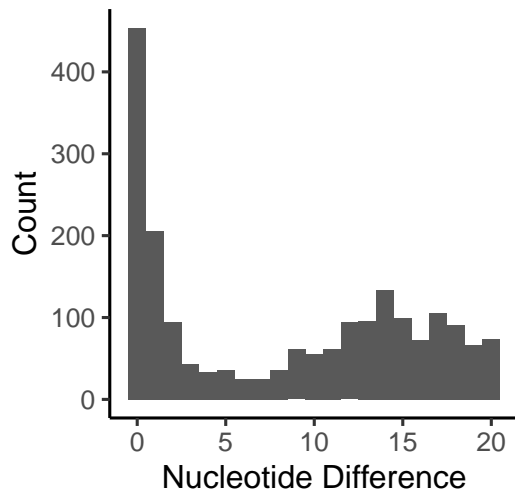


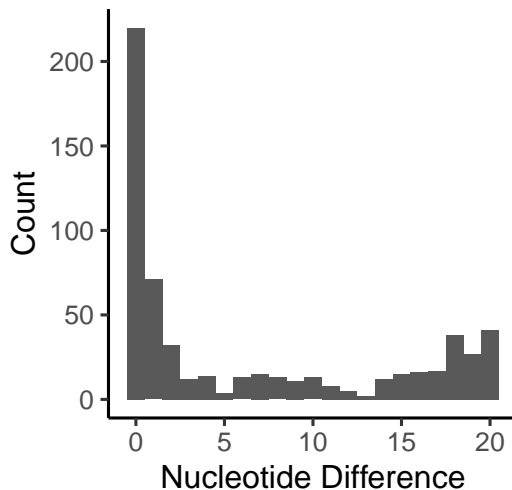
### IGHV1-2\*02

3062 sequences assigned  
454 (14.8%) exact matches, in which:  
441 unique CDR3  
7 unique J



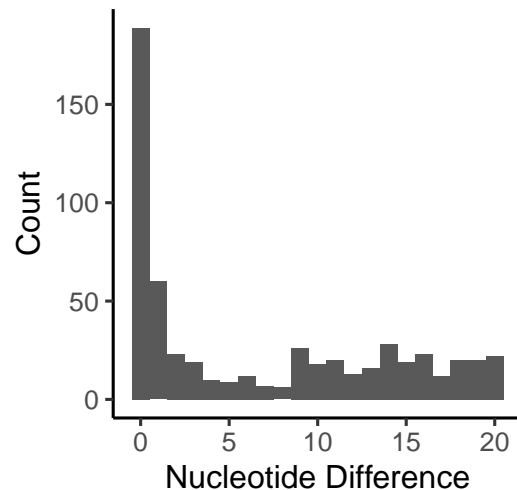
### IGHV1-18\*04

1116 sequences assigned  
220 (19.7%) exact matches, in which:  
217 unique CDR3  
6 unique J



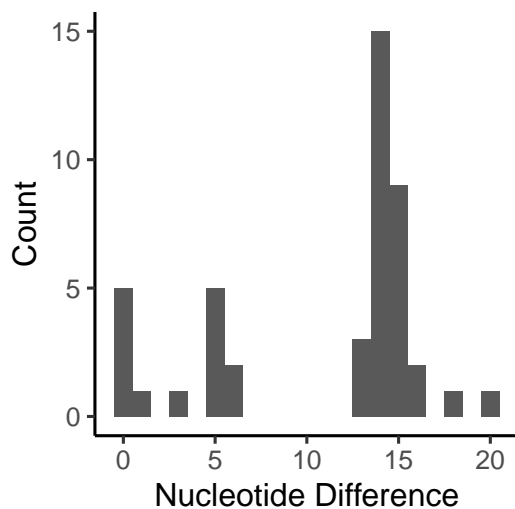
### IGHV1-46\*01

957 sequences assigned  
189 (19.7%) exact matches, in which:  
180 unique CDR3  
5 unique J



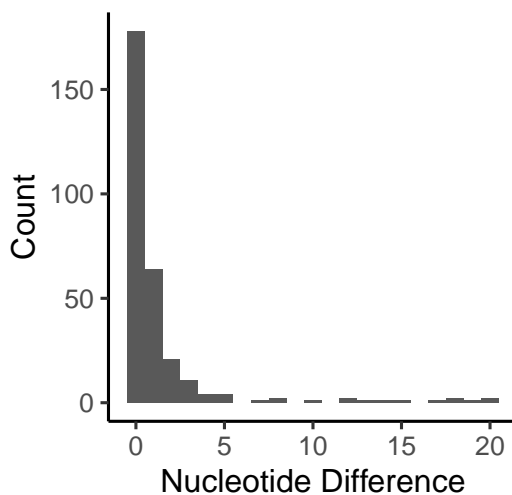
### IGHV1-3\*02

47 sequences assigned  
5 (10.6%) exact matches, in which:  
5 unique CDR3  
3 unique J



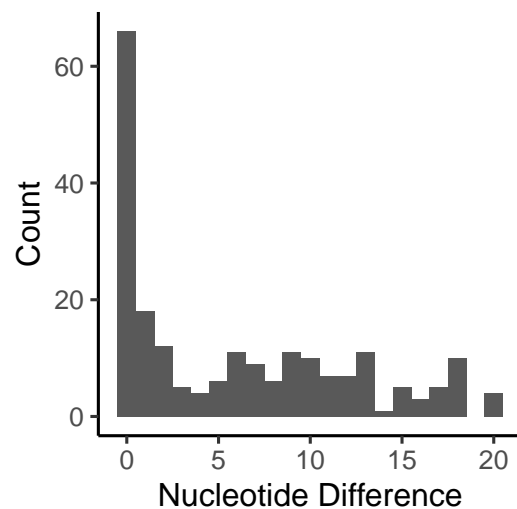
### IGHV1-24\*01

350 sequences assigned  
178 (50.9%) exact matches, in which:  
174 unique CDR3  
7 unique J



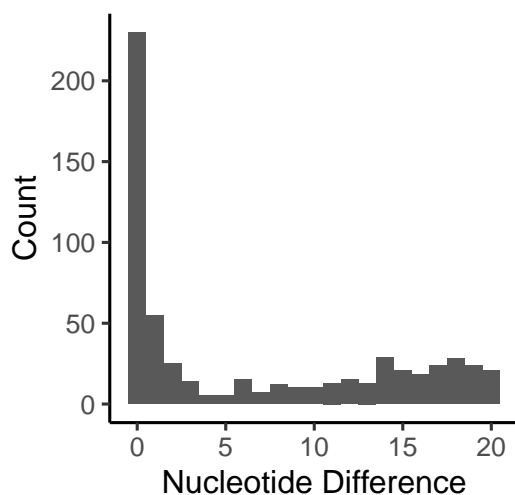
### IGHV1-46\*03

303 sequences assigned  
66 (21.8%) exact matches, in which:  
64 unique CDR3  
5 unique J



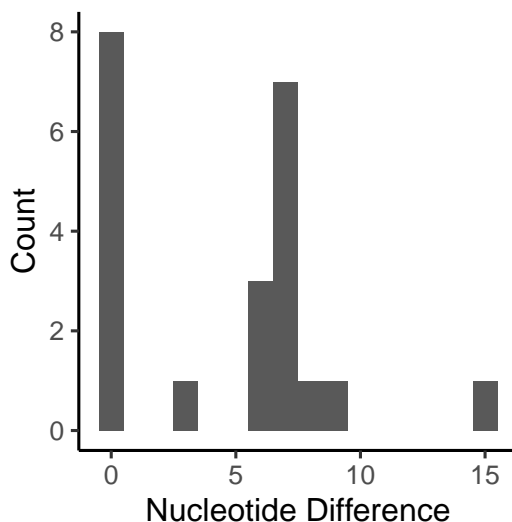
### IGHV1-18\*01

1004 sequences assigned  
230 (22.9%) exact matches, in which:  
222 unique CDR3  
6 unique J



