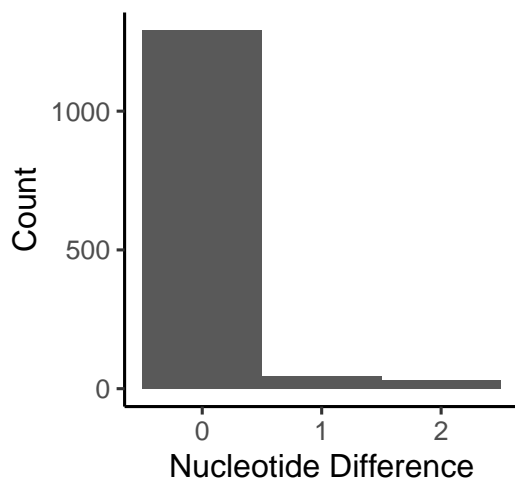


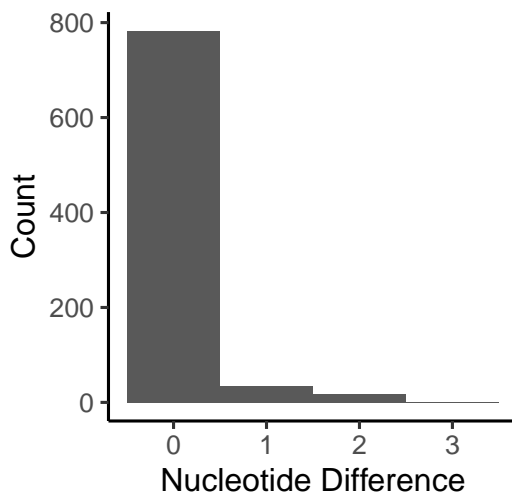
### IGHV1-2\*02

1367 sequences assigned  
1291 (94.4%) exact matches, in which:  
1276 unique CDR3  
6 unique J



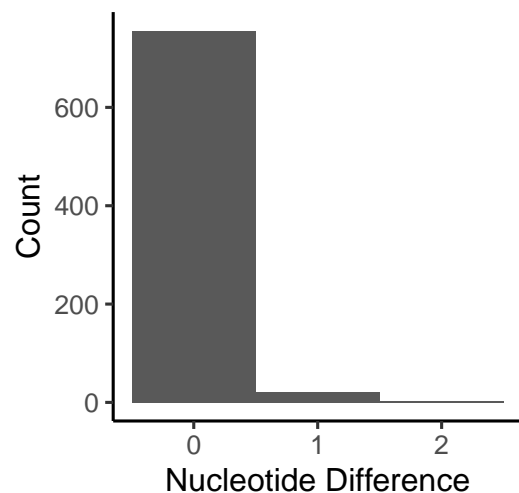
### IGHV1-8\*01

835 sequences assigned  
783 (93.8%) exact matches, in which:  
774 unique CDR3  
6 unique J



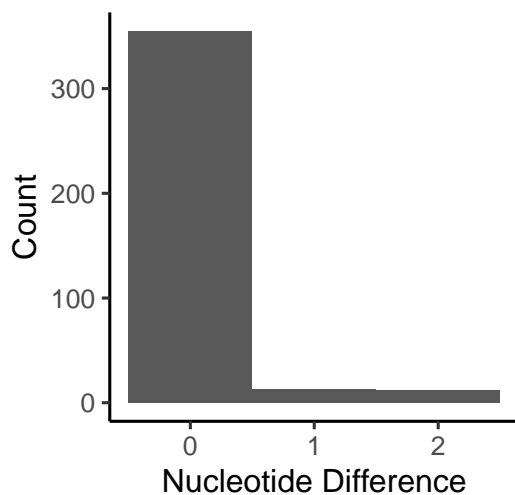
### IGHV1-24\*01

780 sequences assigned  
756 (96.9%) exact matches, in which:  
750 unique CDR3  
6 unique J



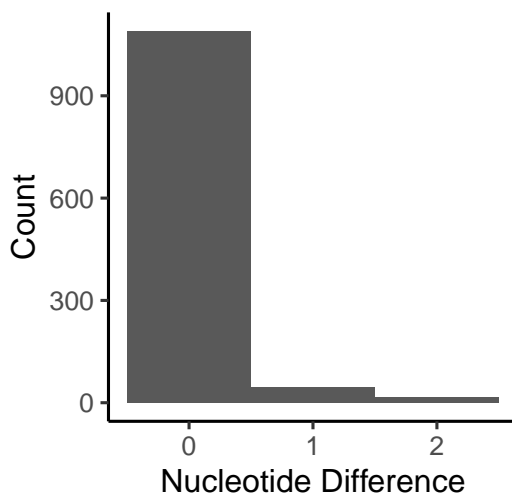
### IGHV1-2\*04

380 sequences assigned  
355 (93.4%) exact matches, in which:  
353 unique CDR3  
6 unique J



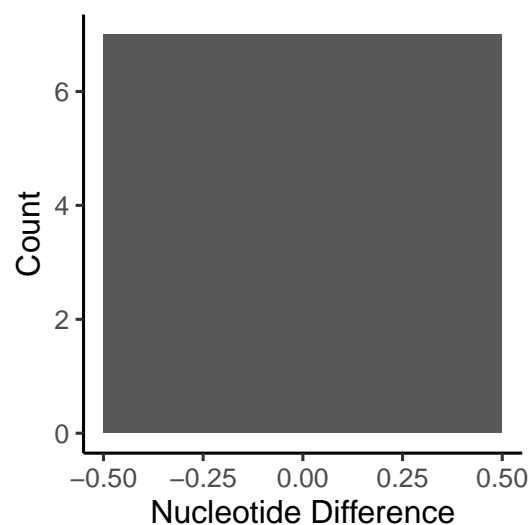
### IGHV1-18\*01

1149 sequences assigned  
1090 (94.9%) exact matches, in which:  
1074 unique CDR3  
6 unique J



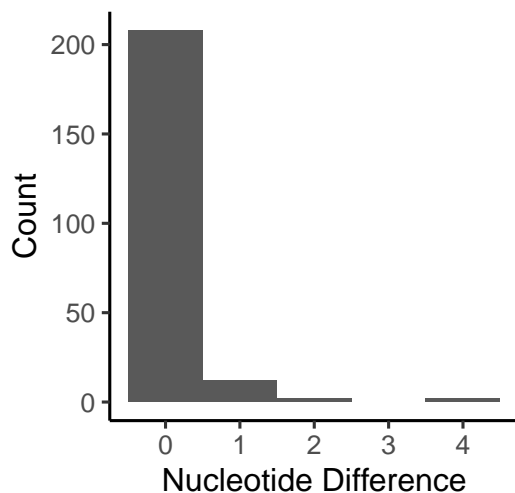
### IGHV1-45\*02

7 sequences assigned  
7 (100%) exact matches, in which:  
7 unique CDR3  
3 unique J



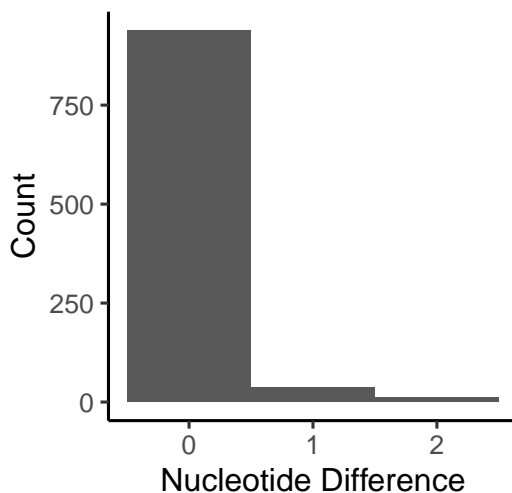
### IGHV1-3\*01\_05

224 sequences assigned  
208 (92.9%) exact matches, in which:  
207 unique CDR3  
6 unique J



