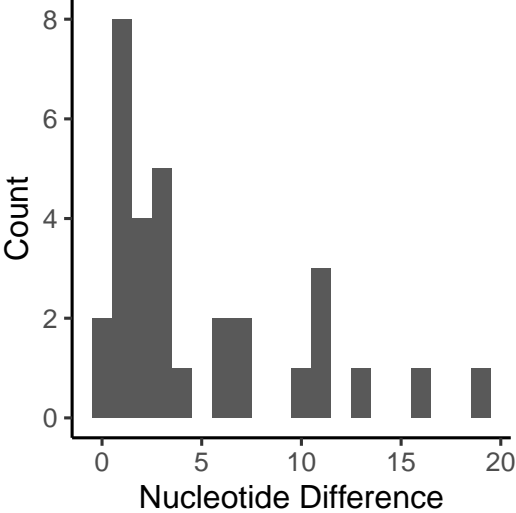


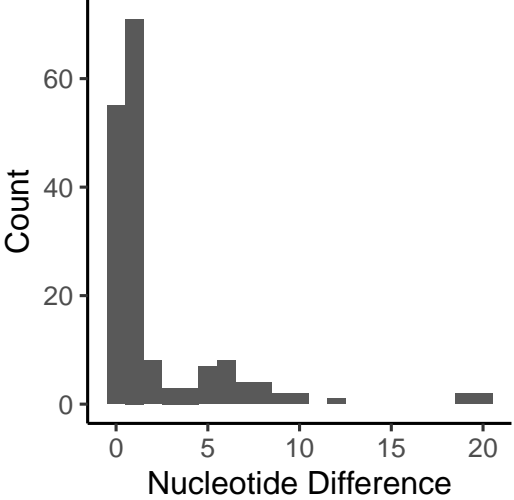
IGHV1-2\*02

31 sequences assigned  
2 (6.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



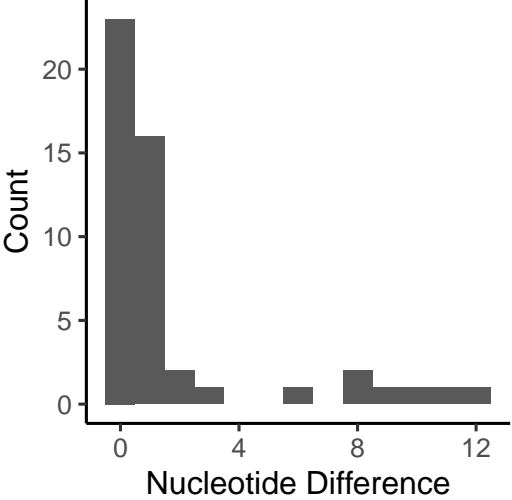
IGHV1-8\*01

175 sequences assigned  
55 (31.4%) exact matches, in which:  
50 unique CDR3  
5 unique J



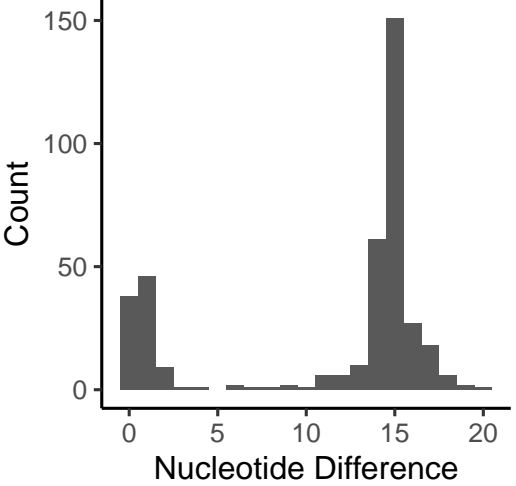
IGHV1-24\*01

49 sequences assigned  
23 (46.9%) exact matches, in which:  
23 unique CDR3  
6 unique J



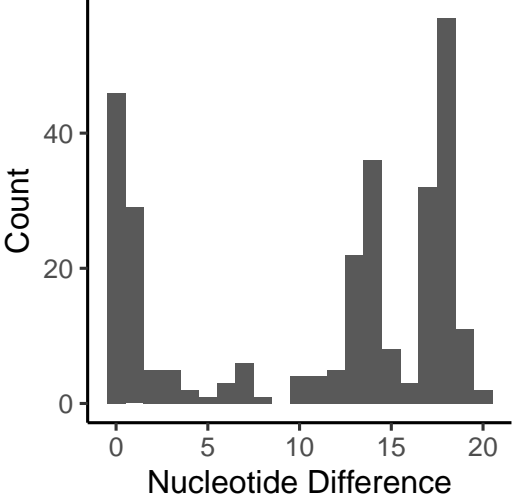
IGHV1-2\*04

392 sequences assigned  
38 (9.7%) exact matches, in which:  
37 unique CDR3  
6 unique J



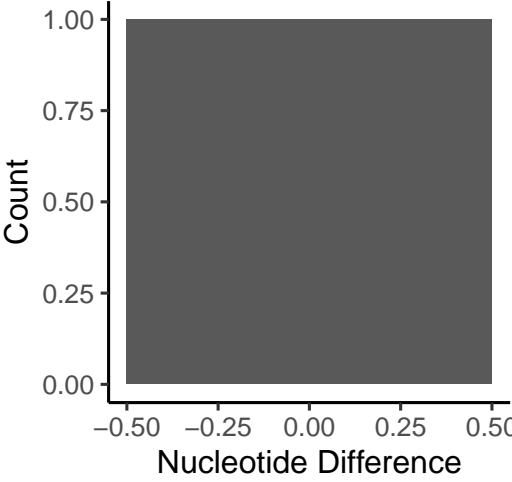
IGHV1-18\*01

287 sequences assigned  
46 (16%) exact matches, in which:  
46 unique CDR3  
7 unique J



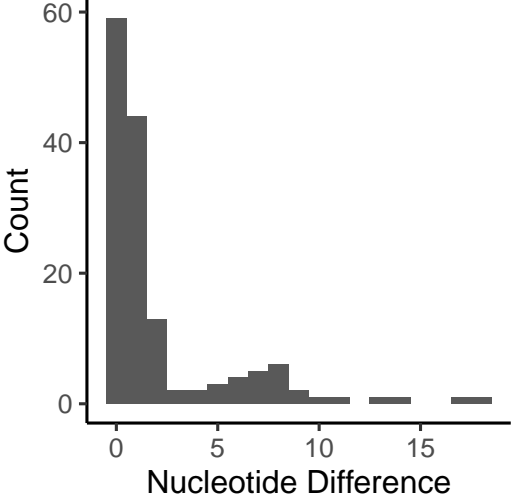
IGHV1-38-4\*01

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



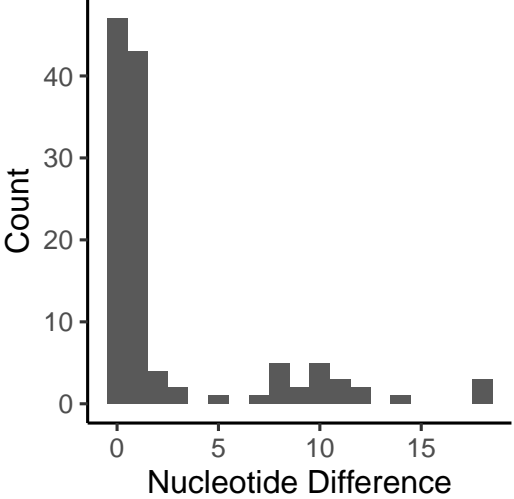
IGHV1-3\*01\_05

146 sequences assigned  
59 (40.4%) exact matches, in which:  
52 unique CDR3  
6 unique J



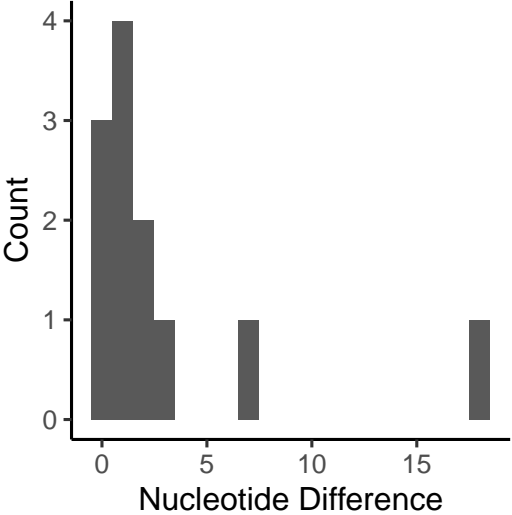
IGHV1-18\*04

121 sequences assigned  
47 (38.8%) exact matches, in which:  
46 unique CDR3  
5 unique J



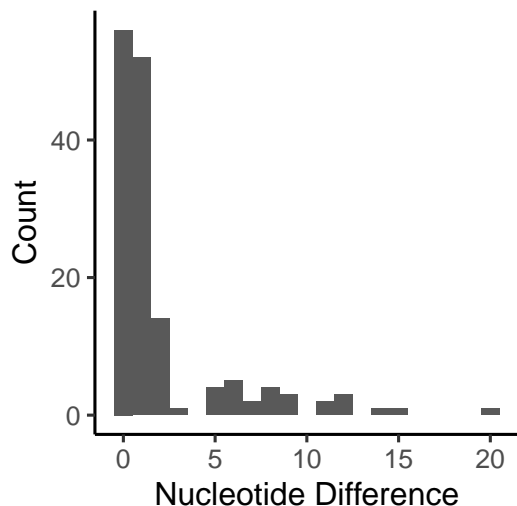
IGHV1-45\*02

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



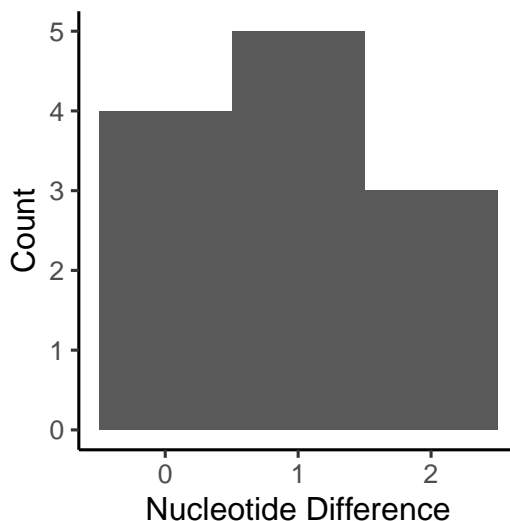
### IGHV1-46\*01

150 sequences assigned  
56 (37.3%) exact matches, in which:  
52 unique CDR3  
6 unique J



