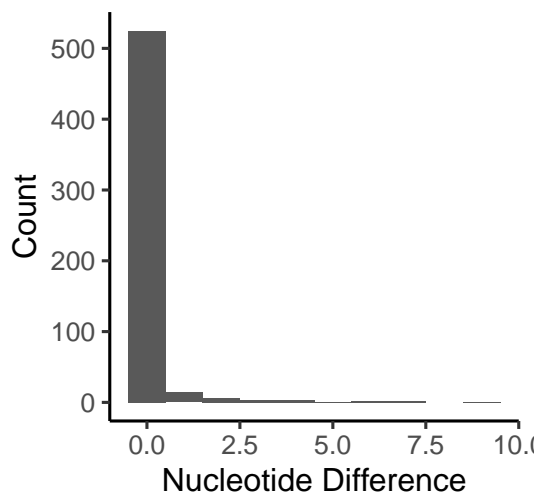


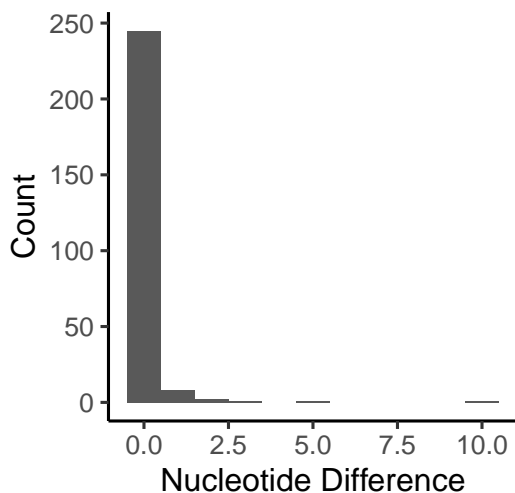
### IGHV1-2\*02

557 sequences assigned  
525 (94.3%) exact matches, in which:  
525 unique CDR3  
6 unique J



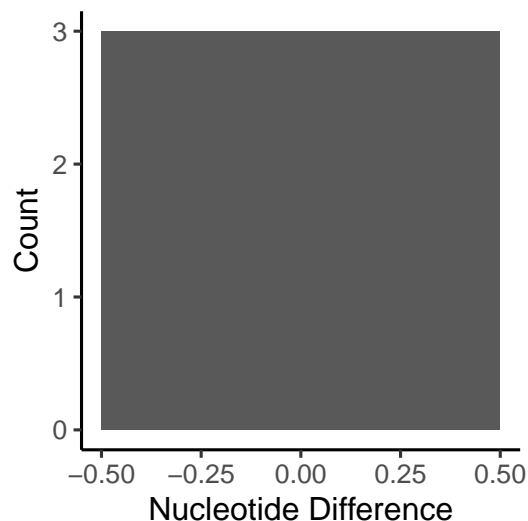
### IGHV1-8\*01

258 sequences assigned  
245 (95%) exact matches, in which:  
245 unique CDR3  
5 unique J



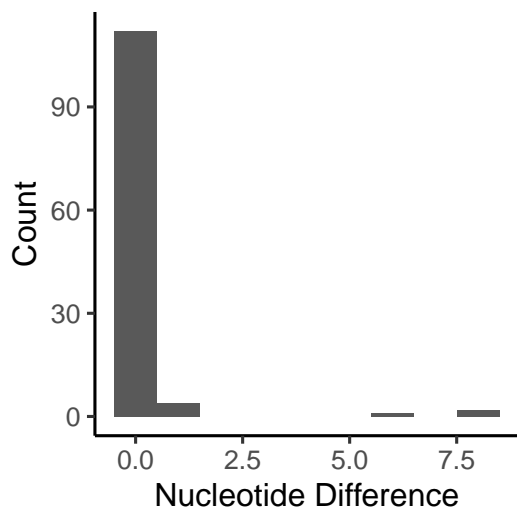
### IGHV1-45\*02

3 sequences assigned  
3 (100%) exact matches, in which:  
3 unique CDR3  
3 unique J



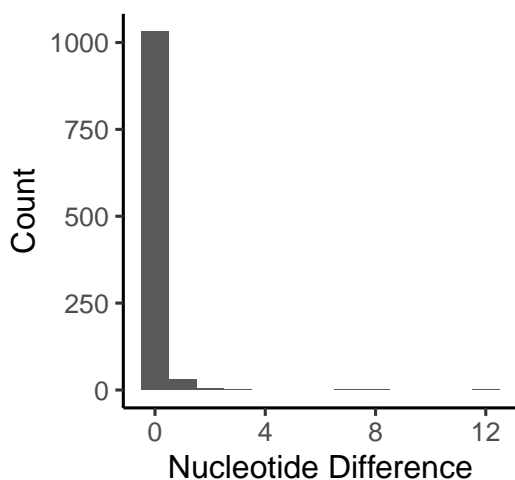
### IGHV1-2\*04

119 sequences assigned  
112 (94.1%) exact matches, in which:  
111 unique CDR3  
5 unique J



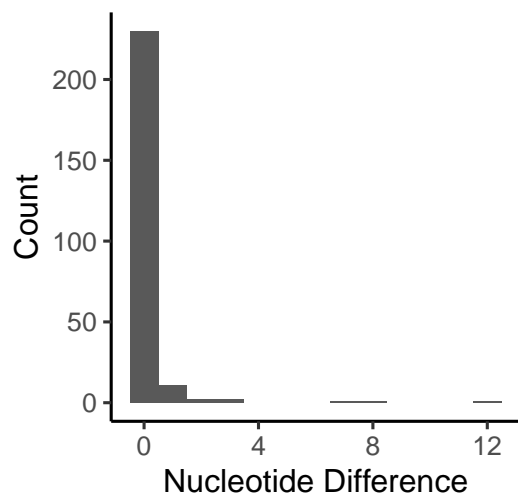
### IGHV1-18\*01

1069 sequences assigned  
1031 (96.4%) exact matches, in which:  
1029 unique CDR3  
6 unique J



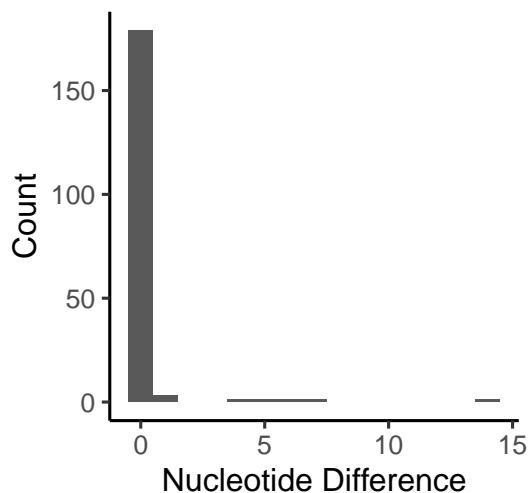
### IGHV1-46\*01

248 sequences assigned  
230 (92.7%) exact matches, in which:  
230 unique CDR3  
6 unique J