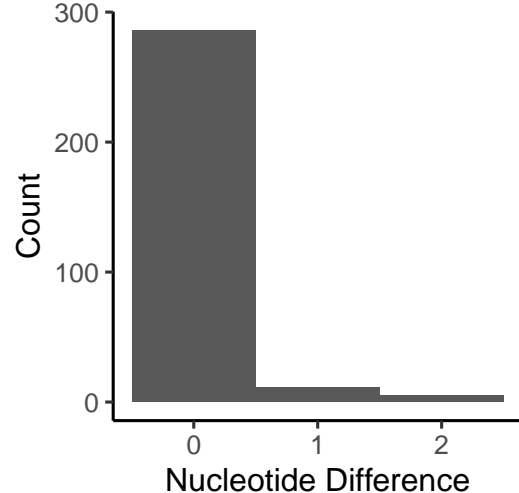
### IGHV1-18\*04

987 sequences assigned  
939 (95.1%) exact matches, in which:  
928 unique CDR3  
6 unique J



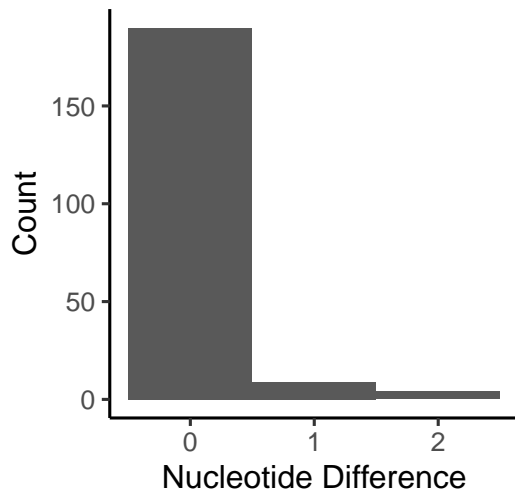
### IGHV1-46\*01

302 sequences assigned  
286 (94.7%) exact matches, in which:  
285 unique CDR3  
6 unique J



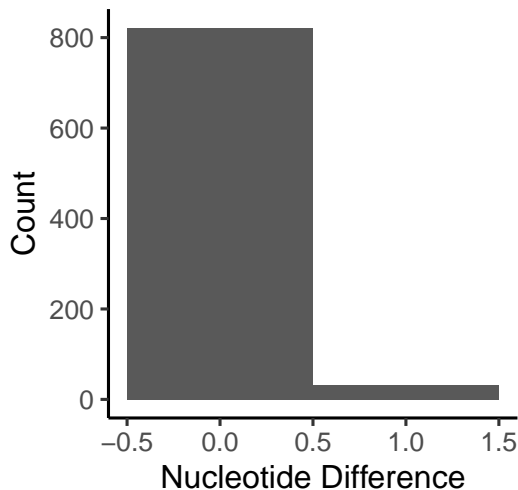
### IGHV1-46\*03

203 sequences assigned  
190 (93.6%) exact matches, in which:  
190 unique CDR3  
6 unique J



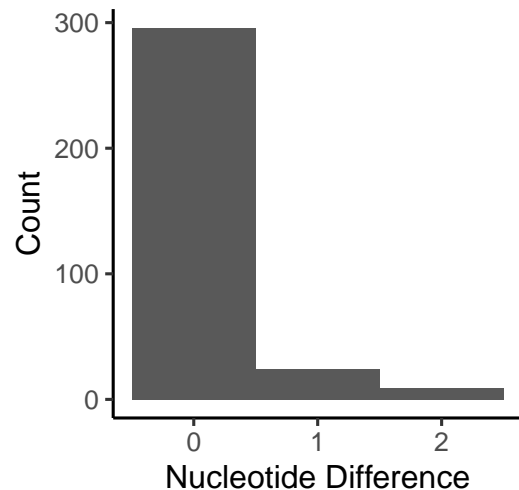
### IGHV1-69\*01\_12\_13

854 sequences assigned  
822 (96.3%) exact matches, in which:  
821 unique CDR3  
6 unique J



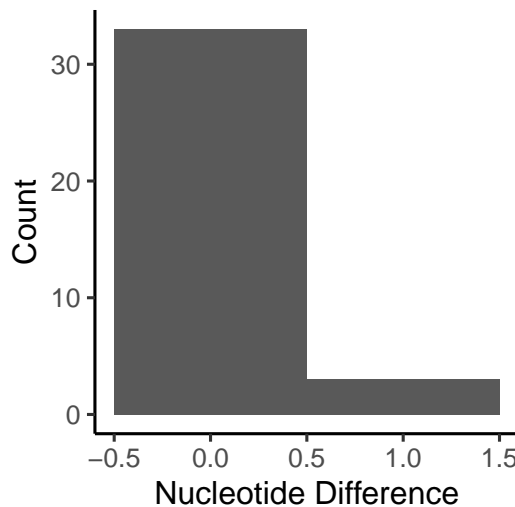
### IGHV2-5\*01

329 sequences assigned  
296 (90%) exact matches, in which:  
294 unique CDR3  
6 unique J



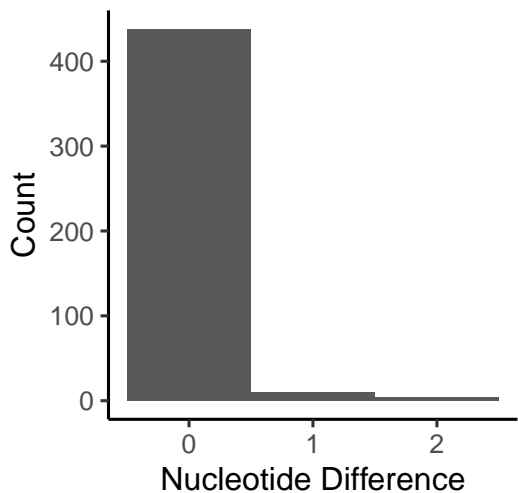
### IGHV1-58\*02

36 sequences assigned  
33 (91.7%) exact matches, in which:  
33 unique CDR3  
5 unique J



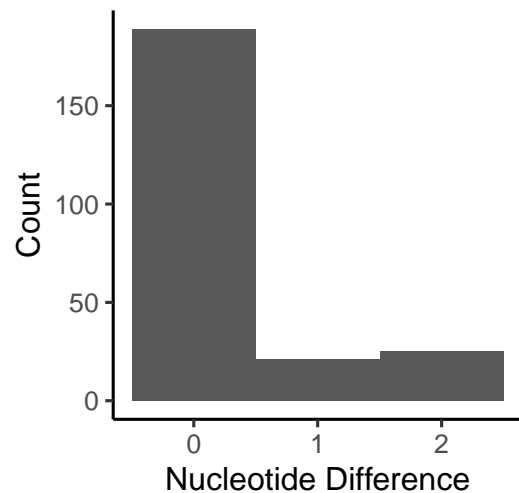
### IGHV1-69\*04\_09

452 sequences assigned  
438 (96.9%) exact matches, in which:  
437 unique CDR3  
6 unique J



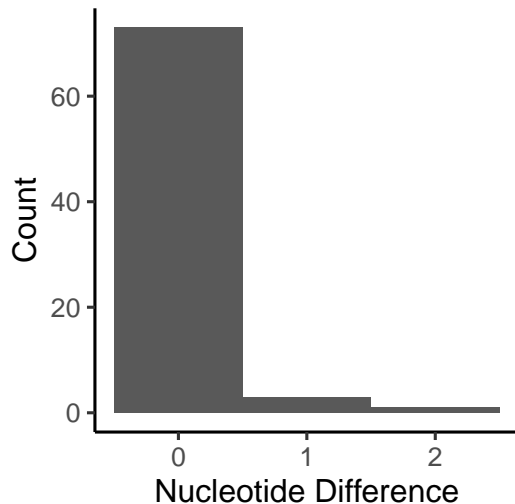
### IGHV2-5\*02

235 sequences assigned  
189 (80.4%) exact matches, in which:  
189 unique CDR3  
6 unique J



