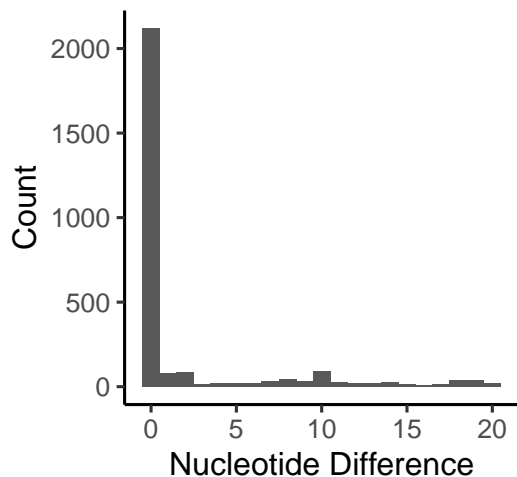


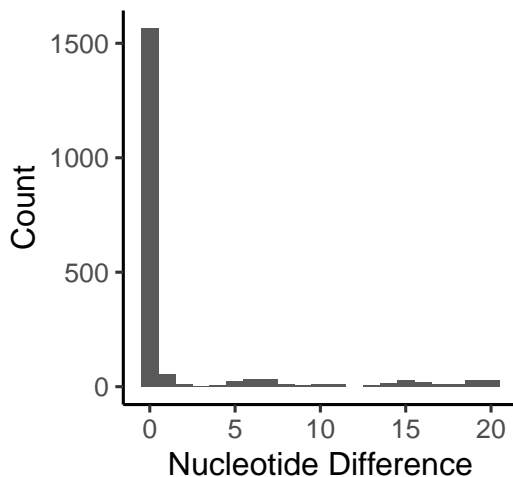
### IGHV1-2\*02

3102 sequences assigned  
2119 (68.3%) exact matches, in which:  
2110 unique CDR3  
6 unique J



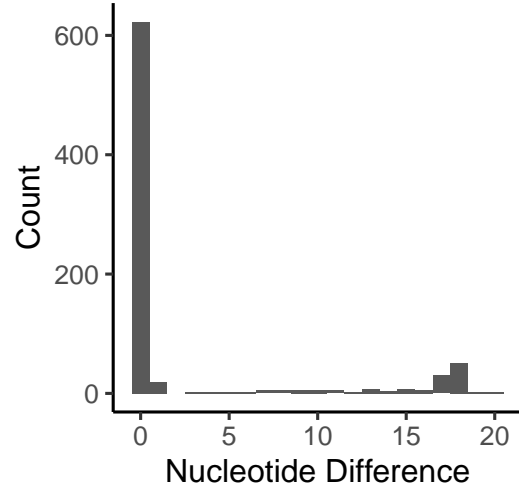
### IGHV1-8\*01

1965 sequences assigned  
1565 (79.6%) exact matches, in which:  
1554 unique CDR3  
6 unique J



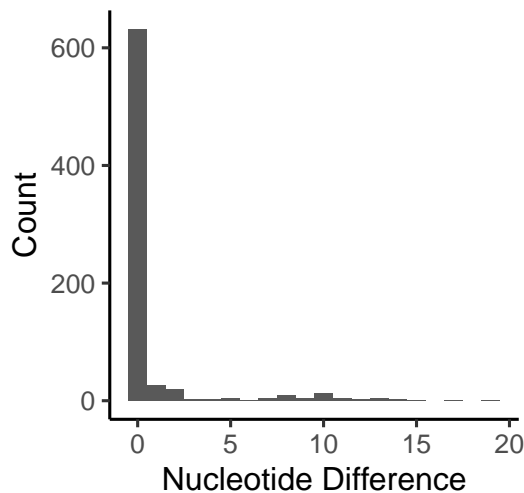
### IGHV1-24\*01

830 sequences assigned  
623 (75.1%) exact matches, in which:  
622 unique CDR3  
6 unique J



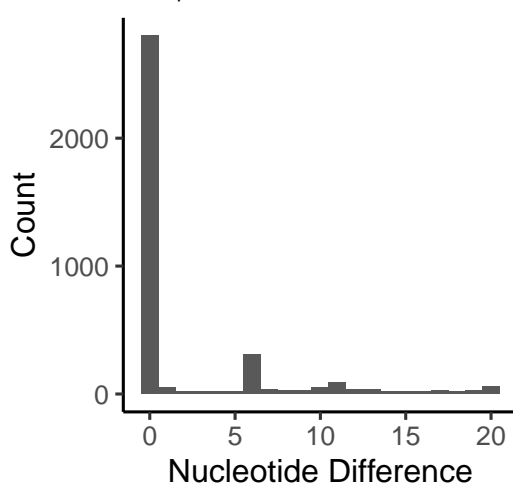
### IGHV1-2\*04

740 sequences assigned  
632 (85.4%) exact matches, in which:  
623 unique CDR3  
6 unique J



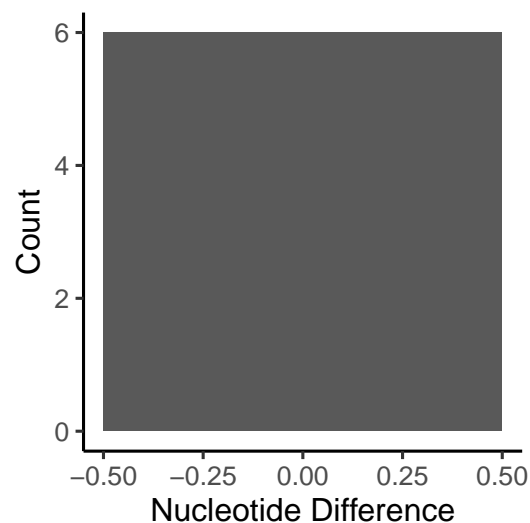
### IGHV1-18\*01

4003 sequences assigned  
2801 (70%) exact matches, in which:  
2782 unique CDR3  
6 unique J



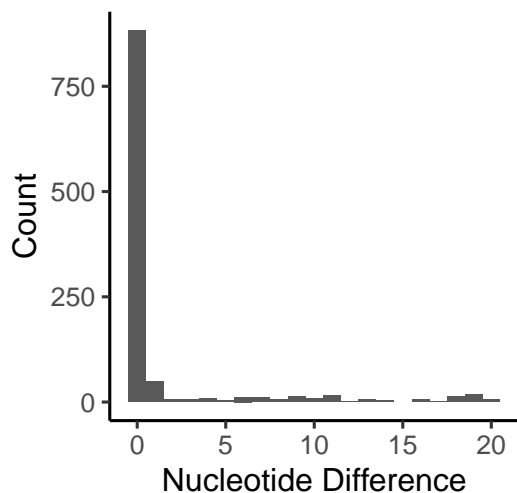
### IGHV1-45\*02

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



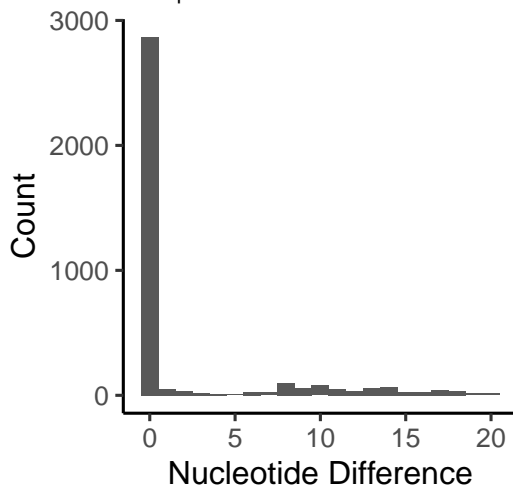
### IGHV1-3\*01\_05

1241 sequences assigned  
883 (71.2%) exact matches, in which:  
875 unique CDR3  
6 unique J



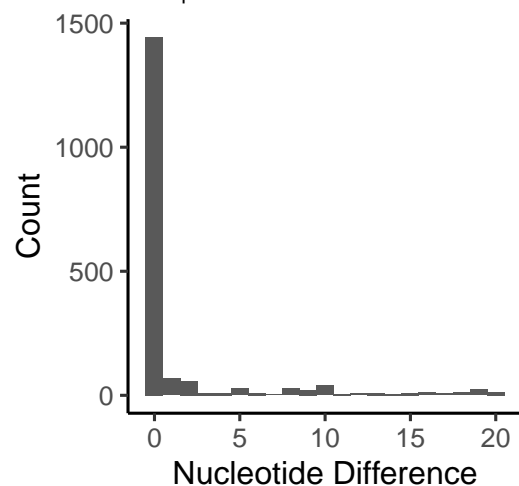
### IGHV1-18\*04

3782 sequences assigned  
2867 (75.8%) exact matches, in which:  
2852 unique CDR3  
6 unique J



