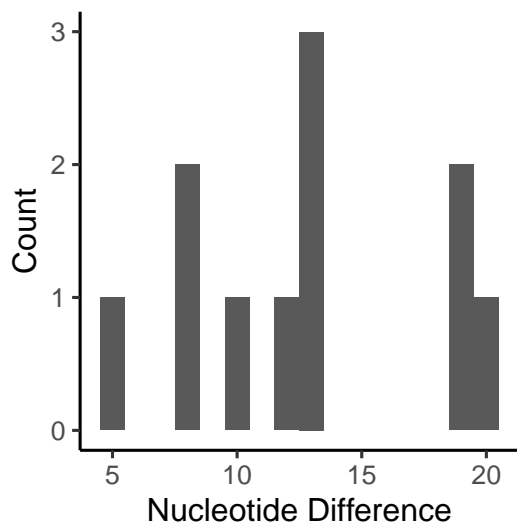


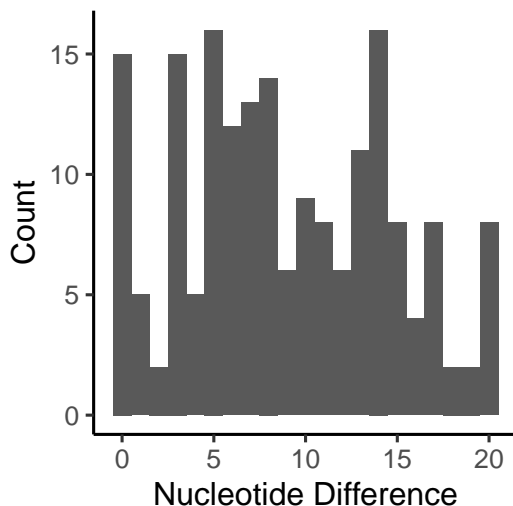
### IGHV1-2\*02

15 sequences assigned  
No exact matches.



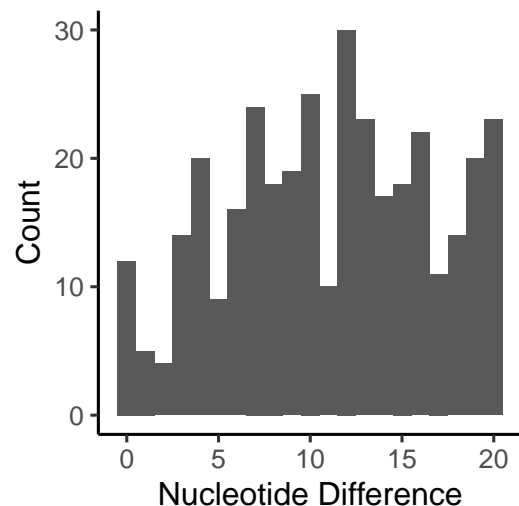
### IGHV1-3\*01\_05

229 sequences assigned  
15 (6.6%) exact matches, in which:  
14 unique CDR3  
5 unique J



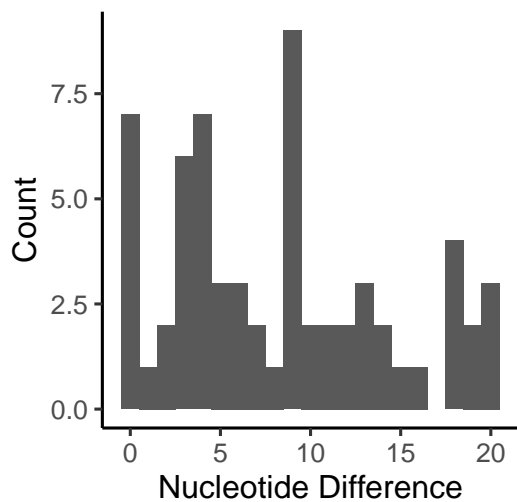
### IGHV1-18\*04

495 sequences assigned  
12 (2.4%) exact matches, in which:  
10 unique CDR3  
4 unique J



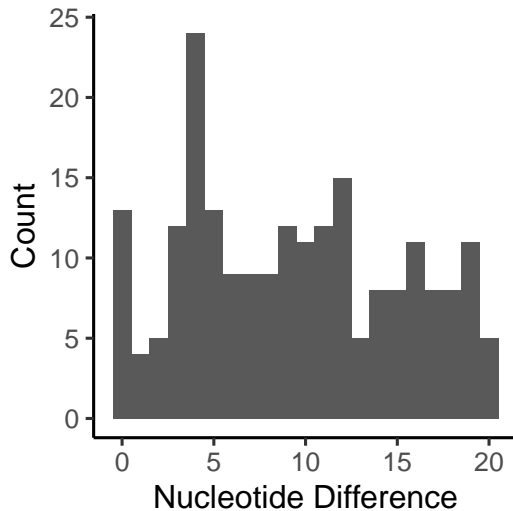
### IGHV1-2\*04

69 sequences assigned  
7 (10.1%) exact matches, in which:  
6 unique CDR3  
3 unique J



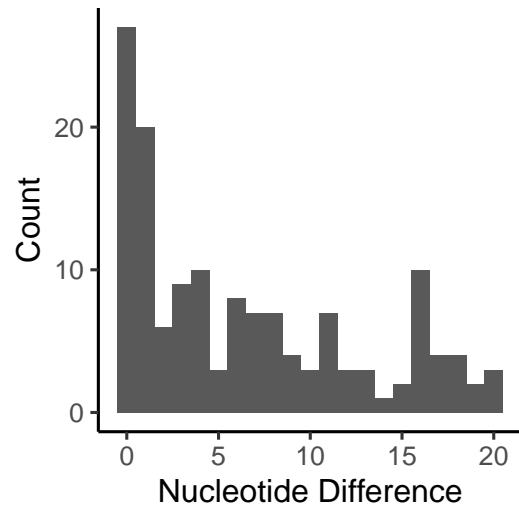
### IGHV1-8\*01

282 sequences assigned  
13 (4.6%) exact matches, in which:  
11 unique CDR3  
3 unique J



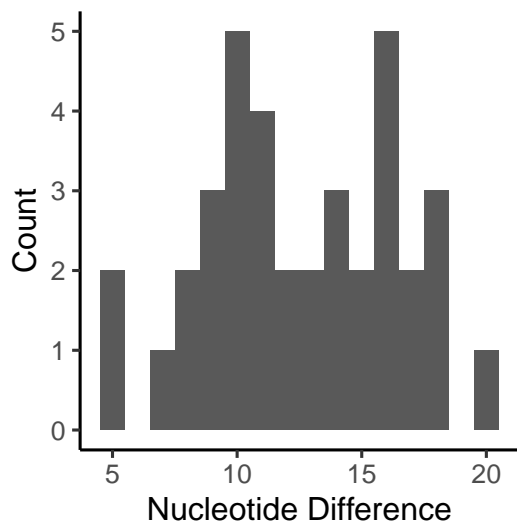
### IGHV1-24\*01

192 sequences assigned  
27 (14.1%) exact matches, in which:  
19 unique CDR3  
5 unique J



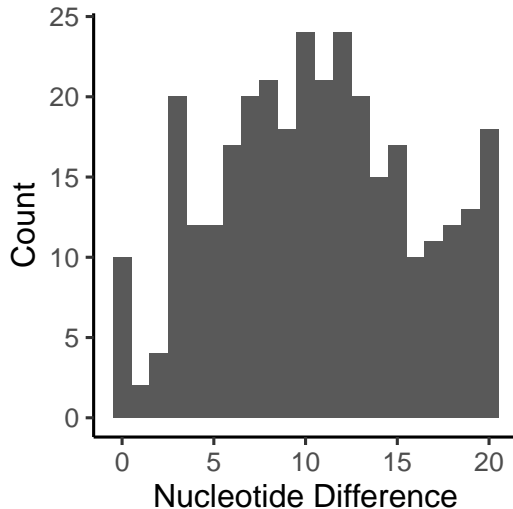
### IGHV1-3\*04

54 sequences assigned  
No exact matches.



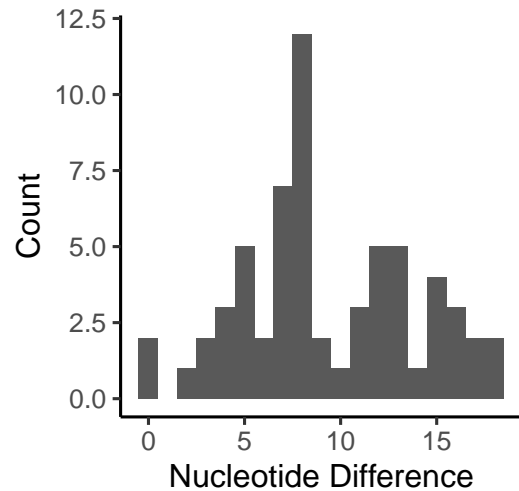
### IGHV1-18\*01

459 sequences assigned  
10 (2.2%) exact matches, in which:  
10 unique CDR3  
5 unique J



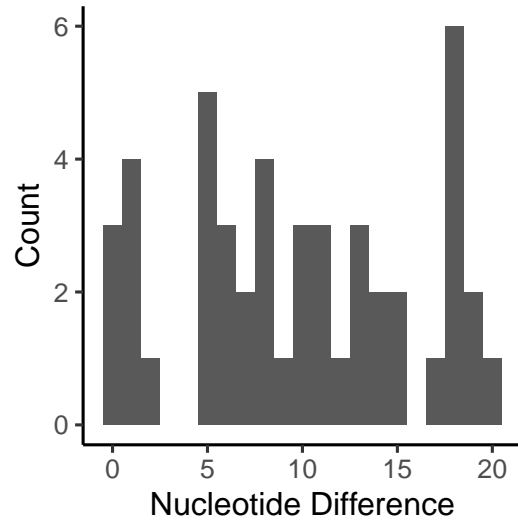
### IGHV1-46\*01

90 sequences assigned  
2 (2.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