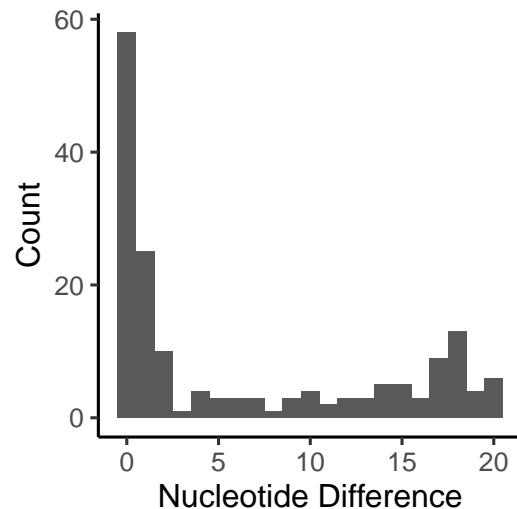
### IGHV1-45\*02

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



### IGHV1-58\*01

190 sequences assigned  
58 (30.5%) exact matches, in which:  
57 unique CDR3  
6 unique J



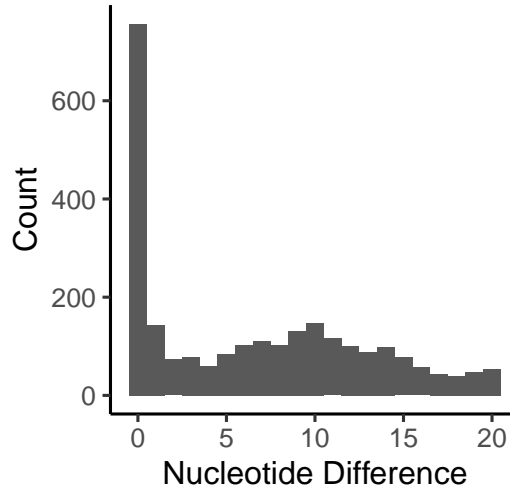
### IGHV1-68\*02

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



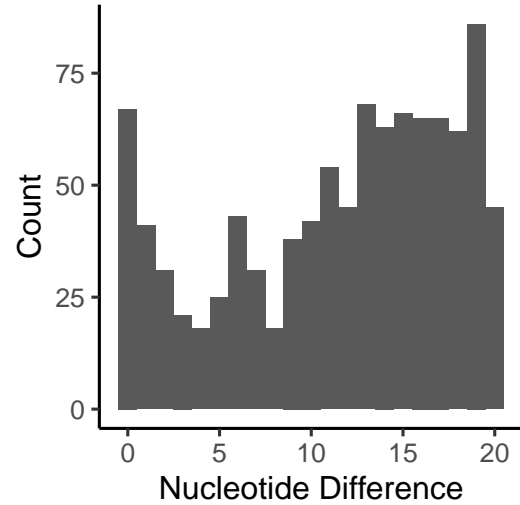
### IGHV2-5\*02

3189 sequences assigned  
757 (23.7%) exact matches, in which:  
696 unique CDR3  
7 unique J



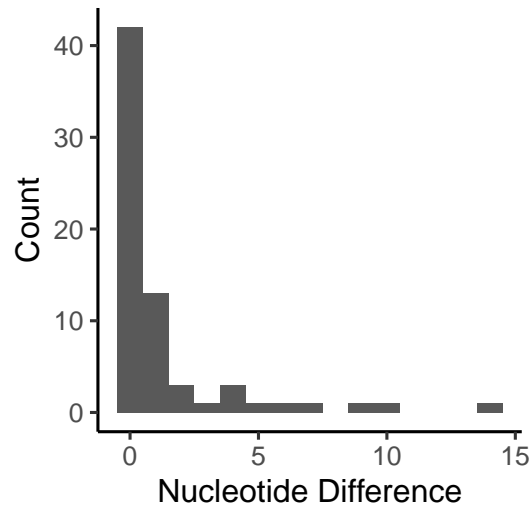
### IGHV3-7\*04

1458 sequences assigned  
67 (4.6%) exact matches, in which:  
65 unique CDR3  
7 unique J



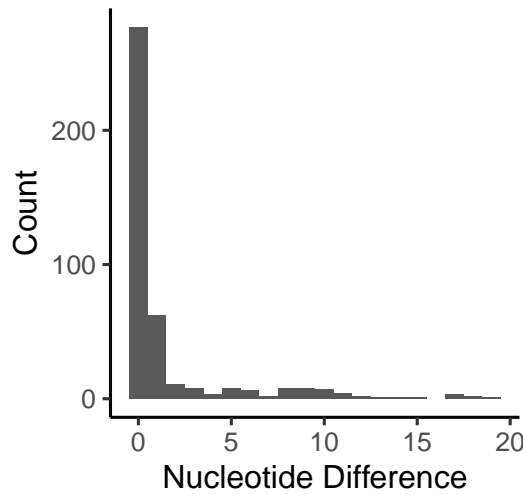
### IGHV1-69-2\*01

85 sequences assigned  
42 (49.4%) exact matches, in which:  
40 unique CDR3  
4 unique J



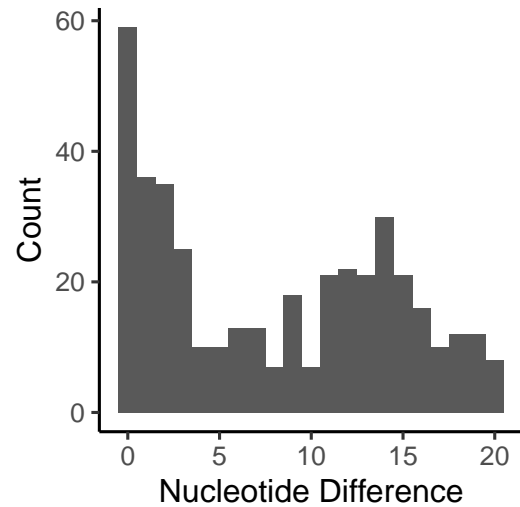
### IGHV2-26\*01

428 sequences assigned  
277 (64.7%) exact matches, in which:  
267 unique CDR3  
7 unique J



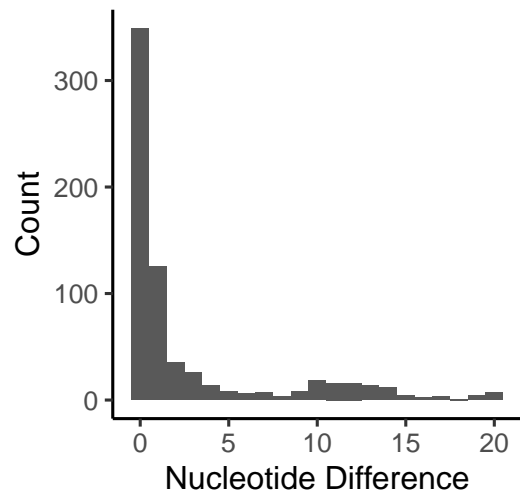
### IGHV3-11\*06

671 sequences assigned  
59 (8.8%) exact matches, in which:  
57 unique CDR3  
6 unique J



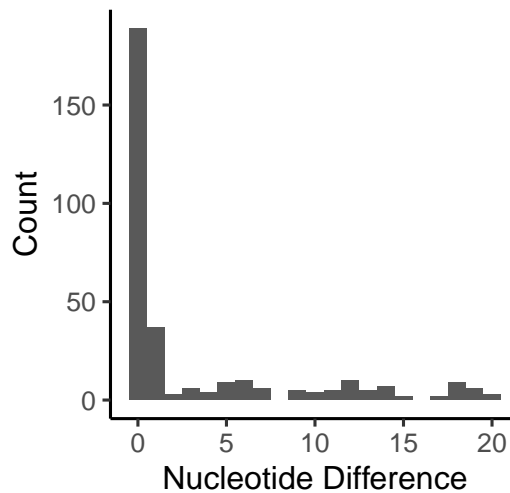
### IGHV1-69\*06

793 sequences assigned  
349 (44%) exact matches, in which:  
331 unique CDR3  
7 unique J



