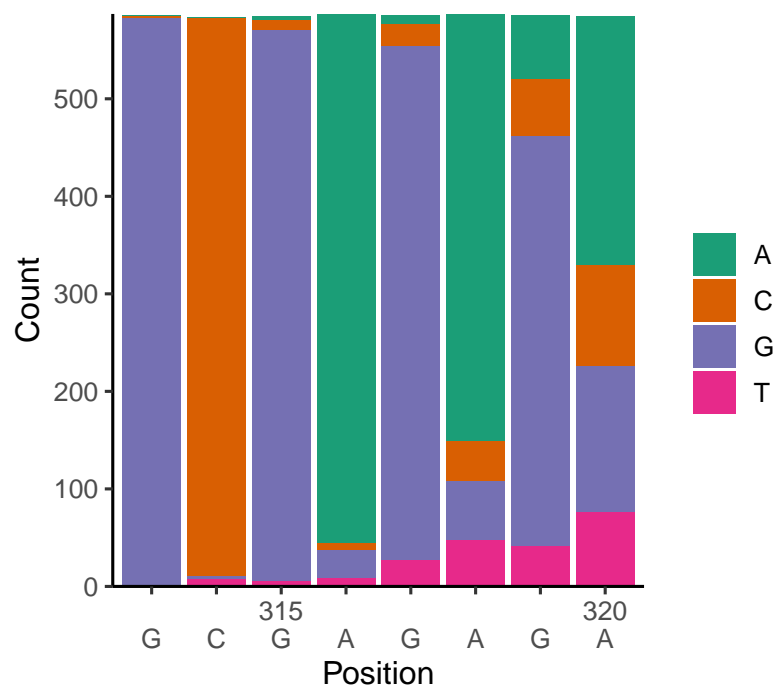
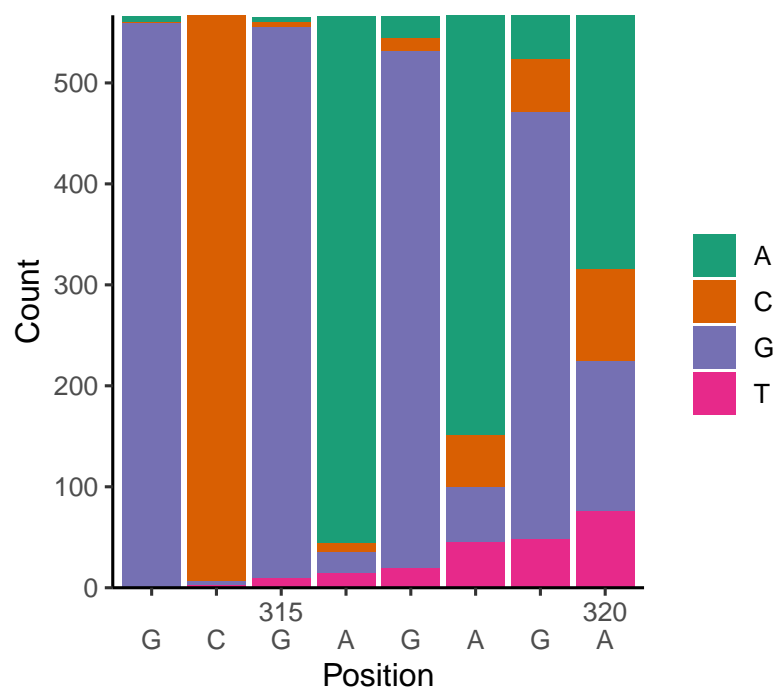


