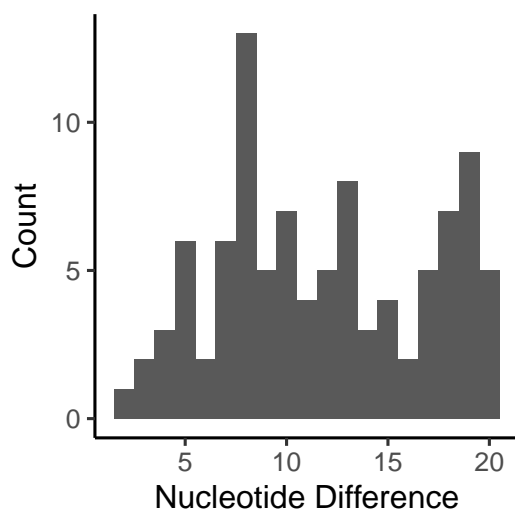


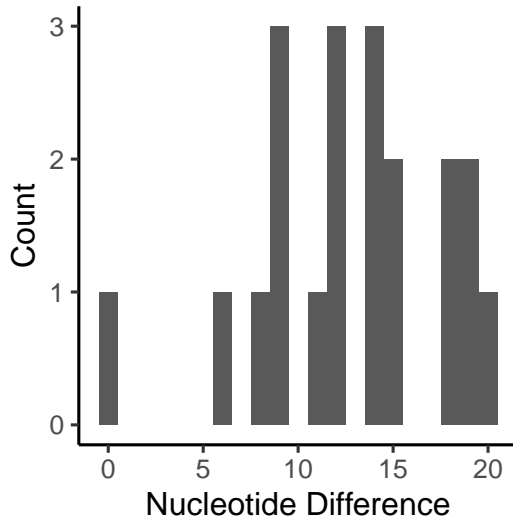
### IGHV1-2\*06

127 sequences assigned  
No exact matches.



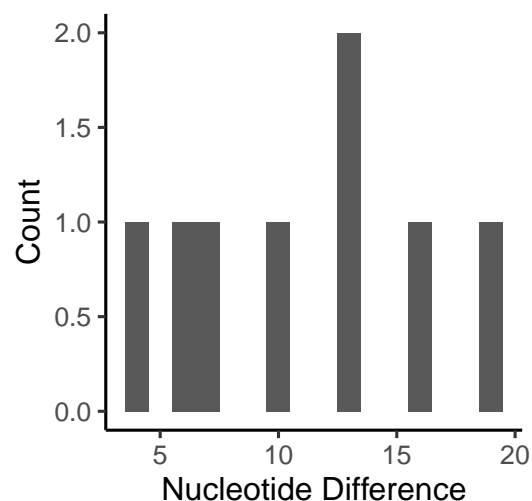
### IGHV1-24\*01

35 sequences assigned  
1 (2.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



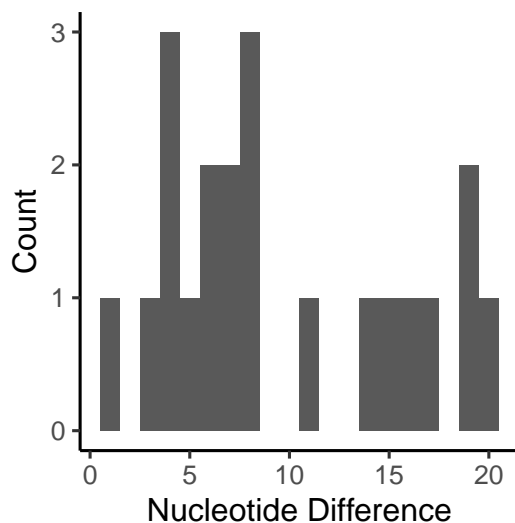
### IGHV1-69\*10

14 sequences assigned  
No exact matches.



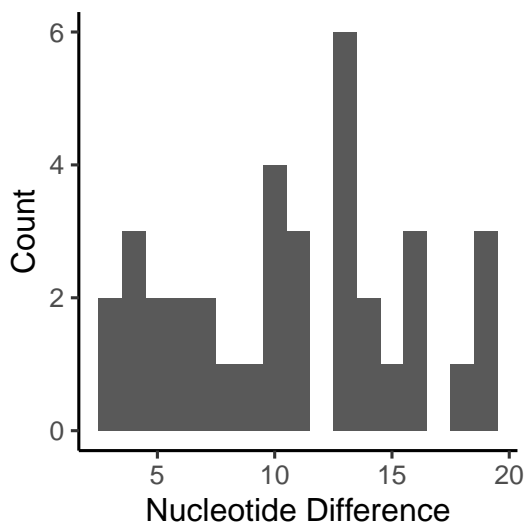
### IGHV1-8\*01

31 sequences assigned  
No exact matches.



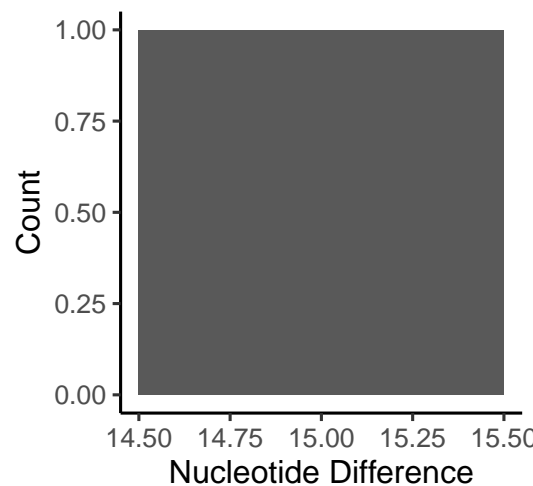
### IGHV1-46\*01

50 sequences assigned  
No exact matches.



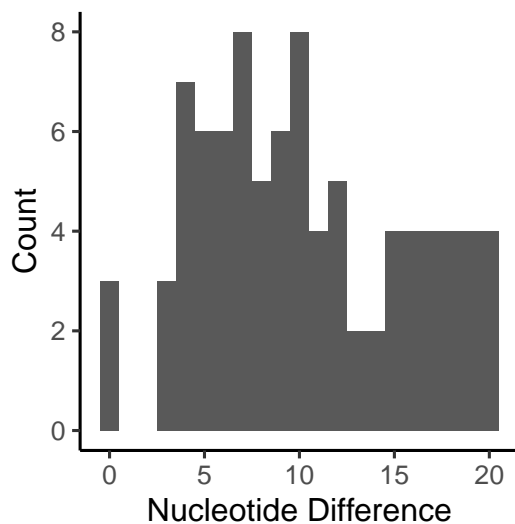
### IGHV1-69\*17

3 sequences assigned  
No exact matches.



