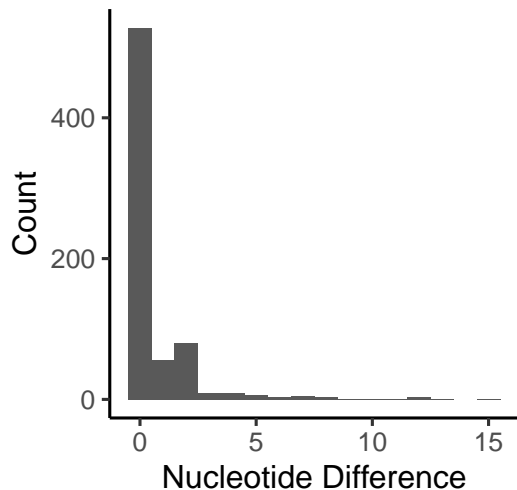


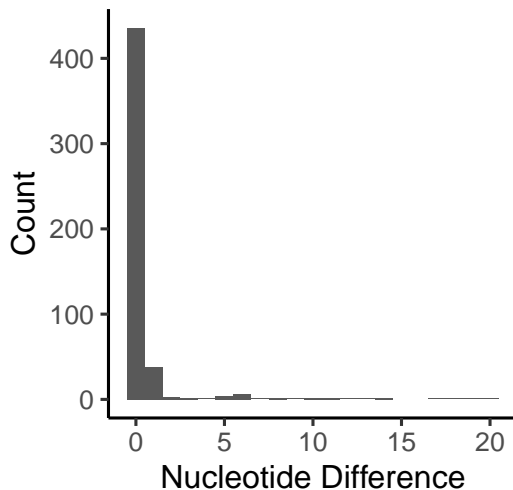
### IGHV1-2\*06

708 sequences assigned  
528 (74.6%) exact matches, in which:  
504 unique CDR3  
7 unique J



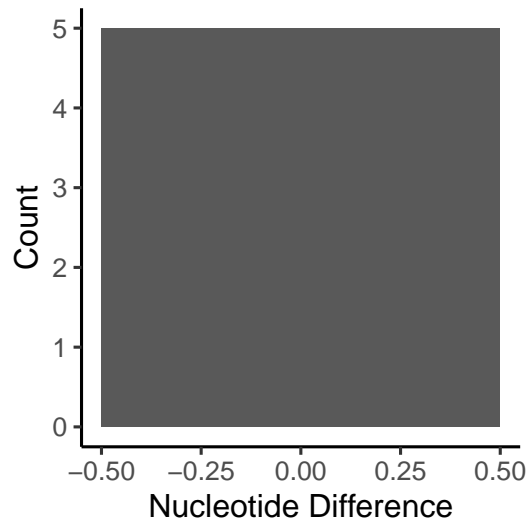
### IGHV1-18\*01

509 sequences assigned  
436 (85.7%) exact matches, in which:  
423 unique CDR3  
6 unique J



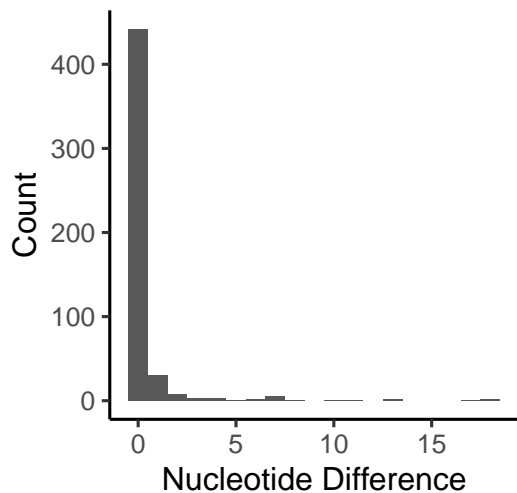
### IGHV1-45\*02

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



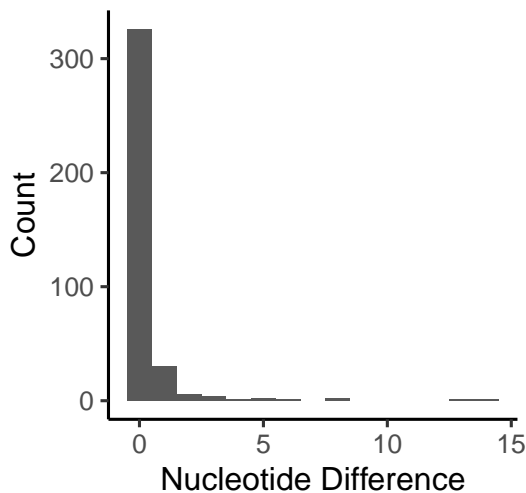
### IGHV1-3\*01

504 sequences assigned  
442 (87.7%) exact matches, in which:  
431 unique CDR3  
7 unique J



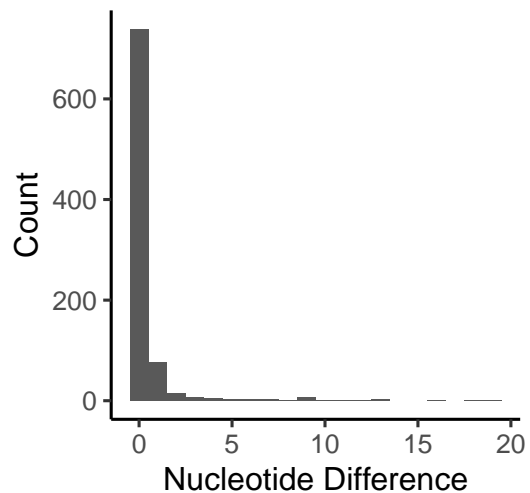
### IGHV1-18\*04

374 sequences assigned  
326 (87.2%) exact matches, in which:  
314 unique CDR3  
6 unique J



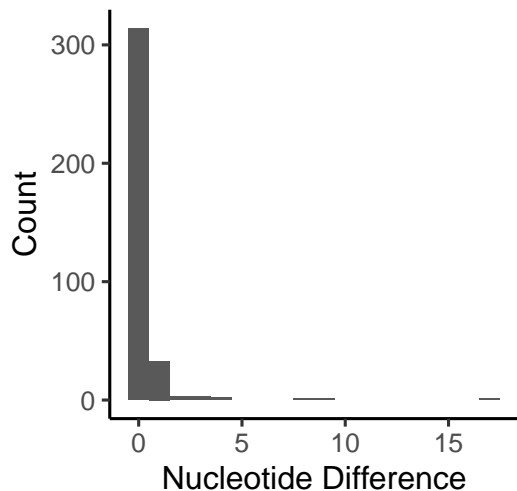
### IGHV1-46\*01

865 sequences assigned  
739 (85.4%) exact matches, in which:  
711 unique CDR3  
7 unique J



