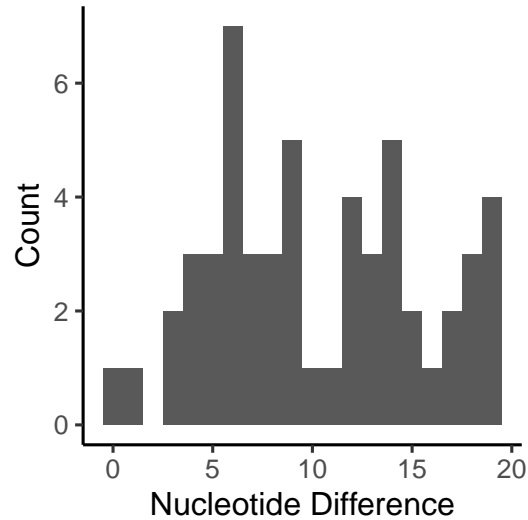


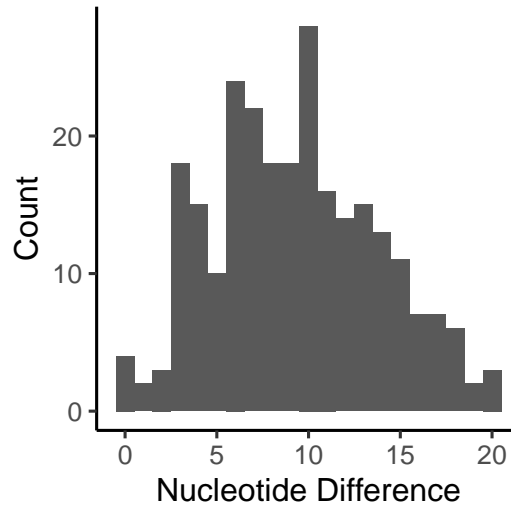
### IGHV1–2\*04

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



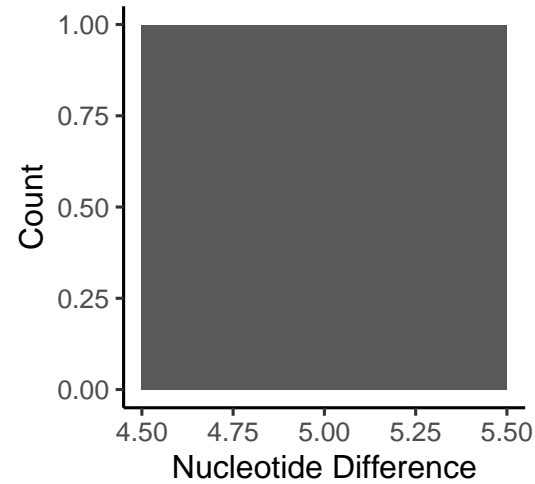
### IGHV1–18\*01

315 sequences assigned  
4 (1.3%) exact matches, in which:  
4 unique CDR3  
1 unique J



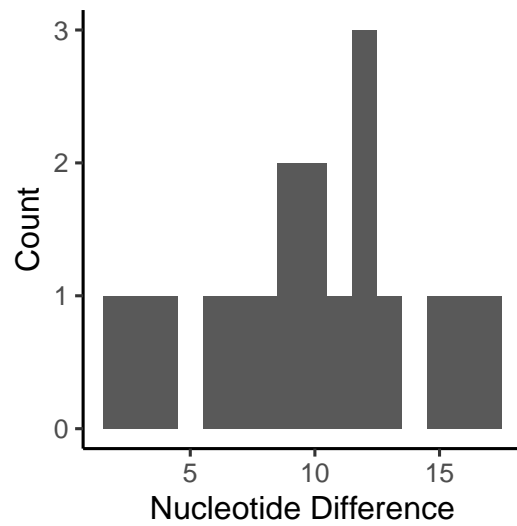
### IGHV1–45\*02

5 sequences assigned  
No exact matches.



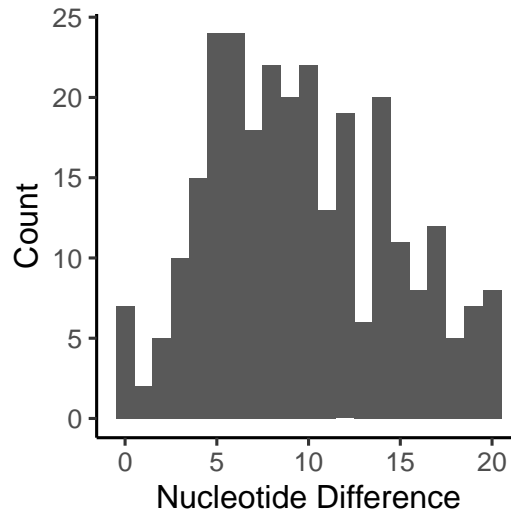
### IGHV1–3\*04

20 sequences assigned  
No exact matches.



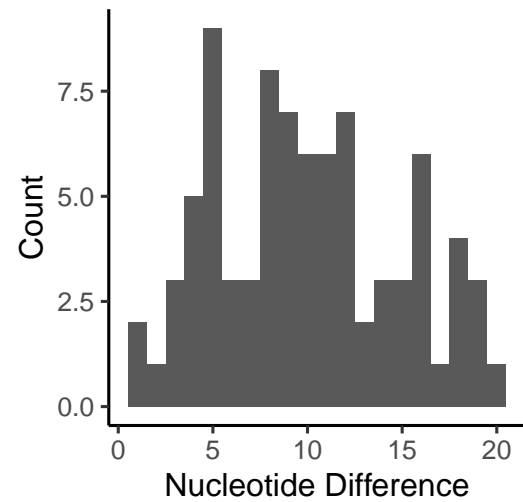
### IGHV1–18\*04

312 sequences assigned  
7 (2.2%) exact matches, in which:  
7 unique CDR3  
4 unique J



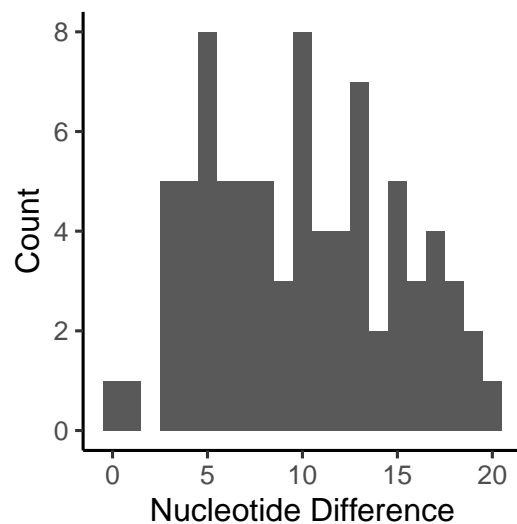
### IGHV1–46\*01

101 sequences assigned  
No exact matches.



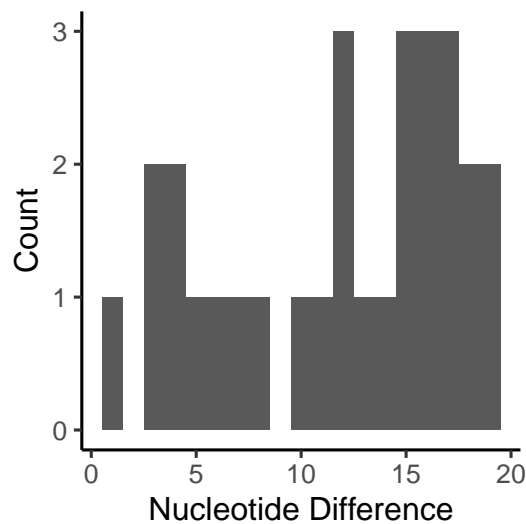
### IGHV1–3\*01\_05

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



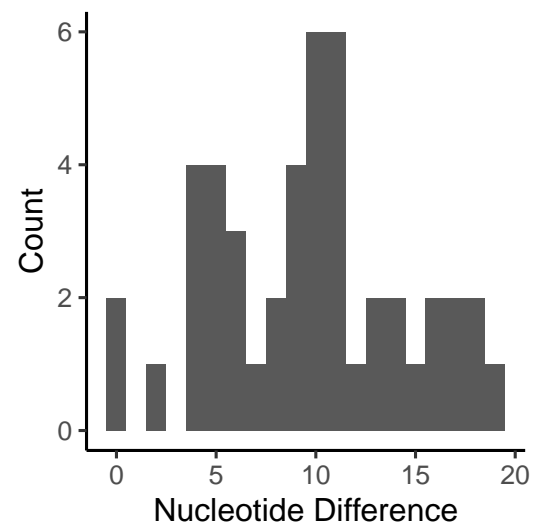
### IGHV1–24\*01

38 sequences assigned  
No exact matches.



