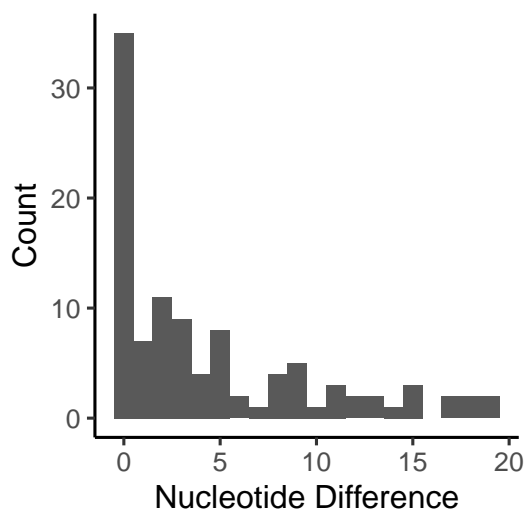


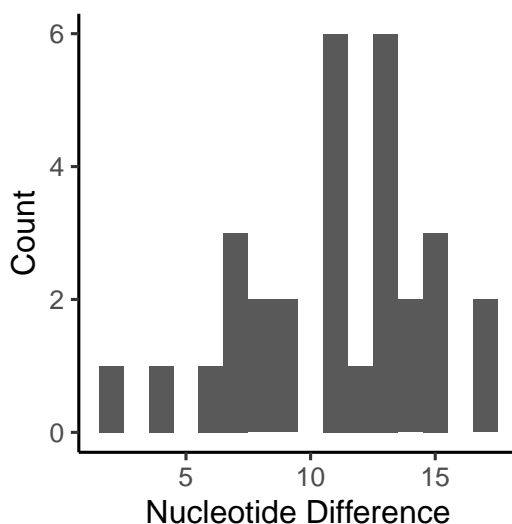
### IGHV1-2\*02

109 sequences assigned  
35 (32.1%) exact matches, in which:  
34 unique CDR3  
5 unique J



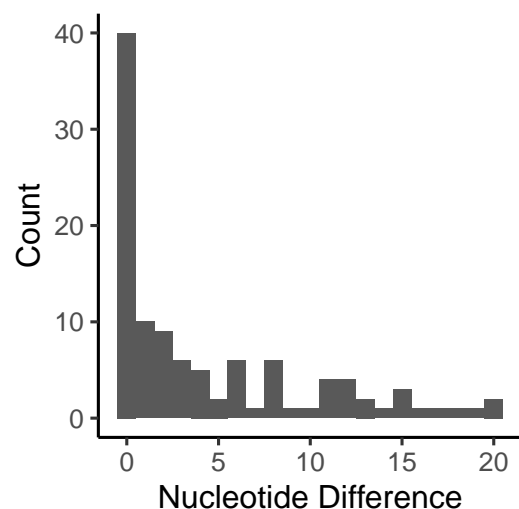
### IGHV1-8\*02

30 sequences assigned  
No exact matches.



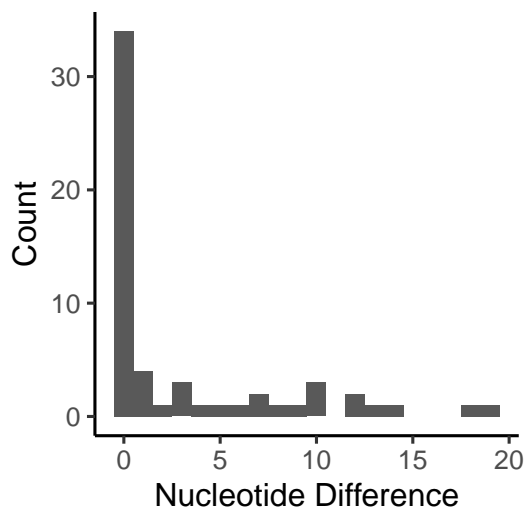
### IGHV1-46\*01

111 sequences assigned  
40 (36%) exact matches, in which:  
40 unique CDR3  
6 unique J



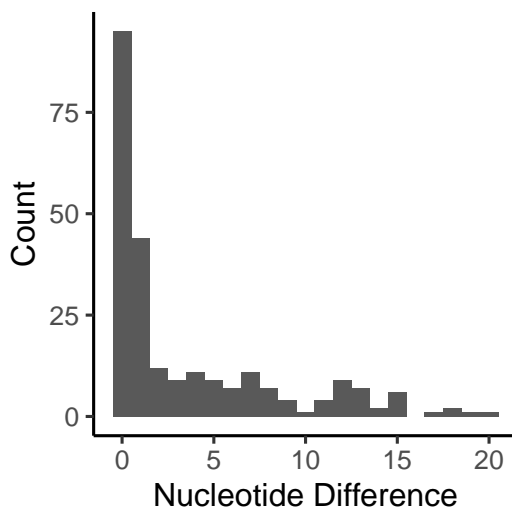
### IGHV1-3\*01

61 sequences assigned  
34 (55.7%) exact matches, in which:  
30 unique CDR3  
5 unique J



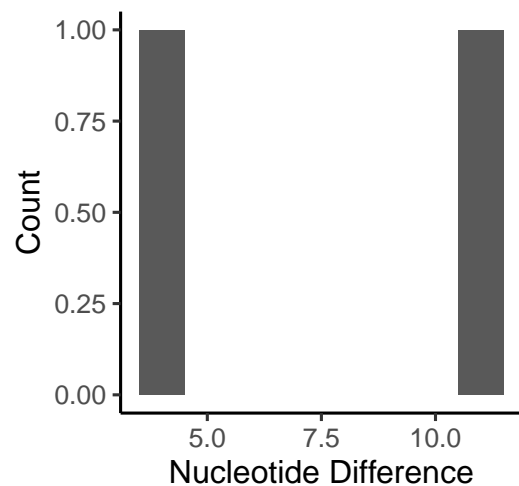
### IGHV1-18\*01

256 sequences assigned  
95 (37.1%) exact matches, in which:  
93 unique CDR3  
6 unique J



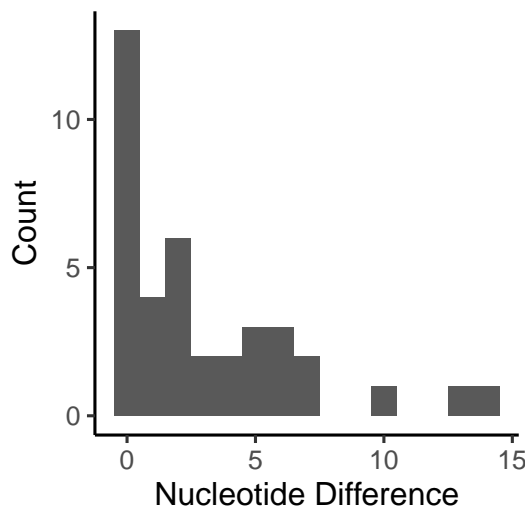
### IGHV1-58\*01

2 sequences assigned  
No exact matches.



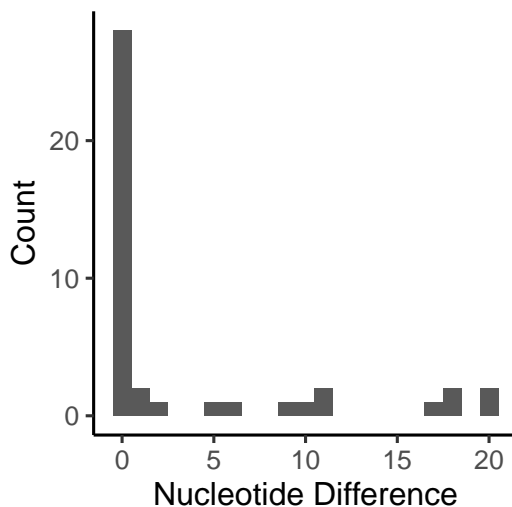
### IGHV1-8\*01

38 sequences assigned  
13 (34.2%) exact matches, in which:  
13 unique CDR3  
6 unique J



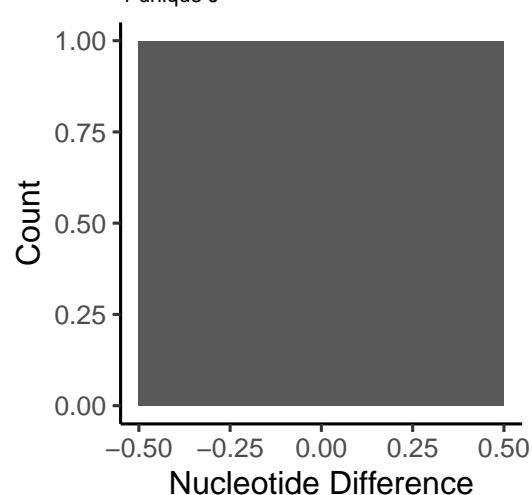
### IGHV1-24\*01

45 sequences assigned  
28 (62.2%) exact matches, in which:  
27 unique CDR3  
6 unique J



### IGHV1-58\*02

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



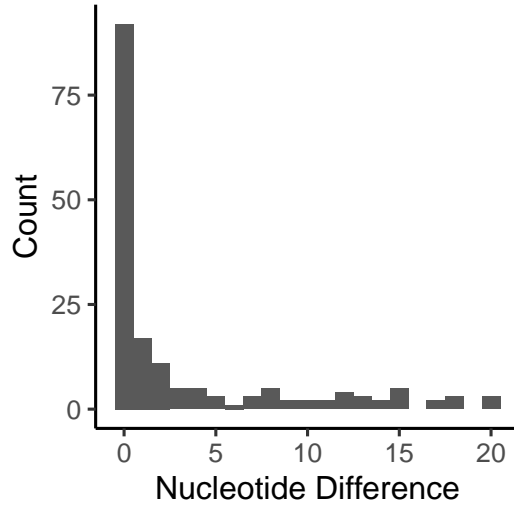
### IGHV1-68\*01

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



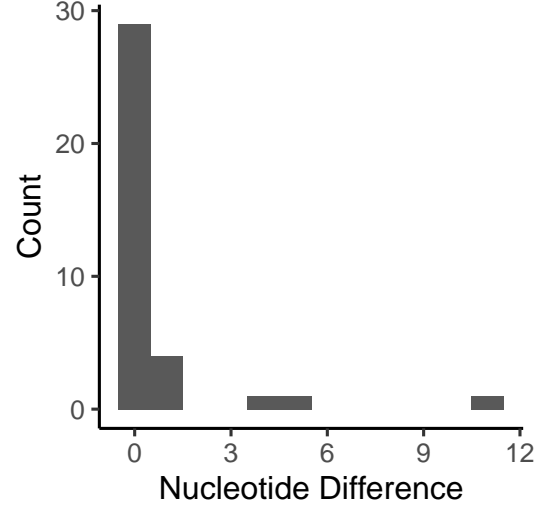
### IGHV1-69\*06

175 sequences assigned  
92 (52.6%) exact matches, in which:  
92 unique CDR3  
5 unique J



