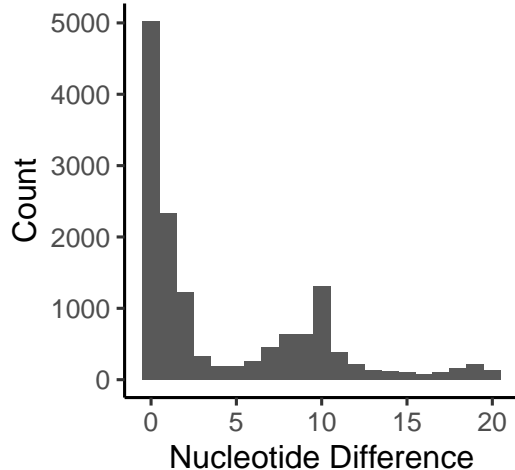


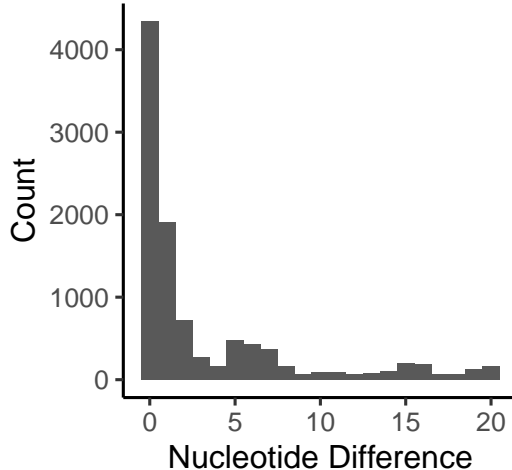
### IGHV1-2\*02

16593 sequences assigned  
5021 (30.3%) exact matches, in which:  
4714 unique CDR3  
6 unique J



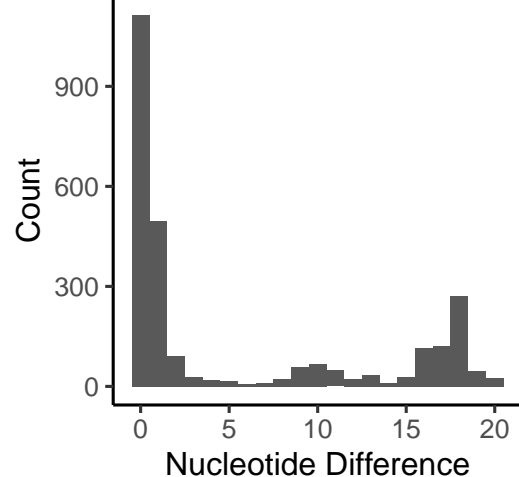
### IGHV1-8\*01

10473 sequences assigned  
4343 (41.5%) exact matches, in which:  
4083 unique CDR3  
6 unique J



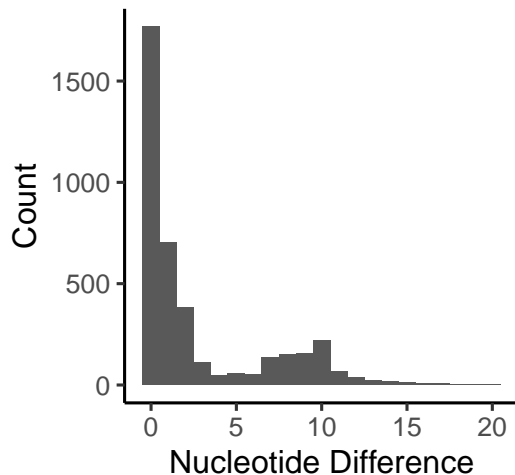
### IGHV1-24\*01

3028 sequences assigned  
1115 (36.8%) exact matches, in which:  
1018 unique CDR3  
6 unique J



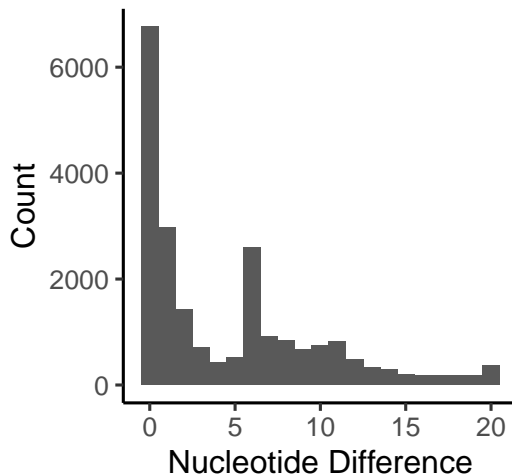
### IGHV1-2\*04

3980 sequences assigned  
1768 (44.4%) exact matches, in which:  
1663 unique CDR3  
6 unique J



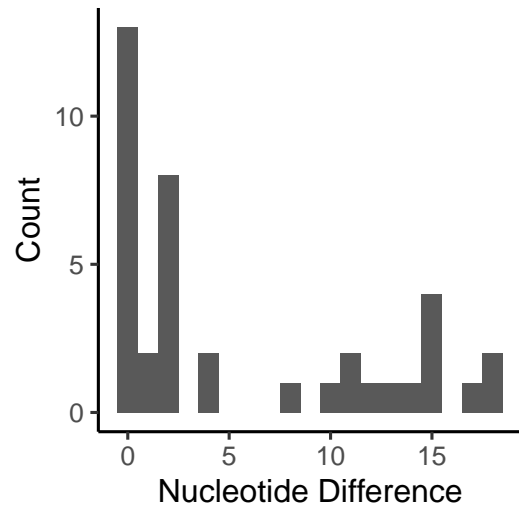
### IGHV1-18\*01

23734 sequences assigned  
6764 (28.5%) exact matches, in which:  
6382 unique CDR3  
6 unique J



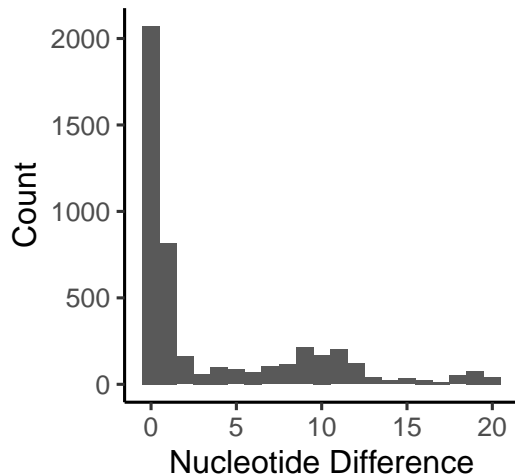
### IGHV1-45\*02

39 sequences assigned  
13 (33.3%) exact matches, in which:  
12 unique CDR3  
3 unique J



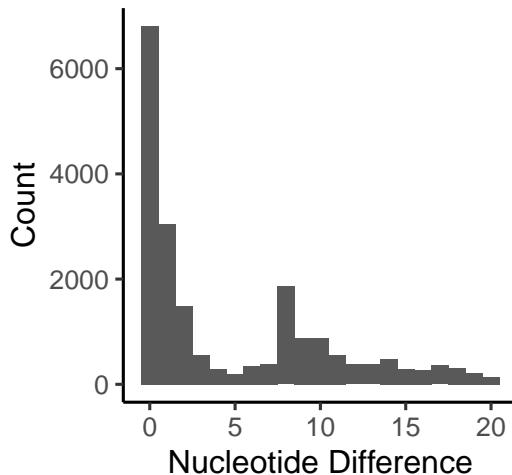
### IGHV1-3\*01\_05

5855 sequences assigned  
2072 (35.4%) exact matches, in which:  
1892 unique CDR3  
6 unique J



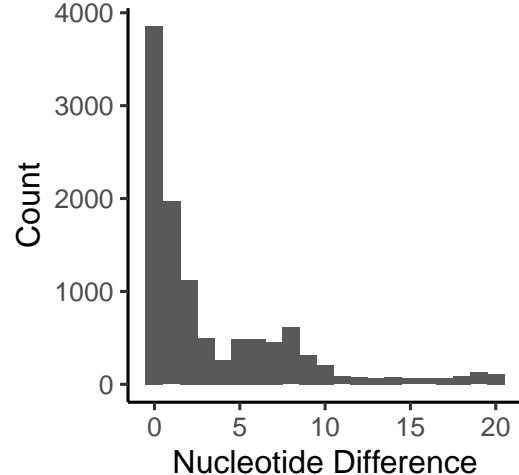
### IGHV1-18\*04

21143 sequences assigned  
6810 (32.2%) exact matches, in which:  
6407 unique CDR3  
6 unique J



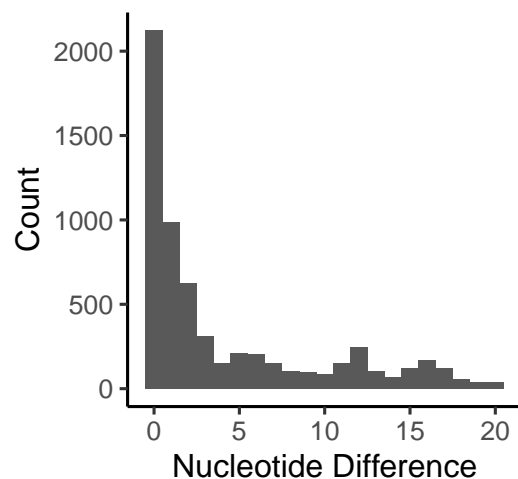
### IGHV1-46\*01

12122 sequences assigned  
3857 (31.8%) exact matches, in which:  
3651 unique CDR3  
6 unique J



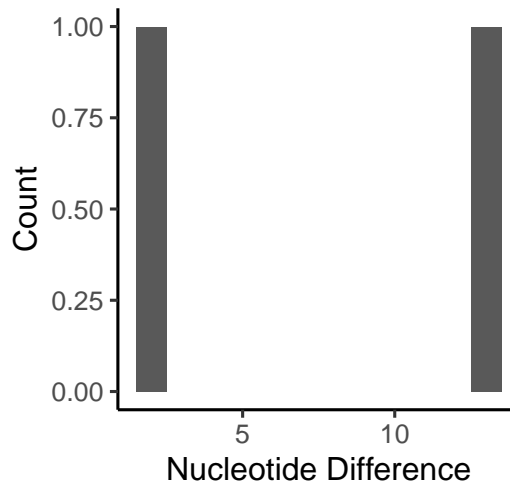
### IGHV1-46\*04

6813 sequences assigned  
2123 (31.2%) exact matches, in which:  
2014 unique CDR3  
6 unique J



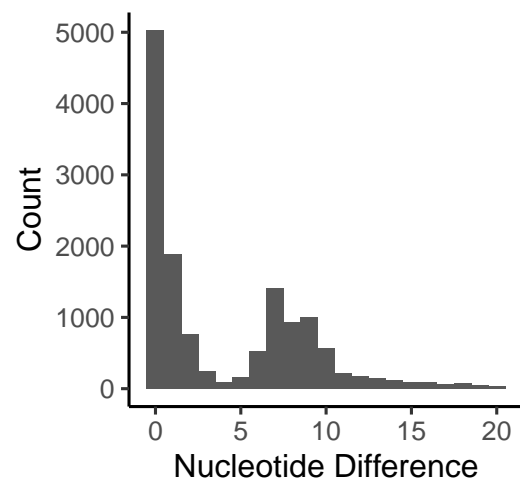
### IGHV1-68\*01

2 sequences assigned  
No exact matches.