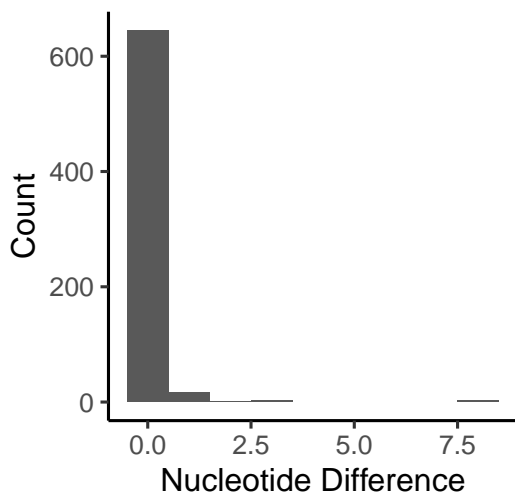
### IGHV1-3\*01

188 sequences assigned  
179 (95.2%) exact matches, in which:  
179 unique CDR3  
6 unique J



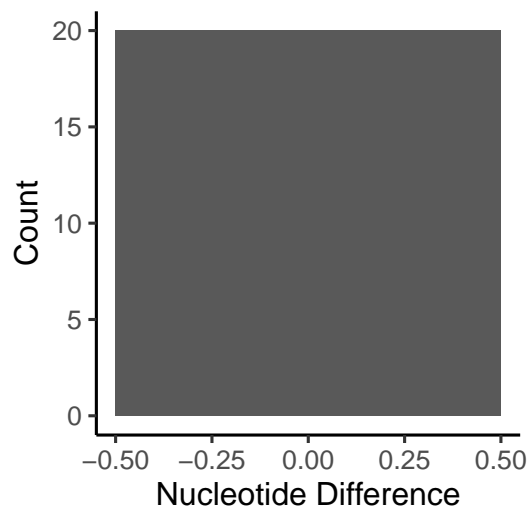
### IGHV1-24\*01

667 sequences assigned  
645 (96.7%) exact matches, in which:  
645 unique CDR3  
6 unique J



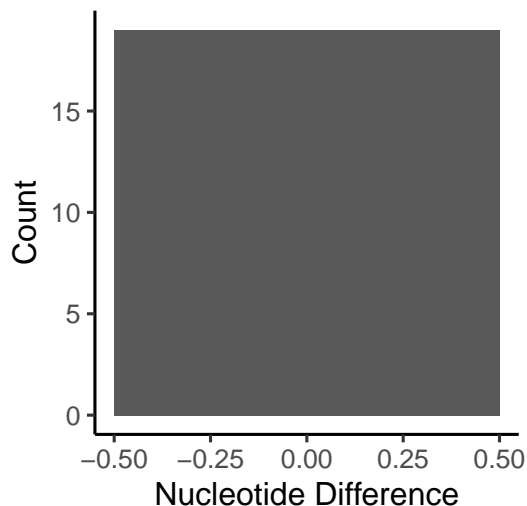
### IGHV1-58\*01

20 sequences assigned  
20 (100%) exact matches, in which:  
20 unique CDR3  
4 unique J



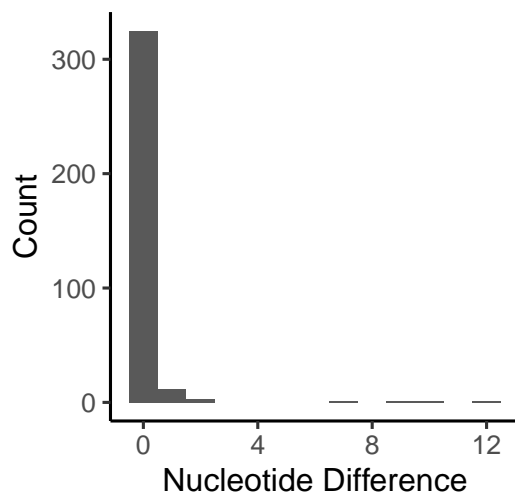
### IGHV1-58\*02

19 sequences assigned  
19 (100%) exact matches, in which:  
19 unique CDR3  
5 unique J



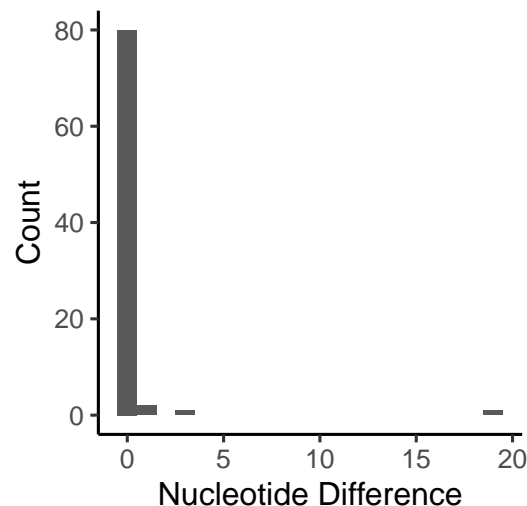
### IGHV1-69\*06

344 sequences assigned  
325 (94.5%) exact matches, in which:  
325 unique CDR3  
6 unique J



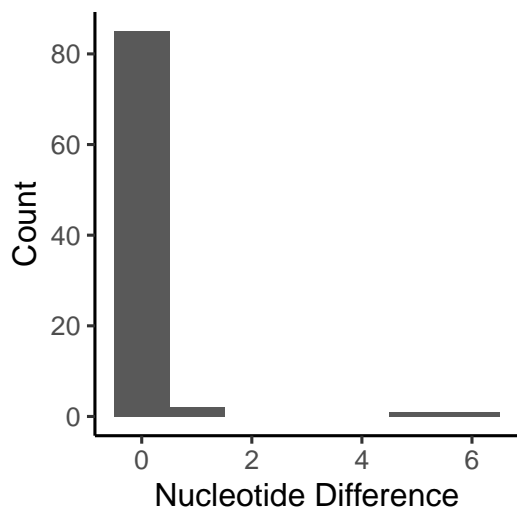
### IGHV2-26\*01

84 sequences assigned  
80 (95.2%) exact matches, in which:  
80 unique CDR3  
6 unique J



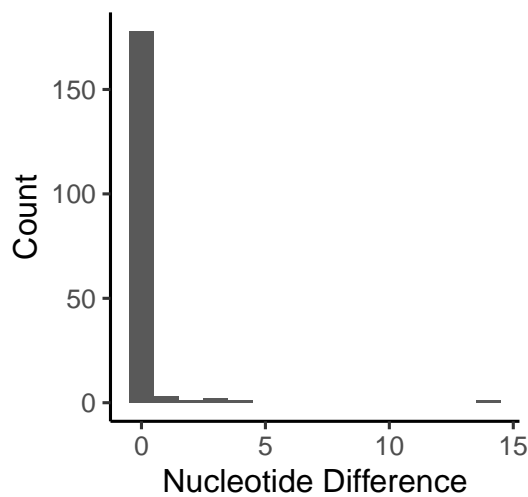
### IGHV1-69-2\*01

89 sequences assigned  
85 (95.5%) exact matches, in which:  
84 unique CDR3  
4 unique J



