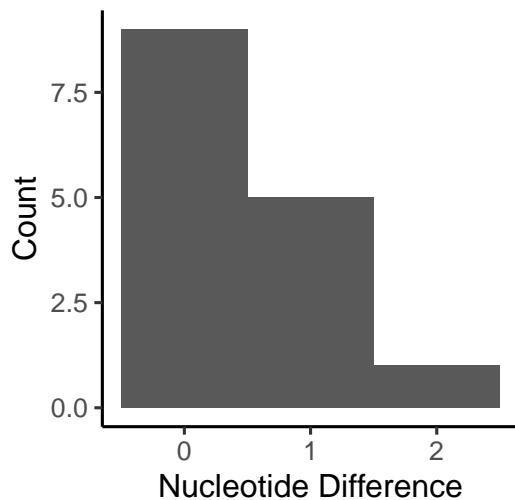


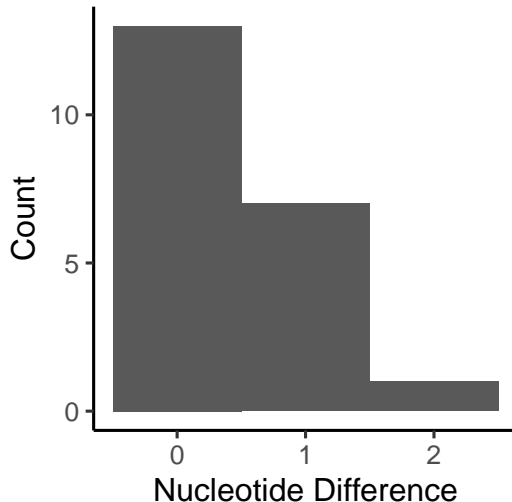
### IGHV1-2\*06

17 sequences assigned  
9 (52.9%) exact matches, in which:  
9 unique CDR3  
3 unique J



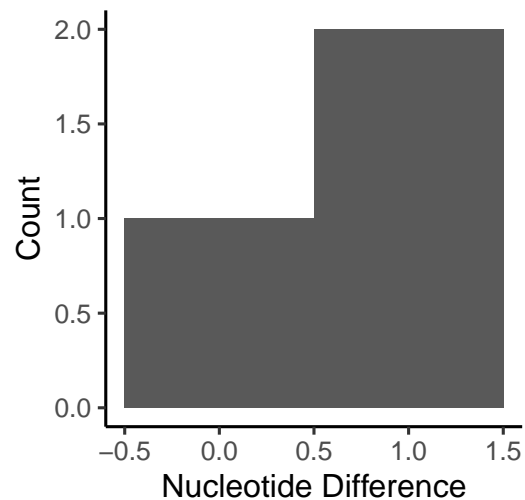
### IGHV1-18\*01

21 sequences assigned  
13 (61.9%) exact matches, in which:  
13 unique CDR3  
2 unique J



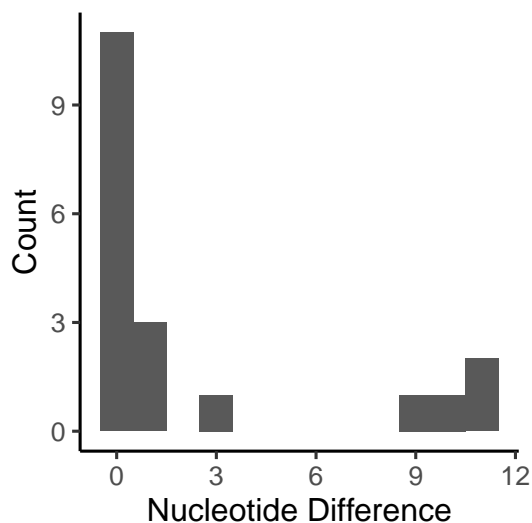
### IGHV1-46\*03

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



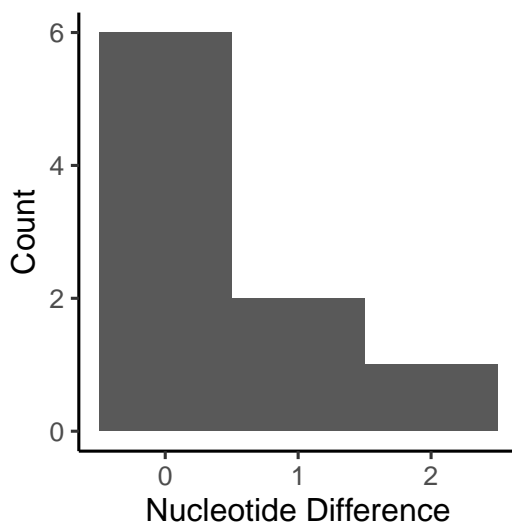
### IGHV1-3\*01

19 sequences assigned  
11 (57.9%) exact matches, in which:  
7 unique CDR3  
4 unique J



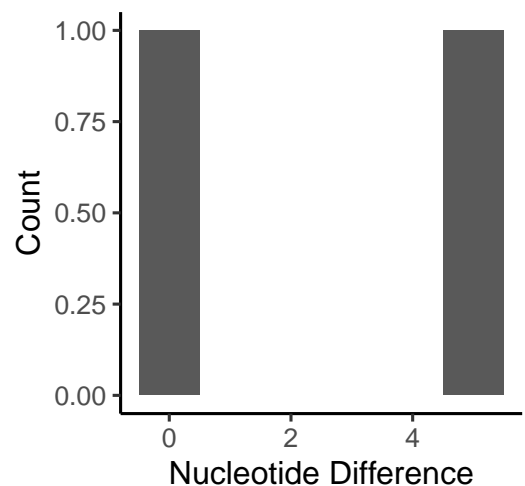
### IGHV1-24\*01

9 sequences assigned  
6 (66.7%) exact matches, in which:  
6 unique CDR3  
3 unique J



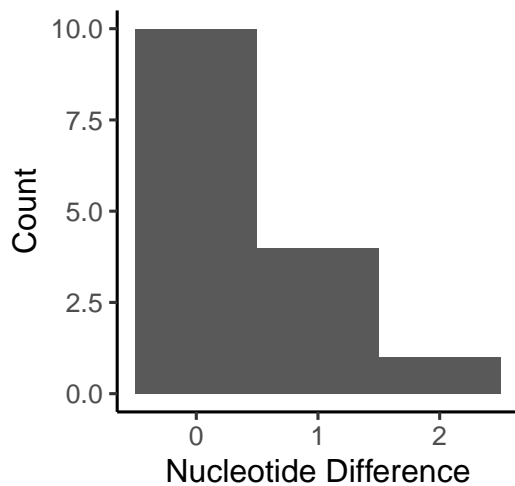
### IGHV1-58\*01

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



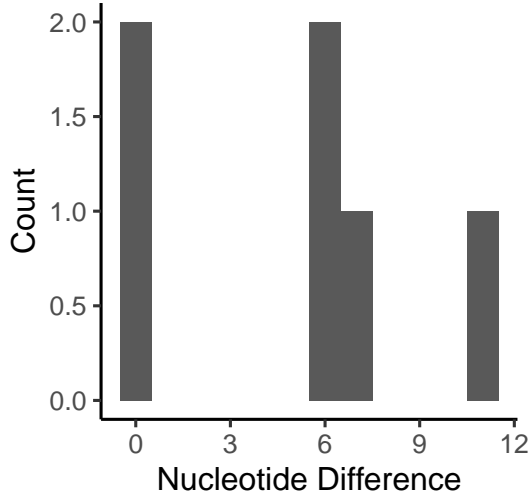
### IGHV1-8\*01

15 sequences assigned  
10 (66.7%) exact matches, in which:  
9 unique CDR3  
3 unique J



