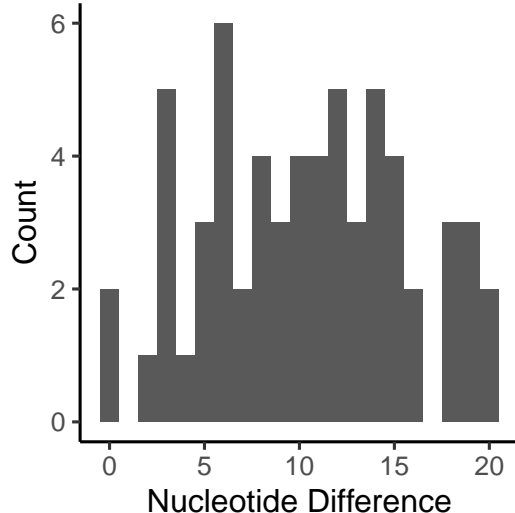


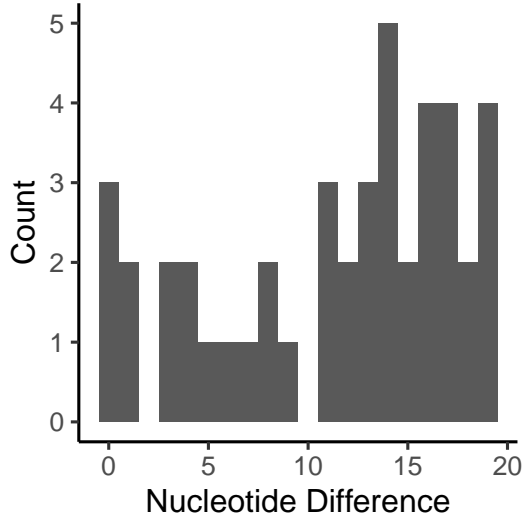
### IGHV1-2\*02

88 sequences assigned  
2 (2.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



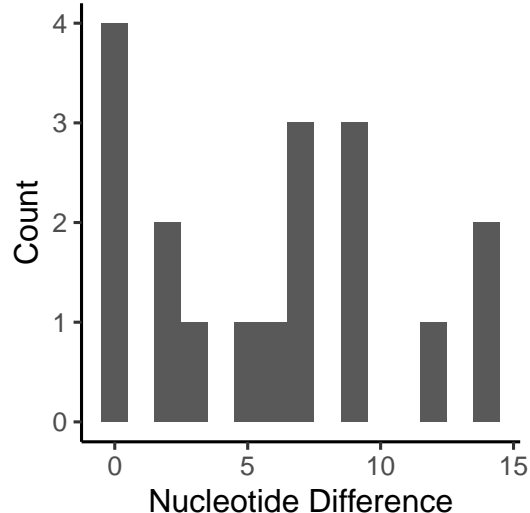
### IGHV1-18\*04

58 sequences assigned  
3 (5.2%) exact matches, in which:  
3 unique CDR3  
3 unique J



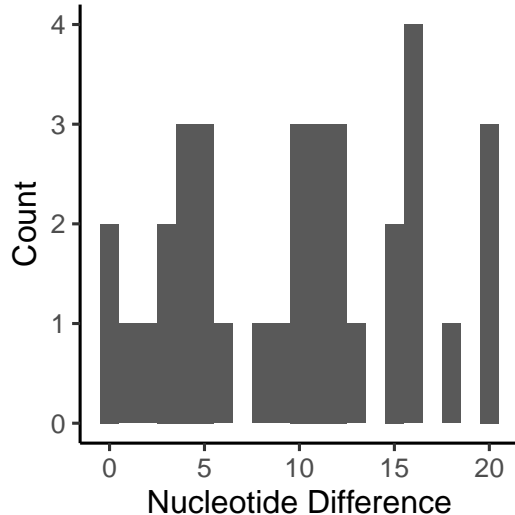
### IGHV1-46\*03

22 sequences assigned  
4 (18.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



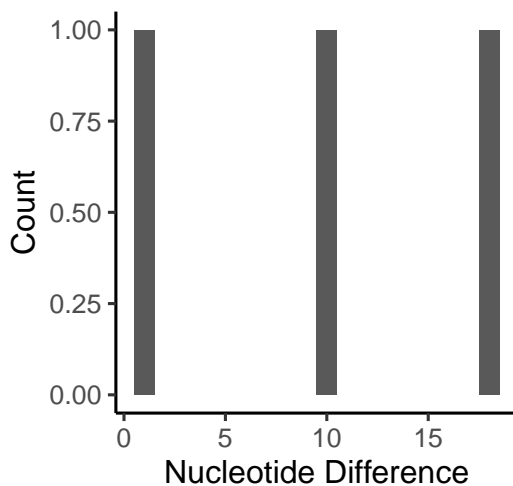
### IGHV1-3\*01\_05

46 sequences assigned  
2 (4.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



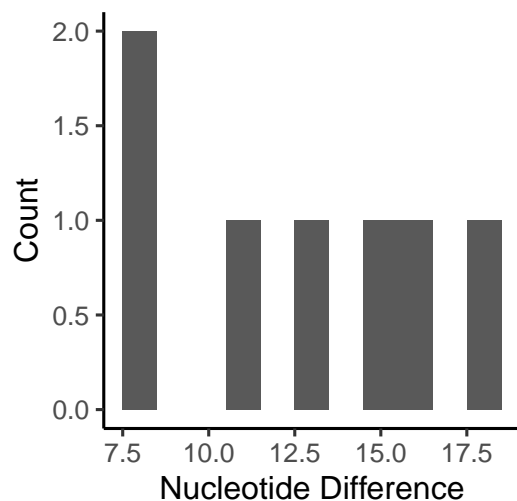
### IGHV1-24\*01

10 sequences assigned  
No exact matches.



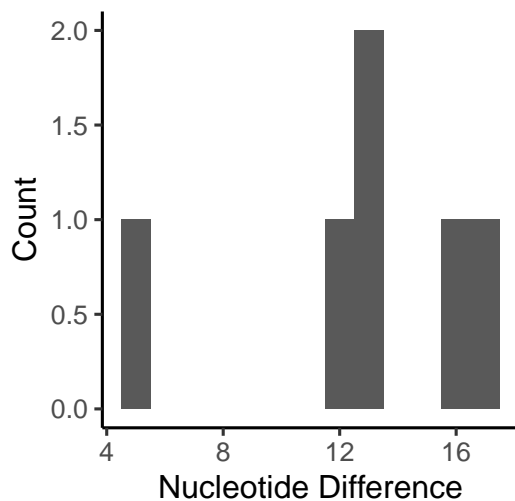
### IGHV1-58\*02

7 sequences assigned  
No exact matches.



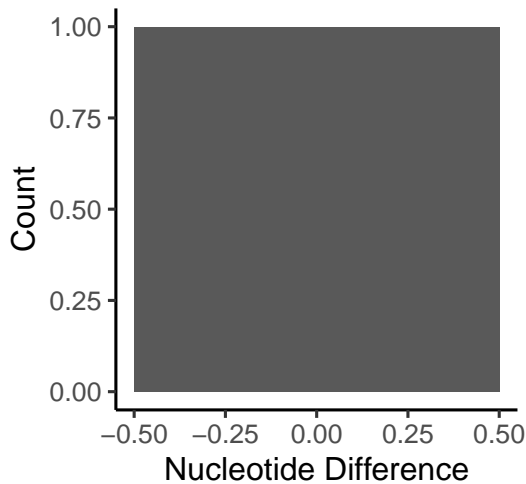
### IGHV1-18\*01

7 sequences assigned  
No exact matches.



