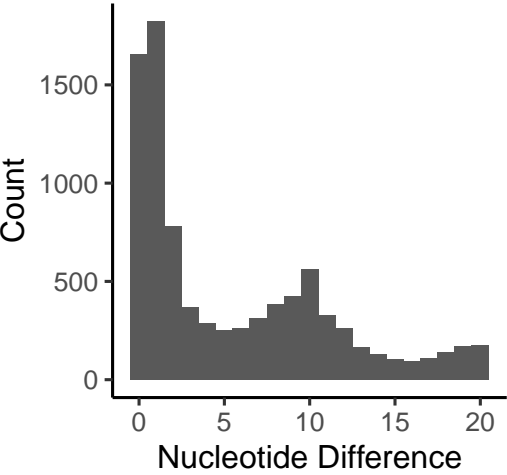


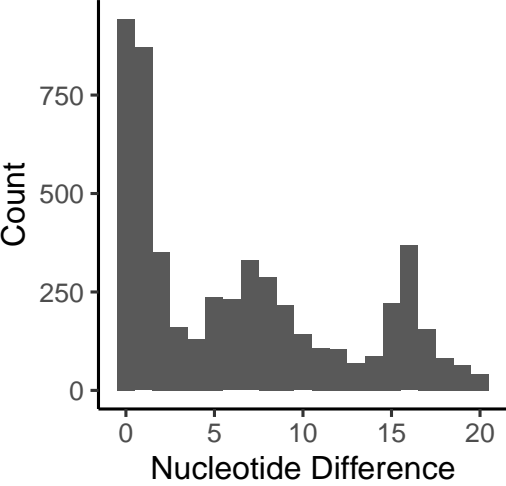
IGHV1-2\*02

11285 sequences assigned  
1656 (14.7%) exact matches, in which:  
1386 unique CDR3  
6 unique J



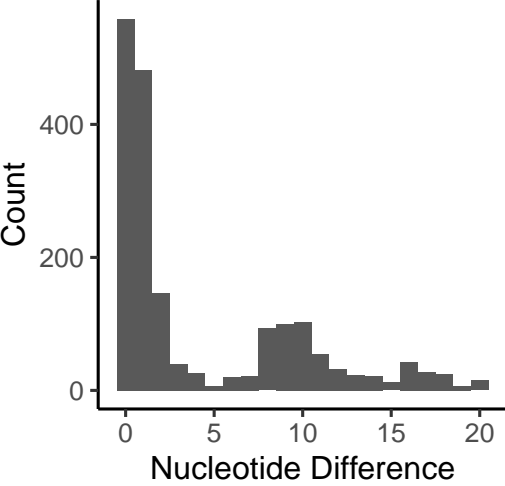
IGHV1-8\*01

5844 sequences assigned  
944 (16.2%) exact matches, in which:  
846 unique CDR3  
6 unique J



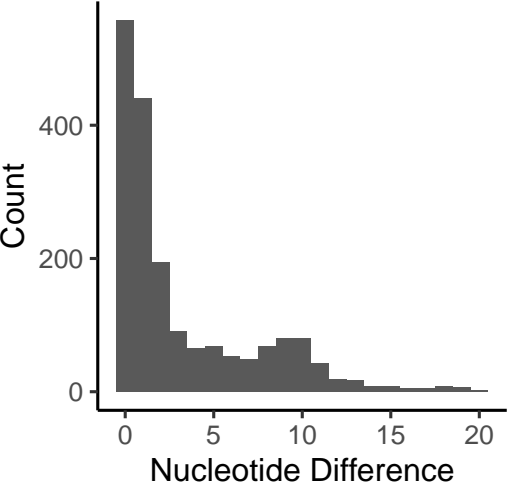
IGHV1-24\*01

2028 sequences assigned  
559 (27.6%) exact matches, in which:  
477 unique CDR3  
6 unique J



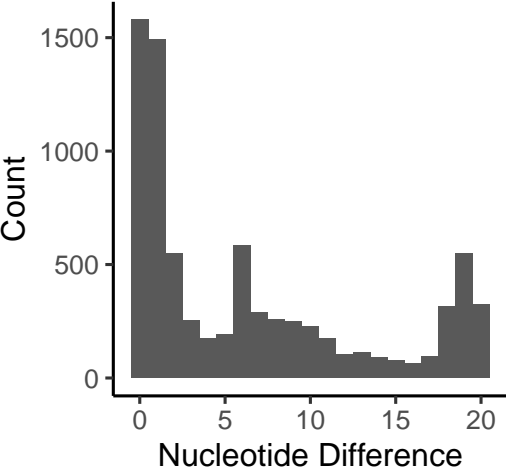
IGHV1-2\*04

1881 sequences assigned  
558 (29.7%) exact matches, in which:  
488 unique CDR3  
6 unique J



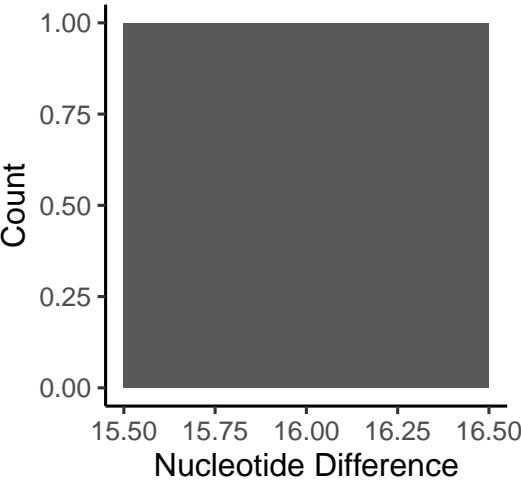
IGHV1-18\*01

9322 sequences assigned  
1579 (16.9%) exact matches, in which:  
1342 unique CDR3  
6 unique J



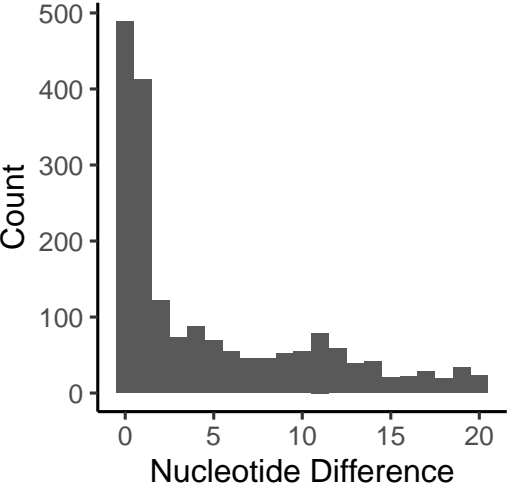
IGHV1-45\*02

1 sequences assigned  
No exact matches.



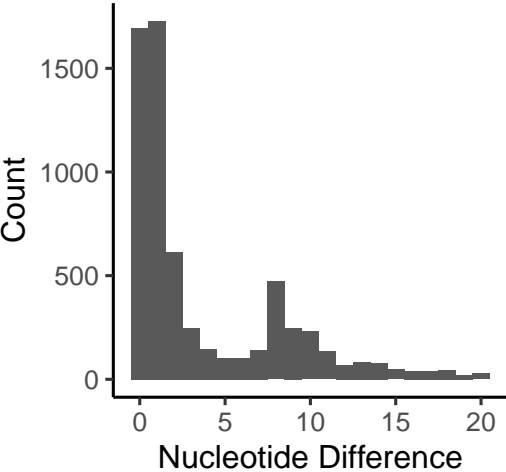
IGHV1-3\*01\_05

2122 sequences assigned  
489 (23%) exact matches, in which:  
406 unique CDR3  
6 unique J



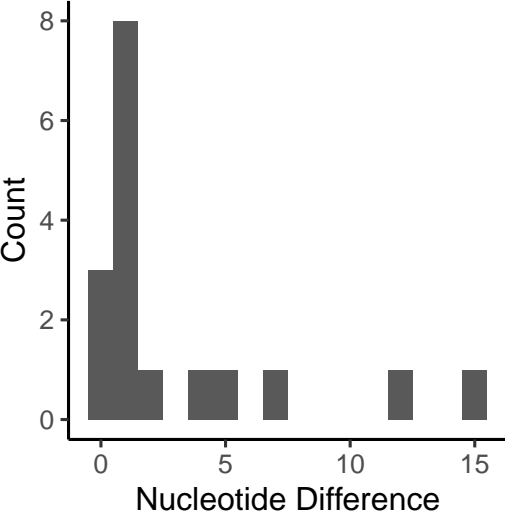
IGHV1-18\*04

6544 sequences assigned  
1694 (25.9%) exact matches, in which:  
1413 unique CDR3  
6 unique J



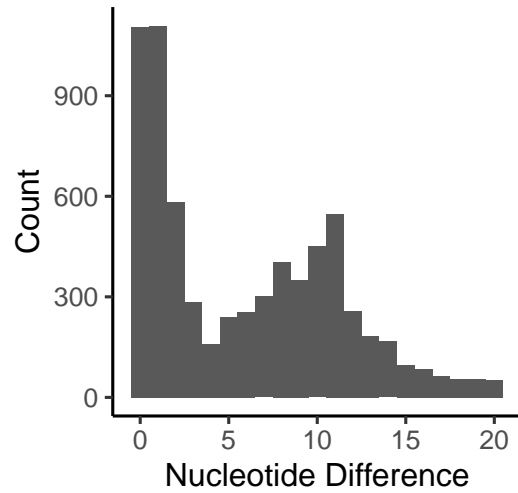
IGHV1-45\*03

17 sequences assigned  
3 (17.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



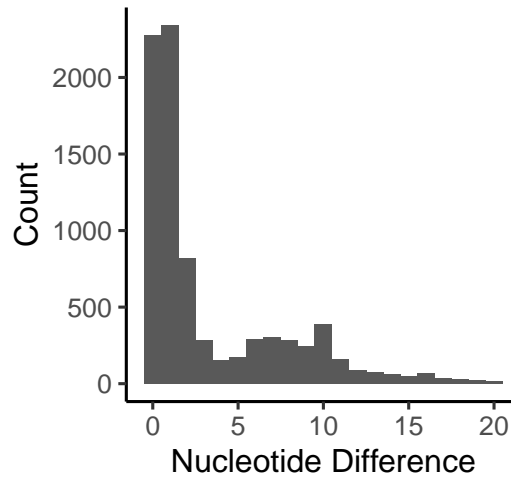
### IGHV1-46\*01

7204 sequences assigned  
1105 (15.3%) exact matches, in which:  
985 unique CDR3  
6 unique J



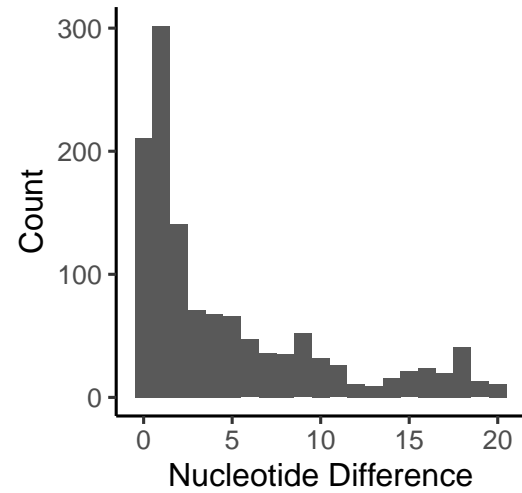
### IGHV1-69\*01\_12\_13

8772 sequences assigned  
2275 (25.9%) exact matches, in which:  
1960 unique CDR3  
6 unique J