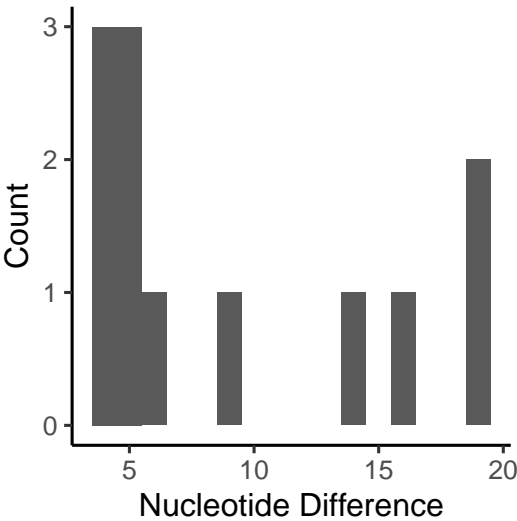
### IGHV1–46\*04

55 sequences assigned  
2 (3.6%) exact matches, in which:  
2 unique CDR3  
1 unique J



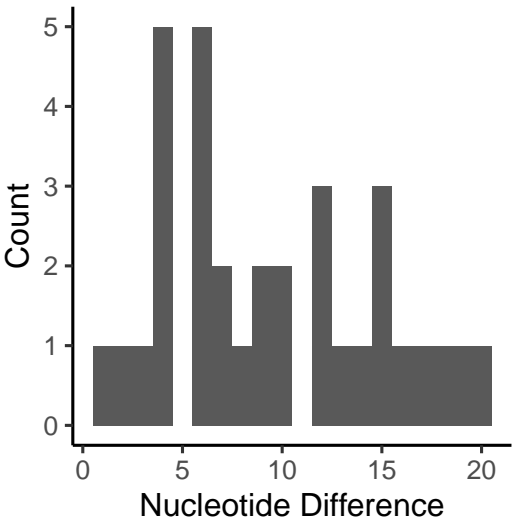
IGHV1-58\*02

24 sequences assigned  
No exact matches.



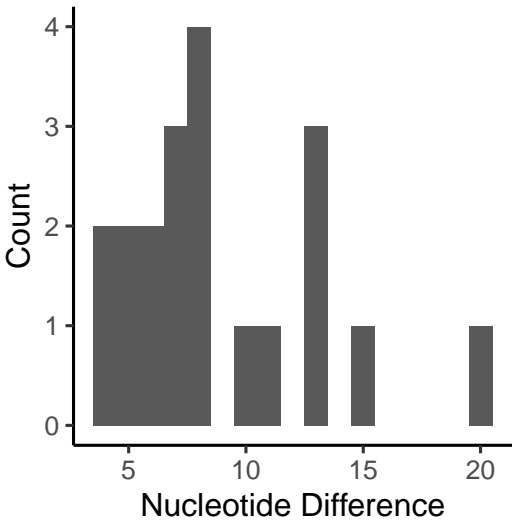
IGHV1-69\*10

61 sequences assigned  
No exact matches.



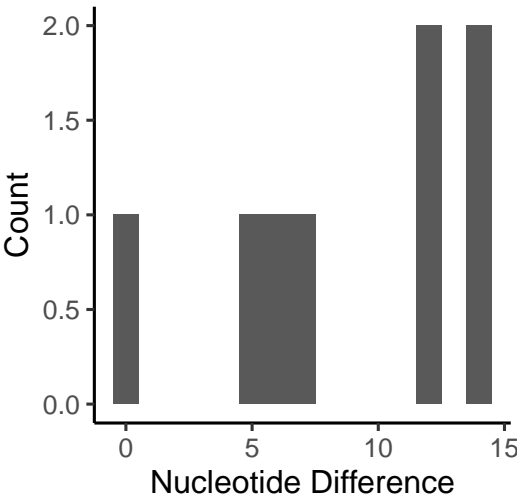
IGHV2-70\*01

23 sequences assigned  
No exact matches.



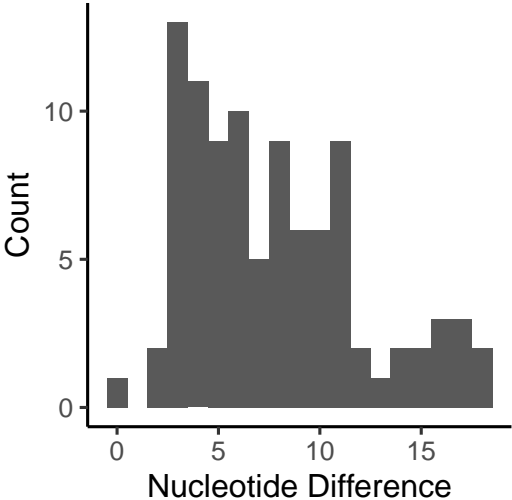
IGHV1-58\*01\_03

42 sequences assigned  
1 (2.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



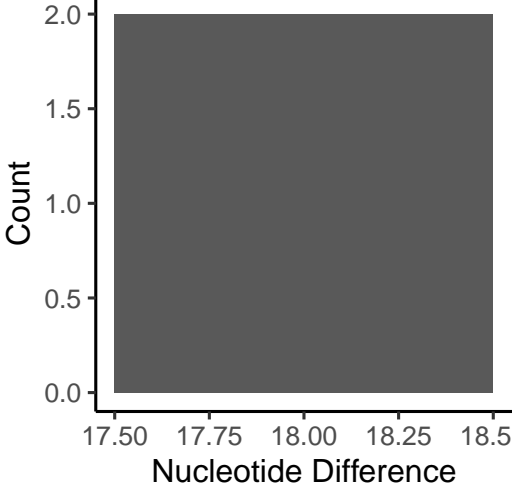
IGHV2-5\*02

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



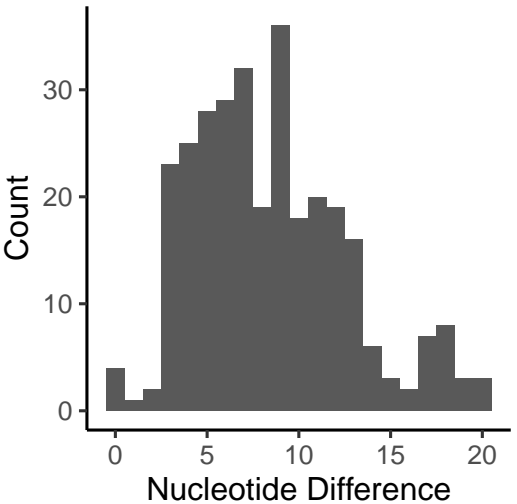
IGHV2-70D\*04

2 sequences assigned  
No exact matches.



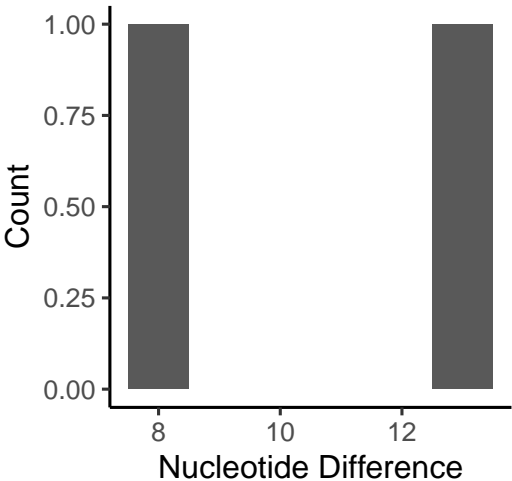
IGHV1-69\*01\_12\_13

321 sequences assigned  
4 (1.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



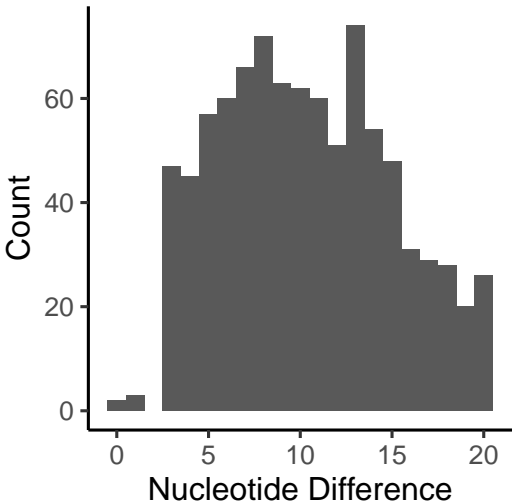
IGHV2-26\*01

5 sequences assigned  
No exact matches.