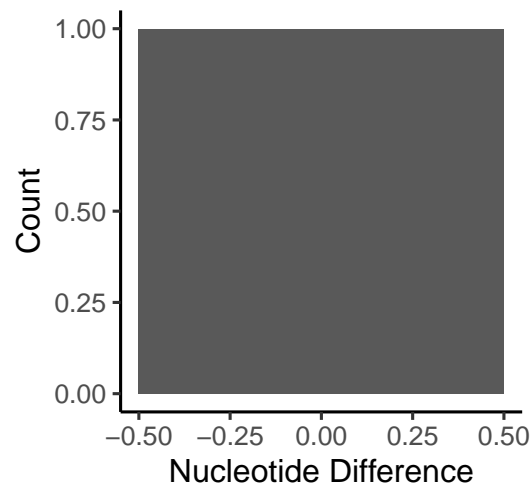
### IGHV1-46\*01

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



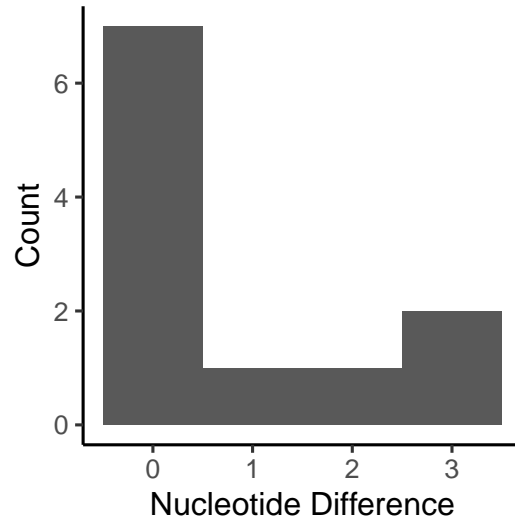
### IGHV1-58\*02

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



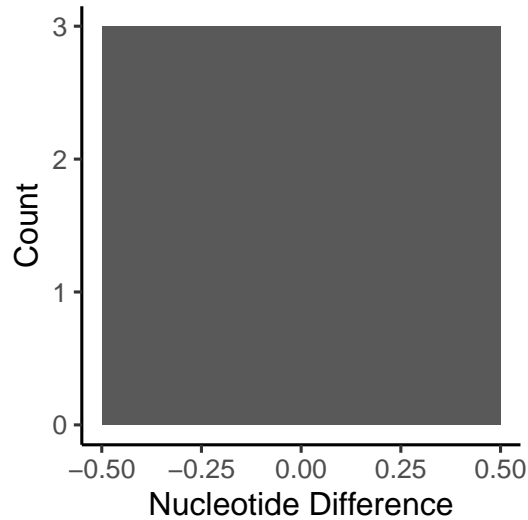
### IGHV1-69\*02

11 sequences assigned  
7 (63.6%) exact matches, in which:  
7 unique CDR3  
4 unique J



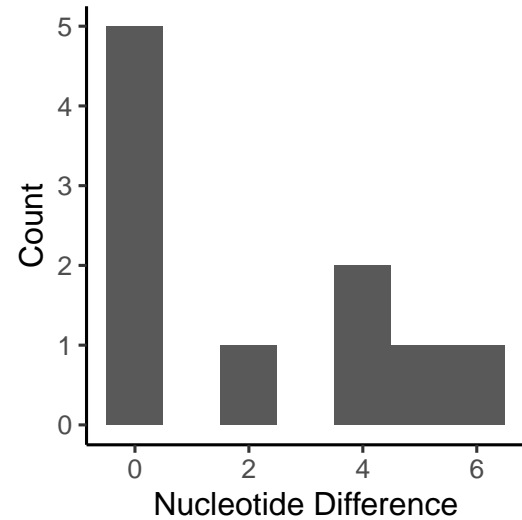
### IGHV2-26\*01

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



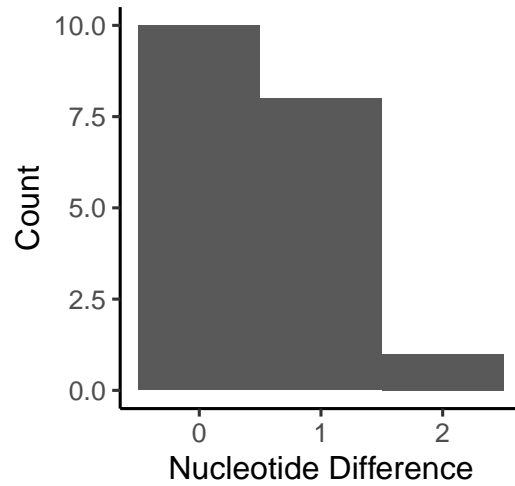
### IGHV3-7\*01

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



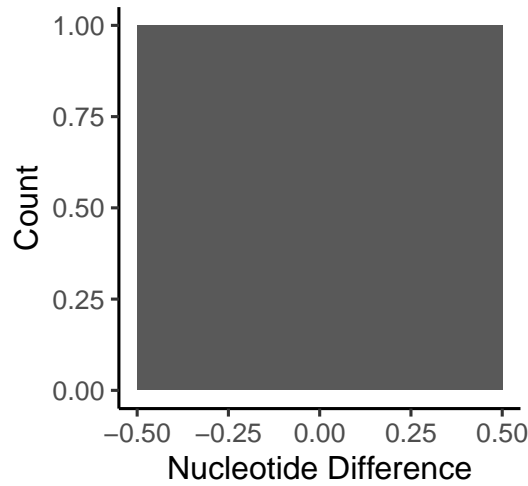
### IGHV1-69\*06

19 sequences assigned  
10 (52.6%) exact matches, in which:  
9 unique CDR3  
2 unique J



