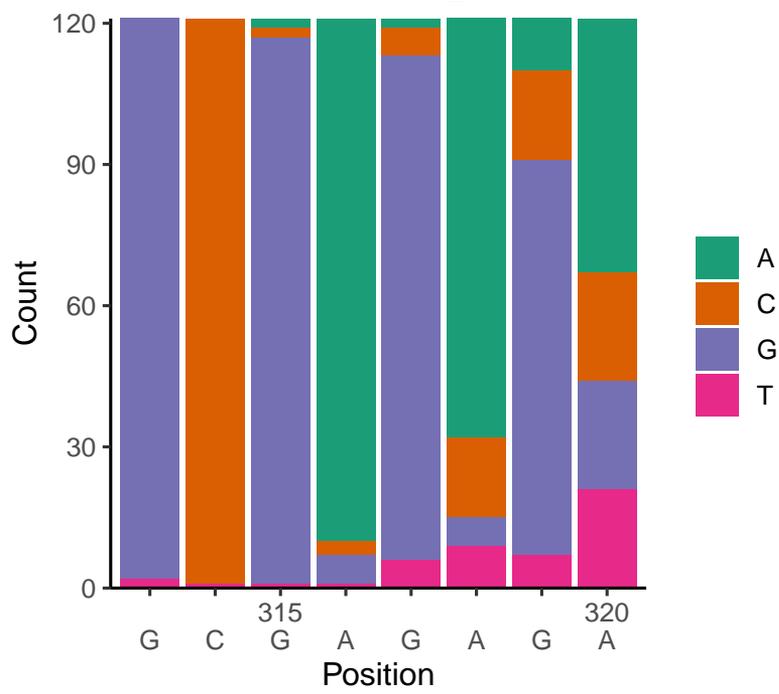
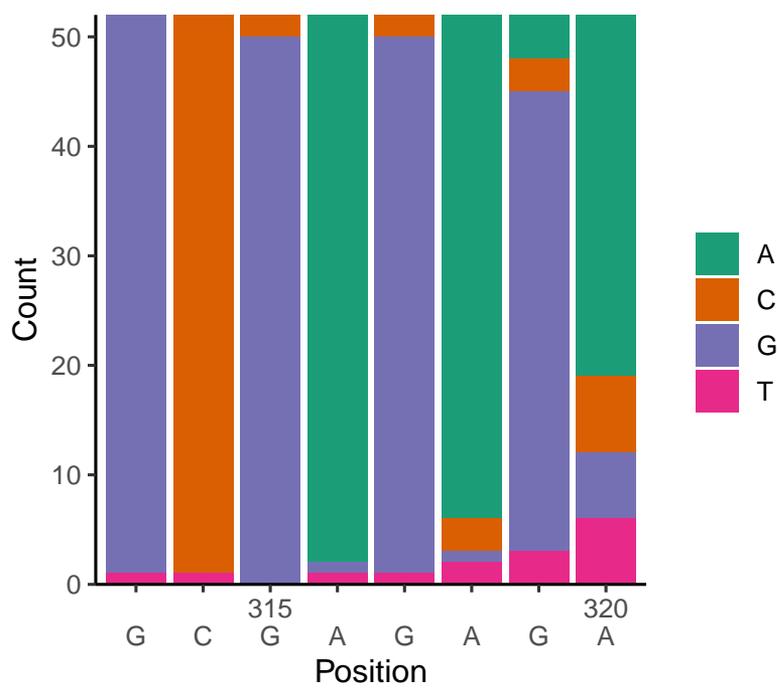