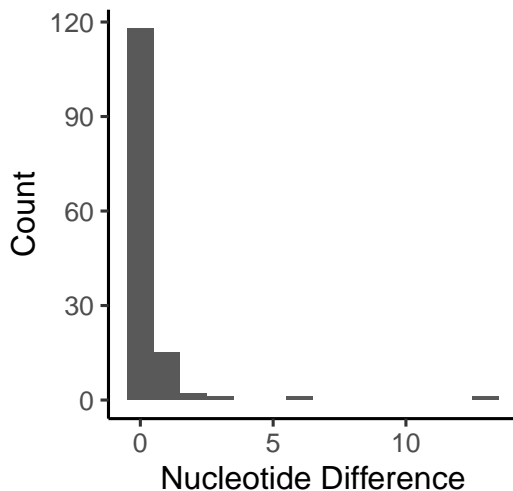
### IGHV1-8\*01

358 sequences assigned  
314 (87.7%) exact matches, in which:  
302 unique CDR3  
7 unique J



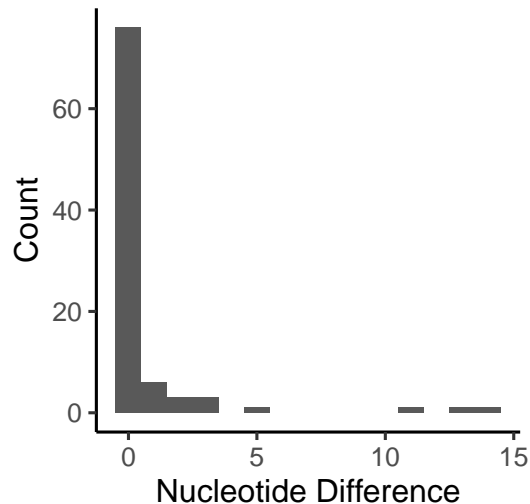
### IGHV1-24\*01

139 sequences assigned  
118 (84.9%) exact matches, in which:  
111 unique CDR3  
7 unique J



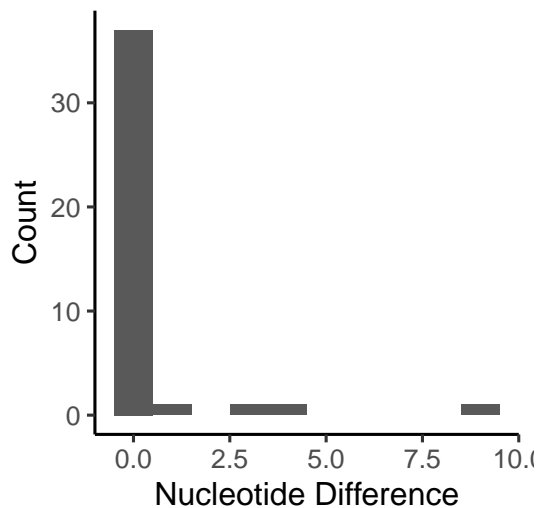
### IGHV1-58\*01

92 sequences assigned  
76 (82.6%) exact matches, in which:  
74 unique CDR3  
6 unique J



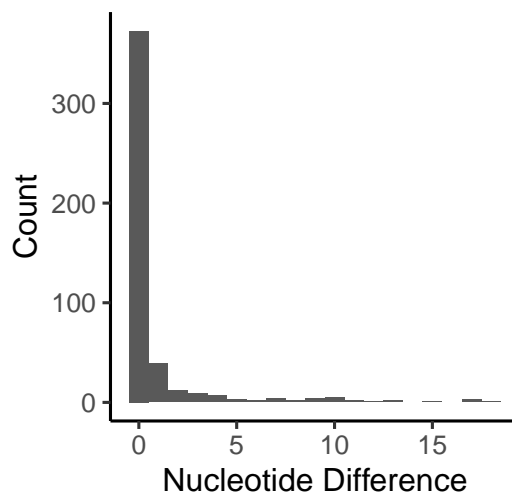
### IGHV1-69-2\*01

41 sequences assigned  
37 (90.2%) exact matches, in which:  
34 unique CDR3  
5 unique J



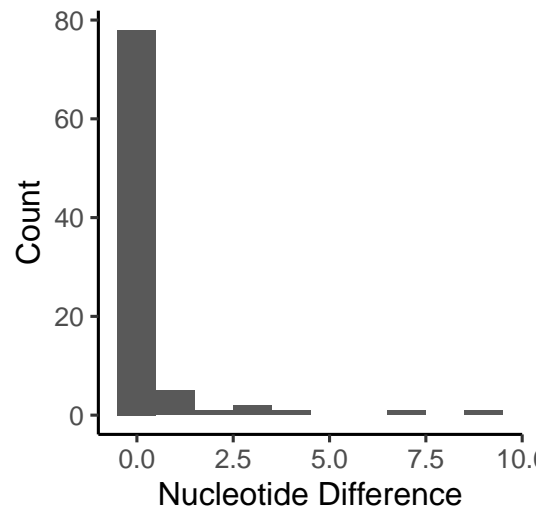
### IGHV2-5\*02

471 sequences assigned  
373 (79.2%) exact matches, in which:  
361 unique CDR3  
7 unique J



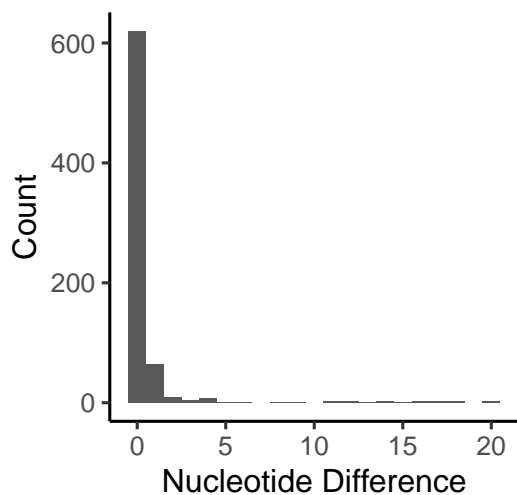
### IGHV2-70\*15

89 sequences assigned  
78 (87.6%) exact matches, in which:  
73 unique CDR3  
5 unique J



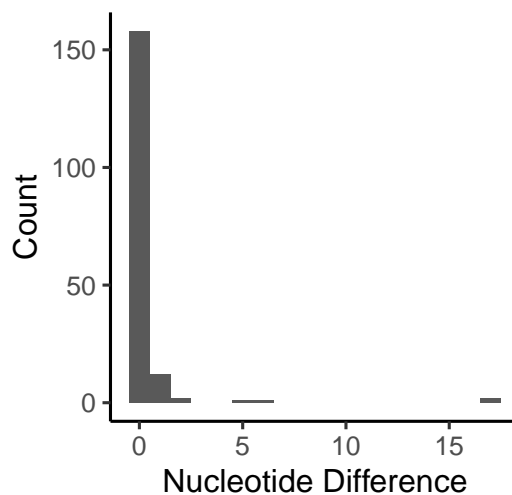
### IGHV1-69\*06

786 sequences assigned  
620 (78.9%) exact matches, in which:  
589 unique CDR3  
7 unique J