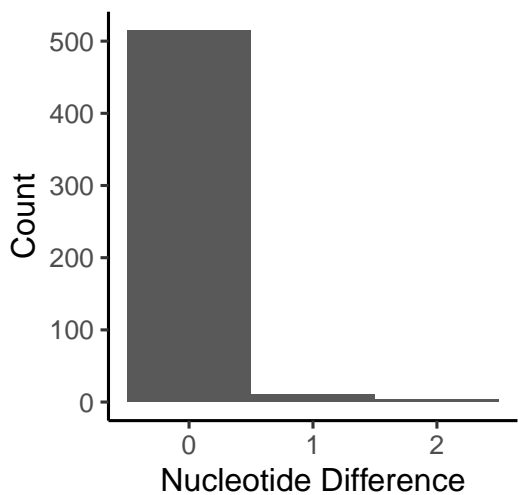
### IGHV1-58\*01\_03

77 sequences assigned  
73 (94.8%) exact matches, in which:  
73 unique CDR3  
5 unique J



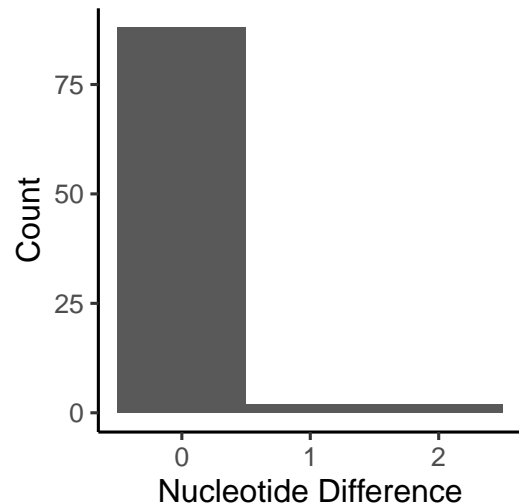
### IGHV1-69\*06\_14

529 sequences assigned  
515 (97.4%) exact matches, in which:  
513 unique CDR3  
6 unique J



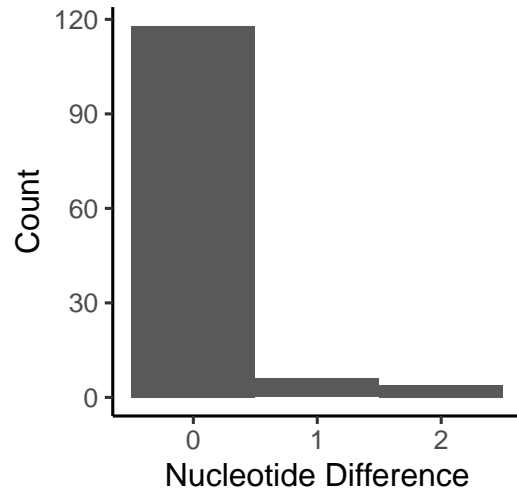
### IGHV2-26\*01

92 sequences assigned  
88 (95.7%) exact matches, in which:  
88 unique CDR3  
6 unique J



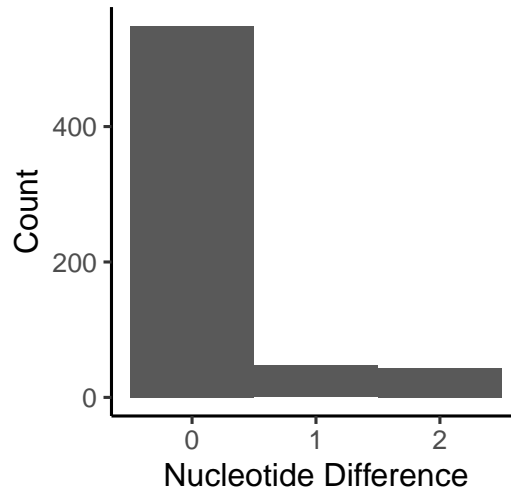
### IGHV2-70\*01

128 sequences assigned  
118 (92.2%) exact matches, in which:  
117 unique CDR3  
6 unique J



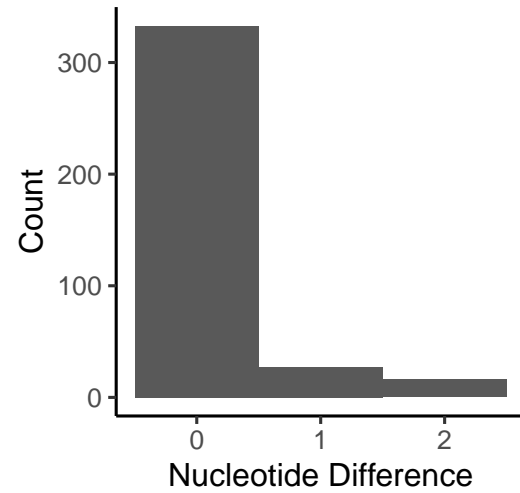
### IGHV3-7\*01

640 sequences assigned  
549 (85.8%) exact matches, in which:  
530 unique CDR3  
6 unique J



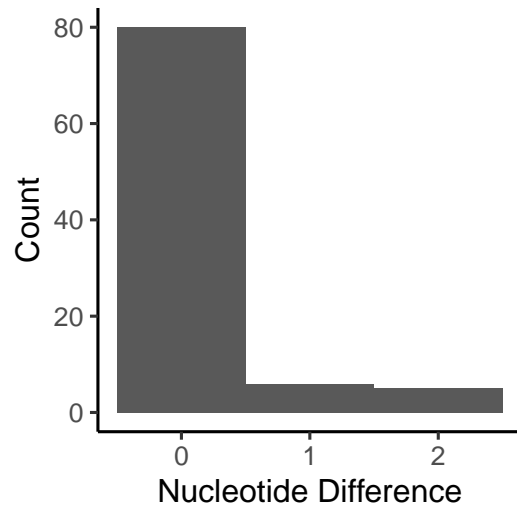
### IGHV3-11\*01

376 sequences assigned  
333 (88.6%) exact matches, in which:  
329 unique CDR3  
6 unique J



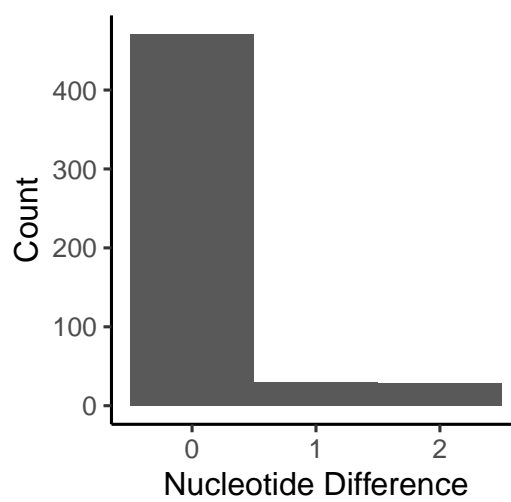
### IGHV2-70\*04

91 sequences assigned  
80 (87.9%) exact matches, in which:  
80 unique CDR3  
5 unique J