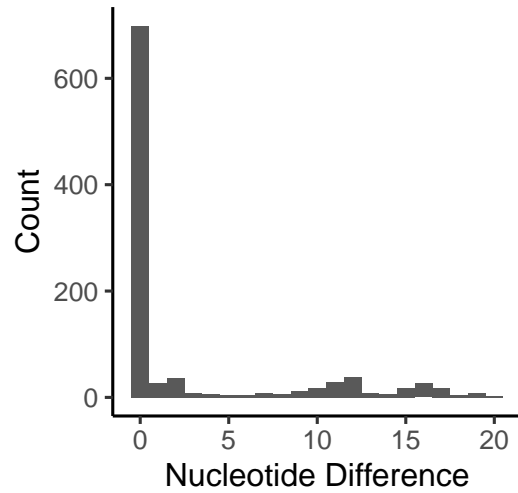
### IGHV1-46\*01

1934 sequences assigned  
1444 (74.7%) exact matches, in which:  
1433 unique CDR3  
6 unique J



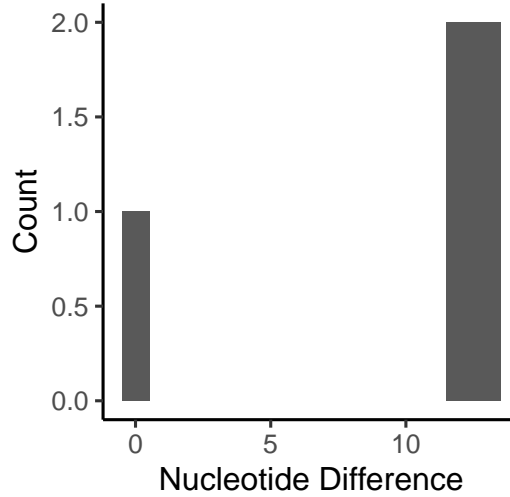
### IGHV1-46\*04

1058 sequences assigned  
699 (66.1%) exact matches, in which:  
697 unique CDR3  
6 unique J



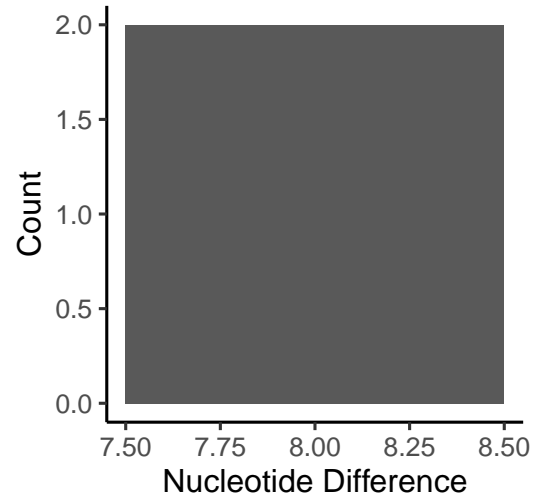
### IGHV1-69-2\*01

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



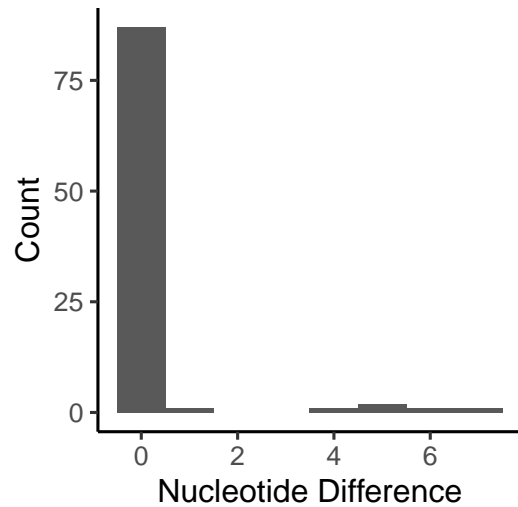
### IGHV1-NL1\*01

2 sequences assigned  
No exact matches.



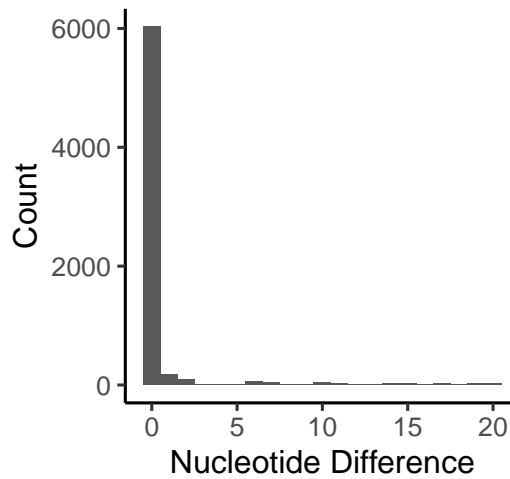
### IGHV1-58\*02

95 sequences assigned  
87 (91.6%) exact matches, in which:  
85 unique CDR3  
5 unique J



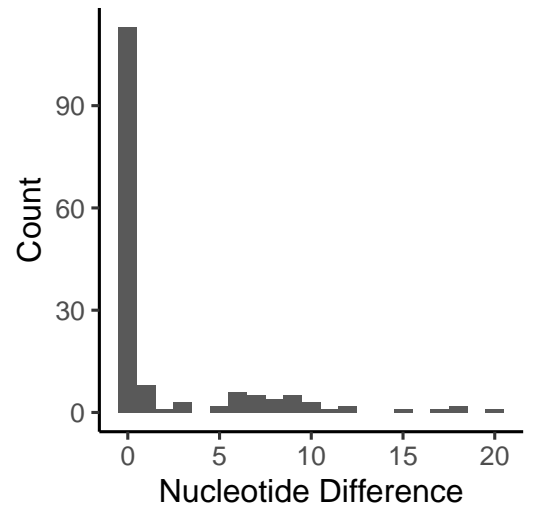
### IGHV1-69\*01\_12\_13

6913 sequences assigned  
6029 (87.2%) exact matches, in which:  
5982 unique CDR3  
6 unique J



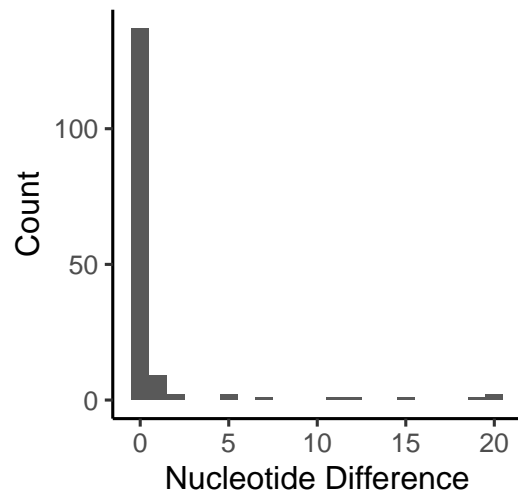
### IGHV2-5\*01

171 sequences assigned  
113 (66.1%) exact matches, in which:  
107 unique CDR3  
5 unique J



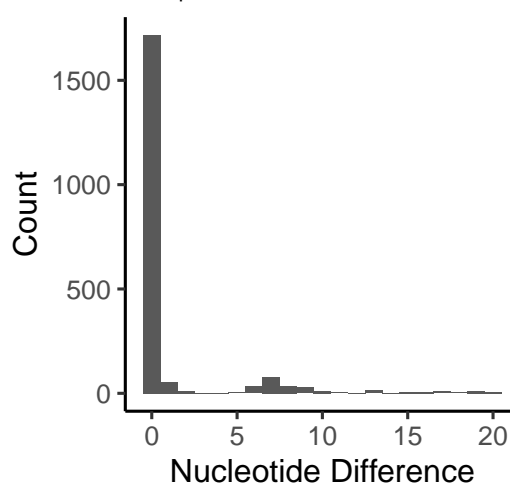
### IGHV1-58\*01\_03

158 sequences assigned  
137 (86.7%) exact matches, in which:  
136 unique CDR3  
6 unique J



