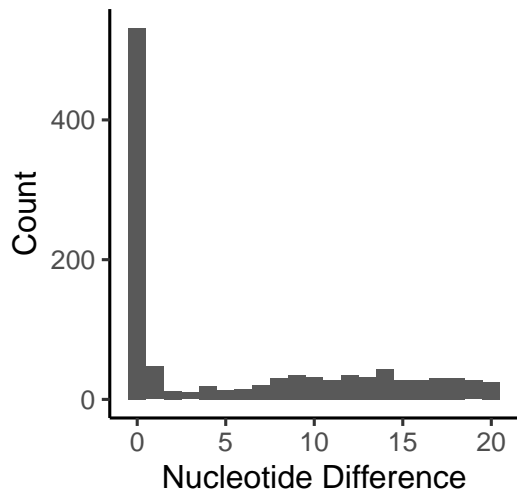


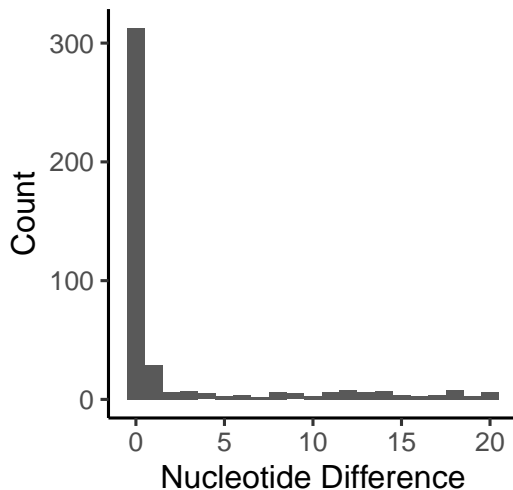
### IGHV1-2\*02

1348 sequences assigned  
532 (39.5%) exact matches, in which:  
526 unique CDR3  
7 unique J



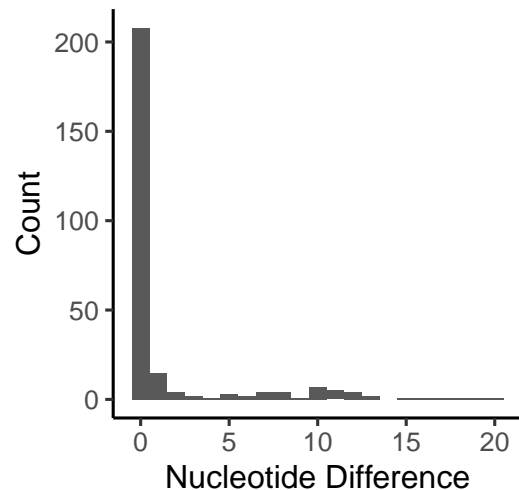
### IGHV1-8\*01

522 sequences assigned  
313 (60%) exact matches, in which:  
310 unique CDR3  
7 unique J



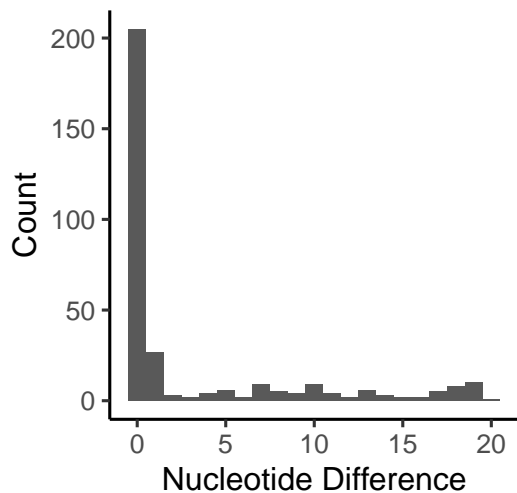
### IGHV1-24\*01

285 sequences assigned  
208 (73%) exact matches, in which:  
206 unique CDR3  
7 unique J



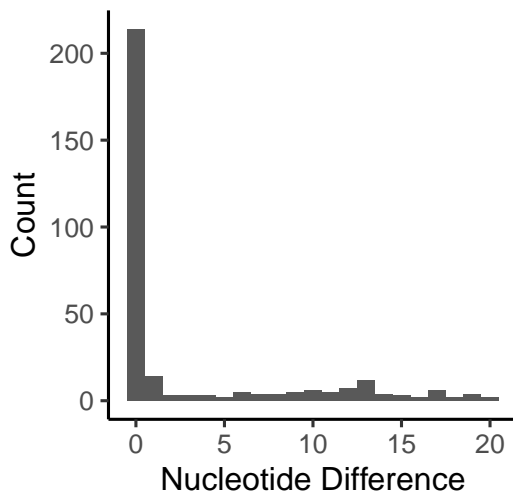
### IGHV1-2\*04

356 sequences assigned  
205 (57.6%) exact matches, in which:  
202 unique CDR3  
5 unique J



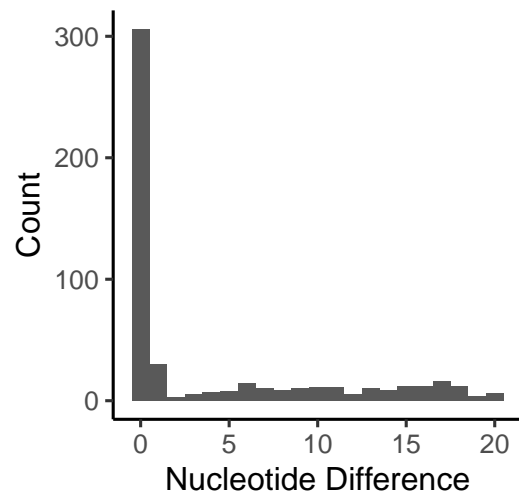
### IGHV1-8\*03

322 sequences assigned  
214 (66.5%) exact matches, in which:  
211 unique CDR3  
5 unique J



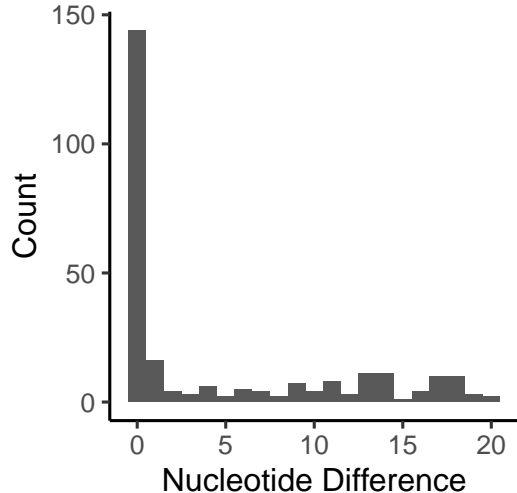
### IGHV1-46\*01

703 sequences assigned  
306 (43.5%) exact matches, in which:  
302 unique CDR3  
7 unique J



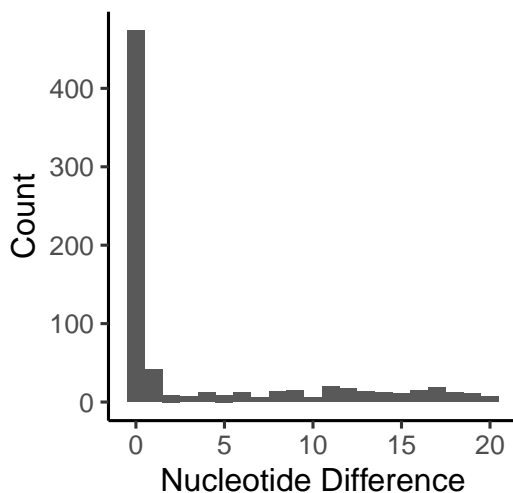
### IGHV1-3\*01

359 sequences assigned  
144 (40.1%) exact matches, in which:  
143 unique CDR3  
6 unique J



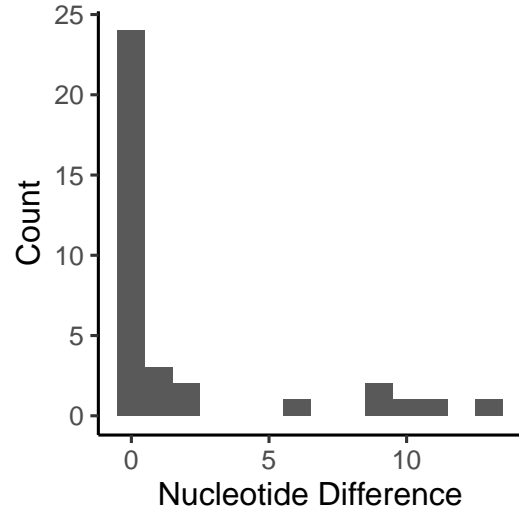
### IGHV1-18\*01

901 sequences assigned  
474 (52.6%) exact matches, in which:  
472 unique CDR3  
7 unique J



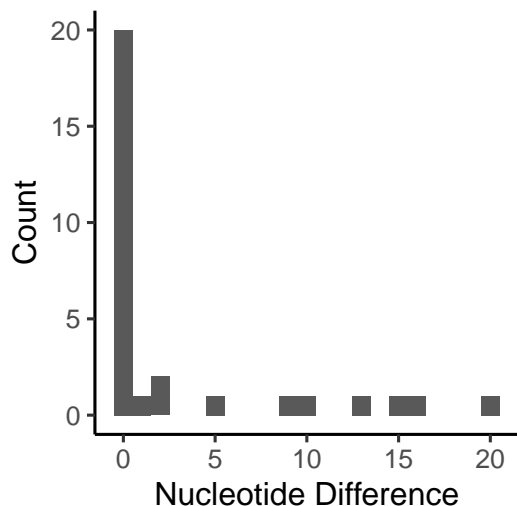
### IGHV1-58\*01

35 sequences assigned  
24 (68.6%) exact matches, in which:  
24 unique CDR3  
5 unique J