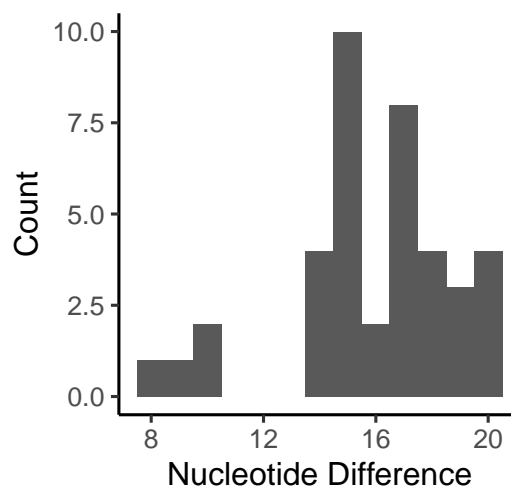
### IGHV1-46\*03

68 sequences assigned  
3 (4.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



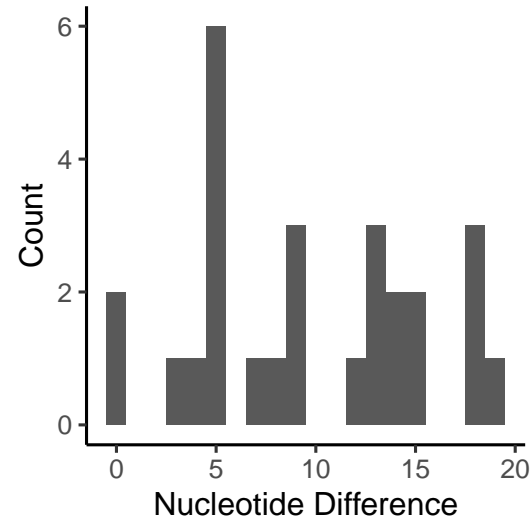
### IGHV1-69\*08

58 sequences assigned  
No exact matches.



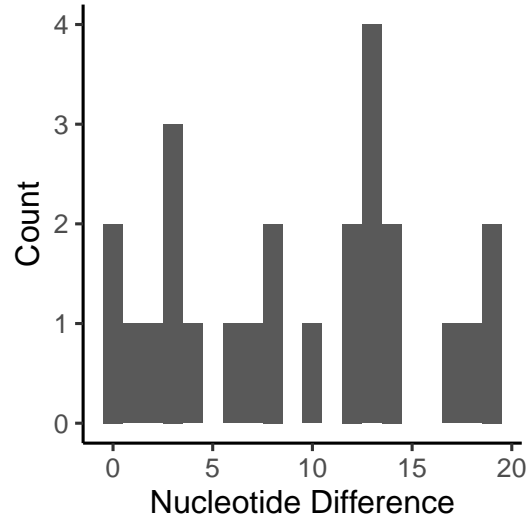
### IGHV2-26\*01

33 sequences assigned  
2 (6.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



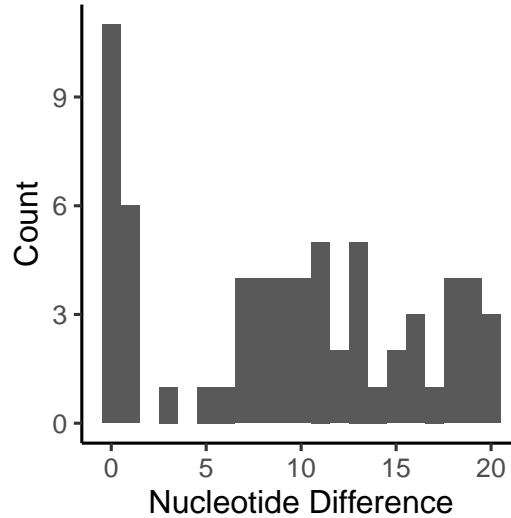
### IGHV1-58\*02

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



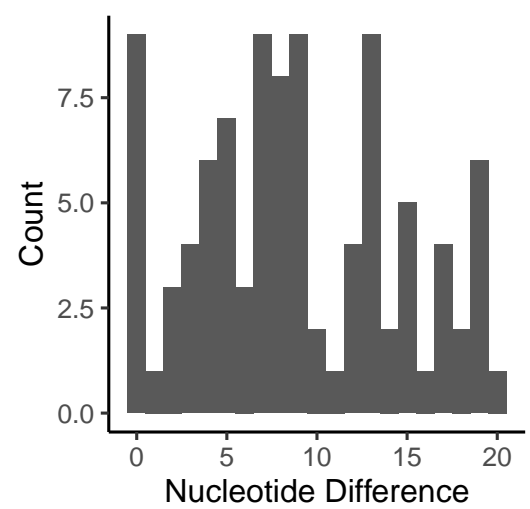
### IGHV1-69\*04\_09

99 sequences assigned  
11 (11.1%) exact matches, in which:  
8 unique CDR3  
2 unique J



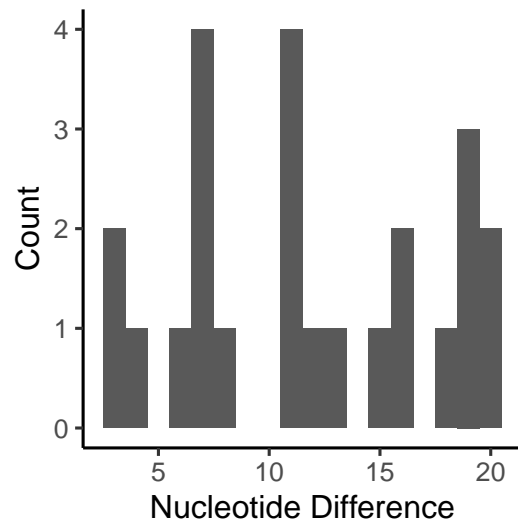
### IGHV2-70\*11\_15

106 sequences assigned  
9 (8.5%) exact matches, in which:  
7 unique CDR3  
3 unique J



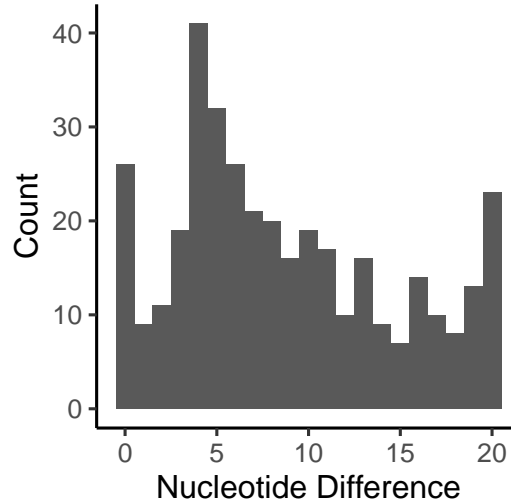
### IGHV1-69\*02

39 sequences assigned  
No exact matches.



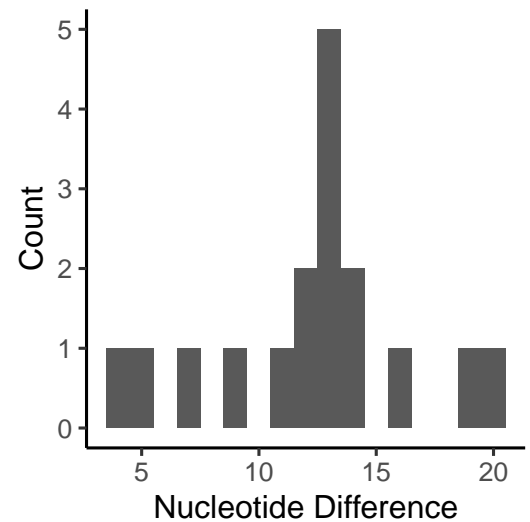
### IGHV2-5\*02

449 sequences assigned  
26 (5.8%) exact matches, in which:  
22 unique CDR3  
4 unique J



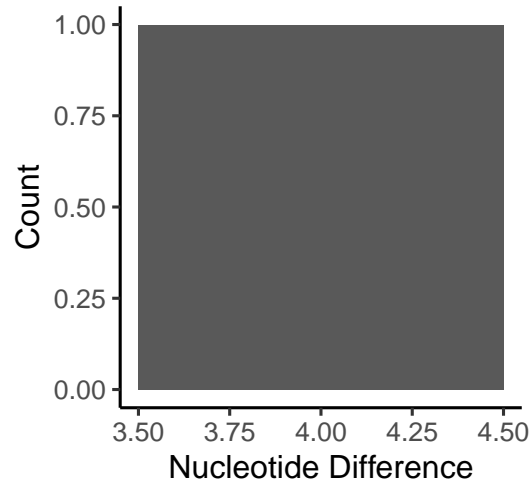
### IGHV2-70\*16\_17

18 sequences assigned  
No exact matches.



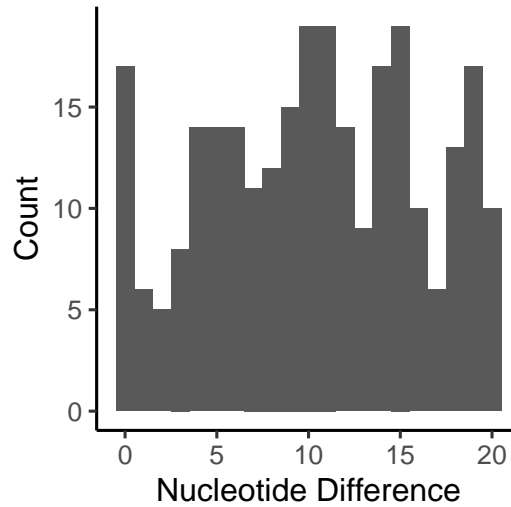
### IGHV2-70D\*04

1 sequences assigned  
No exact matches.