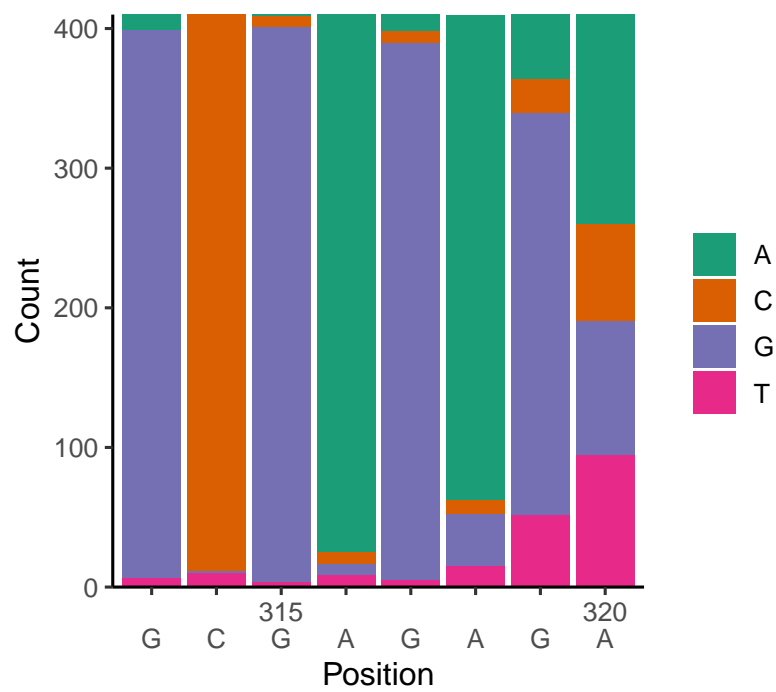
Gene IGHV1-69\*08\_C191T



Gene IGHV1-69\*17\_G163A



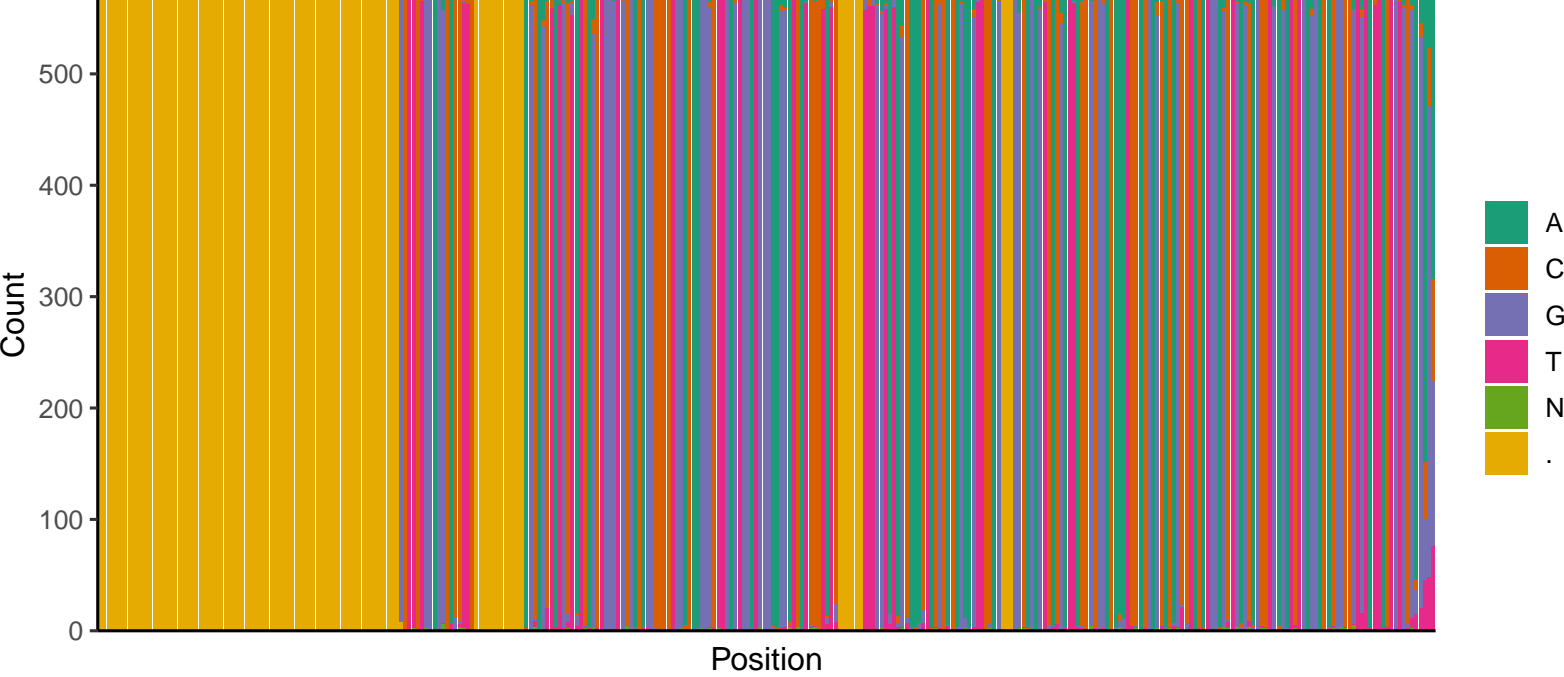
Gene IGHV4-38-2\*02\_A70G



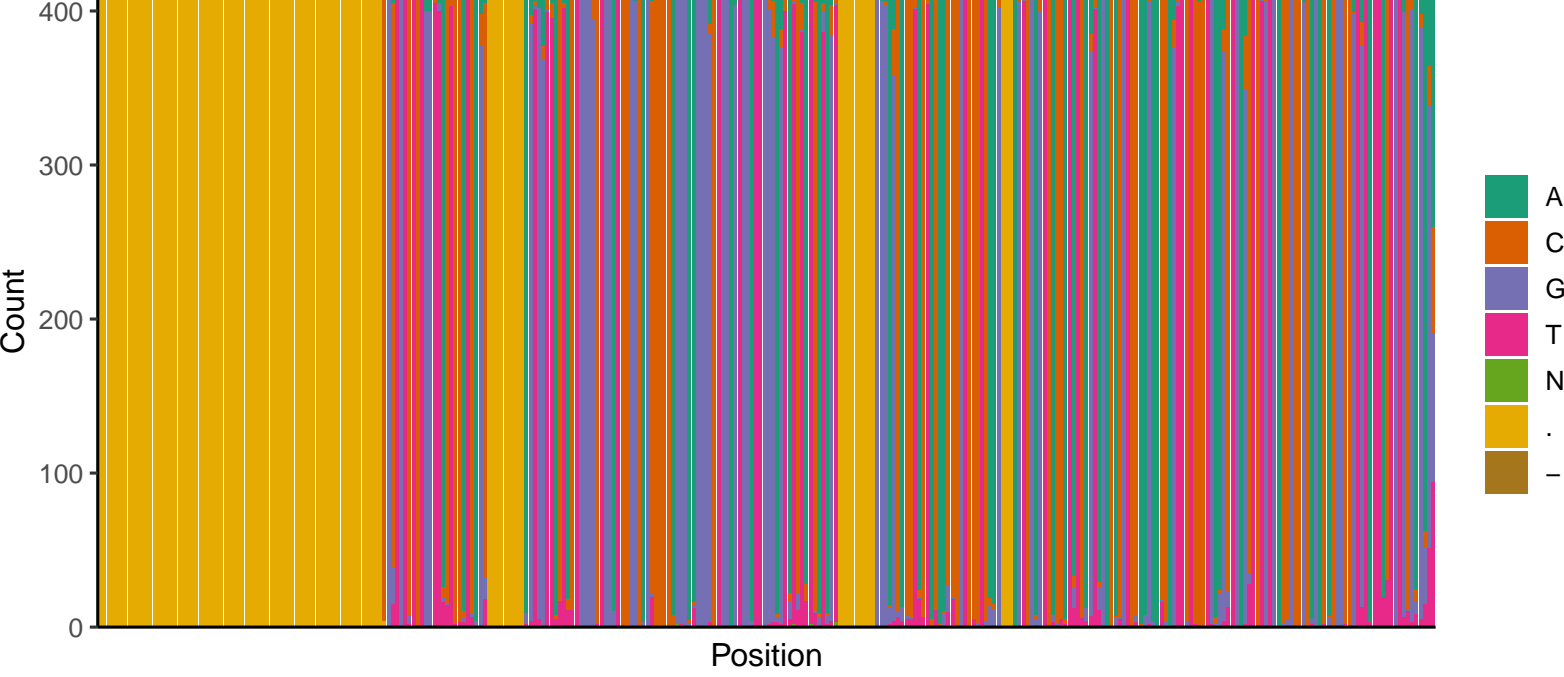
Gene IGHV1-69\*08\_C191T



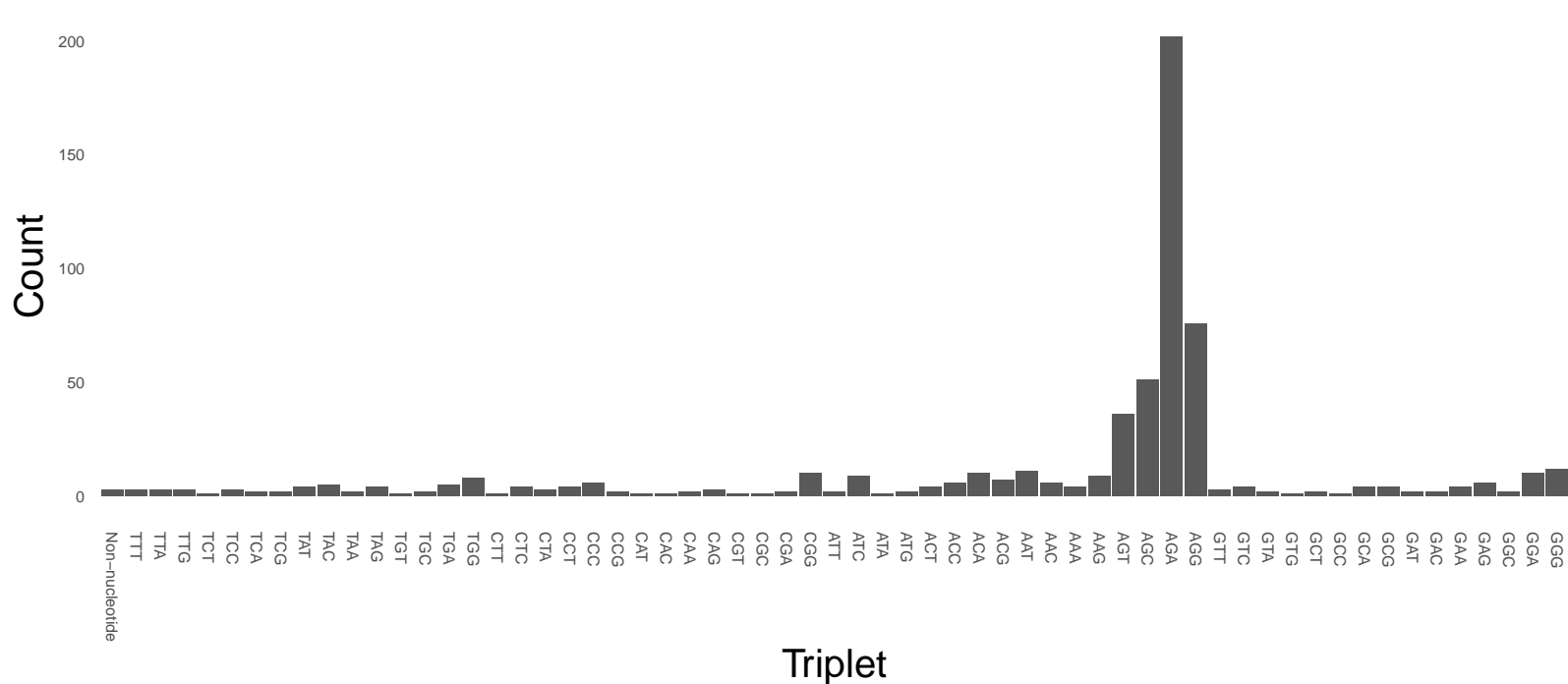
Gene IGHV1-69\*17\_G163A



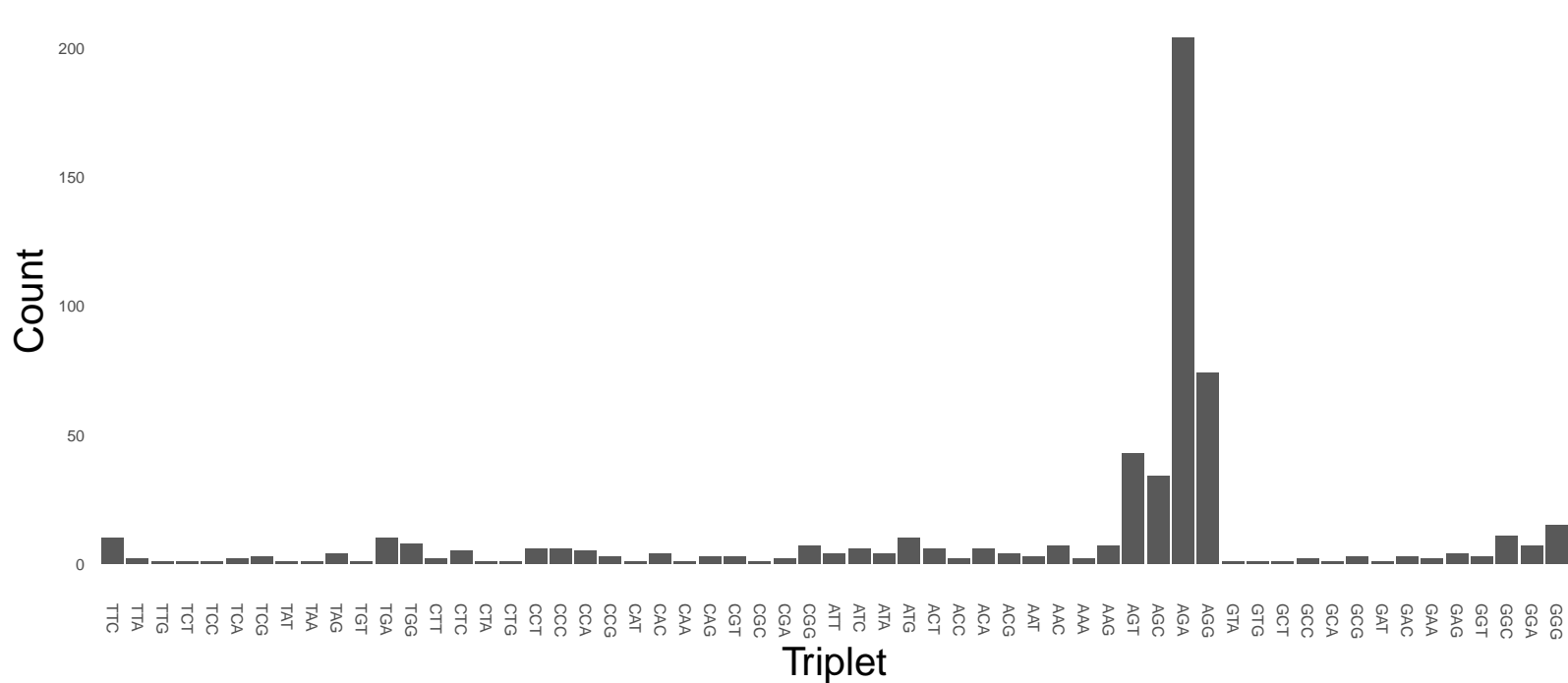
Gene IGHV4-38-2\*02\_A70G



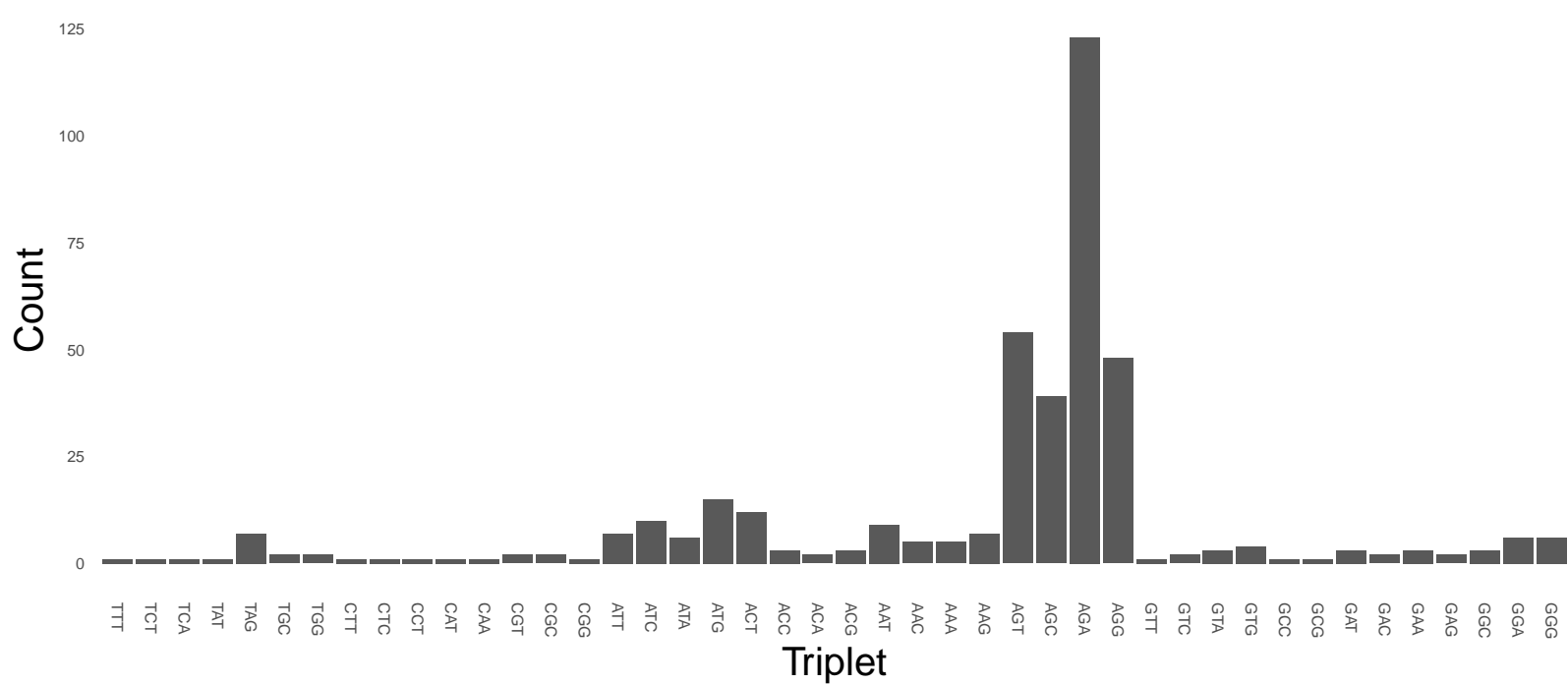
IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet



