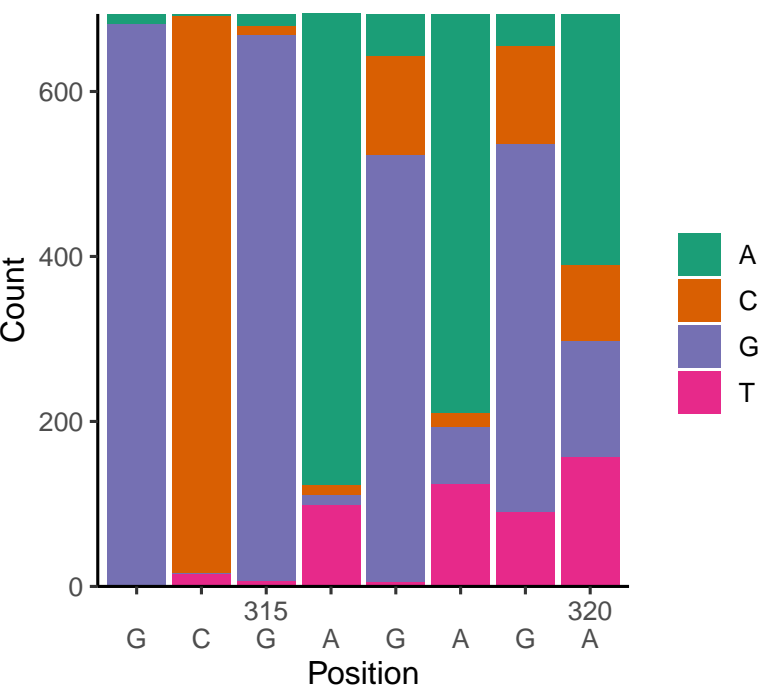
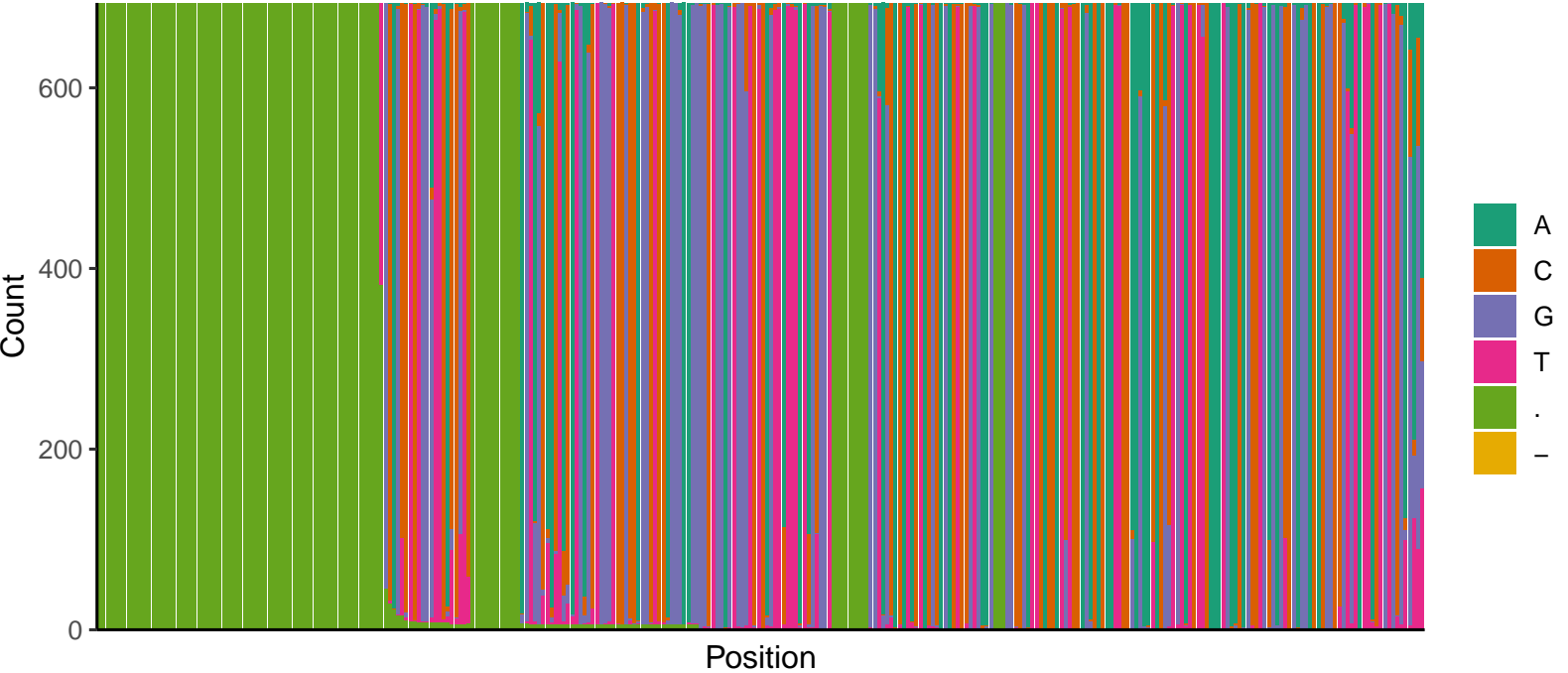


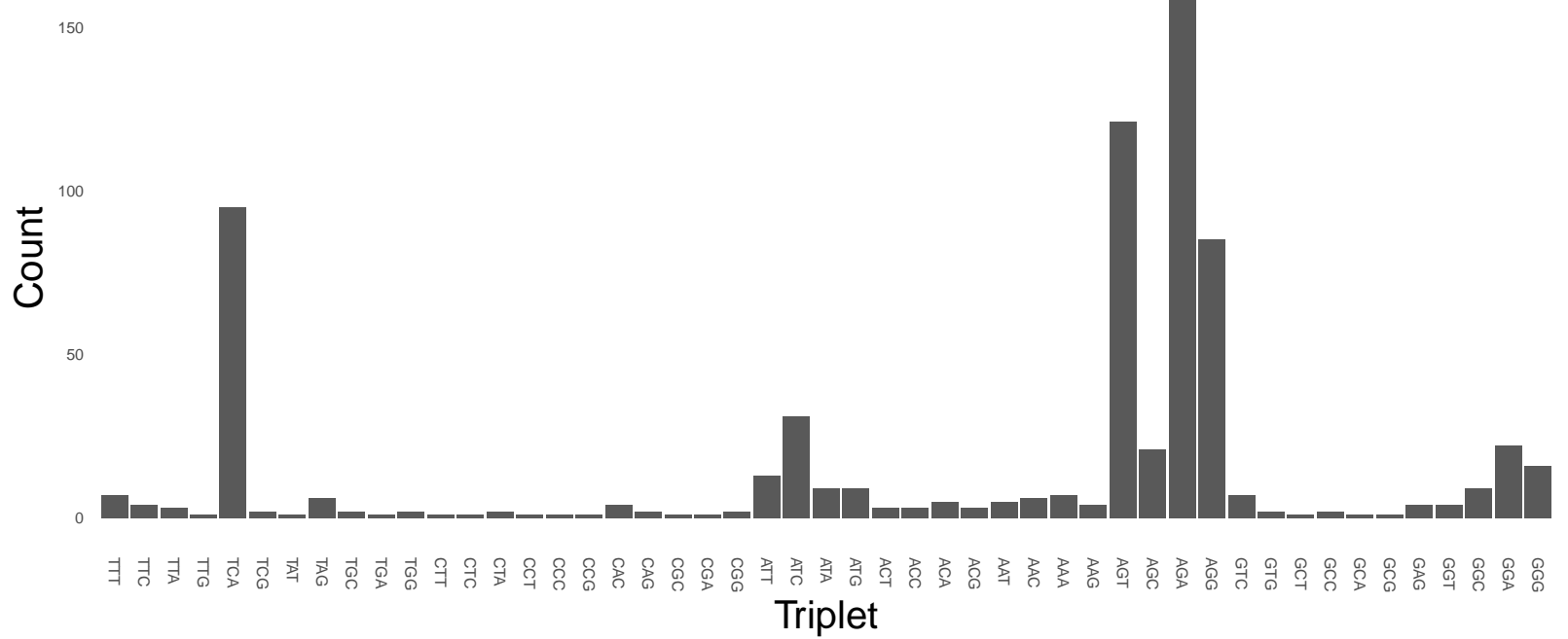
Gene IGHV3-53\*04\_T288C



Gene IGHV3-53\*04\_T288C

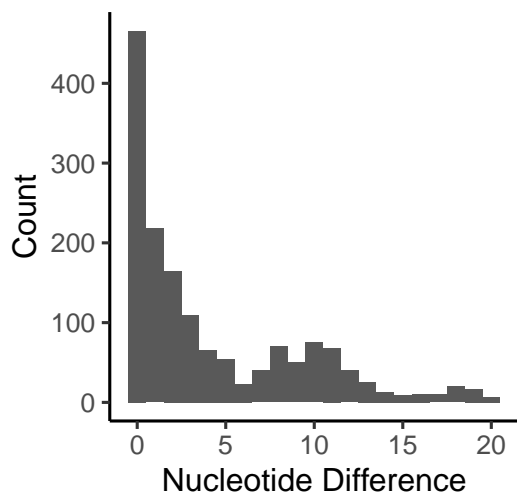


IGHV3-53\*04\_T288C- Final 3 nucleotides as a triplet



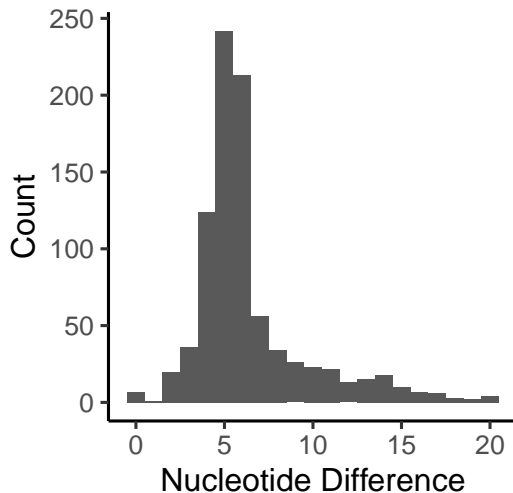
### IGHV1-2\*04

1685 sequences assigned  
466 (27.7%) exact matches, in which:  
434 unique CDR3  
6 unique J



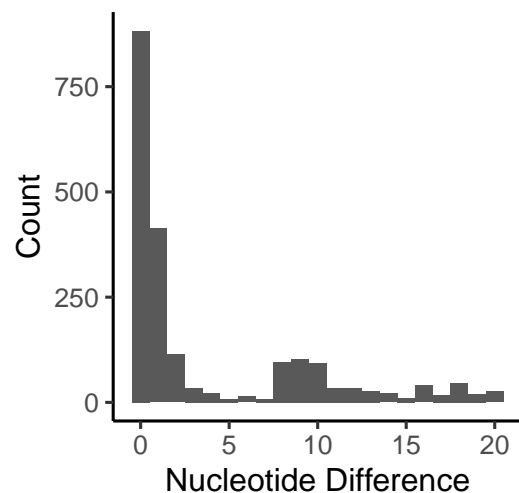
### IGHV1-8\*02

894 sequences assigned  
7 (0.8%) exact matches, in which:  
7 unique CDR3  
3 unique J



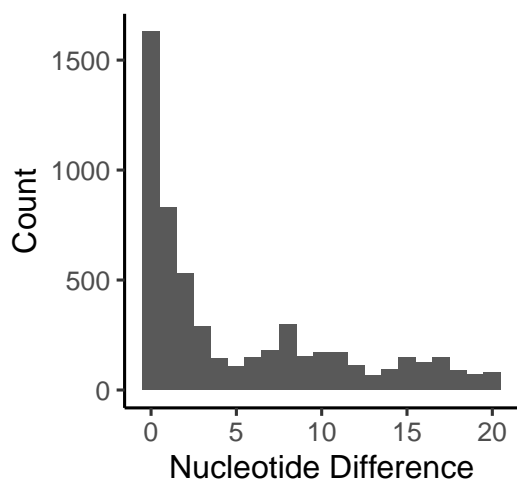
### IGHV1-24\*01

2261 sequences assigned  
883 (39.1%) exact matches, in which:  
819 unique CDR3  
6 unique J



