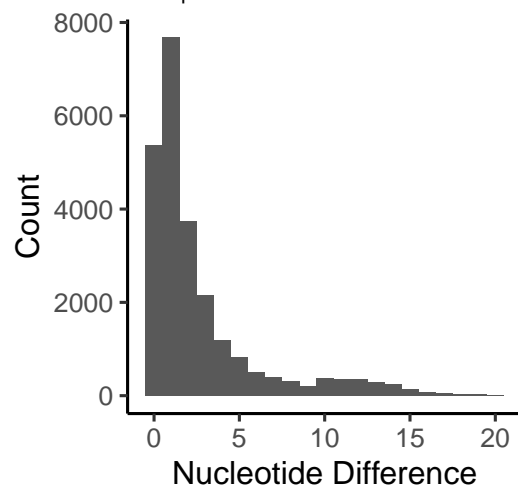


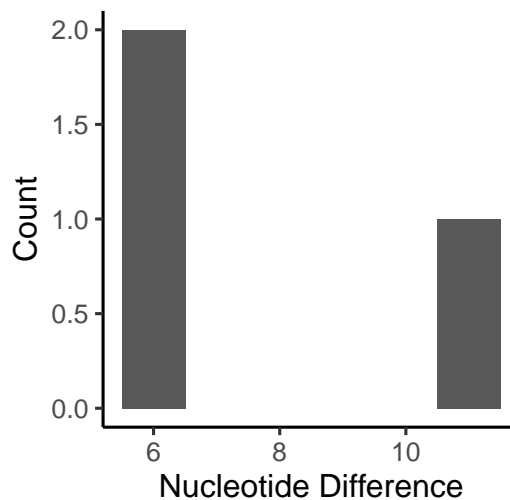
### IGHV1-2\*02

24487 sequences assigned  
5366 (21.9%) exact matches, in which:  
3912 unique CDR3  
6 unique J



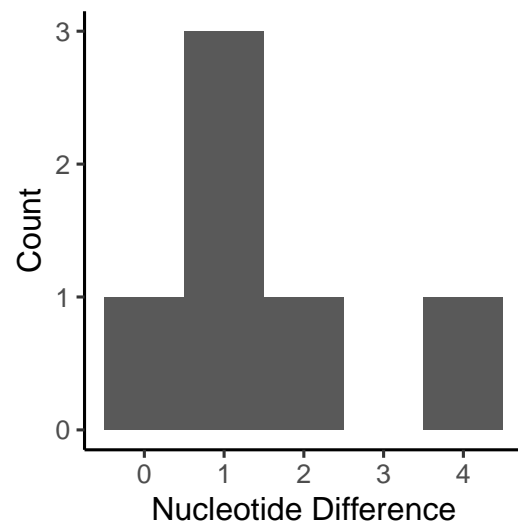
### IGHV1-8\*01

3 sequences assigned  
No exact matches.



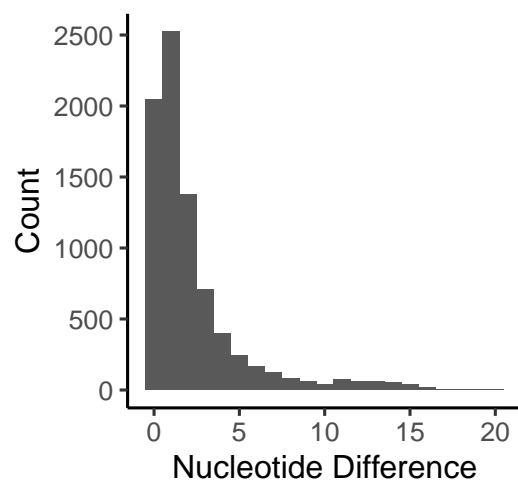
### IGHV1-38-4\*01

7 sequences assigned  
1 (14.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



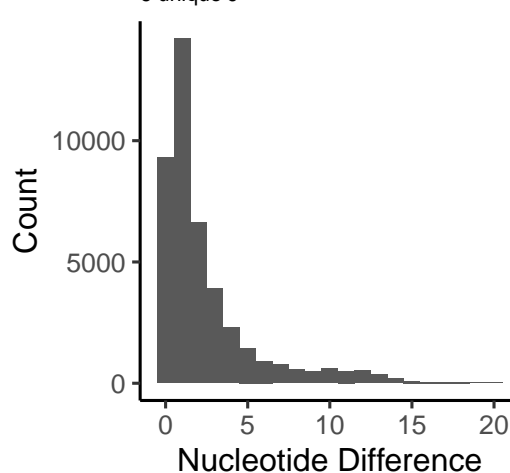
### IGHV1-2\*04

8154 sequences assigned  
2048 (25.1%) exact matches, in which:  
1559 unique CDR3  
6 unique J



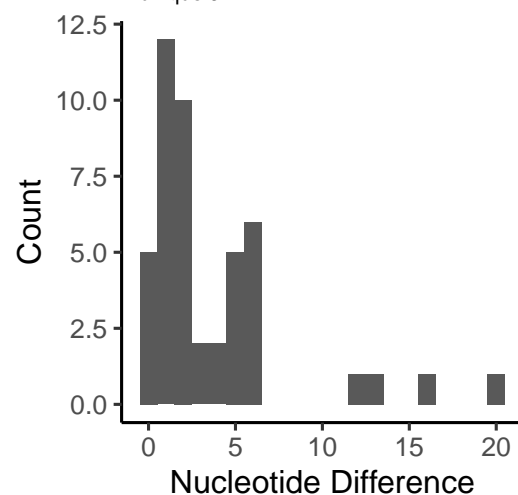
### IGHV1-18\*01

43382 sequences assigned  
9298 (21.4%) exact matches, in which:  
6785 unique CDR3  
6 unique J



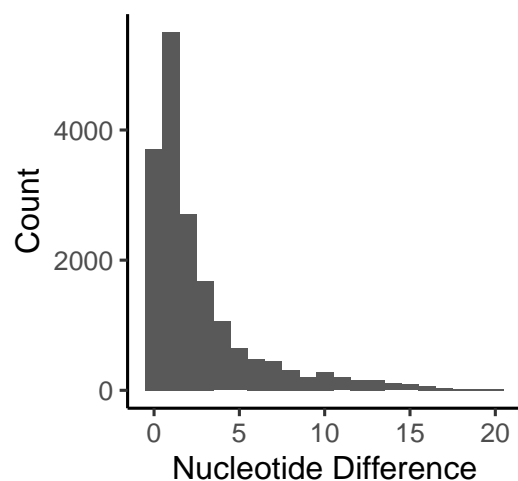
### IGHV1-45\*02

46 sequences assigned  
5 (10.9%) exact matches, in which:  
4 unique CDR3  
2 unique J



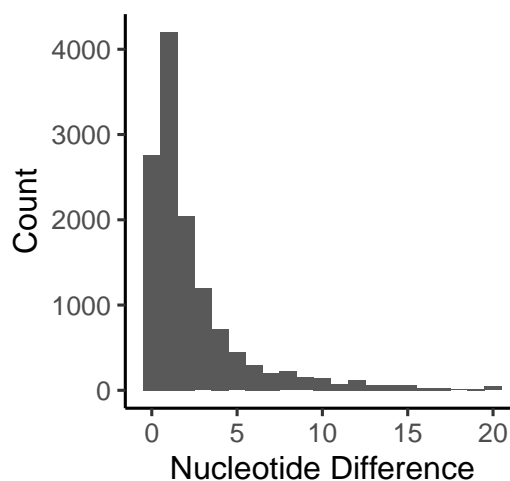
### IGHV1-3\*01

18083 sequences assigned  
3708 (20.5%) exact matches, in which:  
2691 unique CDR3  
6 unique J



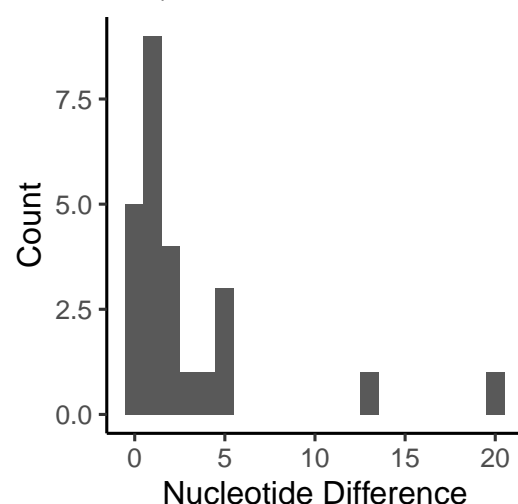
### IGHV1-24\*01

13153 sequences assigned  
2762 (21%) exact matches, in which:  
2039 unique CDR3  
6 unique J



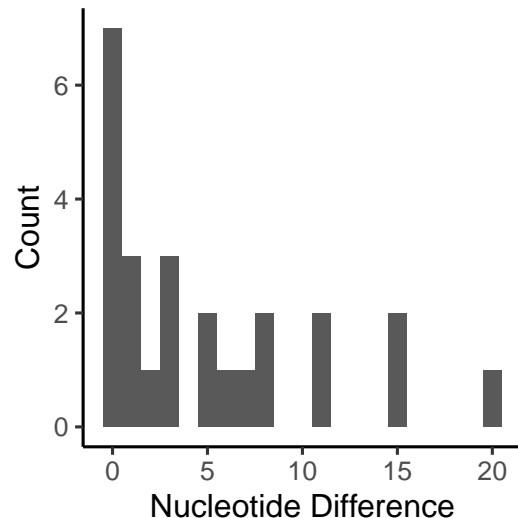
### IGHV1-45\*03

26 sequences assigned  
5 (19.2%) exact matches, in which:  
5 unique CDR3  
2 unique J



