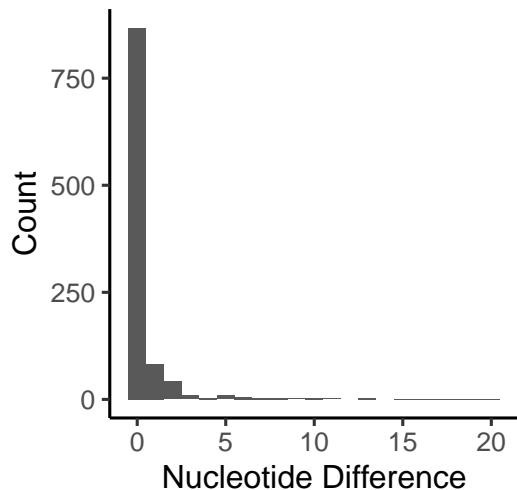


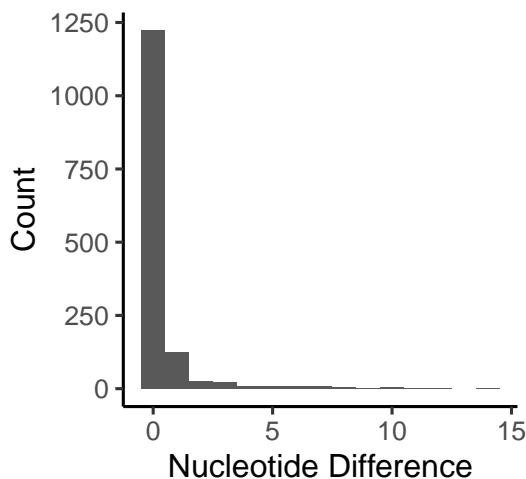
### IGHV1-2\*02

1043 sequences assigned  
868 (83.2%) exact matches, in which:  
806 unique CDR3  
6 unique J



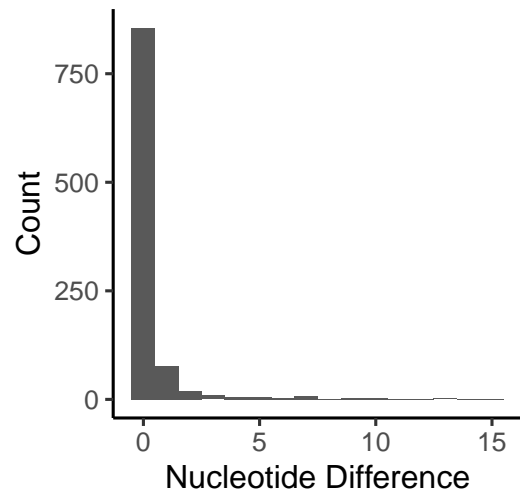
### IGHV1-18\*01

1455 sequences assigned  
1223 (84.1%) exact matches, in which:  
1156 unique CDR3  
7 unique J



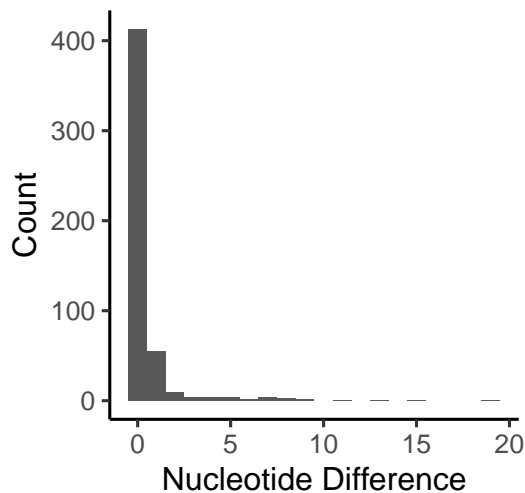
### IGHV1-46\*01

1004 sequences assigned  
856 (85.3%) exact matches, in which:  
797 unique CDR3  
7 unique J



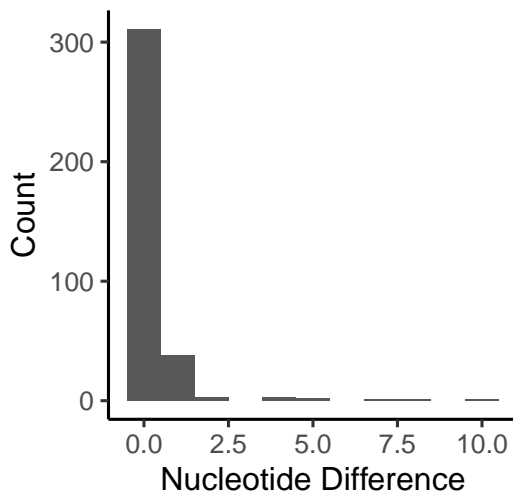
### IGHV1-3\*01

504 sequences assigned  
413 (81.9%) exact matches, in which:  
398 unique CDR3  
6 unique J



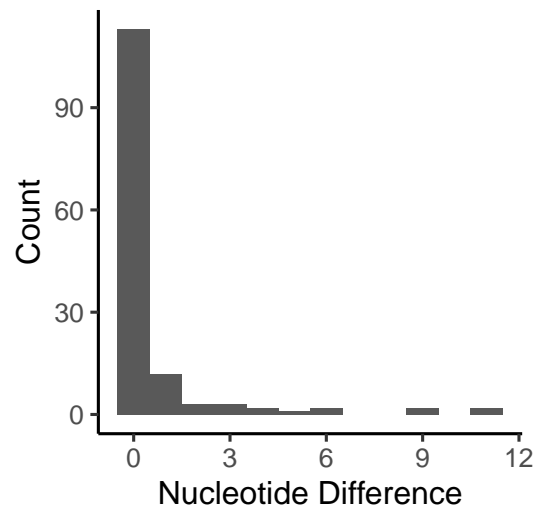
### IGHV1-24\*01

360 sequences assigned  
311 (86.4%) exact matches, in which:  
291 unique CDR3  
7 unique J



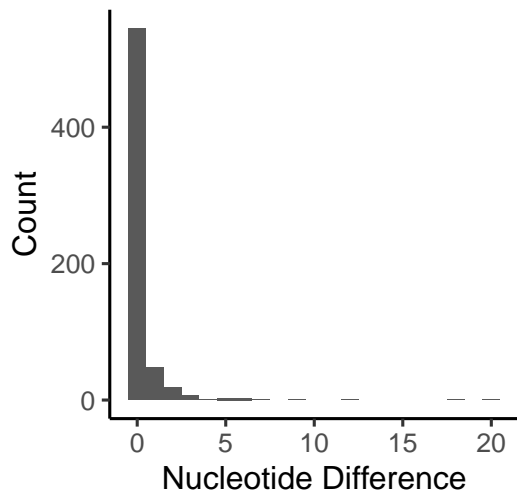
### IGHV1-58\*01

140 sequences assigned  
113 (80.7%) exact matches, in which:  
102 unique CDR3  
7 unique J



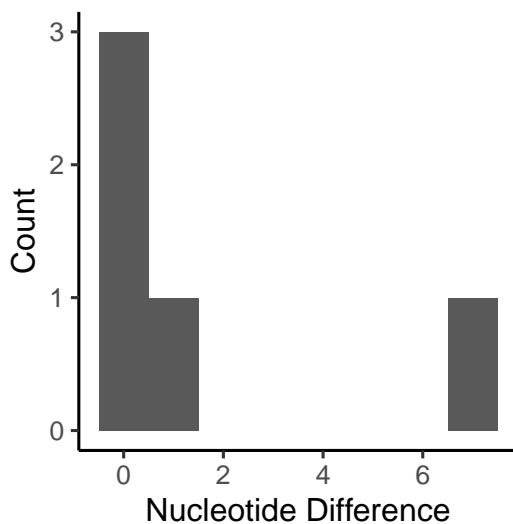
### IGHV1-8\*01

630 sequences assigned  
545 (86.5%) exact matches, in which:  
513 unique CDR3  
7 unique J



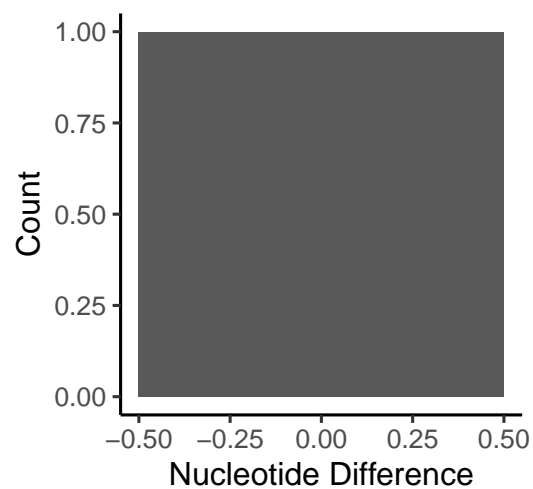
### IGHV1-45\*02

5 sequences assigned  
3 (60%) exact matches, in which:  
2 unique CDR3  
2 unique J