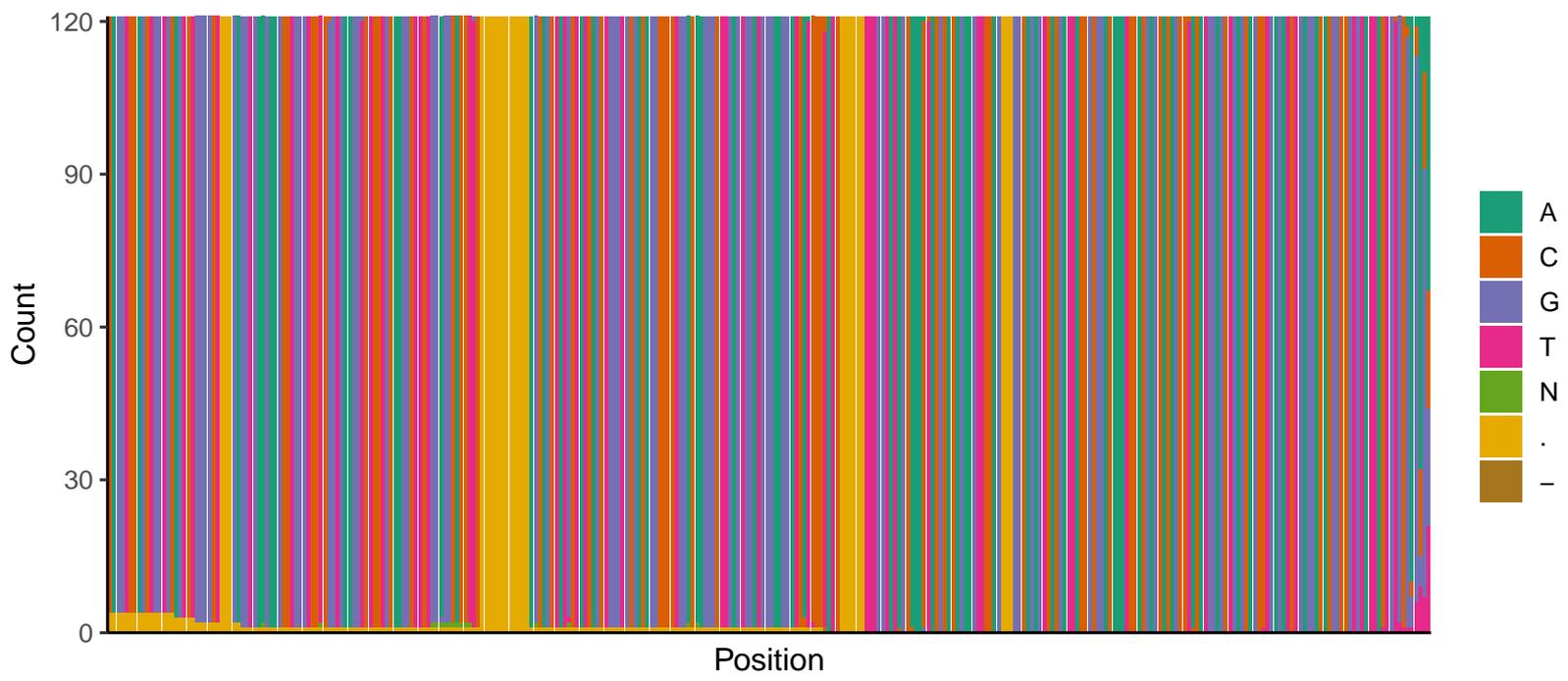
Gene IGHV1-69\*04\_C184T



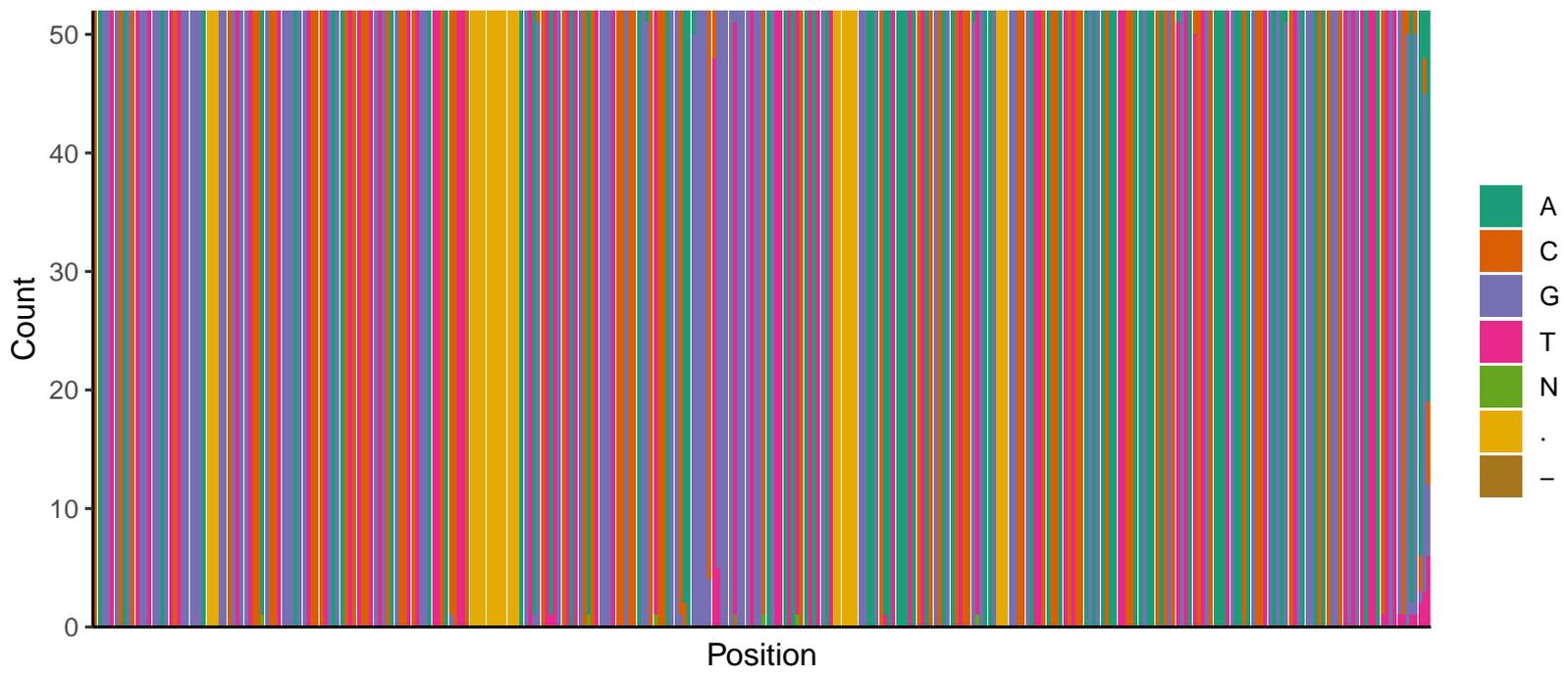
Gene IGHV3-30-3\*01\_A152G



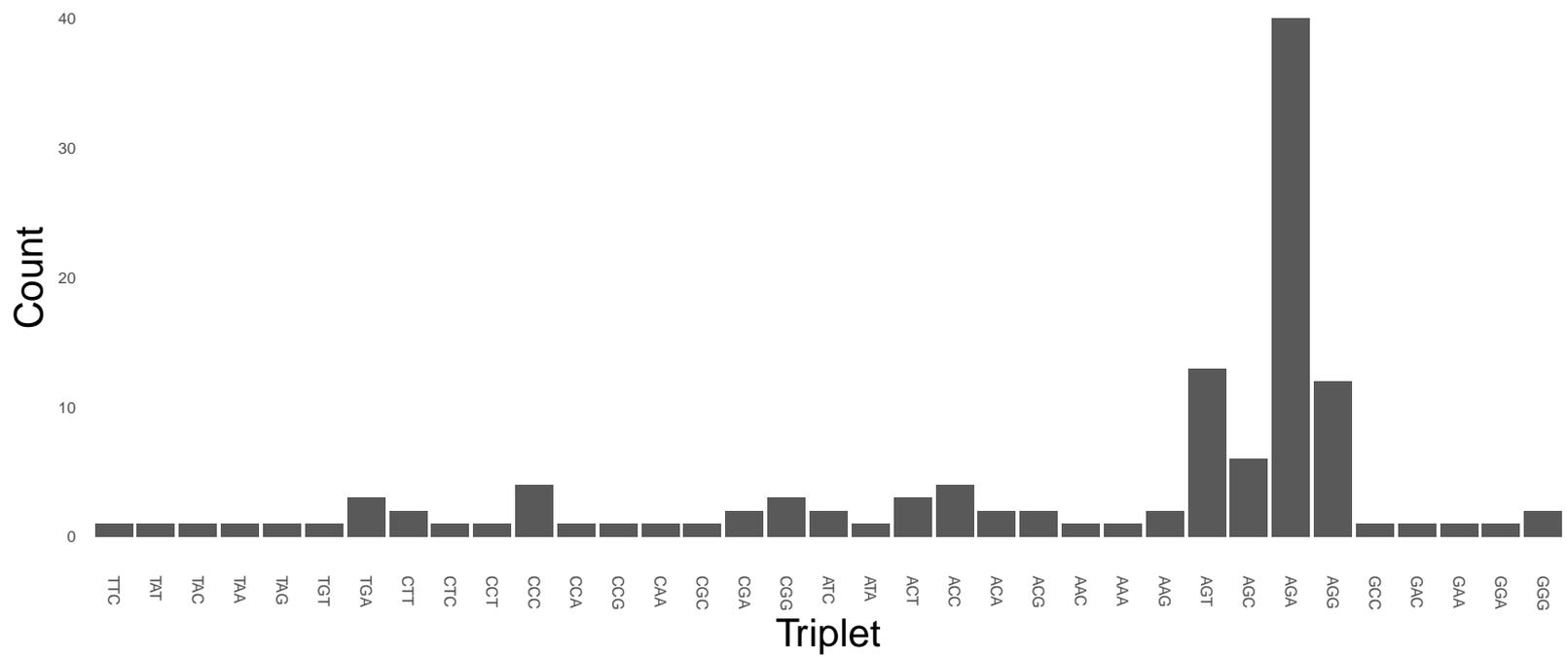
Gene IGHV1-69\*04\_C184T



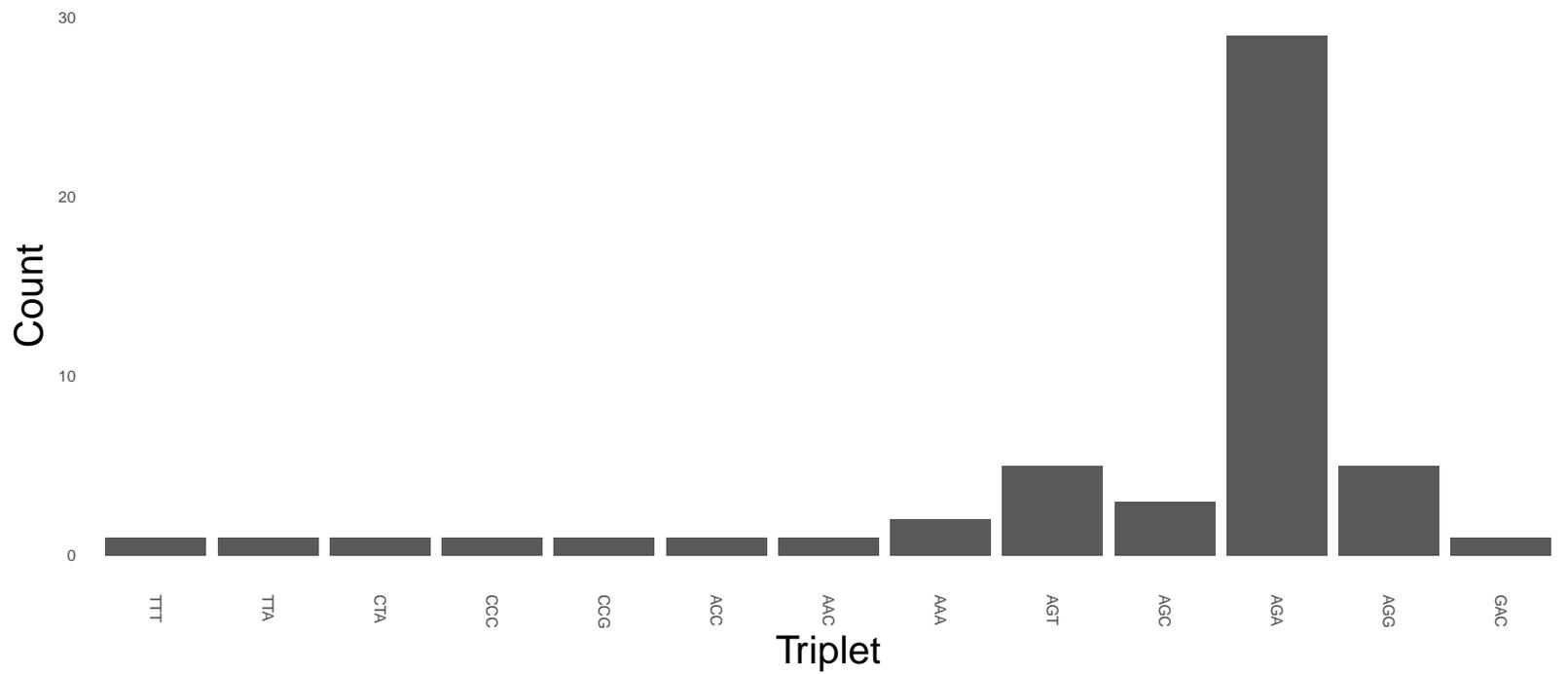
Gene IGHV3-30-3\*01\_A152G



IGHV1-69\*04\_C184T- Final 3 nucleotides as a triplet

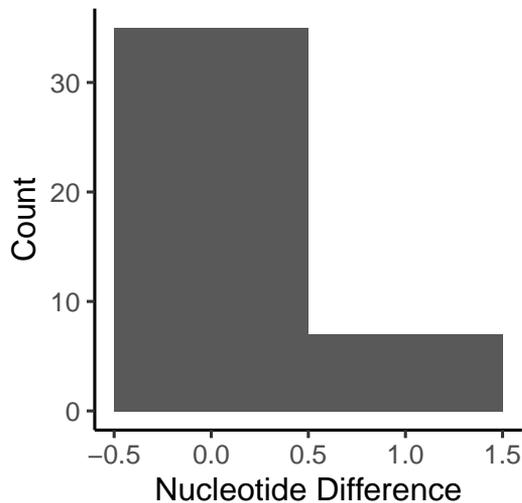


IGHV3-30-3\*01\_A152G- Final 3 nucleotides as a triplet



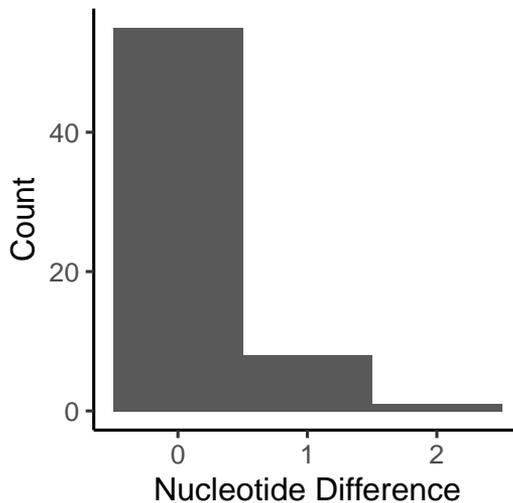
### IGHV1-2\*04

42 sequences assigned  
35 (83.3%) exact matches, in which:  
35 unique CDR3  
4 unique J