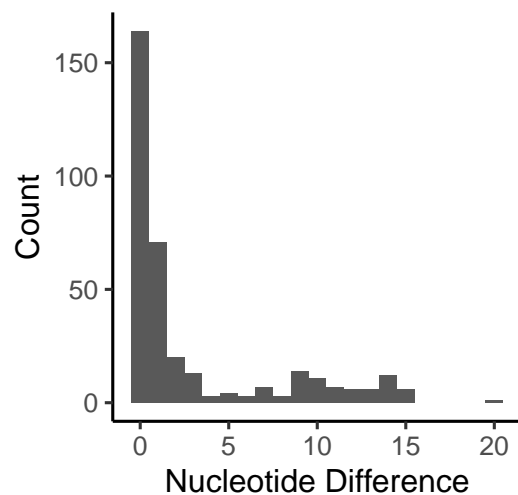
### IGHV1-69\*06\_14

14325 sequences assigned  
5026 (35.1%) exact matches, in which:  
4788 unique CDR3  
6 unique J



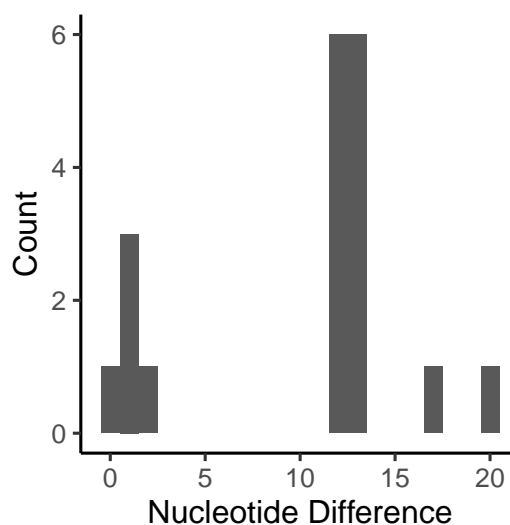
### IGHV1-58\*02

356 sequences assigned  
164 (46.1%) exact matches, in which:  
157 unique CDR3  
6 unique J



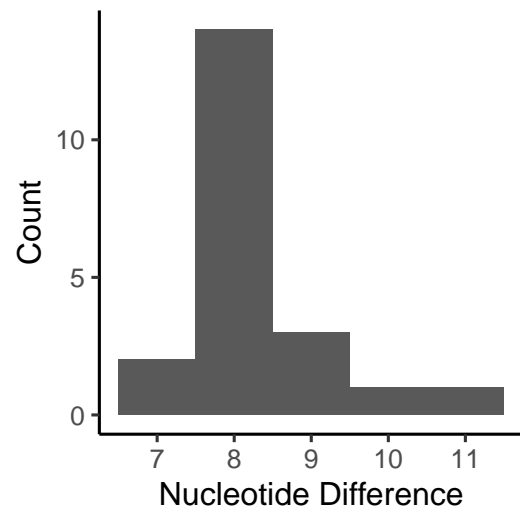
### IGHV1-69-2\*01

113 sequences assigned  
1 (0.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



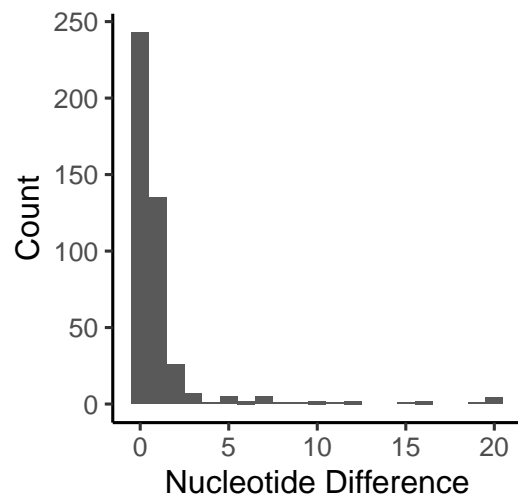
### IGHV1-NL1\*01

21 sequences assigned  
No exact matches.



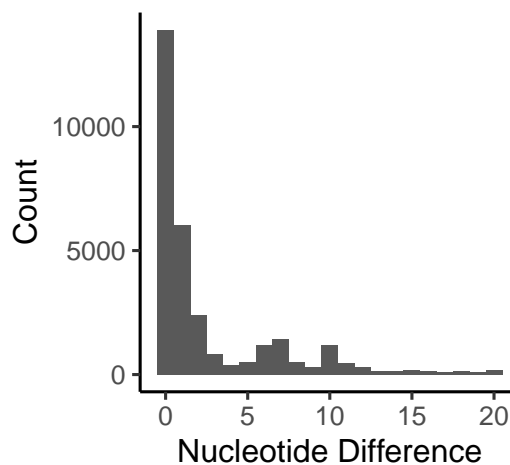
### IGHV1-58\*01\_03

444 sequences assigned  
243 (54.7%) exact matches, in which:  
228 unique CDR3  
6 unique J



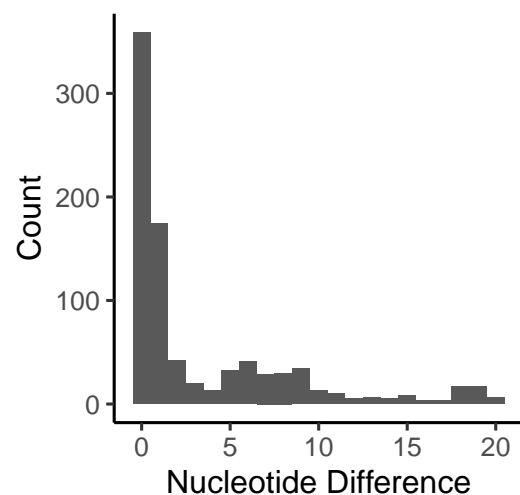
### IGHV1-69\*01\_12\_13

32186 sequences assigned  
13904 (43.2%) exact matches, in which:  
13048 unique CDR3  
6 unique J



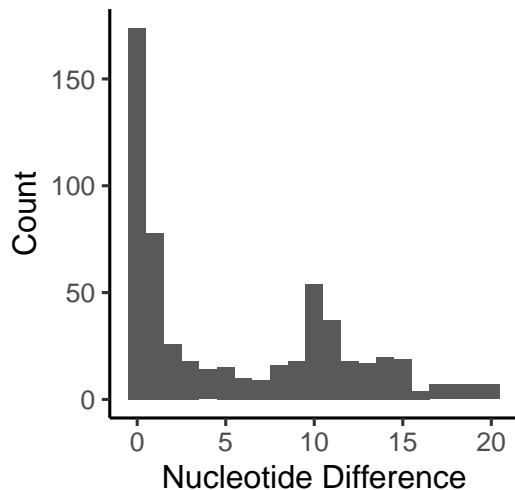
### IGHV2-5\*01

1033 sequences assigned  
359 (34.8%) exact matches, in which:  
335 unique CDR3  
6 unique J



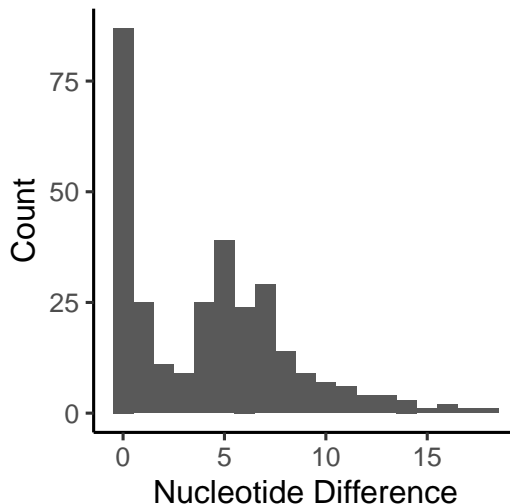
### IGHV2-5\*02

748 sequences assigned  
174 (23.3%) exact matches, in which:  
166 unique CDR3  
6 unique J



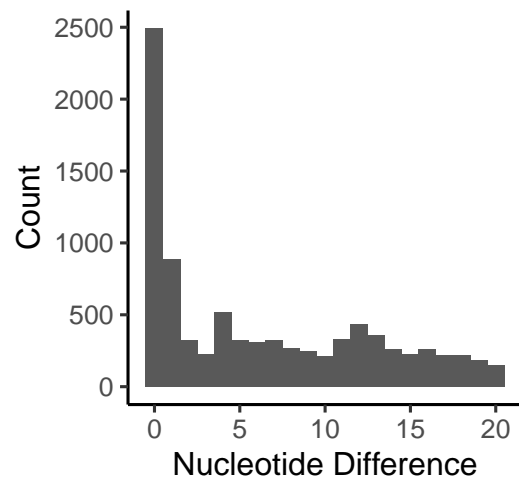
### IGHV2-70\*04

316 sequences assigned  
87 (27.5%) exact matches, in which:  
82 unique CDR3  
4 unique J



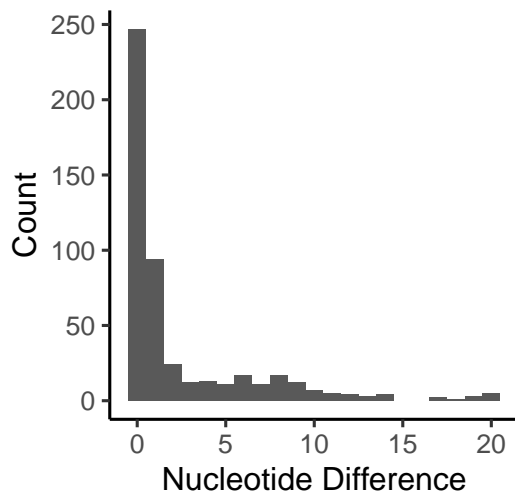
### IGHV3-7\*01

10605 sequences assigned  
2492 (23.5%) exact matches, in which:  
2037 unique CDR3  
6 unique J



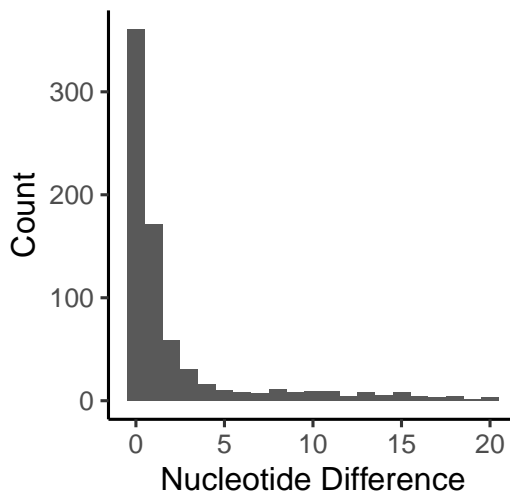
### IGHV2-26\*01

522 sequences assigned  
247 (47.3%) exact matches, in which:  
236 unique CDR3  
5 unique J



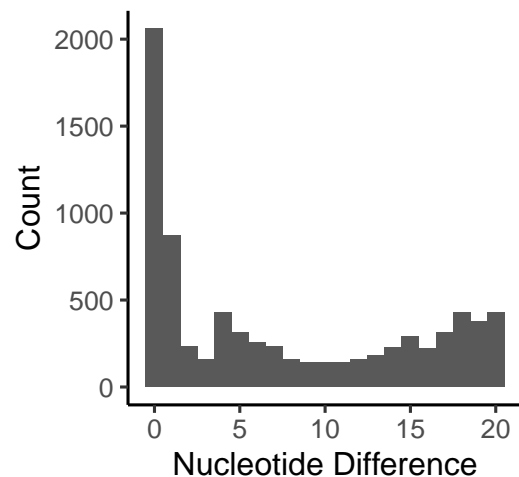
### IGHV2-70\*11\_15

765 sequences assigned  
361 (47.2%) exact matches, in which:  
336 unique CDR3  
5 unique J



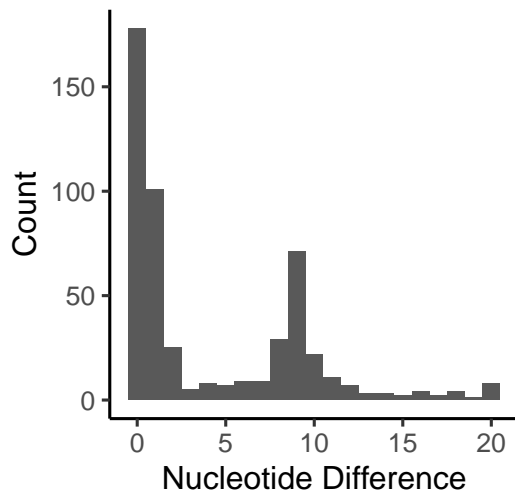
### IGHV3-7\*03

10360 sequences assigned  
2060 (19.9%) exact matches, in which:  
1603 unique CDR3  
6 unique J