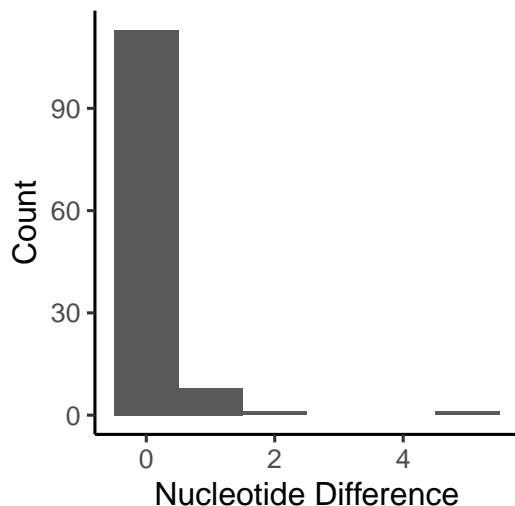
### IGHV1-68\*01

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



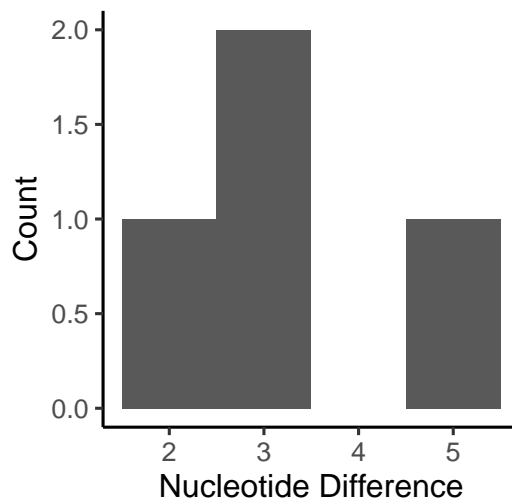
### IGHV1-69-2\*01

123 sequences assigned  
113 (91.9%) exact matches, in which:  
110 unique CDR3  
7 unique J



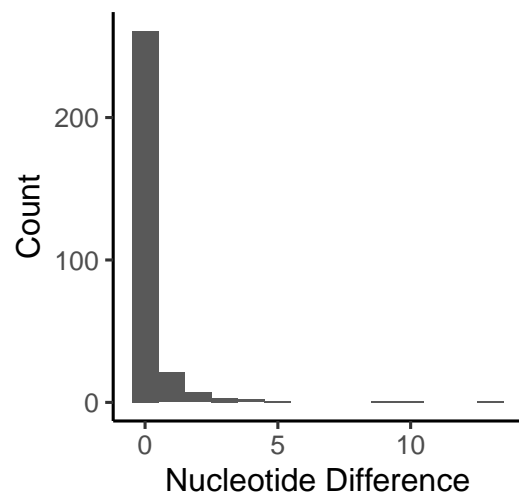
### IGHV1-NL1\*01

4 sequences assigned  
No exact matches.



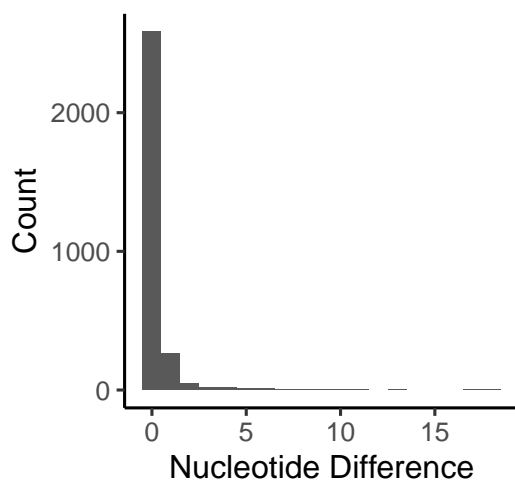
### IGHV2-26\*01

298 sequences assigned  
261 (87.6%) exact matches, in which:  
252 unique CDR3  
7 unique J



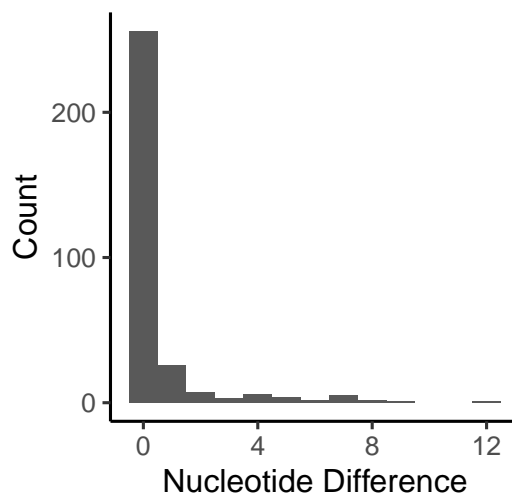
### IGHV1-69\*01

2969 sequences assigned  
2584 (87%) exact matches, in which:  
2387 unique CDR3  
7 unique J



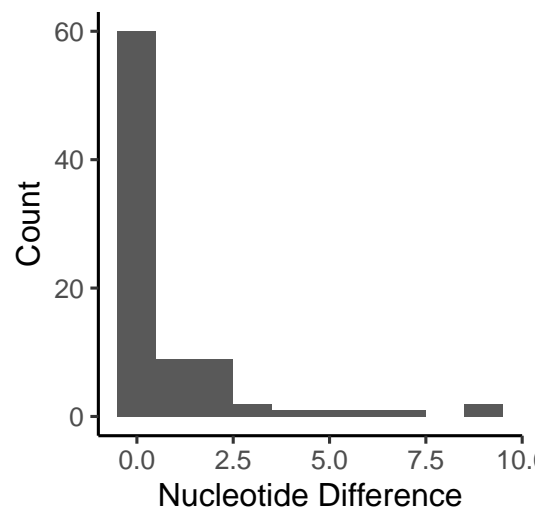
### IGHV2-5\*01

313 sequences assigned  
256 (81.8%) exact matches, in which:  
244 unique CDR3  
6 unique J



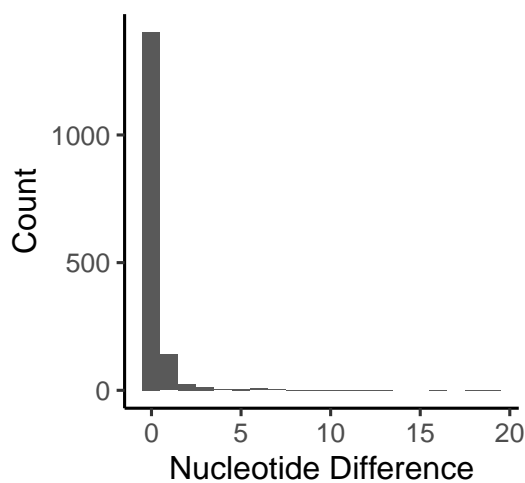
### IGHV2-70\*01

86 sequences assigned  
60 (69.8%) exact matches, in which:  
60 unique CDR3  
5 unique J



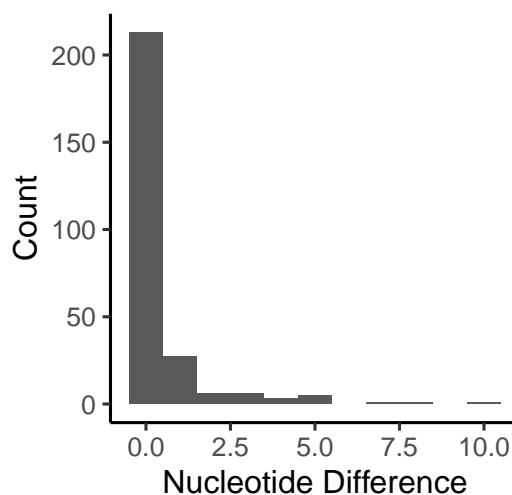
### IGHV1-69\*06

1611 sequences assigned  
1403 (87.1%) exact matches, in which:  
1295 unique CDR3  
7 unique J



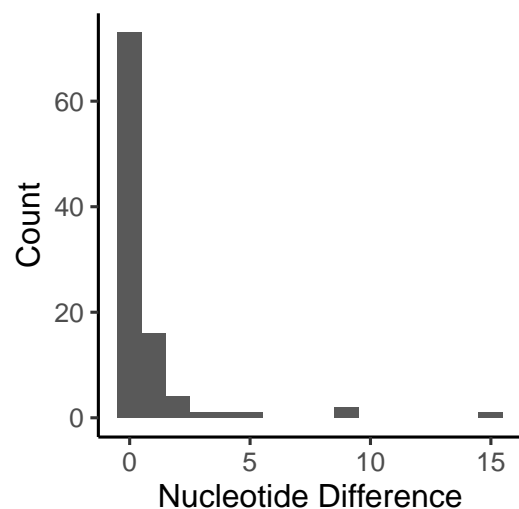
### IGHV2-5\*02

265 sequences assigned  
213 (80.4%) exact matches, in which:  
204 unique CDR3  
6 unique J