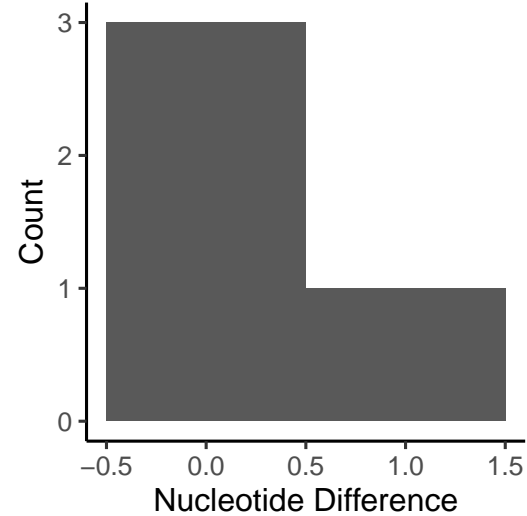
### IGHV2-70\*01

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



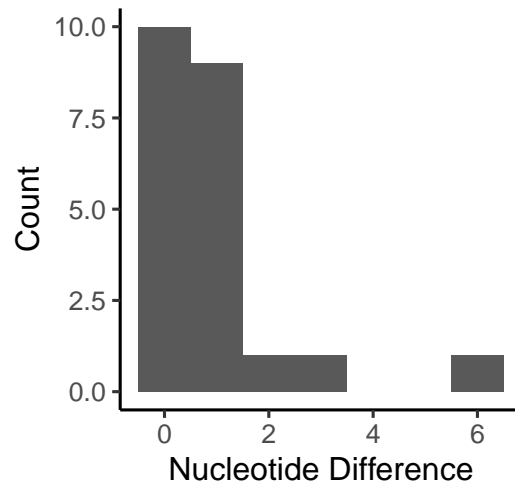
### IGHV3-7\*03

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



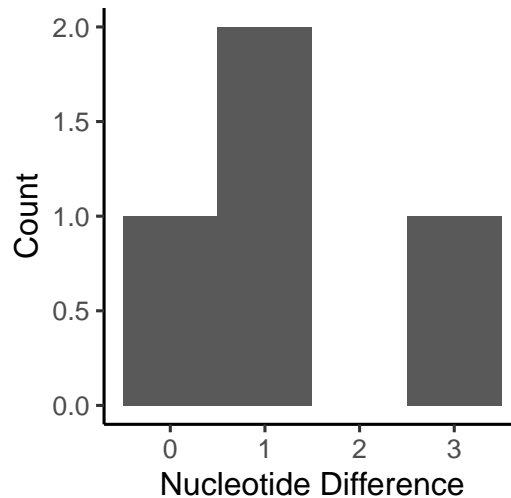
### IGHV2-5\*02

22 sequences assigned  
10 (45.5%) exact matches, in which:  
6 unique CDR3  
4 unique J



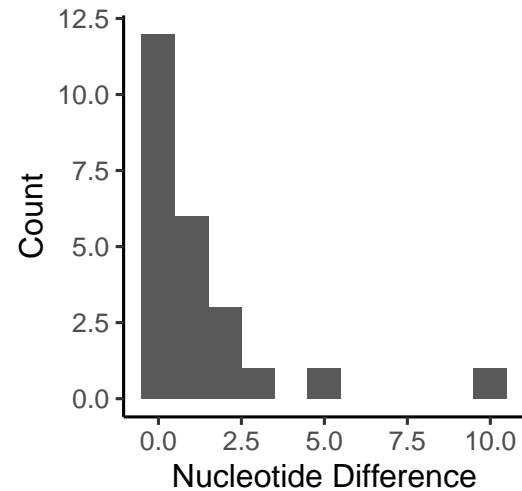
### IGHV2-70\*15

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



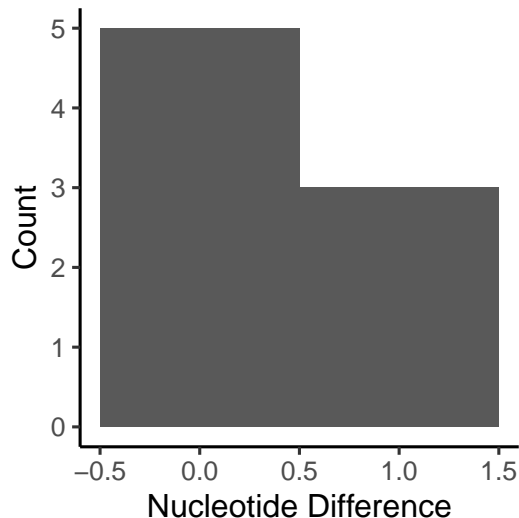
### IGHV3-9\*01

24 sequences assigned  
12 (50%) exact matches, in which:  
9 unique CDR3  
3 unique J



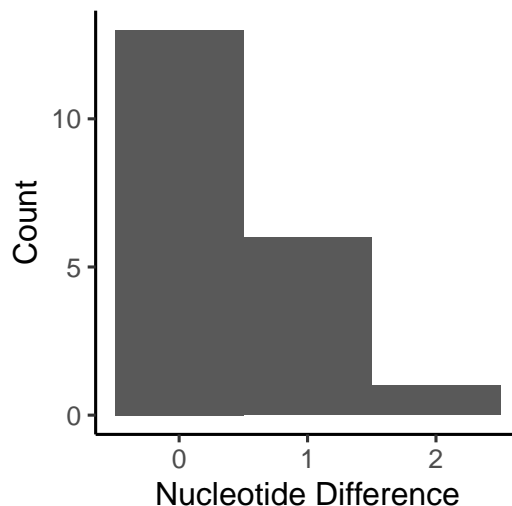
### IGHV3-11\*01

8 sequences assigned  
5 (62.5%) exact matches, in which:  
4 unique CDR3  
3 unique J



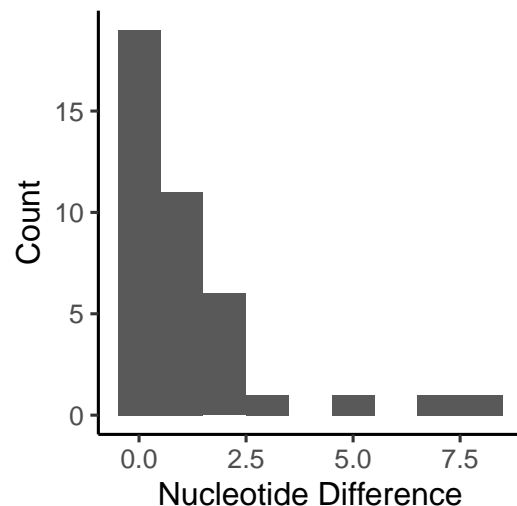
### IGHV3-15\*01

20 sequences assigned  
13 (65%) exact matches, in which:  
10 unique CDR3  
3 unique J



