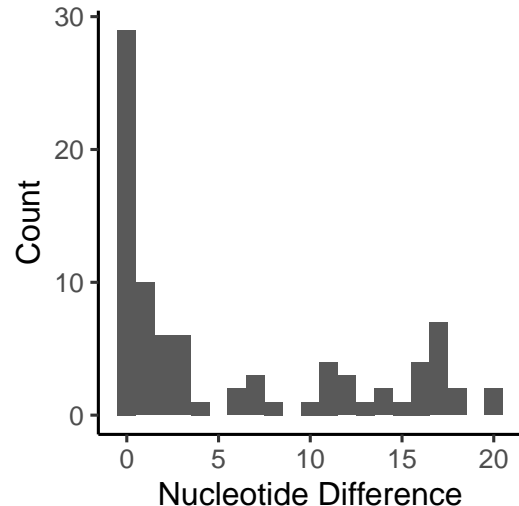
### IGHV3-66\*03

1 sequences assigned  
No exact matches.



### IGHV3-73\*02

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



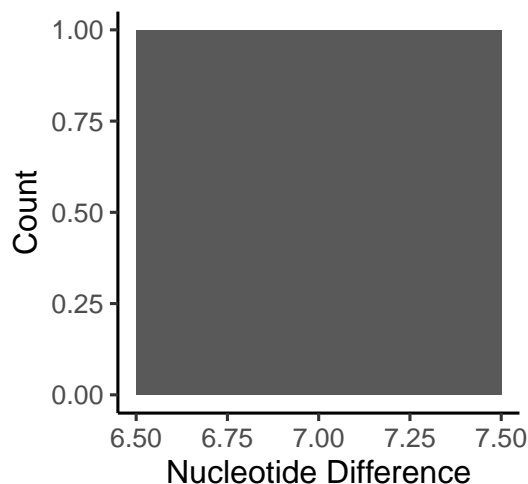
### IGHV3-64\*02

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



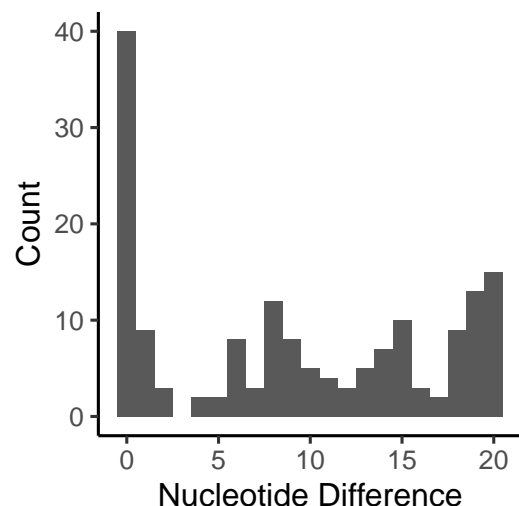
### IGHV3-66\*04

1 sequences assigned  
No exact matches.



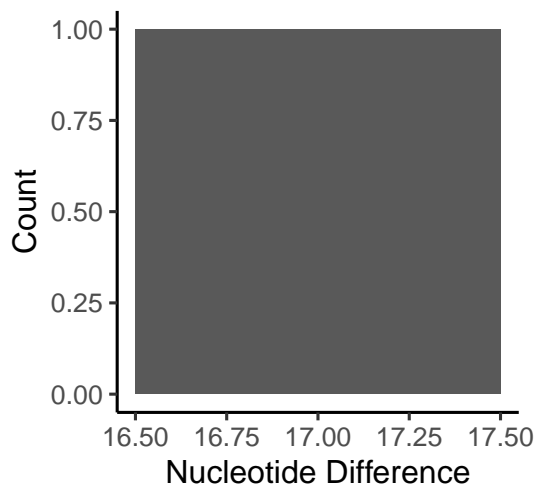
### IGHV3-74\*01

426 sequences assigned  
40 (9.4%) exact matches, in which:  
39 unique CDR3  
6 unique J



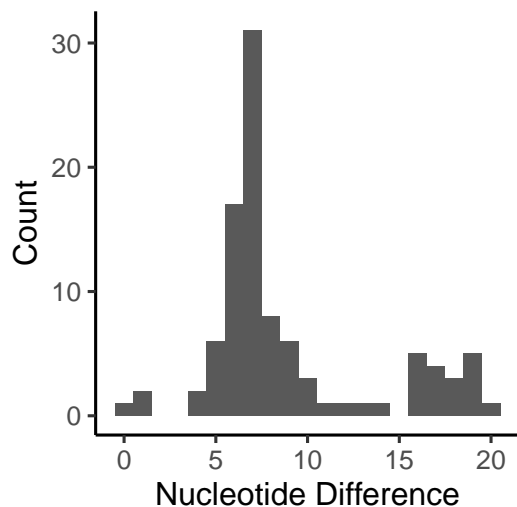
### IGHV3-64\*07

4 sequences assigned  
No exact matches.