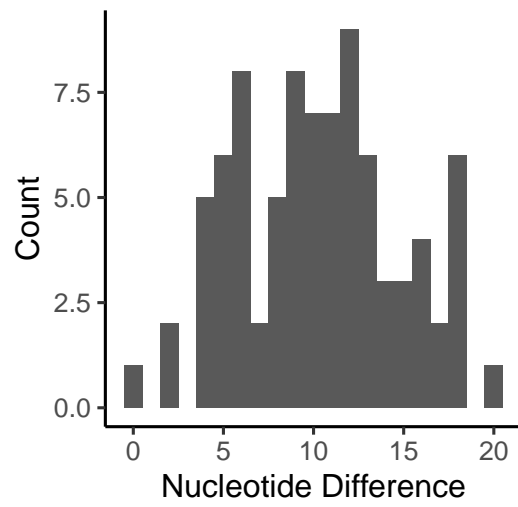
IGHV3-7\*03

948 sequences assigned  
2 (0.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



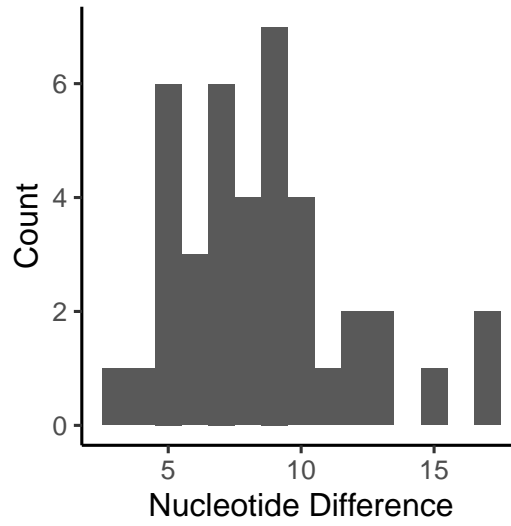
### IGHV3-11\*06

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



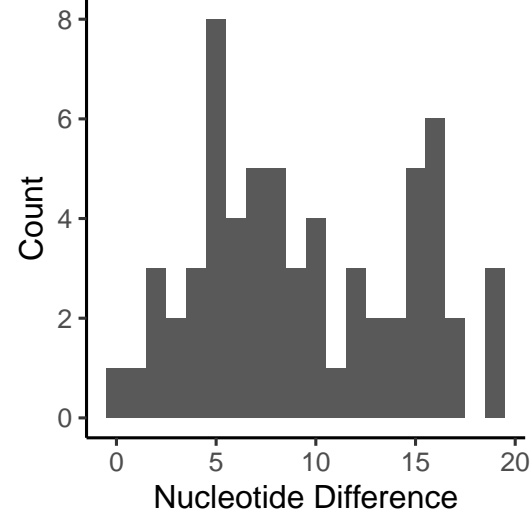
### IGHV3-13\*04

74 sequences assigned  
No exact matches.



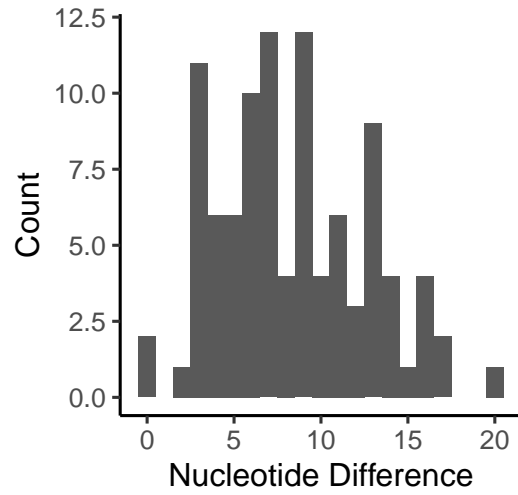
### IGHV3-20\*03\_04

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



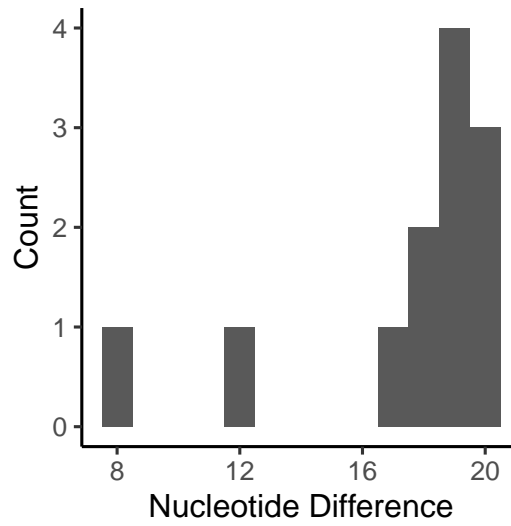
### IGHV3-11\*03\_05

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



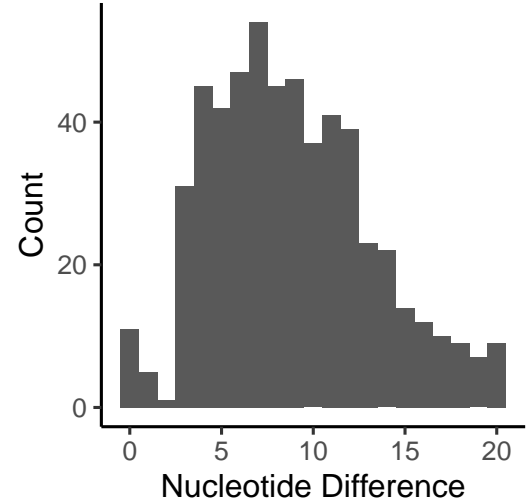
### IGHV3-13\*05

12 sequences assigned  
No exact matches.



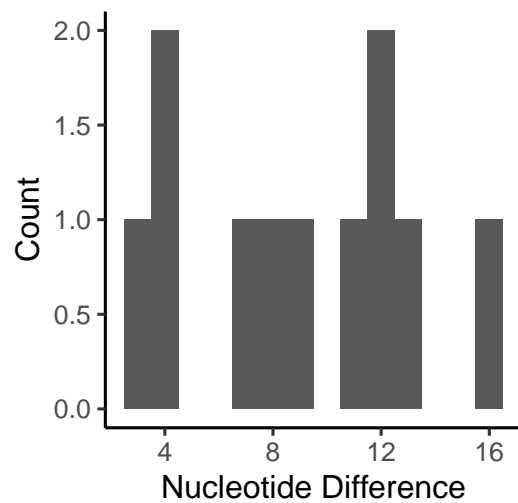
### IGHV3-21\*01\_02

592 sequences assigned  
11 (1.9%) exact matches, in which:  
6 unique CDR3  
4 unique J



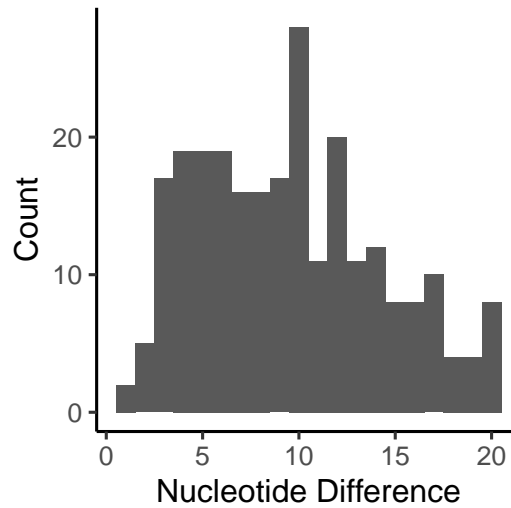
### IGHV3-13\*01

12 sequences assigned  
No exact matches.



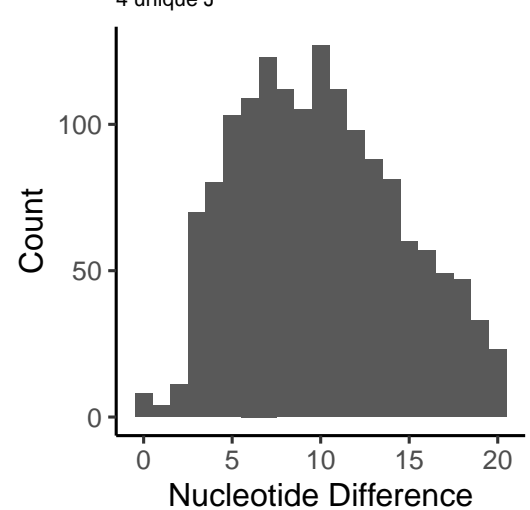
### IGHV3-15\*01\_02

291 sequences assigned  
No exact matches.



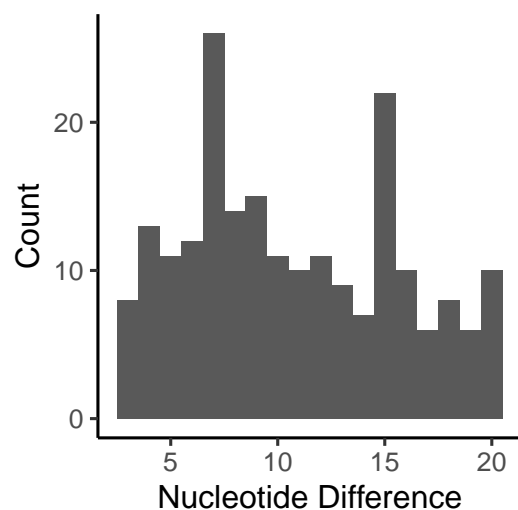
### IGHV3-23\*01\_04

1671 sequences assigned  
8 (0.5%) exact matches, in which:  
6 unique CDR3  
4 unique J



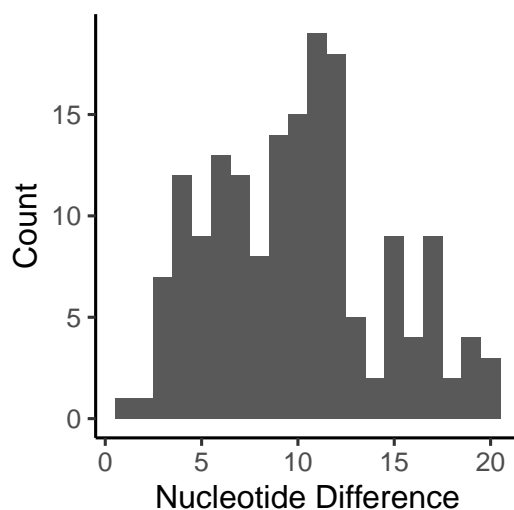
### IGHV3-30\*01

239 sequences assigned  
No exact matches.