IGHV1-69\*17\_G163A- Final 3 nucleotides as a triplet

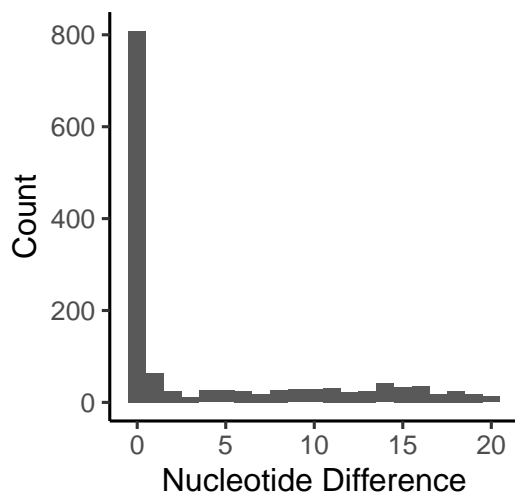


IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



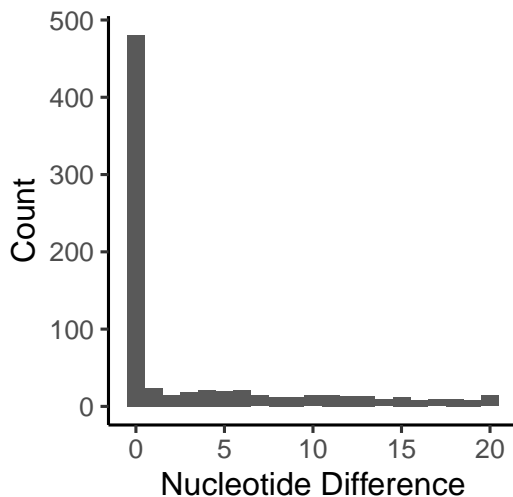
### IGHV1-2\*02

1440 sequences assigned  
809 (56.2%) exact matches, in which:  
805 unique CDR3  
6 unique J



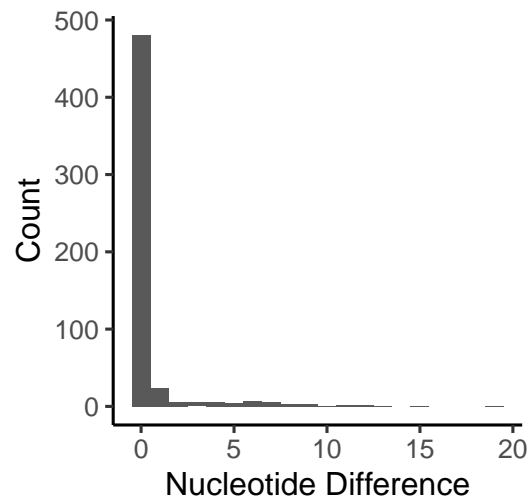
### IGHV1-3\*01\_05

811 sequences assigned  
481 (59.3%) exact matches, in which:  
481 unique CDR3  
7 unique J



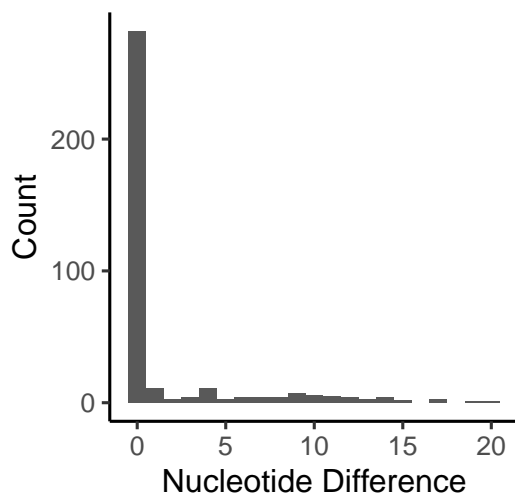
### IGHV1-24\*01

558 sequences assigned  
481 (86.2%) exact matches, in which:  
477 unique CDR3  
7 unique J



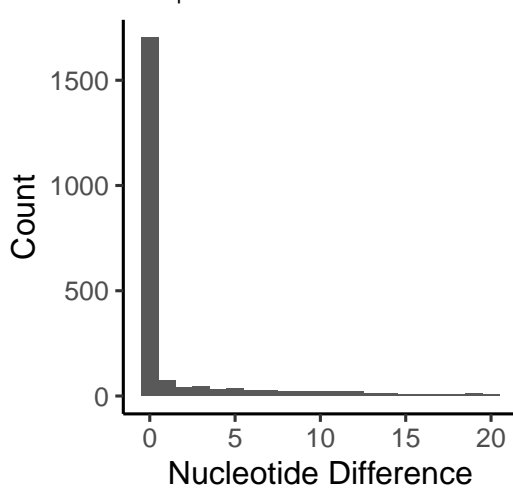
### IGHV1-2\*04

364 sequences assigned  
282 (77.5%) exact matches, in which:  
281 unique CDR3  
7 unique J



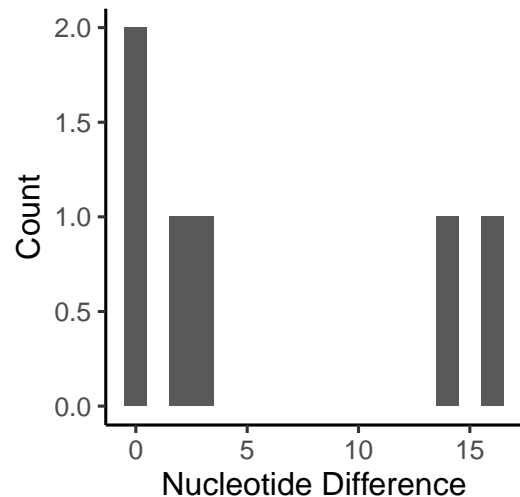
### IGHV1-8\*01

2190 sequences assigned  
1702 (77.7%) exact matches, in which:  
1697 unique CDR3  
7 unique J



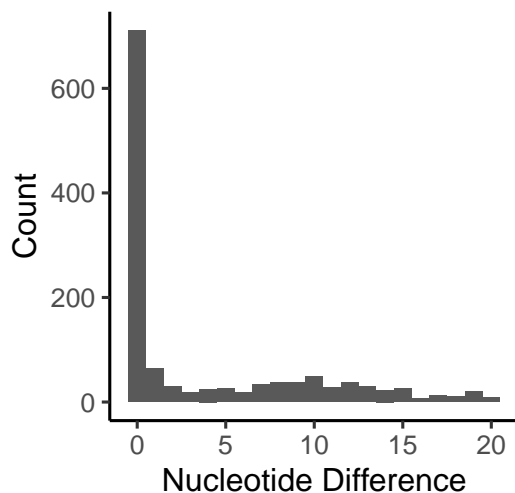
### IGHV1-45\*02

6 sequences assigned  
2 (33.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



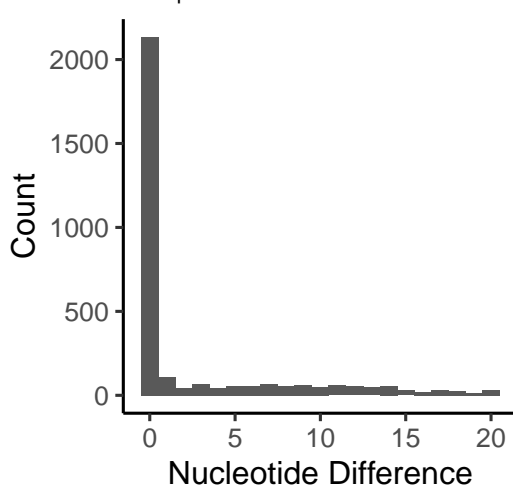
### IGHV1-2\*06

1355 sequences assigned  
711 (52.5%) exact matches, in which:  
706 unique CDR3  
7 unique J



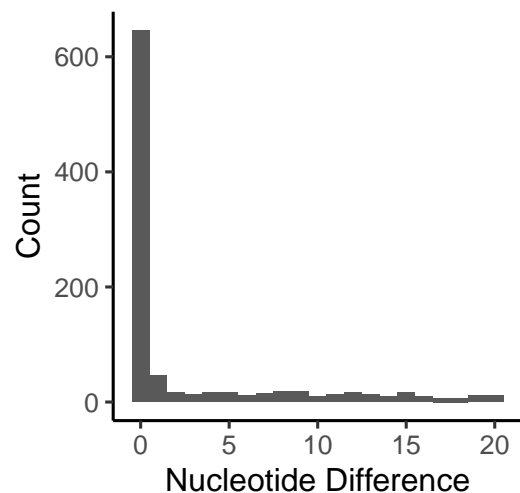
### IGHV1-18\*01

3247 sequences assigned  
2134 (65.7%) exact matches, in which:  
2127 unique CDR3  
7 unique J



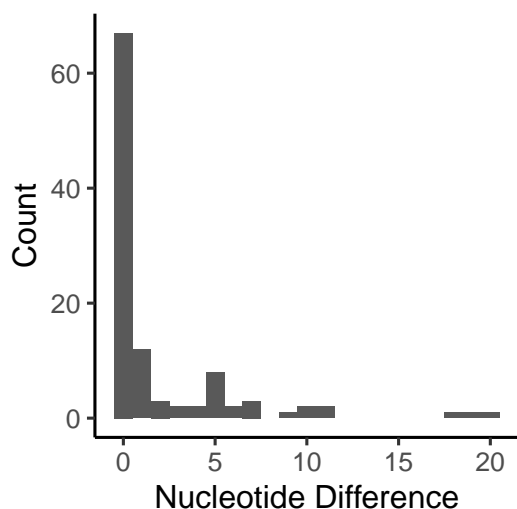
### IGHV1-46\*01

1004 sequences assigned  
646 (64.3%) exact matches, in which:  
643 unique CDR3  
7 unique J