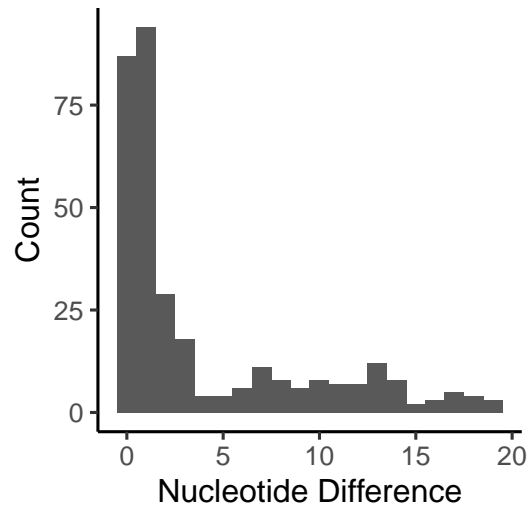
### IGHV2-5\*02

1393 sequences assigned  
211 (15.1%) exact matches, in which:  
170 unique CDR3  
6 unique J



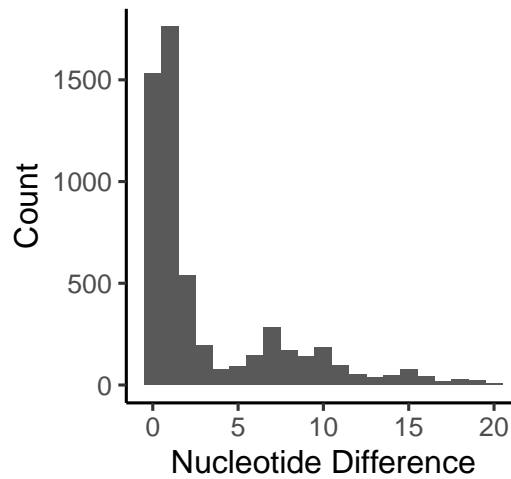
### IGHV1-58\*02

328 sequences assigned  
87 (26.5%) exact matches, in which:  
79 unique CDR3  
6 unique J



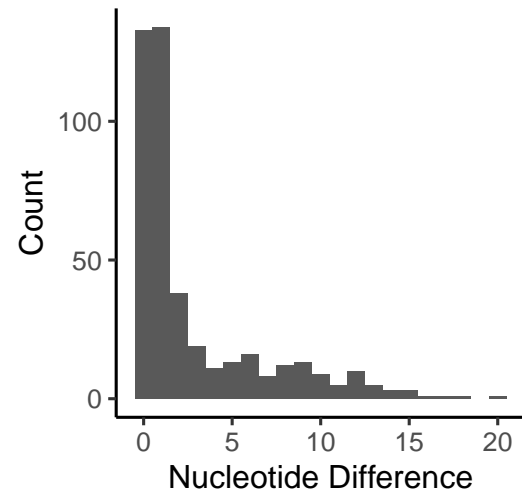
### IGHV1-69\*04\_09

5683 sequences assigned  
1533 (27%) exact matches, in which:  
1311 unique CDR3  
6 unique J



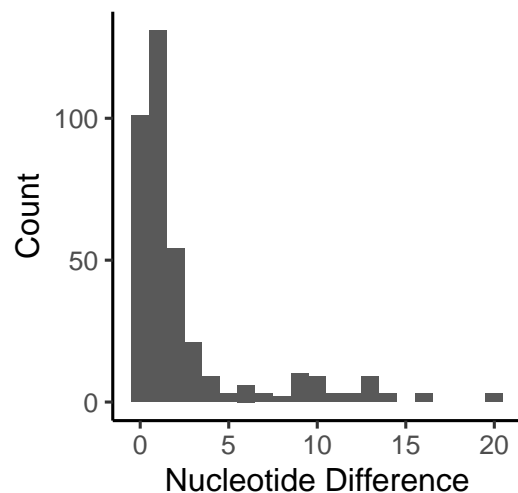
### IGHV2-26\*01

445 sequences assigned  
133 (29.9%) exact matches, in which:  
110 unique CDR3  
6 unique J



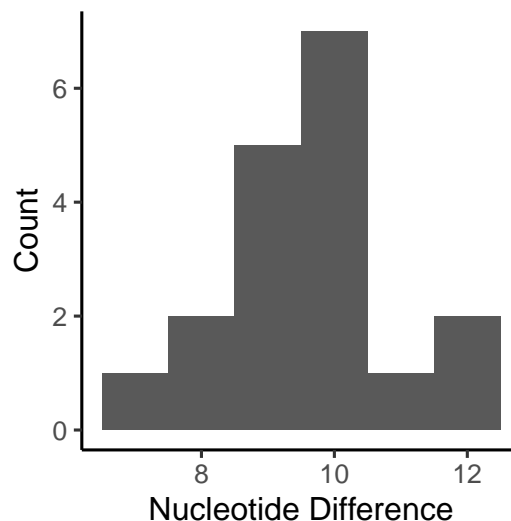
### IGHV1-58\*01\_03

384 sequences assigned  
101 (26.3%) exact matches, in which:  
86 unique CDR3  
5 unique J



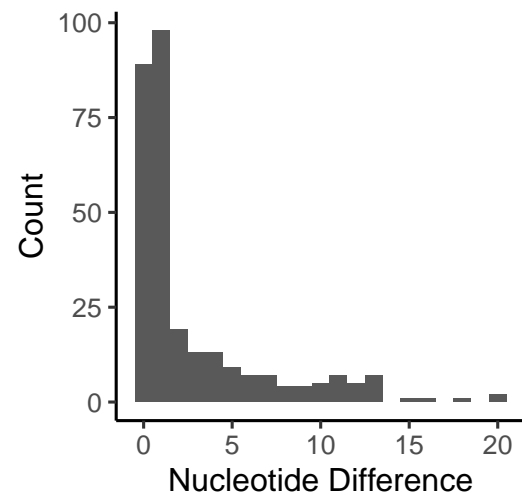
### IGHV1-NL1\*01

18 sequences assigned  
No exact matches.



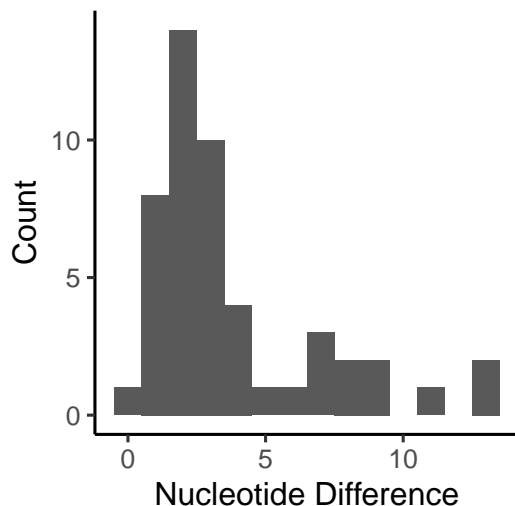
### IGHV2-70\*01

294 sequences assigned  
89 (30.3%) exact matches, in which:  
69 unique CDR3  
5 unique J



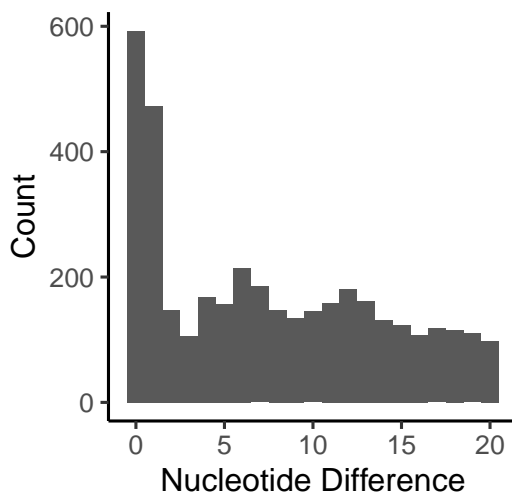
## IGHV2-70\*12

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



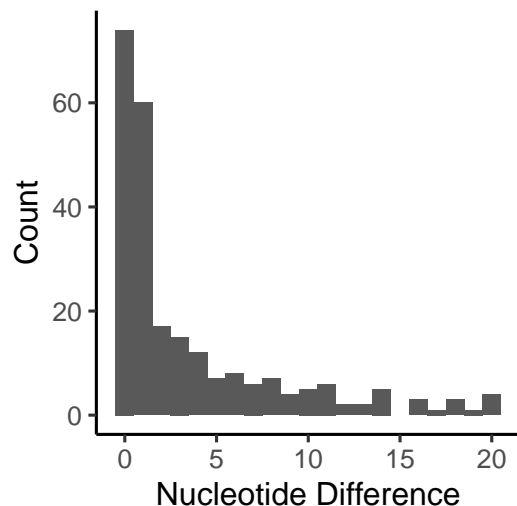
## IGHV3-7\*03

4900 sequences assigned  
593 (12.1%) exact matches, in which:  
417 unique CDR3  
6 unique J



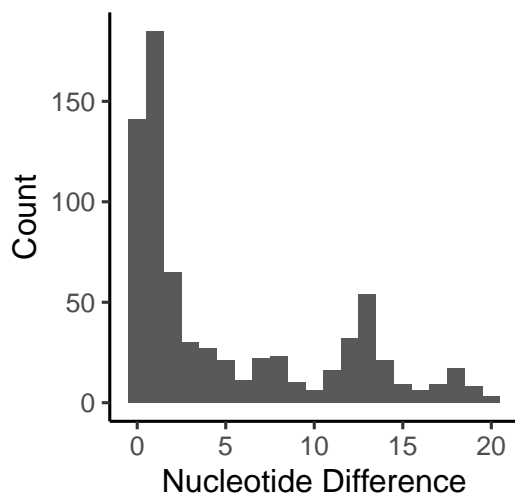
## IGHV3-11\*04

249 sequences assigned  
74 (29.7%) exact matches, in which:  
71 unique CDR3  
6 unique J



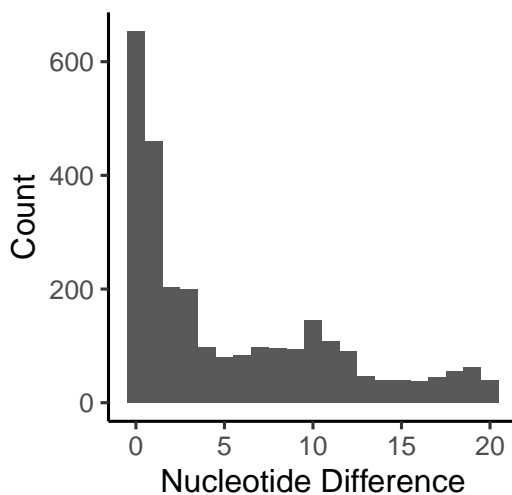
## IGHV2-70\*11\_15

732 sequences assigned  
141 (19.3%) exact matches, in which:  
109 unique CDR3  
4 unique J



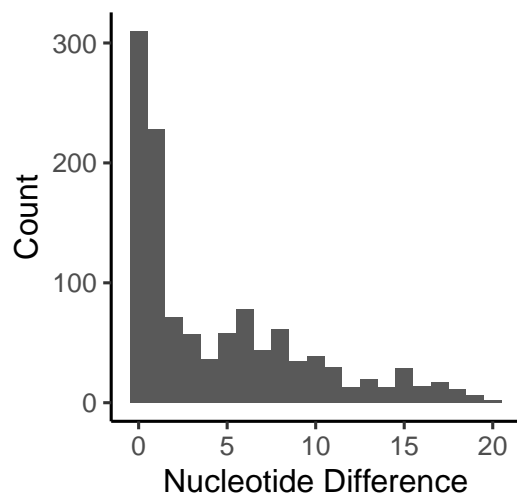
## IGHV3-9\*01

3066 sequences assigned  
654 (21.3%) exact matches, in which:  
395 unique CDR3  
6 unique J