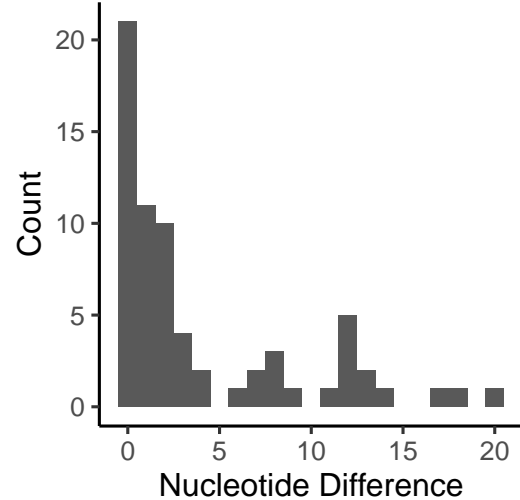
### IGHV2-70\*01

361 sequences assigned  
189 (52.4%) exact matches, in which:  
186 unique CDR3  
6 unique J



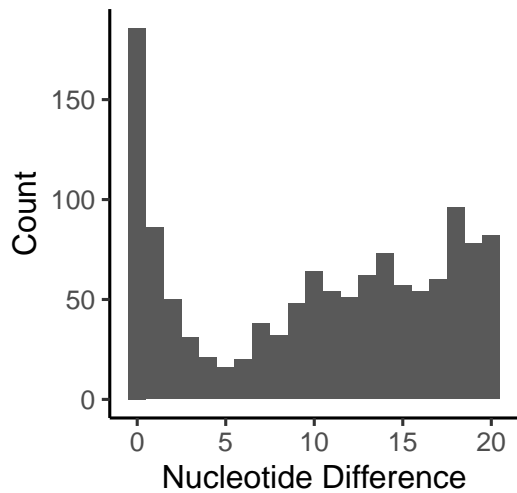
### IGHV3-13\*05

97 sequences assigned  
21 (21.6%) exact matches, in which:  
20 unique CDR3  
5 unique J



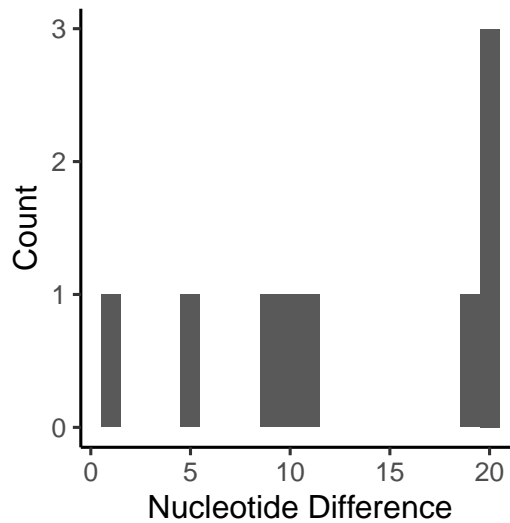
### IGHV3-15\*01

1951 sequences assigned  
186 (9.5%) exact matches, in which:  
180 unique CDR3  
7 unique J



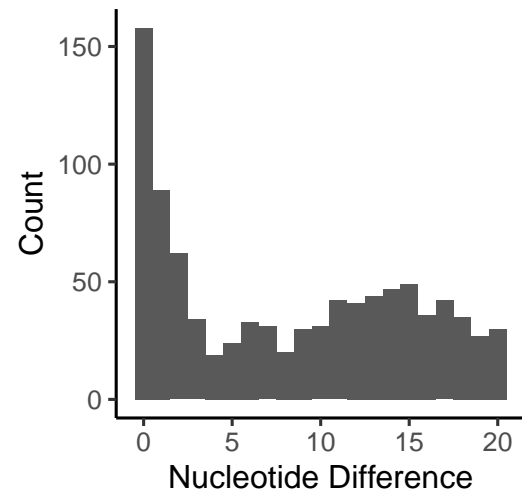
### IGHV3-20\*04

18 sequences assigned  
No exact matches.



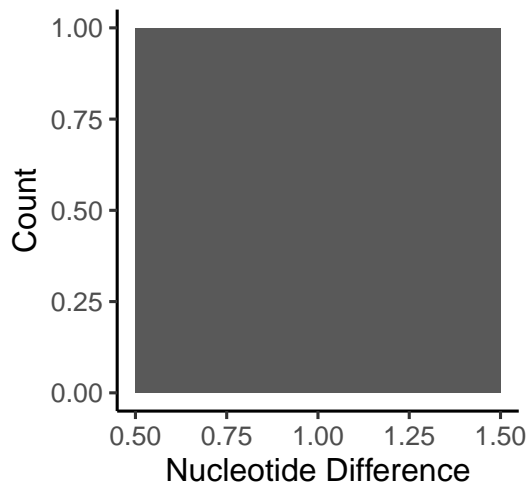
### IGHV3-30-3\*01

1326 sequences assigned  
158 (11.9%) exact matches, in which:  
155 unique CDR3  
6 unique J



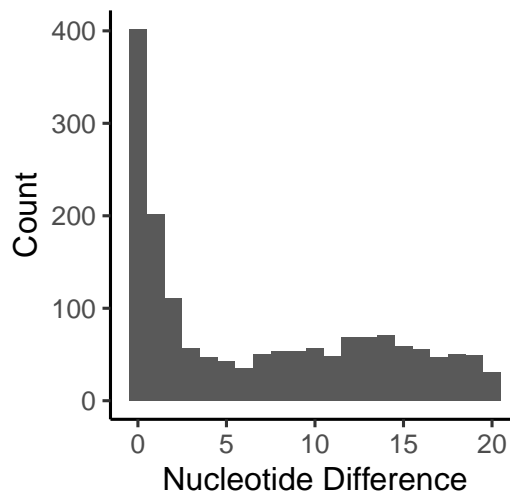
### IGHV3-19\*01

2 sequences assigned  
No exact matches.



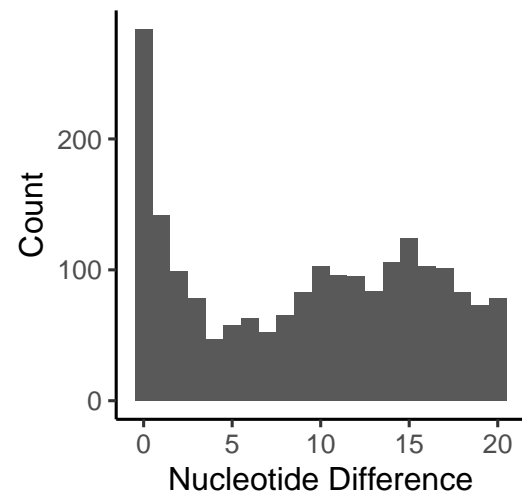
### IGHV3-21\*01

2327 sequences assigned  
402 (17.3%) exact matches, in which:  
383 unique CDR3  
7 unique J



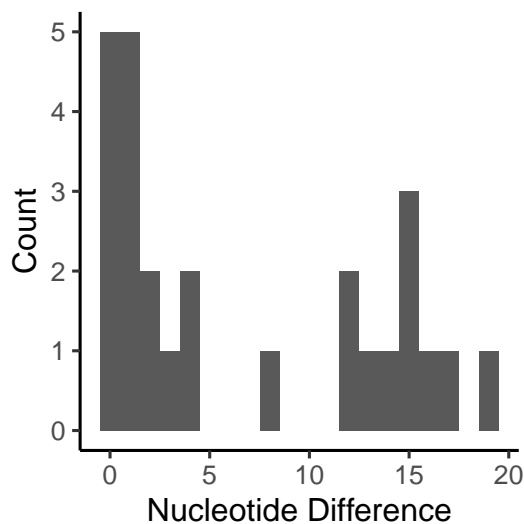
### IGHV3-33\*01

2753 sequences assigned  
284 (10.3%) exact matches, in which:  
277 unique CDR3  
7 unique J