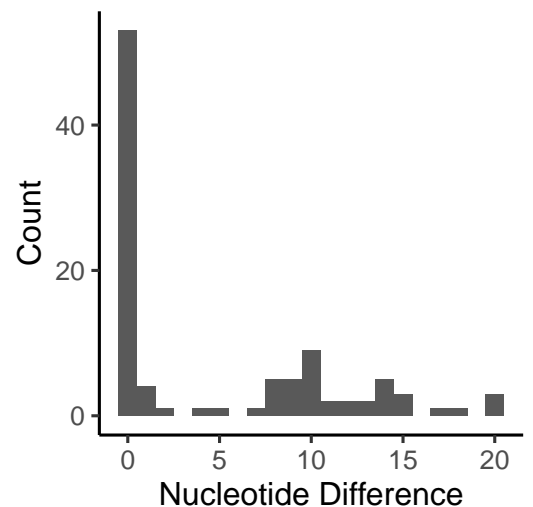
### IGHV1-69\*06\_14

2111 sequences assigned  
1717 (81.3%) exact matches, in which:  
1708 unique CDR3  
6 unique J



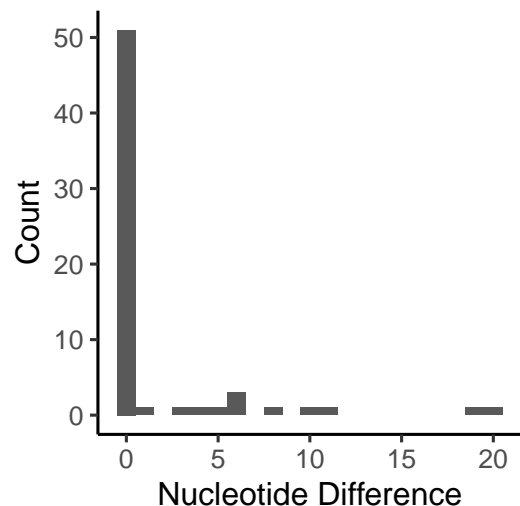
### IGHV2-5\*02

112 sequences assigned  
53 (47.3%) exact matches, in which:  
53 unique CDR3  
4 unique J



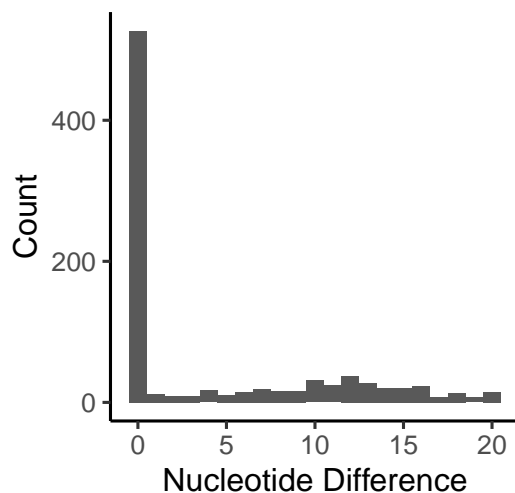
## IGHV2-26\*01

64 sequences assigned  
51 (79.7%) exact matches, in which:  
47 unique CDR3  
5 unique J



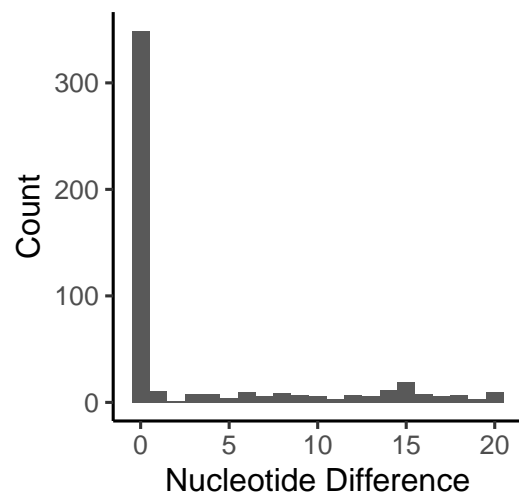
## IGHV3-7\*01

1031 sequences assigned  
527 (51.1%) exact matches, in which:  
430 unique CDR3  
6 unique J



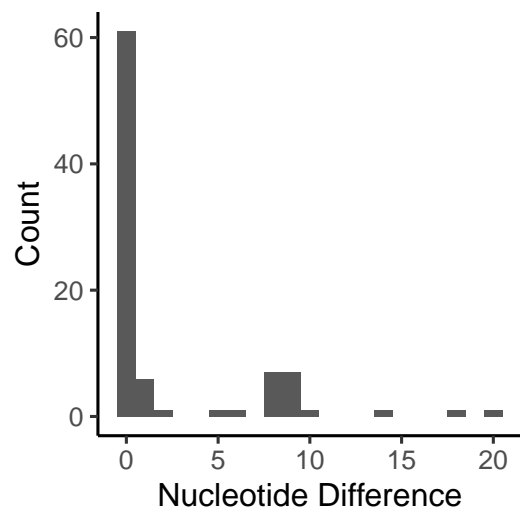
## IGHV3-11\*01

964 sequences assigned  
349 (36.2%) exact matches, in which:  
270 unique CDR3  
5 unique J



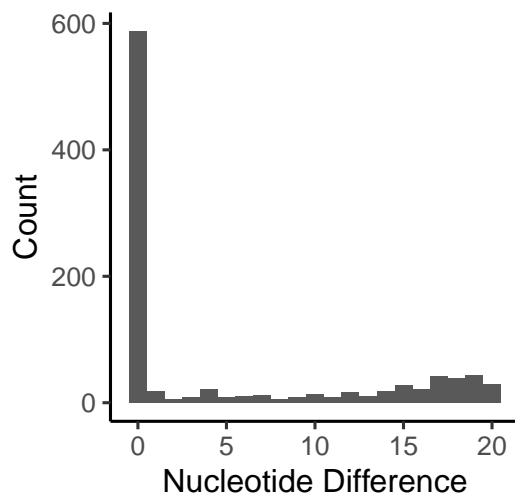
## IGHV2-70\*01

100 sequences assigned  
61 (61%) exact matches, in which:  
60 unique CDR3  
4 unique J



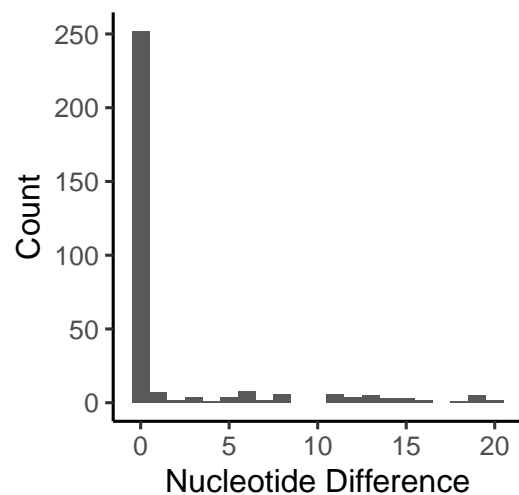
## IGHV3-7\*03

1182 sequences assigned  
588 (49.7%) exact matches, in which:  
462 unique CDR3  
5 unique J



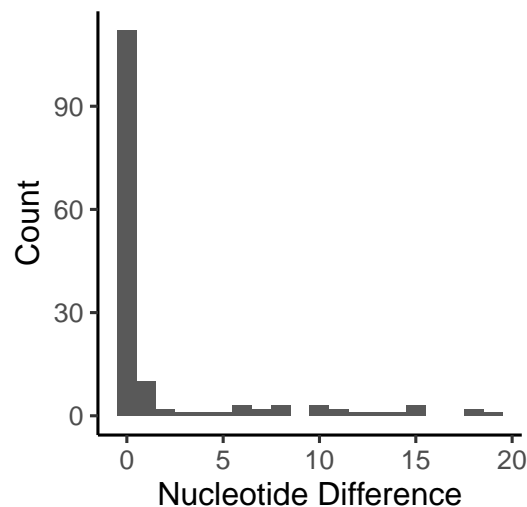
## IGHV3-11\*06

368 sequences assigned  
252 (68.5%) exact matches, in which:  
205 unique CDR3  
5 unique J



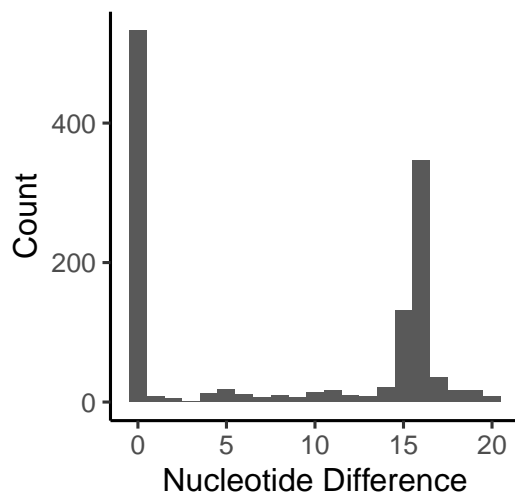
## IGHV2-70\*11\_15

154 sequences assigned  
112 (72.7%) exact matches, in which:  
111 unique CDR3  
5 unique J