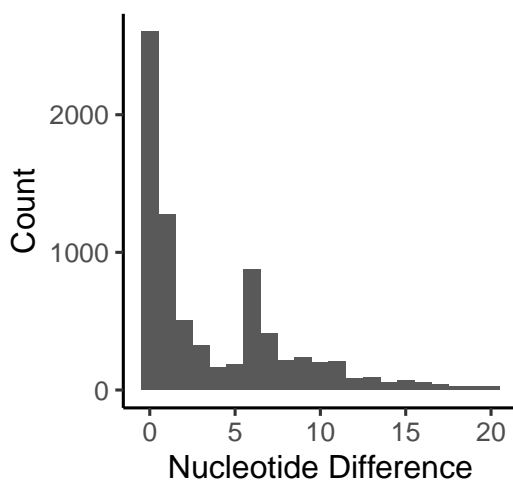
### IGHV1-3\*01\_05

6009 sequences assigned  
1629 (27.1%) exact matches, in which:  
1491 unique CDR3  
6 unique J



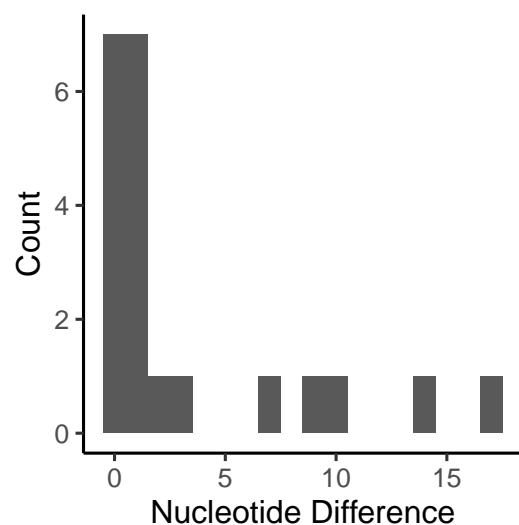
### IGHV1-18\*01

9144 sequences assigned  
2603 (28.5%) exact matches, in which:  
2413 unique CDR3  
6 unique J



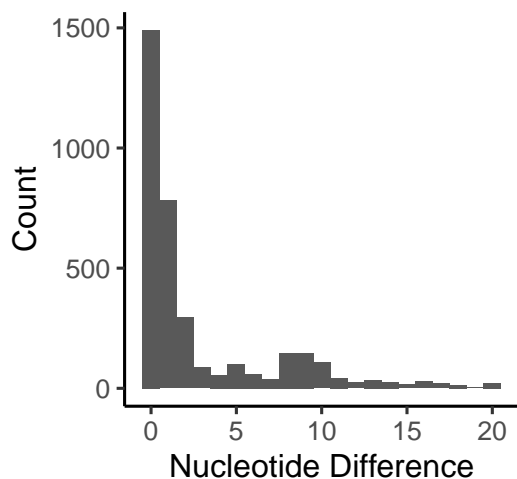
### IGHV1-45\*02

21 sequences assigned  
7 (33.3%) exact matches, in which:  
7 unique CDR3  
3 unique J



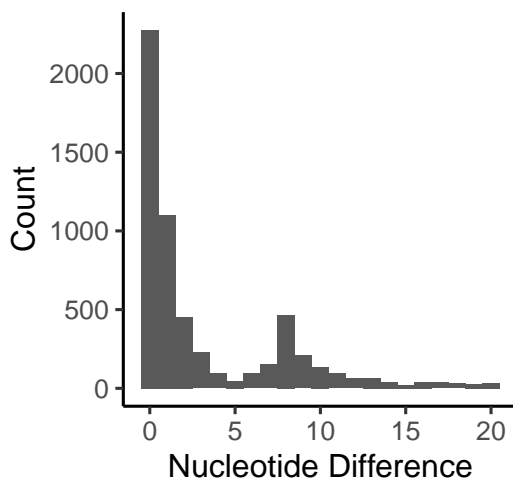
### IGHV1-8\*01

3722 sequences assigned  
1491 (40.1%) exact matches, in which:  
1383 unique CDR3  
6 unique J



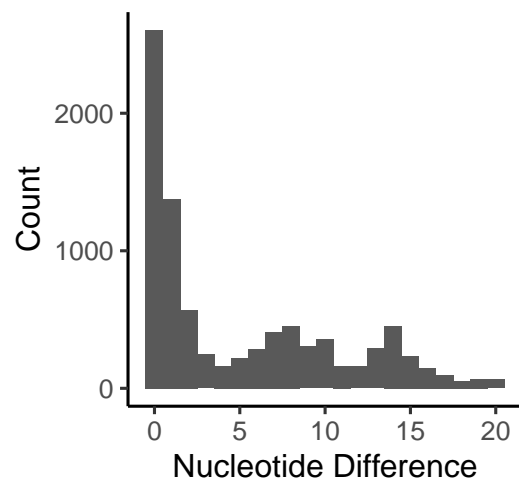
### IGHV1-18\*04

6817 sequences assigned  
2276 (33.4%) exact matches, in which:  
2127 unique CDR3  
6 unique J



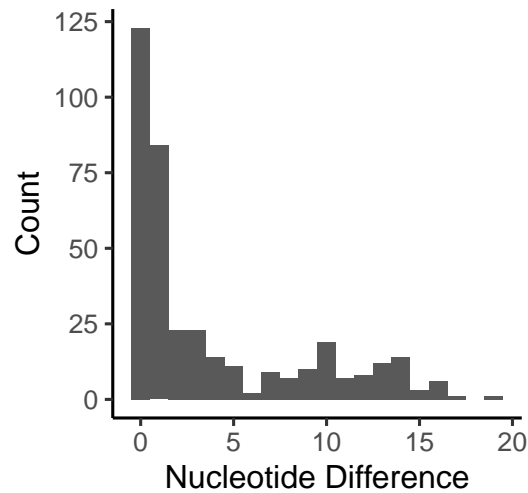
### IGHV1-46\*01

9196 sequences assigned  
2605 (28.3%) exact matches, in which:  
2390 unique CDR3  
6 unique J



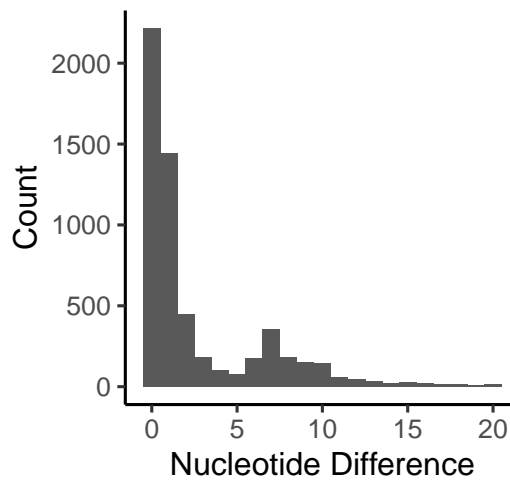
### IGHV1–58\*02

419 sequences assigned  
123 (29.4%) exact matches, in which:  
115 unique CDR3  
5 unique J



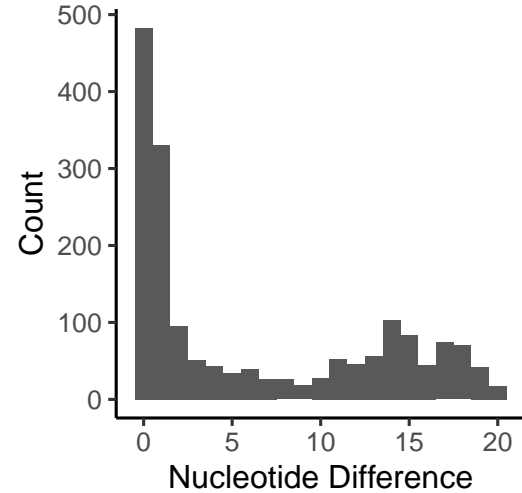
### IGHV1–69\*04\_09

6321 sequences assigned  
2215 (35%) exact matches, in which:  
2088 unique CDR3  
6 unique J



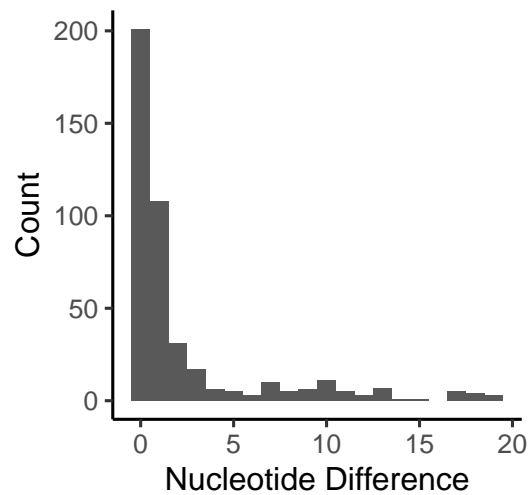
### IGHV2–5\*02

1997 sequences assigned  
483 (24.2%) exact matches, in which:  
444 unique CDR3  
6 unique J



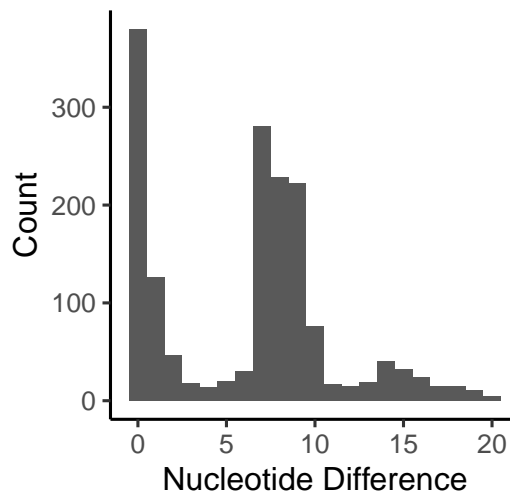
### IGHV1–58\*01\_03

444 sequences assigned  
201 (45.3%) exact matches, in which:  
179 unique CDR3  
6 unique J



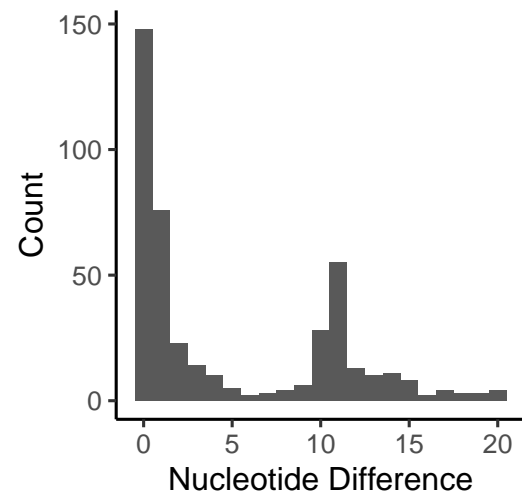
### IGHV1–69\*06\_14

1670 sequences assigned  
380 (22.8%) exact matches, in which:  
373 unique CDR3  
6 unique J