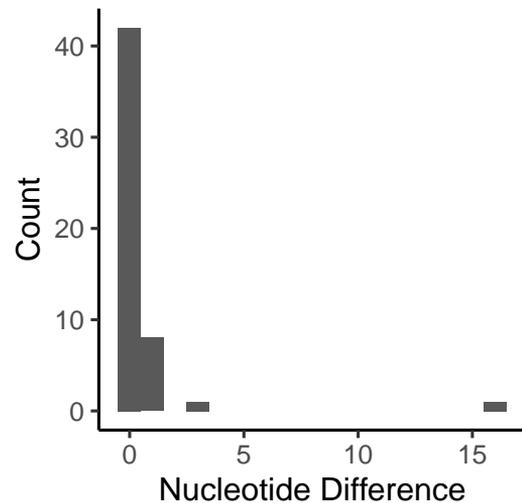
### IGHV1-8\*01

64 sequences assigned  
55 (85.9%) exact matches, in which:  
55 unique CDR3  
5 unique J



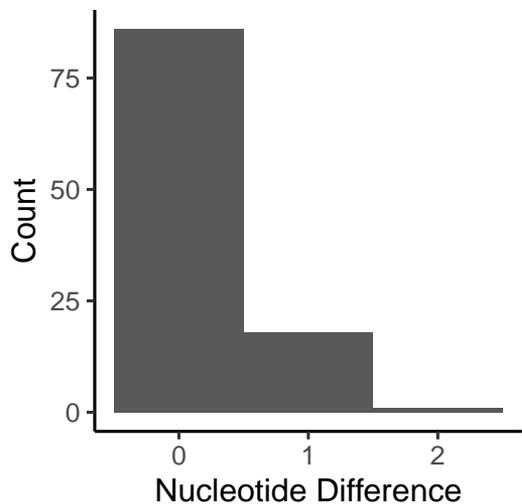
### IGHV1-46\*01

54 sequences assigned  
42 (77.8%) exact matches, in which:  
42 unique CDR3  
4 unique J



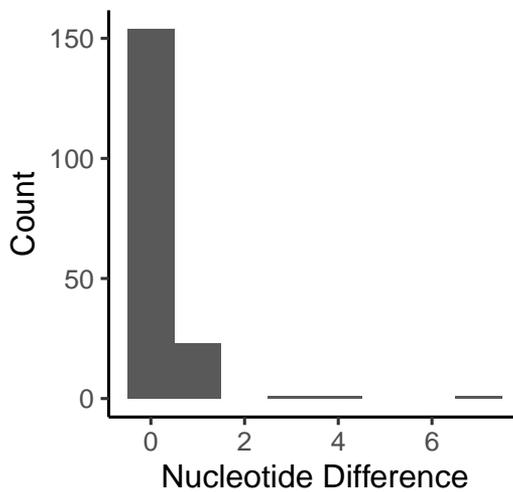
### IGHV1-2\*06

106 sequences assigned  
86 (81.1%) exact matches, in which:  
86 unique CDR3  
5 unique J



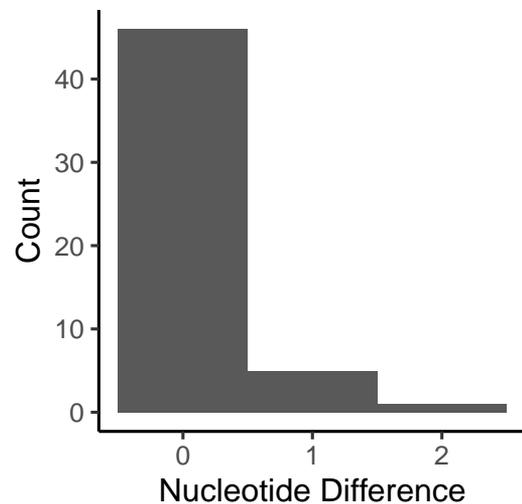
### IGHV1-18\*01

180 sequences assigned  
154 (85.6%) exact matches, in which:  
154 unique CDR3  
4 unique J