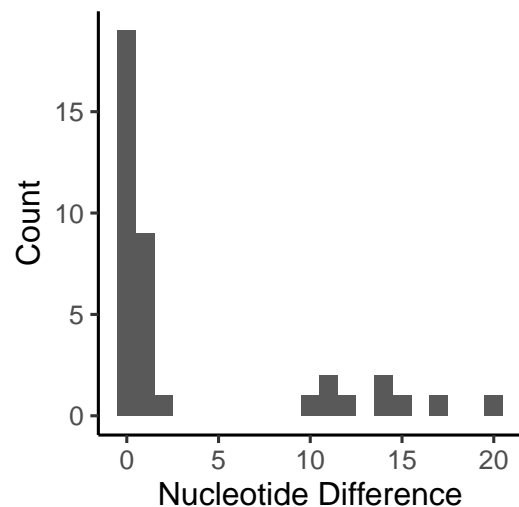
### IGHV3-72\*01

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



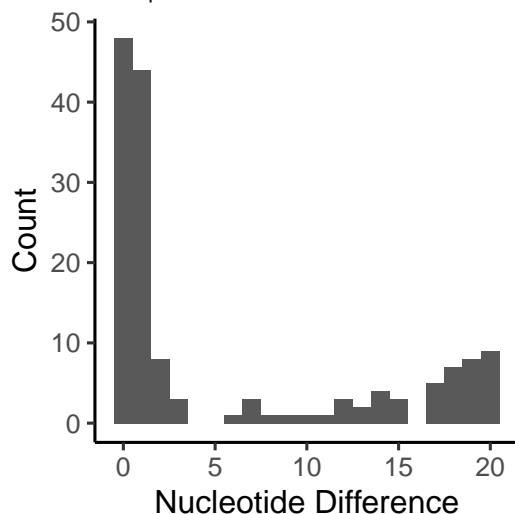
### IGHV3-64D\*06

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



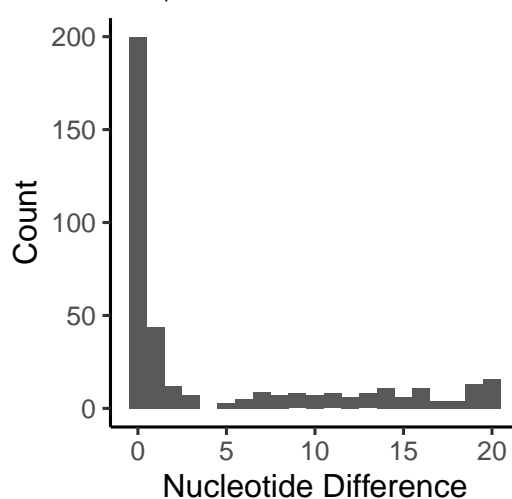
### IGHV4-4\*02

269 sequences assigned  
48 (17.8%) exact matches, in which:  
48 unique CDR3  
6 unique J



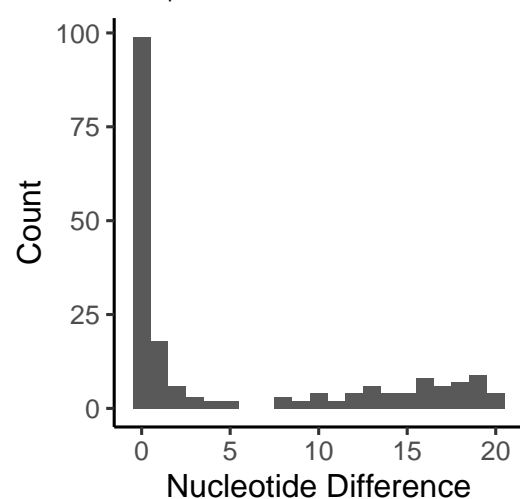
### IGHV4-31\*03

713 sequences assigned  
200 (28.1%) exact matches, in which:  
200 unique CDR3  
7 unique J



