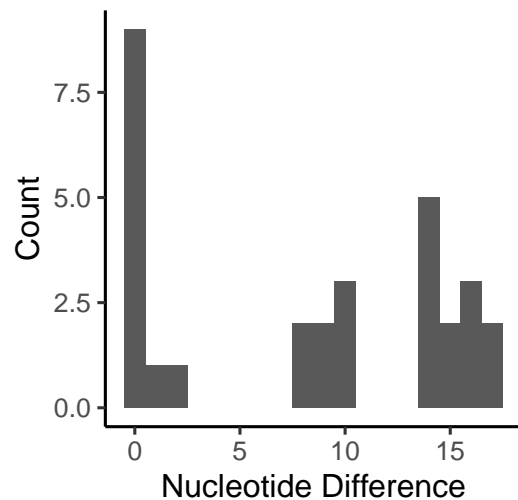


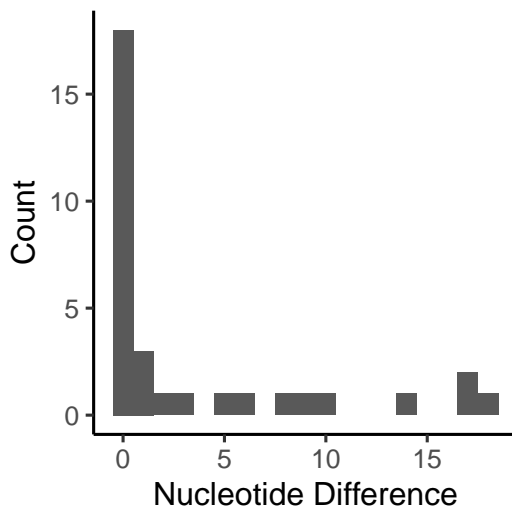
### IGHV1-2\*02

58 sequences assigned  
9 (15.5%) exact matches, in which:  
9 unique CDR3  
3 unique J



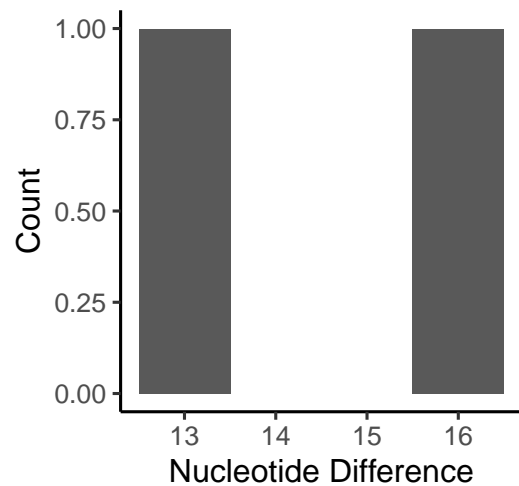
### IGHV1-8\*03

40 sequences assigned  
18 (45%) exact matches, in which:  
18 unique CDR3  
5 unique J



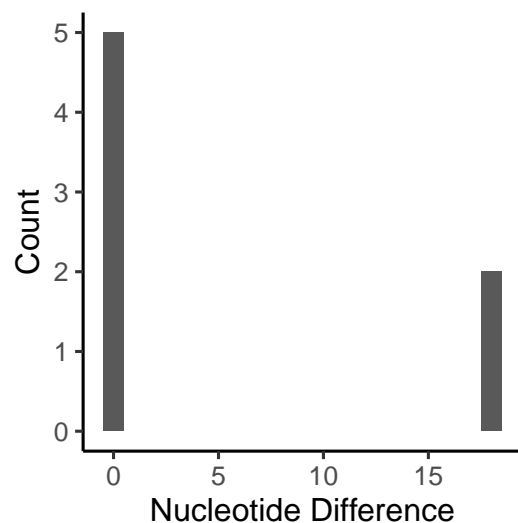
### IGHV1-45\*02

2 sequences assigned  
No exact matches.



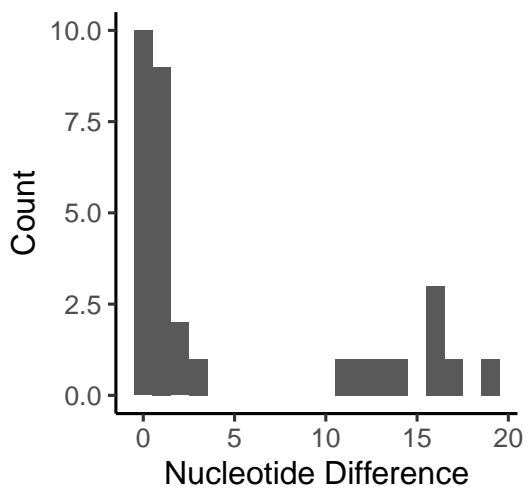
### IGHV1-2\*04

10 sequences assigned  
5 (50%) exact matches, in which:  
5 unique CDR3  
3 unique J



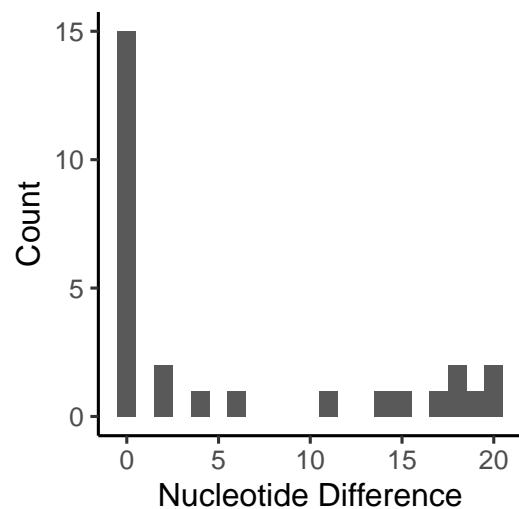
### IGHV1-18\*01

51 sequences assigned  
10 (19.6%) exact matches, in which:  
10 unique CDR3  
4 unique J



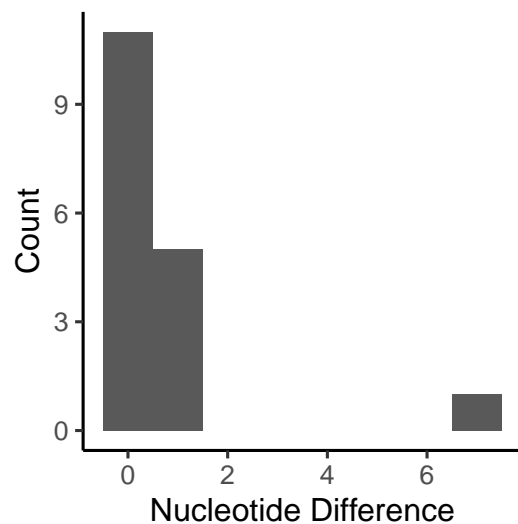
### IGHV1-46\*01

41 sequences assigned  
15 (36.6%) exact matches, in which:  
15 unique CDR3  
5 unique J



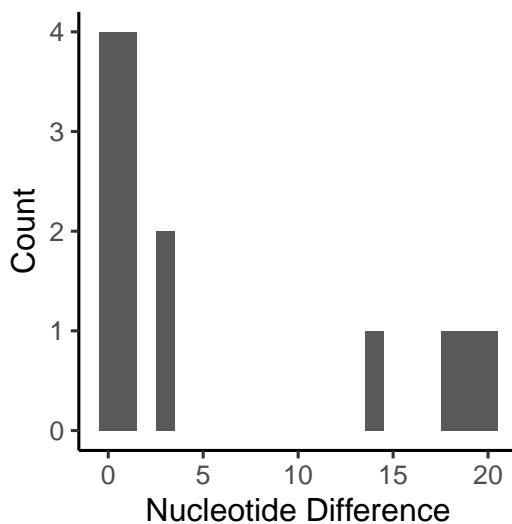
### IGHV1-3\*01

25 sequences assigned  
11 (44%) exact matches, in which:  
10 unique CDR3  
3 unique J