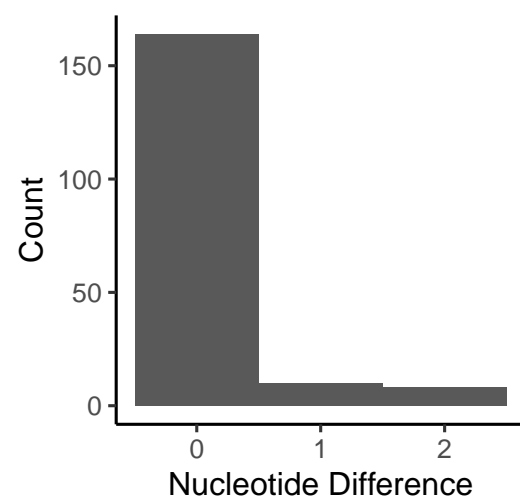
### IGHV3-7\*03

530 sequences assigned  
471 (88.9%) exact matches, in which:  
447 unique CDR3  
6 unique J



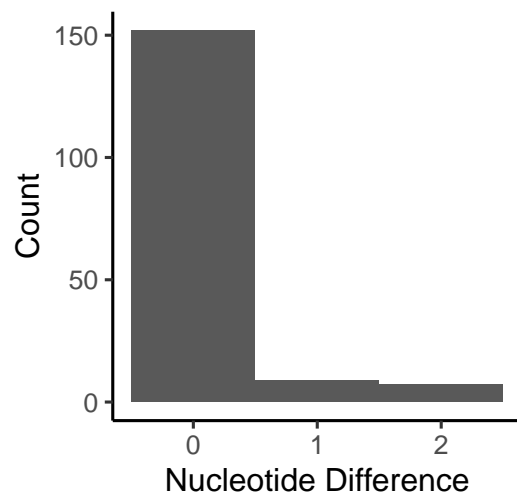
### IGHV3-11\*06

182 sequences assigned  
164 (90.1%) exact matches, in which:  
158 unique CDR3  
6 unique J



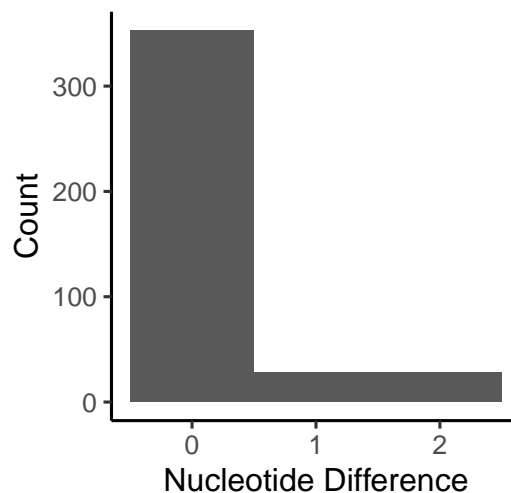
### IGHV2-70\*11\_15

168 sequences assigned  
152 (90.5%) exact matches, in which:  
149 unique CDR3  
5 unique J



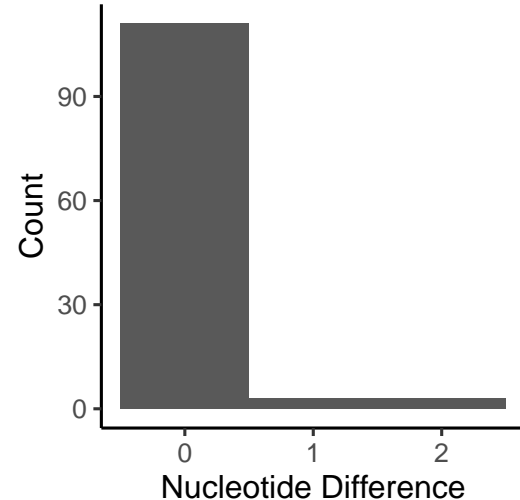
### IGHV3-9\*01

409 sequences assigned  
353 (86.3%) exact matches, in which:  
349 unique CDR3  
6 unique J



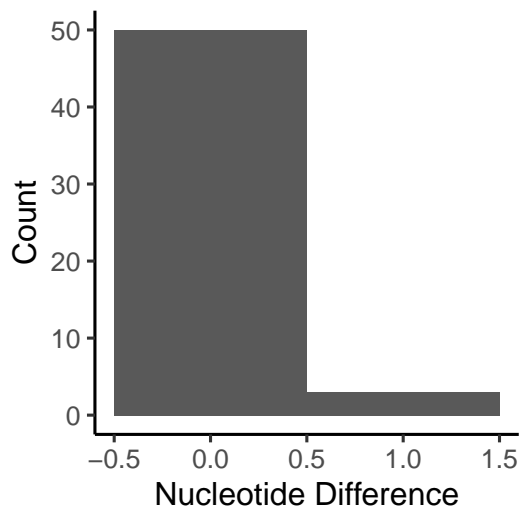
### IGHV3-13\*01

117 sequences assigned  
111 (94.9%) exact matches, in which:  
108 unique CDR3  
5 unique J



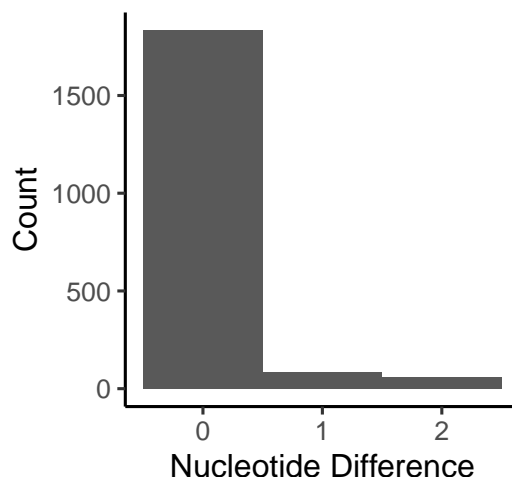
### IGHV3-13\*05

53 sequences assigned  
50 (94.3%) exact matches, in which:  
48 unique CDR3  
4 unique J



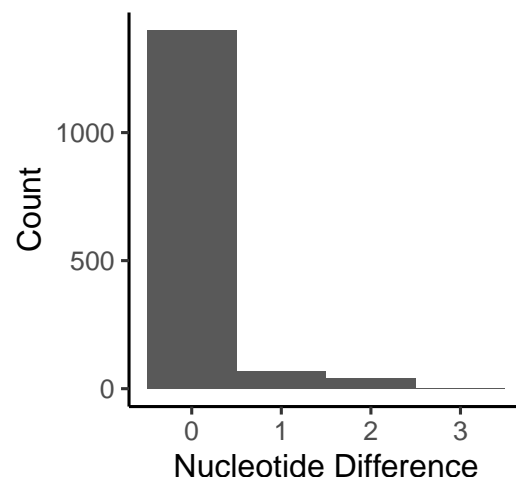
### IGHV3-21\*01\_02

1980 sequences assigned  
1833 (92.6%) exact matches, in which:  
1766 unique CDR3  
6 unique J



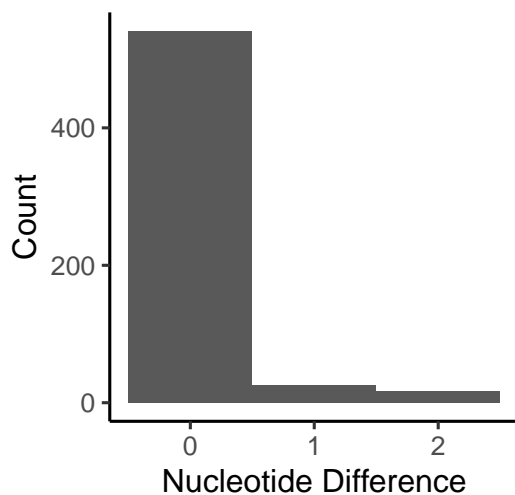
### IGHV3-30\*18

1512 sequences assigned  
1399 (92.5%) exact matches, in which:  
1379 unique CDR3  
6 unique J



