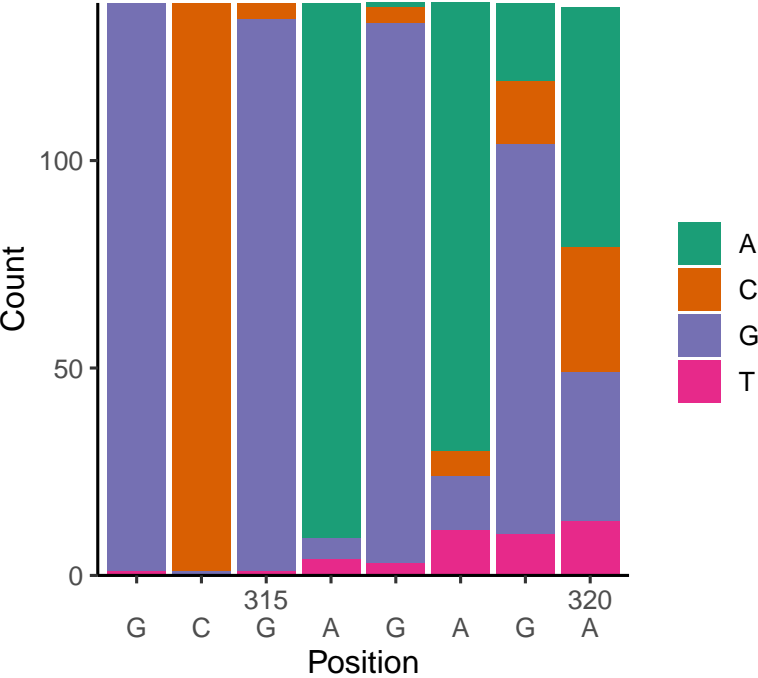
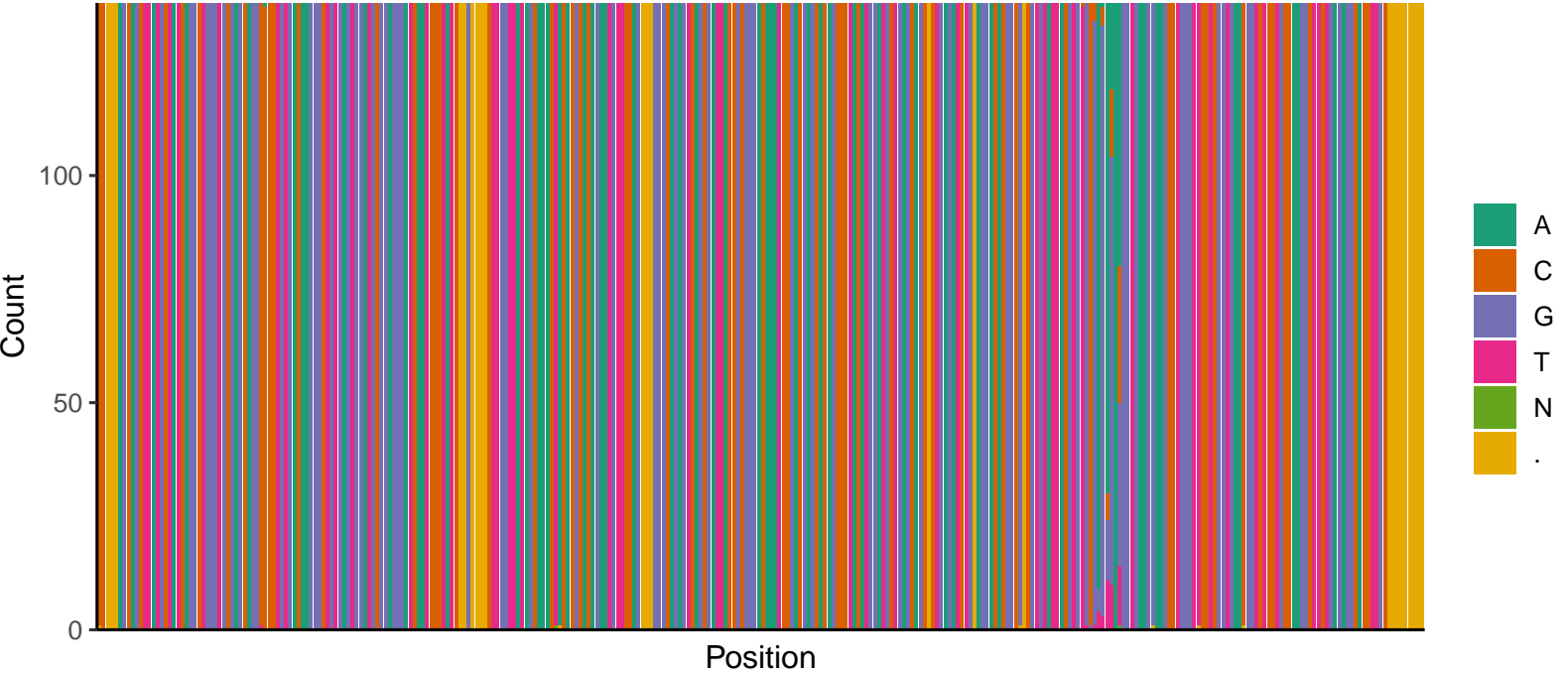