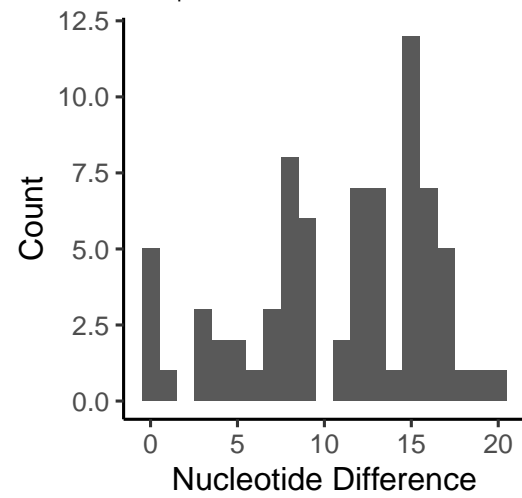
### IGHV3-9\*01

378 sequences assigned  
17 (4.5%) exact matches, in which:  
12 unique CDR3  
3 unique J



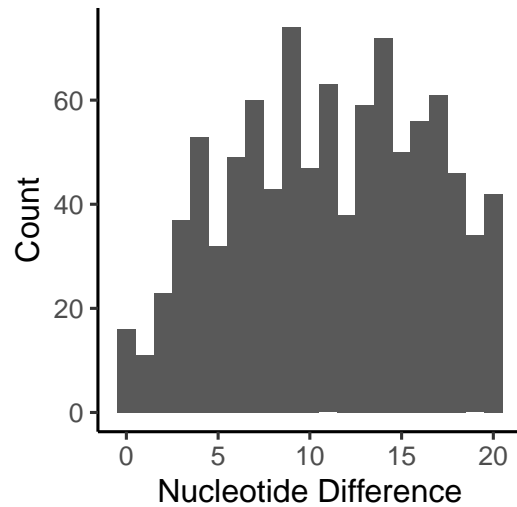
### IGHV3-13\*01

86 sequences assigned  
5 (5.8%) exact matches, in which:  
3 unique CDR3  
2 unique J



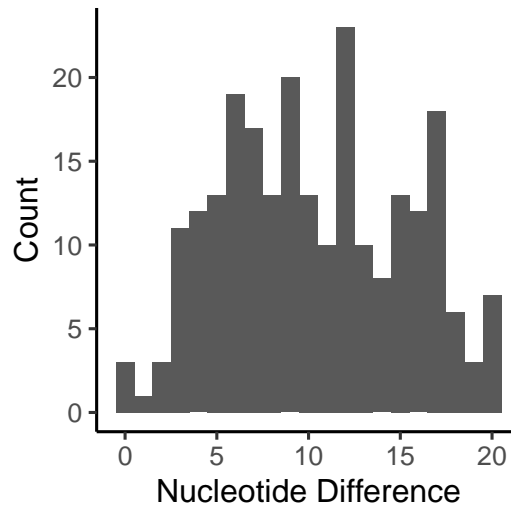
### IGHV3-7\*01

1291 sequences assigned  
16 (1.2%) exact matches, in which:  
12 unique CDR3  
4 unique J



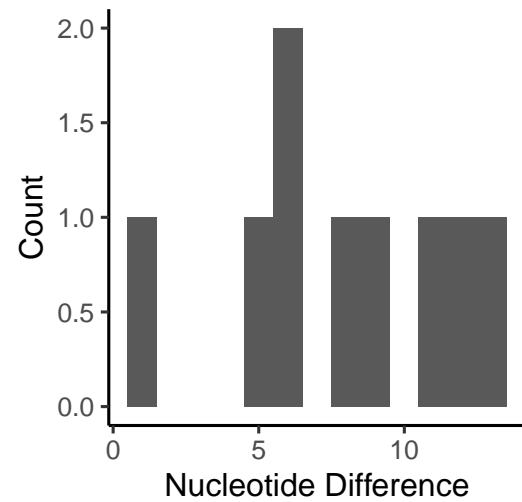
### IGHV3-11\*01

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



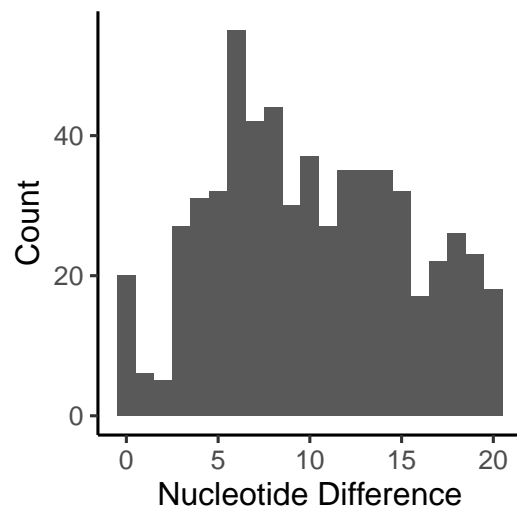
### IGHV3-13\*05

14 sequences assigned  
No exact matches.



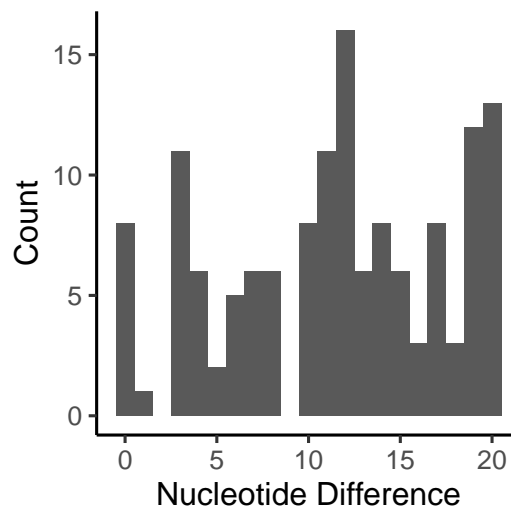
### IGHV3-7\*03

807 sequences assigned  
20 (2.5%) exact matches, in which:  
14 unique CDR3  
4 unique J



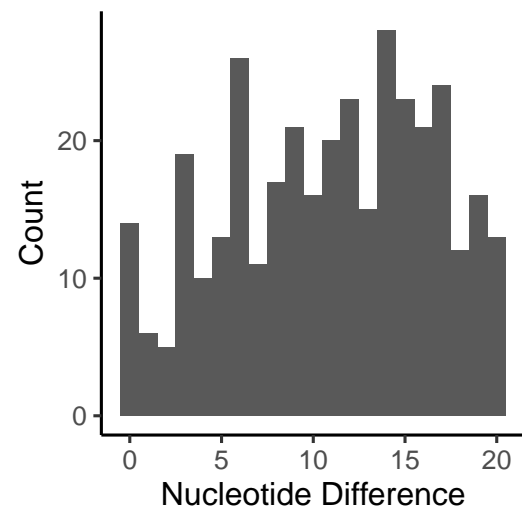
### IGHV3-11\*06

196 sequences assigned  
8 (4.1%) exact matches, in which:  
3 unique CDR3  
2 unique J



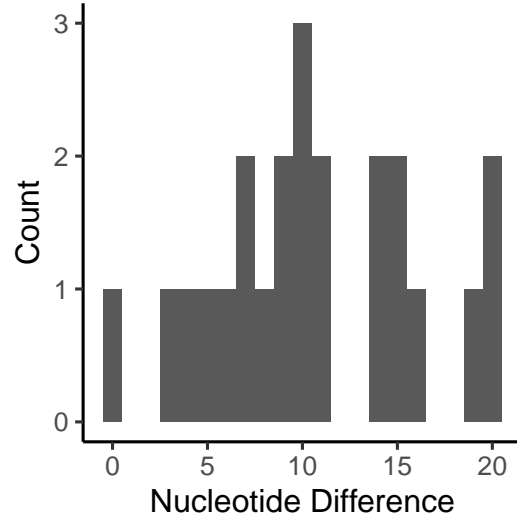
### IGHV3-15\*01\_02

483 sequences assigned  
14 (2.9%) exact matches, in which:  
9 unique CDR3  
4 unique J



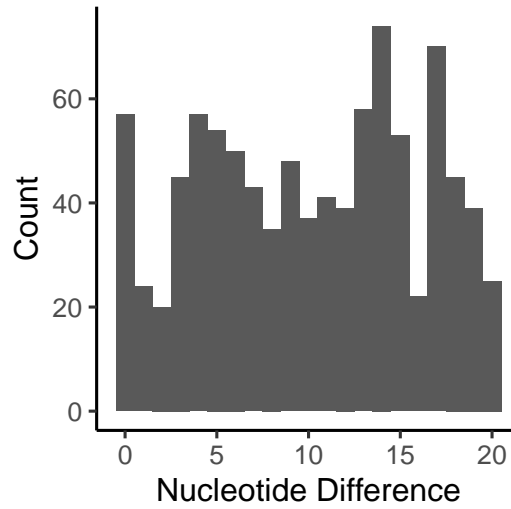
### IGHV3-20\*01\_02

30 sequences assigned  
1 (3.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



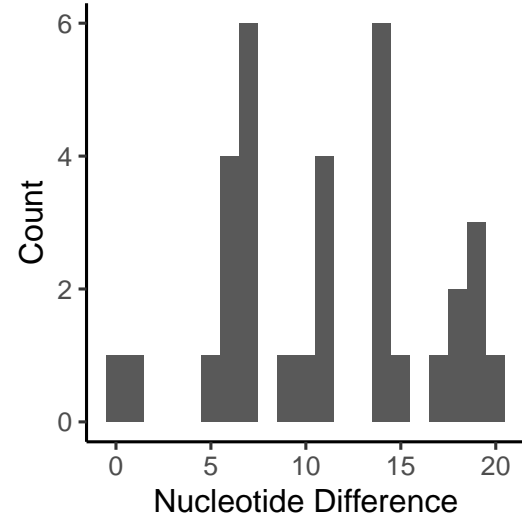
### IGHV3-21\*01\_02

1148 sequences assigned  
57 (5%) exact matches, in which:  
36 unique CDR3  
7 unique J