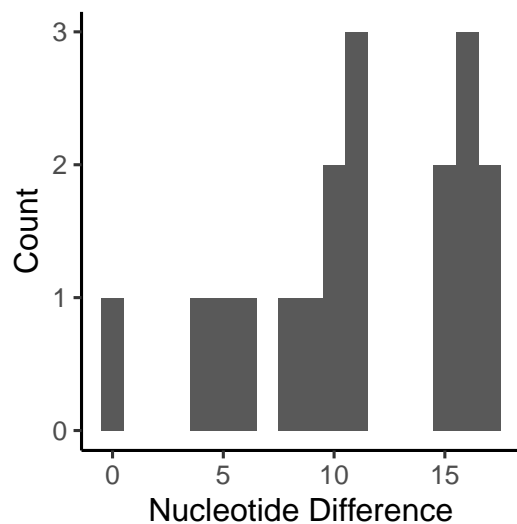
### IGHV1-45\*02

2 sequences assigned  
1 (50%) exact matches, in which:  
1 unique CDR3  
1 unique J



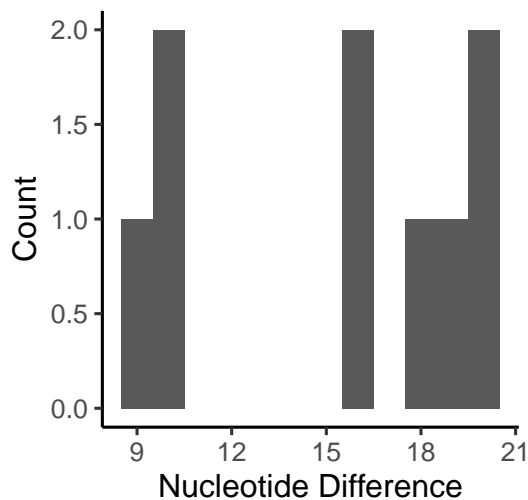
### IGHV1-69\*02

28 sequences assigned  
1 (3.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



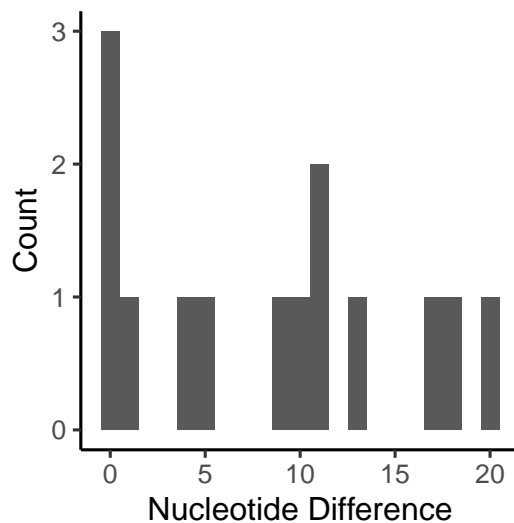
### IGHV1-69\*08

13 sequences assigned  
No exact matches.



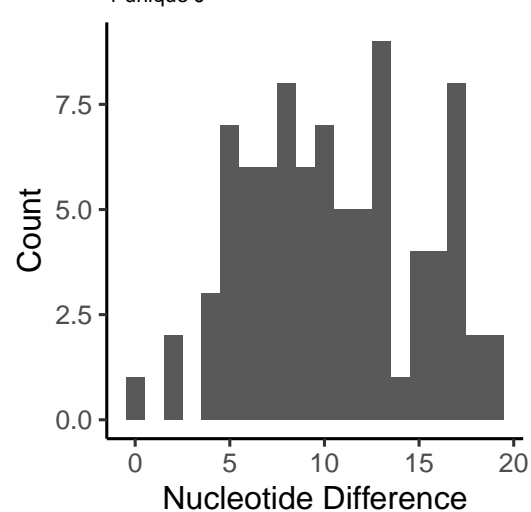
### IGHV2-70\*11\_15

14 sequences assigned  
3 (21.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



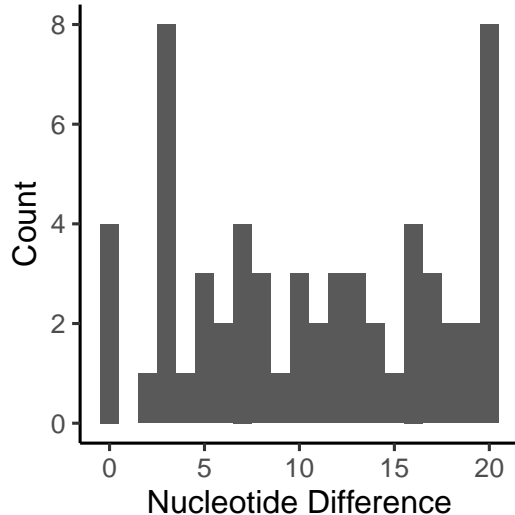
### IGHV3-7\*04

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



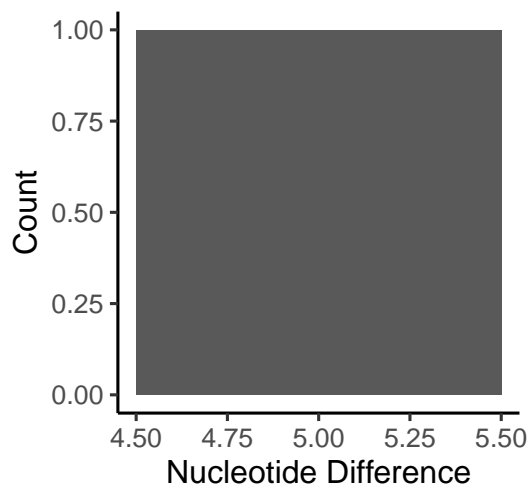
### IGHV2-5\*02

90 sequences assigned  
4 (4.4%) exact matches, in which:  
4 unique CDR3  
2 unique J



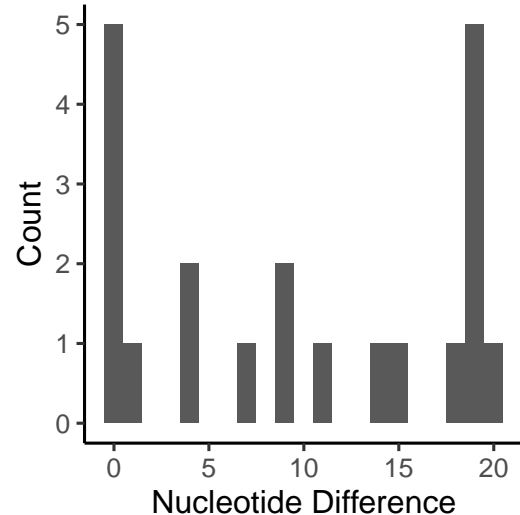
### IGHV2-70D\*14

1 sequences assigned  
No exact matches.



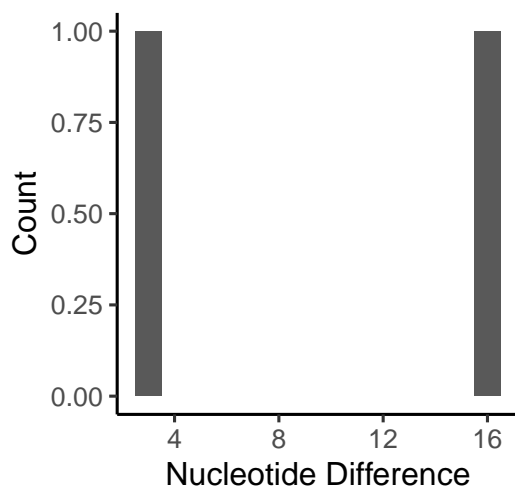
### IGHV3-11\*06

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



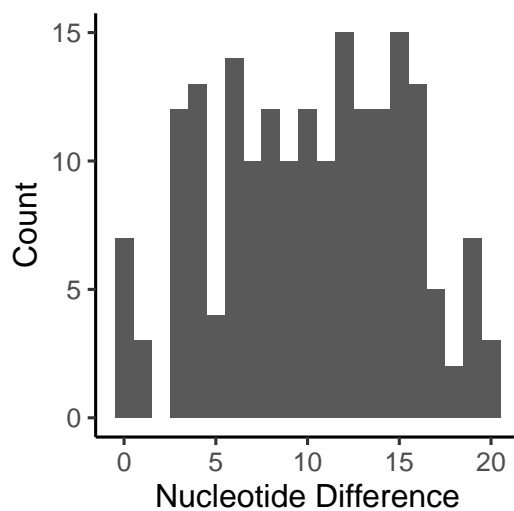
### IGHV2-26\*01

2 sequences assigned  
No exact matches.



