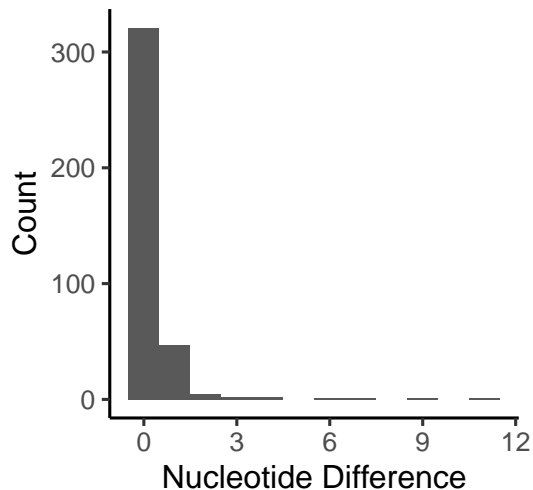


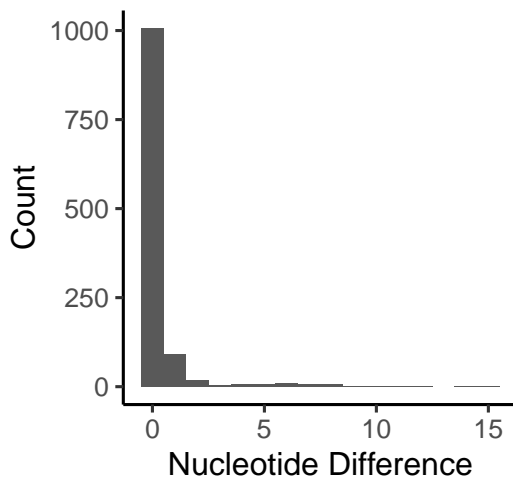
### IGHV1-2\*04

381 sequences assigned  
321 (84.3%) exact matches, in which:  
282 unique CDR3  
7 unique J



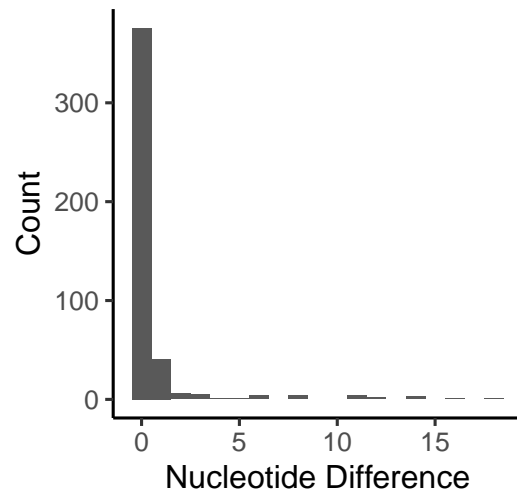
### IGHV1-18\*01

1162 sequences assigned  
1006 (86.6%) exact matches, in which:  
929 unique CDR3  
7 unique J



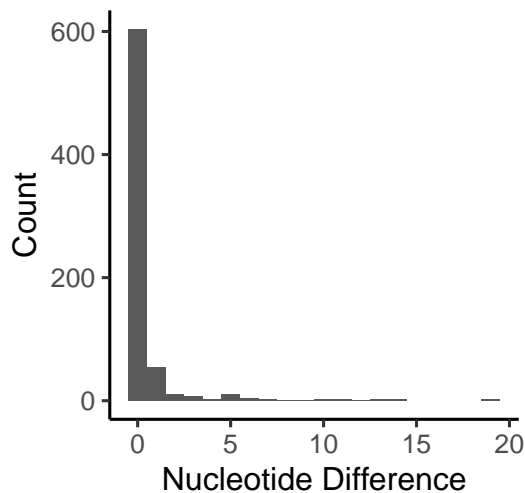
### IGHV1-46\*01

449 sequences assigned  
376 (83.7%) exact matches, in which:  
340 unique CDR3  
7 unique J



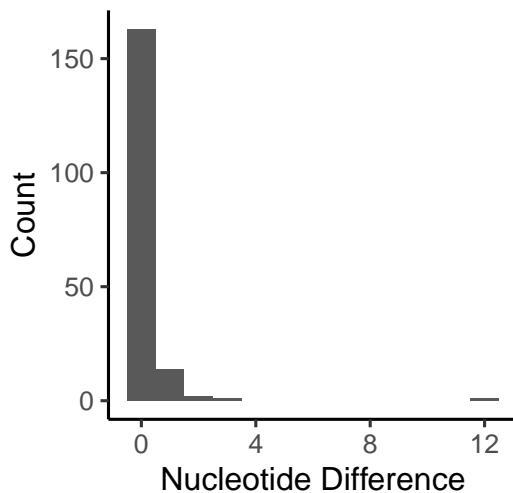
### IGHV1-3\*01

717 sequences assigned  
604 (84.2%) exact matches, in which:  
554 unique CDR3  
7 unique J



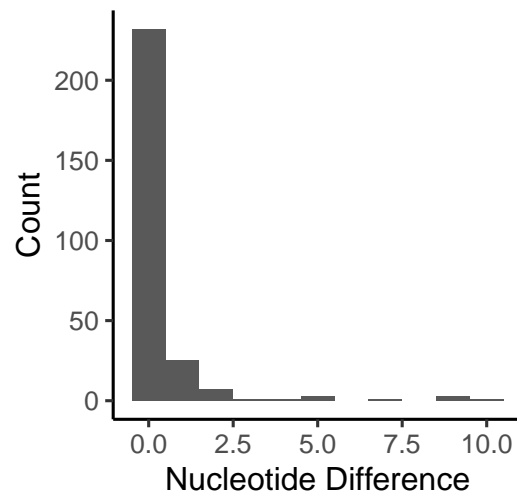
### IGHV1-24\*01

182 sequences assigned  
163 (89.6%) exact matches, in which:  
154 unique CDR3  
7 unique J



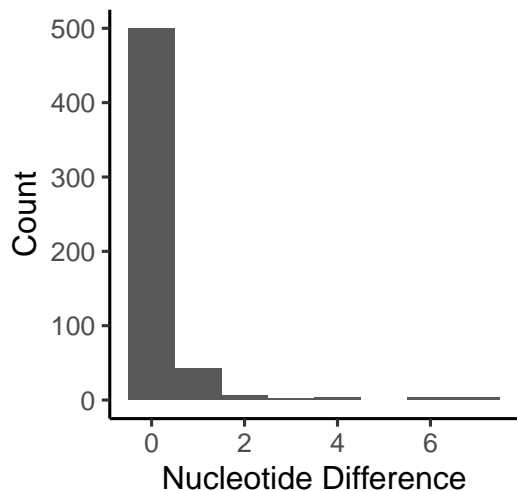
### IGHV1-46\*03

274 sequences assigned  
232 (84.7%) exact matches, in which:  
208 unique CDR3  
6 unique J



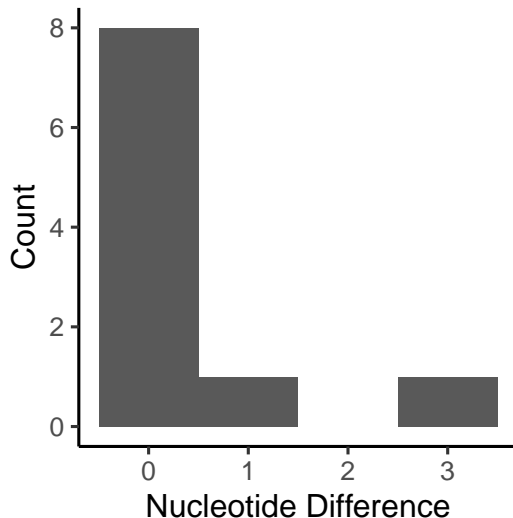
### IGHV1-8\*01

559 sequences assigned  
500 (89.4%) exact matches, in which:  
459 unique CDR3  
7 unique J



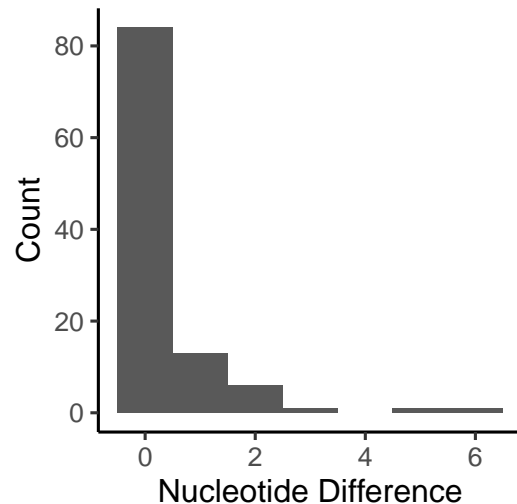
### IGHV1-45\*02

10 sequences assigned  
8 (80%) exact matches, in which:  
7 unique CDR3  
2 unique J