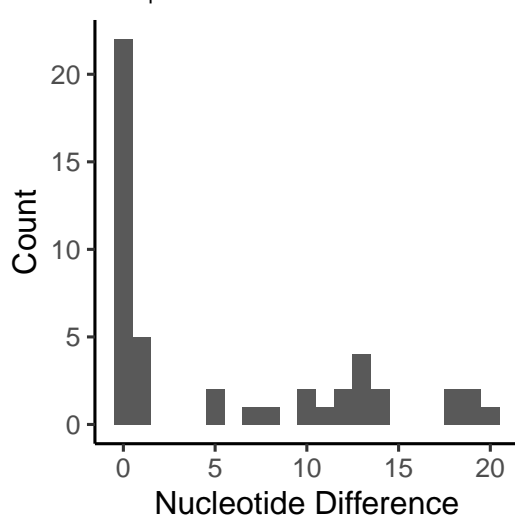
### IGHV4-59\*01

395 sequences assigned  
99 (25.1%) exact matches, in which:  
98 unique CDR3  
6 unique J



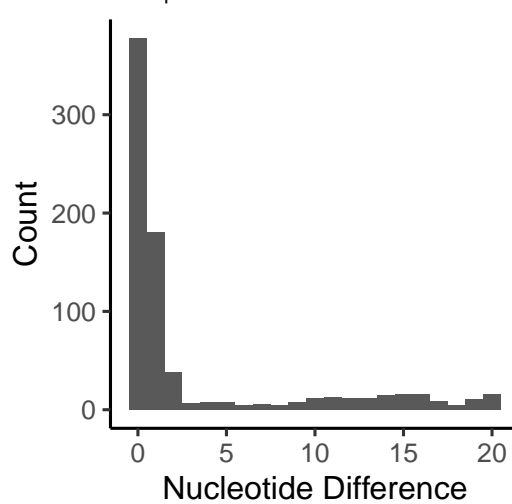
### IGHV4-30-4\*01

73 sequences assigned  
22 (30.1%) exact matches, in which:  
22 unique CDR3  
5 unique J



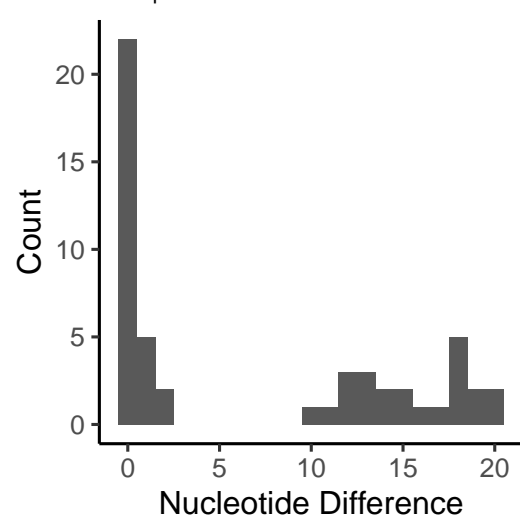
### IGHV4-34\*01

1025 sequences assigned  
378 (36.9%) exact matches, in which:  
377 unique CDR3  
7 unique J



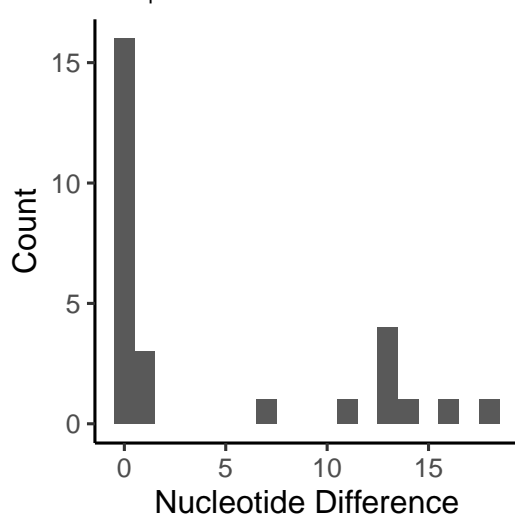
### IGHV4-61\*01

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



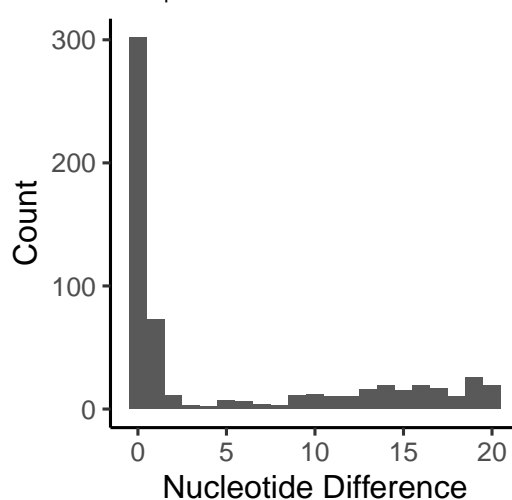
### IGHV4-30-2\*01

45 sequences assigned  
16 (35.6%) exact matches, in which:  
16 unique CDR3  
6 unique J