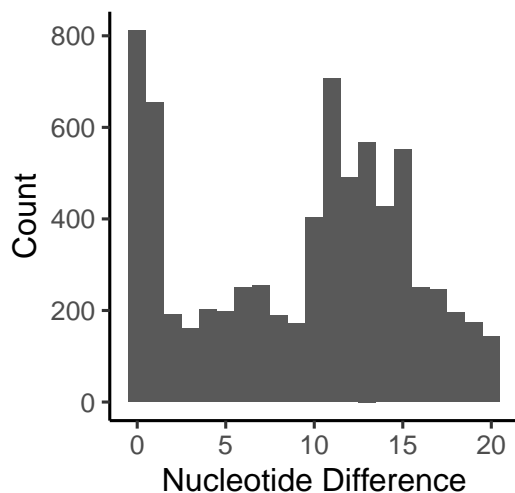
## IGHV3-11\*06

1211 sequences assigned  
310 (25.6%) exact matches, in which:  
213 unique CDR3  
6 unique J



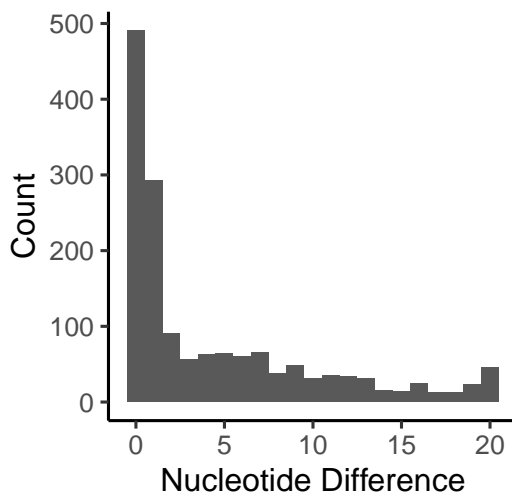
## IGHV3-7\*01

8011 sequences assigned  
812 (10.1%) exact matches, in which:  
577 unique CDR3  
6 unique J



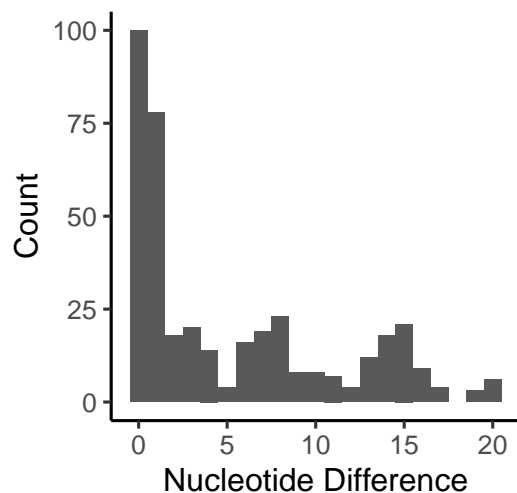
## IGHV3-11\*01

2178 sequences assigned  
491 (22.5%) exact matches, in which:  
338 unique CDR3  
6 unique J



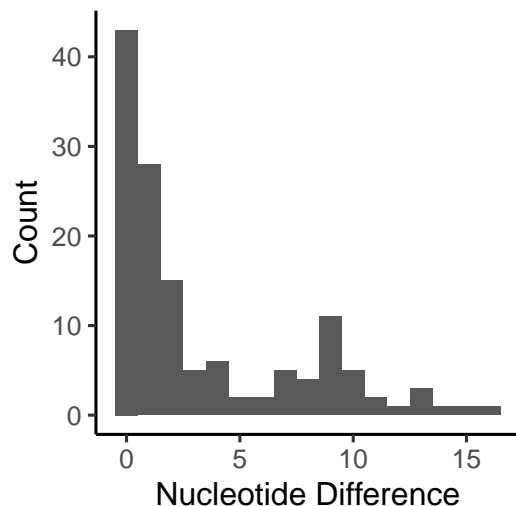
## IGHV3-13\*01

398 sequences assigned  
100 (25.1%) exact matches, in which:  
68 unique CDR3  
5 unique J



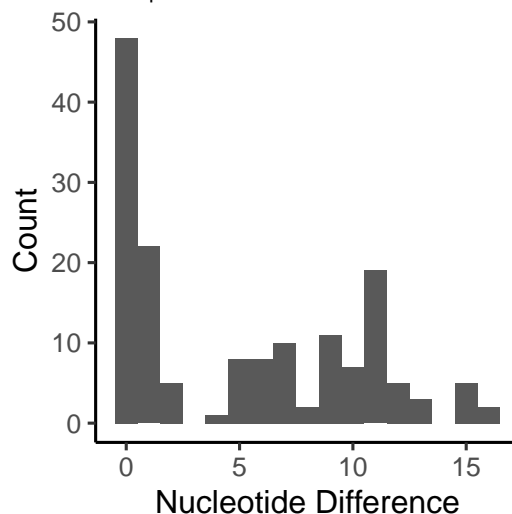
### IGHV3-13\*05

135 sequences assigned  
43 (31.9%) exact matches, in which:  
25 unique CDR3  
5 unique J



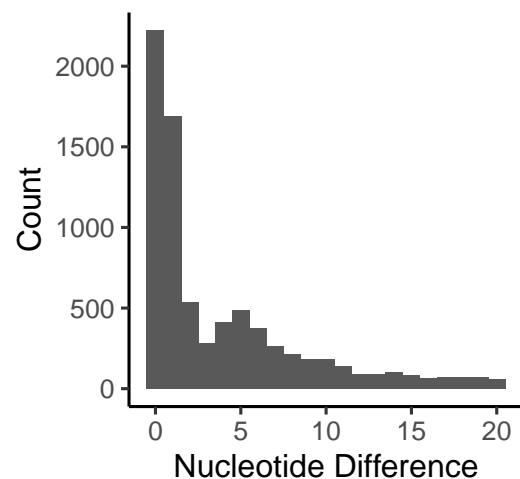
### IGHV3-20\*01\_02

157 sequences assigned  
48 (30.6%) exact matches, in which:  
29 unique CDR3  
4 unique J



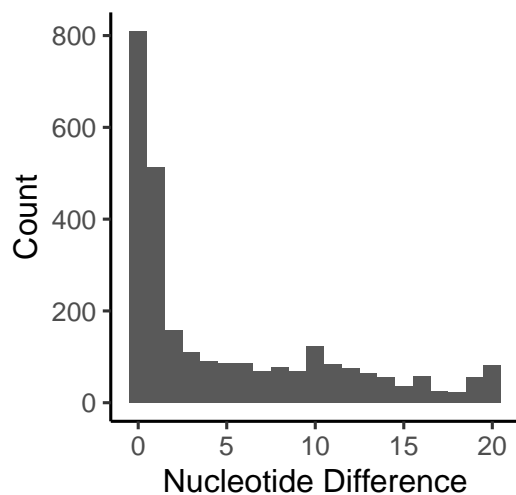
### IGHV3-21\*01\_02

8191 sequences assigned  
2222 (27.1%) exact matches, in which:  
1405 unique CDR3  
6 unique J



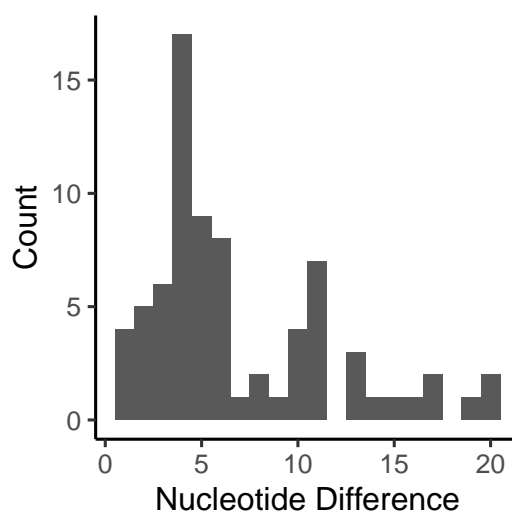
### IGHV3-15\*01\_02

4514 sequences assigned  
810 (17.9%) exact matches, in which:  
477 unique CDR3  
6 unique J



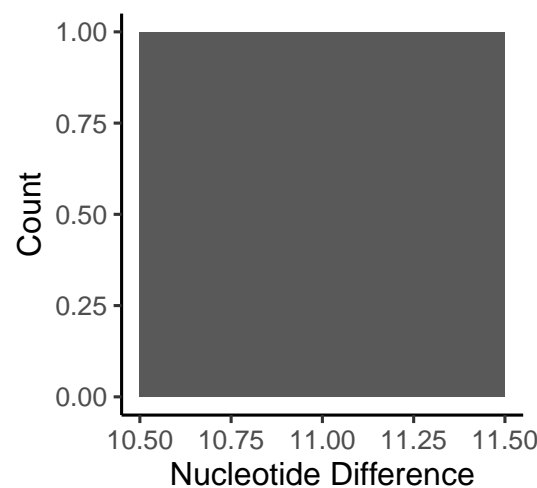
### IGHV3-20\*03\_04

81 sequences assigned  
No exact matches.



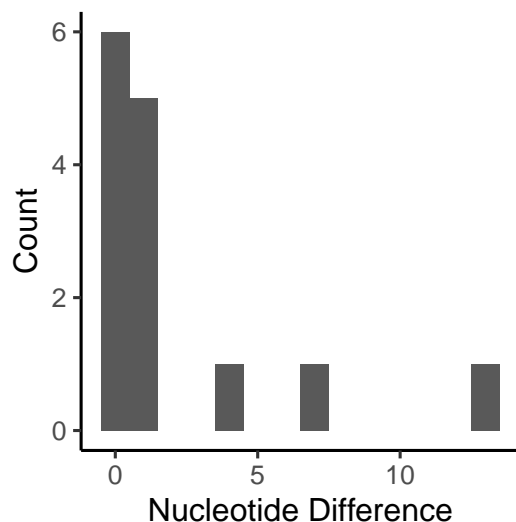
### IGHV3-22\*01\_02

2 sequences assigned  
No exact matches.



