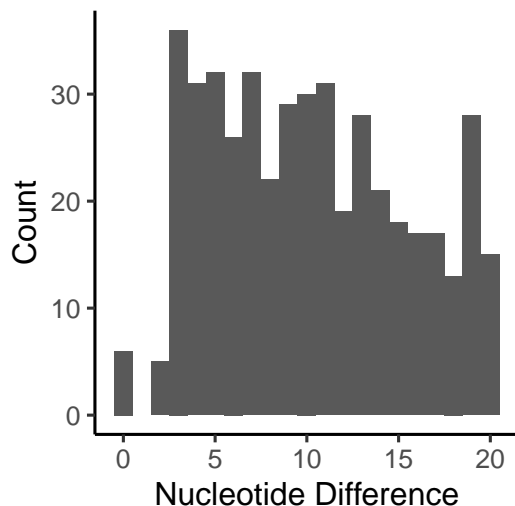


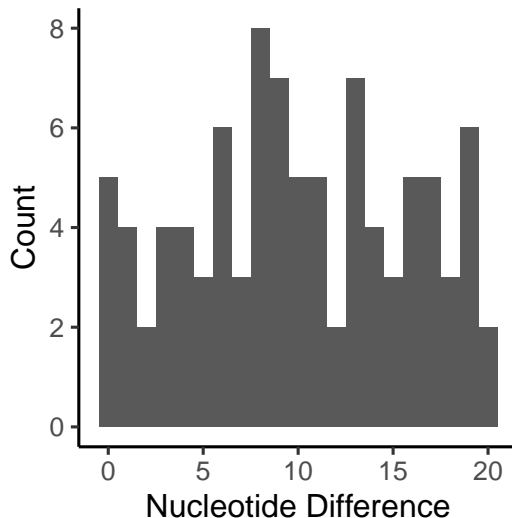
### IGHV1-2\*02

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



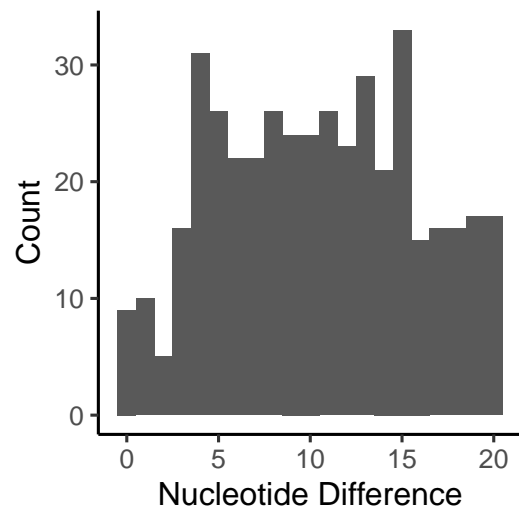
### IGHV1-3\*01\_05

122 sequences assigned  
5 (4.1%) exact matches, in which:  
5 unique CDR3  
2 unique J



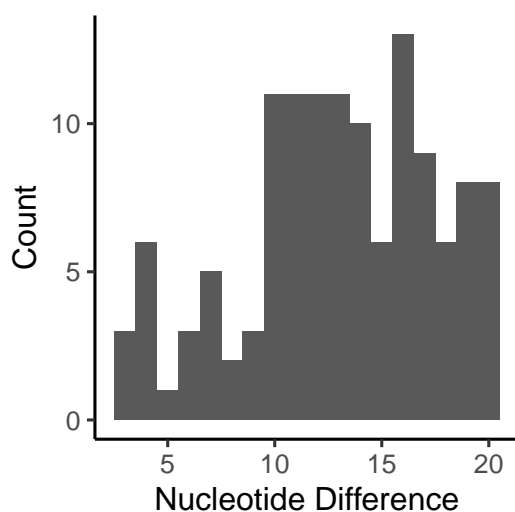
### IGHV1-18\*01

568 sequences assigned  
9 (1.6%) exact matches, in which:  
9 unique CDR3  
5 unique J



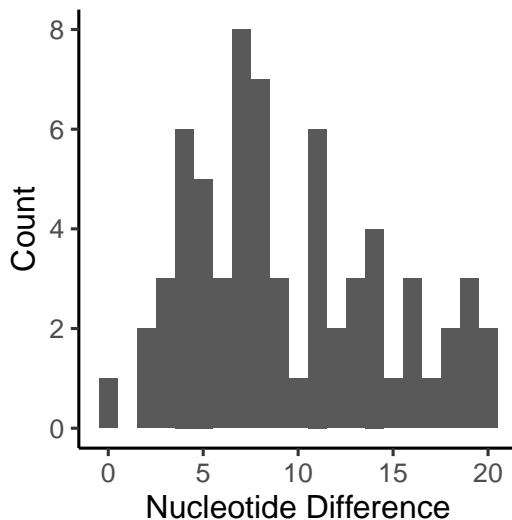
### IGHV1-2\*06

200 sequences assigned  
No exact matches.



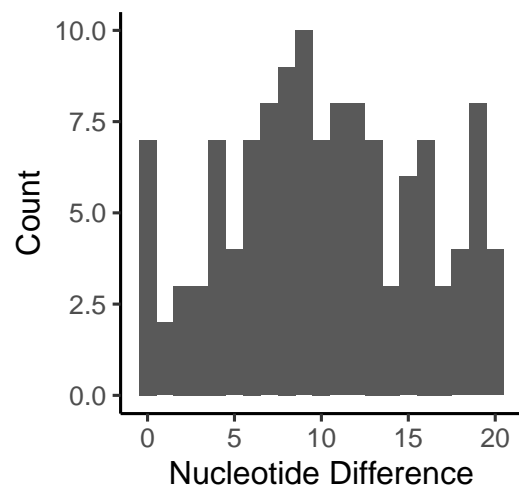
### IGHV1-8\*01

78 sequences assigned  
1 (1.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



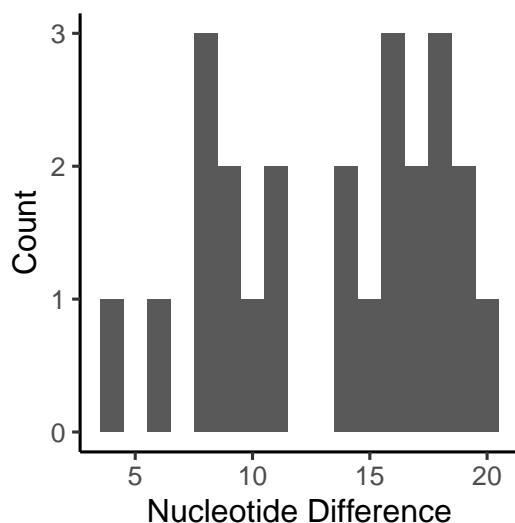
### IGHV1-18\*04

208 sequences assigned  
7 (3.4%) exact matches, in which:  
7 unique CDR3  
4 unique J



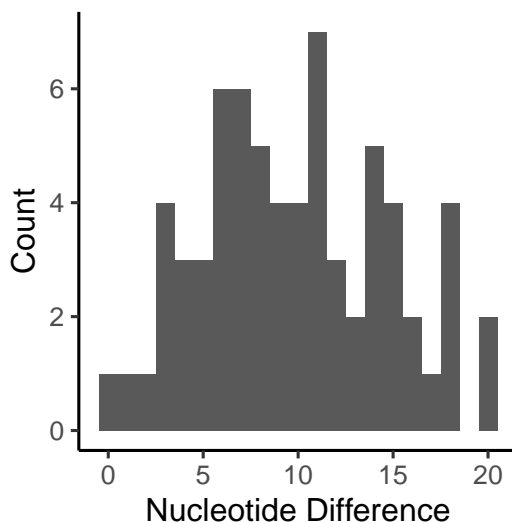
### IGHV1-3\*04

32 sequences assigned  
No exact matches.



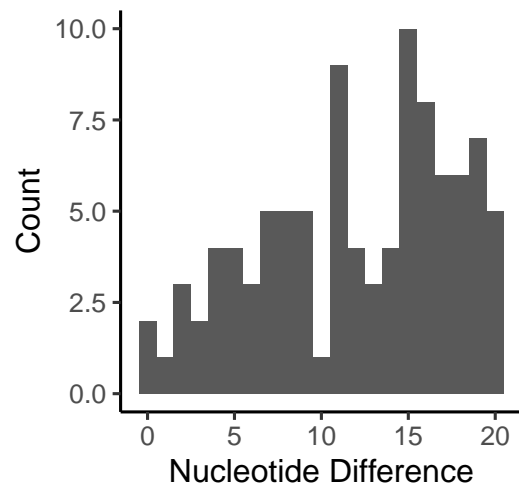
### IGHV1-8\*02

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



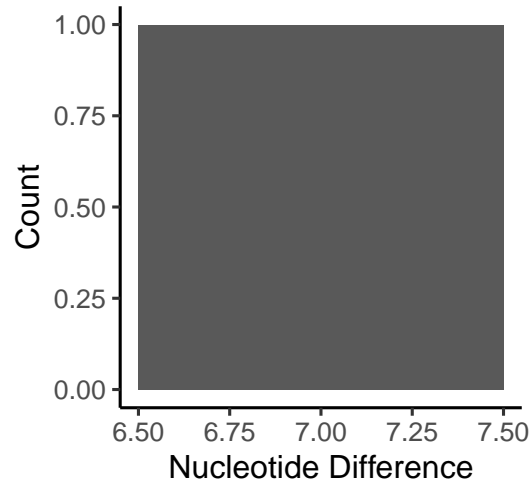
### IGHV1-24\*01

120 sequences assigned  
2 (1.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



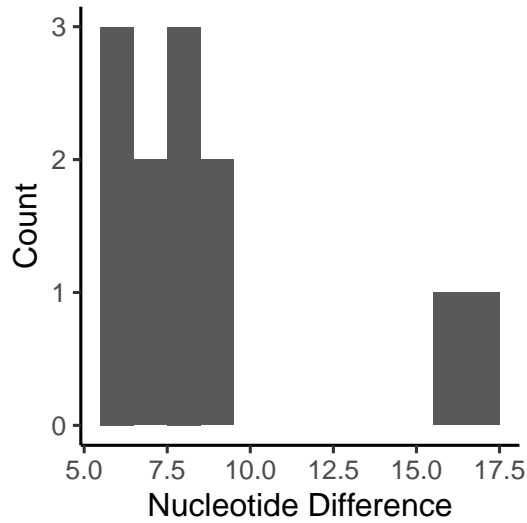
### IGHV1-45\*02

1 sequences assigned  
No exact matches.