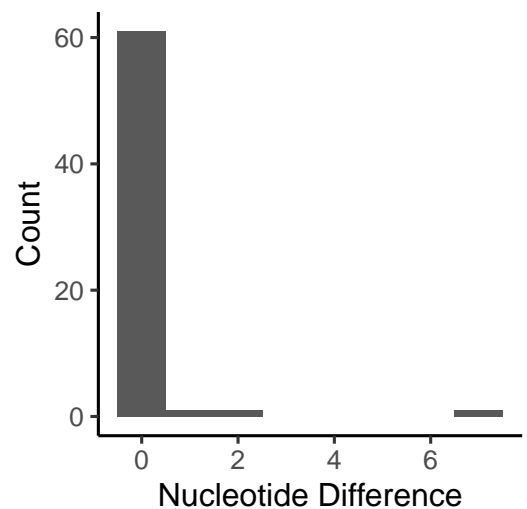
### IGHV2-5\*01

186 sequences assigned  
178 (95.7%) exact matches, in which:  
178 unique CDR3  
6 unique J



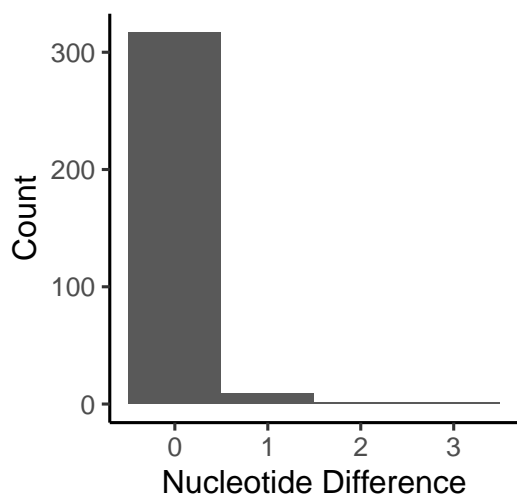
### IGHV2-70\*01

64 sequences assigned  
61 (95.3%) exact matches, in which:  
61 unique CDR3  
5 unique J



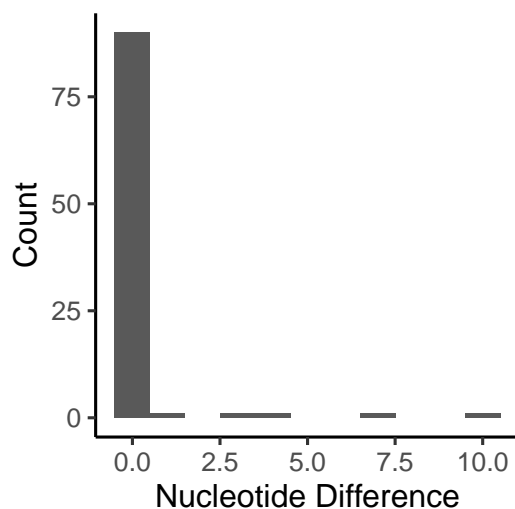
### IGHV1-69\*04

328 sequences assigned  
317 (96.6%) exact matches, in which:  
317 unique CDR3  
6 unique J



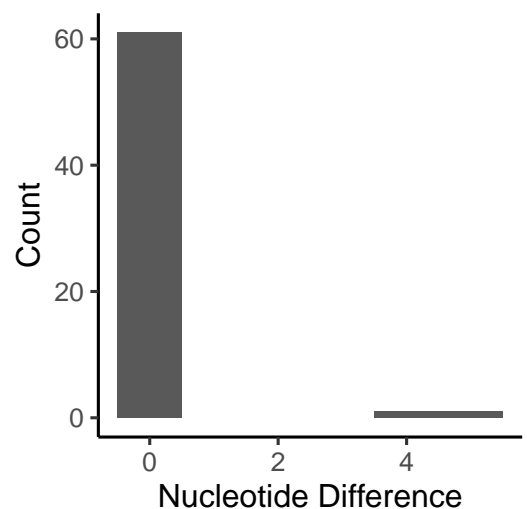
### IGHV2-5\*02

95 sequences assigned  
90 (94.7%) exact matches, in which:  
90 unique CDR3  
6 unique J



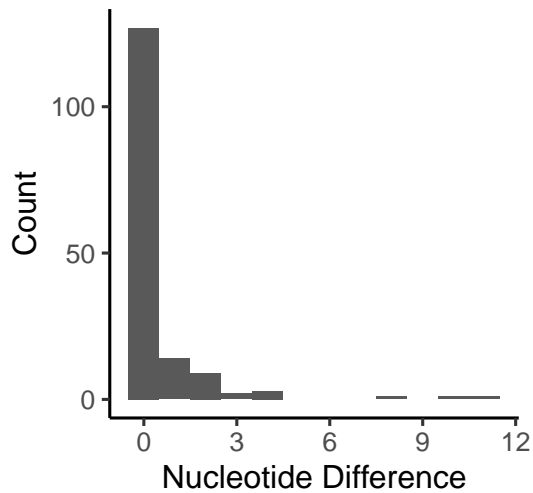
### IGHV2-70\*15

63 sequences assigned  
61 (96.8%) exact matches, in which:  
61 unique CDR3  
5 unique J



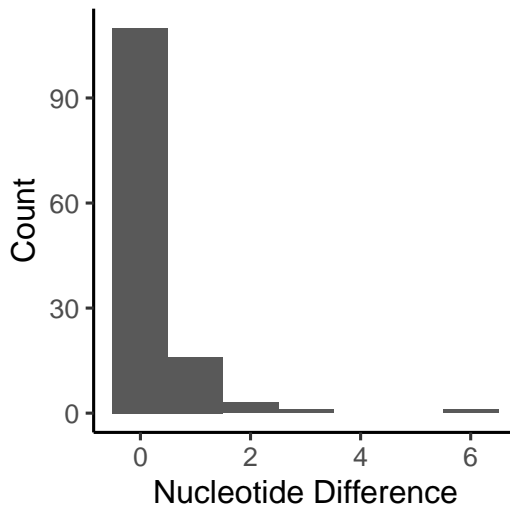
### IGHV3-7\*01

160 sequences assigned  
127 (79.4%) exact matches, in which:  
126 unique CDR3  
5 unique J



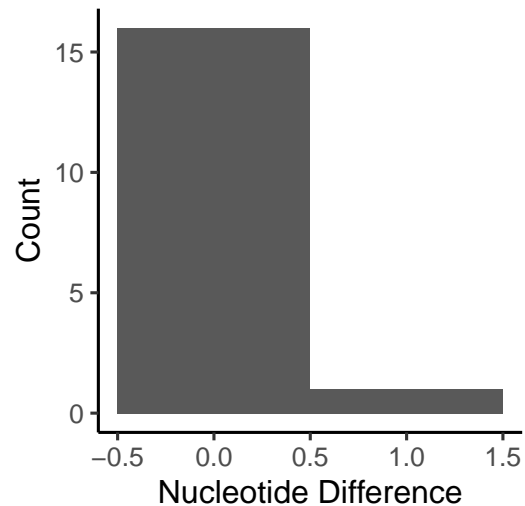
### IGHV3-11\*01

131 sequences assigned  
110 (84%) exact matches, in which:  
110 unique CDR3  
6 unique J