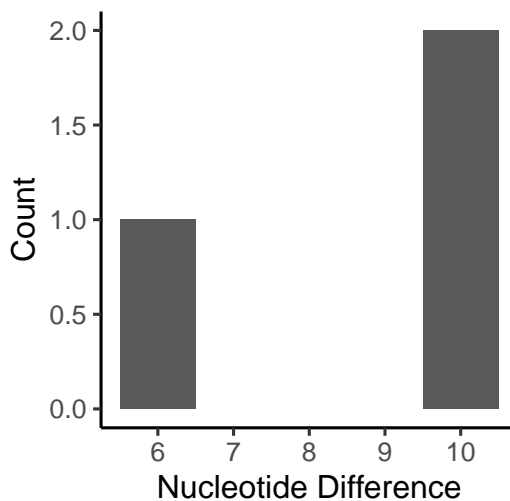
### IGHV2-70\*01

632 sequences assigned  
178 (28.2%) exact matches, in which:  
165 unique CDR3  
6 unique J



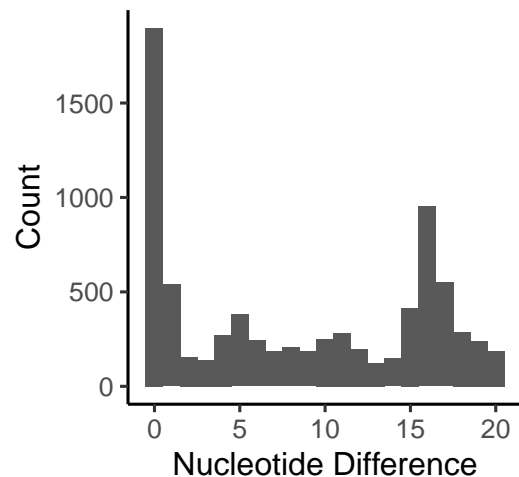
### IGHV2-70D\*14

3 sequences assigned  
No exact matches.



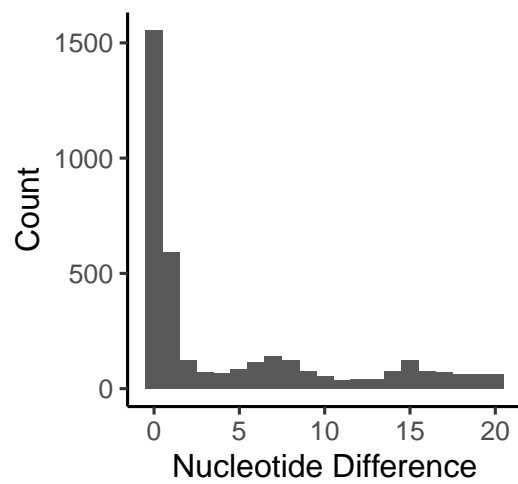
### IGHV3-9\*01

9409 sequences assigned  
1897 (20.2%) exact matches, in which:  
1428 unique CDR3  
6 unique J



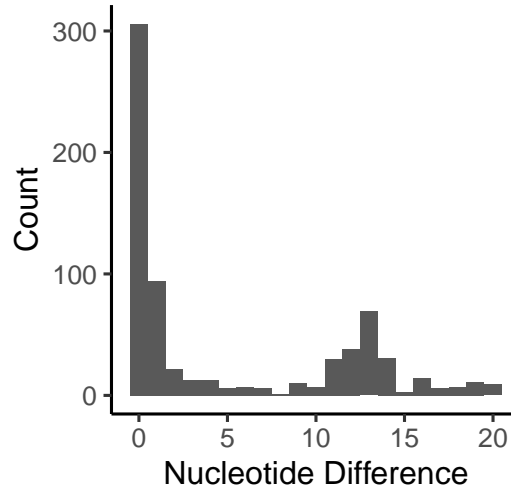
### IGHV3-11\*01

5991 sequences assigned  
1554 (25.9%) exact matches, in which:  
1237 unique CDR3  
6 unique J



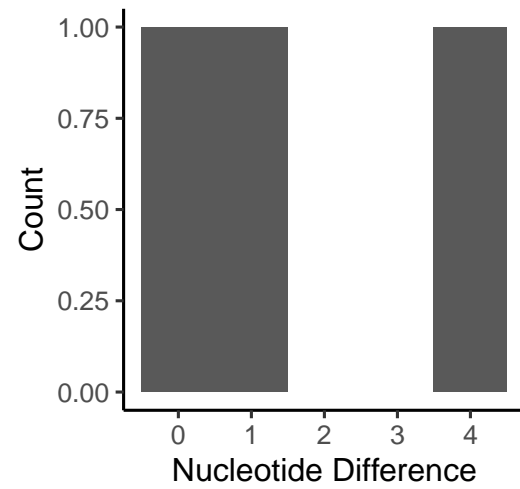
### IGHV3-13\*01

1030 sequences assigned  
306 (29.7%) exact matches, in which:  
225 unique CDR3  
5 unique J



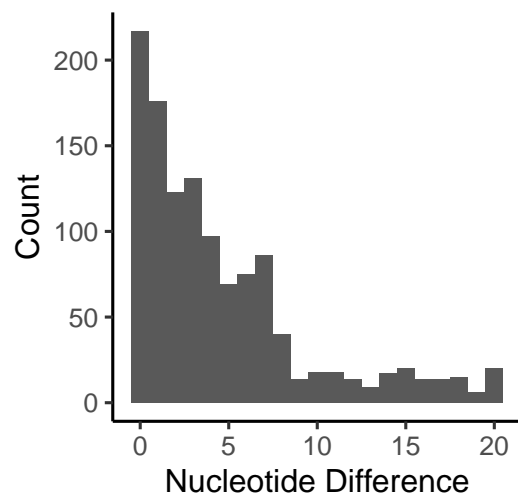
### IGHV3-19\*01

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



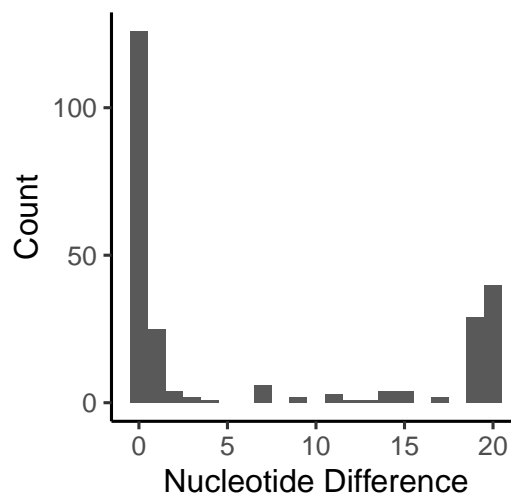
### IGHV3-11\*04

1321 sequences assigned  
217 (16.4%) exact matches, in which:  
215 unique CDR3  
6 unique J



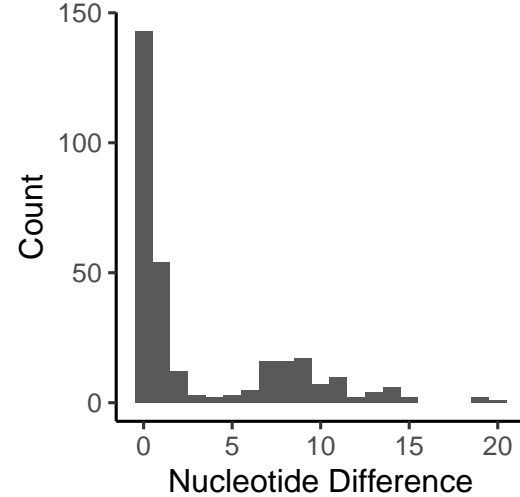
### IGHV3-13\*05

275 sequences assigned  
126 (45.8%) exact matches, in which:  
89 unique CDR3  
5 unique J



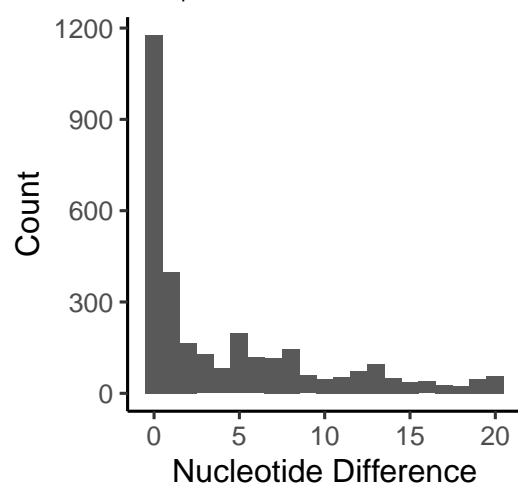
### IGHV3-20\*01\_02

362 sequences assigned  
143 (39.5%) exact matches, in which:  
110 unique CDR3  
5 unique J



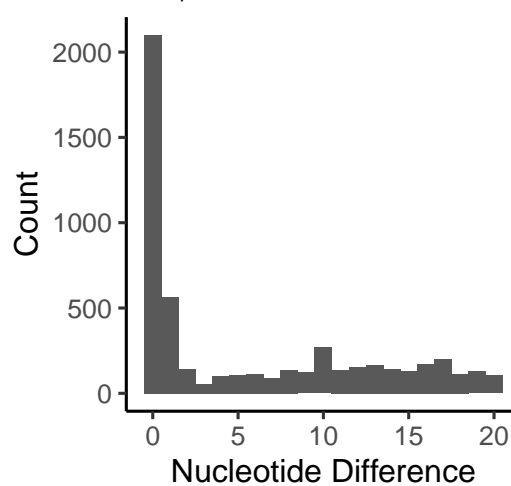
### IGHV3-11\*06

3763 sequences assigned  
1177 (31.3%) exact matches, in which:  
948 unique CDR3  
6 unique J



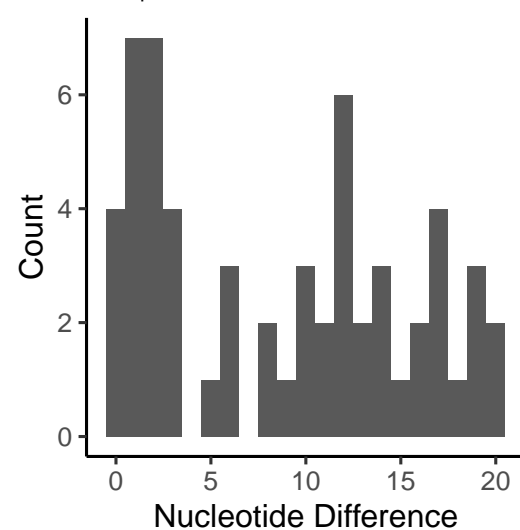
### IGHV3-15\*01\_02

6359 sequences assigned  
2100 (33%) exact matches, in which:  
1699 unique CDR3  
6 unique J



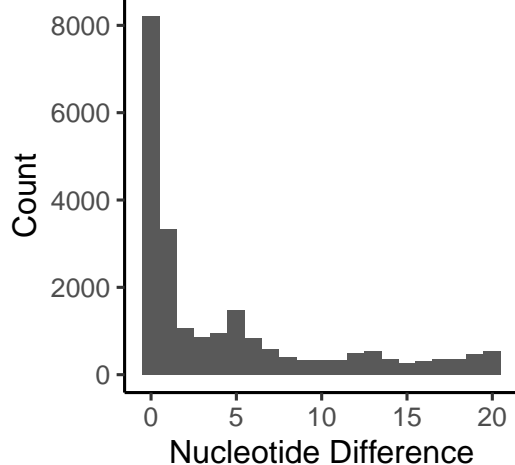
### IGHV3-20\*03\_04

211 sequences assigned  
4 (1.9%) exact matches, in which:  
4 unique CDR3  
3 unique J