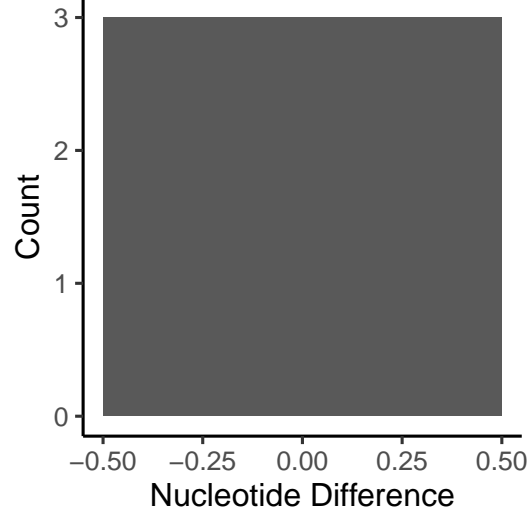
### IGHV2-26\*01

36 sequences assigned  
29 (80.6%) exact matches, in which:  
28 unique CDR3  
5 unique J



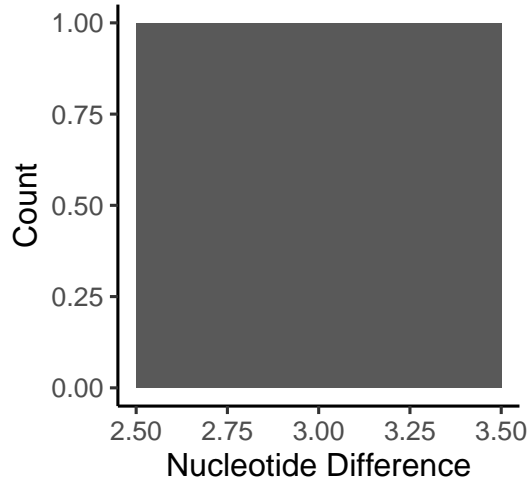
### IGHV1-69-2\*01

3 sequences assigned  
3 (100%) exact matches, in which:  
2 unique CDR3  
2 unique J



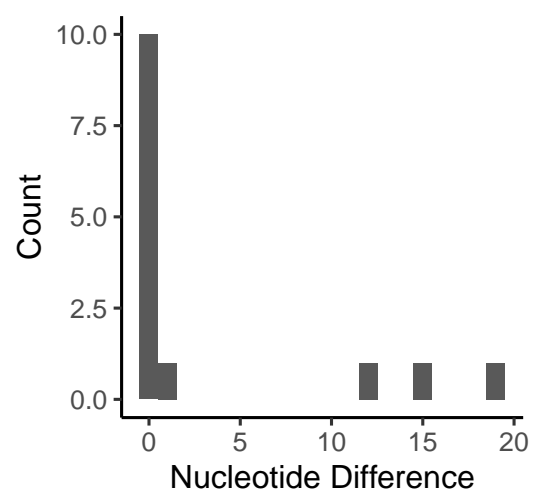
### IGHV1-69D\*01

1 sequences assigned  
No exact matches.



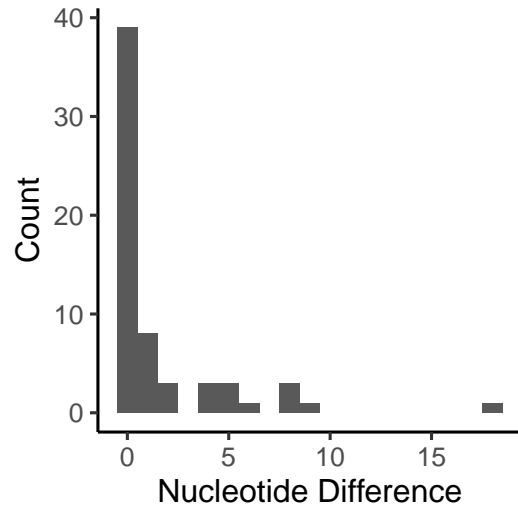
### IGHV2-70\*01

16 sequences assigned  
10 (62.5%) exact matches, in which:  
10 unique CDR3  
4 unique J



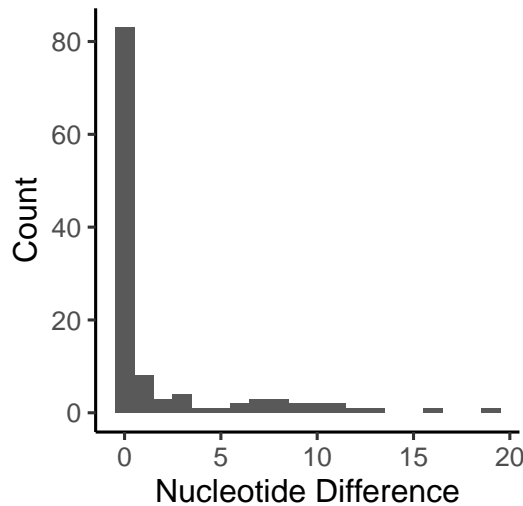
### IGHV1-69\*04

63 sequences assigned  
39 (61.9%) exact matches, in which:  
38 unique CDR3  
6 unique J



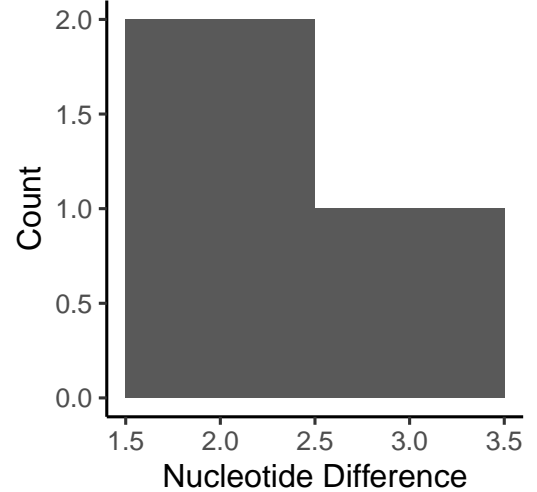
### IGHV2-5\*02

122 sequences assigned  
83 (68%) exact matches, in which:  
83 unique CDR3  
6 unique J



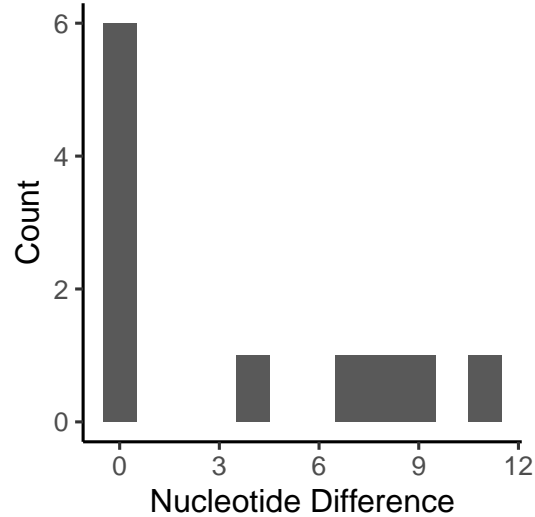
### IGHV2-70\*12

3 sequences assigned  
No exact matches.



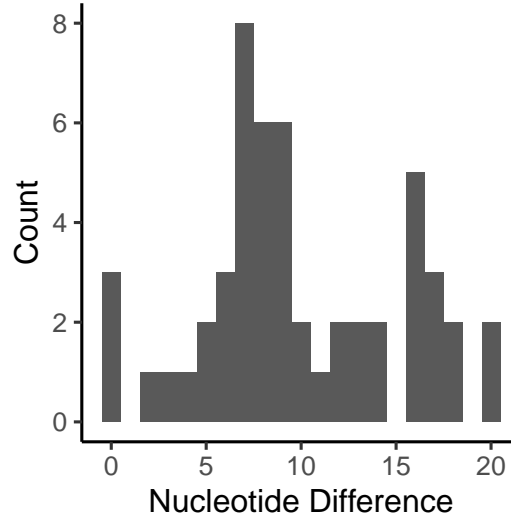
### IGHV2-70\*15

11 sequences assigned  
6 (54.5%) exact matches, in which:  
6 unique CDR3  
2 unique J



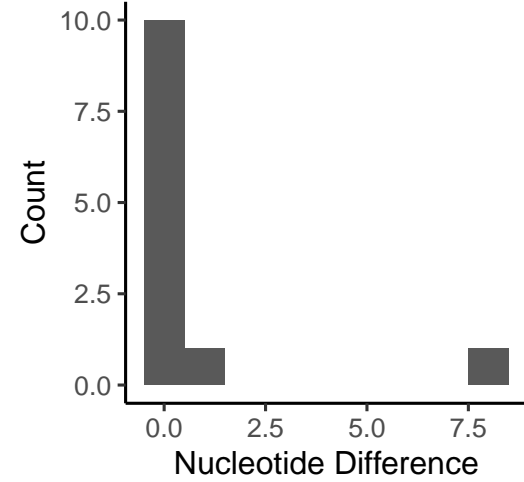
### IGHV3-7\*05

56 sequences assigned  
3 (5.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