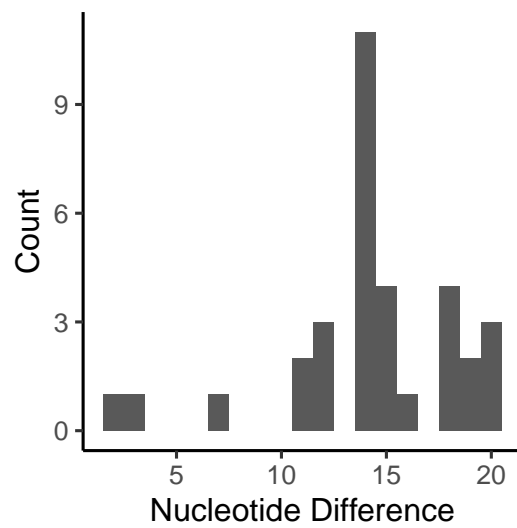
### IGHV3-30\*03

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



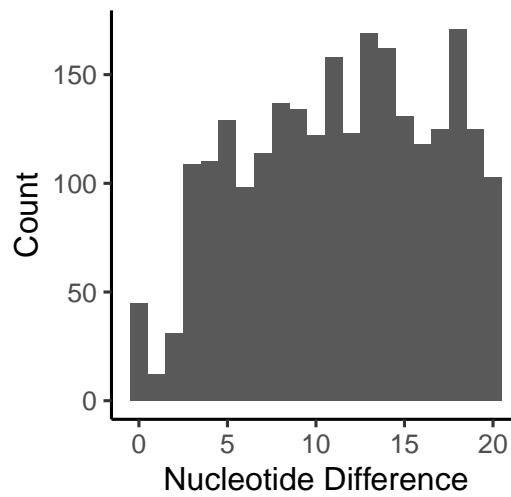
### IGHV3-20\*03\_04

57 sequences assigned  
No exact matches.



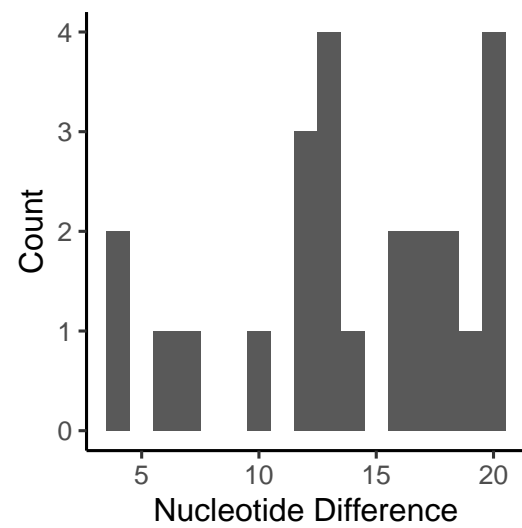
### IGHV3-23\*01\_04

3372 sequences assigned  
45 (1.3%) exact matches, in which:  
28 unique CDR3  
7 unique J



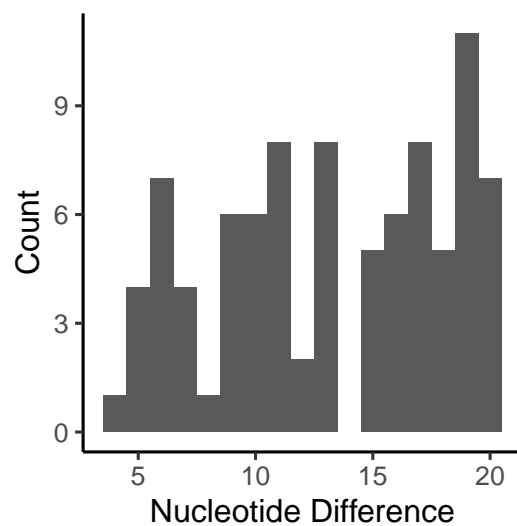
### IGHV3-30\*04

78 sequences assigned  
No exact matches.



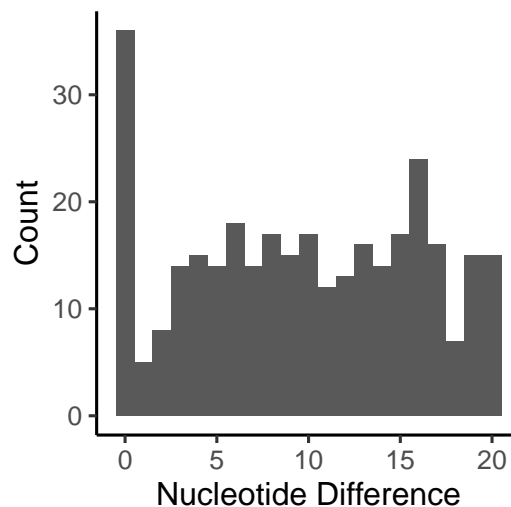
### IGHV3-21\*06

187 sequences assigned  
No exact matches.



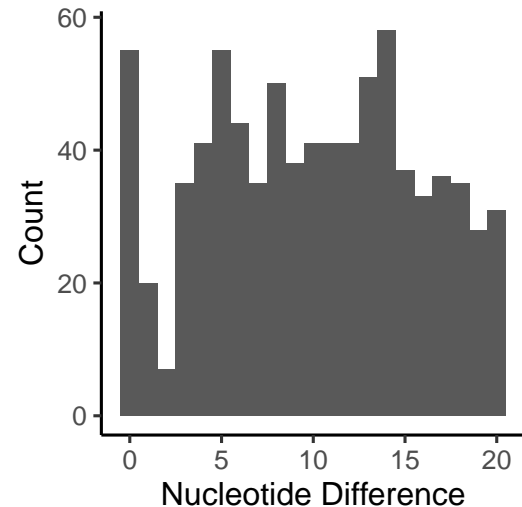
### IGHV3-30-3\*01

464 sequences assigned  
36 (7.8%) exact matches, in which:  
22 unique CDR3  
4 unique J



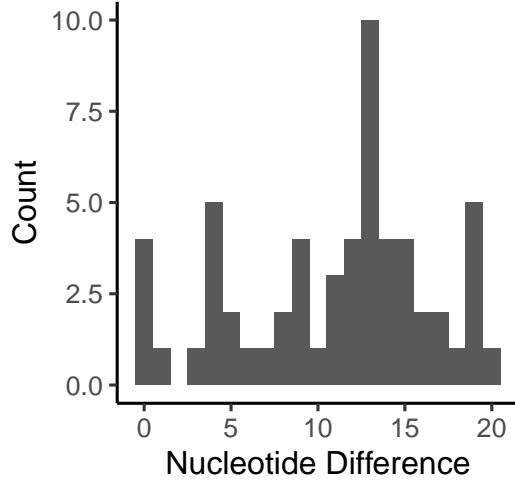
### IGHV3-33\*01

1023 sequences assigned  
55 (5.4%) exact matches, in which:  
31 unique CDR3  
6 unique J



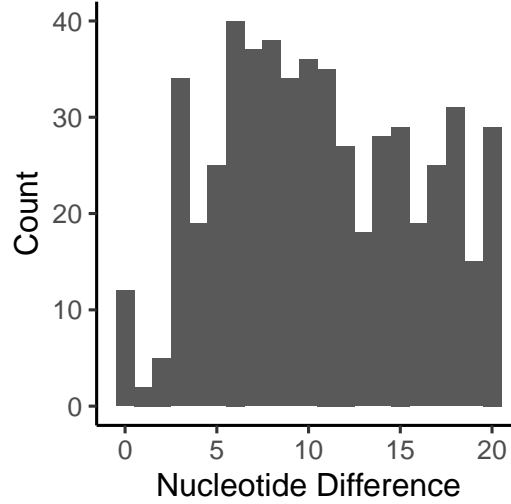
### IGHV3-43\*01

69 sequences assigned  
4 (5.8%) exact matches, in which:  
2 unique CDR3  
1 unique J



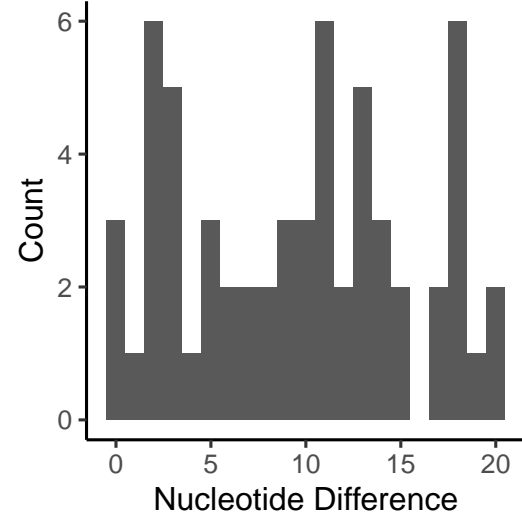
### IGHV3-48\*03

702 sequences assigned  
12 (1.7%) exact matches, in which:  
8 unique CDR3  
3 unique J



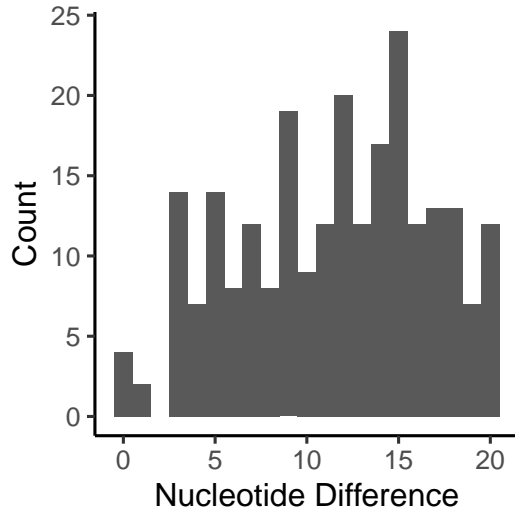
### IGHV3-53\*04

76 sequences assigned  
3 (3.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