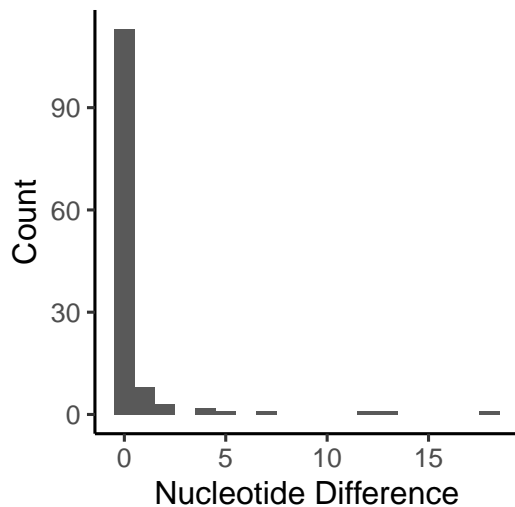
### IGHV3-13\*05

17 sequences assigned  
16 (94.1%) exact matches, in which:  
16 unique CDR3  
4 unique J



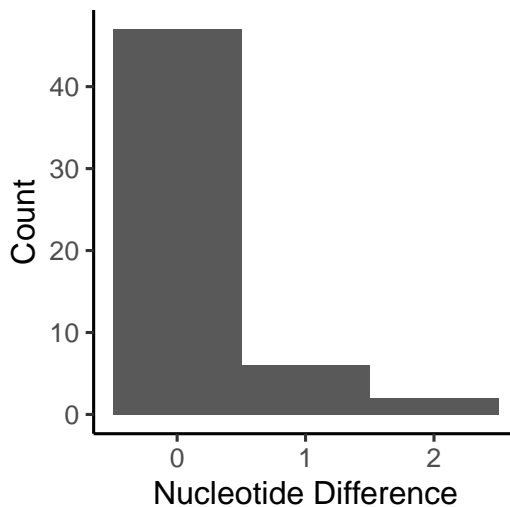
### IGHV3-7\*03

132 sequences assigned  
113 (85.6%) exact matches, in which:  
113 unique CDR3  
6 unique J



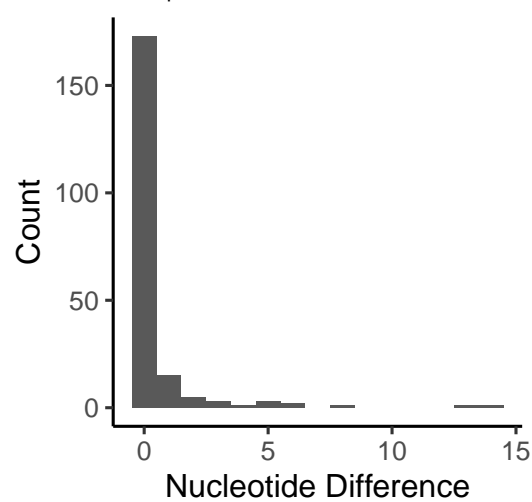
### IGHV3-11\*06

55 sequences assigned  
47 (85.5%) exact matches, in which:  
47 unique CDR3  
6 unique J



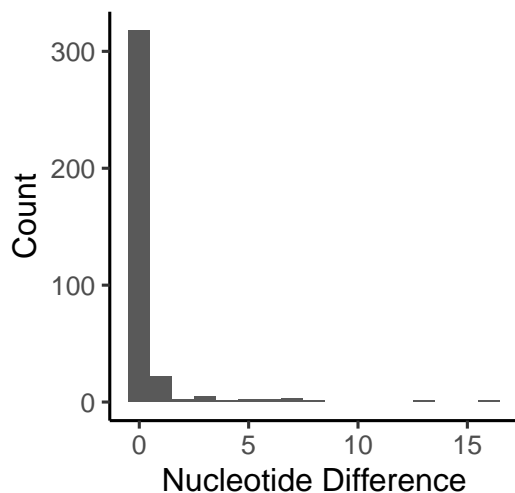
### IGHV3-15\*01

205 sequences assigned  
173 (84.4%) exact matches, in which:  
173 unique CDR3  
6 unique J



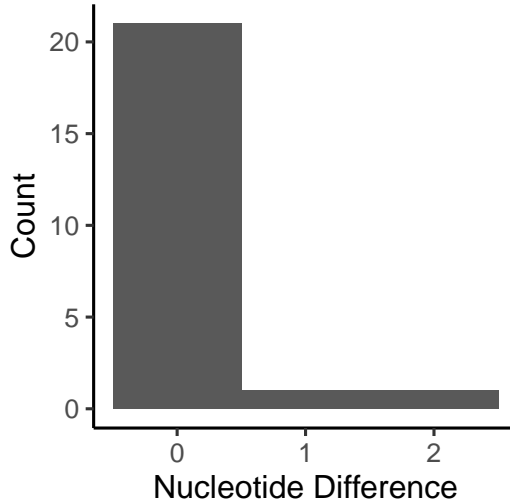
### IGHV3-9\*01

358 sequences assigned  
318 (88.8%) exact matches, in which:  
318 unique CDR3  
6 unique J



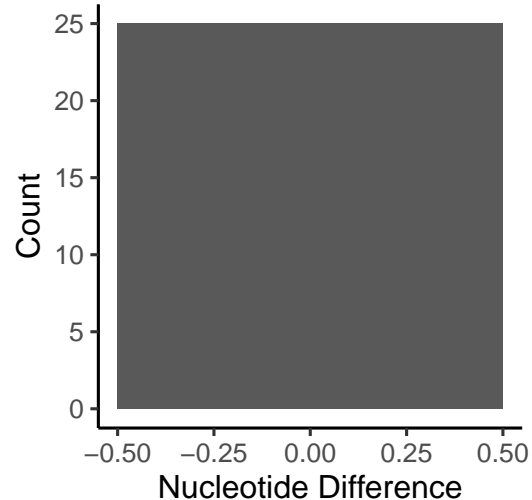
### IGHV3-13\*01

23 sequences assigned  
21 (91.3%) exact matches, in which:  
21 unique CDR3  
4 unique J



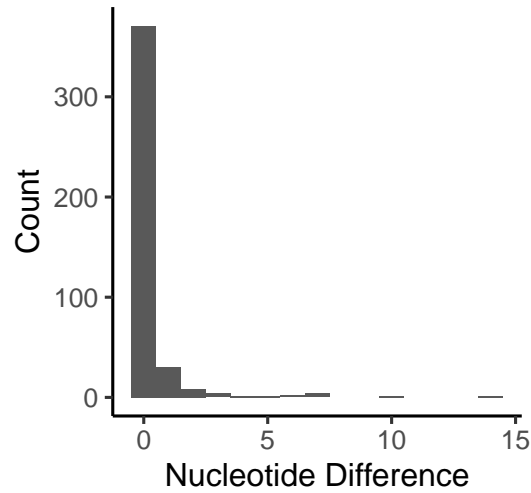
### IGHV3-20\*01

25 sequences assigned  
25 (100%) exact matches, in which:  
25 unique CDR3  
5 unique J



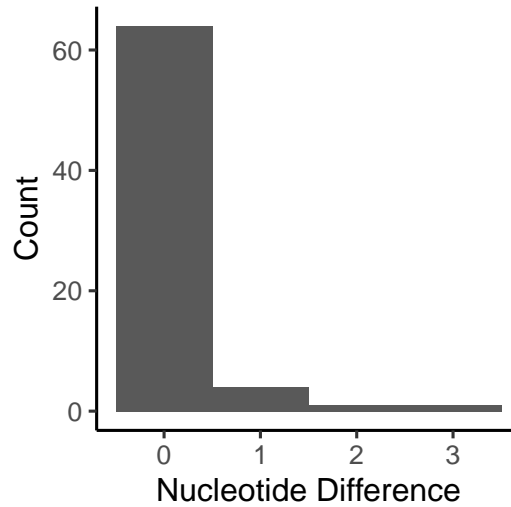
### IGHV3-21\*01

423 sequences assigned  
371 (87.7%) exact matches, in which:  
371 unique CDR3  
6 unique J