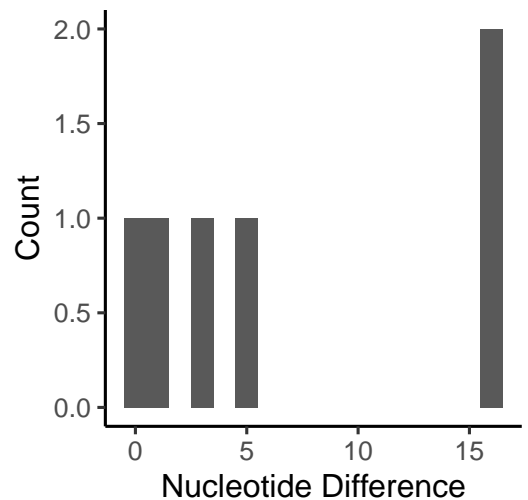
### IGHV2–26\*01

439 sequences assigned  
148 (33.7%) exact matches, in which:  
138 unique CDR3  
5 unique J



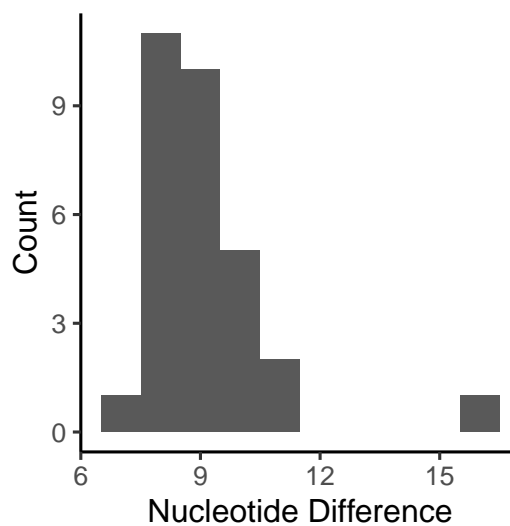
### IGHV1–68\*01

6 sequences assigned  
1 (16.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



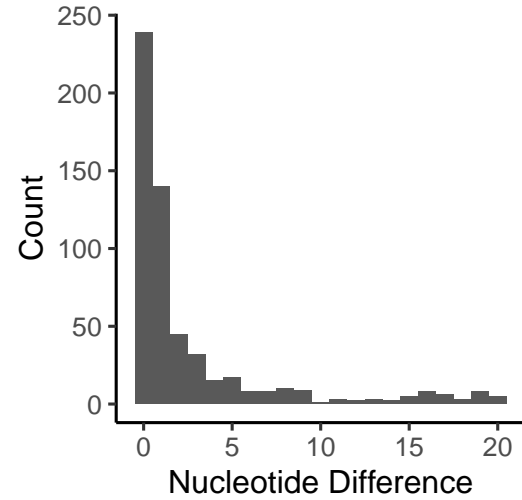
### IGHV1–NL1\*01

30 sequences assigned  
No exact matches.



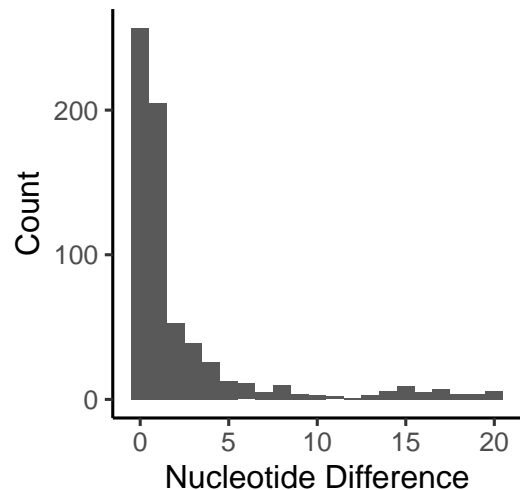
### IGHV2–70\*01

623 sequences assigned  
239 (38.4%) exact matches, in which:  
221 unique CDR3  
6 unique J



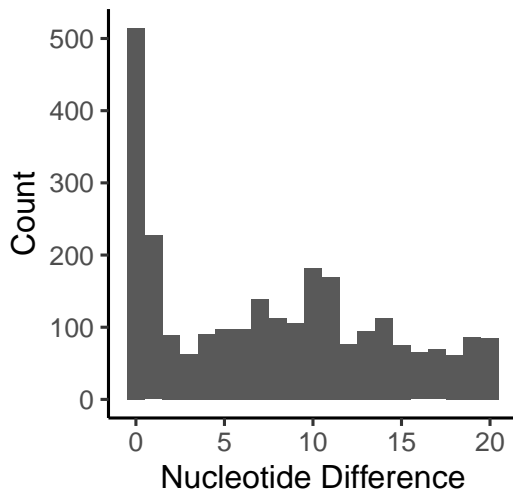
### IGHV2-70\*11\_15

726 sequences assigned  
257 (35.4%) exact matches, in which:  
237 unique CDR3  
6 unique J



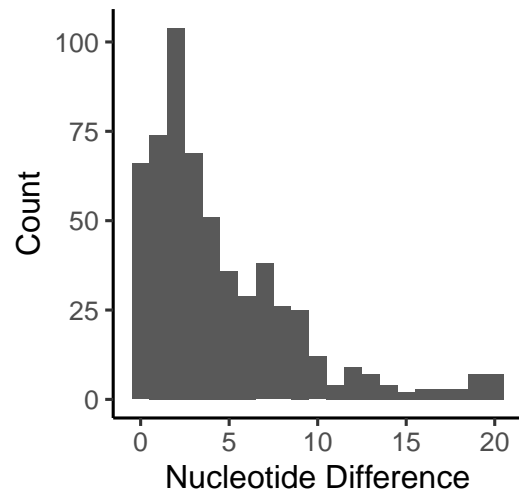
### IGHV3-7\*03

3300 sequences assigned  
515 (15.6%) exact matches, in which:  
414 unique CDR3  
6 unique J



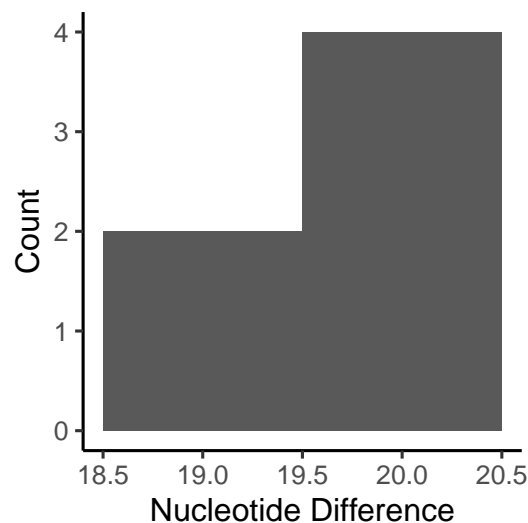
### IGHV3-11\*04

659 sequences assigned  
66 (10%) exact matches, in which:  
65 unique CDR3  
5 unique J



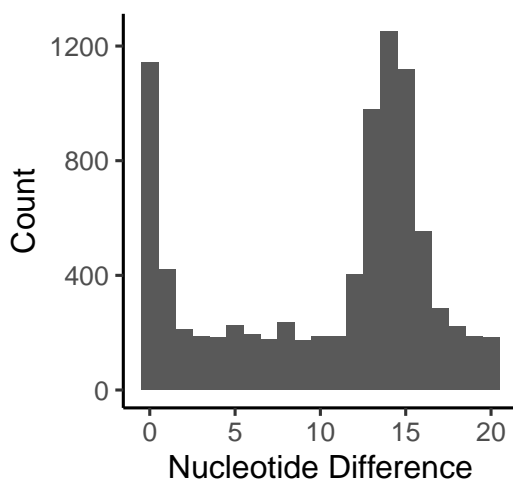
### IGHV2-70D\*04

60 sequences assigned  
No exact matches.



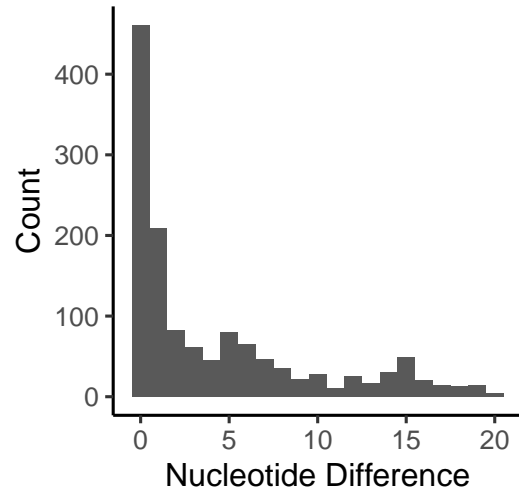
### IGHV3-9\*01

9829 sequences assigned  
1143 (11.6%) exact matches, in which:  
877 unique CDR3  
6 unique J



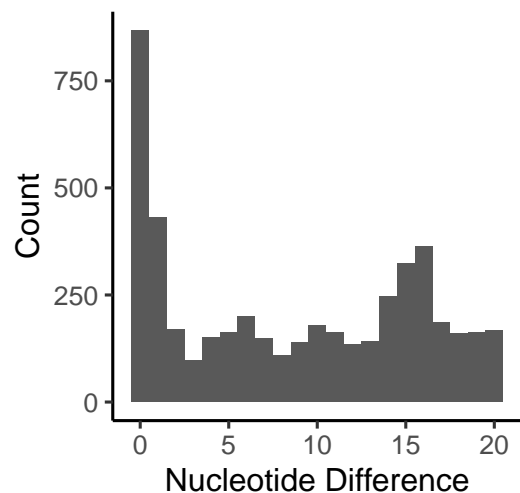
### IGHV3-11\*06

1645 sequences assigned  
461 (28%) exact matches, in which:  
373 unique CDR3  
6 unique J



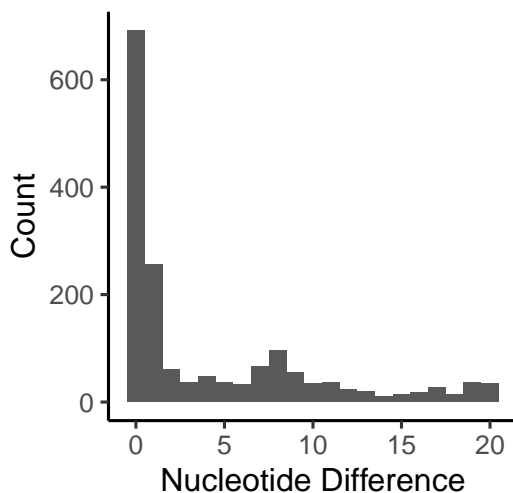
### IGHV3-7\*01

5442 sequences assigned  
868 (16%) exact matches, in which:  
692 unique CDR3  
6 unique J



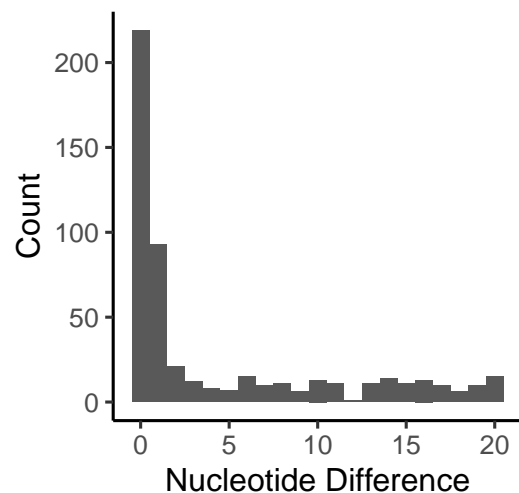
### IGHV3-11\*01

2108 sequences assigned  
692 (32.8%) exact matches, in which:  
533 unique CDR3  
6 unique J



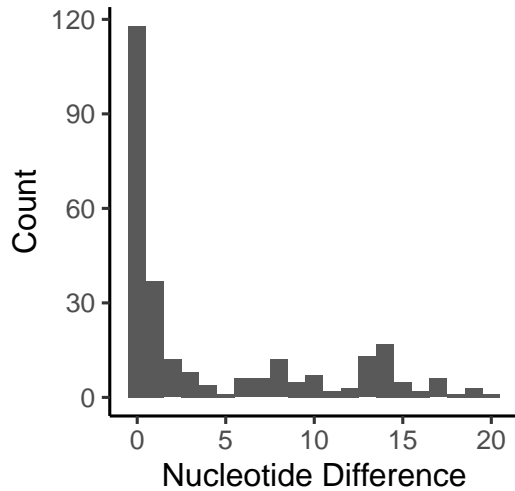
### IGHV3-13\*01

730 sequences assigned  
219 (30%) exact matches, in which:  
171 unique CDR3  
5 unique J