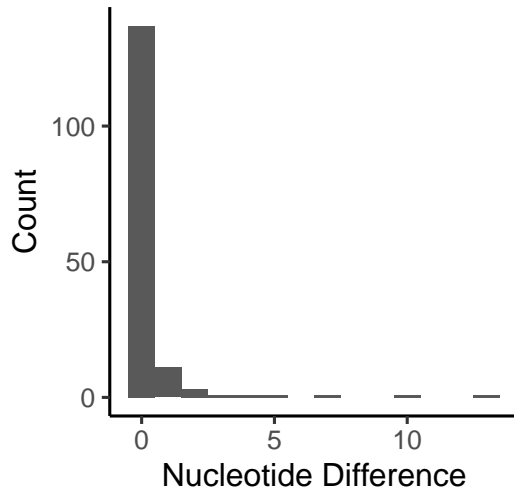
### IGHV2-70\*04

99 sequences assigned  
73 (73.7%) exact matches, in which:  
72 unique CDR3  
6 unique J



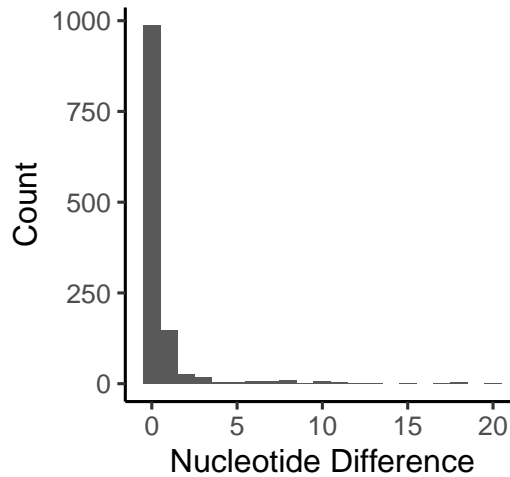
### IGHV2-70\*15

157 sequences assigned  
137 (87.3%) exact matches, in which:  
133 unique CDR3  
5 unique J



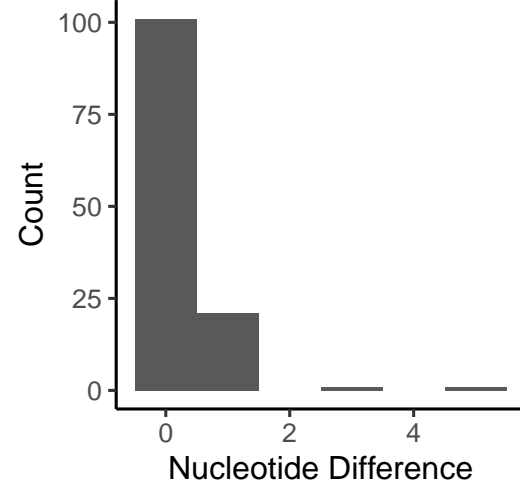
### IGHV3-9\*01

1229 sequences assigned  
987 (80.3%) exact matches, in which:  
902 unique CDR3  
6 unique J



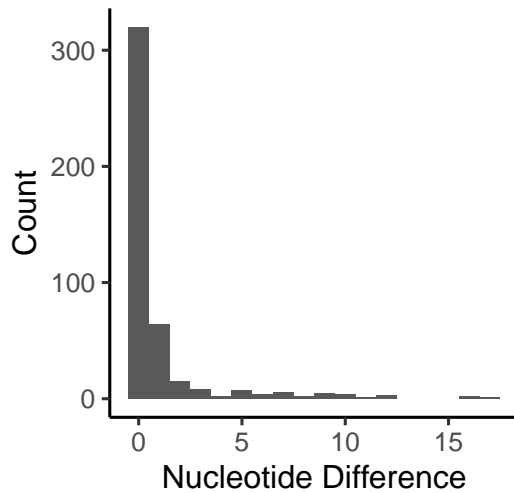
### IGHV3-13\*01

124 sequences assigned  
101 (81.5%) exact matches, in which:  
94 unique CDR3  
6 unique J



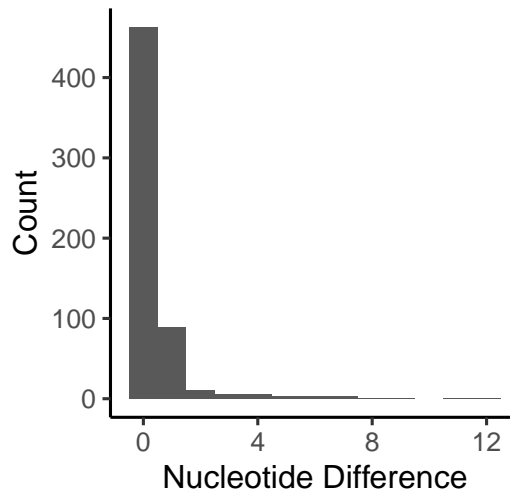
### IGHV3-7\*01

448 sequences assigned  
320 (71.4%) exact matches, in which:  
303 unique CDR3  
6 unique J



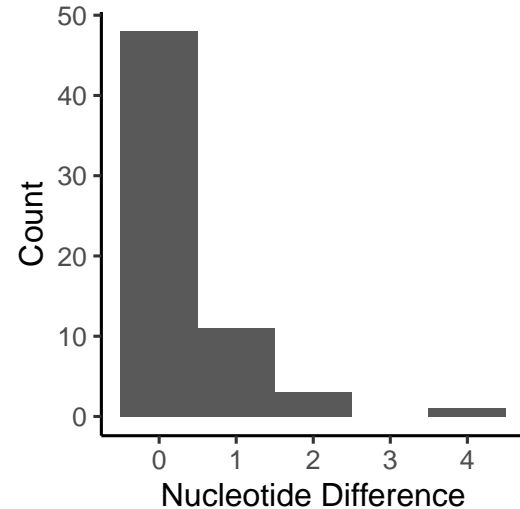
### IGHV3-11\*01

587 sequences assigned  
463 (78.9%) exact matches, in which:  
446 unique CDR3  
7 unique J



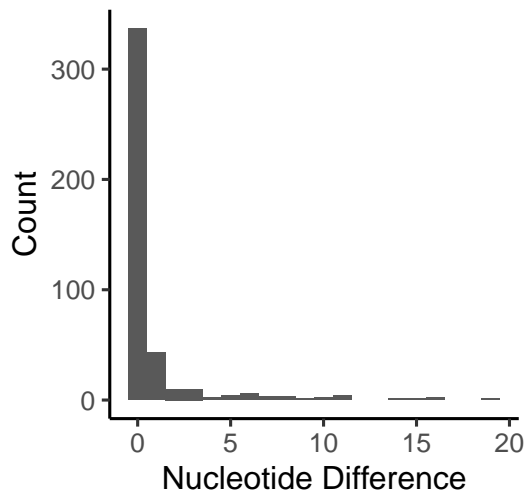
### IGHV3-13\*05

63 sequences assigned  
48 (76.2%) exact matches, in which:  
43 unique CDR3  
4 unique J



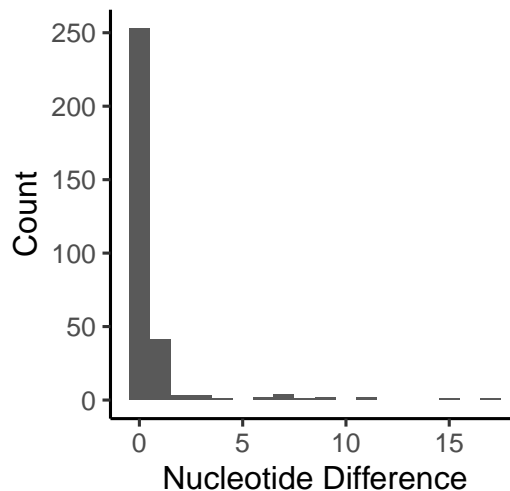
### IGHV3-7\*03

433 sequences assigned  
337 (77.8%) exact matches, in which:  
311 unique CDR3  
6 unique J



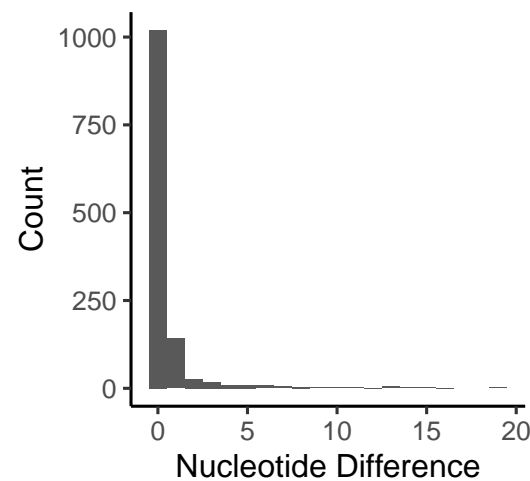
### IGHV3-11\*06

316 sequences assigned  
253 (80.1%) exact matches, in which:  
231 unique CDR3  
6 unique J