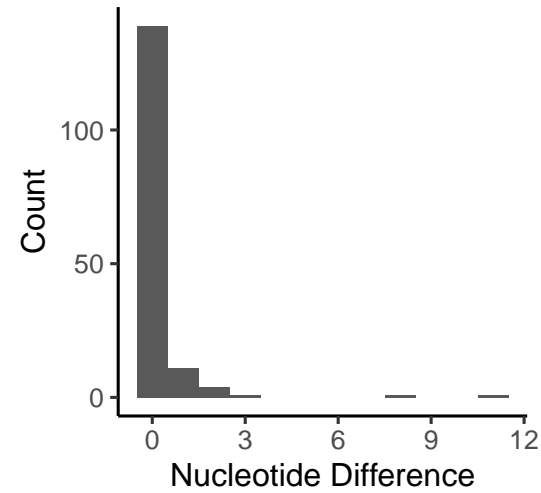
### IGHV3-43\*01

70 sequences assigned  
64 (91.4%) exact matches, in which:  
64 unique CDR3  
5 unique J



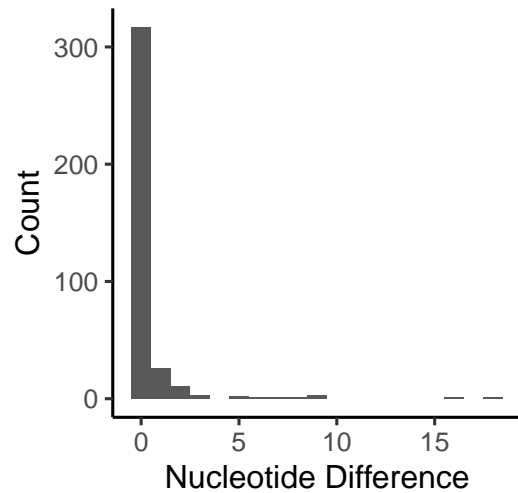
### IGHV3-53\*01

157 sequences assigned  
139 (88.5%) exact matches, in which:  
139 unique CDR3  
6 unique J



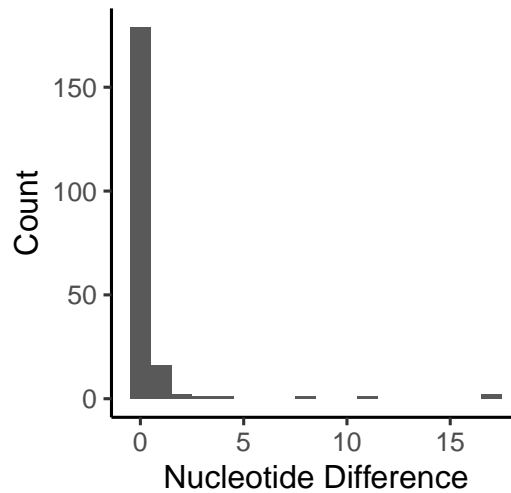
### IGHV3-30-3\*01

367 sequences assigned  
317 (86.4%) exact matches, in which:  
317 unique CDR3  
6 unique J



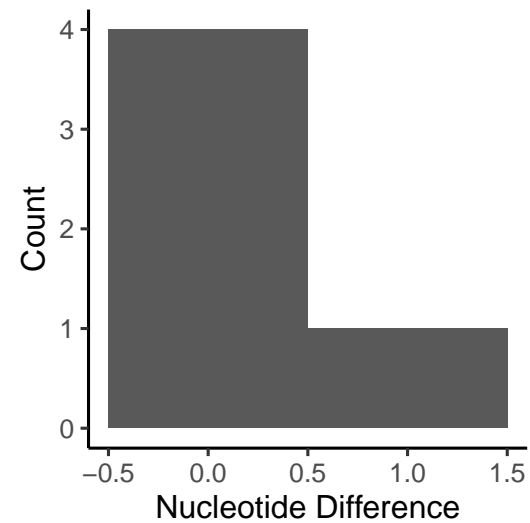
### IGHV3-48\*01

204 sequences assigned  
179 (87.7%) exact matches, in which:  
178 unique CDR3  
6 unique J



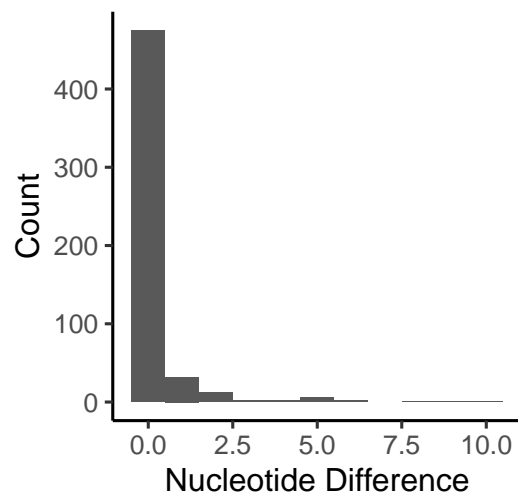
### IGHV3-64\*01

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



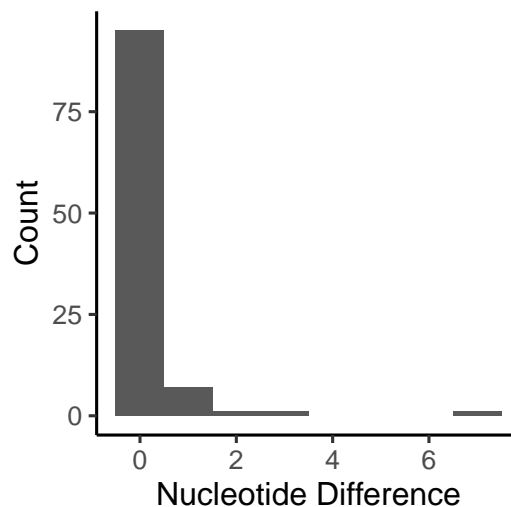
### IGHV3-33\*01

534 sequences assigned  
475 (89%) exact matches, in which:  
475 unique CDR3  
6 unique J



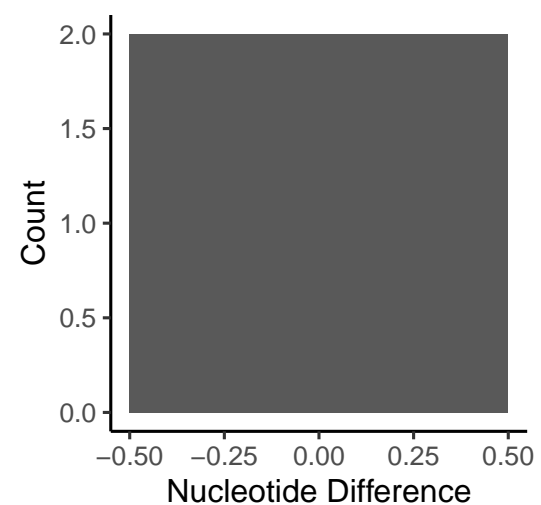
### IGHV3-49\*03

105 sequences assigned  
95 (90.5%) exact matches, in which:  
94 unique CDR3  
5 unique J