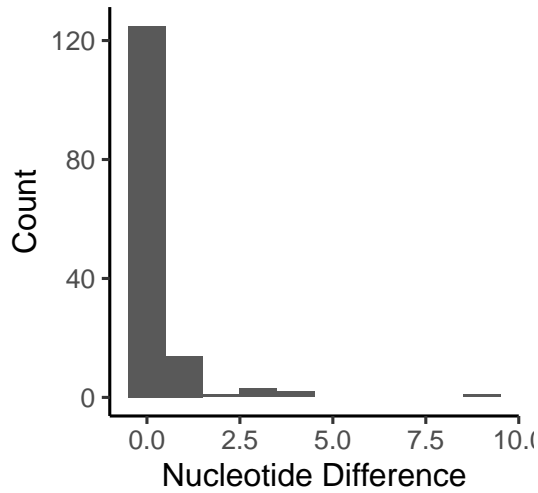
### IGHV1-58\*01

115 sequences assigned  
84 (73%) exact matches, in which:  
79 unique CDR3  
7 unique J



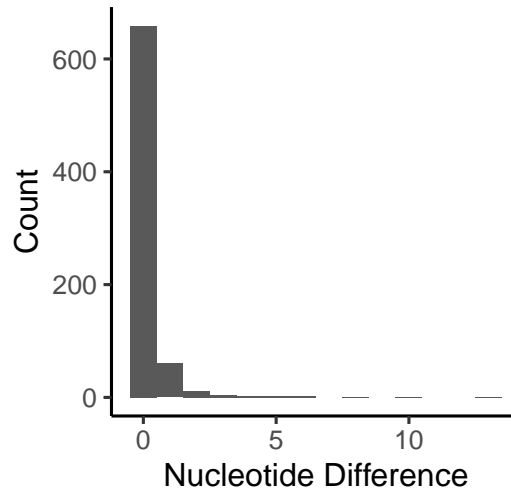
### IGHV1-69-2\*01

147 sequences assigned  
125 (85%) exact matches, in which:  
114 unique CDR3  
6 unique J



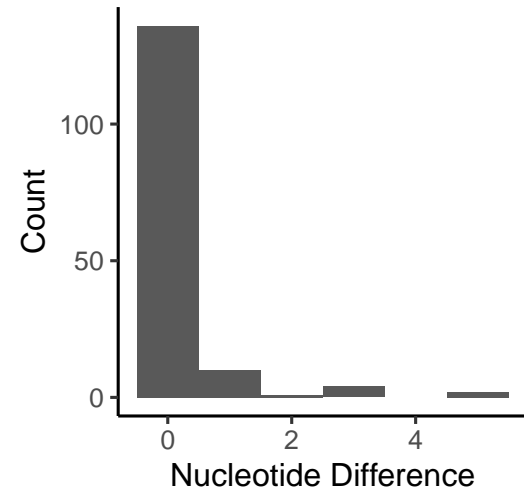
### IGHV1-69\*09

746 sequences assigned  
659 (88.3%) exact matches, in which:  
596 unique CDR3  
6 unique J



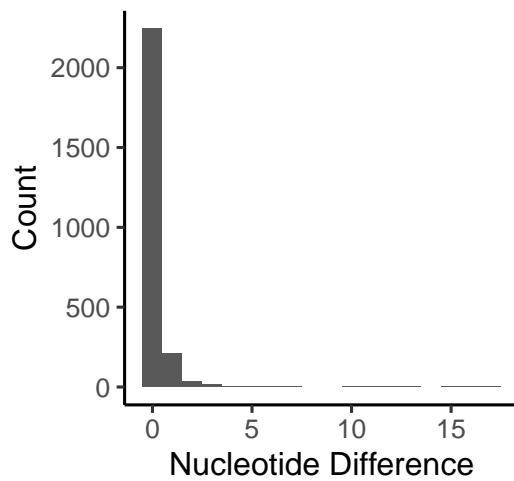
### IGHV2-70\*01

153 sequences assigned  
136 (88.9%) exact matches, in which:  
130 unique CDR3  
6 unique J



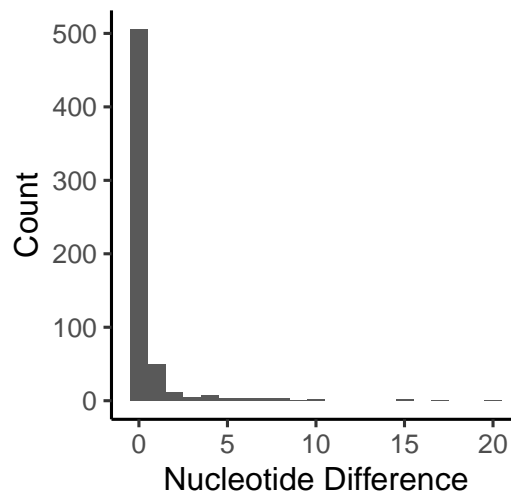
### IGHV1-69\*01

2533 sequences assigned  
2244 (88.6%) exact matches, in which:  
2035 unique CDR3  
7 unique J



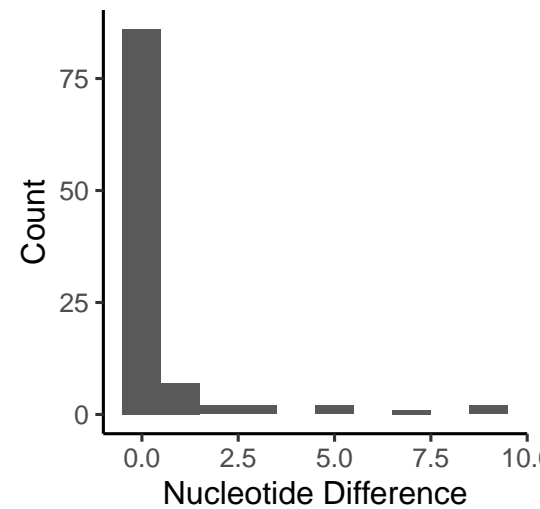
### IGHV2-5\*02

602 sequences assigned  
506 (84.1%) exact matches, in which:  
471 unique CDR3  
7 unique J



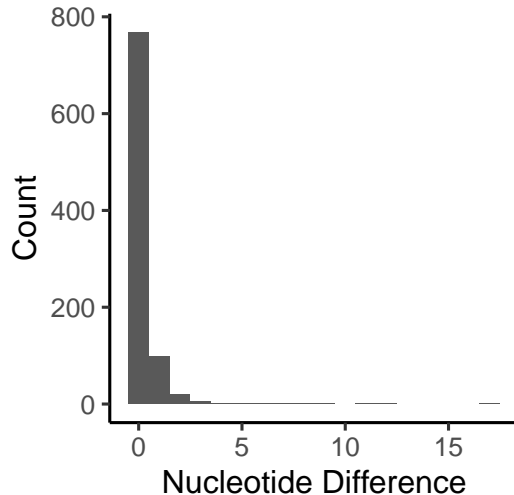
### IGHV2-70\*04

102 sequences assigned  
86 (84.3%) exact matches, in which:  
85 unique CDR3  
5 unique J



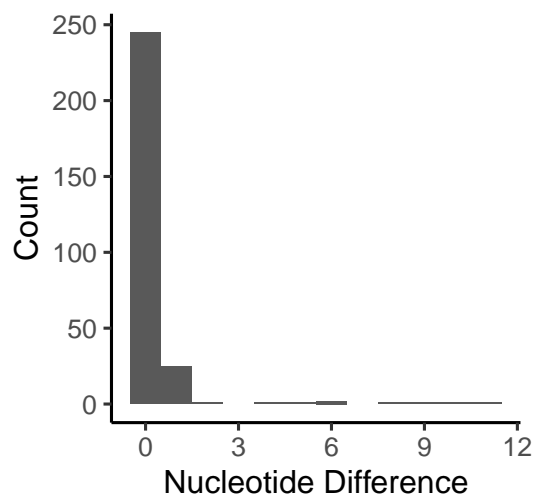
### IGHV1-69\*06

903 sequences assigned  
768 (85%) exact matches, in which:  
689 unique CDR3  
7 unique J



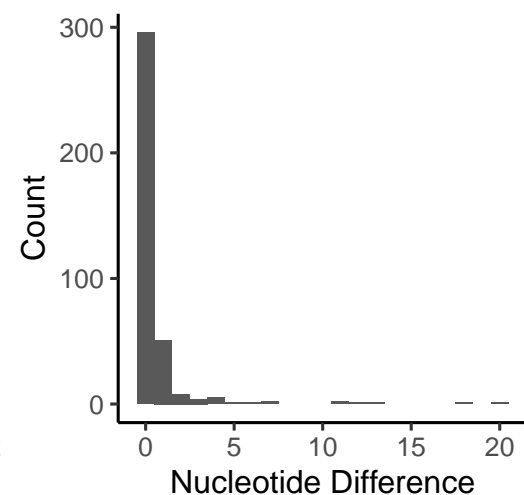
### IGHV2-26\*01

279 sequences assigned  
245 (87.8%) exact matches, in which:  
228 unique CDR3  
6 unique J



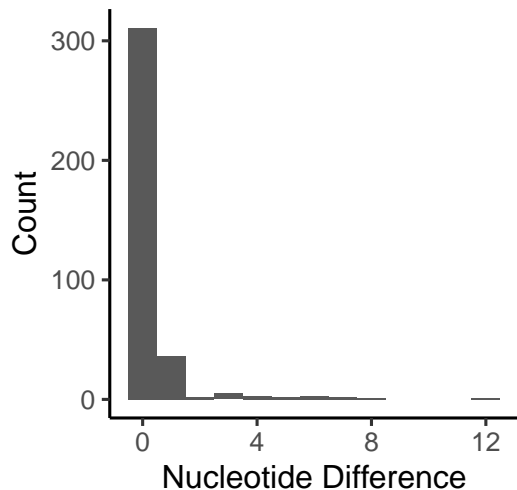
### IGHV3-7\*01

384 sequences assigned  
296 (77.1%) exact matches, in which:  
281 unique CDR3  
7 unique J