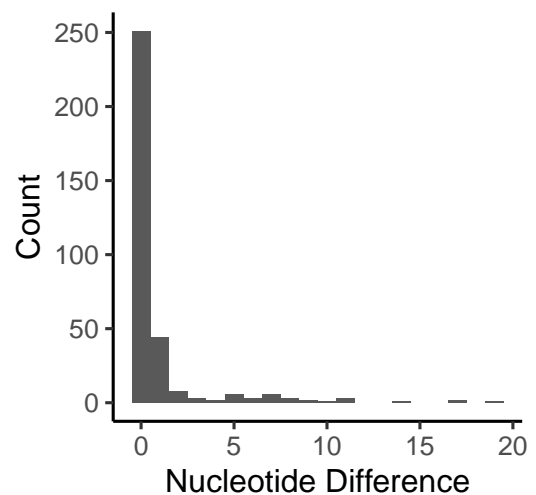
### IGHV2-26\*01

176 sequences assigned  
158 (89.8%) exact matches, in which:  
154 unique CDR3  
7 unique J



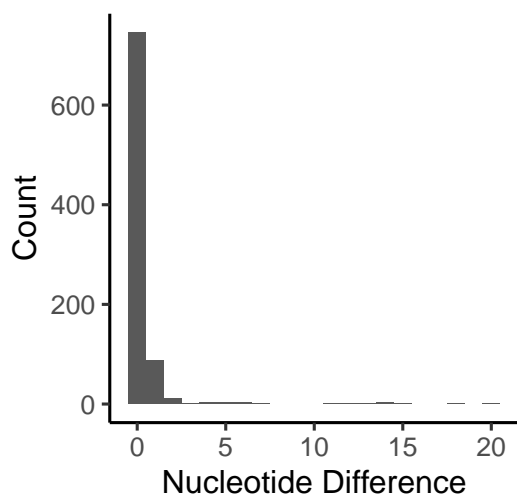
### IGHV3-7\*01

337 sequences assigned  
251 (74.5%) exact matches, in which:  
243 unique CDR3  
6 unique J



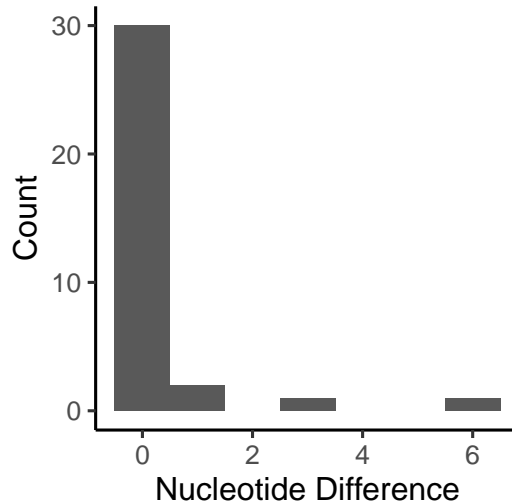
### IGHV1-69\*12

874 sequences assigned  
746 (85.4%) exact matches, in which:  
732 unique CDR3  
6 unique J



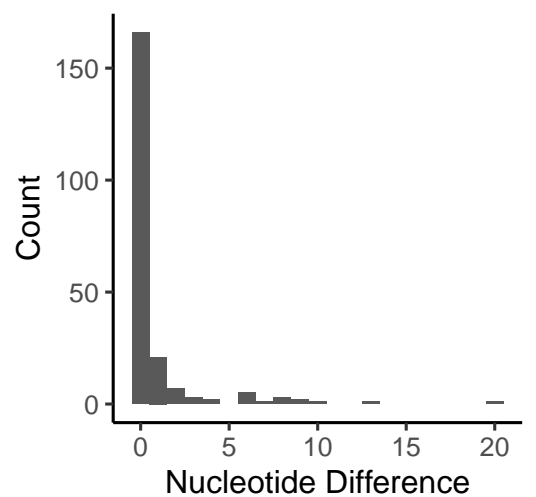
### IGHV2-70\*01

34 sequences assigned  
30 (88.2%) exact matches, in which:  
30 unique CDR3  
5 unique J



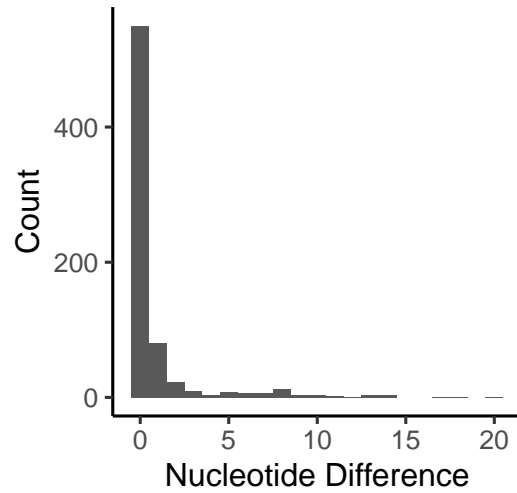
### IGHV3-7\*03

213 sequences assigned  
166 (77.9%) exact matches, in which:  
161 unique CDR3  
6 unique J



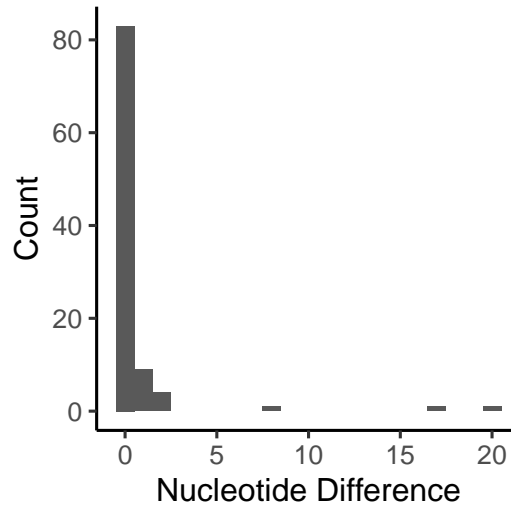
### IGHV3-9\*01

720 sequences assigned  
550 (76.4%) exact matches, in which:  
509 unique CDR3  
7 unique J



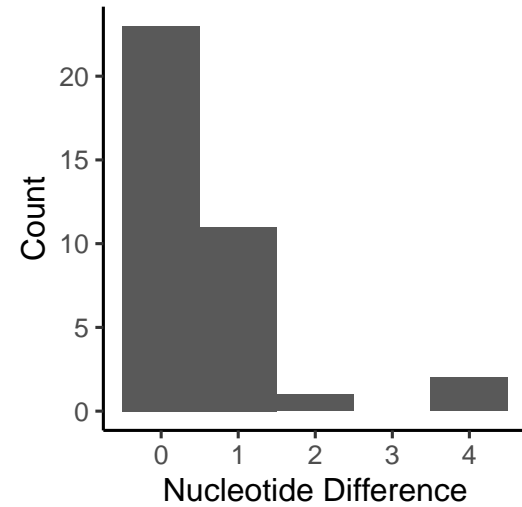
### IGHV3-13\*01

99 sequences assigned  
83 (83.8%) exact matches, in which:  
78 unique CDR3  
5 unique J