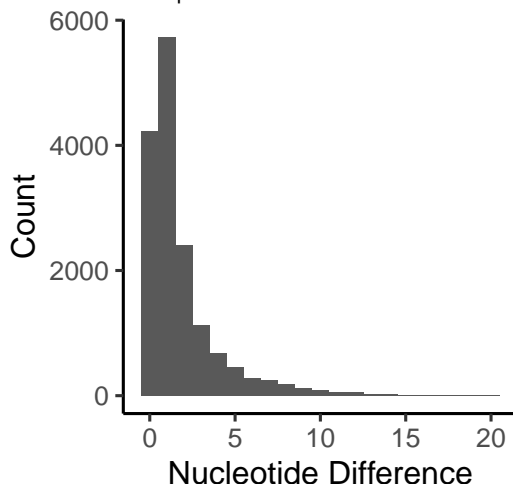
## IGHV1-45\*02\_A315G

28 sequences assigned  
7 (25%) exact matches, in which:  
7 unique CDR3  
3 unique J



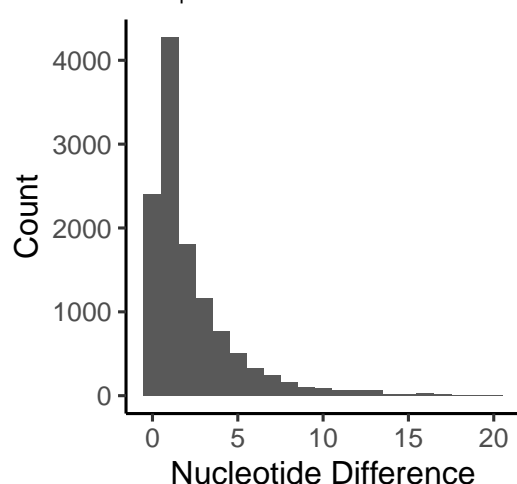
## IGHV1-69\*02

15760 sequences assigned  
4224 (26.8%) exact matches, in which:  
3205 unique CDR3  
6 unique J



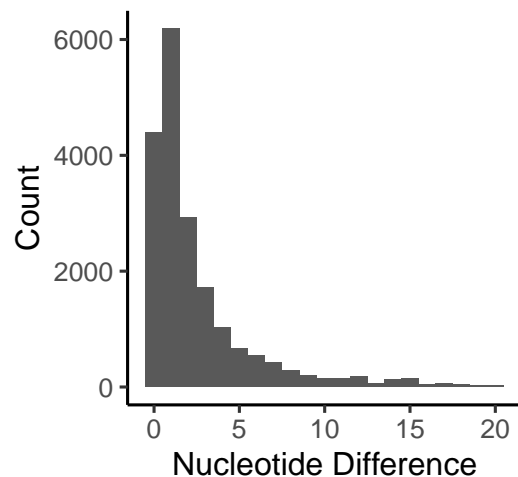
## IGHV2-5\*02

12279 sequences assigned  
2403 (19.6%) exact matches, in which:  
1645 unique CDR3  
6 unique J



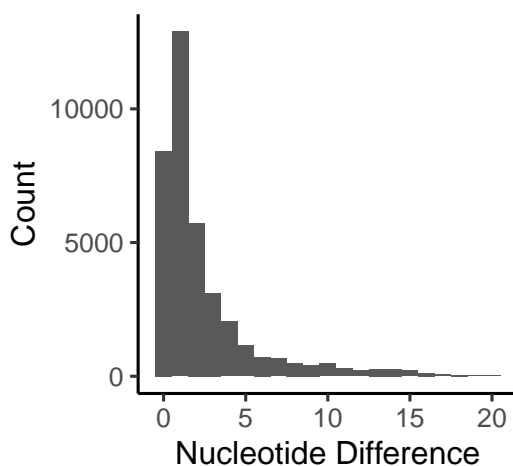
## IGHV1-46\*01

19541 sequences assigned  
4391 (22.5%) exact matches, in which:  
3215 unique CDR3  
6 unique J



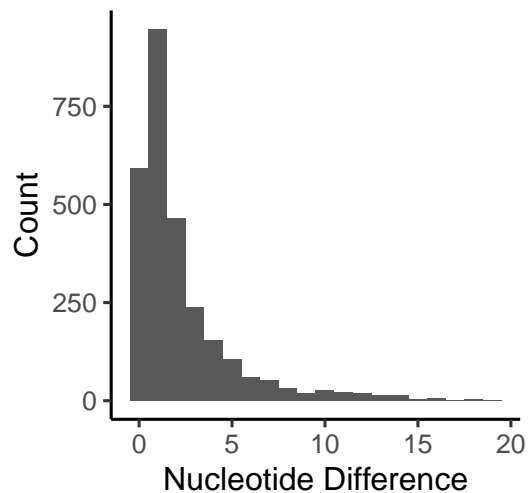
## IGHV1-69\*04

38040 sequences assigned  
8424 (22.1%) exact matches, in which:  
6140 unique CDR3  
6 unique J



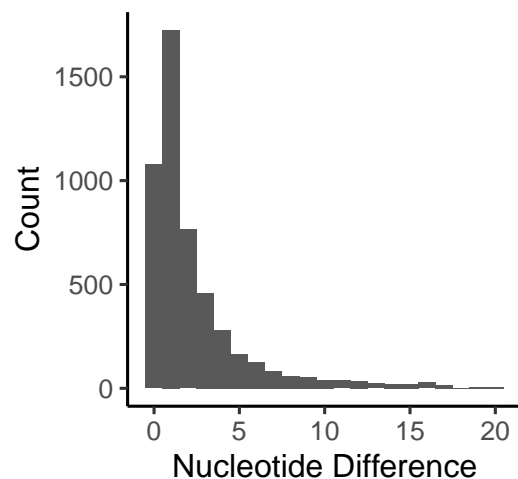
## IGHV2-26\*01

2835 sequences assigned  
592 (20.9%) exact matches, in which:  
439 unique CDR3  
6 unique J



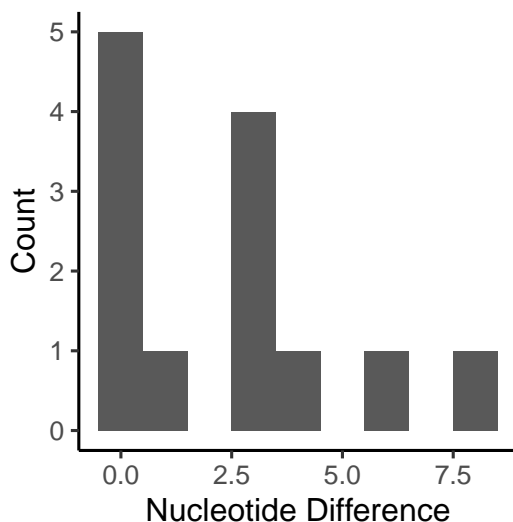
## IGHV1-58\*02

5076 sequences assigned  
1078 (21.2%) exact matches, in which:  
759 unique CDR3  
6 unique J



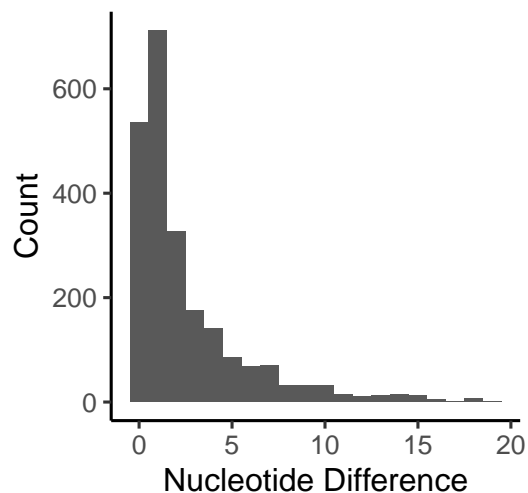
## IGHV1-69D\*01

13 sequences assigned  
5 (38.5%) exact matches, in which:  
5 unique CDR3  
3 unique J



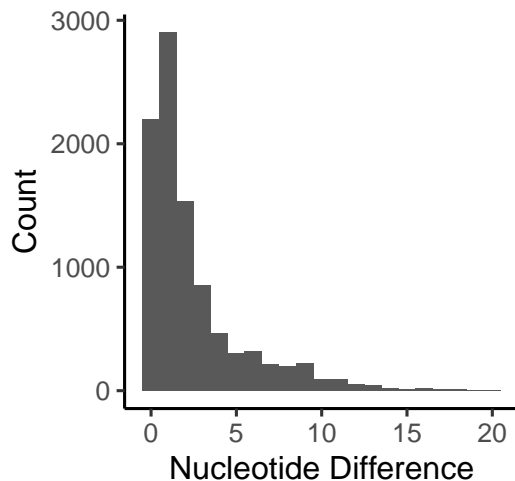
## IGHV2-70\*15

2333 sequences assigned  
536 (23%) exact matches, in which:  
378 unique CDR3  
6 unique J



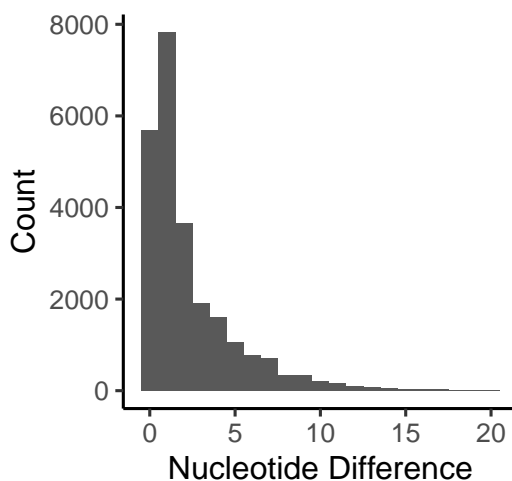
### IGHV3-7\*03

9685 sequences assigned  
2203 (22.7%) exact matches, in which:  
1667 unique CDR3  
6 unique J



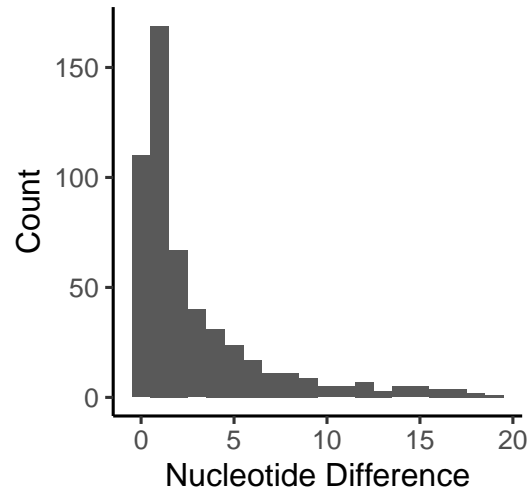
### IGHV3-11\*05

24878 sequences assigned  
5696 (22.9%) exact matches, in which:  
4025 unique CDR3  
6 unique J