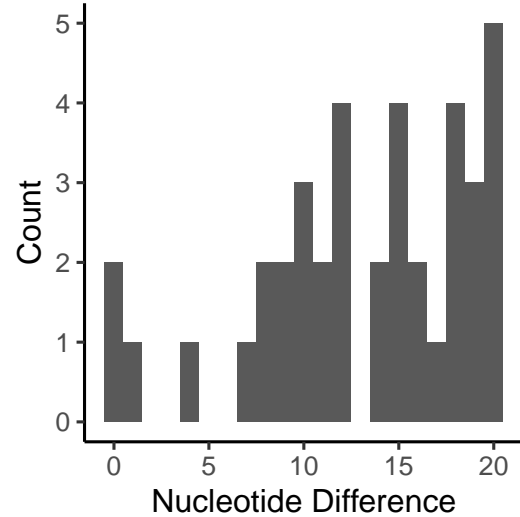
### IGHV1-58\*02

16 sequences assigned  
No exact matches.



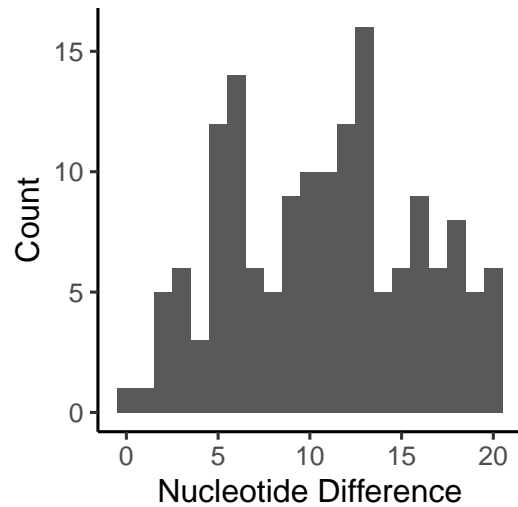
### IGHV1-69\*02

82 sequences assigned  
2 (2.4%) exact matches, in which:  
2 unique CDR3  
2 unique J



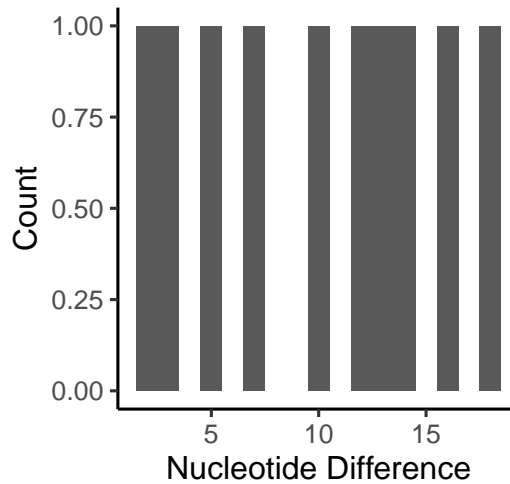
### IGHV1-46\*01

199 sequences assigned  
1 (0.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



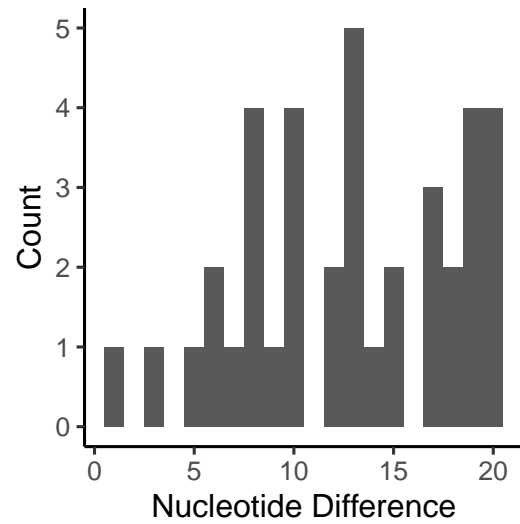
### IGHV1-58\*01\_03

12 sequences assigned  
No exact matches.



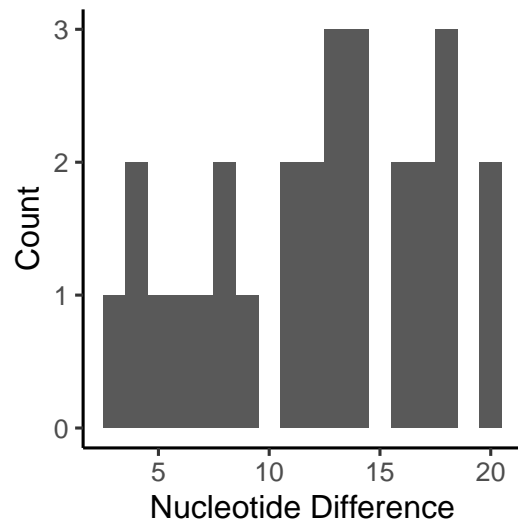
### IGHV1-69\*08

65 sequences assigned  
No exact matches.



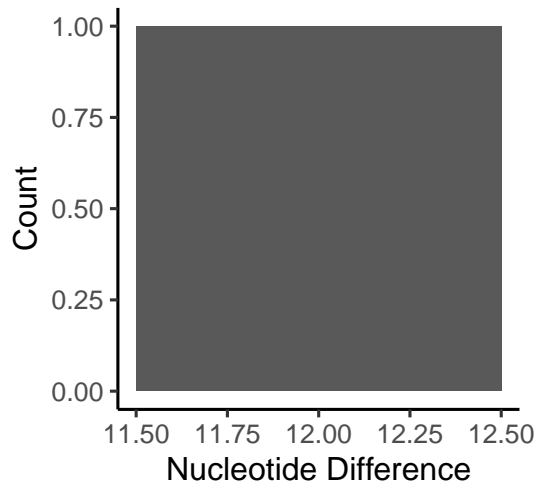
### IGHV1-46\*03

45 sequences assigned  
No exact matches.



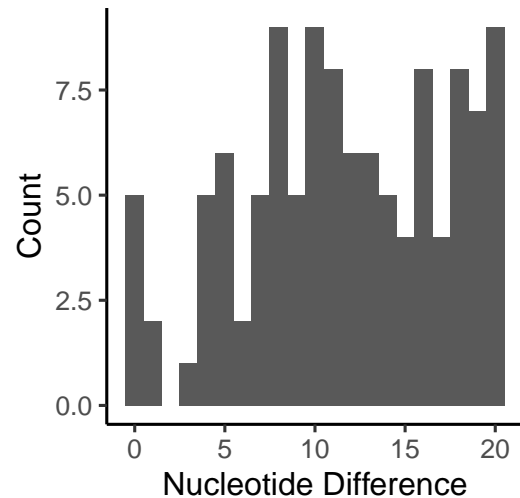
### IGHV1-69-2\*01

2 sequences assigned  
No exact matches.



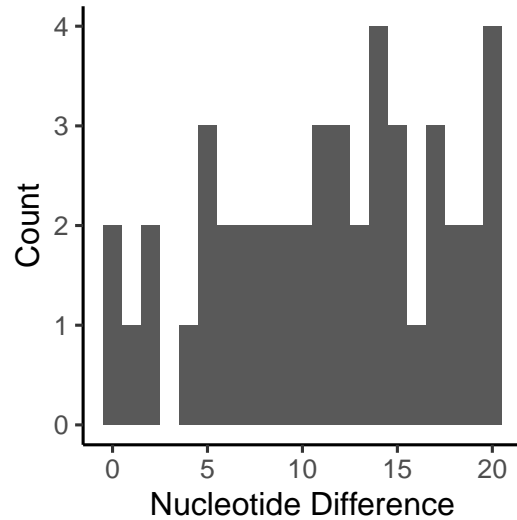
### IGHV1-69\*01\_12\_13

194 sequences assigned  
5 (2.6%) exact matches, in which:  
5 unique CDR3  
4 unique J



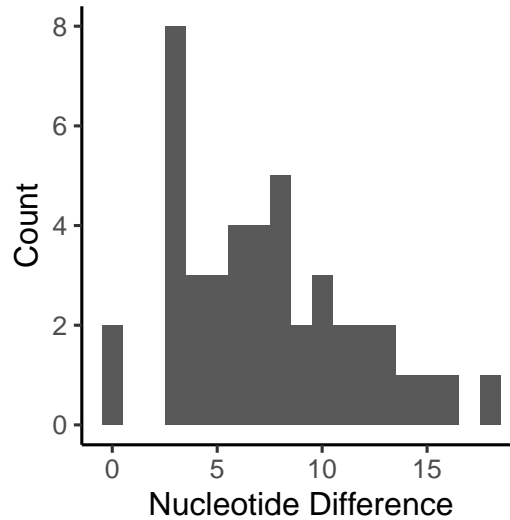
### IGHV1-69\*06\_14

85 sequences assigned  
2 (2.4%) exact matches, in which:  
2 unique CDR3  
2 unique J



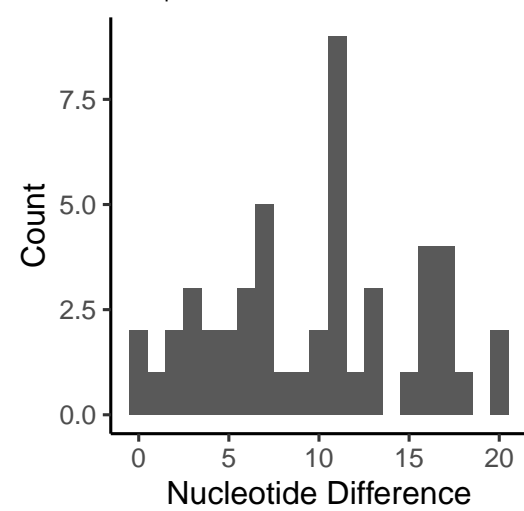
### IGHV2-5\*05\_09

49 sequences assigned  
2 (4.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



