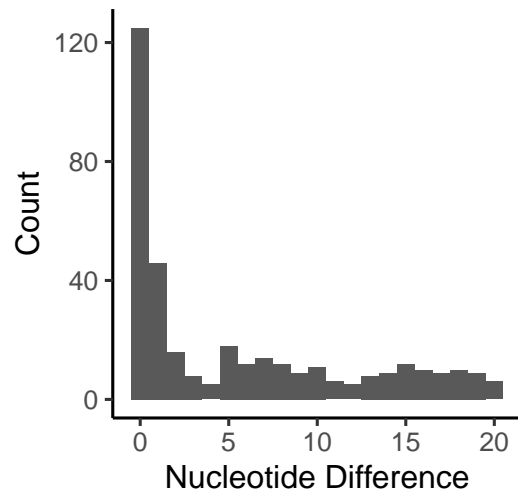


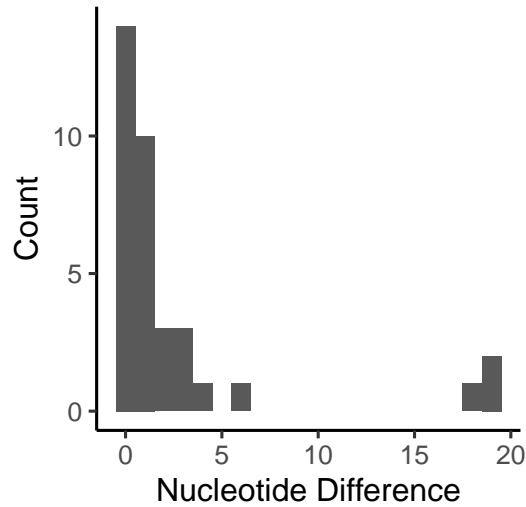
### IGHV1-2\*02

475 sequences assigned  
125 (26.3%) exact matches, in which:  
124 unique CDR3  
7 unique J



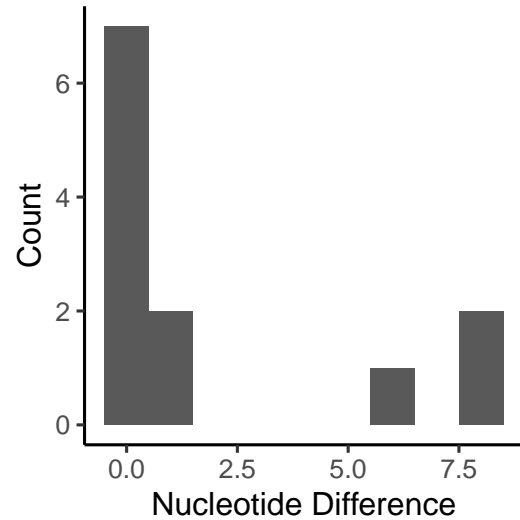
### IGHV1-24\*01

39 sequences assigned  
14 (35.9%) exact matches, in which:  
14 unique CDR3  
6 unique J



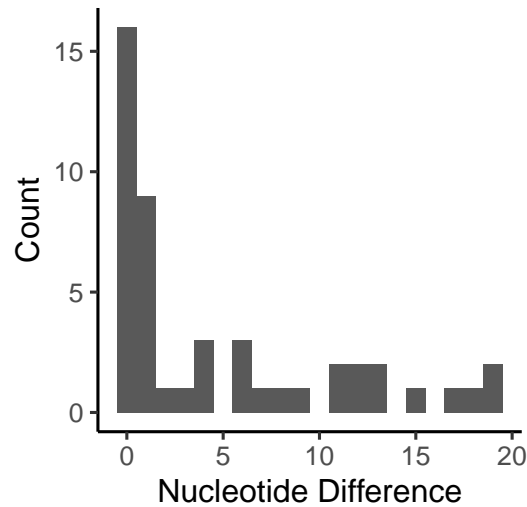
### IGHV1-58\*02

12 sequences assigned  
7 (58.3%) exact matches, in which:  
6 unique CDR3  
4 unique J



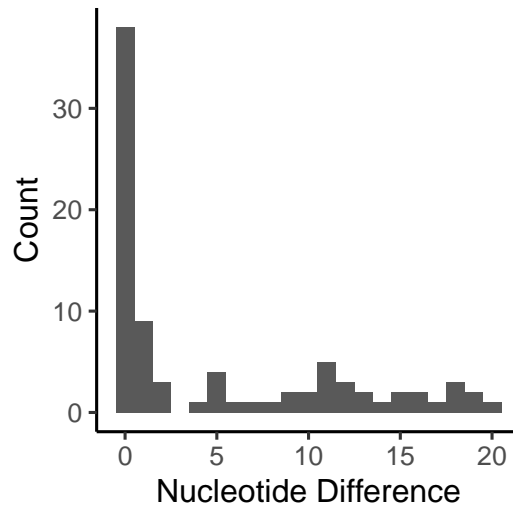
### IGHV1-8\*03

59 sequences assigned  
16 (27.1%) exact matches, in which:  
15 unique CDR3  
4 unique J



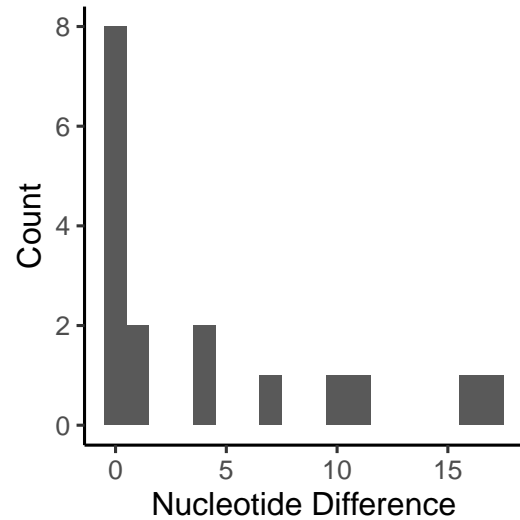
### IGHV1-46\*01

112 sequences assigned  
38 (33.9%) exact matches, in which:  
38 unique CDR3  
4 unique J



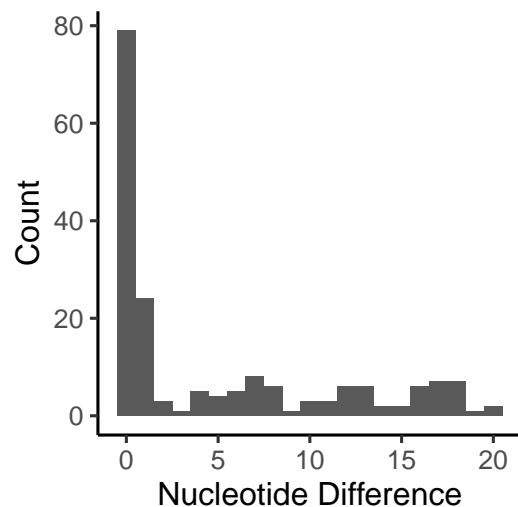
### IGHV1-69-2\*01

18 sequences assigned  
8 (44.4%) exact matches, in which:  
8 unique CDR3  
4 unique J



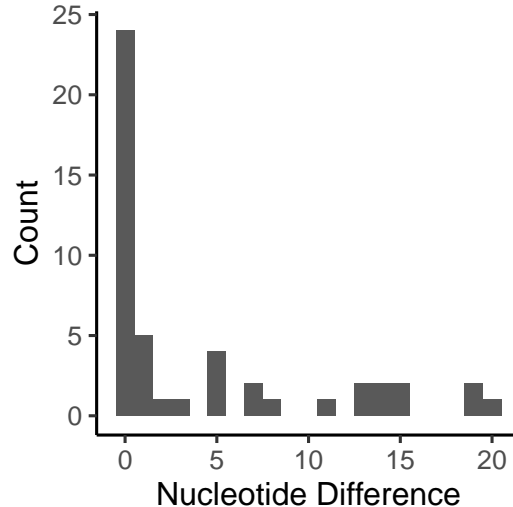
### IGHV1-18\*01

225 sequences assigned  
79 (35.1%) exact matches, in which:  
78 unique CDR3  
6 unique J



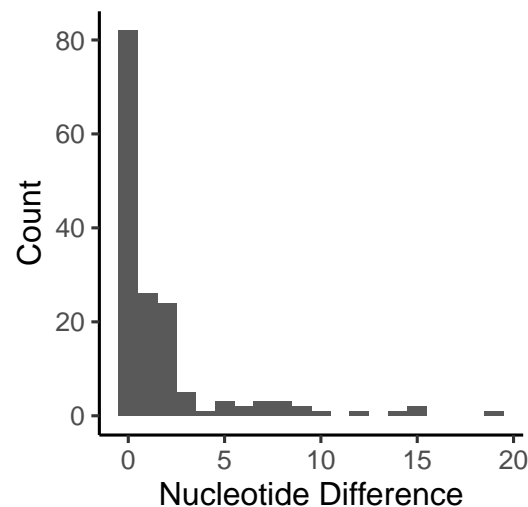
### IGHV1-46\*03

61 sequences assigned  
24 (39.3%) exact matches, in which:  
24 unique CDR3  
6 unique J