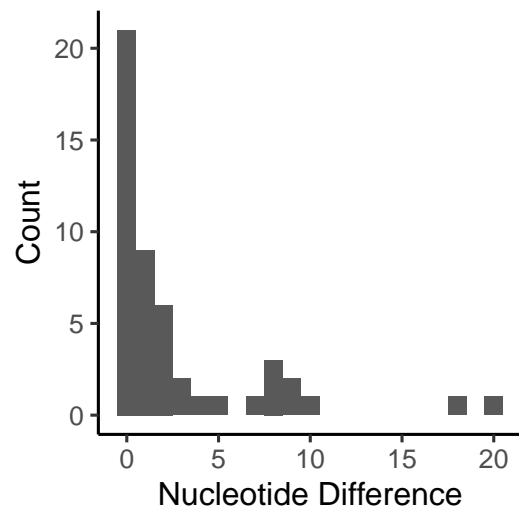
### IGHV1-58\*01\_03

12 sequences assigned  
4 (33.3%) exact matches, in which:  
4 unique CDR3  
2 unique J



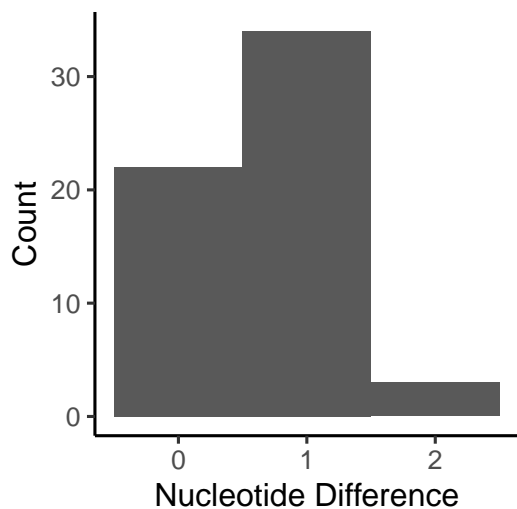
### IGHV2-5\*02

49 sequences assigned  
21 (42.9%) exact matches, in which:  
20 unique CDR3  
4 unique J



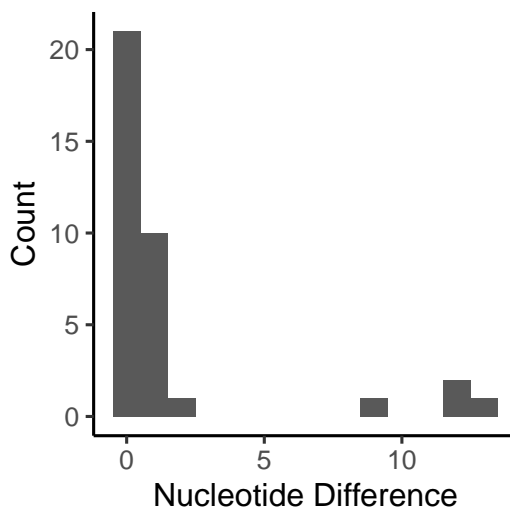
### IGHV1-46\*03

59 sequences assigned  
22 (37.3%) exact matches, in which:  
20 unique CDR3  
5 unique J



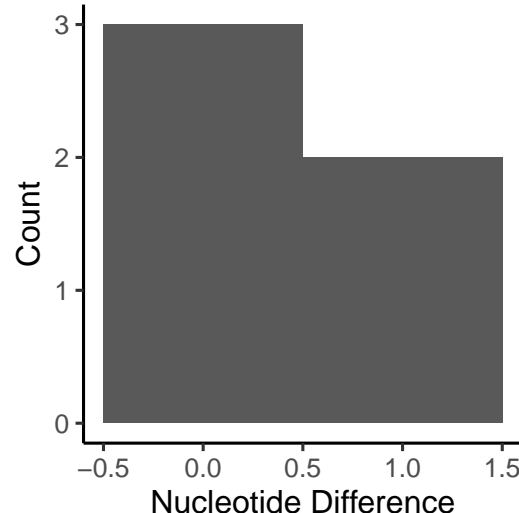
### IGHV1-69\*02

36 sequences assigned  
21 (58.3%) exact matches, in which:  
20 unique CDR3  
5 unique J



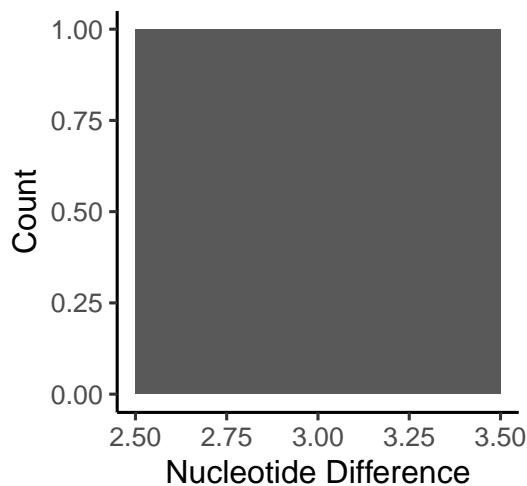
### IGHV2-26\*01

5 sequences assigned  
3 (60%) exact matches, in which:  
3 unique CDR3  
3 unique J



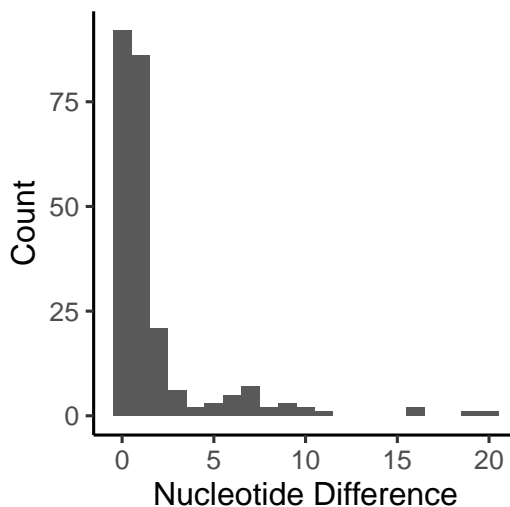
### IGHV1-58\*02

1 sequences assigned  
No exact matches.



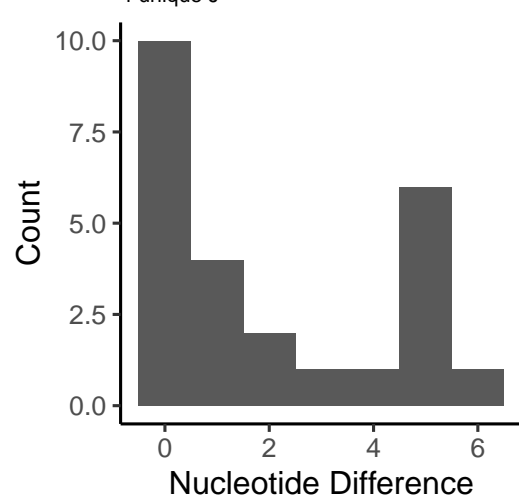
### IGHV1-69\*04\_09

236 sequences assigned  
92 (39%) exact matches, in which:  
87 unique CDR3  
7 unique J



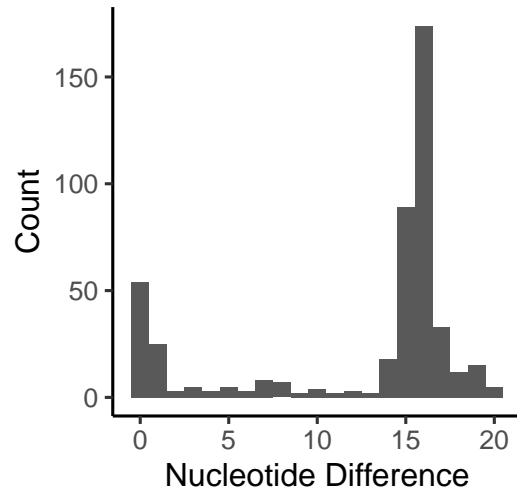
### IGHV2-70\*11\_15

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



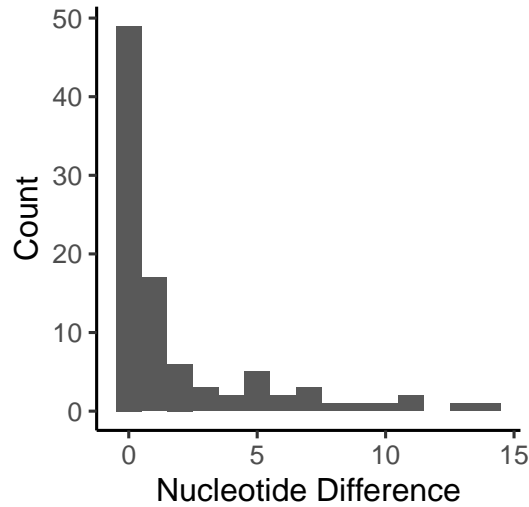
### IGHV3-7\*01

490 sequences assigned  
54 (11%) exact matches, in which:  
37 unique CDR3  
7 unique J



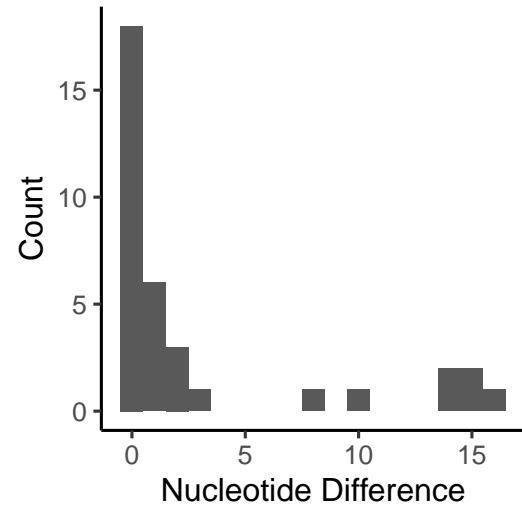
### IGHV3-11\*01

96 sequences assigned  
49 (51%) exact matches, in which:  
31 unique CDR3  
3 unique J