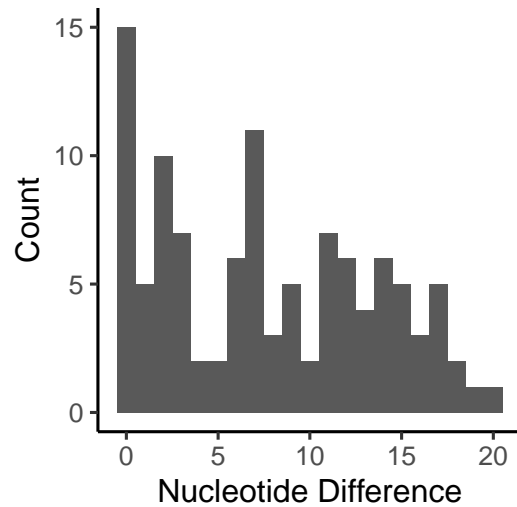
### IGHV3-11\*05

13 sequences assigned  
10 (76.9%) exact matches, in which:  
10 unique CDR3  
3 unique J



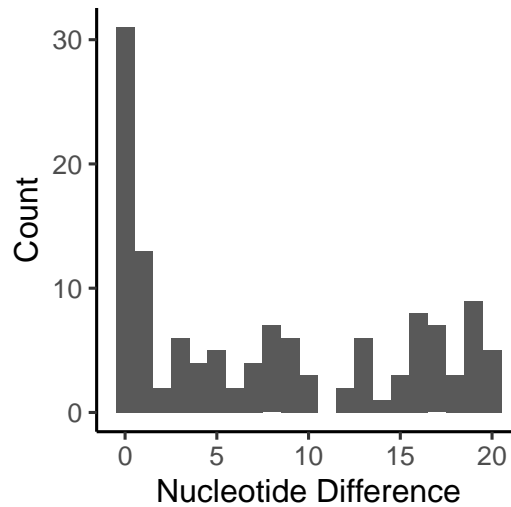
### IGHV3-7\*01

110 sequences assigned  
15 (13.6%) exact matches, in which:  
15 unique CDR3  
5 unique J



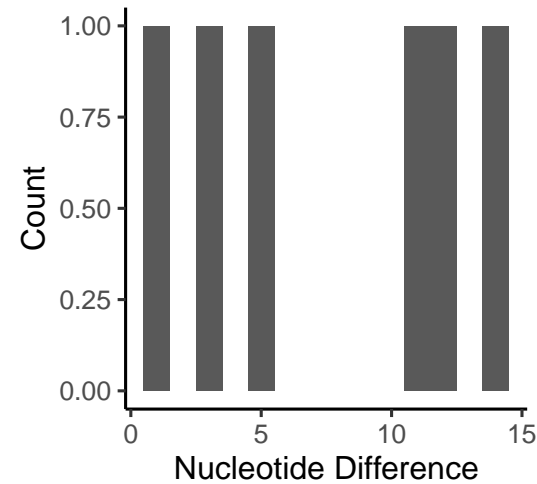
### IGHV3-9\*01

134 sequences assigned  
31 (23.1%) exact matches, in which:  
29 unique CDR3  
4 unique J



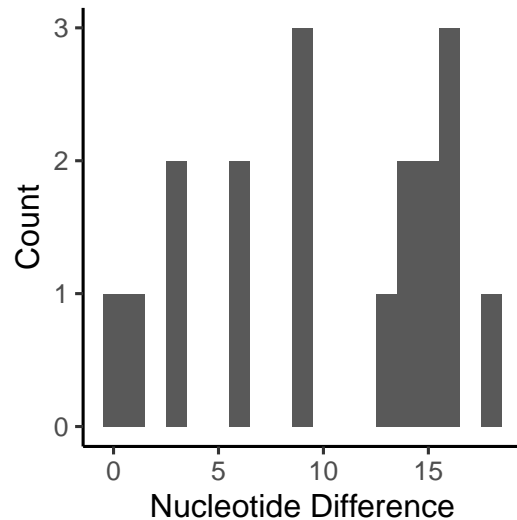
### IGHV3-11\*06

6 sequences assigned  
No exact matches.



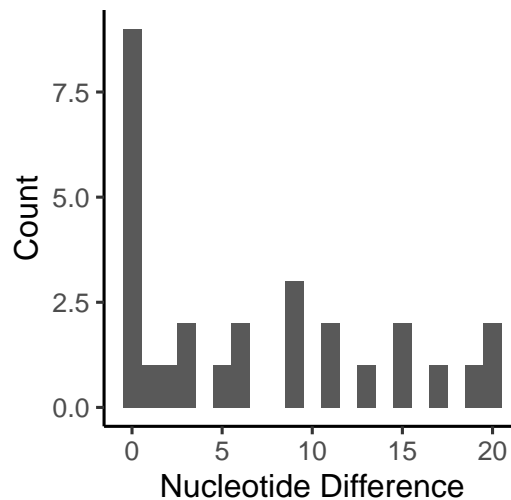
### IGHV3-7\*03

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



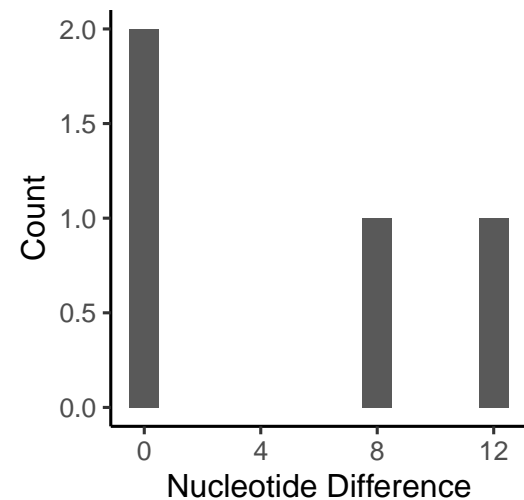
### IGHV3-11\*01

31 sequences assigned  
9 (29%) exact matches, in which:  
9 unique CDR3  
5 unique J



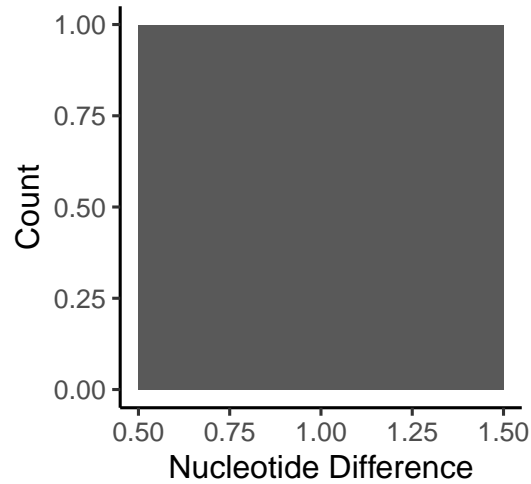
### IGHV3-13\*01

6 sequences assigned  
2 (33.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



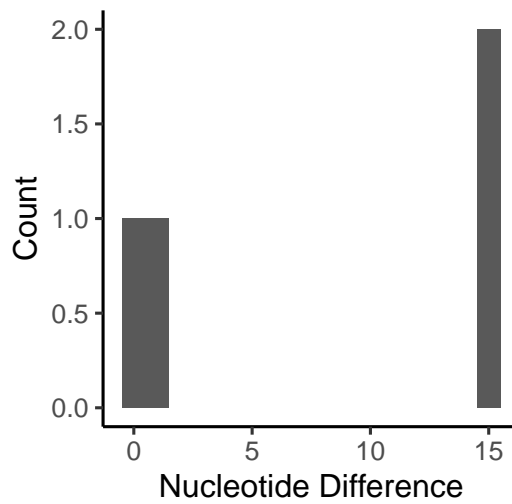
### IGHV3-13\*02

1 sequences assigned  
No exact matches.



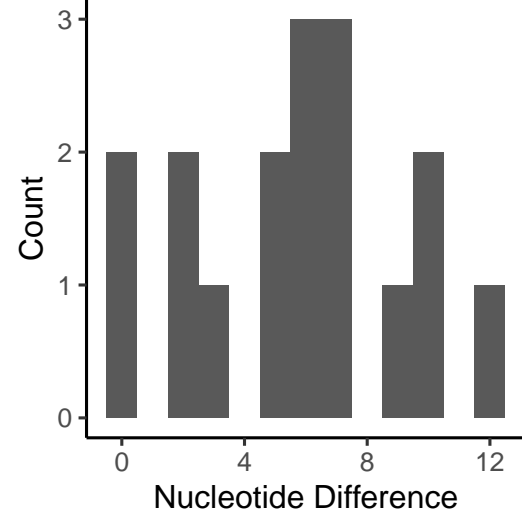
### IGHV3-20\*01

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



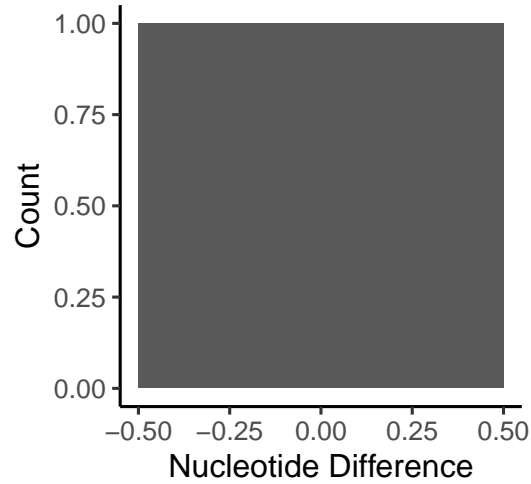
### IGHV3-21\*04

19 sequences assigned  
2 (10.5%) exact matches, in which:  
2 unique CDR3  
2 unique J



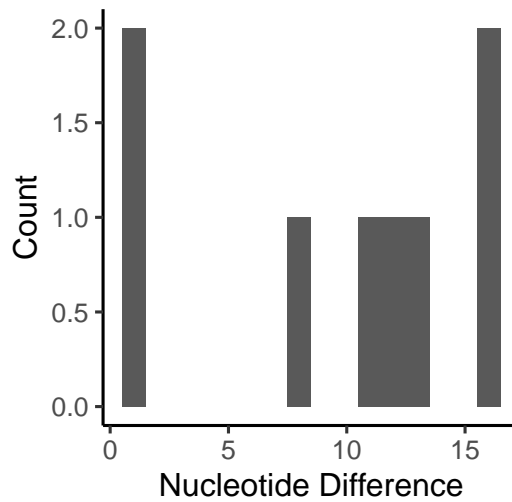
### IGHV3-13\*04

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



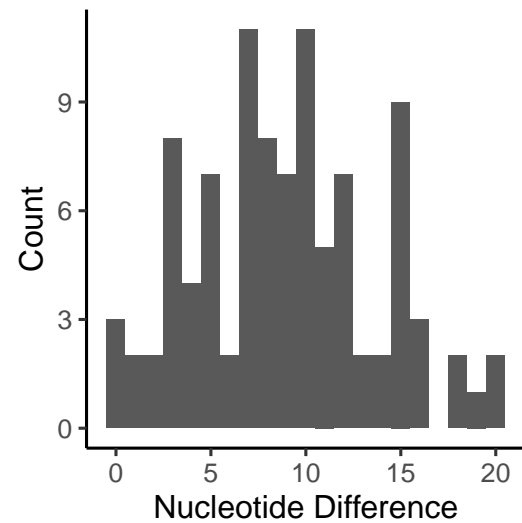
### IGHV3-20\*04

9 sequences assigned  
No exact matches.