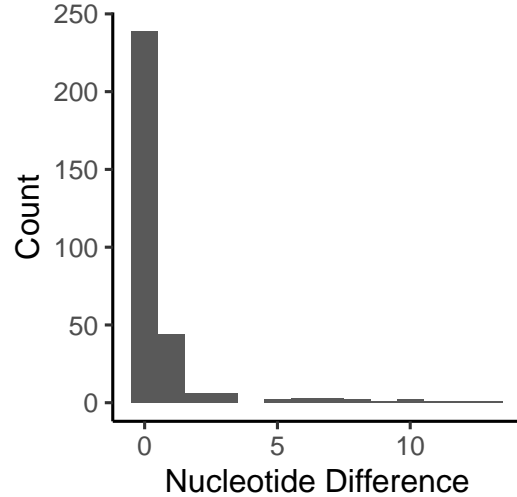
### IGHV3-20\*01

37 sequences assigned  
23 (62.2%) exact matches, in which:  
22 unique CDR3  
5 unique J



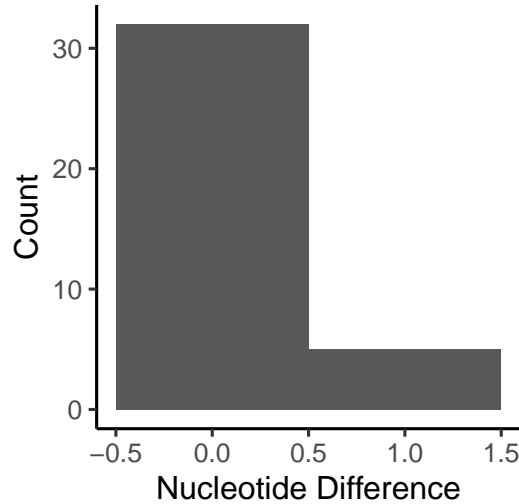
### IGHV3-11\*01

314 sequences assigned  
239 (76.1%) exact matches, in which:  
229 unique CDR3  
6 unique J



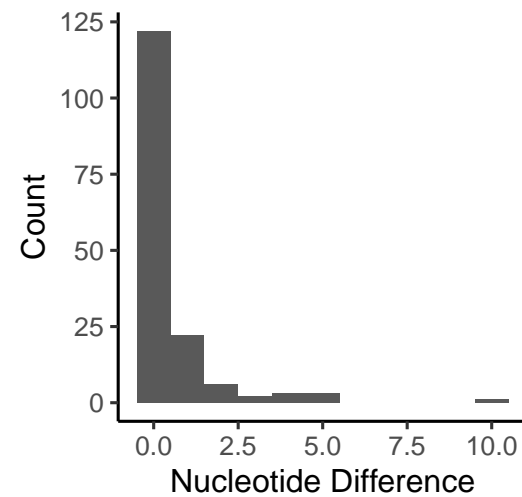
### IGHV3-13\*05

37 sequences assigned  
32 (86.5%) exact matches, in which:  
30 unique CDR3  
4 unique J



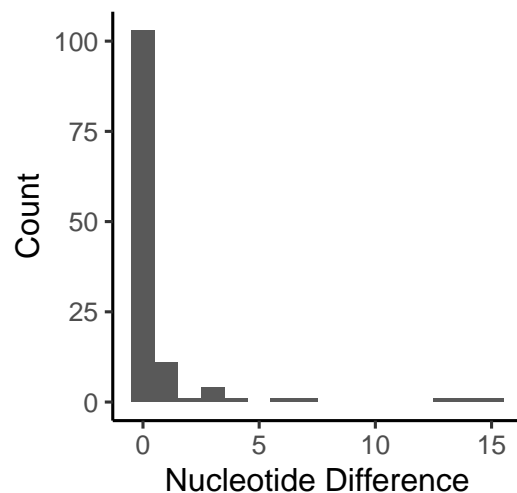
### IGHV3-20\*04

159 sequences assigned  
122 (76.7%) exact matches, in which:  
113 unique CDR3  
6 unique J



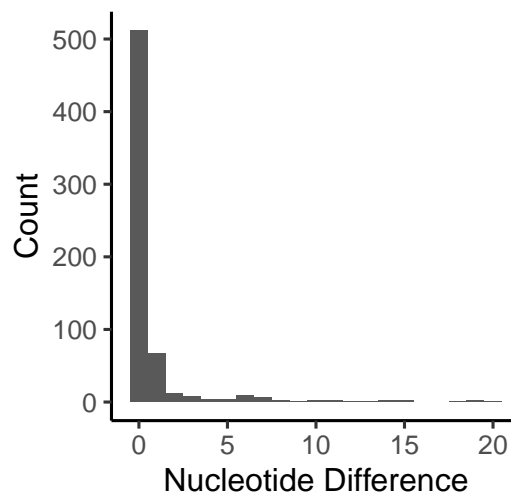
### IGHV3-11\*06

125 sequences assigned  
103 (82.4%) exact matches, in which:  
97 unique CDR3  
6 unique J



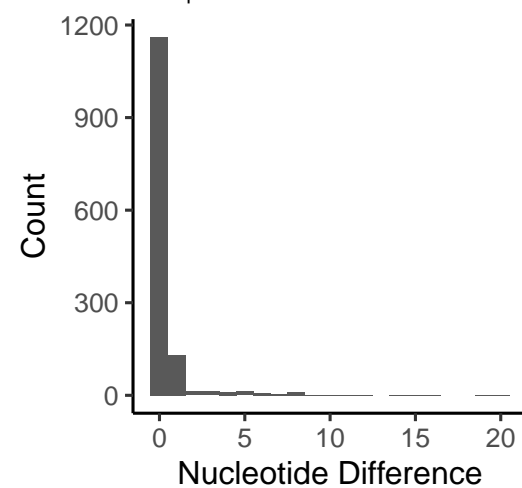
### IGHV3-15\*01

642 sequences assigned  
512 (79.8%) exact matches, in which:  
489 unique CDR3  
7 unique J



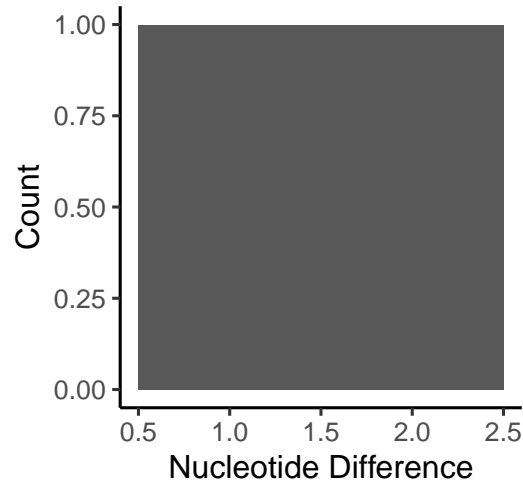
### IGHV3-21\*01

1372 sequences assigned  
1161 (84.6%) exact matches, in which:  
1100 unique CDR3  
7 unique J