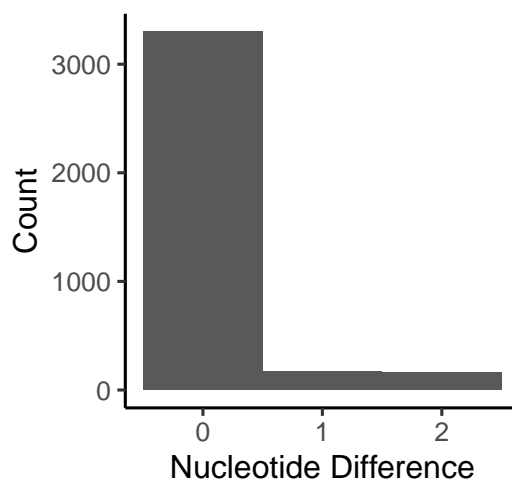
### IGHV3-15\*01\_02

584 sequences assigned  
541 (92.6%) exact matches, in which:  
529 unique CDR3  
6 unique J



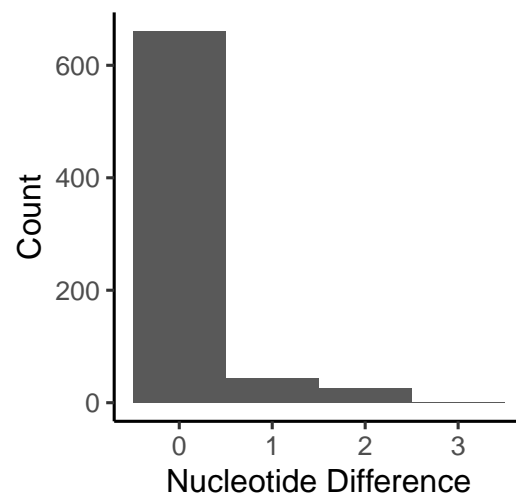
### IGHV3-23\*01\_04

3636 sequences assigned  
3299 (90.7%) exact matches, in which:  
3199 unique CDR3  
6 unique J



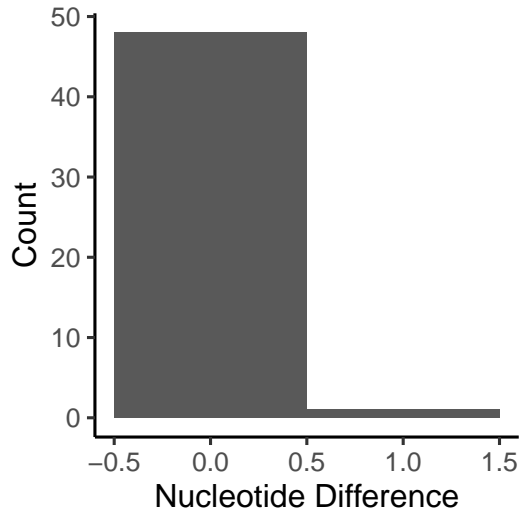
### IGHV3-33\*01

731 sequences assigned  
661 (90.4%) exact matches, in which:  
653 unique CDR3  
6 unique J



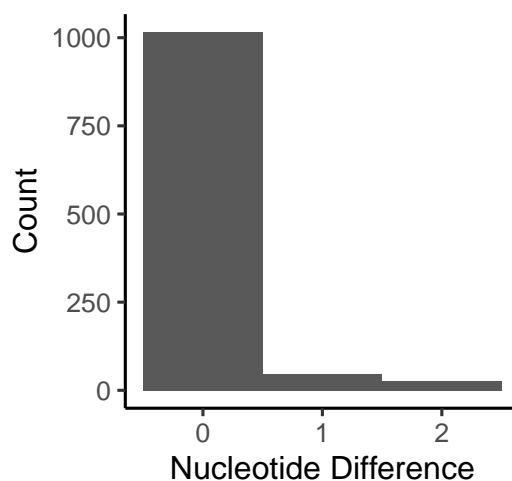
### IGHV3-20\*01\_02

49 sequences assigned  
48 (98%) exact matches, in which:  
46 unique CDR3  
5 unique J



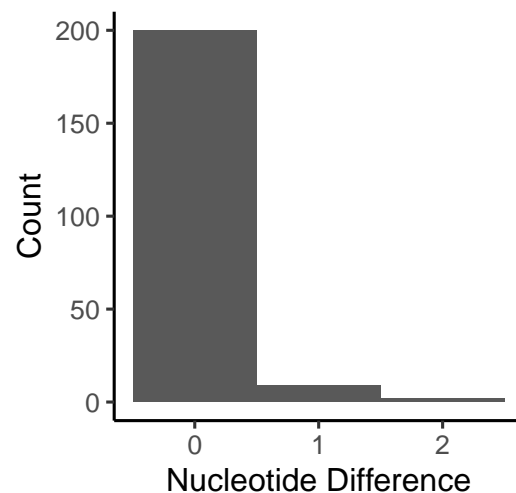
### IGHV3-30-3\*01

1088 sequences assigned  
1016 (93.4%) exact matches, in which:  
1000 unique CDR3  
6 unique J



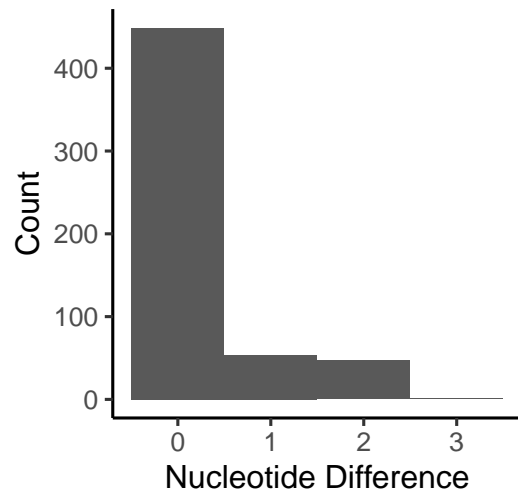
### IGHV3-43\*01

211 sequences assigned  
200 (94.8%) exact matches, in which:  
198 unique CDR3  
6 unique J



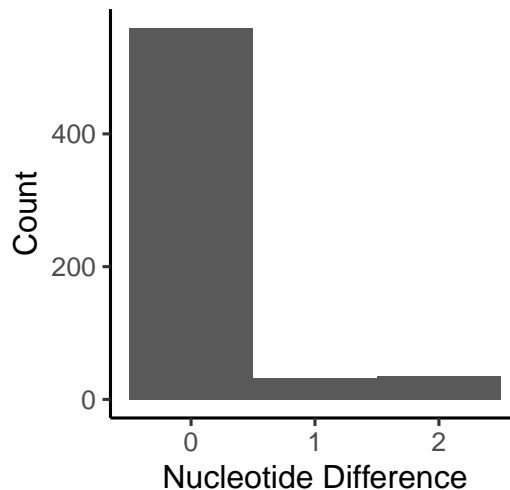
### IGHV3-48\*01

551 sequences assigned  
449 (81.5%) exact matches, in which:  
437 unique CDR3  
6 unique J



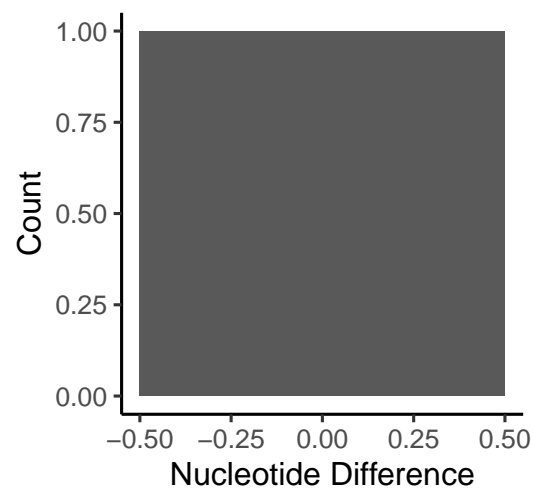
### IGHV3-53\*01\_02

627 sequences assigned  
560 (89.3%) exact matches, in which:  
547 unique CDR3  
6 unique J