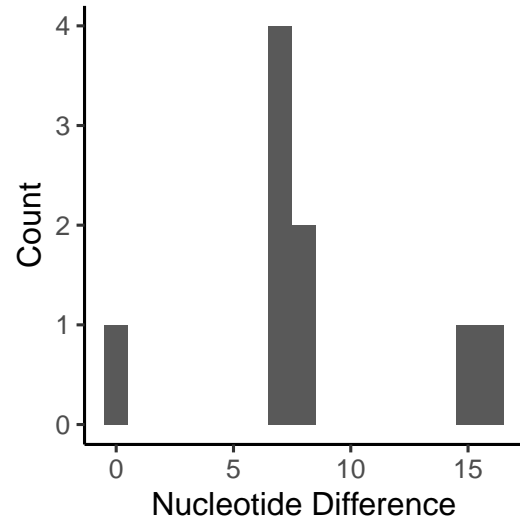
### IGHV3-7\*03

201 sequences assigned  
7 (3.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



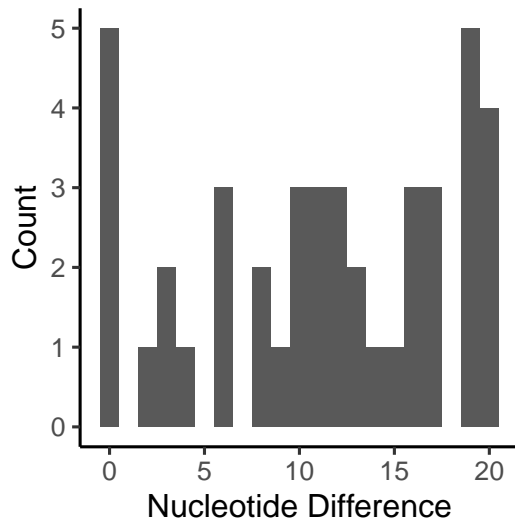
### IGHV3-13\*05

9 sequences assigned  
1 (11.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



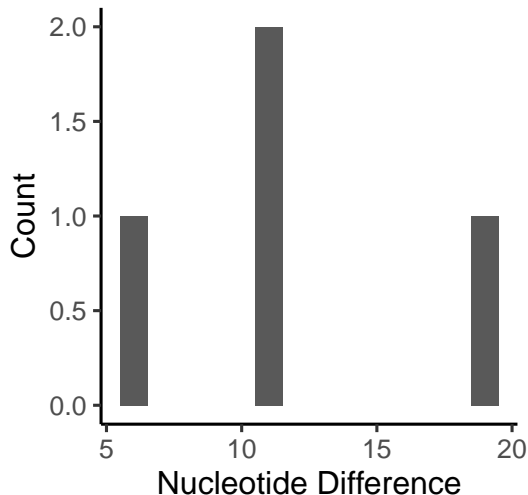
### IGHV3-15\*01\_02

77 sequences assigned  
5 (6.5%) exact matches, in which:  
3 unique CDR3  
3 unique J



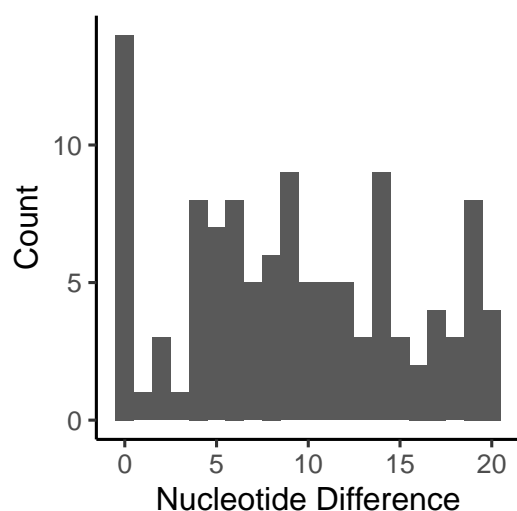
### IGHV3-30-3\*01

4 sequences assigned  
No exact matches.



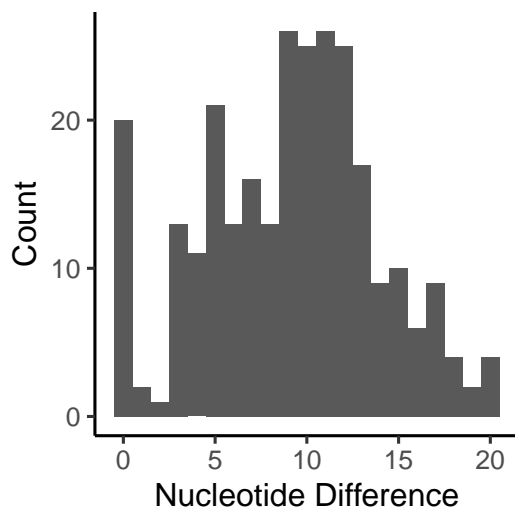
### IGHV3-30\*18

157 sequences assigned  
14 (8.9%) exact matches, in which:  
9 unique CDR3  
5 unique J



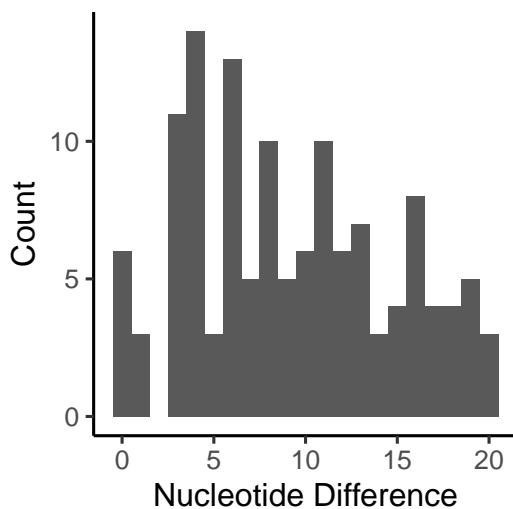
### IGHV3-21\*01\_02

299 sequences assigned  
20 (6.7%) exact matches, in which:  
13 unique CDR3  
2 unique J



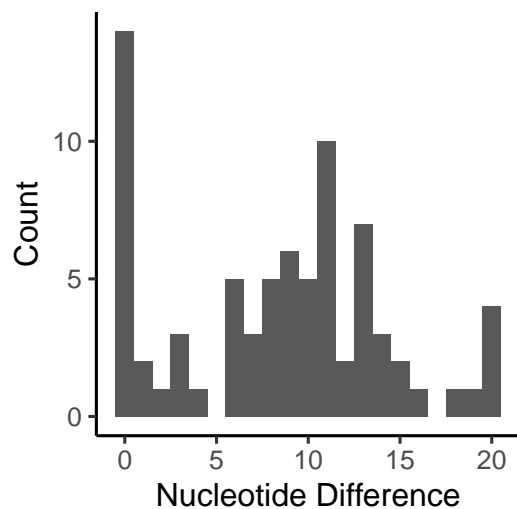
### IGHV3-30\*02

173 sequences assigned  
6 (3.5%) exact matches, in which:  
5 unique CDR3  
2 unique J



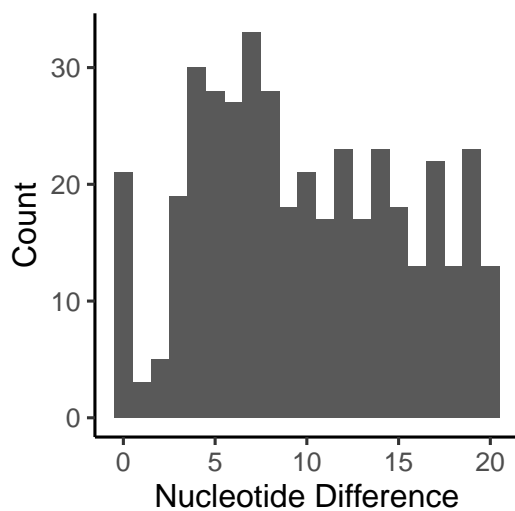
### IGHV3-33\*01

93 sequences assigned  
14 (15.1%) exact matches, in which:  
10 unique CDR3  
5 unique J



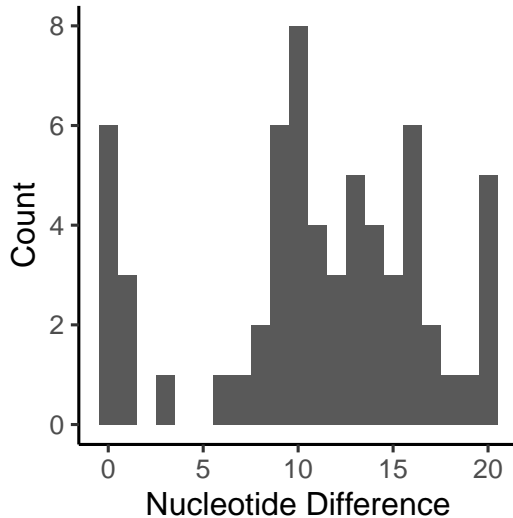
### IGHV3-23\*01\_04

505 sequences assigned  
21 (4.2%) exact matches, in which:  
13 unique CDR3  
4 unique J