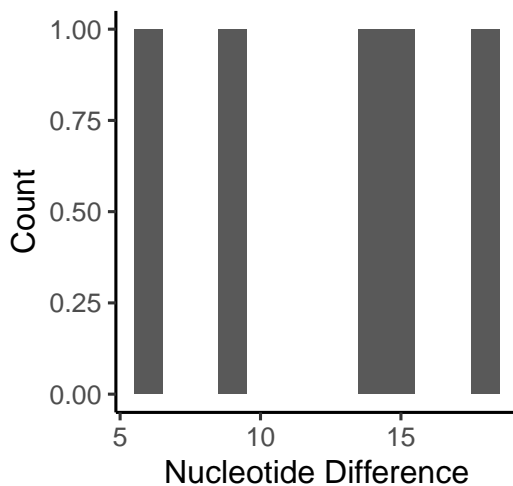
### IGHV1-18\*01

133 sequences assigned  
3 (2.3%) exact matches, in which:  
3 unique CDR3  
2 unique J



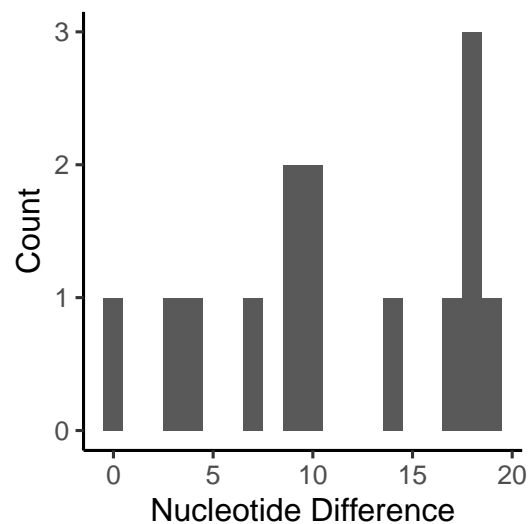
### IGHV1-58\*02

5 sequences assigned  
No exact matches.



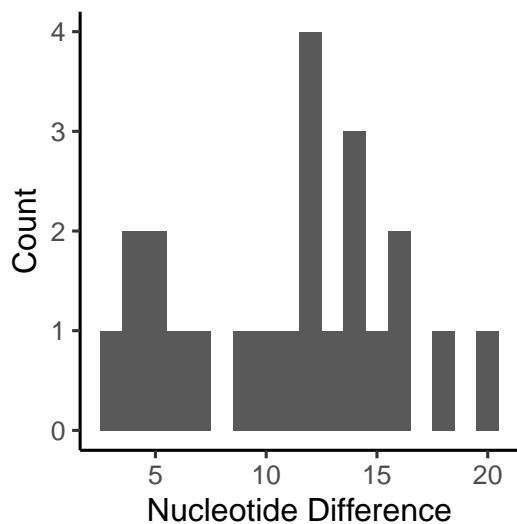
### IGHV1-69\*04\_09

34 sequences assigned  
1 (2.9%) exact matches, in which:  
1 unique CDR3  
0 unique J



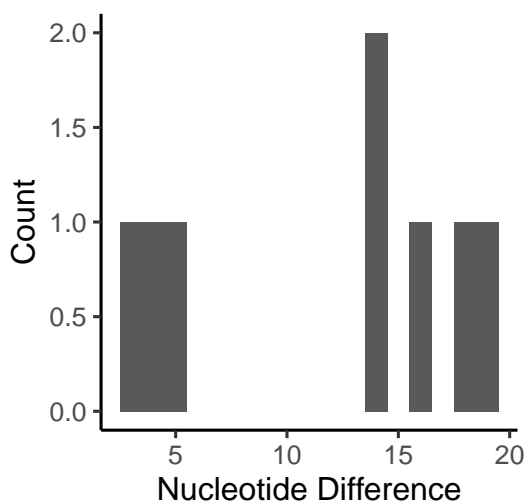
### IGHV2-5\*01

30 sequences assigned  
No exact matches.



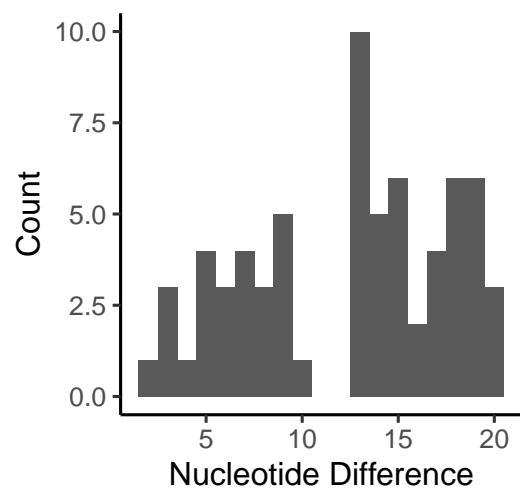
### IGHV2-70\*11\_15

10 sequences assigned  
No exact matches.



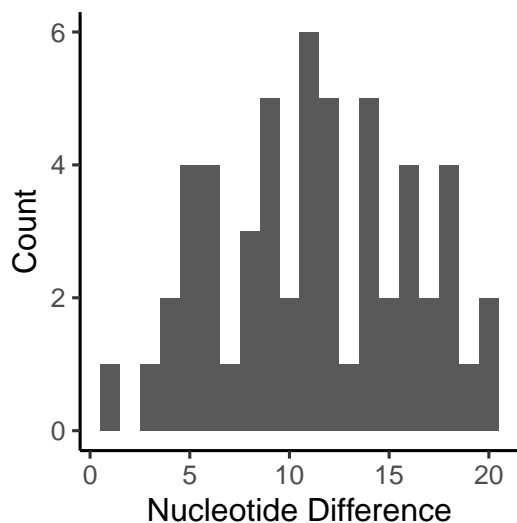
### IGHV3-7\*05

92 sequences assigned  
No exact matches.



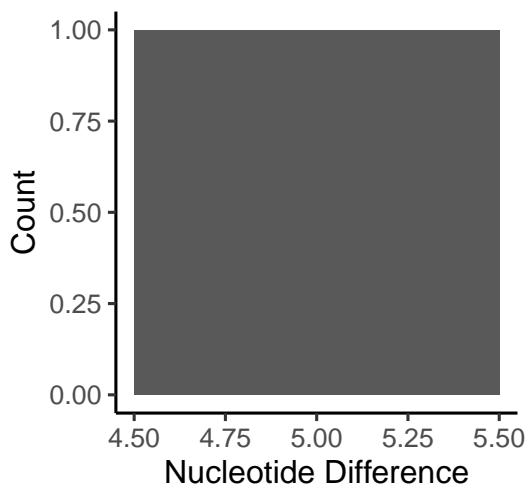
### IGHV2-5\*02

73 sequences assigned  
No exact matches.



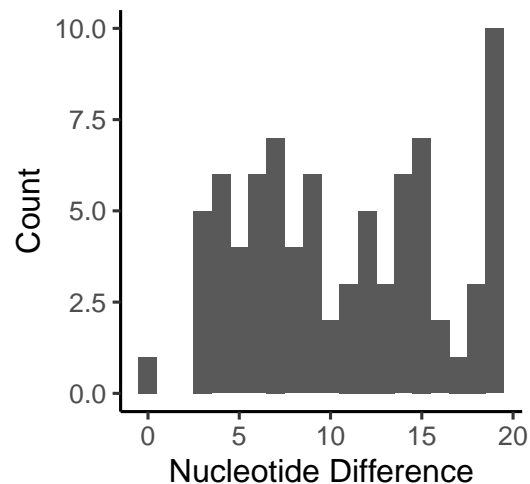
### IGHV2-70\*16\_17

2 sequences assigned  
No exact matches.