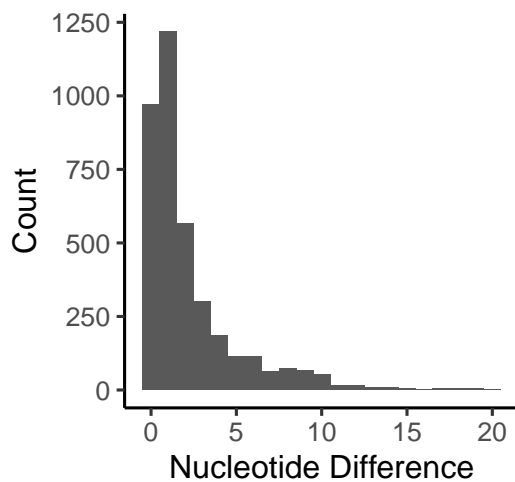
### IGHV3-20\*01

535 sequences assigned  
110 (20.6%) exact matches, in which:  
86 unique CDR3  
5 unique J



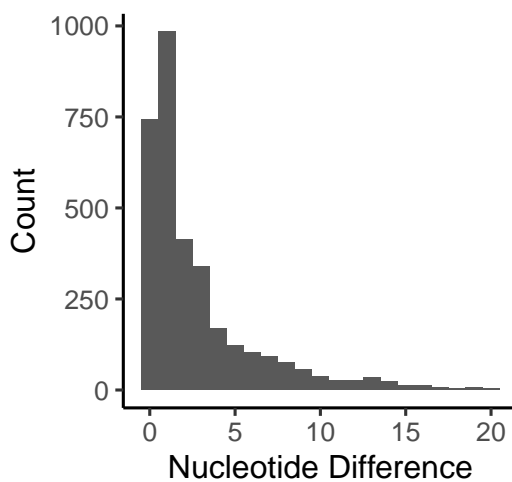
### IGHV3-7\*04

3823 sequences assigned  
972 (25.4%) exact matches, in which:  
734 unique CDR3  
6 unique J



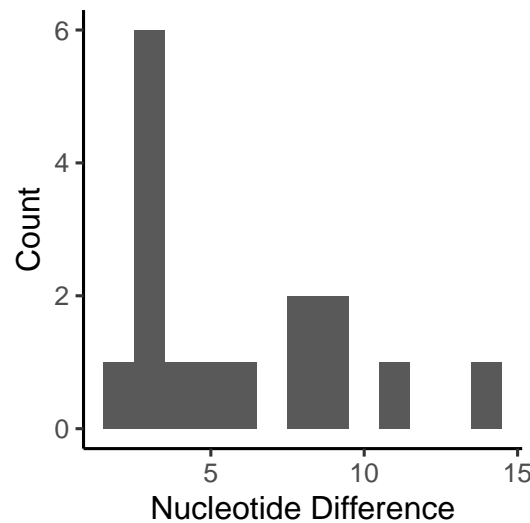
### IGHV3-13\*04

3318 sequences assigned  
743 (22.4%) exact matches, in which:  
539 unique CDR3  
6 unique J



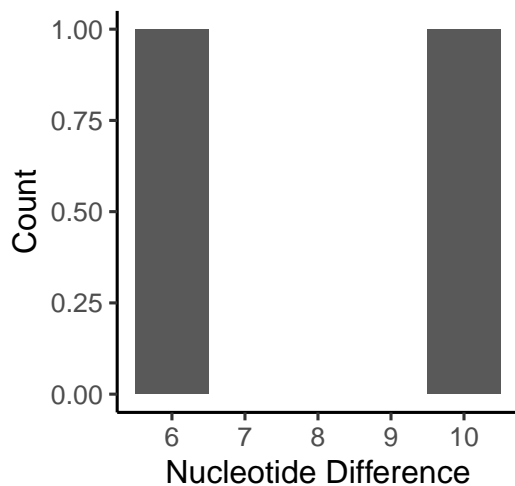
### IGHV3-20\*03

16 sequences assigned  
No exact matches.



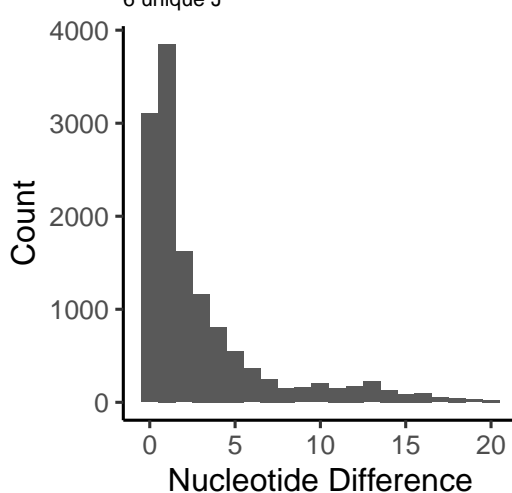
### IGHV3-9\*01

2 sequences assigned  
No exact matches.



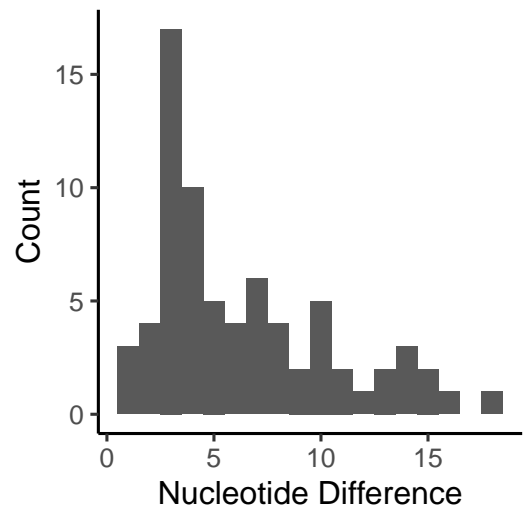
### IGHV3-15\*01

13482 sequences assigned  
3106 (23%) exact matches, in which:  
2158 unique CDR3  
6 unique J



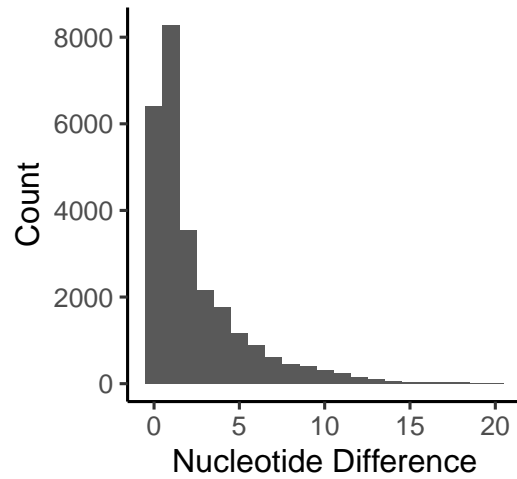
### IGHV3-20\*04

74 sequences assigned  
No exact matches.



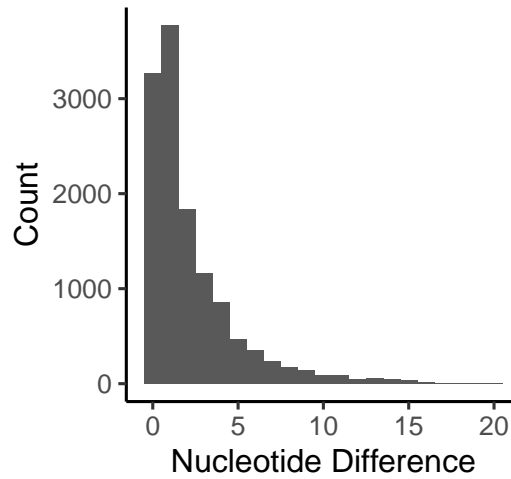
### IGHV3-21\*01

26907 sequences assigned  
6417 (23.8%) exact matches, in which:  
4699 unique CDR3  
6 unique J



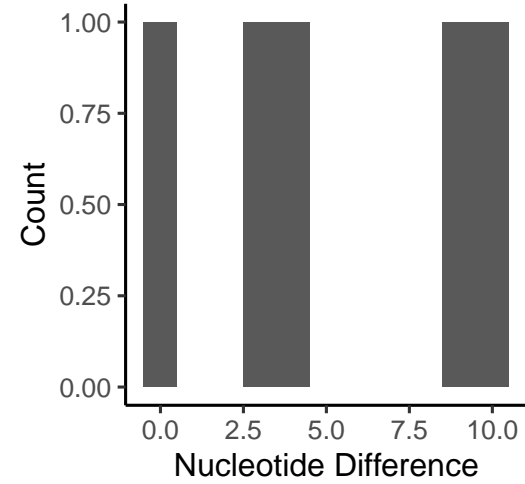
### IGHV3-30-3\*01

12762 sequences assigned  
3264 (25.6%) exact matches, in which:  
2462 unique CDR3  
6 unique J



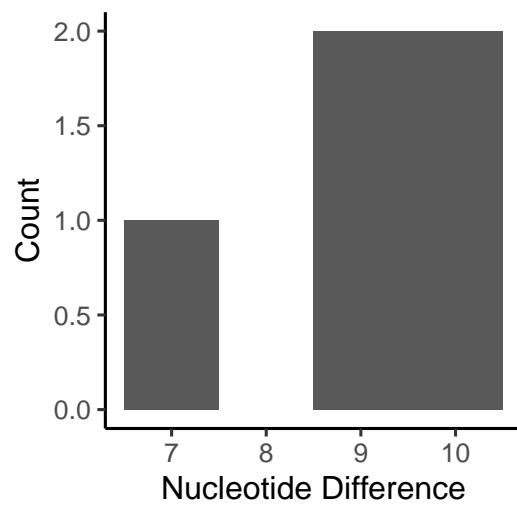
### IGHV3-35\*01

5 sequences assigned  
1 (20%) exact matches, in which:  
1 unique CDR3  
1 unique J



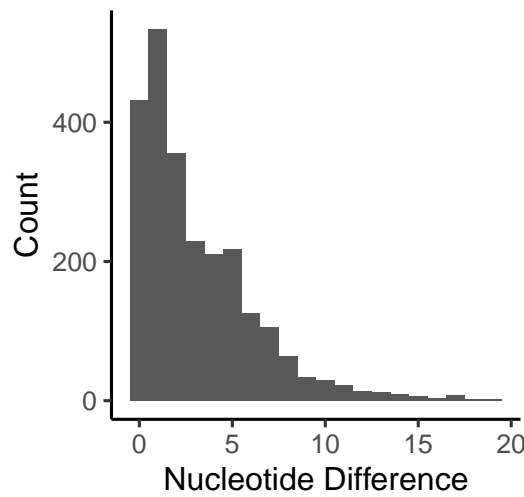
### IGHV3-22\*02

6 sequences assigned  
No exact matches.