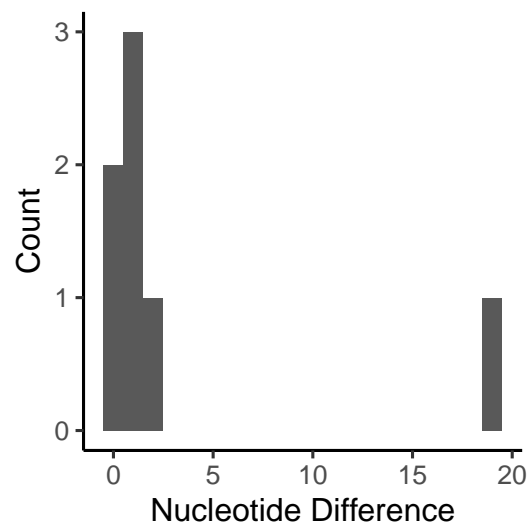
### IGHV1-24\*01

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



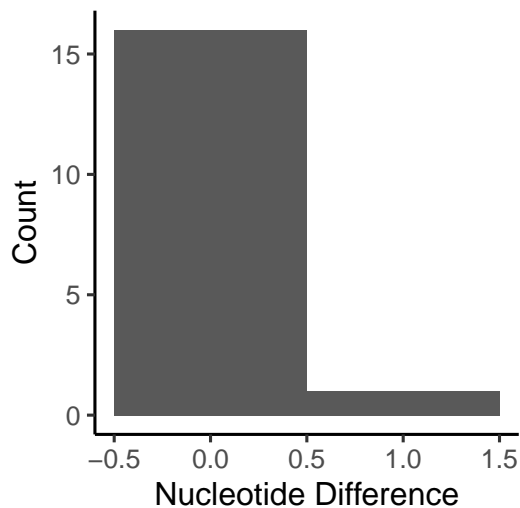
### IGHV1-69-2\*01

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



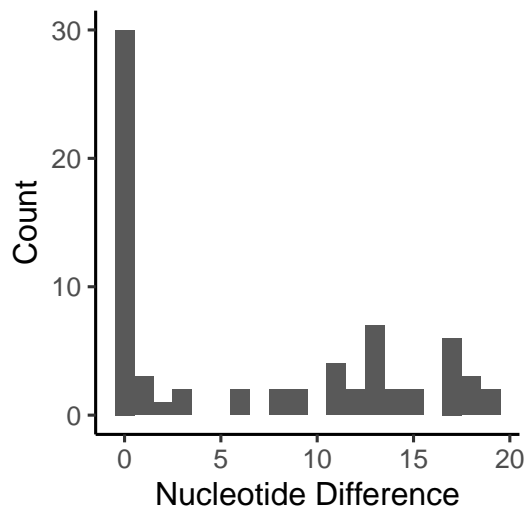
### IGHV1-69\*02

21 sequences assigned  
16 (76.2%) exact matches, in which:  
16 unique CDR3  
5 unique J



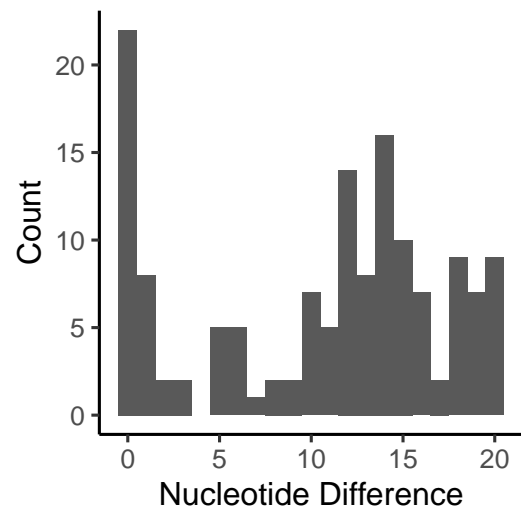
### IGHV2-5\*01

78 sequences assigned  
30 (38.5%) exact matches, in which:  
29 unique CDR3  
4 unique J



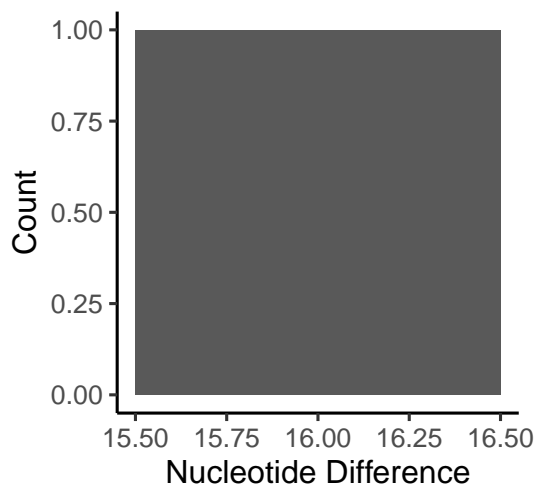
### IGHV3-7\*01

191 sequences assigned  
22 (11.5%) exact matches, in which:  
22 unique CDR3  
6 unique J



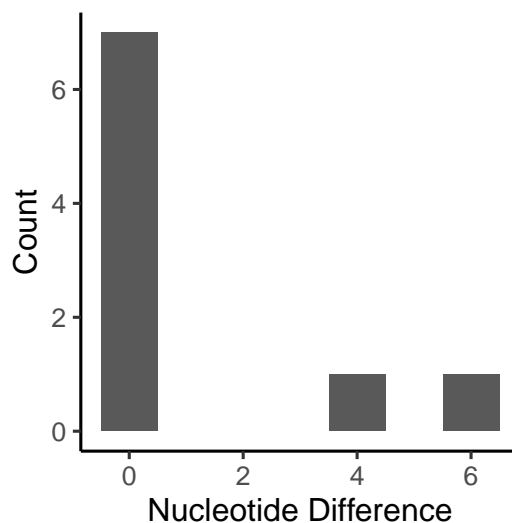
### IGHV1-69\*10

1 sequences assigned  
No exact matches.



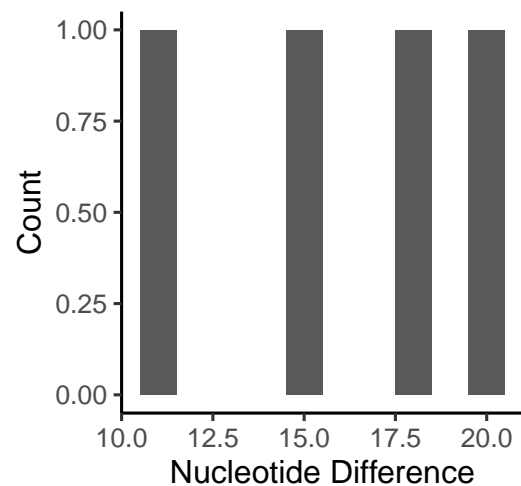
### IGHV2-26\*01

12 sequences assigned  
7 (58.3%) exact matches, in which:  
7 unique CDR3  
4 unique J



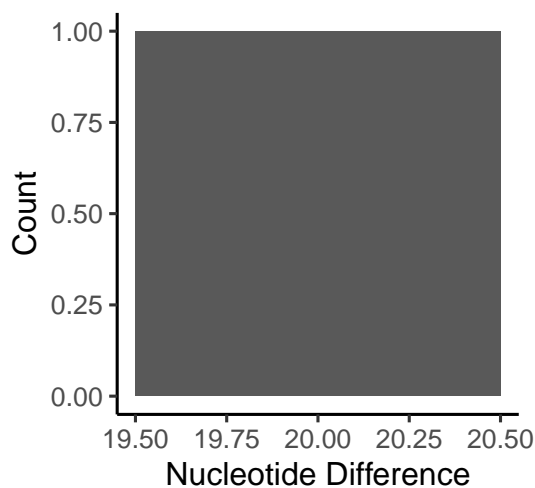
### IGHV3-9\*01

8 sequences assigned  
No exact matches.



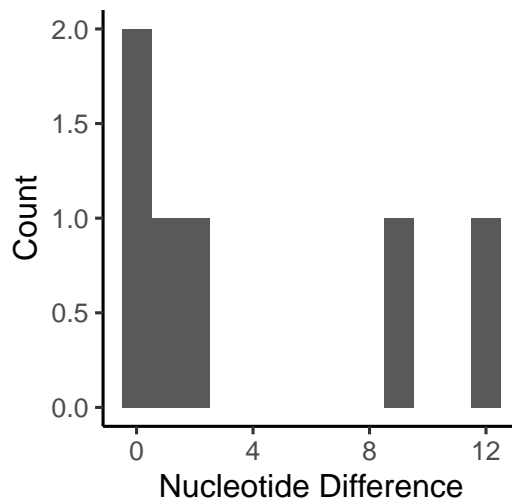
### IGHV1-69\*11

7 sequences assigned  
No exact matches.