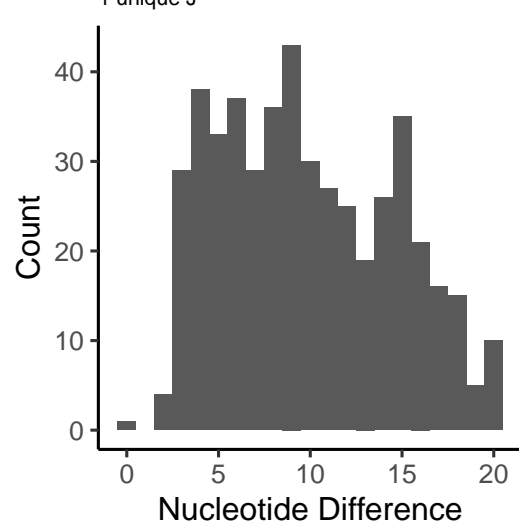
### IGHV3-33\*08

181 sequences assigned  
No exact matches.



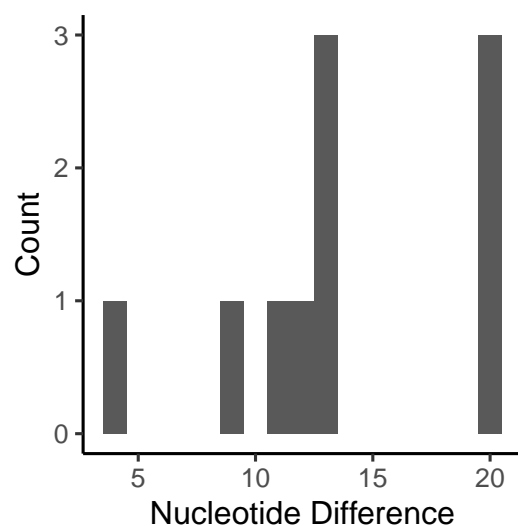
### IGHV3-48\*02

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



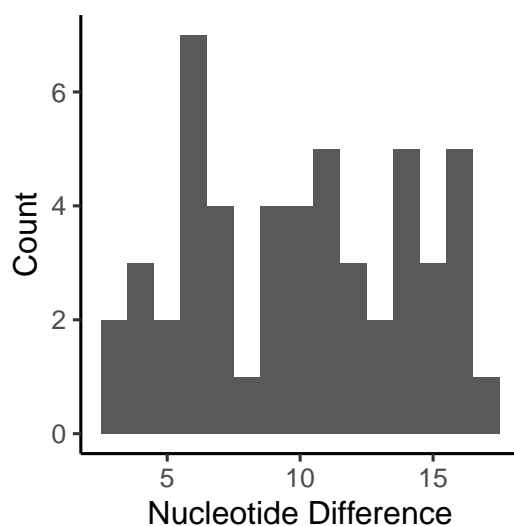
### IGHV3-30-3\*03

15 sequences assigned  
No exact matches.



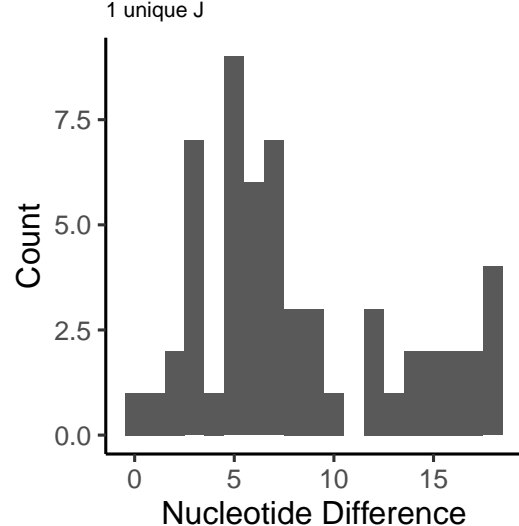
### IGHV3-43\*01

62 sequences assigned  
No exact matches.



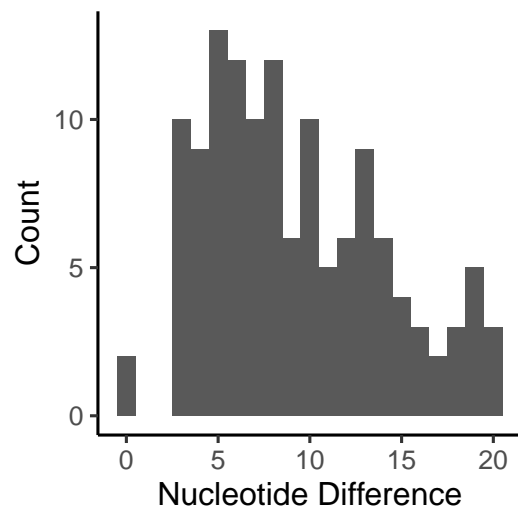
### IGHV3-49\*04

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



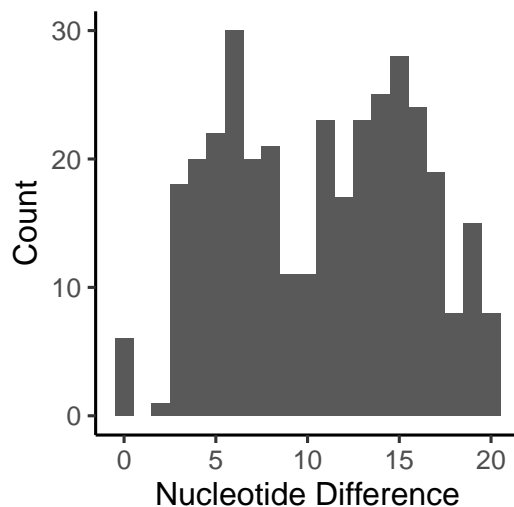
### IGHV3-33\*01

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



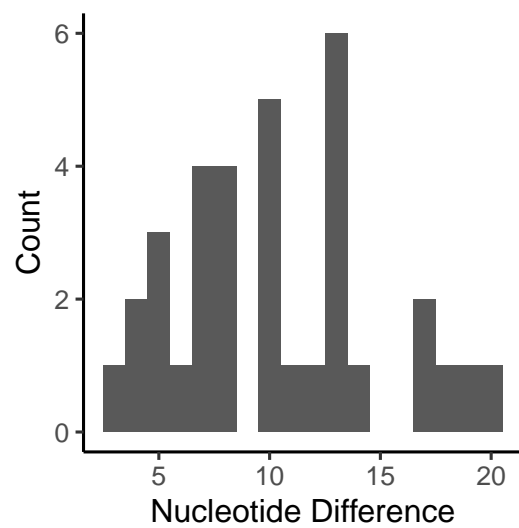
### IGHV3-48\*01

380 sequences assigned  
6 (1.6%) exact matches, in which:  
5 unique CDR3  
2 unique J



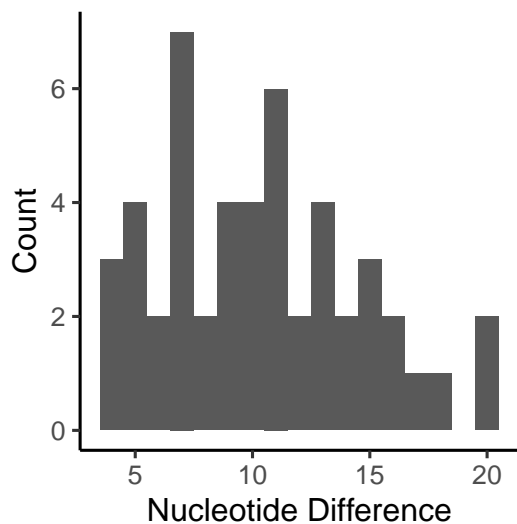
### IGHV3-49\*03\_05

34 sequences assigned  
No exact matches.



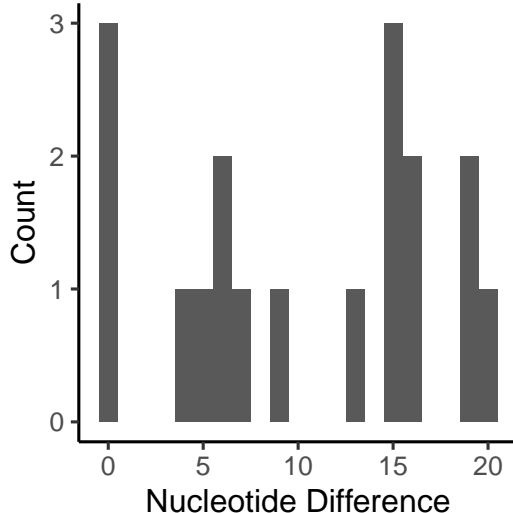
### IGHV3-53\*04

55 sequences assigned  
No exact matches.