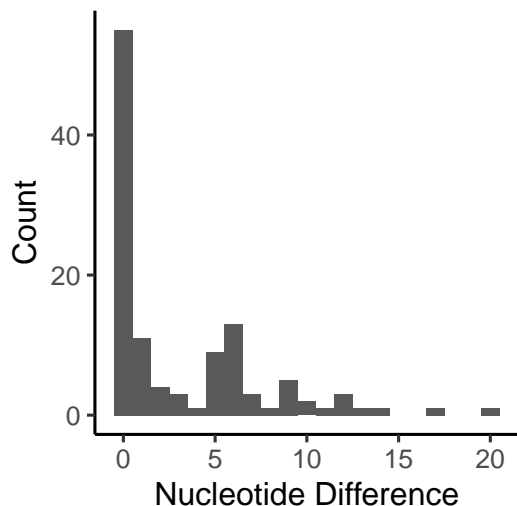
### IGHV1-69\*04

183 sequences assigned  
82 (44.8%) exact matches, in which:  
82 unique CDR3  
6 unique J



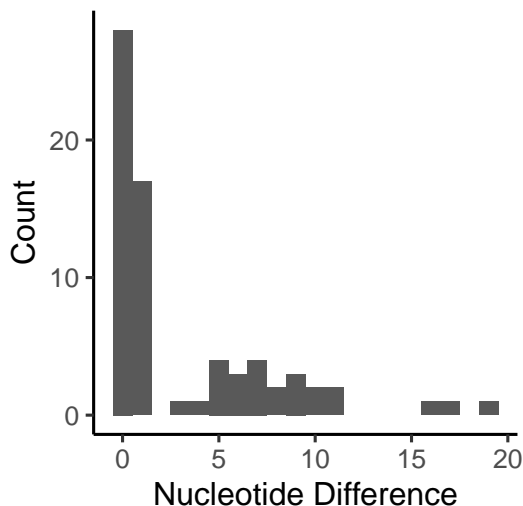
### IGHV1-69\*12

137 sequences assigned  
55 (40.1%) exact matches, in which:  
54 unique CDR3  
5 unique J



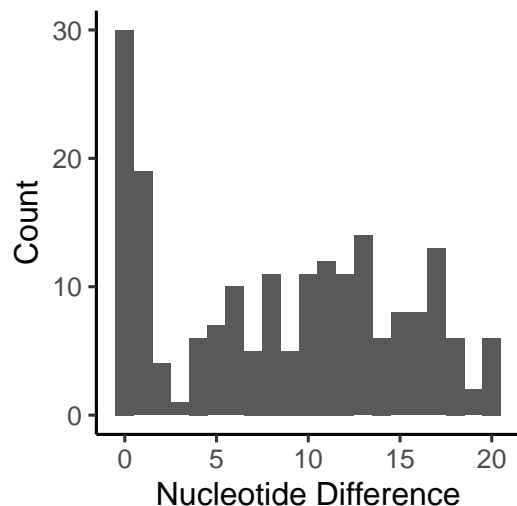
### IGHV2-26\*01

77 sequences assigned  
28 (36.4%) exact matches, in which:  
27 unique CDR3  
5 unique J



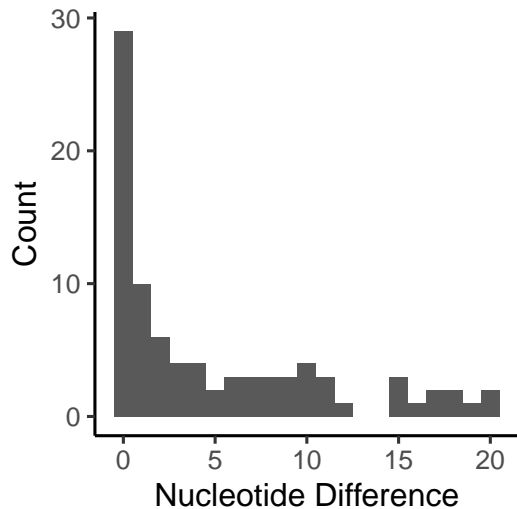
### IGHV3-7\*01

262 sequences assigned  
30 (11.5%) exact matches, in which:  
29 unique CDR3  
5 unique J



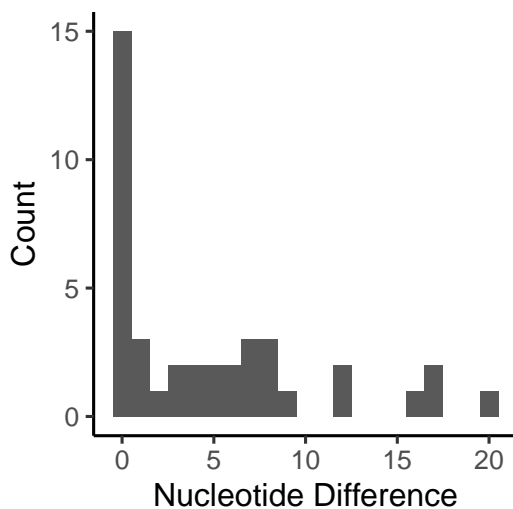
### IGHV2-5\*01

113 sequences assigned  
29 (25.7%) exact matches, in which:  
29 unique CDR3  
5 unique J



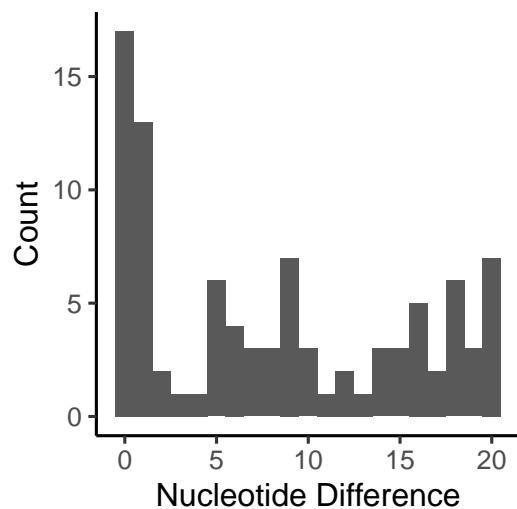
### IGHV2-70\*15

42 sequences assigned  
15 (35.7%) exact matches, in which:  
15 unique CDR3  
3 unique J



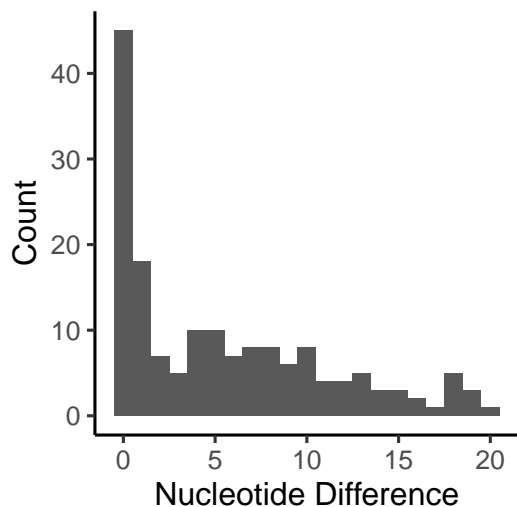
### IGHV3-7\*04

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



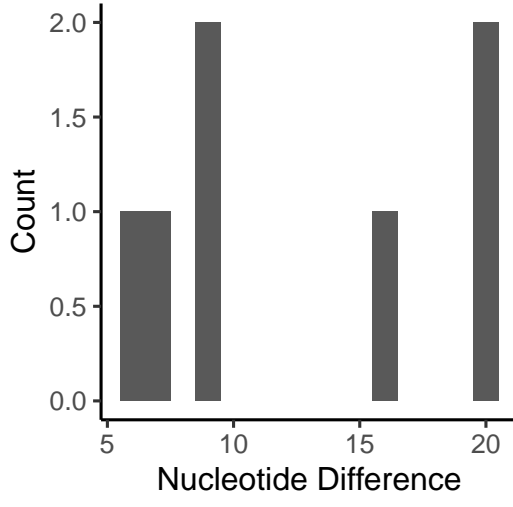
### IGHV2-5\*02

184 sequences assigned  
45 (24.5%) exact matches, in which:  
45 unique CDR3  
5 unique J



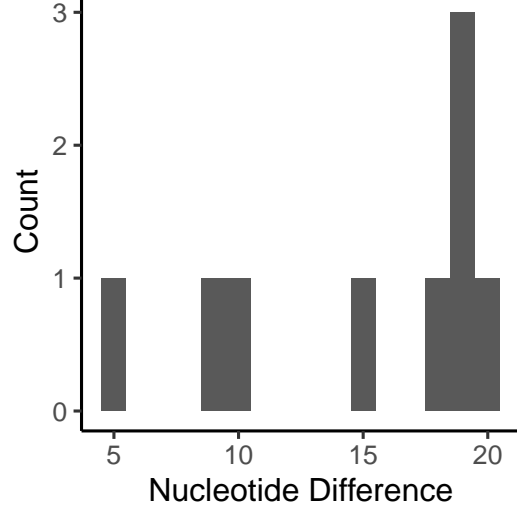
### IGHV2-70\*17

7 sequences assigned  
No exact matches.