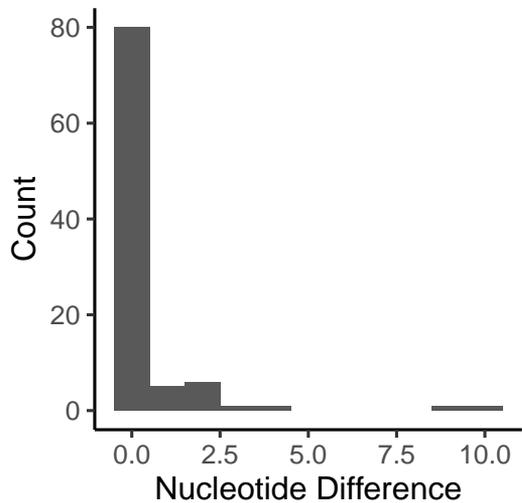
### IGHV1-46\*03

52 sequences assigned  
46 (88.5%) exact matches, in which:  
46 unique CDR3  
6 unique J



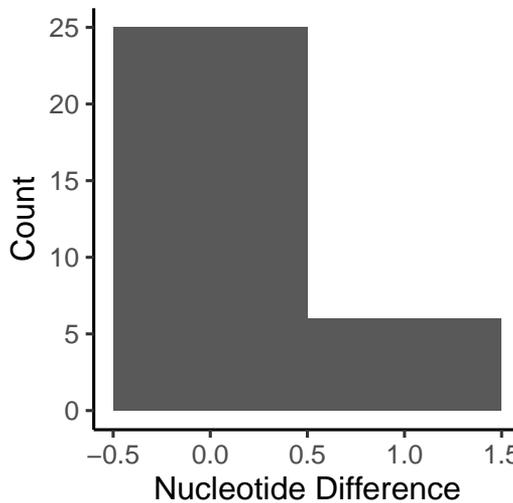
### IGHV1-3\*01

96 sequences assigned  
80 (83.3%) exact matches, in which:  
80 unique CDR3  
5 unique J



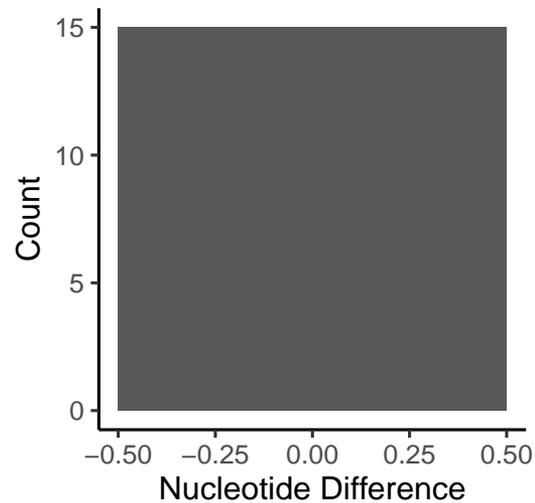
### IGHV1-24\*01

31 sequences assigned  
25 (80.6%) exact matches, in which:  
25 unique CDR3  
5 unique J



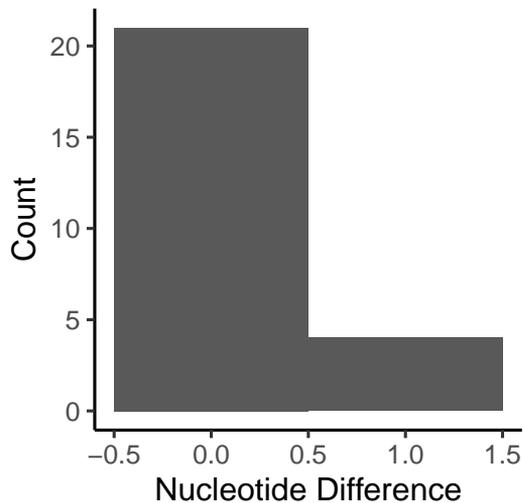
### IGHV1-58\*02

15 sequences assigned  
15 (100%) exact matches, in which:  
15 unique CDR3  
3 unique J



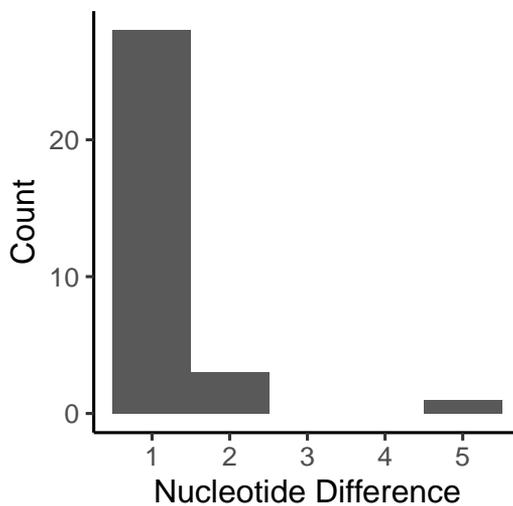
### IGHV1-69-2\*01

25 sequences assigned  
21 (84%) exact matches, in which:  
21 unique CDR3  
4 unique J



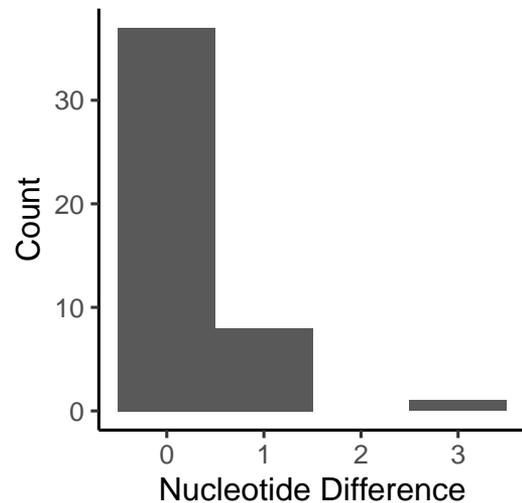
### IGHV1-69\*08

32 sequences assigned  
No exact matches.



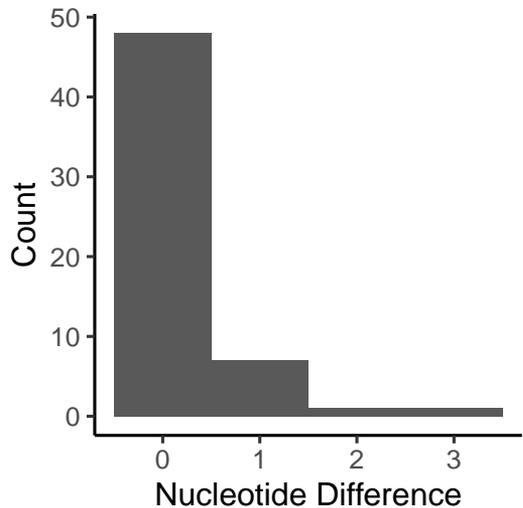
### IGHV2-26\*01

46 sequences assigned  
37 (80.4%) exact matches, in which:  
37 unique CDR3  
5 unique J