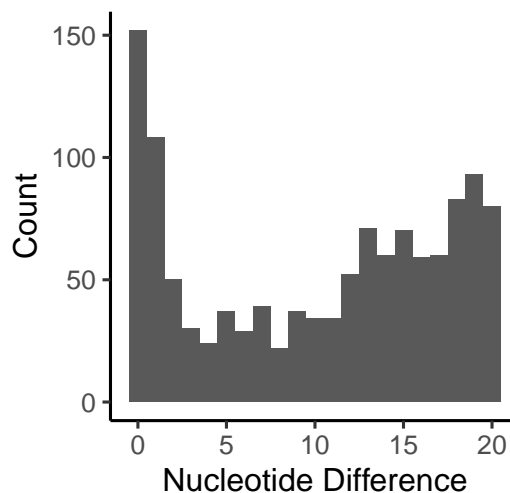
### IGHV3-20\*01

27 sequences assigned  
5 (18.5%) exact matches, in which:  
5 unique CDR3  
3 unique J



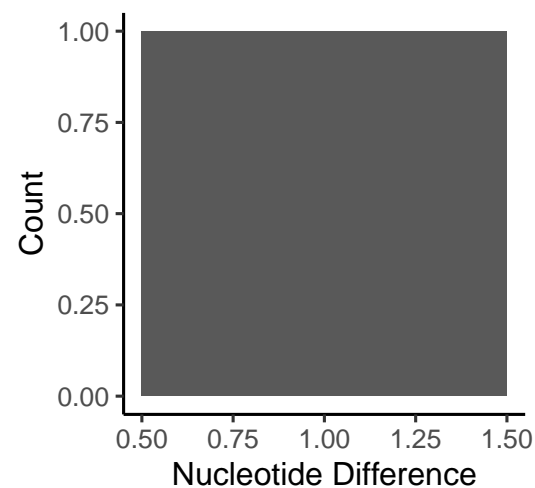
### IGHV3-23\*04

2020 sequences assigned  
152 (7.5%) exact matches, in which:  
147 unique CDR3  
6 unique J



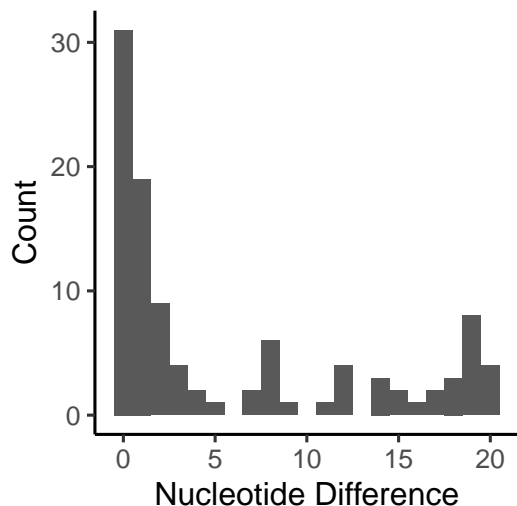
### IGHV3-35\*01

1 sequences assigned  
No exact matches.



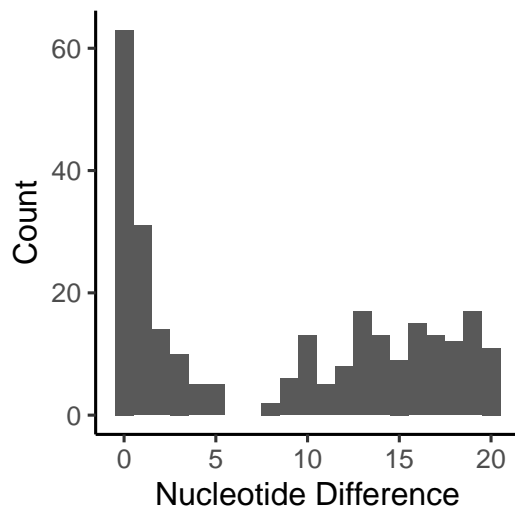
## IGHV3-43\*01

148 sequences assigned  
31 (20.9%) exact matches, in which:  
29 unique CDR3  
5 unique J



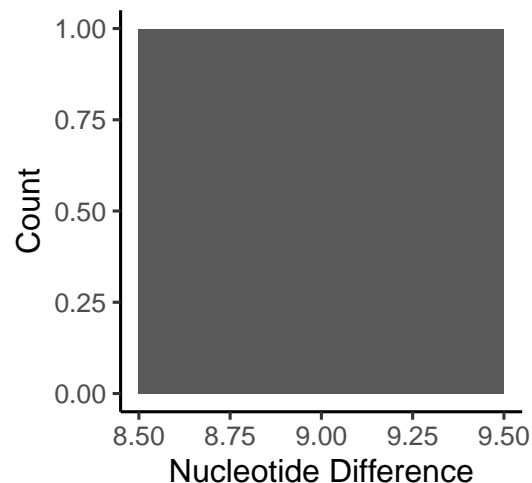
## IGHV3-49\*05

322 sequences assigned  
63 (19.6%) exact matches, in which:  
63 unique CDR3  
7 unique J



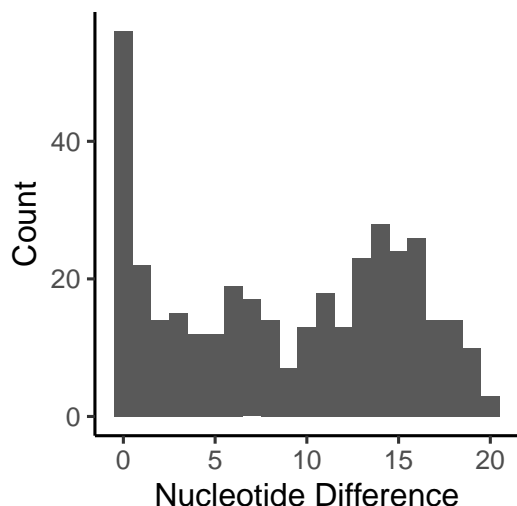
## IGHV3-66\*01

1 sequences assigned  
No exact matches.



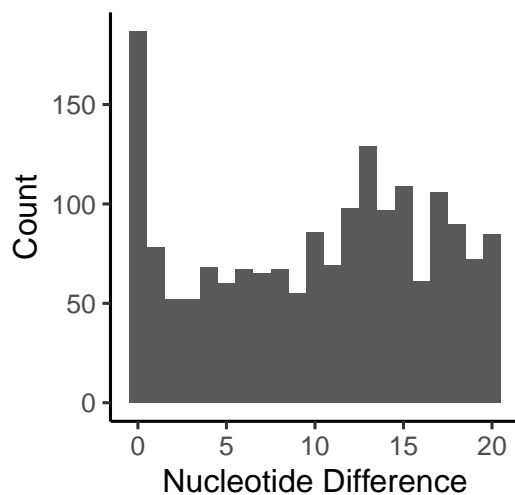
## IGHV3-48\*01

483 sequences assigned  
56 (11.6%) exact matches, in which:  
55 unique CDR3  
6 unique J



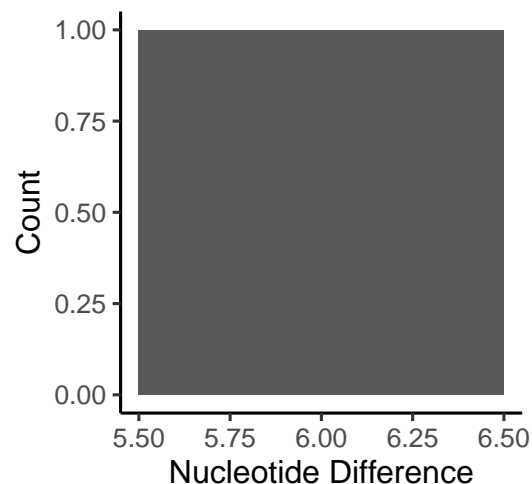
## IGHV3-53\*01

2543 sequences assigned  
187 (7.4%) exact matches, in which:  
168 unique CDR3  
7 unique J