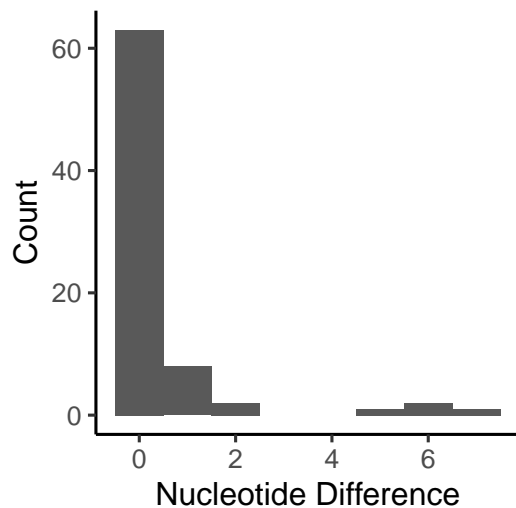
### IGHV3-64\*02

2 sequences assigned  
2 (100%) exact matches, in which:  
2 unique CDR3  
2 unique J



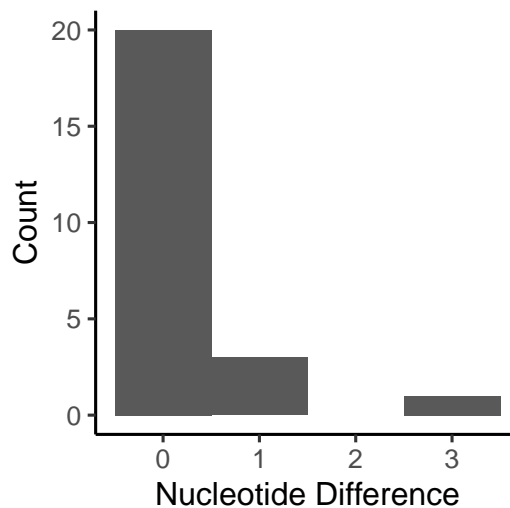
### IGHV3-66\*01

78 sequences assigned  
63 (80.8%) exact matches, in which:  
63 unique CDR3  
6 unique J



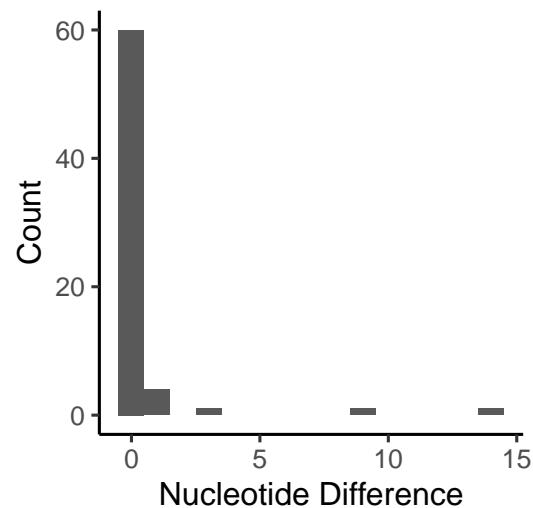
### IGHV3-73\*01

24 sequences assigned  
20 (83.3%) exact matches, in which:  
20 unique CDR3  
4 unique J



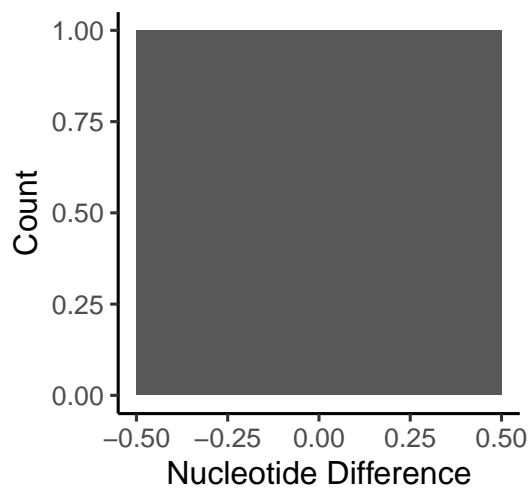
### IGHV3-64D\*09

67 sequences assigned  
60 (89.6%) exact matches, in which:  
60 unique CDR3  
6 unique J



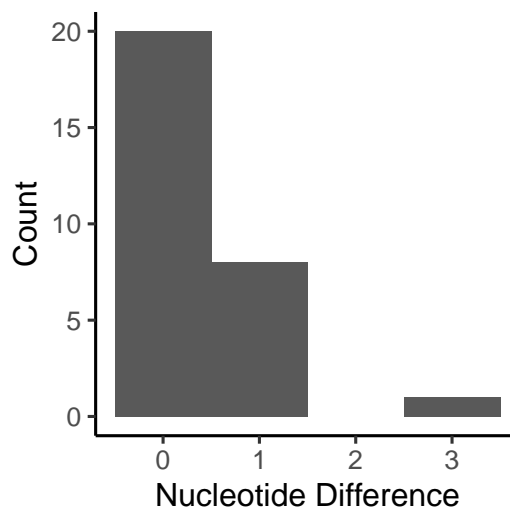
### IGHV3-69-1\*01

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



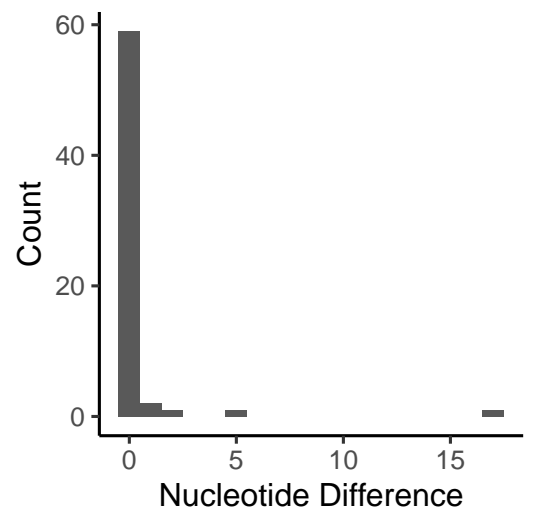
### IGHV3-73\*02

29 sequences assigned  
20 (69%) exact matches, in which:  
20 unique CDR3  
4 unique J



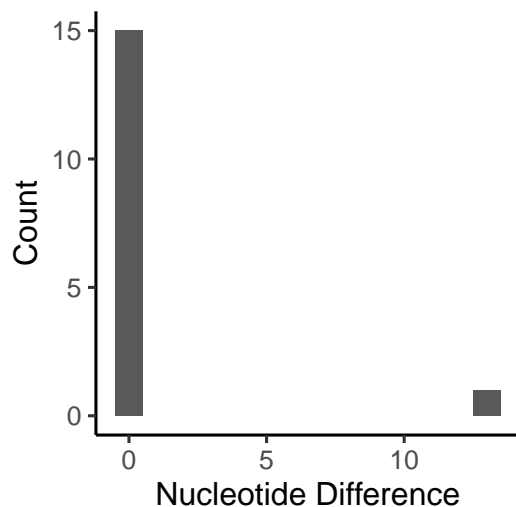
### IGHV4-4\*02

64 sequences assigned  
59 (92.2%) exact matches, in which:  
59 unique CDR3  
5 unique J