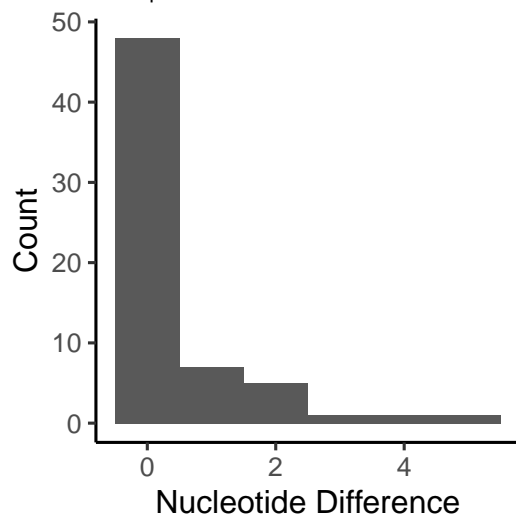
### IGHV3-15\*01

1265 sequences assigned  
1020 (80.6%) exact matches, in which:  
950 unique CDR3  
7 unique J



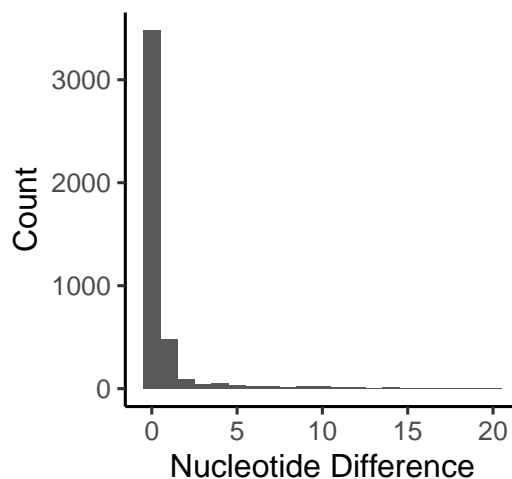
### IGHV3-20\*01

63 sequences assigned  
48 (76.2%) exact matches, in which:  
46 unique CDR3  
5 unique J



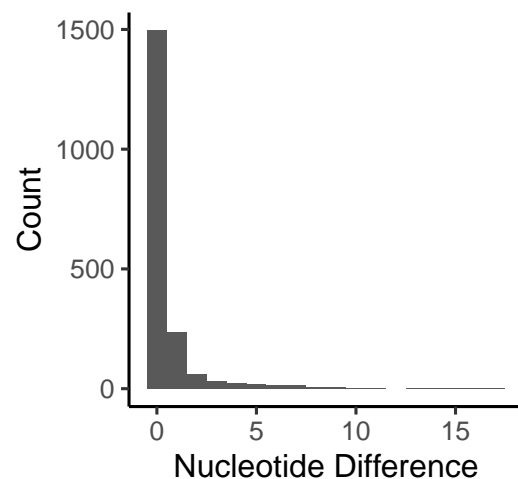
### IGHV3-23\*01

4390 sequences assigned  
3479 (79.2%) exact matches, in which:  
3166 unique CDR3  
7 unique J



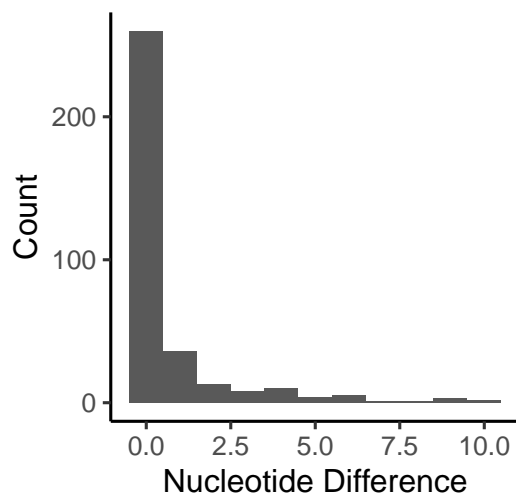
### IGHV3-33\*01

1917 sequences assigned  
1496 (78%) exact matches, in which:  
1367 unique CDR3  
7 unique J



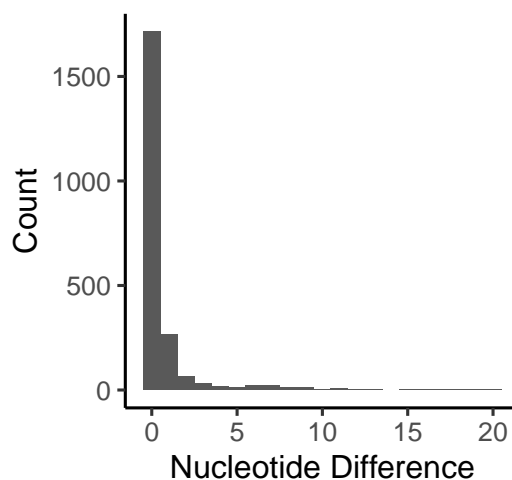
### IGHV3-20\*04

343 sequences assigned  
260 (75.8%) exact matches, in which:  
237 unique CDR3  
6 unique J



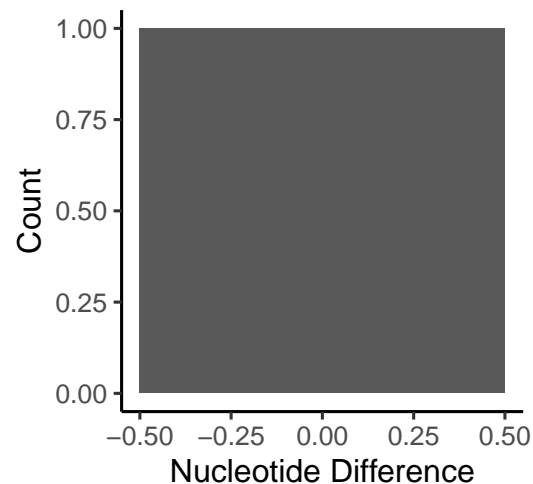
### IGHV3-30-3\*01

2199 sequences assigned  
1714 (77.9%) exact matches, in which:  
1590 unique CDR3  
7 unique J



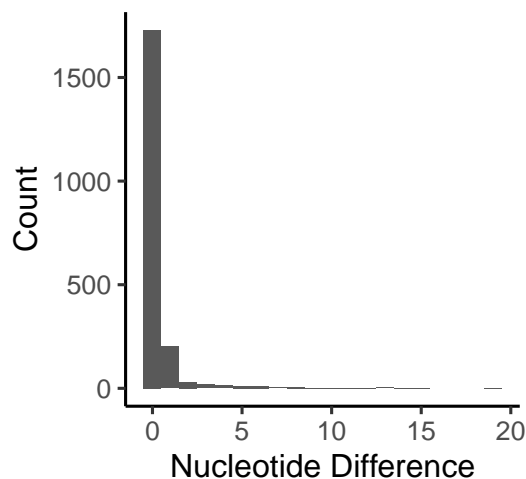
### IGHV3-35\*01

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



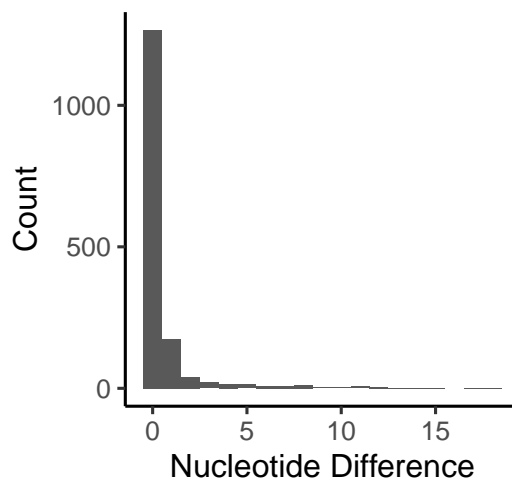
### IGHV3-21\*01

2056 sequences assigned  
1729 (84.1%) exact matches, in which:  
1614 unique CDR3  
7 unique J



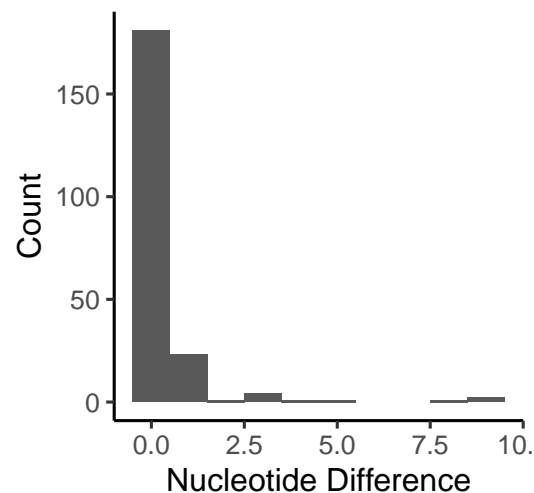
### IGHV3-30\*18

1587 sequences assigned  
1266 (79.8%) exact matches, in which:  
1182 unique CDR3  
7 unique J