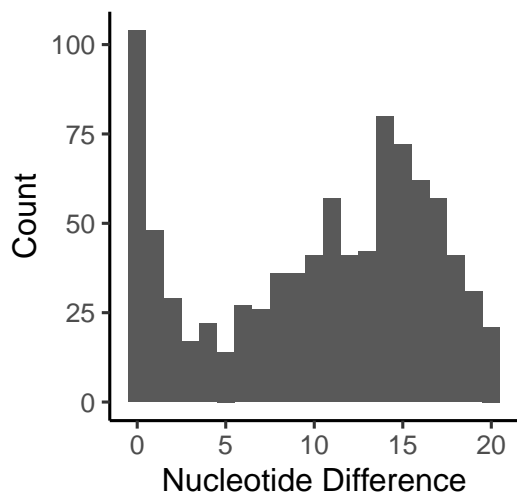
## IGHV3-66\*03

1 sequences assigned  
No exact matches.



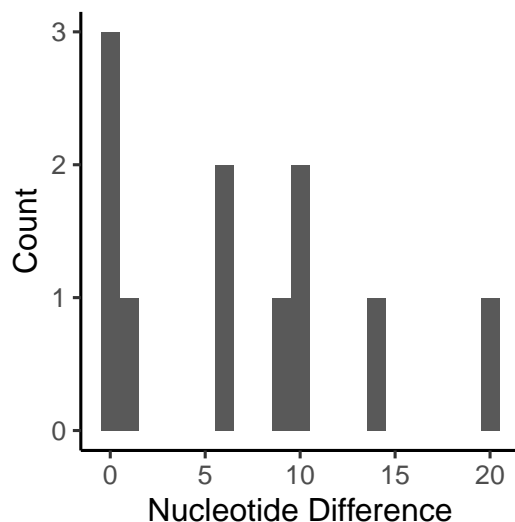
## IGHV3-48\*02

1191 sequences assigned  
104 (8.7%) exact matches, in which:  
99 unique CDR3  
6 unique J



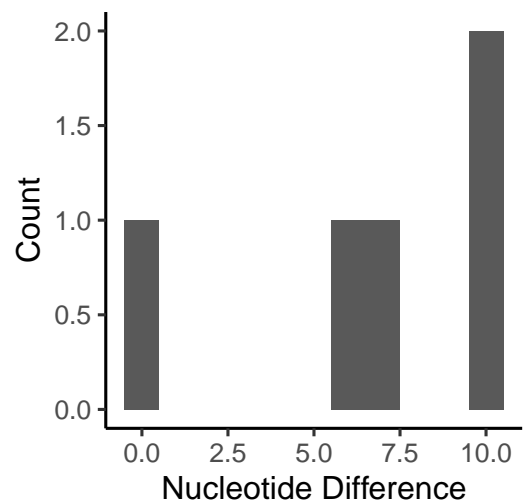
## IGHV3-64\*02

13 sequences assigned  
3 (23.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



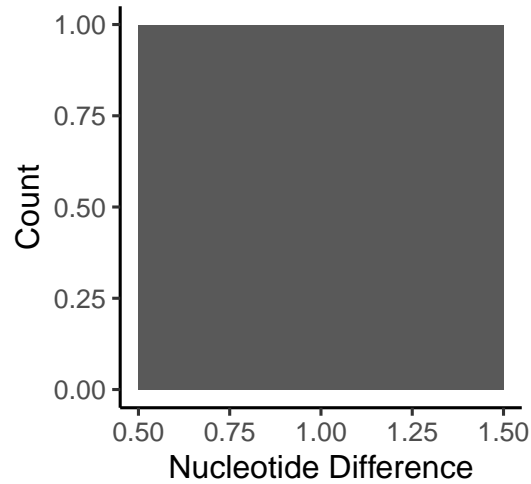
## IGHV3-69-1\*02

12 sequences assigned  
1 (8.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



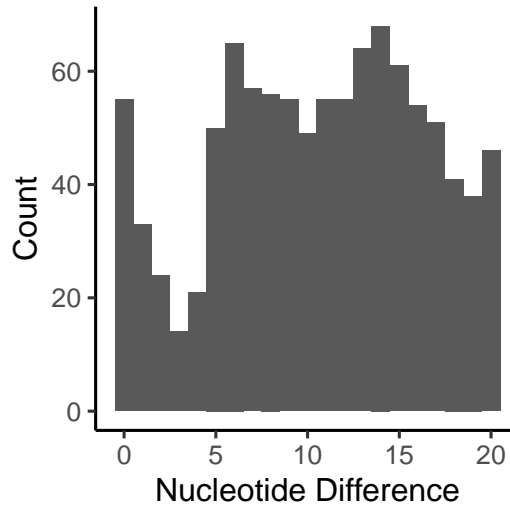
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



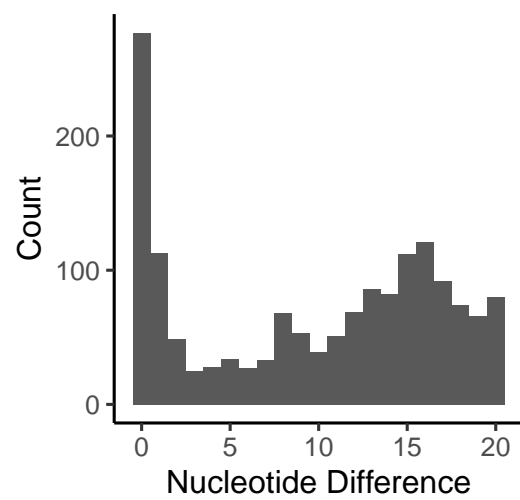
### IGHV3-74\*01

1542 sequences assigned  
55 (3.6%) exact matches, in which:  
55 unique CDR3  
5 unique J



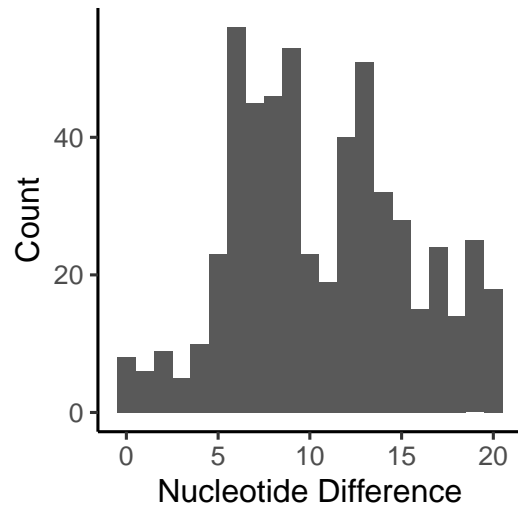
### IGHV4-4\*07

2348 sequences assigned  
277 (11.8%) exact matches, in which:  
260 unique CDR3  
6 unique J



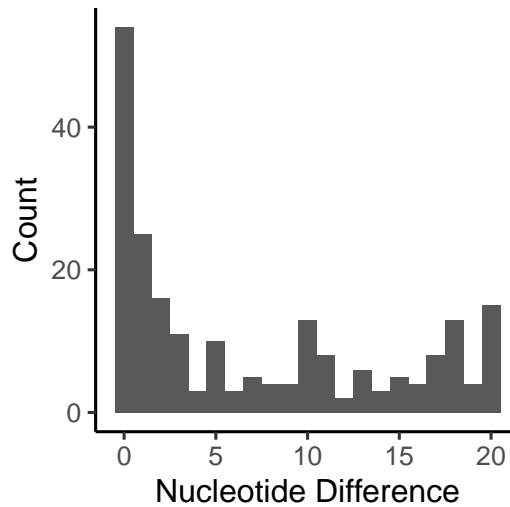
### IGHV3-72\*01

601 sequences assigned  
8 (1.3%) exact matches, in which:  
8 unique CDR3  
4 unique J