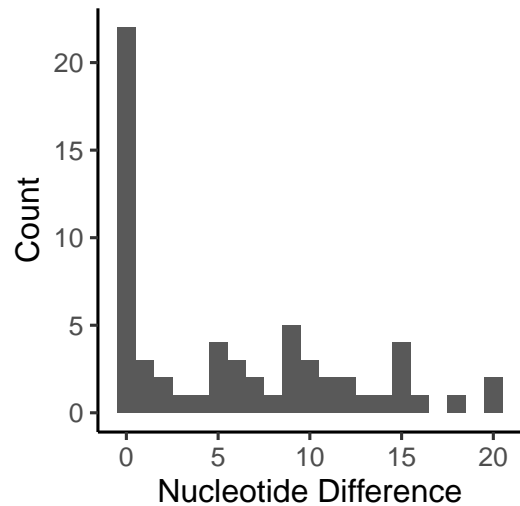
### IGHV3-23\*04

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



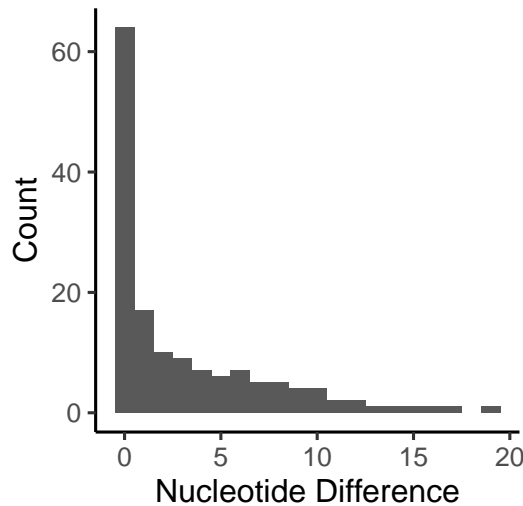
### IGHV3-15\*01

67 sequences assigned  
22 (32.8%) exact matches, in which:  
22 unique CDR3  
5 unique J



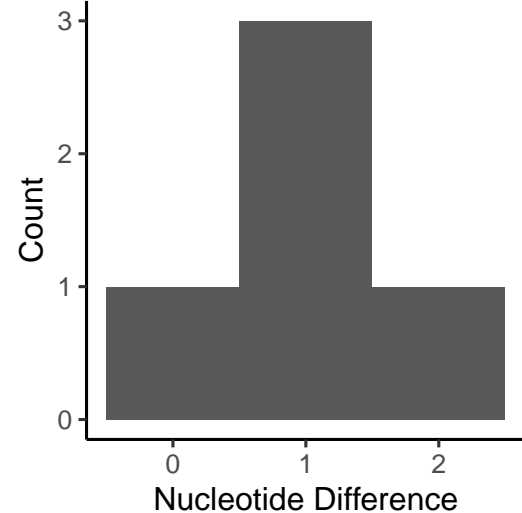
### IGHV3-21\*01

154 sequences assigned  
64 (41.6%) exact matches, in which:  
63 unique CDR3  
6 unique J



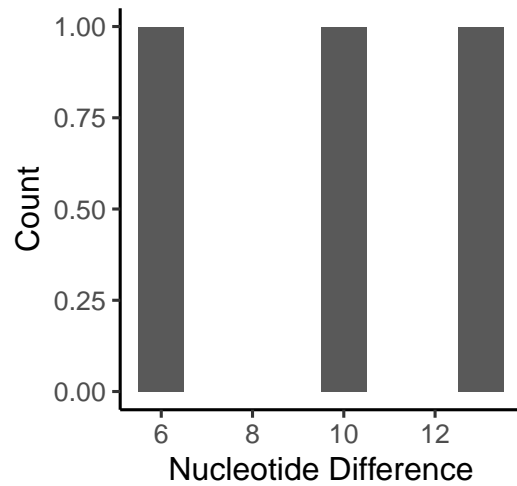
### IGHV3-30-3\*01

5 sequences assigned  
1 (20%) exact matches, in which:  
1 unique CDR3  
1 unique J



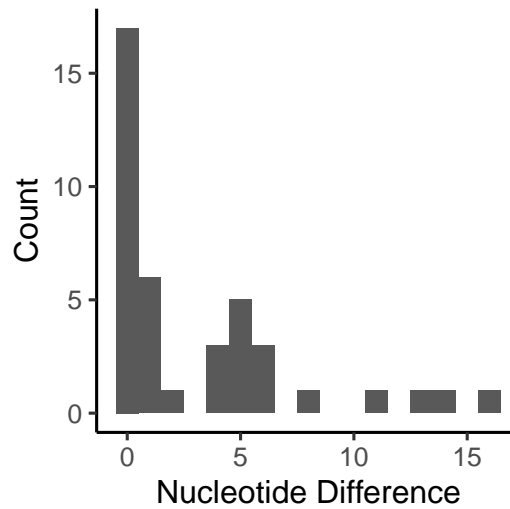
### IGHV3-30-3\*02

3 sequences assigned  
No exact matches.



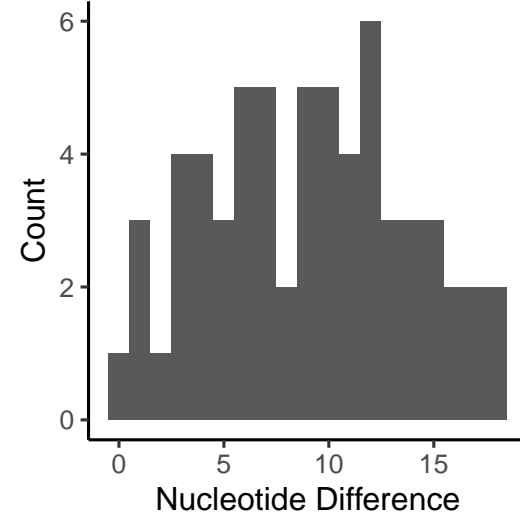
### IGHV3-33\*06

40 sequences assigned  
17 (42.5%) exact matches, in which:  
17 unique CDR3  
5 unique J



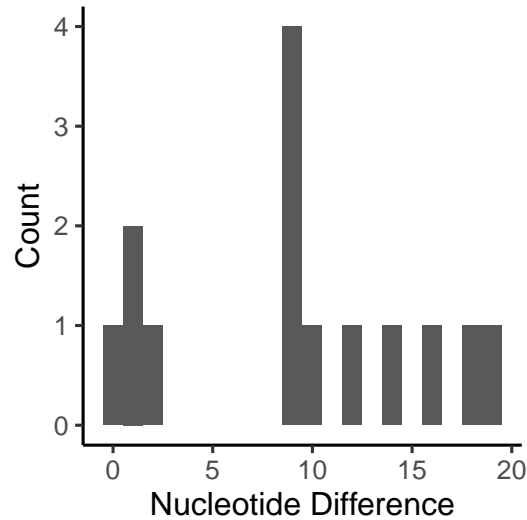
### IGHV3-48\*01

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



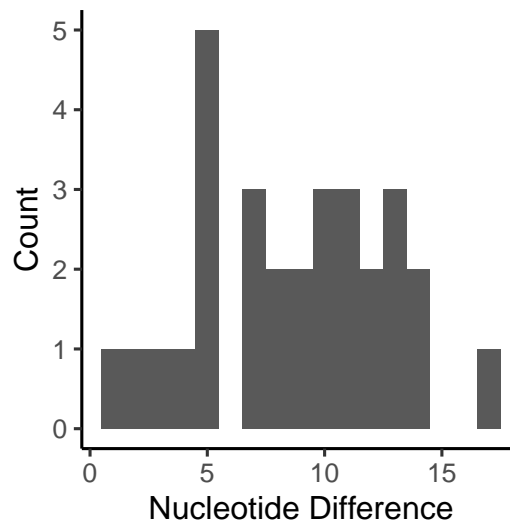
### IGHV3-30\*03

15 sequences assigned  
1 (6.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



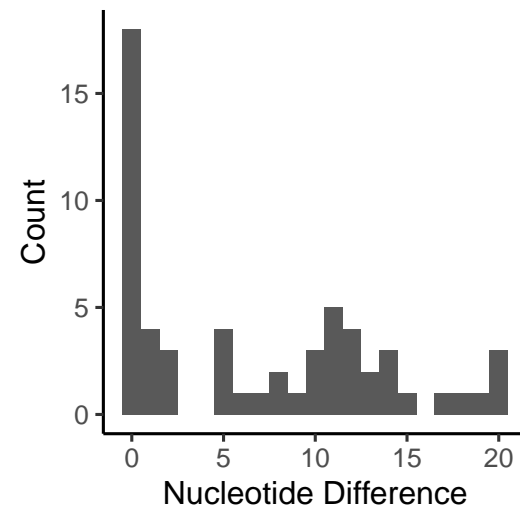
### IGHV3-33\*08

32 sequences assigned  
No exact matches.