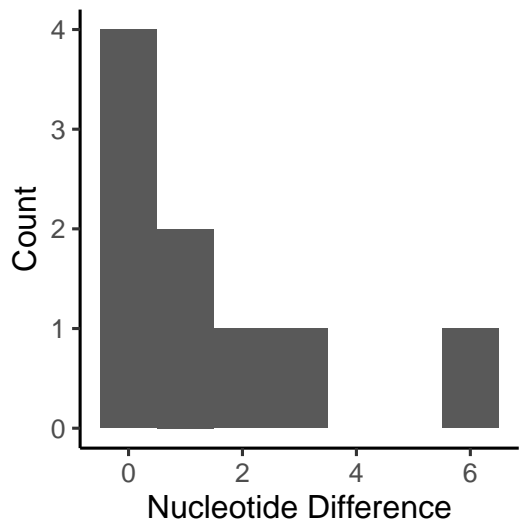
### IGHV3-30-3\*01

40 sequences assigned  
19 (47.5%) exact matches, in which:  
18 unique CDR3  
6 unique J



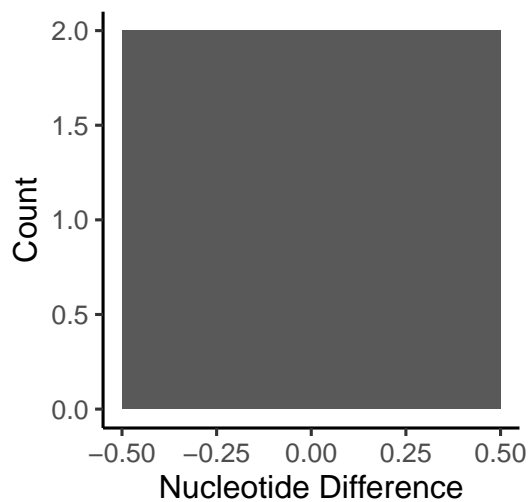
### IGHV3-11\*06

9 sequences assigned  
4 (44.4%) exact matches, in which:  
4 unique CDR3  
2 unique J



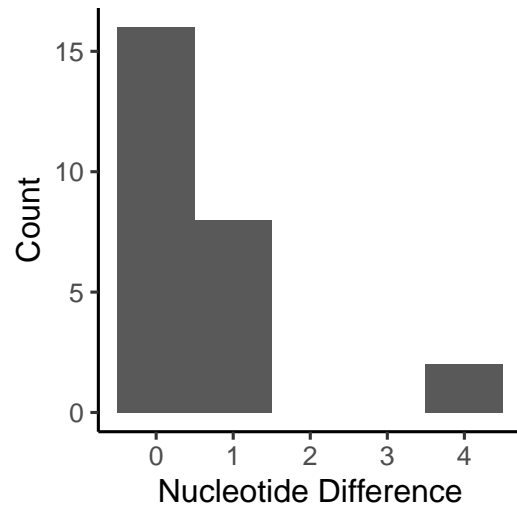
### IGHV3-20\*01

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



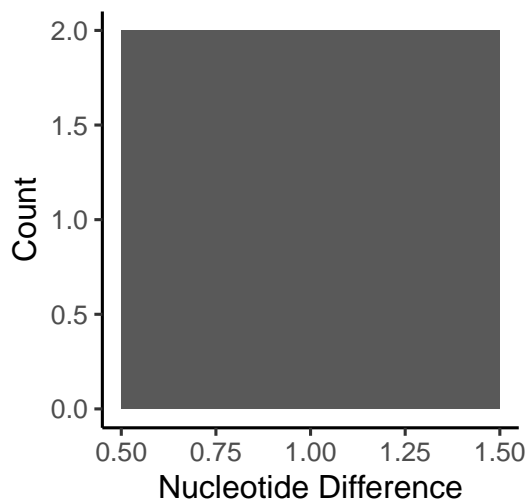
### IGHV3-33\*01

26 sequences assigned  
16 (61.5%) exact matches, in which:  
15 unique CDR3  
4 unique J



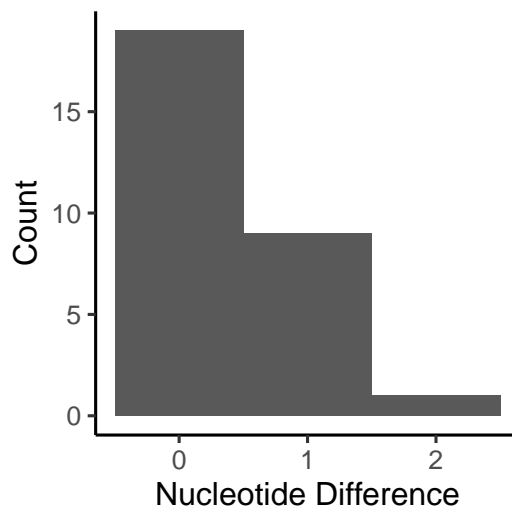
### IGHV3-13\*01

2 sequences assigned  
No exact matches.



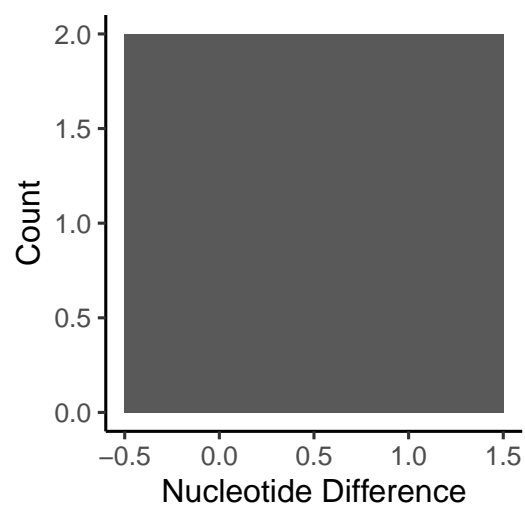
### IGHV3-21\*01

29 sequences assigned  
19 (65.5%) exact matches, in which:  
16 unique CDR3  
5 unique J