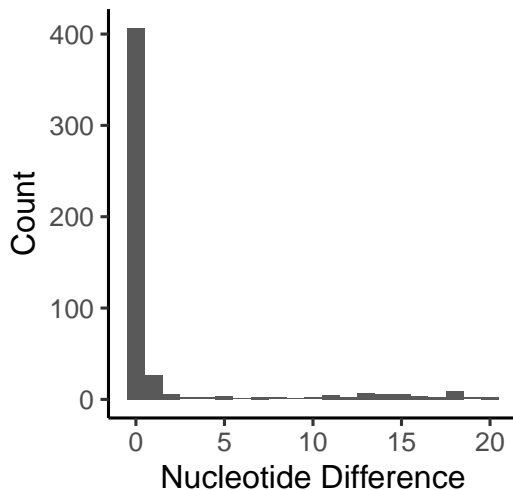
### IGHV1-58\*02

37 sequences assigned  
20 (54.1%) exact matches, in which:  
20 unique CDR3  
4 unique J



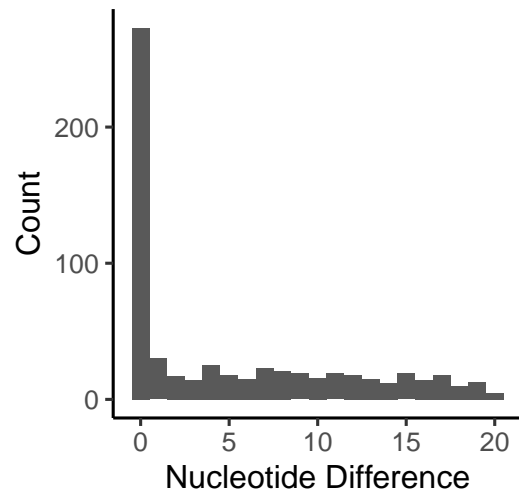
### IGHV1-69\*04

578 sequences assigned  
407 (70.4%) exact matches, in which:  
404 unique CDR3  
6 unique J



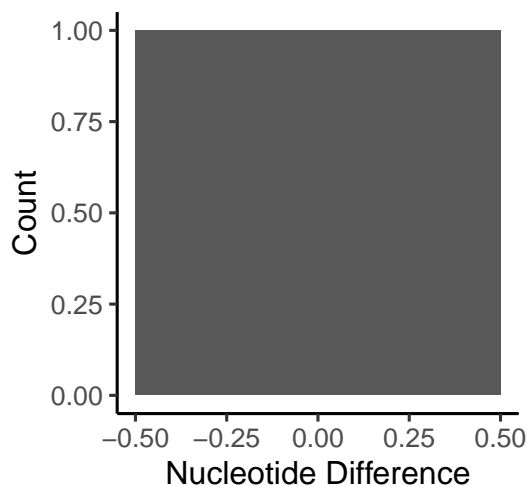
### IGHV2-5\*02

687 sequences assigned  
273 (39.7%) exact matches, in which:  
270 unique CDR3  
6 unique J



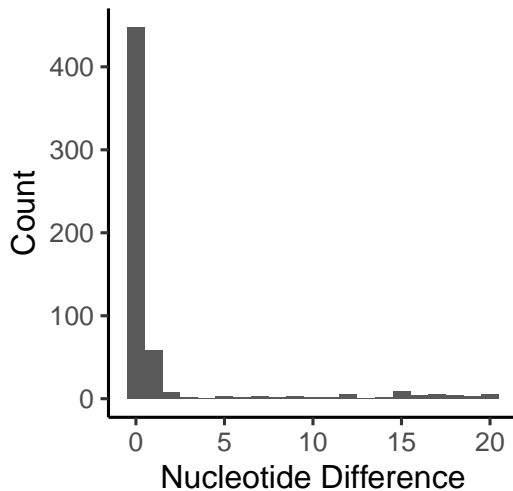
### IGHV1-68\*02

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



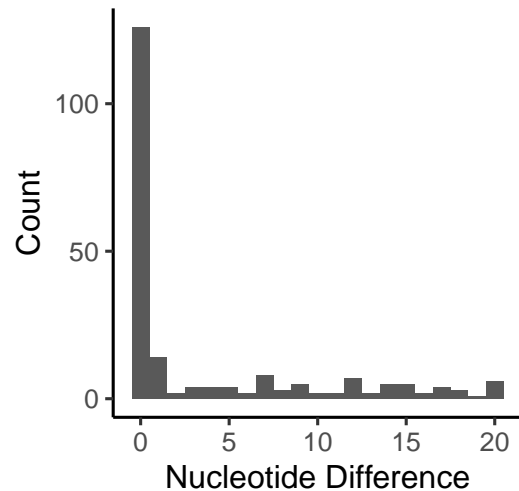
### IGHV1-69\*06

669 sequences assigned  
448 (67%) exact matches, in which:  
445 unique CDR3  
7 unique J



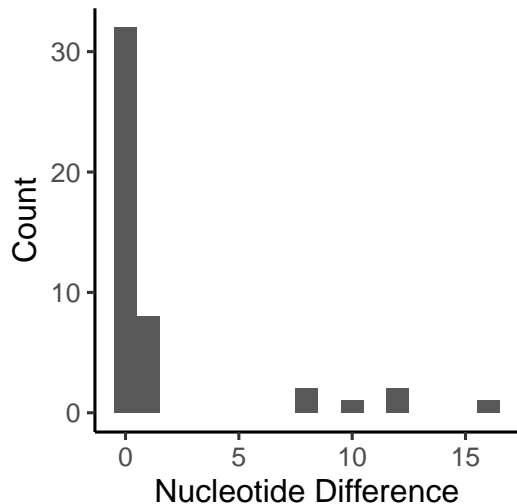
### IGHV2-26\*01

230 sequences assigned  
126 (54.8%) exact matches, in which:  
125 unique CDR3  
6 unique J



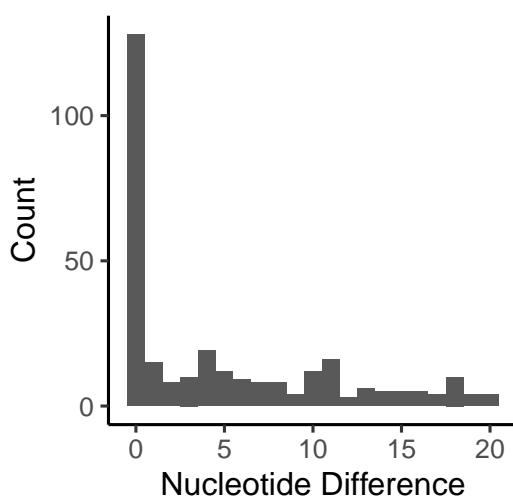
### IGHV1-69-2\*01

53 sequences assigned  
32 (60.4%) exact matches, in which:  
31 unique CDR3  
5 unique J



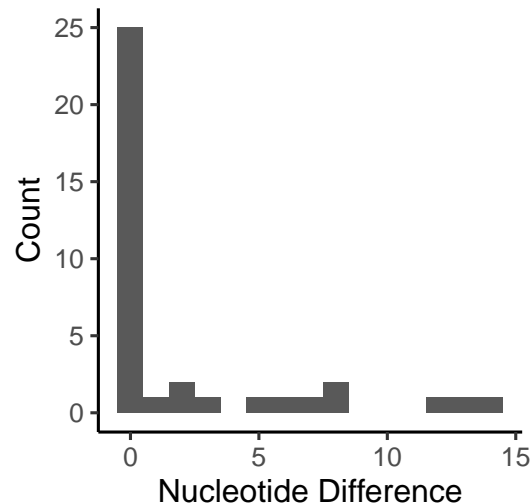
### IGHV2-5\*01

322 sequences assigned  
128 (39.8%) exact matches, in which:  
128 unique CDR3  
6 unique J



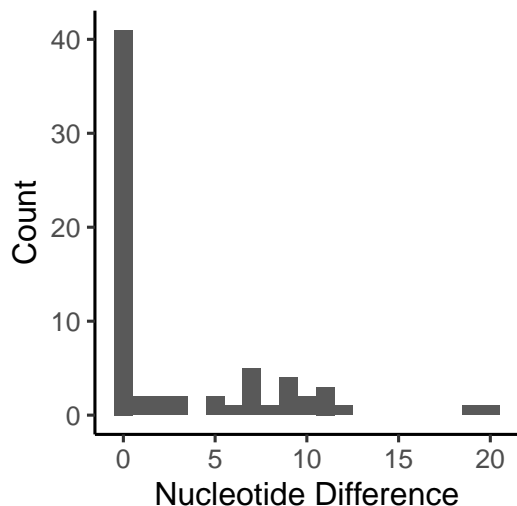
### IGHV2-70\*01

41 sequences assigned  
25 (61%) exact matches, in which:  
25 unique CDR3  
4 unique J



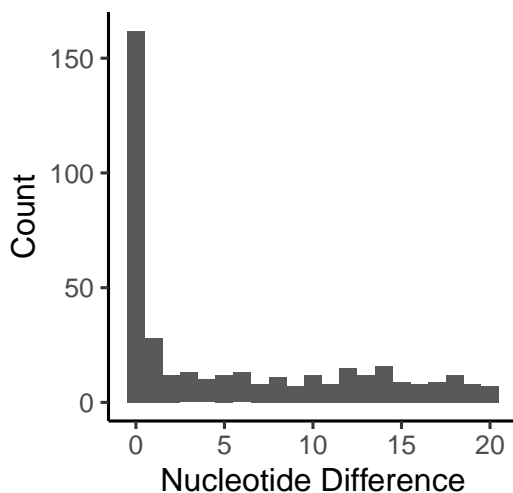
## IGHV2-70\*15

75 sequences assigned  
41 (54.7%) exact matches, in which:  
41 unique CDR3  
5 unique J