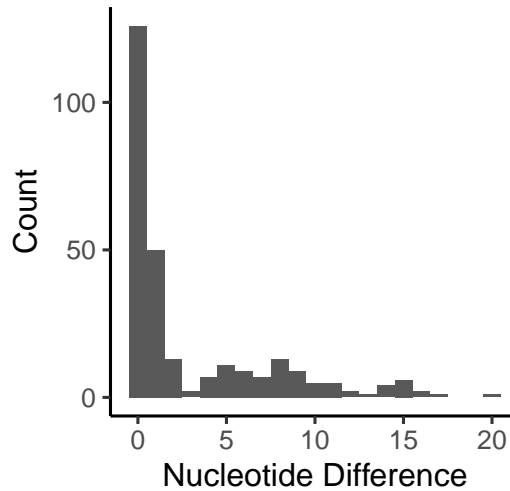
### IGHV3-13\*05

292 sequences assigned  
118 (40.4%) exact matches, in which:  
90 unique CDR3  
5 unique J



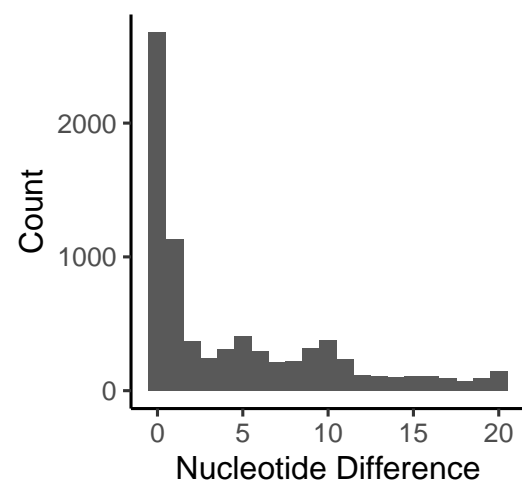
### IGHV3-20\*01\_02

338 sequences assigned  
126 (37.3%) exact matches, in which:  
88 unique CDR3  
6 unique J



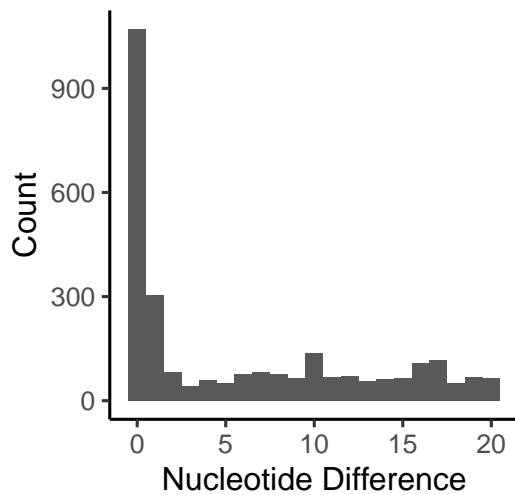
### IGHV3-21\*01\_02

8764 sequences assigned  
2678 (30.6%) exact matches, in which:  
2032 unique CDR3  
6 unique J



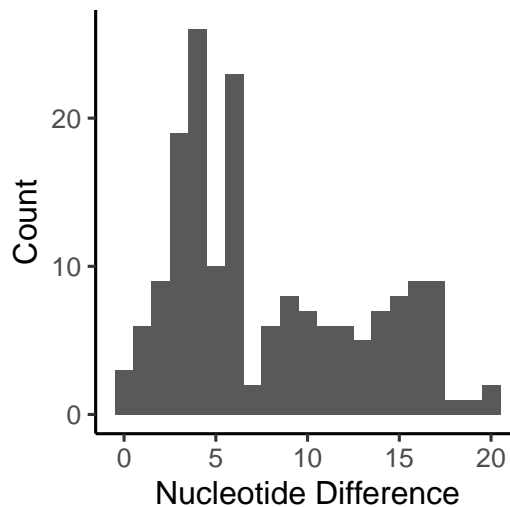
### IGHV3-15\*01\_02

3544 sequences assigned  
1071 (30.2%) exact matches, in which:  
836 unique CDR3  
6 unique J



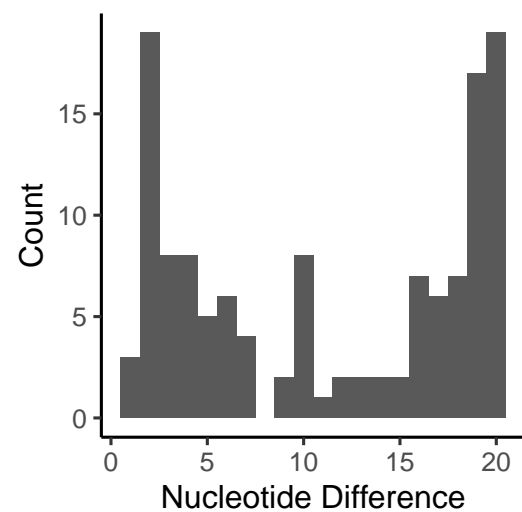
### IGHV3-20\*03\_04

228 sequences assigned  
3 (1.3%) exact matches, in which:  
3 unique CDR3  
1 unique J



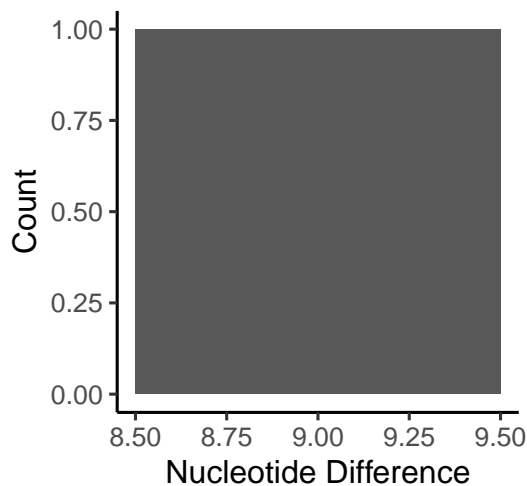
### IGHV3-30-5\*01

238 sequences assigned  
No exact matches.



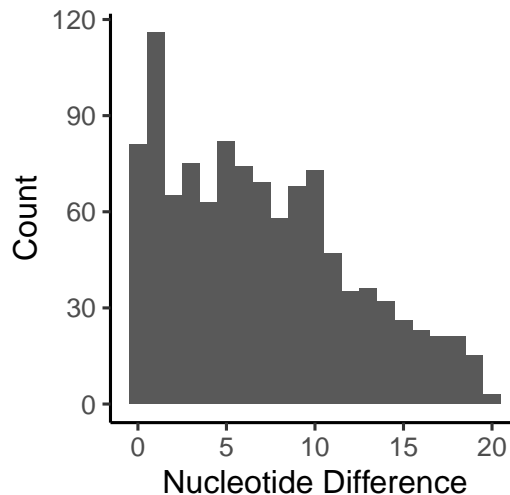
### IGHV3-19\*01

1 sequences assigned  
No exact matches.



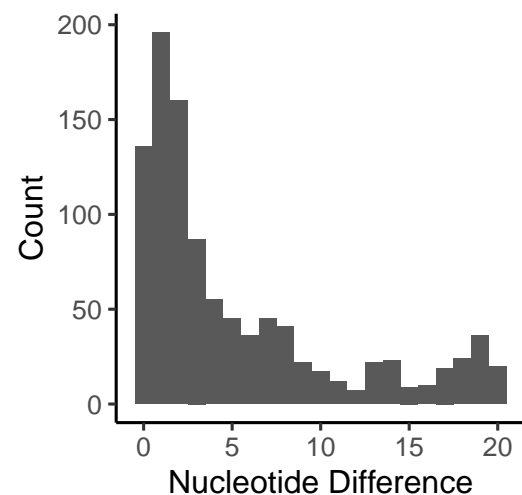
### IGHV3-21\*04

1234 sequences assigned  
81 (6.6%) exact matches, in which:  
80 unique CDR3  
6 unique J



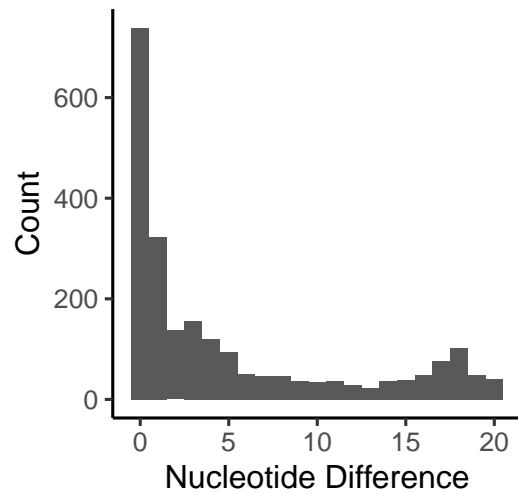
### IGHV3-33\*01

1184 sequences assigned  
136 (11.5%) exact matches, in which:  
131 unique CDR3  
6 unique J



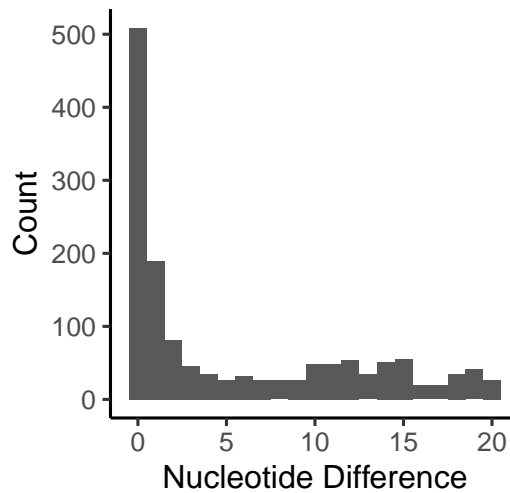
### IGHV3–33\*06

2539 sequences assigned  
739 (29.1%) exact matches, in which:  
575 unique CDR3  
6 unique J



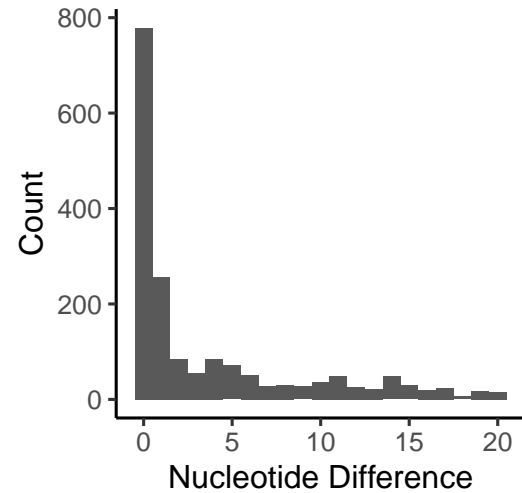
### IGHV3–43\*02

1687 sequences assigned  
509 (30.2%) exact matches, in which:  
378 unique CDR3  
6 unique J



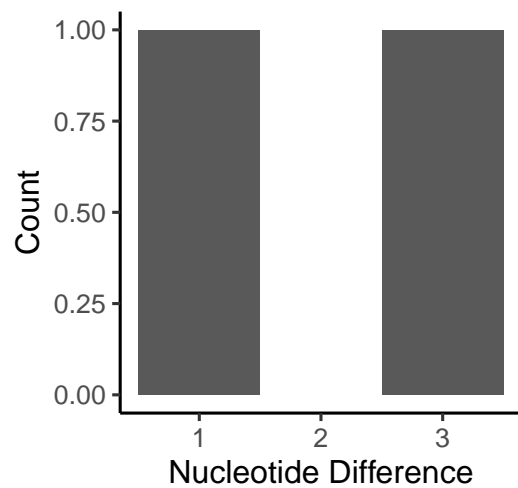
### IGHV3–48\*02

2126 sequences assigned  
779 (36.6%) exact matches, in which:  
586 unique CDR3  
6 unique J



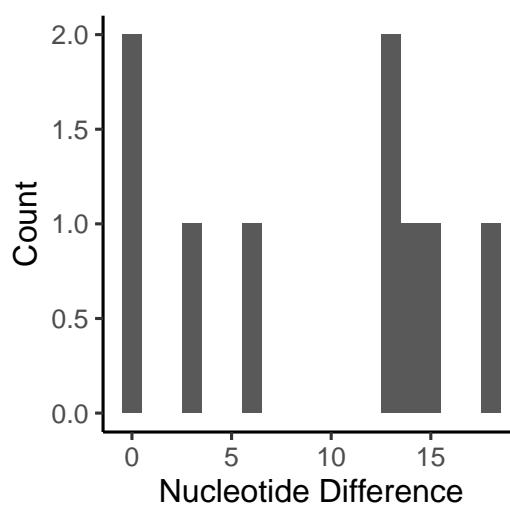
### IGHV3–35\*01

2 sequences assigned  
No exact matches.