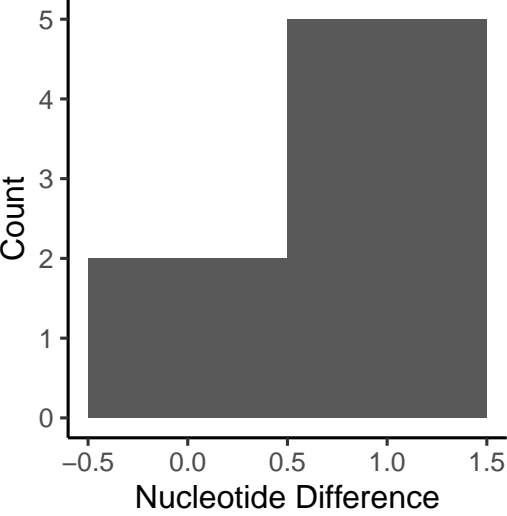
### IGHV3-43\*01

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



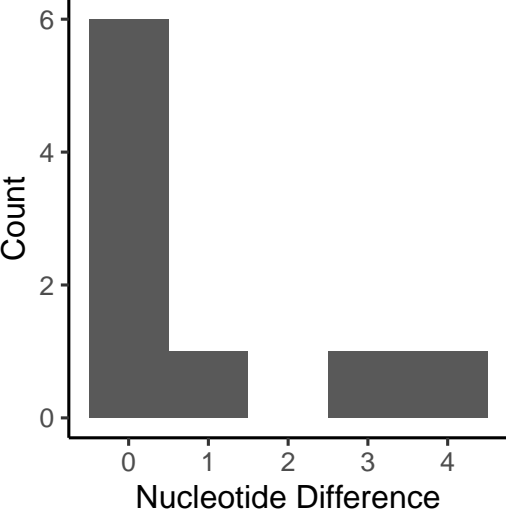
IGHV3-48\*01

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



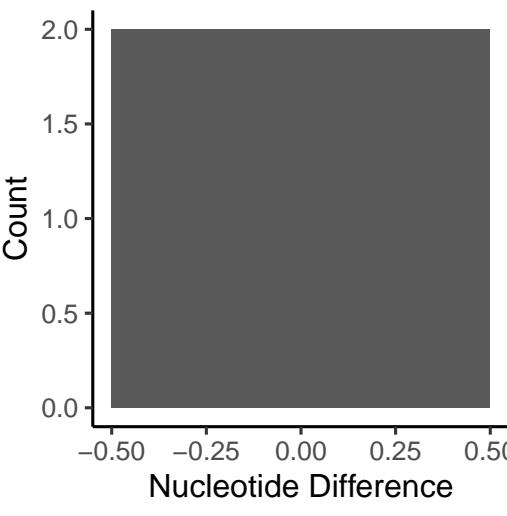
IGHV3-53\*01

9 sequences assigned  
6 (66.7%) exact matches, in which:  
6 unique CDR3  
4 unique J



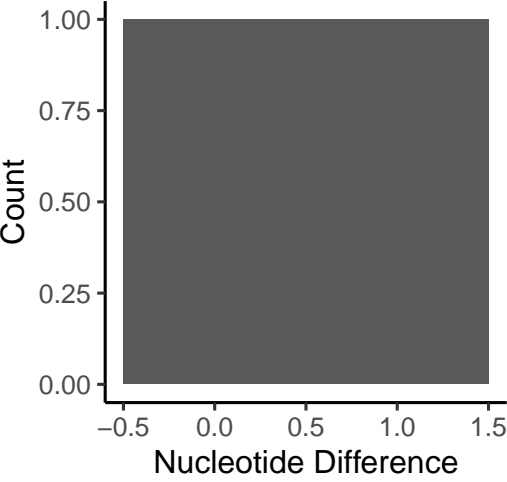
IGHV3-66\*01

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



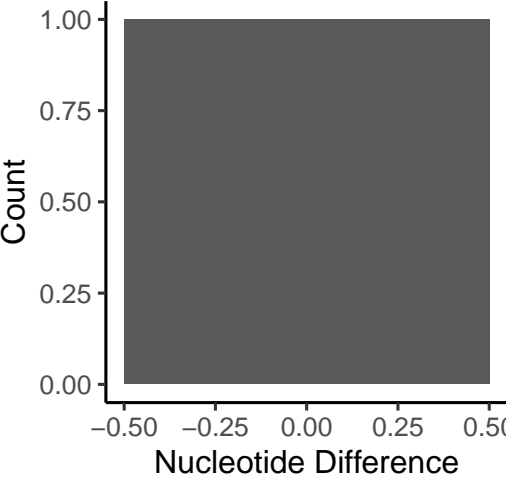
IGHV3-48\*02

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



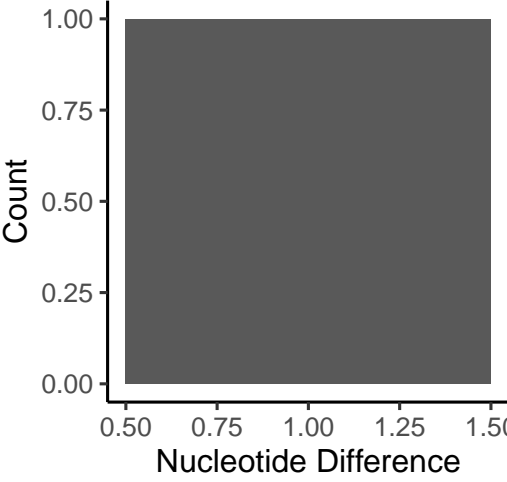
IGHV3-53\*04

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



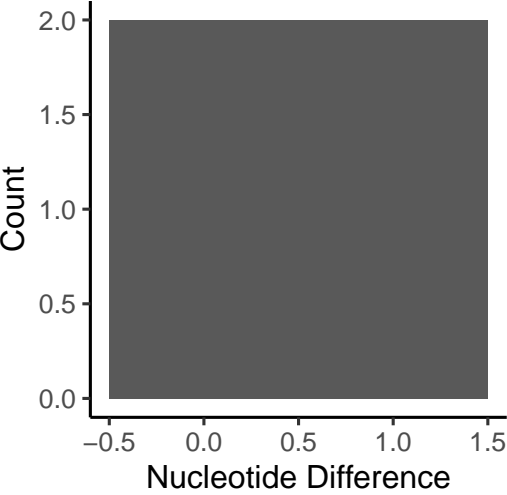
IGHV3-72\*01

1 sequences assigned  
No exact matches.



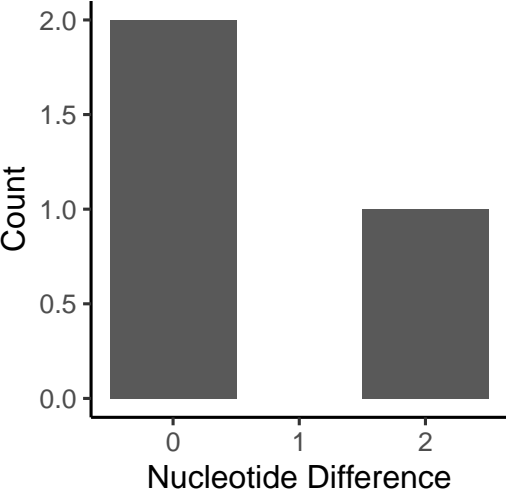
IGHV3-49\*05

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



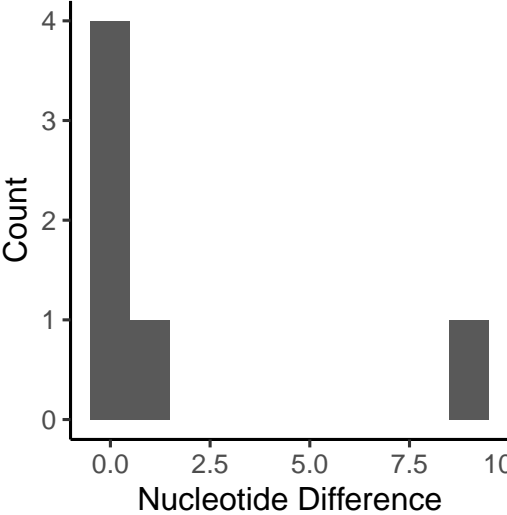
IGHV3-64\*01

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



IGHV3-74\*01

6 sequences assigned  
4 (66.7%) exact matches, in which:  
4 unique CDR3  
3 unique J