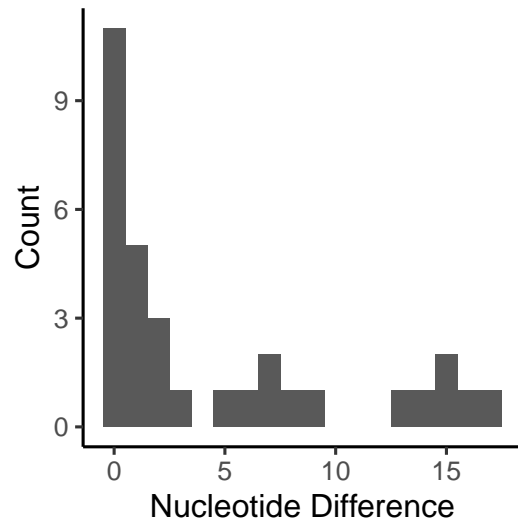
### IGHV3-9\*01

15 sequences assigned  
No exact matches.



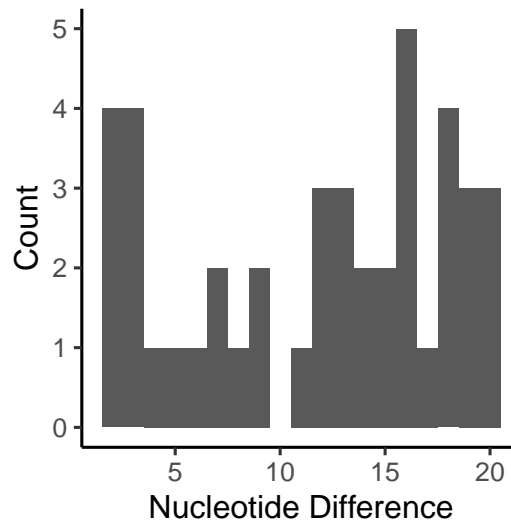
### IGHV3-9\*03

33 sequences assigned  
11 (33.3%) exact matches, in which:  
11 unique CDR3  
3 unique J



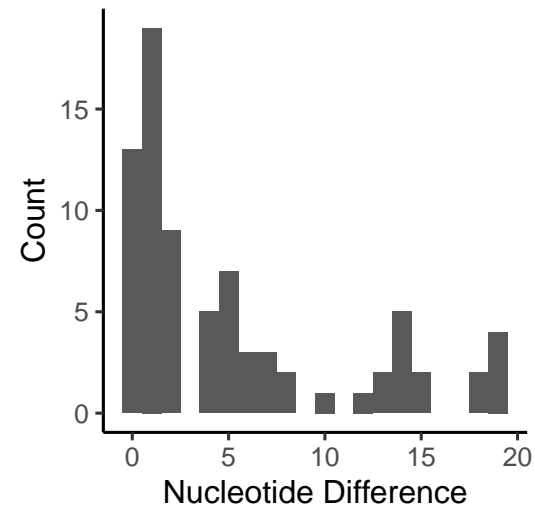
### IGHV3-13\*01

63 sequences assigned  
No exact matches.



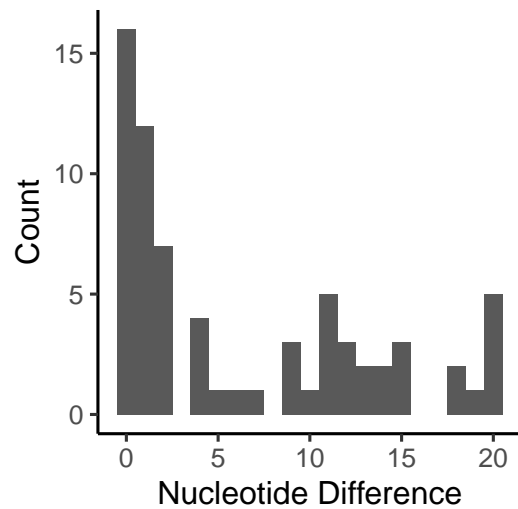
### IGHV3-20\*04

87 sequences assigned  
13 (14.9%) exact matches, in which:  
13 unique CDR3  
4 unique J



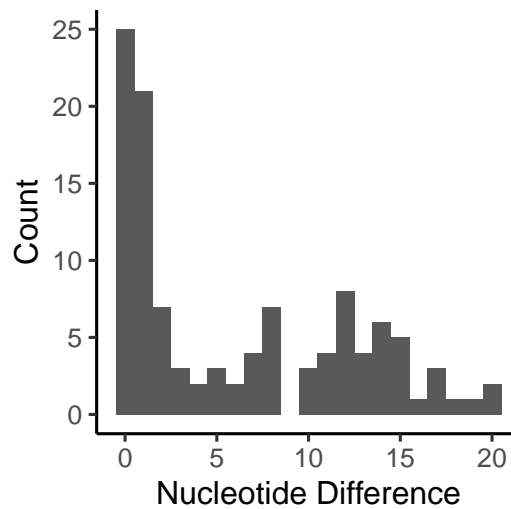
### IGHV3-11\*04

98 sequences assigned  
16 (16.3%) exact matches, in which:  
16 unique CDR3  
5 unique J



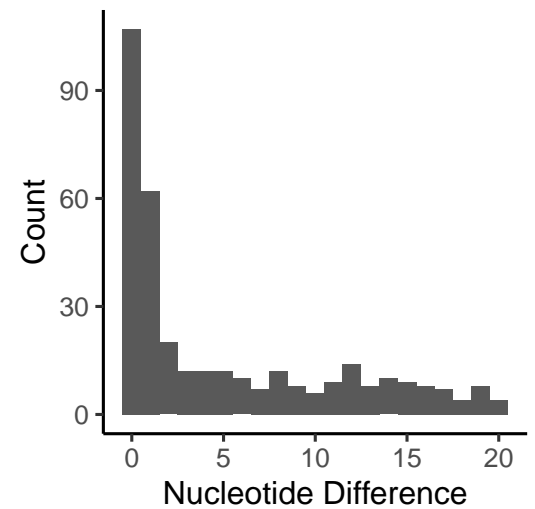
### IGHV3-15\*01

120 sequences assigned  
25 (20.8%) exact matches, in which:  
24 unique CDR3  
5 unique J



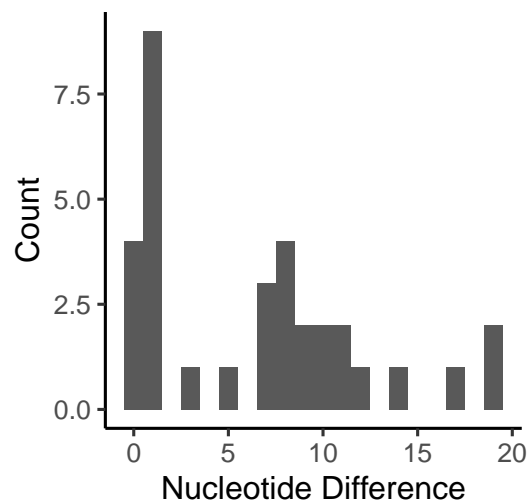
### IGHV3-21\*01

403 sequences assigned  
107 (26.6%) exact matches, in which:  
106 unique CDR3  
7 unique J



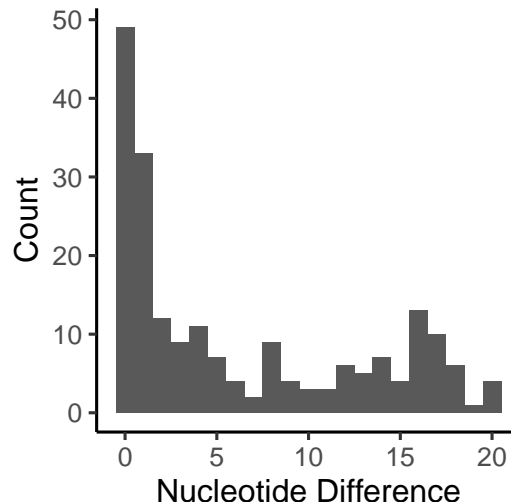
### IGHV3-11\*06

39 sequences assigned  
4 (10.3%) exact matches, in which:  
4 unique CDR3  
3 unique J



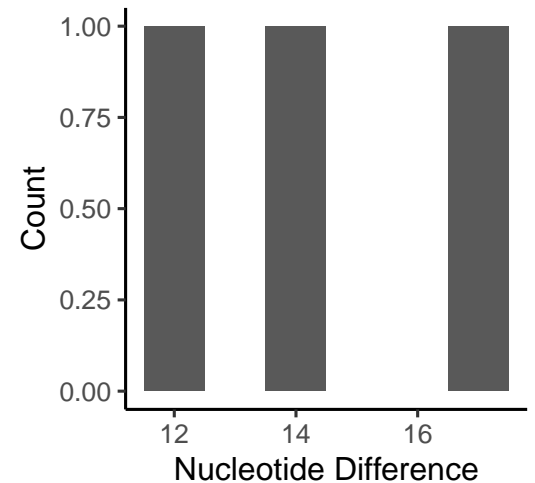
### IGHV3-15\*07

286 sequences assigned  
49 (17.1%) exact matches, in which:  
49 unique CDR3  
5 unique J



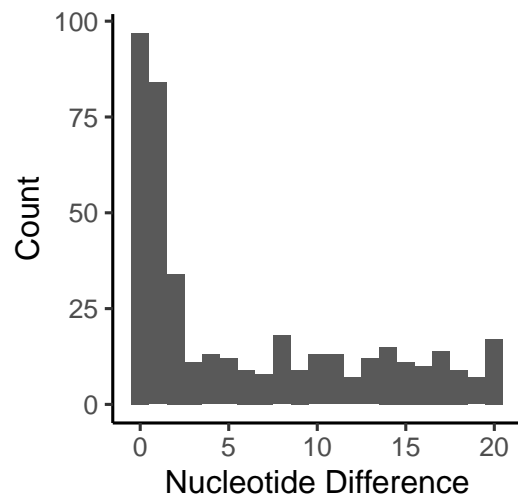
### IGHV3-30-3\*01

3 sequences assigned  
No exact matches.