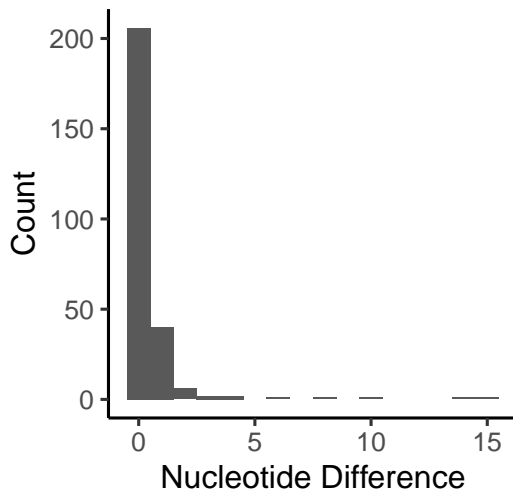
### IGHV3-7\*03

367 sequences assigned  
311 (84.7%) exact matches, in which:  
283 unique CDR3  
7 unique J



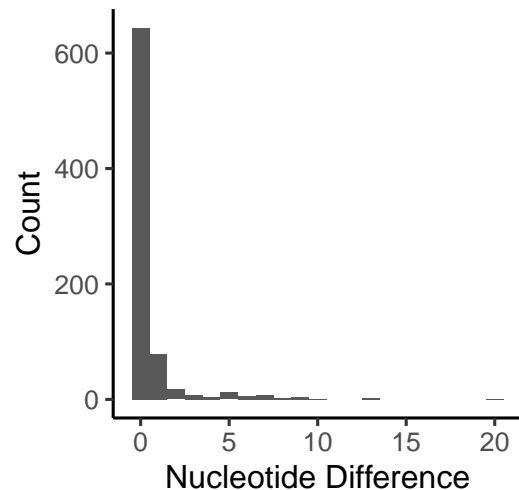
### IGHV3-11\*06

261 sequences assigned  
206 (78.9%) exact matches, in which:  
186 unique CDR3  
7 unique J



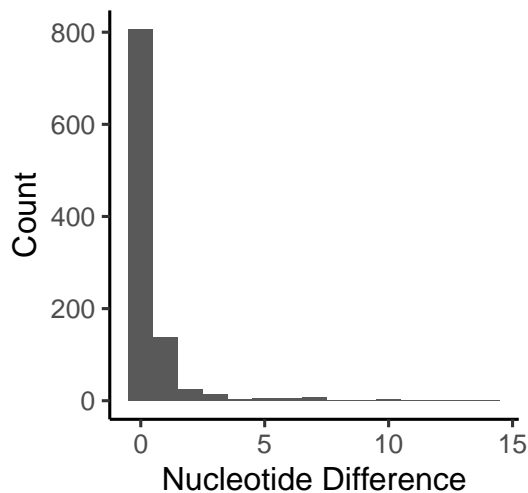
### IGHV3-15\*01

788 sequences assigned  
644 (81.7%) exact matches, in which:  
573 unique CDR3  
7 unique J



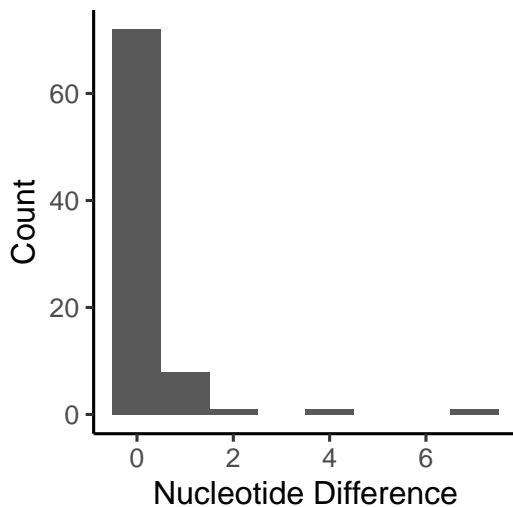
### IGHV3-9\*01

1018 sequences assigned  
807 (79.3%) exact matches, in which:  
721 unique CDR3  
6 unique J



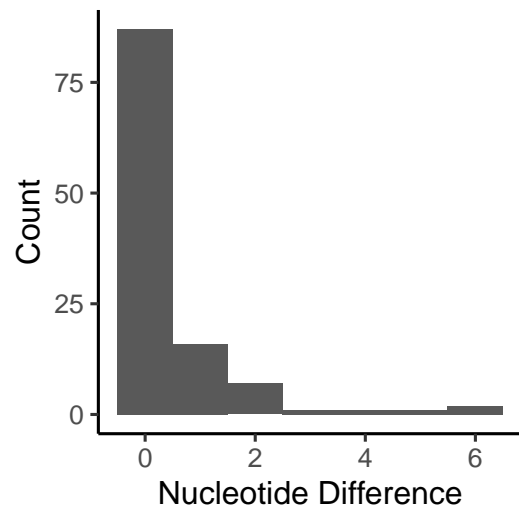
### IGHV3-13\*01

84 sequences assigned  
72 (85.7%) exact matches, in which:  
70 unique CDR3  
5 unique J



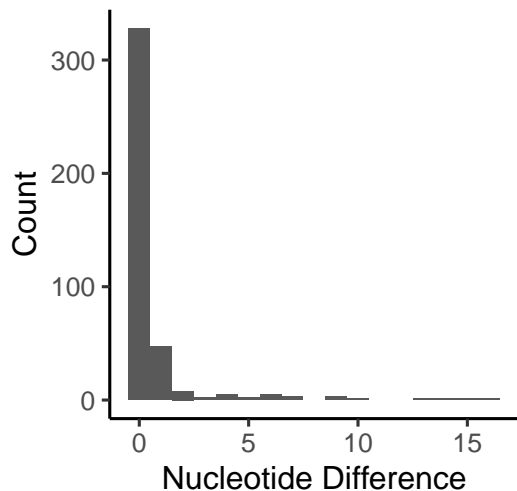
### IGHV3-20\*01

115 sequences assigned  
87 (75.7%) exact matches, in which:  
76 unique CDR3  
6 unique J



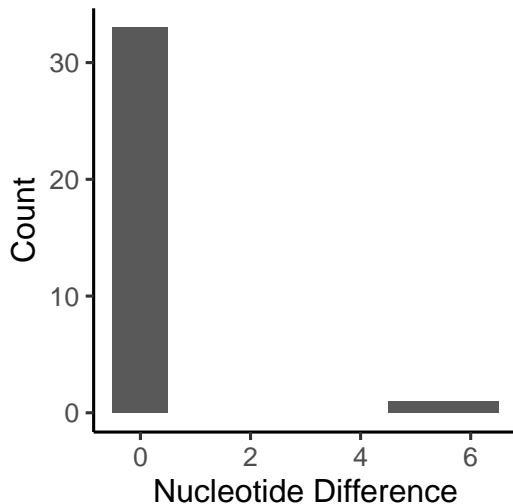
### IGHV3-11\*01

408 sequences assigned  
328 (80.4%) exact matches, in which:  
304 unique CDR3  
6 unique J



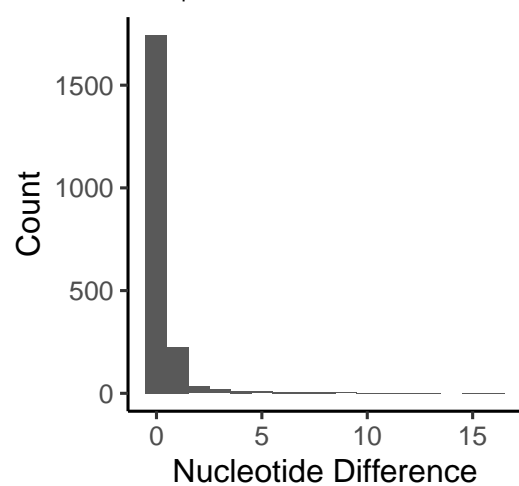
### IGHV3-13\*05

35 sequences assigned  
33 (94.3%) exact matches, in which:  
30 unique CDR3  
4 unique J



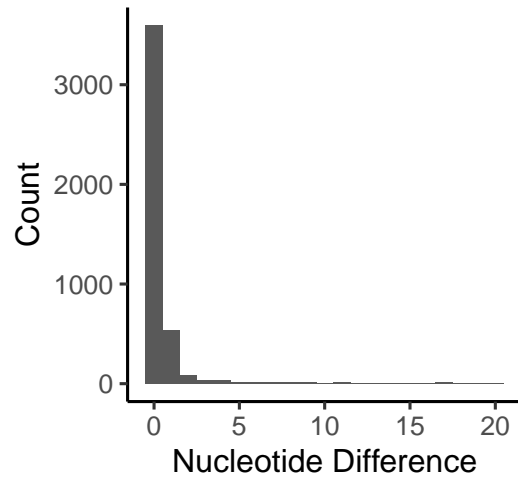
### IGHV3-21\*01

2077 sequences assigned  
1744 (84%) exact matches, in which:  
1567 unique CDR3  
7 unique J