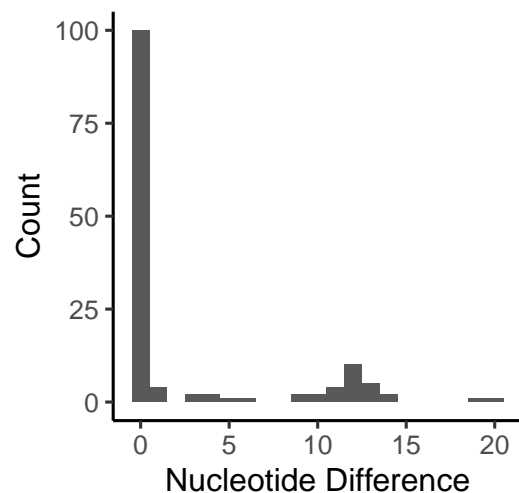
## IGHV3-9\*01

1357 sequences assigned  
533 (39.3%) exact matches, in which:  
449 unique CDR3  
6 unique J



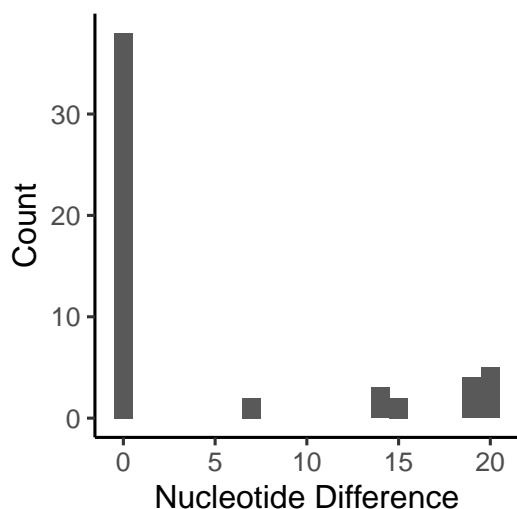
## IGHV3-13\*01

162 sequences assigned  
100 (61.7%) exact matches, in which:  
84 unique CDR3  
5 unique J



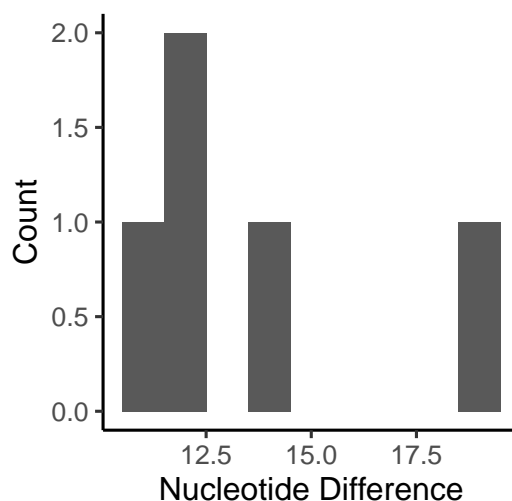
### IGHV3-13\*05

54 sequences assigned  
38 (70.4%) exact matches, in which:  
30 unique CDR3  
5 unique J



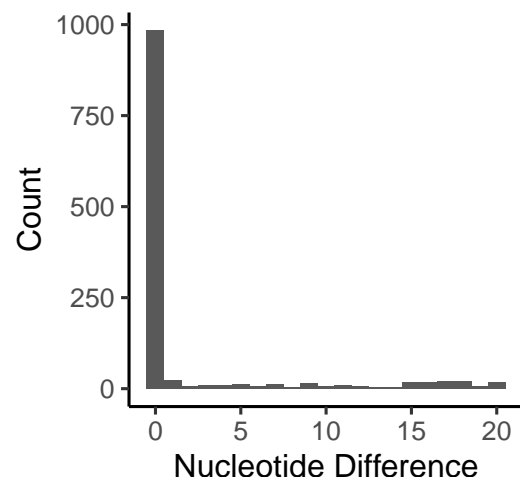
### IGHV3-20\*03\_04

11 sequences assigned  
No exact matches.



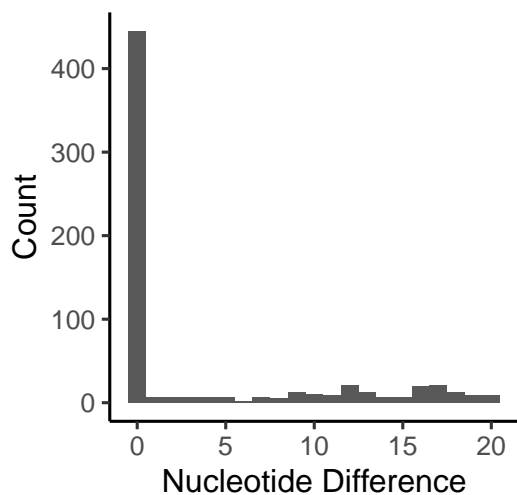
### IGHV3-30-3\*01

1515 sequences assigned  
984 (65%) exact matches, in which:  
794 unique CDR3  
6 unique J



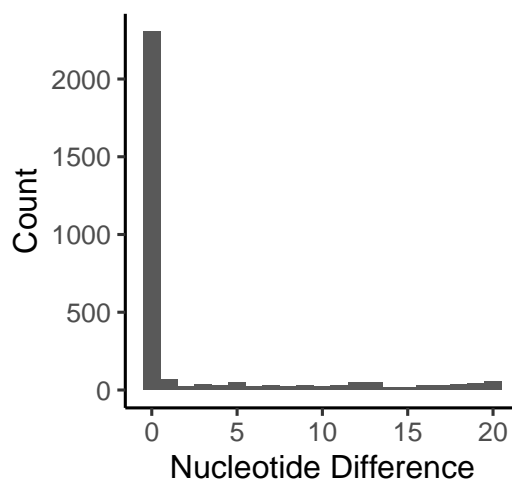
### IGHV3-15\*01\_02

716 sequences assigned  
445 (62.2%) exact matches, in which:  
368 unique CDR3  
5 unique J



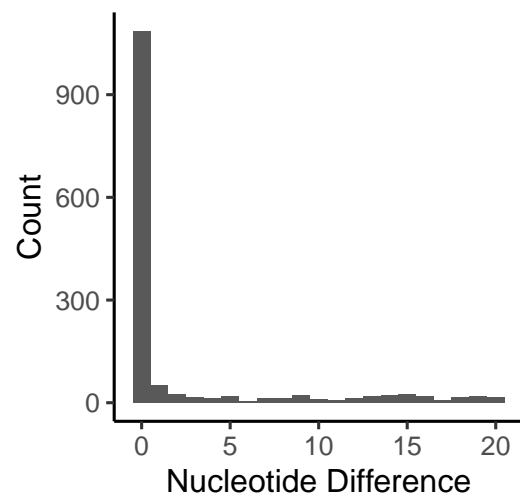
### IGHV3-21\*01\_02

3342 sequences assigned  
2304 (68.9%) exact matches, in which:  
1820 unique CDR3  
6 unique J



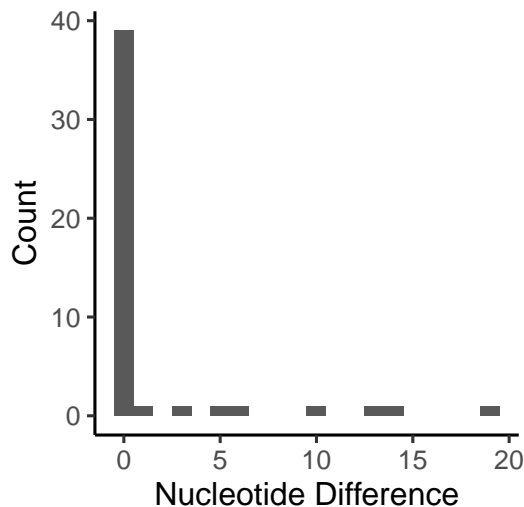
### IGHV3-33\*01

1633 sequences assigned  
1086 (66.5%) exact matches, in which:  
892 unique CDR3  
6 unique J



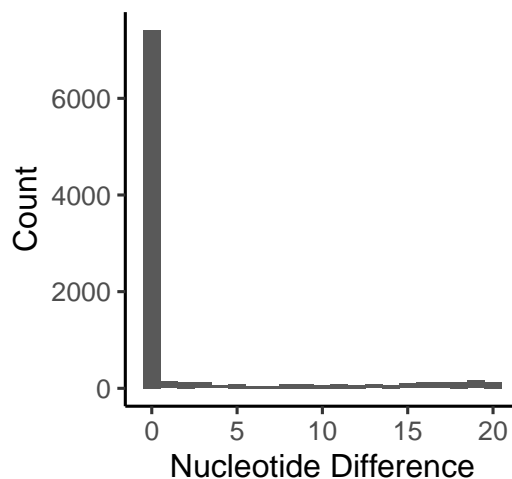
### IGHV3-20\*01\_02

51 sequences assigned  
39 (76.5%) exact matches, in which:  
34 unique CDR3  
5 unique J