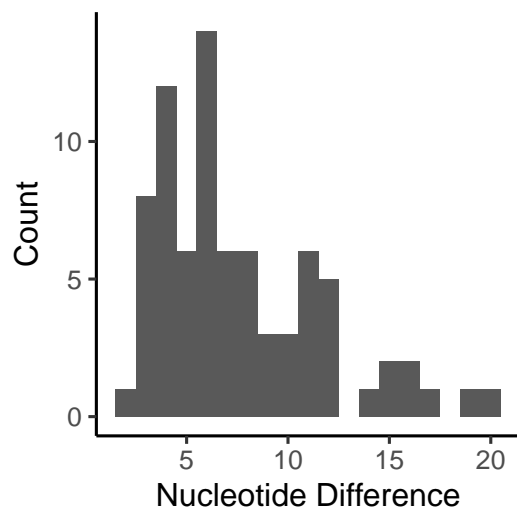
### IGHV3-64\*02\_07

18 sequences assigned  
3 (16.7%) exact matches, in which:  
2 unique CDR3  
1 unique J



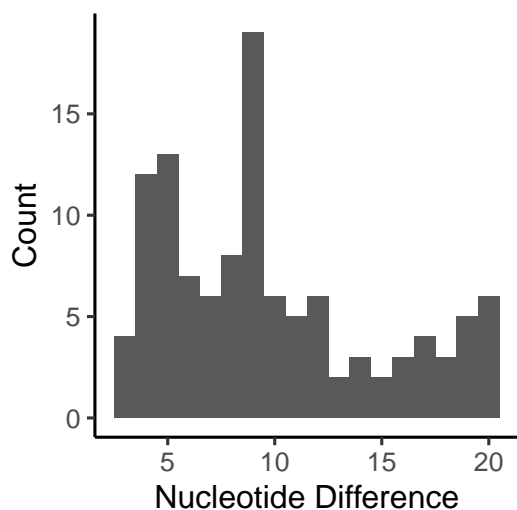
### IGHV3-73\*01\_02

79 sequences assigned  
No exact matches.



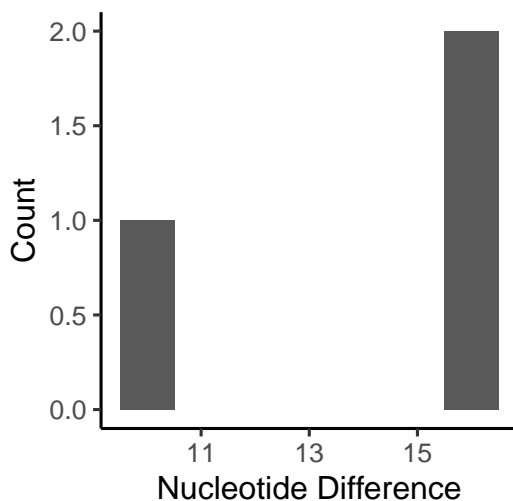
### IGHV3-53\*01\_02

119 sequences assigned  
No exact matches.



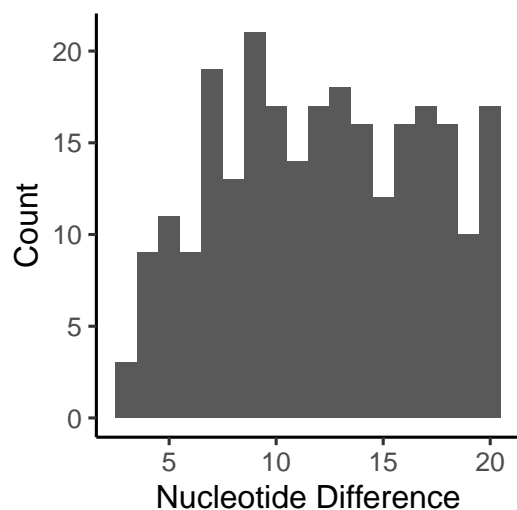
### IGHV3-69-1\*01

8 sequences assigned  
No exact matches.



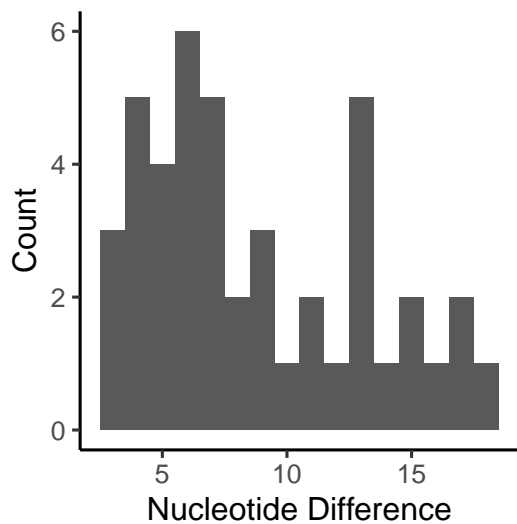
### IGHV3-74\*03

316 sequences assigned  
No exact matches.



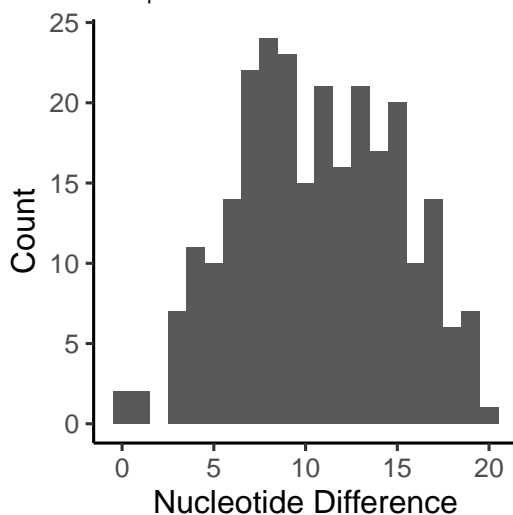
### IGHV3-64\*01

50 sequences assigned  
No exact matches.



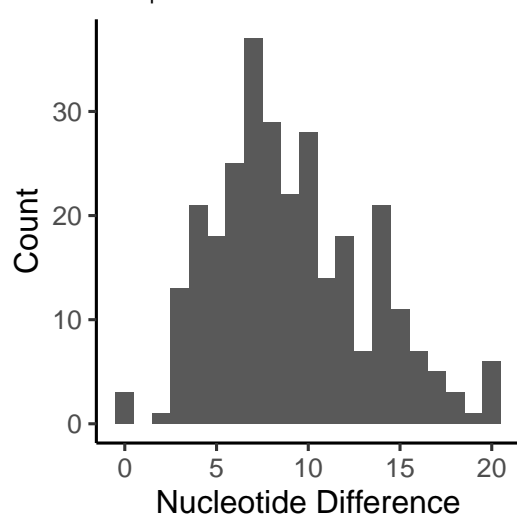
### IGHV3-72\*01

286 sequences assigned  
2 (0.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



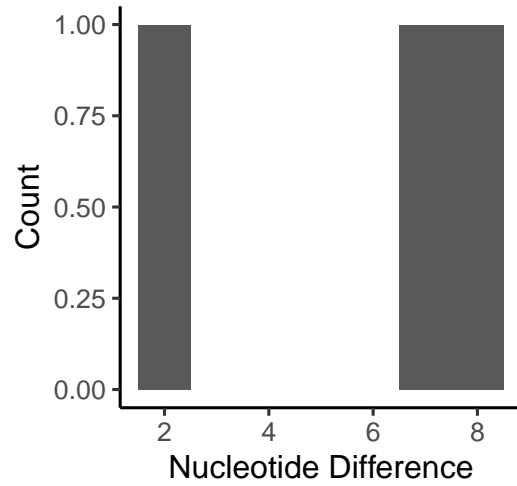
### IGHV3-74\*01\_02

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



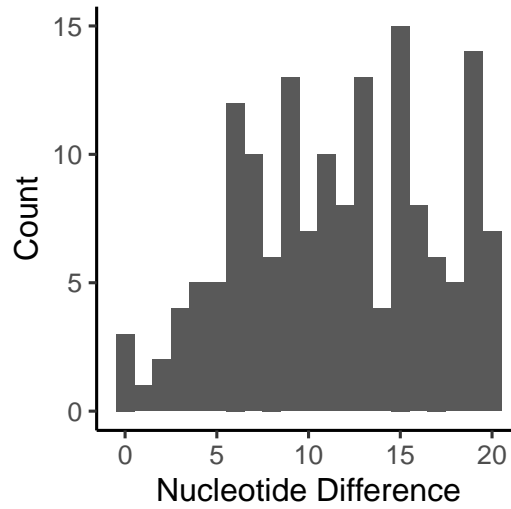
### IGHV3-43D\*04

3 sequences assigned  
No exact matches.