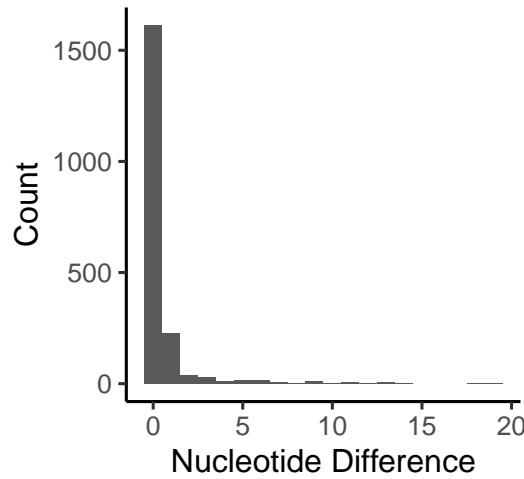
### IGHV3-23\*01

4463 sequences assigned  
3595 (80.6%) exact matches, in which:  
3157 unique CDR3  
7 unique J



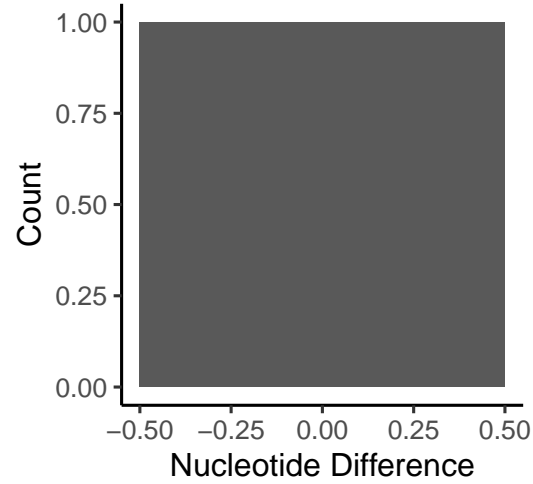
### IGHV3-30\*18

1995 sequences assigned  
1612 (80.8%) exact matches, in which:  
1449 unique CDR3  
7 unique J



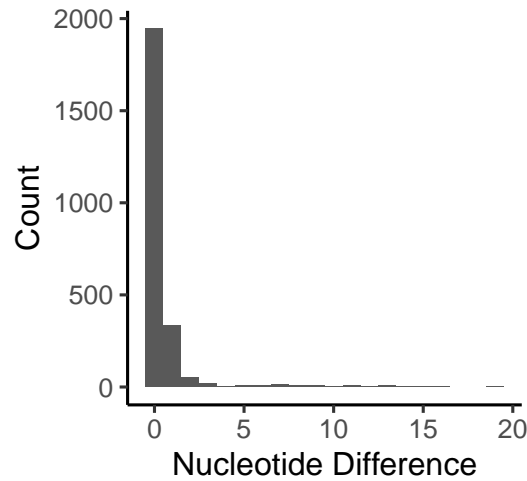
### IGHV3-47\*02

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



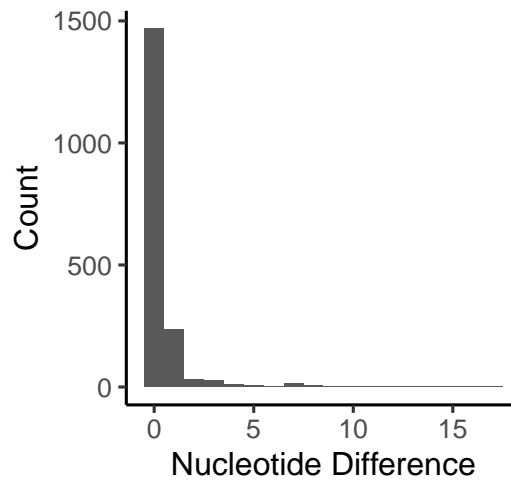
### IGHV3-30-3\*01

2426 sequences assigned  
1945 (80.2%) exact matches, in which:  
1735 unique CDR3  
7 unique J



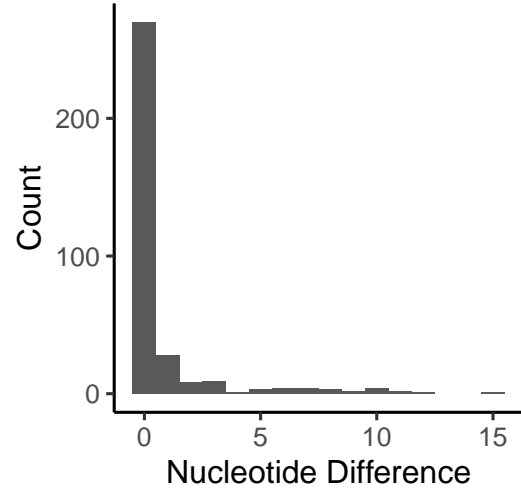
### IGHV3-33\*01

1832 sequences assigned  
1468 (80.1%) exact matches, in which:  
1295 unique CDR3  
7 unique J



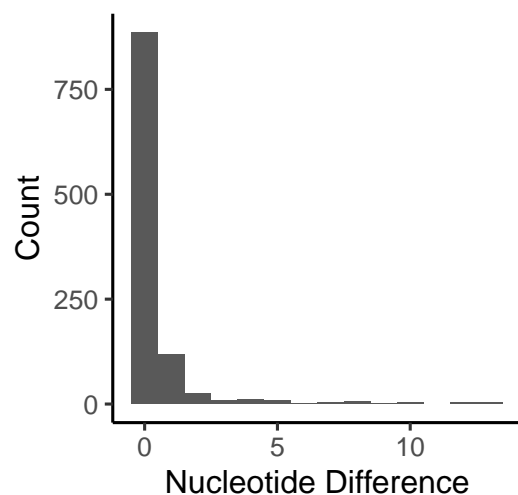
### IGHV3-48\*01

340 sequences assigned  
270 (79.4%) exact matches, in which:  
257 unique CDR3  
7 unique J



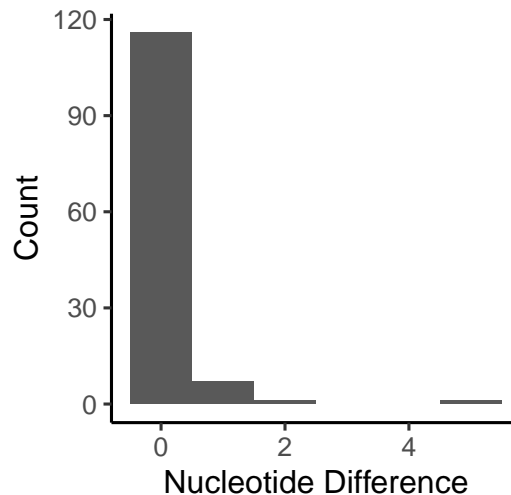
### IGHV3-30\*04

1079 sequences assigned  
886 (82.1%) exact matches, in which:  
799 unique CDR3  
7 unique J



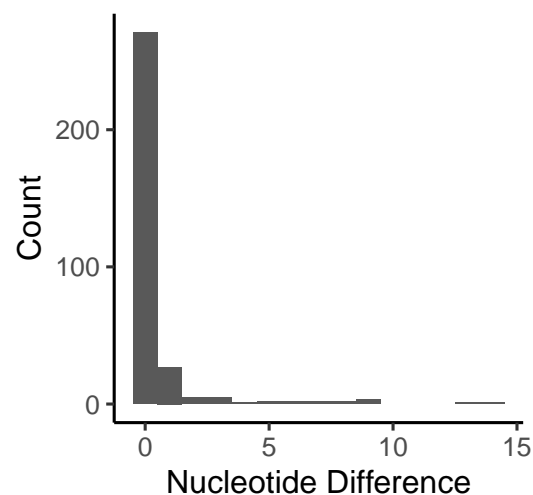
### IGHV3-43\*01

125 sequences assigned  
116 (92.8%) exact matches, in which:  
102 unique CDR3  
7 unique J



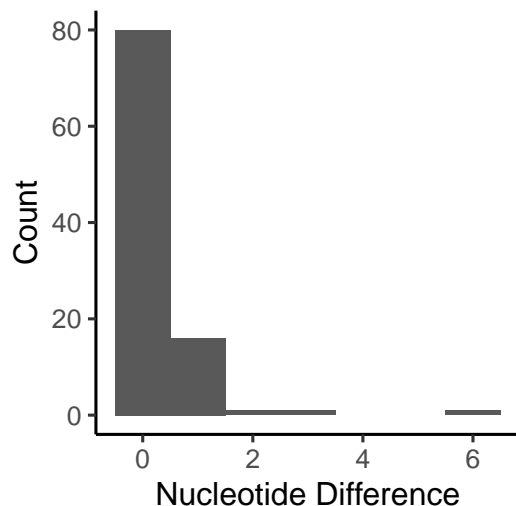
### IGHV3-48\*02

322 sequences assigned  
271 (84.2%) exact matches, in which:  
251 unique CDR3  
7 unique J