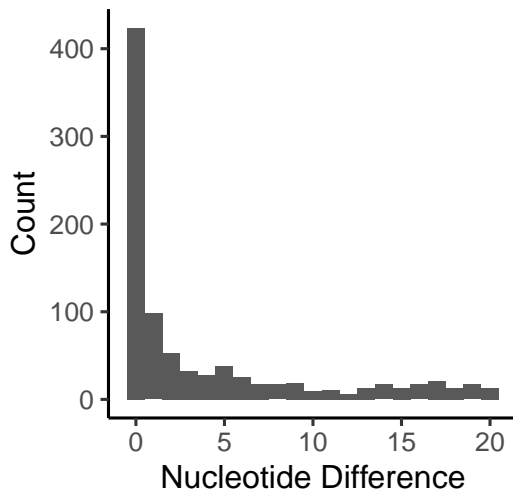
### IGHV3-21\*01\_02

26231 sequences assigned  
8205 (31.3%) exact matches, in which:  
6184 unique CDR3  
6 unique J



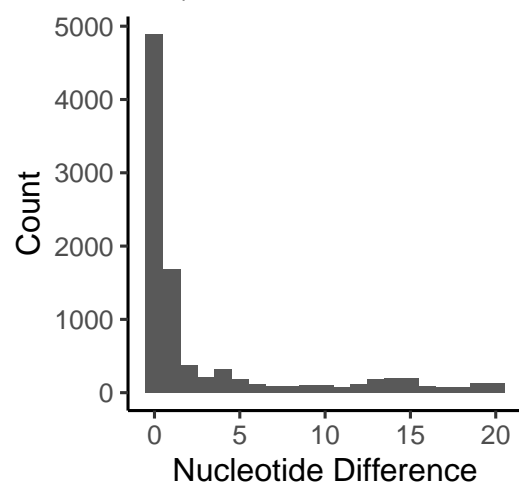
### IGHV3-30\*03

1486 sequences assigned  
424 (28.5%) exact matches, in which:  
409 unique CDR3  
6 unique J



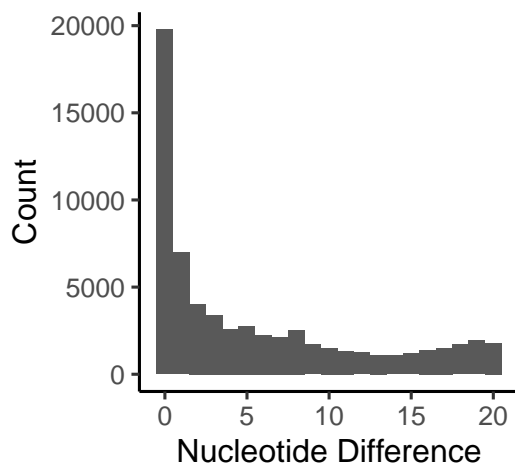
### IGHV3-33\*01

11000 sequences assigned  
4888 (44.4%) exact matches, in which:  
3986 unique CDR3  
6 unique J



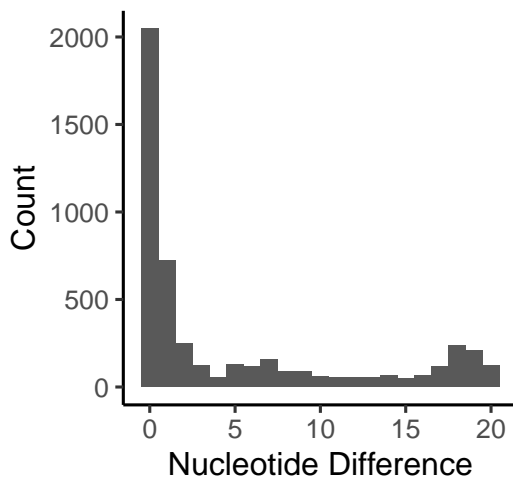
### IGHV3-23\*01\_04

77851 sequences assigned  
19781 (25.4%) exact matches, in which:  
13717 unique CDR3  
6 unique J



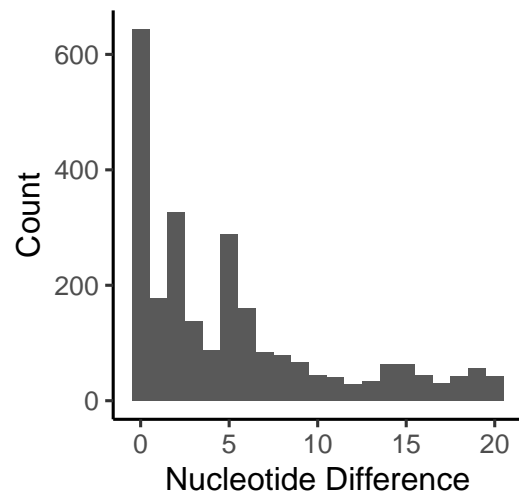
### IGHV3-30\*18

6387 sequences assigned  
2047 (32%) exact matches, in which:  
1622 unique CDR3  
6 unique J



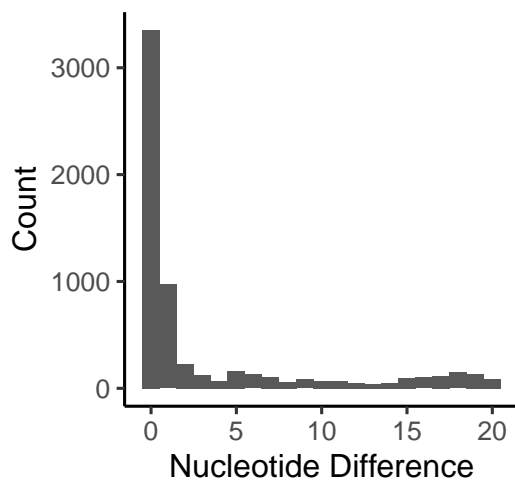
### IGHV3-33\*08

3109 sequences assigned  
644 (20.7%) exact matches, in which:  
610 unique CDR3  
6 unique J



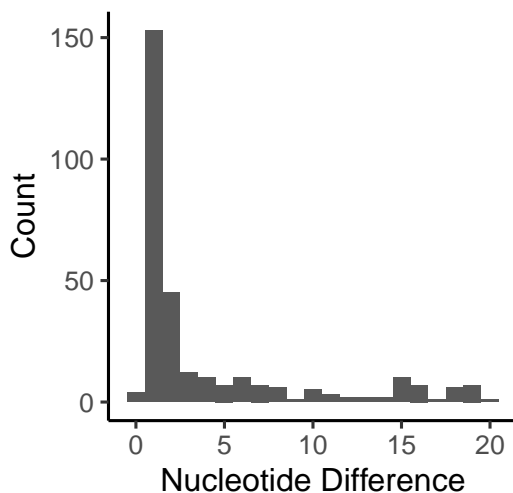
### IGHV3-30-3\*01

7621 sequences assigned  
3353 (44%) exact matches, in which:  
2598 unique CDR3  
6 unique J



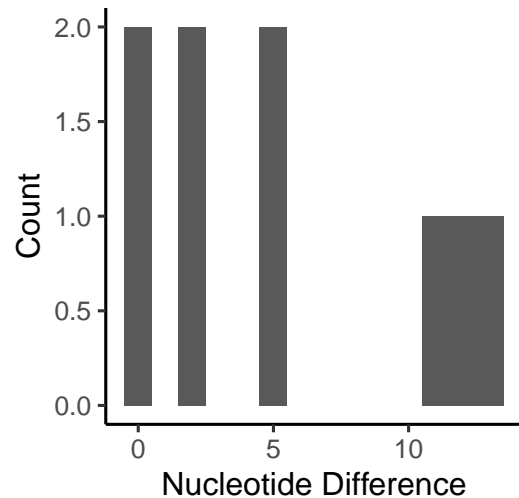
### IGHV3-30\*19

402 sequences assigned  
4 (1%) exact matches, in which:  
4 unique CDR3  
3 unique J



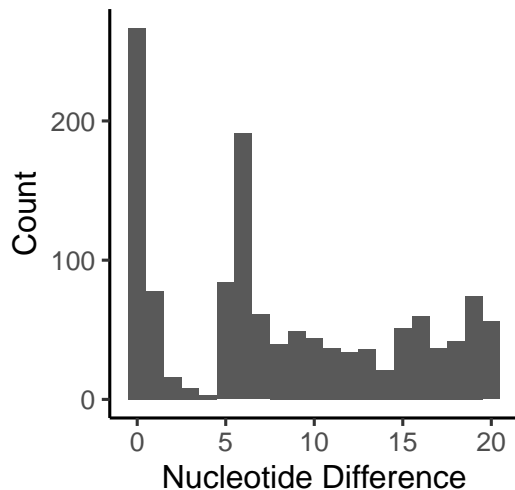
### IGHV3-35\*01

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



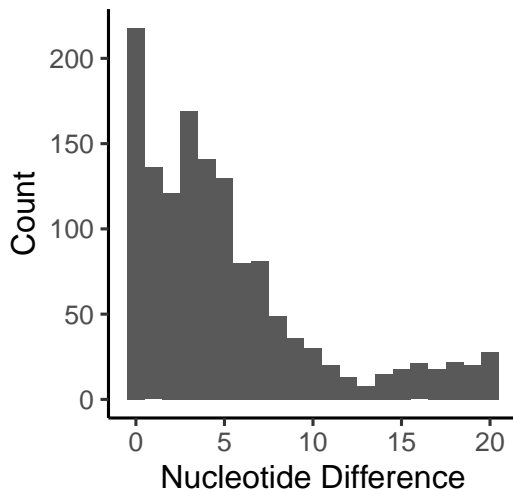
### IGHV3-43\*01

1858 sequences assigned  
267 (14.4%) exact matches, in which:  
204 unique CDR3  
6 unique J



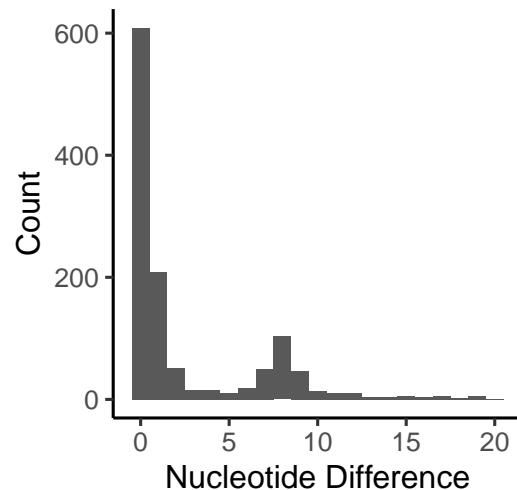
### IGHV3-48\*04

1775 sequences assigned  
218 (12.3%) exact matches, in which:  
218 unique CDR3  
6 unique J



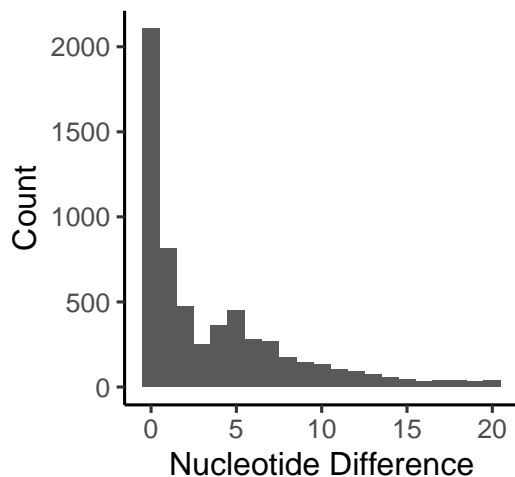
### IGHV3-53\*04

1225 sequences assigned  
609 (49.7%) exact matches, in which:  
493 unique CDR3  
6 unique J