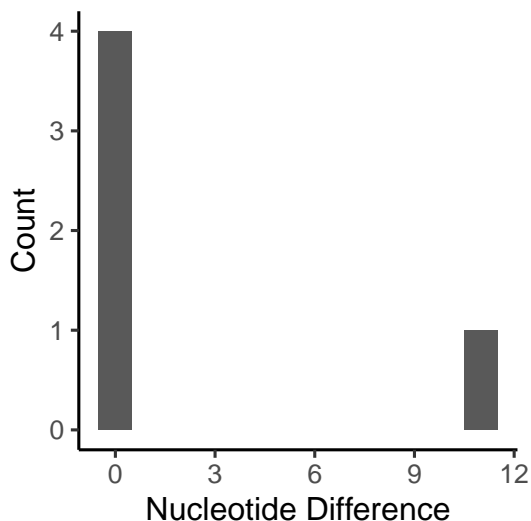
## IGHV1-58\*02

108 sequences assigned  
67 (62%) exact matches, in which:  
66 unique CDR3  
5 unique J



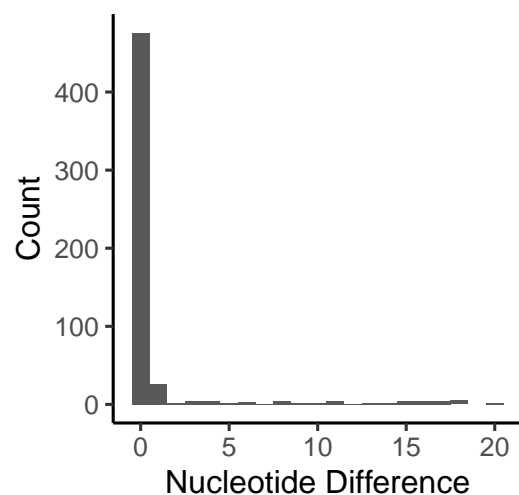
## IGHV1-69-2\*01

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



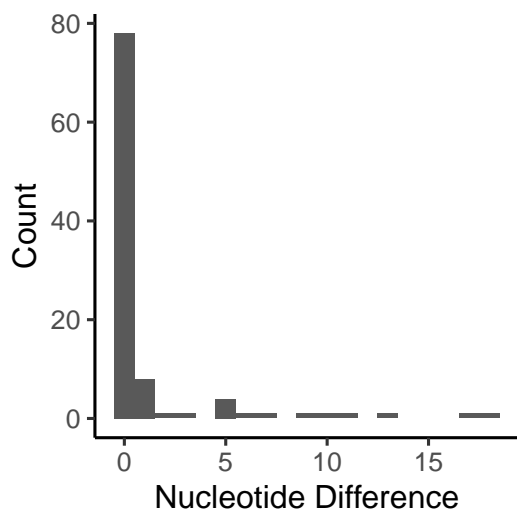
## IGHV1-69\*17\_G163A

567 sequences assigned  
476 (84%) exact matches, in which:  
471 unique CDR3  
6 unique J



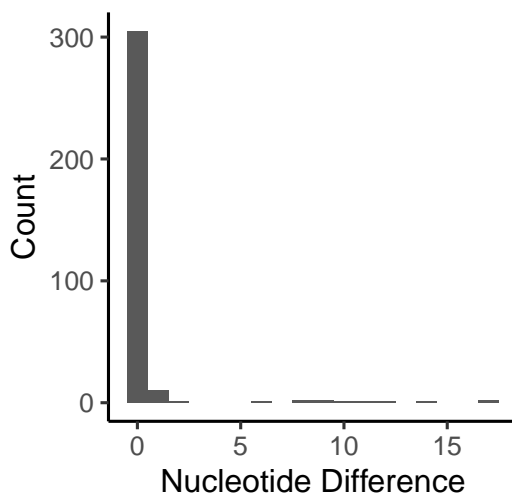
## IGHV1-58\*01\_03

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



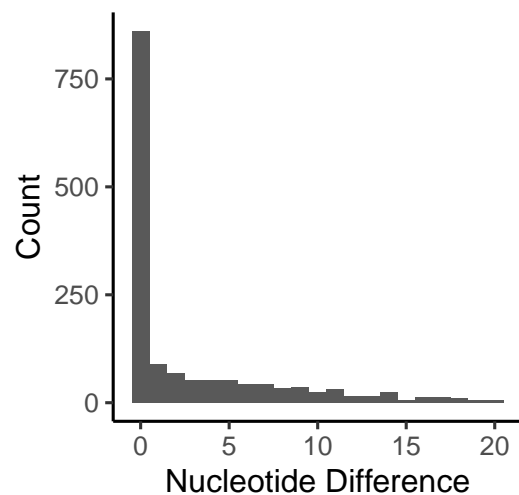
## IGHV1-69\*06\_14

331 sequences assigned  
305 (92.1%) exact matches, in which:  
305 unique CDR3  
6 unique J



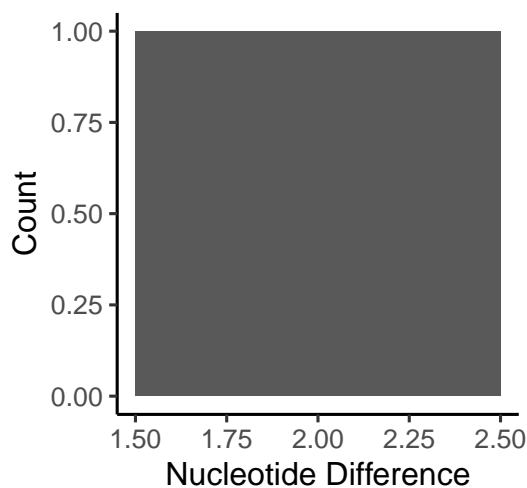
## IGHV2-5\*02

1527 sequences assigned  
861 (56.4%) exact matches, in which:  
857 unique CDR3  
7 unique J



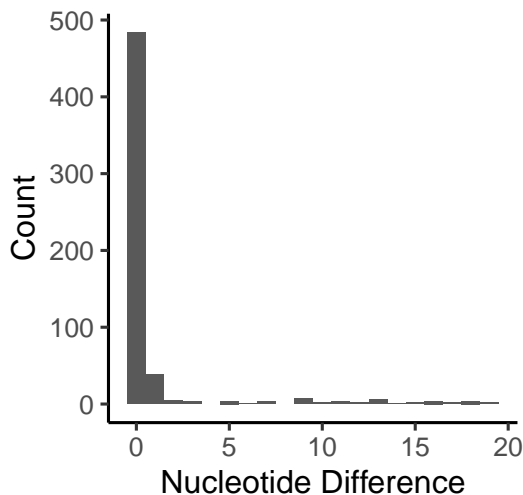
## IGHV1-68\*02

1 sequences assigned  
No exact matches.



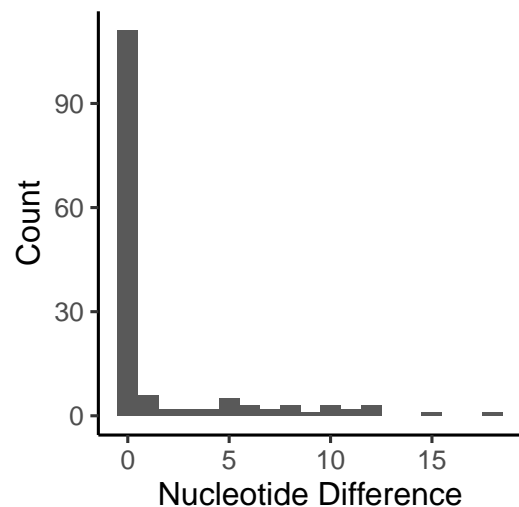
## IGHV1-69\*08\_C191T

587 sequences assigned  
484 (82.5%) exact matches, in which:  
484 unique CDR3  
6 unique J



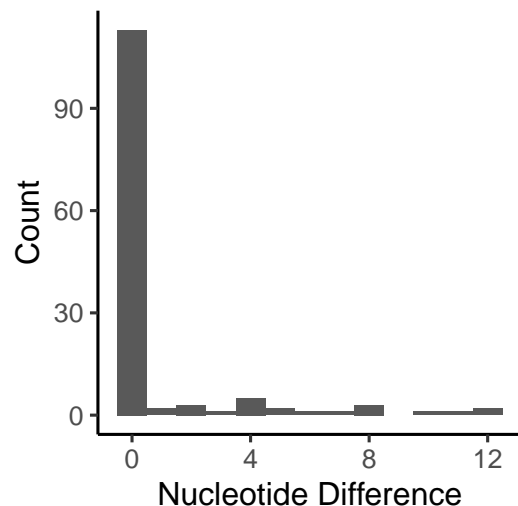
## IGHV2-26\*01

148 sequences assigned  
111 (75%) exact matches, in which:  
111 unique CDR3  
6 unique J



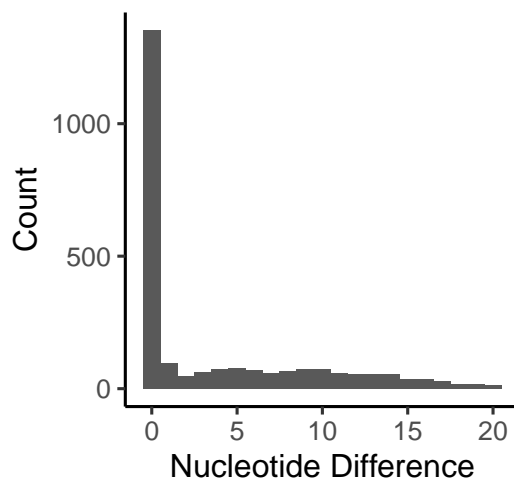
### IGHV2-70\*01

136 sequences assigned  
113 (83.1%) exact matches, in which:  
113 unique CDR3  
6 unique J



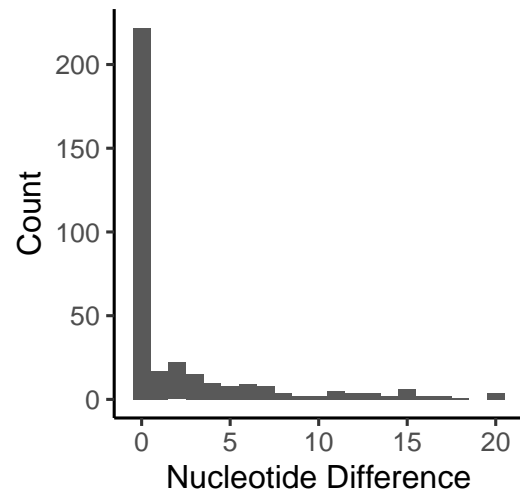
### IGHV3-11\*01

2506 sequences assigned  
1352 (54%) exact matches, in which:  
1312 unique CDR3  
7 unique J



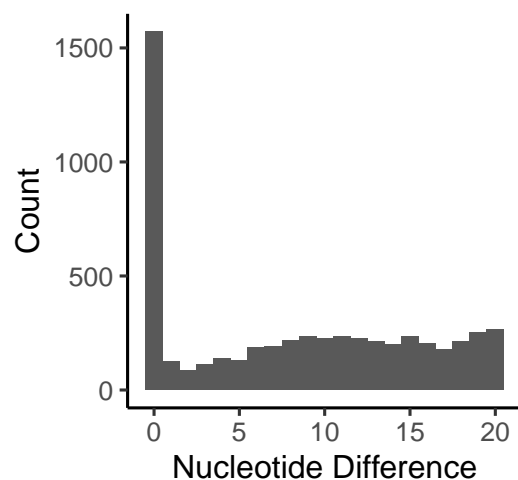
### IGHV3-20\*01\_02

352 sequences assigned  
222 (63.1%) exact matches, in which:  
208 unique CDR3  
7 unique J