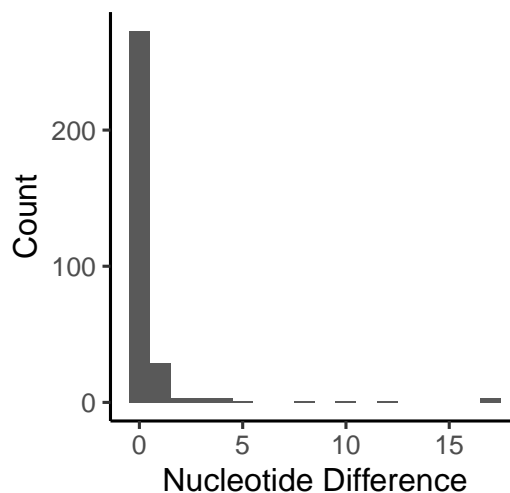
### IGHV3-49\*03

99 sequences assigned  
80 (80.8%) exact matches, in which:  
75 unique CDR3  
6 unique J



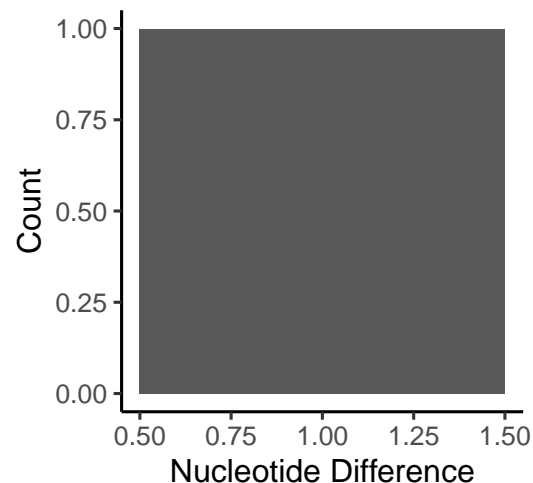
### IGHV3-53\*01

318 sequences assigned  
273 (85.8%) exact matches, in which:  
250 unique CDR3  
7 unique J



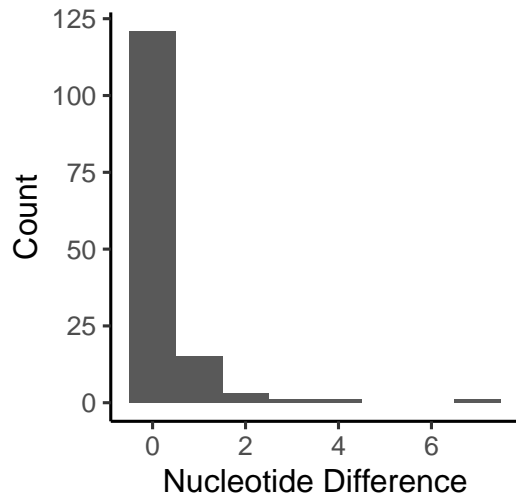
### IGHV3-69-1\*01

1 sequences assigned  
No exact matches.



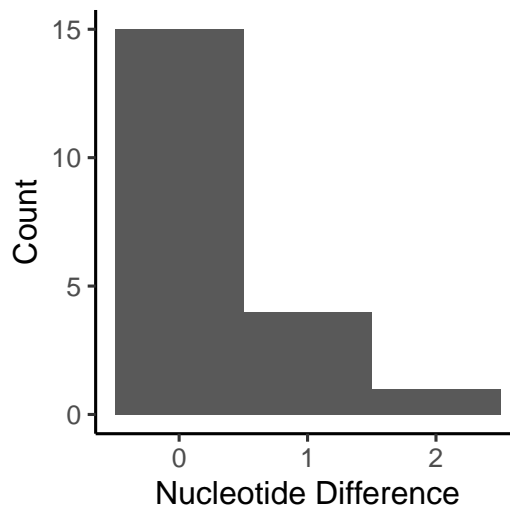
### IGHV3-49\*05

142 sequences assigned  
121 (85.2%) exact matches, in which:  
112 unique CDR3  
5 unique J



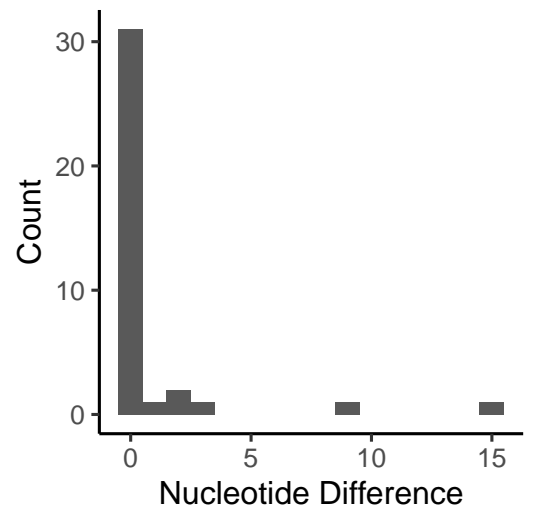
### IGHV3-64\*02

20 sequences assigned  
15 (75%) exact matches, in which:  
14 unique CDR3  
4 unique J



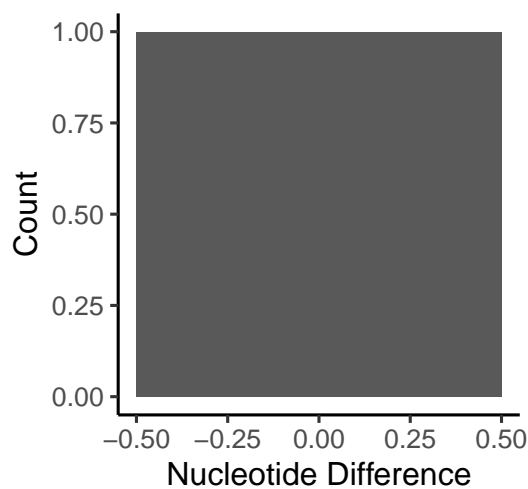
### IGHV3-72\*01

37 sequences assigned  
31 (83.8%) exact matches, in which:  
29 unique CDR3  
7 unique J



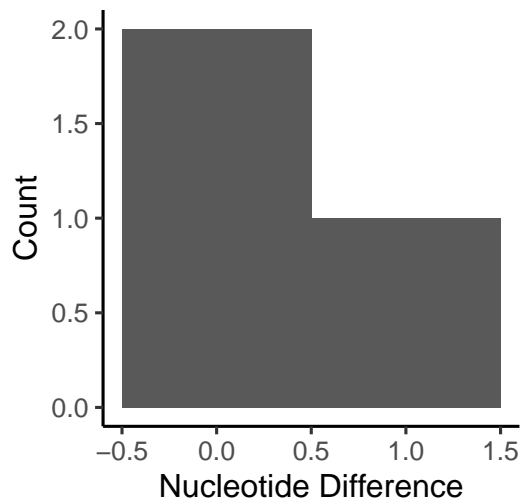
### IGHV3-52\*01

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



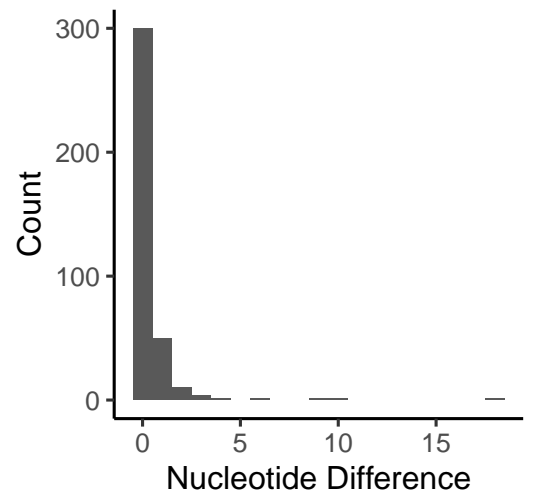
### IGHV3-66\*03

3 sequences assigned  
2 (66.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



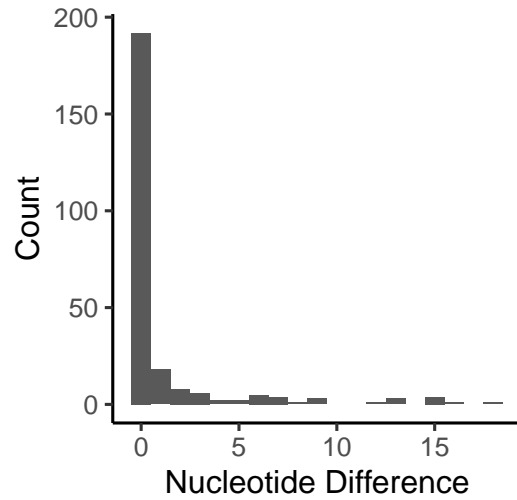
### IGHV3-73\*02

369 sequences assigned  
300 (81.3%) exact matches, in which:  
273 unique CDR3  
7 unique J