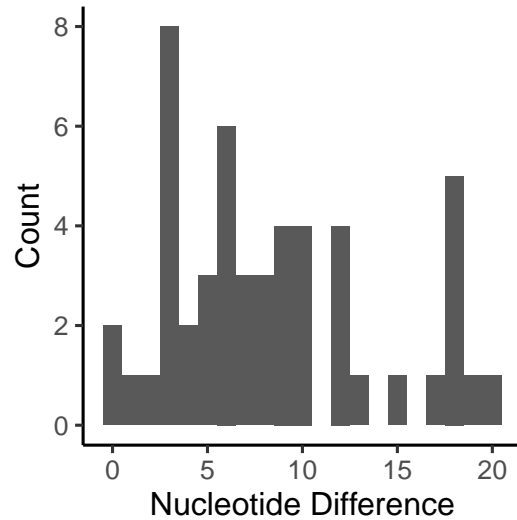
### IGHV2-70\*11\_15

52 sequences assigned  
2 (3.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



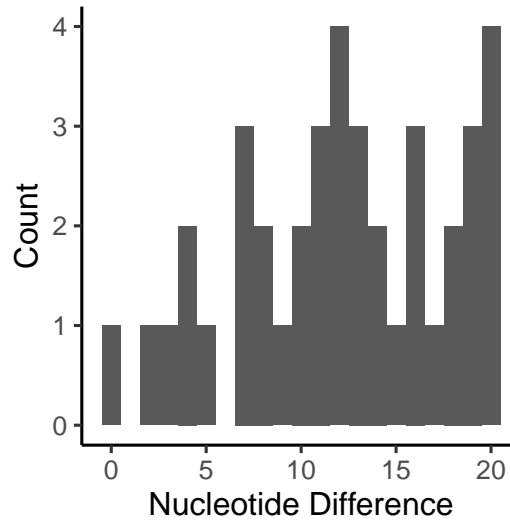
### IGHV2-5\*01

59 sequences assigned  
2 (3.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



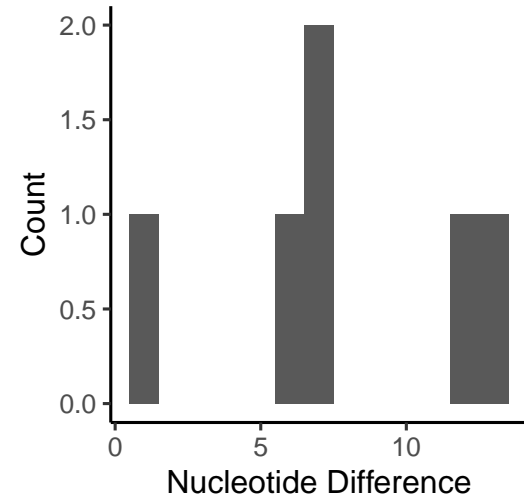
### IGHV2-26\*01

46 sequences assigned  
1 (2.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



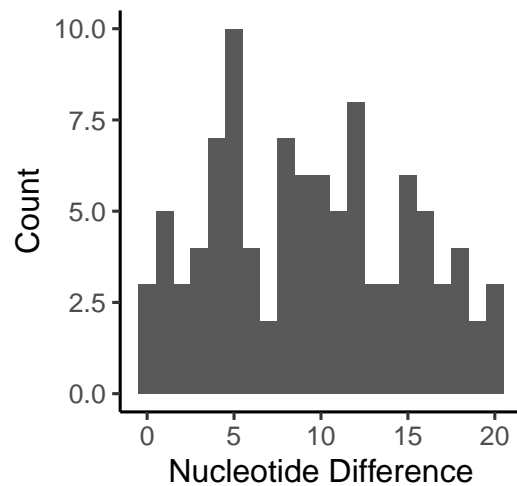
### IGHV2-70\*16\_17

8 sequences assigned  
No exact matches.



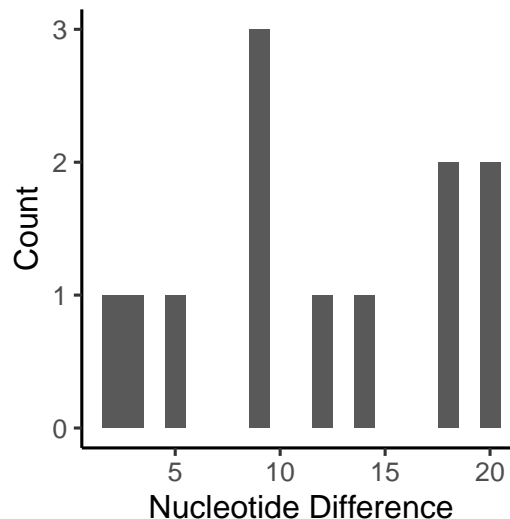
### IGHV2-5\*02

119 sequences assigned  
3 (2.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



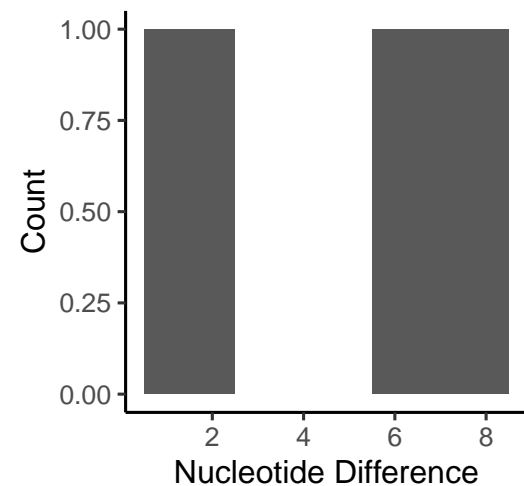
### IGHV2-70\*01

15 sequences assigned  
No exact matches.



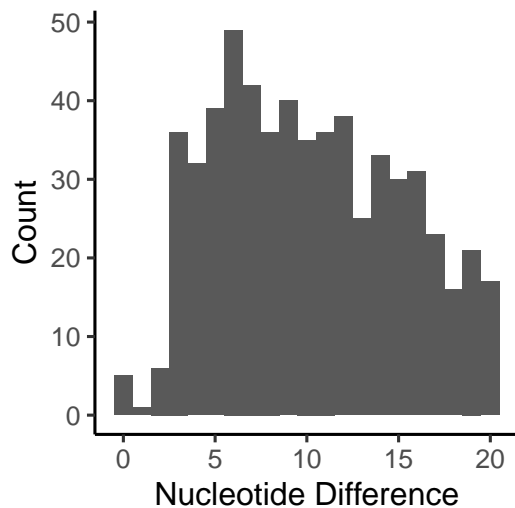
### IGHV2-70D\*04

7 sequences assigned  
No exact matches.



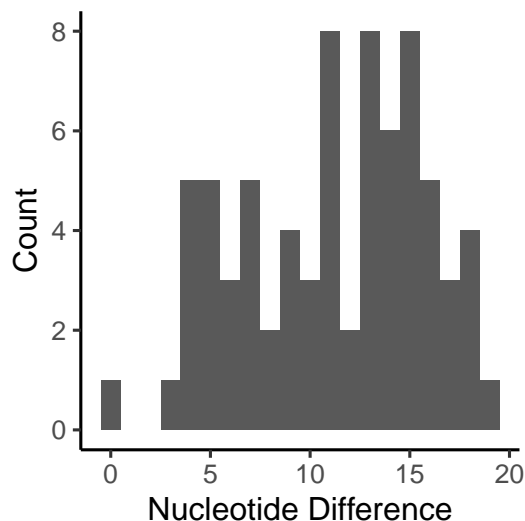
### IGHV3-7\*01

734 sequences assigned  
5 (0.7%) exact matches, in which:  
5 unique CDR3  
1 unique J



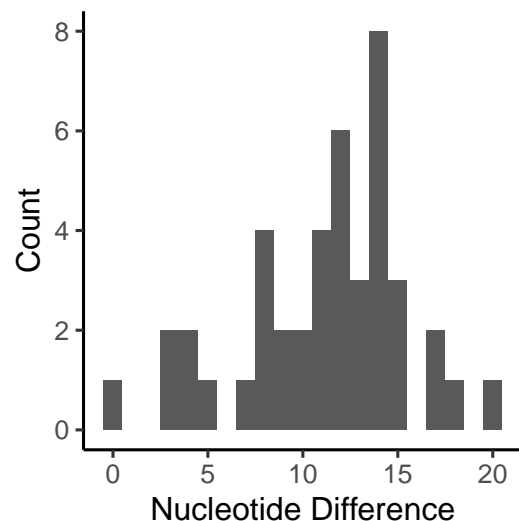
### IGHV3-11\*01

109 sequences assigned  
1 (0.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



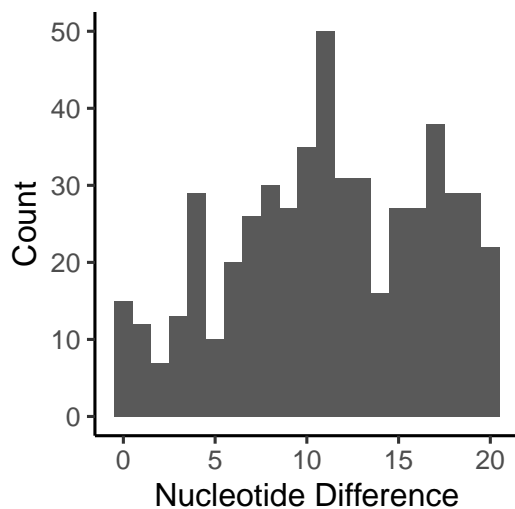
### IGHV3-13\*01

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



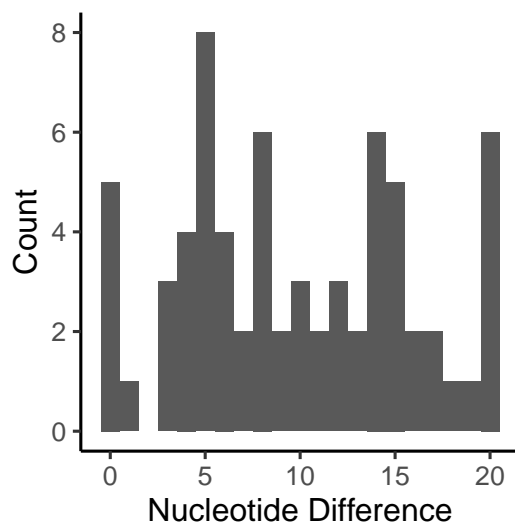
### IGHV3-7\*03

654 sequences assigned  
15 (2.3%) exact matches, in which:  
11 unique CDR3  
5 unique J