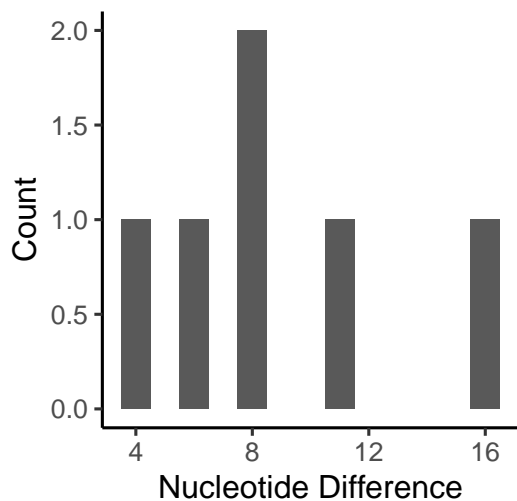
### IGHV3-9\*01

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



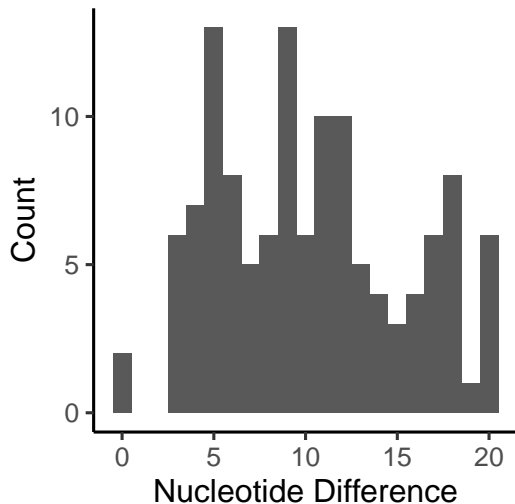
### IGHV2-26\*01

10 sequences assigned  
No exact matches.



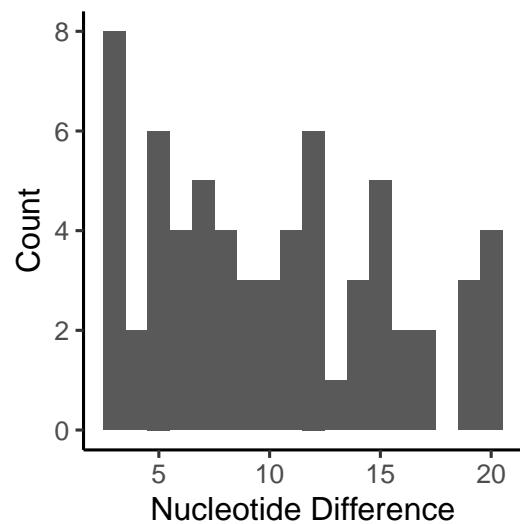
### IGHV3-7\*01

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



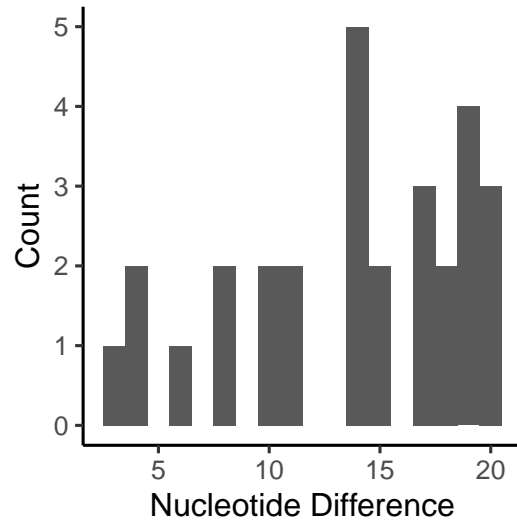
### IGHV3-11\*01

91 sequences assigned  
No exact matches.



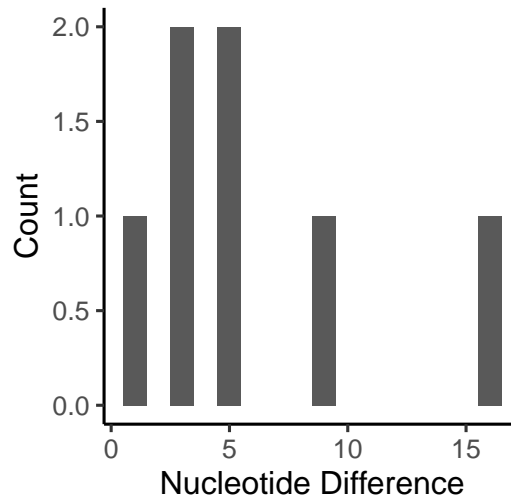
### IGHV3-11\*06

35 sequences assigned  
No exact matches.



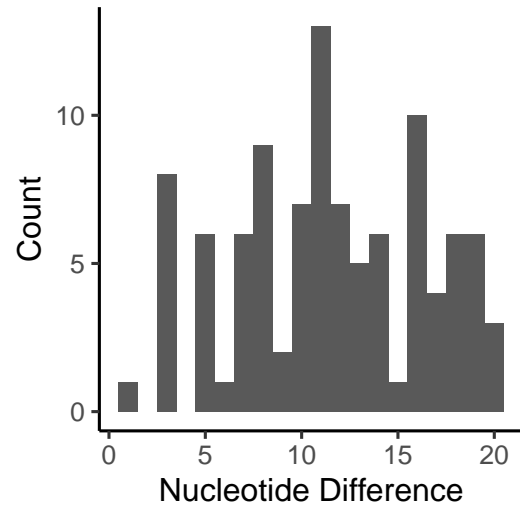
### IGHV3-20\*01\_02

7 sequences assigned  
No exact matches.



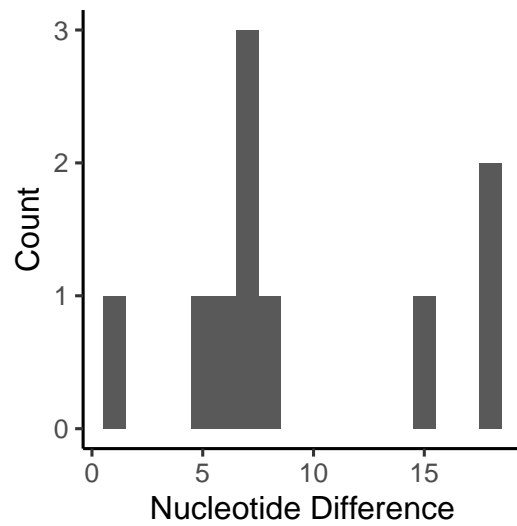
### IGHV3-21\*01\_02

142 sequences assigned  
No exact matches.



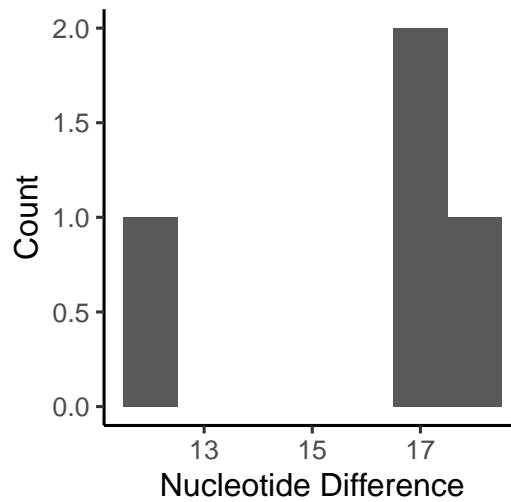
### IGHV3-13\*01

14 sequences assigned  
No exact matches.