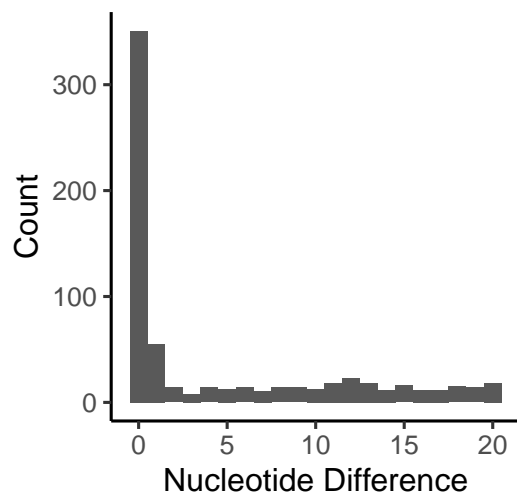
## IGHV3-11\*01

483 sequences assigned  
162 (33.5%) exact matches, in which:  
162 unique CDR3  
5 unique J



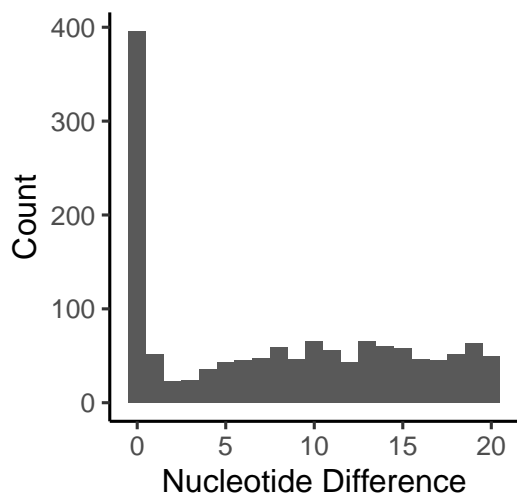
## IGHV3-15\*01

846 sequences assigned  
351 (41.5%) exact matches, in which:  
345 unique CDR3  
7 unique J



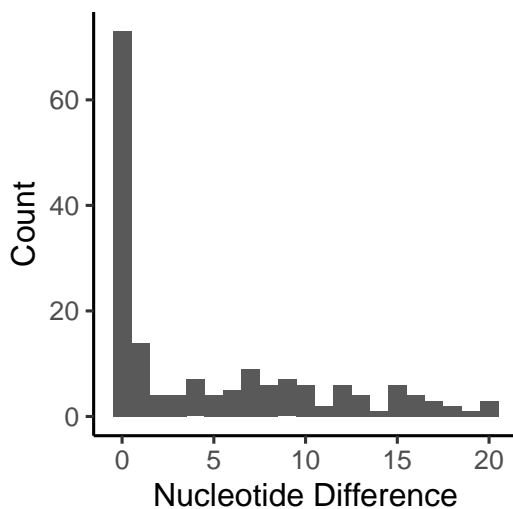
## IGHV3-7\*01

1798 sequences assigned  
396 (22%) exact matches, in which:  
393 unique CDR3  
7 unique J



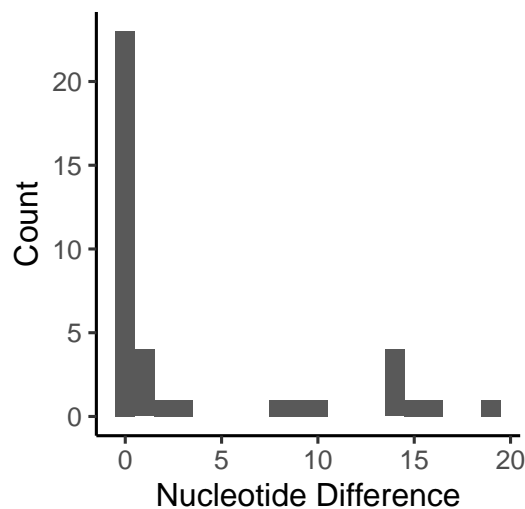
## IGHV3-11\*04

236 sequences assigned  
73 (30.9%) exact matches, in which:  
73 unique CDR3  
5 unique J



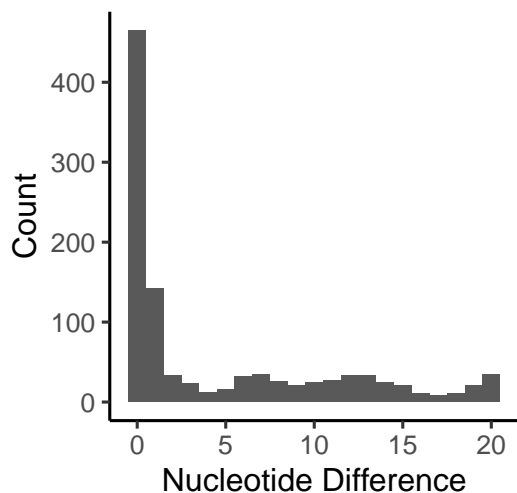
## IGHV3-20\*01

48 sequences assigned  
23 (47.9%) exact matches, in which:  
23 unique CDR3  
5 unique J



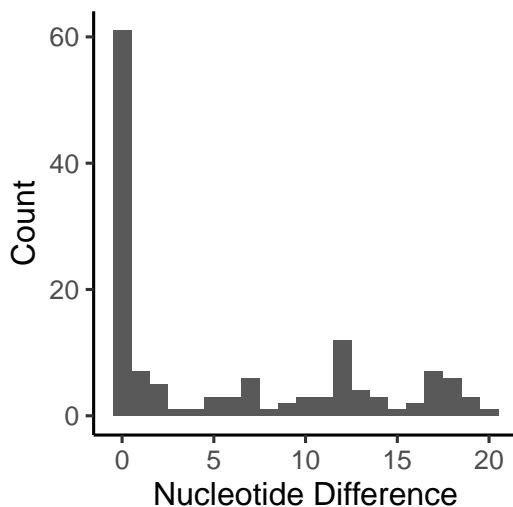
## IGHV3-9\*01

1211 sequences assigned  
465 (38.4%) exact matches, in which:  
455 unique CDR3  
6 unique J



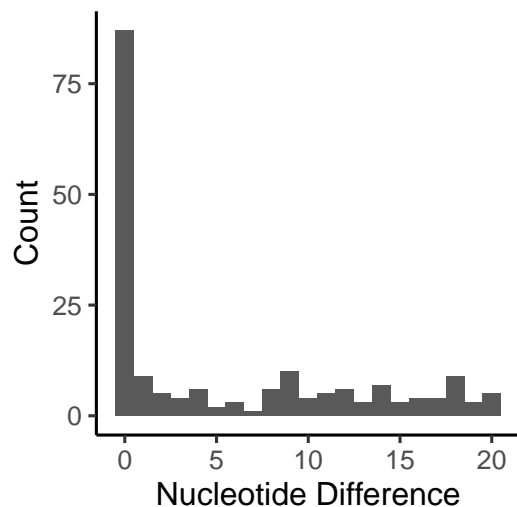
## IGHV3-13\*01

165 sequences assigned  
61 (37%) exact matches, in which:  
60 unique CDR3  
5 unique J



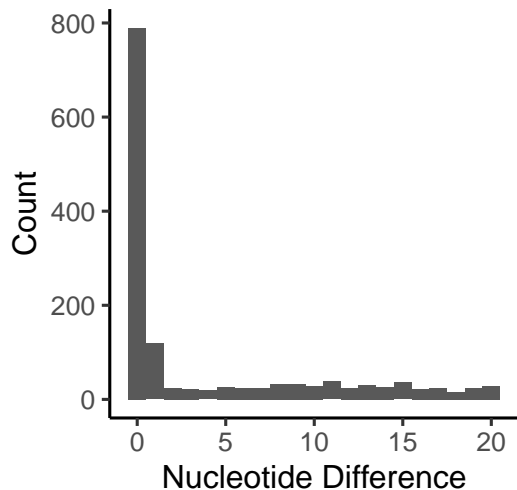
## IGHV3-20\*04

224 sequences assigned  
87 (38.8%) exact matches, in which:  
84 unique CDR3  
5 unique J



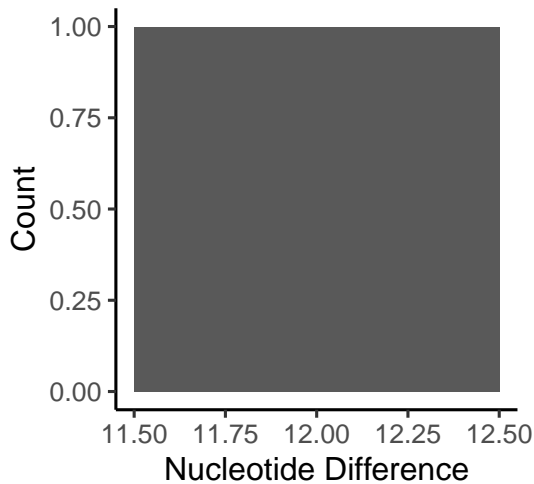
### IGHV3-21\*01

1649 sequences assigned  
790 (47.9%) exact matches, in which:  
780 unique CDR3  
7 unique J



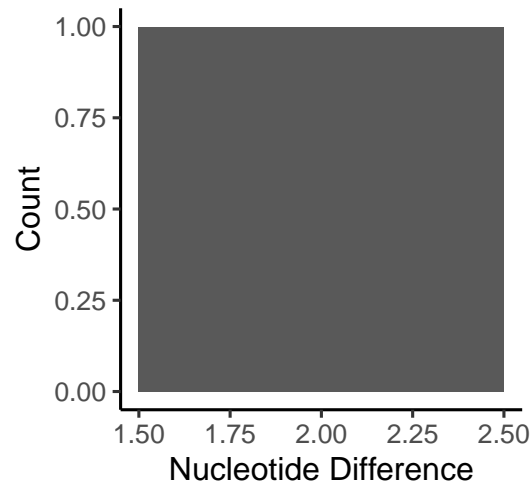
### IGHV3-41\*02

1 sequences assigned  
No exact matches.