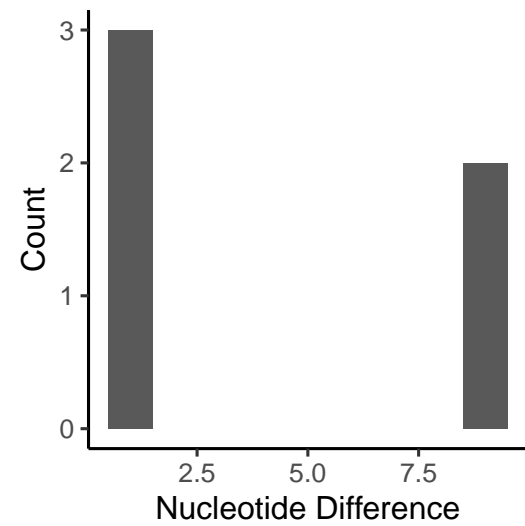
### IGHV3-30\*03\_T288C

2428 sequences assigned  
431 (17.8%) exact matches, in which:  
418 unique CDR3  
6 unique J



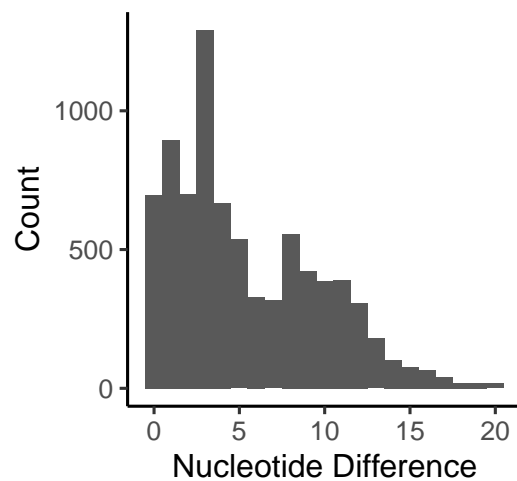
### IGHV3-35\*02

5 sequences assigned  
No exact matches.



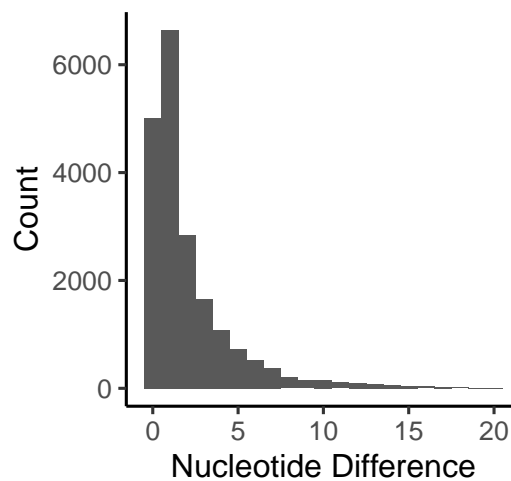
### IGHV3-23\*04

8213 sequences assigned  
696 (8.5%) exact matches, in which:  
624 unique CDR3  
6 unique J



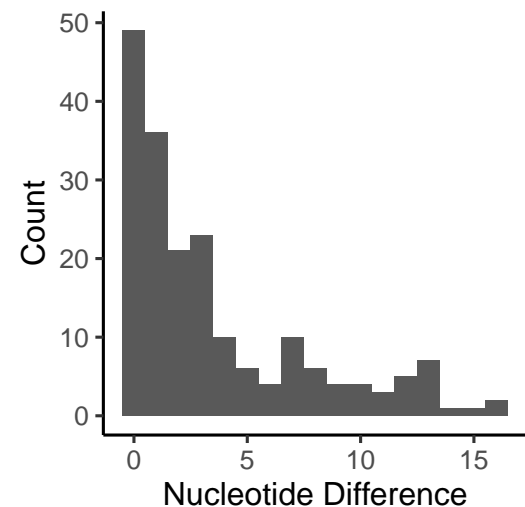
### IGHV3-33\*01

19952 sequences assigned  
5008 (25.1%) exact matches, in which:  
3686 unique CDR3  
6 unique J



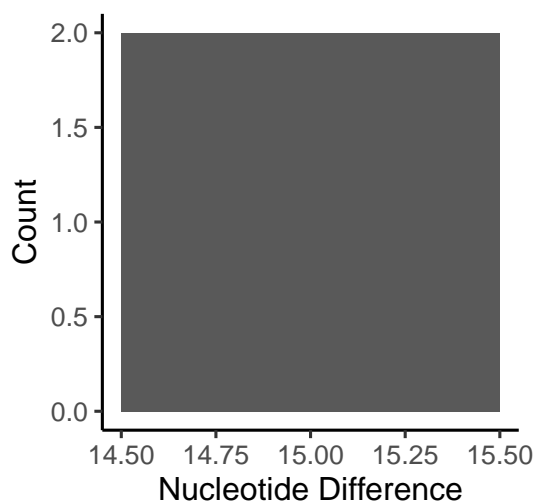
### IGHV3-38-3\*01

196 sequences assigned  
49 (25%) exact matches, in which:  
44 unique CDR3  
4 unique J



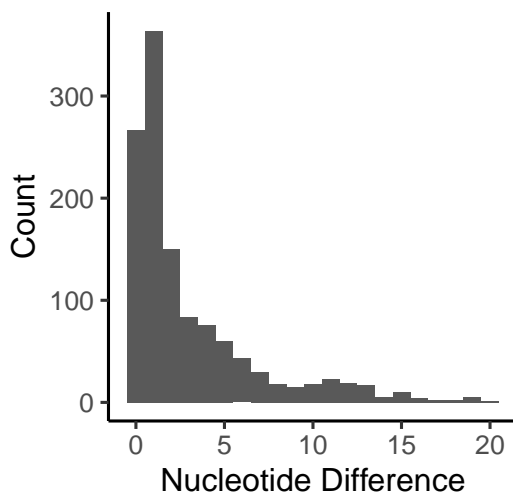
### IGHV3-38\*02

2 sequences assigned  
No exact matches.



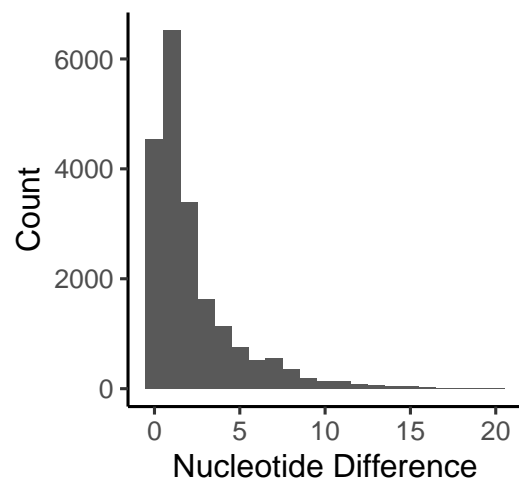
### IGHV3-43\*01

1222 sequences assigned  
267 (21.8%) exact matches, in which:  
193 unique CDR3  
6 unique J



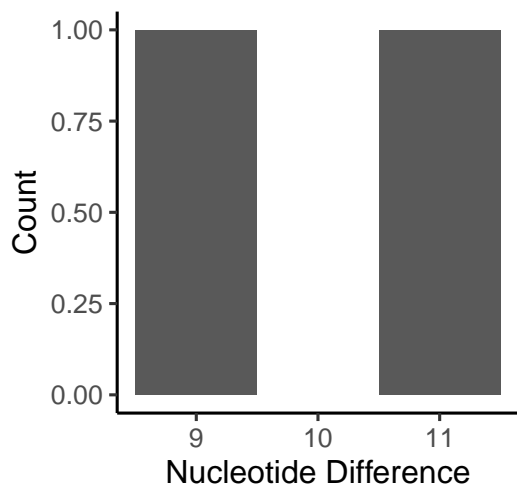
### IGHV3-48\*03

20305 sequences assigned  
4540 (22.4%) exact matches, in which:  
3311 unique CDR3  
6 unique J



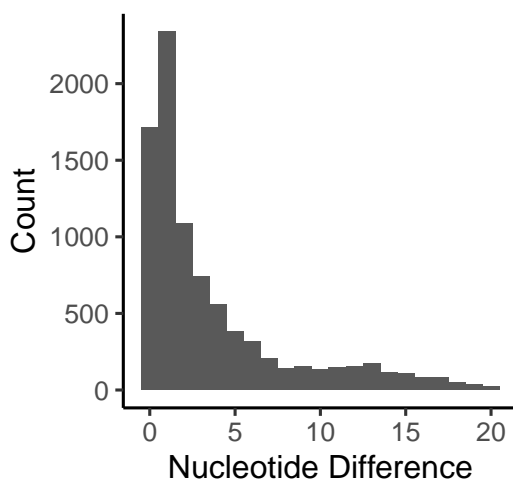
### IGHV3-38\*03

3 sequences assigned  
No exact matches.