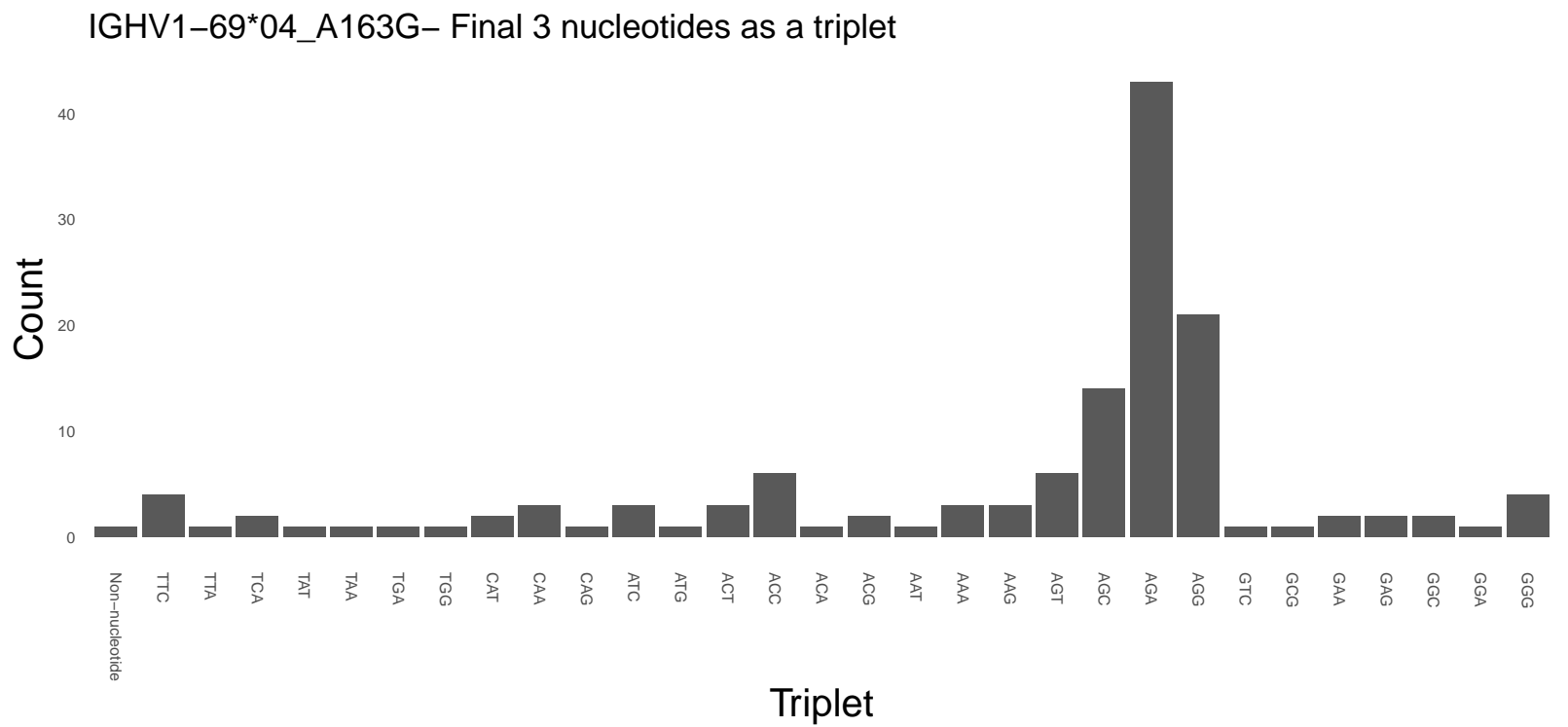
Gene IGHV1-69\*04\_A163G



Gene IGHV1-69\*04\_A163G

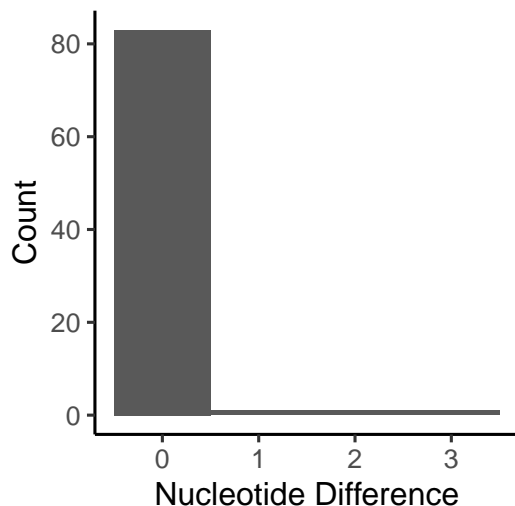


IGHV1-69\*04\_A163G- Final 3 nucleotides as a triplet



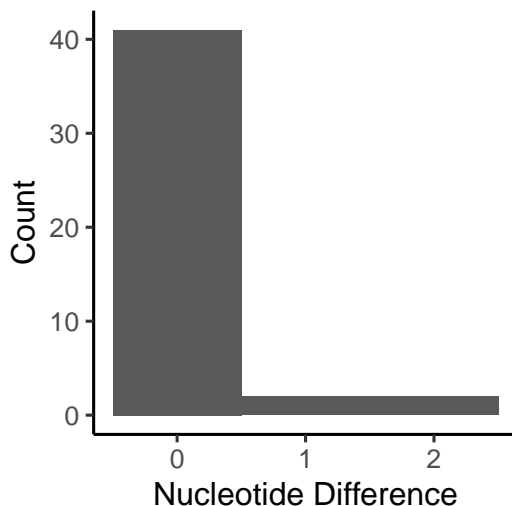
### IGHV1-2\*04

87 sequences assigned  
83 (95.4%) exact matches, in which:  
83 unique CDR3  
7 unique J



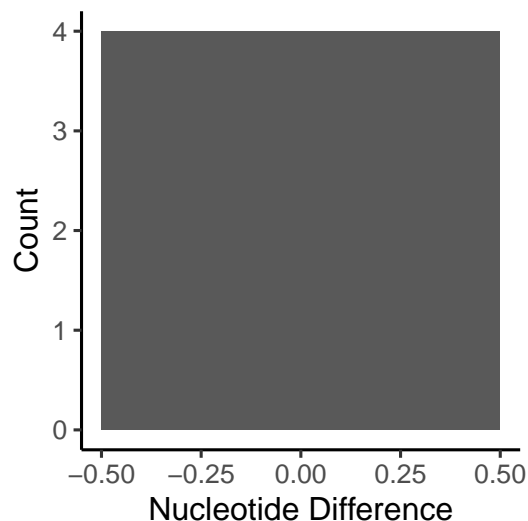
### IGHV1-24\*01

45 sequences assigned  
41 (91.1%) exact matches, in which:  
41 unique CDR3  
5 unique J



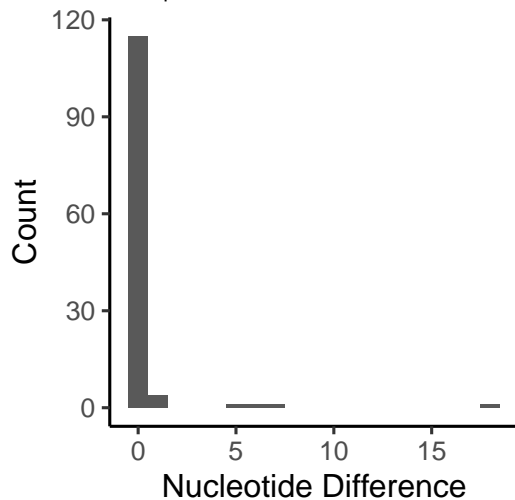
### IGHV1-58\*02

4 sequences assigned  
4 (100%) exact matches, in which:  
4 unique CDR3  
3 unique J



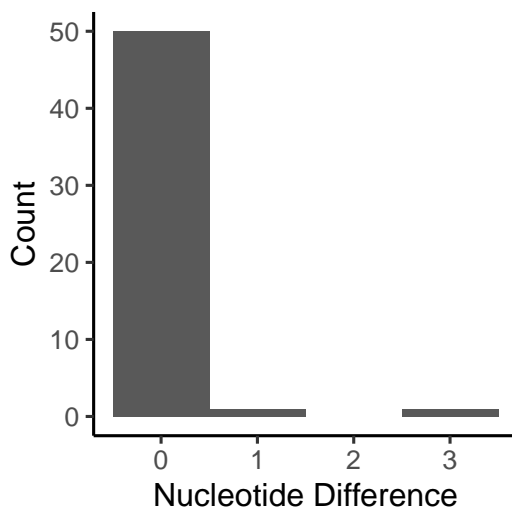
### IGHV1-3\*01

124 sequences assigned  
115 (92.7%) exact matches, in which:  
115 unique CDR3  
7 unique J



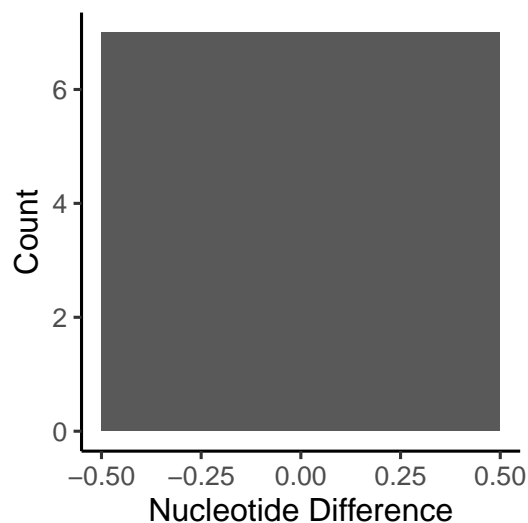
### IGHV1-46\*01

54 sequences assigned  
50 (92.6%) exact matches, in which:  
50 unique CDR3  
6 unique J



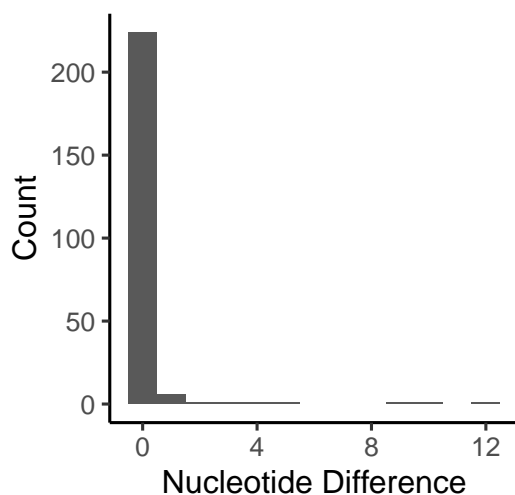
### IGHV1-69-2\*01

7 sequences assigned  
7 (100%) exact matches, in which:  
7 unique CDR3  
3 unique J



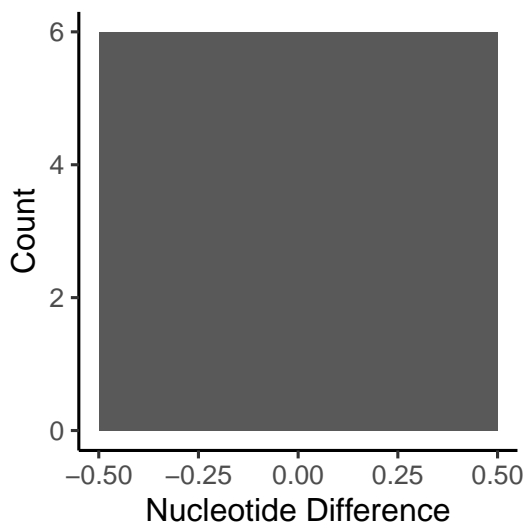
### IGHV1-18\*04

238 sequences assigned  
224 (94.1%) exact matches, in which:  
224 unique CDR3  
7 unique J