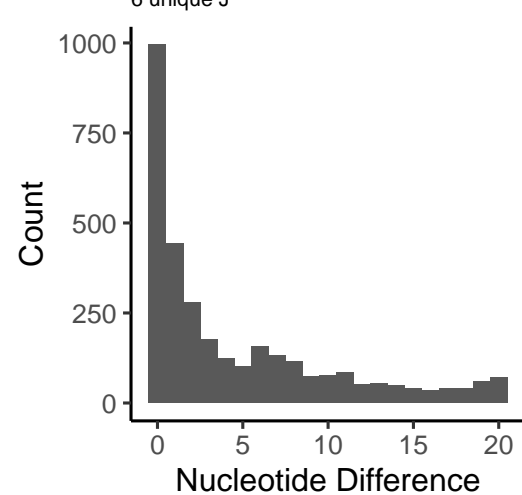
### IGHV3–47\*02

9 sequences assigned  
2 (22.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



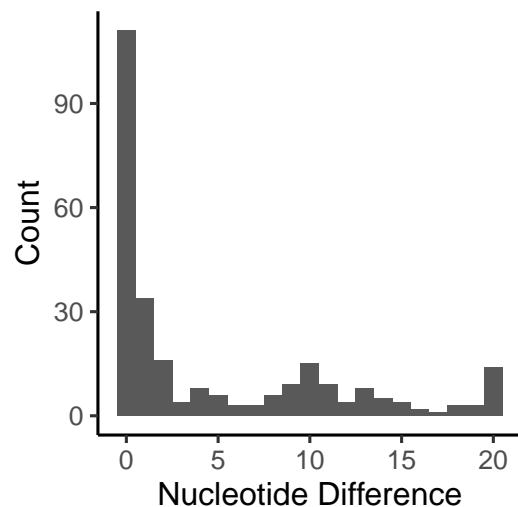
### IGHV3–48\*03

3563 sequences assigned  
995 (27.9%) exact matches, in which:  
776 unique CDR3  
6 unique J



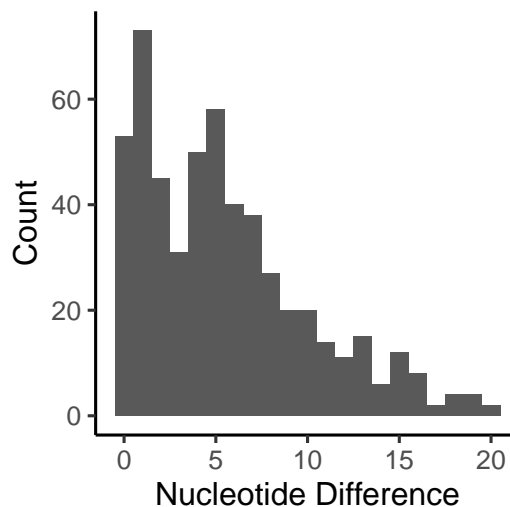
### IGHV3–43\*01

404 sequences assigned  
111 (27.5%) exact matches, in which:  
94 unique CDR3  
6 unique J



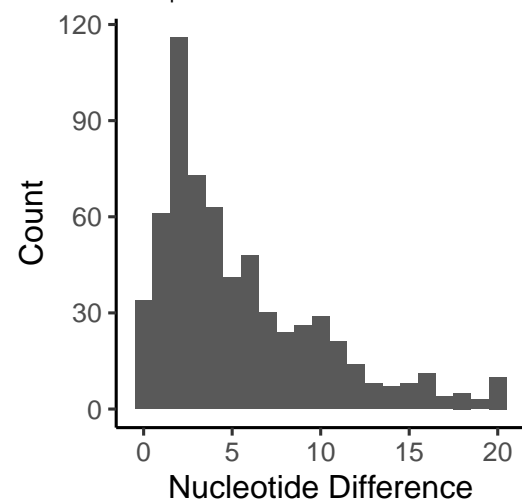
### IGHV3–48\*01

579 sequences assigned  
53 (9.2%) exact matches, in which:  
53 unique CDR3  
5 unique J



### IGHV3–48\*04

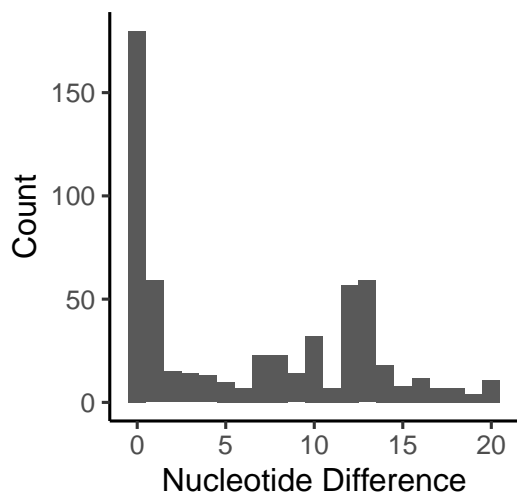
710 sequences assigned  
34 (4.8%) exact matches, in which:  
34 unique CDR3  
5 unique J





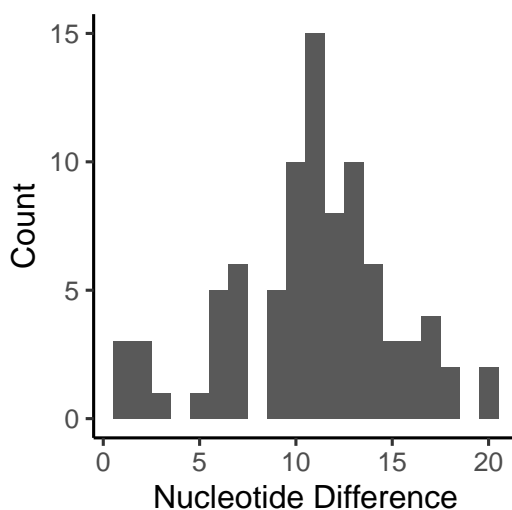
### IGHV3-49\*04

893 sequences assigned  
180 (20.2%) exact matches, in which:  
144 unique CDR3  
6 unique J



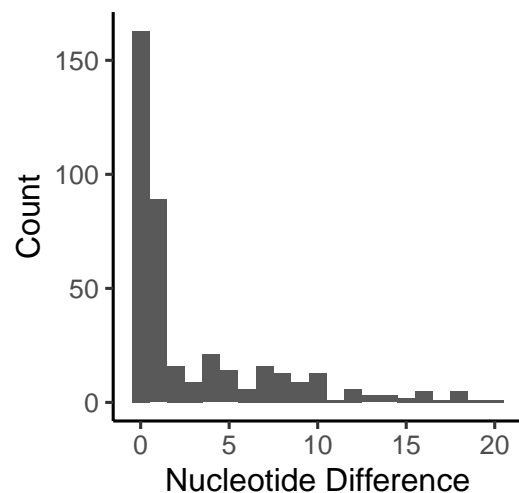
### IGHV3-53\*05

101 sequences assigned  
No exact matches.



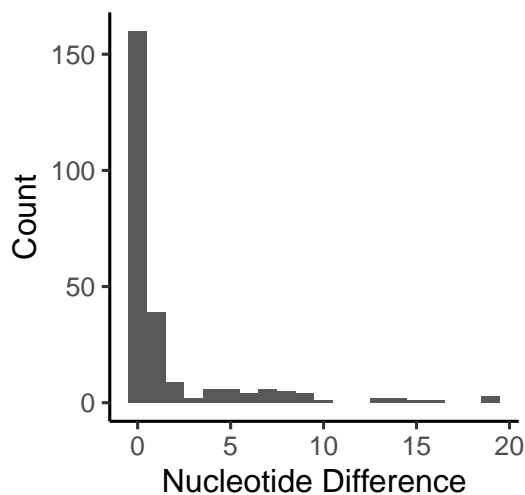
### IGHV3-64\*01

421 sequences assigned  
163 (38.7%) exact matches, in which:  
123 unique CDR3  
6 unique J



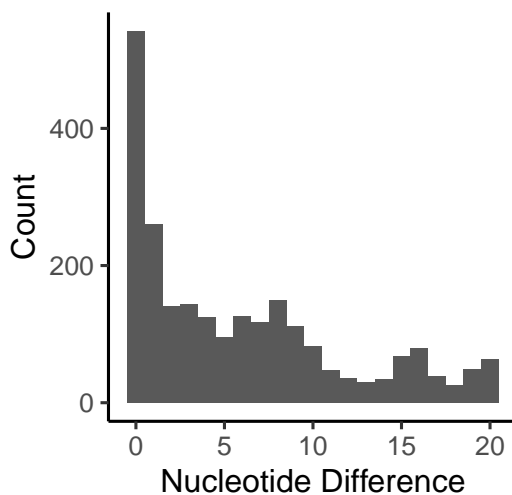
### IGHV3-49\*03\_05

324 sequences assigned  
160 (49.4%) exact matches, in which:  
128 unique CDR3  
6 unique J



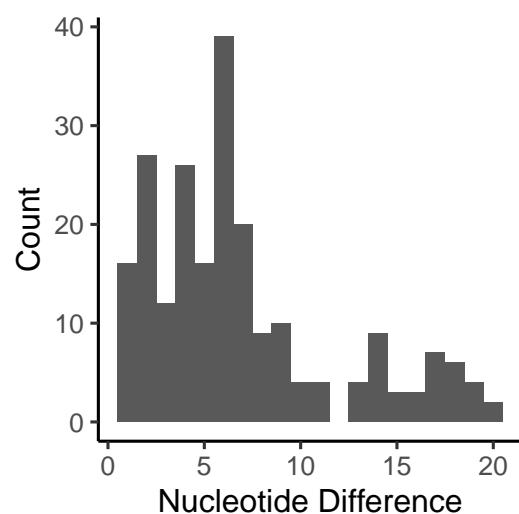
### IGHV3-53\*01\_02

2989 sequences assigned  
542 (18.1%) exact matches, in which:  
431 unique CDR3  
6 unique J



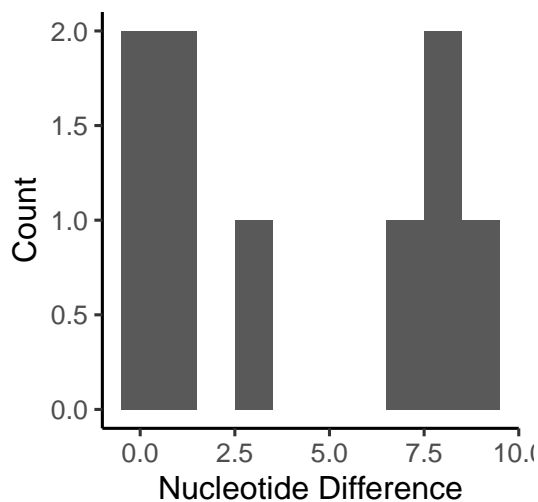
### IGHV3-64\*04

230 sequences assigned  
No exact matches.