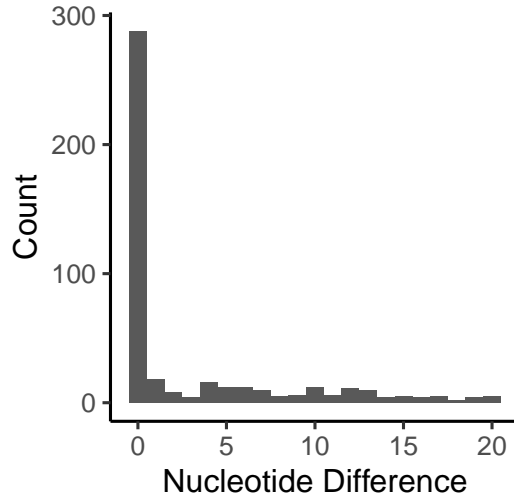
### IGHV3-7\*01

6475 sequences assigned  
1571 (24.3%) exact matches, in which:  
1523 unique CDR3  
7 unique J



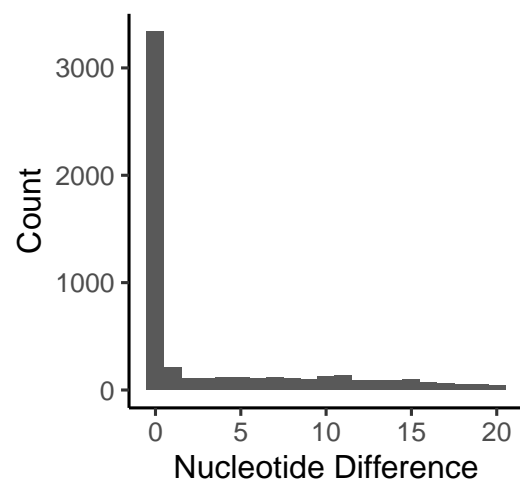
### IGHV3-13\*01

473 sequences assigned  
288 (60.9%) exact matches, in which:  
282 unique CDR3  
6 unique J



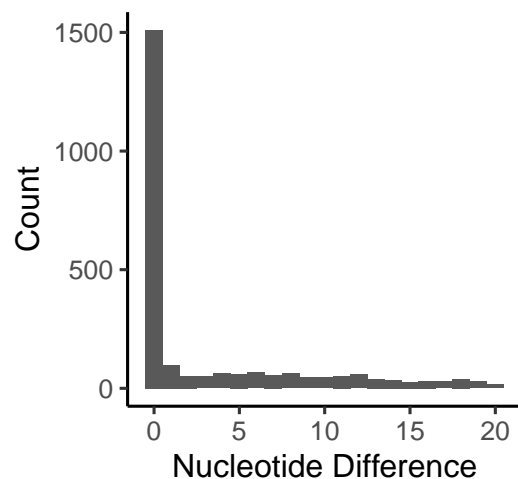
### IGHV3-21\*01\_02

5585 sequences assigned  
3337 (59.7%) exact matches, in which:  
3197 unique CDR3  
7 unique J



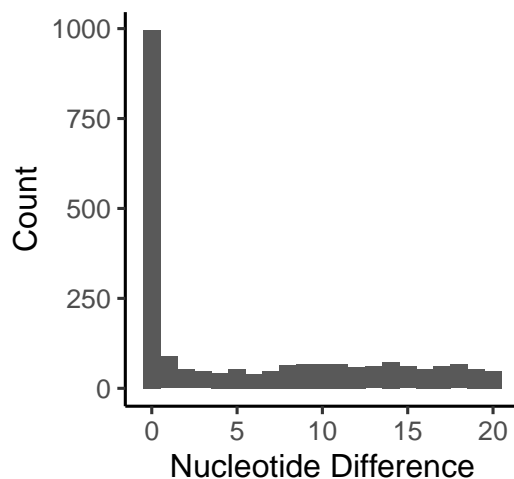
### IGHV3-9\*01

2568 sequences assigned  
1510 (58.8%) exact matches, in which:  
1478 unique CDR3  
7 unique J



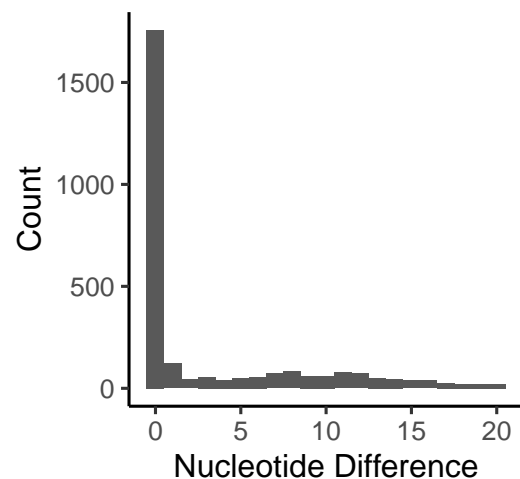
### IGHV3-15\*01\_02

2393 sequences assigned  
996 (41.6%) exact matches, in which:  
964 unique CDR3  
7 unique J



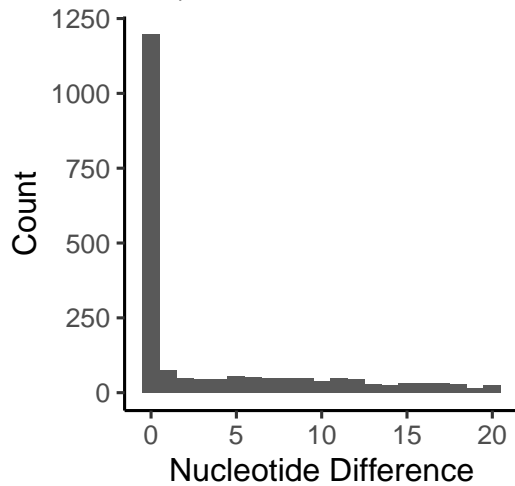
### IGHV3-30-3\*01

2987 sequences assigned  
1757 (58.8%) exact matches, in which:  
1715 unique CDR3  
7 unique J



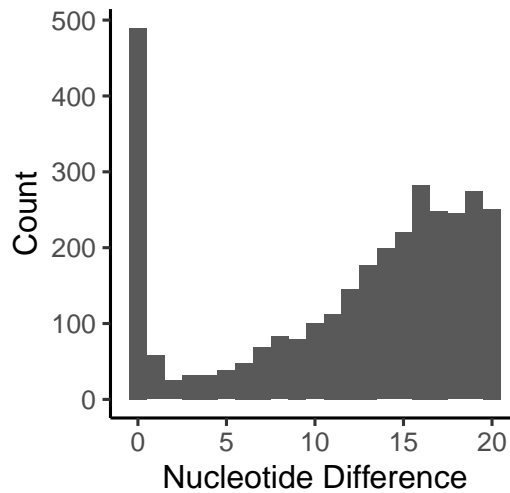
### IGHV3-33\*01

2110 sequences assigned  
1197 (56.7%) exact matches, in which:  
1163 unique CDR3  
7 unique J



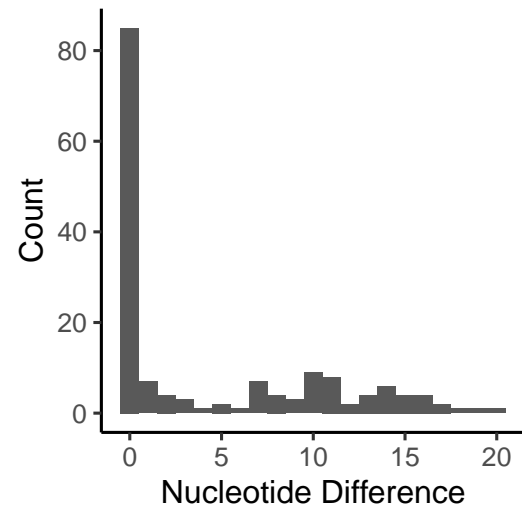
### IGHV3-48\*01

4611 sequences assigned  
490 (10.6%) exact matches, in which:  
468 unique CDR3  
6 unique J



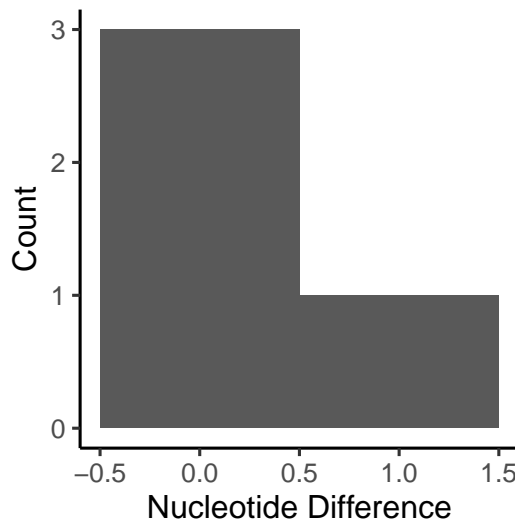
### IGHV3-49\*03\_05

189 sequences assigned  
85 (45%) exact matches, in which:  
83 unique CDR3  
5 unique J



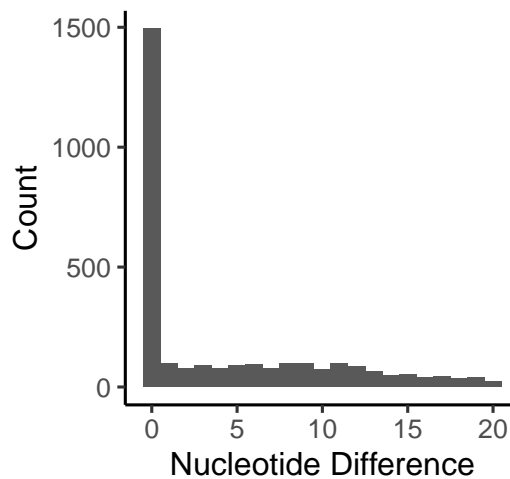
### IGHV3-35\*01

4 sequences assigned  
3 (75%) exact matches, in which:  
3 unique CDR3  
2 unique J



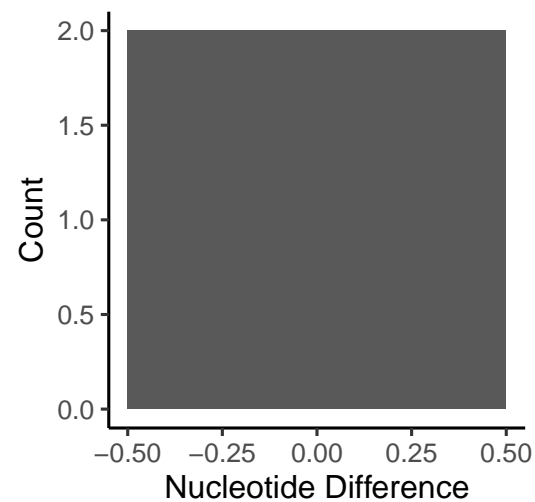
### IGHV3-48\*03

3025 sequences assigned  
1494 (49.4%) exact matches, in which:  
1460 unique CDR3  
7 unique J