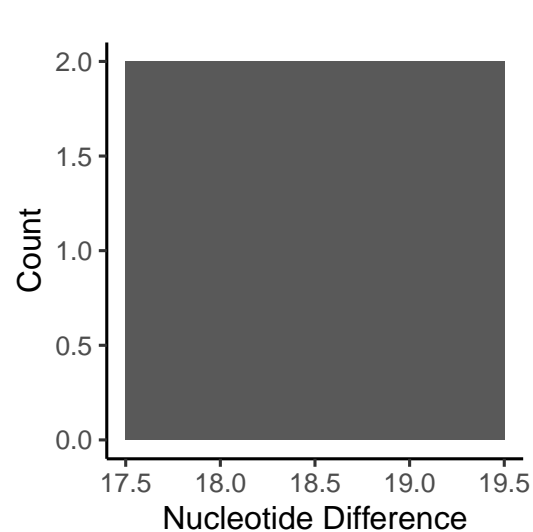
### IGHV4-39\*01

1150 sequences assigned  
302 (26.3%) exact matches, in which:  
301 unique CDR3  
7 unique J



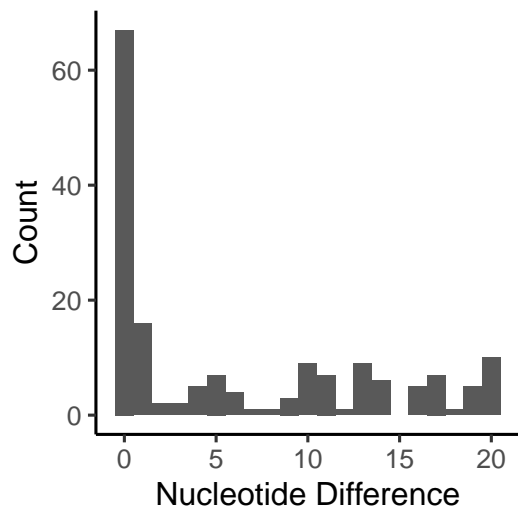
### IGHV4-61\*08

15 sequences assigned  
No exact matches.