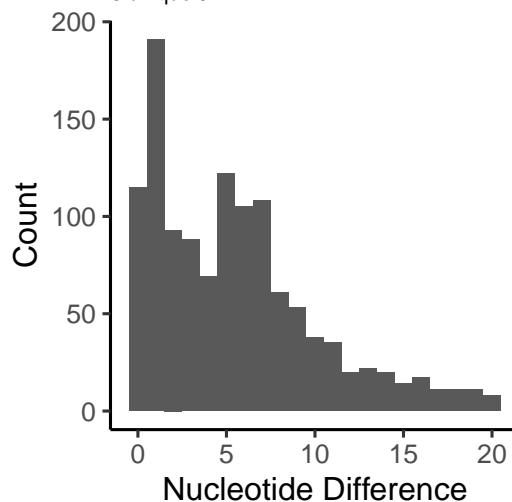
### IGHV3-19\*01

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



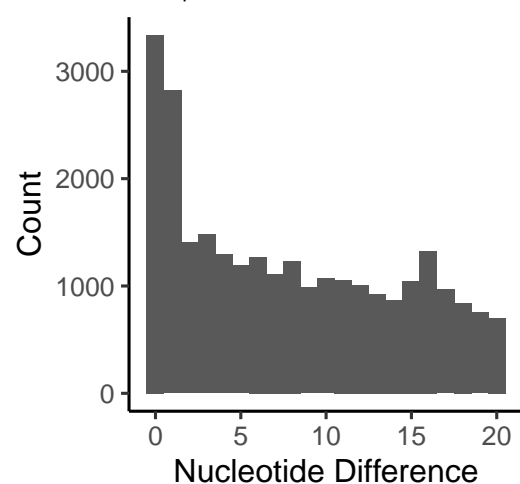
### IGHV3-21\*04

1348 sequences assigned  
115 (8.5%) exact matches, in which:  
107 unique CDR3  
6 unique J



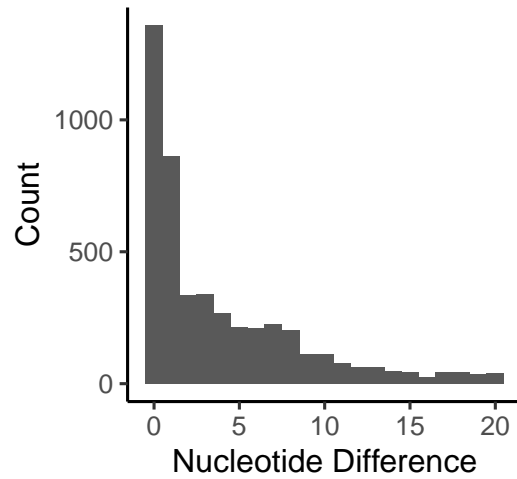
### IGHV3-23\*01\_04

34586 sequences assigned  
3338 (9.7%) exact matches, in which:  
1970 unique CDR3  
6 unique J



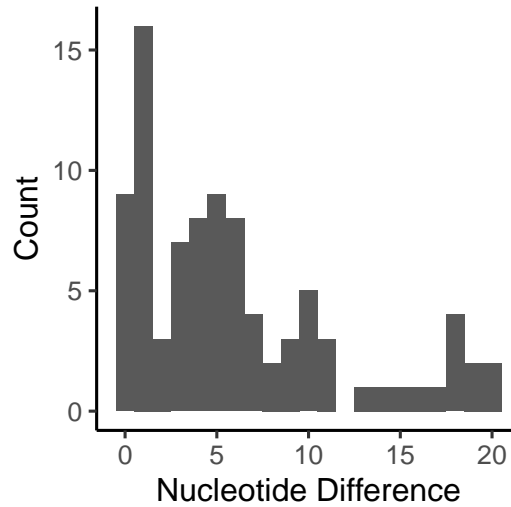
### IGHV3-30-3\*01

4902 sequences assigned  
1358 (27.7%) exact matches, in which:  
928 unique CDR3  
6 unique J



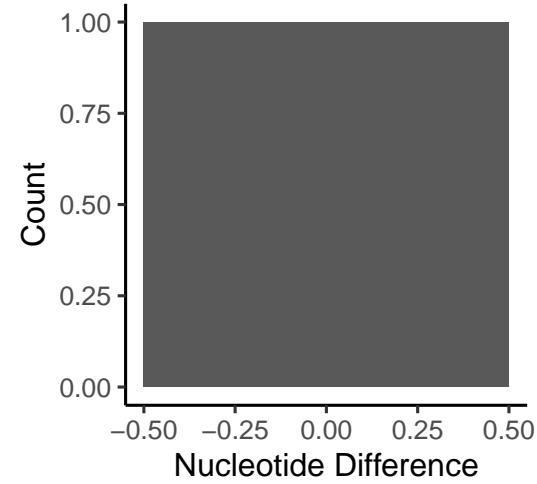
### IGHV3-33\*05

99 sequences assigned  
9 (9.1%) exact matches, in which:  
9 unique CDR3  
4 unique J



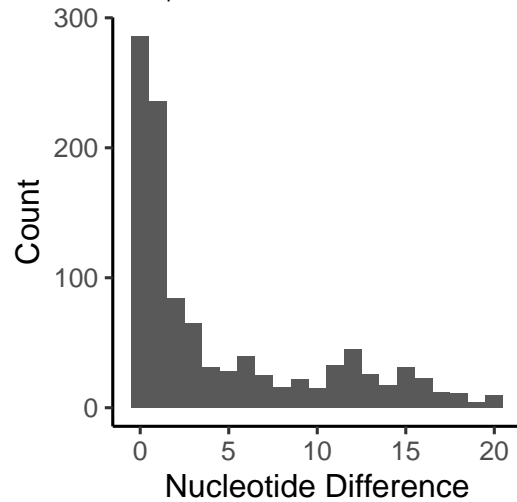
### IGHV3-35\*01

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



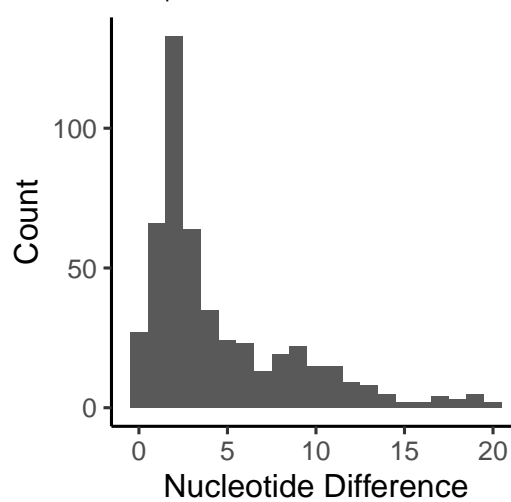
### IGHV3-30\*03

1482 sequences assigned  
286 (19.3%) exact matches, in which:  
263 unique CDR3  
6 unique J



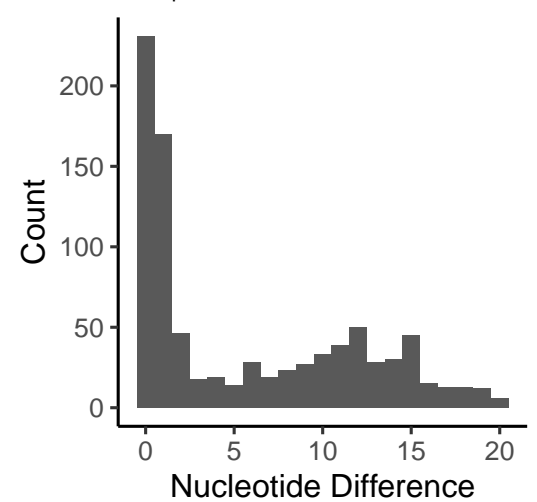
### IGHV3-33\*06

506 sequences assigned  
27 (5.3%) exact matches, in which:  
27 unique CDR3  
5 unique J



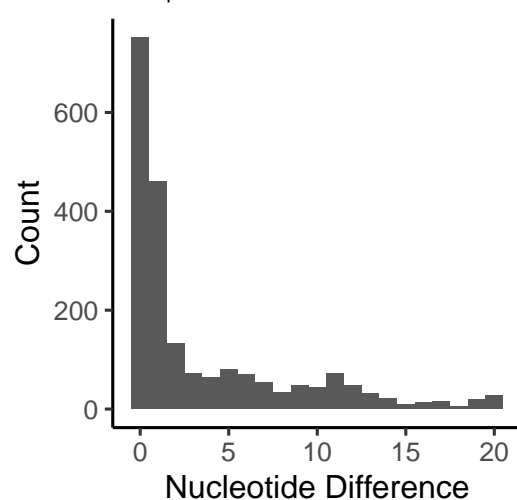
### IGHV3-43\*02

977 sequences assigned  
231 (23.6%) exact matches, in which:  
137 unique CDR3  
6 unique J



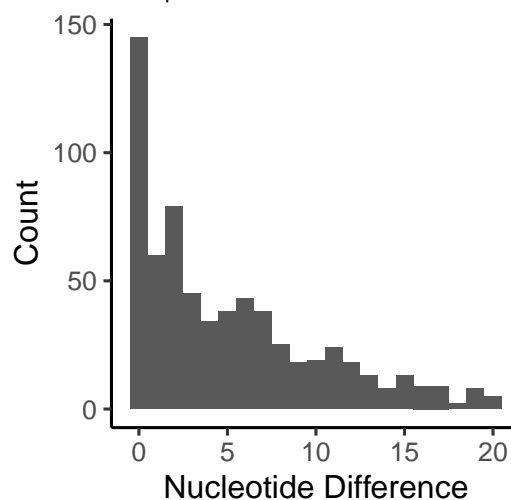
### IGHV3-33\*01

2163 sequences assigned  
752 (34.8%) exact matches, in which:  
508 unique CDR3  
5 unique J



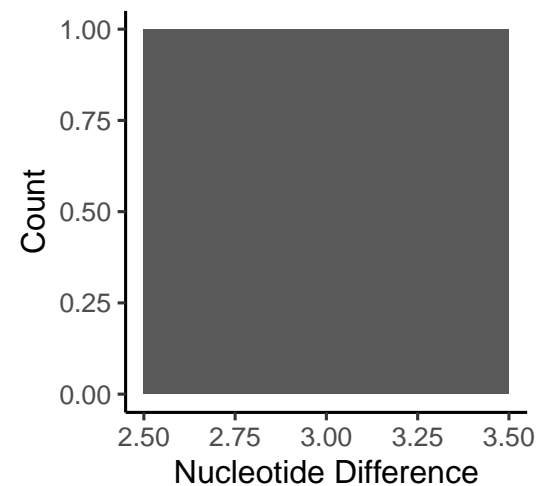
### IGHV3-33\*08

701 sequences assigned  
145 (20.7%) exact matches, in which:  
120 unique CDR3  
5 unique J



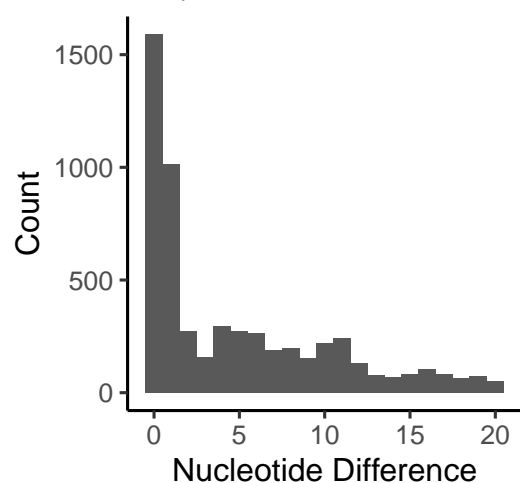
### IGHV3-47\*01

1 sequences assigned  
No exact matches.