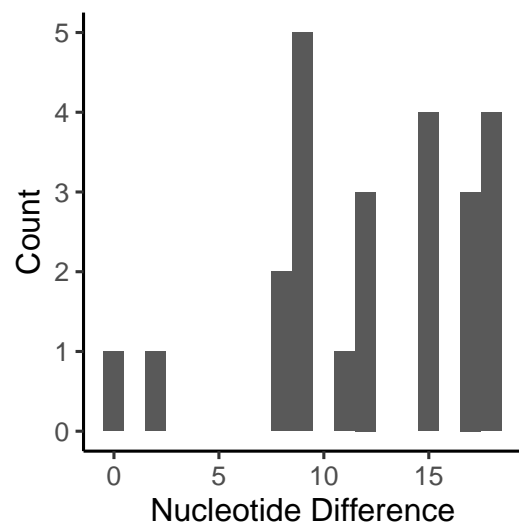
### IGHV3-11\*04

85 sequences assigned  
5 (5.9%) exact matches, in which:  
4 unique CDR3  
2 unique J



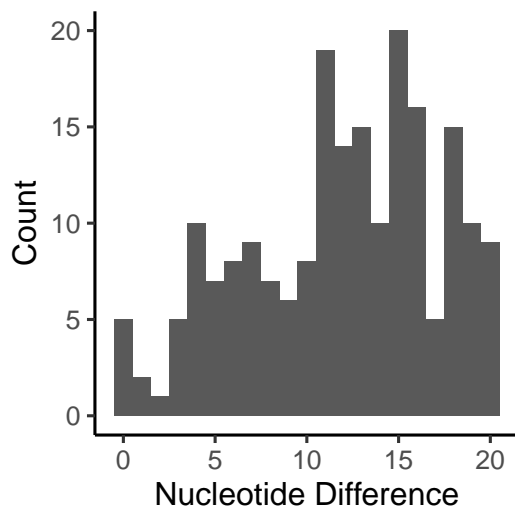
### IGHV3-13\*05

24 sequences assigned  
1 (4.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



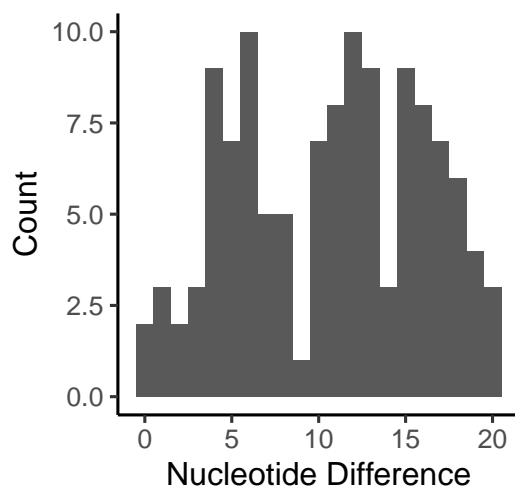
### IGHV3-9\*01

234 sequences assigned  
5 (2.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



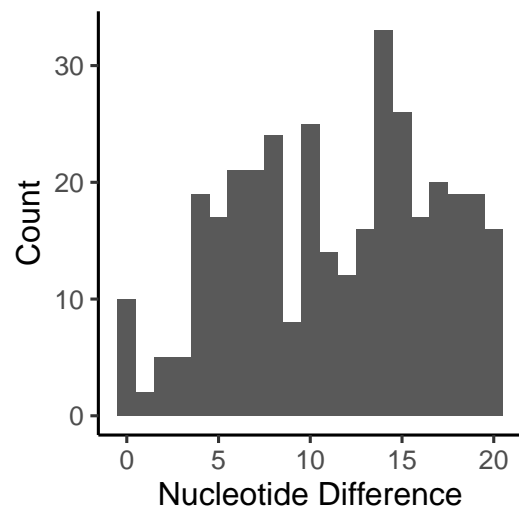
### IGHV3-11\*06

180 sequences assigned  
2 (1.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



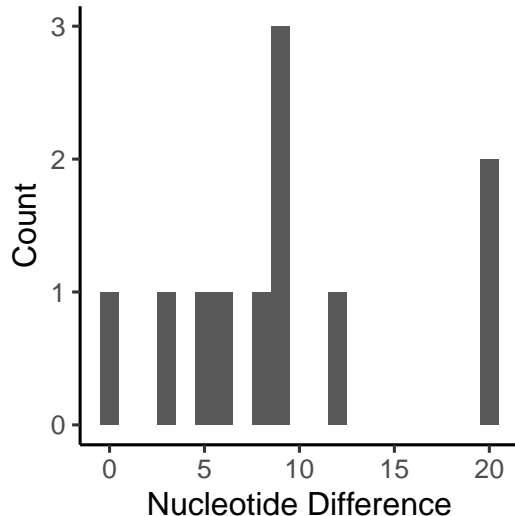
### IGHV3-15\*01\_02

449 sequences assigned  
10 (2.2%) exact matches, in which:  
7 unique CDR3  
3 unique J



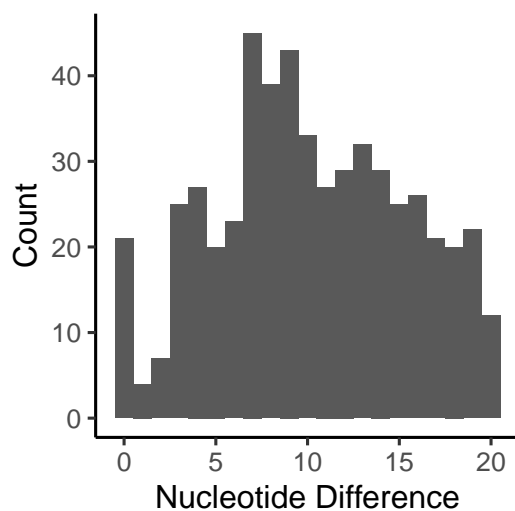
### IGHV3-20\*01\_02

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



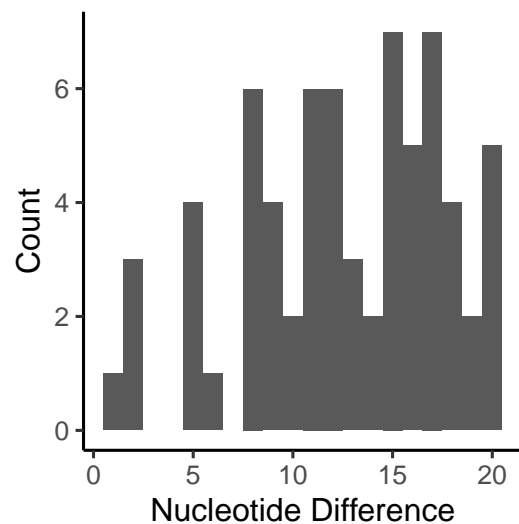
### IGHV3-21\*01\_02

654 sequences assigned  
21 (3.2%) exact matches, in which:  
17 unique CDR3  
5 unique J



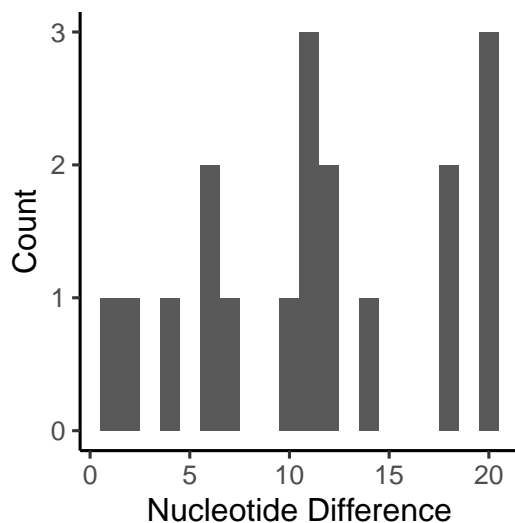
### IGHV3-43\*01

89 sequences assigned  
No exact matches.



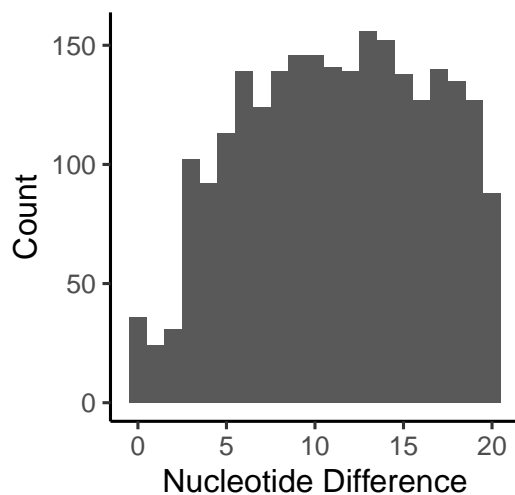
### IGHV3-20\*03\_04

21 sequences assigned  
No exact matches.