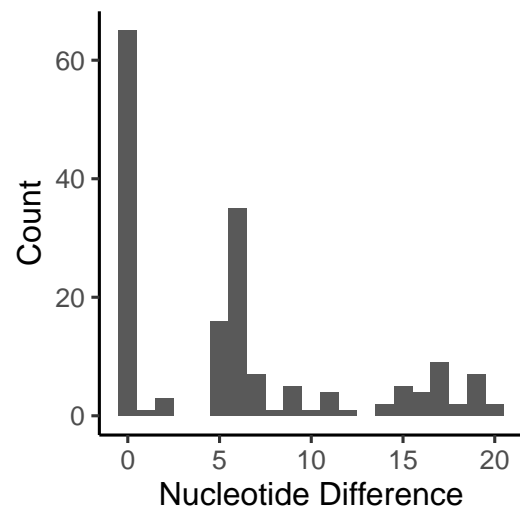
### IGHV3-23\*01\_04

10346 sequences assigned  
7413 (71.7%) exact matches, in which:  
5767 unique CDR3  
6 unique J



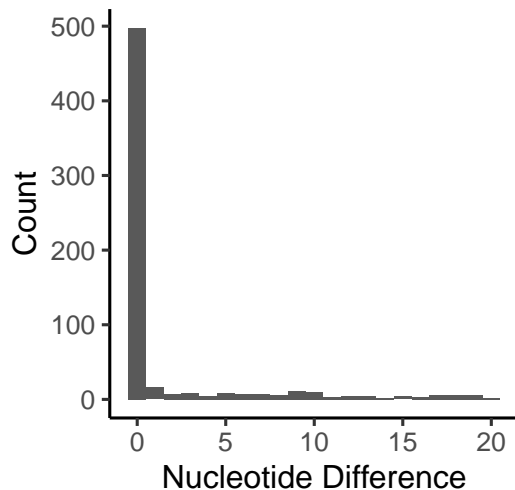
### IGHV3-43\*01

207 sequences assigned  
65 (31.4%) exact matches, in which:  
54 unique CDR3  
6 unique J



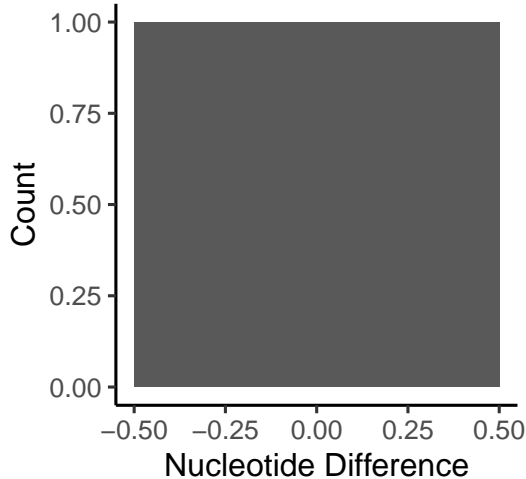
### IGHV3-48\*01

689 sequences assigned  
498 (72.3%) exact matches, in which:  
396 unique CDR3  
6 unique J



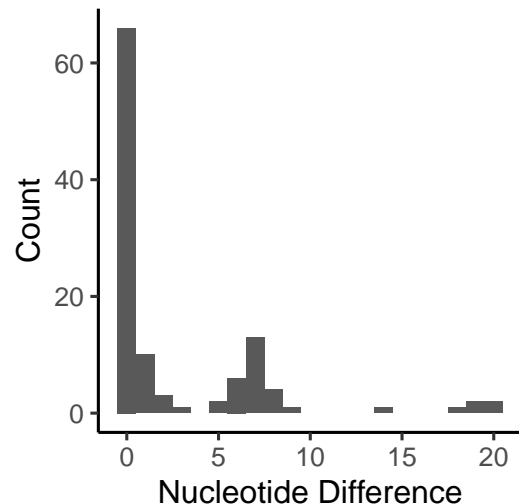
### IGHV3-52\*01\_03

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



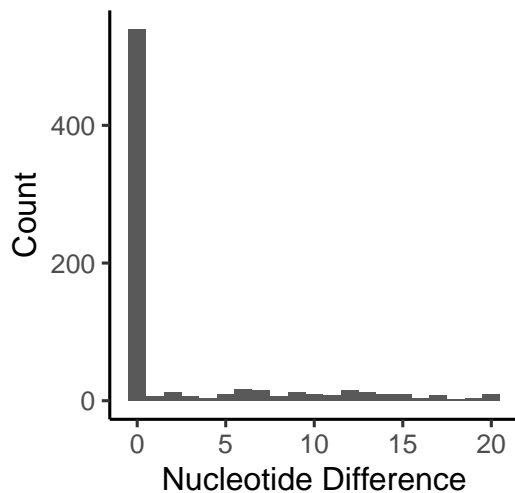
### IGHV3-64\*01

116 sequences assigned  
66 (56.9%) exact matches, in which:  
53 unique CDR3  
6 unique J



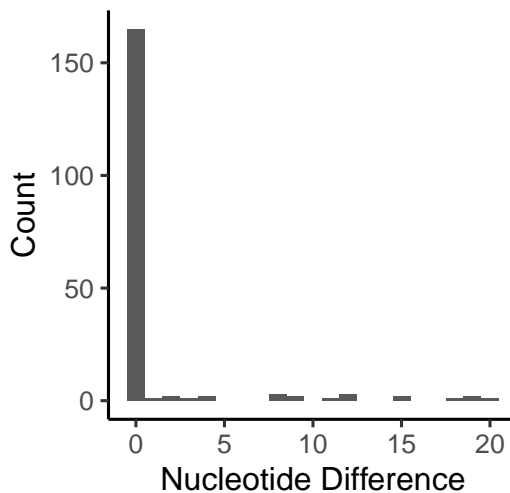
### IGHV3-48\*02

815 sequences assigned  
540 (66.3%) exact matches, in which:  
431 unique CDR3  
6 unique J



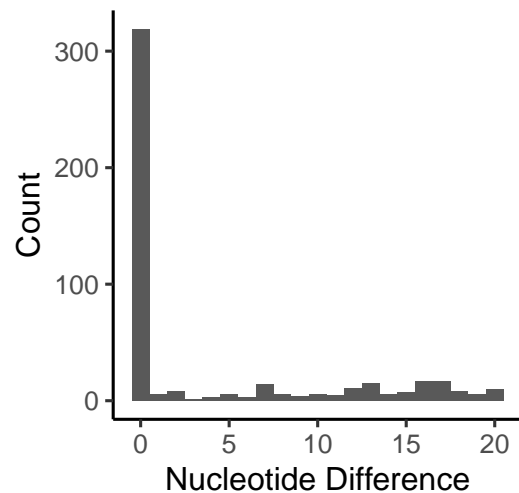
### IGHV3-53\*04

190 sequences assigned  
165 (86.8%) exact matches, in which:  
132 unique CDR3  
5 unique J



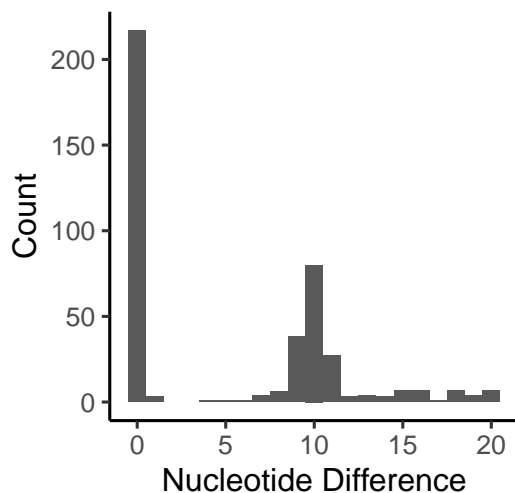
### IGHV3-66\*01

721 sequences assigned  
319 (44.2%) exact matches, in which:  
262 unique CDR3  
6 unique J