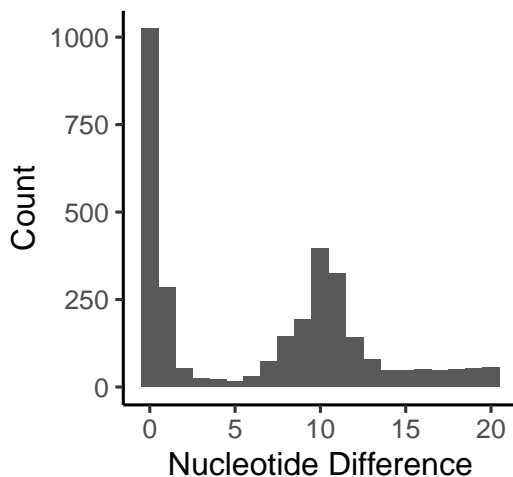
### IGHV3-48\*01

6701 sequences assigned  
2106 (31.4%) exact matches, in which:  
1679 unique CDR3  
6 unique J



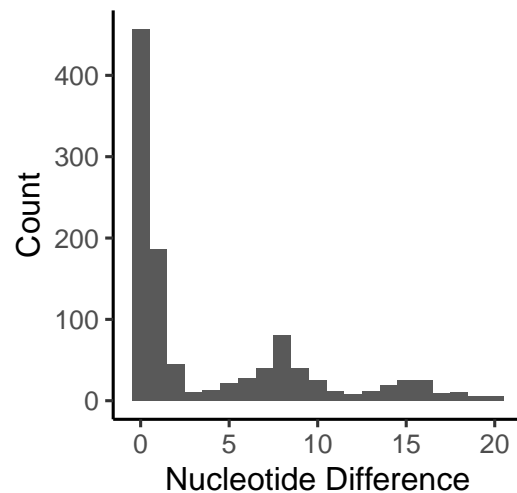
### IGHV3-49\*03\_05

3497 sequences assigned  
1024 (29.3%) exact matches, in which:  
817 unique CDR3  
6 unique J



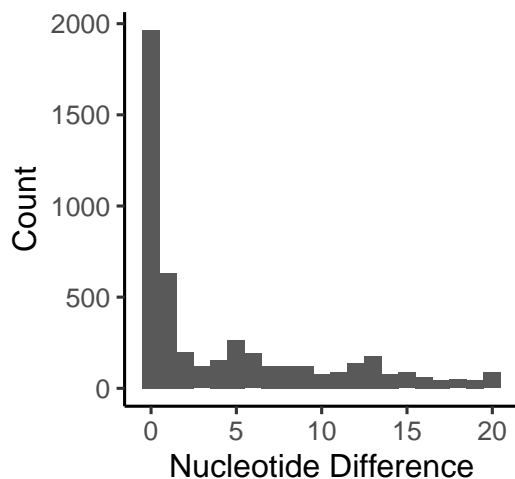
### IGHV3-53\*01\_02

1151 sequences assigned  
457 (39.7%) exact matches, in which:  
364 unique CDR3  
6 unique J



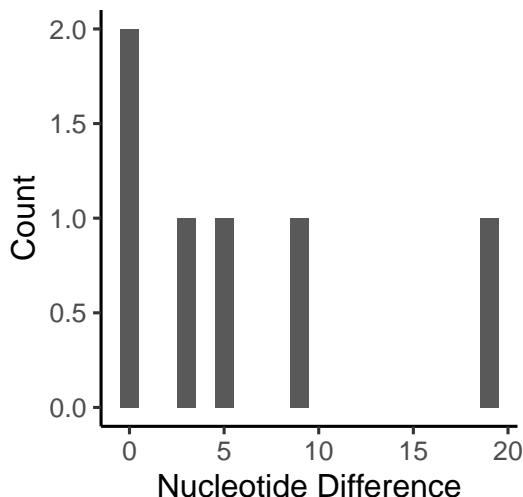
### IGHV3-48\*02

5995 sequences assigned  
1965 (32.8%) exact matches, in which:  
1461 unique CDR3  
6 unique J



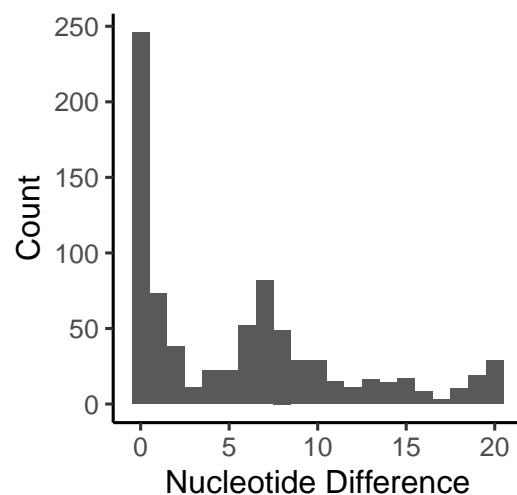
### IGHV3-52\*01\_03

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



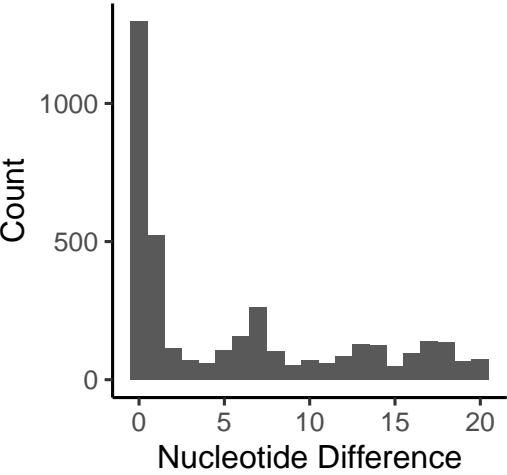
### IGHV3-64\*01

840 sequences assigned  
246 (29.3%) exact matches, in which:  
184 unique CDR3  
6 unique J



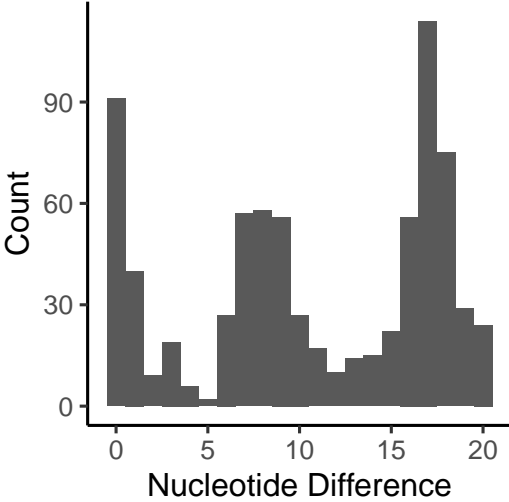
IGHV3-66\*01

6259 sequences assigned  
1297 (20.7%) exact matches, in which:  
1027 unique CDR3  
6 unique J



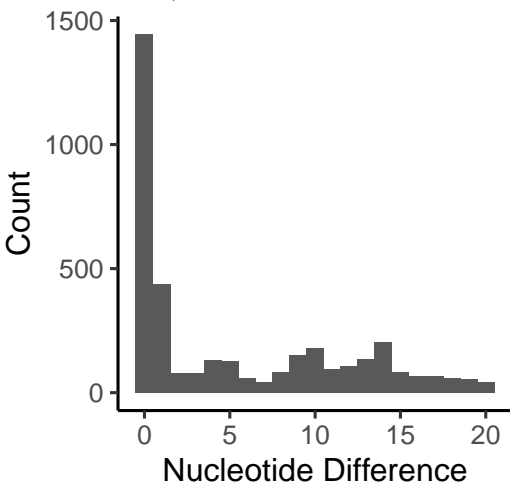
IGHV3-72\*01

1035 sequences assigned  
91 (8.8%) exact matches, in which:  
71 unique CDR3  
5 unique J



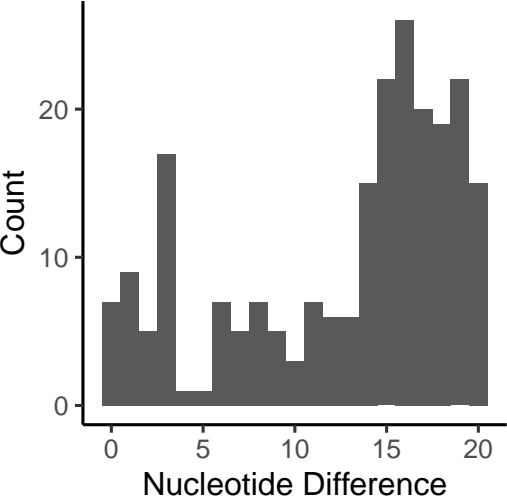
IGHV3-74\*01\_02

4418 sequences assigned  
1444 (32.7%) exact matches, in which:  
1019 unique CDR3  
6 unique J



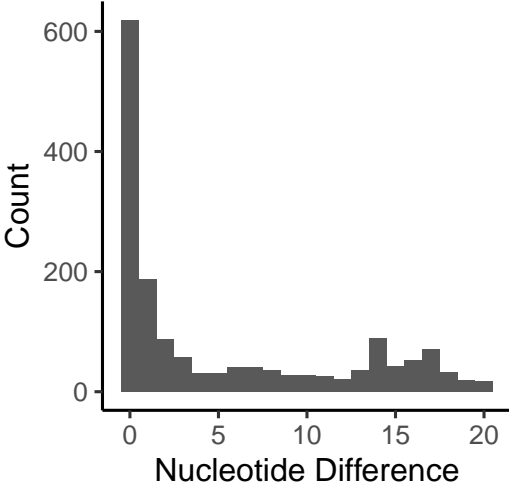
IGHV3-69-1\*01

612 sequences assigned  
7 (1.1%) exact matches, in which:  
7 unique CDR3  
3 unique J



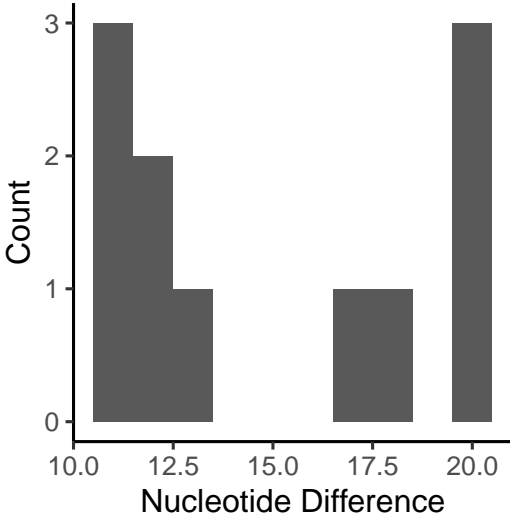
IGHV3-73\*01\_02

1678 sequences assigned  
619 (36.9%) exact matches, in which:  
486 unique CDR3  
5 unique J



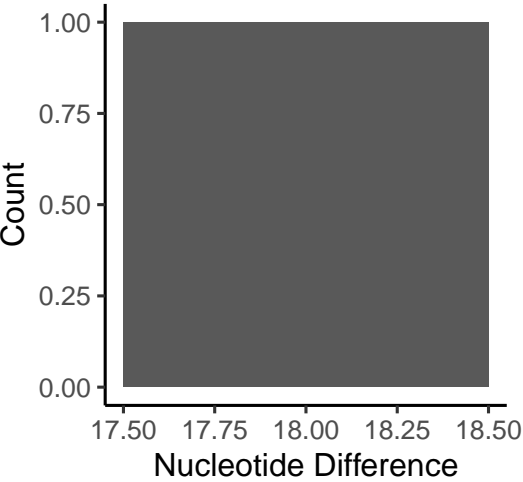
IGHV3-43D\*04

18 sequences assigned  
No exact matches.