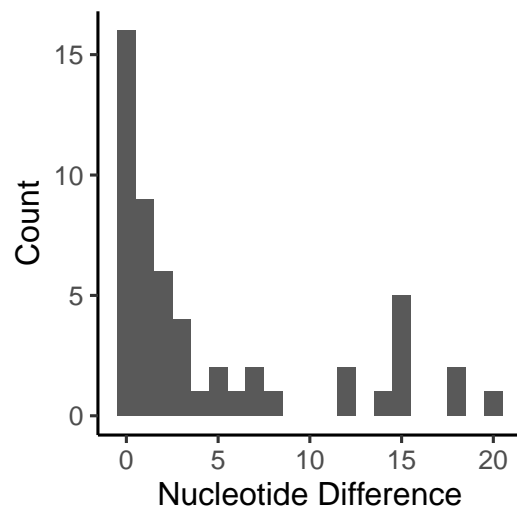
### IGHV3-48\*02

62 sequences assigned  
18 (29%) exact matches, in which:  
18 unique CDR3  
5 unique J



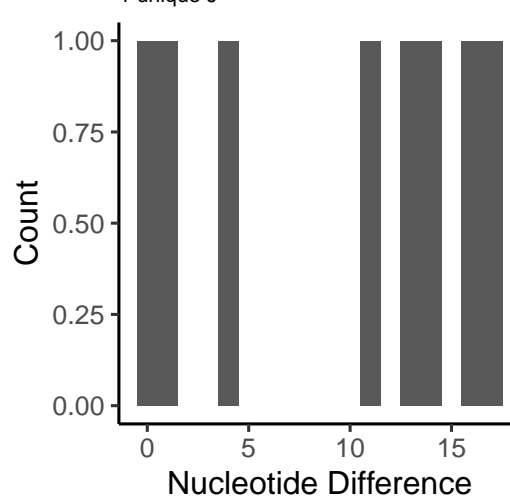
### IGHV3-33\*01

56 sequences assigned  
16 (28.6%) exact matches, in which:  
16 unique CDR3  
4 unique J



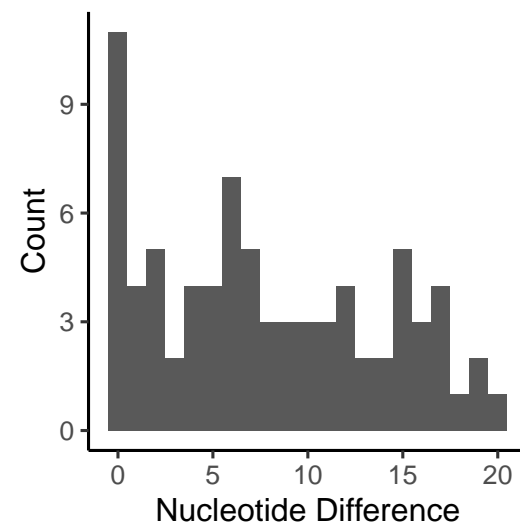
### IGHV3-43\*01

8 sequences assigned  
1 (12.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



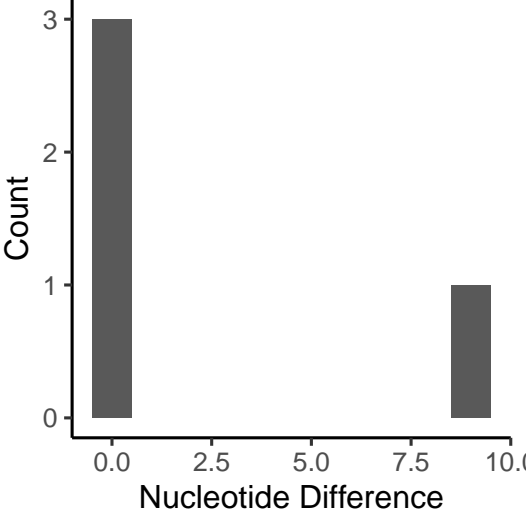
### IGHV3-48\*04

79 sequences assigned  
11 (13.9%) exact matches, in which:  
11 unique CDR3  
3 unique J



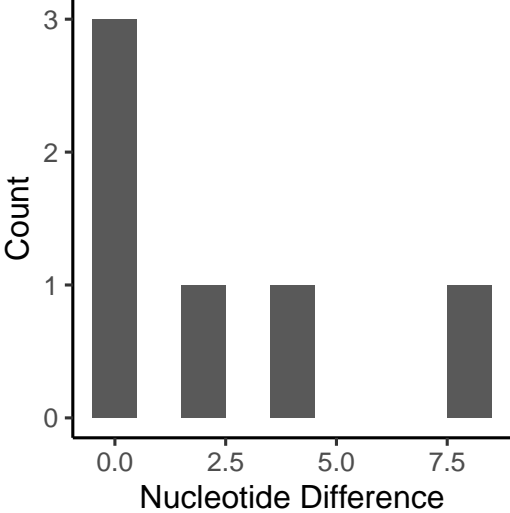
IGHV3-49\*03

4 sequences assigned  
3 (75%) exact matches, in which:  
3 unique CDR3  
3 unique J



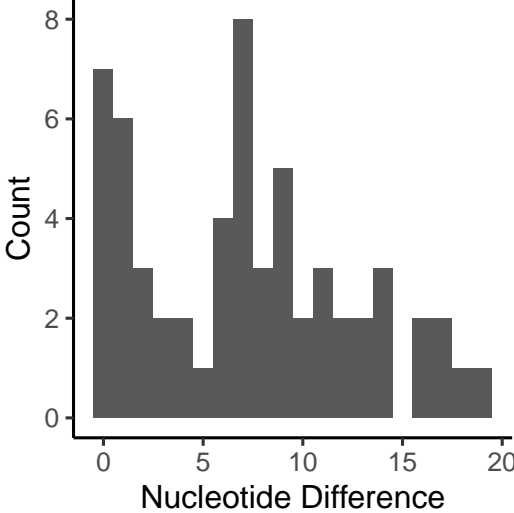
IGHV3-53\*04

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



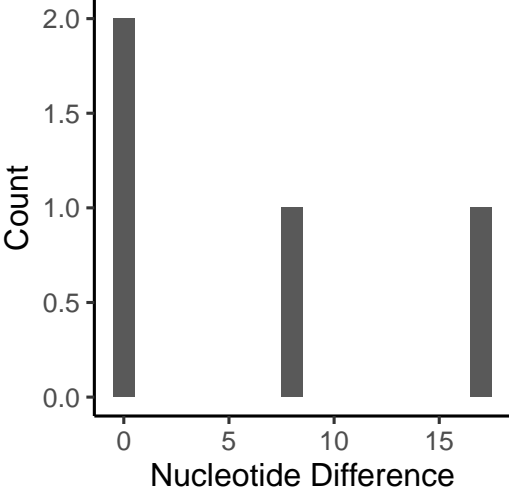
IGHV3-66\*01

62 sequences assigned  
7 (11.3%) exact matches, in which:  
7 unique CDR3  
2 unique J



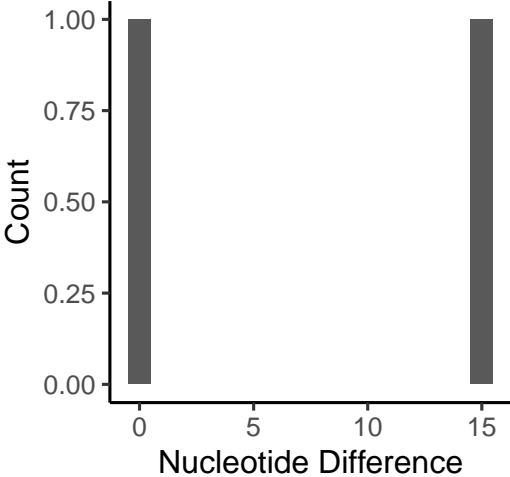
IGHV3-49\*05

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



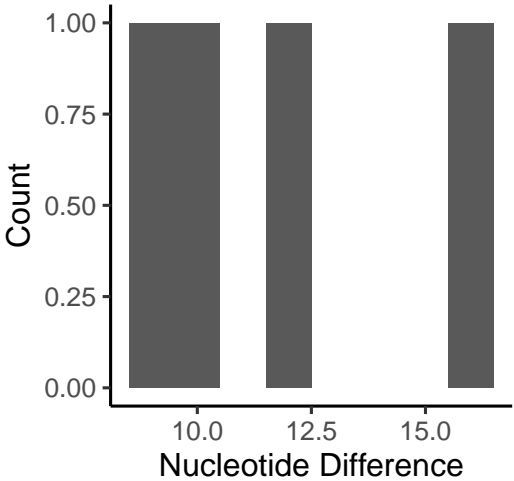
IGHV3-64\*01

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



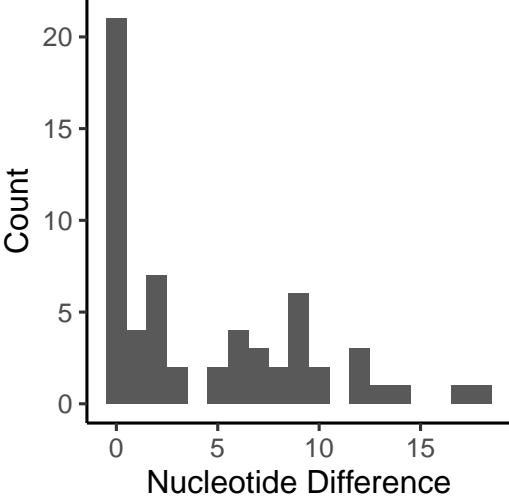
IGHV3-69-1\*01

4 sequences assigned  
No exact matches.



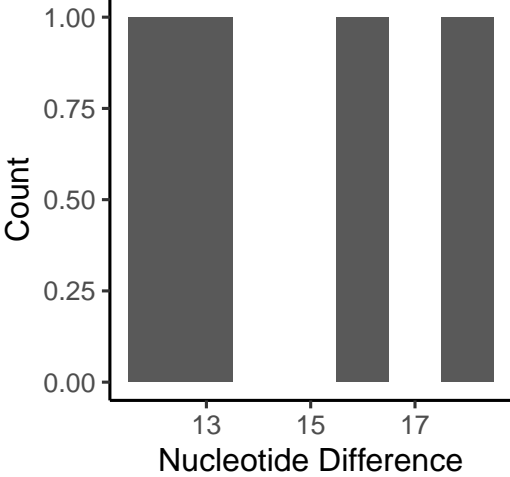
IGHV3-53\*01

64 sequences assigned  
21 (32.8%) exact matches, in which:  
21 unique CDR3  
5 unique J



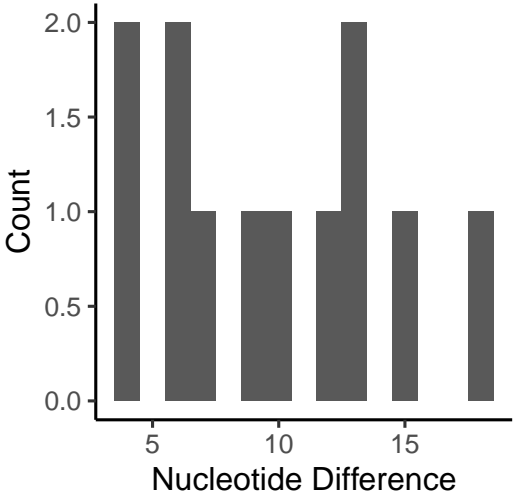
IGHV3-64\*04

5 sequences assigned  
No exact matches.