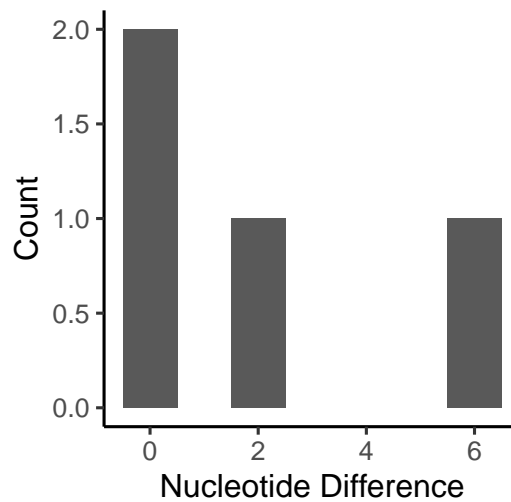
### IGHV3-74\*01

252 sequences assigned  
192 (76.2%) exact matches, in which:  
180 unique CDR3  
7 unique J



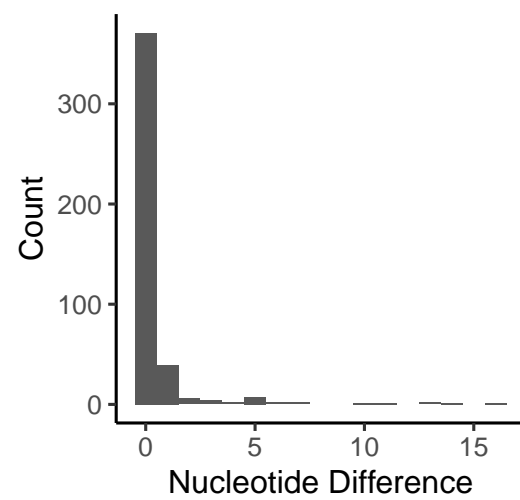
### IGHV4-28\*01

4 sequences assigned  
2 (50%) exact matches, in which:  
2 unique CDR3  
2 unique J



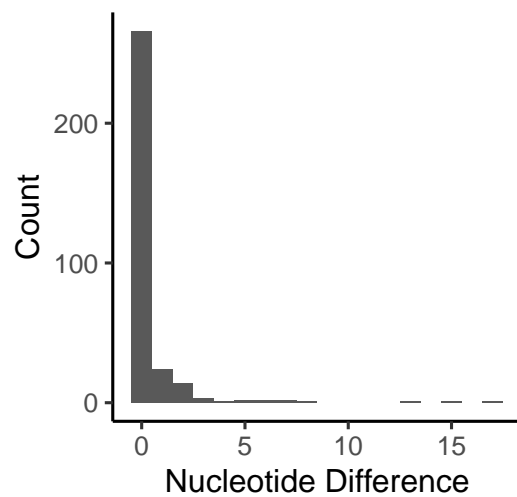
### IGHV4-30-4\*01

439 sequences assigned  
371 (84.5%) exact matches, in which:  
350 unique CDR3  
7 unique J



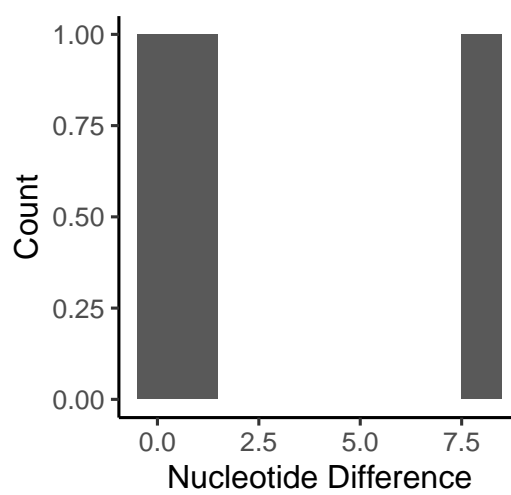
### IGHV3-64D\*09

319 sequences assigned  
266 (83.4%) exact matches, in which:  
241 unique CDR3  
6 unique J



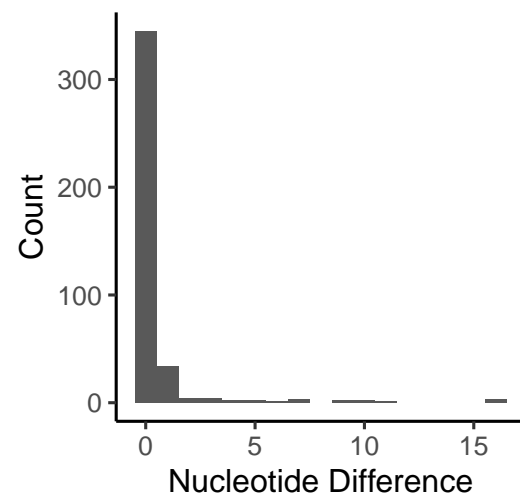
### IGHV4-28\*03

3 sequences assigned  
1 (33.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



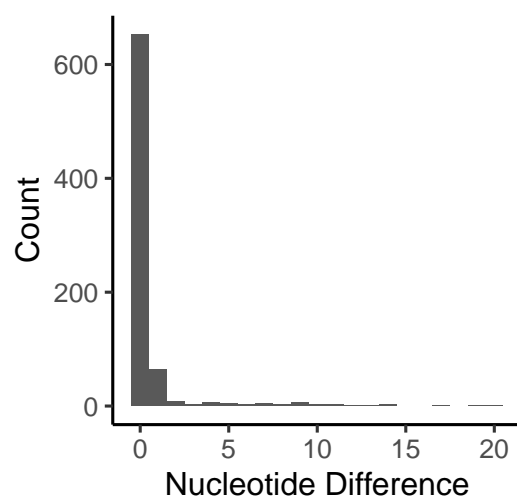
### IGHV4-30-2\*01

403 sequences assigned  
345 (85.6%) exact matches, in which:  
323 unique CDR3  
7 unique J



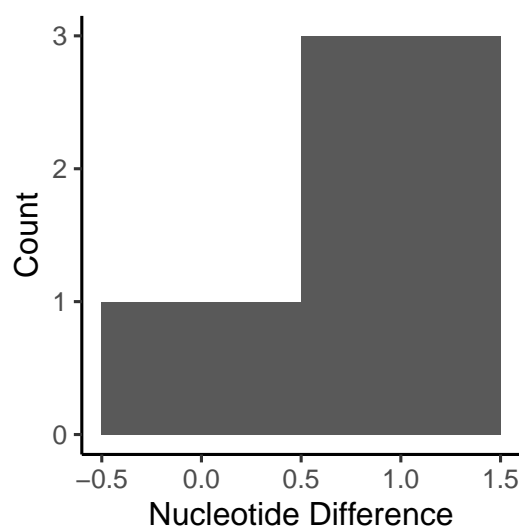
### IGHV4-4\*02

769 sequences assigned  
653 (84.9%) exact matches, in which:  
599 unique CDR3  
7 unique J



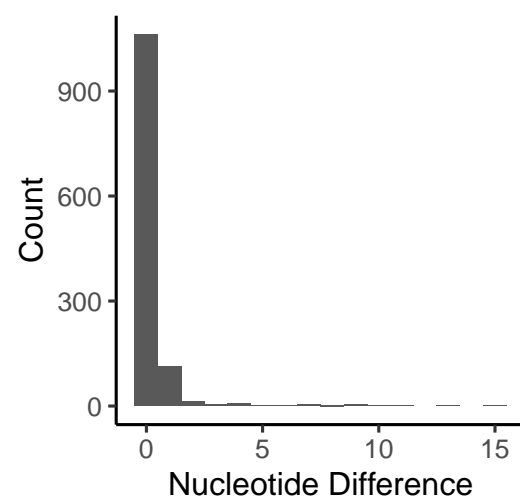
### IGHV4-28\*04

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



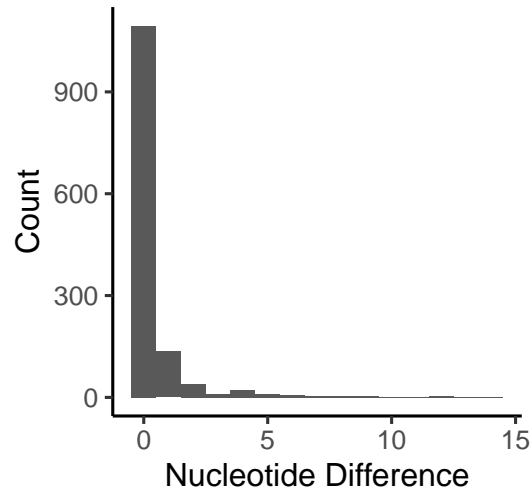
### IGHV4-31\*03

1220 sequences assigned  
1062 (87%) exact matches, in which:  
986 unique CDR3  
7 unique J



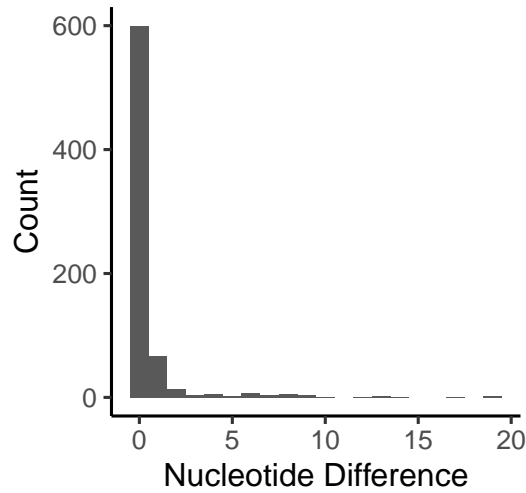
### IGHV4–34\*01

1338 sequences assigned  
1095 (81.8%) exact matches, in which:  
960 unique CDR3  
7 unique J