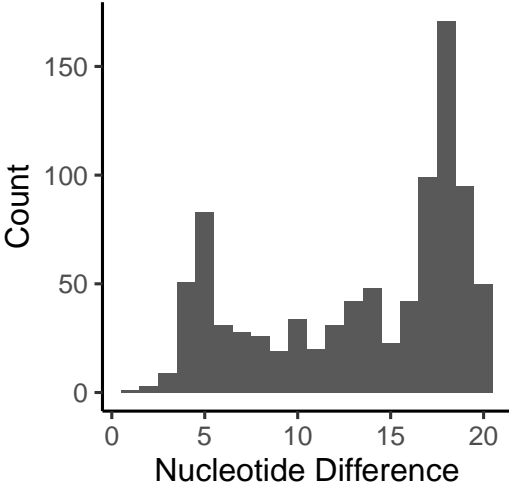
IGHV3-71\*01\_04

2 sequences assigned  
No exact matches.



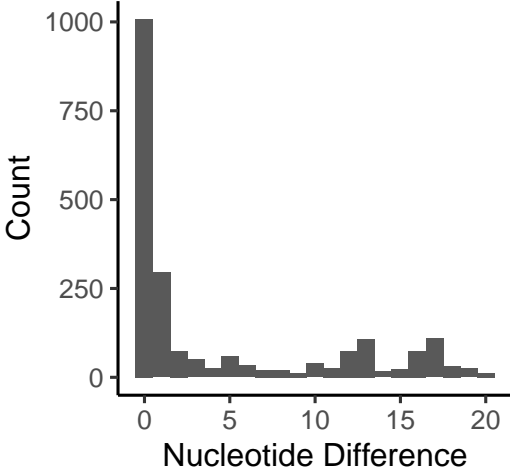
IGHV3-74\*03

2601 sequences assigned  
No exact matches.



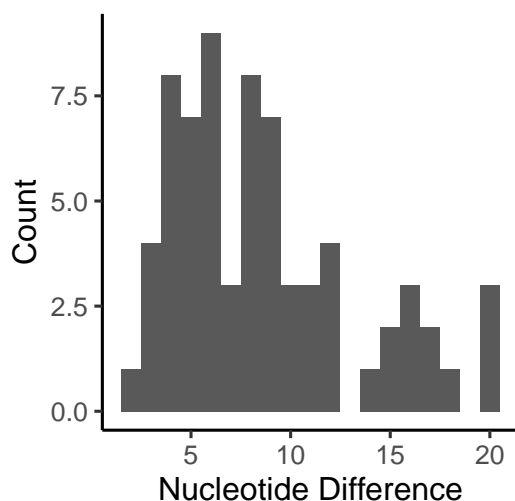
IGHV3-64D\*06

2542 sequences assigned  
1008 (39.7%) exact matches, in which:  
698 unique CDR3  
6 unique J



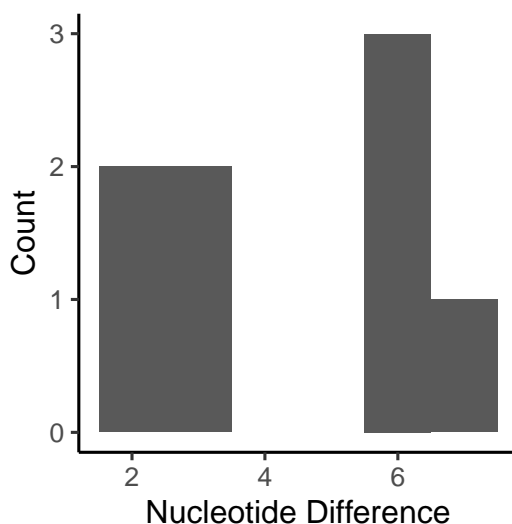
### IGHV3–NL1\*01

104 sequences assigned  
No exact matches.



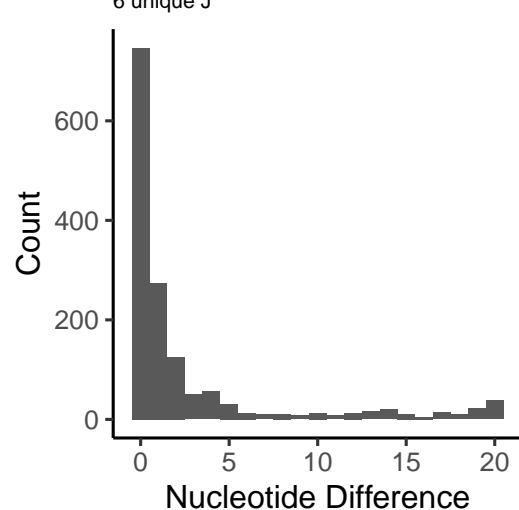
### IGHV4–28\*03

8 sequences assigned  
No exact matches.



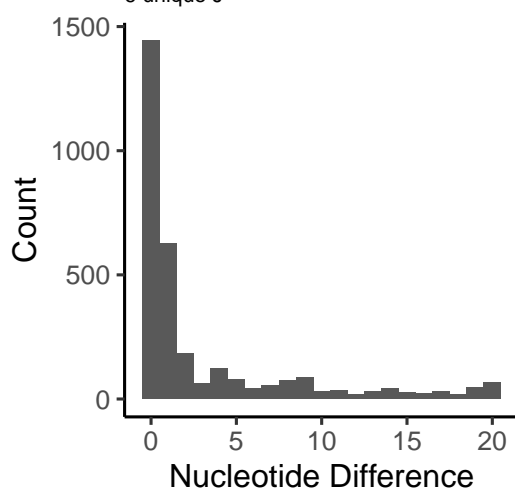
### IGHV4–30–2\*01

1654 sequences assigned  
747 (45.2%) exact matches, in which:  
680 unique CDR3  
6 unique J



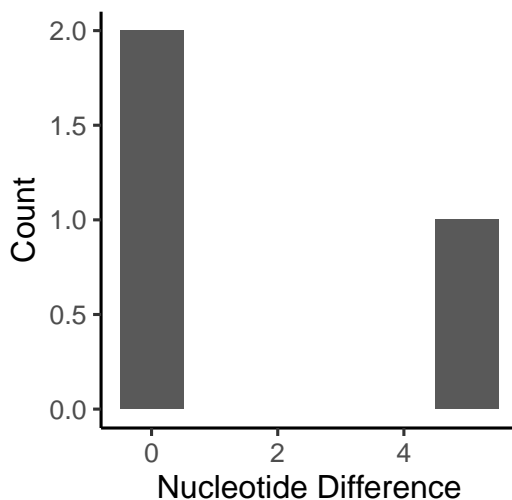
### IGHV4–4\*07

3366 sequences assigned  
1443 (42.9%) exact matches, in which:  
1370 unique CDR3  
6 unique J



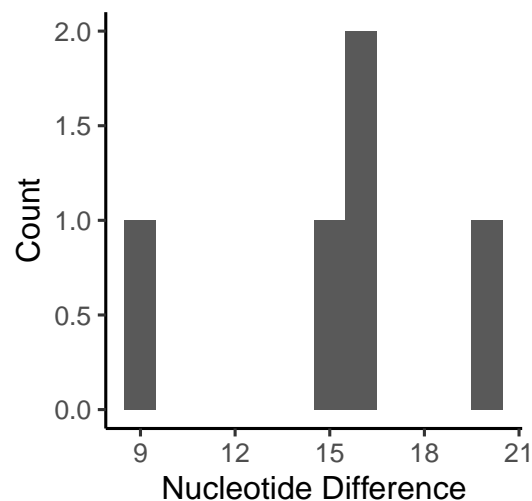
### IGHV4–28\*01\_07

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



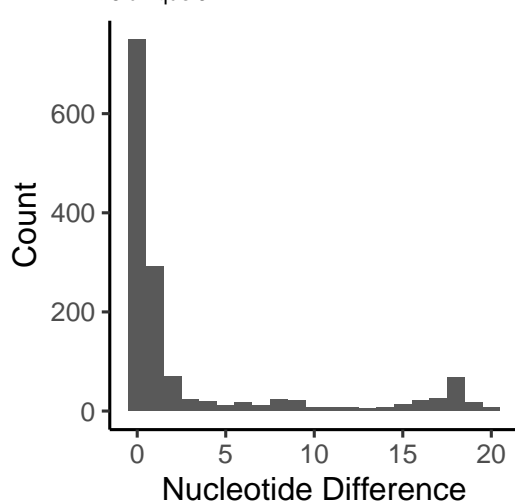
### IGHV4–30–4\*01

8 sequences assigned  
No exact matches.



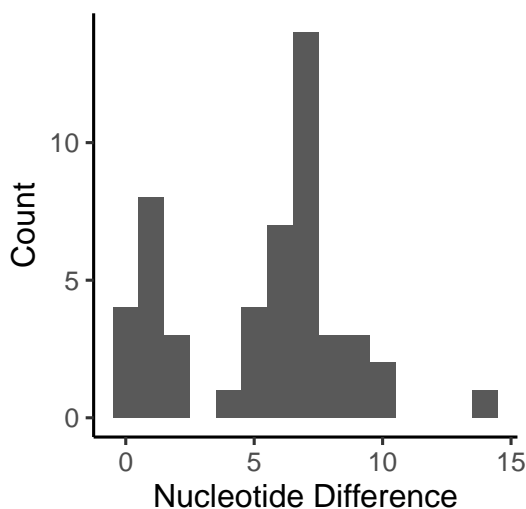
### IGHV4–4\*02\_03

1571 sequences assigned  
750 (47.7%) exact matches, in which:  
714 unique CDR3  
6 unique J



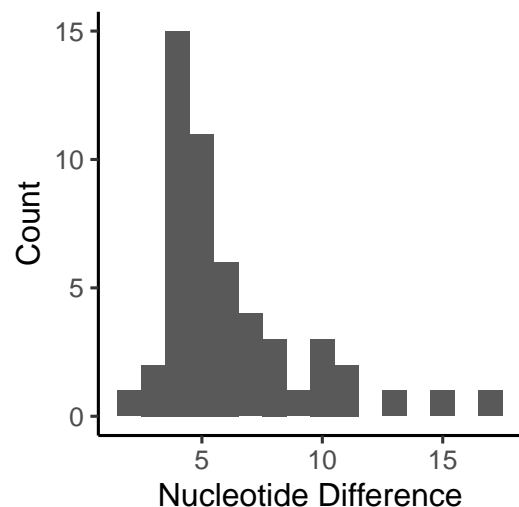
### IGHV4–28\*02\_05

50 sequences assigned  
4 (8%) exact matches, in which:  
4 unique CDR3  
3 unique J



### IGHV4–30–4\*07

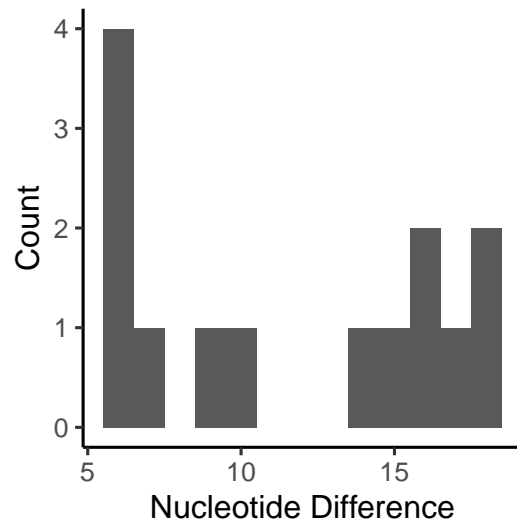
52 sequences assigned  
No exact matches.