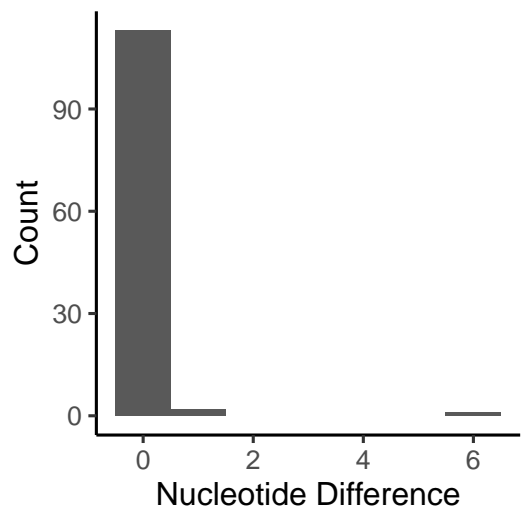
### IGHV1-58\*01

6 sequences assigned  
6 (100%) exact matches, in which:  
6 unique CDR3  
3 unique J



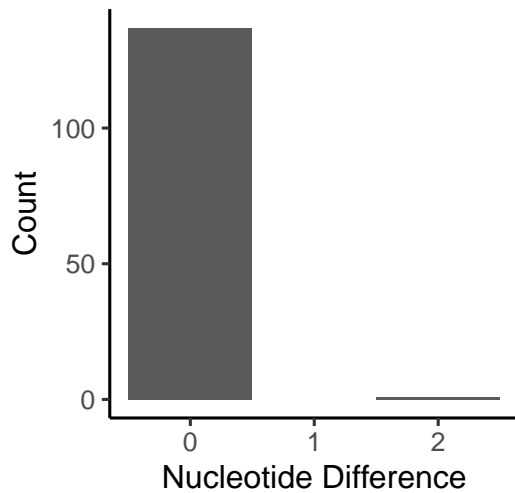
### IGHV1-69\*06

116 sequences assigned  
113 (97.4%) exact matches, in which:  
113 unique CDR3  
7 unique J



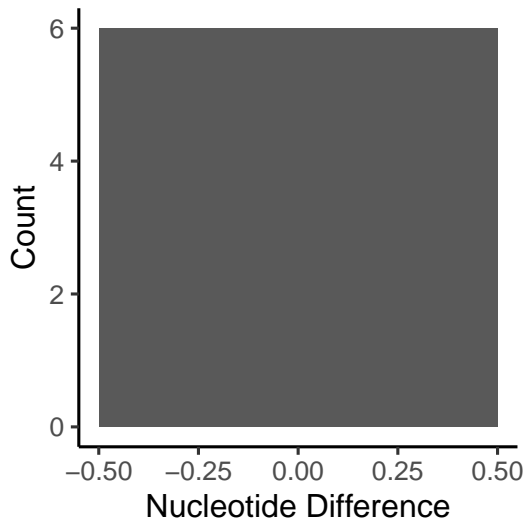
### IGHV1–69\*04\_A163G

138 sequences assigned  
137 (99.3%) exact matches, in which:  
137 unique CDR3  
7 unique J



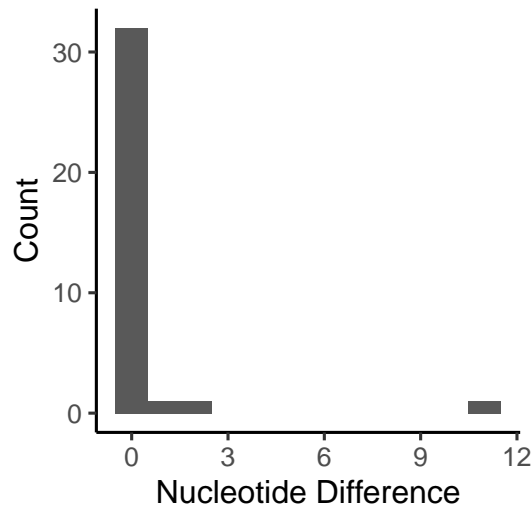
### IGHV2–70\*01

6 sequences assigned  
6 (100%) exact matches, in which:  
6 unique CDR3  
5 unique J



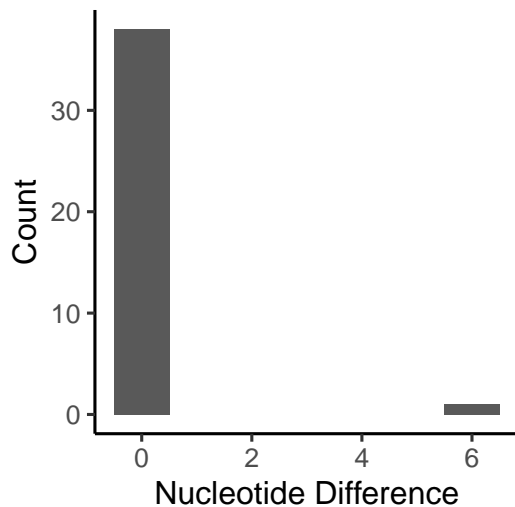
### IGHV3–7\*05

35 sequences assigned  
32 (91.4%) exact matches, in which:  
32 unique CDR3  
4 unique J



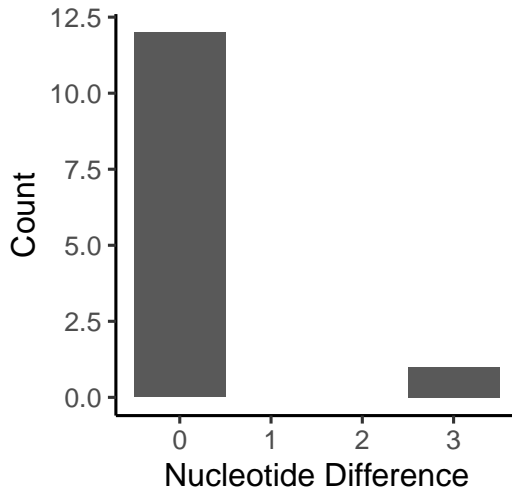
### IGHV2–5\*02

39 sequences assigned  
38 (97.4%) exact matches, in which:  
38 unique CDR3  
5 unique J



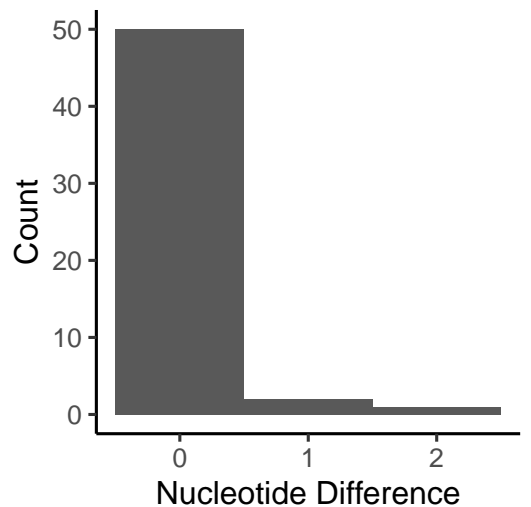
### IGHV2–70\*15

13 sequences assigned  
12 (92.3%) exact matches, in which:  
12 unique CDR3  
4 unique J



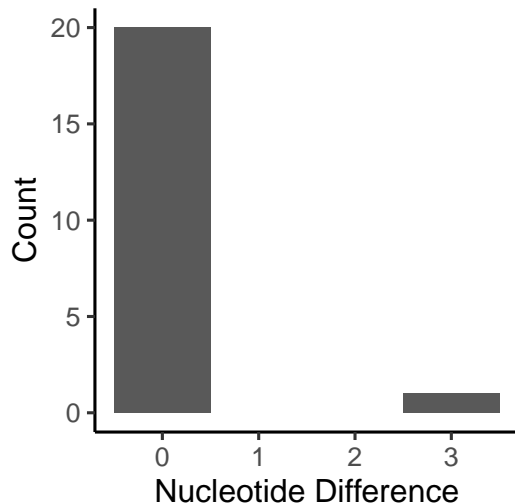
### IGHV3–11\*05

53 sequences assigned  
50 (94.3%) exact matches, in which:  
50 unique CDR3  
5 unique J