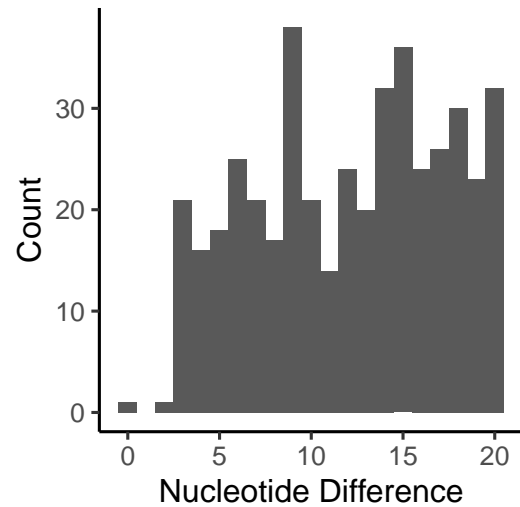
### IGHV3-20\*03\_04

9 sequences assigned  
No exact matches.



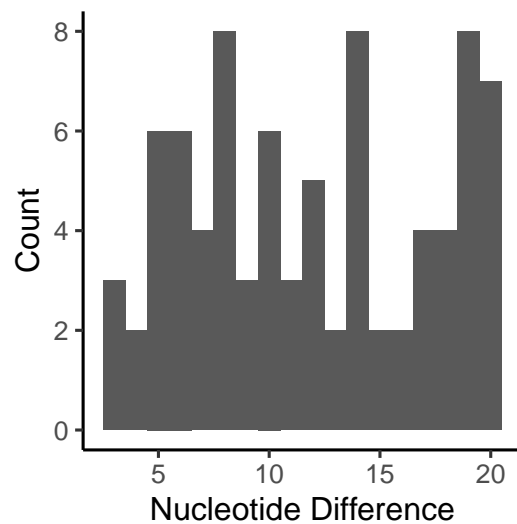
### IGHV3-23\*01\_04

615 sequences assigned  
1 (0.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



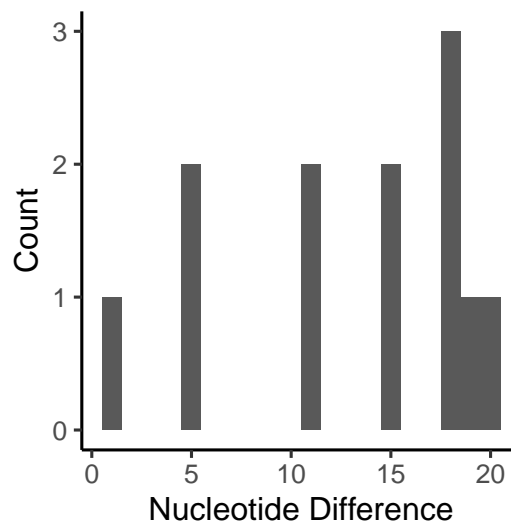
### IGHV3-15\*01\_02

116 sequences assigned  
No exact matches.



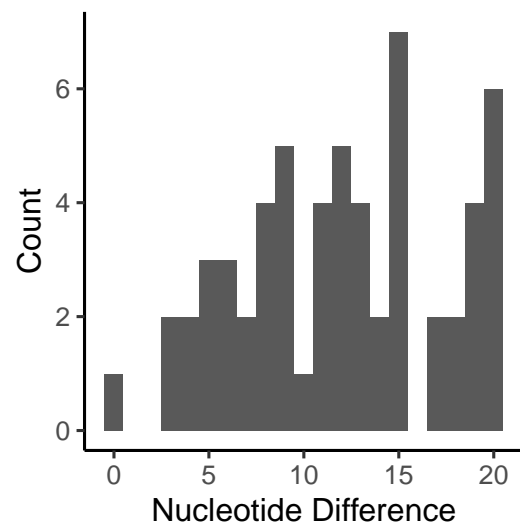
### IGHV3-21\*06

30 sequences assigned  
No exact matches.



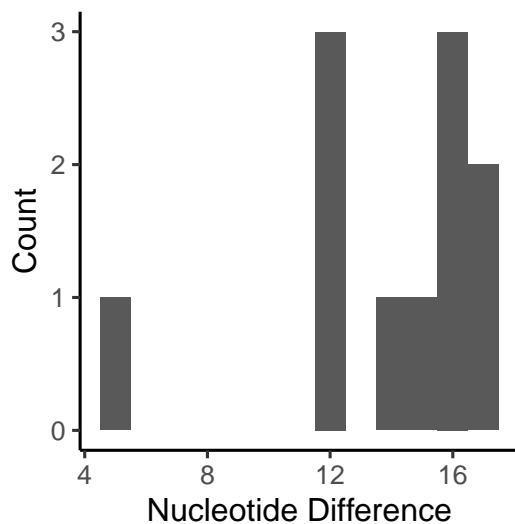
### IGHV3-30-3\*01

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



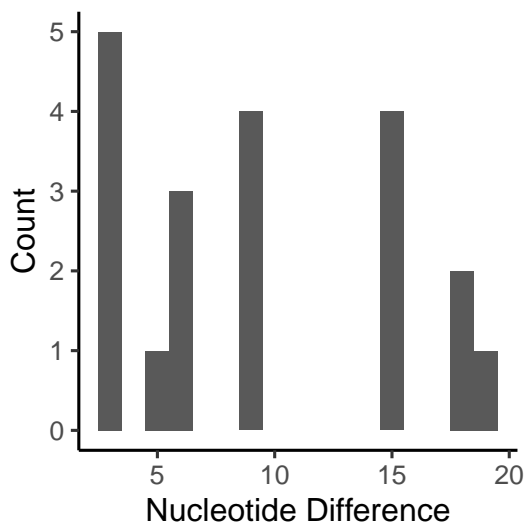
### IGHV3-30\*03

25 sequences assigned  
No exact matches.



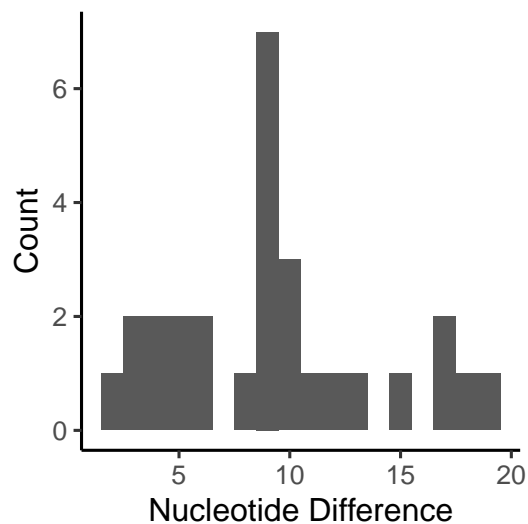
### IGHV3-43\*01

33 sequences assigned  
No exact matches.



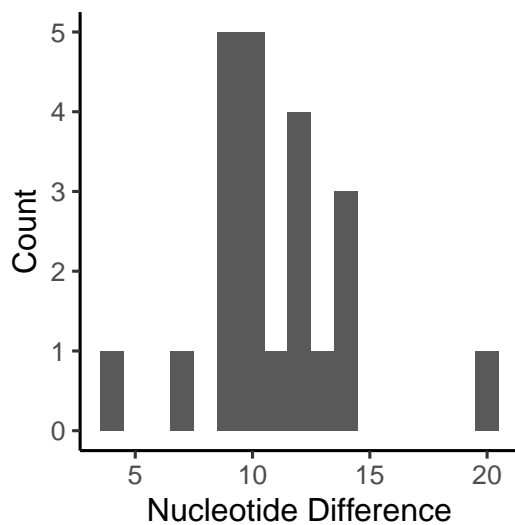
### IGHV3-53\*04

40 sequences assigned  
No exact matches.