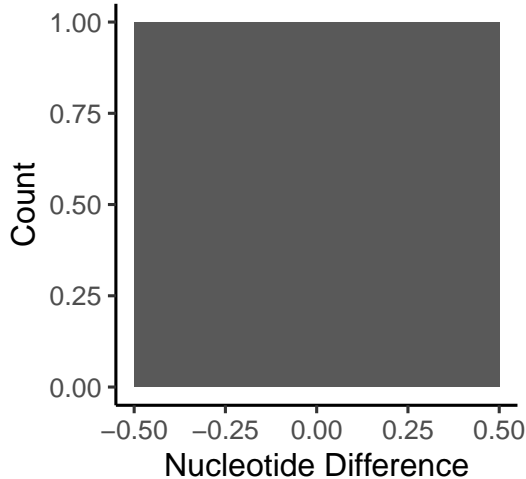
### IGHV3-33\*01

520 sequences assigned  
97 (18.7%) exact matches, in which:  
96 unique CDR3  
5 unique J



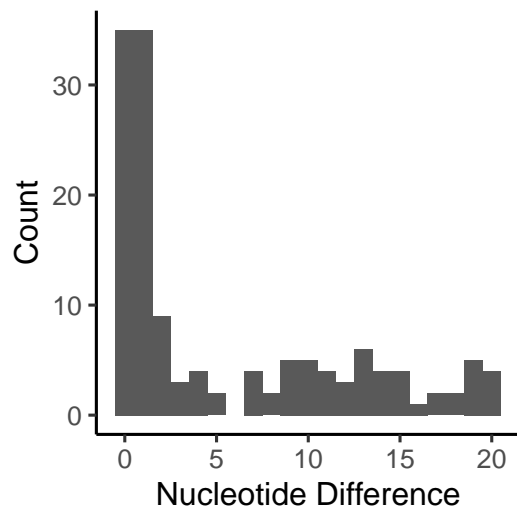
### IGHV3-47\*02

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



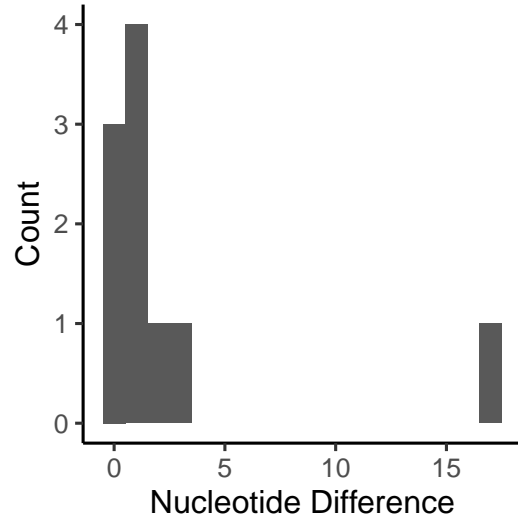
### IGHV3-49\*04

164 sequences assigned  
35 (21.3%) exact matches, in which:  
35 unique CDR3  
6 unique J



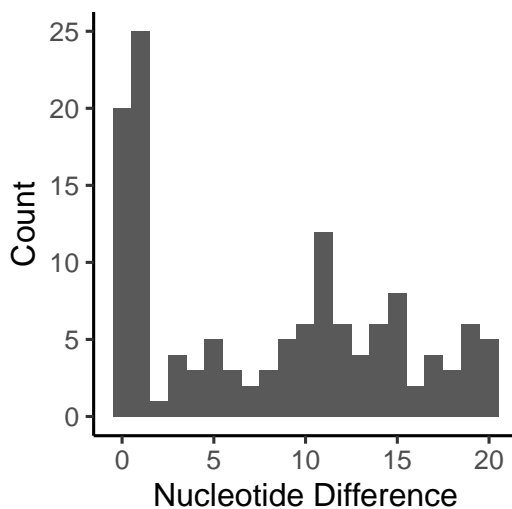
### IGHV3-43\*01

13 sequences assigned  
3 (23.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



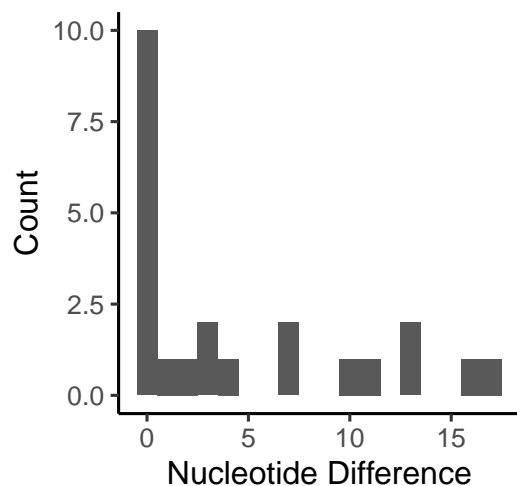
### IGHV3-48\*01

168 sequences assigned  
20 (11.9%) exact matches, in which:  
20 unique CDR3  
4 unique J



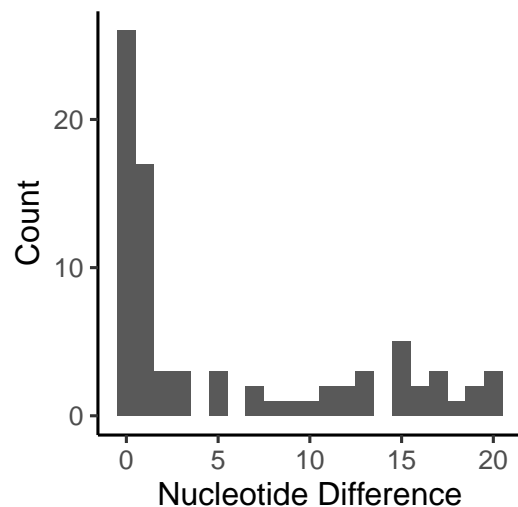
### IGHV3-53\*04

25 sequences assigned  
10 (40%) exact matches, in which:  
10 unique CDR3  
4 unique J



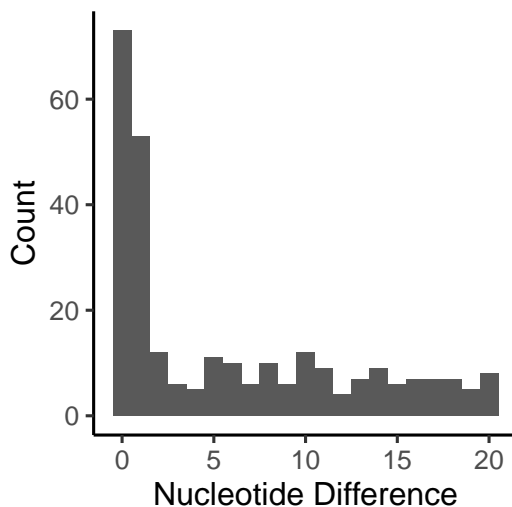
### IGHV3-43\*02

96 sequences assigned  
26 (27.1%) exact matches, in which:  
26 unique CDR3  
4 unique J



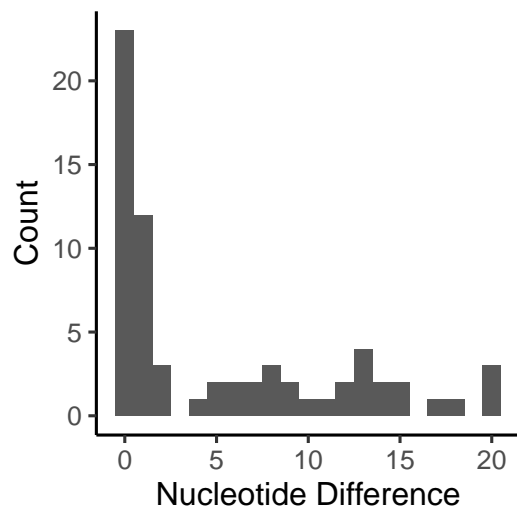
### IGHV3-48\*03

320 sequences assigned  
73 (22.8%) exact matches, in which:  
73 unique CDR3  
5 unique J