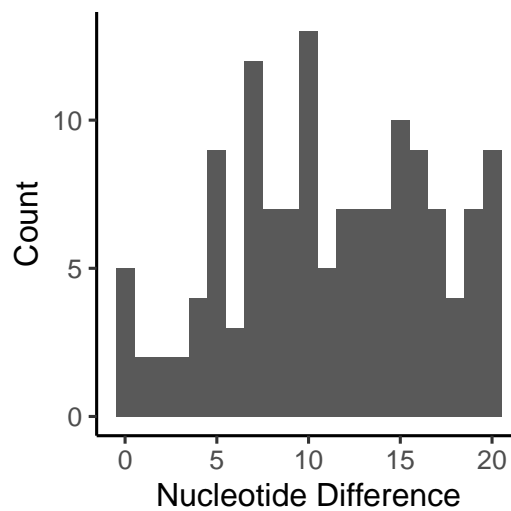
### IGHV3-43\*02

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



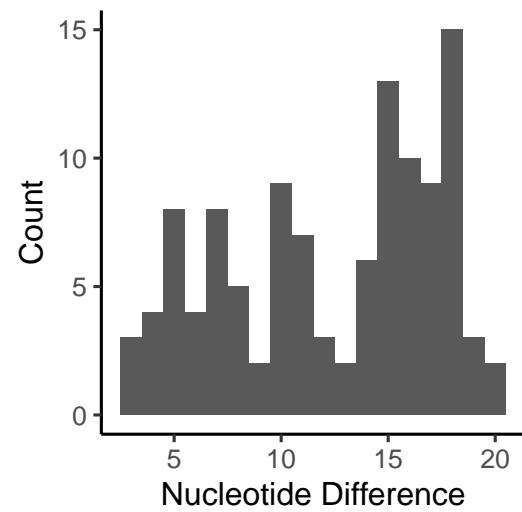
### IGHV3-49\*04

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



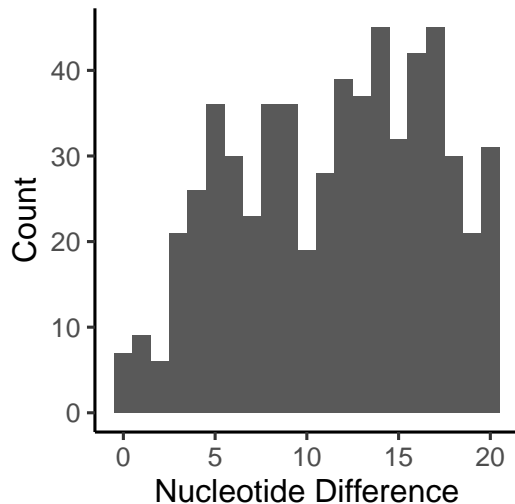
### IGHV3-53\*01\_02

181 sequences assigned  
No exact matches.



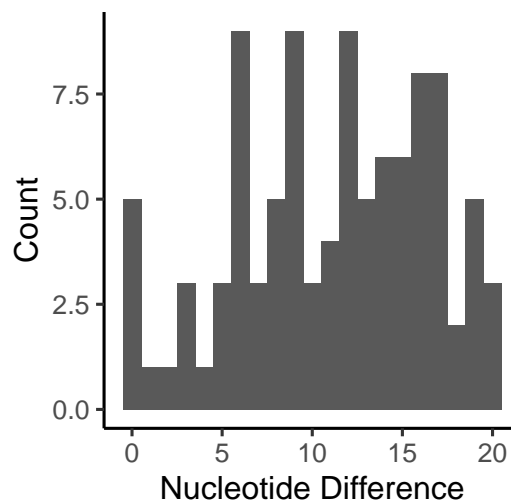
### IGHV3-48\*01

771 sequences assigned  
7 (0.9%) exact matches, in which:  
4 unique CDR3  
3 unique J



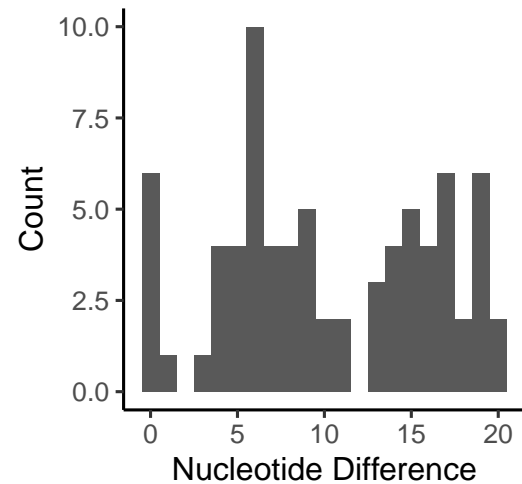
### IGHV3-49\*03\_05

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



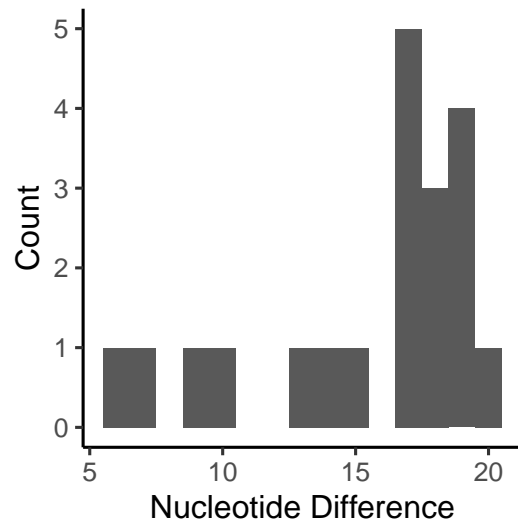
### IGHV3-64\*01

105 sequences assigned  
6 (5.7%) exact matches, in which:  
3 unique CDR3  
3 unique J



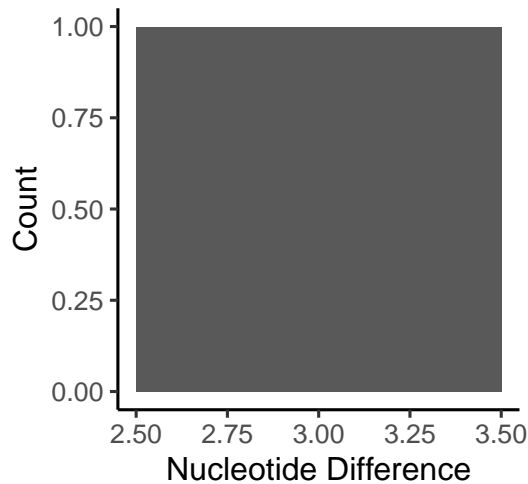
### IGHV3-64\*02\_07

34 sequences assigned  
No exact matches.



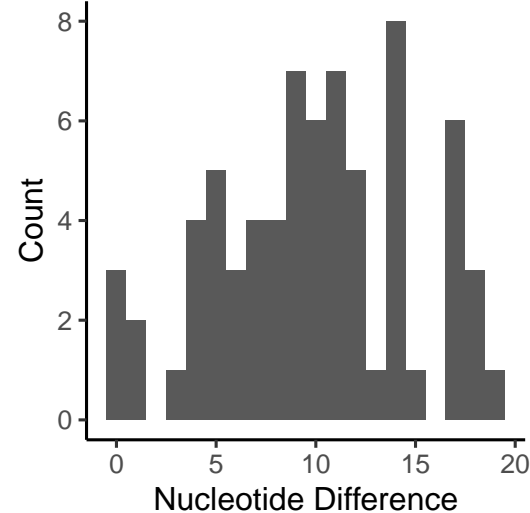
### IGHV3-69-1\*01

5 sequences assigned  
No exact matches.



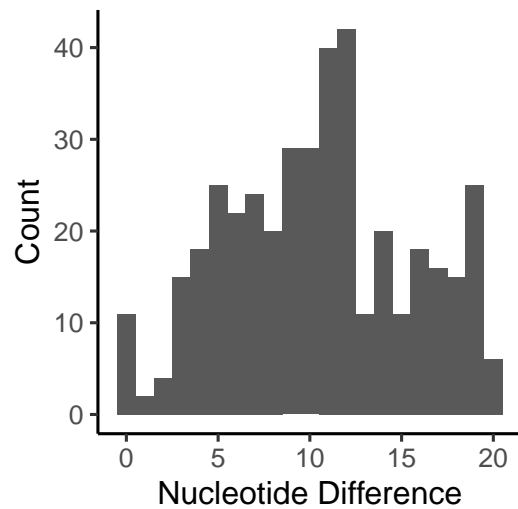
### IGHV3-73\*01\_02

95 sequences assigned  
3 (3.2%) exact matches, in which:  
3 unique CDR3  
2 unique J



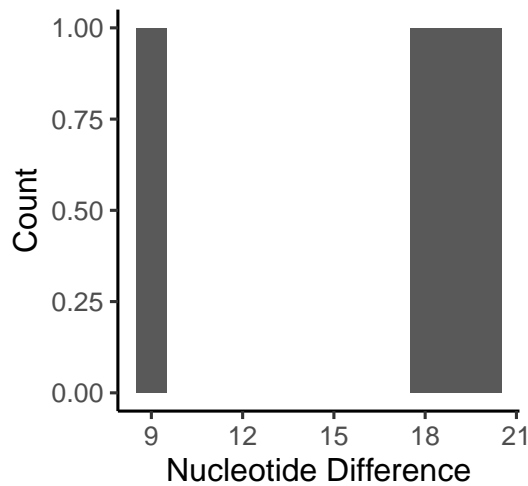
### IGHV3-66\*01

478 sequences assigned  
11 (2.3%) exact matches, in which:  
4 unique CDR3  
2 unique J



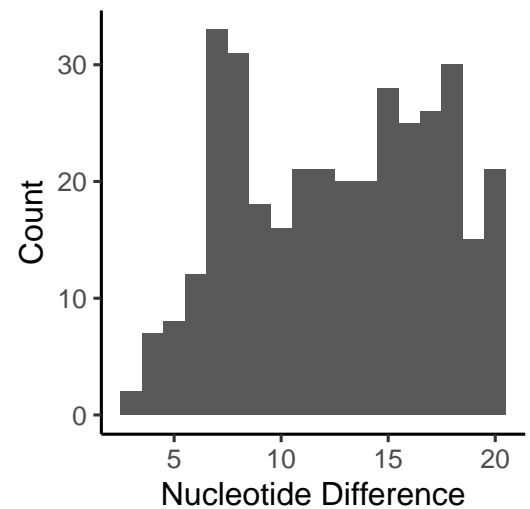
### IGHV3-69-1\*02

5 sequences assigned  
No exact matches.