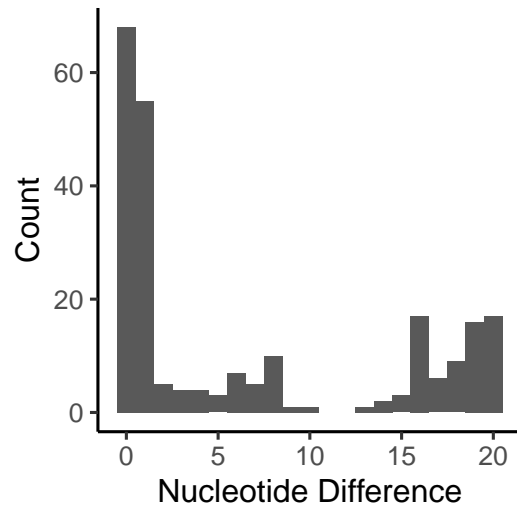
### IGHV3-13\*01

35 sequences assigned  
18 (51.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



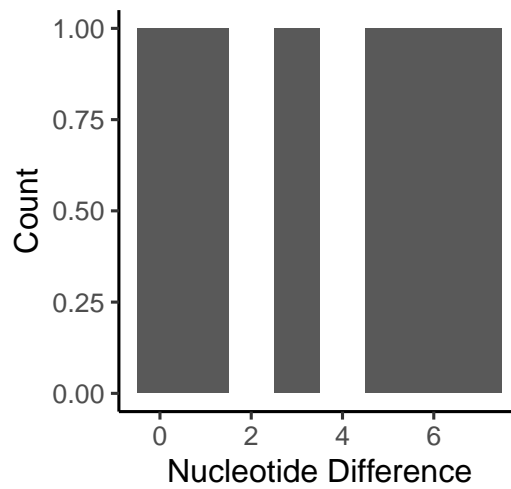
### IGHV3-7\*03

551 sequences assigned  
68 (12.3%) exact matches, in which:  
46 unique CDR3  
5 unique J



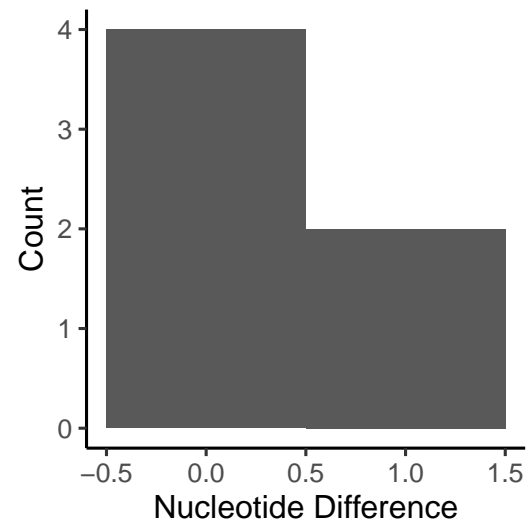
### IGHV3-11\*04

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



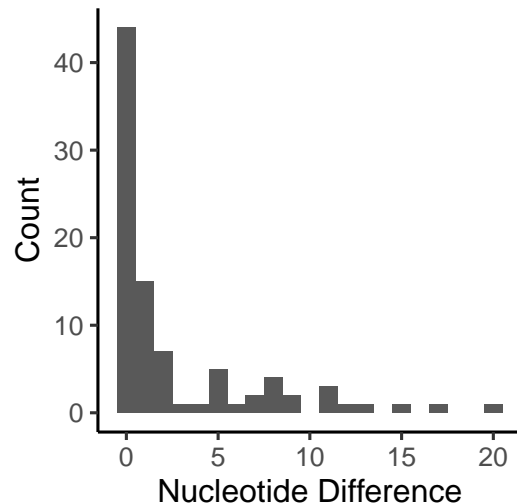
### IGHV3-13\*05

6 sequences assigned  
4 (66.7%) exact matches, in which:  
3 unique CDR3  
2 unique J



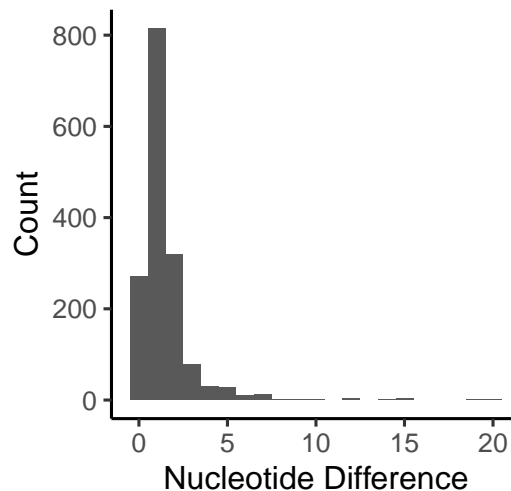
### IGHV3-9\*01

90 sequences assigned  
44 (48.9%) exact matches, in which:  
30 unique CDR3  
5 unique J



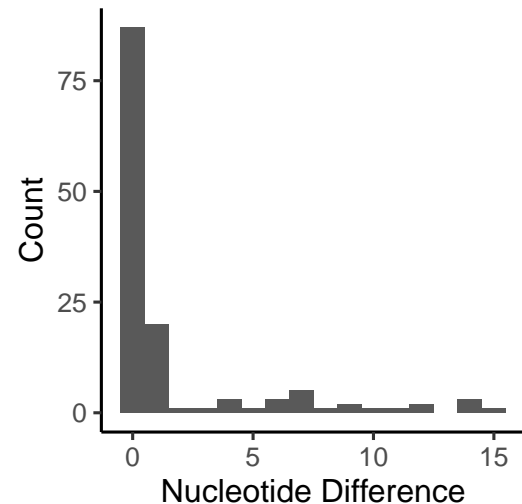
### IGHV3-11\*06

1581 sequences assigned  
271 (17.1%) exact matches, in which:  
104 unique CDR3  
7 unique J



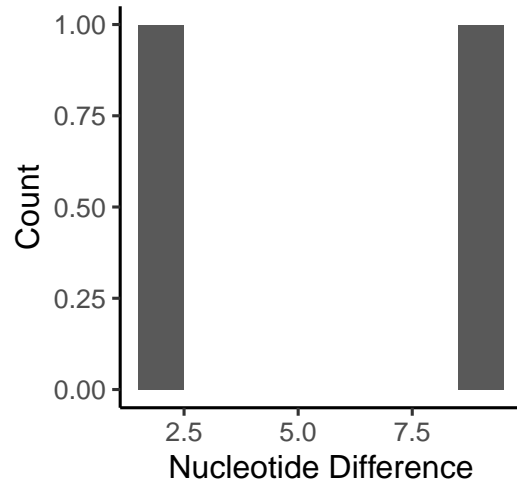
### IGHV3-15\*01\_02

133 sequences assigned  
87 (65.4%) exact matches, in which:  
61 unique CDR3  
6 unique J



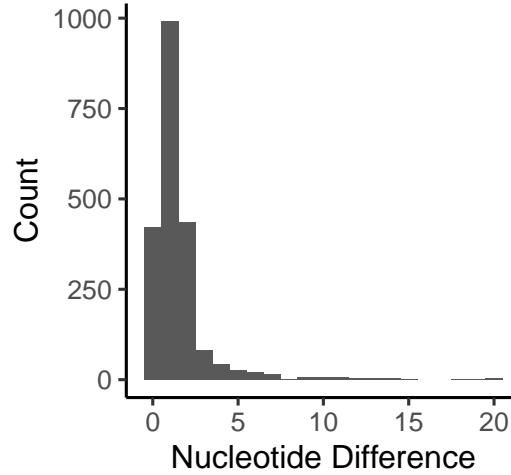
### IGHV3-19\*01

2 sequences assigned  
No exact matches.



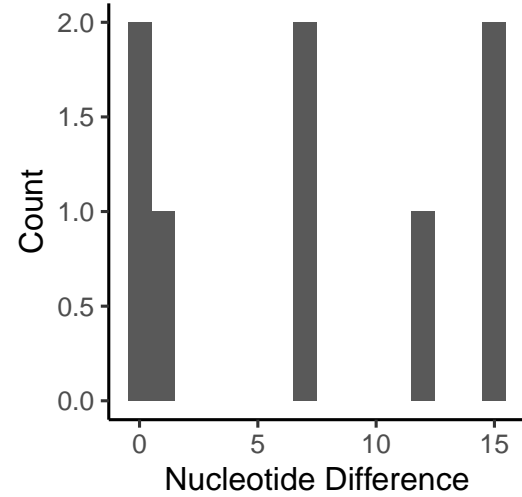
### IGHV3-21\*01\_02

2081 sequences assigned  
421 (20.2%) exact matches, in which:  
172 unique CDR3  
6 unique J



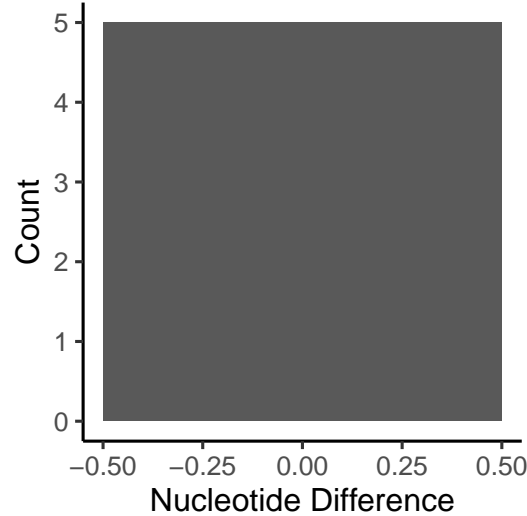
### IGHV3-30-5\*01

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



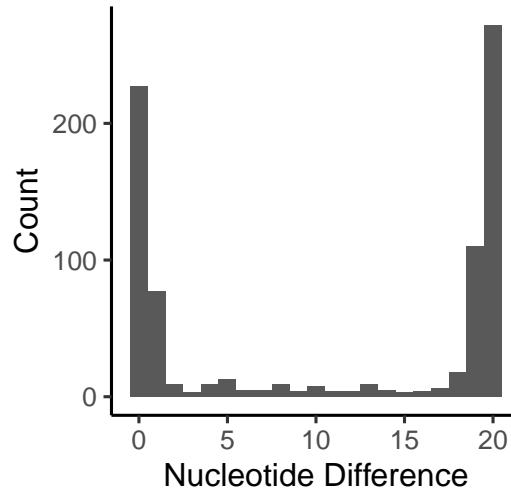
### IGHV3-20\*01\_02

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



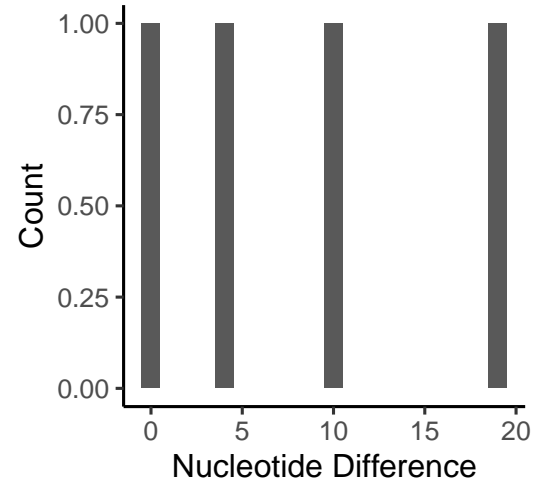
### IGHV3-23\*01\_04

919 sequences assigned  
227 (24.7%) exact matches, in which:  
137 unique CDR3  
7 unique J