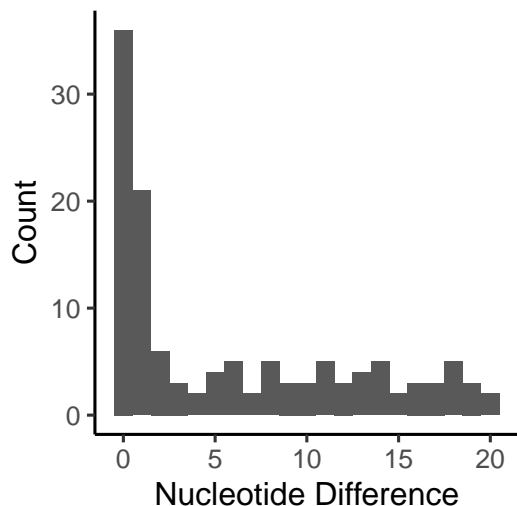
### IGHV3-64\*01

74 sequences assigned  
23 (31.1%) exact matches, in which:  
23 unique CDR3  
5 unique J



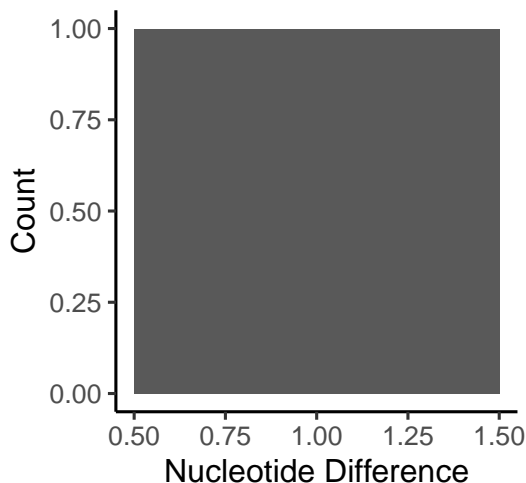
### IGHV3-66\*01

184 sequences assigned  
36 (19.6%) exact matches, in which:  
33 unique CDR3  
5 unique J



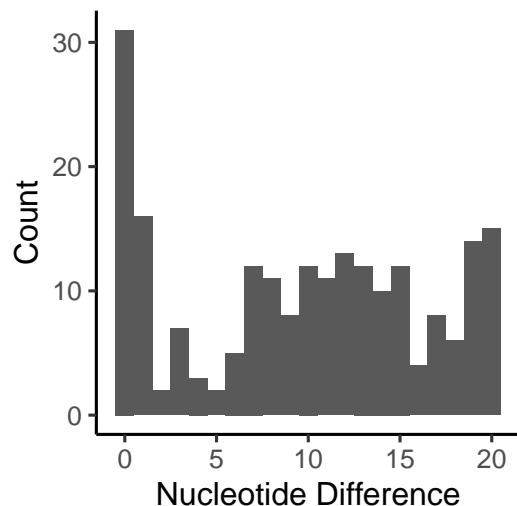
### IGHV3-71\*02

1 sequences assigned  
No exact matches.



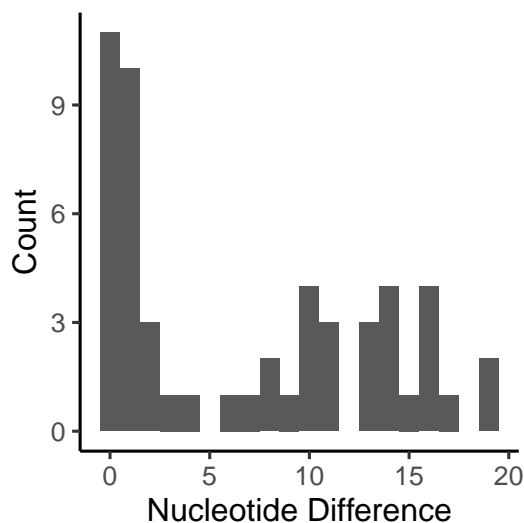
### IGHV3-74\*01

311 sequences assigned  
31 (10%) exact matches, in which:  
31 unique CDR3  
5 unique J



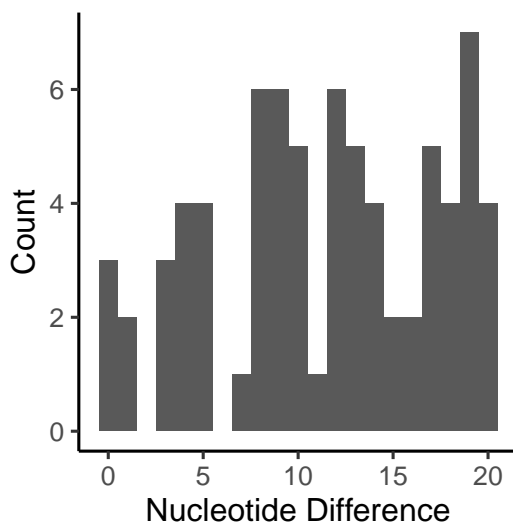
### IGHV3-66\*02

82 sequences assigned  
11 (13.4%) exact matches, in which:  
10 unique CDR3  
5 unique J



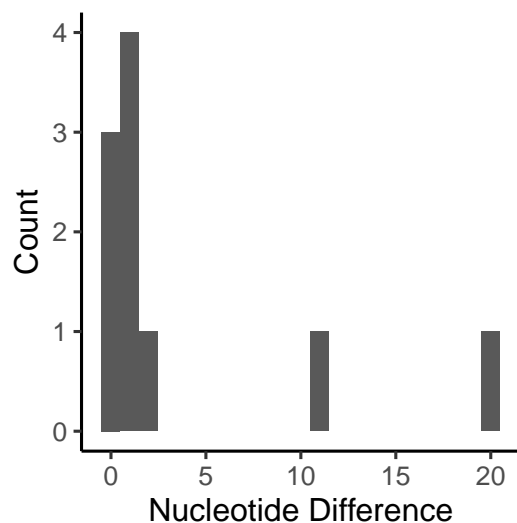
### IGHV3-72\*01

93 sequences assigned  
3 (3.2%) exact matches, in which:  
3 unique CDR3  
1 unique J



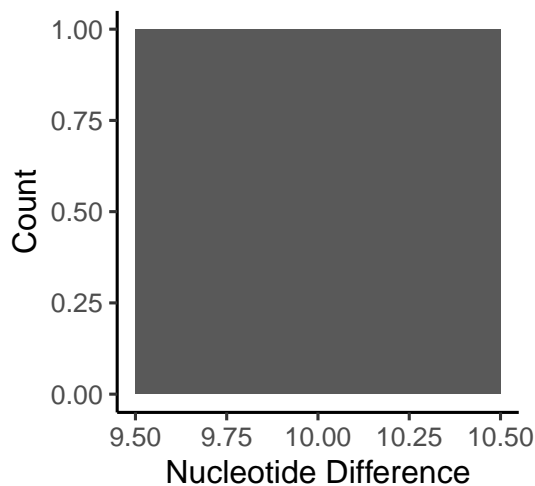
### IGHV3-43D\*03

10 sequences assigned  
3 (30%) exact matches, in which:  
3 unique CDR3  
2 unique J



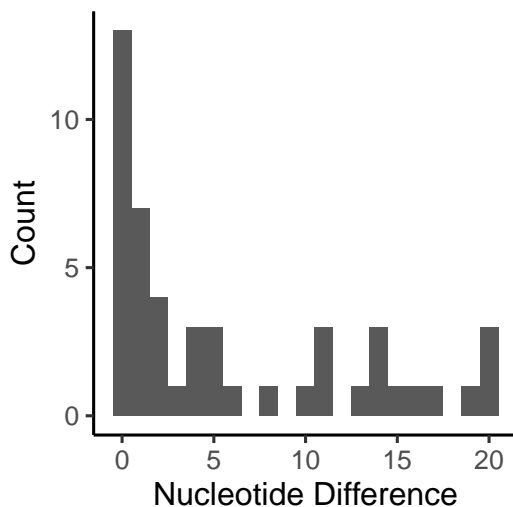
### IGHV3-69-1\*01

1 sequences assigned  
No exact matches.