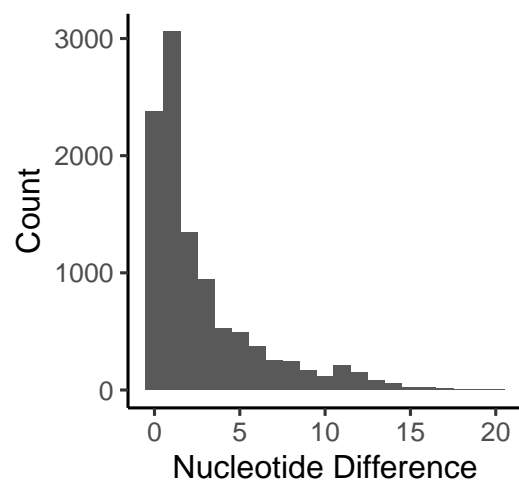
### IGHV3-43\*02

8855 sequences assigned  
1711 (19.3%) exact matches, in which:  
1266 unique CDR3  
6 unique J



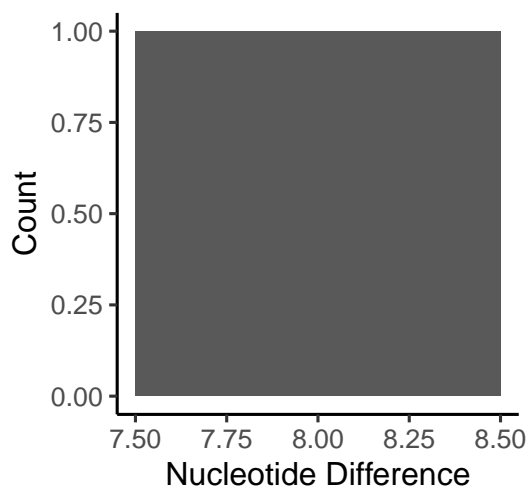
### IGHV3-48\*04

10536 sequences assigned  
2379 (22.6%) exact matches, in which:  
1807 unique CDR3  
6 unique J



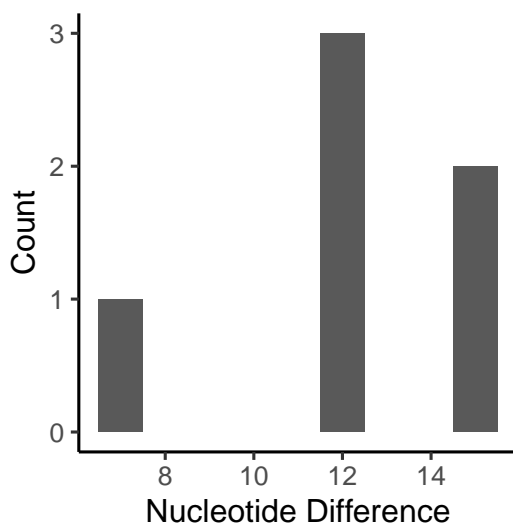
### IGHV3-41\*02

1 sequences assigned  
No exact matches.



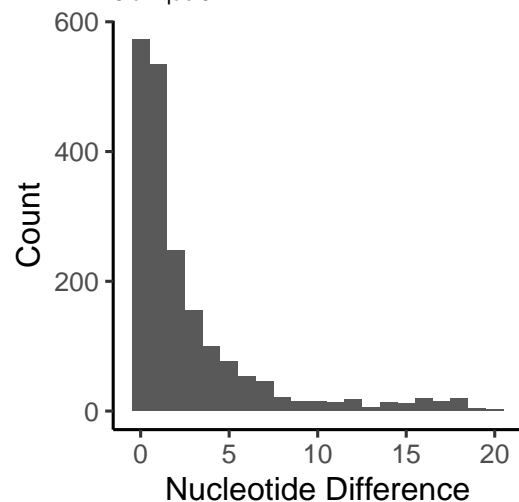
### IGHV3-47\*01

6 sequences assigned  
No exact matches.



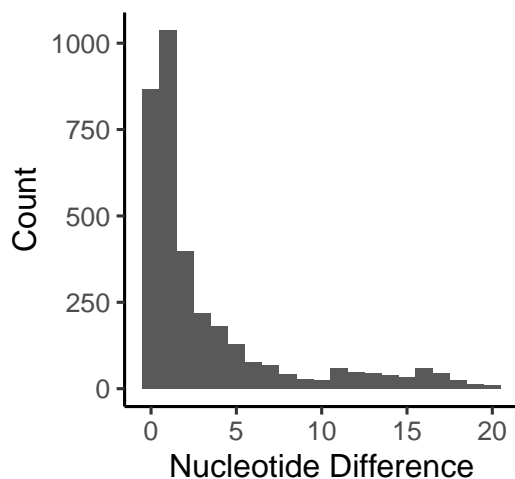
### IGHV3-49\*03

1973 sequences assigned  
573 (29%) exact matches, in which:  
433 unique CDR3  
6 unique J



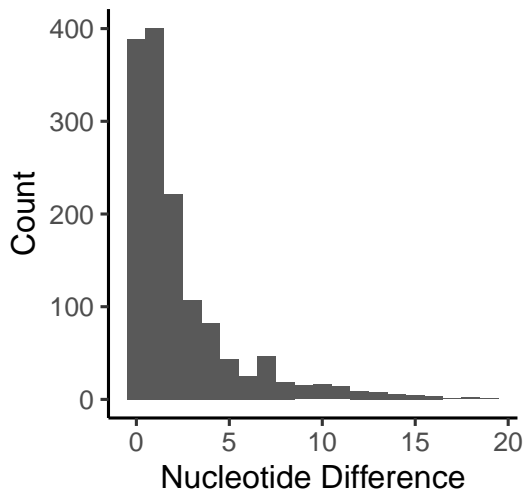
### IGHV3-49\*04

3492 sequences assigned  
866 (24.8%) exact matches, in which:  
643 unique CDR3  
6 unique J



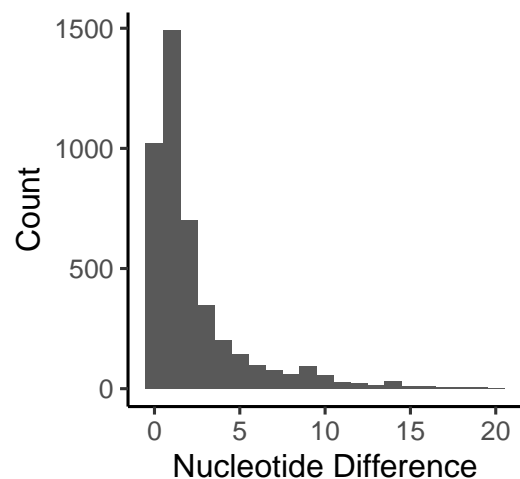
### IGHV3-64\*01

1430 sequences assigned  
389 (27.2%) exact matches, in which:  
298 unique CDR3  
6 unique J



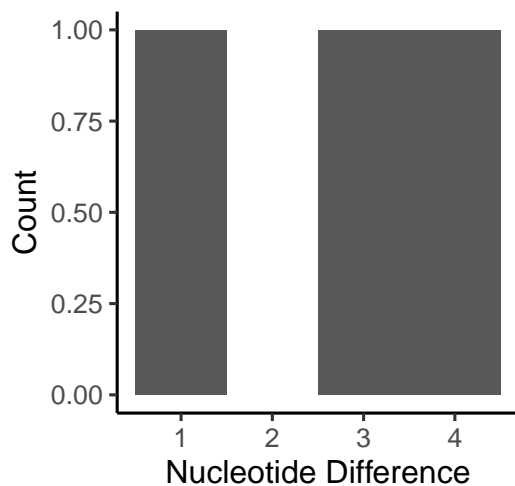
### IGHV3-66\*02

4462 sequences assigned  
1020 (22.9%) exact matches, in which:  
720 unique CDR3  
6 unique J



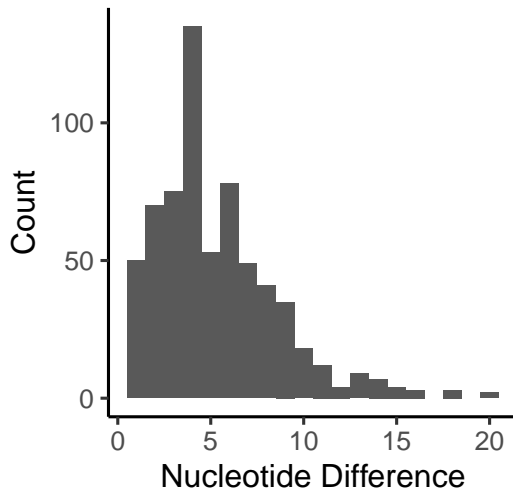
### IGHV3-52\*01

3 sequences assigned  
No exact matches.



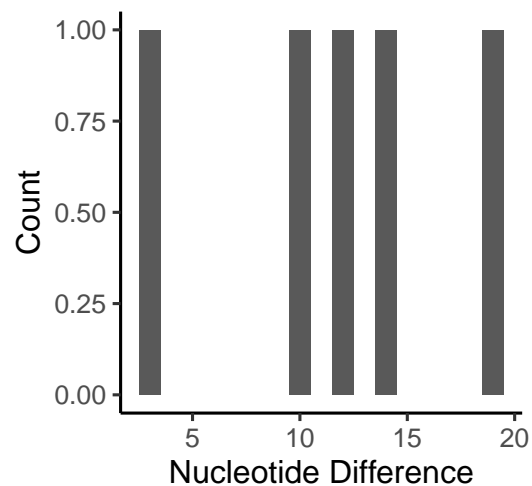
### IGHV3-64\*04

649 sequences assigned  
No exact matches.



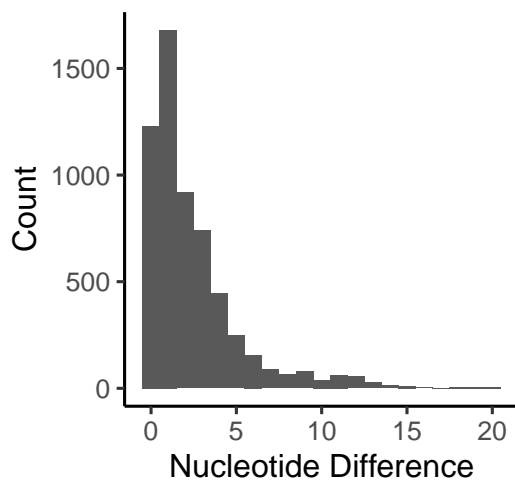
### IGHV3-69-1\*01

5 sequences assigned  
No exact matches.