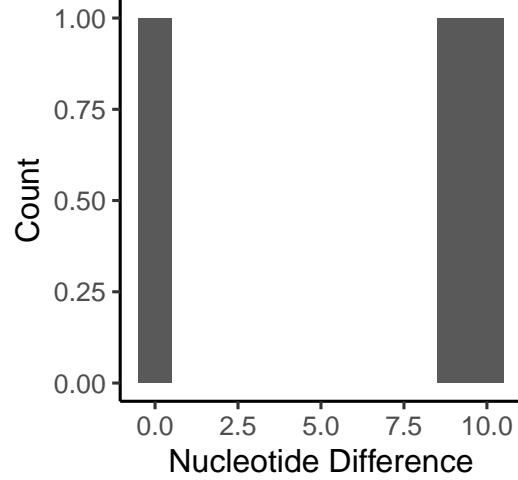
IGHV3-72\*01

12 sequences assigned  
No exact matches.



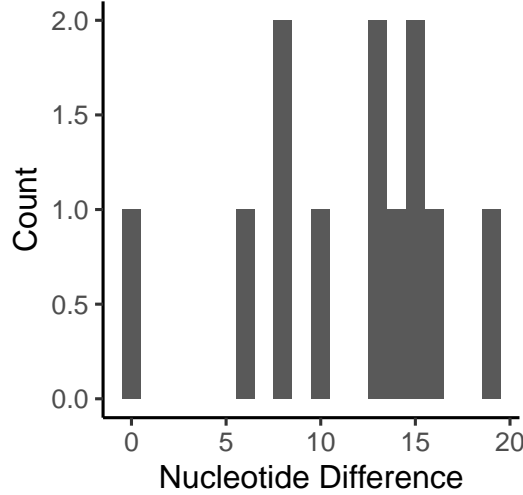
### IGHV3-73\*01

3 sequences assigned  
1 (33.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



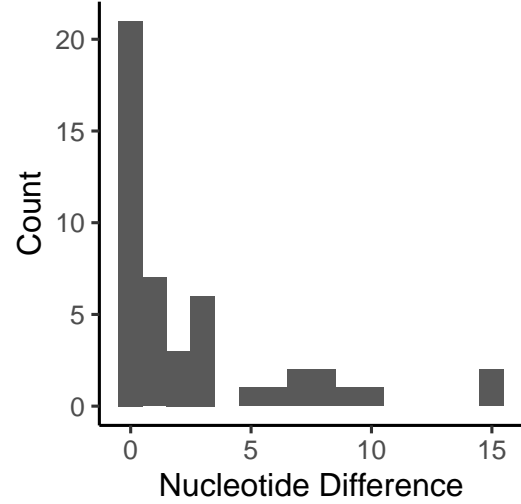
### IGHV3-43D\*03

12 sequences assigned  
1 (8.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



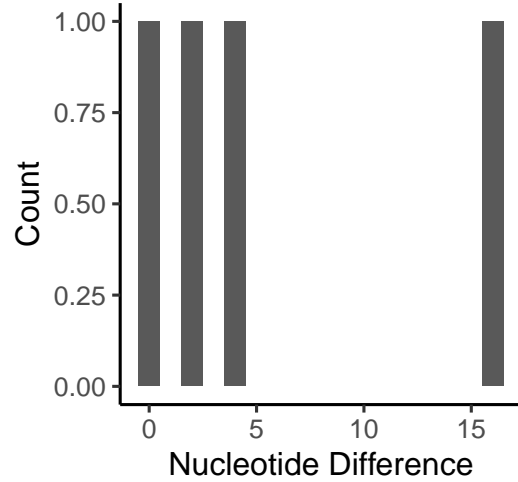
### IGHV4-4\*07

48 sequences assigned  
21 (43.8%) exact matches, in which:  
21 unique CDR3  
6 unique J



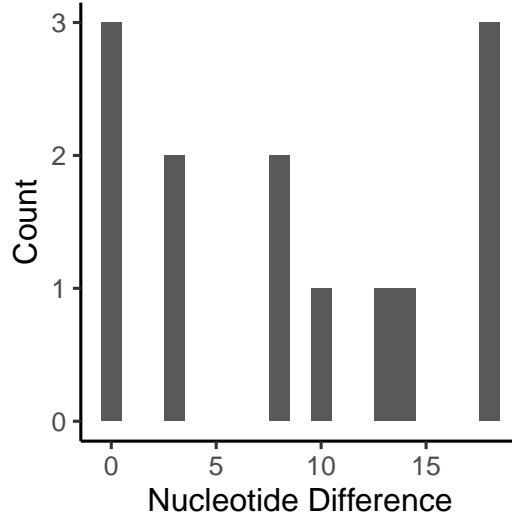
### IGHV3-73\*02

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



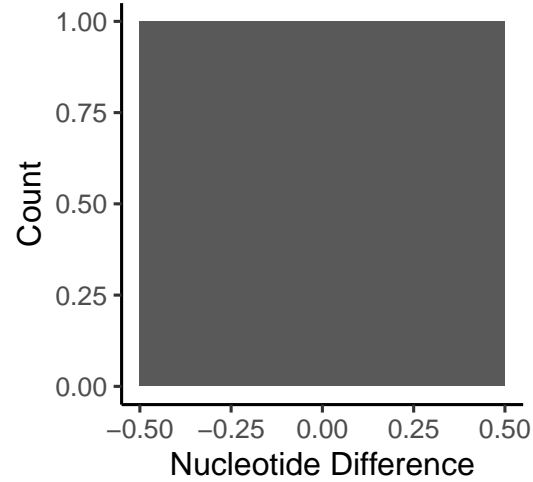
### IGHV3-64D\*09

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



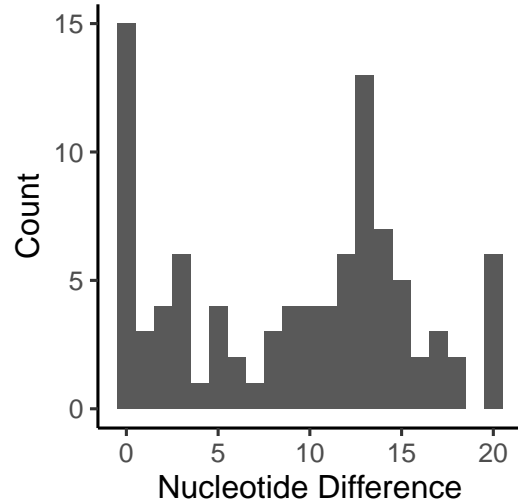
### IGHV4-28\*03

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



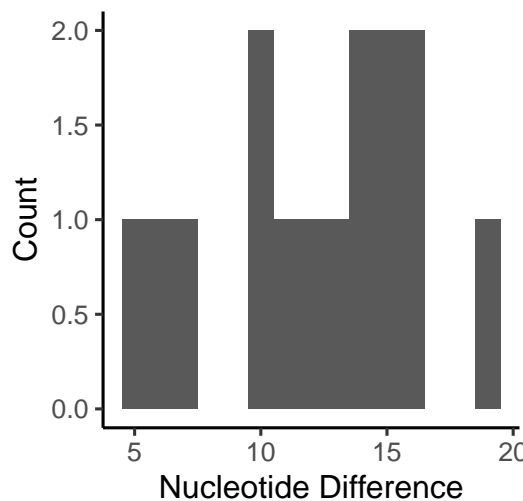
### IGHV3-74\*01

104 sequences assigned  
15 (14.4%) exact matches, in which:  
15 unique CDR3  
4 unique J



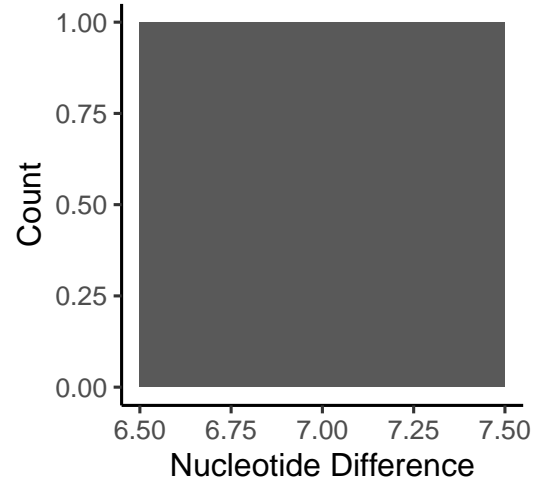
### IGHV3-NL1\*01

16 sequences assigned  
No exact matches.



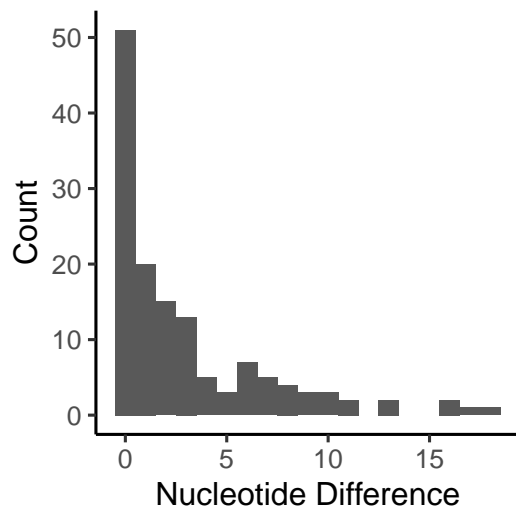
### IGHV4-30-2\*04

1 sequences assigned  
No exact matches.