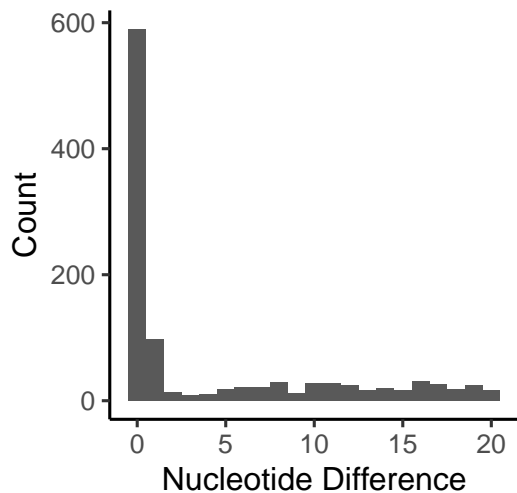
### IGHV3-47\*02

1 sequences assigned  
No exact matches.



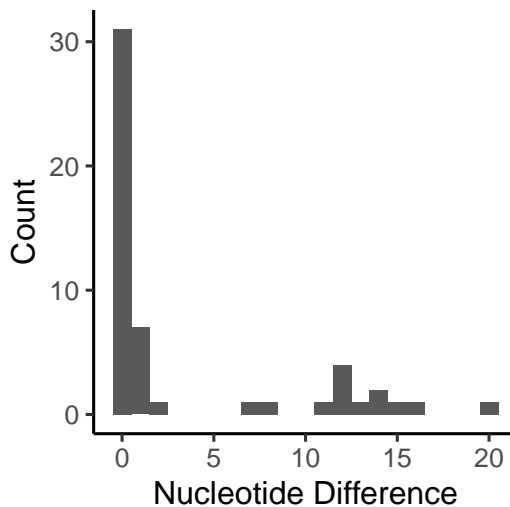
### IGHV3-30-3\*01

1275 sequences assigned  
590 (46.3%) exact matches, in which:  
582 unique CDR3  
6 unique J



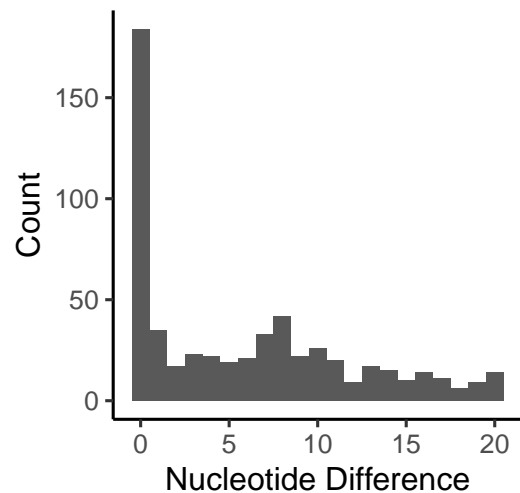
### IGHV3-43\*01

59 sequences assigned  
31 (52.5%) exact matches, in which:  
28 unique CDR3  
4 unique J



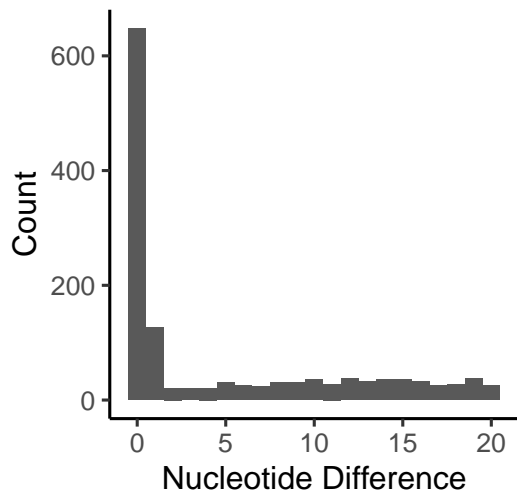
### IGHV3-48\*02

724 sequences assigned  
184 (25.4%) exact matches, in which:  
182 unique CDR3  
6 unique J



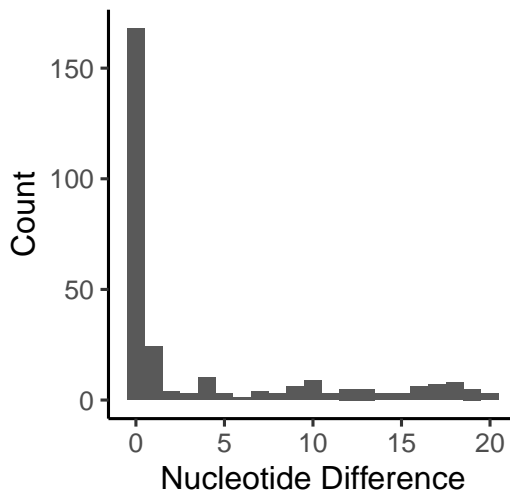
### IGHV3-33\*01

1608 sequences assigned  
648 (40.3%) exact matches, in which:  
643 unique CDR3  
7 unique J



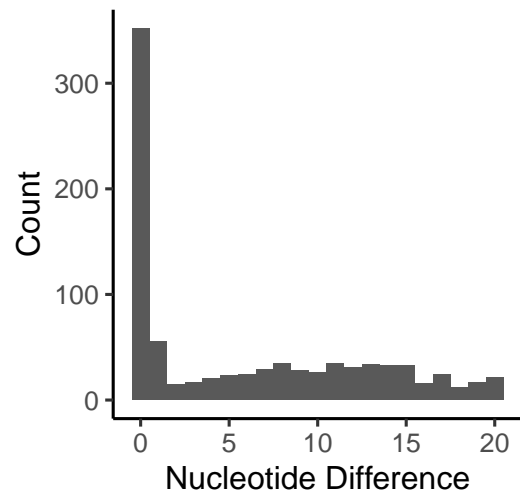
### IGHV3-43\*02

354 sequences assigned  
168 (47.5%) exact matches, in which:  
167 unique CDR3  
5 unique J



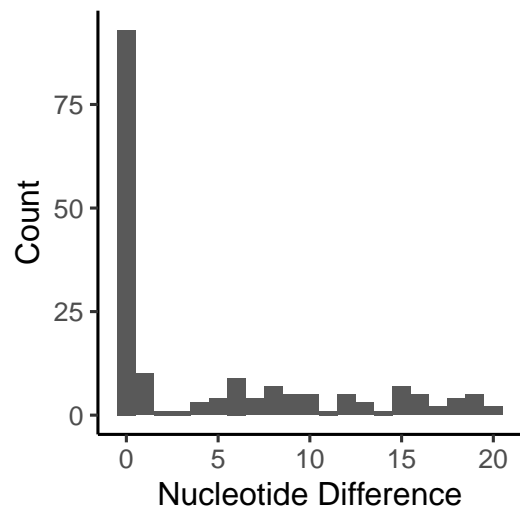
### IGHV3-48\*03

1027 sequences assigned  
352 (34.3%) exact matches, in which:  
351 unique CDR3  
6 unique J



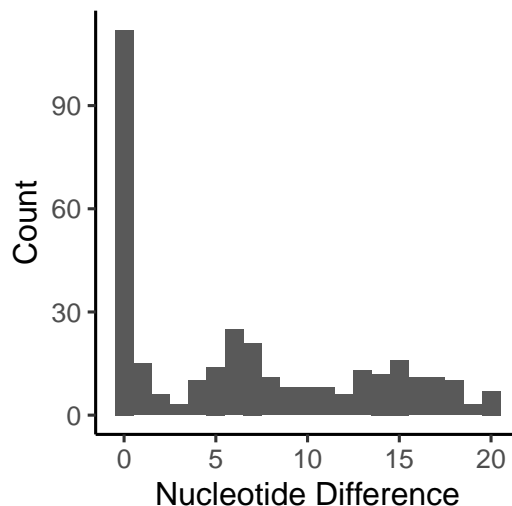
### IGHV3-49\*04

204 sequences assigned  
93 (45.6%) exact matches, in which:  
91 unique CDR3  
5 unique J



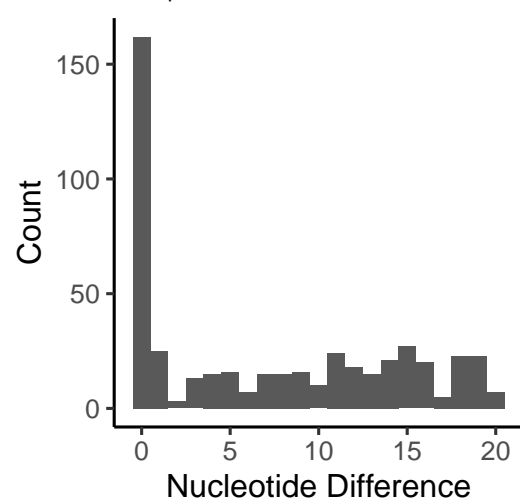
### IGHV3-53\*01

469 sequences assigned  
112 (23.9%) exact matches, in which:  
111 unique CDR3  
6 unique J