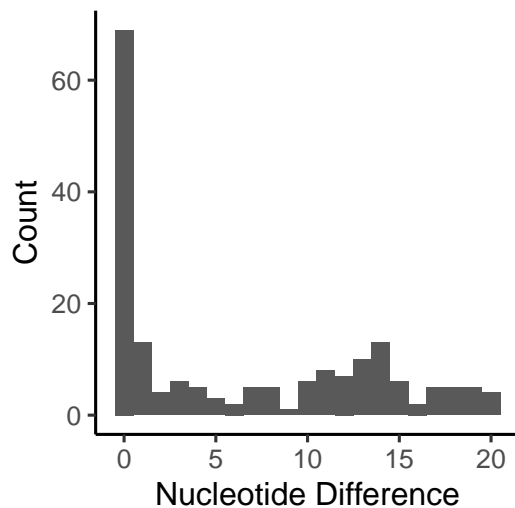
## IGHV5-10-1\*03

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



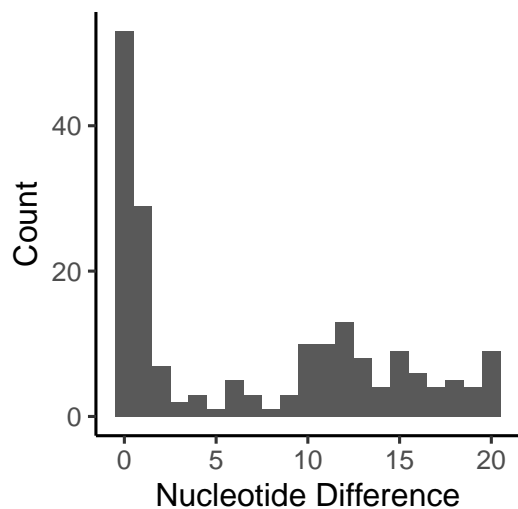
## IGHV6-1\*01

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



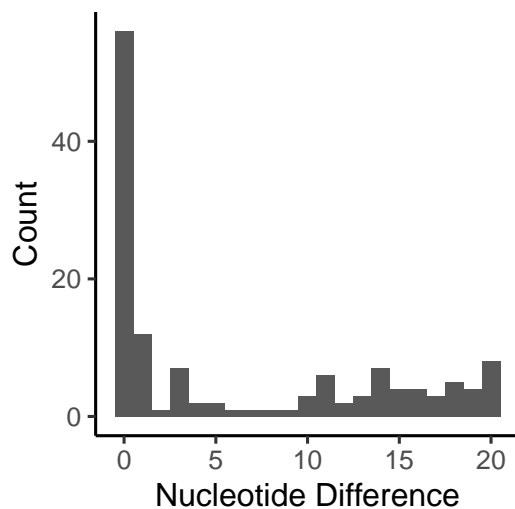
## IGHV5-51\*01

308 sequences assigned  
53 (17.2%) exact matches, in which:  
53 unique CDR3  
6 unique J



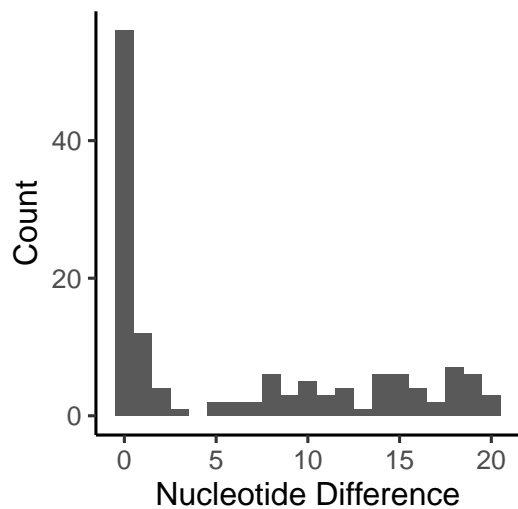
## IGHV7-4-1\*02

247 sequences assigned  
56 (22.7%) exact matches, in which:  
56 unique CDR3  
5 unique J

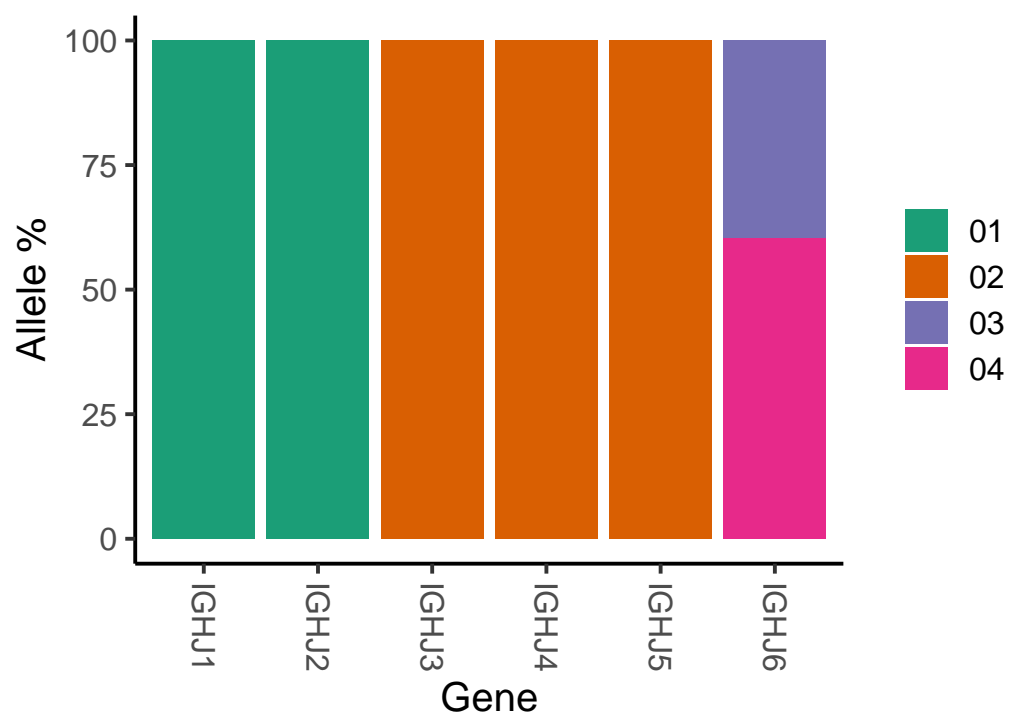


## IGHV5-51\*03

199 sequences assigned  
56 (28.1%) exact matches, in which:  
56 unique CDR3  
6 unique J



Allele Usage





Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.