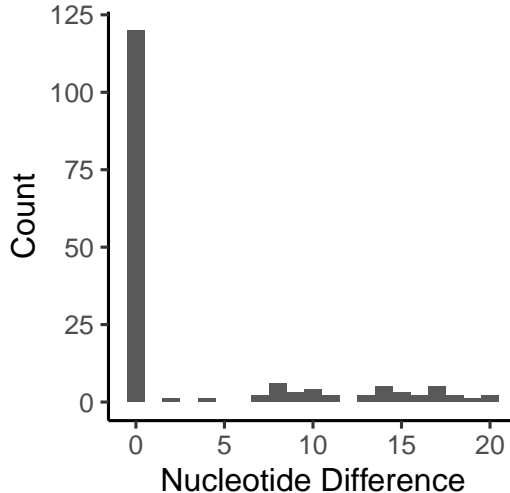
### IGHV3-49\*03\_05

453 sequences assigned  
217 (47.9%) exact matches, in which:  
176 unique CDR3  
6 unique J



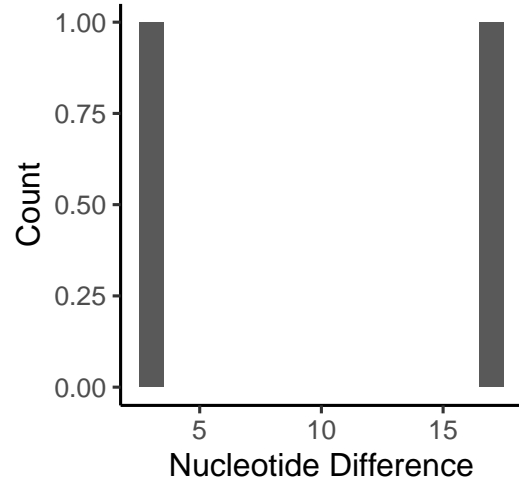
### IGHV3-53\*01\_02

180 sequences assigned  
120 (66.7%) exact matches, in which:  
96 unique CDR3  
5 unique J



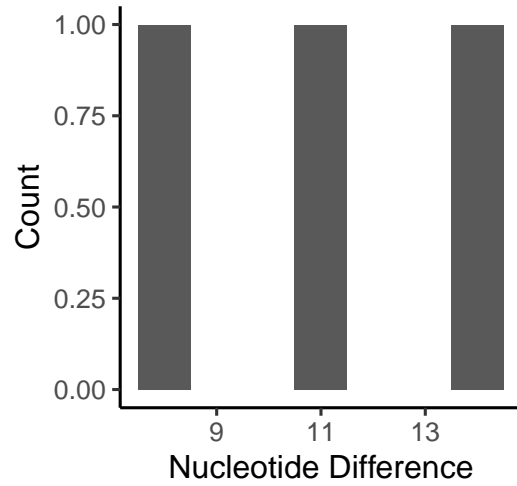
### IGHV3-69-1\*01

18 sequences assigned  
No exact matches.



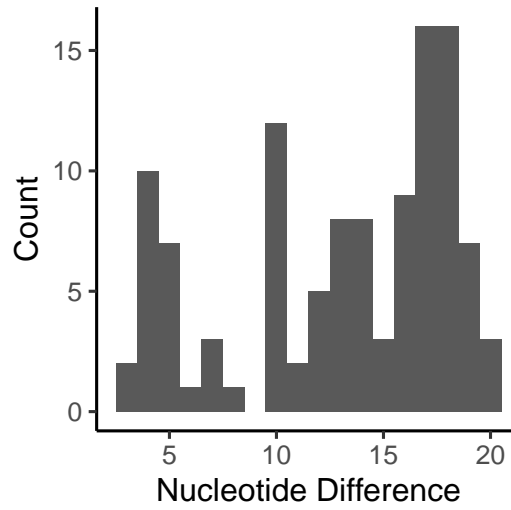
### IGHV3-69-1\*02

3 sequences assigned  
No exact matches.



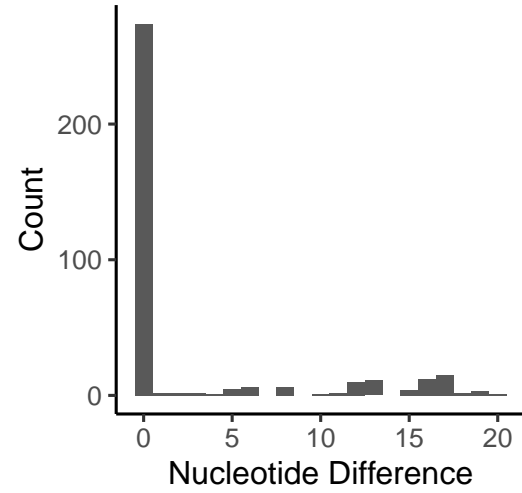
### IGHV3-74\*03

279 sequences assigned  
No exact matches.



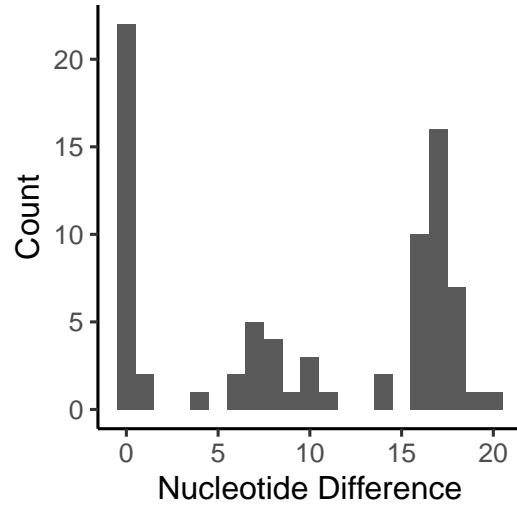
### IGHV3-64D\*06

401 sequences assigned  
274 (68.3%) exact matches, in which:  
211 unique CDR3  
6 unique J



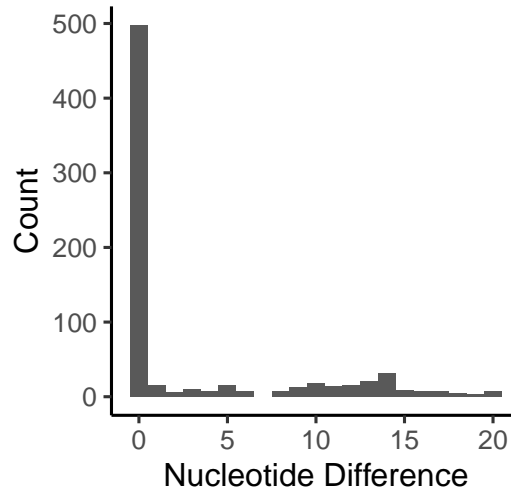
### IGHV3-72\*01

96 sequences assigned  
22 (22.9%) exact matches, in which:  
17 unique CDR3  
4 unique J



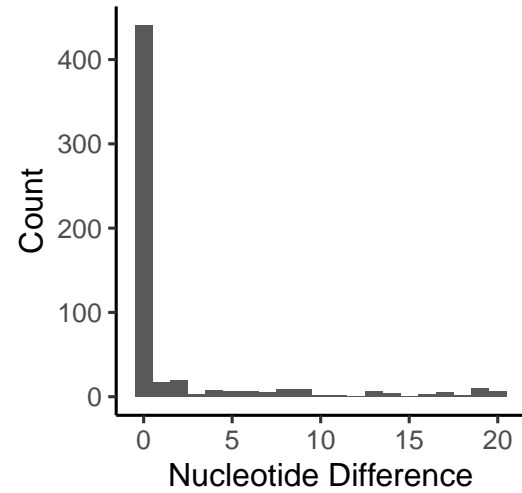
### IGHV3-74\*01\_02

886 sequences assigned  
498 (56.2%) exact matches, in which:  
401 unique CDR3  
5 unique J



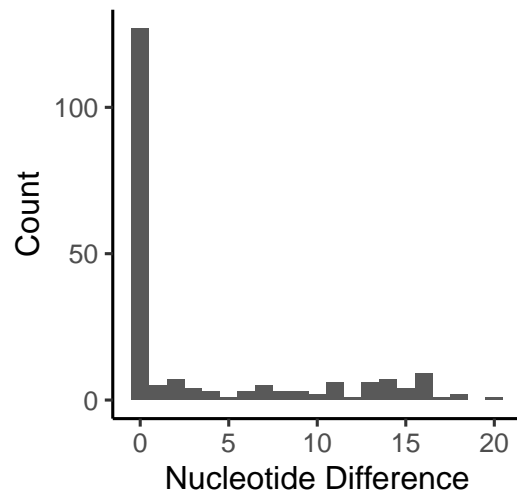
### IGHV4-4\*07

593 sequences assigned  
441 (74.4%) exact matches, in which:  
433 unique CDR3  
6 unique J