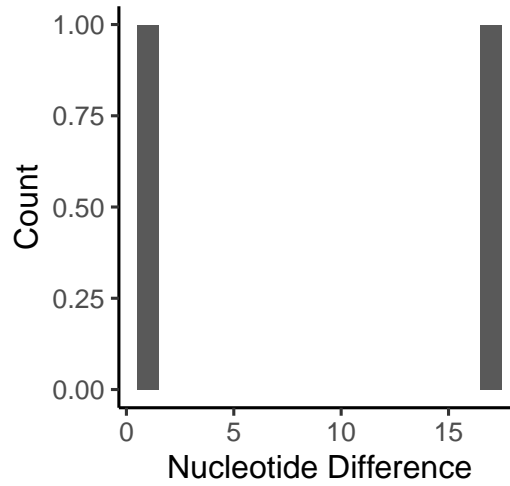
### IGHV4-30-4\*08

20 sequences assigned  
No exact matches.



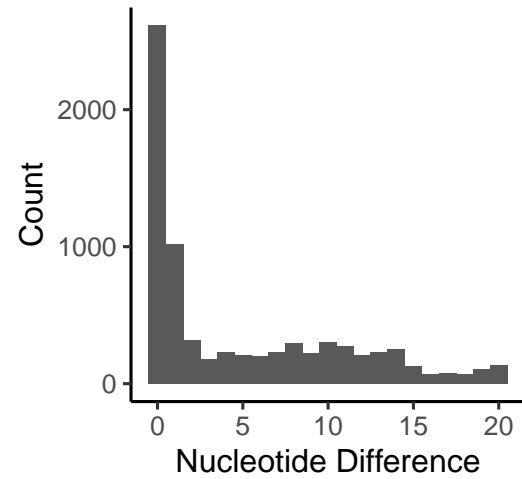
### IGHV4-38-2\*01

5 sequences assigned  
No exact matches.



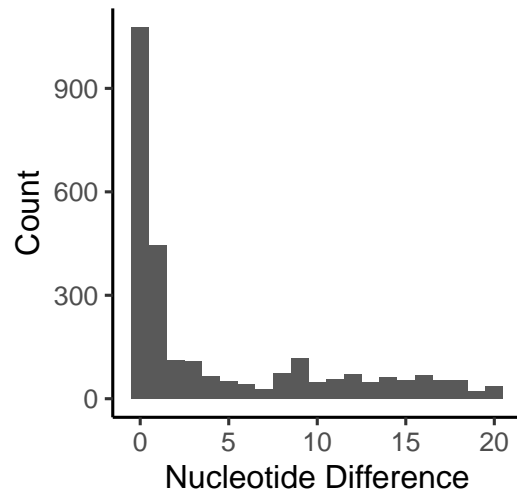
### IGHV4-59\*08

8653 sequences assigned  
2615 (30.2%) exact matches, in which:  
2450 unique CDR3  
6 unique J



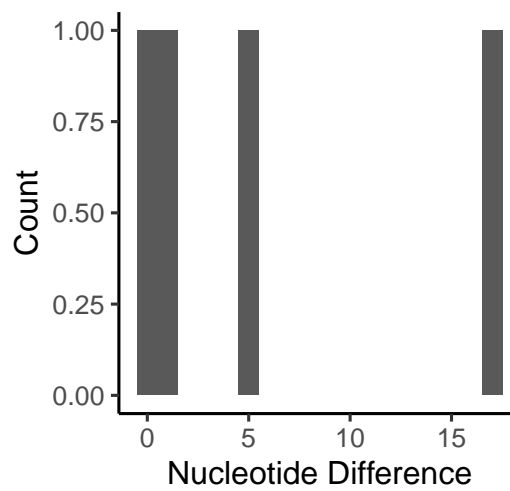
### IGHV4-31\*02

3280 sequences assigned  
1078 (32.9%) exact matches, in which:  
1029 unique CDR3  
6 unique J



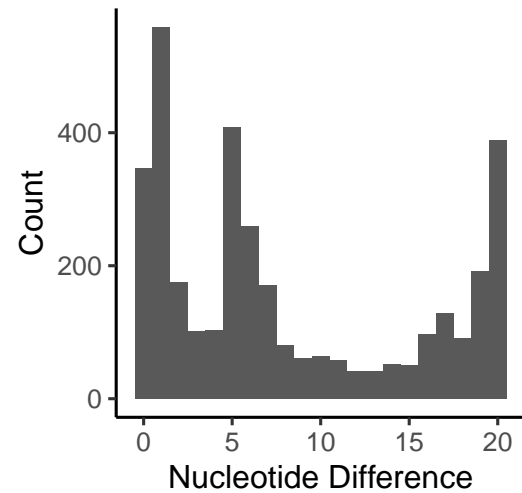
### IGHV4-38-2\*02

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



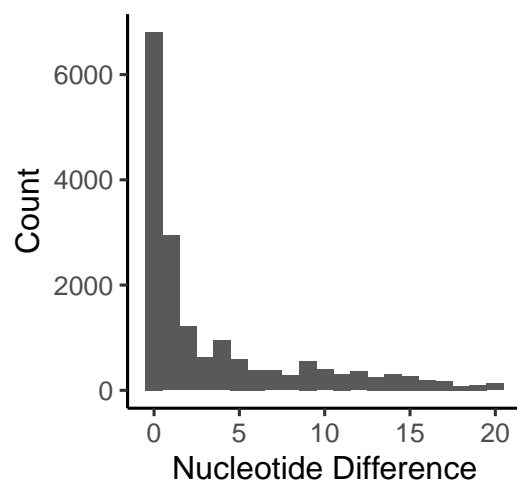
### IGHV4-59\*12

4314 sequences assigned  
346 (8%) exact matches, in which:  
344 unique CDR3  
6 unique J



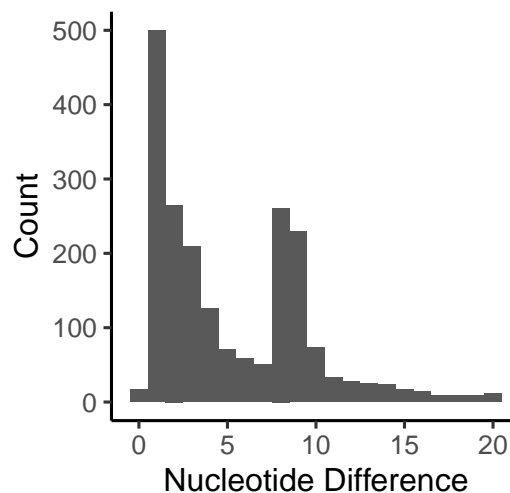
### IGHV4-34\*01\_02

18062 sequences assigned  
6808 (37.7%) exact matches, in which:  
6358 unique CDR3  
6 unique J



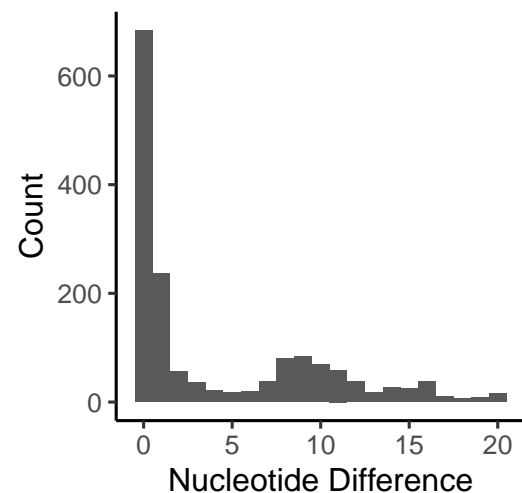
### IGHV4-39\*07

2158 sequences assigned  
17 (0.8%) exact matches, in which:  
17 unique CDR3  
4 unique J



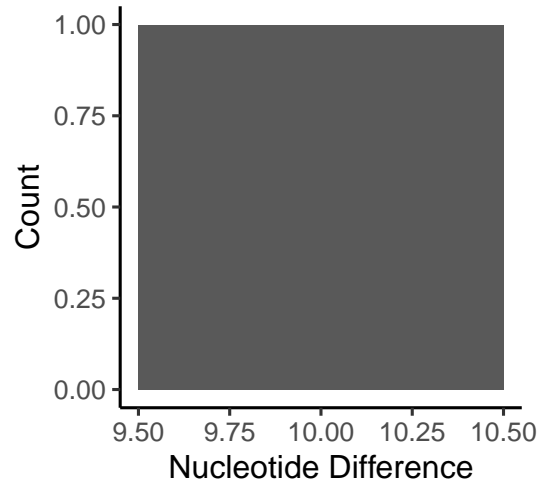
### IGHV4-61\*01

1744 sequences assigned  
684 (39.2%) exact matches, in which:  
665 unique CDR3  
6 unique J



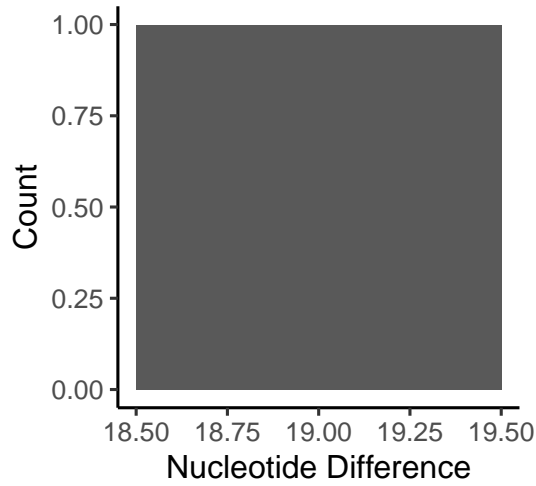
### IGHV1/OR15-1\*04

10 sequences assigned  
No exact matches.



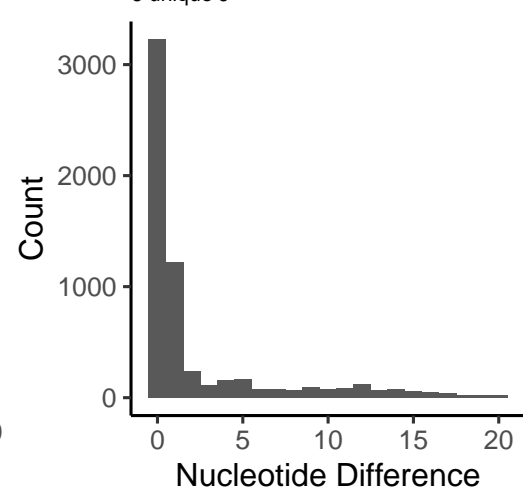
### IGHV1/OR15-4\*01

1 sequences assigned  
No exact matches.



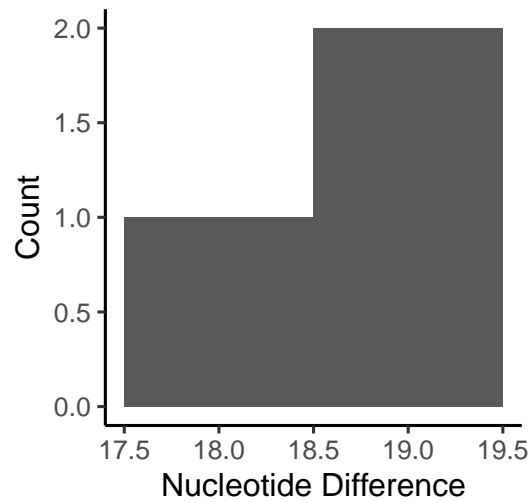
### IGHV5-10-1\*01\_03

6261 sequences assigned  
3227 (51.5%) exact matches, in which:  
2563 unique CDR3  
6 unique J



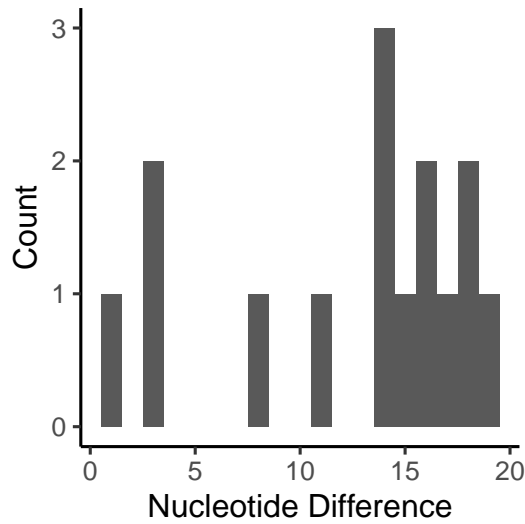
### IGHV1/OR15-2\*02\_03

4 sequences assigned  
No exact matches.