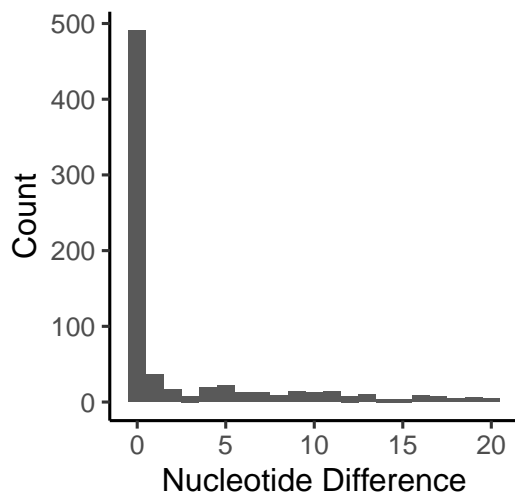
### IGHV3-52\*01\_03

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



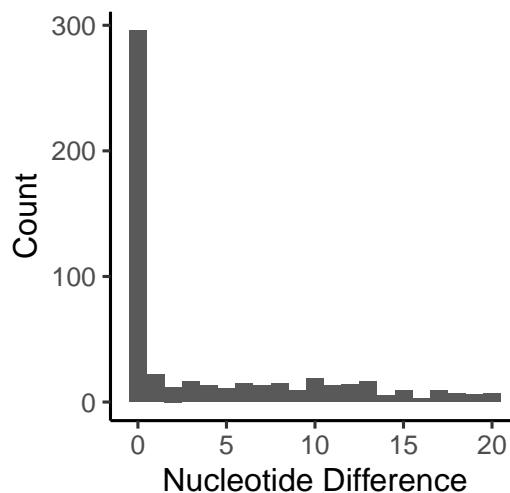
### IGHV3-43\*02

762 sequences assigned  
491 (64.4%) exact matches, in which:  
477 unique CDR3  
7 unique J



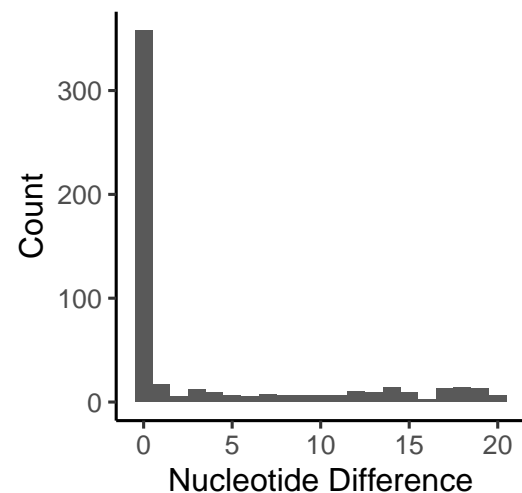
### IGHV3-49\*04

556 sequences assigned  
296 (53.2%) exact matches, in which:  
292 unique CDR3  
7 unique J



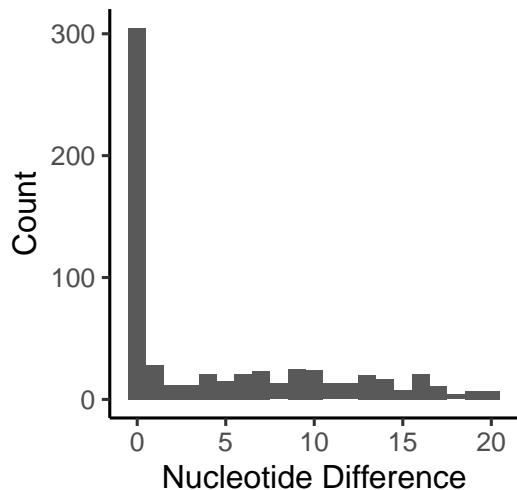
### IGHV3-53\*04

599 sequences assigned  
358 (59.8%) exact matches, in which:  
347 unique CDR3  
7 unique J



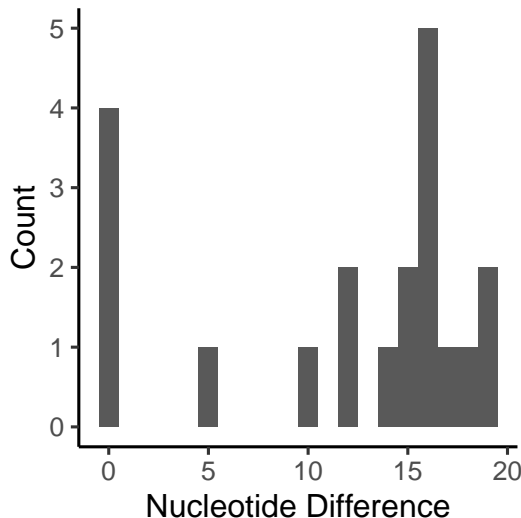
### IGHV3-53\*01\_02

652 sequences assigned  
305 (46.8%) exact matches, in which:  
297 unique CDR3  
6 unique J



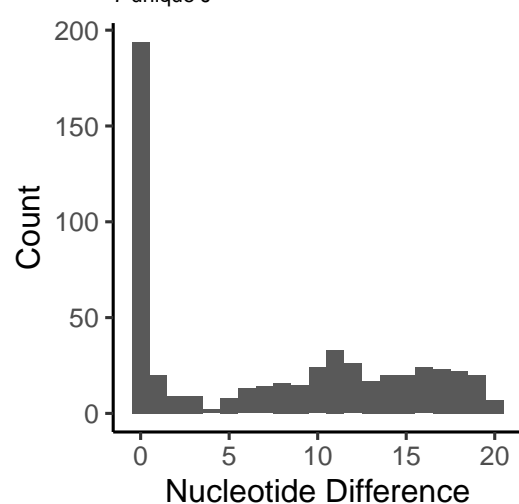
### IGHV3-69-1\*01

108 sequences assigned  
4 (3.7%) exact matches, in which:  
4 unique CDR3  
2 unique J



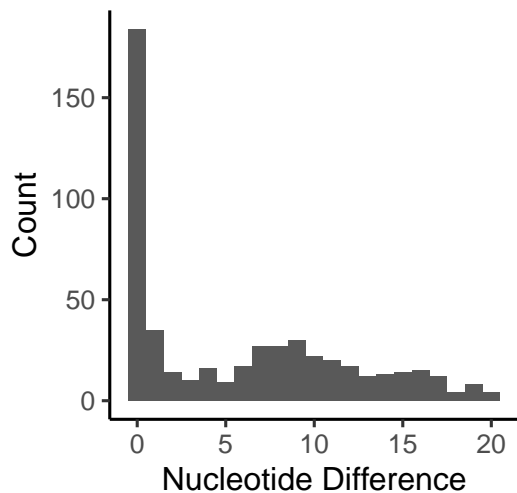
### IGHV3-73\*01\_02

564 sequences assigned  
194 (34.4%) exact matches, in which:  
190 unique CDR3  
7 unique J



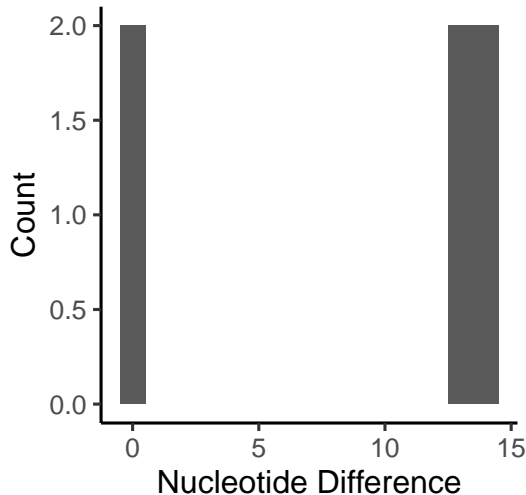
### IGHV3-64\*01

602 sequences assigned  
184 (30.6%) exact matches, in which:  
175 unique CDR3  
5 unique J



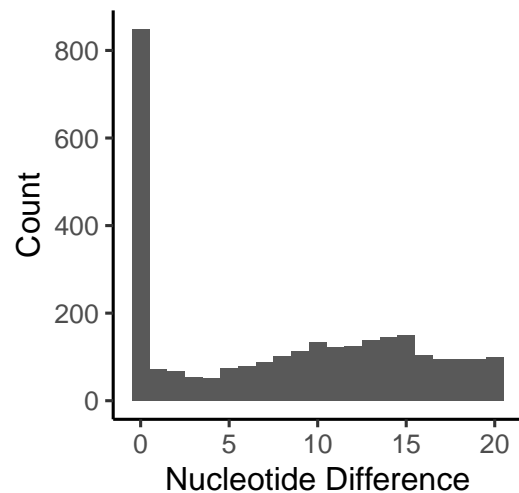
### IGHV3-69-1\*02

18 sequences assigned  
2 (11.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



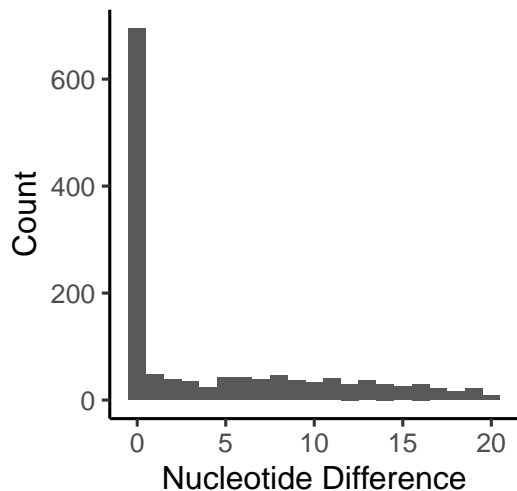
### IGHV3-74\*01\_02

3175 sequences assigned  
849 (26.7%) exact matches, in which:  
824 unique CDR3  
7 unique J



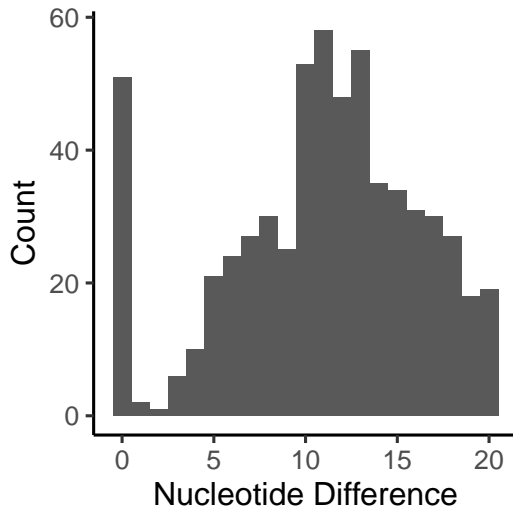
### IGHV3-66\*02

1477 sequences assigned  
695 (47.1%) exact matches, in which:  
659 unique CDR3  
6 unique J