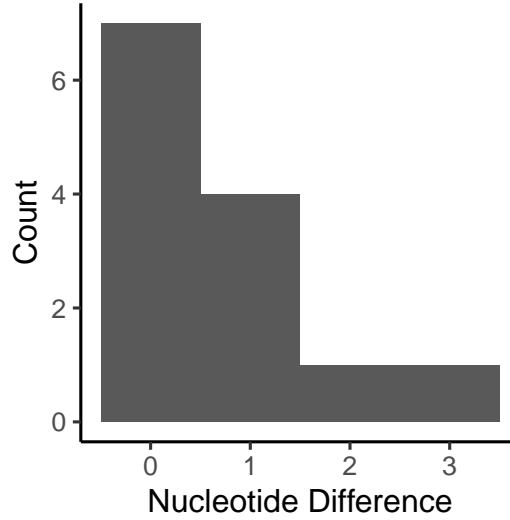
### IGHV3-64D\*06

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



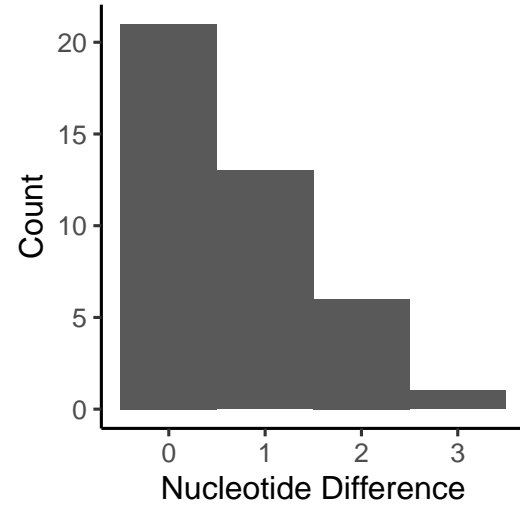
### IGHV4-30-4\*01

13 sequences assigned  
7 (53.8%) exact matches, in which:  
5 unique CDR3  
2 unique J



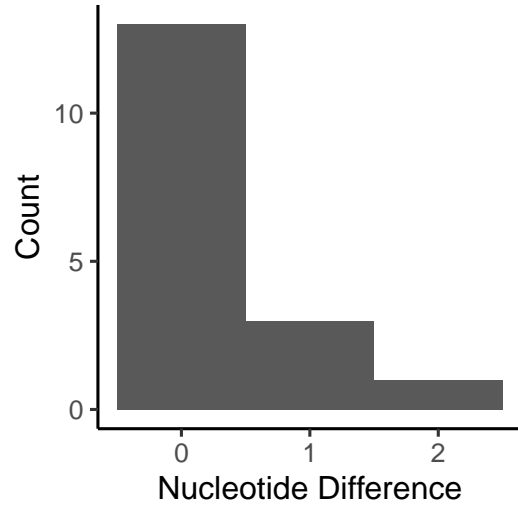
### IGHV4-39\*01

41 sequences assigned  
21 (51.2%) exact matches, in which:  
19 unique CDR3  
7 unique J



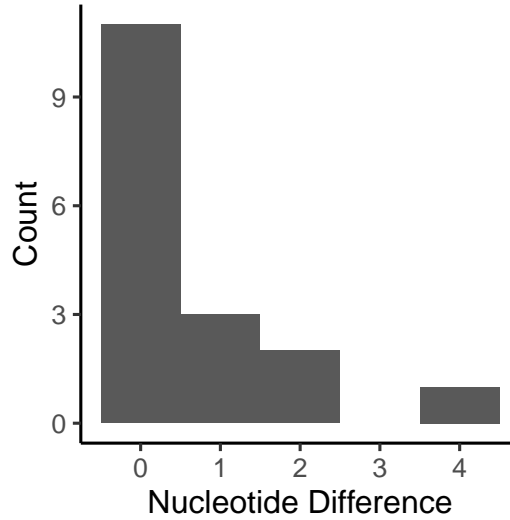
### IGHV4-4\*02

17 sequences assigned  
13 (76.5%) exact matches, in which:  
8 unique CDR3  
4 unique J



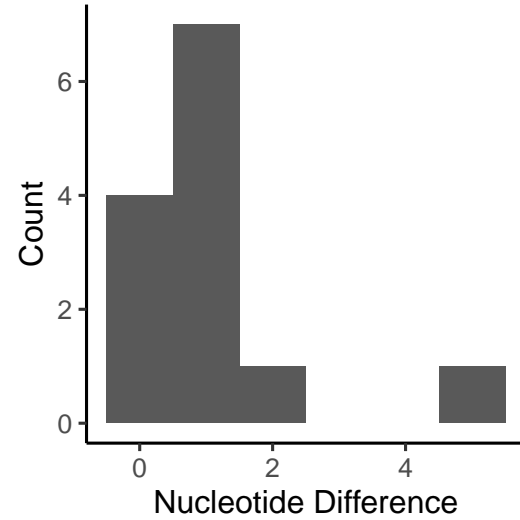
### IGHV4-31\*03

17 sequences assigned  
11 (64.7%) exact matches, in which:  
8 unique CDR3  
4 unique J



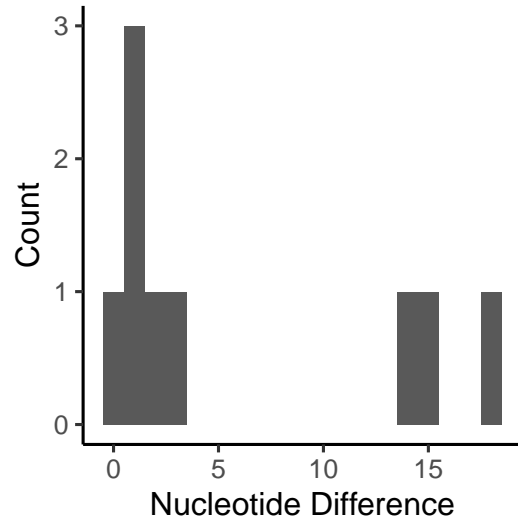
### IGHV4-59\*01

13 sequences assigned  
4 (30.8%) exact matches, in which:  
4 unique CDR3  
4 unique J