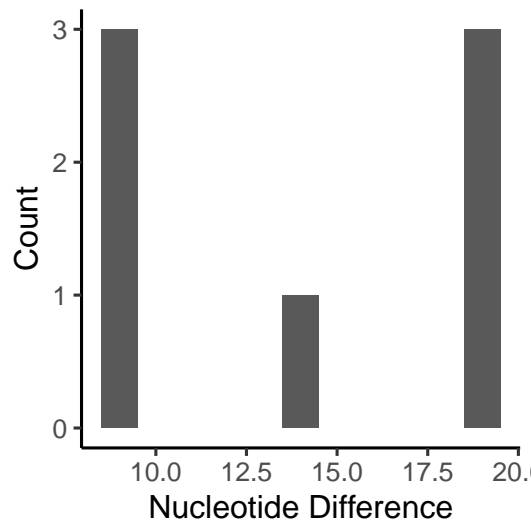
### IGHV3-30\*04

82 sequences assigned  
6 (7.3%) exact matches, in which:  
4 unique CDR3  
3 unique J



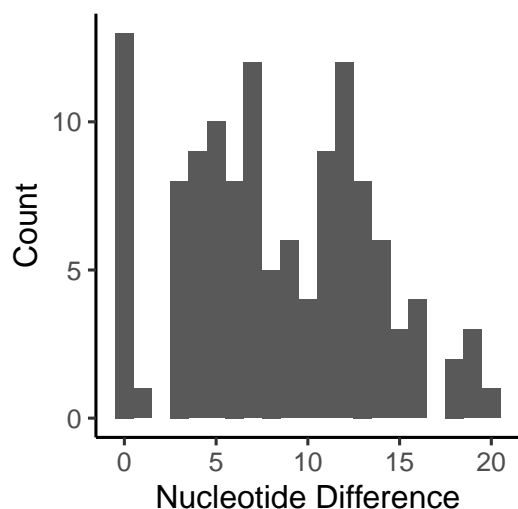
### IGHV3-43\*01

7 sequences assigned  
No exact matches.



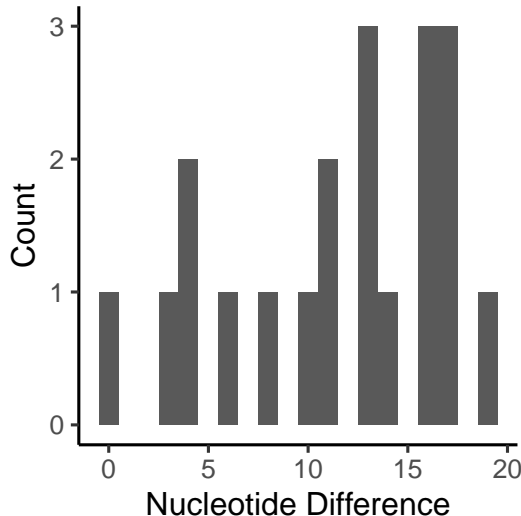
### IGHV3-48\*01

138 sequences assigned  
13 (9.4%) exact matches, in which:  
10 unique CDR3  
3 unique J



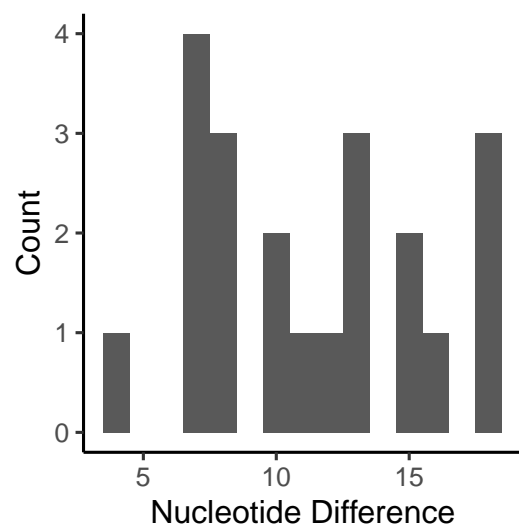
### IGHV3-49\*03\_05

23 sequences assigned  
1 (4.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



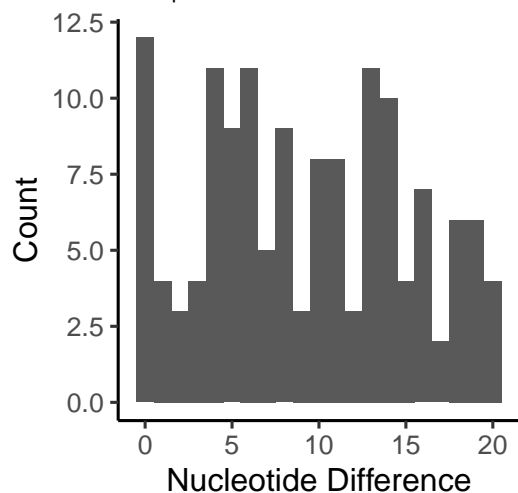
### IGHV3-53\*01\_02

33 sequences assigned  
No exact matches.



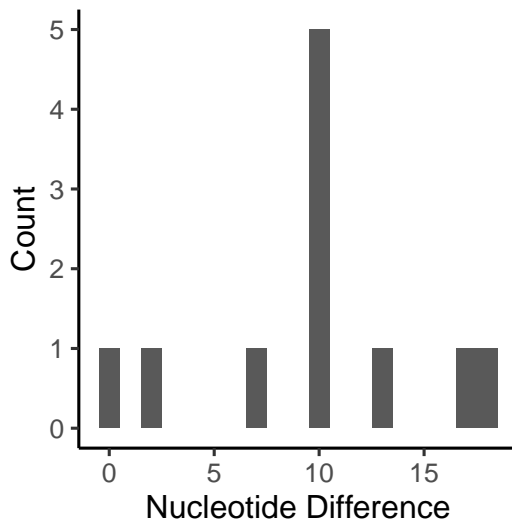
### IGHV3-48\*02

165 sequences assigned  
12 (7.3%) exact matches, in which:  
6 unique CDR3  
3 unique J



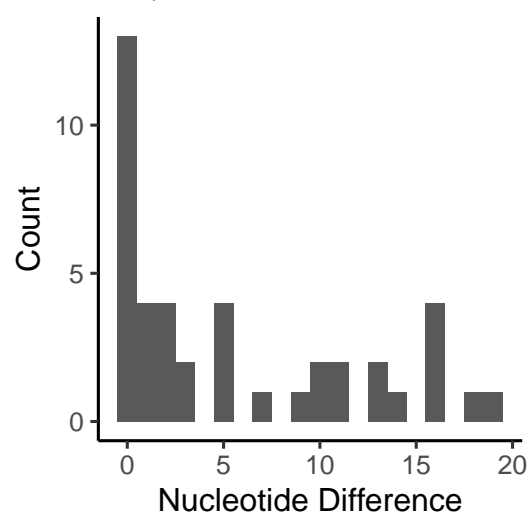
### IGHV3-53\*04

11 sequences assigned  
1 (9.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



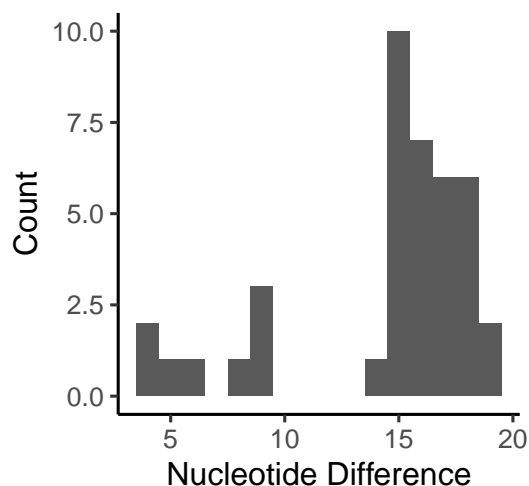
### IGHV3-64\*01

42 sequences assigned  
13 (31%) exact matches, in which:  
8 unique CDR3  
3 unique J



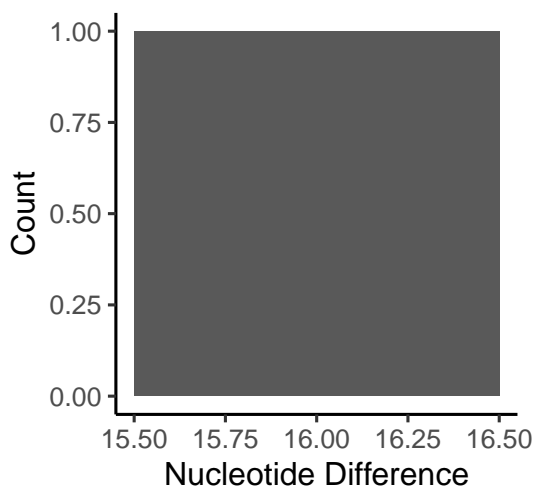
### IGHV3-49\*04

49 sequences assigned  
No exact matches.