### IGHV3-43\*01

214 sequences assigned  
181 (84.6%) exact matches, in which:  
168 unique CDR3  
7 unique J



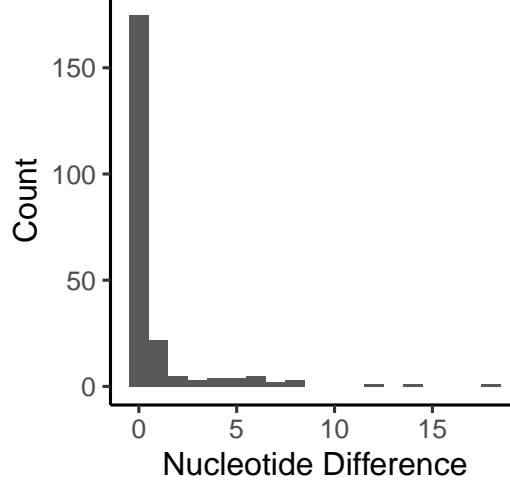
### IGHV3-47\*02

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



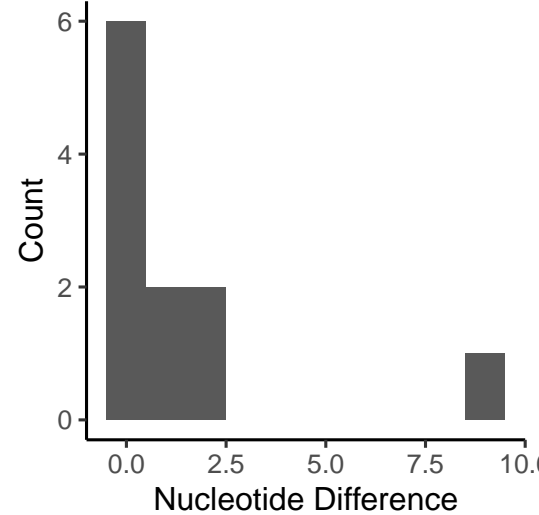
### IGHV3-49\*03

226 sequences assigned  
175 (77.4%) exact matches, in which:  
164 unique CDR3  
6 unique J



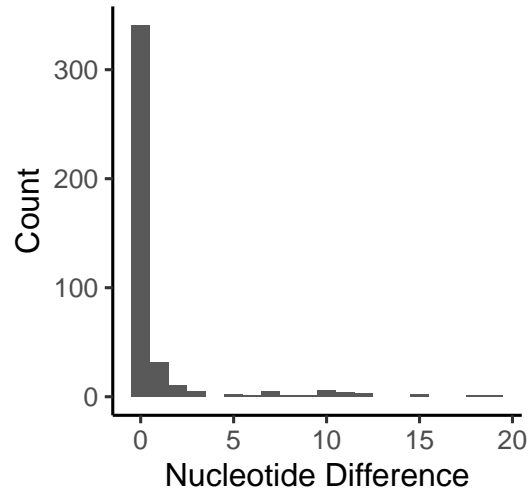
### IGHV3-64\*02

11 sequences assigned  
6 (54.5%) exact matches, in which:  
6 unique CDR3  
2 unique J



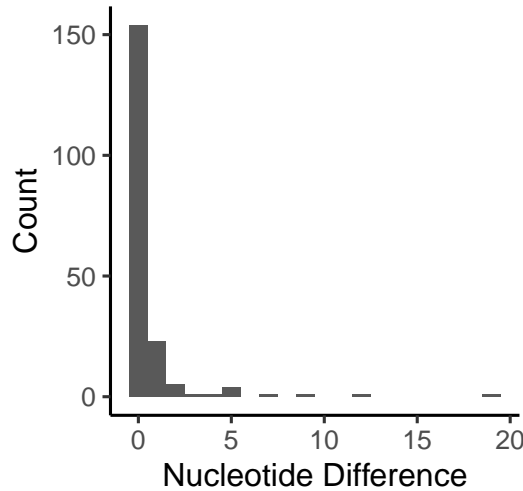
### IGHV3-48\*01

420 sequences assigned  
341 (81.2%) exact matches, in which:  
318 unique CDR3  
7 unique J



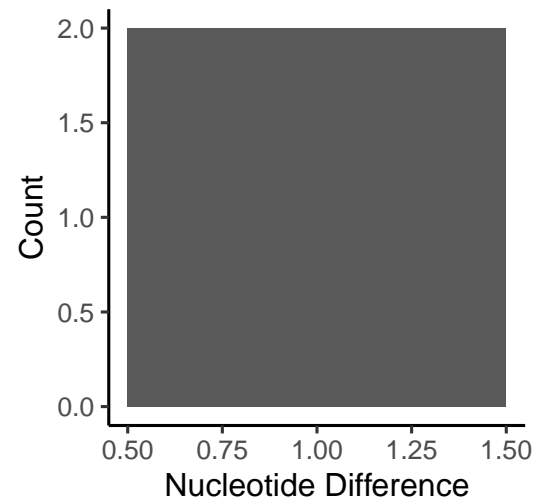
### IGHV3-49\*05

192 sequences assigned  
154 (80.2%) exact matches, in which:  
151 unique CDR3  
6 unique J



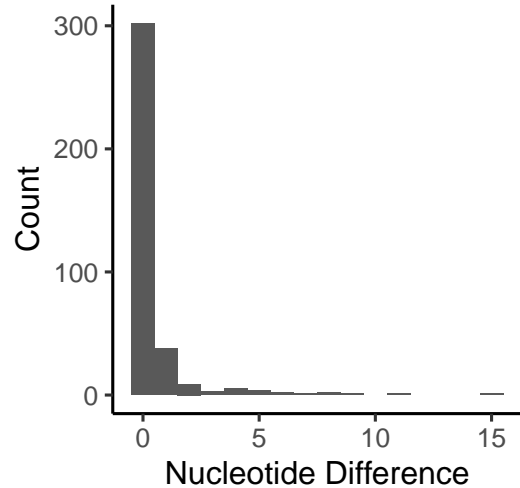
### IGHV3-66\*03

2 sequences assigned  
No exact matches.



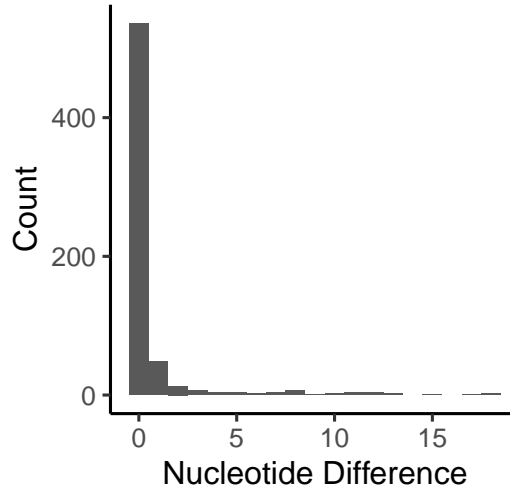
### IGHV3-48\*02

374 sequences assigned  
302 (80.7%) exact matches, in which:  
282 unique CDR3  
6 unique J



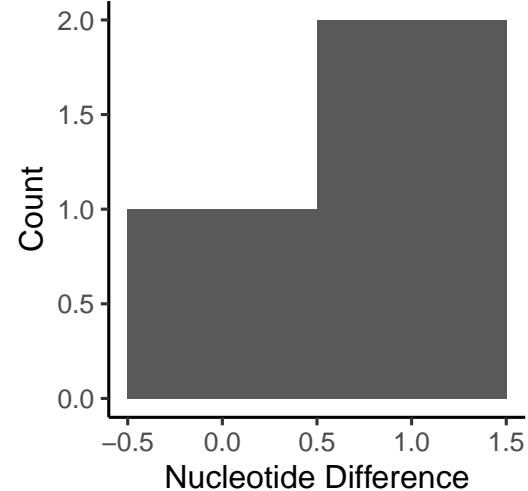
### IGHV3-53\*01

641 sequences assigned  
536 (83.6%) exact matches, in which:  
497 unique CDR3  
7 unique J