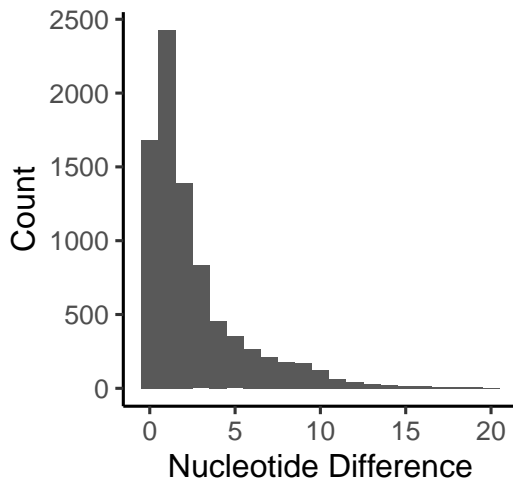
### IGHV3-53\*04

5947 sequences assigned  
1230 (20.7%) exact matches, in which:  
905 unique CDR3  
6 unique J



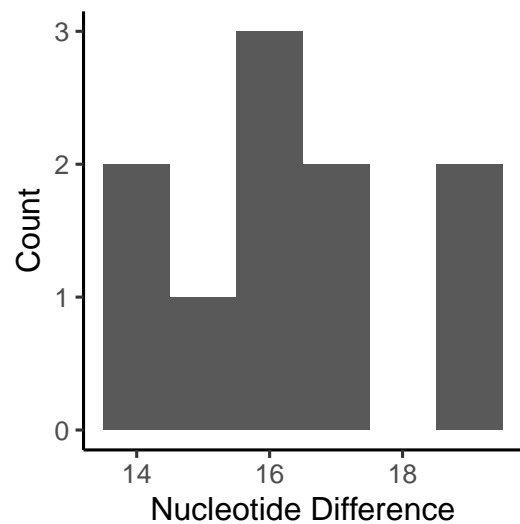
### IGHV3-66\*01

8383 sequences assigned  
1683 (20.1%) exact matches, in which:  
1199 unique CDR3  
6 unique J



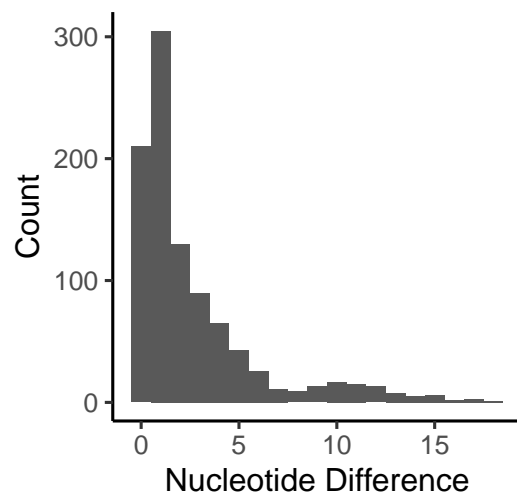
### IGHV3-71\*04

14 sequences assigned  
No exact matches.



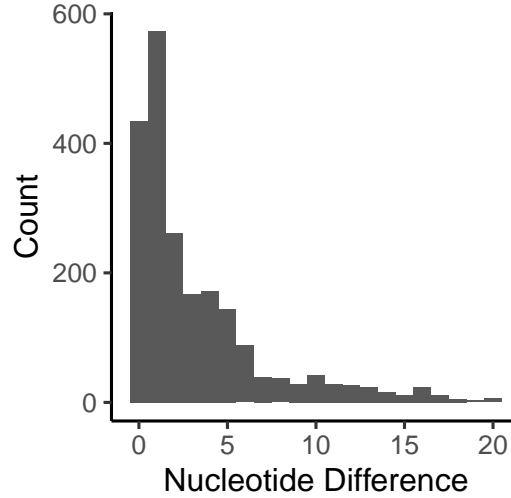
### IGHV3-72\*01

987 sequences assigned  
210 (21.3%) exact matches, in which:  
140 unique CDR3  
5 unique J



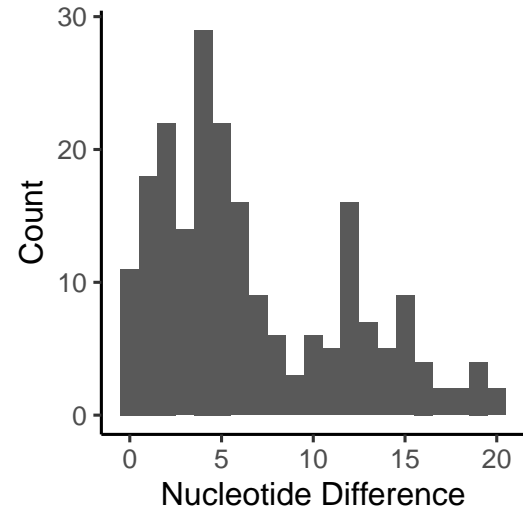
### IGHV3-43D\*03

2172 sequences assigned  
434 (20%) exact matches, in which:  
320 unique CDR3  
6 unique J



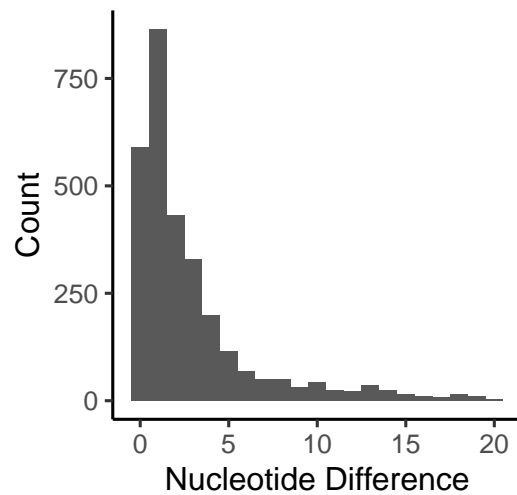
### IGHV3-NL1\*01\_G49A\_G7

217 sequences assigned  
11 (5.1%) exact matches, in which:  
10 unique CDR3  
4 unique J



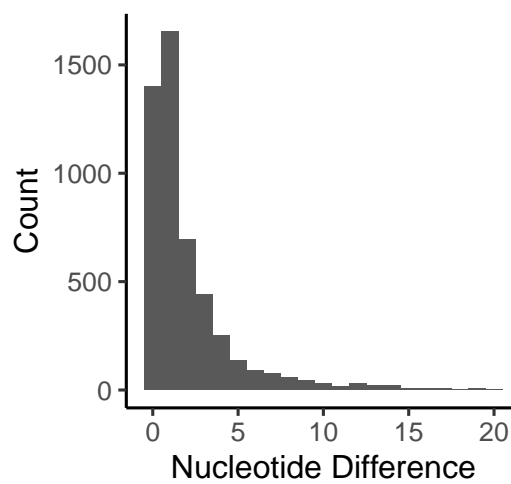
### IGHV3-73\*01

2969 sequences assigned  
590 (19.9%) exact matches, in which:  
416 unique CDR3  
6 unique J



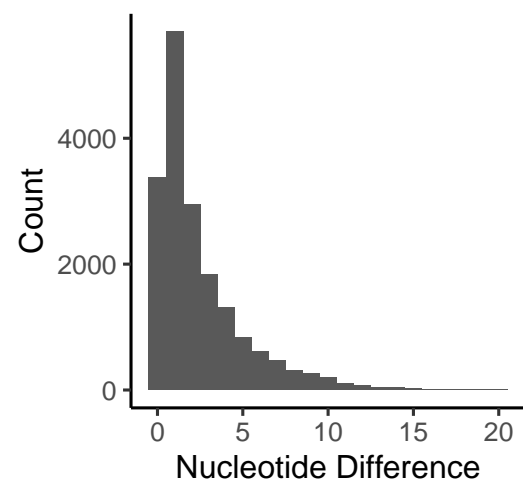
### IGHV3-64D\*06

5030 sequences assigned  
1401 (27.9%) exact matches, in which:  
1061 unique CDR3  
6 unique J



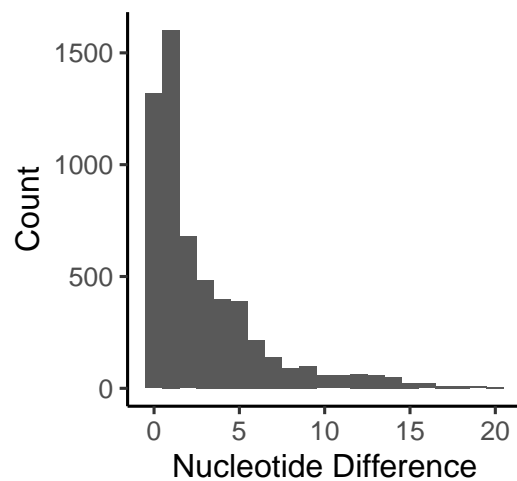
### IGHV4-4\*02

18333 sequences assigned  
3383 (18.5%) exact matches, in which:  
2503 unique CDR3  
6 unique J



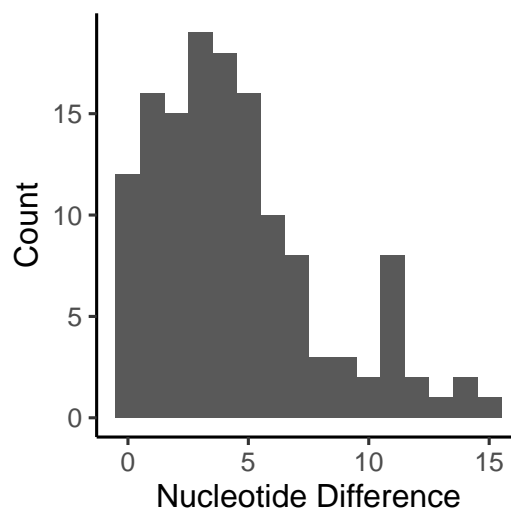
### IGHV3-74\*01

5851 sequences assigned  
1319 (22.5%) exact matches, in which:  
1004 unique CDR3  
6 unique J