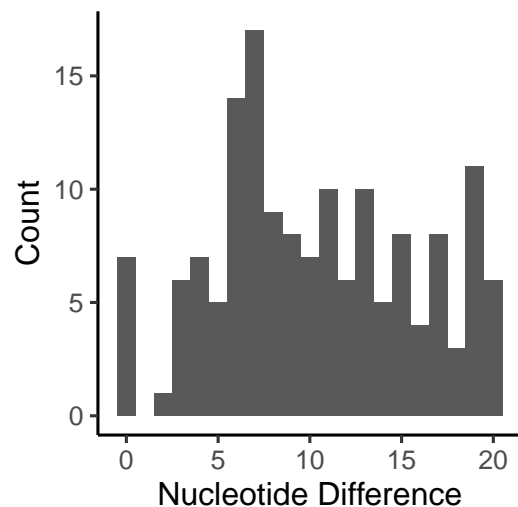
### IGHV3-74\*03

582 sequences assigned  
No exact matches.



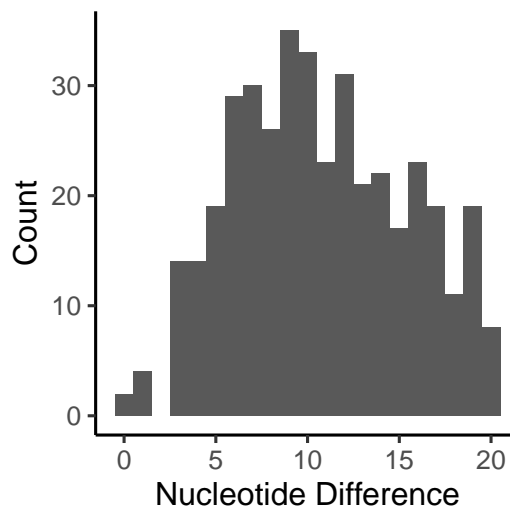
### IGHV3-66\*02

247 sequences assigned  
7 (2.8%) exact matches, in which:  
6 unique CDR3  
3 unique J



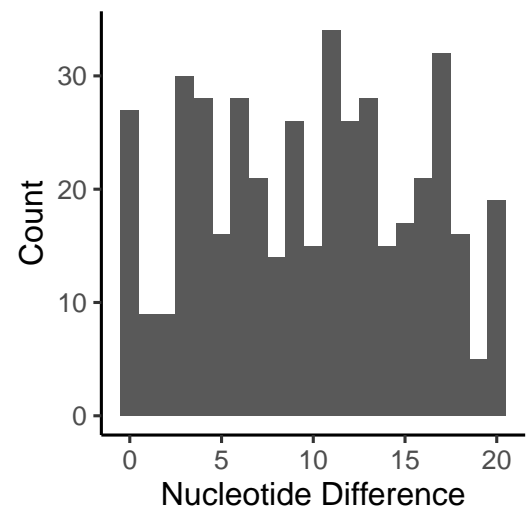
### IGHV3-72\*01

456 sequences assigned  
2 (0.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



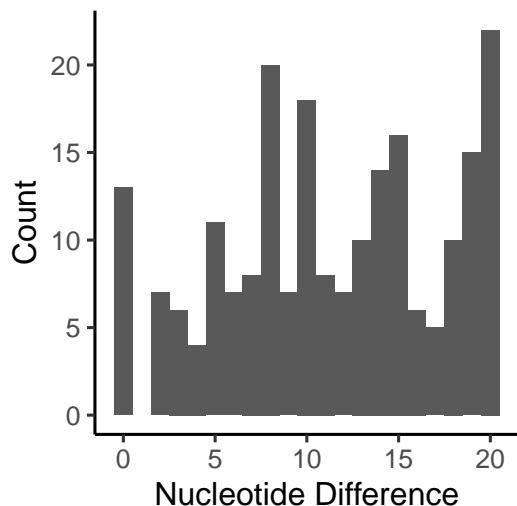
### IGHV3-74\*01\_02

533 sequences assigned  
27 (5.1%) exact matches, in which:  
14 unique CDR3  
5 unique J



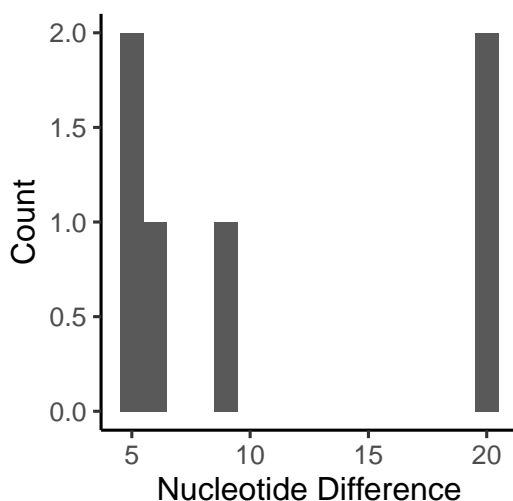
### IGHV3-64D\*09

352 sequences assigned  
13 (3.7%) exact matches, in which:  
6 unique CDR3  
4 unique J



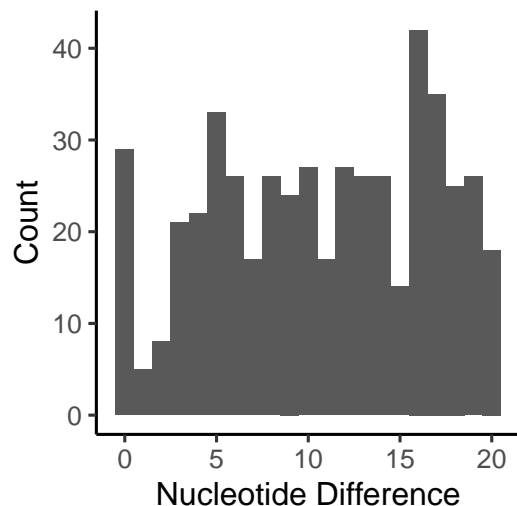
### IGHV4-28\*01\_07

6 sequences assigned  
No exact matches.



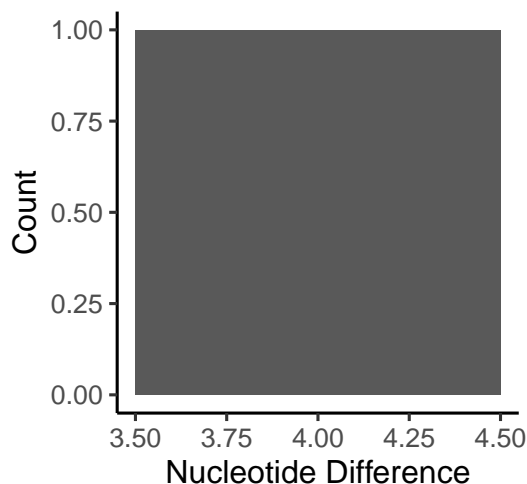
### IGHV4-31\*02

756 sequences assigned  
29 (3.8%) exact matches, in which:  
19 unique CDR3  
4 unique J



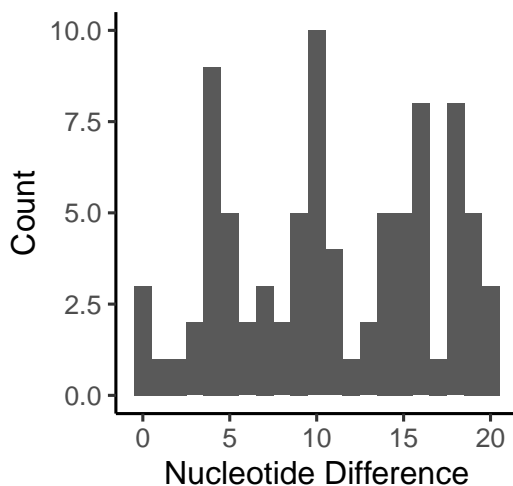
### IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



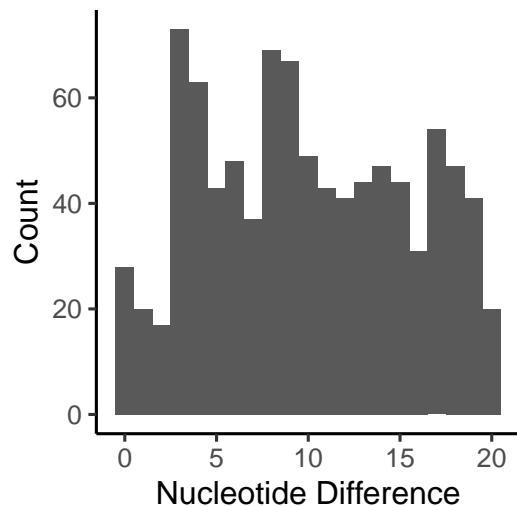
### IGHV4-30-2\*01

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



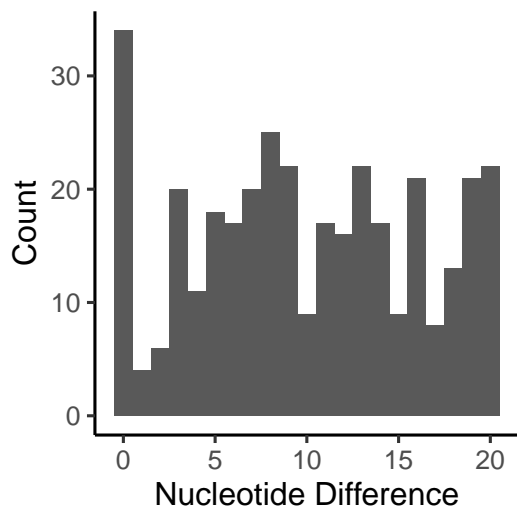
### IGHV4-34\*01\_02

1259 sequences assigned  
28 (2.2%) exact matches, in which:  
15 unique CDR3  
6 unique J