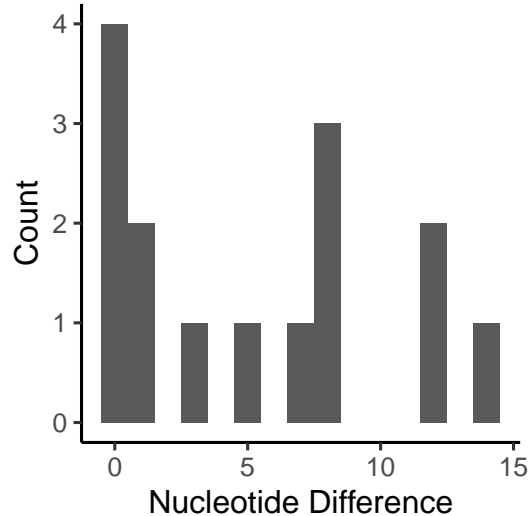
### IGHV3-73\*01

60 sequences assigned  
13 (21.7%) exact matches, in which:  
13 unique CDR3  
4 unique J



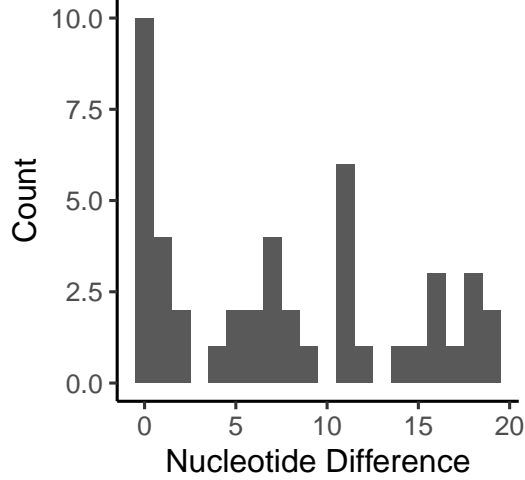
### IGHV3-43D\*04

19 sequences assigned  
4 (21.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



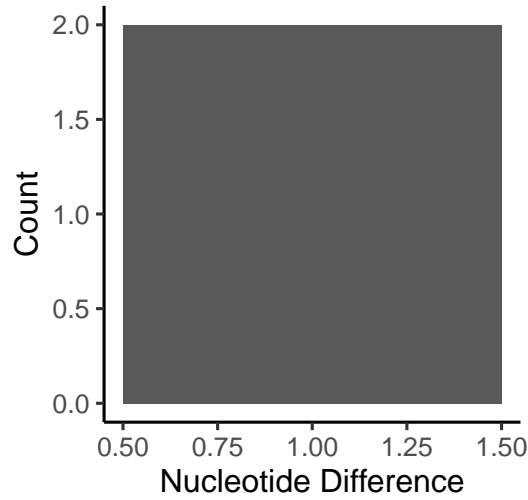
### IGHV3-64D\*06

56 sequences assigned  
10 (17.9%) exact matches, in which:  
10 unique CDR3  
3 unique J



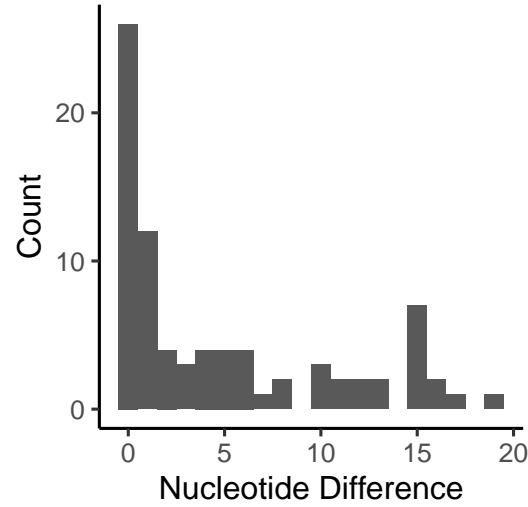
### IGHV4-28\*04

2 sequences assigned  
No exact matches.



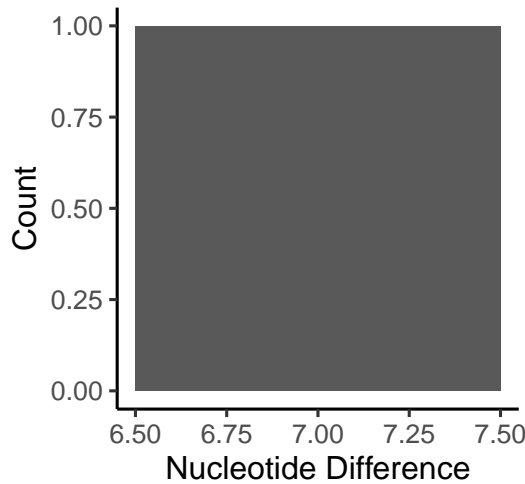
### IGHV4-31\*03

101 sequences assigned  
26 (25.7%) exact matches, in which:  
26 unique CDR3  
6 unique J



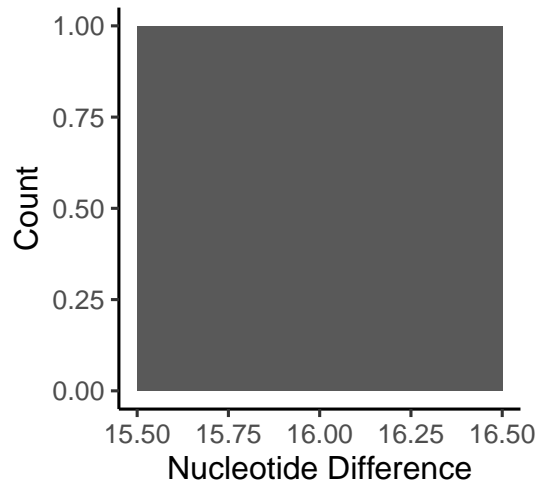
### IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



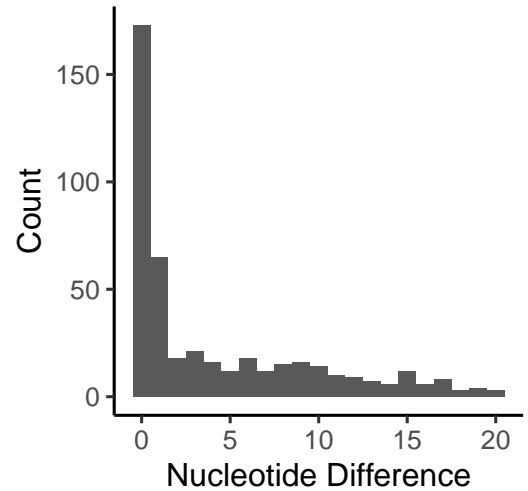
### IGHV4-30-2\*05

2 sequences assigned  
No exact matches.



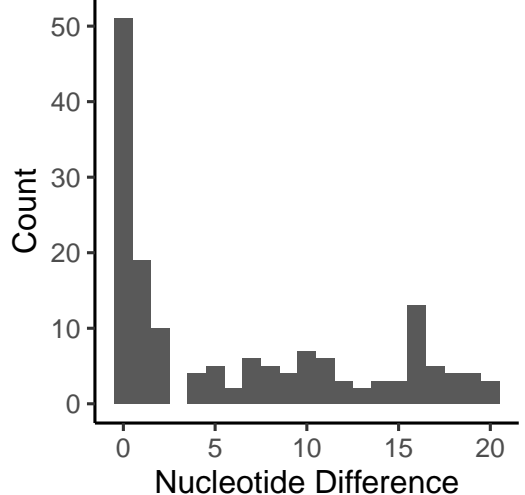
### IGHV4-34\*01

536 sequences assigned  
173 (32.3%) exact matches, in which:  
172 unique CDR3  
7 unique J



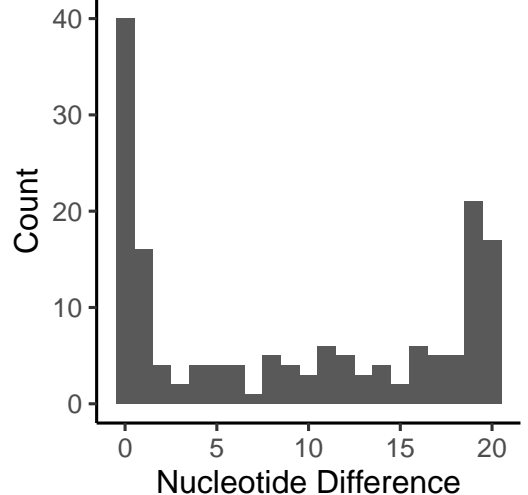
### IGHV4-4\*07

466 sequences assigned  
51 (10.9%) exact matches, in which:  
51 unique CDR3  
7 unique J



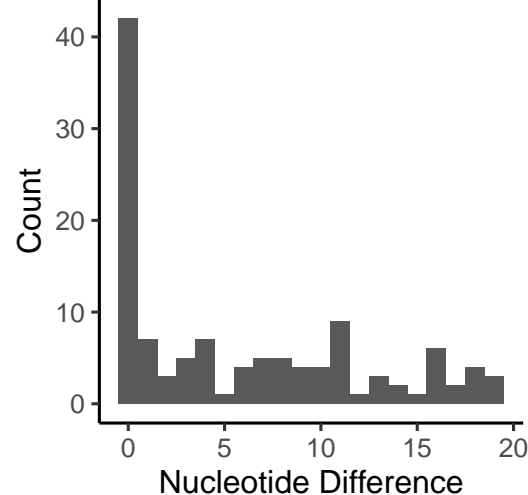
### IGHV4-30-4\*08

357 sequences assigned  
40 (11.2%) exact matches, in which:  
40 unique CDR3  
4 unique J