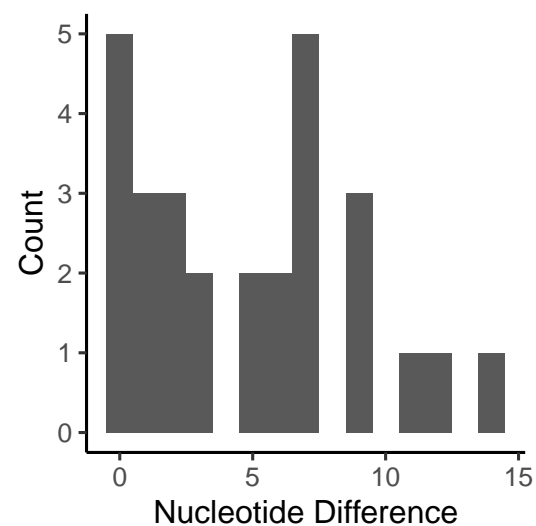
### IGHV3-NL1\*01\_G49A\_C1

136 sequences assigned  
12 (8.8%) exact matches, in which:  
11 unique CDR3  
4 unique J



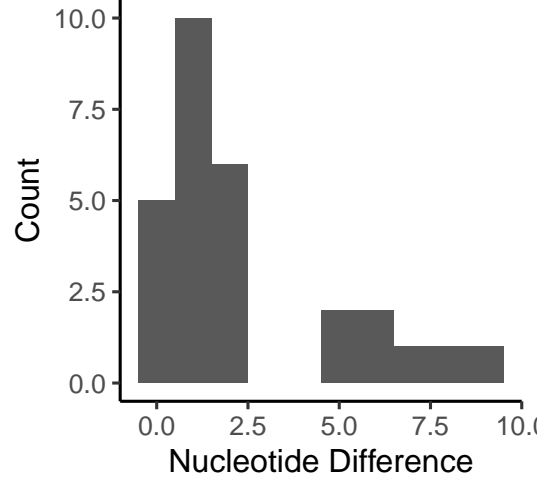
### IGHV4-28\*03

28 sequences assigned  
5 (17.9%) exact matches, in which:  
5 unique CDR3  
3 unique J



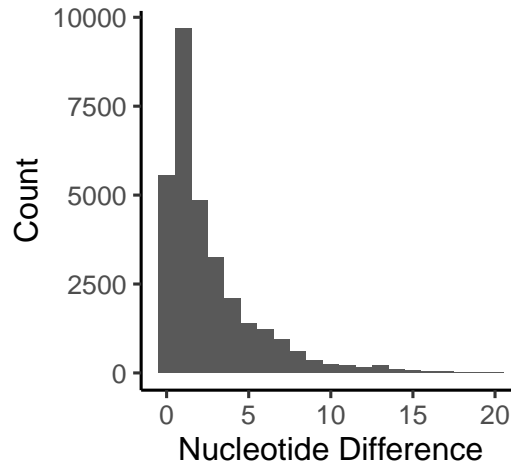
### IGHV4-28\*07

28 sequences assigned  
5 (17.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



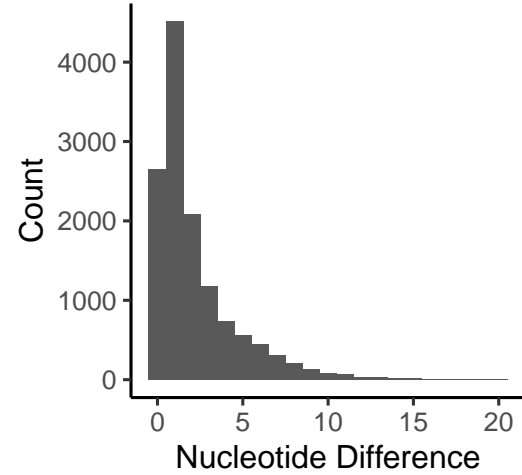
### IGHV4-31\*03

31329 sequences assigned  
5548 (17.7%) exact matches, in which:  
3984 unique CDR3  
6 unique J



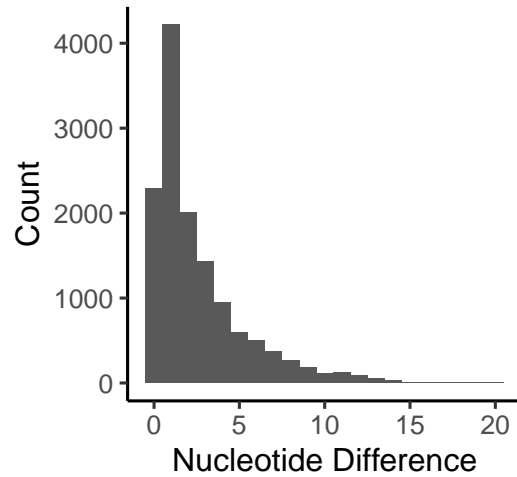
### IGHV4-39\*01

13177 sequences assigned  
2654 (20.1%) exact matches, in which:  
2057 unique CDR3  
6 unique J



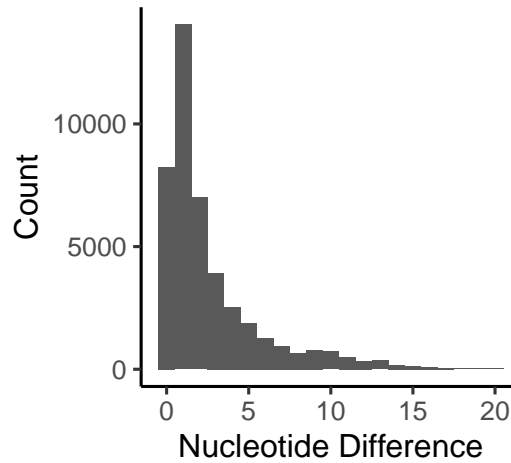
### IGHV4-30-4\*01

13344 sequences assigned  
2295 (17.2%) exact matches, in which:  
1689 unique CDR3  
6 unique J



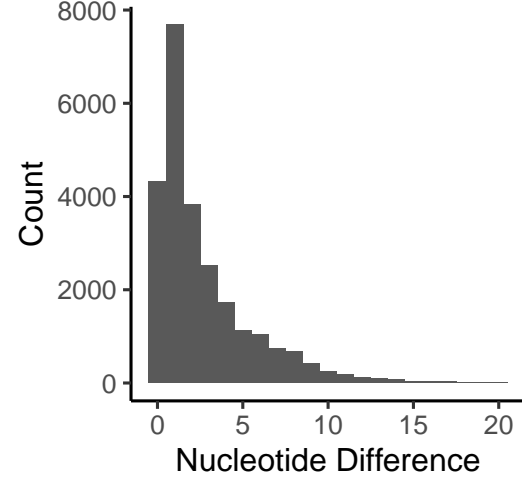
### IGHV4-34\*01

44103 sequences assigned  
8235 (18.7%) exact matches, in which:  
5880 unique CDR3  
6 unique J



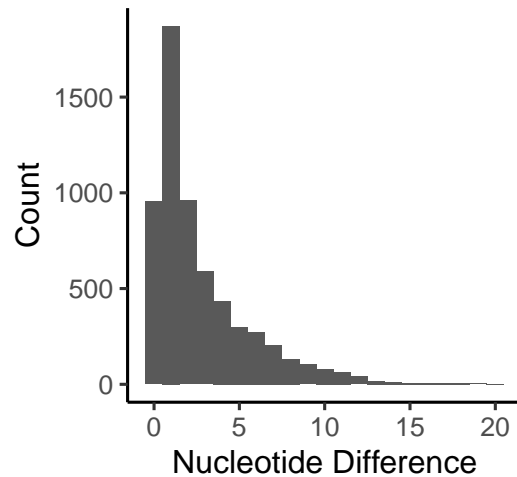
### IGHV4-39\*07

25155 sequences assigned  
4328 (17.2%) exact matches, in which:  
3282 unique CDR3  
6 unique J



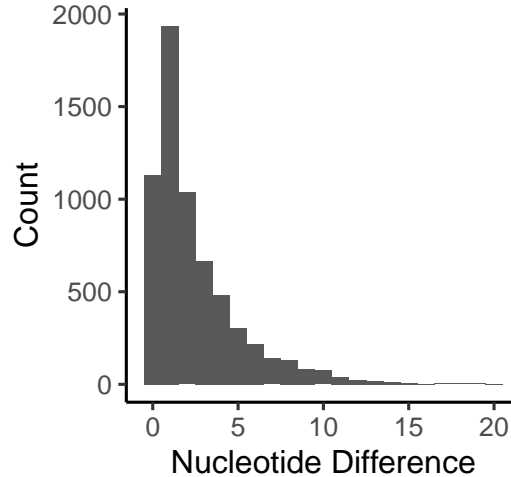
### IGHV4-30-2\*01

6117 sequences assigned  
954 (15.6%) exact matches, in which:  
697 unique CDR3  
6 unique J



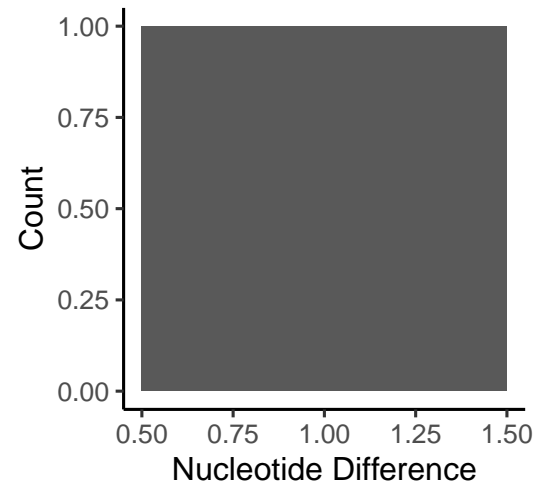
### IGHV4-38-2\*02

6385 sequences assigned  
1130 (17.7%) exact matches, in which:  
838 unique CDR3  
6 unique J



### IGHV4-55\*08

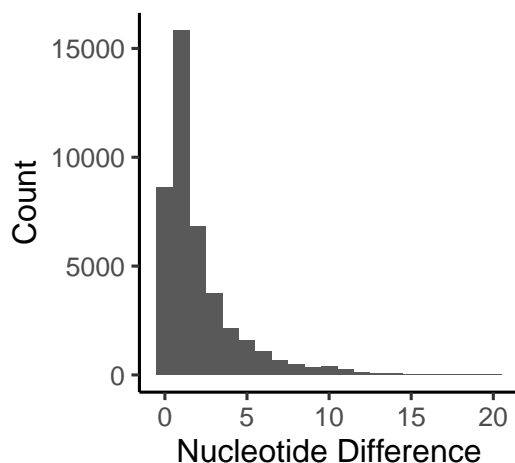
1 sequences assigned  
No exact matches.