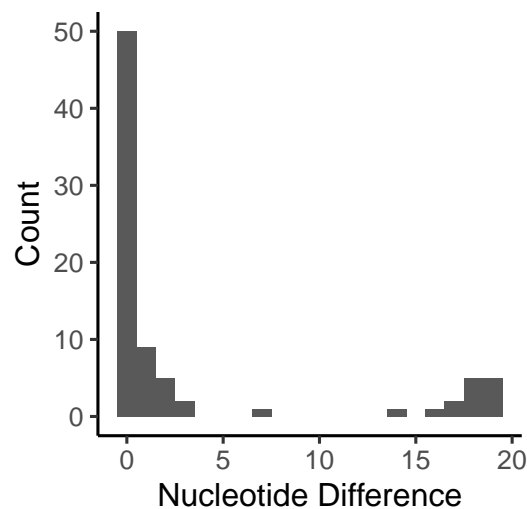
### IGHV3-66\*01

641 sequences assigned  
162 (25.3%) exact matches, in which:  
159 unique CDR3  
6 unique J



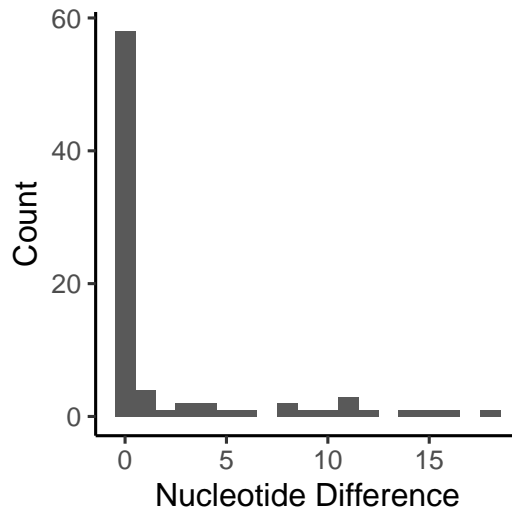
### IGHV3-49\*05

110 sequences assigned  
50 (45.5%) exact matches, in which:  
50 unique CDR3  
6 unique J



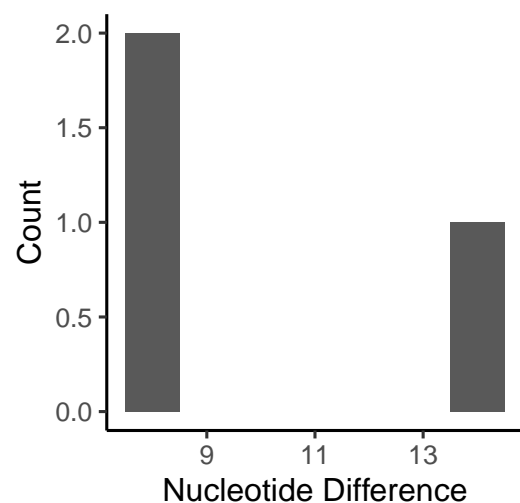
### IGHV3-53\*04

88 sequences assigned  
58 (65.9%) exact matches, in which:  
58 unique CDR3  
5 unique J



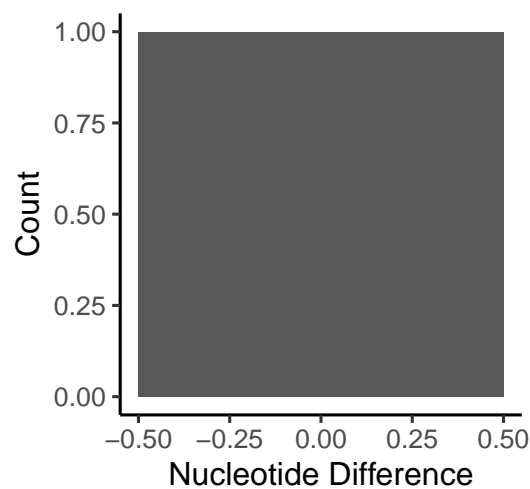
### IGHV3-69-1\*01

6 sequences assigned  
No exact matches.



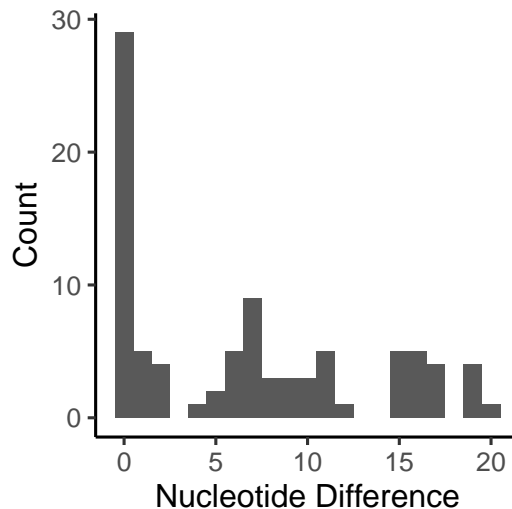
### IGHV3-52\*01

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



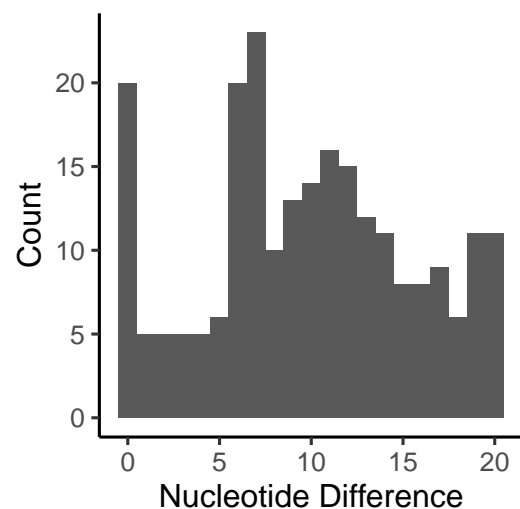
### IGHV3-64\*01

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



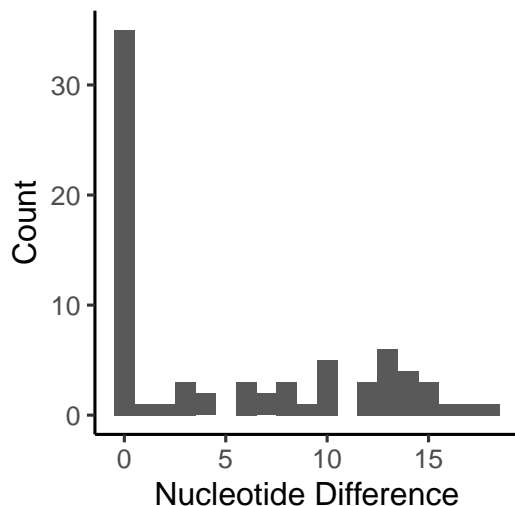
### IGHV3-72\*01

312 sequences assigned  
20 (6.4%) exact matches, in which:  
20 unique CDR3  
6 unique J



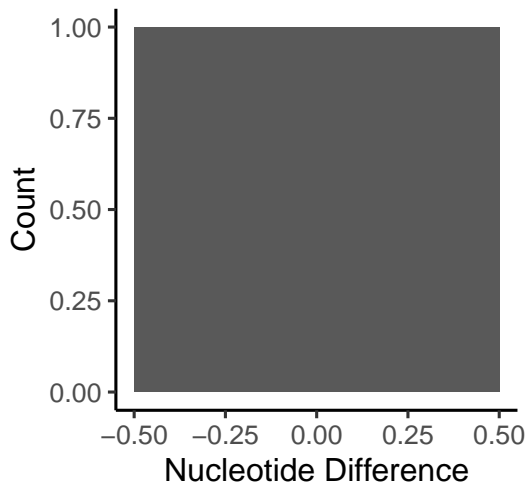
### IGHV3-73\*01

92 sequences assigned  
35 (38%) exact matches, in which:  
33 unique CDR3  
4 unique J



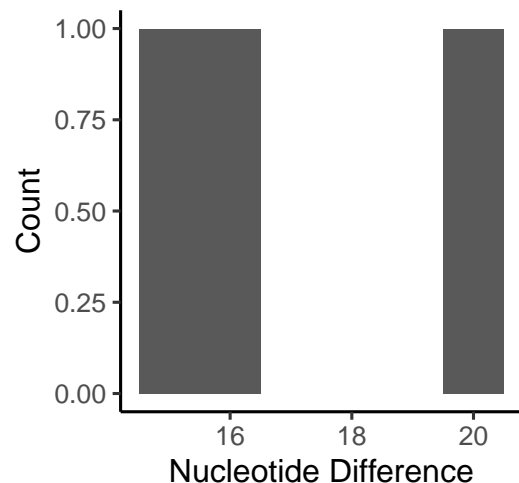
### IGHV3-64D\*06

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



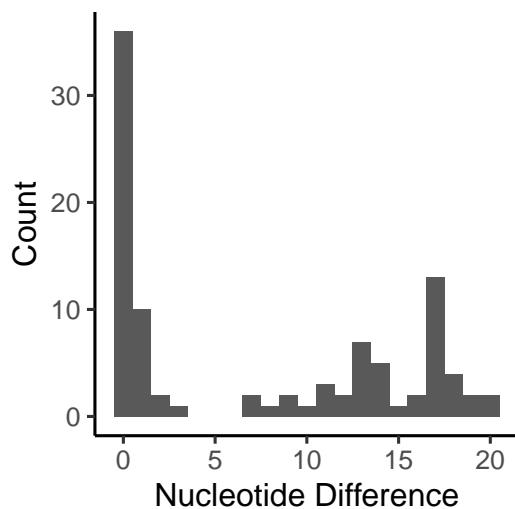
### IGHV4-28\*01

3 sequences assigned  
No exact matches.