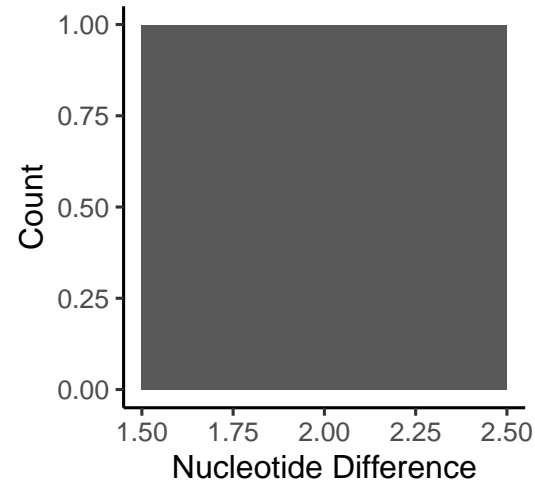
### IGHV4–59\*01

720 sequences assigned  
600 (83.3%) exact matches, in which:  
572 unique CDR3  
6 unique J



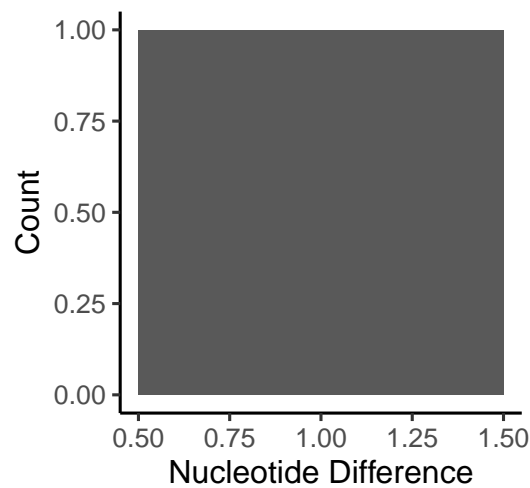
### IGHV4/OR15–8\*01

1 sequences assigned  
No exact matches.



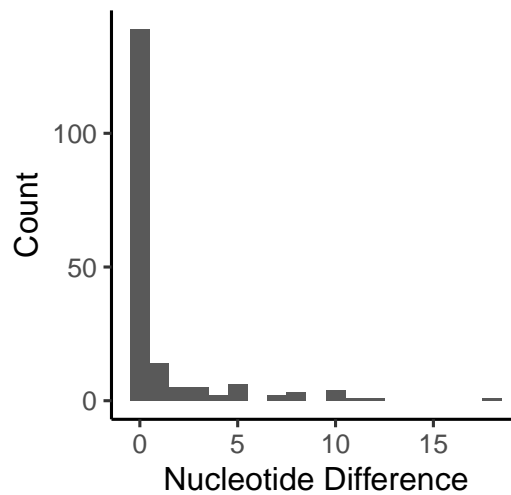
### IGHV4–38–2\*02

1 sequences assigned  
No exact matches.



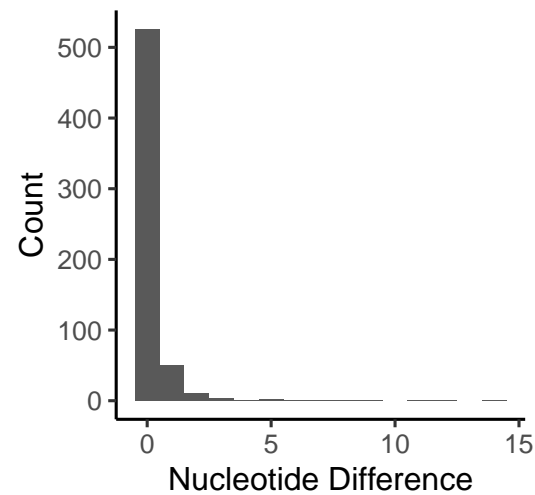
### IGHV4–61\*01

184 sequences assigned  
139 (75.5%) exact matches, in which:  
128 unique CDR3  
7 unique J



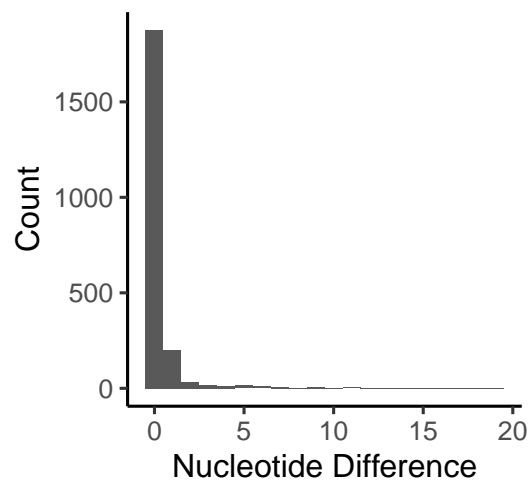
### IGHV5–10–1\*03

600 sequences assigned  
526 (87.7%) exact matches, in which:  
463 unique CDR3  
6 unique J



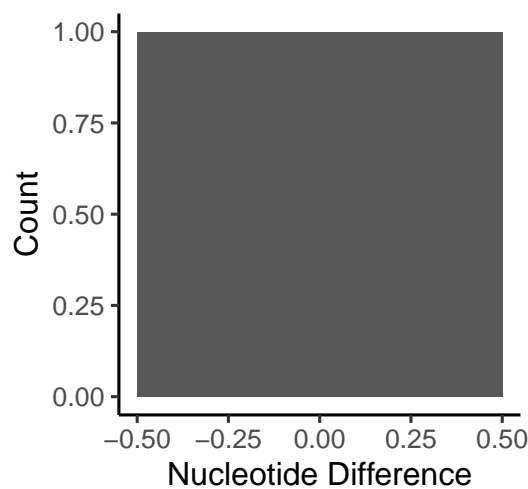
### IGHV4–39\*01

2207 sequences assigned  
1876 (85%) exact matches, in which:  
1672 unique CDR3  
7 unique J



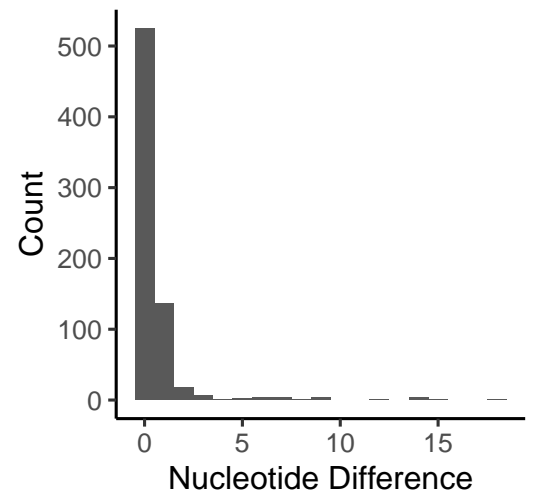
### IGHV1/OR15–2\*01

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



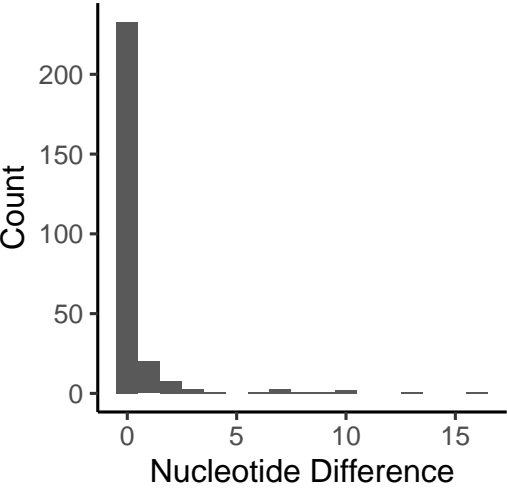
### IGHV5–51\*01

709 sequences assigned  
525 (74%) exact matches, in which:  
475 unique CDR3  
7 unique J



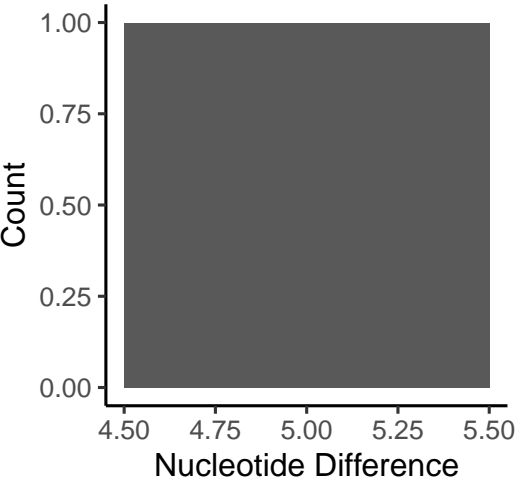
IGHV5–51\*03

275 sequences assigned  
233 (84.7%) exact matches, in which:  
216 unique CDR3  
7 unique J



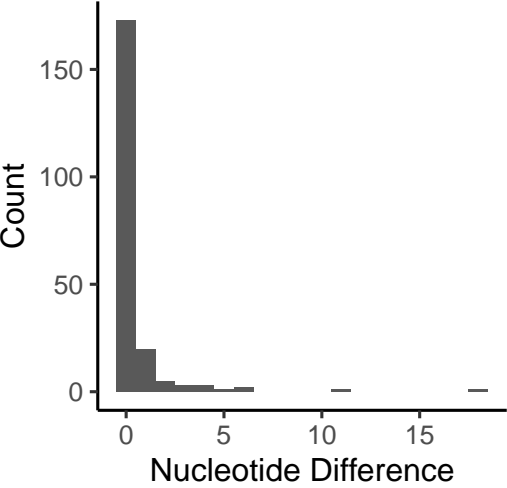
IGHV3/OR16–15\*02

1 sequences assigned  
No exact matches.