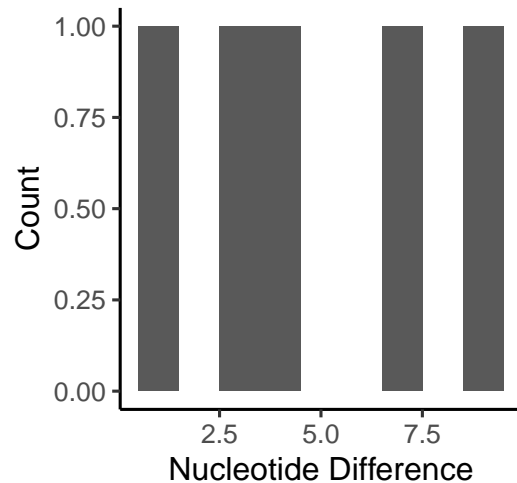
### IGHV3-30-5\*02

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



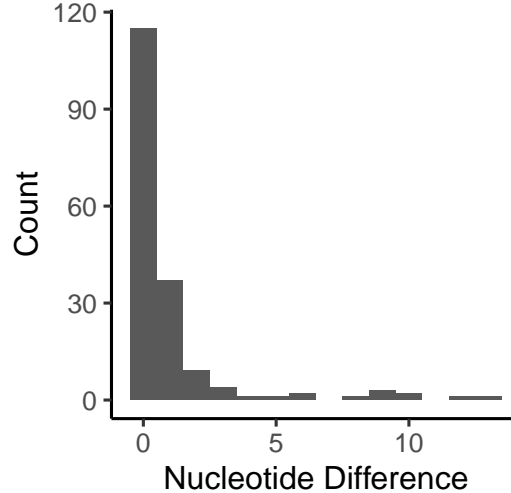
### IGHV3-20\*03\_04

5 sequences assigned  
No exact matches.



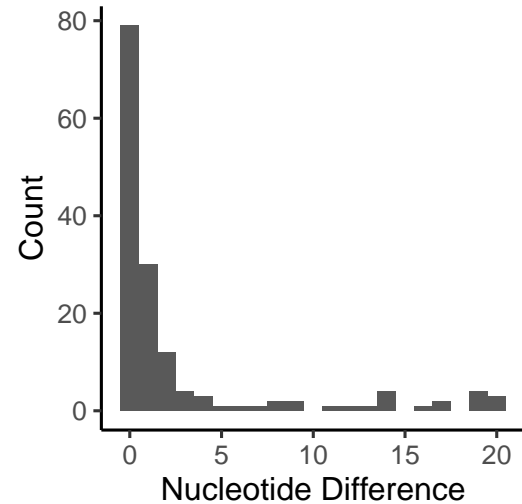
### IGHV3-30\*01

177 sequences assigned  
115 (65%) exact matches, in which:  
79 unique CDR3  
6 unique J



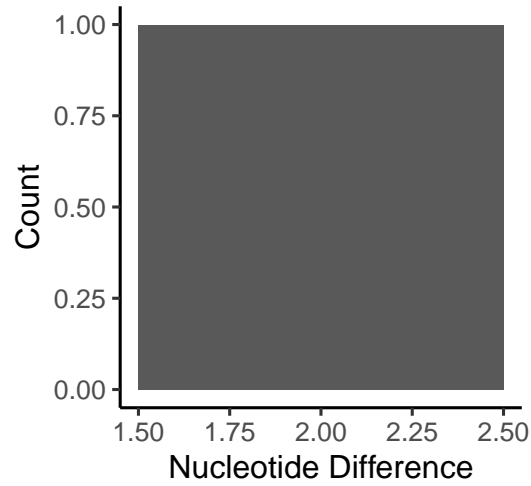
### IGHV3-33\*01

171 sequences assigned  
79 (46.2%) exact matches, in which:  
52 unique CDR3  
5 unique J



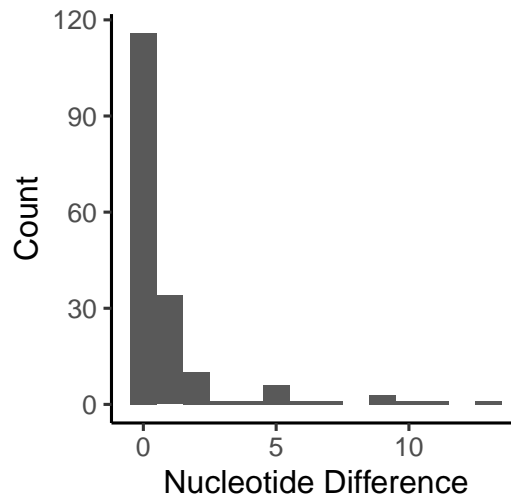
### IGHV3-38-3\*01

1 sequences assigned  
No exact matches.



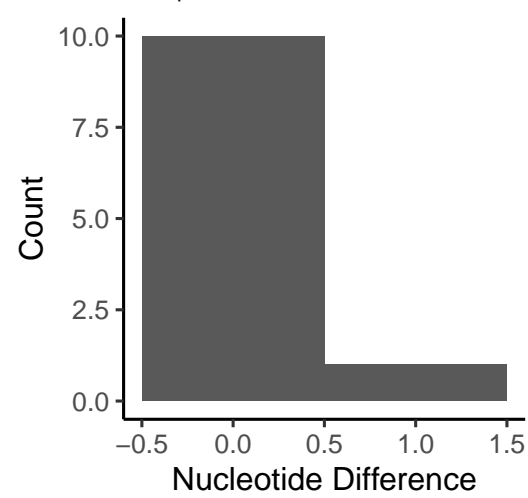
### IGHV3-48\*02

180 sequences assigned  
116 (64.4%) exact matches, in which:  
72 unique CDR3  
6 unique J



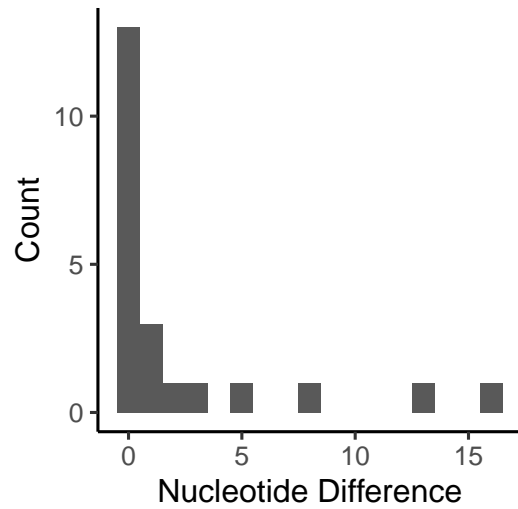
### IGHV3-49\*03\_05

16 sequences assigned  
10 (62.5%) exact matches, in which:  
7 unique CDR3  
4 unique J



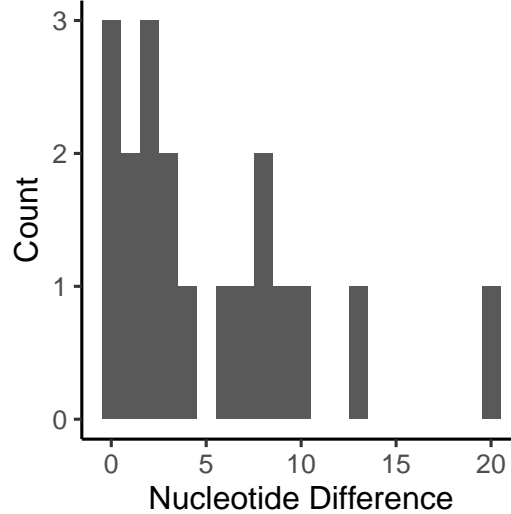
### IGHV3-43\*01

22 sequences assigned  
13 (59.1%) exact matches, in which:  
9 unique CDR3  
4 unique J



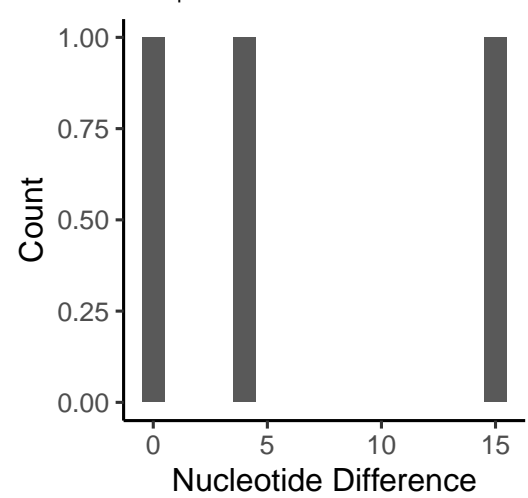
### IGHV3-48\*04

21 sequences assigned  
3 (14.3%) exact matches, in which:  
3 unique CDR3  
3 unique J



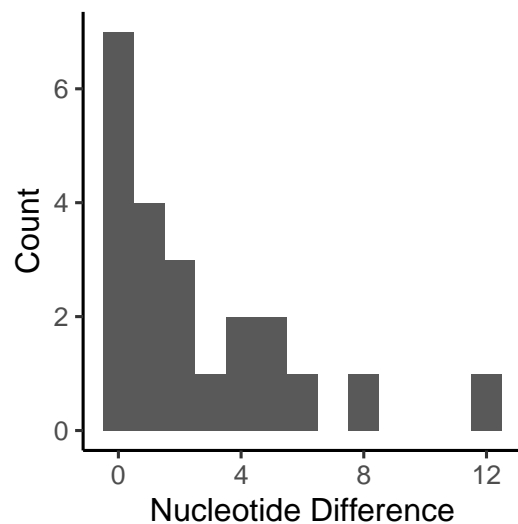
### IGHV3-52\*01\_03

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



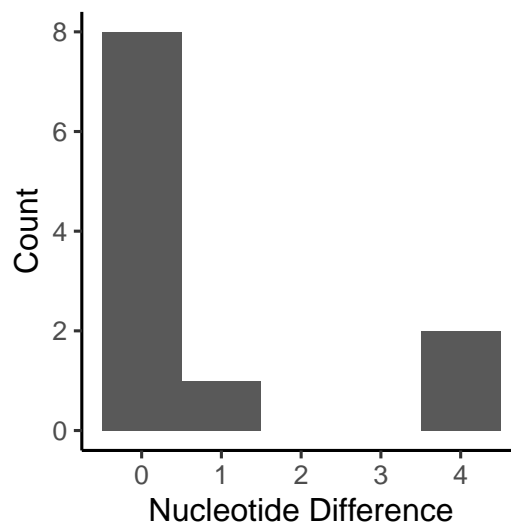
### IGHV3-48\*01

22 sequences assigned  
7 (31.8%) exact matches, in which:  
7 unique CDR3  
5 unique J