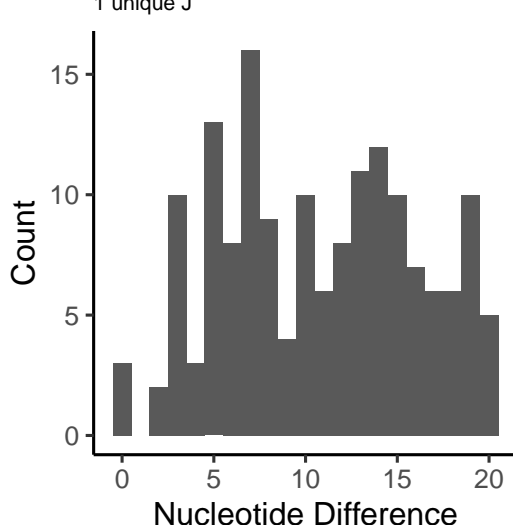
### IGHV3-33\*01

30 sequences assigned  
No exact matches.



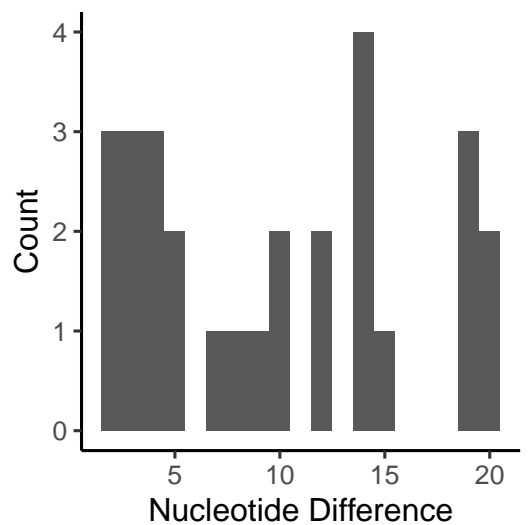
### IGHV3-48\*04

211 sequences assigned  
3 (1.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



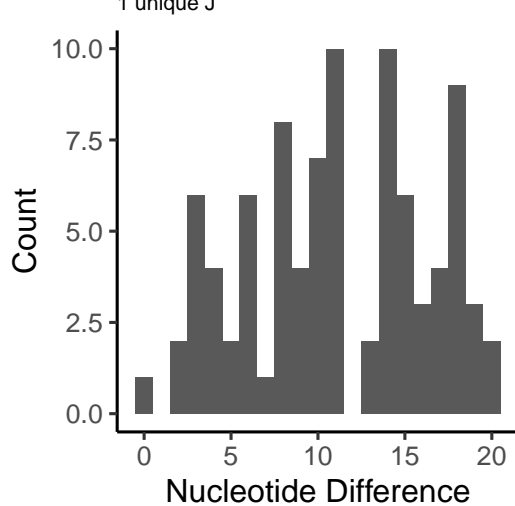
### IGHV3-64\*01

35 sequences assigned  
No exact matches.



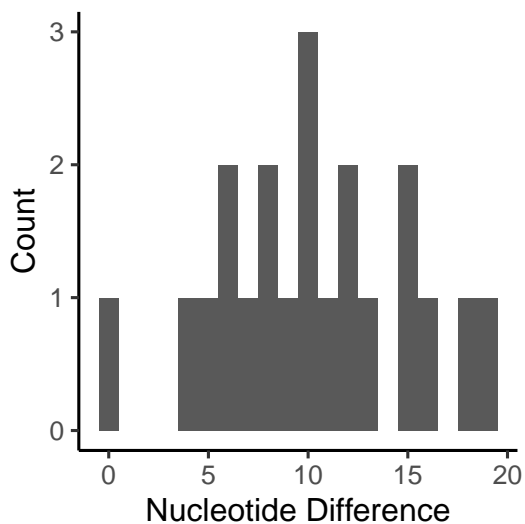
### IGHV3-33\*06

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



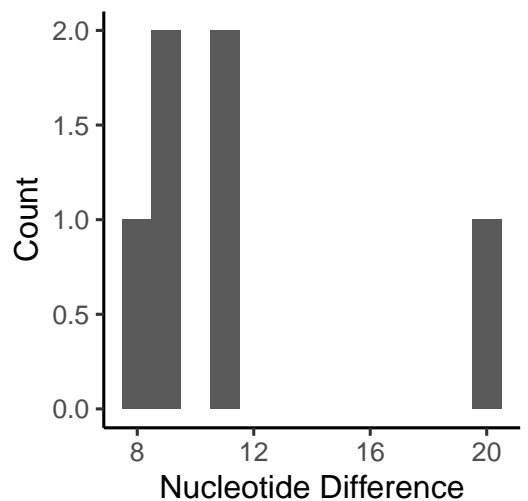
### IGHV3-49\*03\_05

35 sequences assigned  
1 (2.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



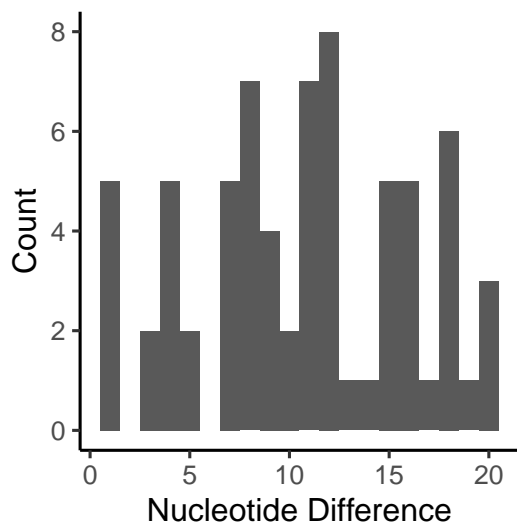
### IGHV3-64\*02\_07

7 sequences assigned  
No exact matches.



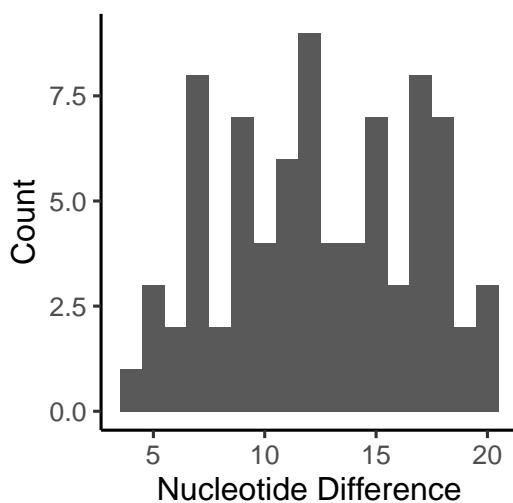
### IGHV3-66\*01

97 sequences assigned  
No exact matches.



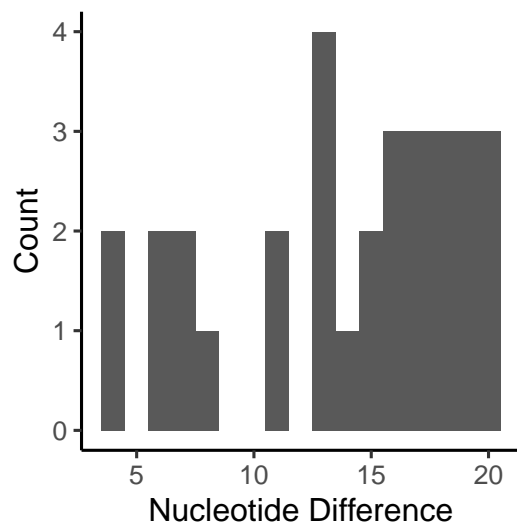
### IGHV3-74\*03

102 sequences assigned  
No exact matches.