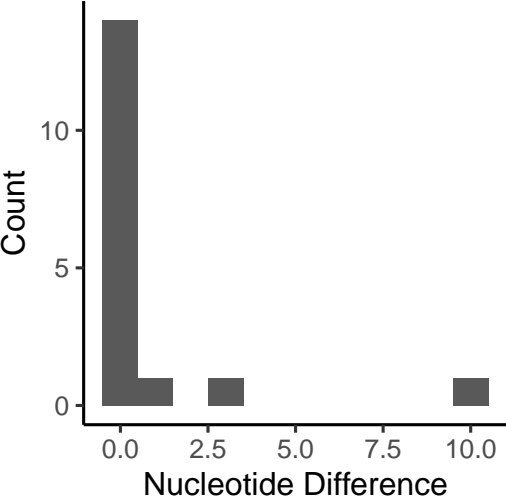
IGHV6–1\*01

209 sequences assigned  
173 (82.8%) exact matches, in which:  
157 unique CDR3  
7 unique J



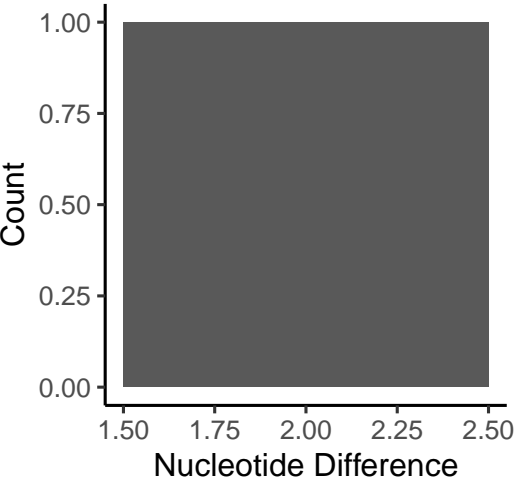
IGHV7–4–1\*01

17 sequences assigned  
14 (82.4%) exact matches, in which:  
10 unique CDR3  
4 unique J

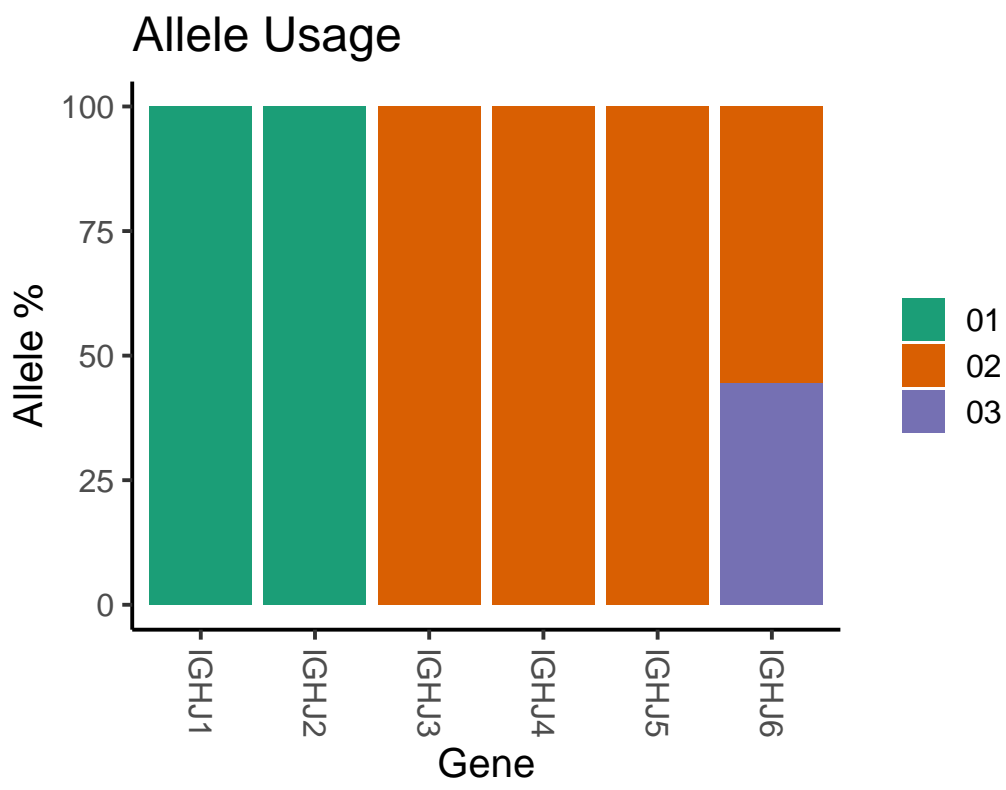


IGHV3/OR16–6\*02

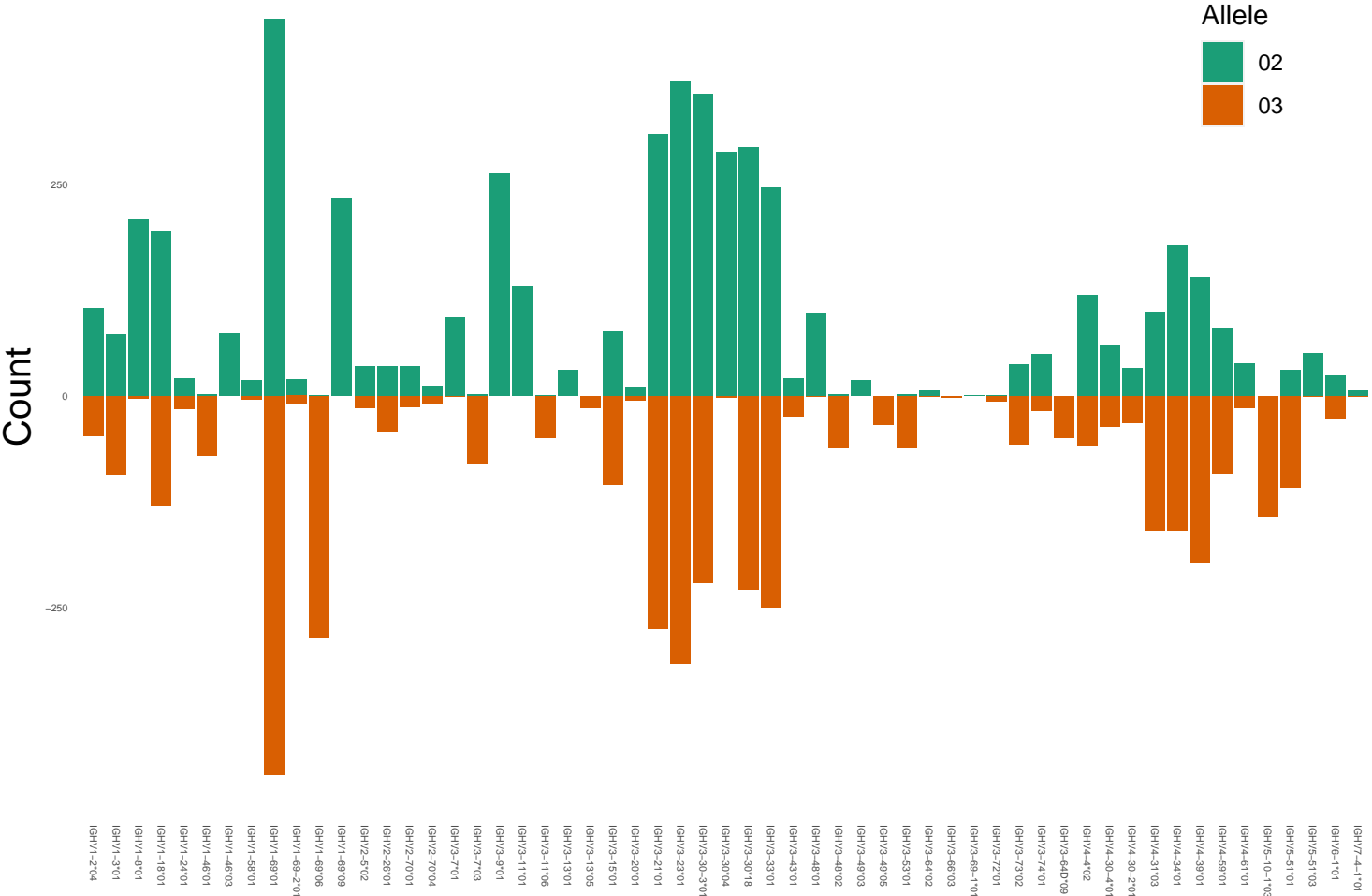
1 sequences assigned  
No exact matches.







Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.