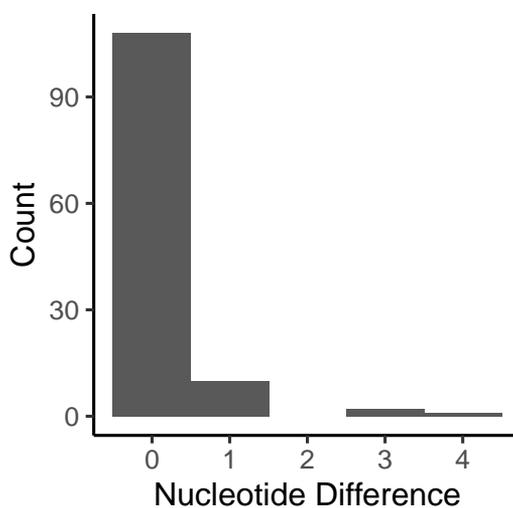
### IGHV1-69\*02

57 sequences assigned  
48 (84.2%) exact matches, in which:  
47 unique CDR3  
5 unique J



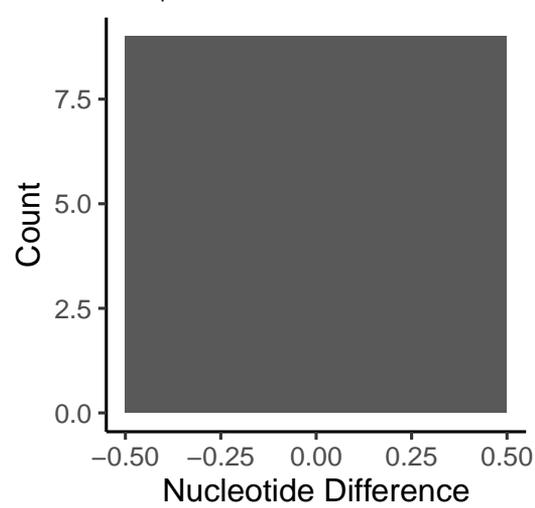
### IGHV1-69\*04\_C184T

121 sequences assigned  
108 (89.3%) exact matches, in which:  
108 unique CDR3  
4 unique J



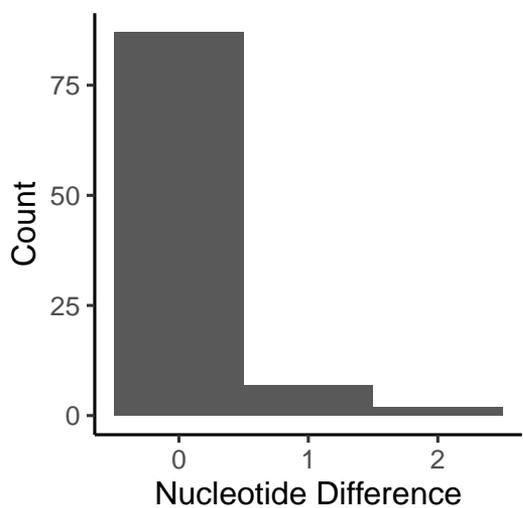
### IGHV2-70\*15

9 sequences assigned  
9 (100%) exact matches, in which:  
9 unique CDR3  
3 unique J



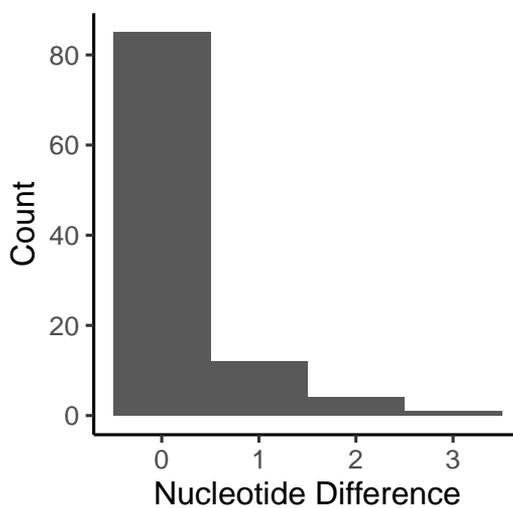
### IGHV1-69\*04

96 sequences assigned  
87 (90.6%) exact matches, in which:  
87 unique CDR3  
6 unique J



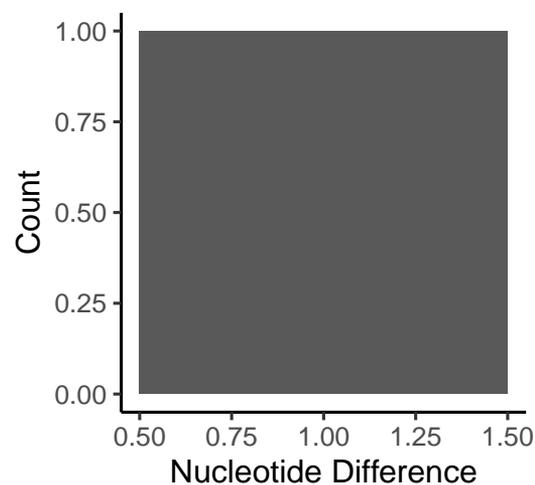
### IGHV2-5\*02

102 sequences assigned  
85 (83.3%) exact matches, in which:  
85 unique CDR3  
6 unique J



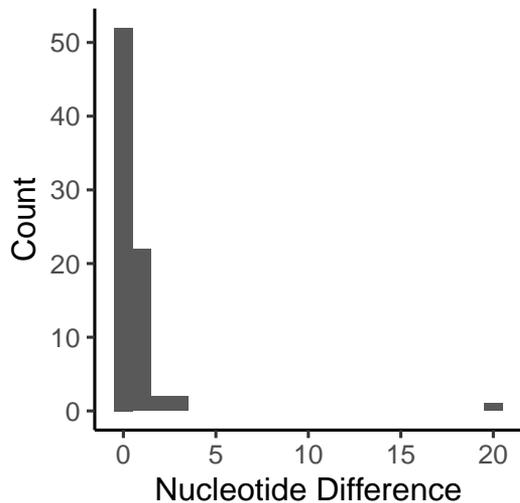
### IGHV2-70D\*04

1 sequences assigned  
No exact matches.



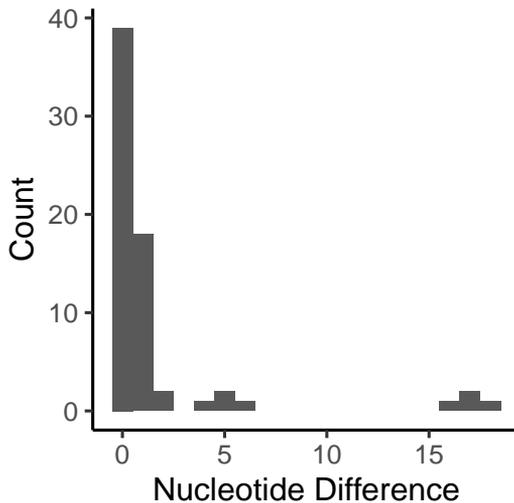
### IGHV3-7\*01

80 sequences assigned  
52 (65%) exact matches, in which:  
52 unique CDR3  
6 unique J



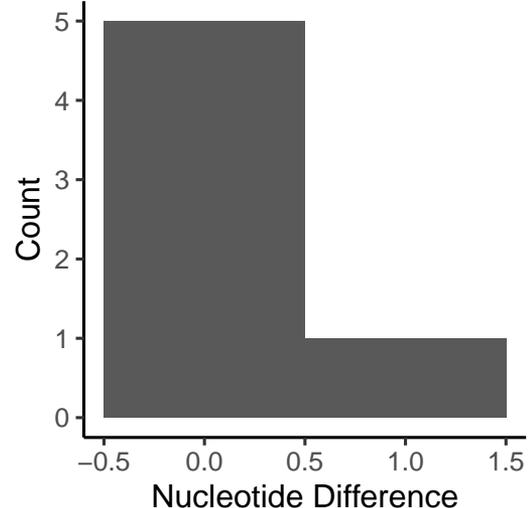
### IGHV3-11\*01

67 sequences assigned  
39 (58.2%) exact matches, in which:  
39 unique CDR3  
5 unique J