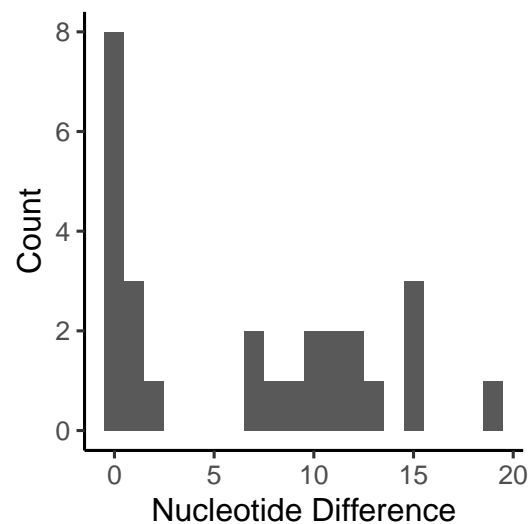
### IGHV2-70\*15

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



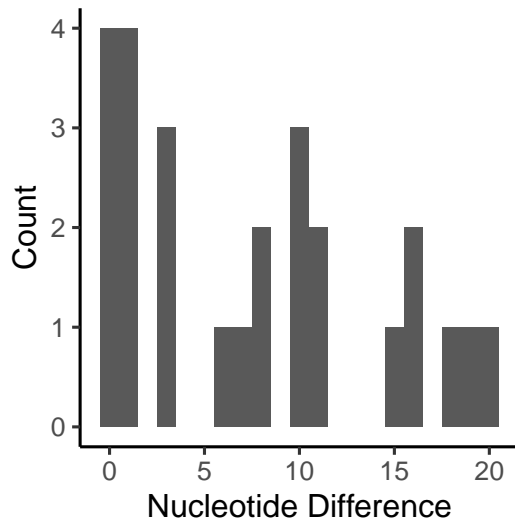
### IGHV3-9\*03

29 sequences assigned  
8 (27.6%) exact matches, in which:  
8 unique CDR3  
2 unique J



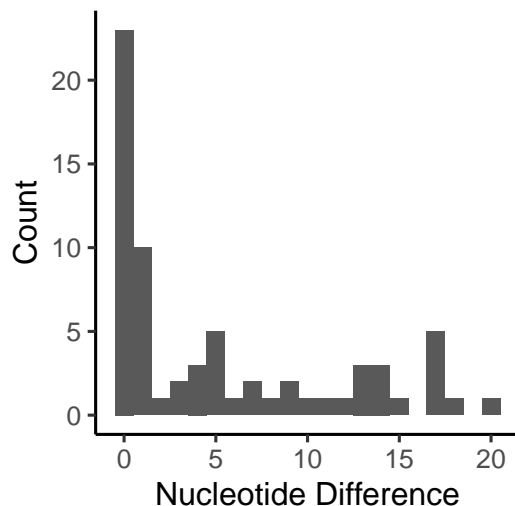
### IGHV3-11\*04

42 sequences assigned  
4 (9.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



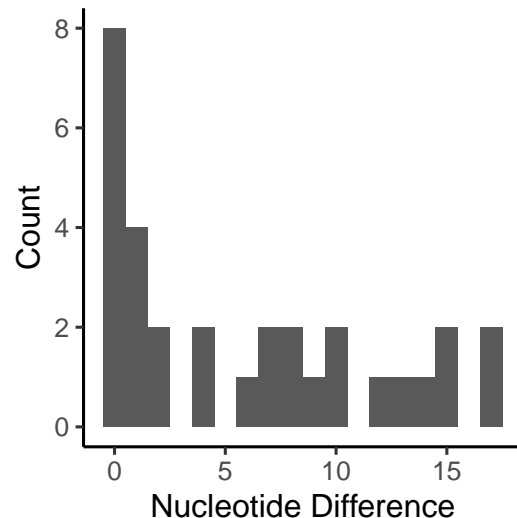
### IGHV3-21\*01

83 sequences assigned  
23 (27.7%) exact matches, in which:  
23 unique CDR3  
4 unique J



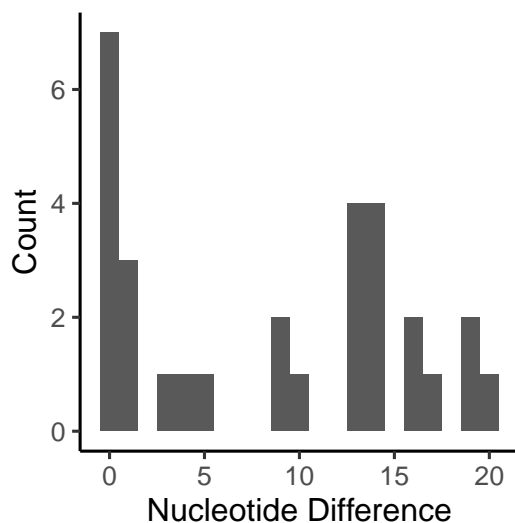
### IGHV3-33\*06

38 sequences assigned  
8 (21.1%) exact matches, in which:  
8 unique CDR3  
4 unique J



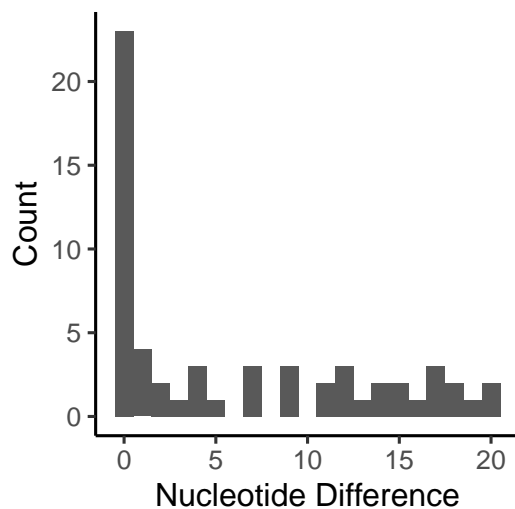
### IGHV3-15\*01

43 sequences assigned  
7 (16.3%) exact matches, in which:  
7 unique CDR3  
3 unique J



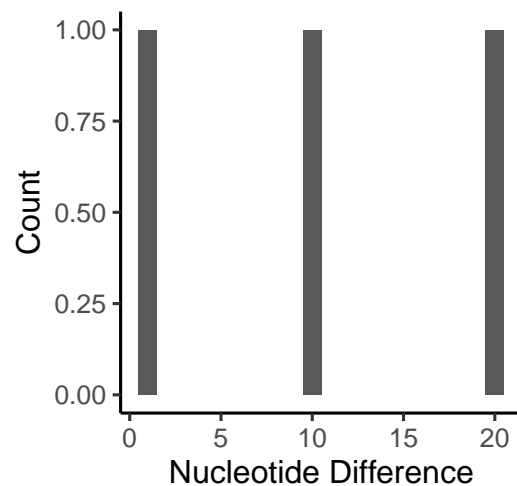
### IGHV3-30\*01

69 sequences assigned  
23 (33.3%) exact matches, in which:  
23 unique CDR3  
4 unique J



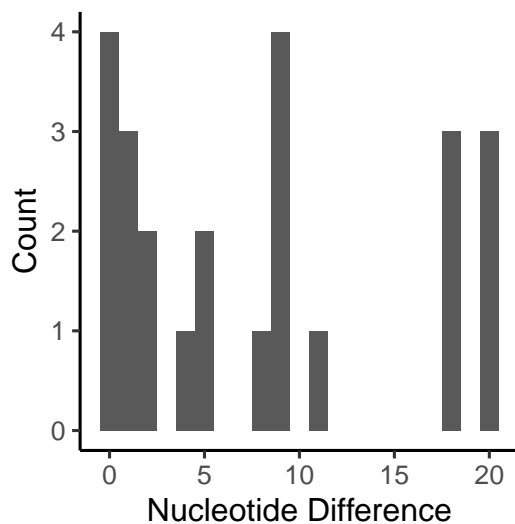
### IGHV3-43\*01

5 sequences assigned  
No exact matches.