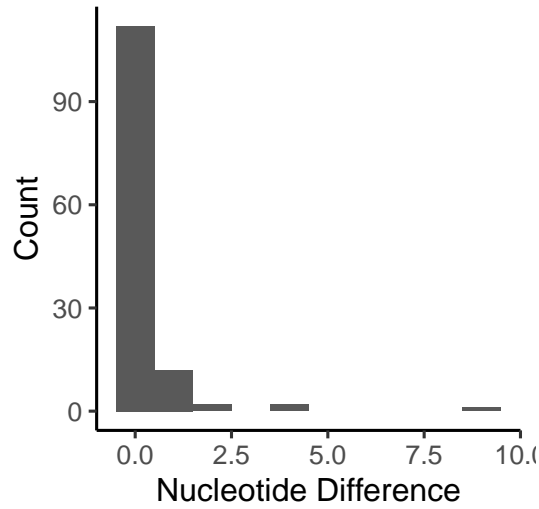
### IGHV3-30\*05

2 sequences assigned  
No exact matches.



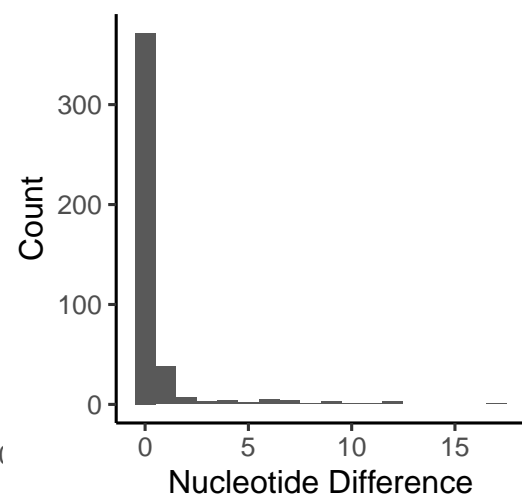
### IGHV3-43\*01

130 sequences assigned  
112 (86.2%) exact matches, in which:  
109 unique CDR3  
7 unique J



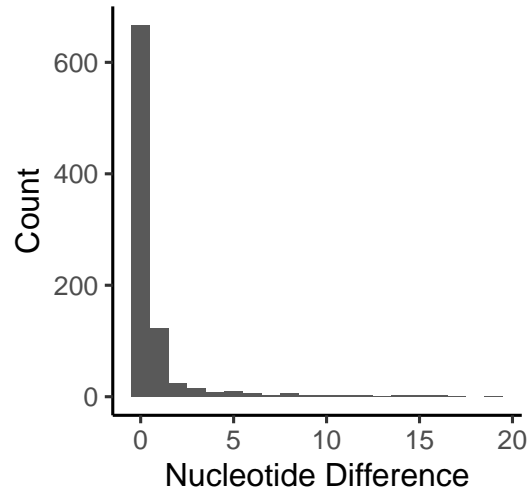
### IGHV3-53\*01

446 sequences assigned  
372 (83.4%) exact matches, in which:  
359 unique CDR3  
7 unique J



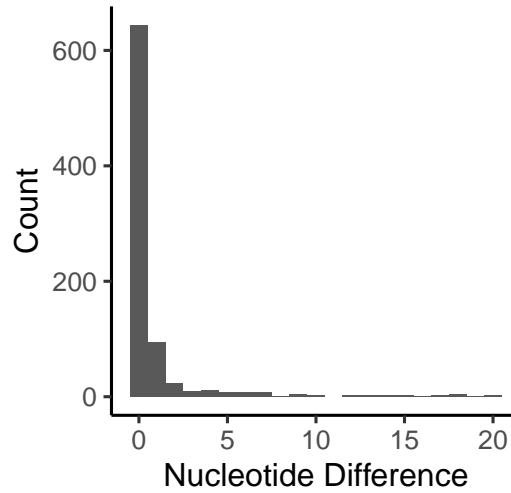
### IGHV3-33\*01

886 sequences assigned  
667 (75.3%) exact matches, in which:  
639 unique CDR3  
7 unique J



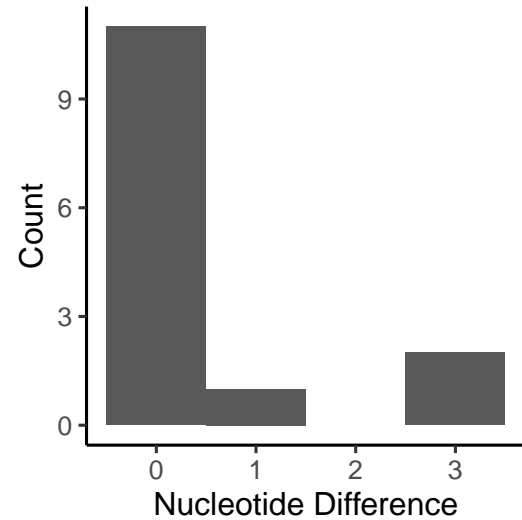
### IGHV3-48\*02

839 sequences assigned  
644 (76.8%) exact matches, in which:  
630 unique CDR3  
7 unique J



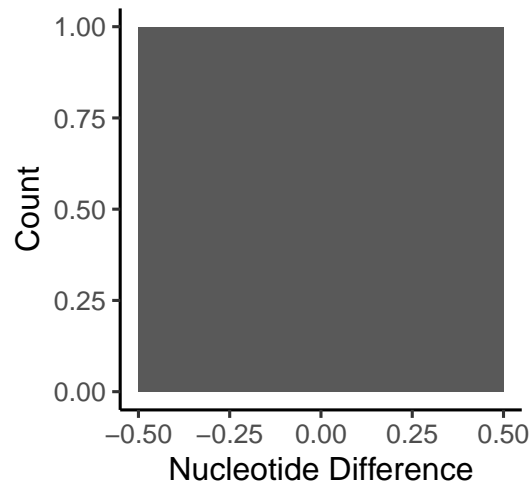
### IGHV3-64\*02

14 sequences assigned  
11 (78.6%) exact matches, in which:  
10 unique CDR3  
4 unique J