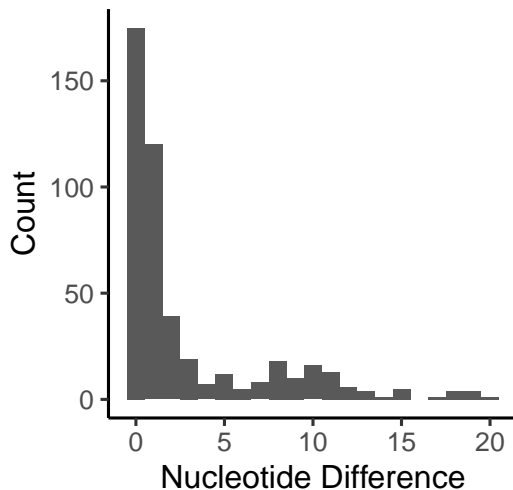
### IGHV3-48\*03

8787 sequences assigned  
1590 (18.1%) exact matches, in which:  
974 unique CDR3  
6 unique J



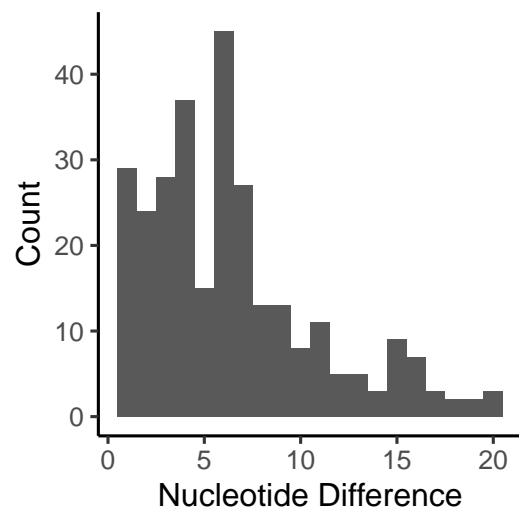
### IGHV3-53\*04

499 sequences assigned  
175 (35.1%) exact matches, in which:  
122 unique CDR3  
6 unique J



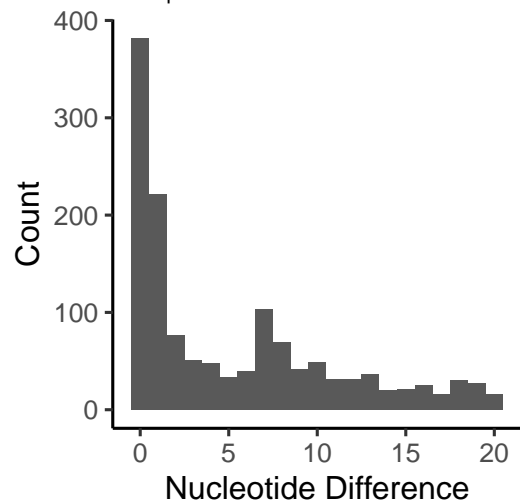
### IGHV3-64\*04

324 sequences assigned  
No exact matches.



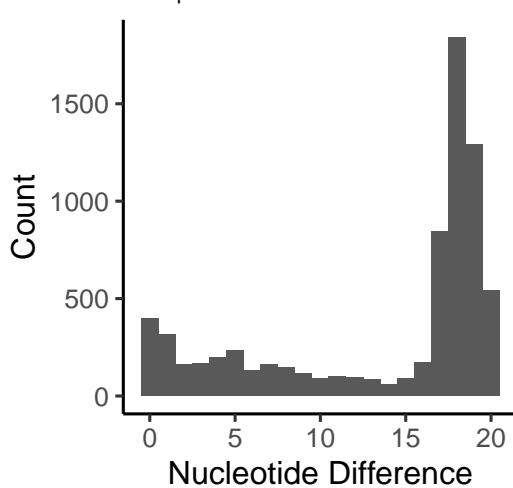
### IGHV3-49\*04

1490 sequences assigned  
382 (25.6%) exact matches, in which:  
232 unique CDR3  
6 unique J



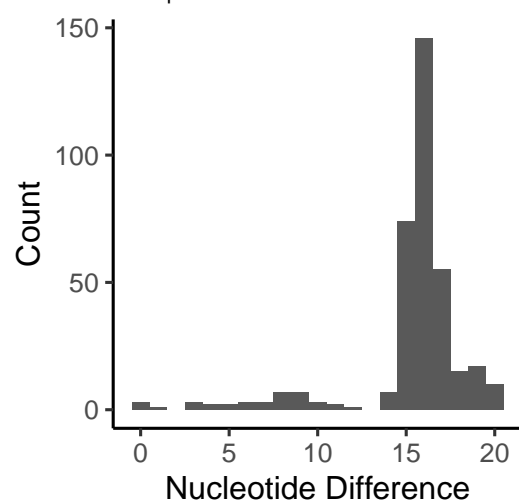
### IGHV3-53\*01\_02

8638 sequences assigned  
398 (4.6%) exact matches, in which:  
260 unique CDR3  
6 unique J



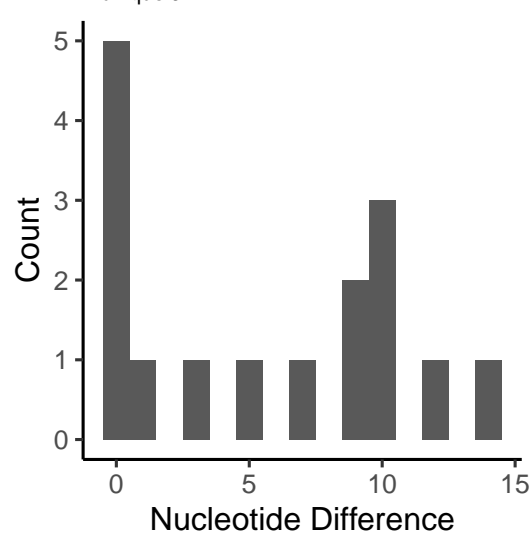
### IGHV3-64\*02\_07

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



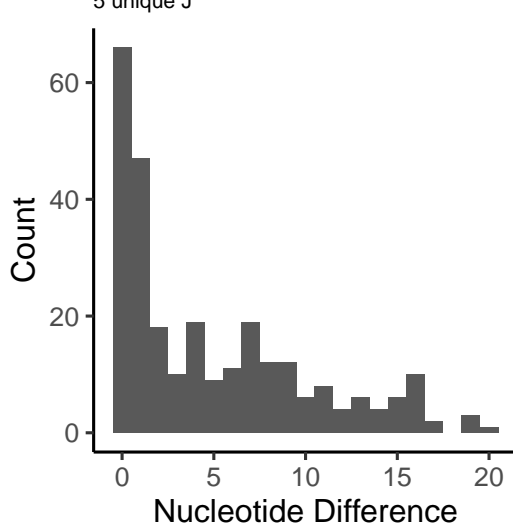
### IGHV3-52\*01\_03

16 sequences assigned  
5 (31.2%) exact matches, in which:  
5 unique CDR3  
2 unique J



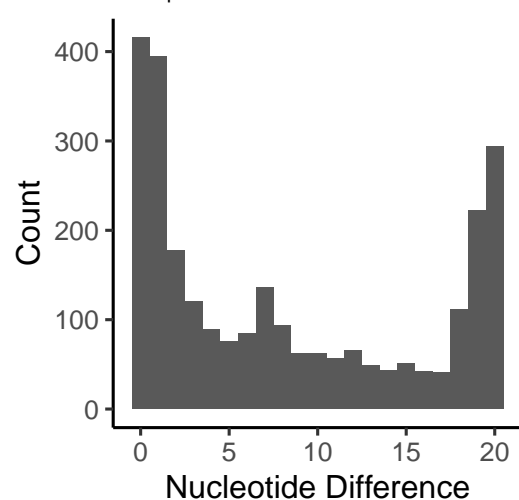
### IGHV3-64\*01

311 sequences assigned  
66 (21.2%) exact matches, in which:  
45 unique CDR3  
5 unique J



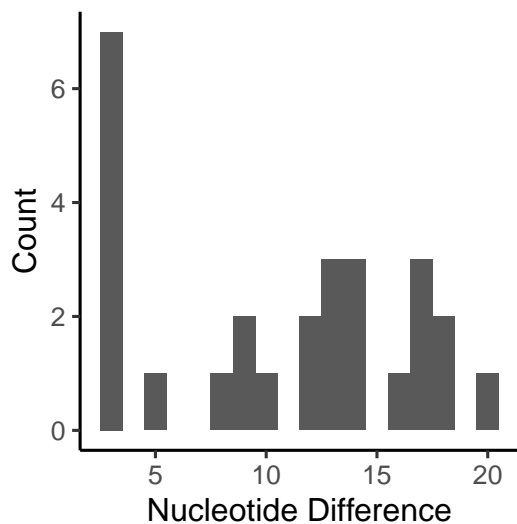
### IGHV3-66\*01

3759 sequences assigned  
416 (11.1%) exact matches, in which:  
270 unique CDR3  
6 unique J



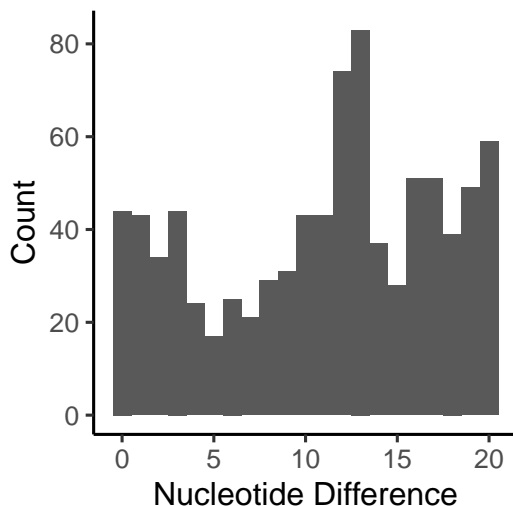
### IGHV3-69-1\*01

75 sequences assigned  
No exact matches.



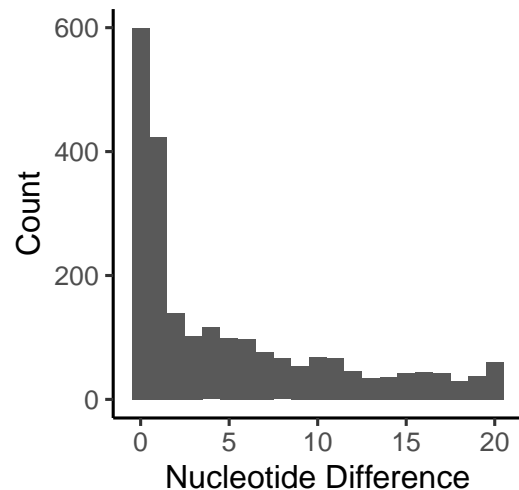
### IGHV3-72\*01

2823 sequences assigned  
44 (1.6%) exact matches, in which:  
29 unique CDR3  
4 unique J



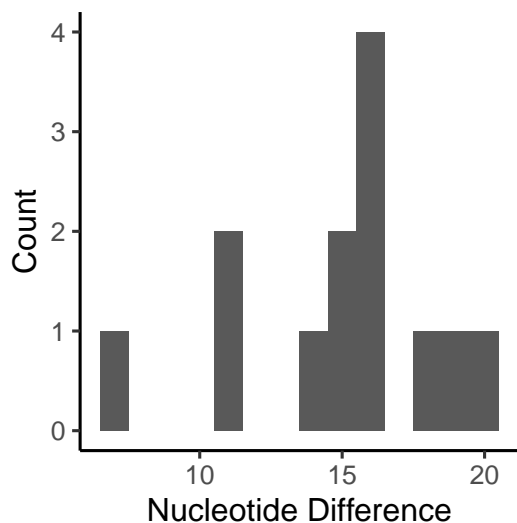
### IGHV3-74\*01\_02

2963 sequences assigned  
600 (20.2%) exact matches, in which:  
403 unique CDR3  
6 unique J



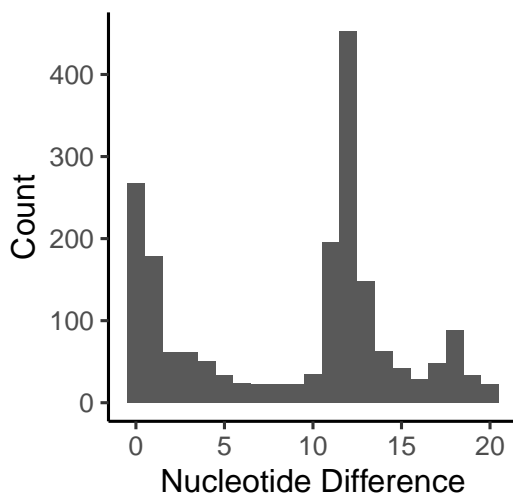
### IGHV3-69-1\*02

42 sequences assigned  
No exact matches.