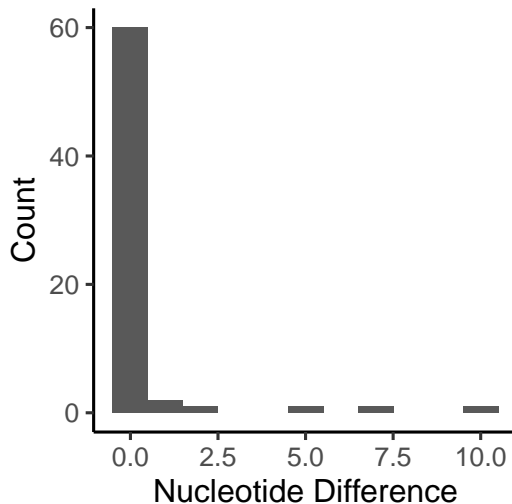
### IGHV2–26\*01

21 sequences assigned  
20 (95.2%) exact matches, in which:  
20 unique CDR3  
5 unique J



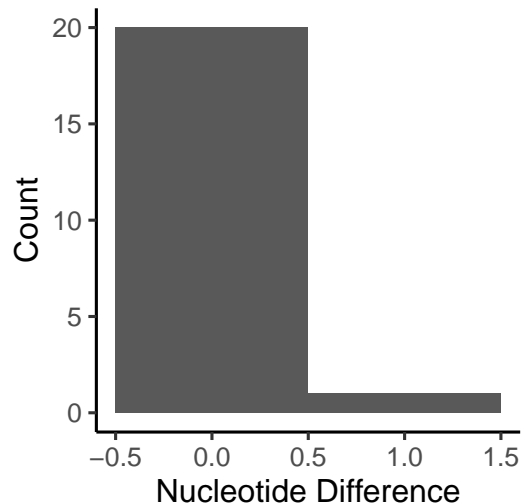
### IGHV3–7\*03

66 sequences assigned  
60 (90.9%) exact matches, in which:  
60 unique CDR3  
5 unique J



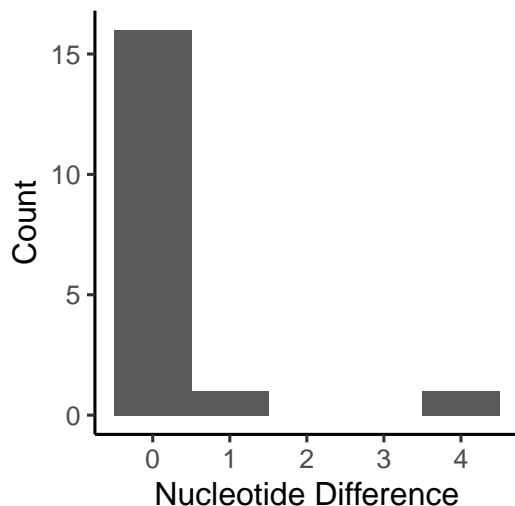
### IGHV3–11\*06

21 sequences assigned  
20 (95.2%) exact matches, in which:  
20 unique CDR3  
5 unique J



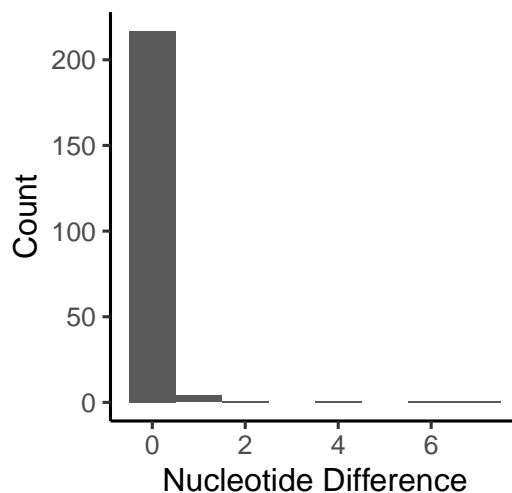
### IGHV3-13\*04

18 sequences assigned  
16 (88.9%) exact matches, in which:  
16 unique CDR3  
4 unique J



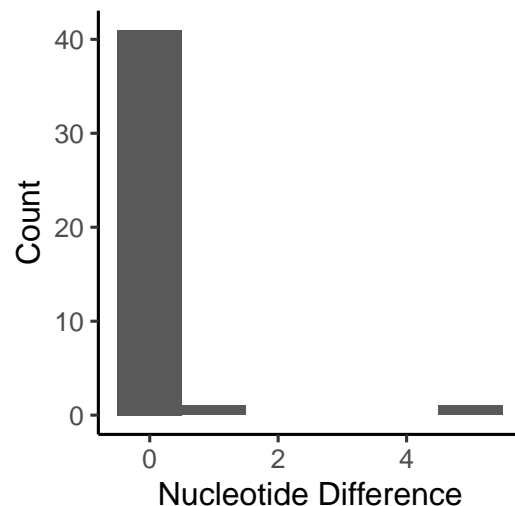
### IGHV3-21\*01

228 sequences assigned  
217 (95.2%) exact matches, in which:  
217 unique CDR3  
6 unique J



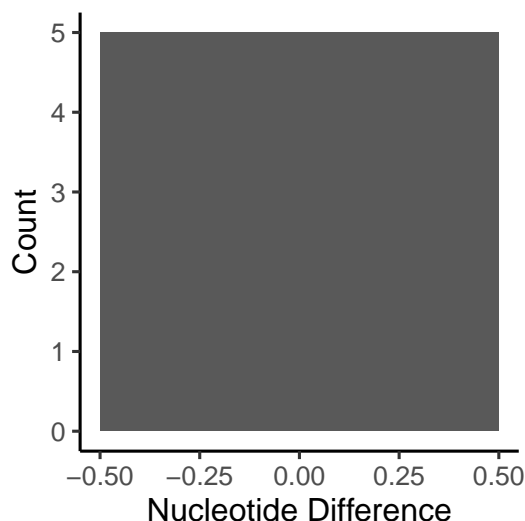
### IGHV3-48\*02

43 sequences assigned  
41 (95.3%) exact matches, in which:  
41 unique CDR3  
4 unique J



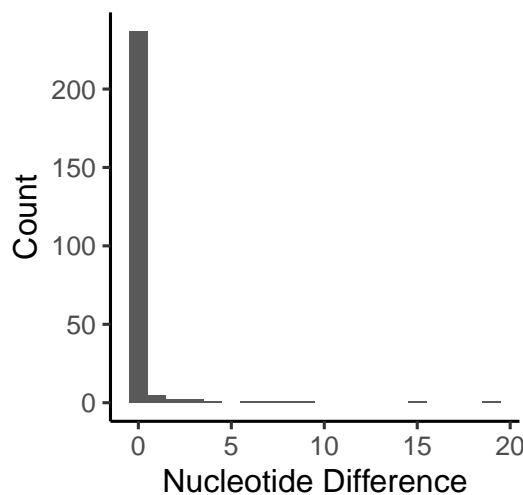
### IGHV3-13\*05

5 sequences assigned  
5 (100%) exact matches, in which:  
5 unique CDR3  
4 unique J



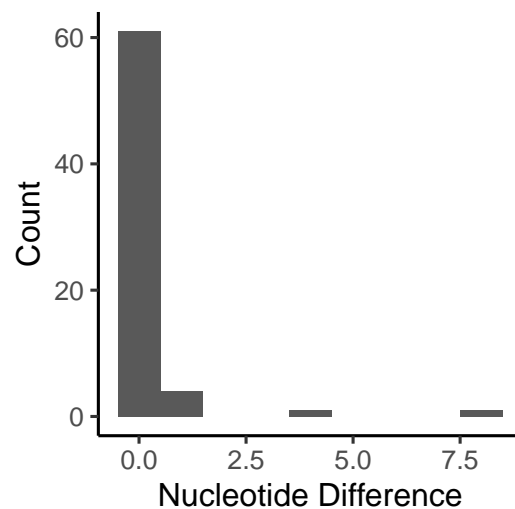
### IGHV3-30-3\*01

254 sequences assigned  
237 (93.3%) exact matches, in which:  
237 unique CDR3  
7 unique J