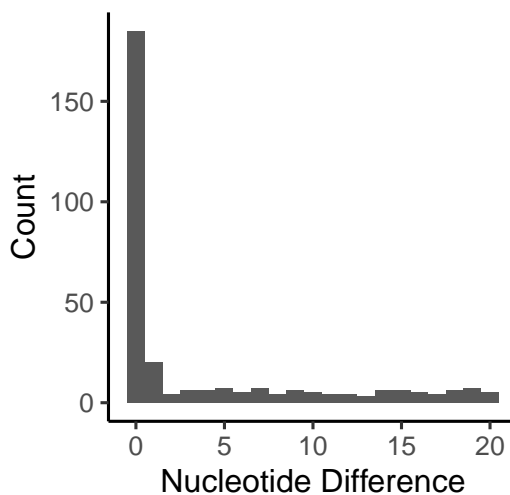
### IGHV3-73\*02

118 sequences assigned  
36 (30.5%) exact matches, in which:  
36 unique CDR3  
5 unique J



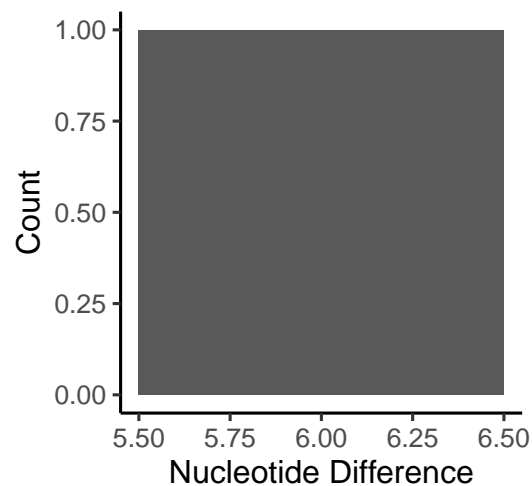
### IGHV4-4\*02

371 sequences assigned  
185 (49.9%) exact matches, in which:  
183 unique CDR3  
6 unique J



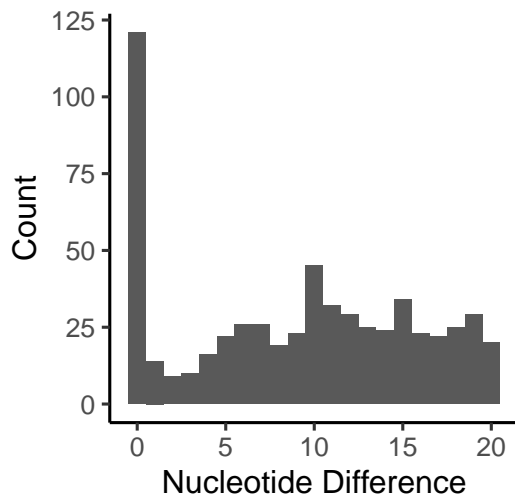
### IGHV4-28\*07

1 sequences assigned  
No exact matches.



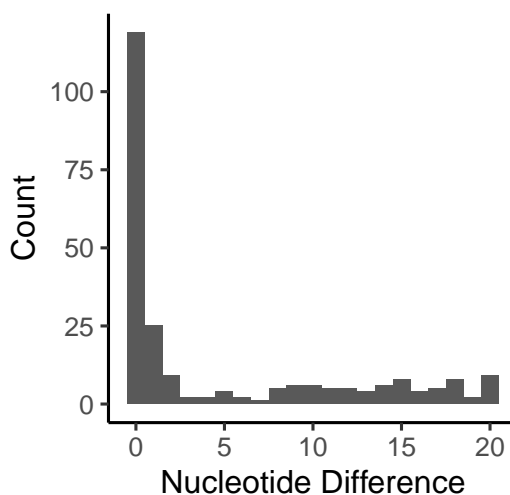
### IGHV3-74\*01

791 sequences assigned  
121 (15.3%) exact matches, in which:  
119 unique CDR3  
7 unique J



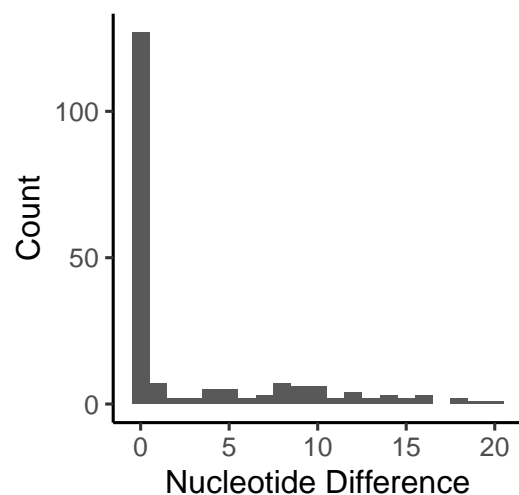
### IGHV4-4\*07

296 sequences assigned  
119 (40.2%) exact matches, in which:  
116 unique CDR3  
6 unique J



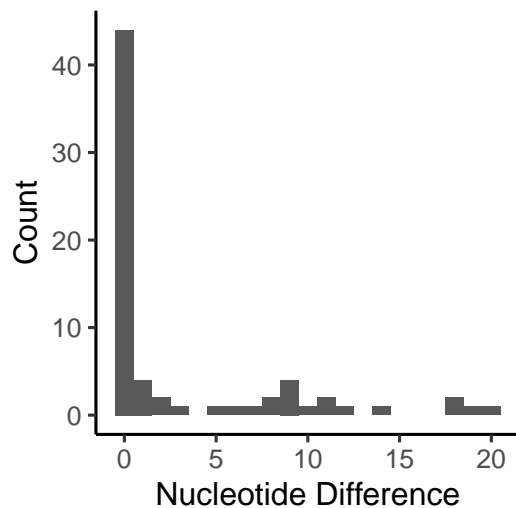
### IGHV4-30-4\*01

242 sequences assigned  
127 (52.5%) exact matches, in which:  
125 unique CDR3  
6 unique J



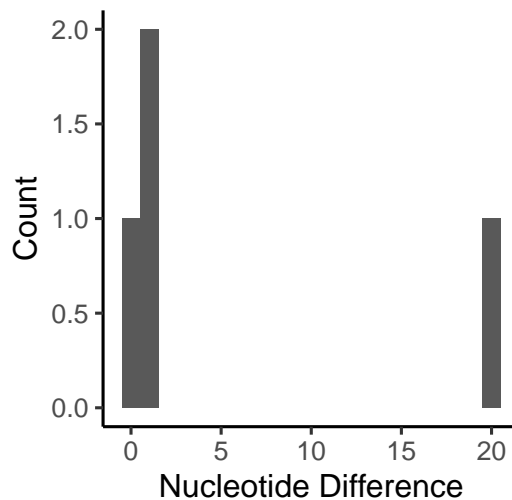
### IGHV4-30-2\*01

74 sequences assigned  
44 (59.5%) exact matches, in which:  
44 unique CDR3  
5 unique J



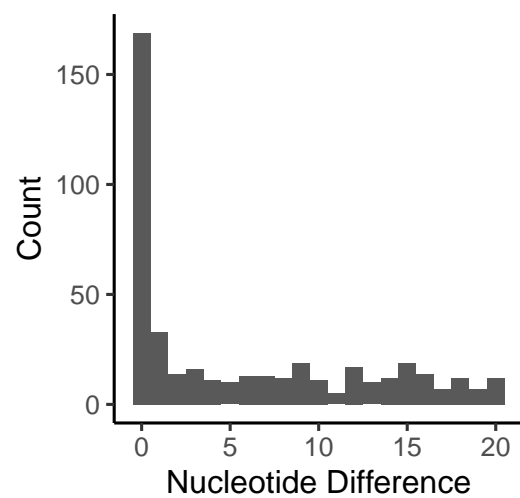
### IGHV4-38-2\*02

6 sequences assigned  
1 (16.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



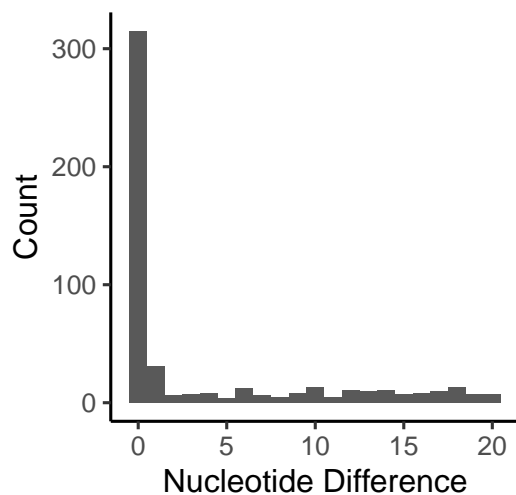
### IGHV4-59\*08

510 sequences assigned  
169 (33.1%) exact matches, in which:  
167 unique CDR3  
6 unique J



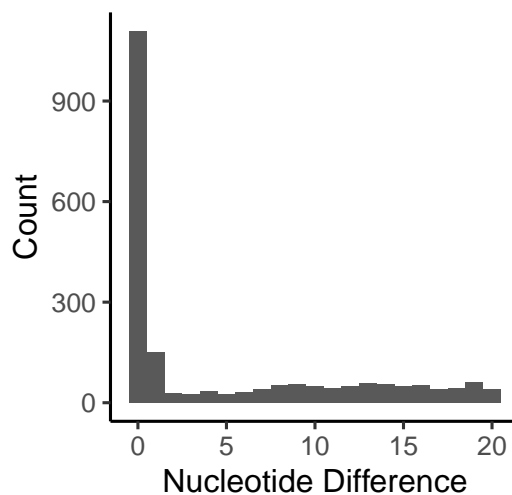
### IGHV4-31\*03

597 sequences assigned  
315 (52.8%) exact matches, in which:  
314 unique CDR3  
7 unique J