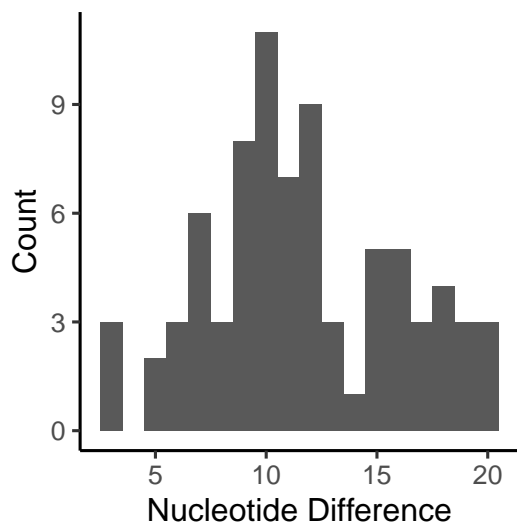
### IGHV3-64D\*06

55 sequences assigned  
No exact matches.



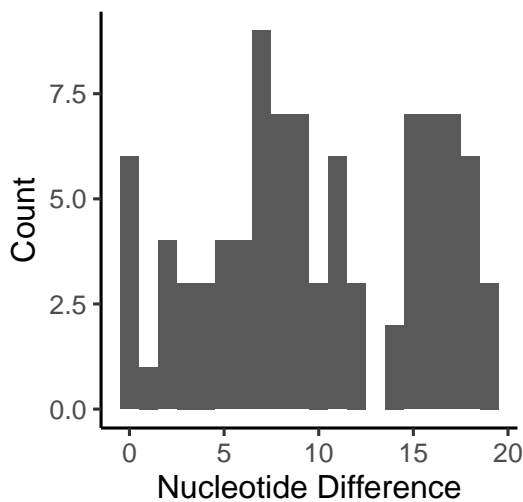
### IGHV3-72\*01

93 sequences assigned  
No exact matches.



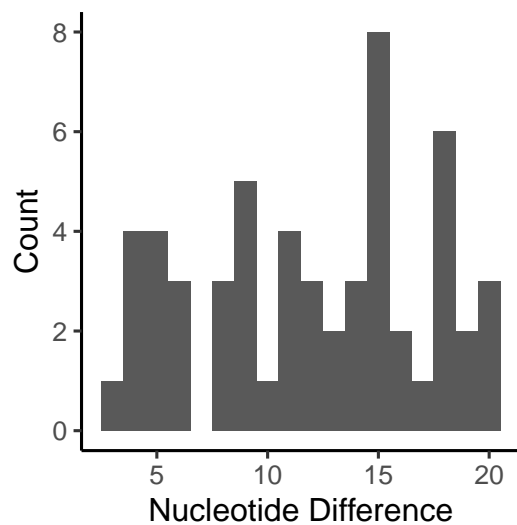
### IGHV3-74\*01\_02

96 sequences assigned  
6 (6.2%) exact matches, in which:  
3 unique CDR3  
3 unique J



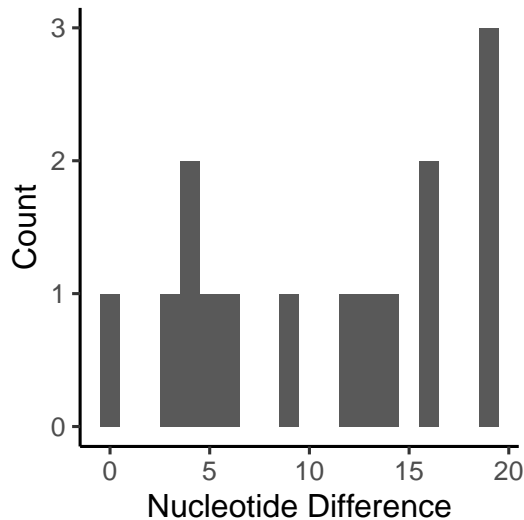
### IGHV4-4\*02\_03

80 sequences assigned  
No exact matches.



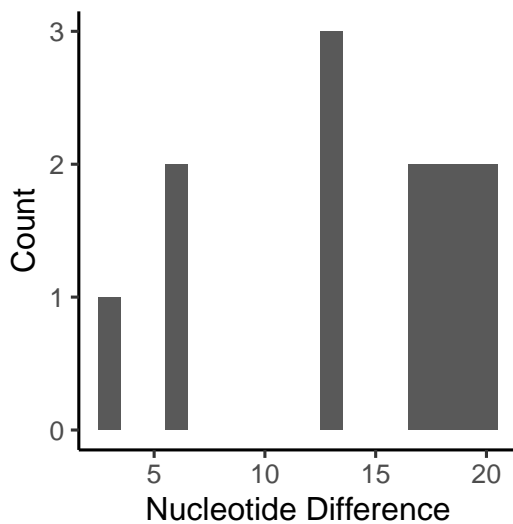
### IGHV3-73\*01\_02

17 sequences assigned  
1 (5.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



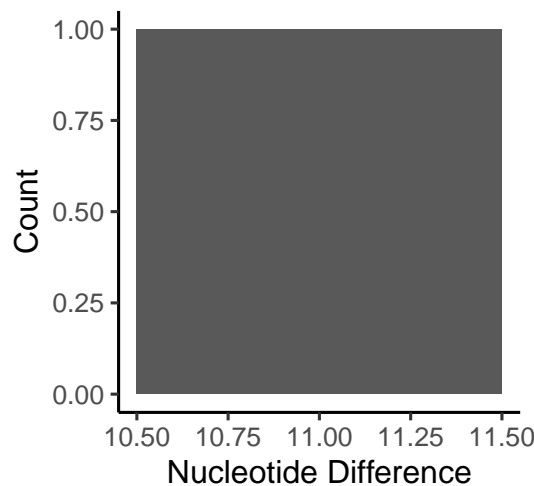
### IGHV3-43D\*03

26 sequences assigned  
No exact matches.



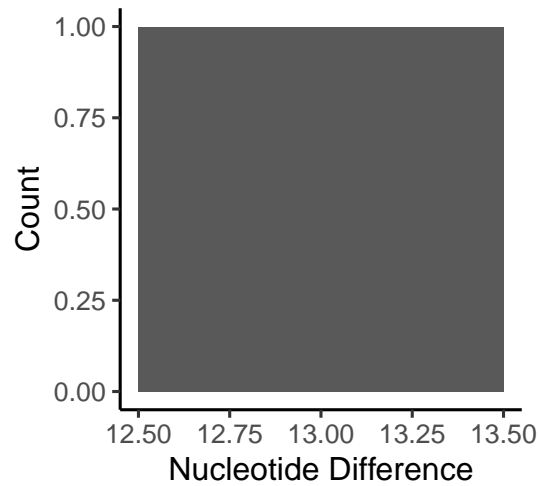
### IGHV4-28\*01\_07

1 sequences assigned  
No exact matches.