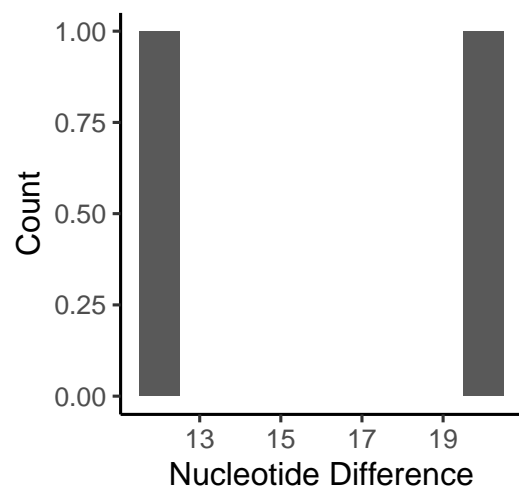
### IGHV3-53\*05

4 sequences assigned  
No exact matches.



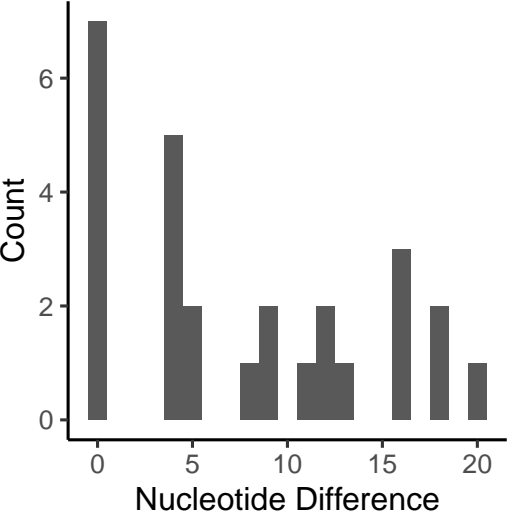
### IGHV3-64\*02\_07

7 sequences assigned  
No exact matches.



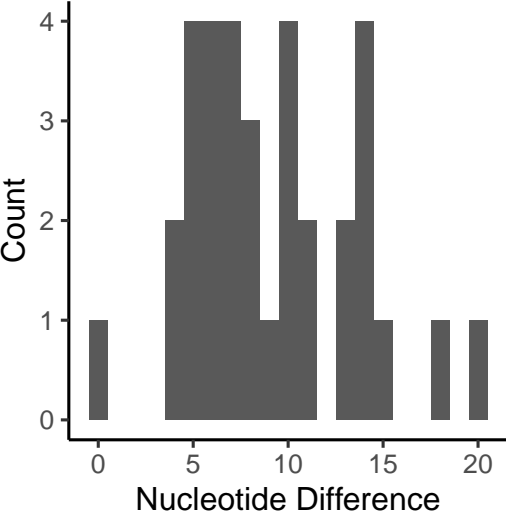
IGHV3-66\*01

30 sequences assigned  
7 (23.3%) exact matches, in which:  
4 unique CDR3  
1 unique J



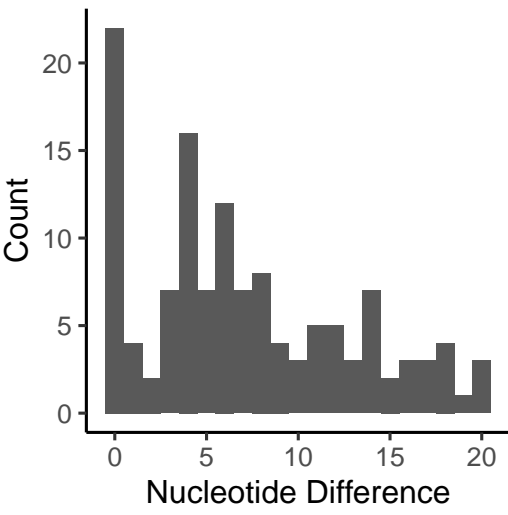
IGHV3-72\*01

38 sequences assigned  
1 (2.6%) exact matches, in which:  
1 unique CDR3  
0 unique J



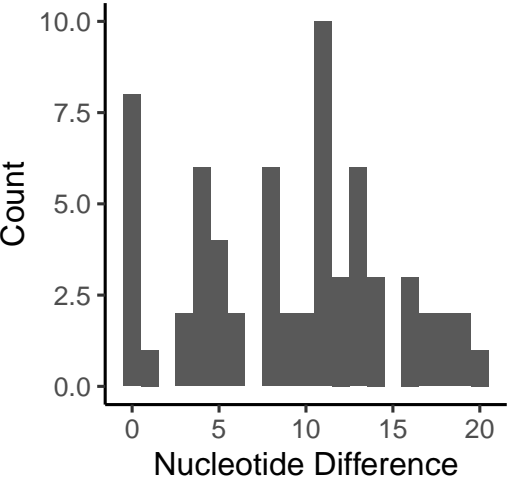
IGHV3-74\*01\_02

153 sequences assigned  
22 (14.4%) exact matches, in which:  
12 unique CDR3  
5 unique J



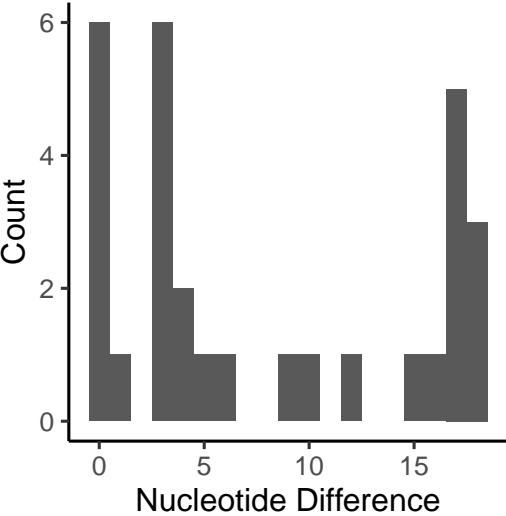
IGHV3-66\*02

79 sequences assigned  
8 (10.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



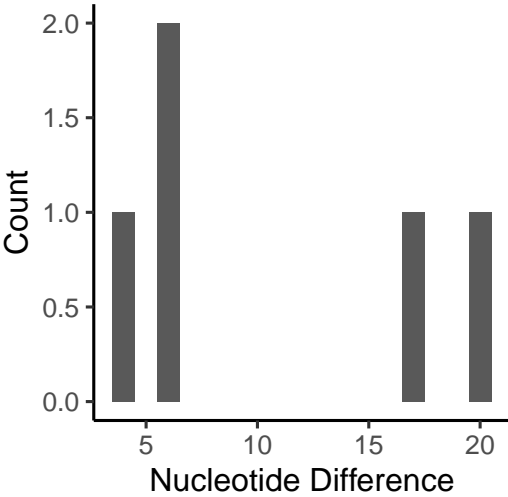
IGHV3-73\*01\_02

35 sequences assigned  
6 (17.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



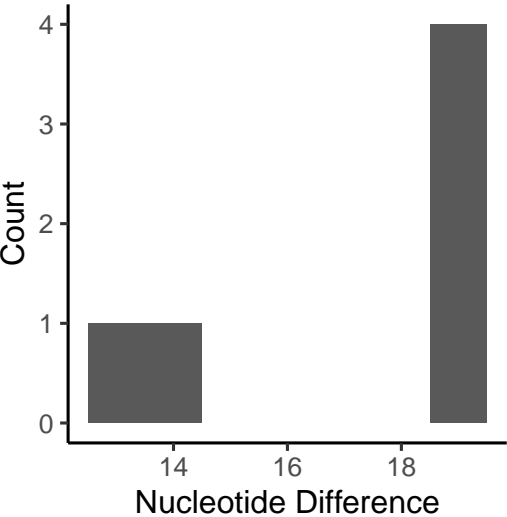
IGHV3-43D\*03

5 sequences assigned  
No exact matches.