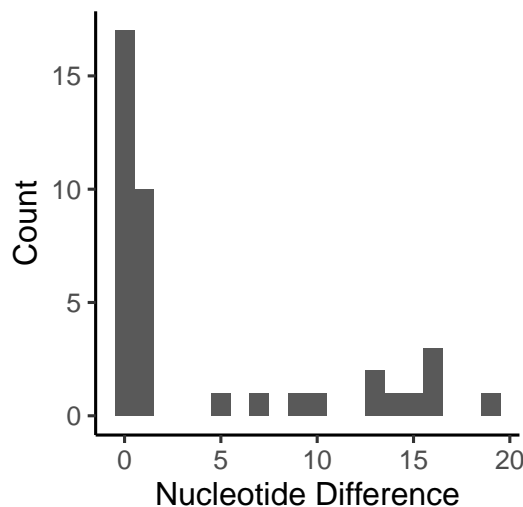
### IGHV3-20\*04

31 sequences assigned  
4 (12.9%) exact matches, in which:  
4 unique CDR3  
3 unique J



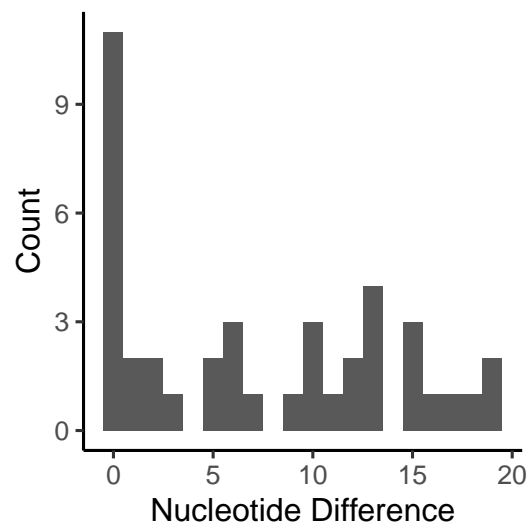
### IGHV3-30-3\*01

56 sequences assigned  
17 (30.4%) exact matches, in which:  
17 unique CDR3  
3 unique J



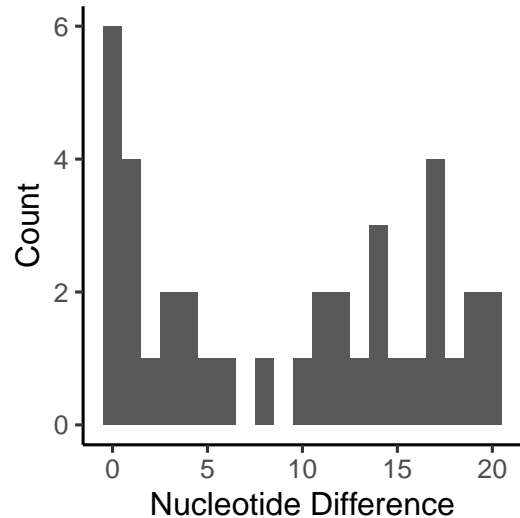
### IGHV3-48\*03

61 sequences assigned  
11 (18%) exact matches, in which:  
11 unique CDR3  
3 unique J



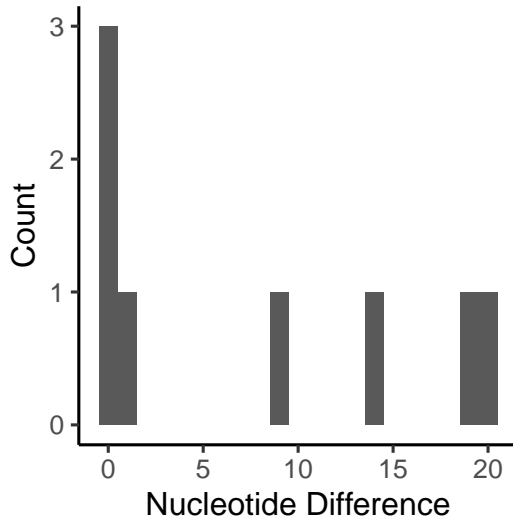
### IGHV3-48\*04

53 sequences assigned  
6 (11.3%) exact matches, in which:  
6 unique CDR3  
4 unique J



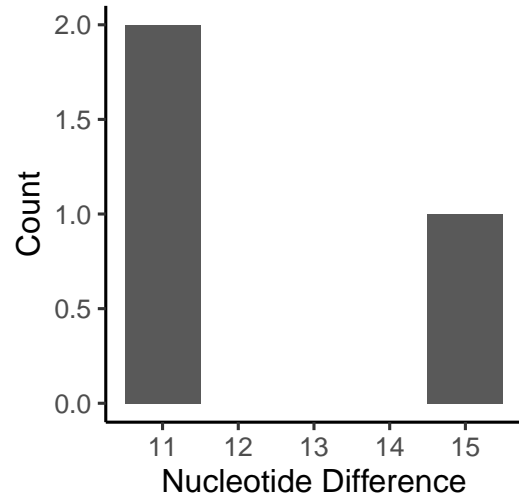
### IGHV3-53\*01

12 sequences assigned  
3 (25%) exact matches, in which:  
3 unique CDR3  
2 unique J



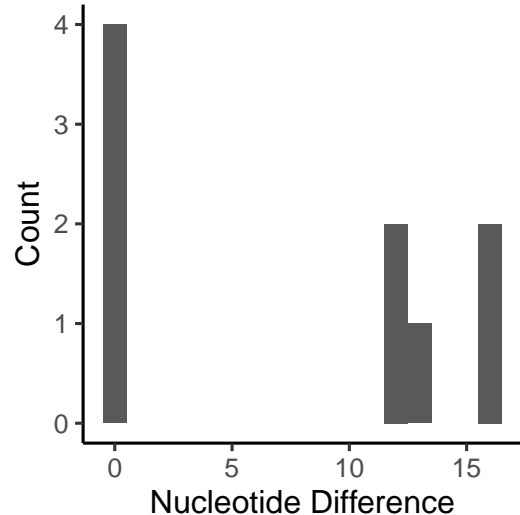
### IGHV3-64\*07

3 sequences assigned  
No exact matches.



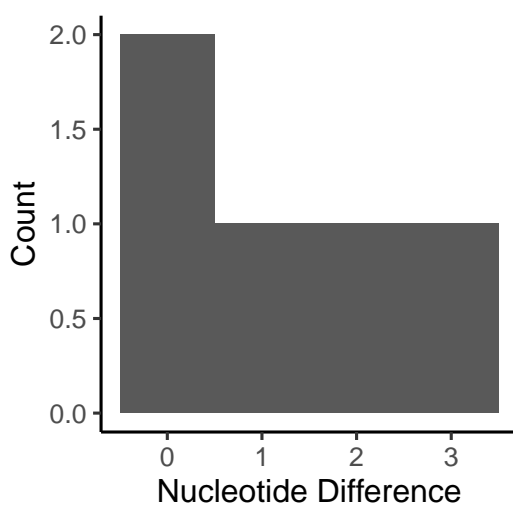
### IGHV3-49\*03

14 sequences assigned  
4 (28.6%) exact matches, in which:  
4 unique CDR3  
3 unique J



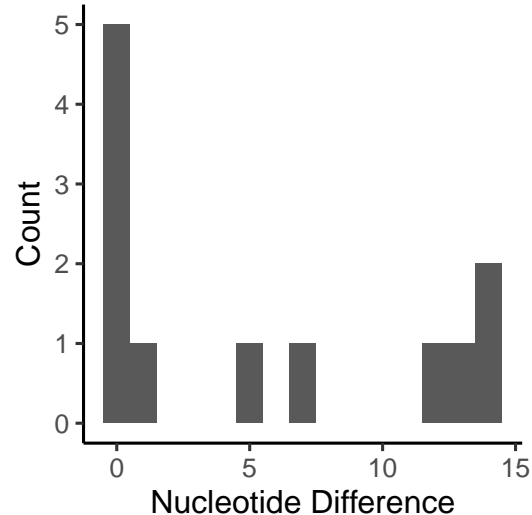
### IGHV3-53\*04

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
2 unique J



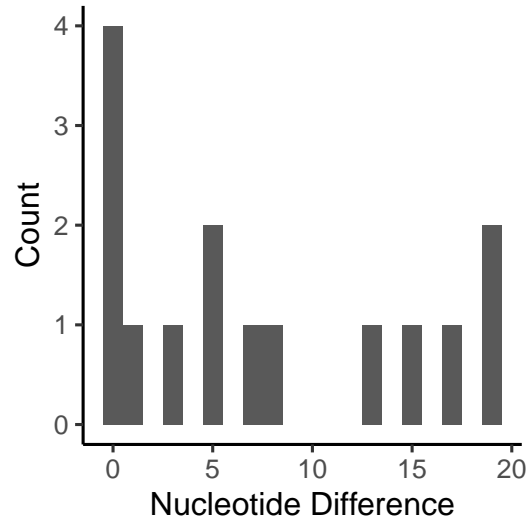
### IGHV3-66\*02

15 sequences assigned  
5 (33.3%) exact matches, in which:  
5 unique CDR3  
3 unique J