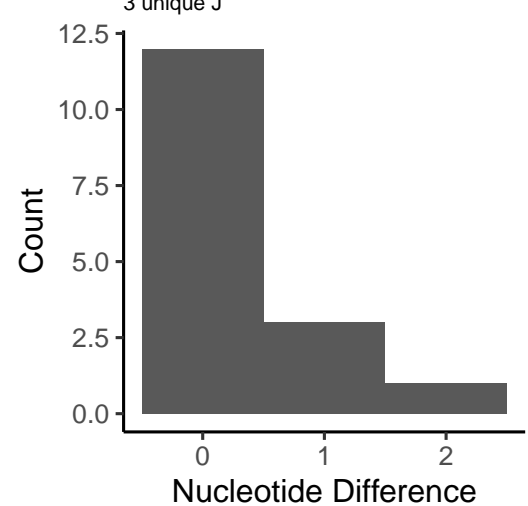
### IGHV3-49\*04

11 sequences assigned  
8 (72.7%) exact matches, in which:  
6 unique CDR3  
4 unique J



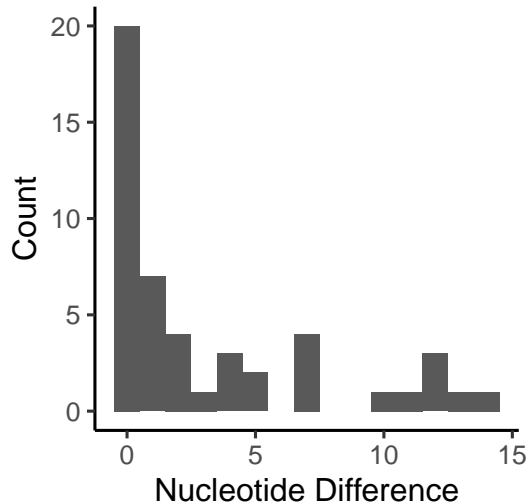
### IGHV3-53\*04

16 sequences assigned  
12 (75%) exact matches, in which:  
8 unique CDR3  
3 unique J



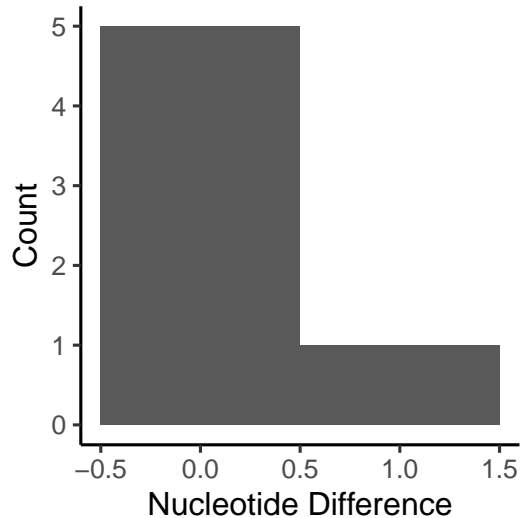
### IGHV3-53\*01\_02

48 sequences assigned  
20 (41.7%) exact matches, in which:  
15 unique CDR3  
5 unique J



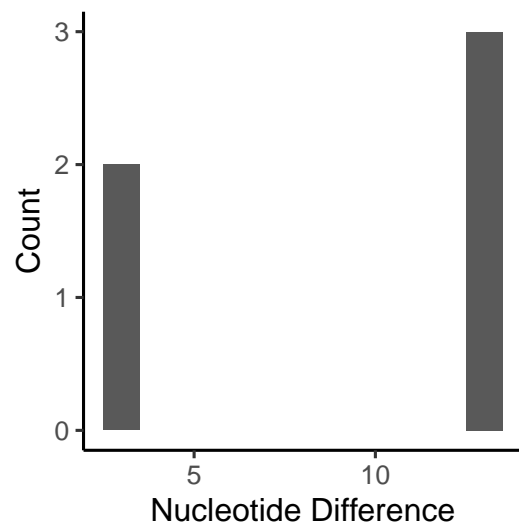
### IGHV3-64\*02\_07

6 sequences assigned  
5 (83.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



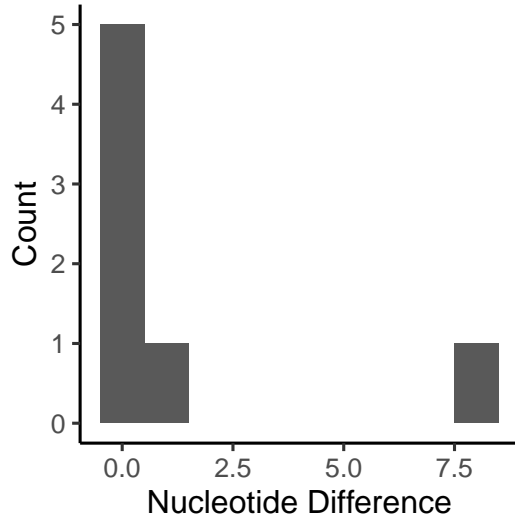
### IGHV3-69-1\*01

5 sequences assigned  
No exact matches.



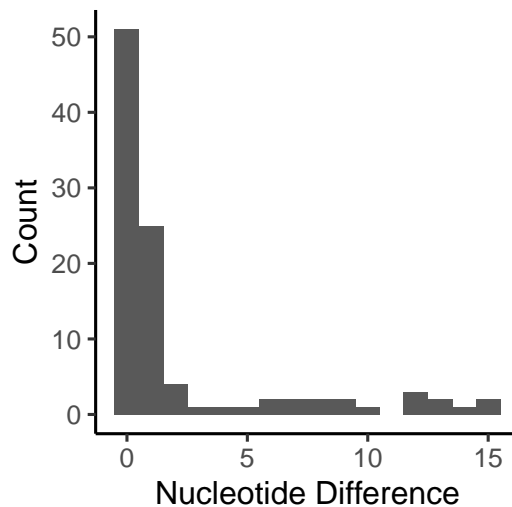
### IGHV3-64\*01

7 sequences assigned  
5 (71.4%) exact matches, in which:  
5 unique CDR3  
2 unique J



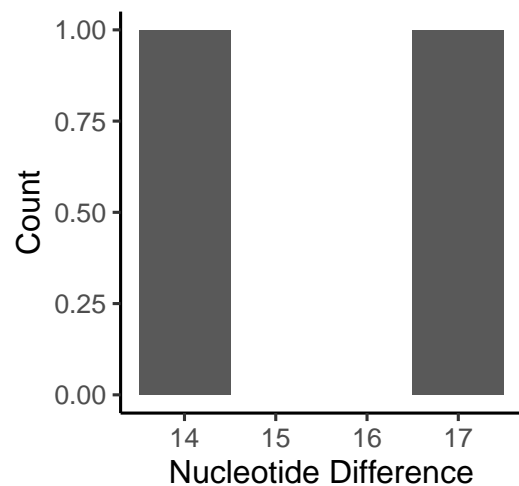
### IGHV3-66\*01

101 sequences assigned  
51 (50.5%) exact matches, in which:  
31 unique CDR3  
5 unique J



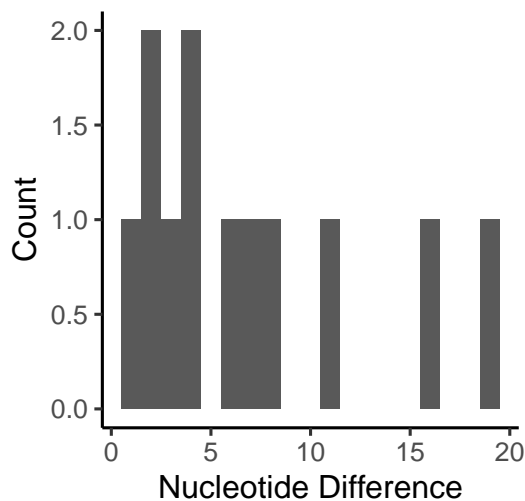
### IGHV3-69-1\*02

2 sequences assigned  
No exact matches.



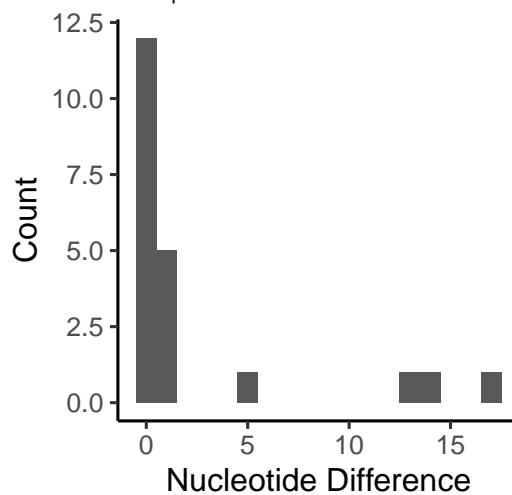
### IGHV3-64\*04

16 sequences assigned  
No exact matches.