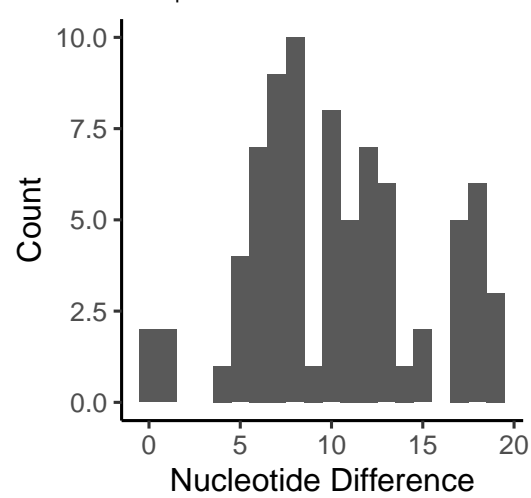
### IGHV3-64D\*06

371 sequences assigned  
54 (14.6%) exact matches, in which:  
48 unique CDR3  
5 unique J



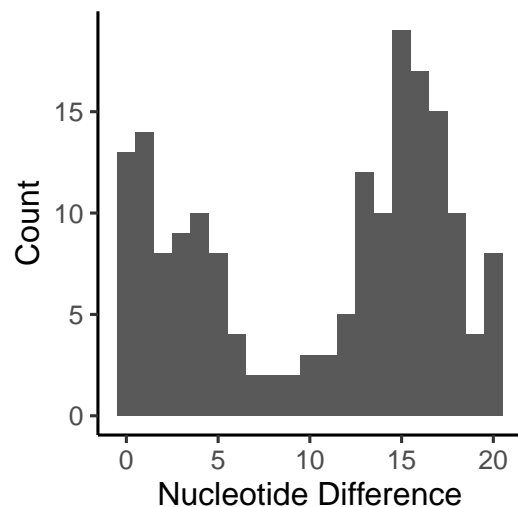
### IGHV4-28\*01

82 sequences assigned  
2 (2.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



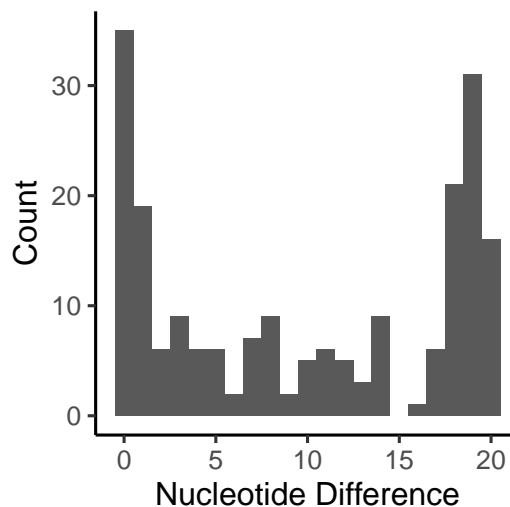
### IGHV3-73\*02

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



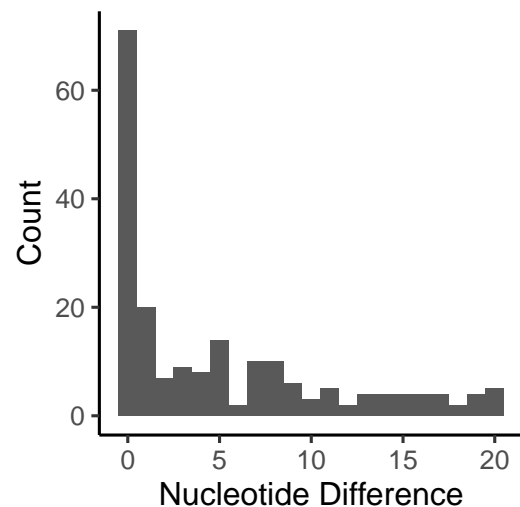
### IGHV3-64D\*08

356 sequences assigned  
35 (9.8%) exact matches, in which:  
35 unique CDR3  
5 unique J



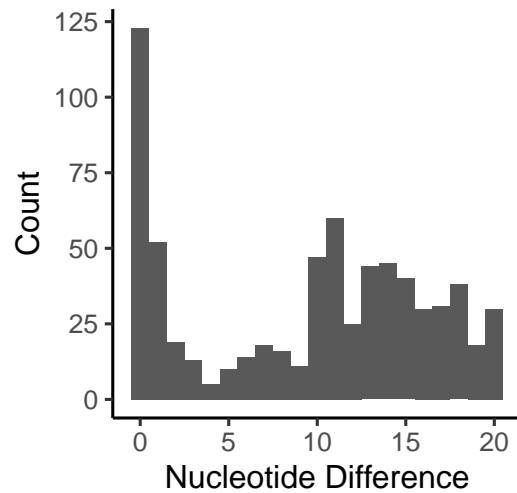
### IGHV4-30-2\*01

307 sequences assigned  
71 (23.1%) exact matches, in which:  
65 unique CDR3  
5 unique J



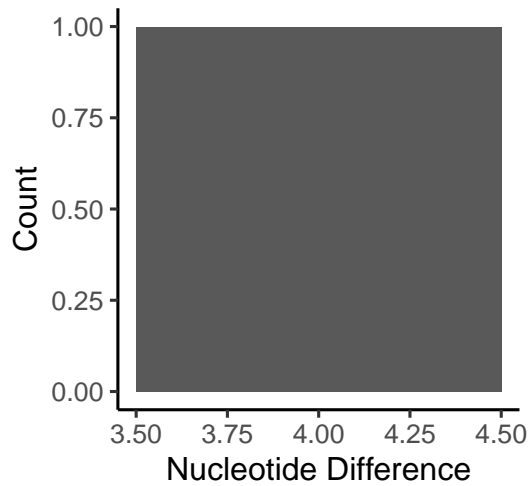
### IGHV4-30-4\*01

1023 sequences assigned  
123 (12%) exact matches, in which:  
113 unique CDR3  
7 unique J



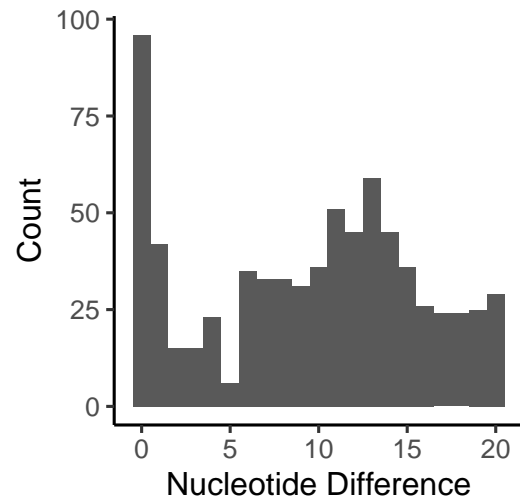
### IGHV4-38-2\*02

39 sequences assigned  
No exact matches.