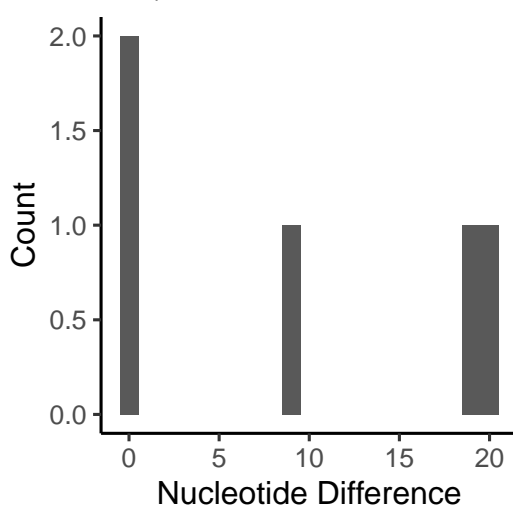
### IGHV3-49\*04

21 sequences assigned  
4 (19%) exact matches, in which:  
4 unique CDR3  
2 unique J



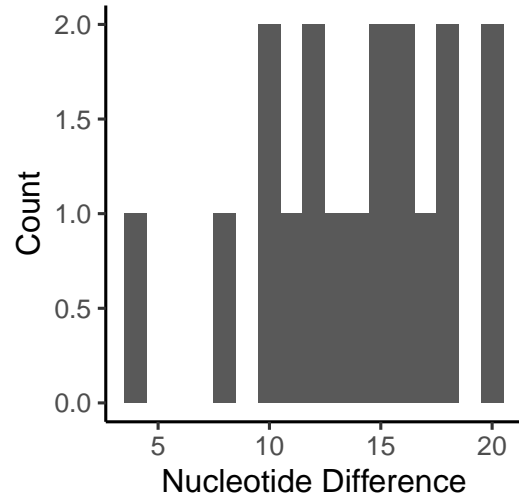
### IGHV3-64\*01

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



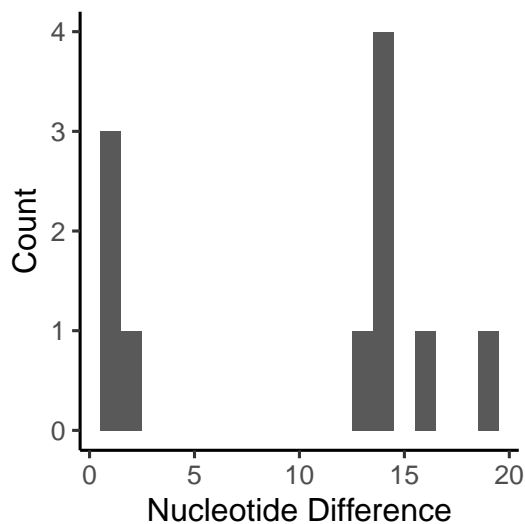
### IGHV3-72\*01

29 sequences assigned  
No exact matches.



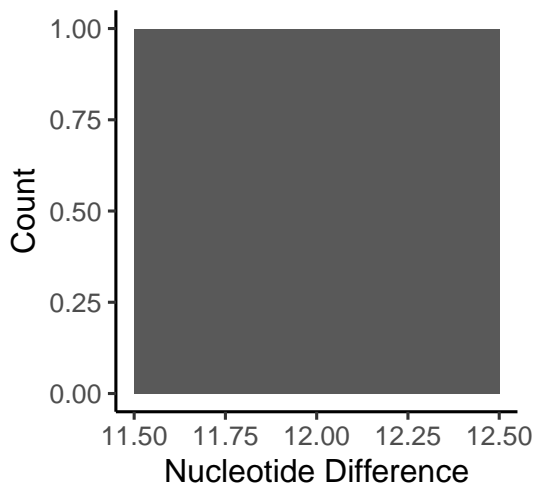
### IGHV3-73\*01

15 sequences assigned  
No exact matches.



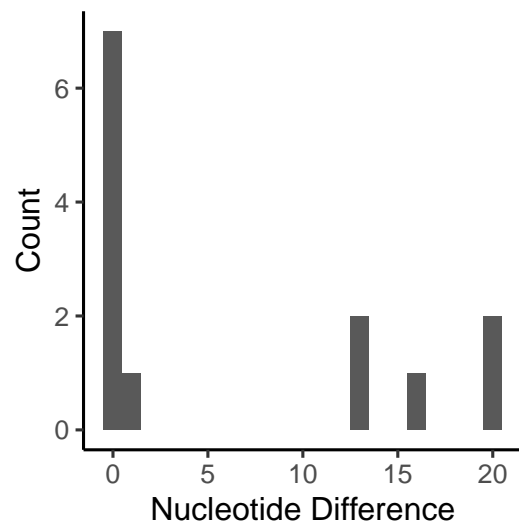
### IGHV3-74\*03

2 sequences assigned  
No exact matches.



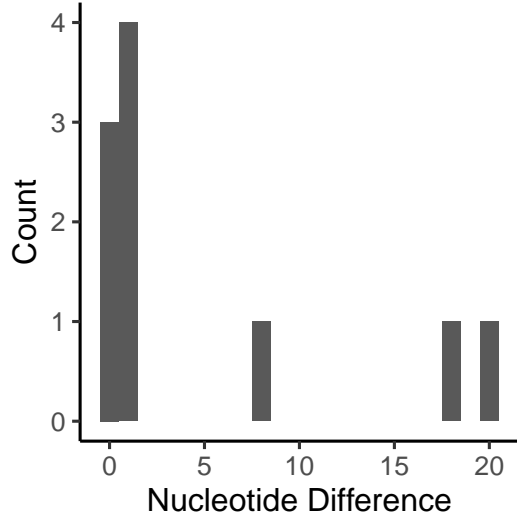
### IGHV4-4\*07

23 sequences assigned  
7 (30.4%) exact matches, in which:  
7 unique CDR3  
5 unique J



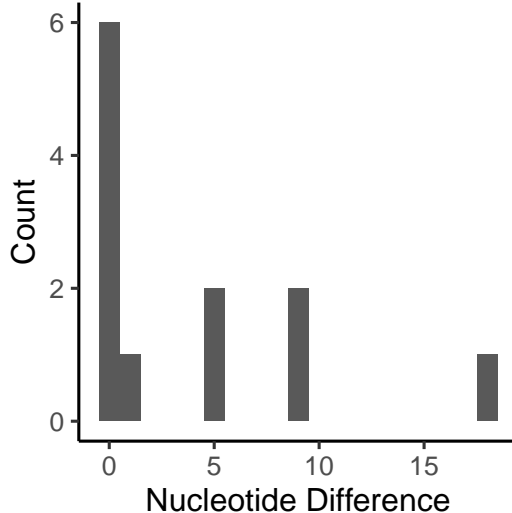
### IGHV3-74\*01

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



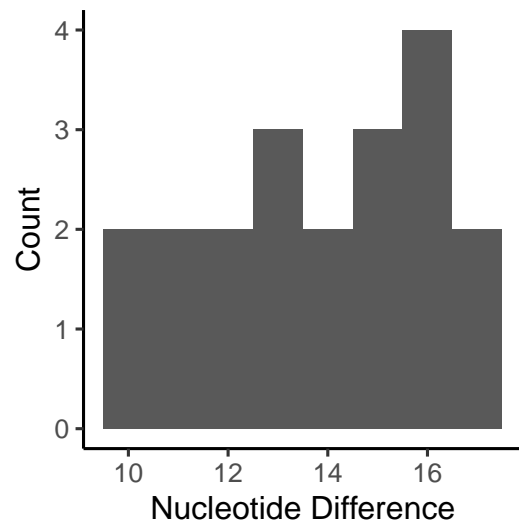
### IGHV3-43D\*04

13 sequences assigned  
6 (46.2%) exact matches, in which:  
6 unique CDR3  
1 unique J



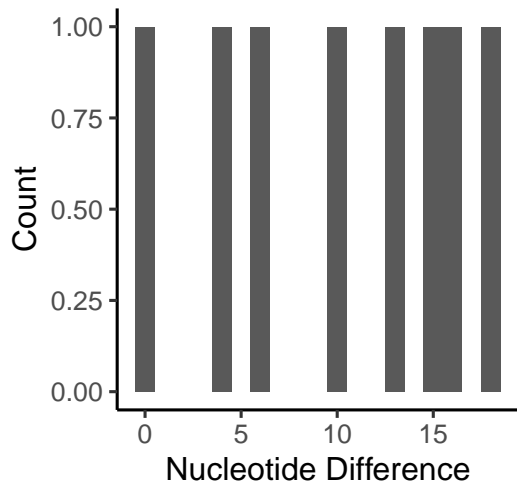
### IGHV4-28\*01

21 sequences assigned  
No exact matches.