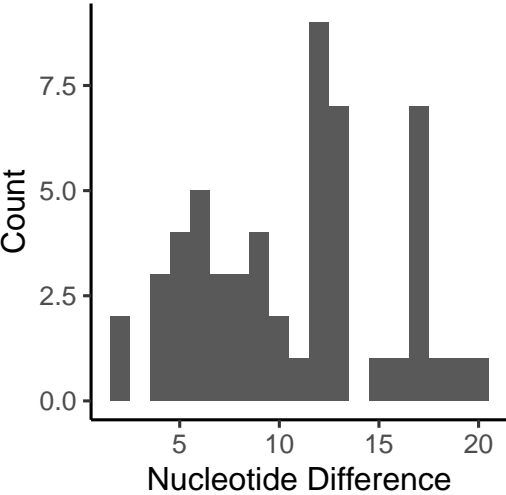
IGHV3-69-1\*01

8 sequences assigned  
No exact matches.



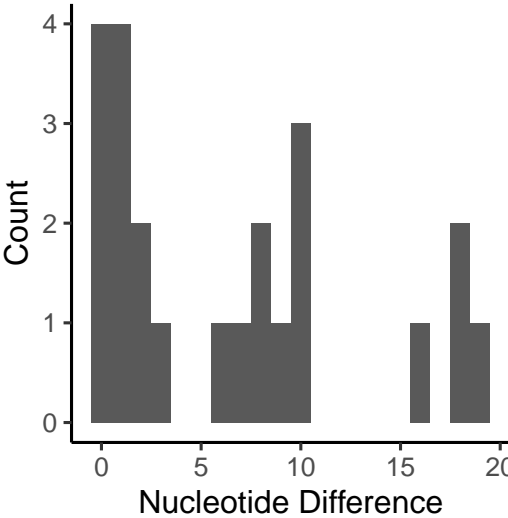
IGHV3-74\*03

65 sequences assigned  
No exact matches.



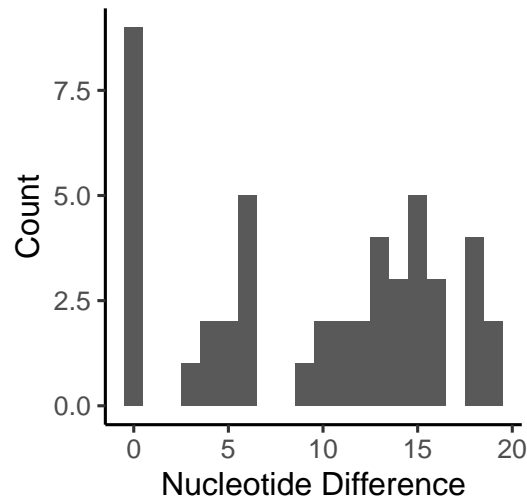
IGHV3-64D\*06

28 sequences assigned  
4 (14.3%) exact matches, in which:  
3 unique CDR3  
1 unique J



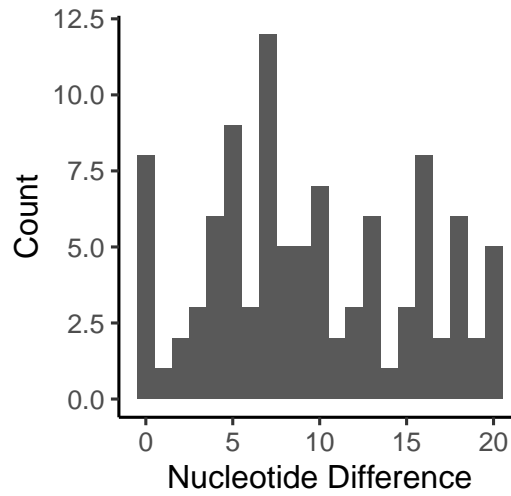
### IGHV4-4\*02\_03

64 sequences assigned  
9 (14.1%) exact matches, in which:  
4 unique CDR3  
2 unique J



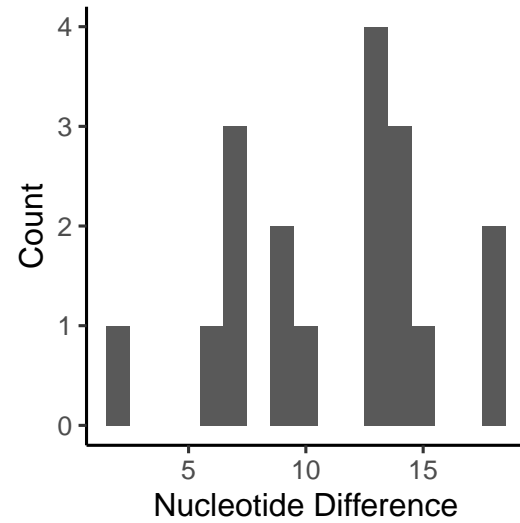
### IGHV4-31\*02

125 sequences assigned  
8 (6.4%) exact matches, in which:  
7 unique CDR3  
2 unique J



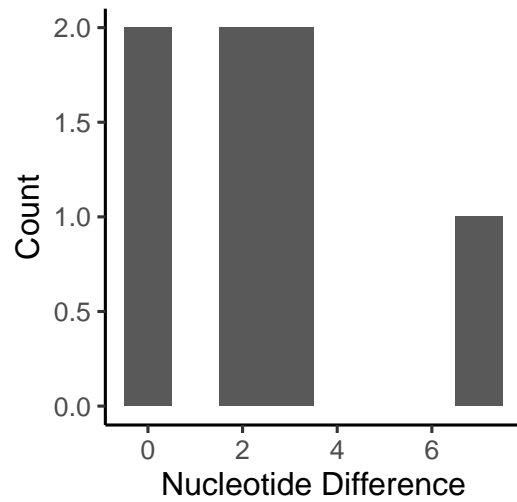
### IGHV4-39\*02

31 sequences assigned  
No exact matches.



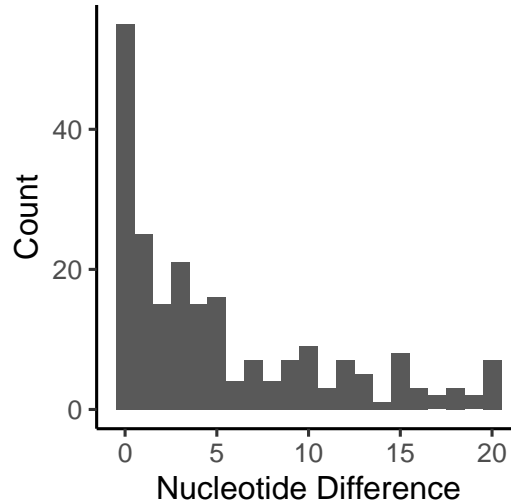
### IGHV4-30-2\*01

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



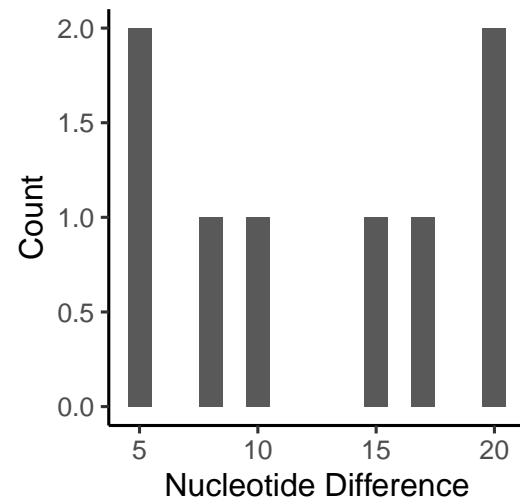
### IGHV4-34\*01\_02

254 sequences assigned  
55 (21.7%) exact matches, in which:  
38 unique CDR3  
4 unique J



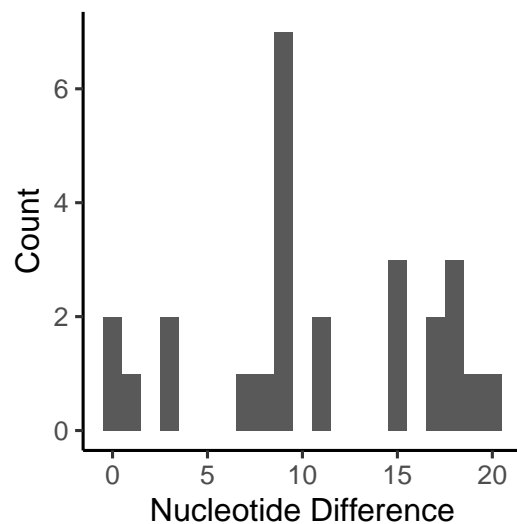
### IGHV4-59\*02

22 sequences assigned  
No exact matches.