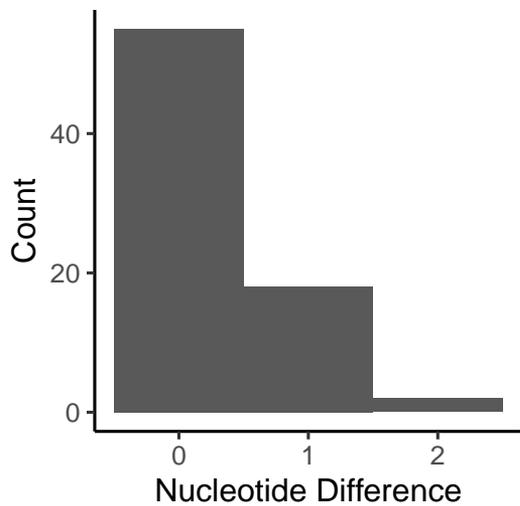
### IGHV3-13\*05

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



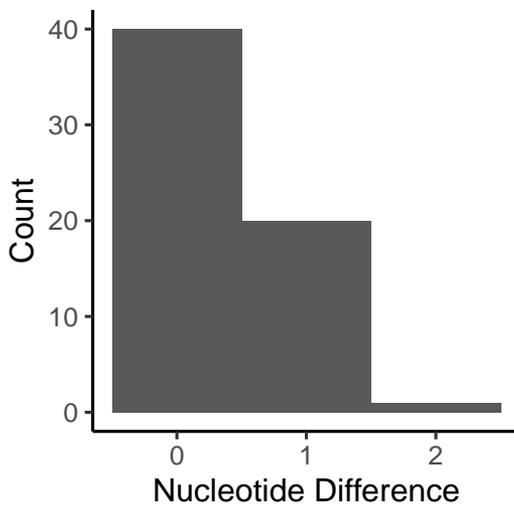
### IGHV3-7\*03

75 sequences assigned  
55 (73.3%) exact matches, in which:  
53 unique CDR3  
5 unique J



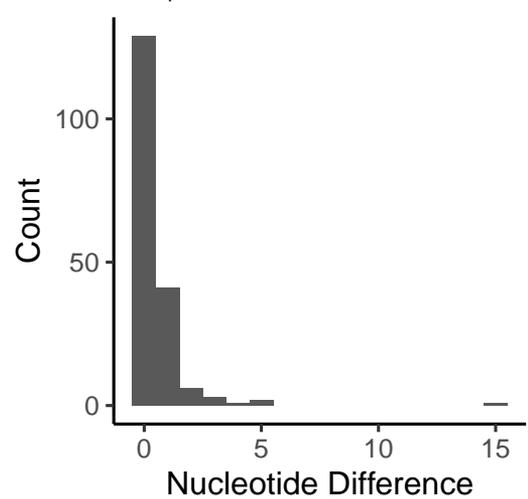
### IGHV3-11\*06

61 sequences assigned  
40 (65.6%) exact matches, in which:  
40 unique CDR3  
5 unique J



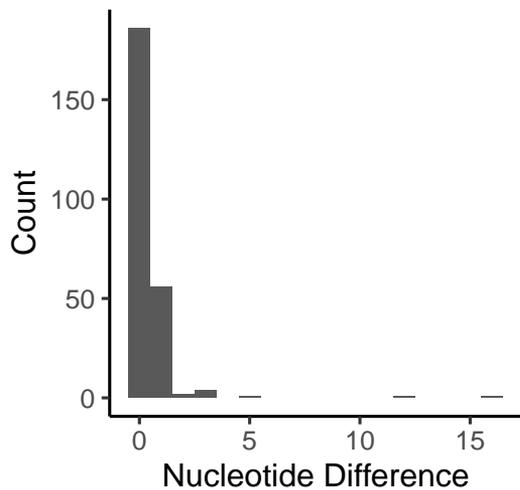
### IGHV3-15\*01

183 sequences assigned  
129 (70.5%) exact matches, in which:  
128 unique CDR3  
6 unique J



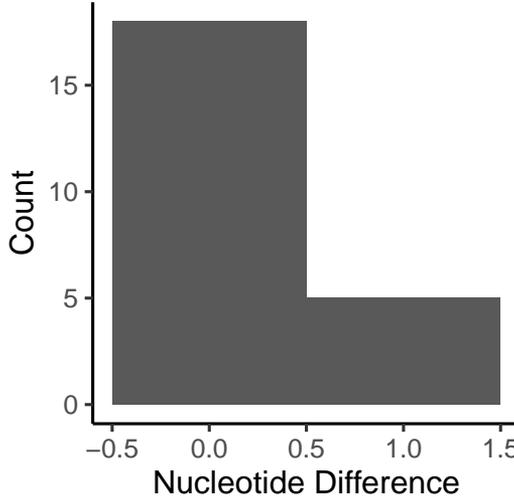
### IGHV3-9\*01

251 sequences assigned  
186 (74.1%) exact matches, in which:  
186 unique CDR3  
6 unique J



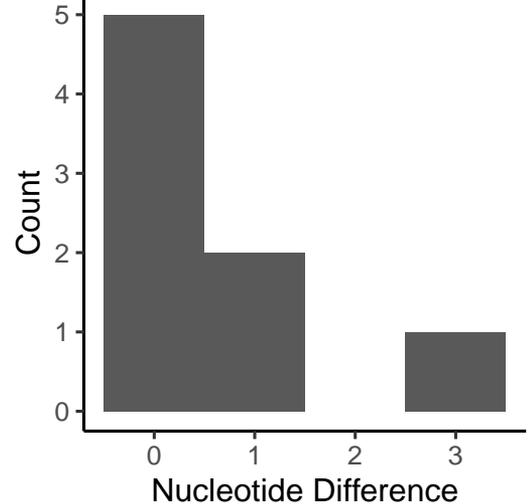
### IGHV3-13\*01

23 sequences assigned  
18 (78.3%) exact matches, in which:  
18 unique CDR3  
4 unique J



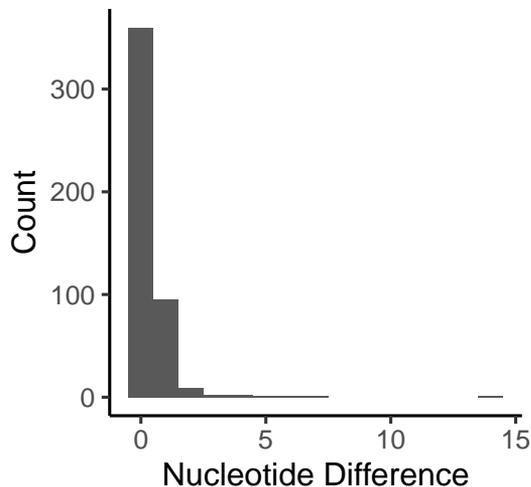
### IGHV3-20\*01

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



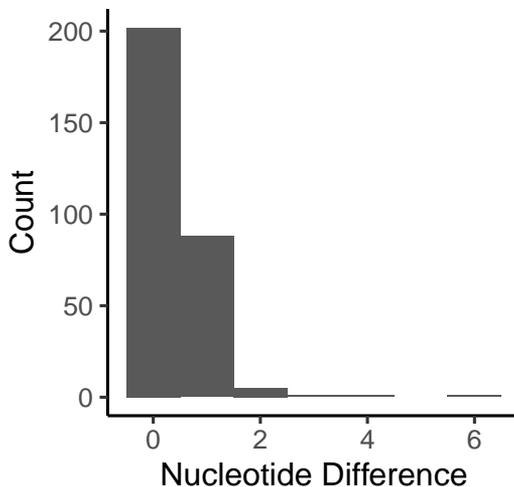
### IGHV3-21\*01

472 sequences assigned  
360 (76.3%) exact matches, in which:  
359 unique CDR3  
6 unique J