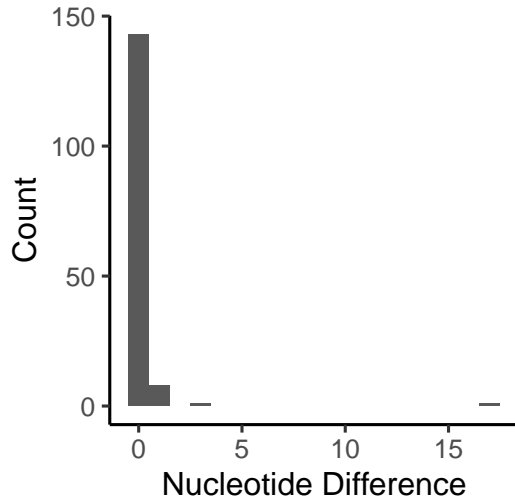
### IGHV3-48\*04

67 sequences assigned  
61 (91%) exact matches, in which:  
61 unique CDR3  
7 unique J



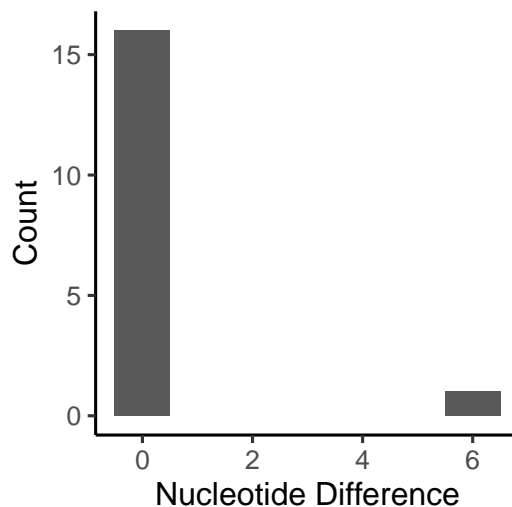
### IGHV3-15\*01

154 sequences assigned  
143 (92.9%) exact matches, in which:  
143 unique CDR3  
6 unique J



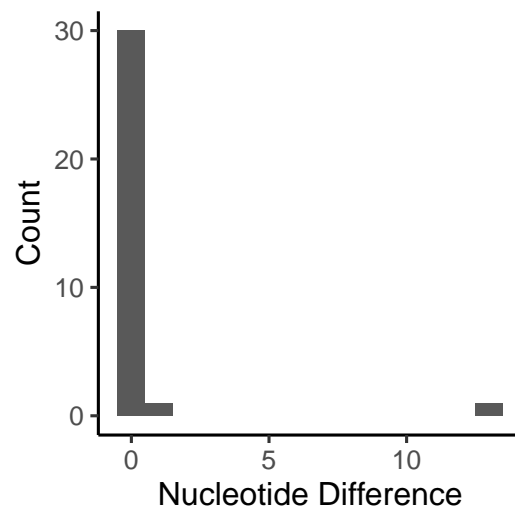
### IGHV3-43\*01

17 sequences assigned  
16 (94.1%) exact matches, in which:  
16 unique CDR3  
5 unique J



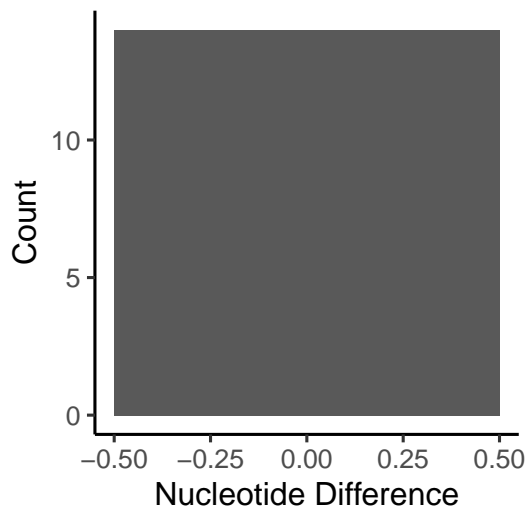
### IGHV3-49\*03

32 sequences assigned  
30 (93.8%) exact matches, in which:  
30 unique CDR3  
4 unique J



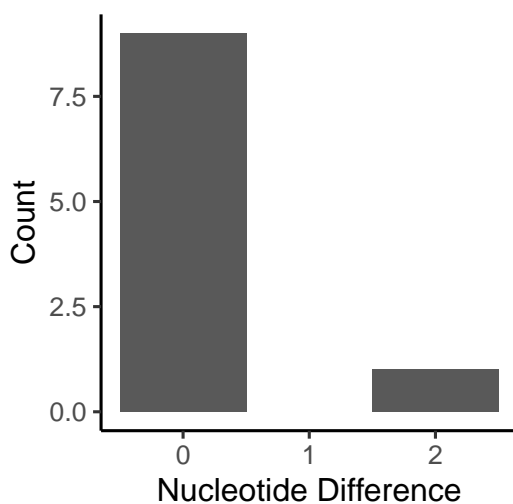
### IGHV3-49\*05

14 sequences assigned  
14 (100%) exact matches, in which:  
14 unique CDR3  
4 unique J



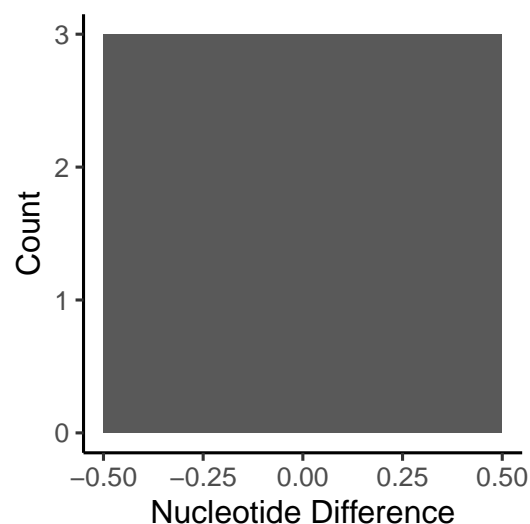
### IGHV3-64\*01

10 sequences assigned  
9 (90%) exact matches, in which:  
9 unique CDR3  
4 unique J



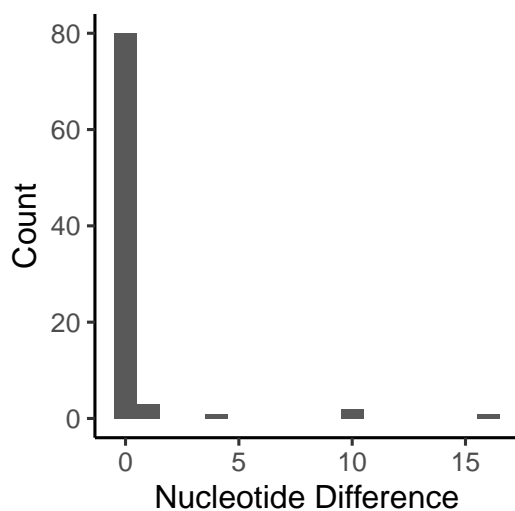
### IGHV3-72\*01

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



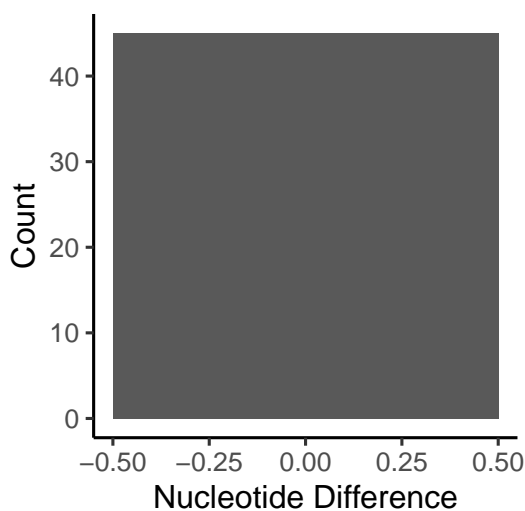
### IGHV3-53\*01

87 sequences assigned  
80 (92%) exact matches, in which:  
80 unique CDR3  
6 unique J