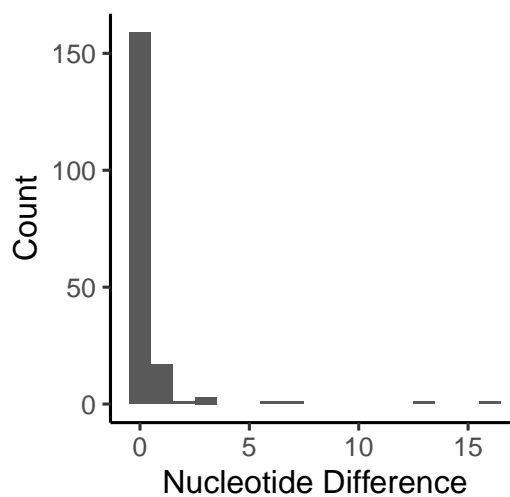
### IGHV3-72\*01

16 sequences assigned  
15 (93.8%) exact matches, in which:  
15 unique CDR3  
3 unique J



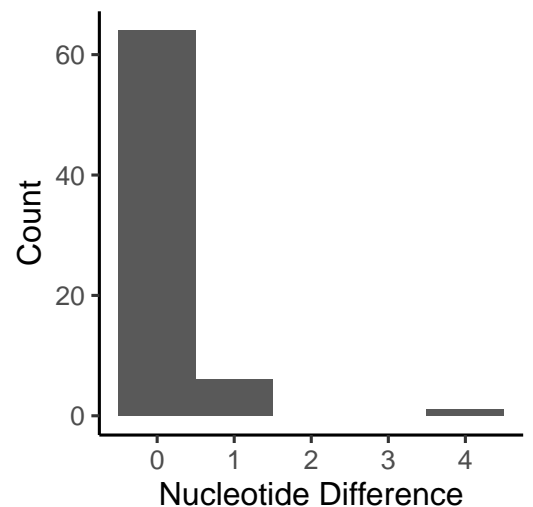
### IGHV3-74\*01

184 sequences assigned  
159 (86.4%) exact matches, in which:  
159 unique CDR3  
6 unique J



### IGHV4-4\*07

71 sequences assigned  
64 (90.1%) exact matches, in which:  
64 unique CDR3  
5 unique J



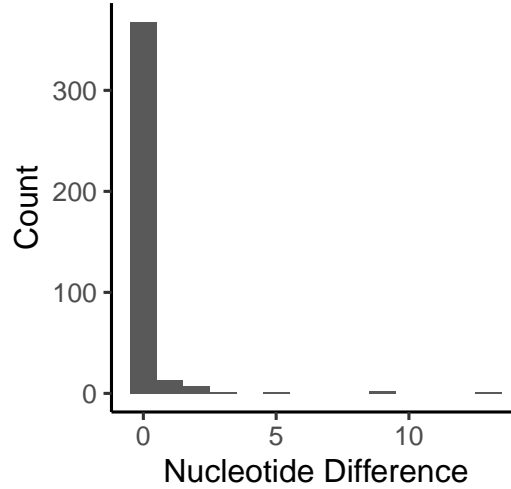
### IGHV4-28\*01

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



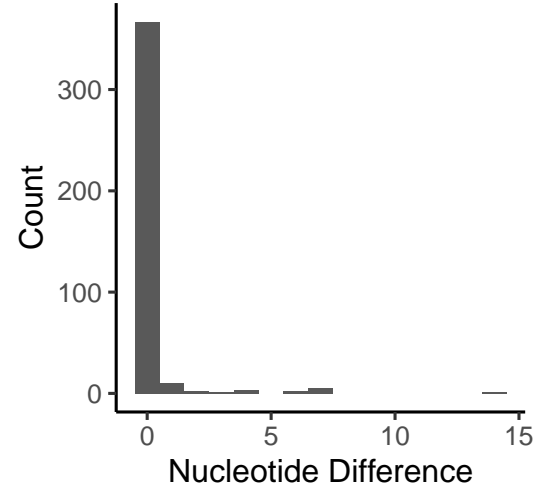
### IGHV4-31\*03

393 sequences assigned  
368 (93.6%) exact matches, in which:  
367 unique CDR3  
6 unique J



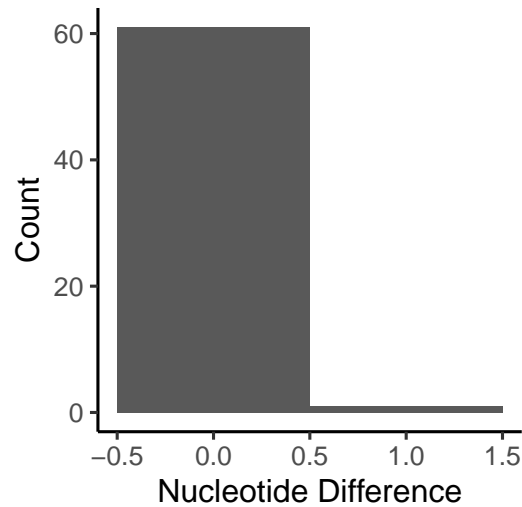
### IGHV4-59\*01

392 sequences assigned  
367 (93.6%) exact matches, in which:  
366 unique CDR3  
6 unique J



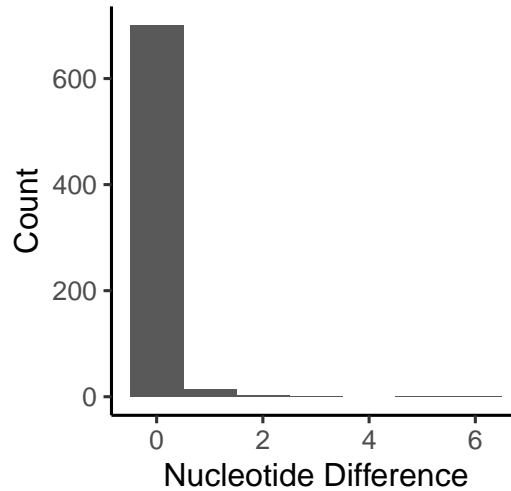
### IGHV4-30-2\*01

62 sequences assigned  
61 (98.4%) exact matches, in which:  
61 unique CDR3  
6 unique J



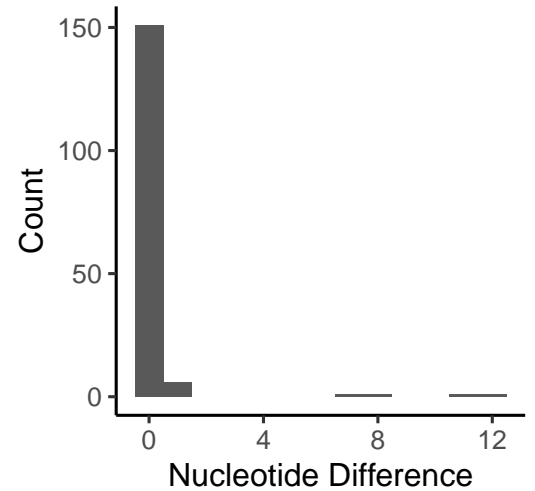
### IGHV4-34\*01

721 sequences assigned  
701 (97.2%) exact matches, in which:  
701 unique CDR3  
6 unique J