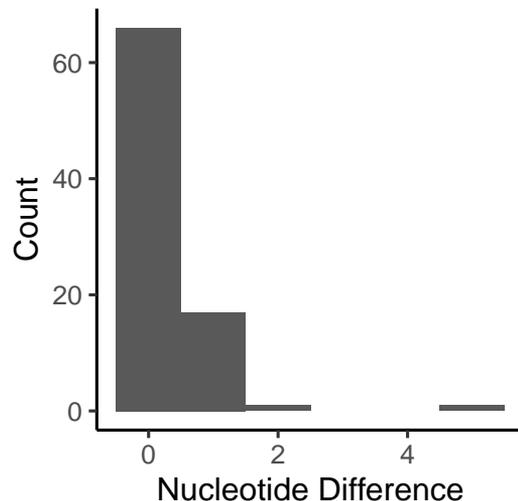
### IGHV3-33\*01

298 sequences assigned  
202 (67.8%) exact matches, in which:  
202 unique CDR3  
5 unique J



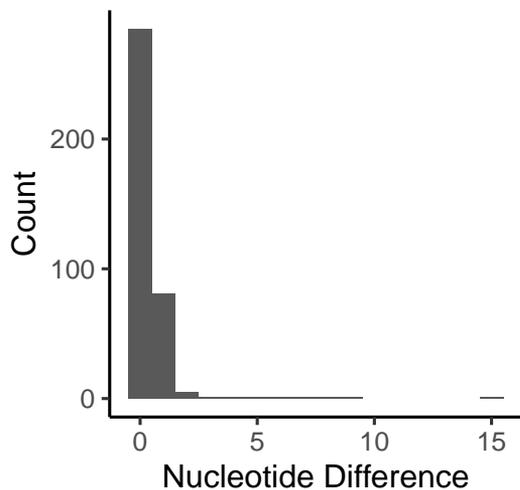
### IGHV3-48\*01

85 sequences assigned  
66 (77.6%) exact matches, in which:  
66 unique CDR3  
6 unique J



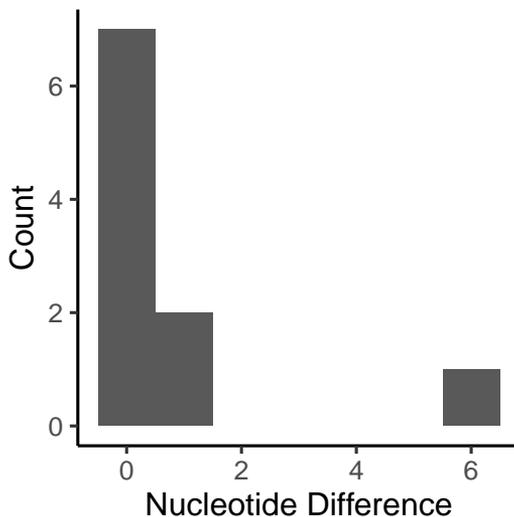
### IGHV3-30-3\*01

381 sequences assigned  
285 (74.8%) exact matches, in which:  
284 unique CDR3  
6 unique J



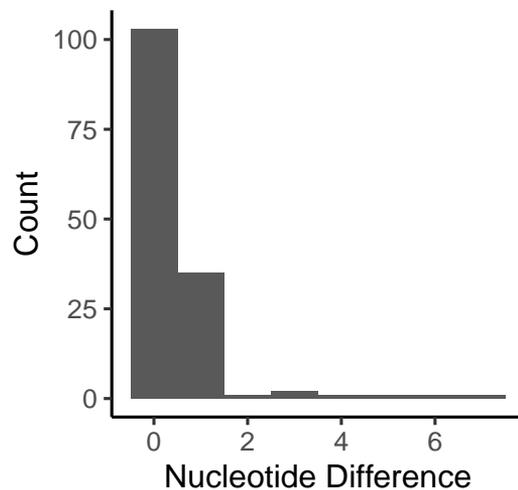
### IGHV3-43\*01

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



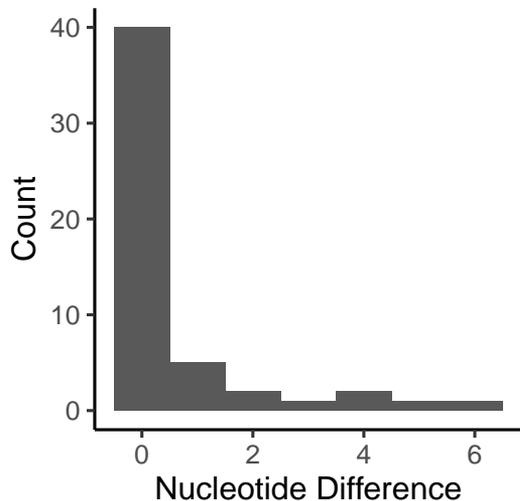
### IGHV3-48\*03

148 sequences assigned  
103 (69.6%) exact matches, in which:  
103 unique CDR3  
6 unique J



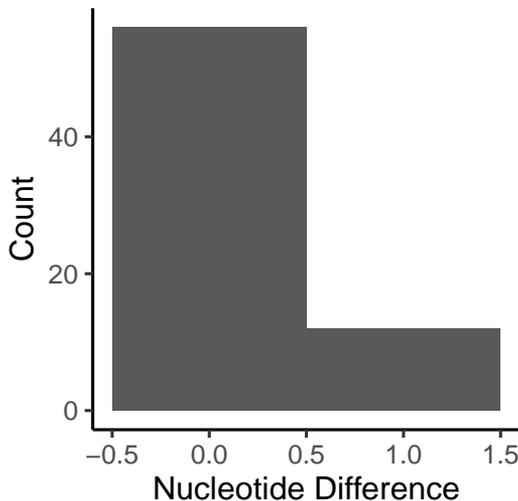
### IGHV3-30-3\*01\_A152G

52 sequences assigned  
40 (76.9%) exact matches, in which:  
40 unique CDR3  
4 unique J



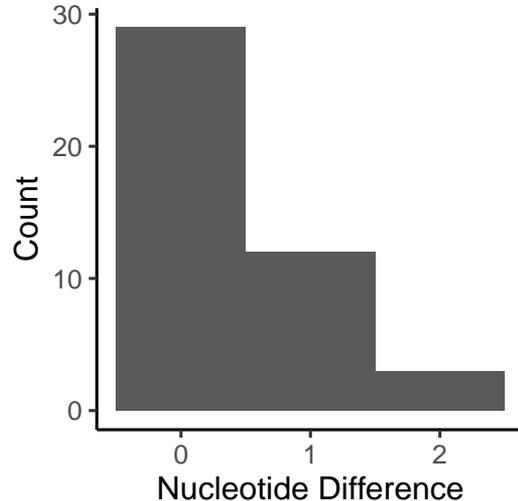
### IGHV3-43\*02

68 sequences assigned  
56 (82.4%) exact matches, in which:  
56 unique CDR3  
4 unique J