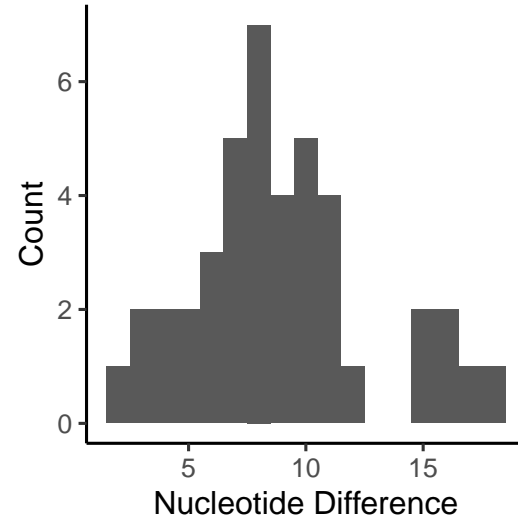
### IGHV4-4\*02\_03

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



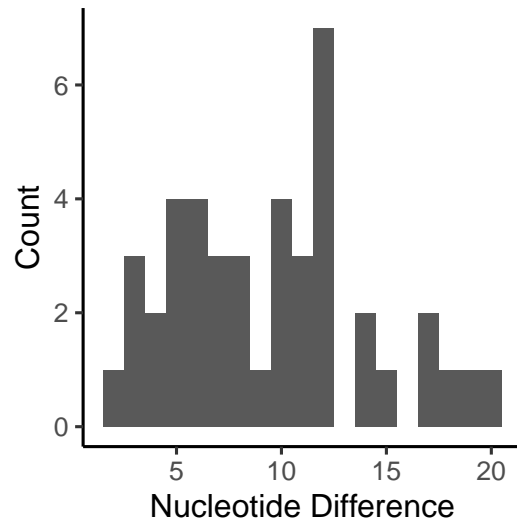
### IGHV4-31\*01

49 sequences assigned  
No exact matches.



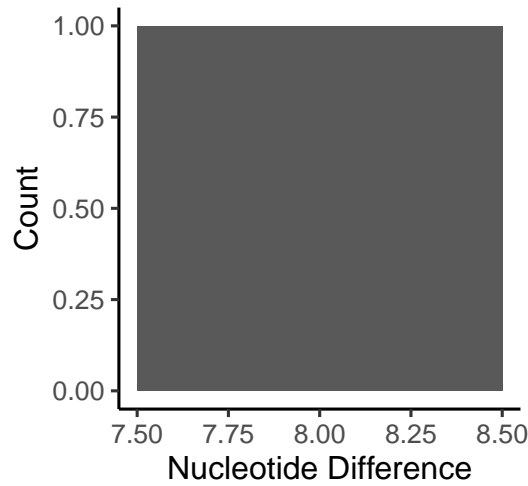
### IGHV3-64D\*06

49 sequences assigned  
No exact matches.



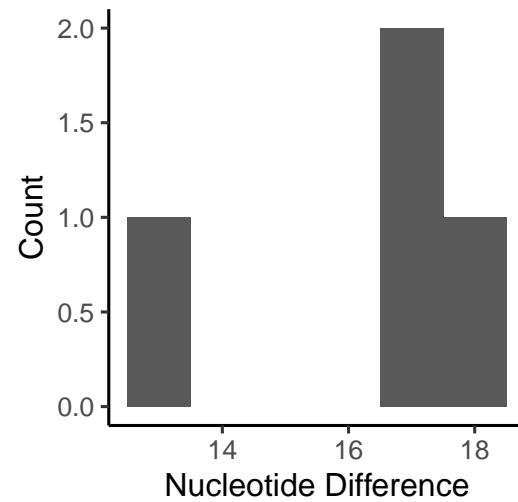
### IGHV4-28\*01\_07

2 sequences assigned  
No exact matches.



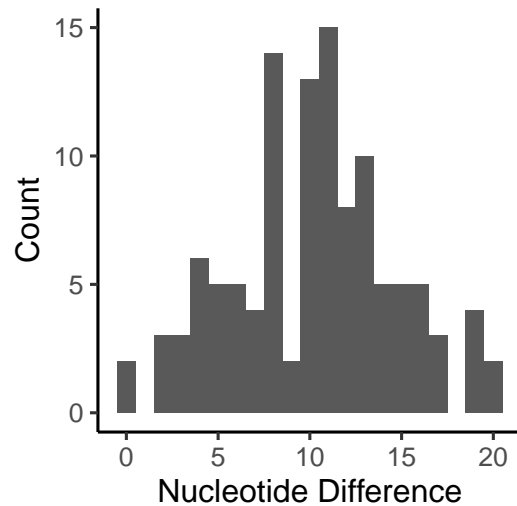
### IGHV4-31\*02

24 sequences assigned  
No exact matches.



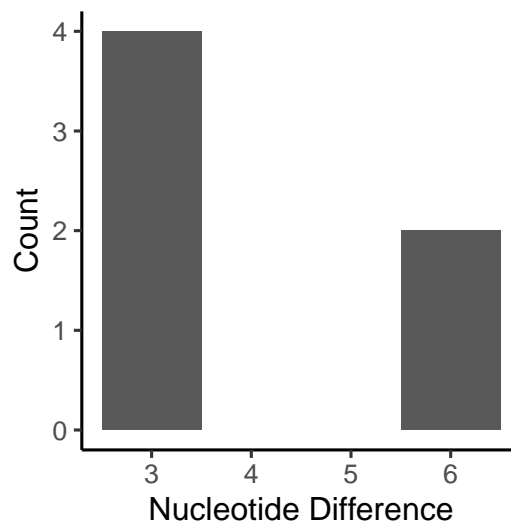
### IGHV3-64D\*09

122 sequences assigned  
2 (1.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



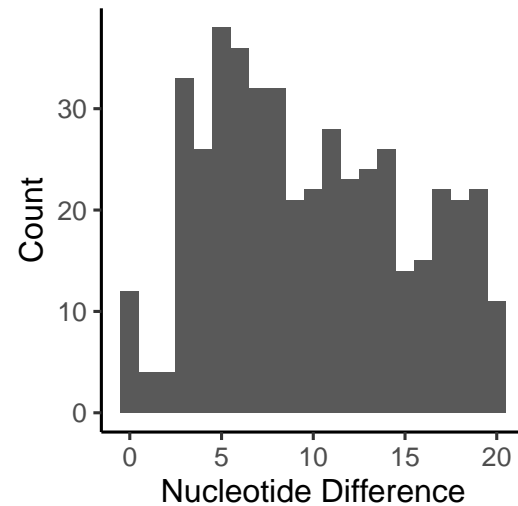
### IGHV4-28\*02\_05

6 sequences assigned  
No exact matches.



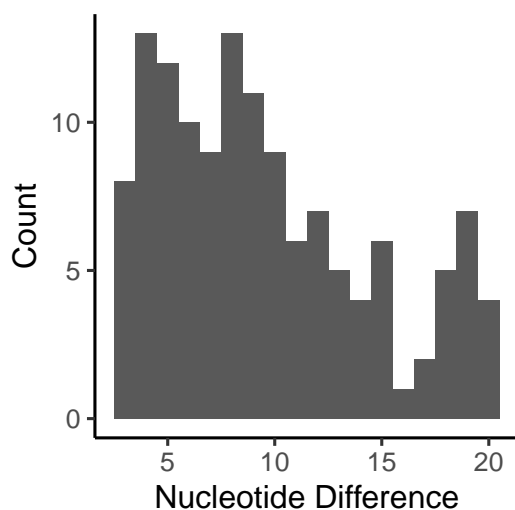
### IGHV4-34\*01\_02

540 sequences assigned  
12 (2.2%) exact matches, in which:  
9 unique CDR3  
5 unique J



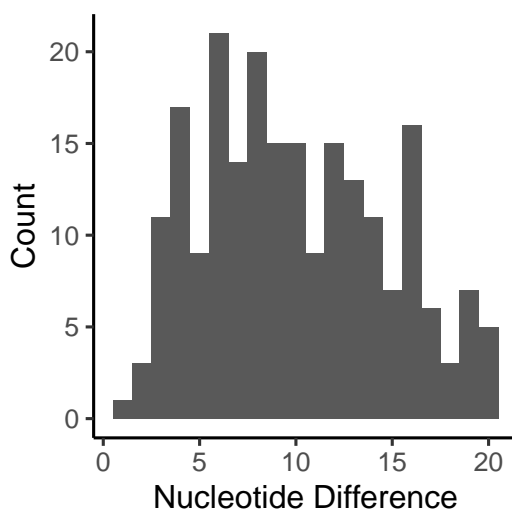
### IGHV4-38-2\*01

137 sequences assigned  
No exact matches.



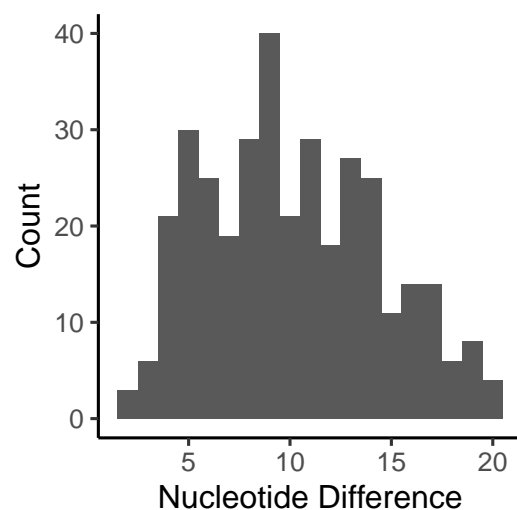
### IGHV4-39\*01\_05

260 sequences assigned  
No exact matches.