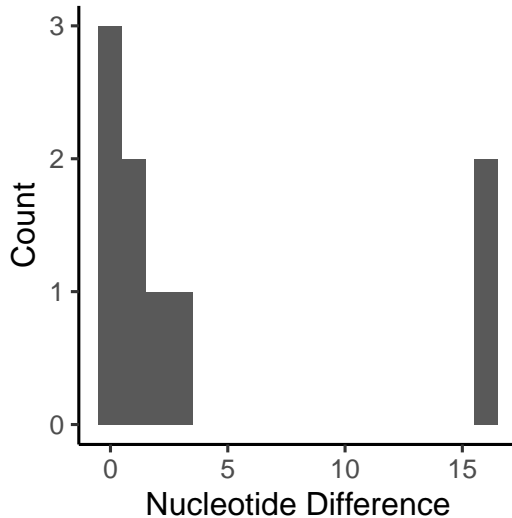
### IGHV3-74\*02

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



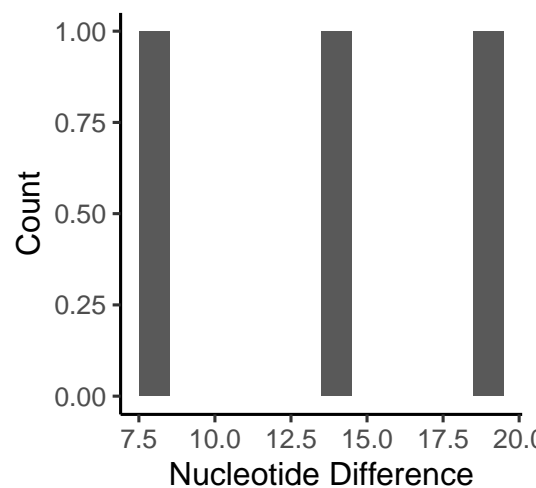
### IGHV4-4\*02

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



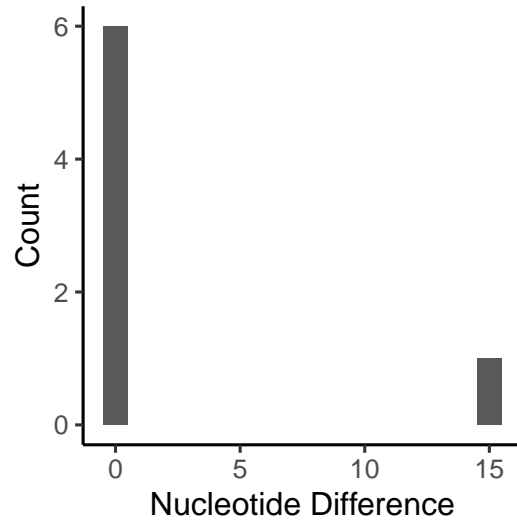
### IGHV4-30-4\*01

5 sequences assigned  
No exact matches.



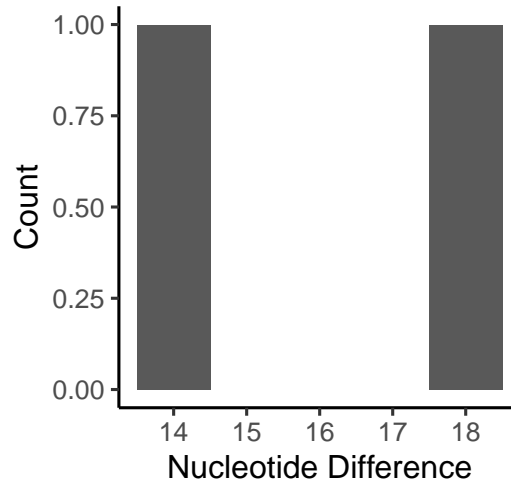
### IGHV4-30-4\*08

8 sequences assigned  
6 (75%) exact matches, in which:  
6 unique CDR3  
4 unique J



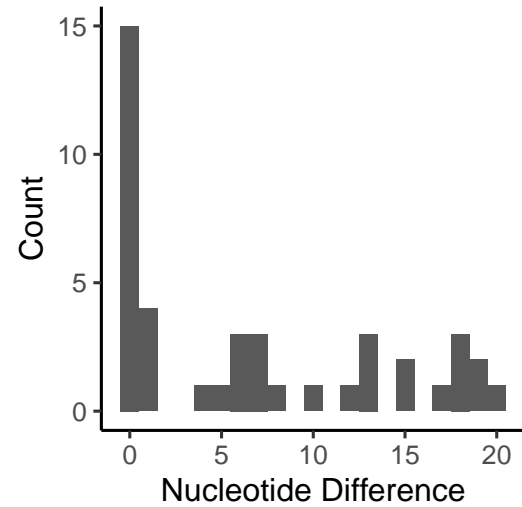
### IGHV4-34\*02

12 sequences assigned  
No exact matches.



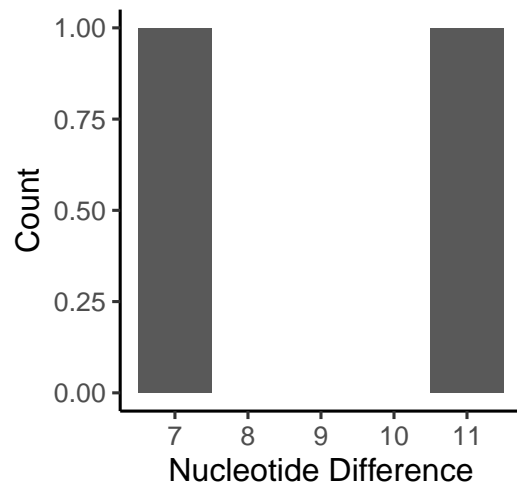
### IGHV4-39\*01

70 sequences assigned  
15 (21.4%) exact matches, in which:  
14 unique CDR3  
5 unique J



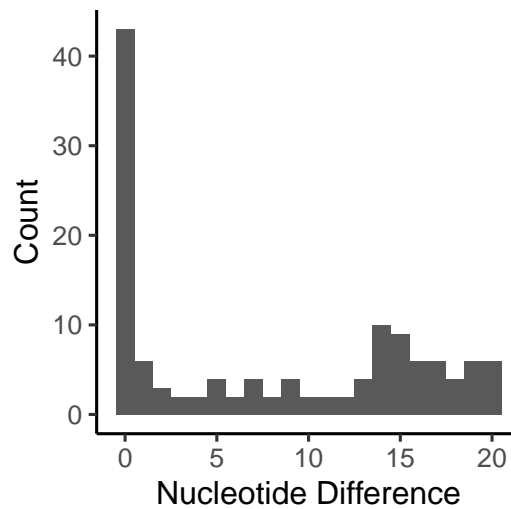
### IGHV4-31\*01

3 sequences assigned  
No exact matches.