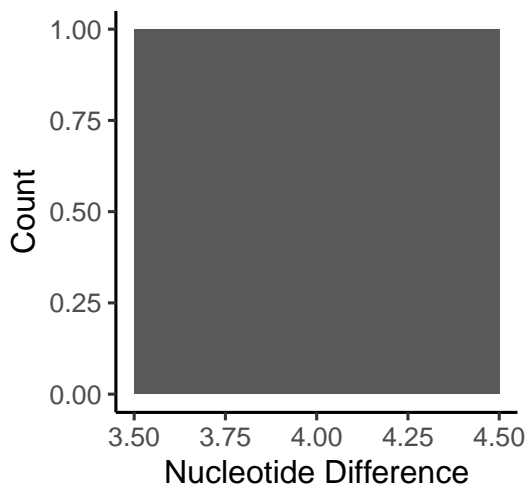
### IGHV4-4\*02\_03

586 sequences assigned  
34 (5.8%) exact matches, in which:  
22 unique CDR3  
5 unique J



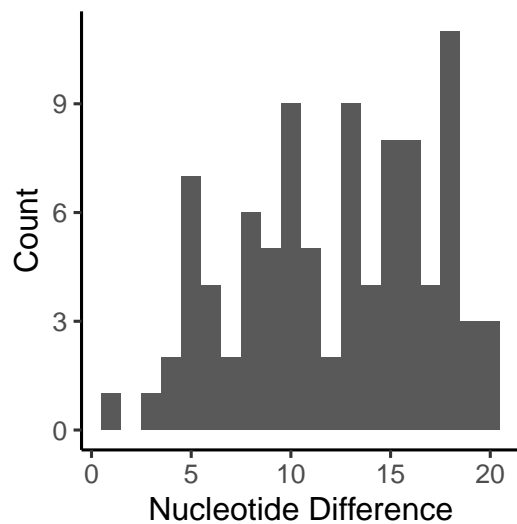
### IGHV4-30-4\*08

1 sequences assigned  
No exact matches.



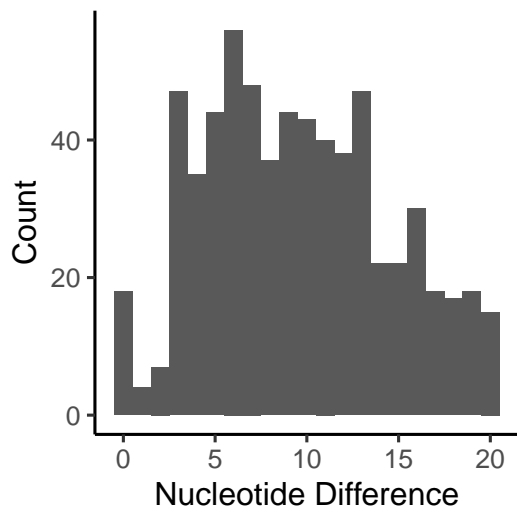
### IGHV4-39\*02

144 sequences assigned  
No exact matches.



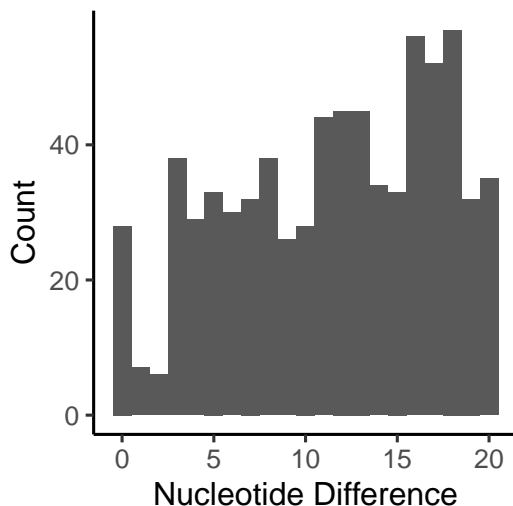
### IGHV4-59\*08

857 sequences assigned  
18 (2.1%) exact matches, in which:  
14 unique CDR3  
5 unique J



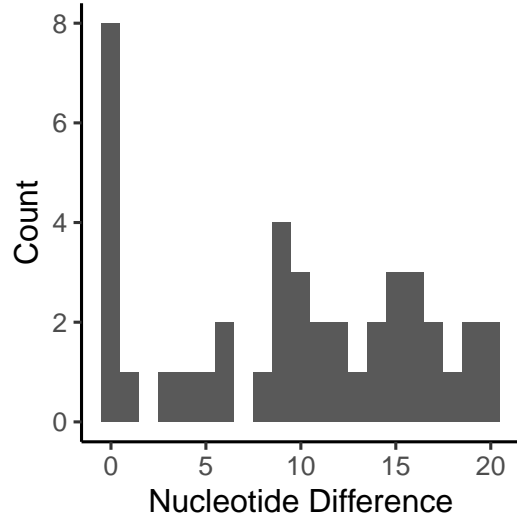
### IGHV4-61\*02

1106 sequences assigned  
28 (2.5%) exact matches, in which:  
20 unique CDR3  
5 unique J



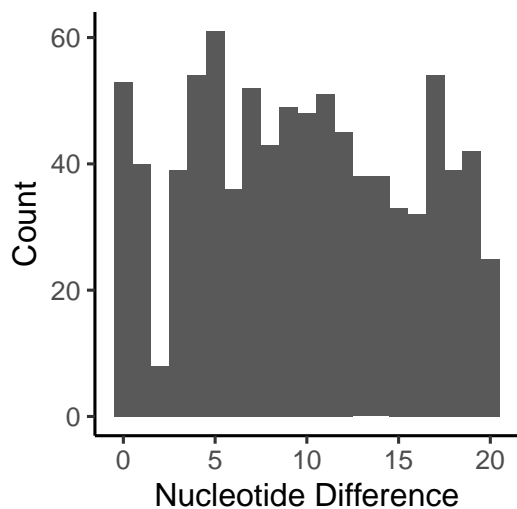
### IGHV5-10-1\*01\_03

58 sequences assigned  
8 (13.8%) exact matches, in which:  
7 unique CDR3  
4 unique J



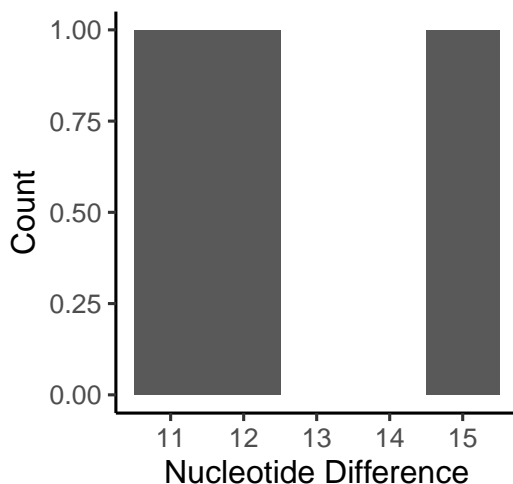
### IGHV4-59\*01\_07

1191 sequences assigned  
53 (4.5%) exact matches, in which:  
26 unique CDR3  
5 unique J



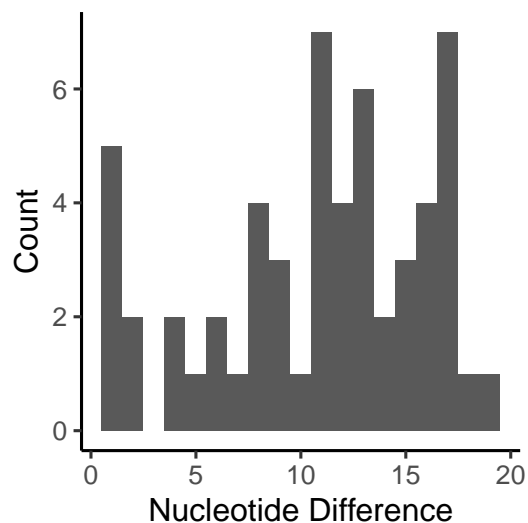
### IGHV4/OR15-8\*01

6 sequences assigned  
No exact matches.



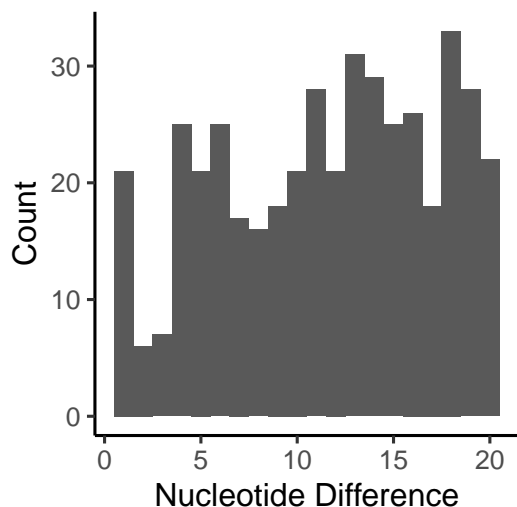
### IGHV5-51\*07

67 sequences assigned  
No exact matches.