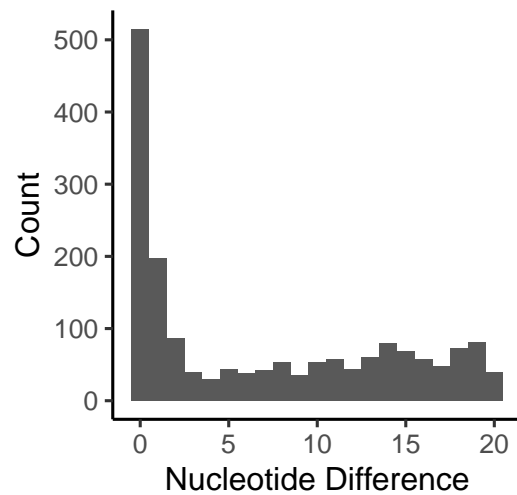
### IGHV4-61\*01

1303 sequences assigned  
96 (7.4%) exact matches, in which:  
93 unique CDR3  
7 unique J



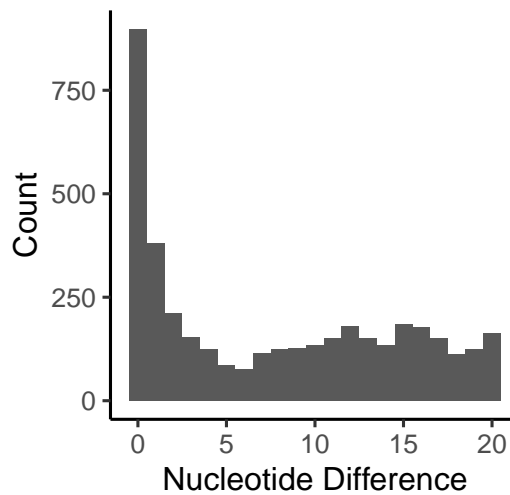
### IGHV4-31\*03

2268 sequences assigned  
515 (22.7%) exact matches, in which:  
488 unique CDR3  
7 unique J



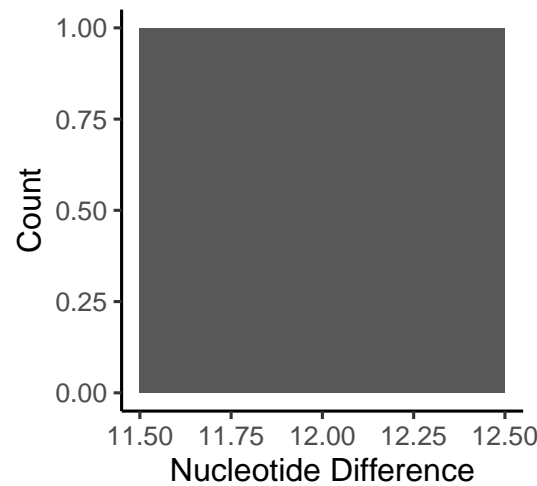
### IGHV4-39\*01

6107 sequences assigned  
898 (14.7%) exact matches, in which:  
840 unique CDR3  
7 unique J



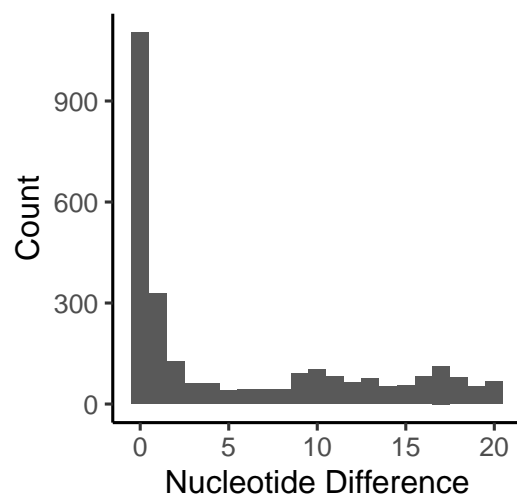
### IGHV1/OR15-9\*01

1 sequences assigned  
No exact matches.



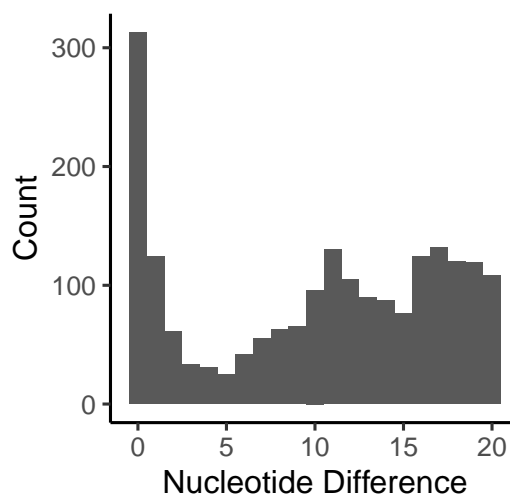
### IGHV4-34\*01

3655 sequences assigned  
1104 (30.2%) exact matches, in which:  
1039 unique CDR3  
7 unique J



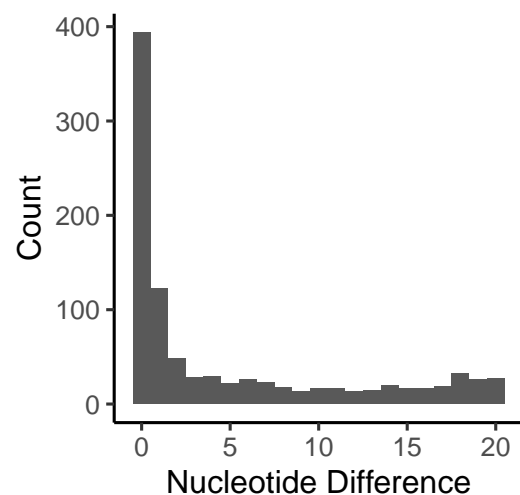
### IGHV4-59\*01

3212 sequences assigned  
313 (9.7%) exact matches, in which:  
289 unique CDR3  
7 unique J



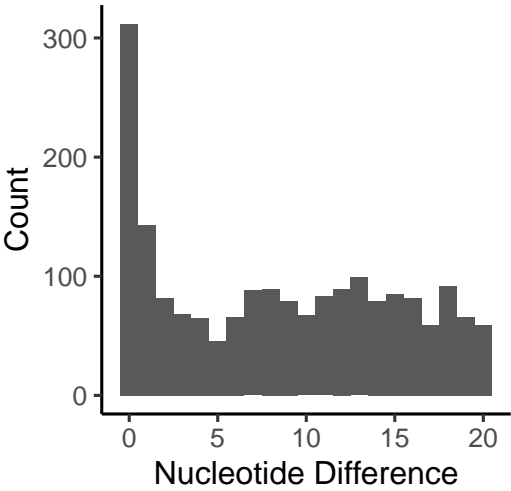
### IGHV5-10-1\*03

1215 sequences assigned  
394 (32.4%) exact matches, in which:  
367 unique CDR3  
7 unique J



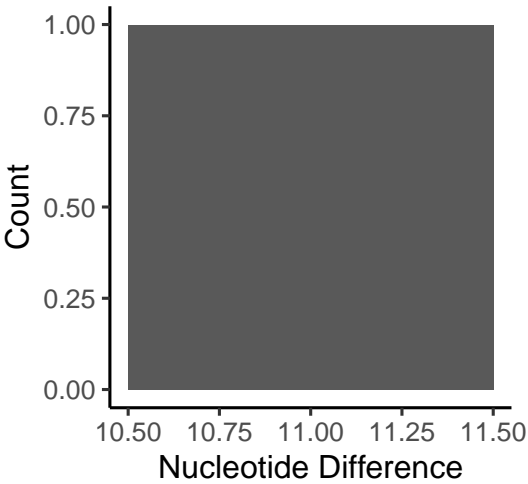
IGHV5–51\*01

2388 sequences assigned  
312 (13.1%) exact matches, in which:  
298 unique CDR3  
7 unique J



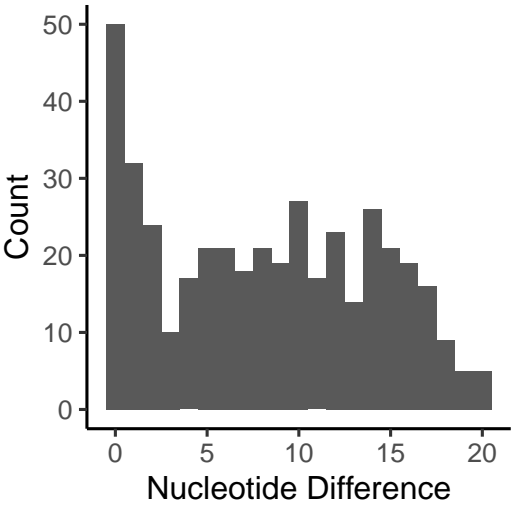
IGHV3/OR16–12\*01

1 sequences assigned  
No exact matches.