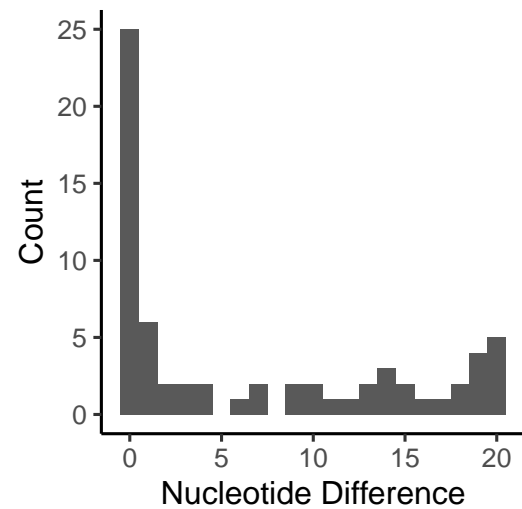
### IGHV4-38-2\*01

170 sequences assigned  
43 (25.3%) exact matches, in which:  
43 unique CDR3  
6 unique J



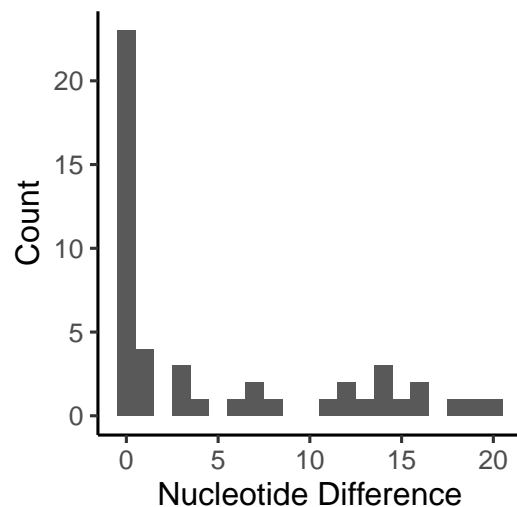
### IGHV4-39\*07

103 sequences assigned  
25 (24.3%) exact matches, in which:  
25 unique CDR3  
5 unique J



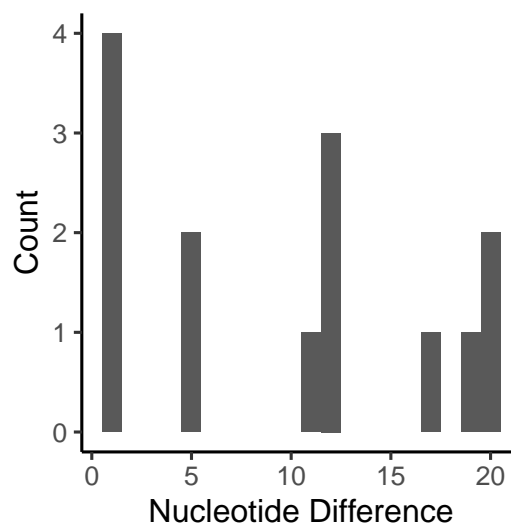
### IGHV4-34\*01

65 sequences assigned  
23 (35.4%) exact matches, in which:  
23 unique CDR3  
5 unique J



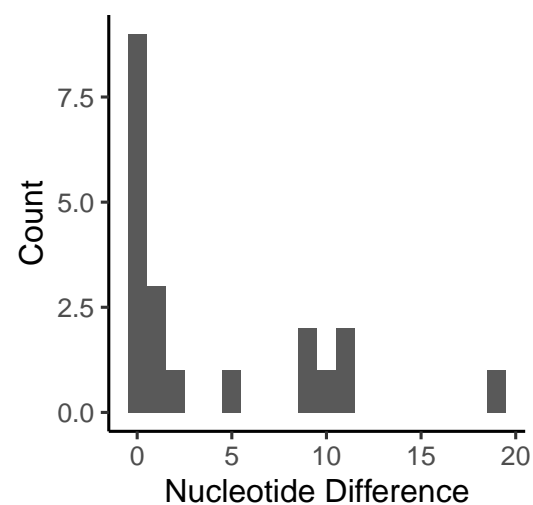
### IGHV4-38-2\*02

34 sequences assigned  
No exact matches.



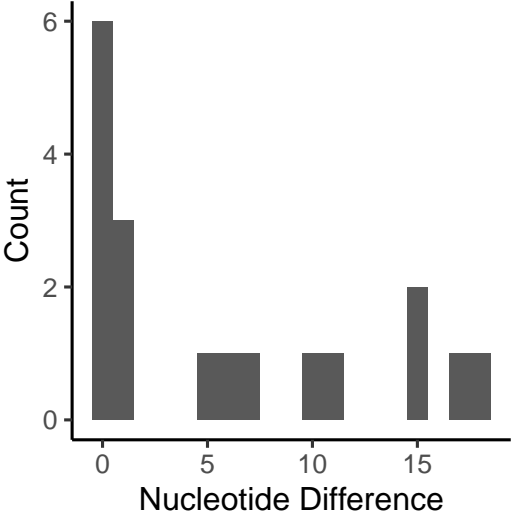
### IGHV4-59\*01

28 sequences assigned  
9 (32.1%) exact matches, in which:  
9 unique CDR3  
4 unique J



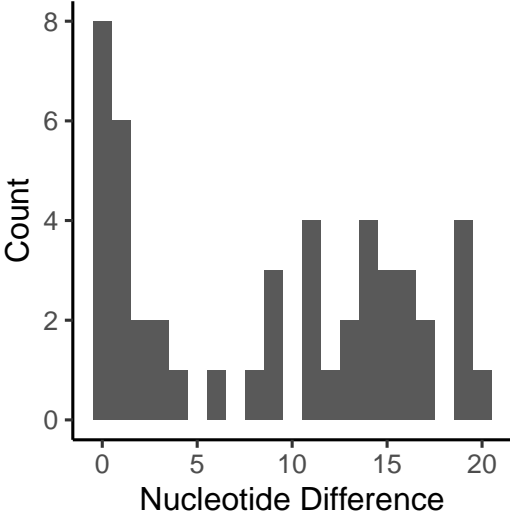
IGHV4–59\*08

27 sequences assigned  
6 (22.2%) exact matches, in which:  
6 unique CDR3  
3 unique J



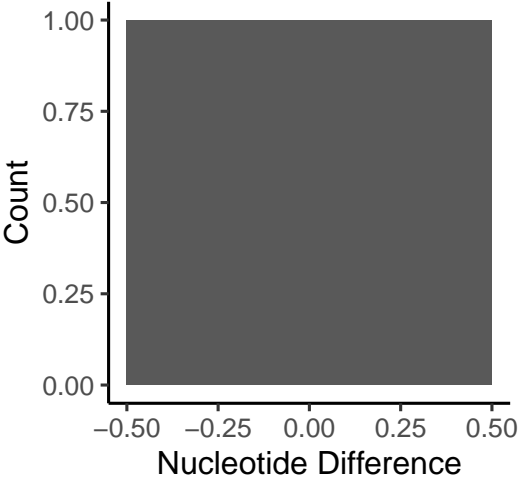
IGHV5–51\*01

60 sequences assigned  
8 (13.3%) exact matches, in which:  
8 unique CDR3  
2 unique J



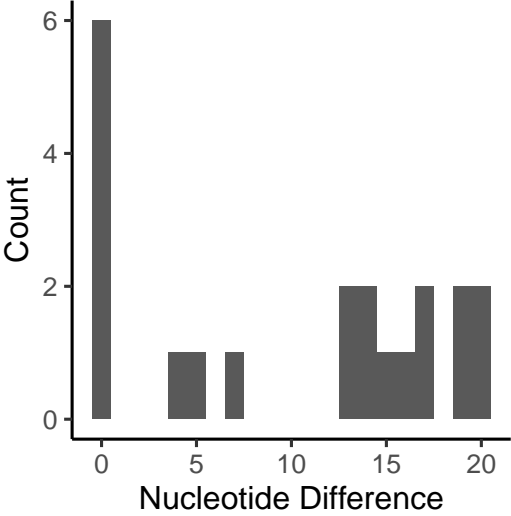
IGHV7–4–1\*01

1 sequences assigned  
1 (100%) exact matches, in which:  
1 unique CDR3  
1 unique J



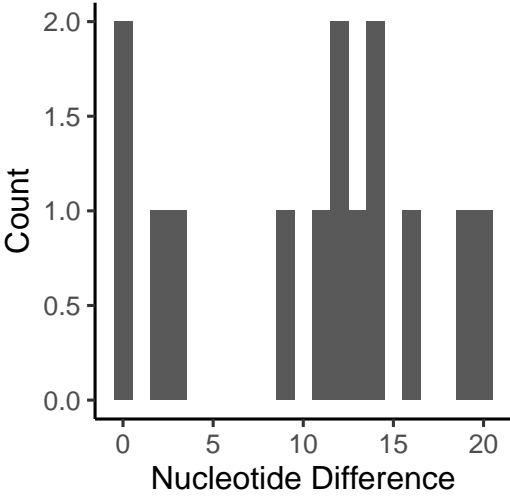
IGHV4–59\*11

34 sequences assigned  
6 (17.6%) exact matches, in which:  
6 unique CDR3  
4 unique J