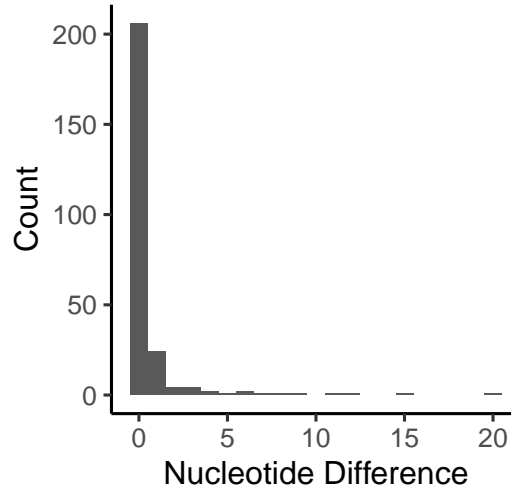
### IGHV3-35\*01

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



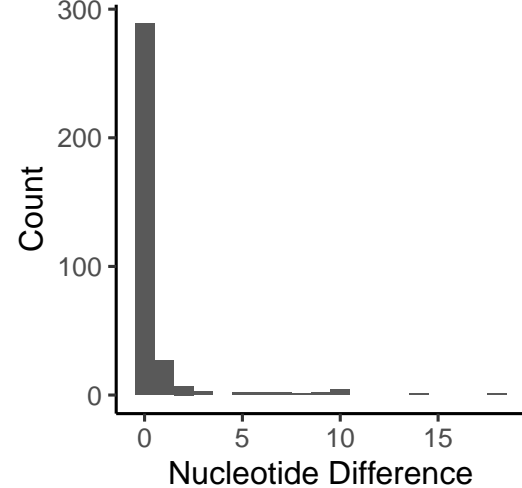
### IGHV3-49\*05

251 sequences assigned  
206 (82.1%) exact matches, in which:  
198 unique CDR3  
7 unique J



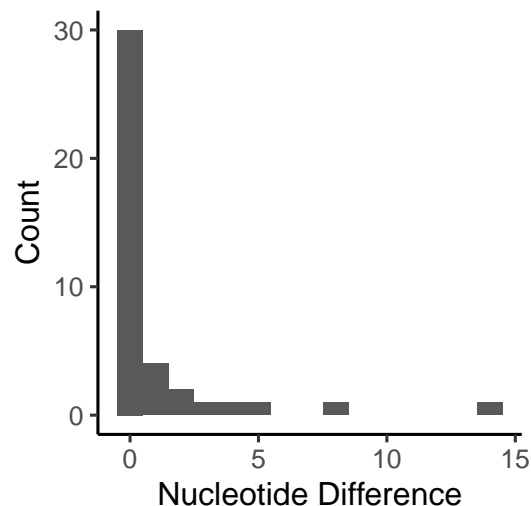
### IGHV3-66\*01

341 sequences assigned  
289 (84.8%) exact matches, in which:  
277 unique CDR3  
6 unique J



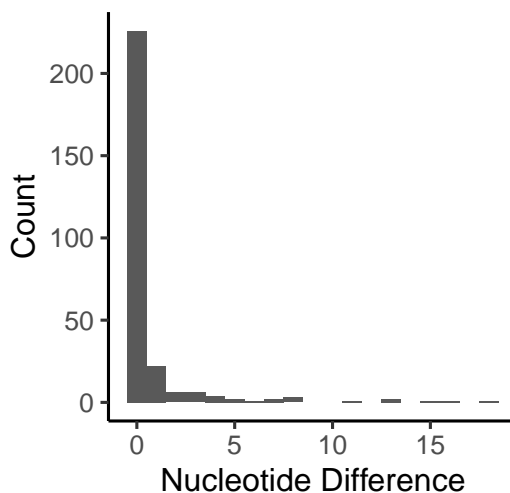
### IGHV3-72\*01

41 sequences assigned  
30 (73.2%) exact matches, in which:  
30 unique CDR3  
4 unique J



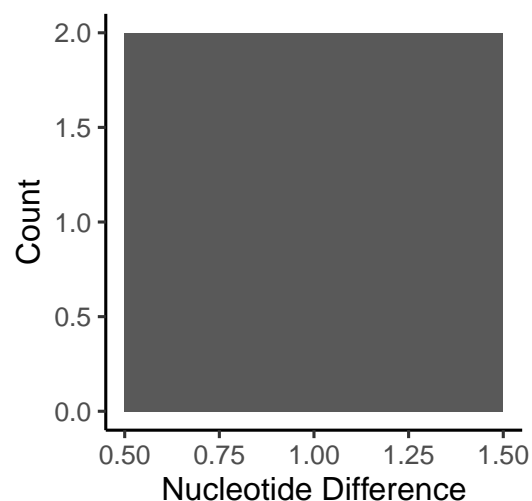
### IGHV3-74\*01

280 sequences assigned  
226 (80.7%) exact matches, in which:  
214 unique CDR3  
7 unique J



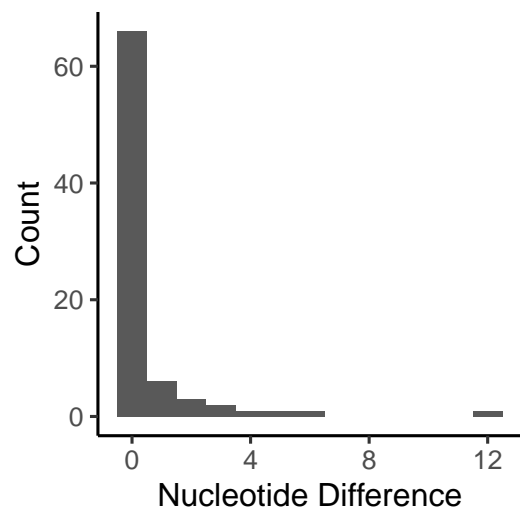
### IGHV4-28\*04

2 sequences assigned  
No exact matches.



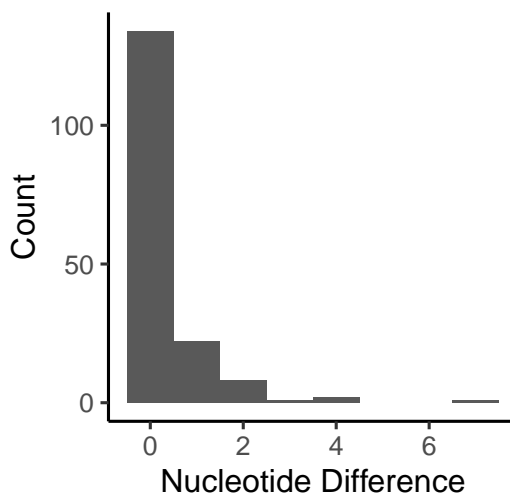
### IGHV3-73\*01

81 sequences assigned  
66 (81.5%) exact matches, in which:  
61 unique CDR3  
6 unique J



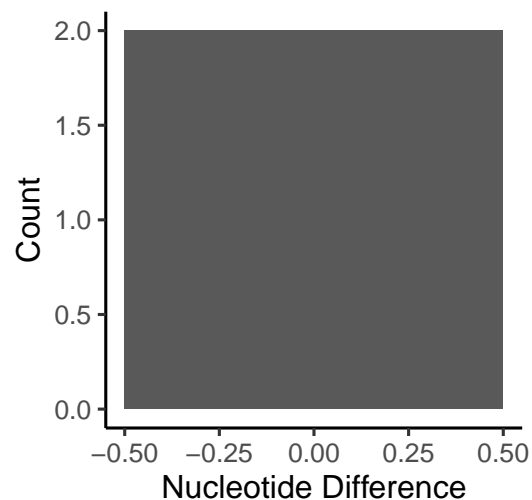
### IGHV3-64D\*09

168 sequences assigned  
134 (79.8%) exact matches, in which:  
122 unique CDR3  
6 unique J