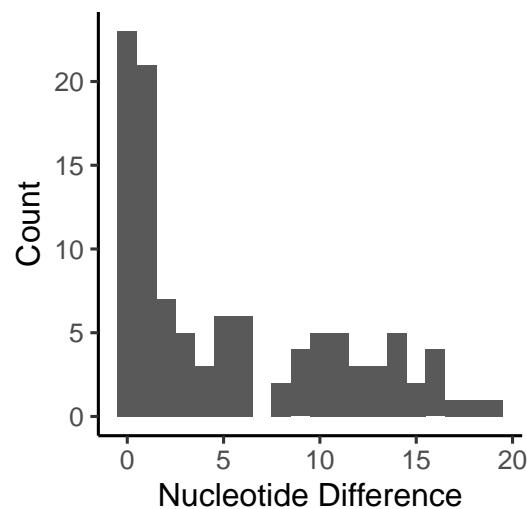
### IGHV3-73\*01\_02

2539 sequences assigned  
267 (10.5%) exact matches, in which:  
167 unique CDR3  
6 unique J



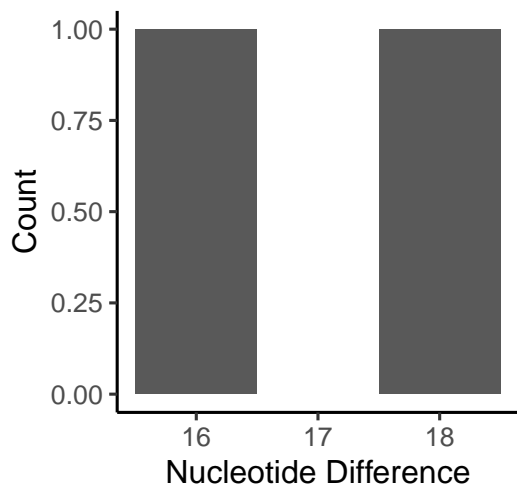
### IGHV3-43D\*04

114 sequences assigned  
23 (20.2%) exact matches, in which:  
15 unique CDR3  
4 unique J



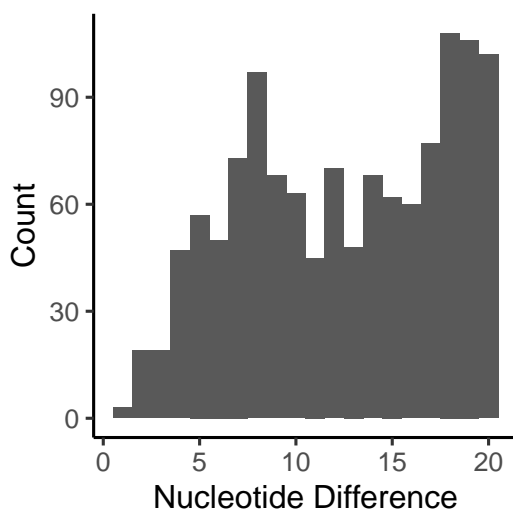
### IGHV3-71\*03

2 sequences assigned  
No exact matches.



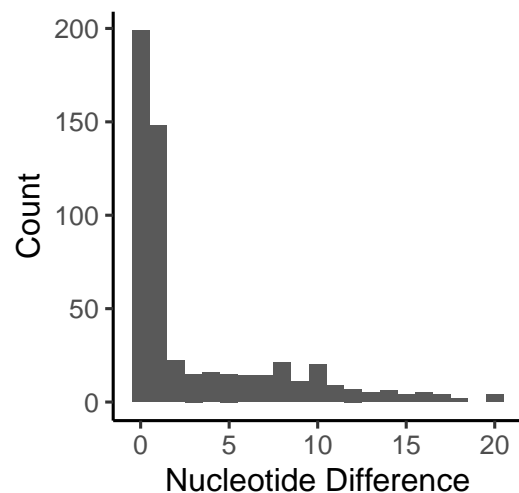
### IGHV3-74\*03

2462 sequences assigned  
No exact matches.



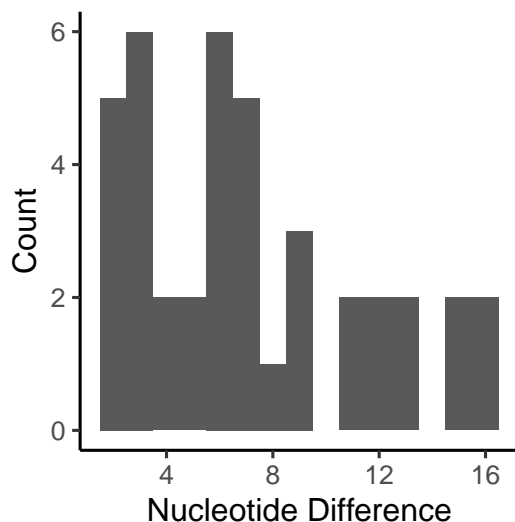
### IGHV3-64D\*06

579 sequences assigned  
199 (34.4%) exact matches, in which:  
86 unique CDR3  
6 unique J



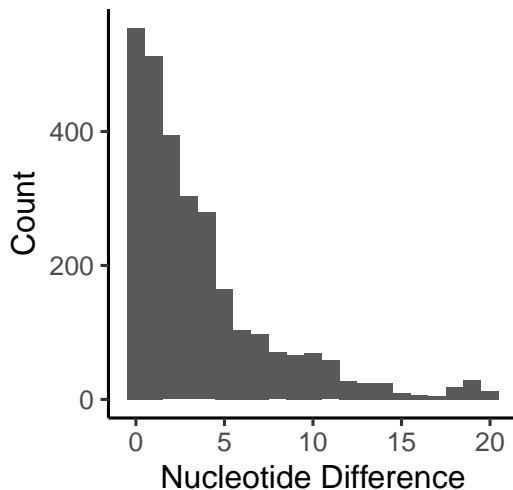
### IGHV3-64D\*08

40 sequences assigned  
No exact matches.



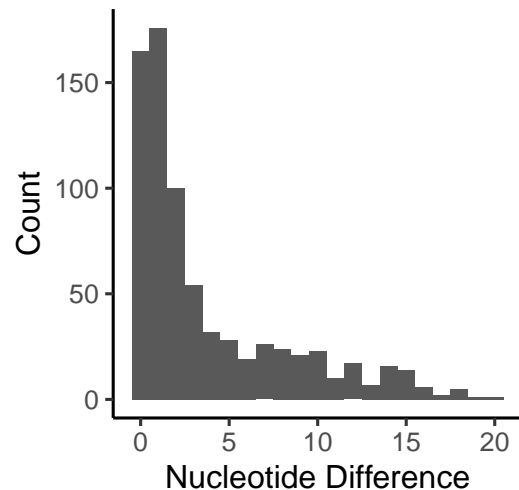
### IGHV4-4\*02\_03

6118 sequences assigned  
555 (9.1%) exact matches, in which:  
433 unique CDR3  
6 unique J



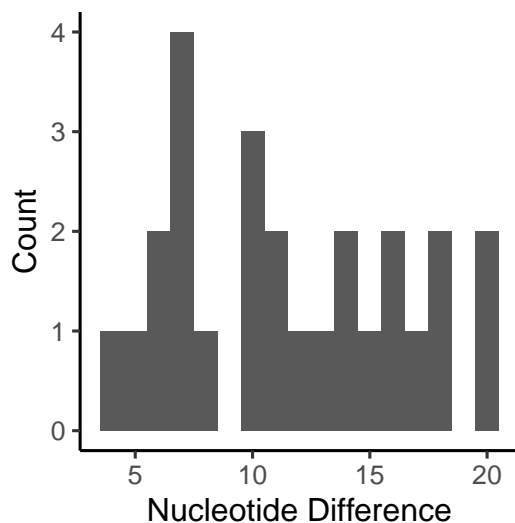
### IGHV4-30-2\*01

755 sequences assigned  
165 (21.9%) exact matches, in which:  
94 unique CDR3  
6 unique J



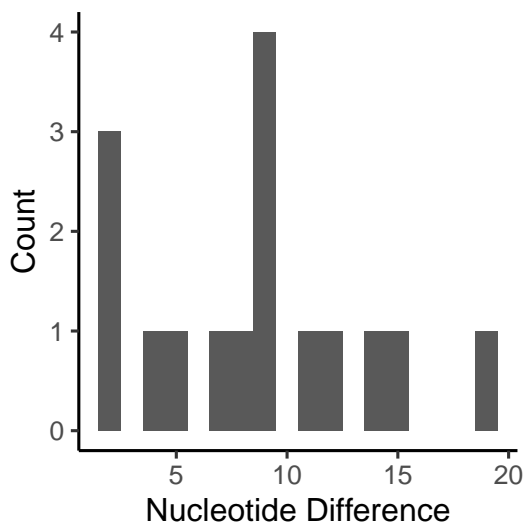
### IGHV3-NL1\*01

47 sequences assigned  
No exact matches.



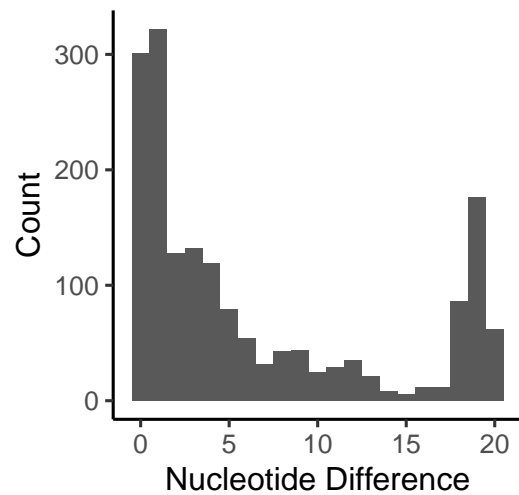
### IGHV4-28\*03

19 sequences assigned  
No exact matches.