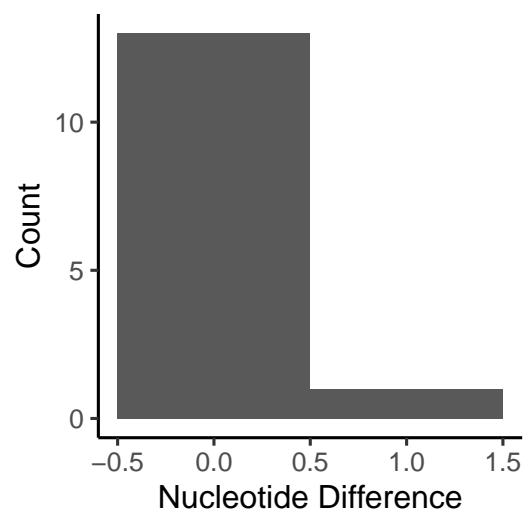
### IGHV3-66\*01

45 sequences assigned  
45 (100%) exact matches, in which:  
45 unique CDR3  
5 unique J



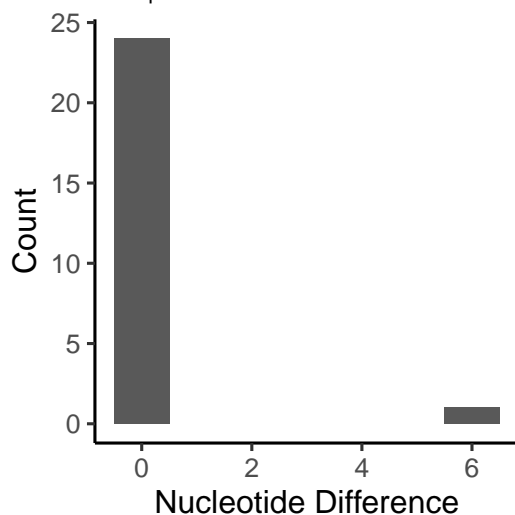
### IGHV3-73\*01

14 sequences assigned  
13 (92.9%) exact matches, in which:  
13 unique CDR3  
4 unique J



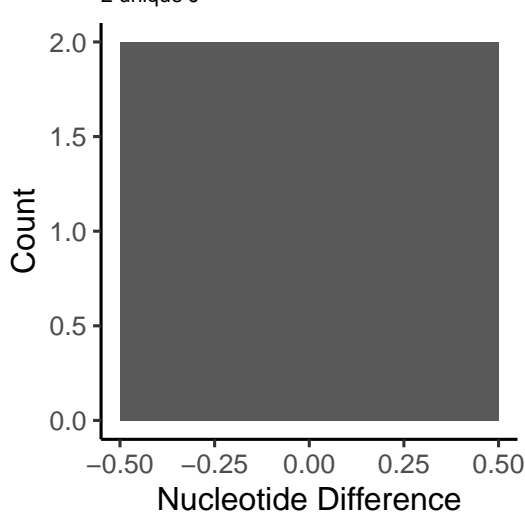
### IGHV3-53\*04

25 sequences assigned  
24 (96%) exact matches, in which:  
24 unique CDR3  
4 unique J



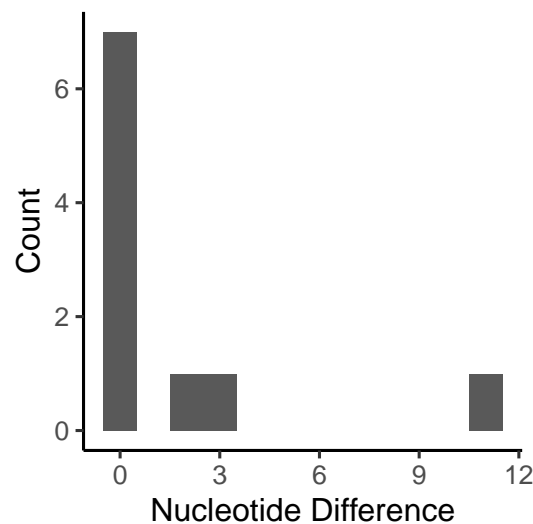
### IGHV3-69-1\*01

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



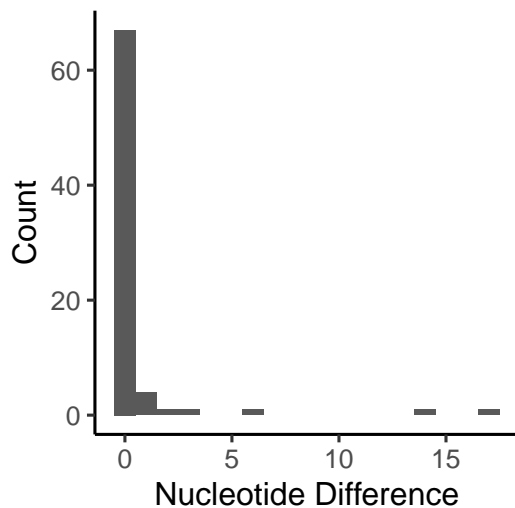
### IGHV3-73\*02

10 sequences assigned  
7 (70%) exact matches, in which:  
7 unique CDR3  
3 unique J



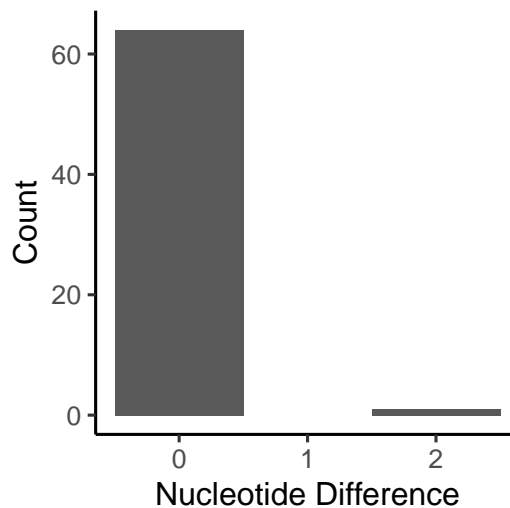
### IGHV3-74\*01

76 sequences assigned  
67 (88.2%) exact matches, in which:  
67 unique CDR3  
7 unique J



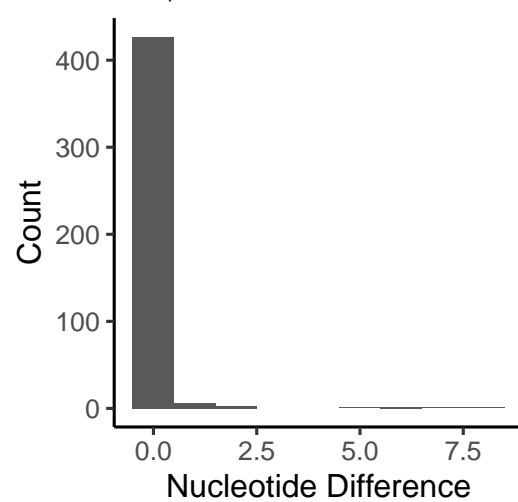
### IGHV4-4\*02

65 sequences assigned  
64 (98.5%) exact matches, in which:  
64 unique CDR3  
7 unique J



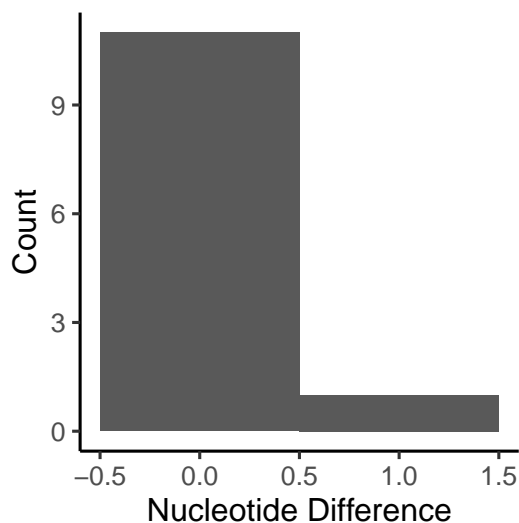
### IGHV4-34\*01

441 sequences assigned  
427 (96.8%) exact matches, in which:  
427 unique CDR3  
7 unique J