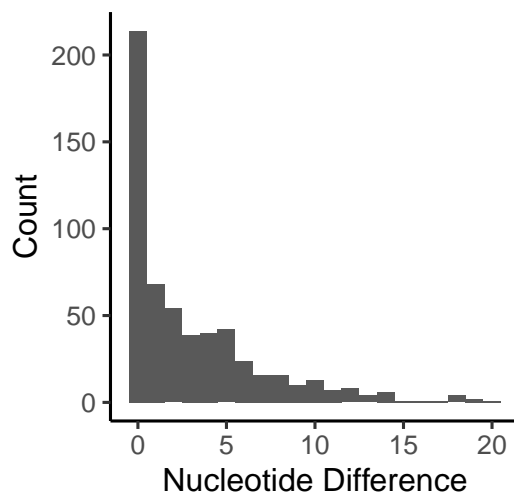
### IGHV4-31\*03

139 sequences assigned  
51 (36.7%) exact matches, in which:  
51 unique CDR3  
6 unique J



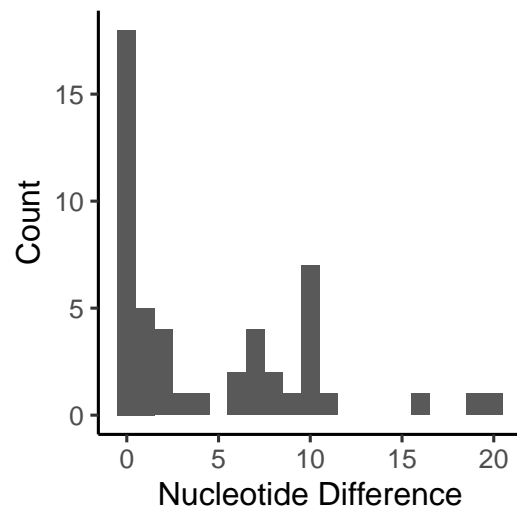
### IGHV4-39\*07

595 sequences assigned  
214 (36%) exact matches, in which:  
214 unique CDR3  
7 unique J



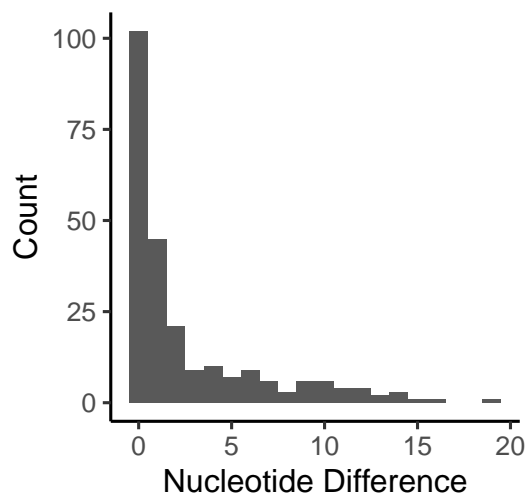
### IGHV4-59\*08

54 sequences assigned  
18 (33.3%) exact matches, in which:  
18 unique CDR3  
5 unique J



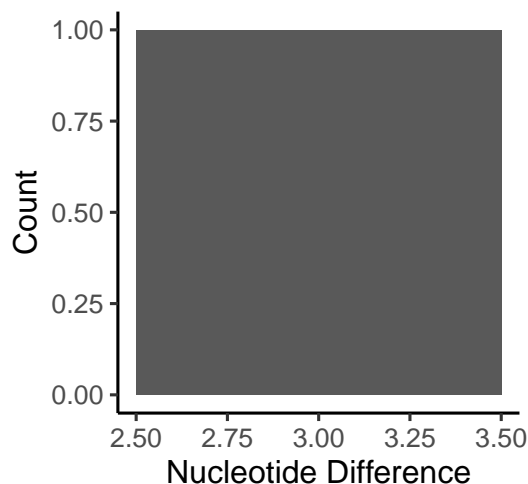
### IGHV4-34\*01

247 sequences assigned  
102 (41.3%) exact matches, in which:  
101 unique CDR3  
7 unique J



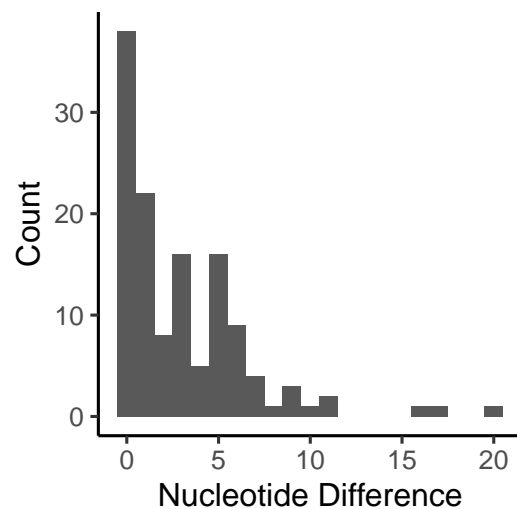
### IGHV4-55\*08

1 sequences assigned  
No exact matches.



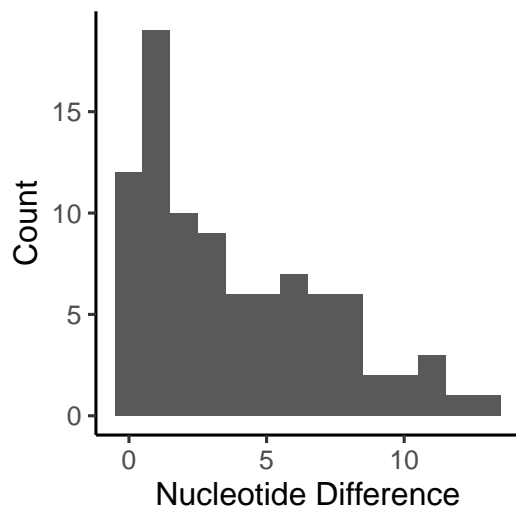
### IGHV4-59\*12

131 sequences assigned  
38 (29%) exact matches, in which:  
38 unique CDR3  
6 unique J



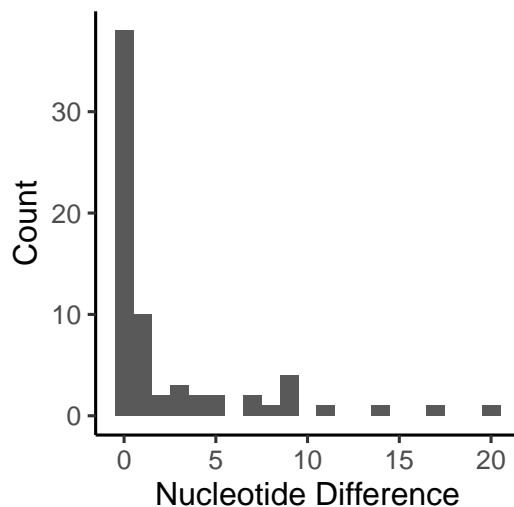
### IGHV4-38-2\*02

91 sequences assigned  
12 (13.2%) exact matches, in which:  
12 unique CDR3  
5 unique J



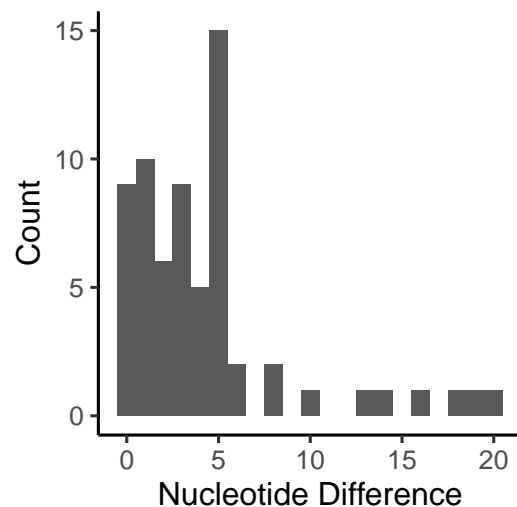
### IGHV4-59\*01

74 sequences assigned  
38 (51.4%) exact matches, in which:  
37 unique CDR3  
7 unique J



### IGHV4-61\*01

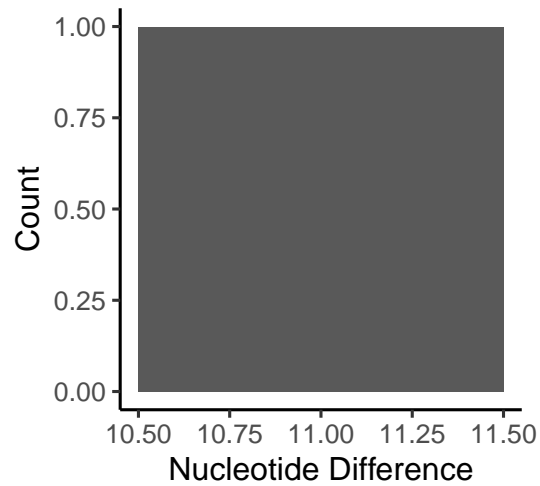
69 sequences assigned  
9 (13%) exact matches, in which:  
9 unique CDR3  
3 unique J





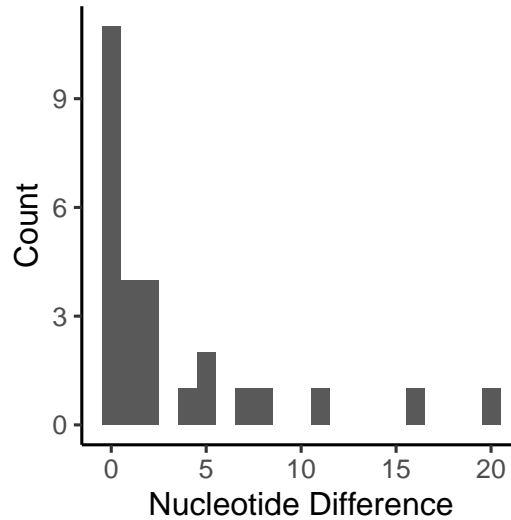
### IGHV4/OR15-8\*01

2 sequences assigned  
No exact matches.