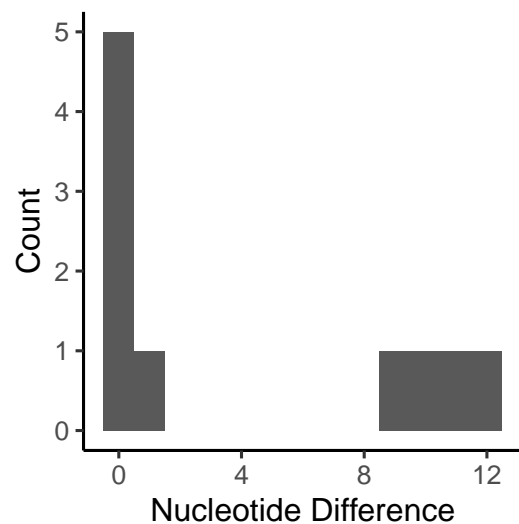
### IGHV3-66\*02

22 sequences assigned  
12 (54.5%) exact matches, in which:  
9 unique CDR3  
5 unique J



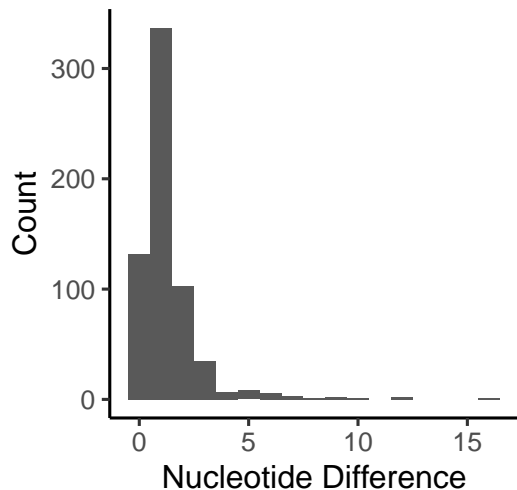
### IGHV3-72\*01

11 sequences assigned  
5 (45.5%) exact matches, in which:  
3 unique CDR3  
3 unique J



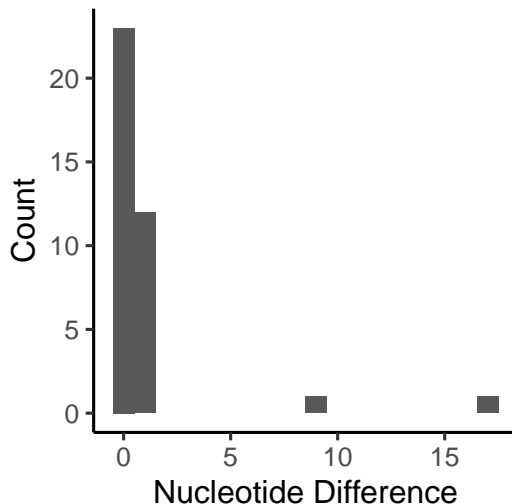
### IGHV3-73\*01\_02

638 sequences assigned  
132 (20.7%) exact matches, in which:  
67 unique CDR3  
4 unique J



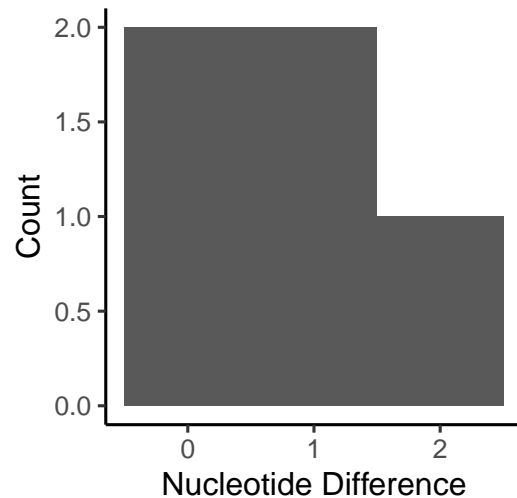
### IGHV3-64D\*06

86 sequences assigned  
23 (26.7%) exact matches, in which:  
13 unique CDR3  
4 unique J



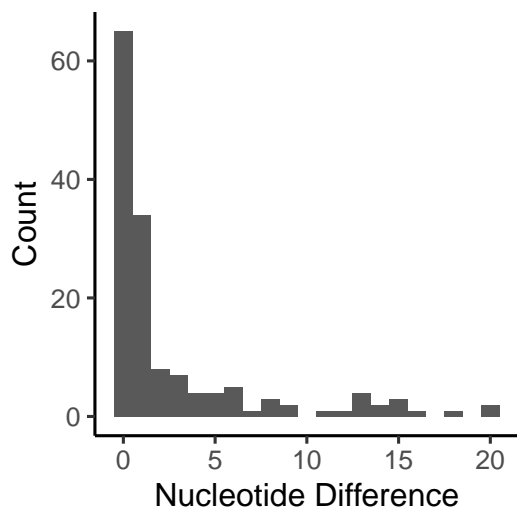
### IGHV4-28\*02\_05

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
1 unique J



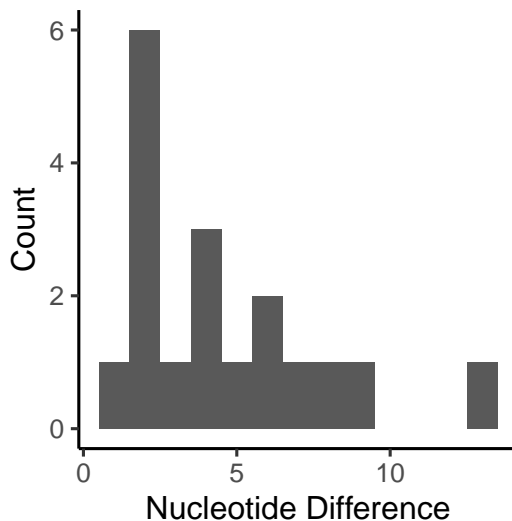
### IGHV3-74\*01\_02

160 sequences assigned  
65 (40.6%) exact matches, in which:  
42 unique CDR3  
5 unique J



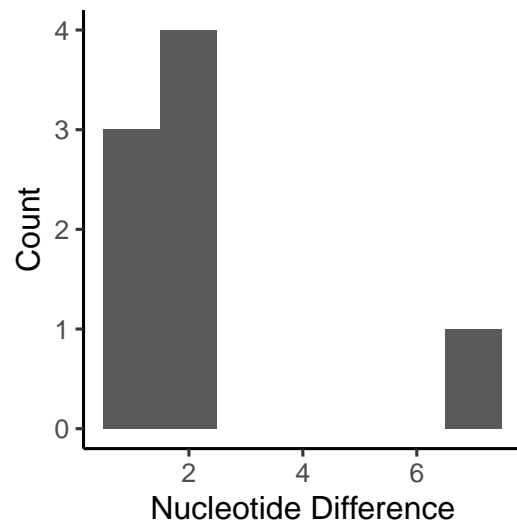
### IGHV4-4\*07

24 sequences assigned  
No exact matches.



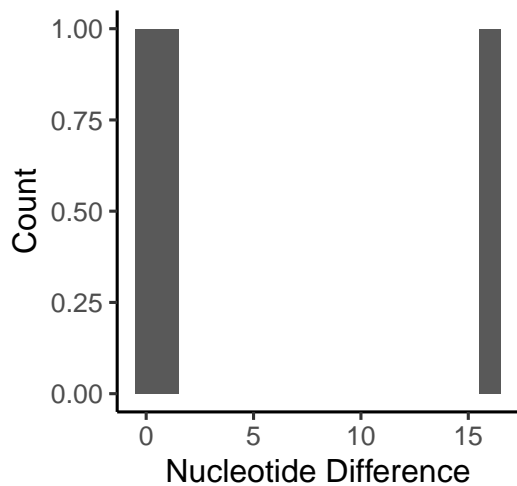
### IGHV4-30-2\*03

8 sequences assigned  
No exact matches.



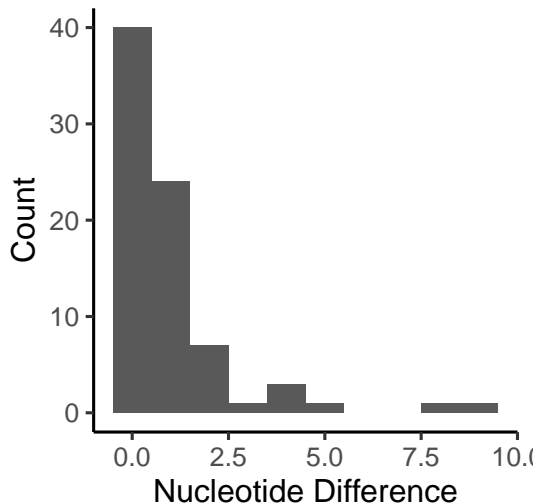
### IGHV3-43D\*03

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



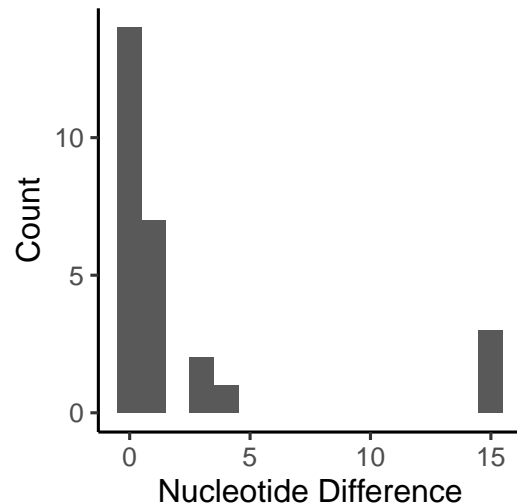
### IGHV4-4\*02\_03

78 sequences assigned  
40 (51.3%) exact matches, in which:  
37 unique CDR3  
4 unique J



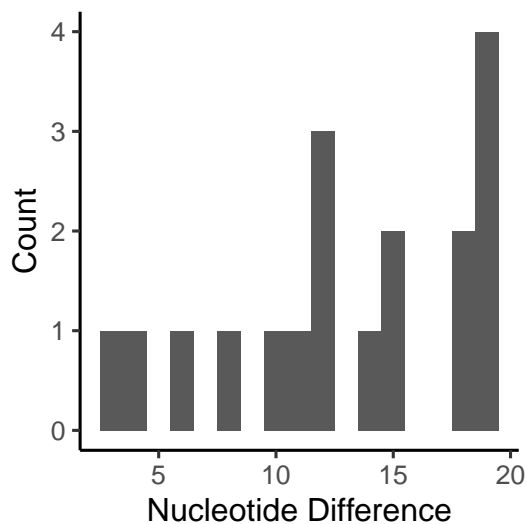
### IGHV4-31\*01

27 sequences assigned  
14 (51.9%) exact matches, in which:  
11 unique CDR3  
3 unique J



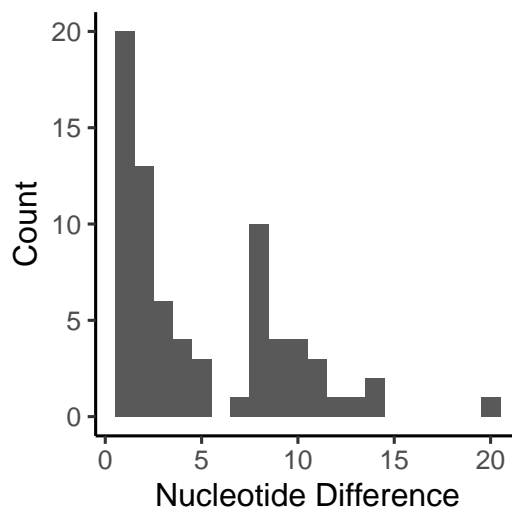
### IGHV4-31\*02

20 sequences assigned  
No exact matches.