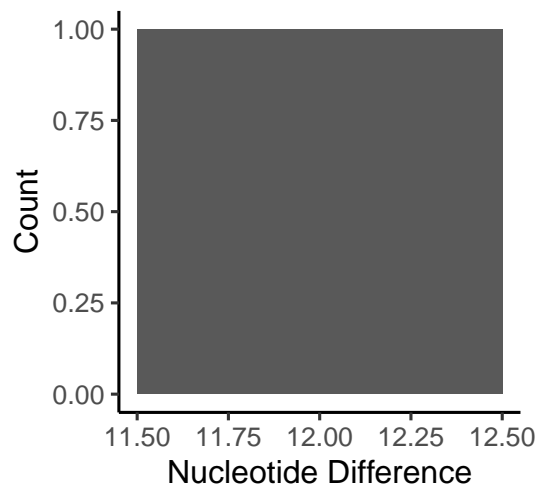
### IGHV3-73\*01\_02

210 sequences assigned  
127 (60.5%) exact matches, in which:  
102 unique CDR3  
4 unique J



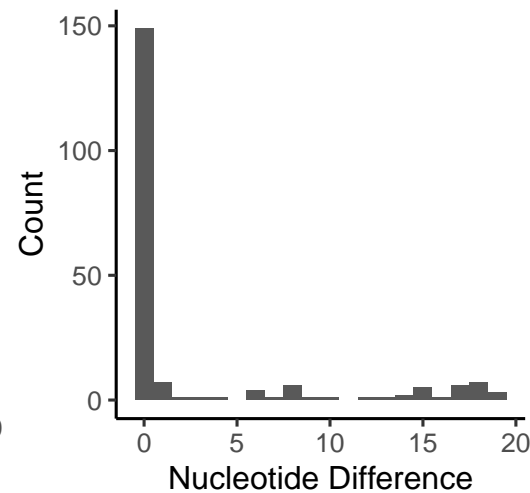
### IGHV3-43D\*04

1 sequences assigned  
No exact matches.



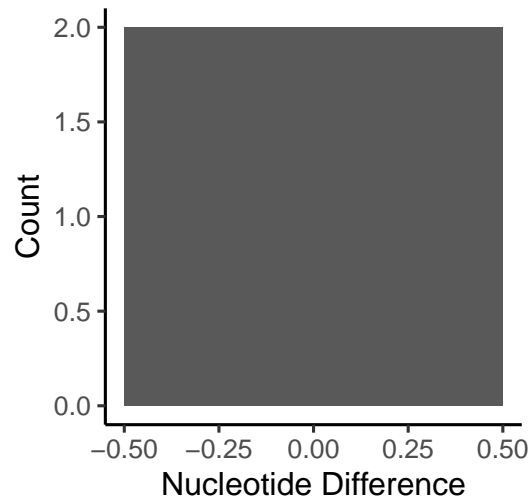
### IGHV4-4\*02\_03

229 sequences assigned  
149 (65.1%) exact matches, in which:  
146 unique CDR3  
6 unique J



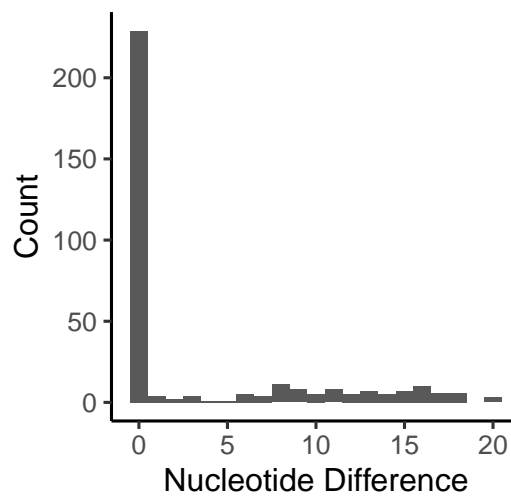
### IGHV4-28\*01\_07

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



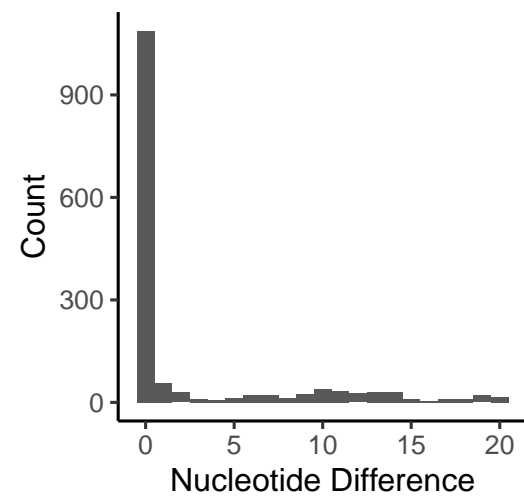
### IGHV4-31\*02

411 sequences assigned  
229 (55.7%) exact matches, in which:  
228 unique CDR3  
6 unique J



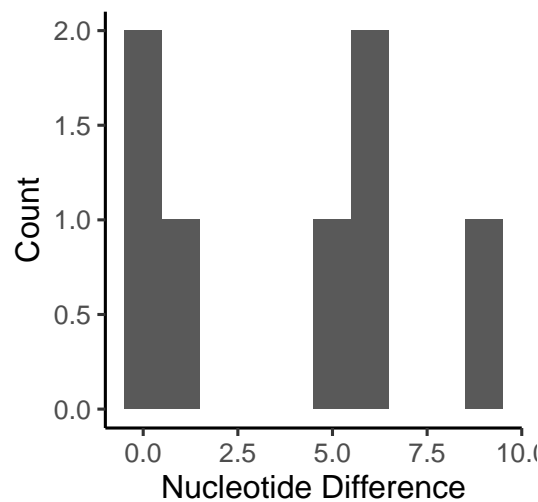
### IGHV4-59\*08

1598 sequences assigned  
1088 (68.1%) exact matches, in which:  
1079 unique CDR3  
6 unique J



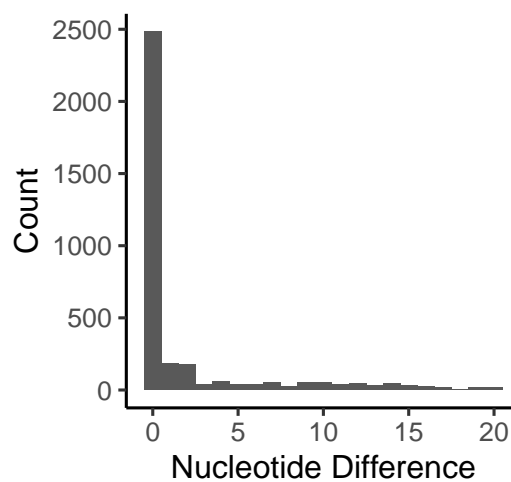
### IGHV4-28\*02\_05

7 sequences assigned  
2 (28.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



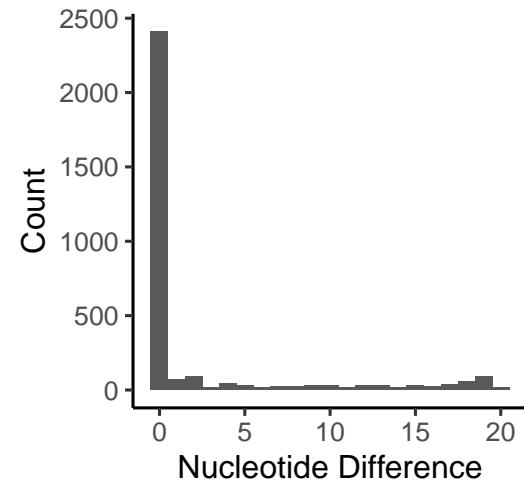
### IGHV4-34\*01\_02

3566 sequences assigned  
2483 (69.6%) exact matches, in which:  
2450 unique CDR3  
6 unique J



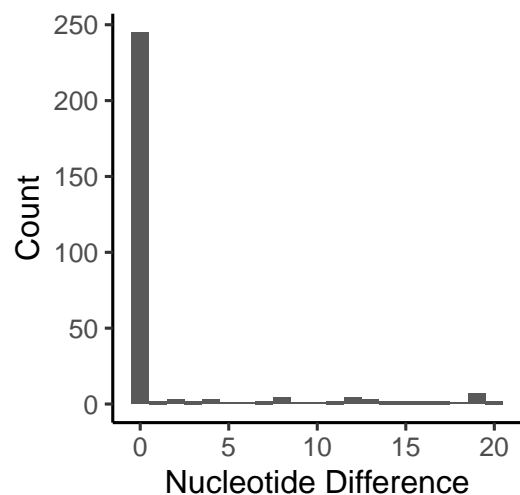
### IGHV4-59\*02\_G88A

3277 sequences assigned  
2409 (73.5%) exact matches, in which:  
2395 unique CDR3  
6 unique J