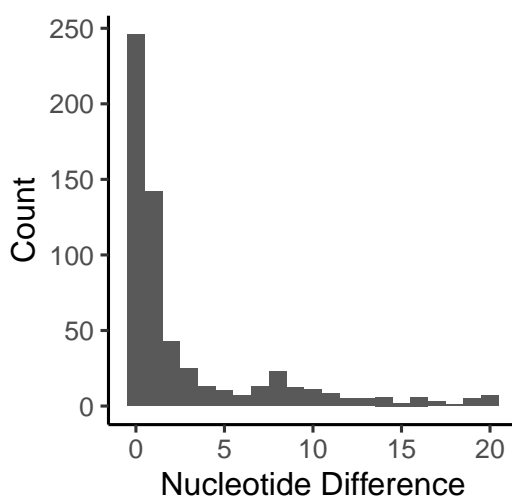
### IGHV3-52\*01\_03

9 sequences assigned  
2 (22.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



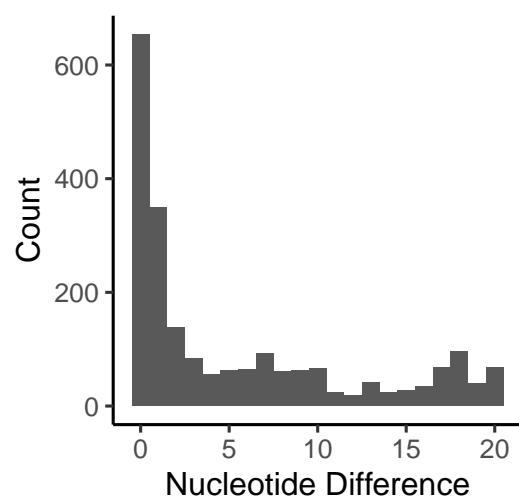
### IGHV3-53\*04\_T288C

694 sequences assigned  
246 (35.4%) exact matches, in which:  
194 unique CDR3  
6 unique J



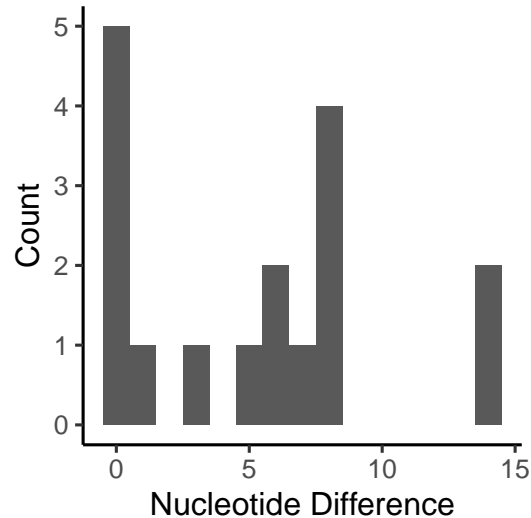
### IGHV3-66\*01

2919 sequences assigned  
654 (22.4%) exact matches, in which:  
512 unique CDR3  
6 unique J



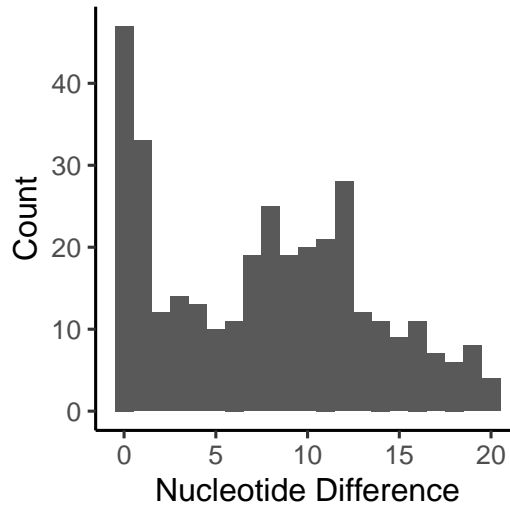
### IGHV3-66\*03

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



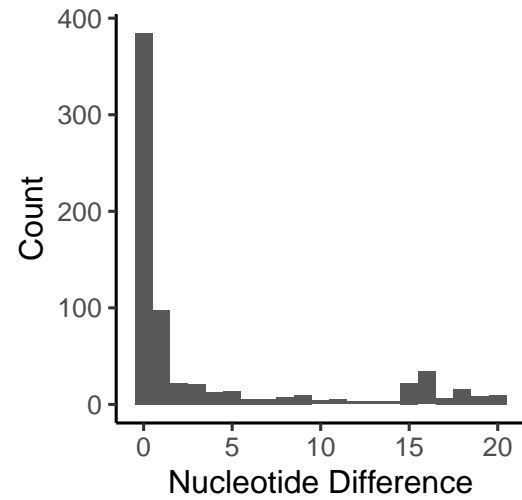
### IGHV3-72\*01

534 sequences assigned  
47 (8.8%) exact matches, in which:  
37 unique CDR3  
4 unique J



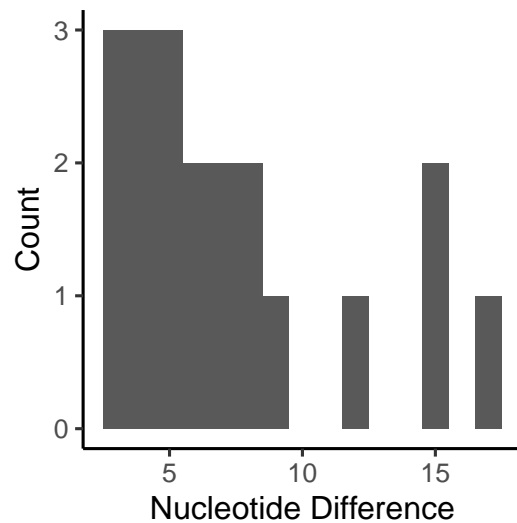
### IGHV3-64D\*06

819 sequences assigned  
385 (47%) exact matches, in which:  
278 unique CDR3  
6 unique J



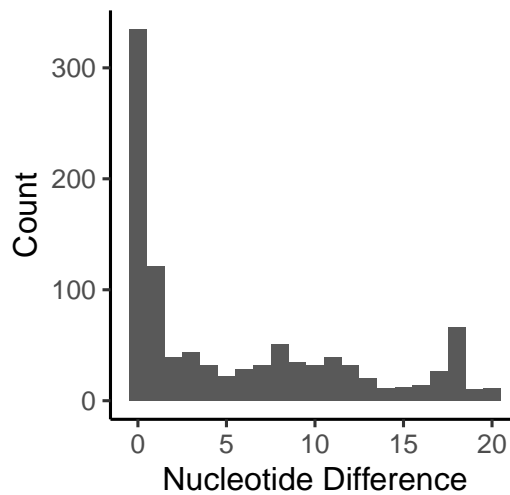
### IGHV3-69-1\*01

25 sequences assigned  
No exact matches.



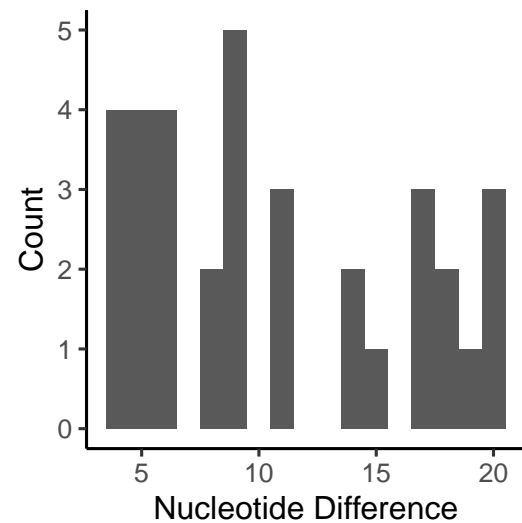
### IGHV3-73\*01\_02

1138 sequences assigned  
335 (29.4%) exact matches, in which:  
266 unique CDR3  
6 unique J



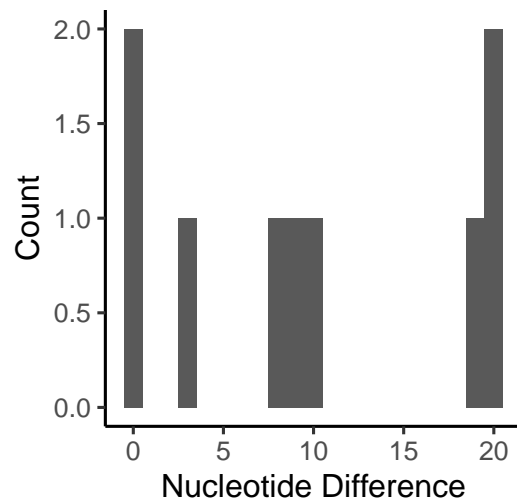
### IGHV3-NL1\*01

40 sequences assigned  
No exact matches.



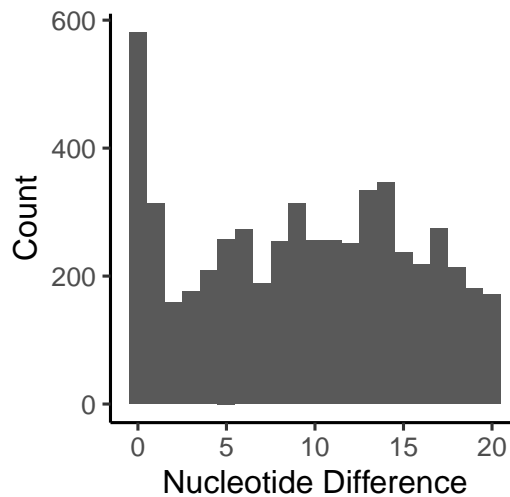
### IGHV3-69-1\*02

19 sequences assigned  
2 (10.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



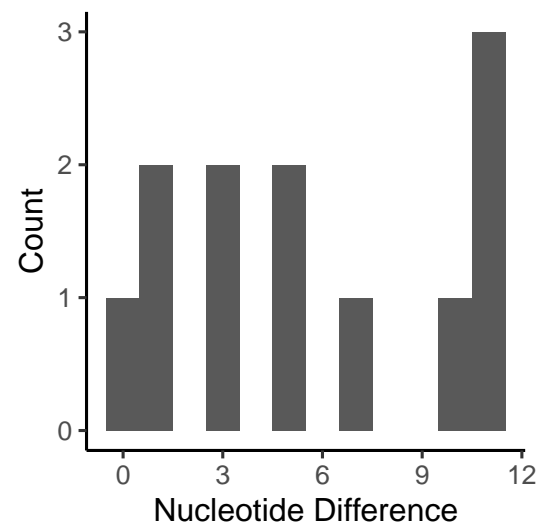
### IGHV3-74\*01\_02

7413 sequences assigned  
581 (7.8%) exact matches, in which:  
444 unique CDR3  
6 unique J



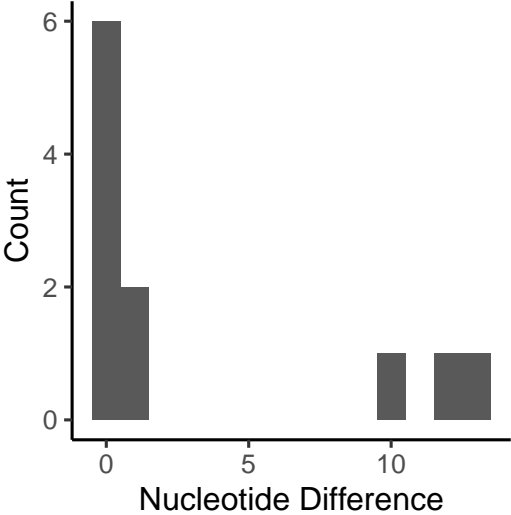
### IGHV4-28\*03

14 sequences assigned  
1 (7.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