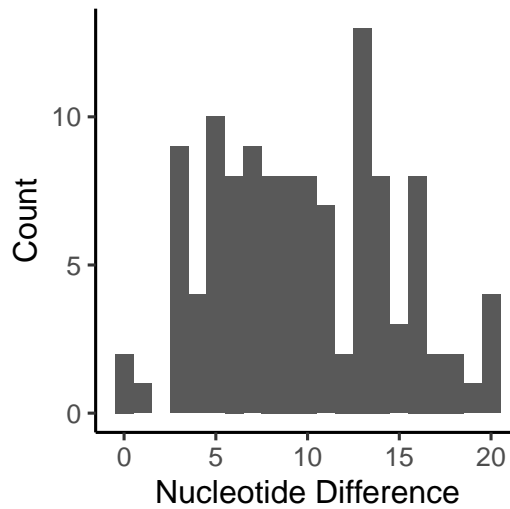
### IGHV4-28\*02\_05

1 sequences assigned  
No exact matches.



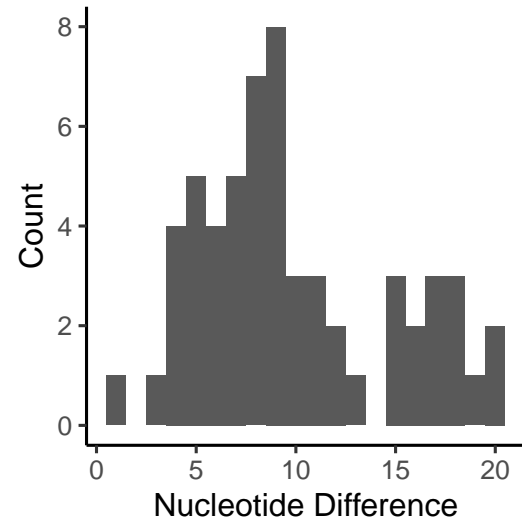
### IGHV4-34\*01\_02

160 sequences assigned  
2 (1.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



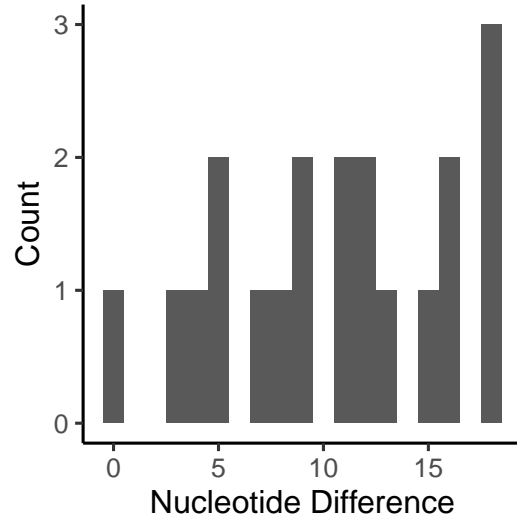
### IGHV4-59\*02

94 sequences assigned  
No exact matches.



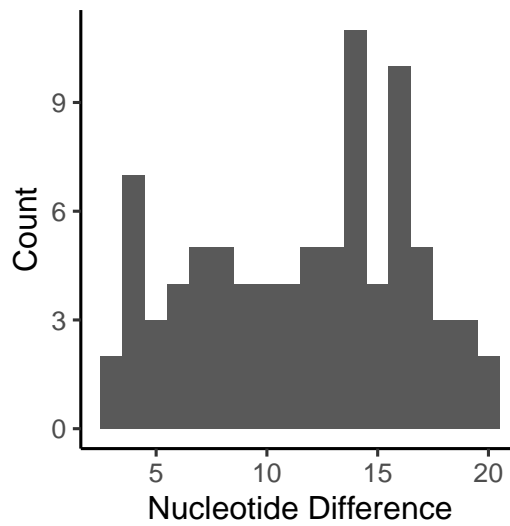
### IGHV4-30-4\*01

36 sequences assigned  
1 (2.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



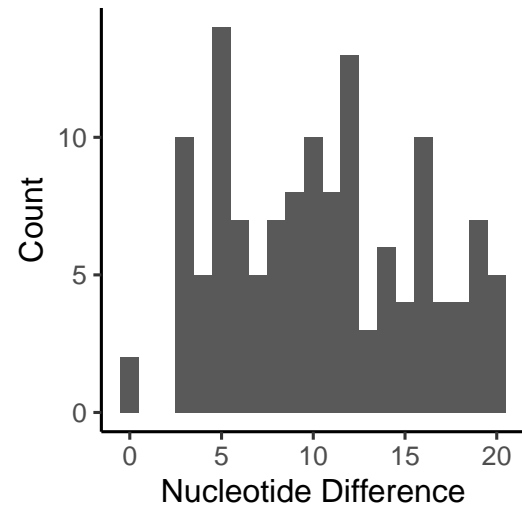
### IGHV4-38-2\*02

109 sequences assigned  
No exact matches.



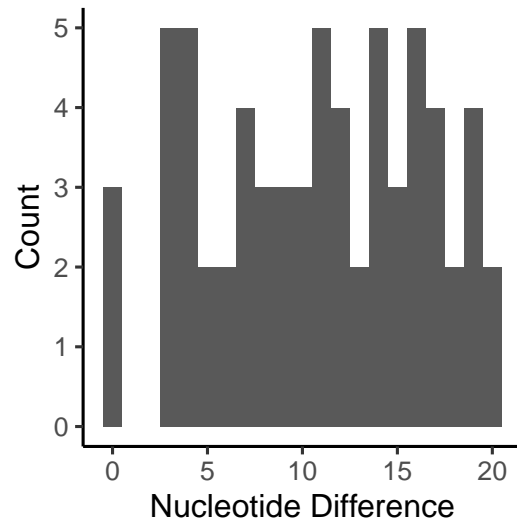
### IGHV4-59\*08

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



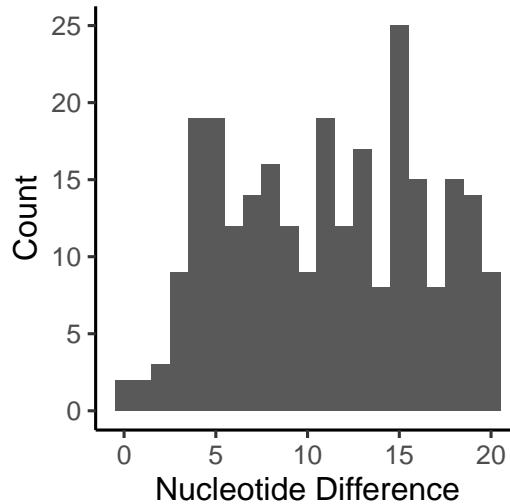
### IGHV4-31\*02

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



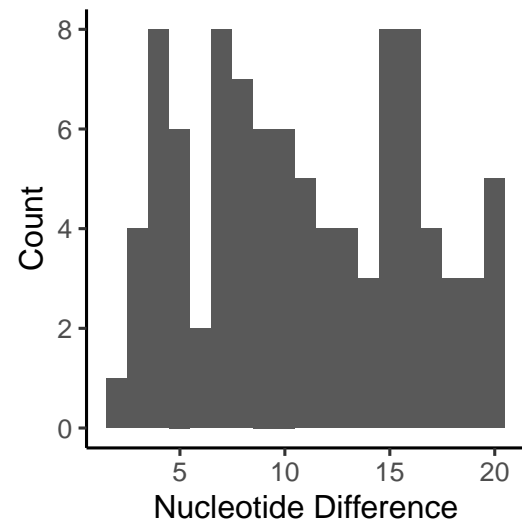
### IGHV4-39\*07

386 sequences assigned  
2 (0.5%) exact matches, in which:  
2 unique CDR3  
2 unique J



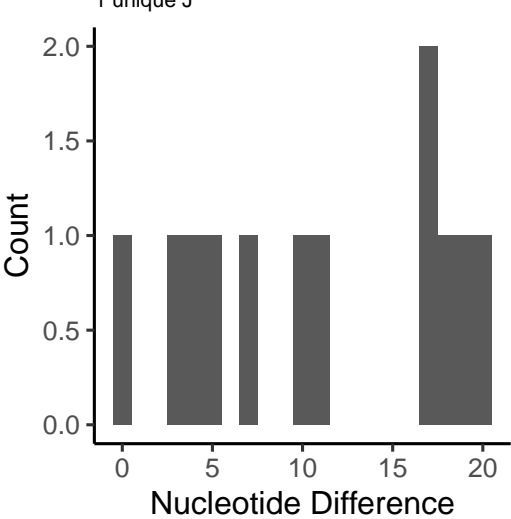
### IGHV4-59\*01\_07

131 sequences assigned  
No exact matches.