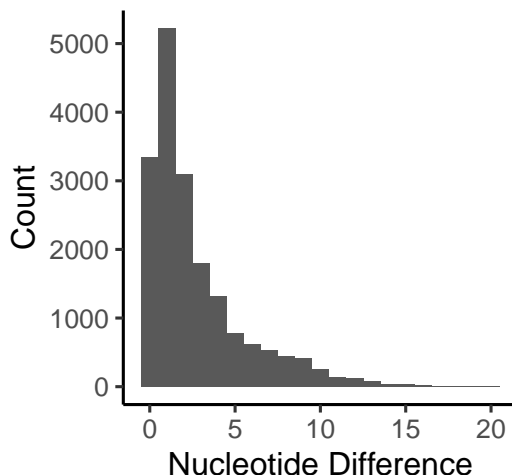
### IGHV4-59\*01

42542 sequences assigned  
8617 (20.3%) exact matches, in which:  
6125 unique CDR3  
6 unique J



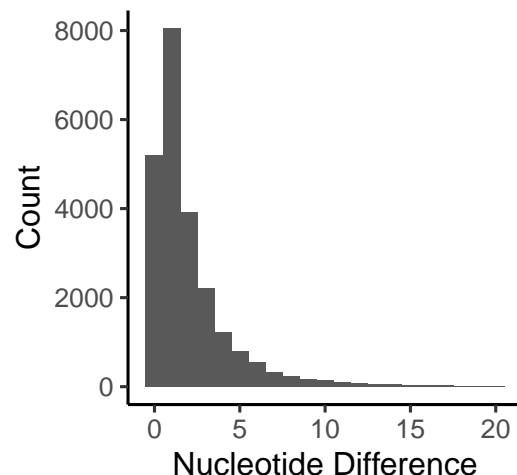
### IGHV4-61\*02

18378 sequences assigned  
3338 (18.2%) exact matches, in which:  
2594 unique CDR3  
6 unique J



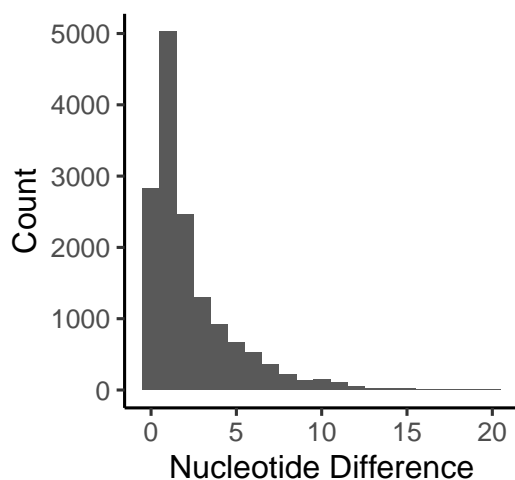
### IGHV5-10-1\*01

23438 sequences assigned  
5190 (22.1%) exact matches, in which:  
3836 unique CDR3  
6 unique J



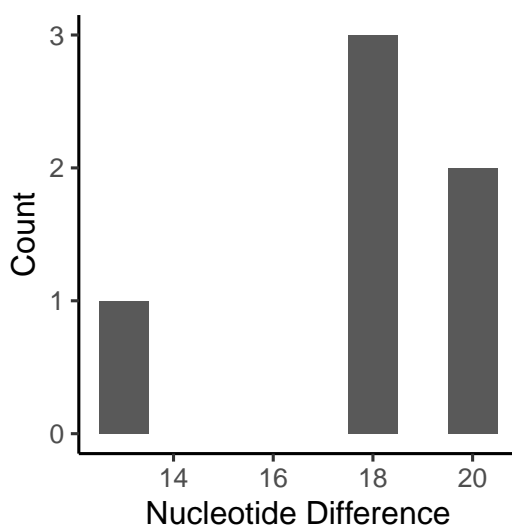
### IGHV4-59\*08

14881 sequences assigned  
2829 (19%) exact matches, in which:  
2036 unique CDR3  
6 unique J



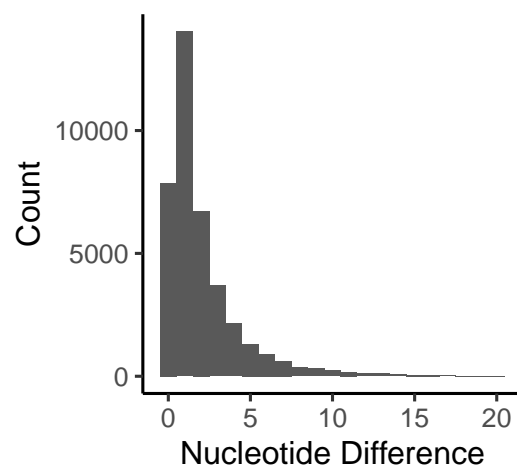
### IGHV1/OR15-3\*02

7 sequences assigned  
No exact matches.



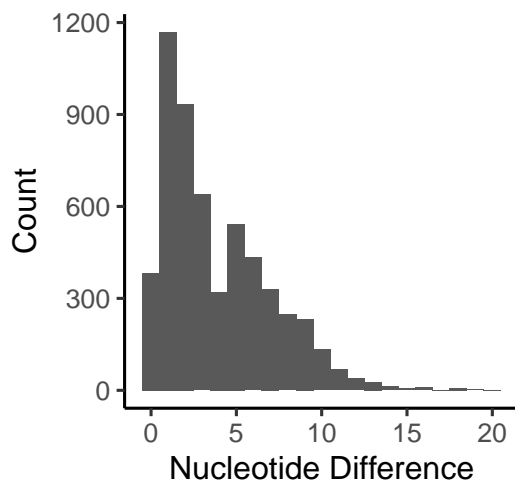
### IGHV5-51\*01

39148 sequences assigned  
7862 (20.1%) exact matches, in which:  
5513 unique CDR3  
6 unique J



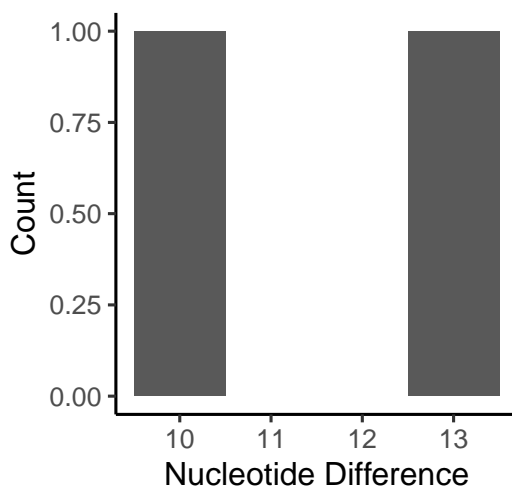
### IGHV4-59\*12

5627 sequences assigned  
382 (6.8%) exact matches, in which:  
375 unique CDR3  
6 unique J



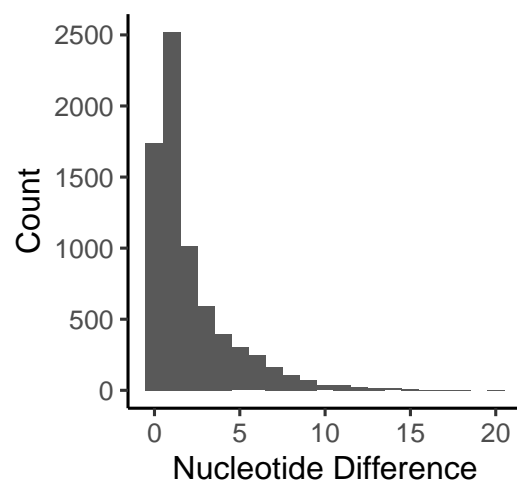
### IGHV4/OR15-8\*01

2 sequences assigned  
No exact matches.



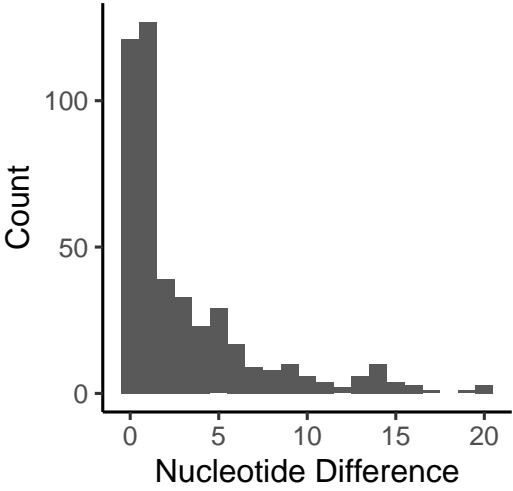
### IGHV6-1\*01

7327 sequences assigned  
1740 (23.7%) exact matches, in which:  
1201 unique CDR3  
6 unique J



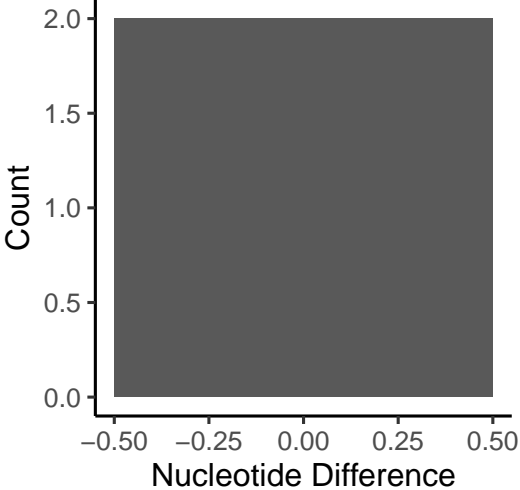
IGHV7-4-1\*01

460 sequences assigned  
121 (26.3%) exact matches, in which:  
100 unique CDR3  
6 unique J



IGHV7-81\*01

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





Warning – no inferred sequences found.