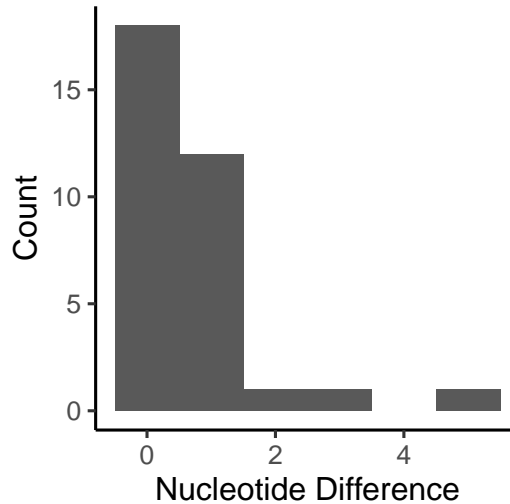
### IGHV4-30-2\*01

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



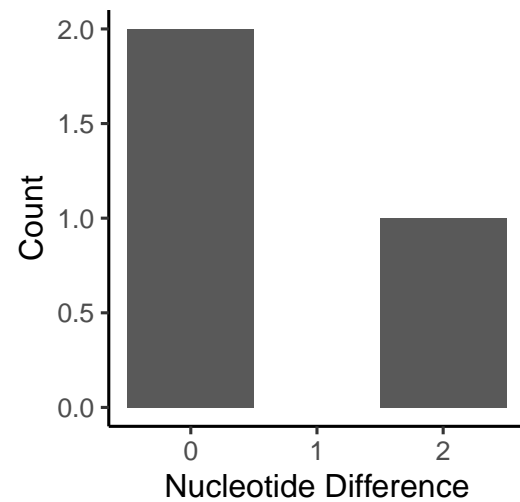
### IGHV4-34\*01

33 sequences assigned  
18 (54.5%) exact matches, in which:  
18 unique CDR3  
6 unique J



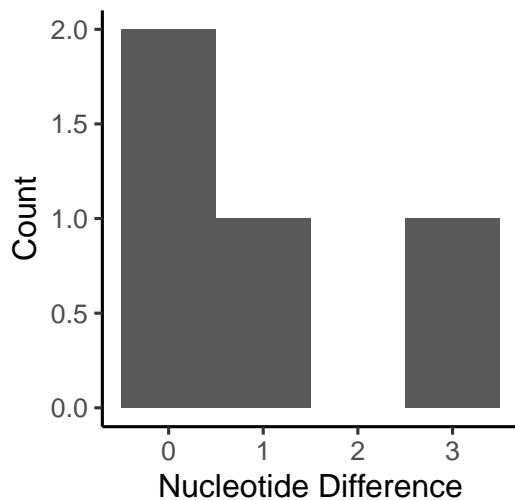
### IGHV4-59\*08

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



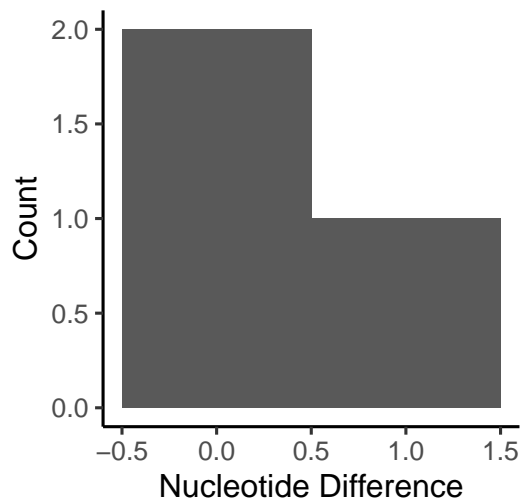
### IGHV4-61\*01

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



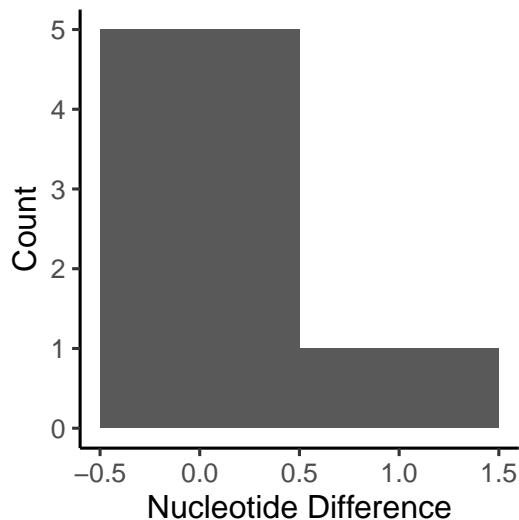
### IGHV5-51\*03

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



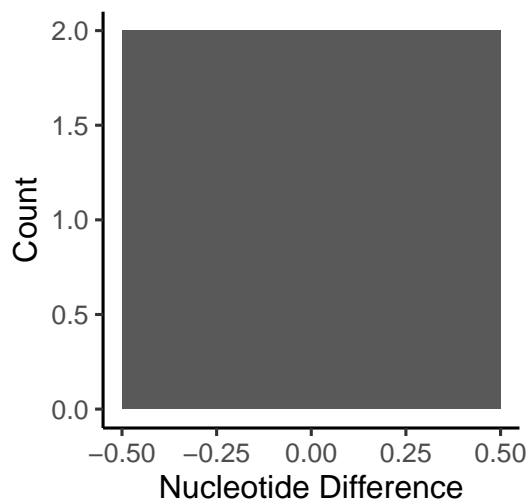
### IGHV5-10-1\*03

6 sequences assigned  
5 (83.3%) exact matches, in which:  
5 unique CDR3  
4 unique J



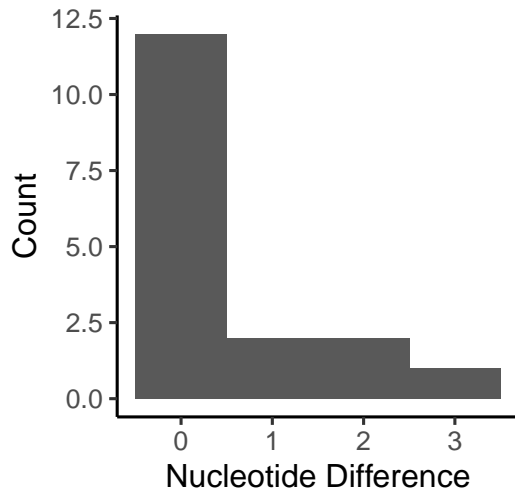
### IGHV6-1\*01

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



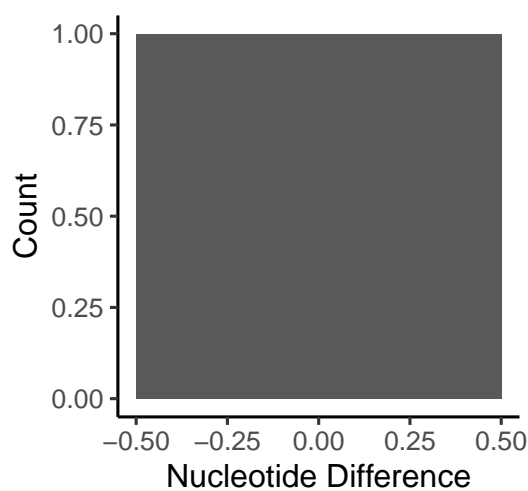
### IGHV5-51\*01

17 sequences assigned  
12 (70.6%) exact matches, in which:  
7 unique CDR3  
2 unique J