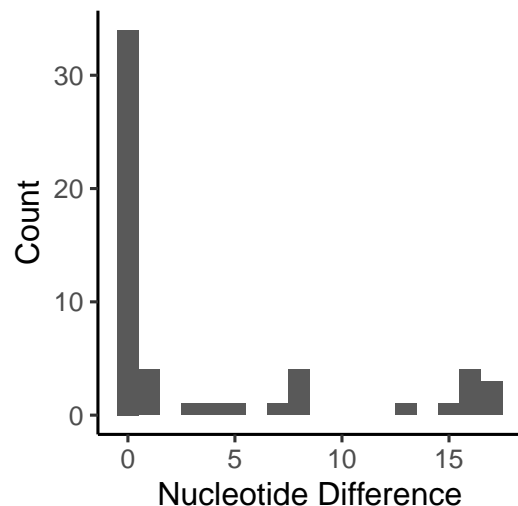
### IGHV3-66\*04

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



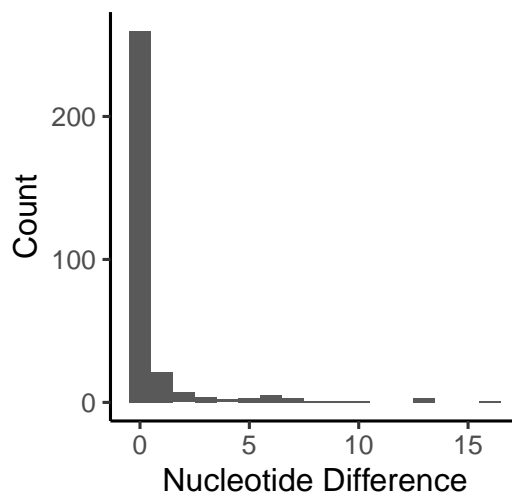
### IGHV3-72\*01

55 sequences assigned  
34 (61.8%) exact matches, in which:  
31 unique CDR3  
6 unique J



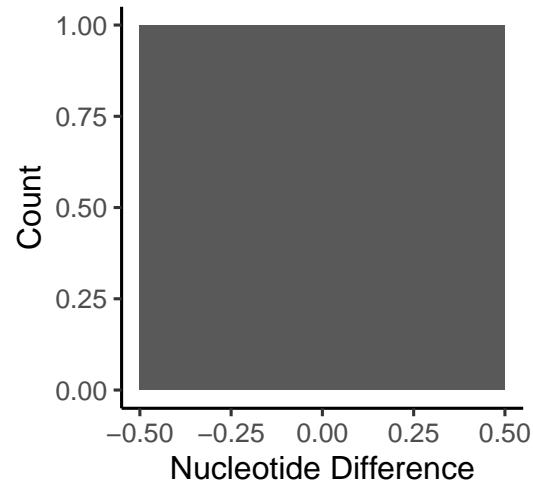
### IGHV3-64D\*06

324 sequences assigned  
260 (80.2%) exact matches, in which:  
238 unique CDR3  
6 unique J



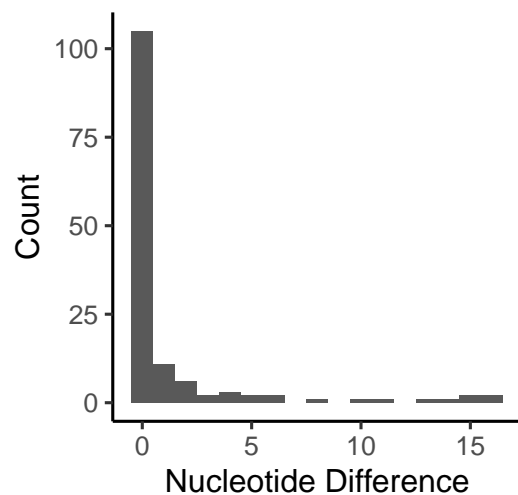
### IGHV4-28\*02

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



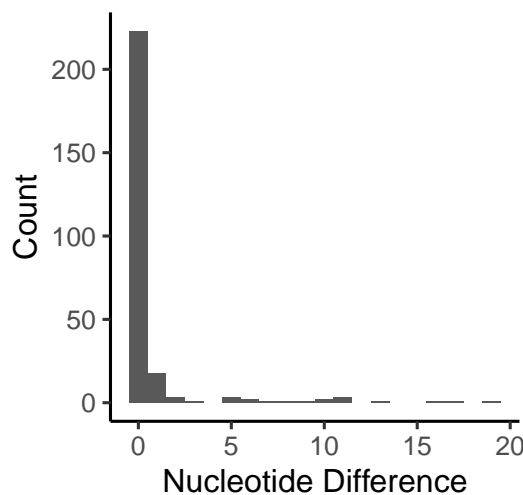
### IGHV3-73\*02

140 sequences assigned  
105 (75%) exact matches, in which:  
96 unique CDR3  
6 unique J



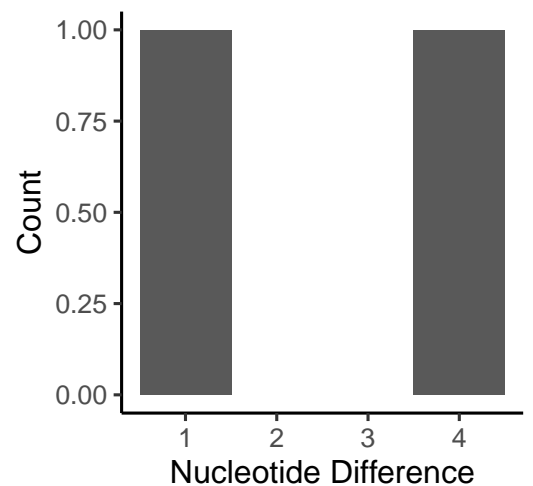
### IGHV4-4\*07

284 sequences assigned  
223 (78.5%) exact matches, in which:  
218 unique CDR3  
6 unique J



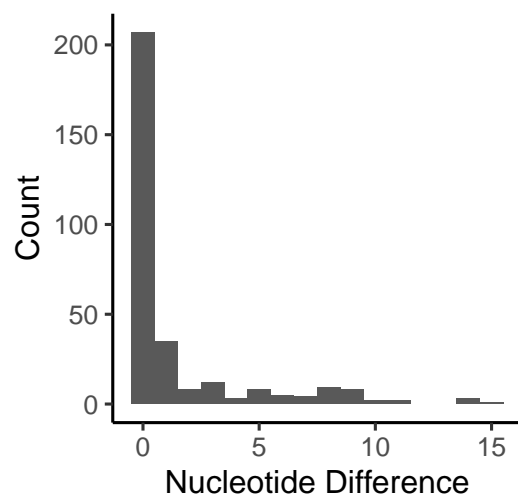
### IGHV4-28\*04

2 sequences assigned  
No exact matches.



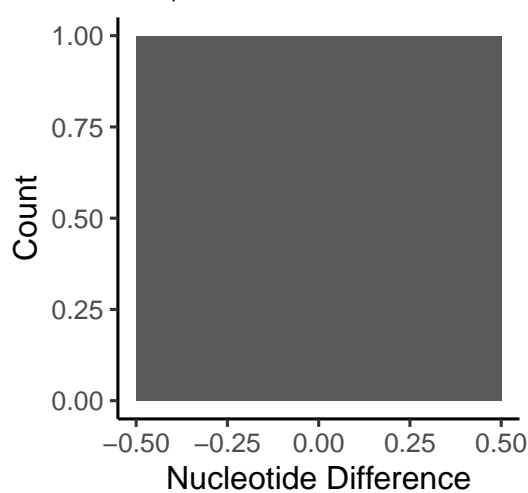
### IGHV3-74\*01

309 sequences assigned  
207 (67%) exact matches, in which:  
197 unique CDR3  
7 unique J



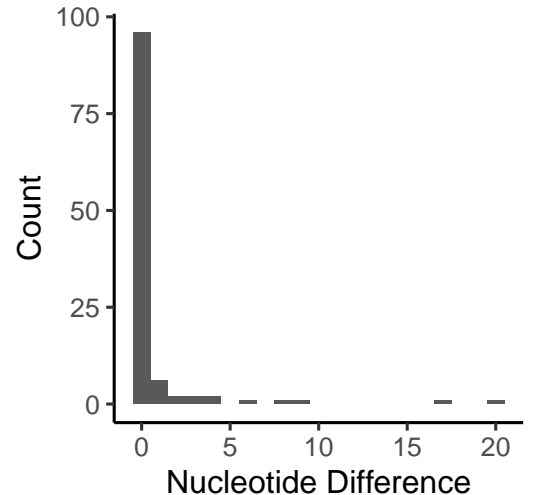
### IGHV4-28\*01

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



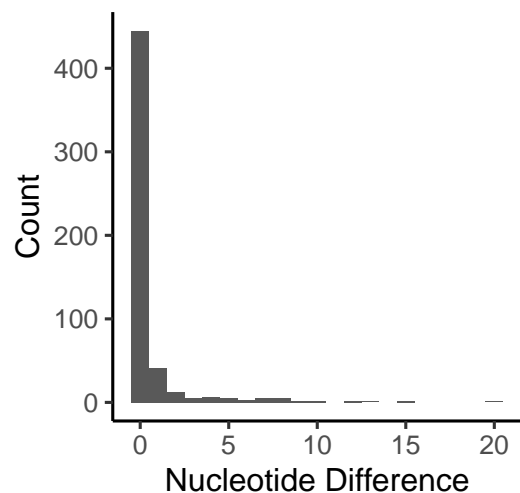
### IGHV4-30-2\*01

115 sequences assigned  
96 (83.5%) exact matches, in which:  
89 unique CDR3  
5 unique J