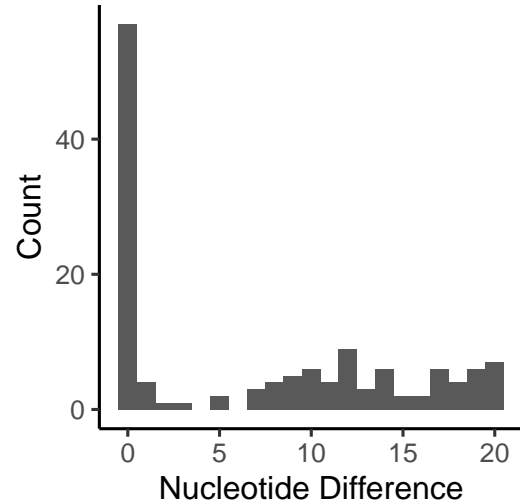
### IGHV4-39\*01

2532 sequences assigned  
1109 (43.8%) exact matches, in which:  
1102 unique CDR3  
7 unique J



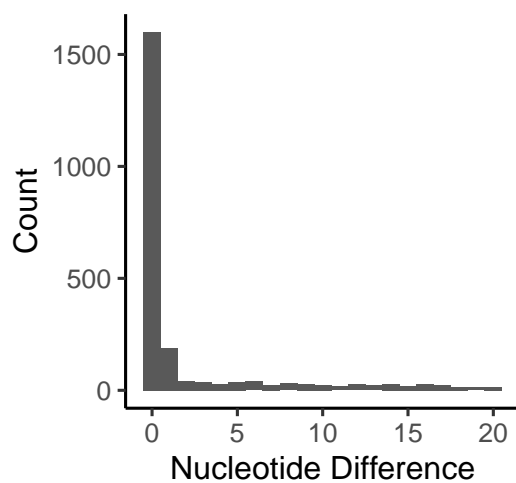
### IGHV4-61\*01

155 sequences assigned  
57 (36.8%) exact matches, in which:  
57 unique CDR3  
6 unique J



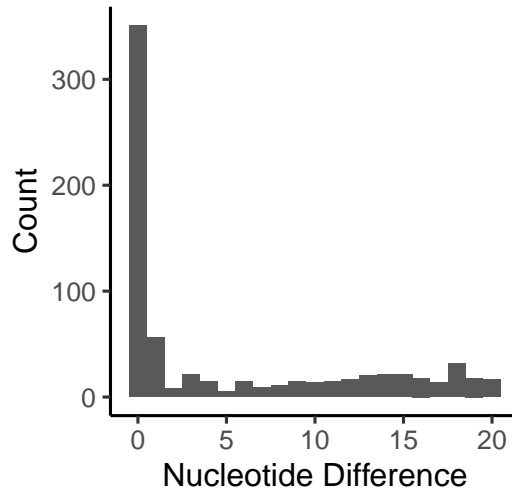
### IGHV4-34\*01

2458 sequences assigned  
1600 (65.1%) exact matches, in which:  
1576 unique CDR3  
7 unique J



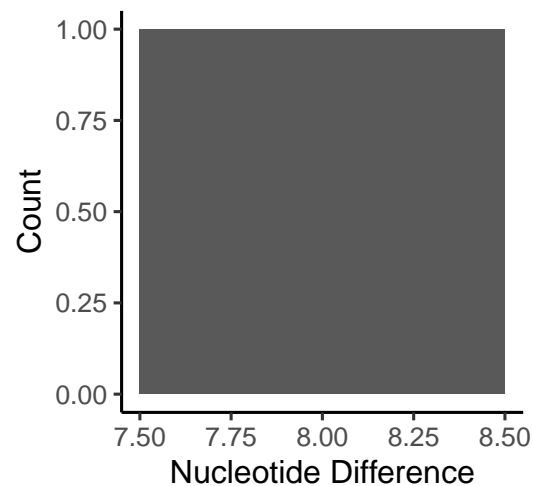
### IGHV4-59\*01

898 sequences assigned  
351 (39.1%) exact matches, in which:  
351 unique CDR3  
7 unique J



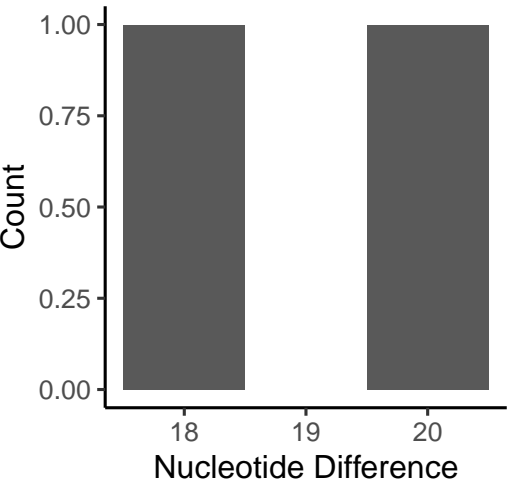
### IGHV1/OR15-1\*04

1 sequences assigned  
No exact matches.



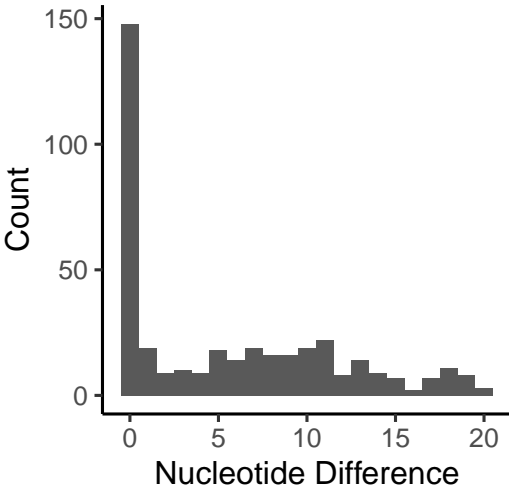
IGHV4/OR15-8\*02

4 sequences assigned  
No exact matches.



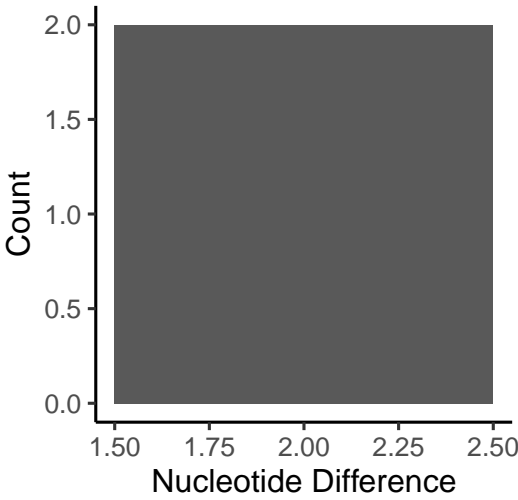
IGHV6-1\*01

420 sequences assigned  
148 (35.2%) exact matches, in which:  
147 unique CDR3  
7 unique J



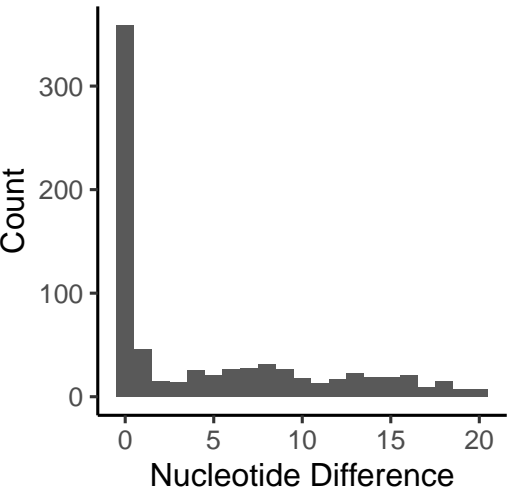
IGHV3/OR16-12\*01

2 sequences assigned  
No exact matches.



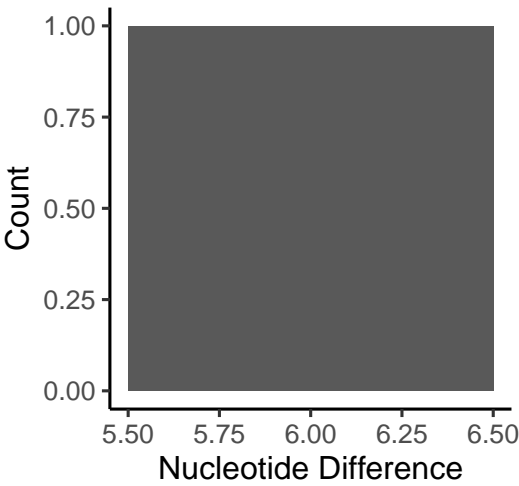
IGHV5-51\*01

891 sequences assigned  
359 (40.3%) exact matches, in which:  
353 unique CDR3  
7 unique J



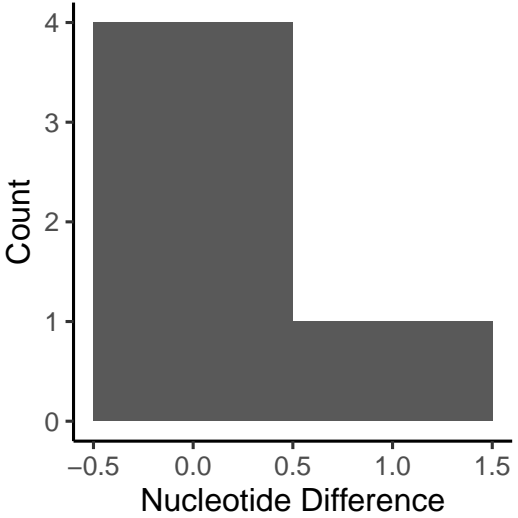
IGHV3/OR16-8\*01

1 sequences assigned  
No exact matches.