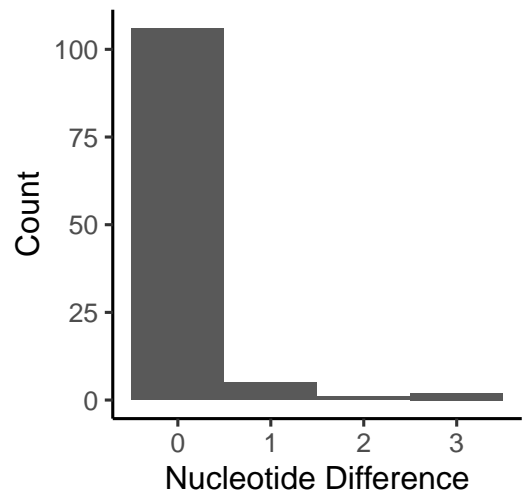
### IGHV4-59\*08

161 sequences assigned  
151 (93.8%) exact matches, in which:  
151 unique CDR3  
6 unique J



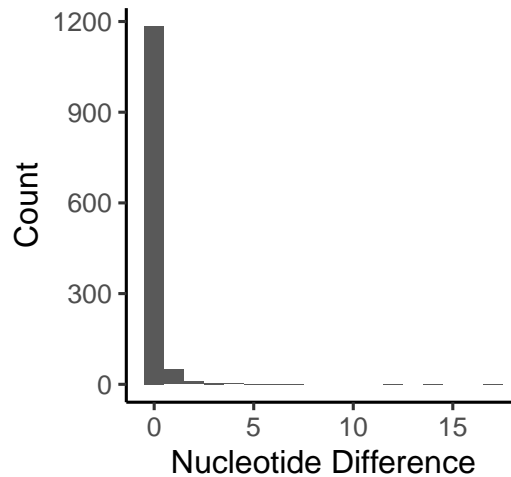
### IGHV4-30-4\*01

114 sequences assigned  
106 (93%) exact matches, in which:  
106 unique CDR3  
6 unique J



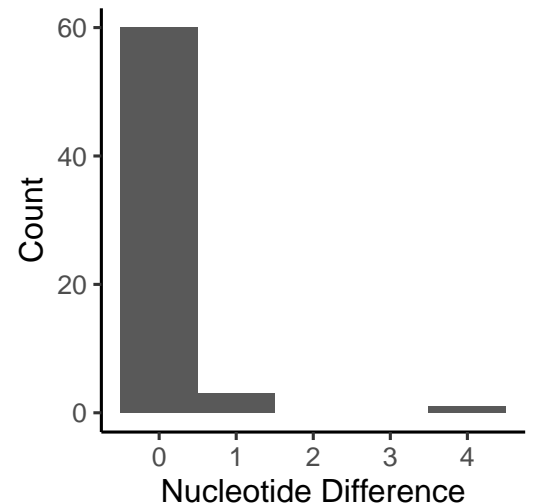
### IGHV4-39\*01

1258 sequences assigned  
1185 (94.2%) exact matches, in which:  
1184 unique CDR3  
6 unique J



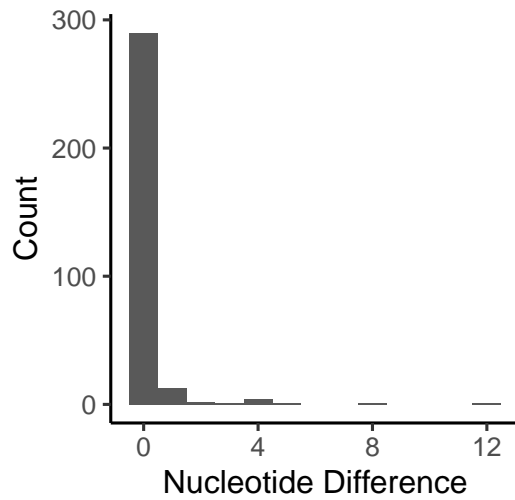
### IGHV4-61\*01

64 sequences assigned  
60 (93.8%) exact matches, in which:  
60 unique CDR3  
5 unique J



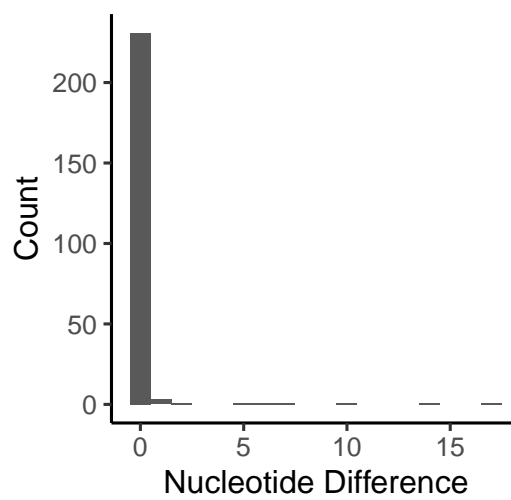
### IGHV5-10-1\*03

314 sequences assigned  
290 (92.4%) exact matches, in which:  
288 unique CDR3  
6 unique J



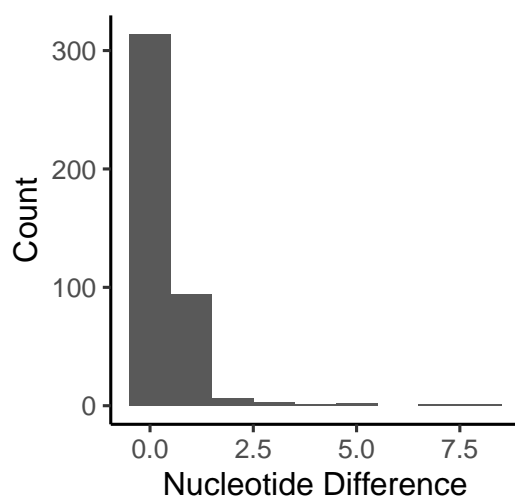
### IGHV6-1\*01

241 sequences assigned  
231 (95.9%) exact matches, in which:  
230 unique CDR3  
6 unique J



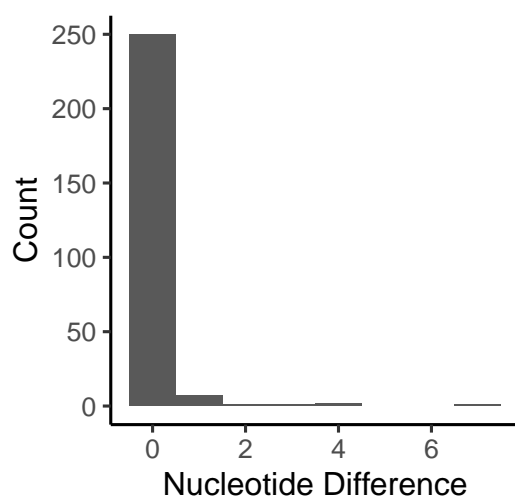
### IGHV5-51\*01

423 sequences assigned  
314 (74.2%) exact matches, in which:  
314 unique CDR3  
6 unique J



### IGHV5-51\*03

263 sequences assigned  
250 (95.1%) exact matches, in which:  
249 unique CDR3  
6 unique J







[illegible]