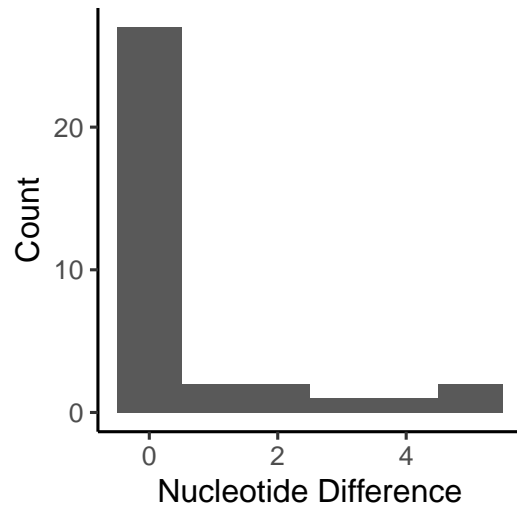
### IGHV6-1\*01

29 sequences assigned  
11 (37.9%) exact matches, in which:  
11 unique CDR3  
5 unique J



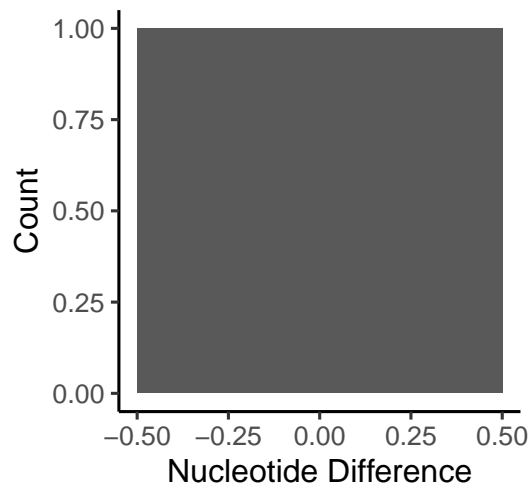
### IGHV5-10-1\*01

36 sequences assigned  
27 (75%) exact matches, in which:  
26 unique CDR3  
5 unique J



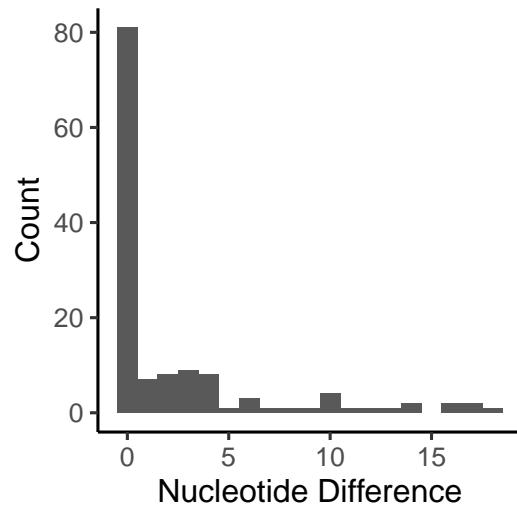
### IGHV3/OR16-8\*01

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



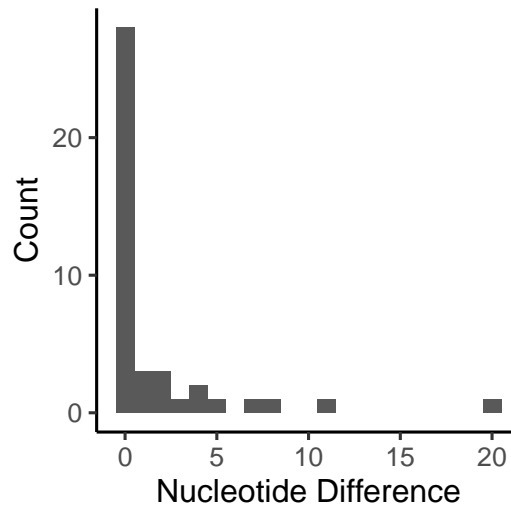
### IGHV5-51\*01

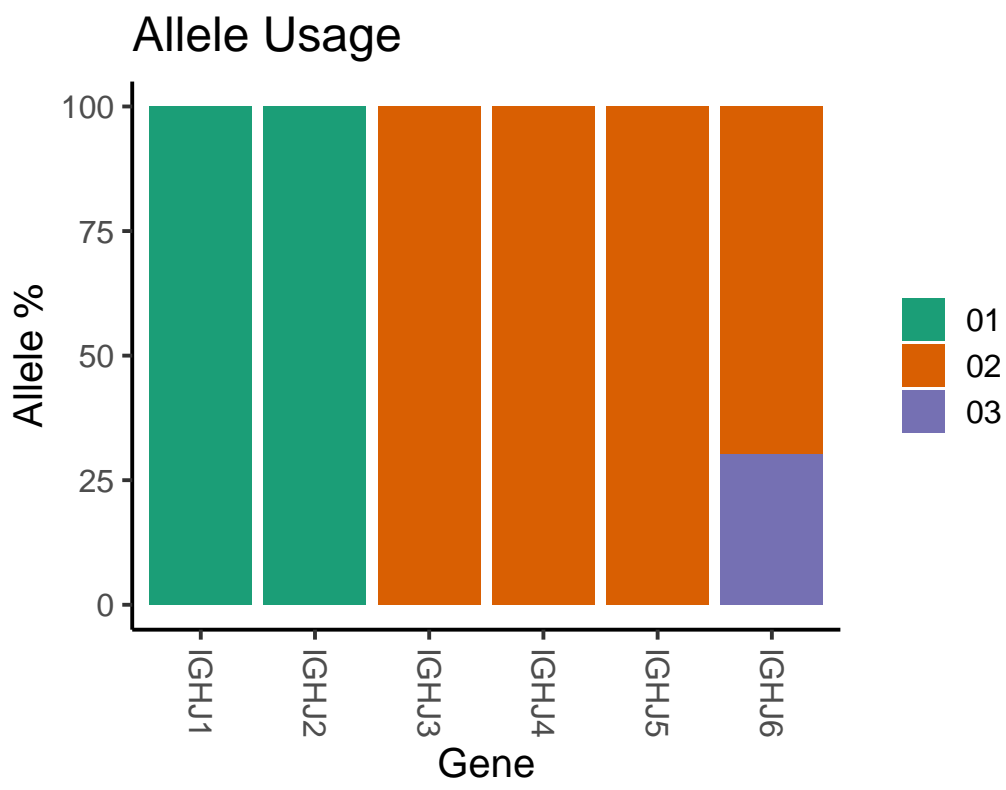
136 sequences assigned  
81 (59.6%) exact matches, in which:  
79 unique CDR3  
6 unique J



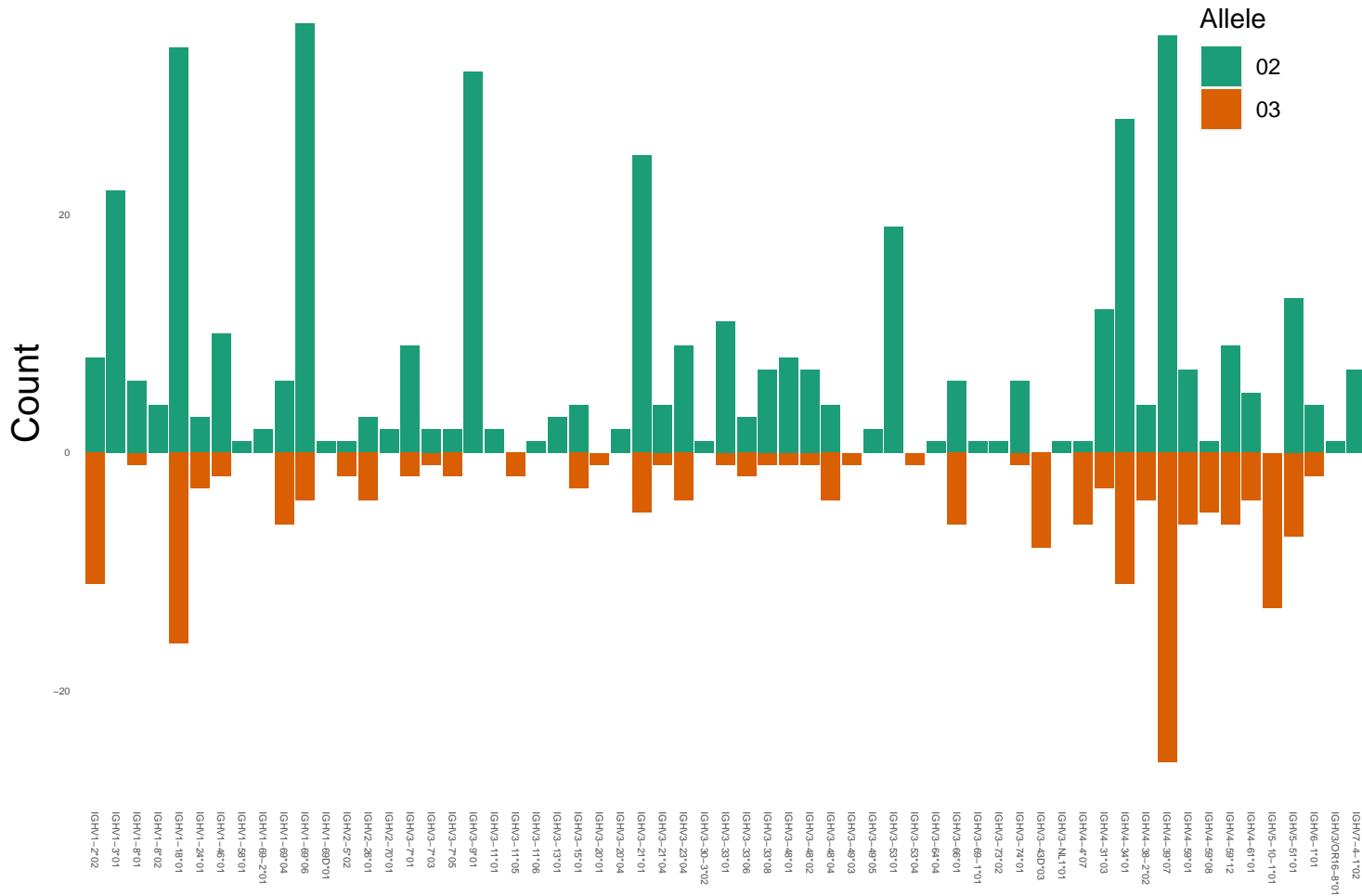
### IGHV7-4-1\*02

42 sequences assigned  
28 (66.7%) exact matches, in which:  
26 unique CDR3  
5 unique J





Sequence Count by IGHJ6 allele usage



[illegible]