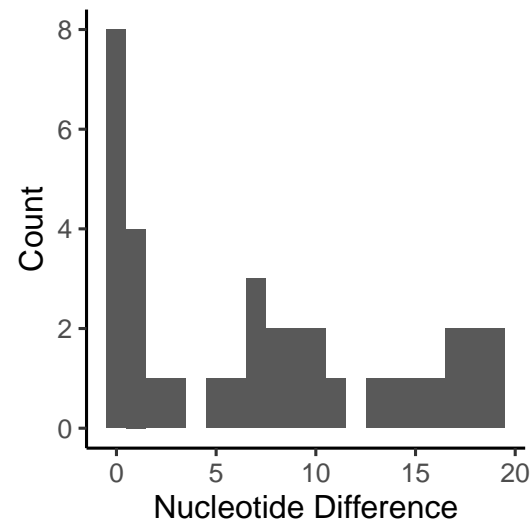
### IGHV4/OR15-8\*01

23 sequences assigned  
No exact matches.



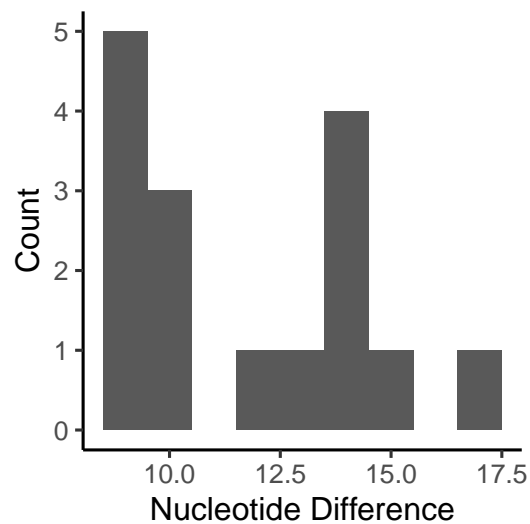
### IGHV5-51\*04

145 sequences assigned  
8 (5.5%) exact matches, in which:  
8 unique CDR3  
3 unique J



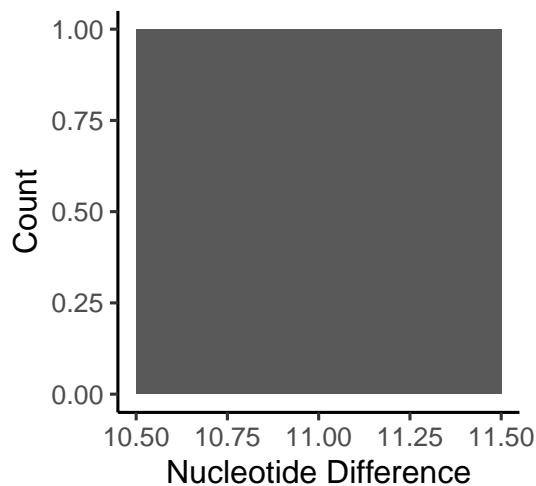
### IGHV1/OR15-3\*02

19 sequences assigned  
No exact matches.



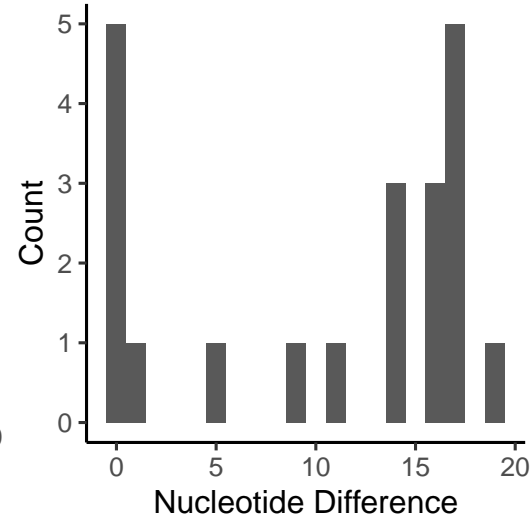
### IGHV1/OR15-9\*01

1 sequences assigned  
No exact matches.



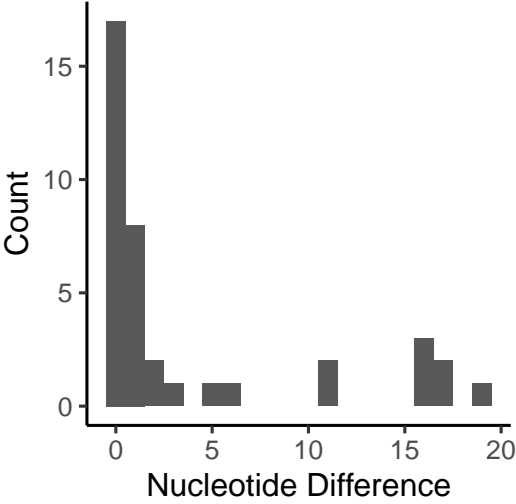
### IGHV5-51\*06

69 sequences assigned  
5 (7.2%) exact matches, in which:  
5 unique CDR3  
3 unique J



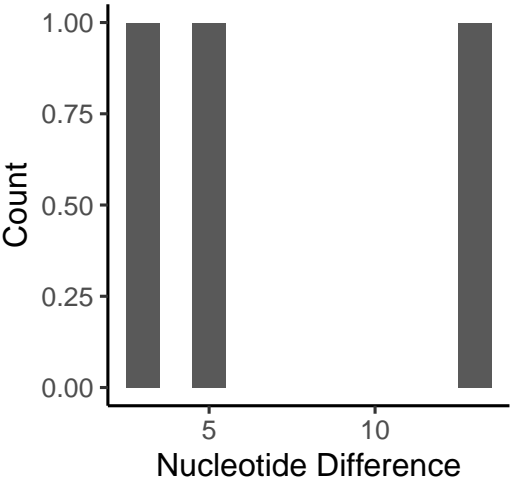
IGHV5-51\*07

109 sequences assigned  
17 (15.6%) exact matches, in which:  
17 unique CDR3  
3 unique J



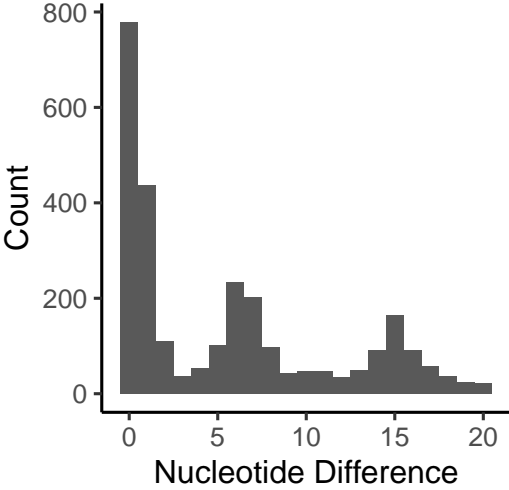
IGHV3/OR16-9\*01

3 sequences assigned  
No exact matches.



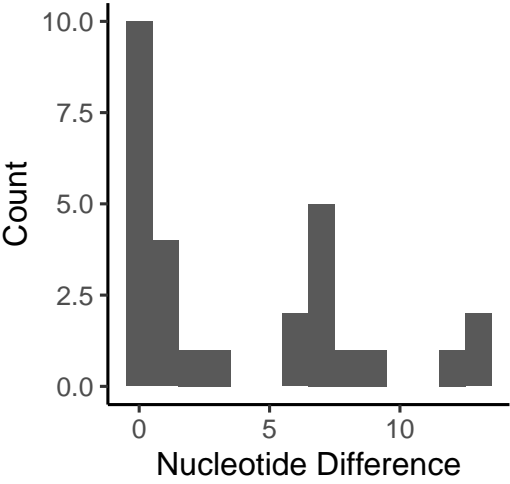
IGHV6-1\*01\_02

3091 sequences assigned  
779 (25.2%) exact matches, in which:  
741 unique CDR3  
6 unique J



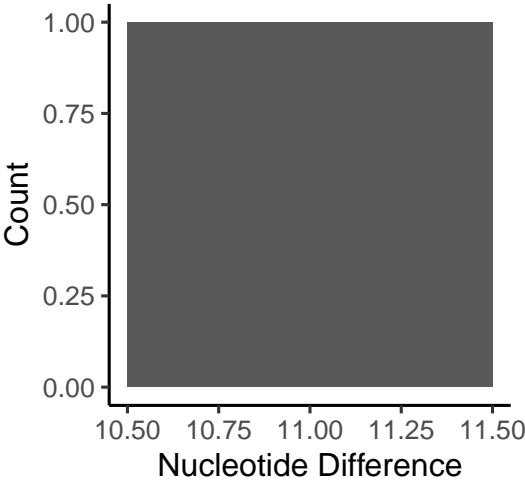
IGHV7-4-1\*01

28 sequences assigned  
10 (35.7%) exact matches, in which:  
10 unique CDR3  
4 unique J

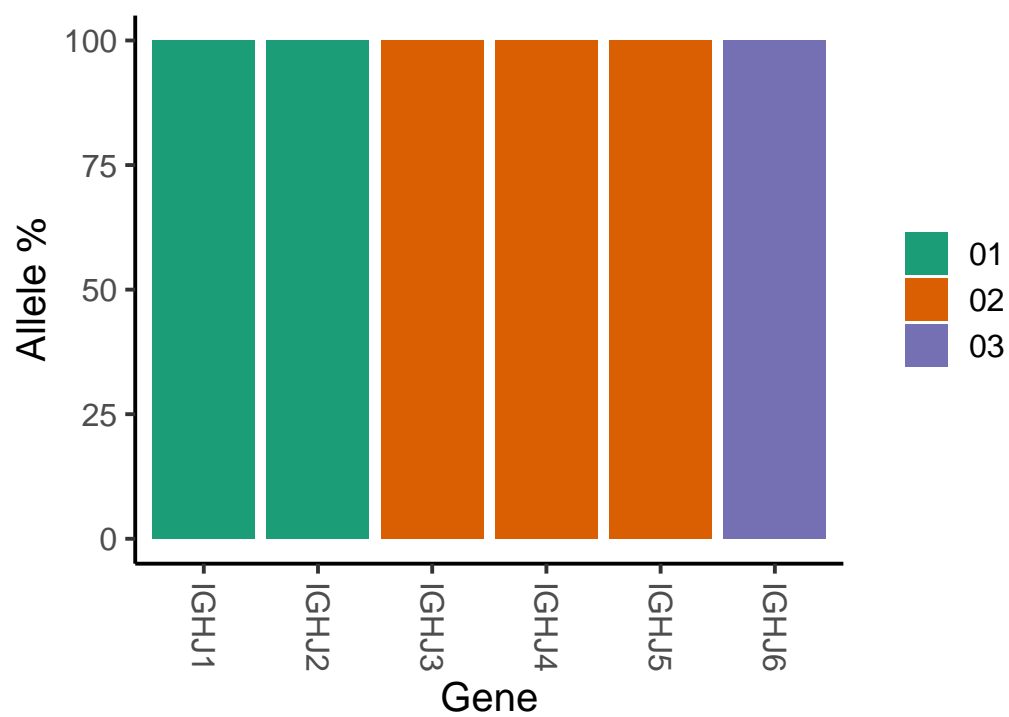


IGHV3/OR16-6\*02

1 sequences assigned  
No exact matches.



Allele Usage



Warning – no inferred sequences found.