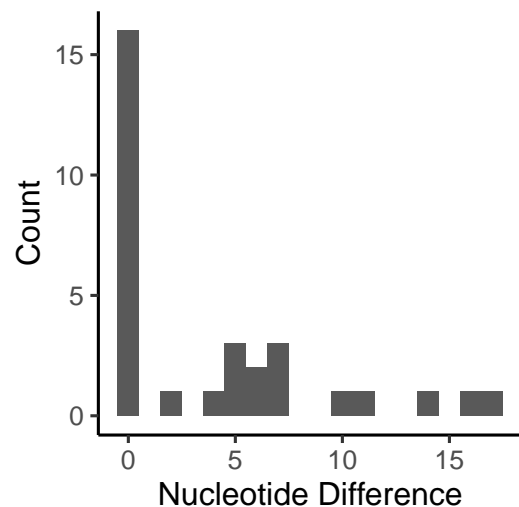
### IGHV3-72\*01

658 sequences assigned  
51 (7.8%) exact matches, in which:  
51 unique CDR3  
6 unique J



### IGHV3-43D\*04

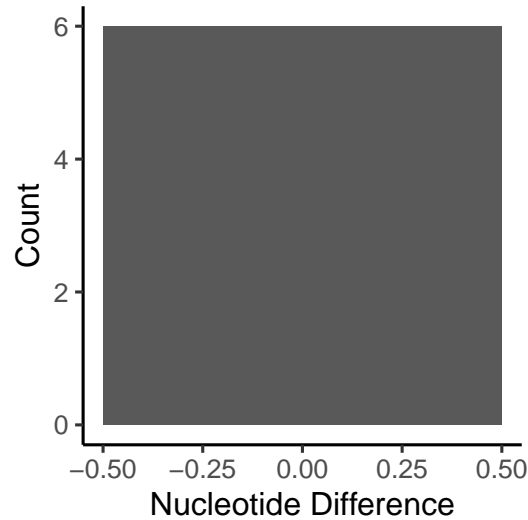
32 sequences assigned  
16 (50%) exact matches, in which:  
16 unique CDR3  
2 unique J





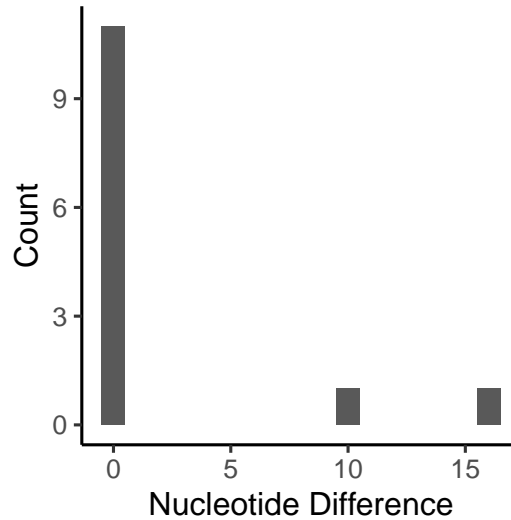
### IGHV3-64D\*06

6 sequences assigned  
6 (100%) exact matches, in which:  
6 unique CDR3  
4 unique J



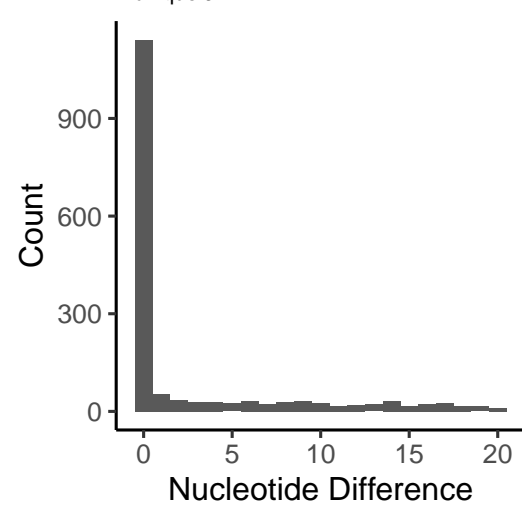
### IGHV4-28\*01\_07

13 sequences assigned  
11 (84.6%) exact matches, in which:  
9 unique CDR3  
3 unique J



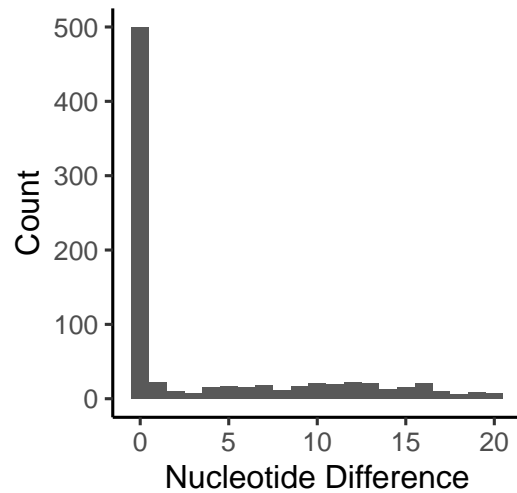
### IGHV4-31\*03\_04

1718 sequences assigned  
1142 (66.5%) exact matches, in which:  
1117 unique CDR3  
7 unique J



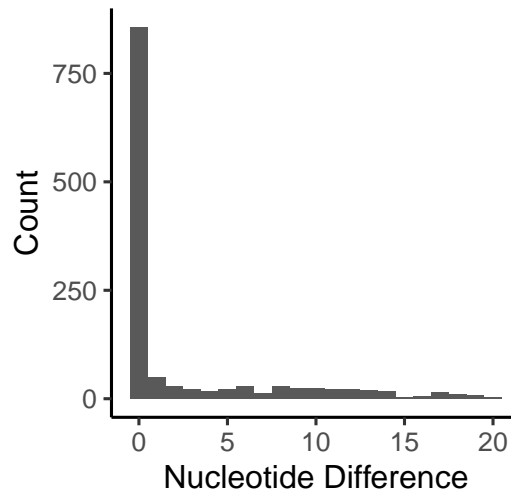
### IGHV4-4\*07

872 sequences assigned  
500 (57.3%) exact matches, in which:  
482 unique CDR3  
6 unique J



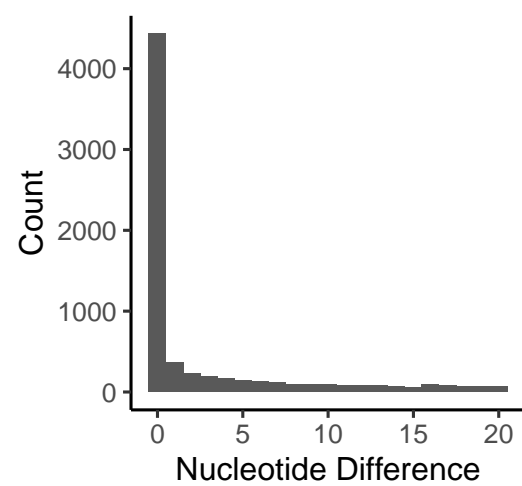
### IGHV4-30-4\*01

1280 sequences assigned  
857 (67%) exact matches, in which:  
843 unique CDR3  
7 unique J



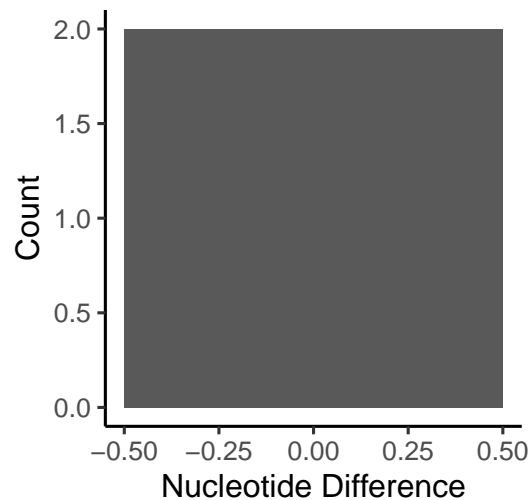
### IGHV4-34\*01\_02

7317 sequences assigned  
4432 (60.6%) exact matches, in which:  
4260 unique CDR3  
7 unique J



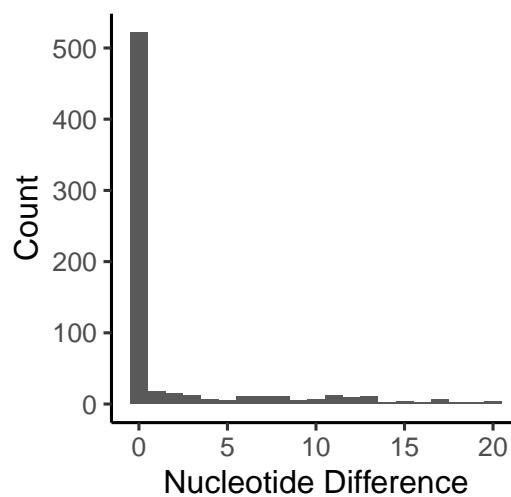
### IGHV4-28\*03

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



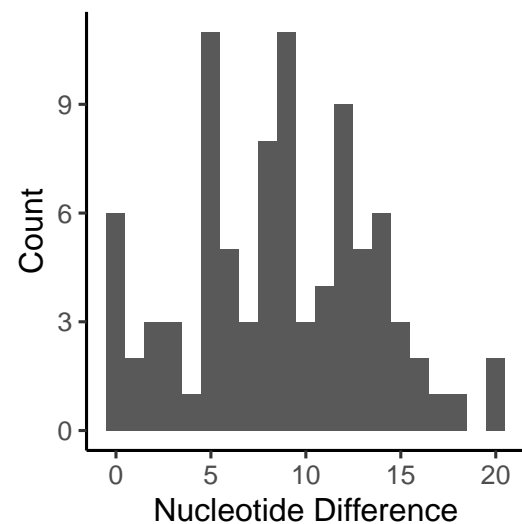
### IGHV4-30-2\*01

693 sequences assigned  
522 (75.3%) exact matches, in which:  
505 unique CDR3  
7 unique J



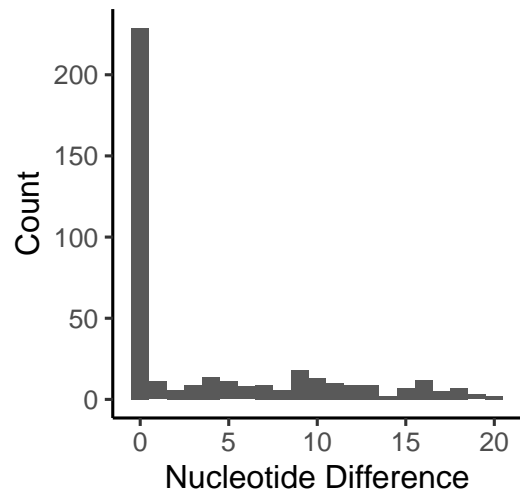
### IGHV4-38-2\*02

97 sequences assigned  
6 (6.2%) exact matches, in which:  
6 unique CDR3  
3 unique J