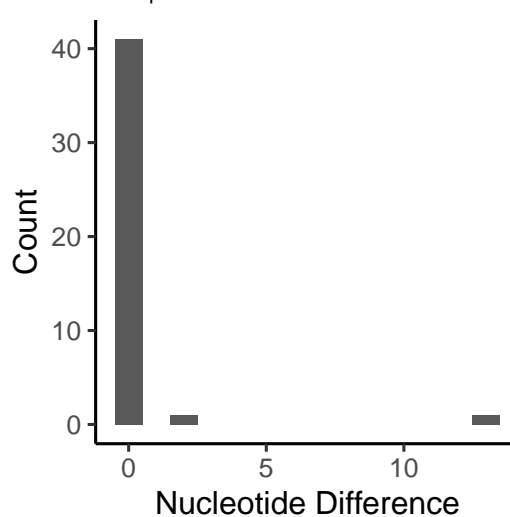
### IGHV3-43D\*03

12 sequences assigned  
11 (91.7%) exact matches, in which:  
11 unique CDR3  
3 unique J



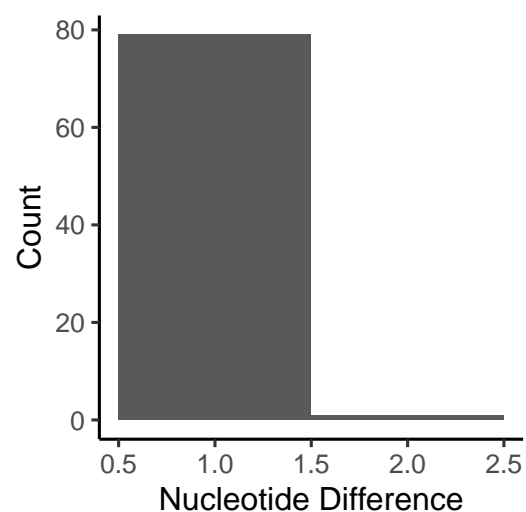
### IGHV4-30-4\*01

43 sequences assigned  
41 (95.3%) exact matches, in which:  
41 unique CDR3  
6 unique J



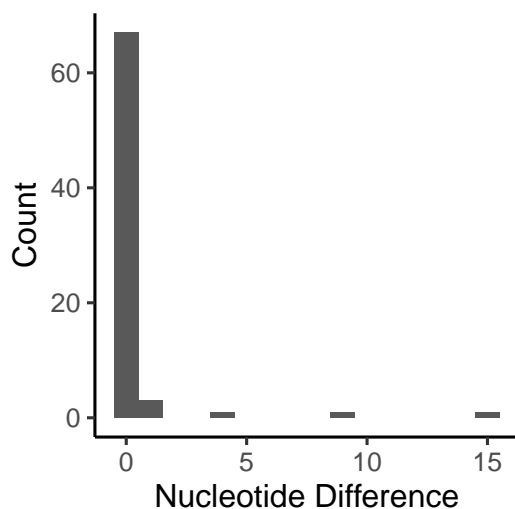
### IGHV4-38-2\*02

80 sequences assigned  
No exact matches.



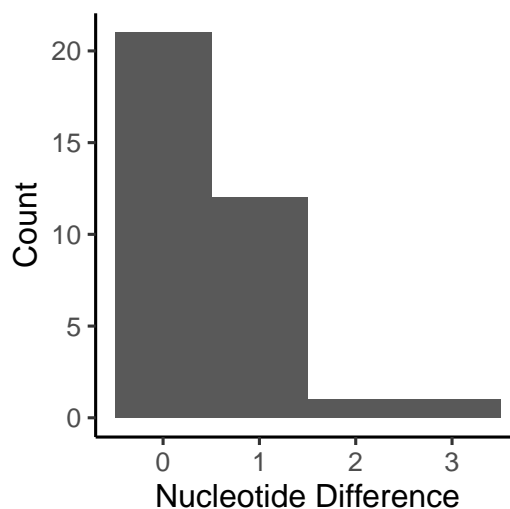
### IGHV3-64D\*09

73 sequences assigned  
67 (91.8%) exact matches, in which:  
67 unique CDR3  
6 unique J



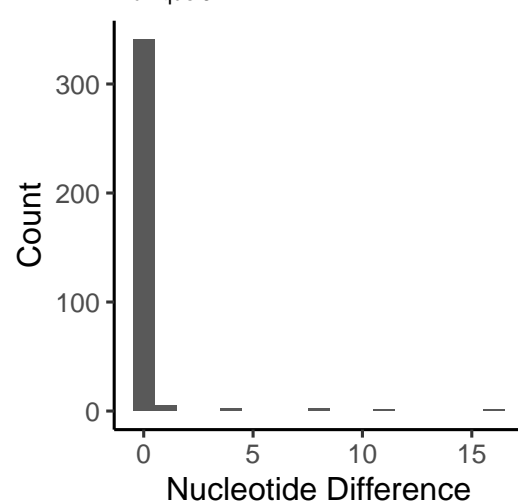
### IGHV4-30-2\*01

35 sequences assigned  
21 (60%) exact matches, in which:  
21 unique CDR3  
7 unique J



### IGHV4-39\*07

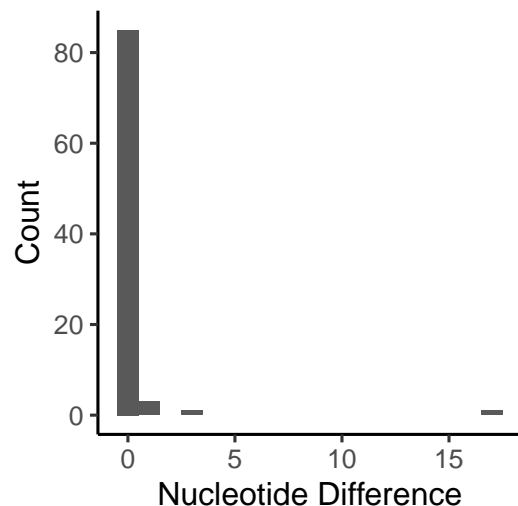
353 sequences assigned  
341 (96.6%) exact matches, in which:  
341 unique CDR3  
7 unique J





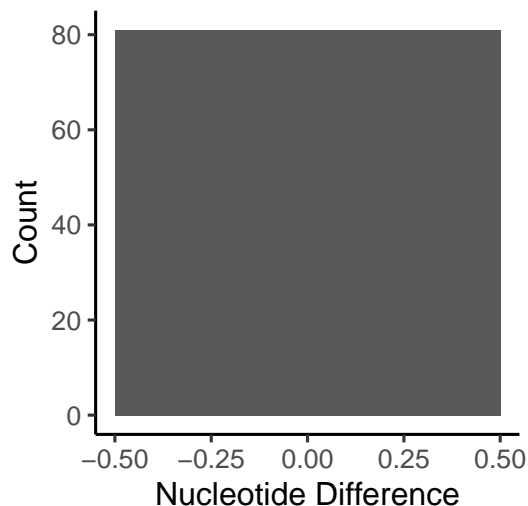
### IGHV4–59\*01

90 sequences assigned  
85 (94.4%) exact matches, in which:  
85 unique CDR3  
7 unique J



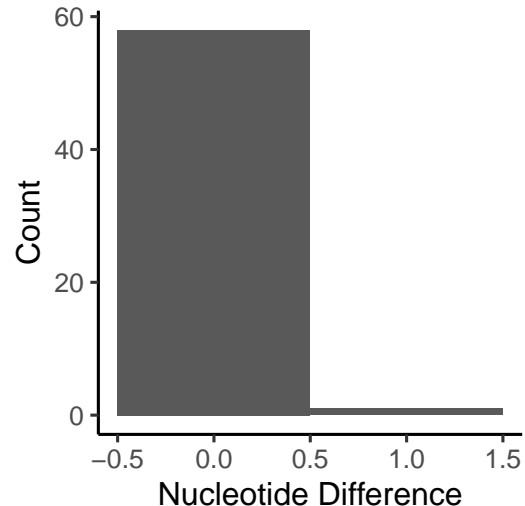
### IGHV5–10–1\*01

81 sequences assigned  
81 (100%) exact matches, in which:  
81 unique CDR3  
5 unique J