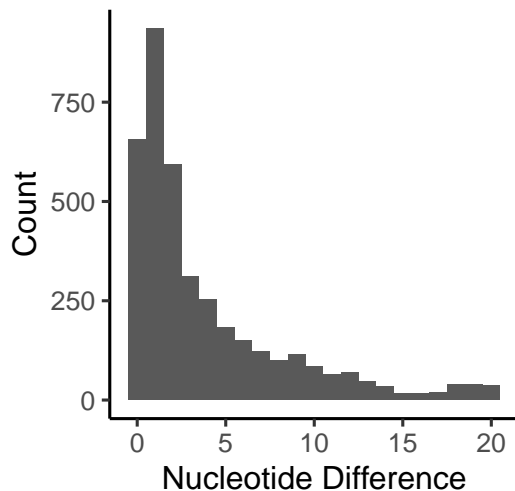
### IGHV4-30-4\*01

1853 sequences assigned  
301 (16.2%) exact matches, in which:  
255 unique CDR3  
6 unique J



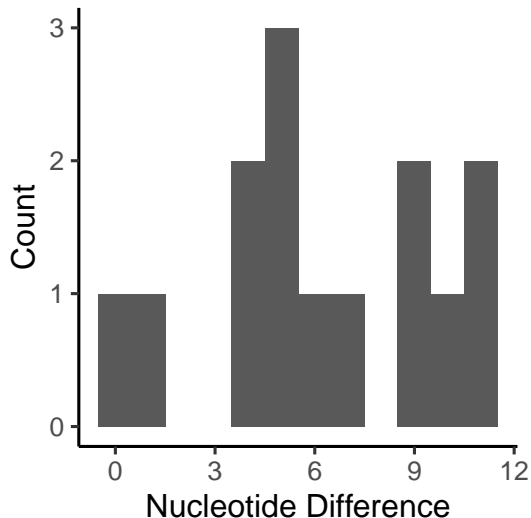
### IGHV4-4\*07

4468 sequences assigned  
657 (14.7%) exact matches, in which:  
537 unique CDR3  
6 unique J



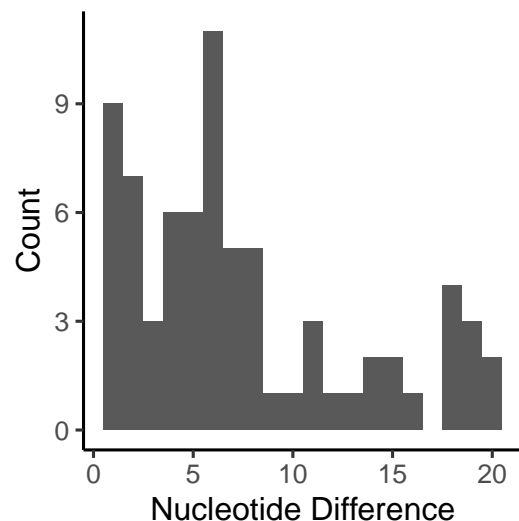
### IGHV4-28\*01\_07

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



### IGHV4-30-2\*03

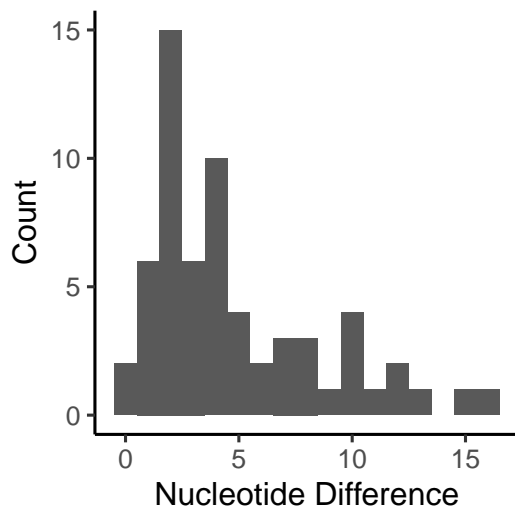
218 sequences assigned  
No exact matches.





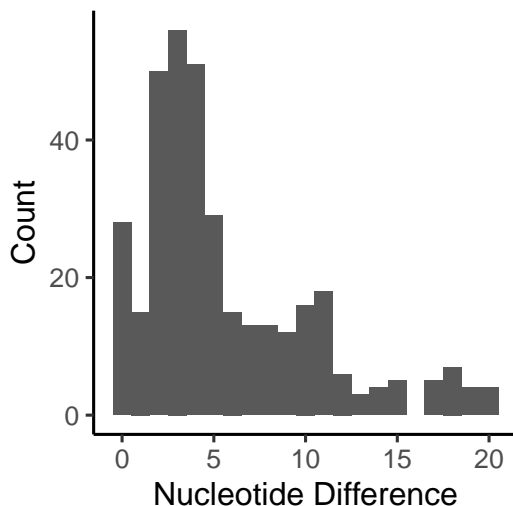
### IGHV4-30-2\*05

62 sequences assigned  
2 (3.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



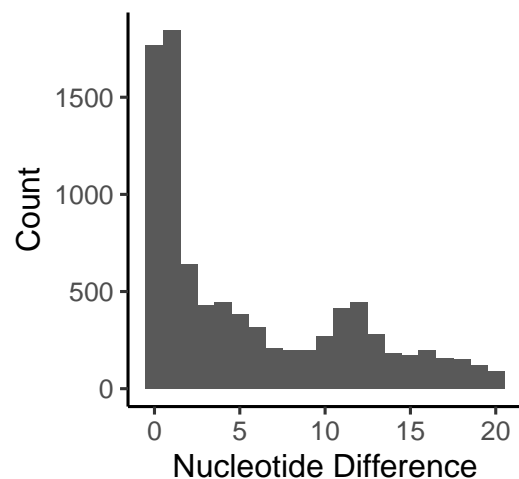
### IGHV4-38-2\*02

553 sequences assigned  
28 (5.1%) exact matches, in which:  
28 unique CDR3  
5 unique J



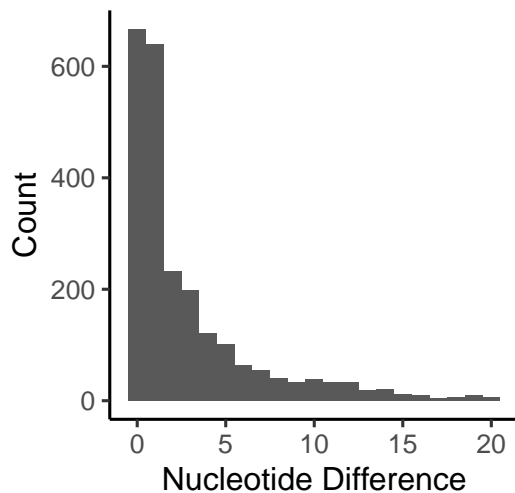
### IGHV4-59\*01\_07

15922 sequences assigned  
1767 (11.1%) exact matches, in which:  
1426 unique CDR3  
6 unique J



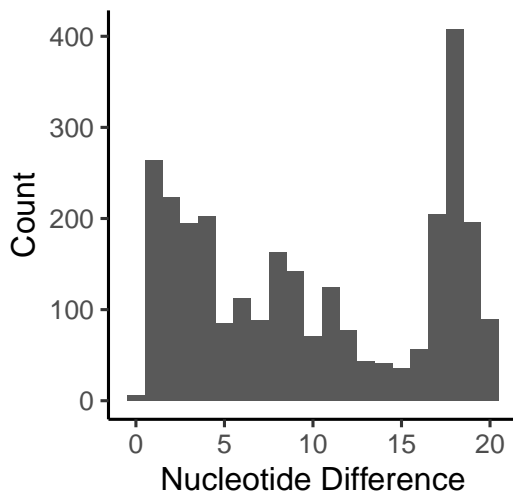
### IGHV4-31\*02

2505 sequences assigned  
667 (26.6%) exact matches, in which:  
559 unique CDR3  
6 unique J



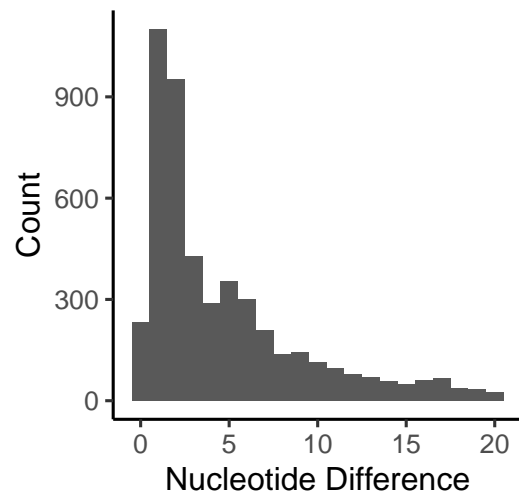
### IGHV4-39\*07

3388 sequences assigned  
6 (0.2%) exact matches, in which:  
6 unique CDR3  
3 unique J



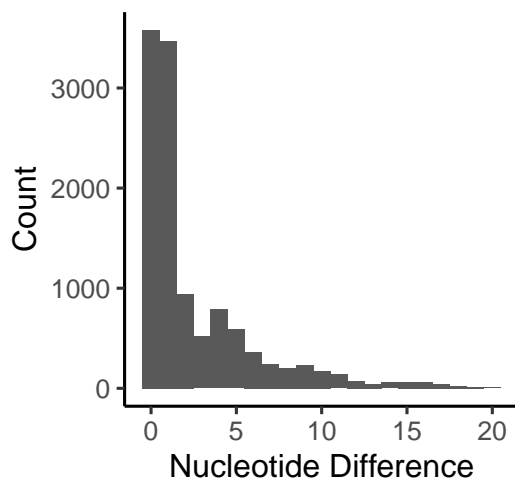
### IGHV4-59\*12

6701 sequences assigned  
233 (3.5%) exact matches, in which:  
220 unique CDR3  
6 unique J



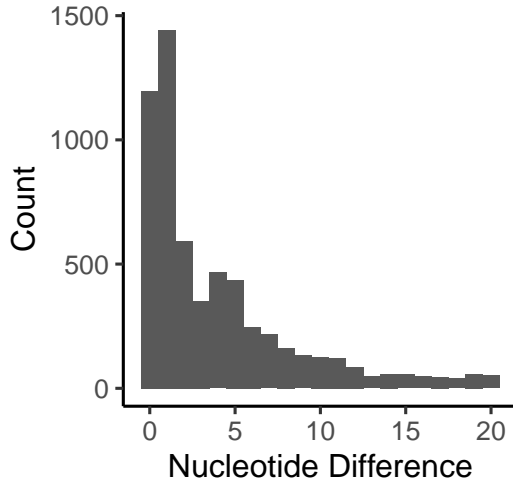
### IGHV4-34\*01\_02

12665 sequences assigned  
3579 (28.3%) exact matches, in which:  
2536 unique CDR3  
6 unique J



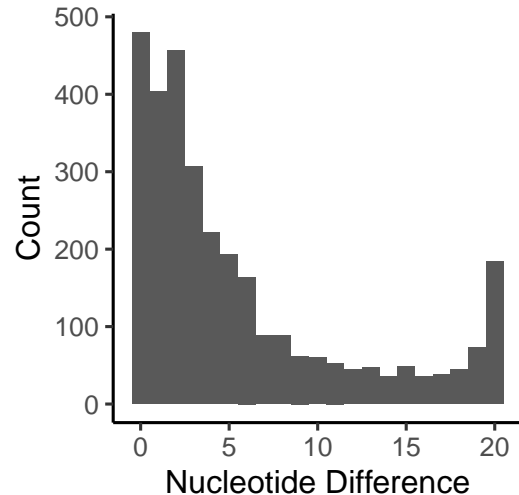
### IGHV4-59\*08

11163 sequences assigned  
1197 (10.7%) exact matches, in which:  
947 unique CDR3  
6 unique J



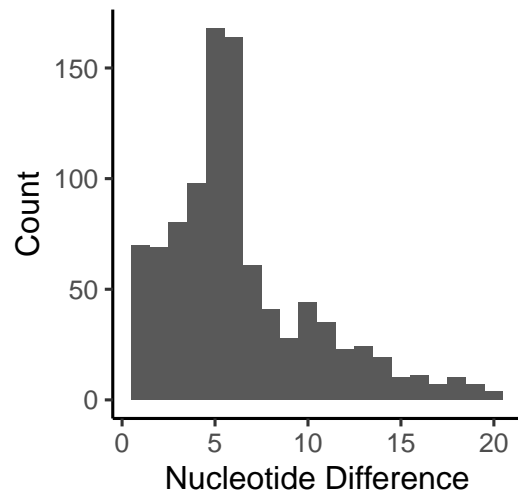
### IGHV4-61\*01

4756 sequences assigned  
480 (10.1%) exact matches, in which:  
438 unique CDR3  
6 unique J



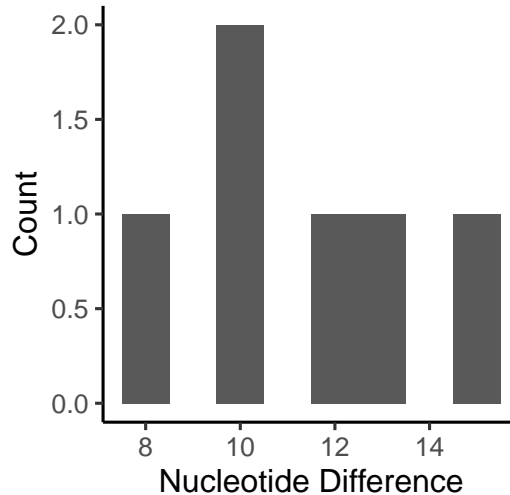
### IGHV4–61\*08

1836 sequences assigned  
No exact matches.