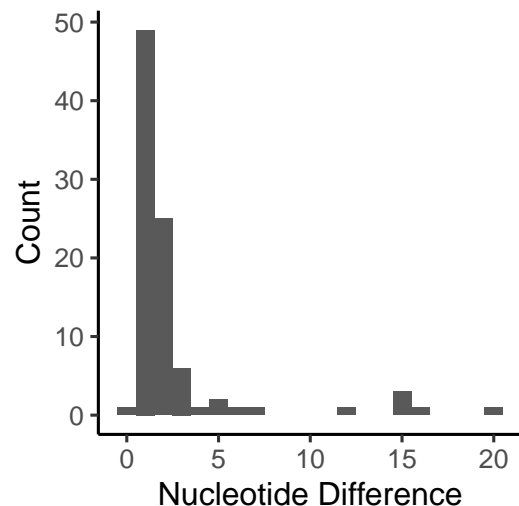
### IGHV4-39\*07

75 sequences assigned  
No exact matches.



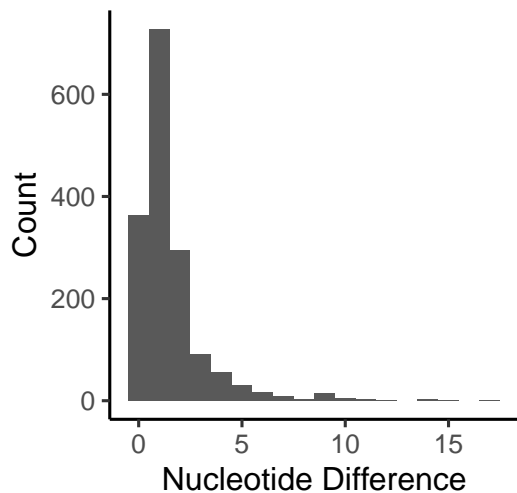
### IGHV4-59\*12

93 sequences assigned  
1 (1.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



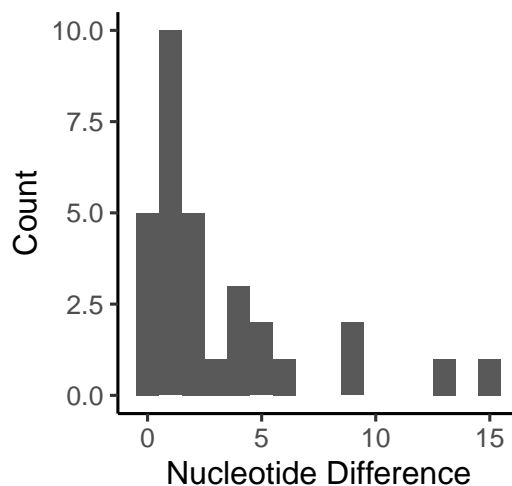
### IGHV4-34\*01\_02

1621 sequences assigned  
363 (22.4%) exact matches, in which:  
242 unique CDR3  
6 unique J



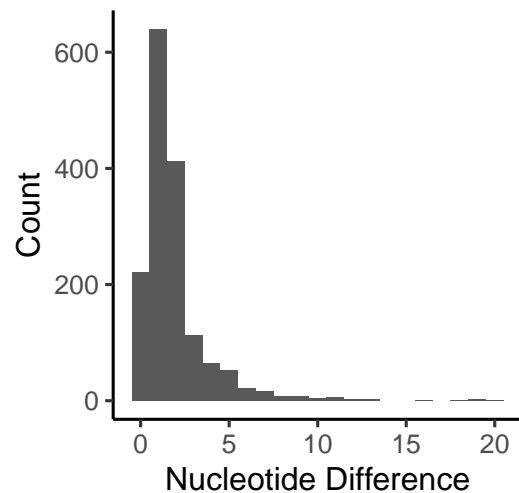
### IGHV4-59\*08

31 sequences assigned  
5 (16.1%) exact matches, in which:  
5 unique CDR3  
4 unique J



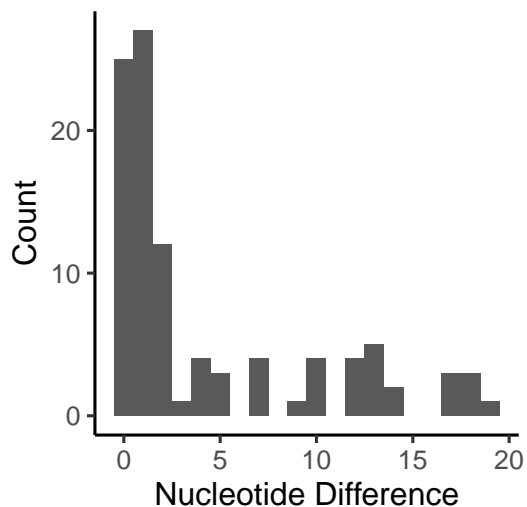
### IGHV4-61\*01

1577 sequences assigned  
221 (14%) exact matches, in which:  
121 unique CDR3  
5 unique J



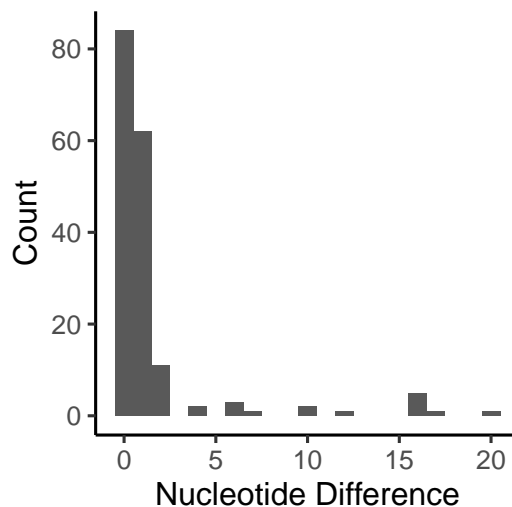
### IGHV4-38-2\*02

100 sequences assigned  
25 (25%) exact matches, in which:  
22 unique CDR3  
6 unique J



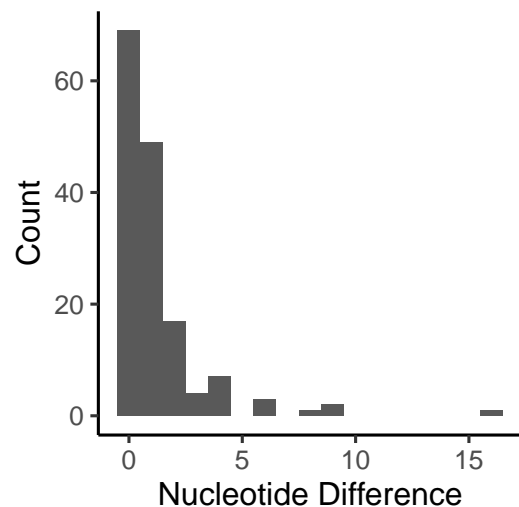
### IGHV4-59\*01\_07

182 sequences assigned  
84 (46.2%) exact matches, in which:  
76 unique CDR3  
5 unique J



### IGHV4-61\*02

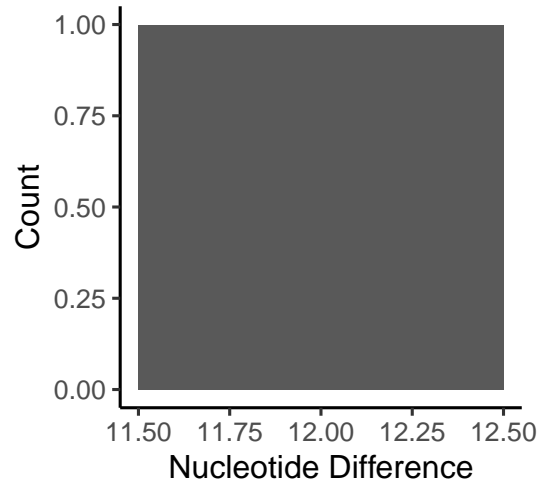
162 sequences assigned  
69 (42.6%) exact matches, in which:  
64 unique CDR3  
5 unique J





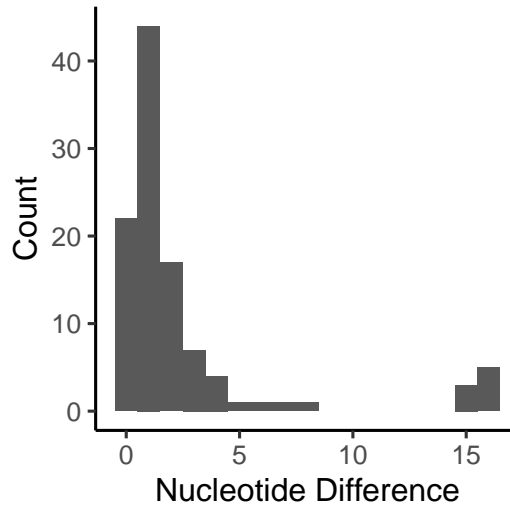
### IGHV1/OR15-2\*02\_03

1 sequences assigned  
No exact matches.