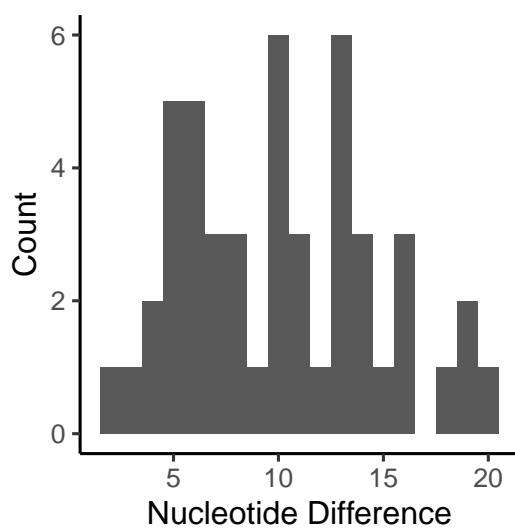
### IGHV4-59\*11

387 sequences assigned  
No exact matches.



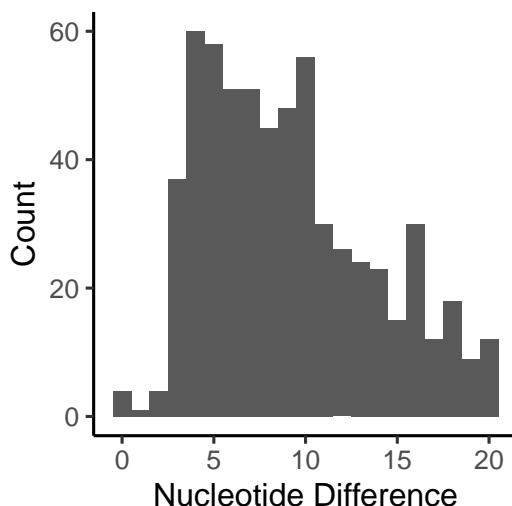
### IGHV4-38-2\*02

65 sequences assigned  
No exact matches.



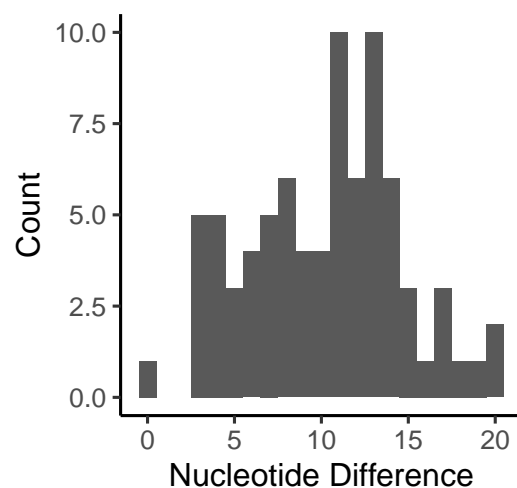
### IGHV4-59\*08

709 sequences assigned  
4 (0.6%) exact matches, in which:  
4 unique CDR3  
3 unique J



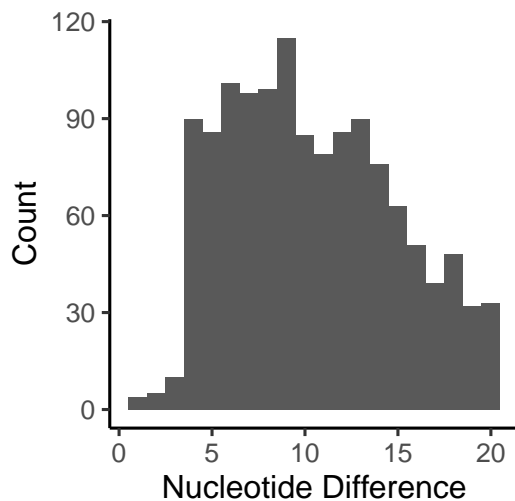
### IGHV4-61\*01

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



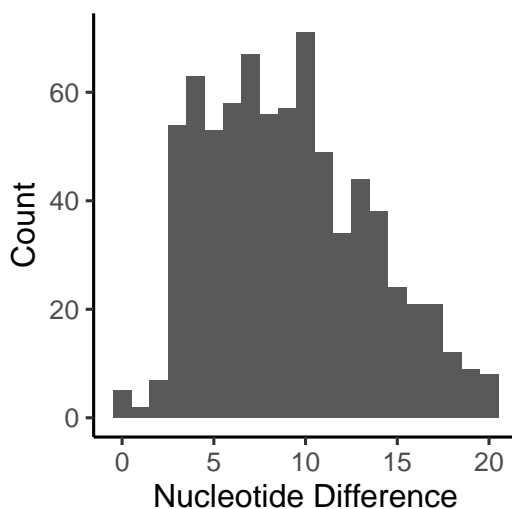
### IGHV4-39\*02

1484 sequences assigned  
No exact matches.



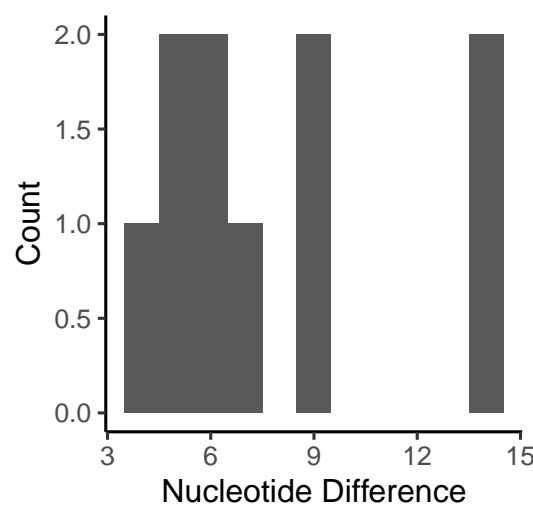
### IGHV4-59\*01\_07

831 sequences assigned  
5 (0.6%) exact matches, in which:  
5 unique CDR3  
2 unique J



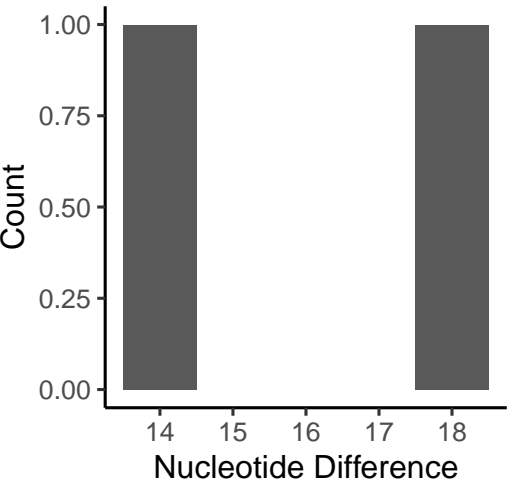
### IGHV4-61\*08

11 sequences assigned  
No exact matches.



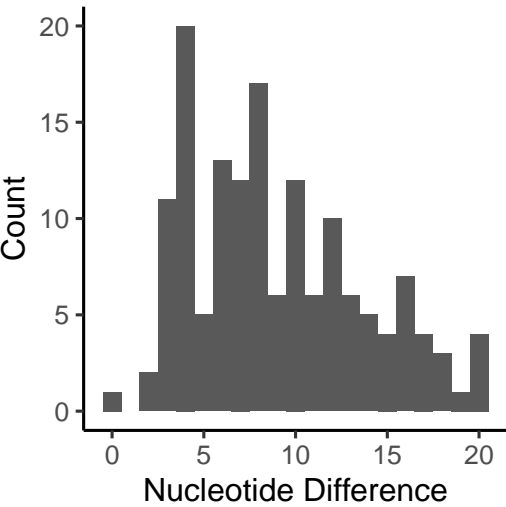
IGHV4/OR15-8\*01

3 sequences assigned  
No exact matches.



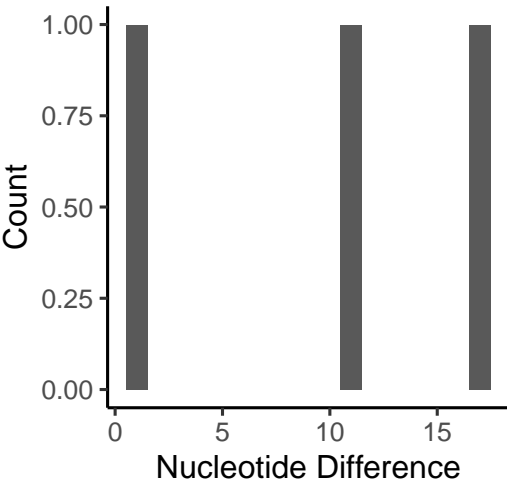
IGHV5-51\*01\_03

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



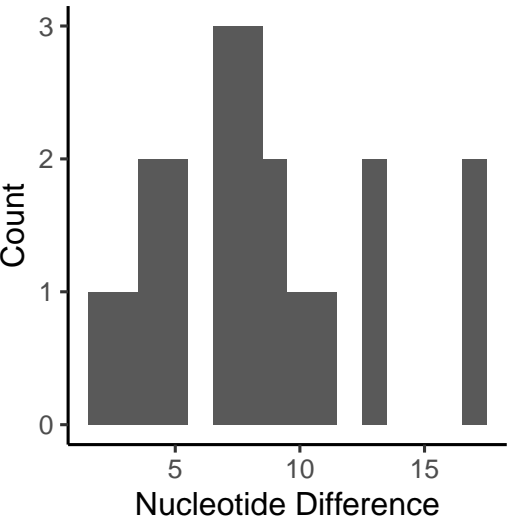
IGHV7-4-1\*02

3 sequences assigned  
No exact matches.