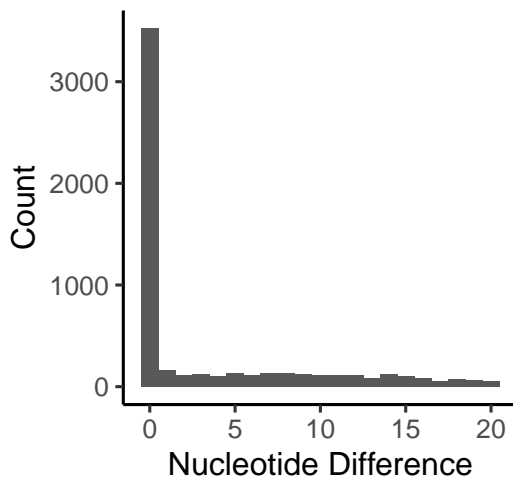
### IGHV4-38-2\*02\_A70G

410 sequences assigned  
229 (55.9%) exact matches, in which:  
229 unique CDR3  
5 unique J



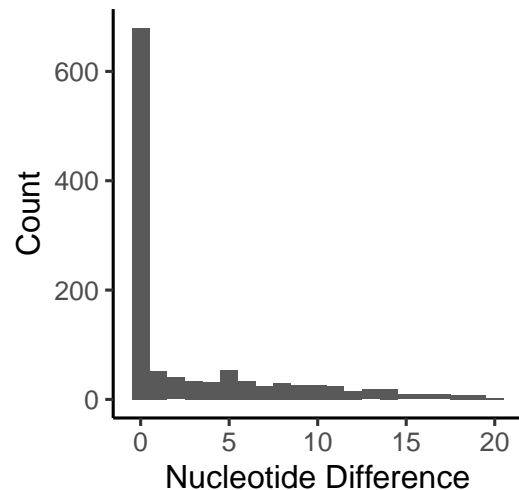
### IGHV4-59\*01\_07

5932 sequences assigned  
3524 (59.4%) exact matches, in which:  
3410 unique CDR3  
7 unique J



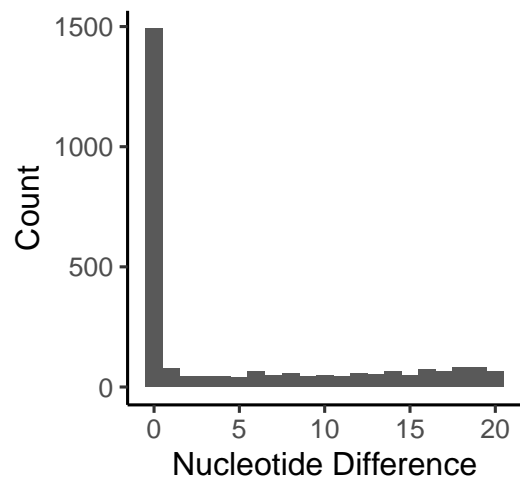
### IGHV5-51\*01\_03

1193 sequences assigned  
680 (57%) exact matches, in which:  
679 unique CDR3  
7 unique J



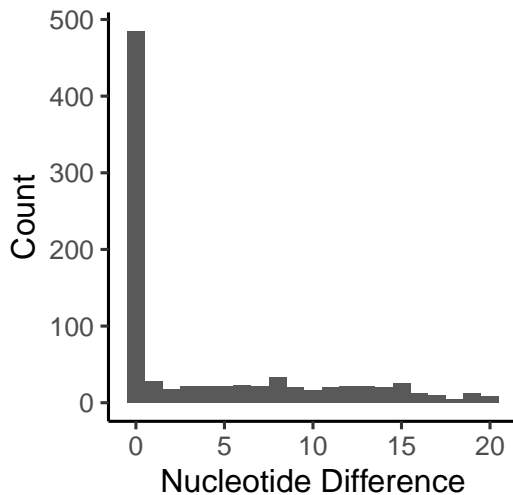
### IGHV4-39\*07

3497 sequences assigned  
1491 (42.6%) exact matches, in which:  
1437 unique CDR3  
6 unique J



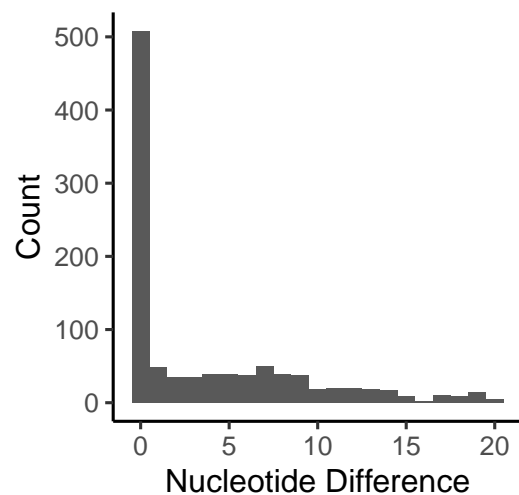
### IGHV4-61\*01

934 sequences assigned  
485 (51.9%) exact matches, in which:  
477 unique CDR3  
7 unique J



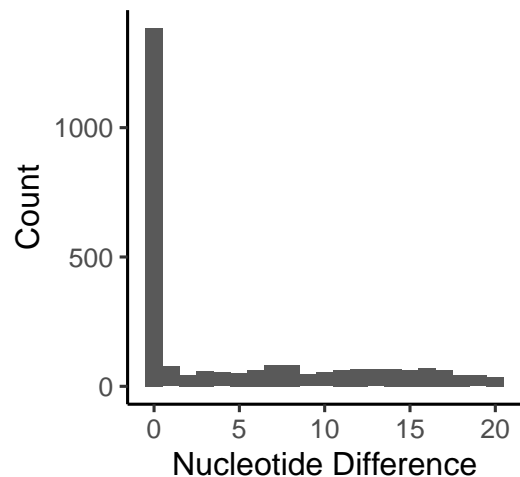
### IGHV6-1\*01\_02

1030 sequences assigned  
508 (49.3%) exact matches, in which:  
501 unique CDR3  
7 unique J



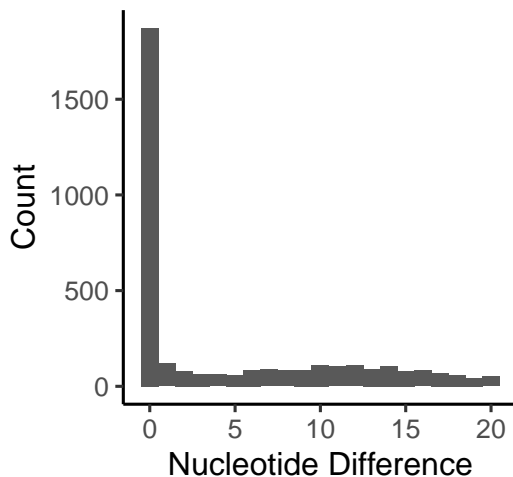
### IGHV4-39\*01\_05

3357 sequences assigned  
1385 (41.3%) exact matches, in which:  
1349 unique CDR3  
7 unique J



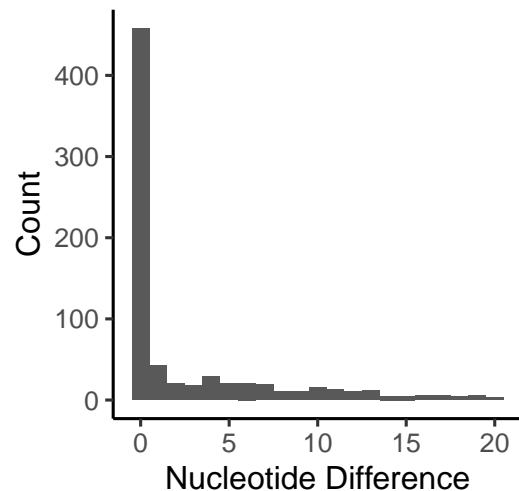
### IGHV4-61\*02

3706 sequences assigned  
1872 (50.5%) exact matches, in which:  
1819 unique CDR3  
6 unique J

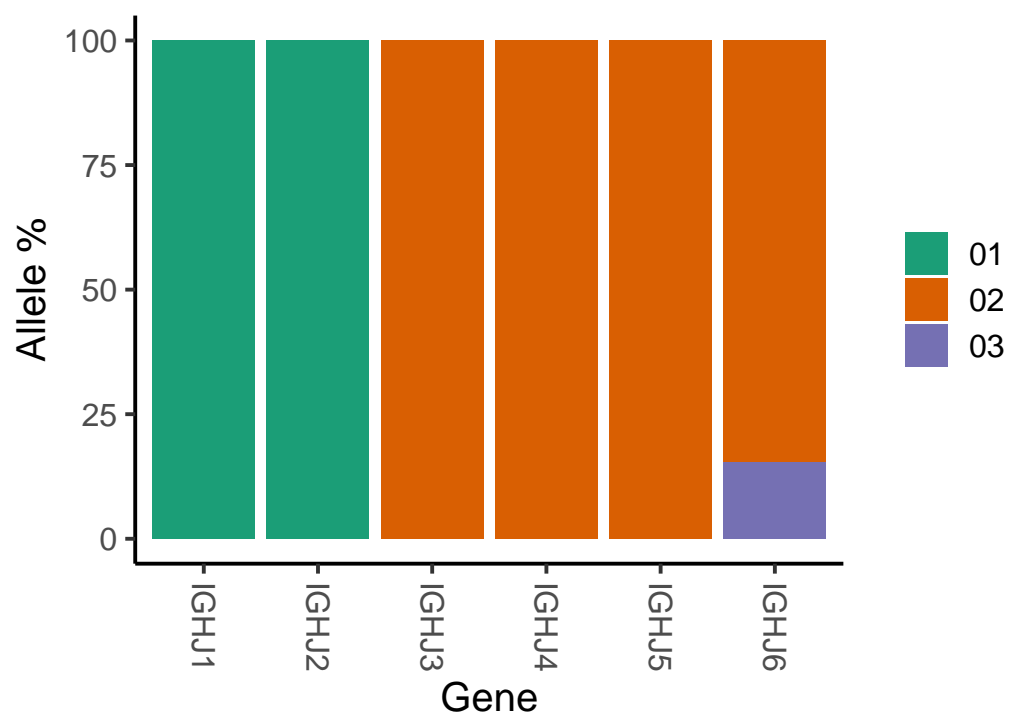


### IGHV7-4-1\*02

774 sequences assigned  
458 (59.2%) exact matches, in which:  
456 unique CDR3  
7 unique J



Allele Usage



Novel sequence(s)IGHV1-38\*02\_G88A are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV3-11\*06\_T300CIGHV4-38-2\*02\_A70GIGHV4-39\*02\_C258GIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-39\*02\_C258GIGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-39\*02\_C258GIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.