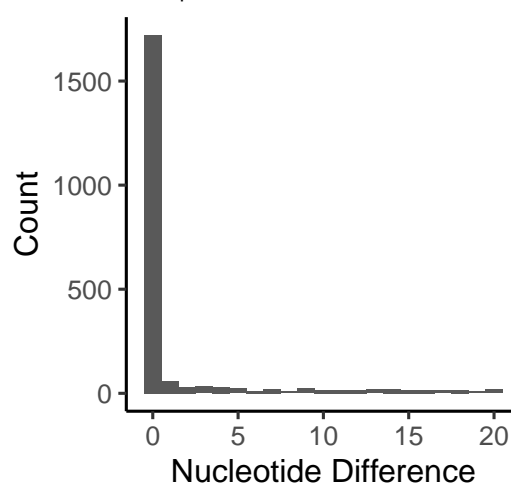
### IGHV4-30-2\*01

310 sequences assigned  
245 (79%) exact matches, in which:  
240 unique CDR3  
6 unique J



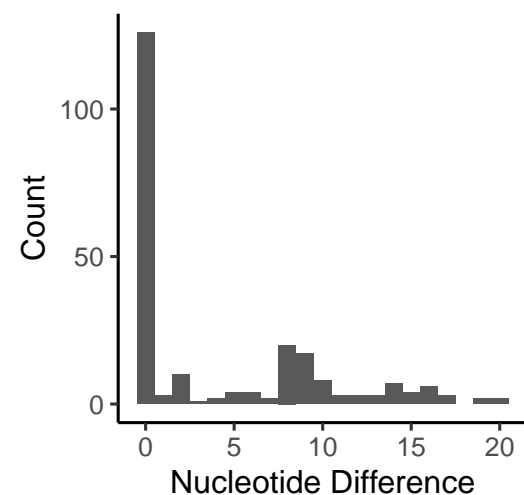
### IGHV4-39\*02\_C258G

2267 sequences assigned  
1721 (75.9%) exact matches, in which:  
1693 unique CDR3  
6 unique J



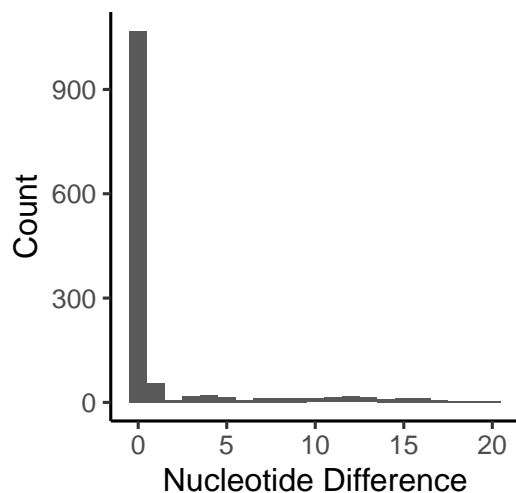
### IGHV4-61\*01

246 sequences assigned  
126 (51.2%) exact matches, in which:  
125 unique CDR3  
5 unique J



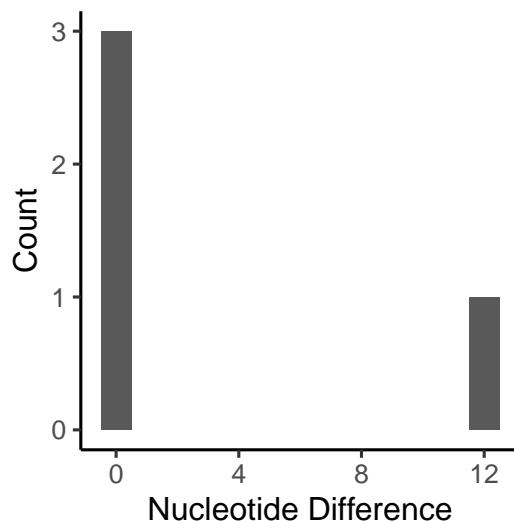
### IGHV5-10-1\*01\_03

1366 sequences assigned  
1069 (78.3%) exact matches, in which:  
964 unique CDR3  
6 unique J



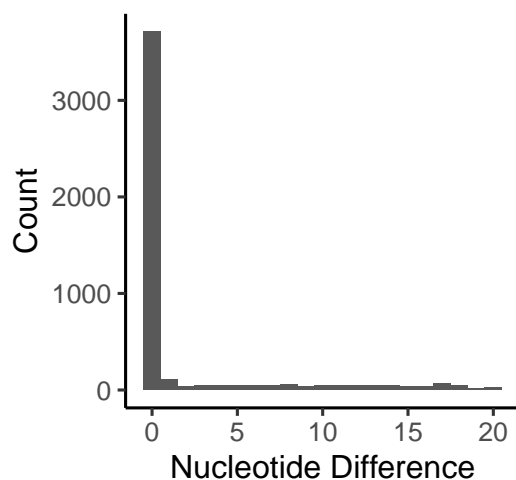
### IGHV7-4-1\*01

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



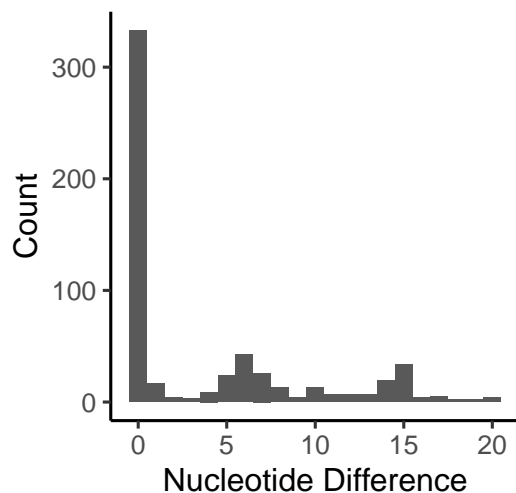
### IGHV5-51\*07\_A128G

7803 sequences assigned  
3711 (47.6%) exact matches, in which:  
3220 unique CDR3  
6 unique J



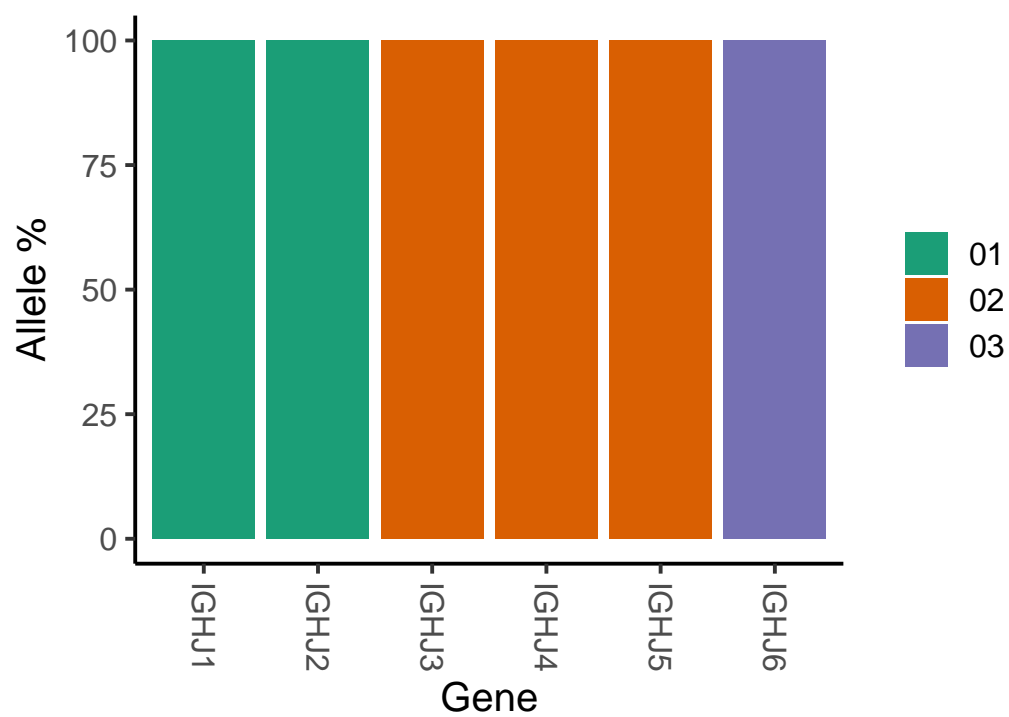
### IGHV6-1\*01\_02

613 sequences assigned  
333 (54.3%) exact matches, in which:  
332 unique CDR3  
5 unique J





Allele Usage



Warning – no inferred sequences found.