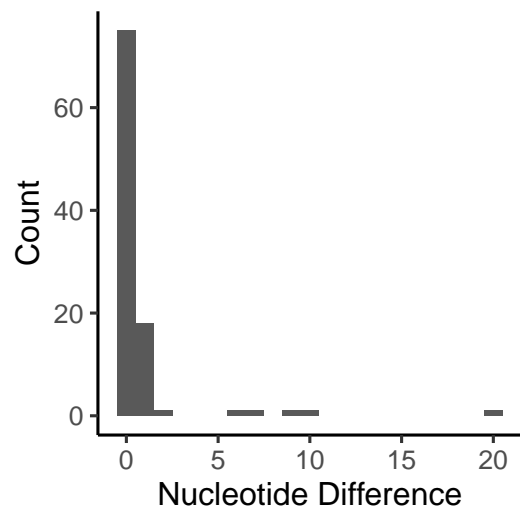
### IGHV4-31\*10

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



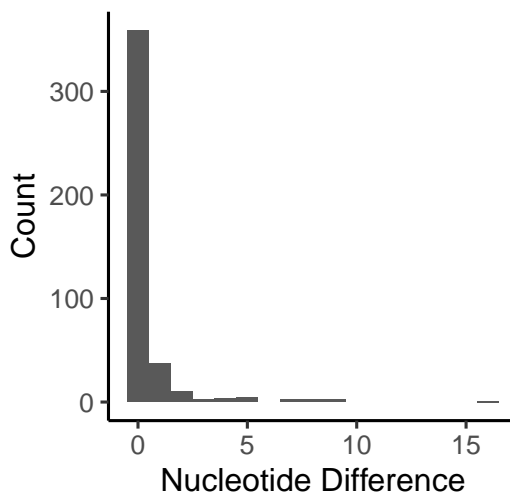
### IGHV3-73\*02

99 sequences assigned  
75 (75.8%) exact matches, in which:  
71 unique CDR3  
6 unique J



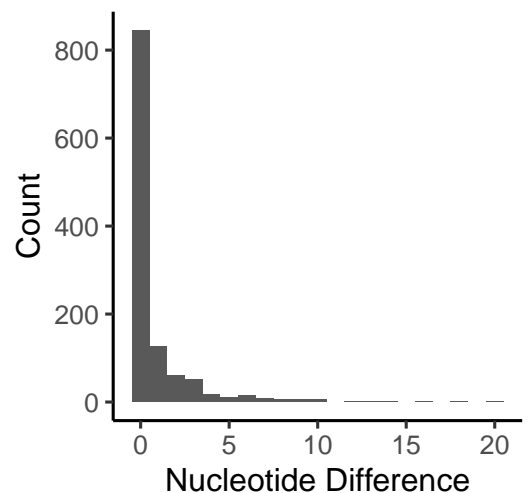
### IGHV4-4\*02

426 sequences assigned  
359 (84.3%) exact matches, in which:  
355 unique CDR3  
7 unique J



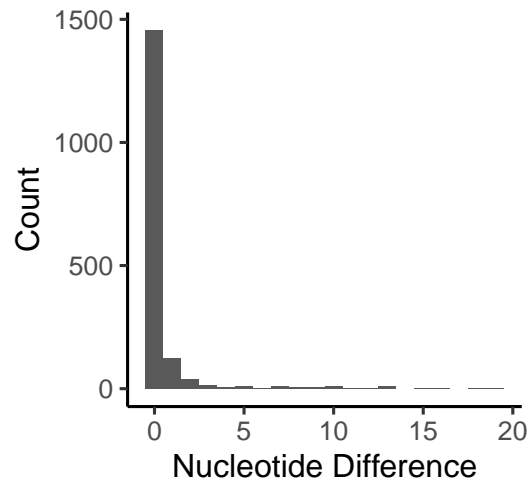
### IGHV4-34\*01

1171 sequences assigned  
845 (72.2%) exact matches, in which:  
804 unique CDR3  
7 unique J



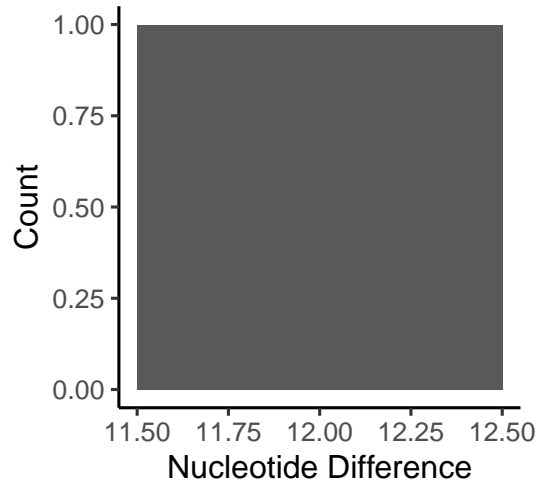
### IGHV4–39\*01

1710 sequences assigned  
1455 (85.1%) exact matches, in which:  
1379 unique CDR3  
7 unique J



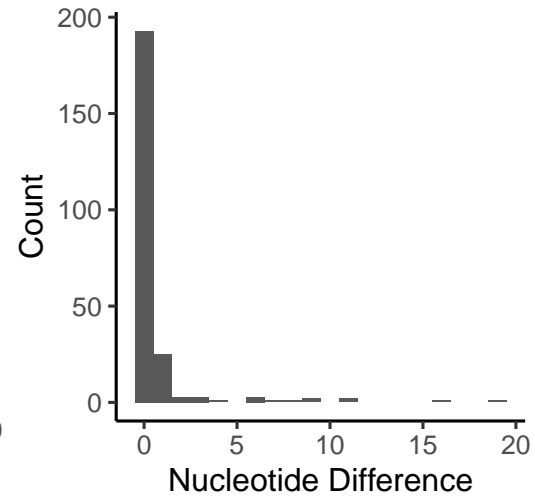
### IGHV1/OR15–9\*01

1 sequences assigned  
No exact matches.