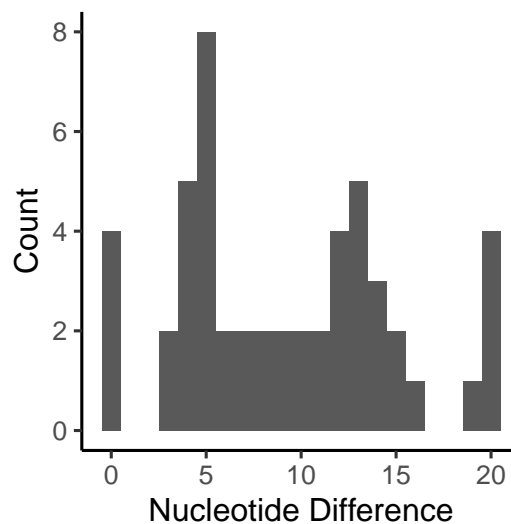
### IGHV4-30-4\*07

34 sequences assigned  
2 (5.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



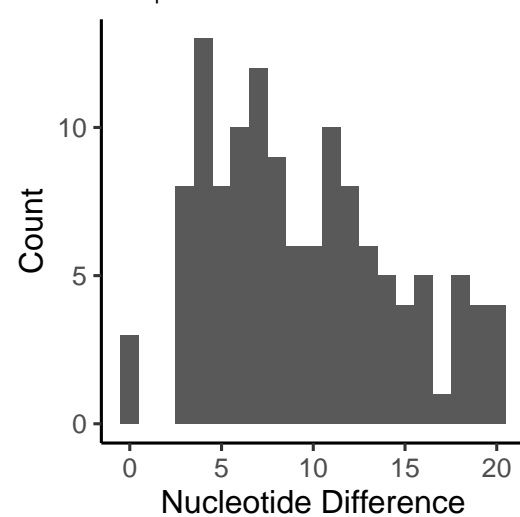
### IGHV4-38-2\*02

70 sequences assigned  
4 (5.7%) exact matches, in which:  
3 unique CDR3  
1 unique J



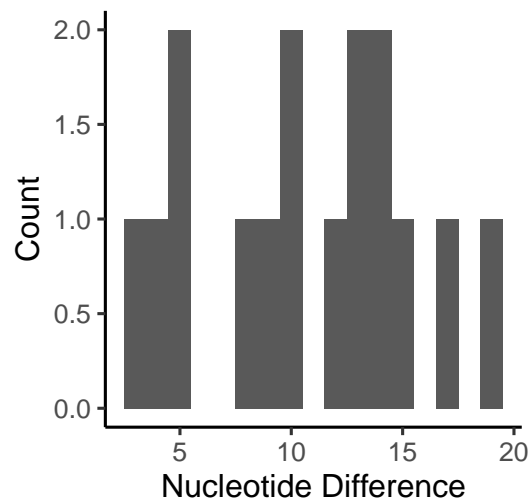
### IGHV4-59\*08

143 sequences assigned  
3 (2.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



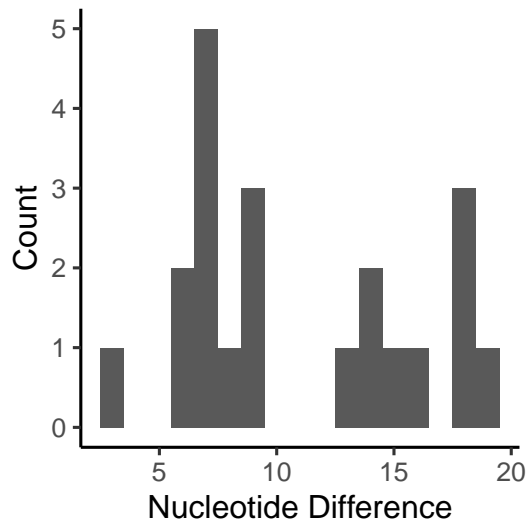
### IGHV4-59\*11

22 sequences assigned  
No exact matches.



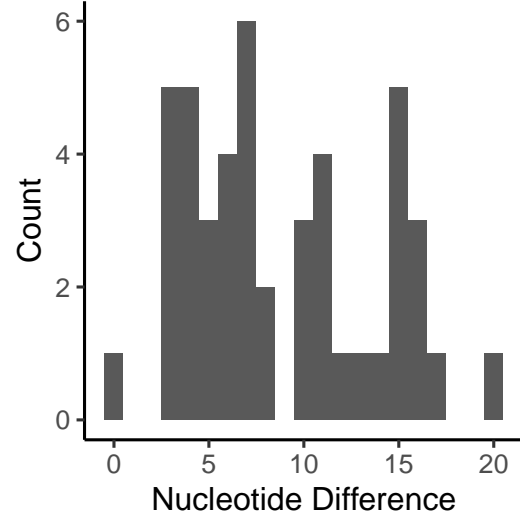
### IGHV4-61\*09

30 sequences assigned  
No exact matches.



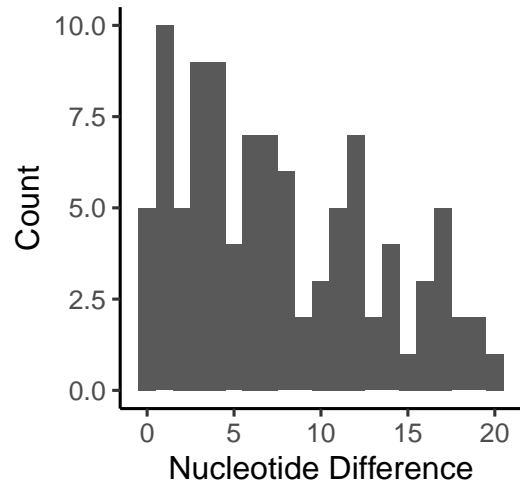
### IGHV5-51\*01\_03

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



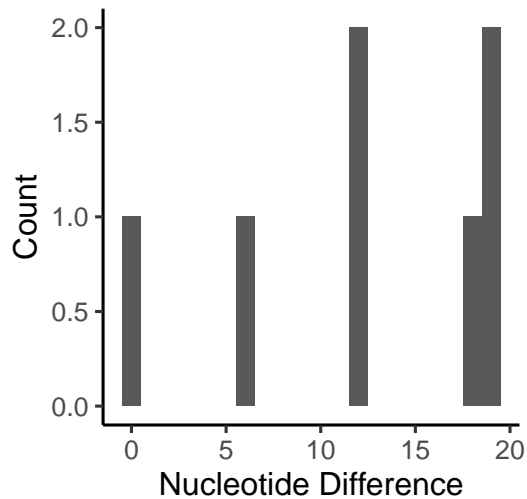
### IGHV4-59\*01\_07

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



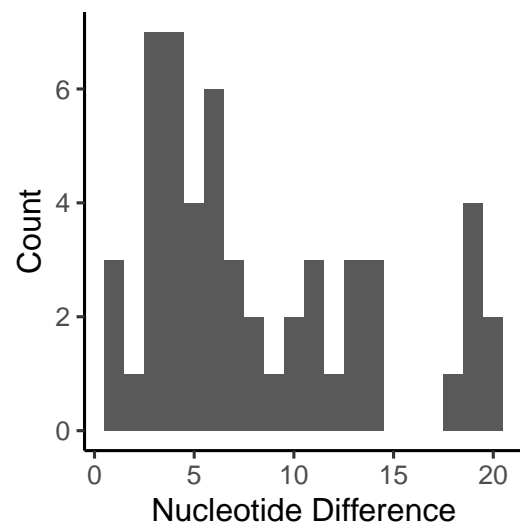
### IGHV5-10-1\*01\_03

10 sequences assigned  
1 (10%) exact matches, in which:  
1 unique CDR3  
1 unique J



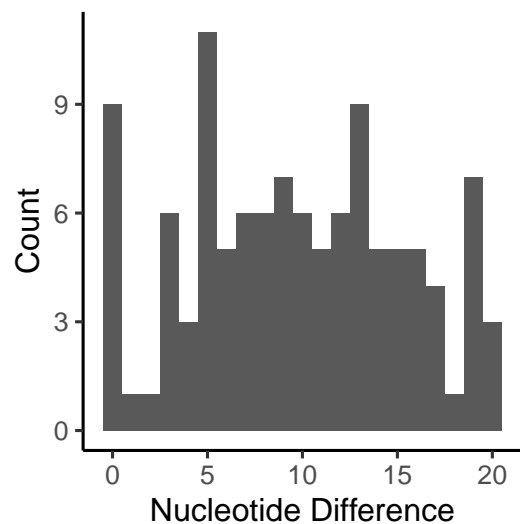
### IGHV6-1\*01\_02

59 sequences assigned  
No exact matches.