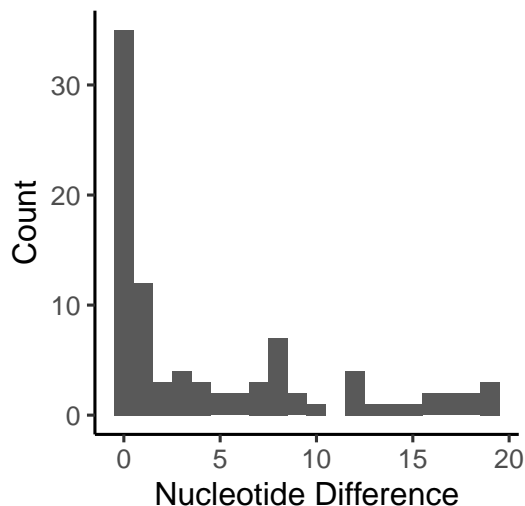
### IGHV4-38-2\*01

131 sequences assigned  
42 (32.1%) exact matches, in which:  
42 unique CDR3  
6 unique J



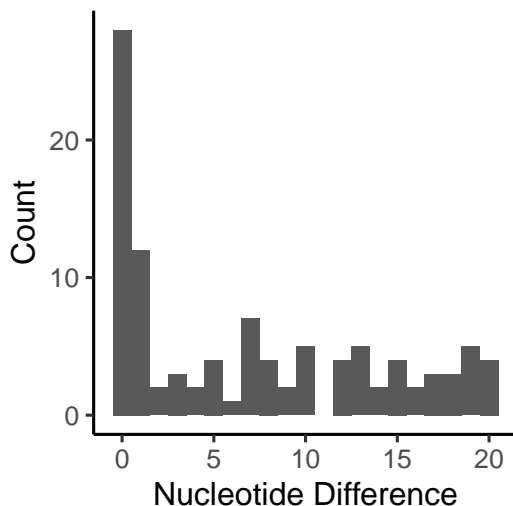
## IGHV4-38-2\*02

109 sequences assigned  
35 (32.1%) exact matches, in which:  
35 unique CDR3  
5 unique J



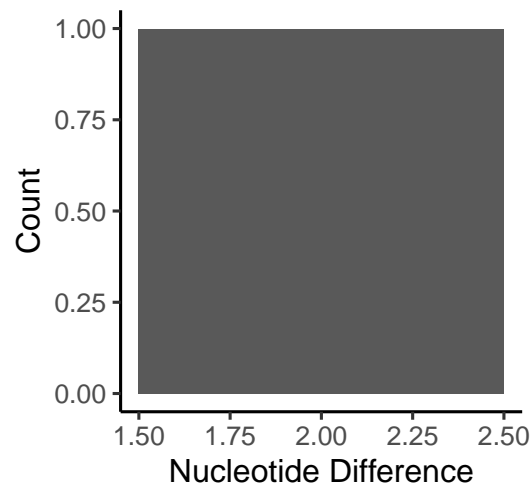
## IGHV4-59\*08

151 sequences assigned  
28 (18.5%) exact matches, in which:  
28 unique CDR3  
5 unique J



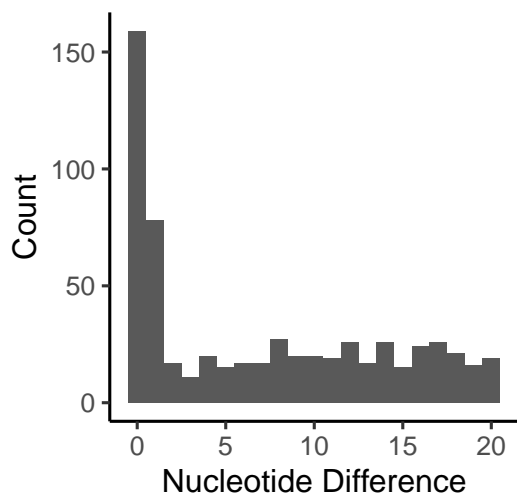
## IGHV3/OR15-7\*05

1 sequences assigned  
No exact matches.



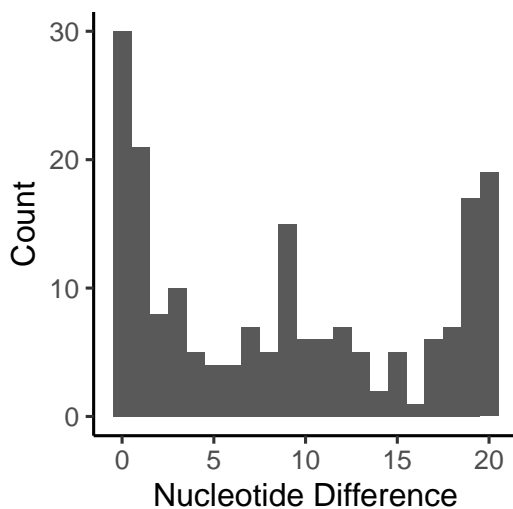
## IGHV4-39\*01

818 sequences assigned  
159 (19.4%) exact matches, in which:  
158 unique CDR3  
7 unique J



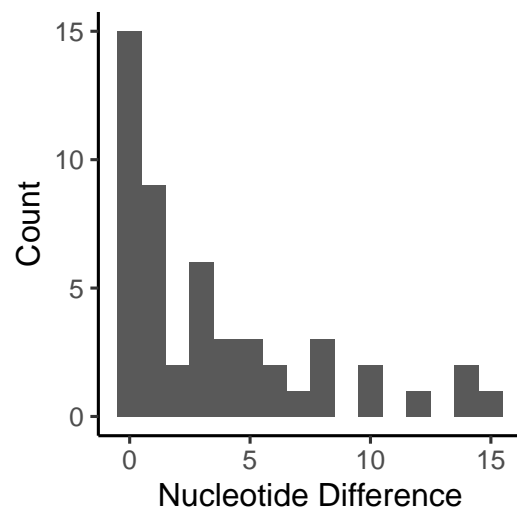
## IGHV4-61\*02

446 sequences assigned  
30 (6.7%) exact matches, in which:  
30 unique CDR3  
5 unique J



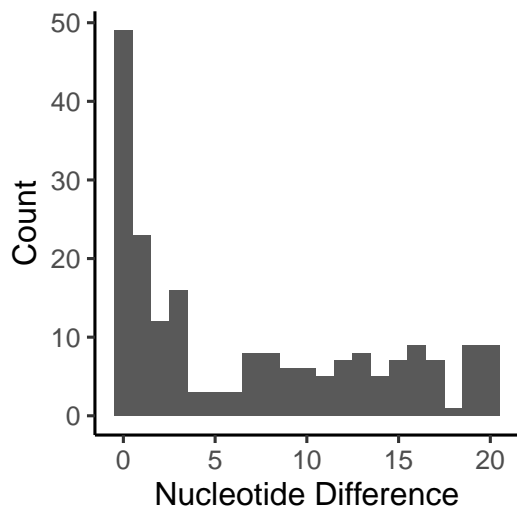
## IGHV5-10-1\*03

55 sequences assigned  
15 (27.3%) exact matches, in which:  
15 unique CDR3  
3 unique J



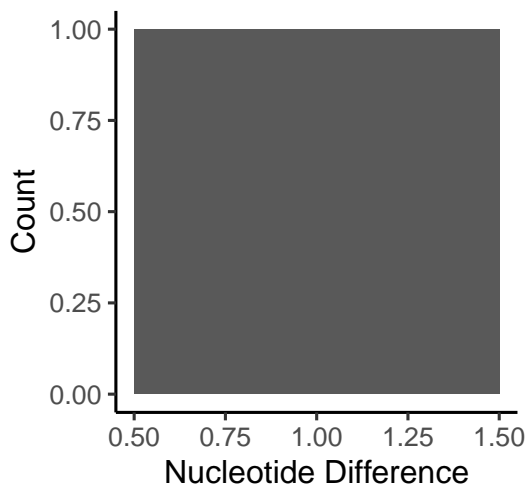
## IGHV4-59\*01

2483 sequences assigned  
49 (2%) exact matches, in which:  
49 unique CDR3  
7 unique J



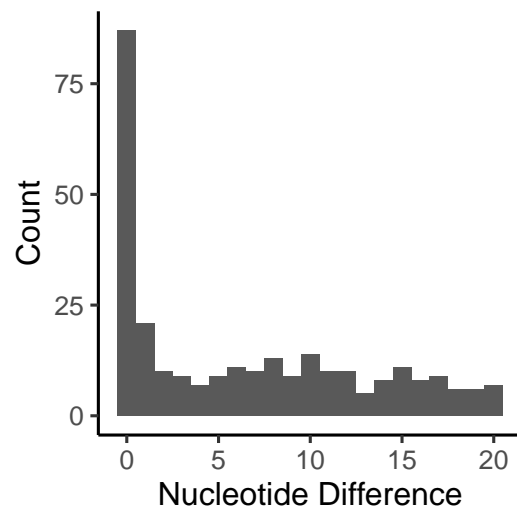
## IGHV1/OR15-2\*01

1 sequences assigned  
No exact matches.