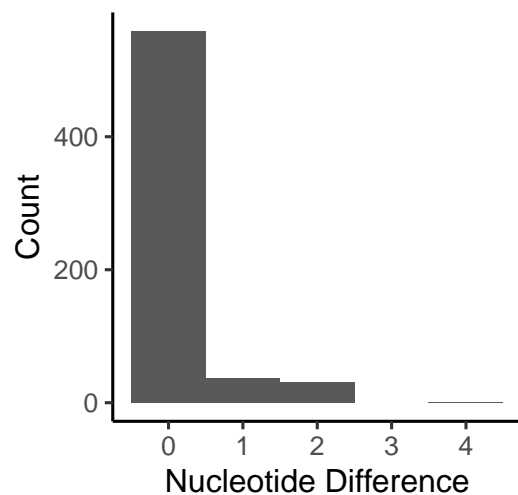
### IGHV3-69-1\*01

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



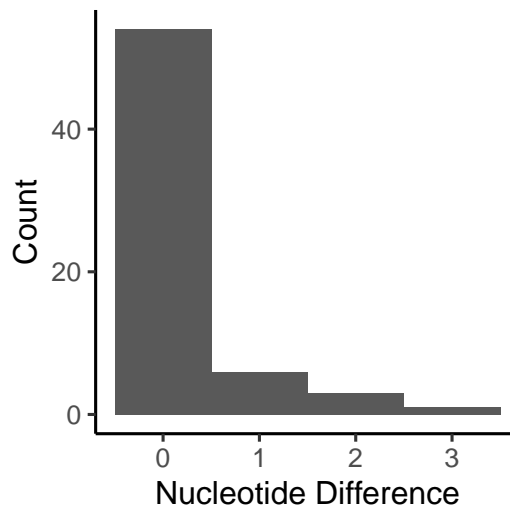
### IGHV3-48\*02

628 sequences assigned  
559 (89%) exact matches, in which:  
538 unique CDR3  
6 unique J



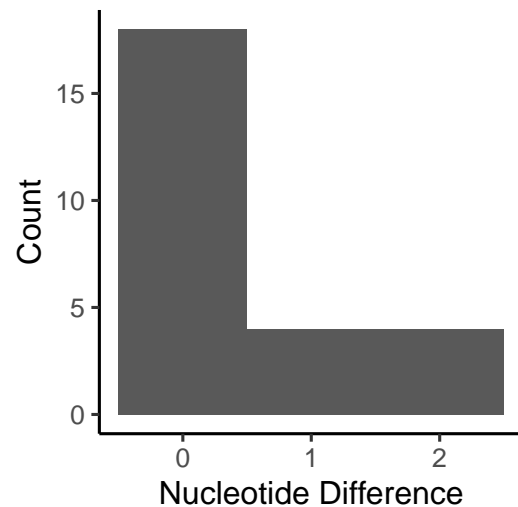
### IGHV3-64\*01

64 sequences assigned  
54 (84.4%) exact matches, in which:  
53 unique CDR3  
6 unique J



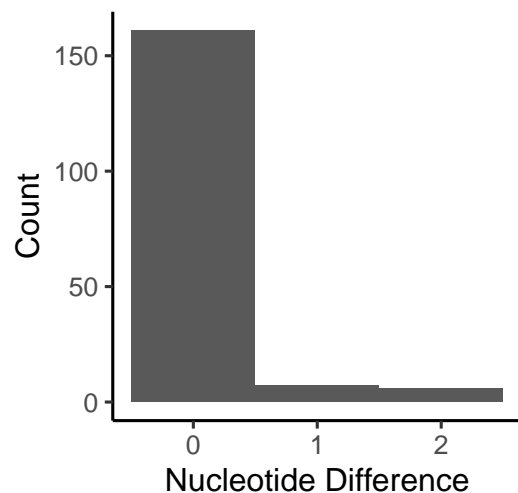
### IGHV3-72\*01

26 sequences assigned  
18 (69.2%) exact matches, in which:  
18 unique CDR3  
5 unique J



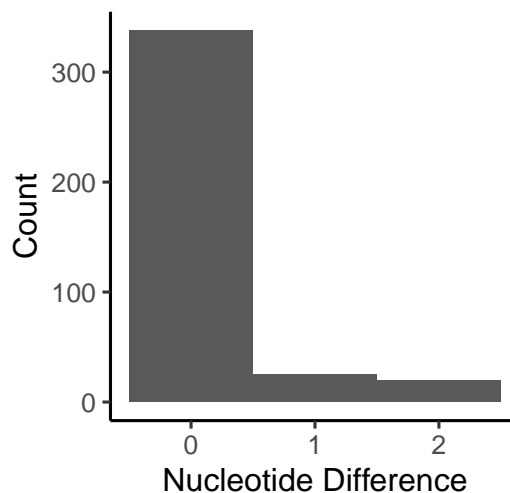
### IGHV3-49\*03\_05

174 sequences assigned  
161 (92.5%) exact matches, in which:  
160 unique CDR3  
6 unique J



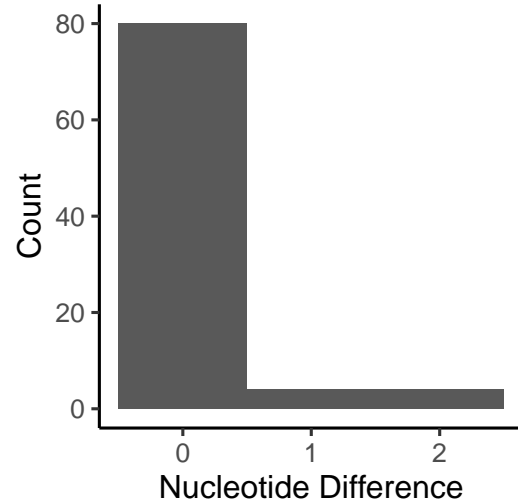
### IGHV3-66\*01

383 sequences assigned  
338 (88.3%) exact matches, in which:  
326 unique CDR3  
6 unique J



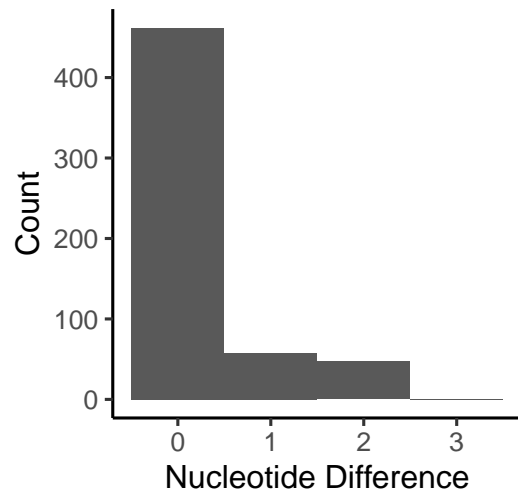
### IGHV3-73\*01\_02

88 sequences assigned  
80 (90.9%) exact matches, in which:  
79 unique CDR3  
6 unique J