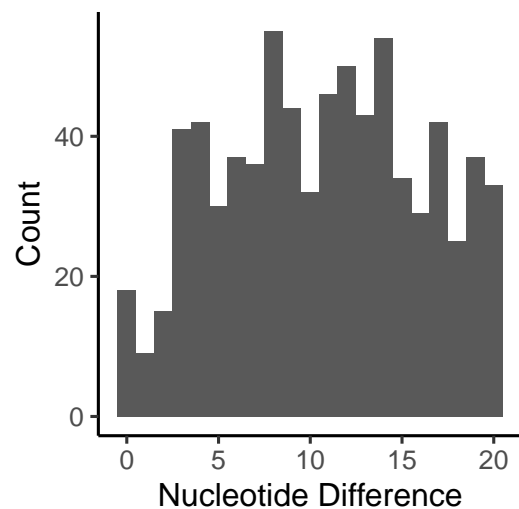
### IGHV3-23\*01\_04

3338 sequences assigned  
36 (1.1%) exact matches, in which:  
32 unique CDR3  
6 unique J



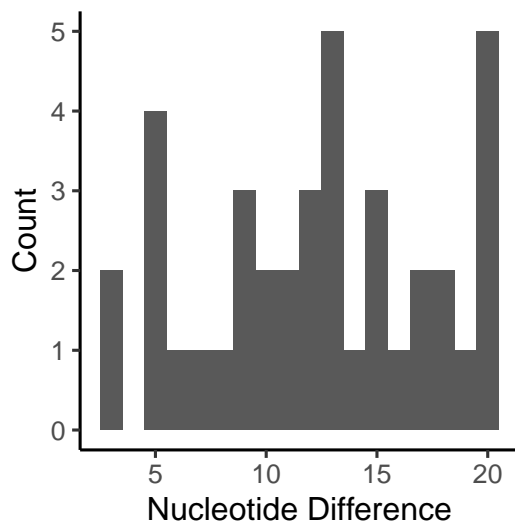
### IGHV3-48\*02

953 sequences assigned  
18 (1.9%) exact matches, in which:  
15 unique CDR3  
5 unique J



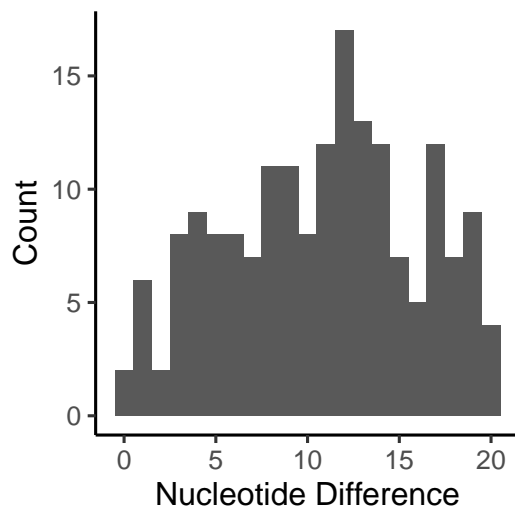
### IGHV3-21\*06

94 sequences assigned  
No exact matches.



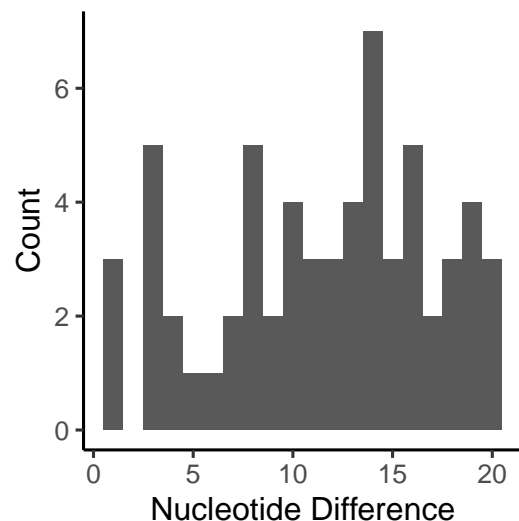
### IGHV3-33\*01

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



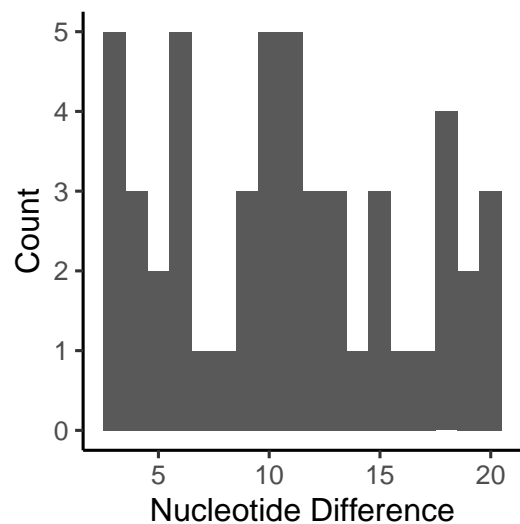
### IGHV3-49\*04

74 sequences assigned  
No exact matches.



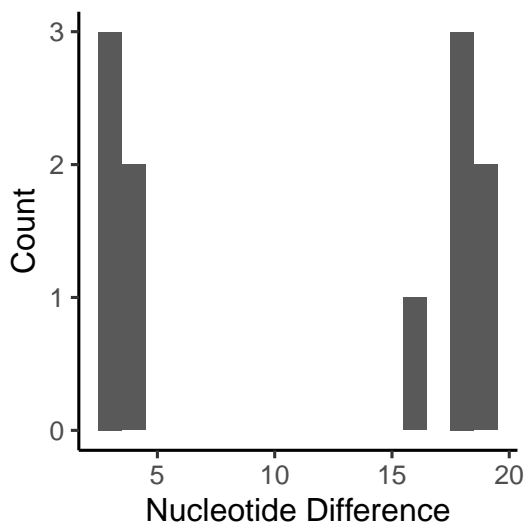
### IGHV3-49\*03\_05

67 sequences assigned  
No exact matches.



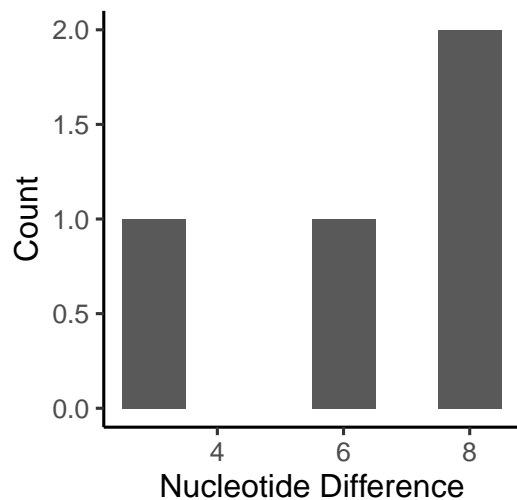
### IGHV3-64\*02\_07

18 sequences assigned  
No exact matches.



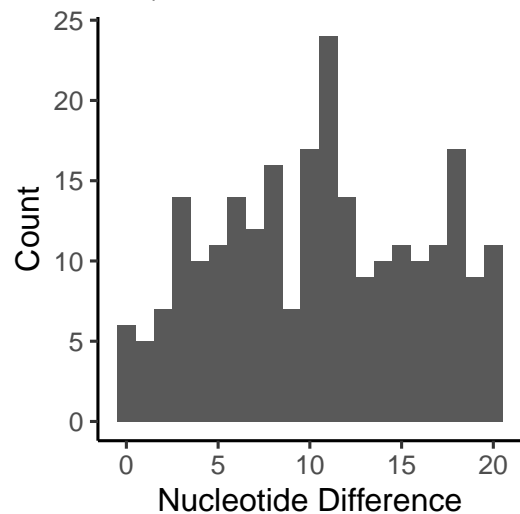
### IGHV3-69-1\*02

5 sequences assigned  
No exact matches.



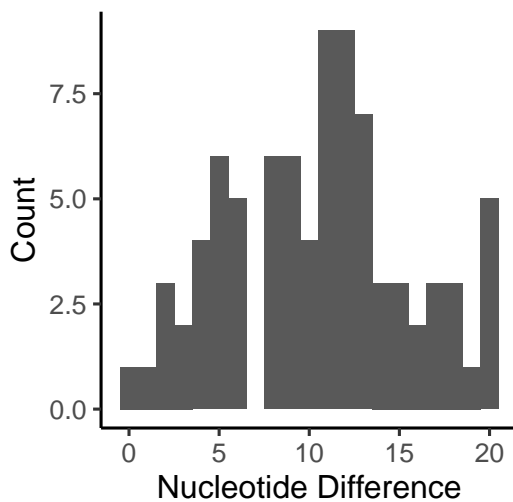
### IGHV3-53\*01\_02

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



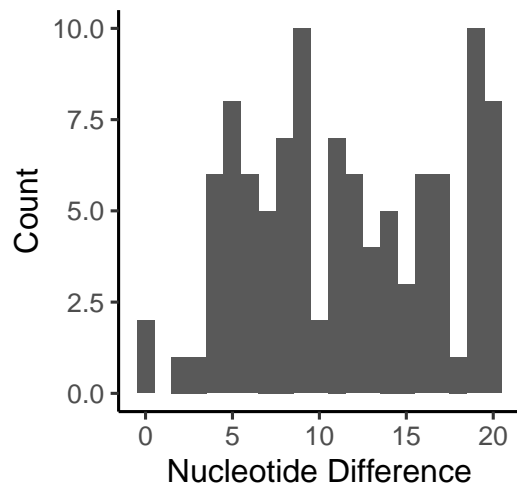
### IGHV3-66\*01

126 sequences assigned  
1 (0.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



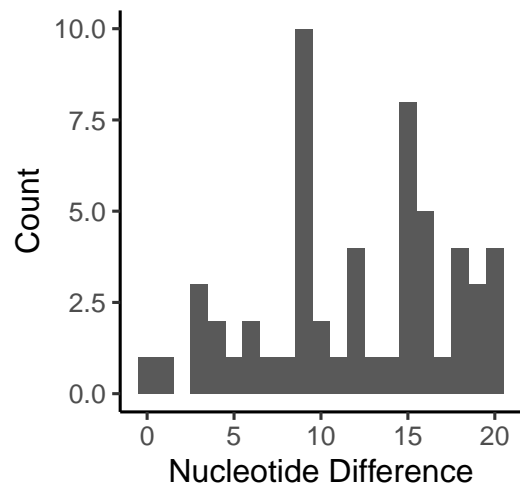
### IGHV3-72\*01

130 sequences assigned  
2 (1.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