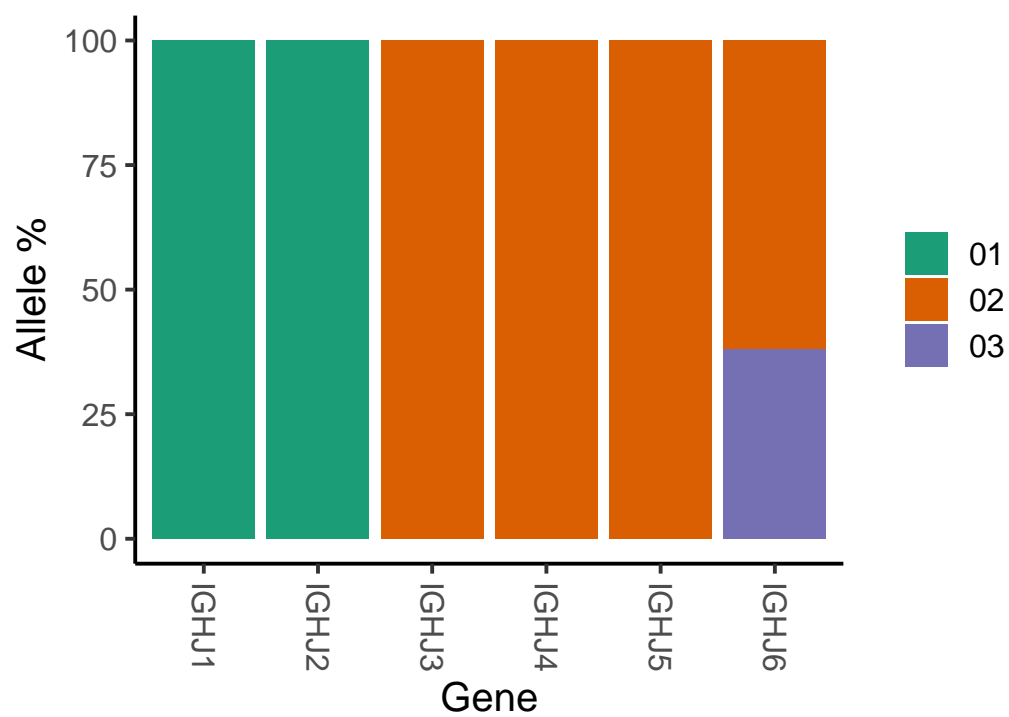


### IGHV7-4-1\*02

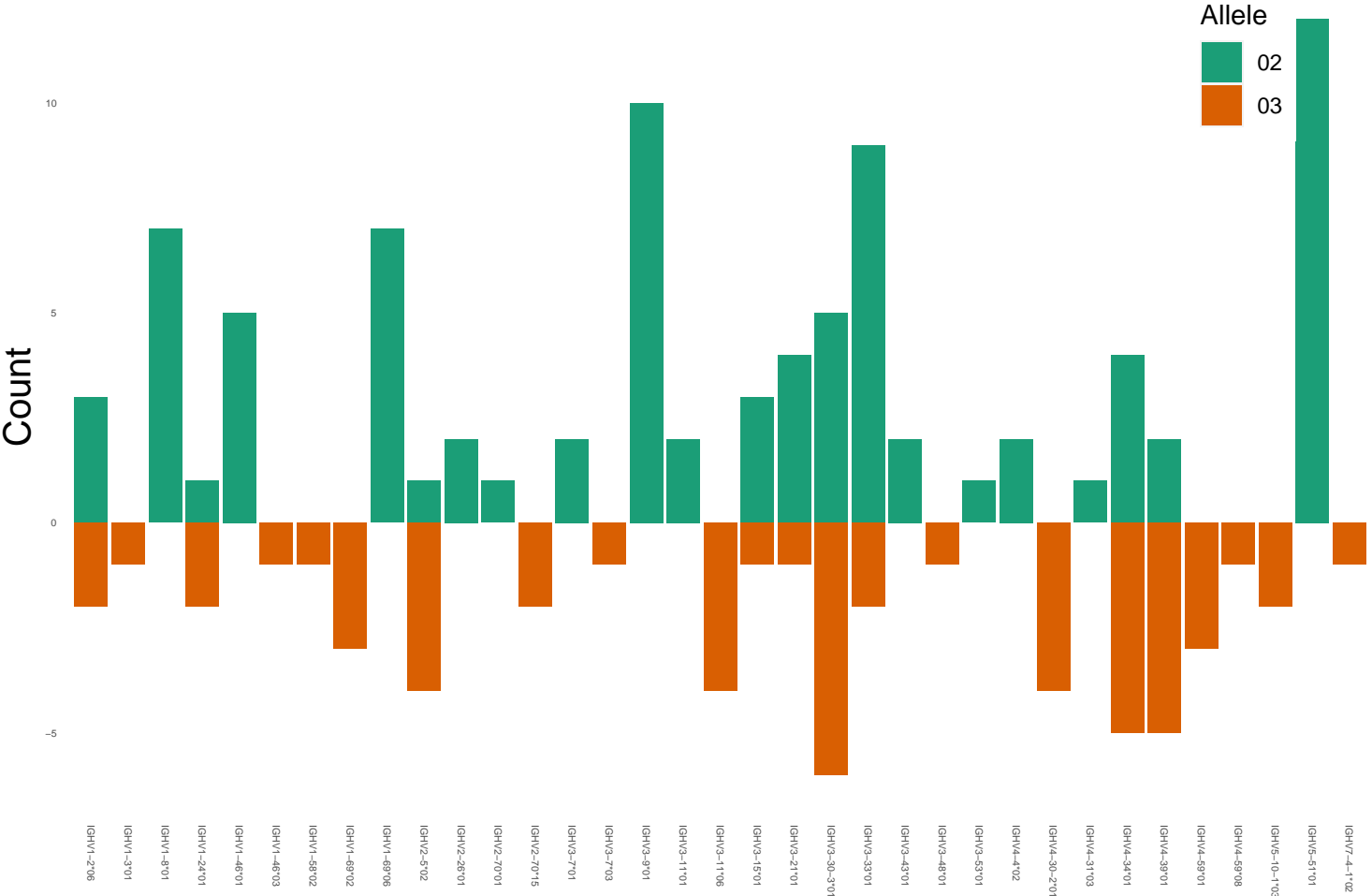
1 sequences assigned  
1 (100%) exact matches, in which:  
1 unique CDR3  
1 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage





[illegible]