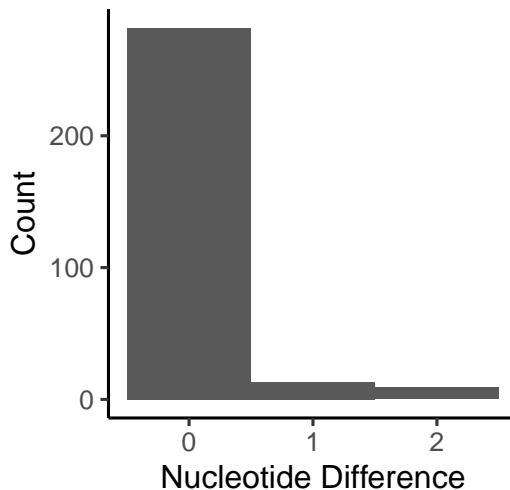
### IGHV3-74\*01\_02

568 sequences assigned  
462 (81.3%) exact matches, in which:  
441 unique CDR3  
6 unique J



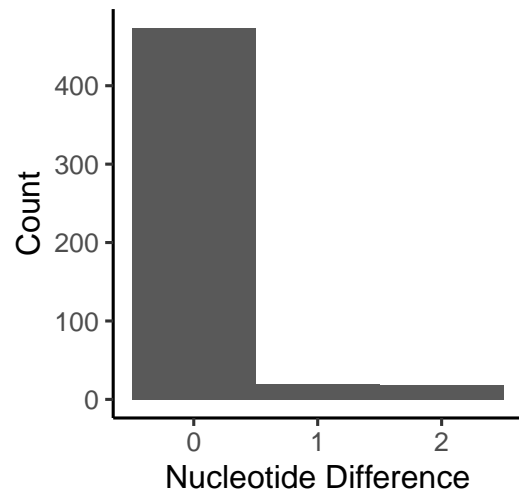
### IGHV4-4\*02\_03

304 sequences assigned  
282 (92.8%) exact matches, in which:  
277 unique CDR3  
6 unique J



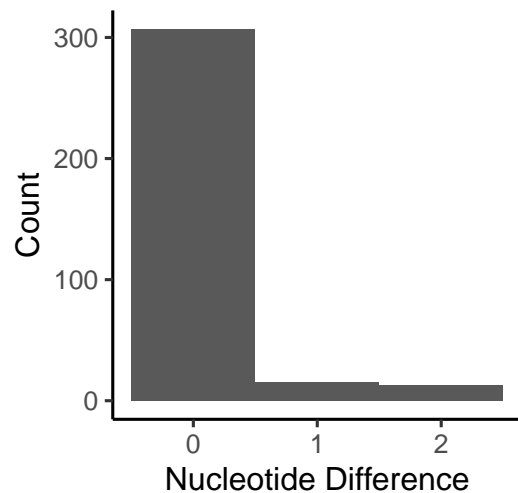
### IGHV4-30-4\*01

512 sequences assigned  
474 (92.6%) exact matches, in which:  
467 unique CDR3  
6 unique J



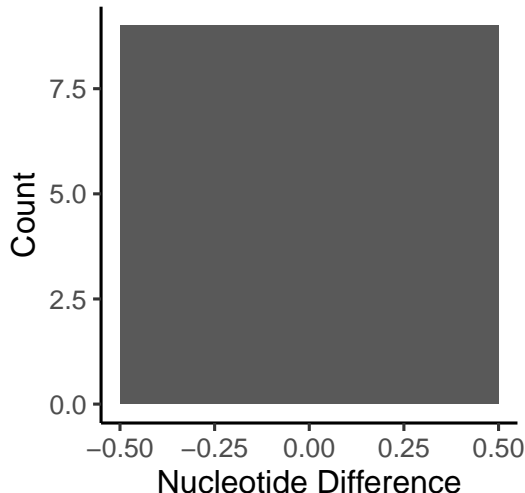
### IGHV3-64D\*06

335 sequences assigned  
307 (91.6%) exact matches, in which:  
302 unique CDR3  
6 unique J



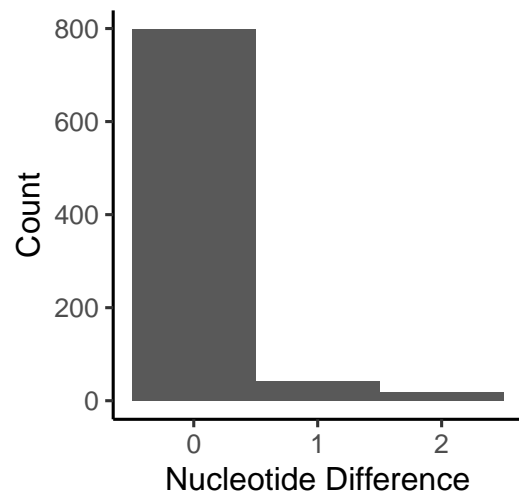
### IGHV4-28\*01\_07

9 sequences assigned  
9 (100%) exact matches, in which:  
9 unique CDR3  
3 unique J



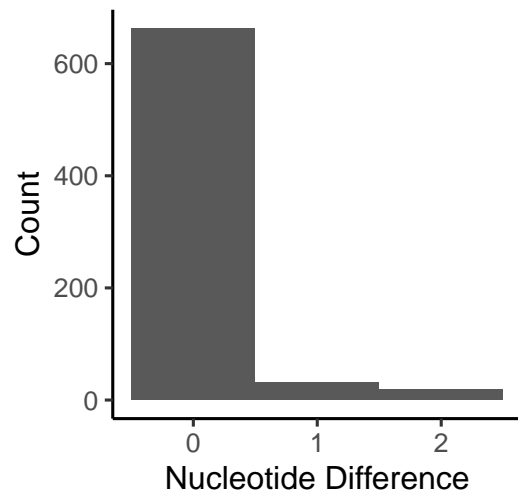
### IGHV4-31\*02

859 sequences assigned  
799 (93%) exact matches, in which:  
787 unique CDR3  
6 unique J



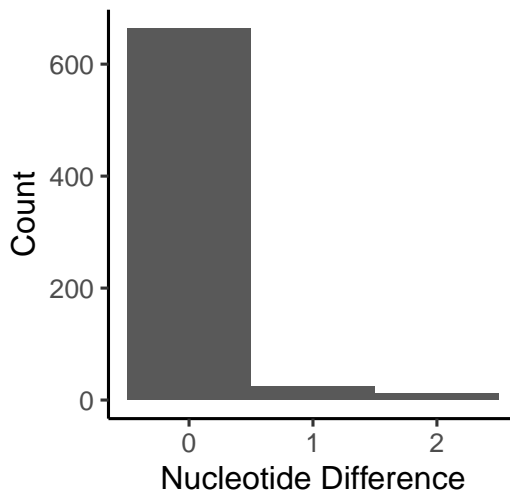
### IGHV4-4\*07

713 sequences assigned  
663 (93%) exact matches, in which:  
635 unique CDR3  
6 unique J



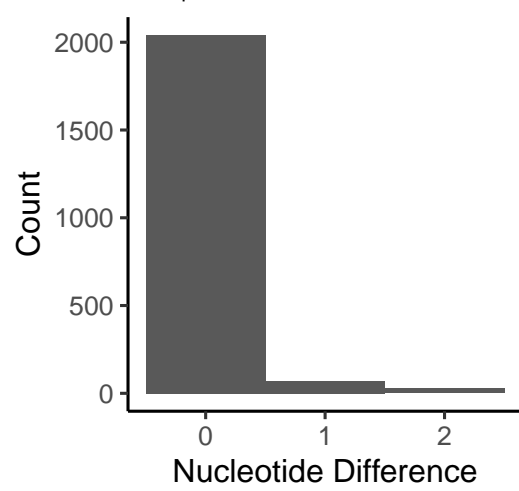
### IGHV4-30-2\*01

700 sequences assigned  
664 (94.9%) exact matches, in which:  
649 unique CDR3  
6 unique J