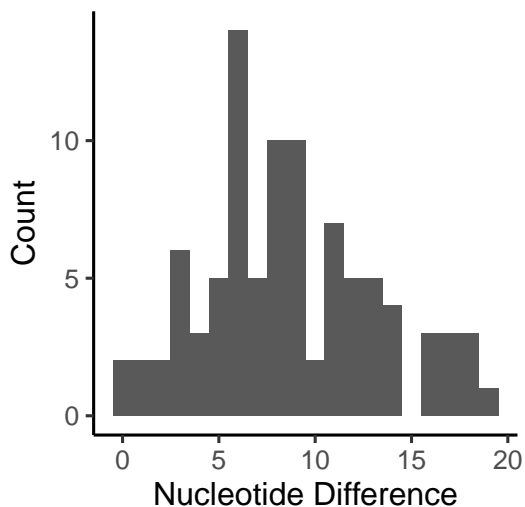
### IGHV3-64\*01

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



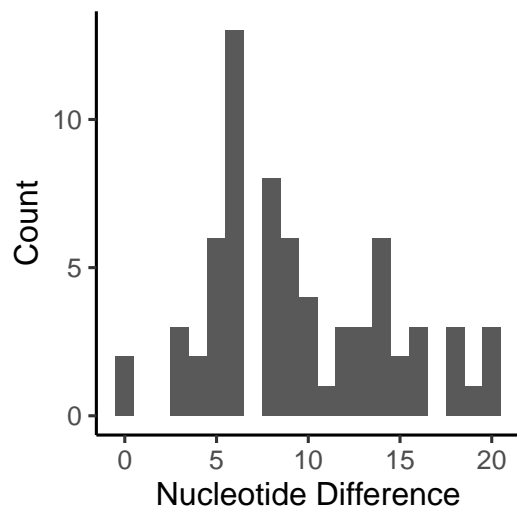
### IGHV3-66\*02

110 sequences assigned  
2 (1.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



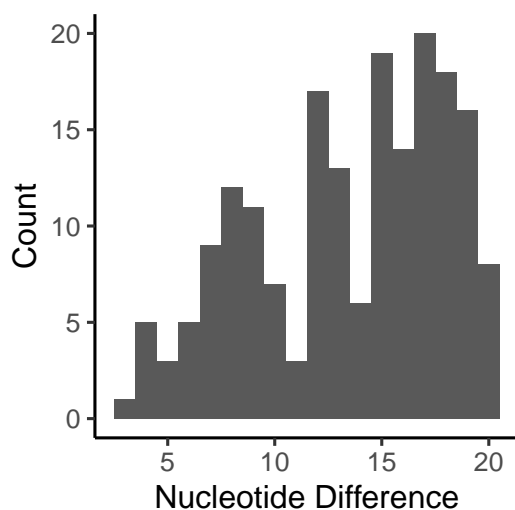
### IGHV3-73\*01\_02

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



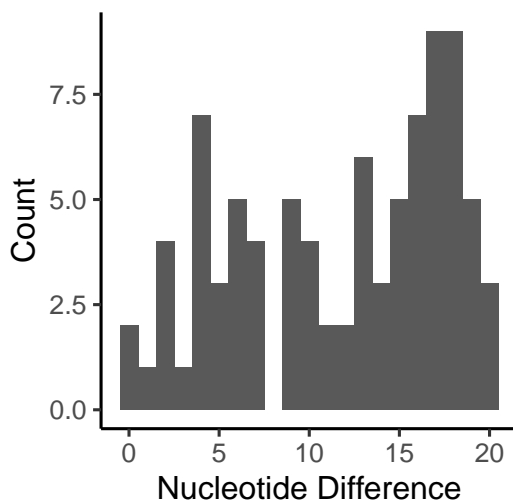
### IGHV3-74\*03

258 sequences assigned  
No exact matches.



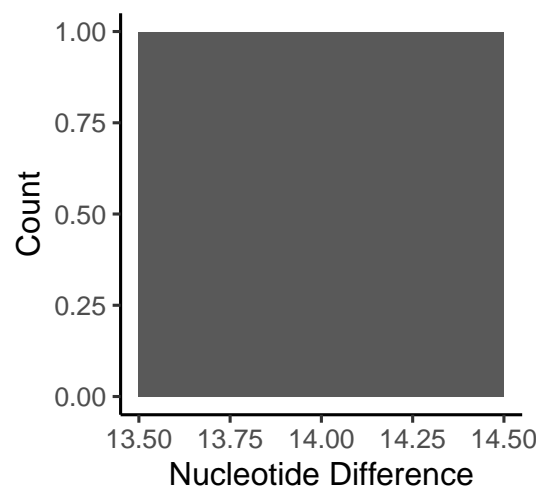
### IGHV3-64D\*06

144 sequences assigned  
2 (1.4%) exact matches, in which:  
2 unique CDR3  
2 unique J



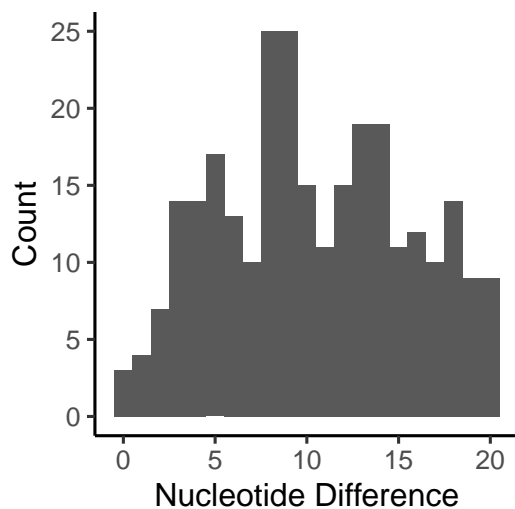
### IGHV4-28\*03

1 sequences assigned  
No exact matches.



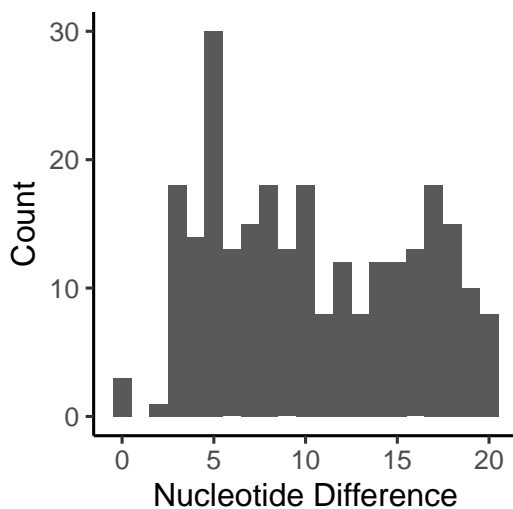
### IGHV3-74\*01\_02

352 sequences assigned  
3 (0.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



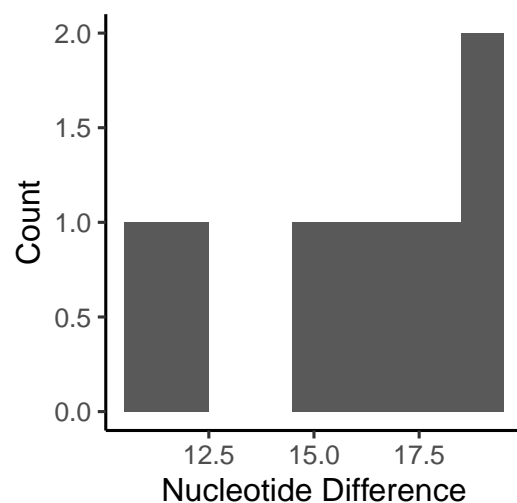
### IGHV4-4\*07

351 sequences assigned  
3 (0.9%) exact matches, in which:  
3 unique CDR3  
3 unique J



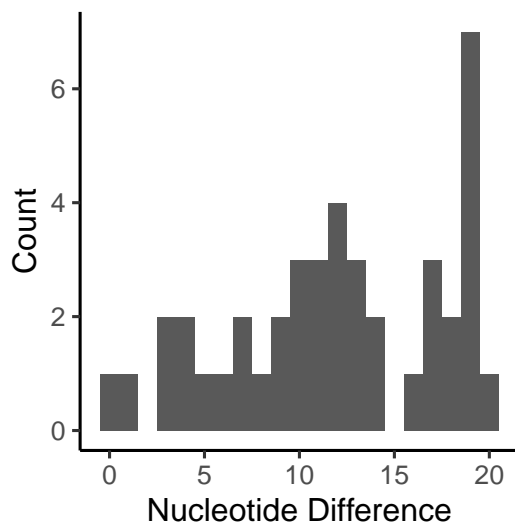
### IGHV4-28\*01\_07

9 sequences assigned  
No exact matches.