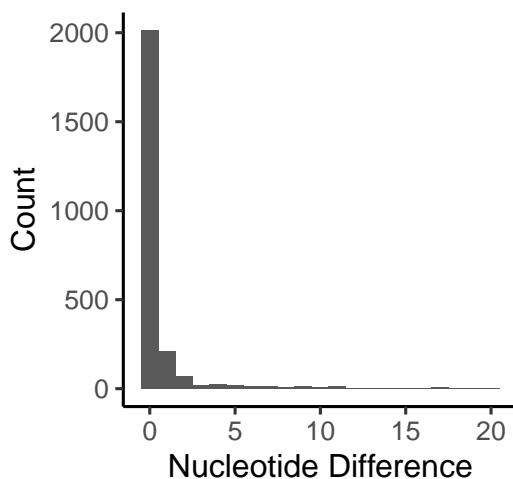
### IGHV4-30-4\*01

537 sequences assigned  
445 (82.9%) exact matches, in which:  
427 unique CDR3  
7 unique J



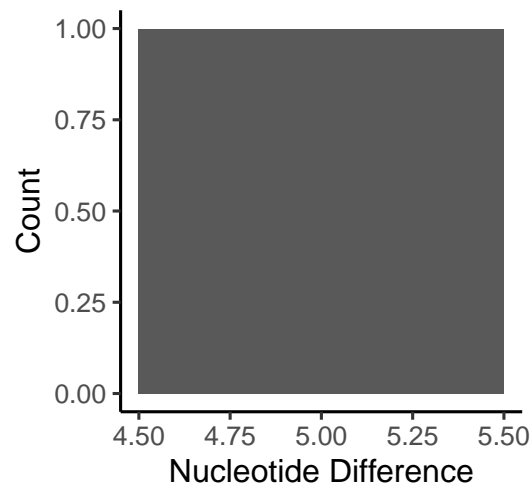
### IGHV4-39\*01

2470 sequences assigned  
2013 (81.5%) exact matches, in which:  
1855 unique CDR3  
7 unique J



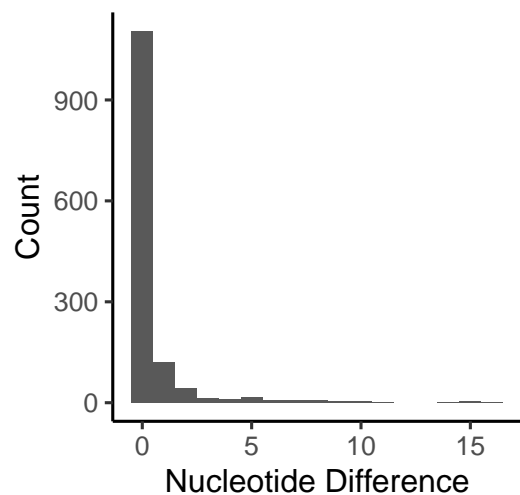
### IGHV1/OR15-4\*01

1 sequences assigned  
No exact matches.



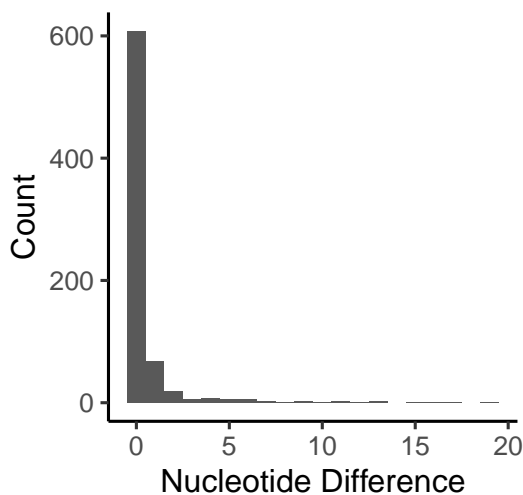
### IGHV4-31\*03

1347 sequences assigned  
1105 (82%) exact matches, in which:  
1048 unique CDR3  
7 unique J



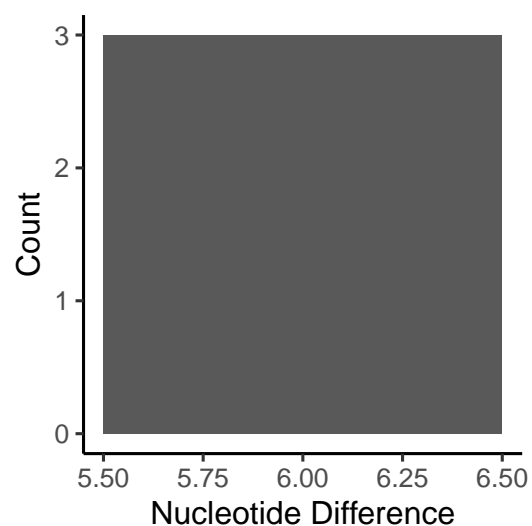
### IGHV4-59\*01

738 sequences assigned  
608 (82.4%) exact matches, in which:  
590 unique CDR3  
7 unique J



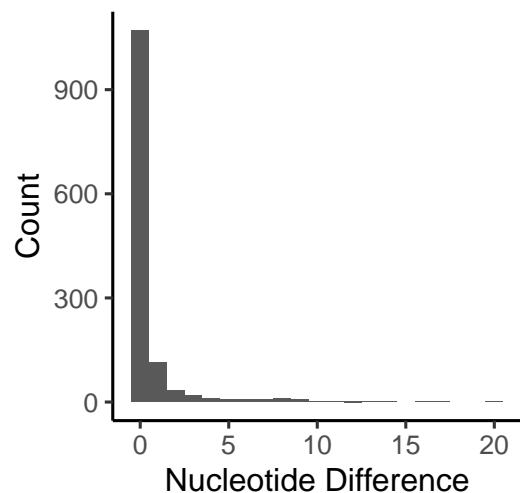
### IGHV4/OR15-8\*01

3 sequences assigned  
No exact matches.



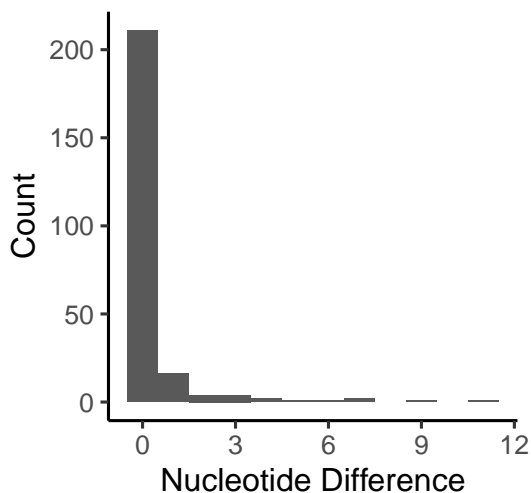
### IGHV4-34\*01

1297 sequences assigned  
1071 (82.6%) exact matches, in which:  
991 unique CDR3  
7 unique J



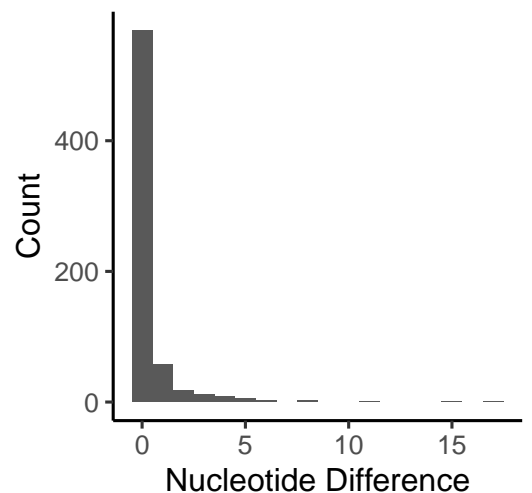
### IGHV4-61\*01

243 sequences assigned  
211 (86.8%) exact matches, in which:  
198 unique CDR3  
7 unique J



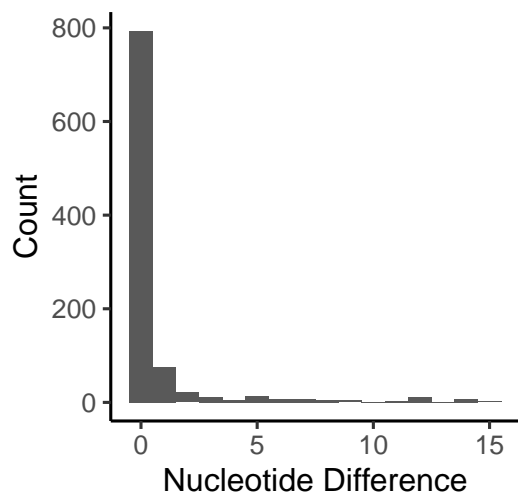
### IGHV5-10-1\*03

675 sequences assigned  
569 (84.3%) exact matches, in which:  
527 unique CDR3  
6 unique J