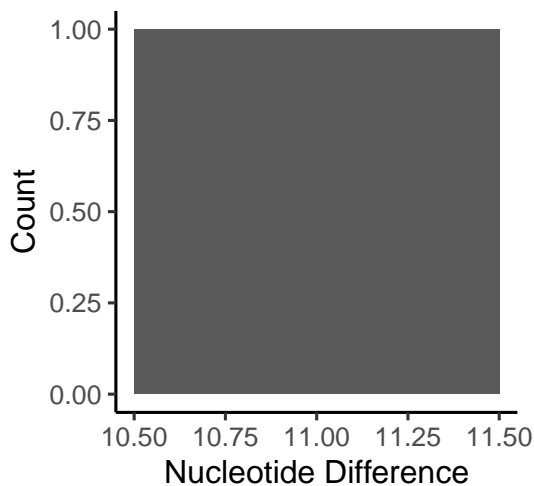
### IGHV4-59\*11

640 sequences assigned  
No exact matches.



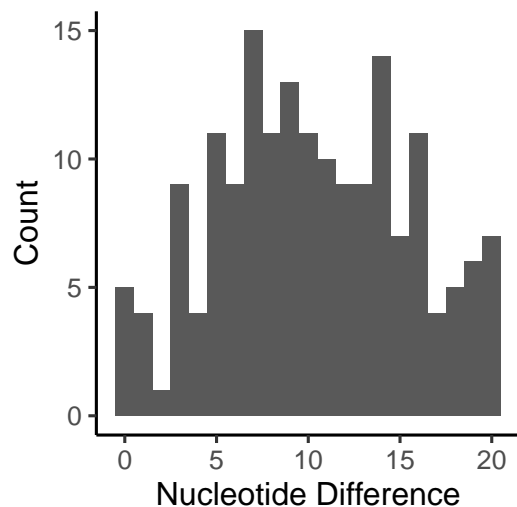
### IGHV4/OR15-8\*02

11 sequences assigned  
No exact matches.



### IGHV5-51\*01\_03

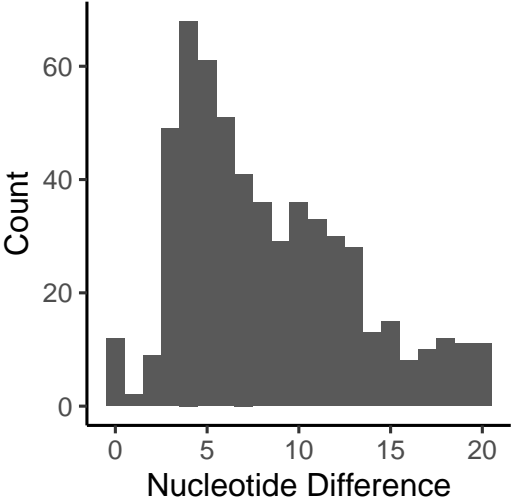
215 sequences assigned  
5 (2.3%) exact matches, in which:  
5 unique CDR3  
3 unique J





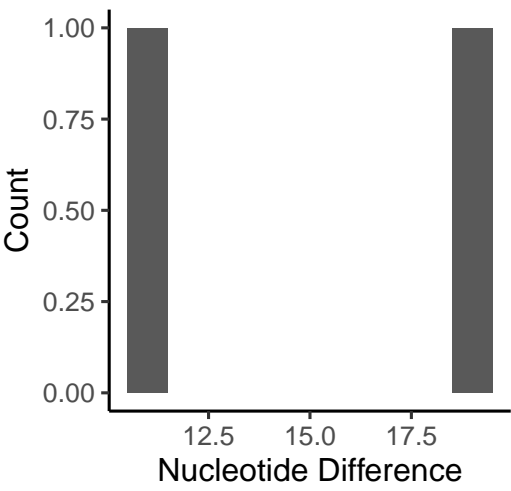
# IGHV6-1\*01\_02

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

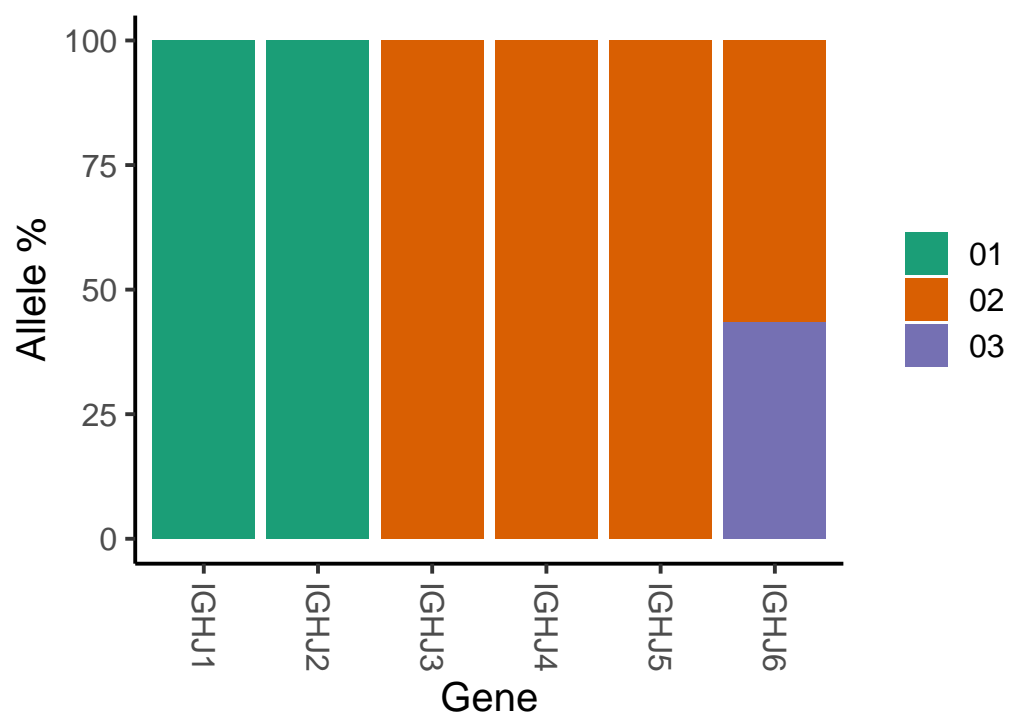


# IGHV7-4-1\*01

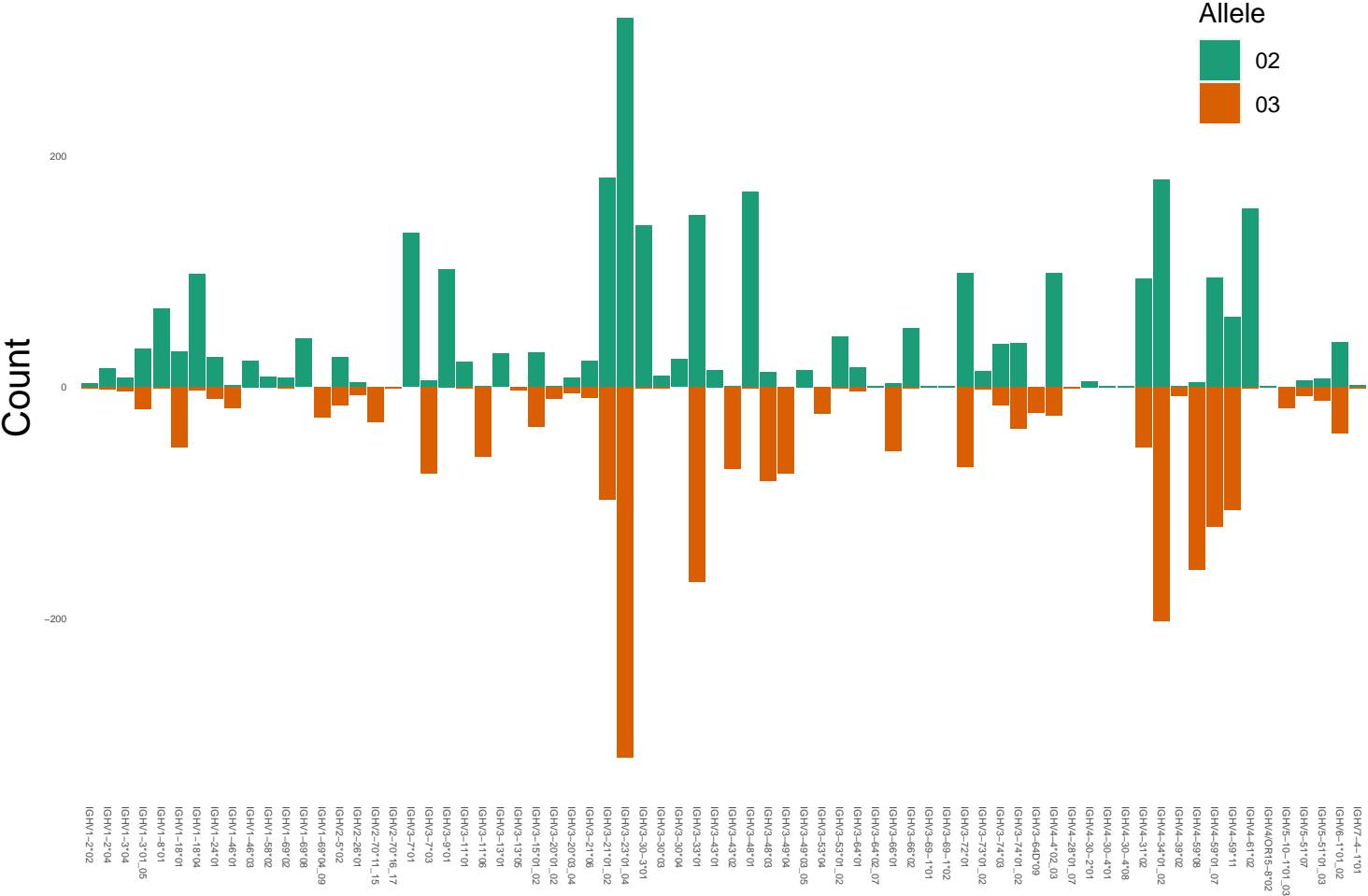
3 sequences assigned  
No exact matches.



Allele Usage



Sequence Count by IGHJ6 allele usage



[illegible]