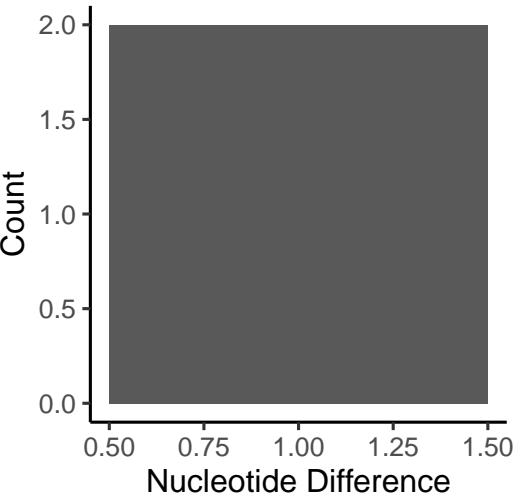
### IGHV4-34\*01\_02

2138 sequences assigned  
2041 (95.5%) exact matches, in which:  
1995 unique CDR3  
6 unique J



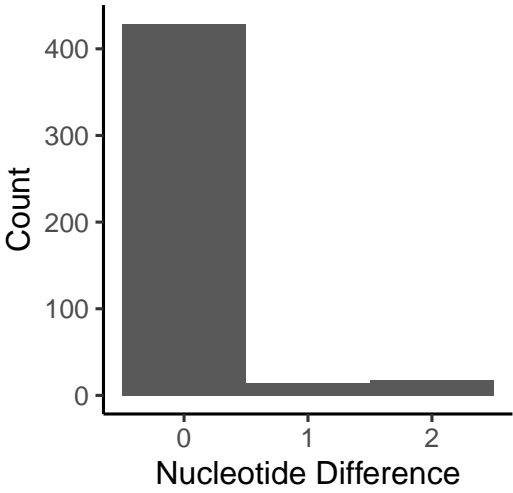
IGHV4-39\*02

2 sequences assigned  
No exact matches.



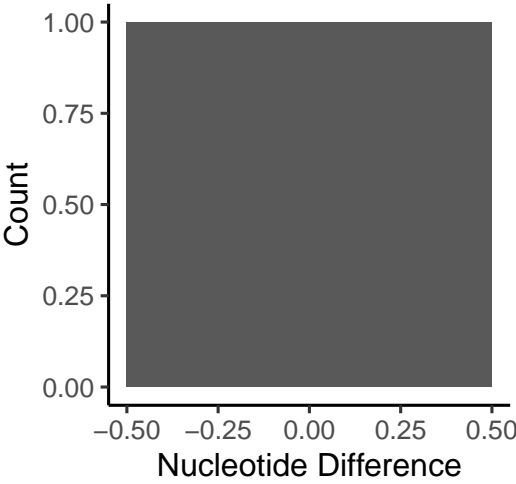
IGHV4-61\*01

461 sequences assigned  
429 (93.1%) exact matches, in which:  
421 unique CDR3  
6 unique J



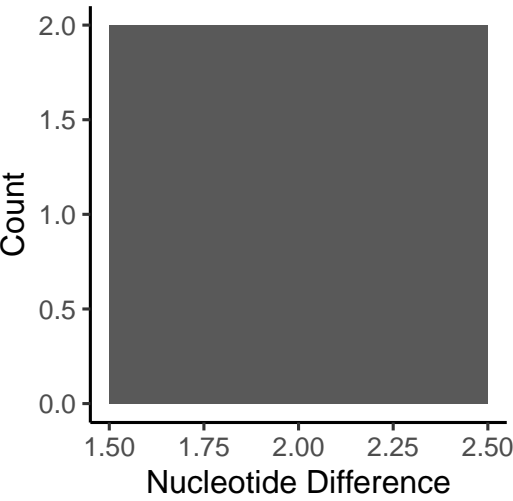
IGHV7-4-1\*01

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



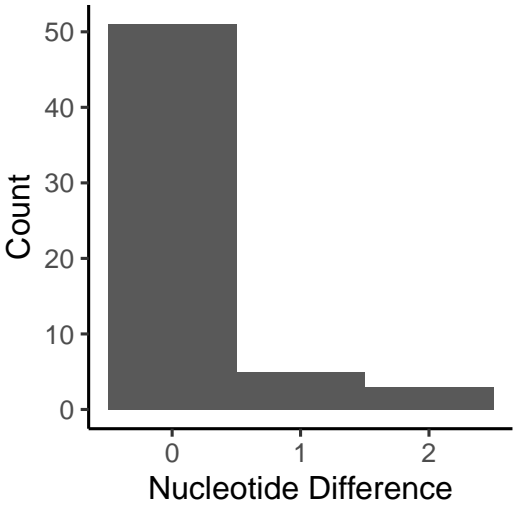
IGHV4-39\*07

2 sequences assigned  
No exact matches.



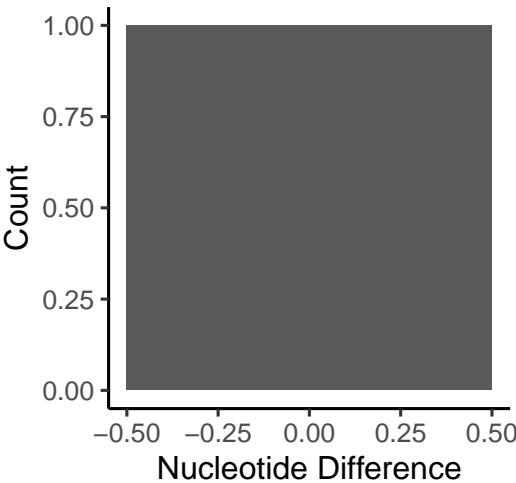
IGHV5-10-1\*01\_03

59 sequences assigned  
51 (86.4%) exact matches, in which:  
50 unique CDR3  
5 unique J



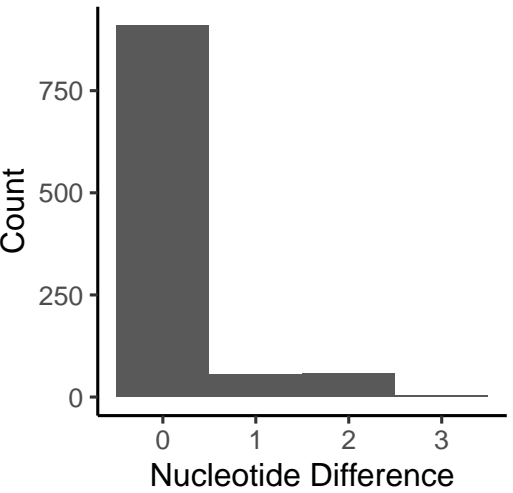
IGHV7-81\*01

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



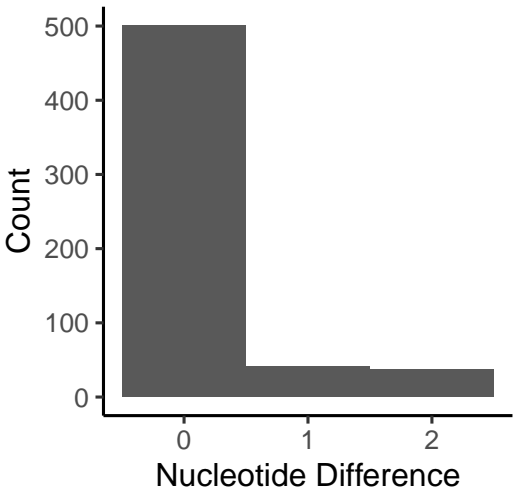
IGHV4-59\*08

1027 sequences assigned  
910 (88.6%) exact matches, in which:  
891 unique CDR3  
6 unique J



IGHV6-1\*01\_02

579 sequences assigned  
501 (86.5%) exact matches, in which:  
486 unique CDR3  
6 unique J







Warning – no inferred sequences found.