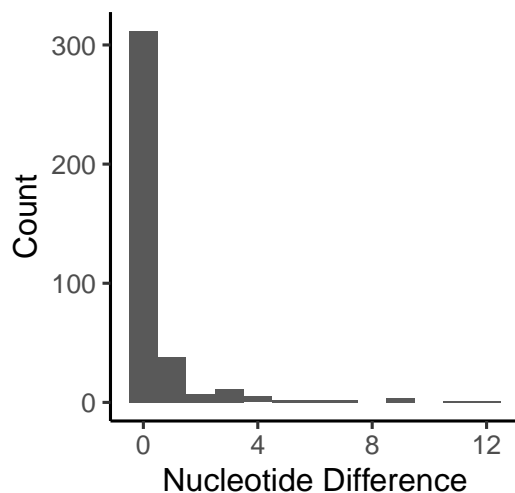
## IGHV5–51\*01

972 sequences assigned  
794 (81.7%) exact matches, in which:  
752 unique CDR3  
7 unique J



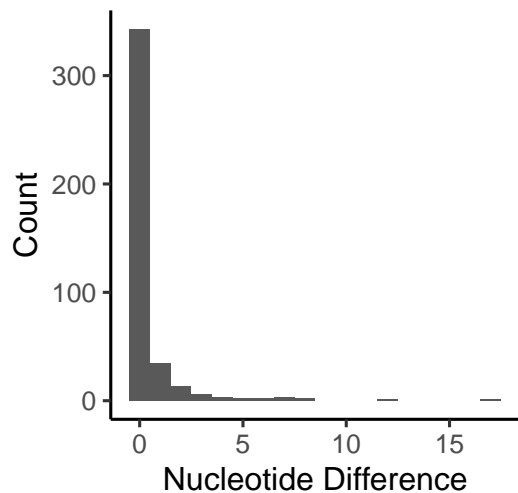
## IGHV7–4–1\*02

385 sequences assigned  
312 (81%) exact matches, in which:  
300 unique CDR3  
7 unique J



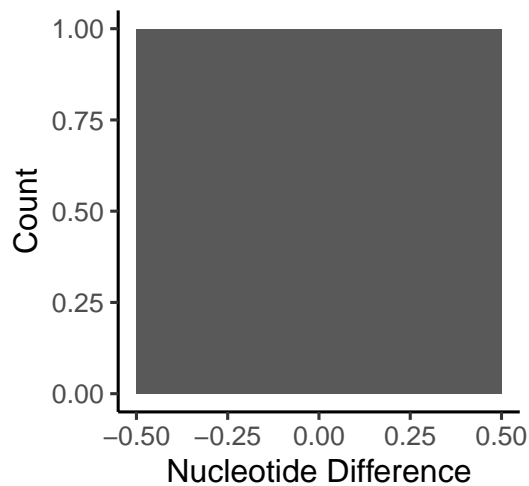
## IGHV6–1\*01

411 sequences assigned  
343 (83.5%) exact matches, in which:  
325 unique CDR3  
6 unique J



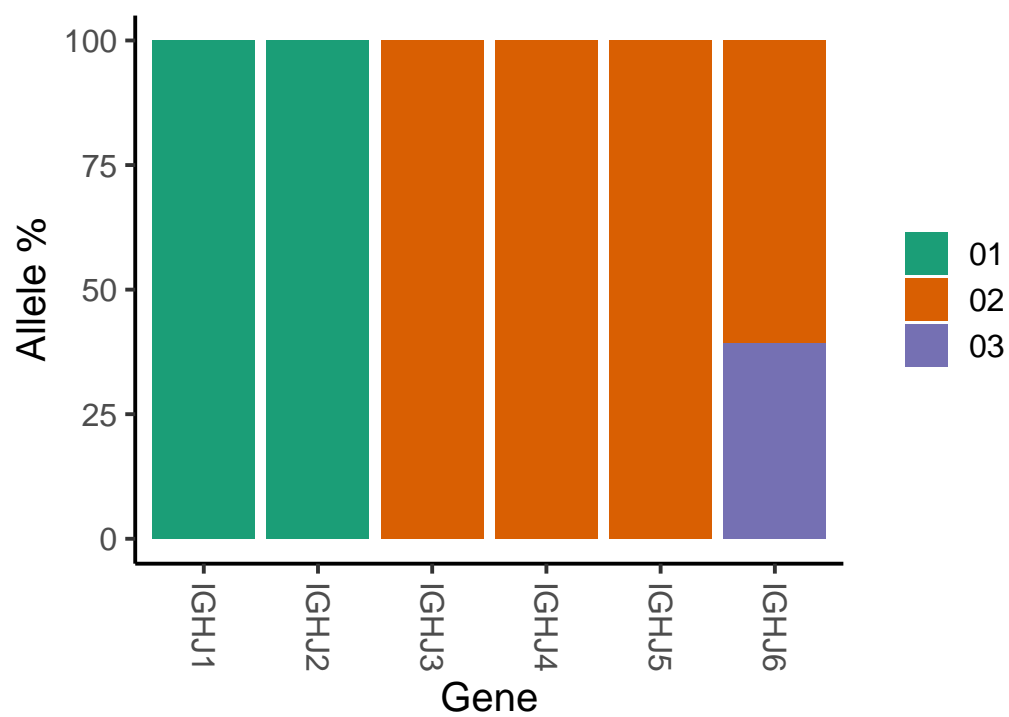
## IGHV3/OR16–12\*01

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

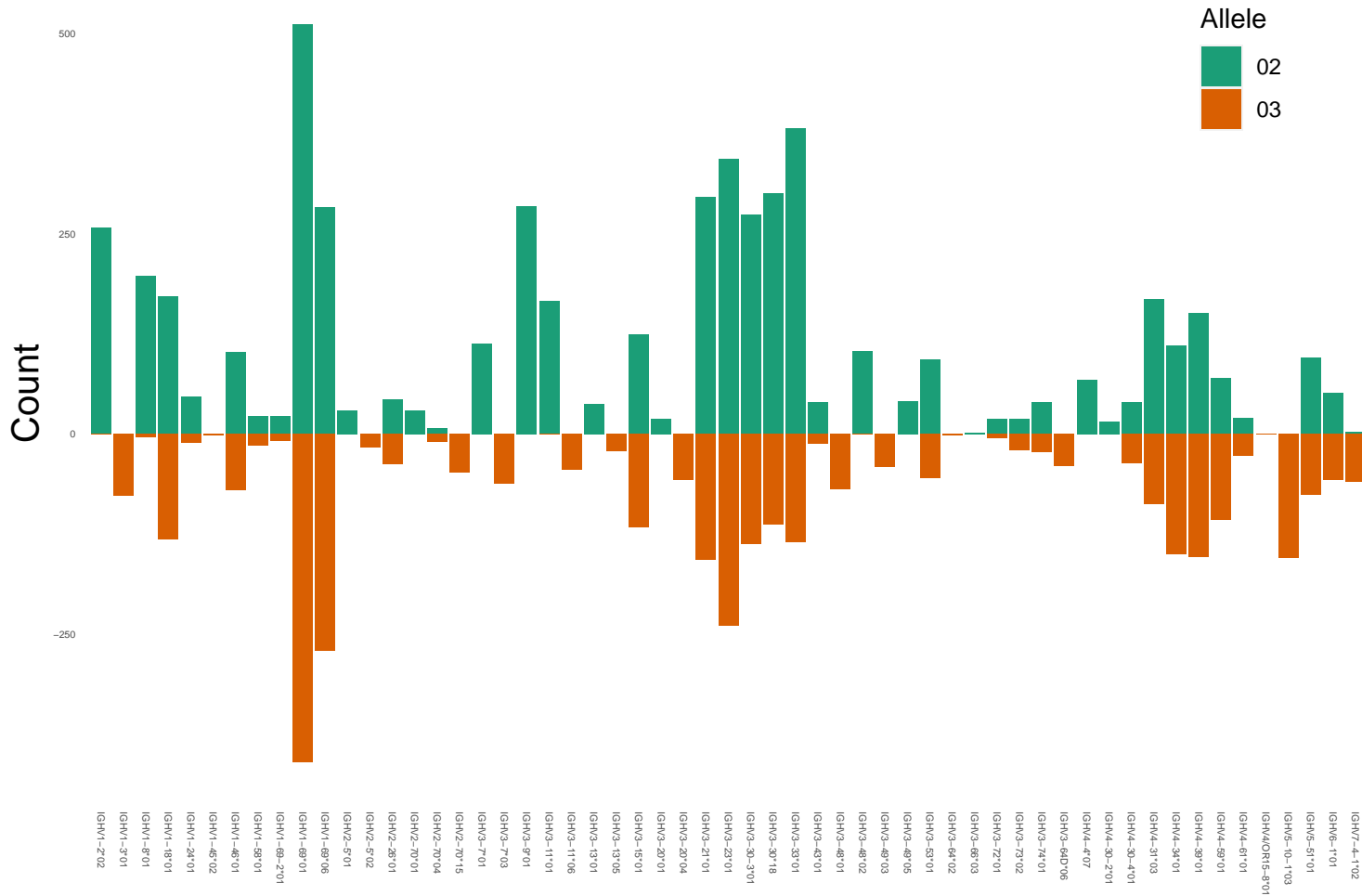




Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.