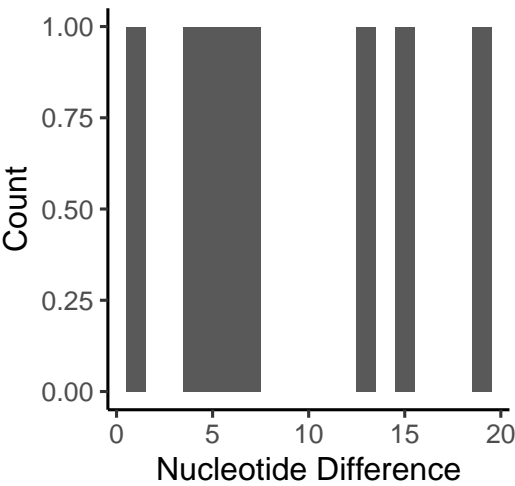
IGHV4-28\*01\_07

14 sequences assigned  
6 (42.9%) exact matches, in which:  
5 unique CDR3  
4 unique J



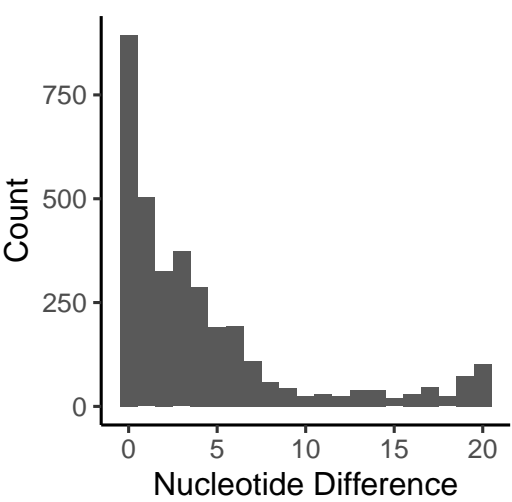
IGHV4-30-2\*03

15 sequences assigned  
No exact matches.



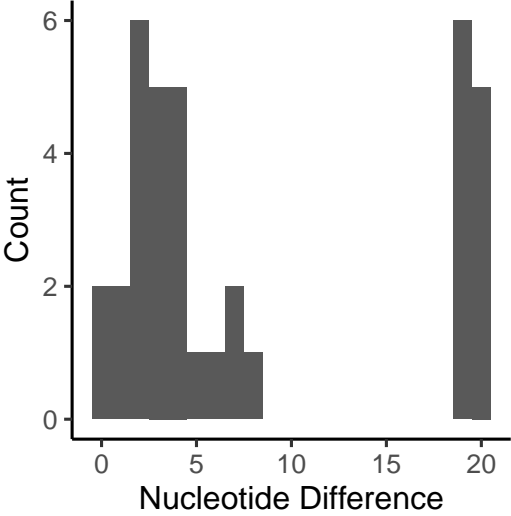
IGHV4-31\*03\_04

4206 sequences assigned  
895 (21.3%) exact matches, in which:  
842 unique CDR3  
6 unique J



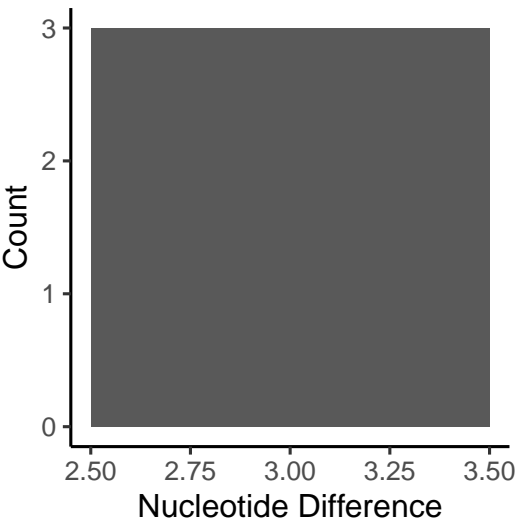
IGHV4-28\*02\_05

38 sequences assigned  
2 (5.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



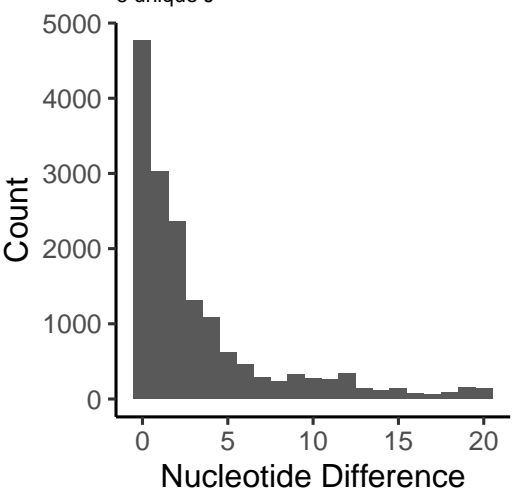
IGHV4-30-2\*04

3 sequences assigned  
No exact matches.



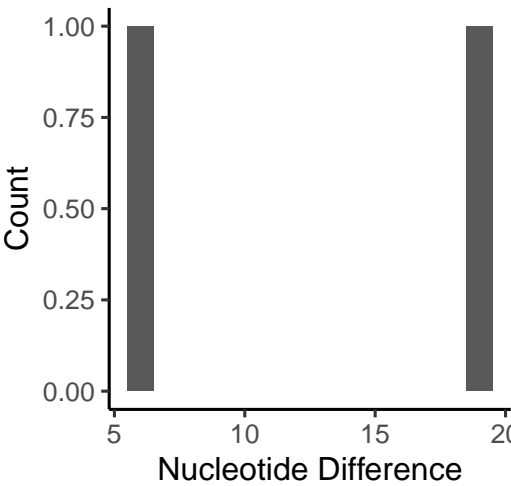
IGHV4-34\*01\_02

17772 sequences assigned  
4765 (26.8%) exact matches, in which:  
4188 unique CDR3  
6 unique J



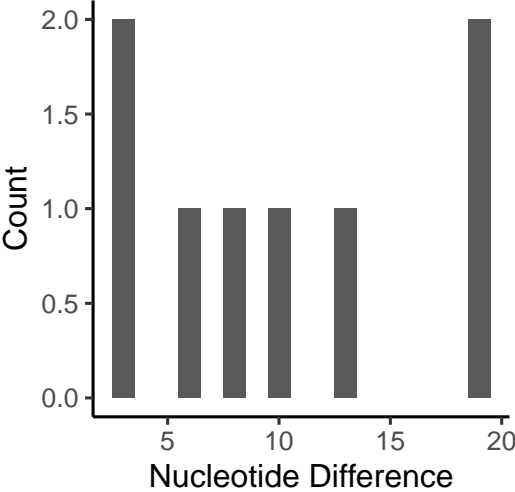
IGHV4-30-4\*01

3 sequences assigned  
No exact matches.



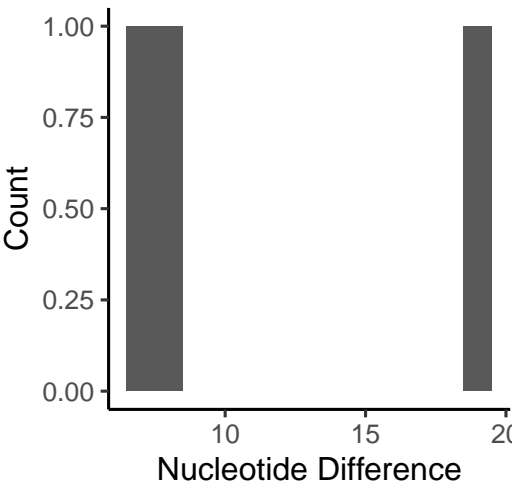
IGHV4-30-4\*08

8 sequences assigned  
No exact matches.



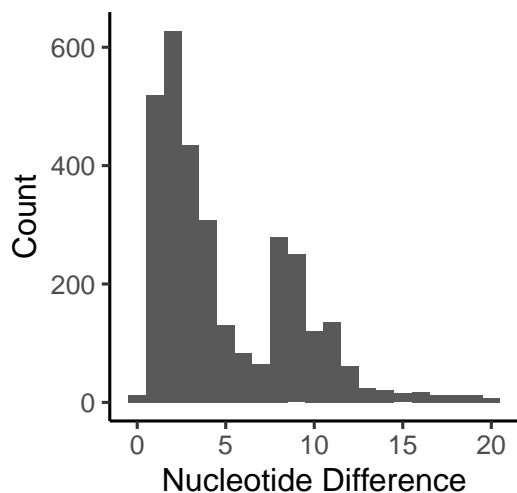
IGHV4-38-2\*01

4 sequences assigned  
No exact matches.



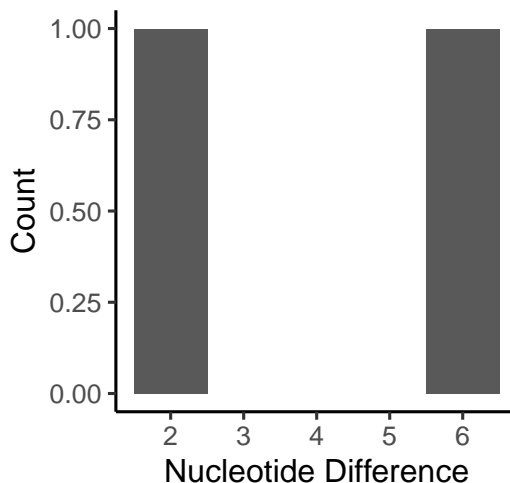
### IGHV4-39\*07

3245 sequences assigned  
13 (0.4%) exact matches, in which:  
13 unique CDR3  
3 unique J



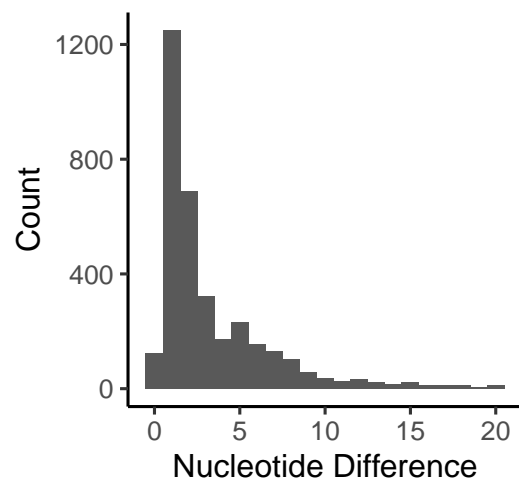
### IGHV4-55\*02\_04\_08

2 sequences assigned  
No exact matches.