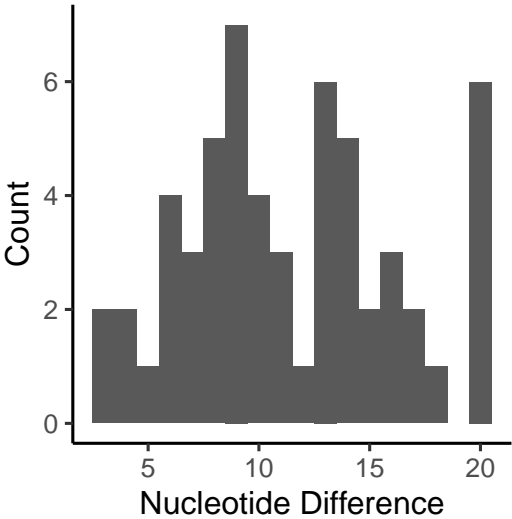
IGHV5-10-1\*01\_03

18 sequences assigned  
1 (5.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



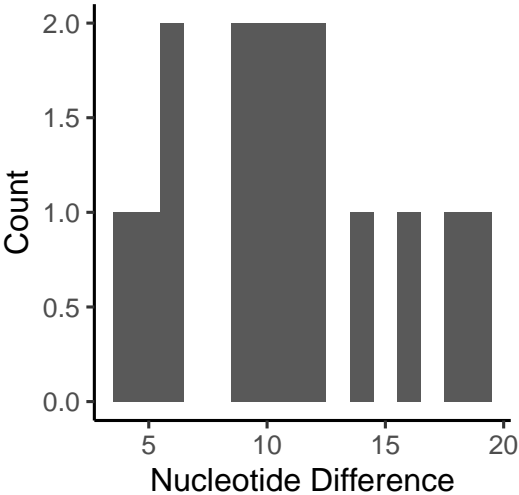
IGHV6-1\*01\_02

79 sequences assigned  
No exact matches.



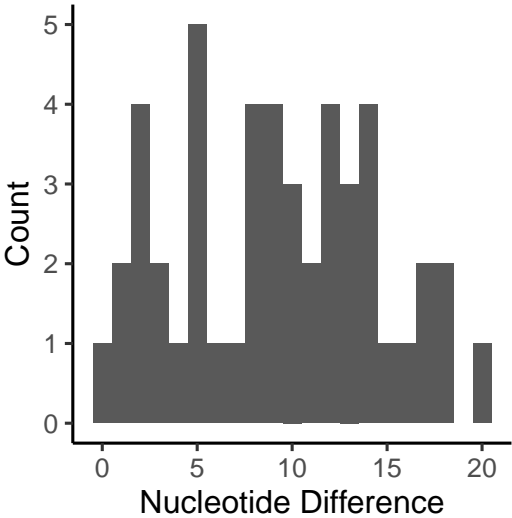
IGHV5-51\*07

22 sequences assigned  
No exact matches.



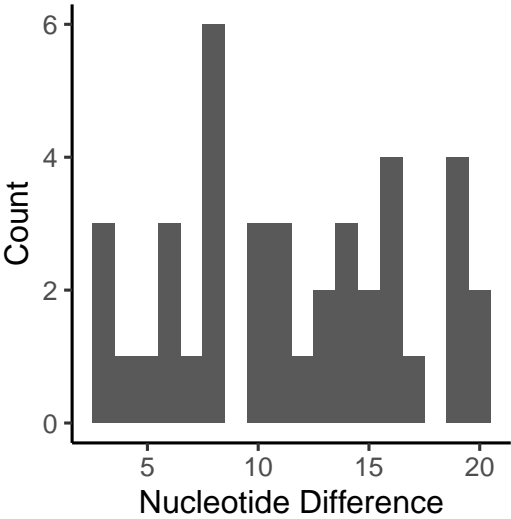
IGHV7-4-1\*02

64 sequences assigned  
1 (1.6%) exact matches, in which:  
1 unique CDR3  
1 unique J

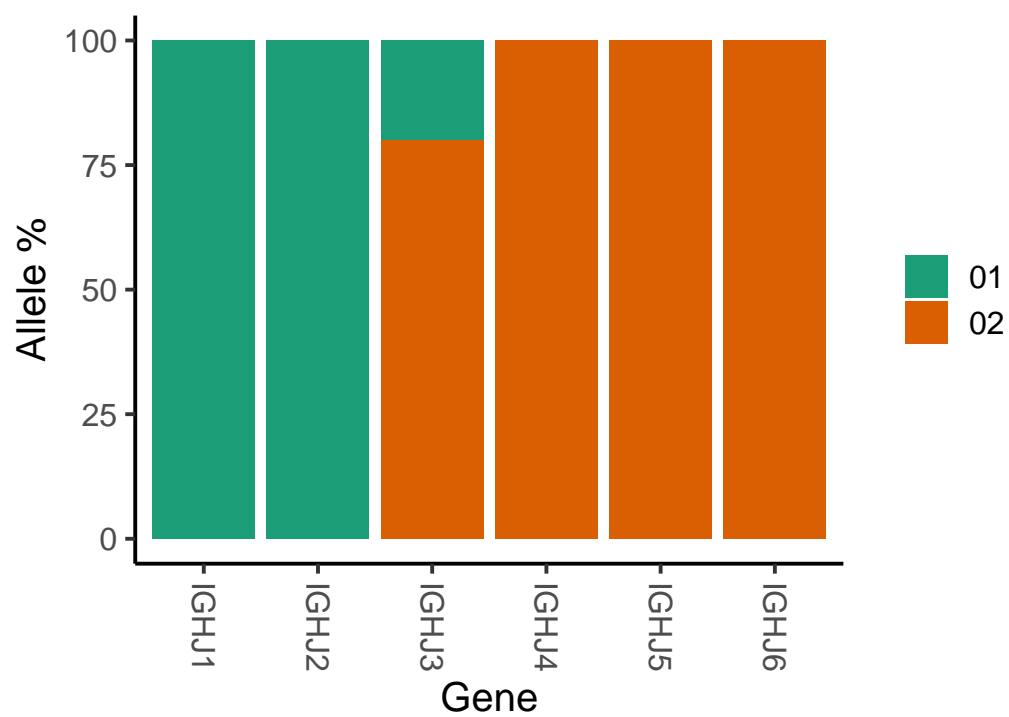


IGHV5-51\*01\_03

53 sequences assigned  
No exact matches.



Allele Usage





[illegible]