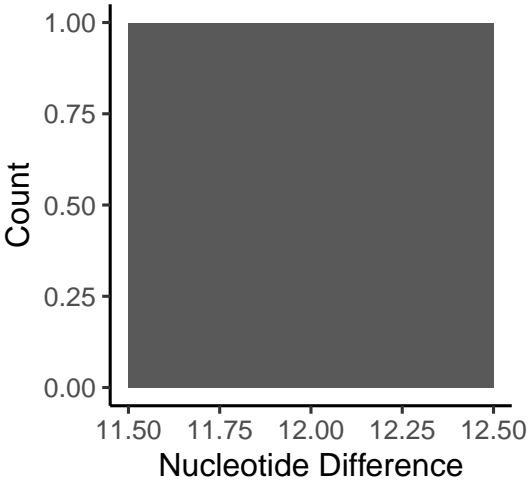
## IGHV5-51\*01

331 sequences assigned  
87 (26.3%) exact matches, in which:  
86 unique CDR3  
7 unique J



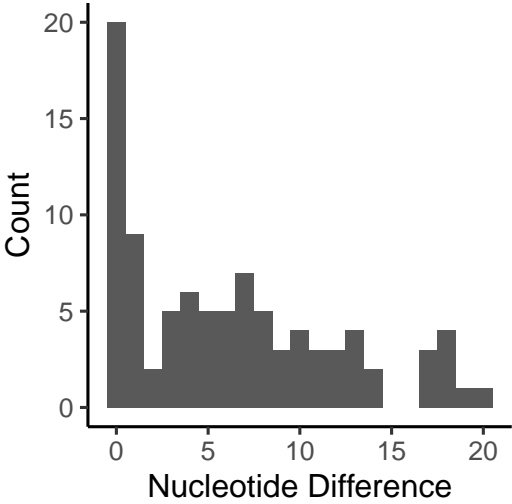
IGHV5-78\*01

1 sequences assigned  
No exact matches.



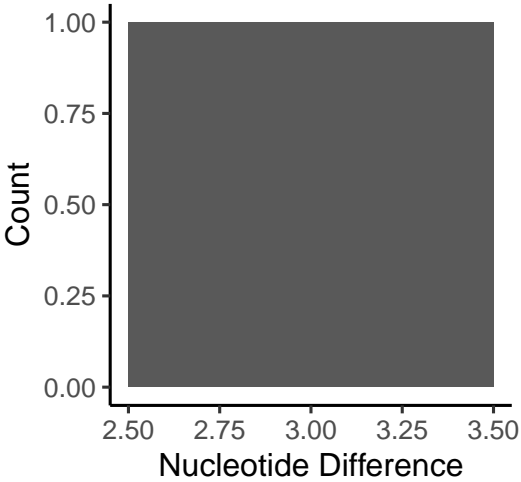
IGHV6-1\*01

102 sequences assigned  
20 (19.6%) exact matches, in which:  
19 unique CDR3  
6 unique J



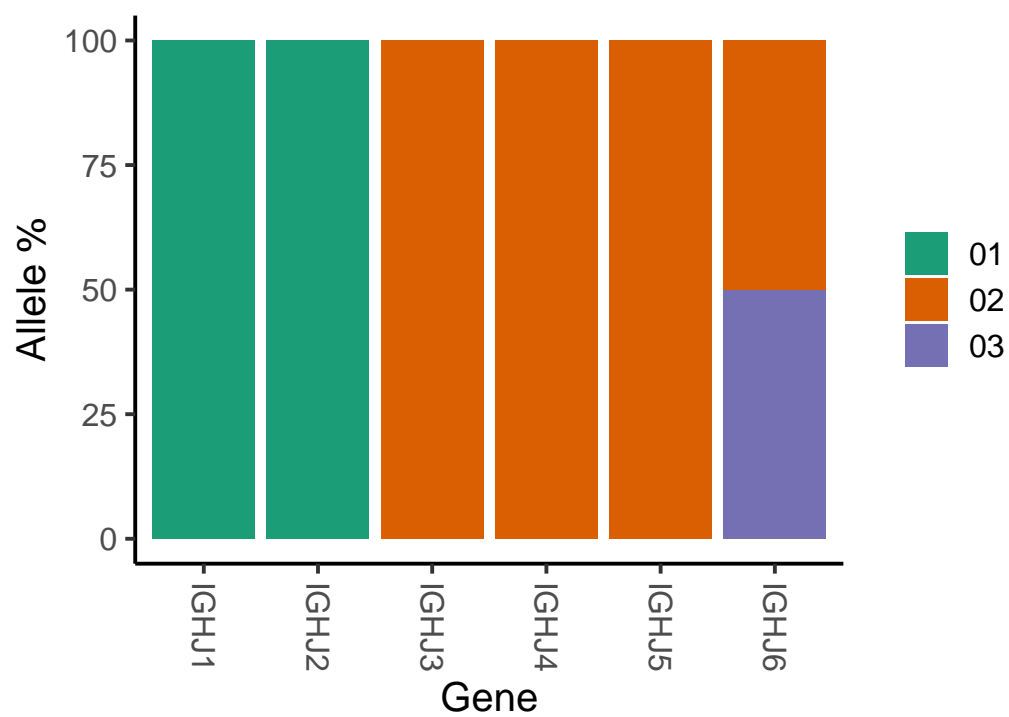
IGHV7-81\*01

1 sequences assigned  
No exact matches.

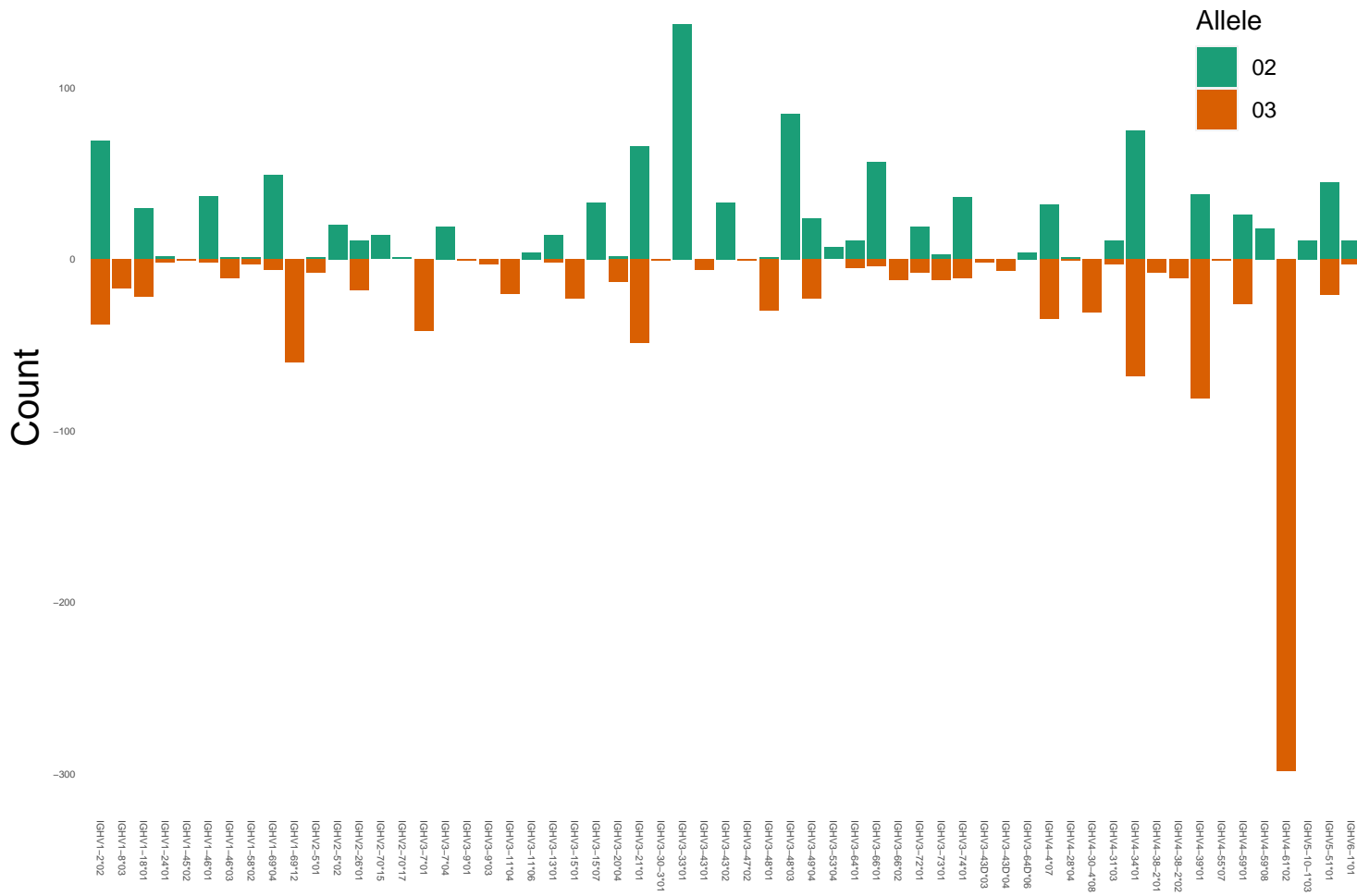




Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.