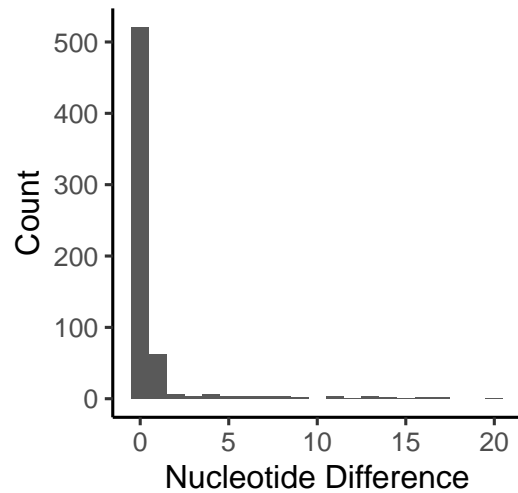
### IGHV6–1\*01

236 sequences assigned  
193 (81.8%) exact matches, in which:  
180 unique CDR3  
7 unique J



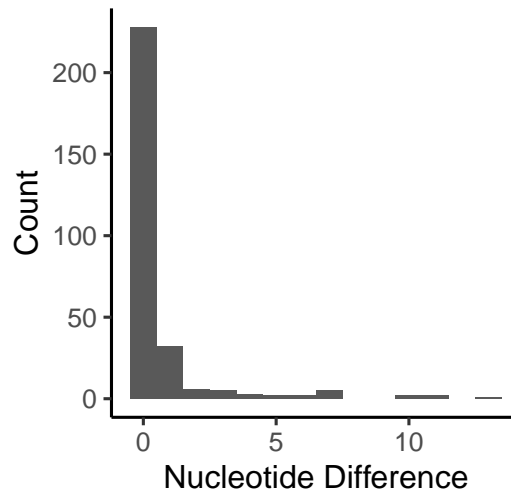
### IGHV4–59\*01

635 sequences assigned  
521 (82%) exact matches, in which:  
513 unique CDR3  
7 unique J



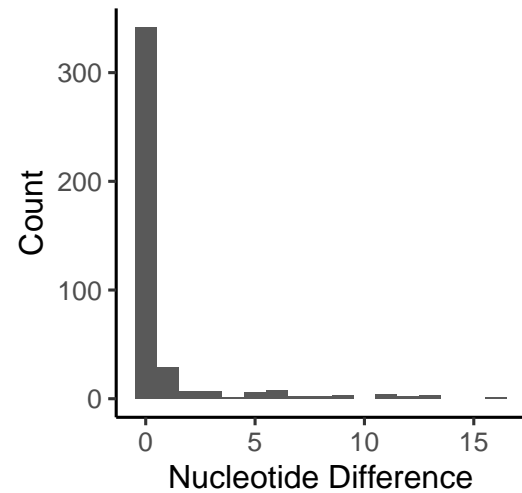
### IGHV5–10–1\*03

288 sequences assigned  
228 (79.2%) exact matches, in which:  
219 unique CDR3  
6 unique J



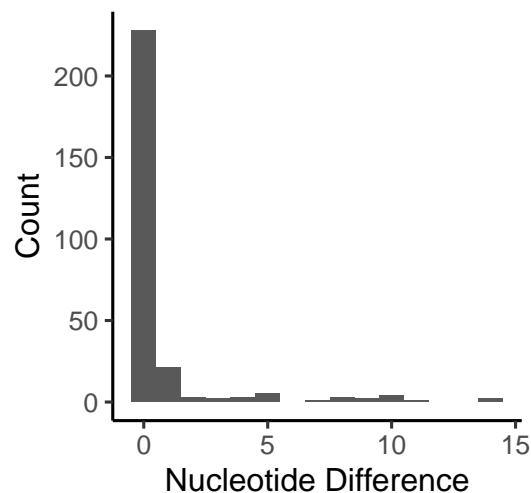
### IGHV7–4–1\*02

417 sequences assigned  
342 (82%) exact matches, in which:  
336 unique CDR3  
6 unique J



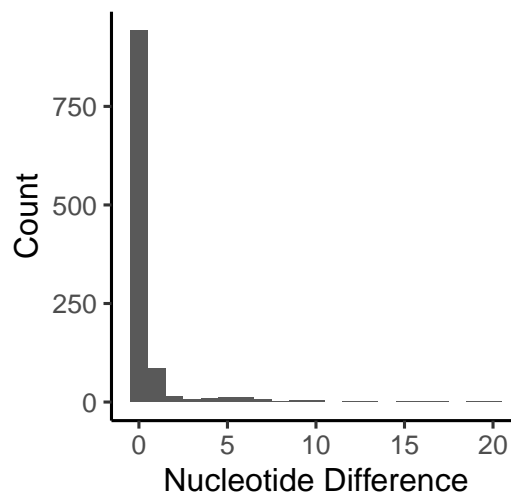
### IGHV4–61\*01

278 sequences assigned  
228 (82%) exact matches, in which:  
225 unique CDR3  
7 unique J

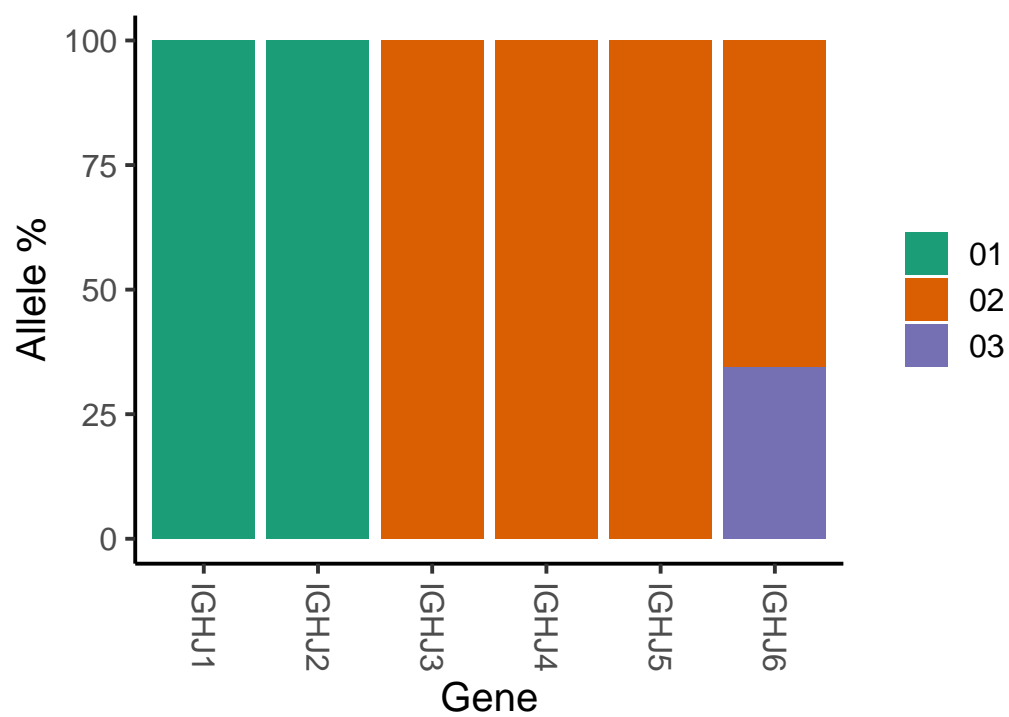


### IGHV5–51\*01

1109 sequences assigned  
943 (85%) exact matches, in which:  
903 unique CDR3  
7 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage