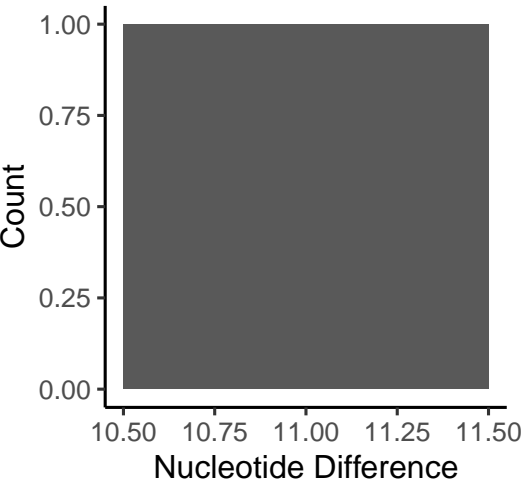
IGHV7-4-1\*01

5 sequences assigned  
4 (80%) exact matches, in which:  
4 unique CDR3  
3 unique J



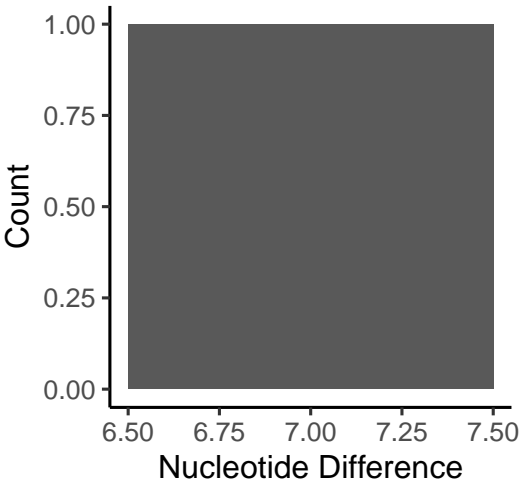
IGHV5-78\*01

1 sequences assigned  
No exact matches.



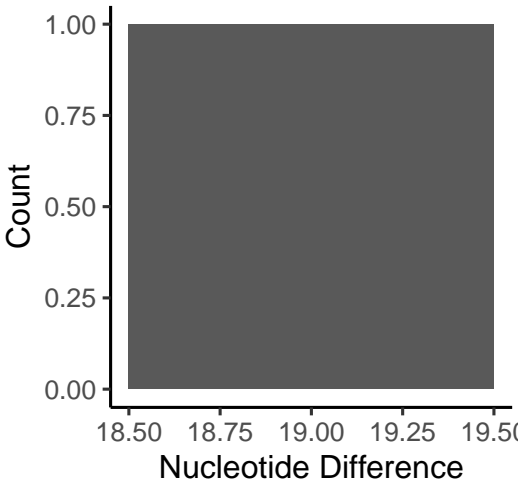
IGHV3/OR16-9\*01

1 sequences assigned  
No exact matches.

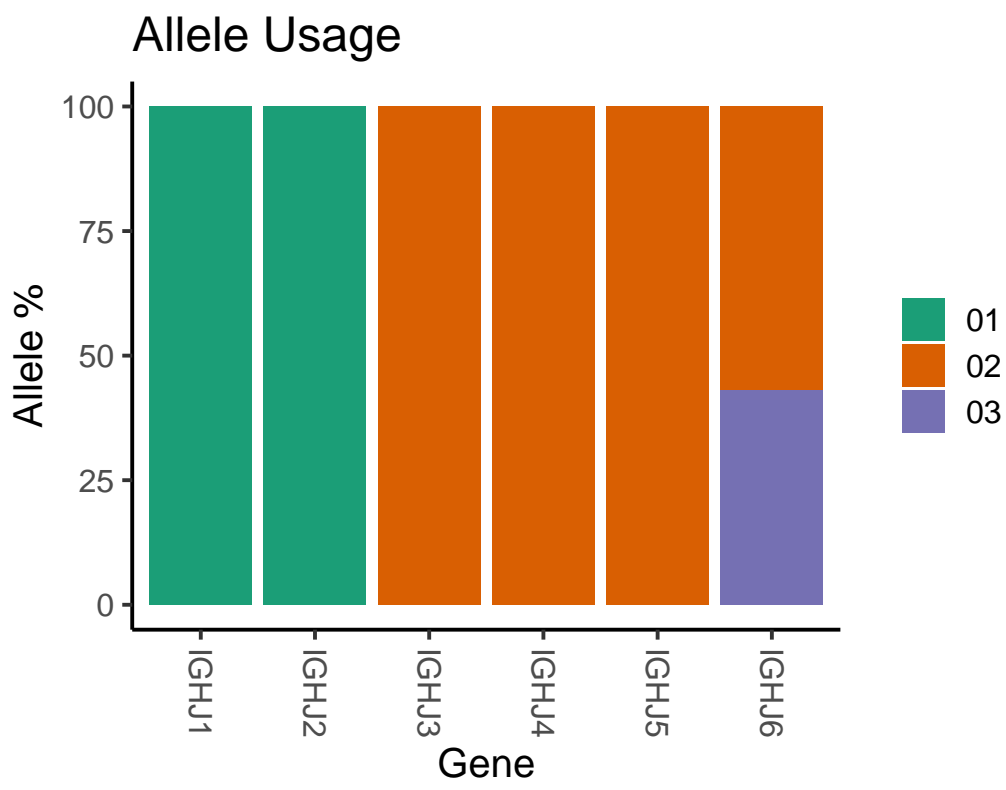


IGHV7-4-1\*02

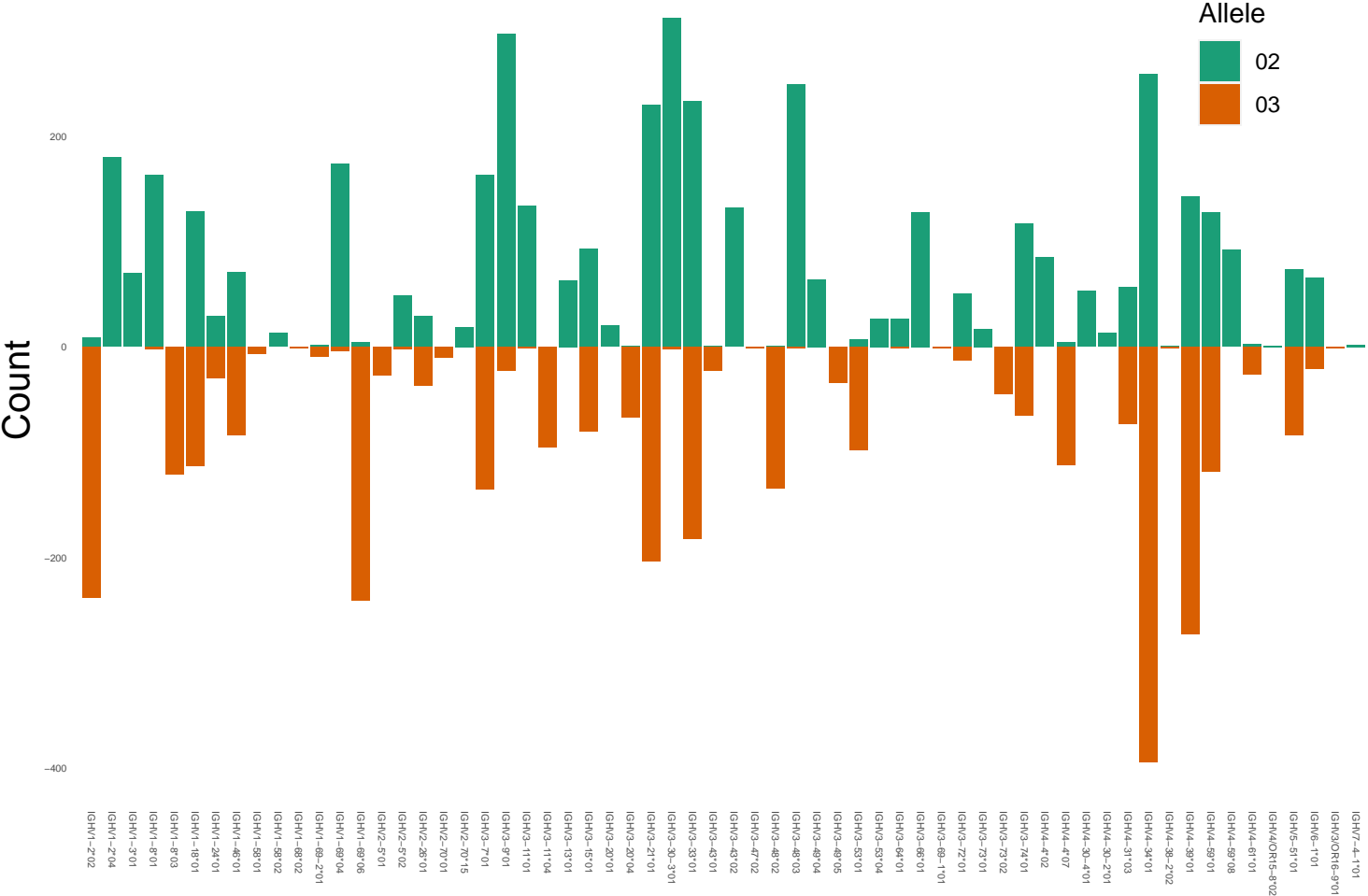
1 sequences assigned  
No exact matches.







Sequence Count by IGHJ6 allele usage



[illegible]