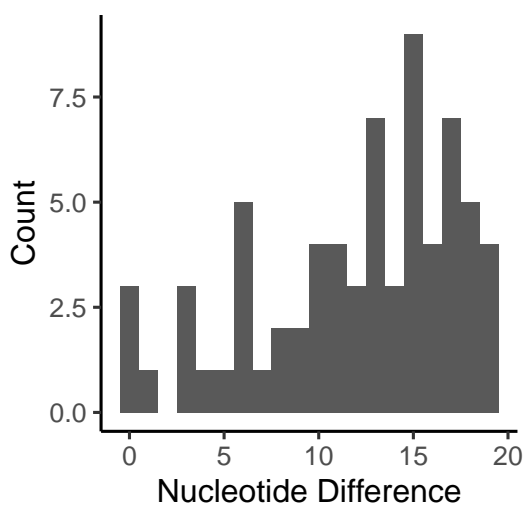
### IGHV3-43D\*03

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



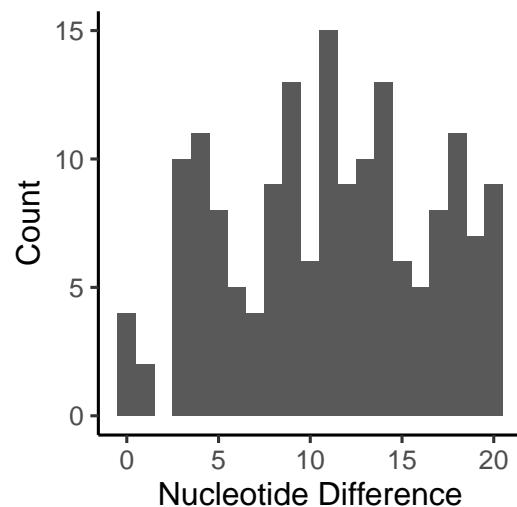
### IGHV4-4\*02\_03

102 sequences assigned  
3 (2.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



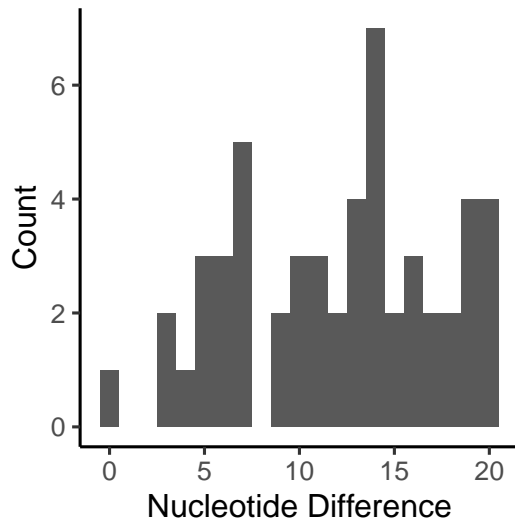
### IGHV4-30-2\*01

250 sequences assigned  
4 (1.6%) exact matches, in which:  
4 unique CDR3  
3 unique J



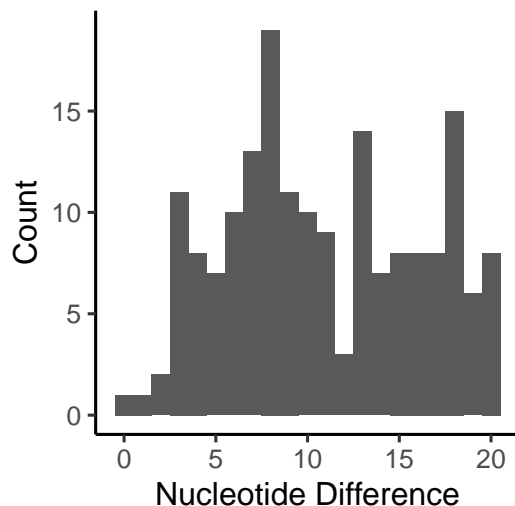
### IGHV4-30-4\*07

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



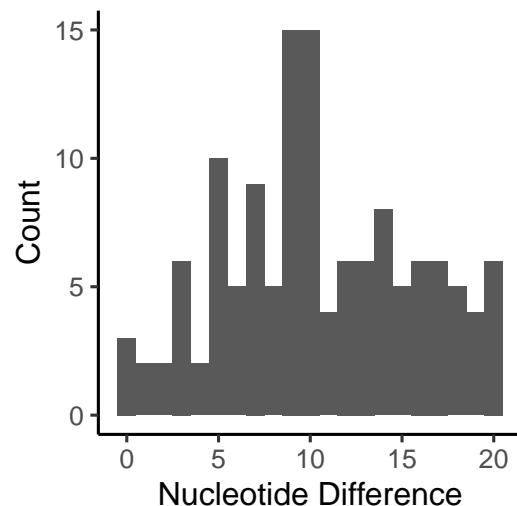
### IGHV4-38-2\*02

245 sequences assigned  
1 (0.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



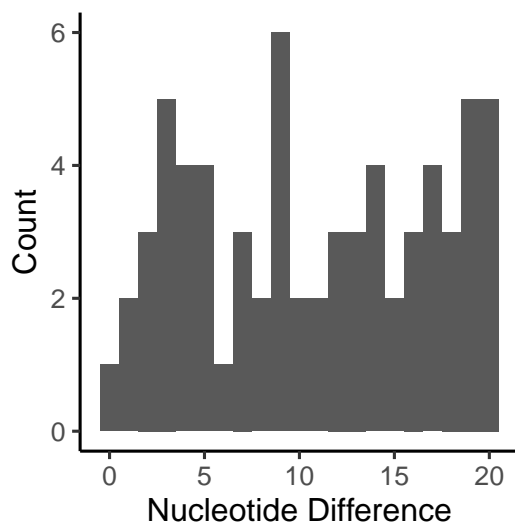
### IGHV4-39\*01\_05

199 sequences assigned  
3 (1.5%) exact matches, in which:  
3 unique CDR3  
3 unique J



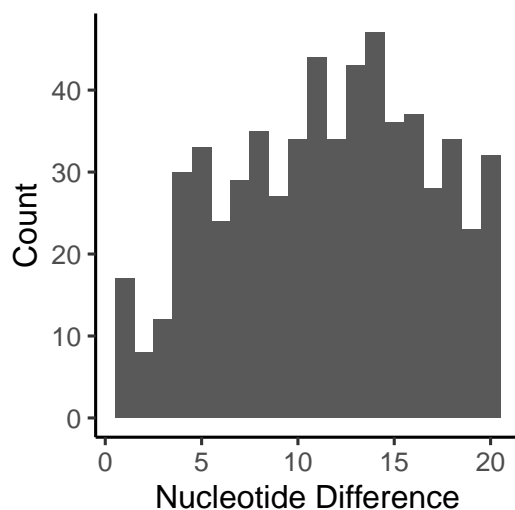
### IGHV4-31\*02

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



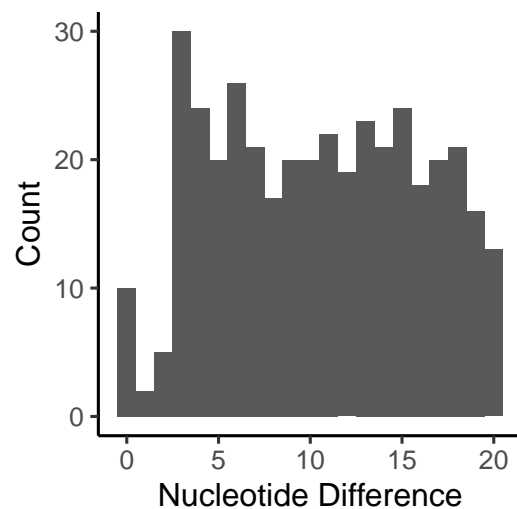
### IGHV4-39\*02

915 sequences assigned  
No exact matches.



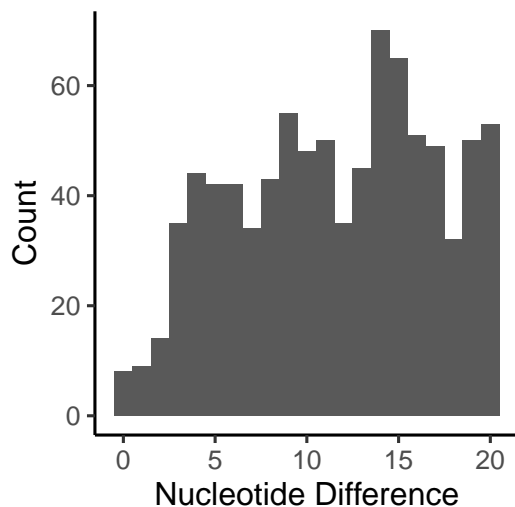
### IGHV4-59\*08

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



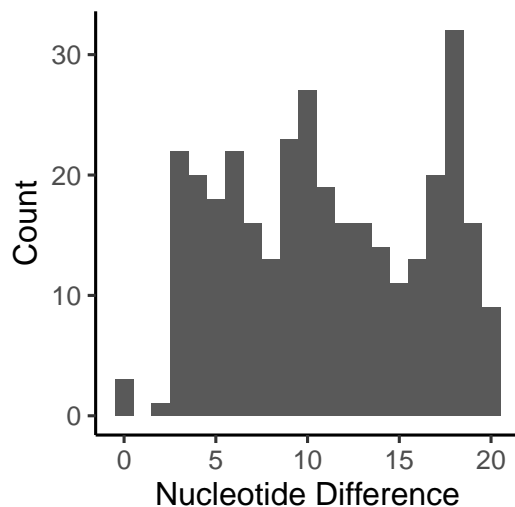
### IGHV4-34\*01\_02

1207 sequences assigned  
8 (0.7%) exact matches, in which:  
7 unique CDR3  
5 unique J



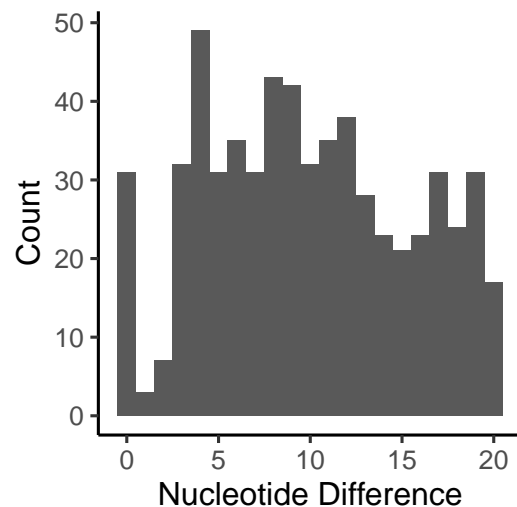
### IGHV4-39\*07

463 sequences assigned  
3 (0.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