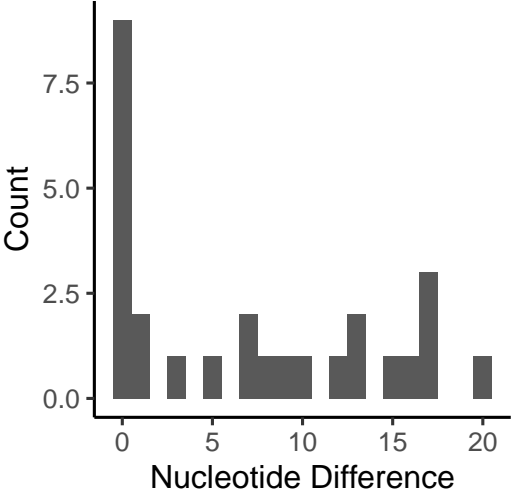
IGHV5–51\*03

17 sequences assigned  
2 (11.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



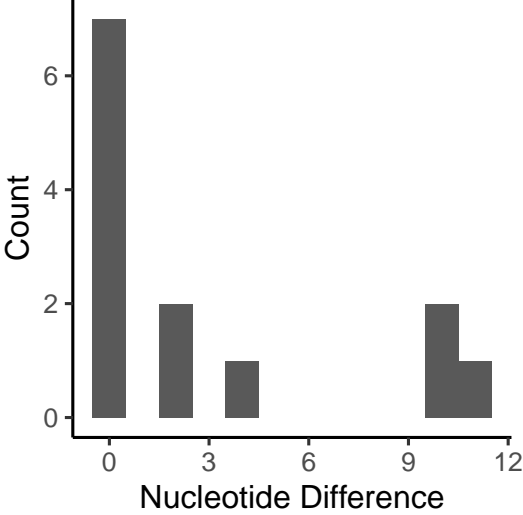
IGHV4–61\*02

42 sequences assigned  
9 (21.4%) exact matches, in which:  
9 unique CDR3  
3 unique J

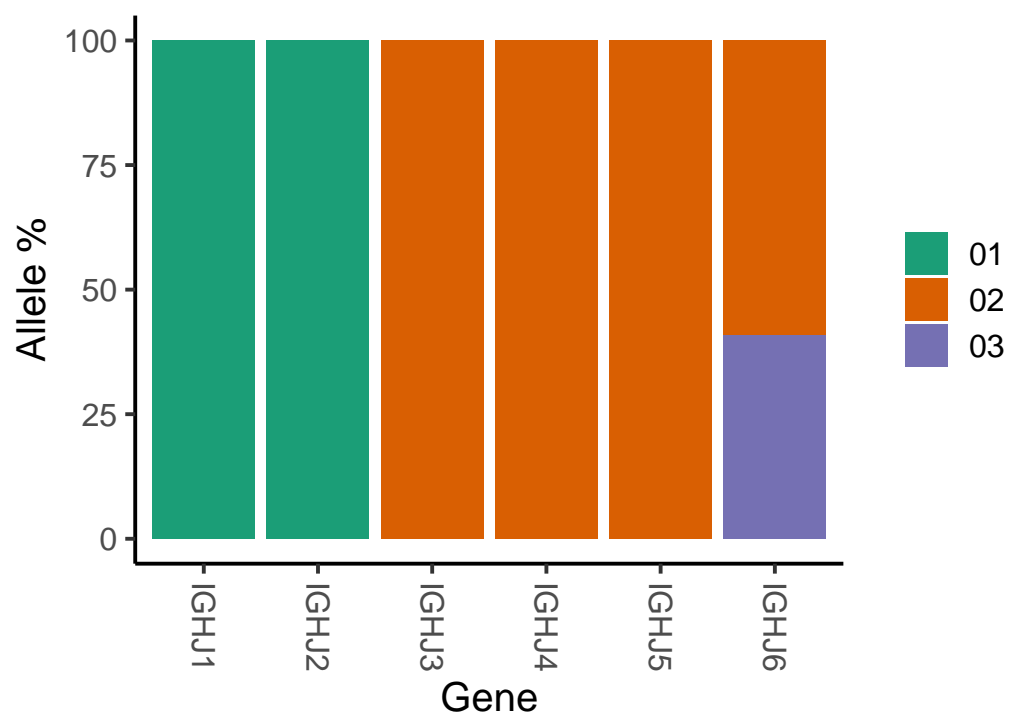


IGHV6–1\*01

17 sequences assigned  
7 (41.2%) exact matches, in which:  
7 unique CDR3  
3 unique J

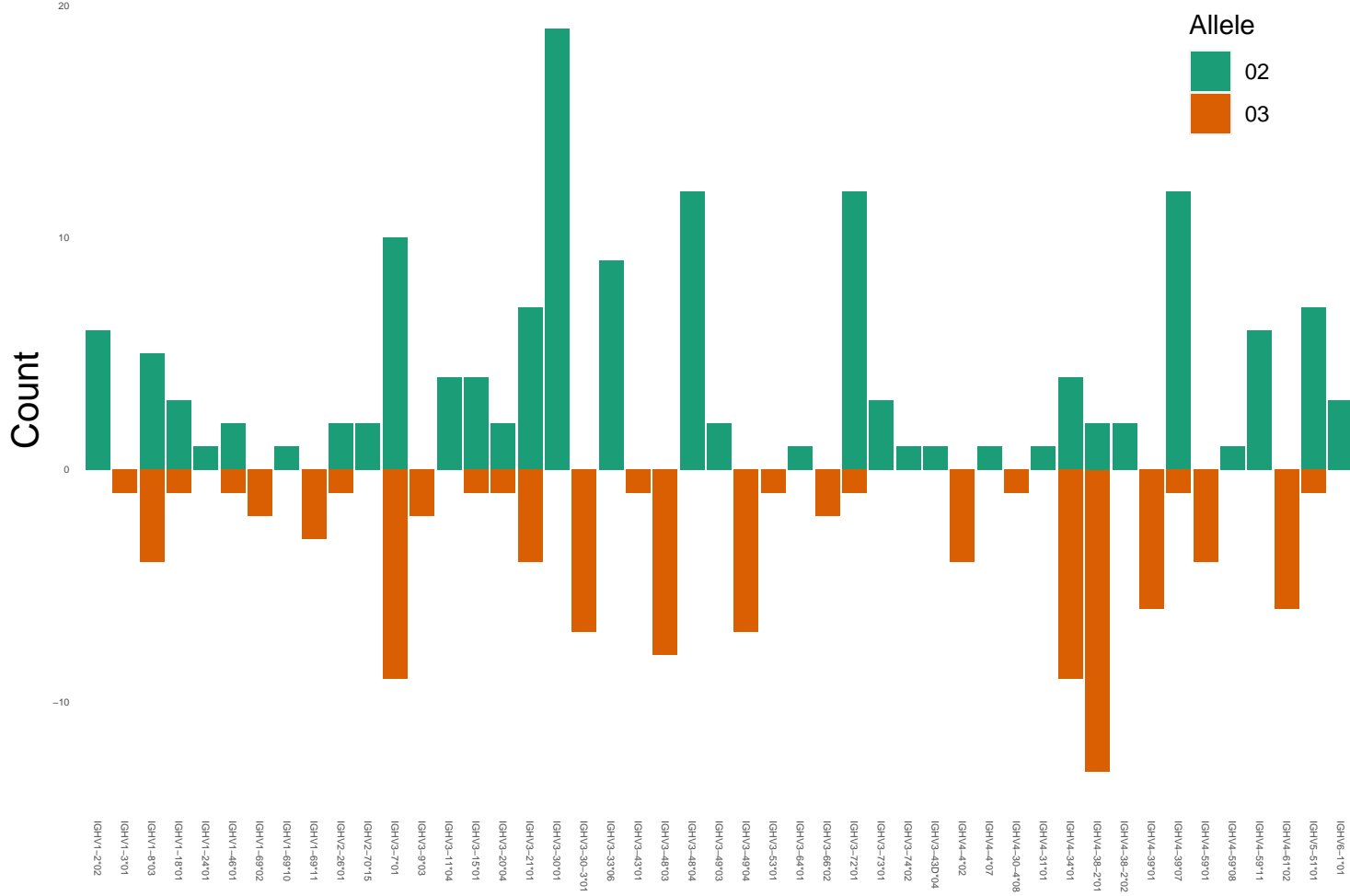


Allele Usage





Sequence Count by IGHJ6 allele usage



[illegible]