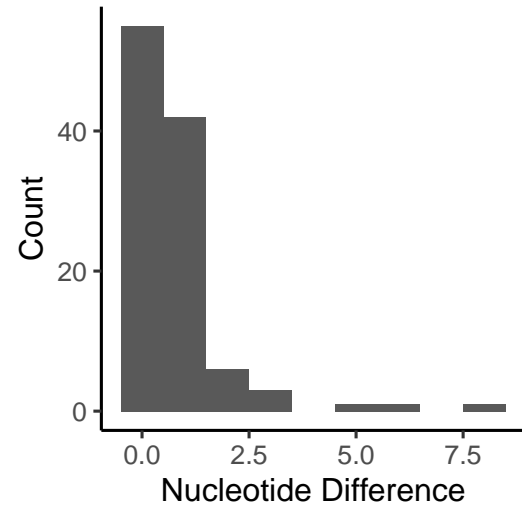
### IGHV5-51\*07

106 sequences assigned  
22 (20.8%) exact matches, in which:  
18 unique CDR3  
6 unique J



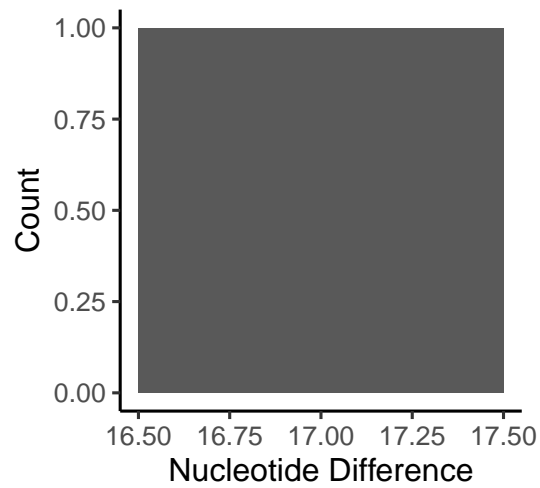
### IGHV7-4-1\*02

109 sequences assigned  
55 (50.5%) exact matches, in which:  
49 unique CDR3  
5 unique J



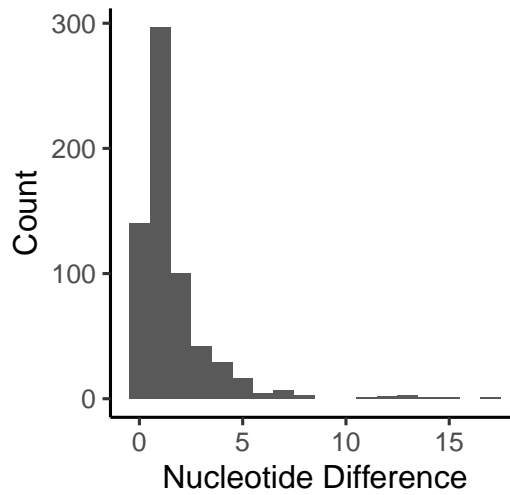
### IGHV4/OR15-8\*02

1 sequences assigned  
No exact matches.



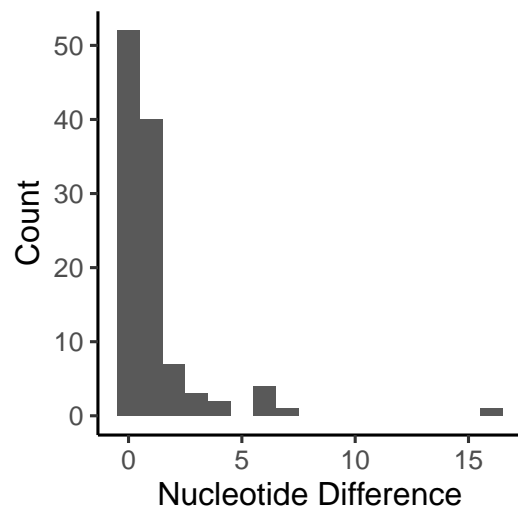
### IGHV5-51\*01\_03

647 sequences assigned  
140 (21.6%) exact matches, in which:  
90 unique CDR3  
6 unique J



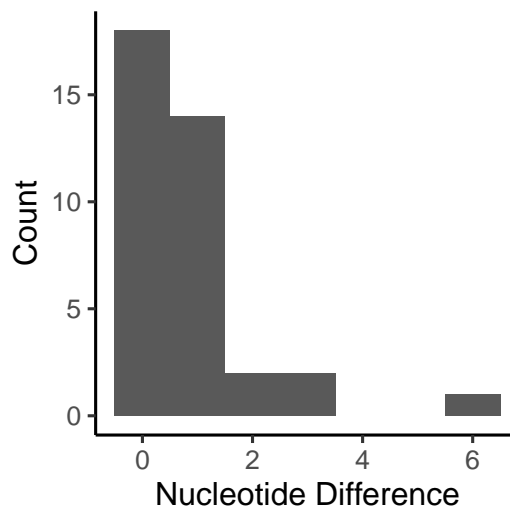
### IGHV5-10-1\*01\_03

110 sequences assigned  
52 (47.3%) exact matches, in which:  
41 unique CDR3  
4 unique J

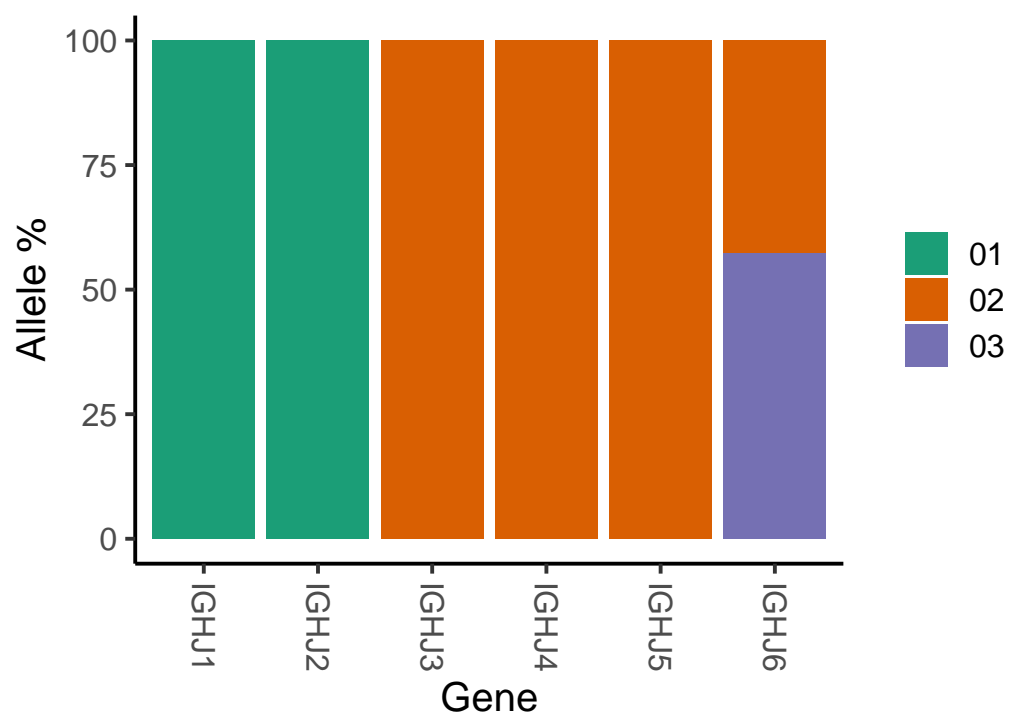


### IGHV6-1\*01\_02

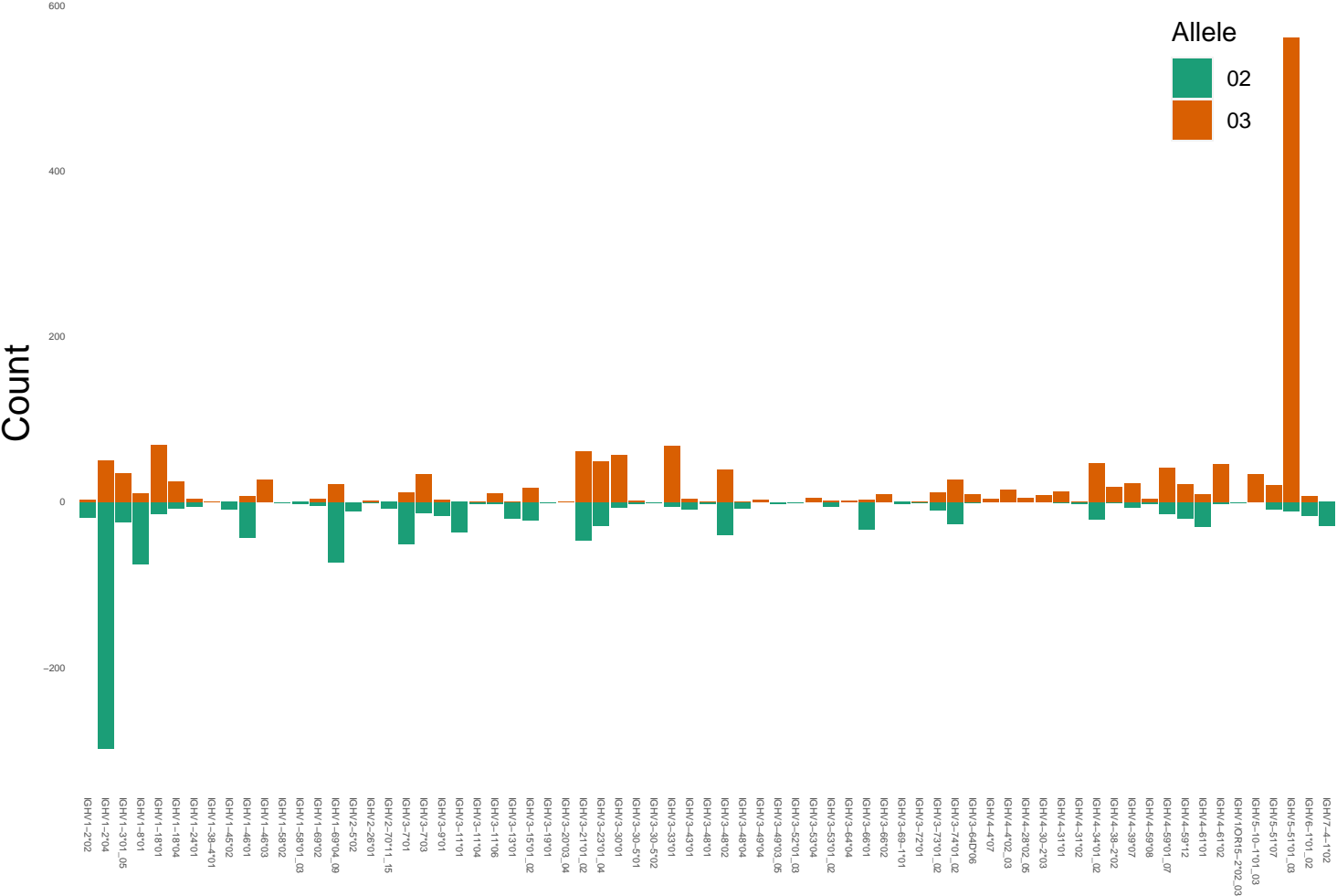
38 sequences assigned  
18 (47.4%) exact matches, in which:  
17 unique CDR3  
4 unique J



Allele Usage



# Sequence Count by IGHJ6 allele usage



[illegible]