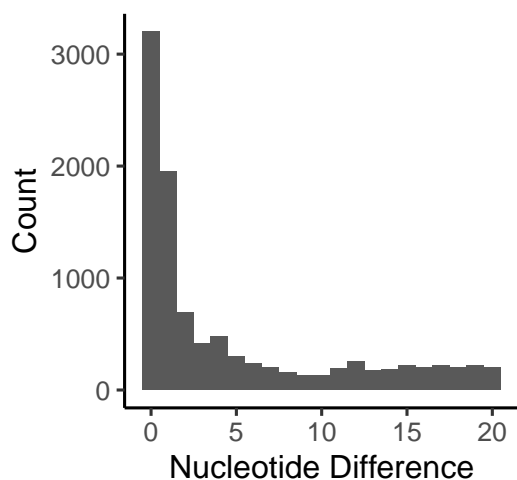
### IGHV4-59\*12

3572 sequences assigned  
124 (3.5%) exact matches, in which:  
121 unique CDR3  
5 unique J



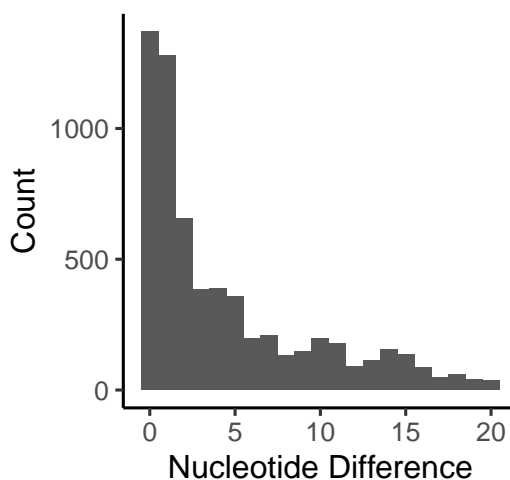
### IGHV4-39\*01\_05

11815 sequences assigned  
3200 (27.1%) exact matches, in which:  
2787 unique CDR3  
6 unique J



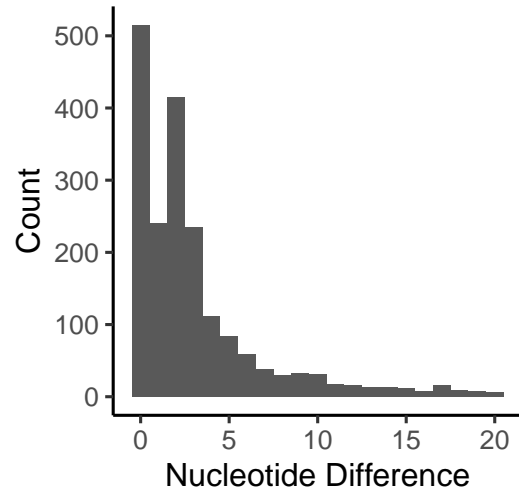
### IGHV4-59\*08

6915 sequences assigned  
1370 (19.8%) exact matches, in which:  
1236 unique CDR3  
6 unique J



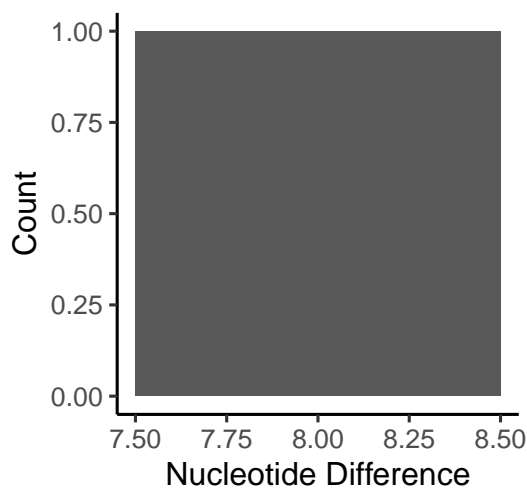
### IGHV4-61\*01

1999 sequences assigned  
515 (25.8%) exact matches, in which:  
497 unique CDR3  
6 unique J



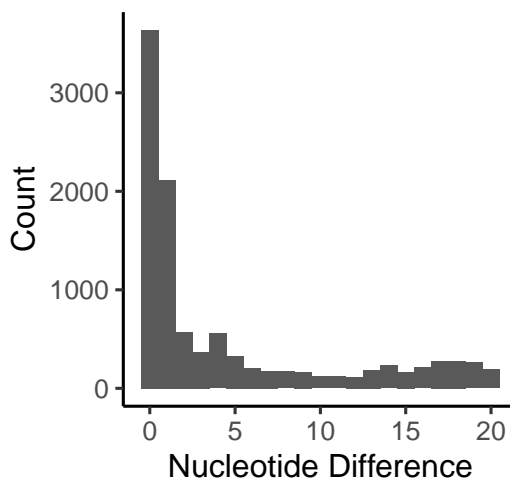
### IGHV4-55\*01\_05

1 sequences assigned  
No exact matches.



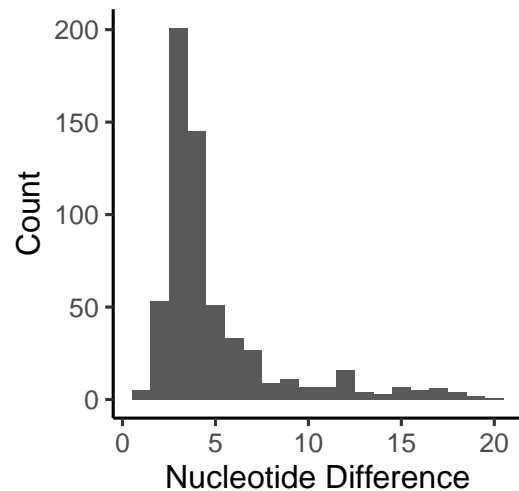
### IGHV4-59\*01\_07

12697 sequences assigned  
3637 (28.6%) exact matches, in which:  
3334 unique CDR3  
6 unique J



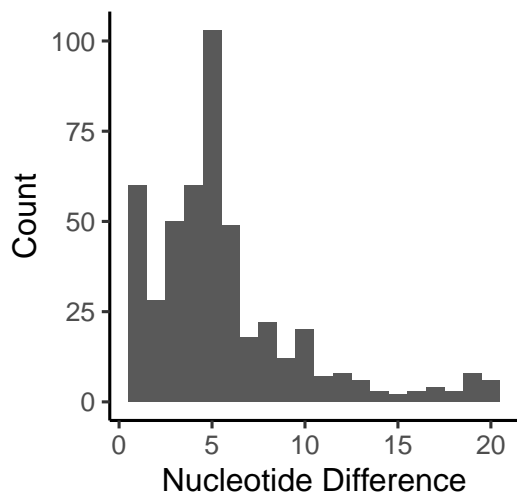
### IGHV4-61\*05

619 sequences assigned  
No exact matches.



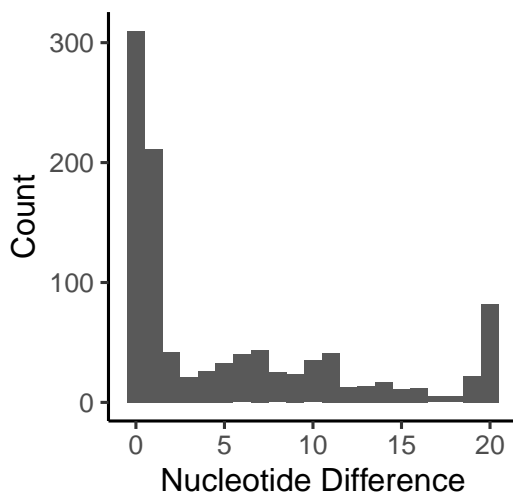
### IGHV4-61\*08

551 sequences assigned  
No exact matches.



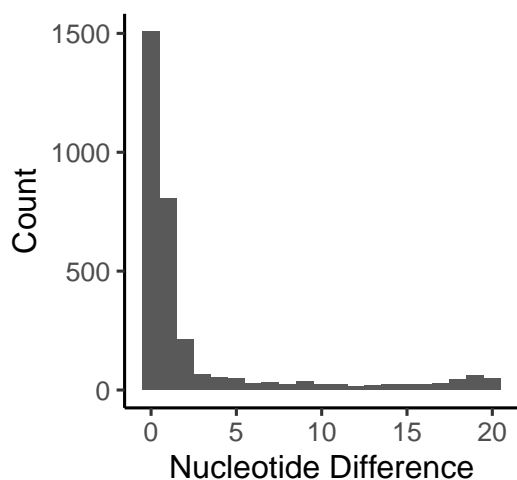
### IGHV6-1\*01\_02

1412 sequences assigned  
310 (22%) exact matches, in which:  
286 unique CDR3  
6 unique J



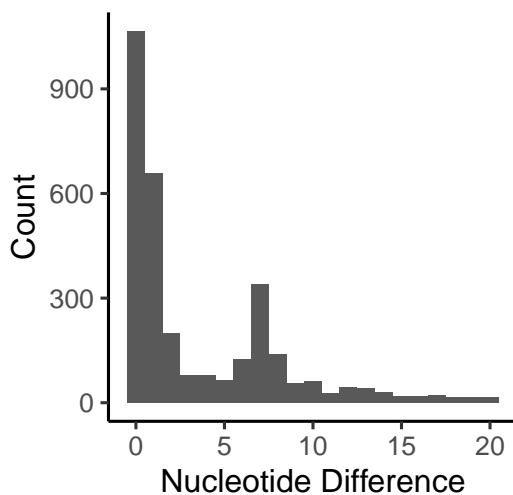
### IGHV5-10-1\*01\_03

3583 sequences assigned  
1507 (42.1%) exact matches, in which:  
1115 unique CDR3  
6 unique J



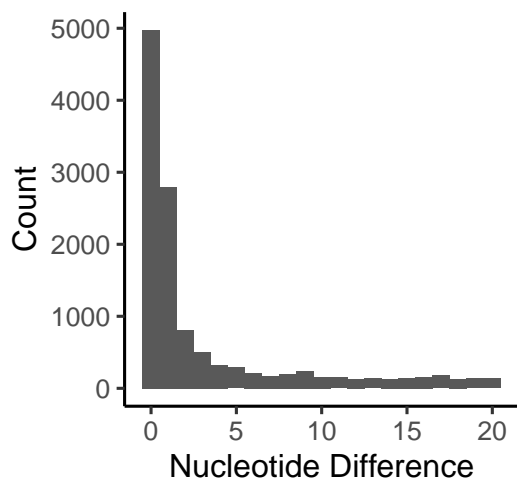
### IGHV7-4-1\*02

3402 sequences assigned  
1066 (31.3%) exact matches, in which:  
962 unique CDR3  
6 unique J



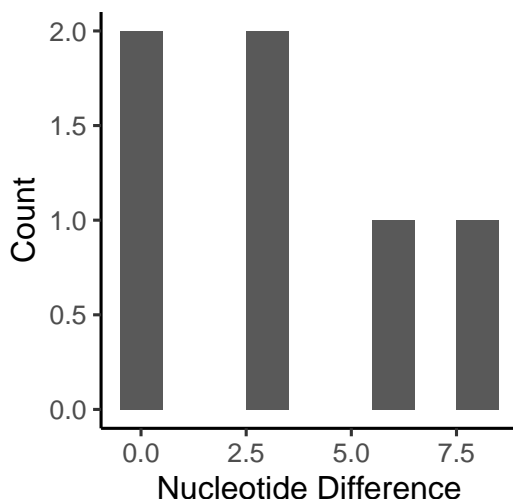
### IGHV5-51\*01\_03

13299 sequences assigned  
4975 (37.4%) exact matches, in which:  
3258 unique CDR3  
6 unique J



### IGHV7-81\*01

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





Warning - no inferred sequences found.

Novel sequence(s) IGHV3-33\*01\_G75C IGHV4-59\*02\_G88A IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-33\*01\_G75C IGHV4-59\*02\_G88A IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-30\*03\_T288C IGHV4-59\*02\_G88A IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning - no inferred sequences found.

Warning - no inferred sequences found.

Warning - no inferred sequences found.

Novel sequence(s) IGHV1-69\*08\_09\_G112A IGHV4-59\*02\_G88A IGHV5-10-1\*01\_03\_T258C IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning - no inferred sequences found.

Novel sequence(s) IGHV1-69\*08\_C191T IGHV3-48\*03\_T303G IGHV4-59\*02\_G88A 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) IGHV3-30\*03\_T288C IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning: IGHV4-31\*02, IGHV4-31\*03\_04 have identical germline sequences.

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

Novel sequence(s) IGHV1-69\*04\_09\_G112A 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.

Novel sequence(s) IGHV1-69\*08\_C191T IGHV3-30\*03\_T288C IGHV3-30-3\*02\_G75C IGHV4-59\*02\_G88A IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV4-59\*02\_G88A IGHV5-51\*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.