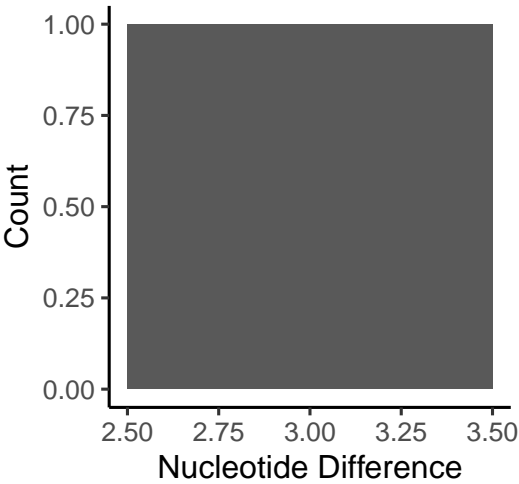
IGHV6–1\*01

523 sequences assigned  
50 (9.6%) exact matches, in which:  
49 unique CDR3  
6 unique J

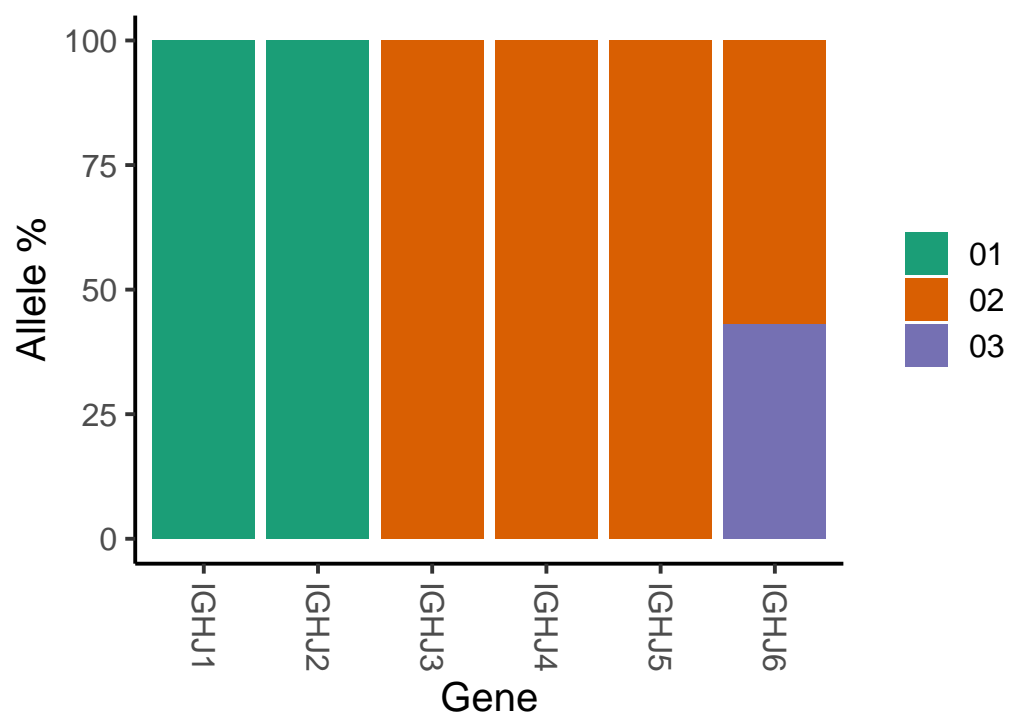


IGHV3/OR16–9\*01

1 sequences assigned  
No exact matches.

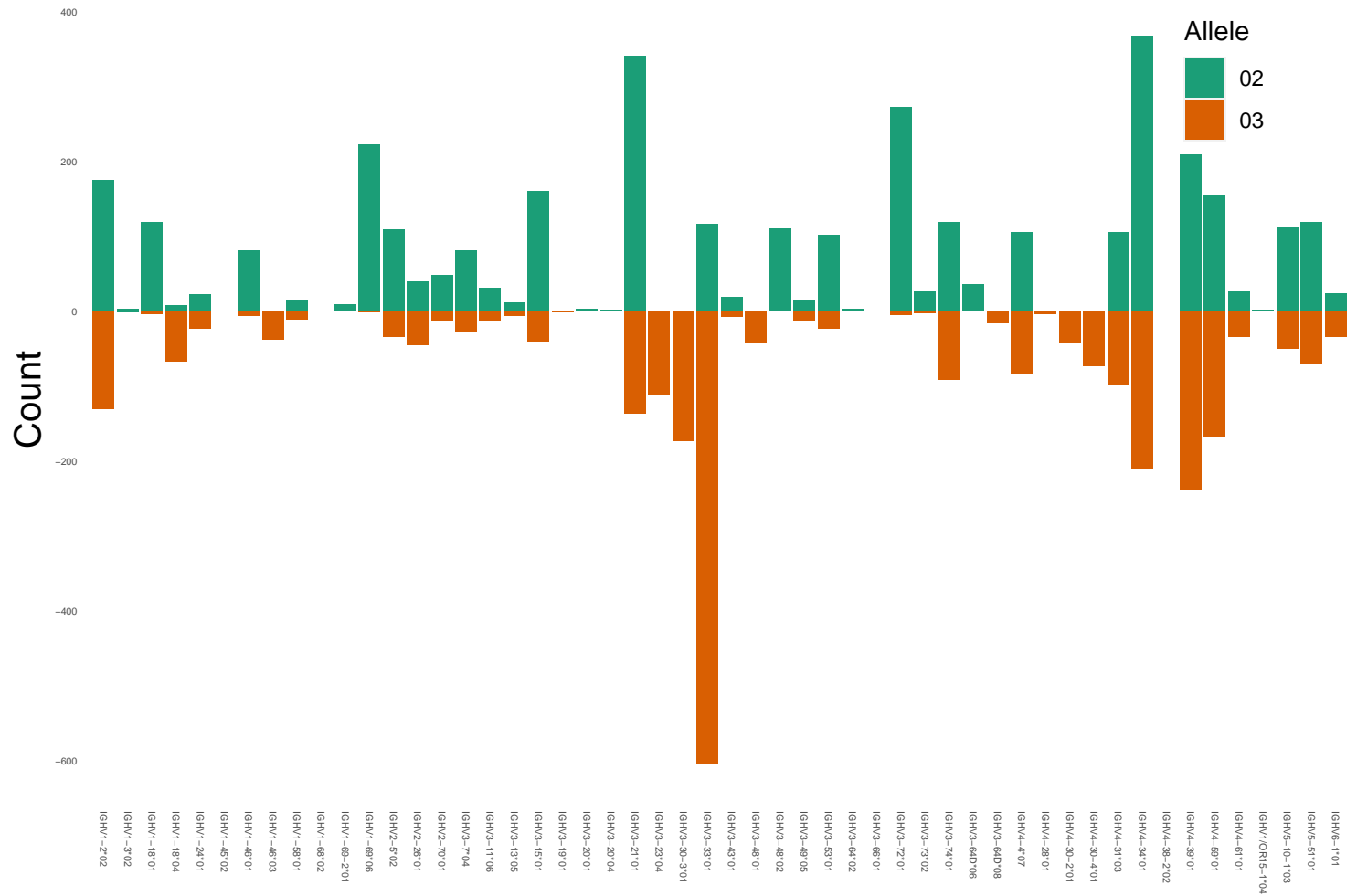


Allele Usage





## Sequence Count byIGHJ6 allele usage



[illegible]