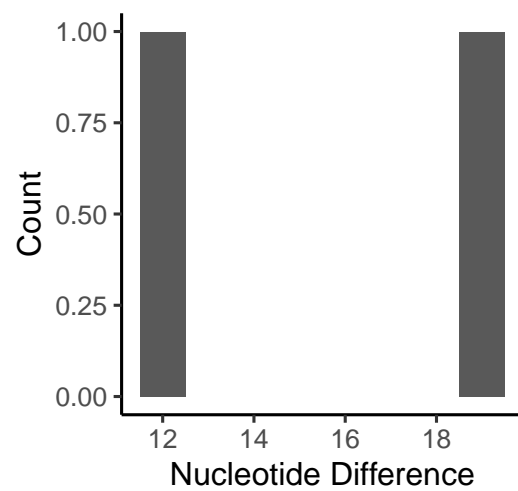
### IGHV1/OR15–3\*02

7 sequences assigned  
No exact matches.



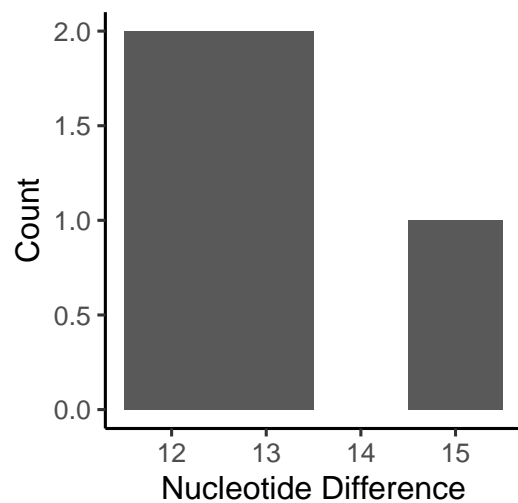
### IGHV1/OR15–9\*01

2 sequences assigned  
No exact matches.



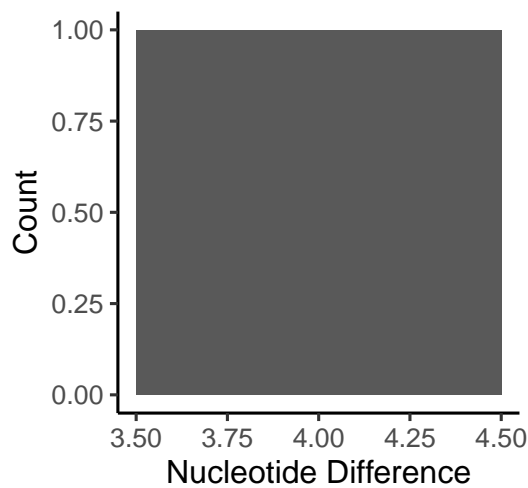
### IGHV1/OR15–1\*04

5 sequences assigned  
No exact matches.



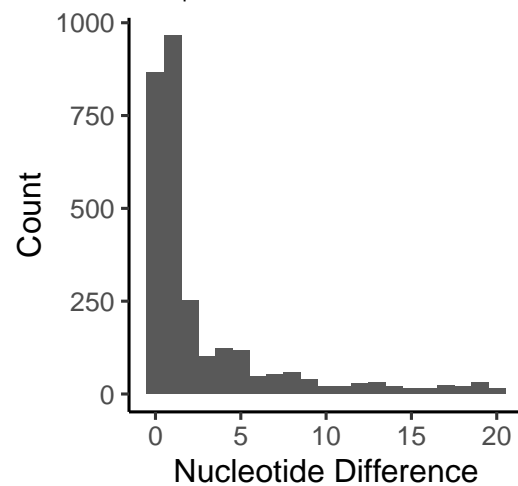
### IGHV1/OR15–4\*01

1 sequences assigned  
No exact matches.



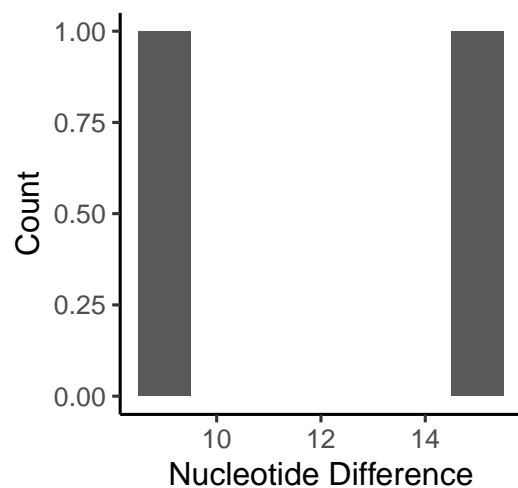
### IGHV5–10–1\*01\_03

2868 sequences assigned  
866 (30.2%) exact matches, in which:  
544 unique CDR3  
6 unique J



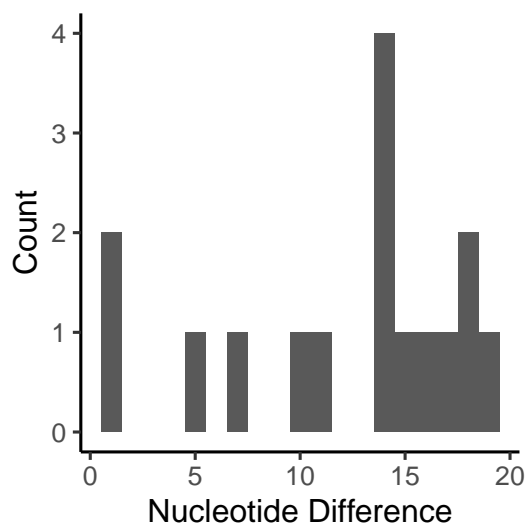
### IGHV1/OR15–2\*02\_03

2 sequences assigned  
No exact matches.



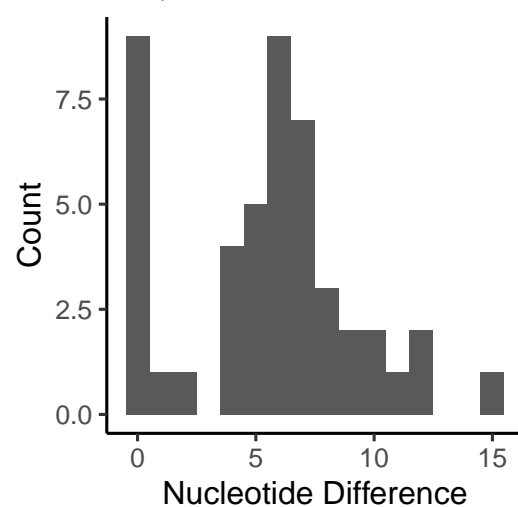
### IGHV4/OR15–8\*01

31 sequences assigned  
No exact matches.



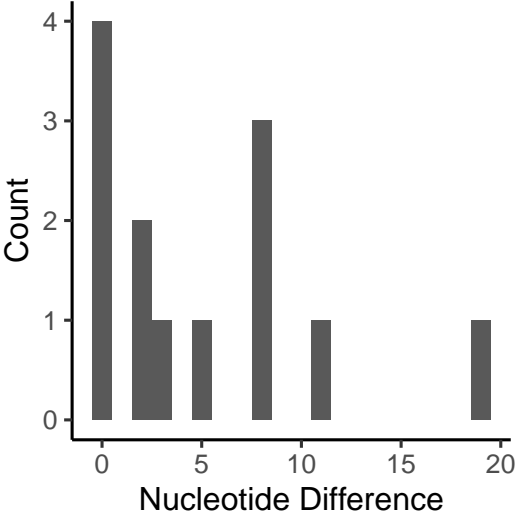
### IGHV5–51\*04

49 sequences assigned  
9 (18.4%) exact matches, in which:  
9 unique CDR3  
5 unique J



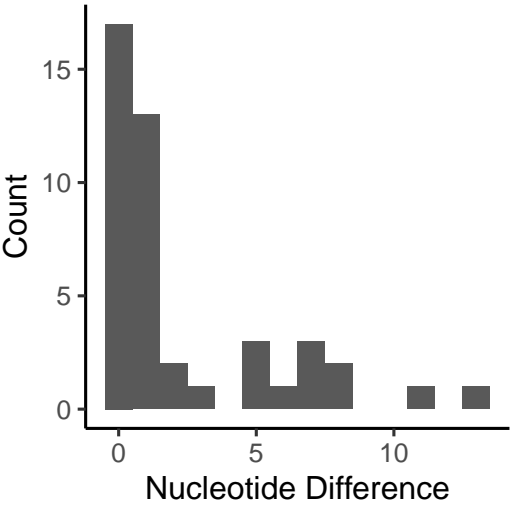
IGHV5-51\*06

14 sequences assigned  
4 (28.6%) exact matches, in which:  
4 unique CDR3  
3 unique J



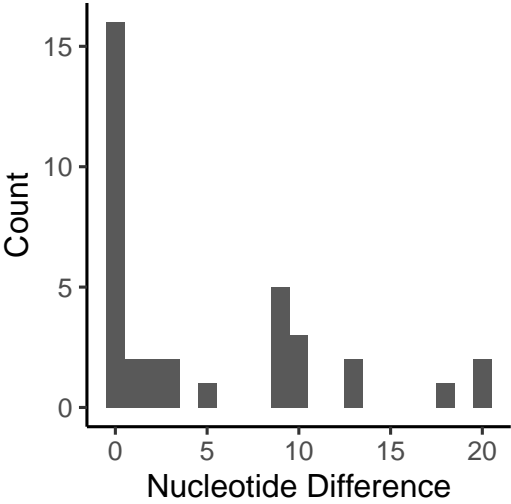
IGHV7-4-1\*01

44 sequences assigned  
17 (38.6%) exact matches, in which:  
14 unique CDR3  
4 unique J



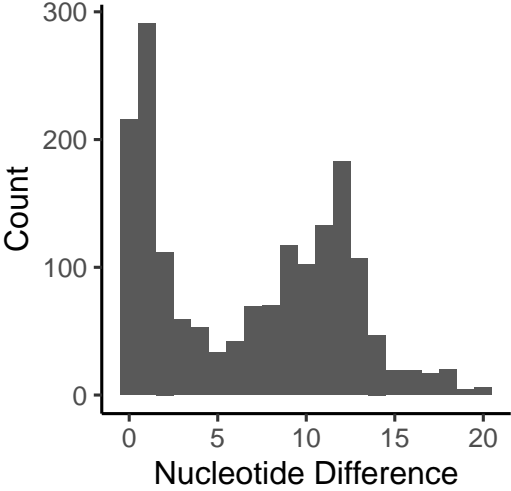
IGHV5-51\*07

38 sequences assigned  
16 (42.1%) exact matches, in which:  
13 unique CDR3  
4 unique J



IGHV6-1\*01\_02

1888 sequences assigned  
216 (11.4%) exact matches, in which:  
175 unique CDR3  
6 unique J





[illegible]