### IGHV4-59\*01\_07

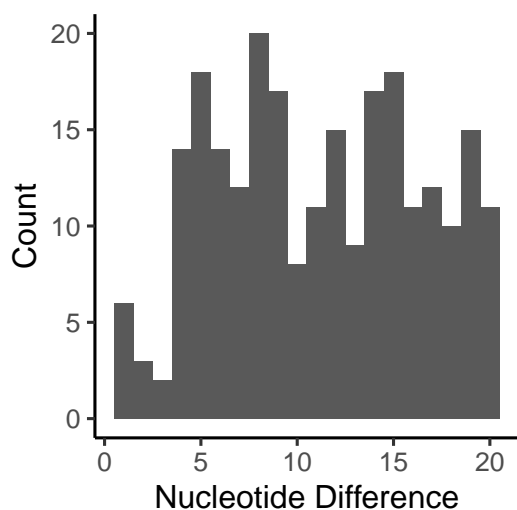
772 sequences assigned  
31 (4%) exact matches, in which:  
26 unique CDR3  
6 unique J





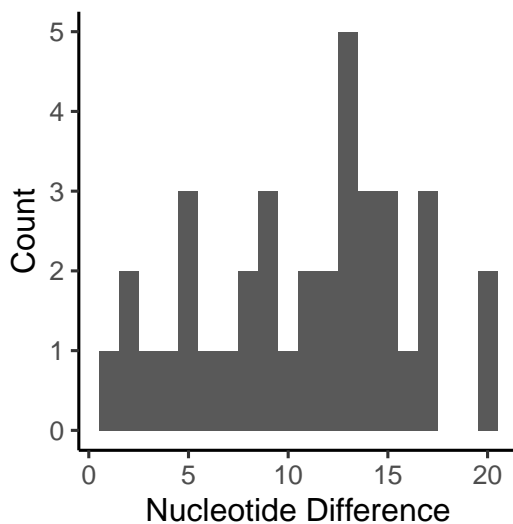
### IGHV4-59\*11

339 sequences assigned  
No exact matches.



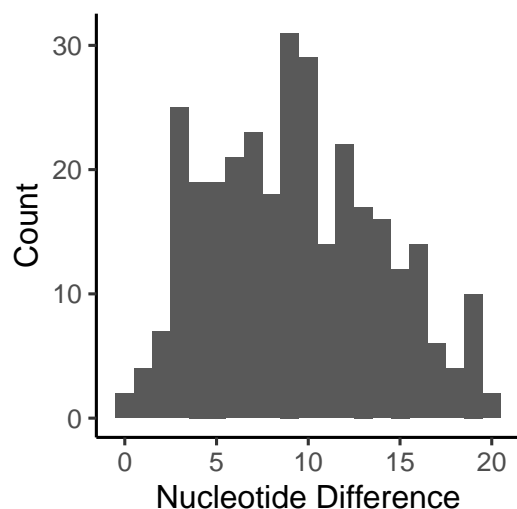
### IGHV5-10-1\*01\_03

56 sequences assigned  
No exact matches.



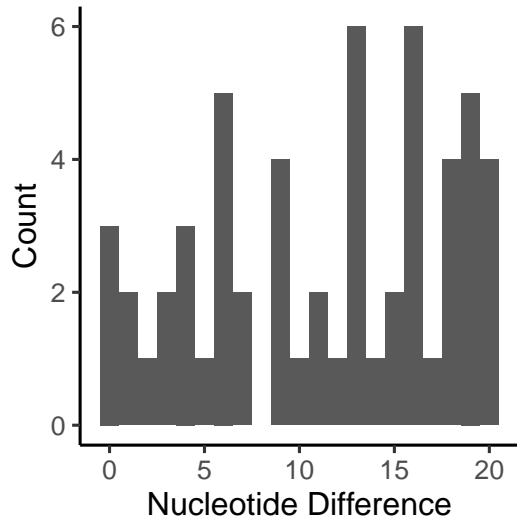
### IGHV6-1\*01\_02

346 sequences assigned  
2 (0.6%) exact matches, in which:  
2 unique CDR3  
1 unique J



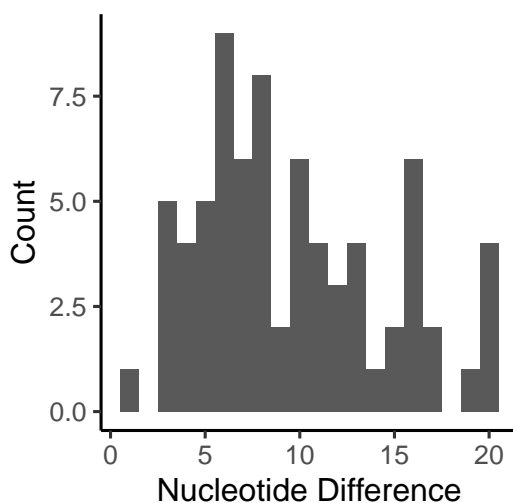
### IGHV4-61\*01

84 sequences assigned  
3 (3.6%) exact matches, in which:  
3 unique CDR3  
3 unique J



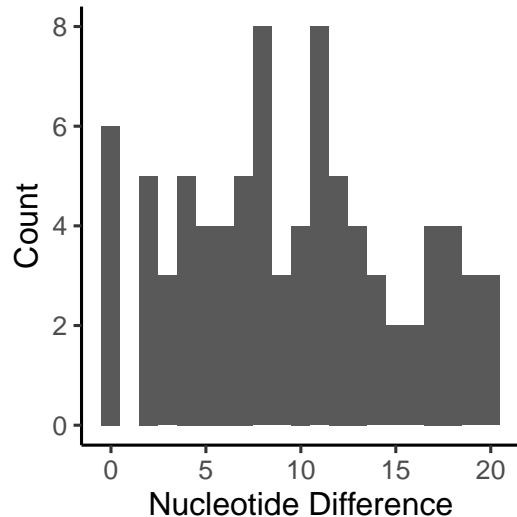
### IGHV5-51\*07

89 sequences assigned  
No exact matches.



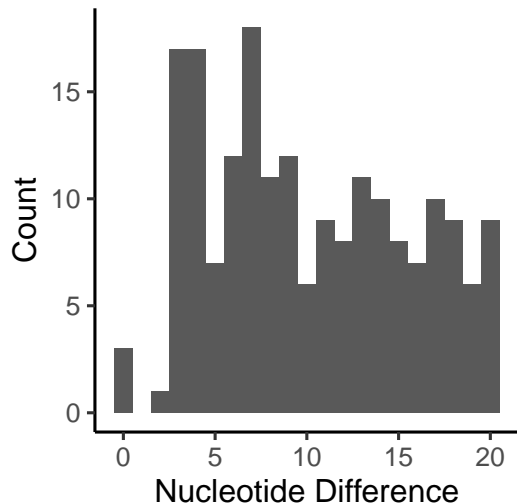
### IGHV7-4-1\*02

131 sequences assigned  
6 (4.6%) exact matches, in which:  
6 unique CDR3  
1 unique J



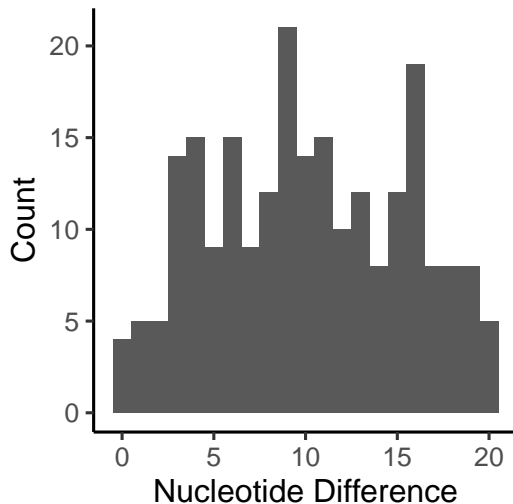
### IGHV4-61\*02

238 sequences assigned  
3 (1.3%) exact matches, in which:  
2 unique CDR3  
1 unique J

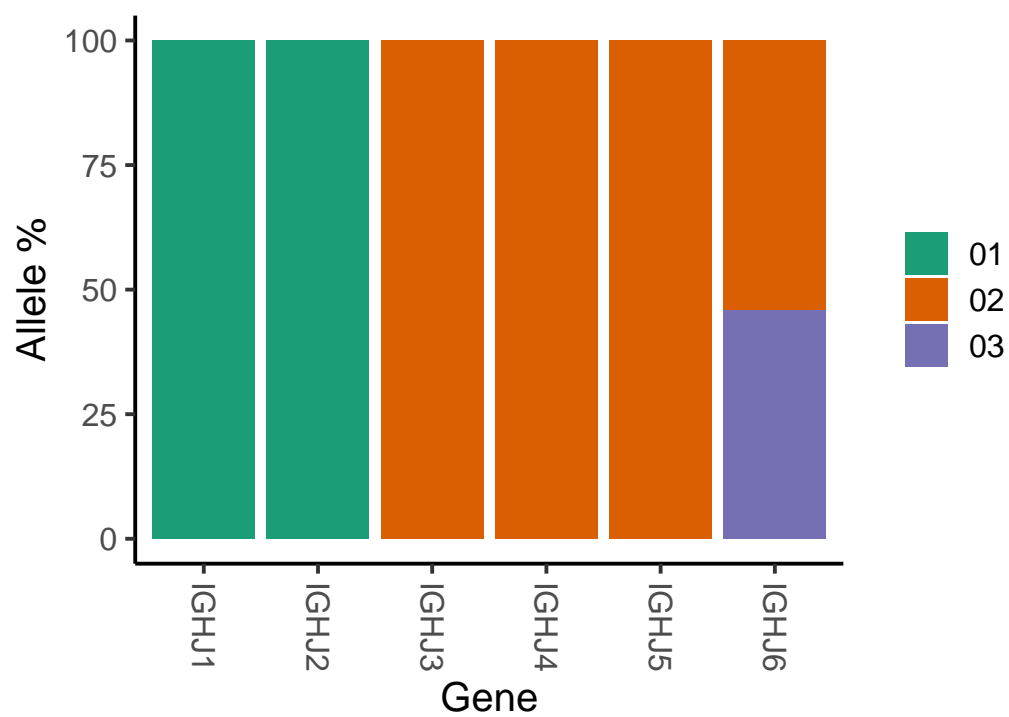


### IGHV5-51\*01\_03

266 sequences assigned  
4 (1.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage