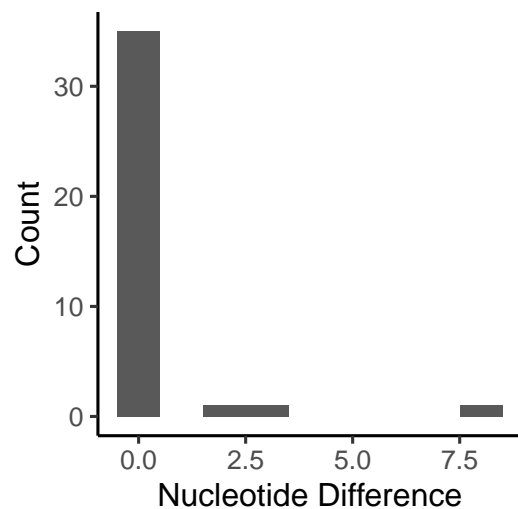
### IGHV6–1\*01

59 sequences assigned  
58 (98.3%) exact matches, in which:  
58 unique CDR3  
5 unique J



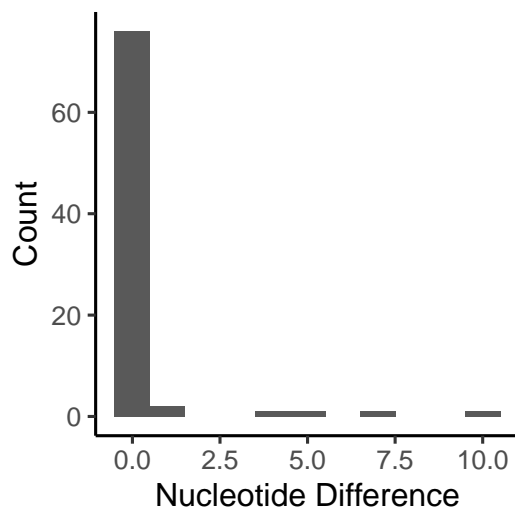
### IGHV4–59\*08

38 sequences assigned  
35 (92.1%) exact matches, in which:  
35 unique CDR3  
5 unique J



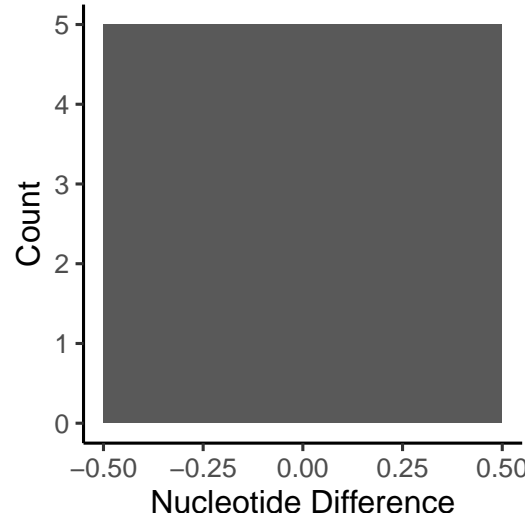
### IGHV5–10–1\*03

82 sequences assigned  
76 (92.7%) exact matches, in which:  
76 unique CDR3  
6 unique J



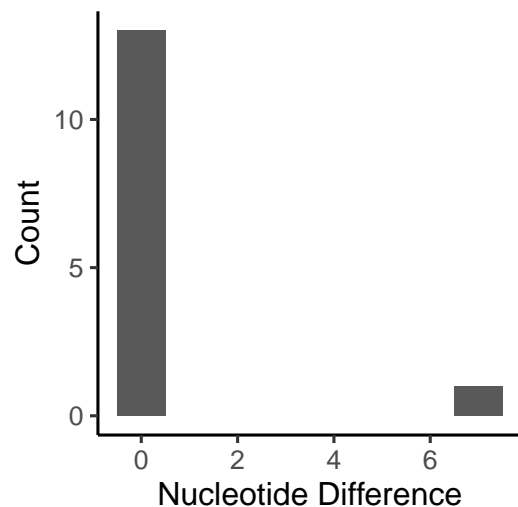
### IGHV7–4–1\*01

5 sequences assigned  
5 (100%) exact matches, in which:  
5 unique CDR3  
4 unique J



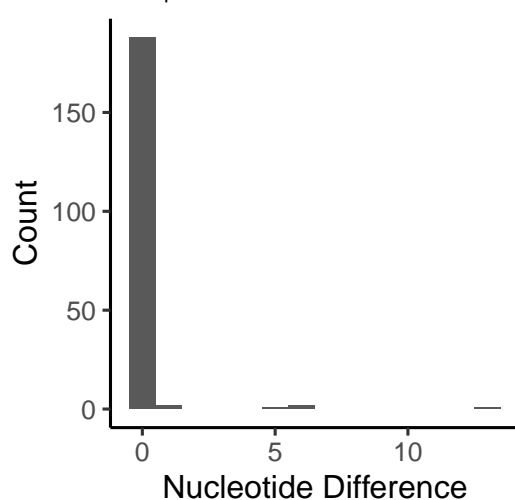
### IGHV4–61\*01

14 sequences assigned  
13 (92.9%) exact matches, in which:  
13 unique CDR3  
4 unique J

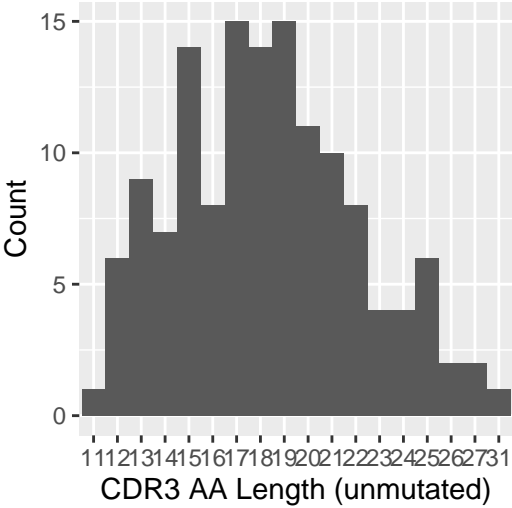


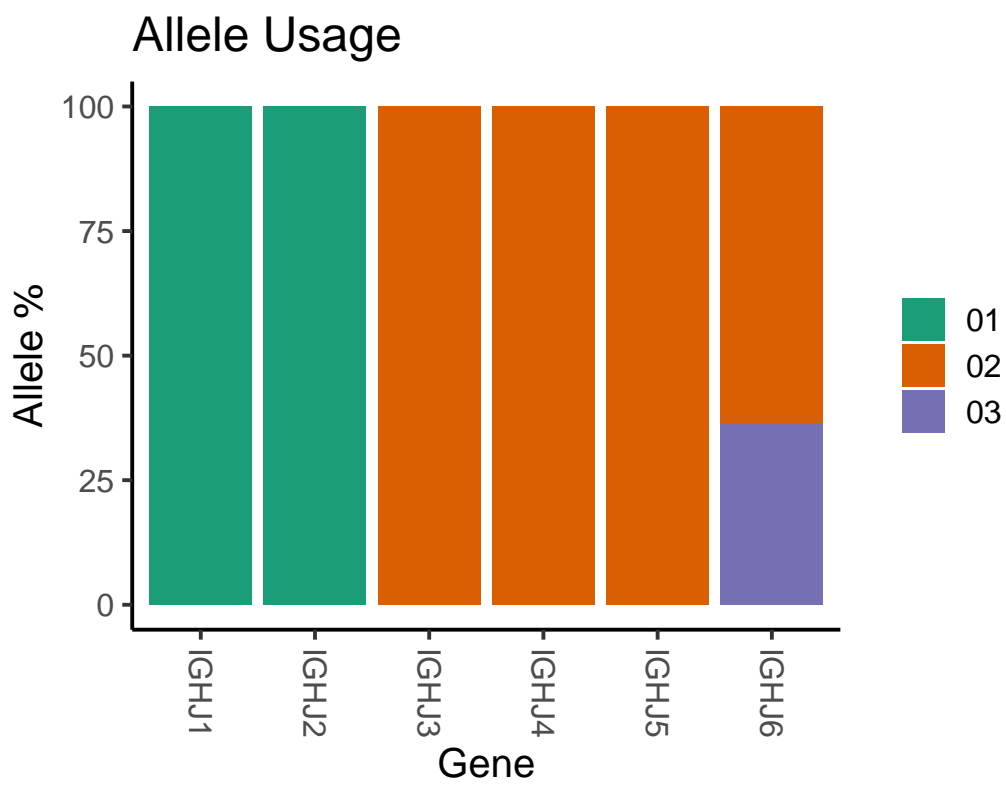
### IGHV5–51\*01

194 sequences assigned  
188 (96.9%) exact matches, in which:  
188 unique CDR3  
7 unique J



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Sequence Count by IGHJ6 allele usage