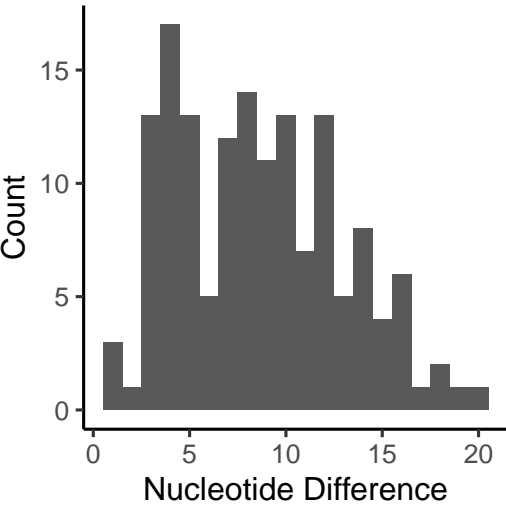
IGHV5-10-1\*01\_03

27 sequences assigned  
No exact matches.



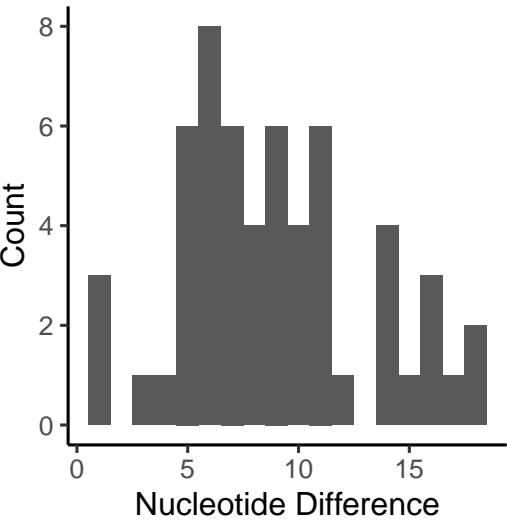
IGHV6-1\*01\_02

161 sequences assigned  
No exact matches.



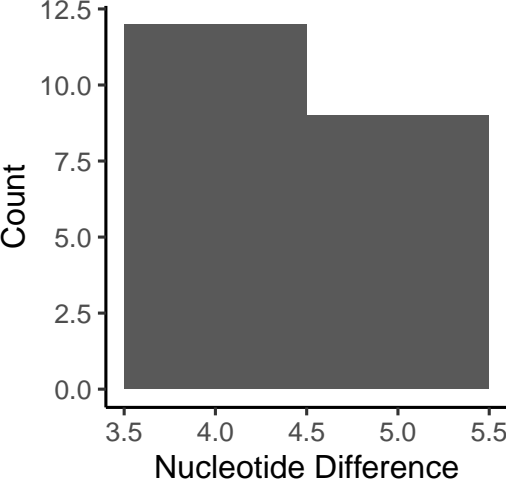
IGHV5-51\*07

59 sequences assigned  
No exact matches.



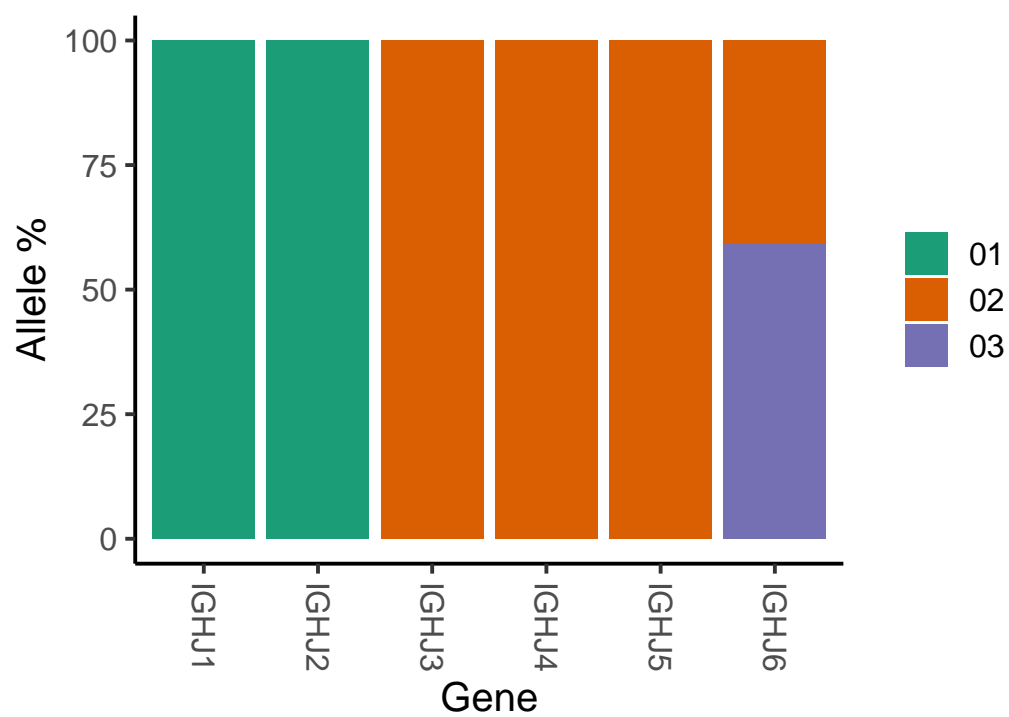
IGHV7-4-1\*01

21 sequences assigned  
No exact matches.

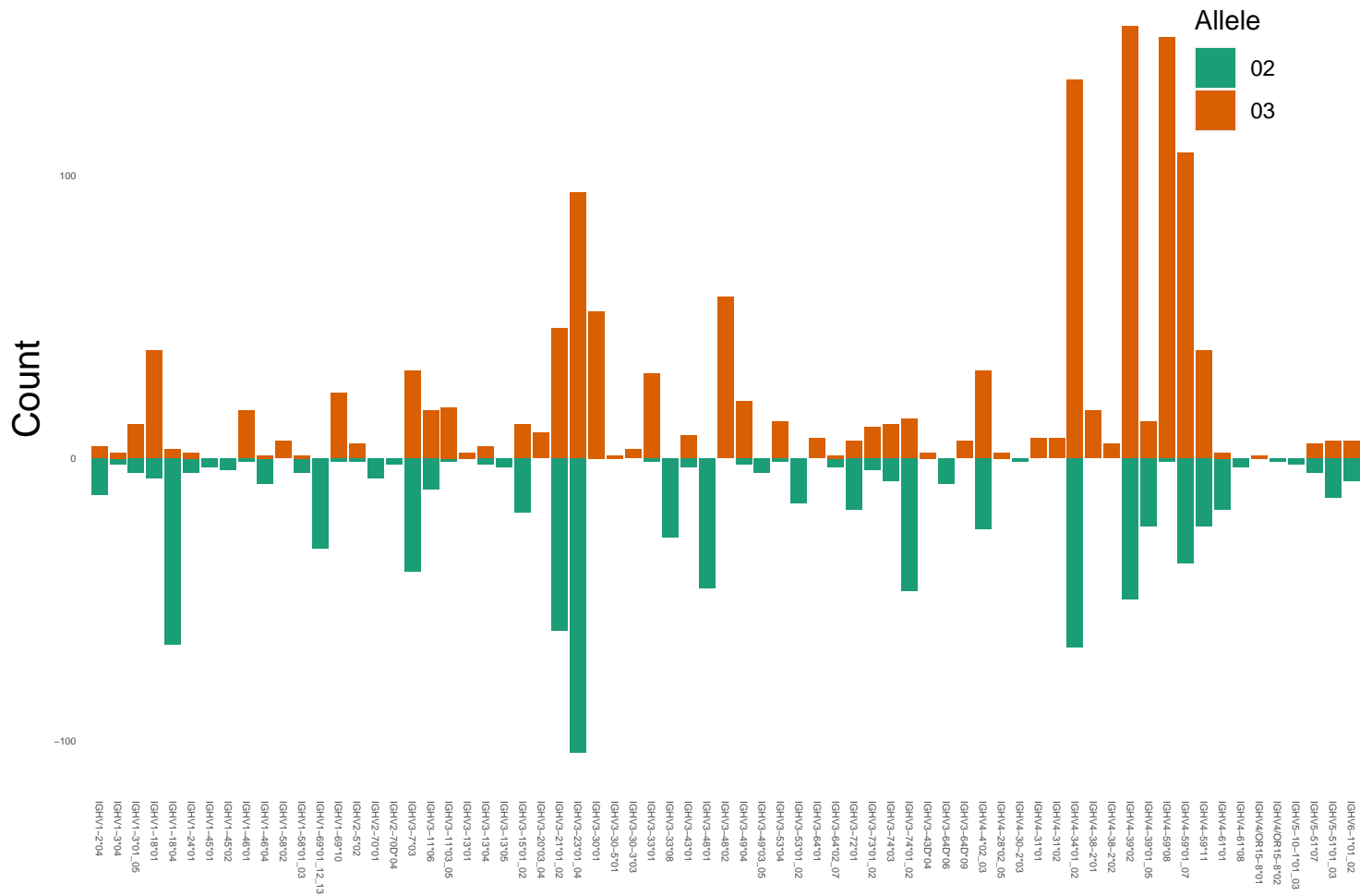




Allele Usage



## Sequence Count byIGHJ6 allele usage



[illegible]