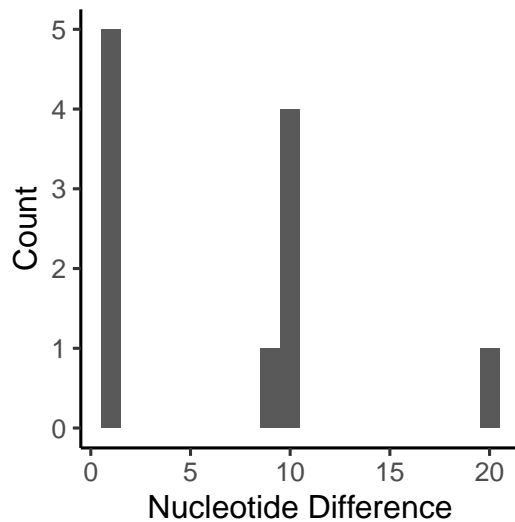
### IGHV4-61\*02

148 sequences assigned  
9 (6.1%) exact matches, in which:  
7 unique CDR3  
4 unique J



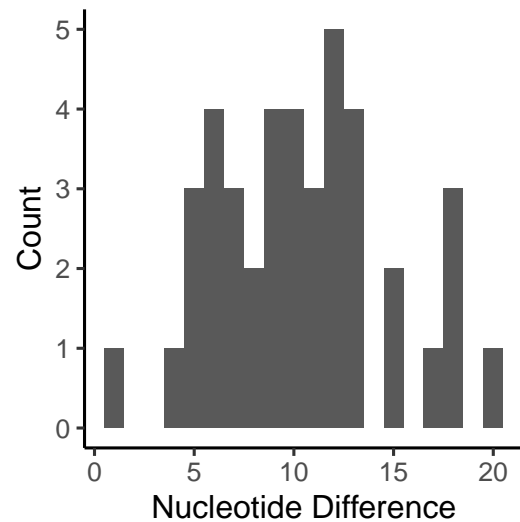
### IGHV5-51\*07

16 sequences assigned  
No exact matches.

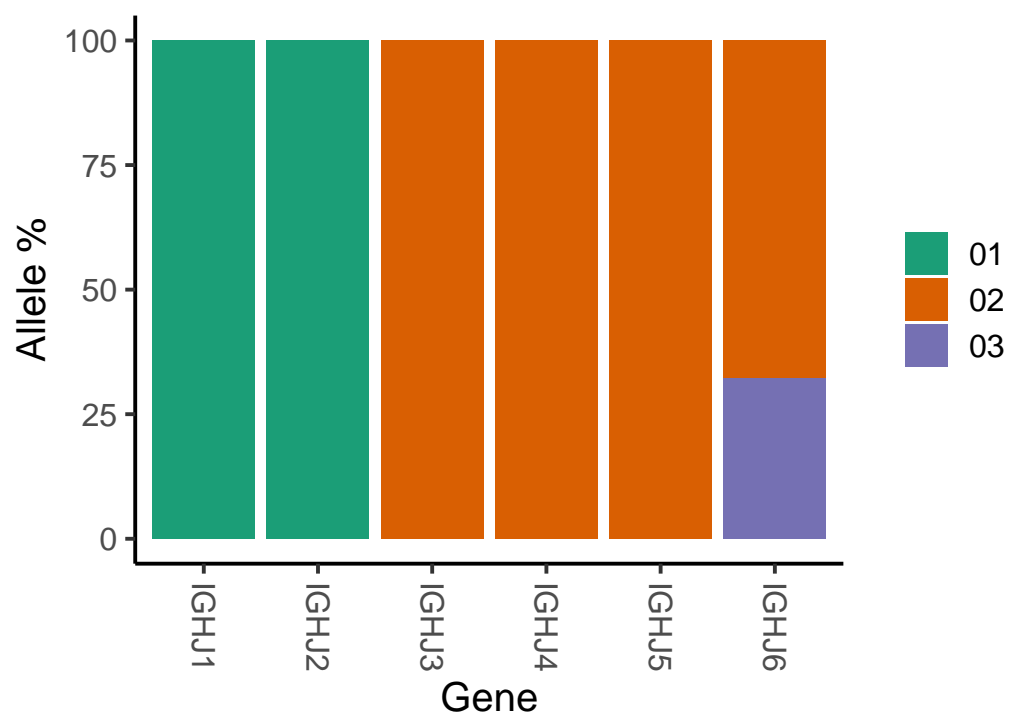


### IGHV7-4-1\*02

53 sequences assigned  
No exact matches.

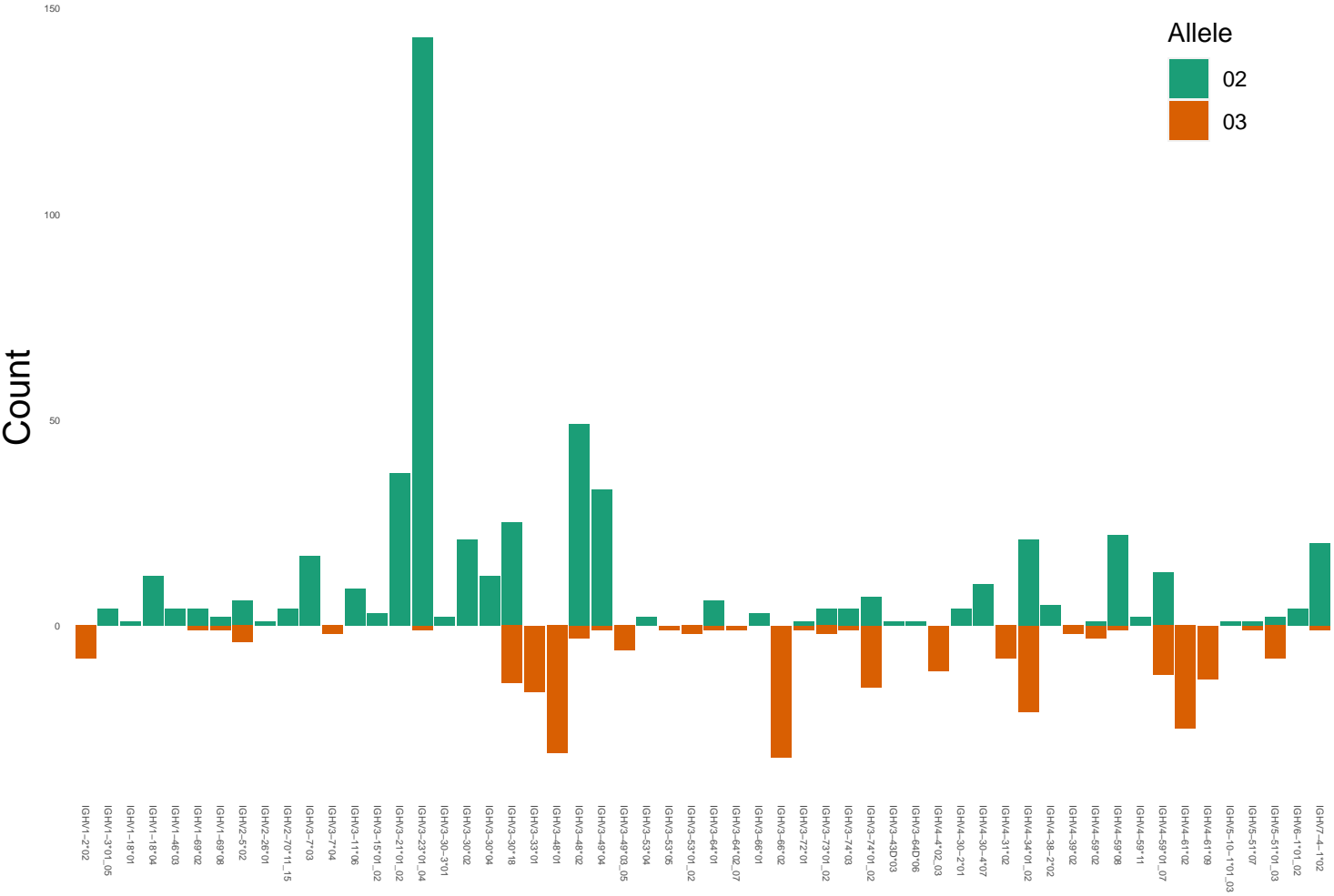


Allele Usage





Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.