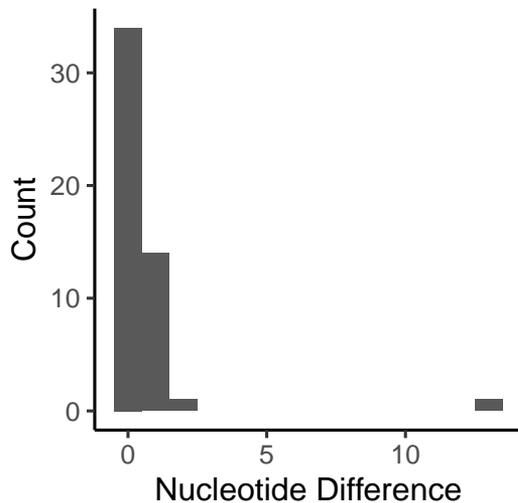
### IGHV3-49\*03

44 sequences assigned  
29 (65.9%) exact matches, in which:  
29 unique CDR3  
4 unique J



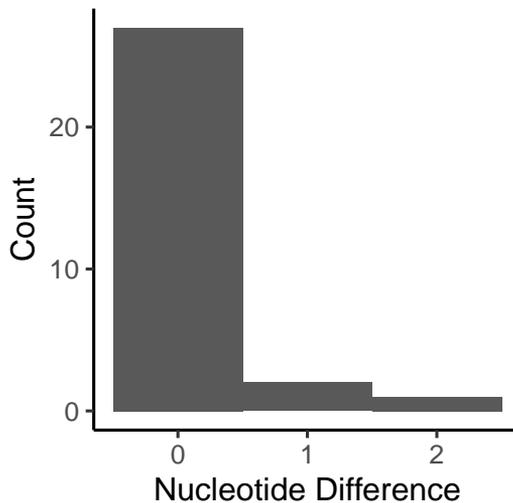
### IGHV3-49\*04

50 sequences assigned  
34 (68%) exact matches, in which:  
34 unique CDR3  
4 unique J



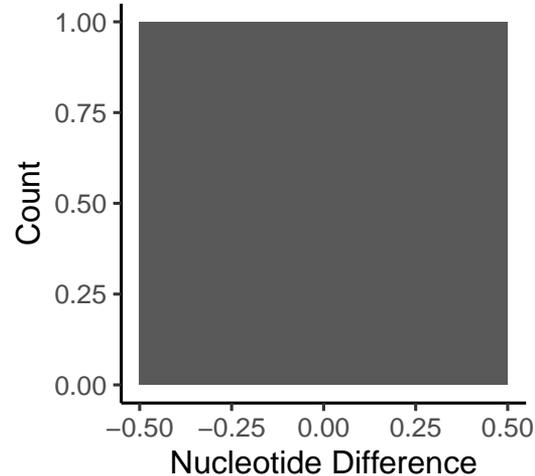
### IGHV3-64\*01

30 sequences assigned  
27 (90%) exact matches, in which:  
26 unique CDR3  
4 unique J



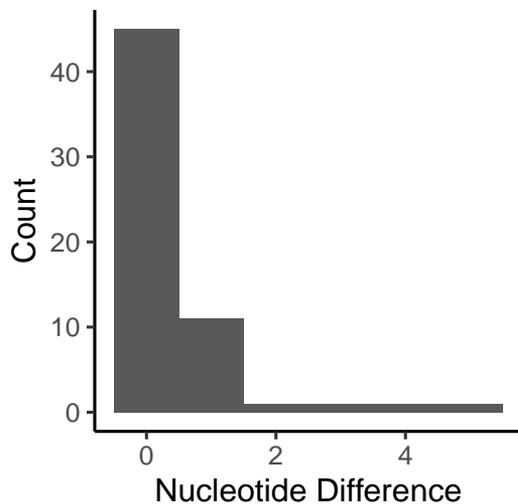
### IGHV3-69-1\*02

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



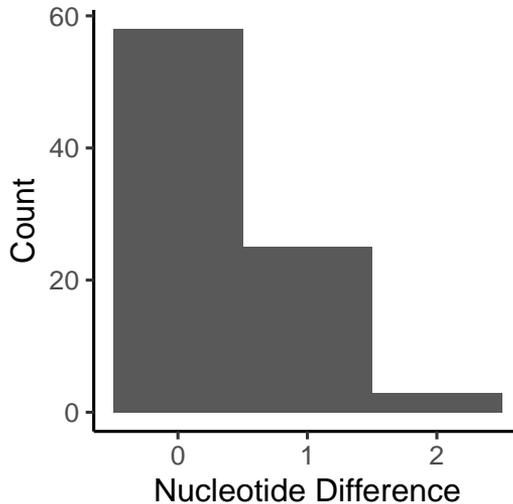
### IGHV3-53\*01

60 sequences assigned  
45 (75%) exact matches, in which:  
45 unique CDR3  
5 unique J



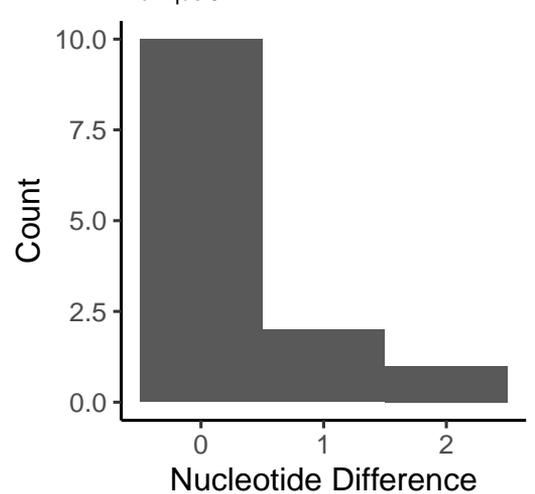
### IGHV3-66\*01

86 sequences assigned  
58 (67.4%) exact matches, in which:  
58 unique CDR3  
6 unique J



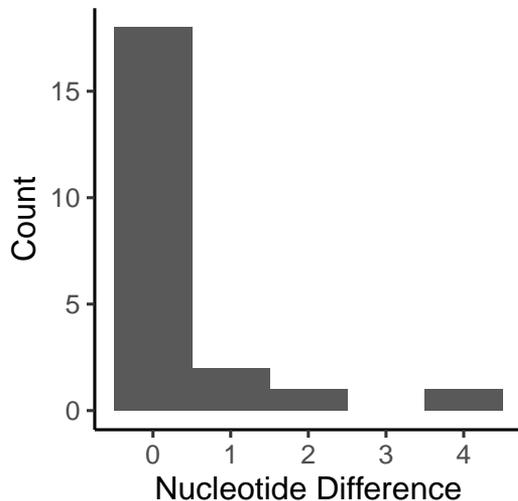
### IGHV3-72\*01

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



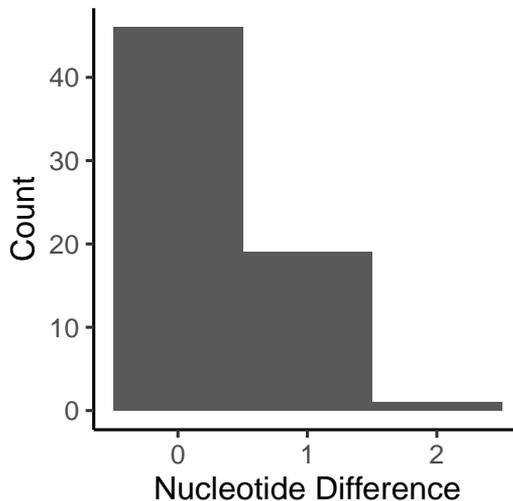
### IGHV3-53\*04

22 sequences assigned  
18 (81.8%) exact matches, in which:  
18 unique CDR3  
6 unique J



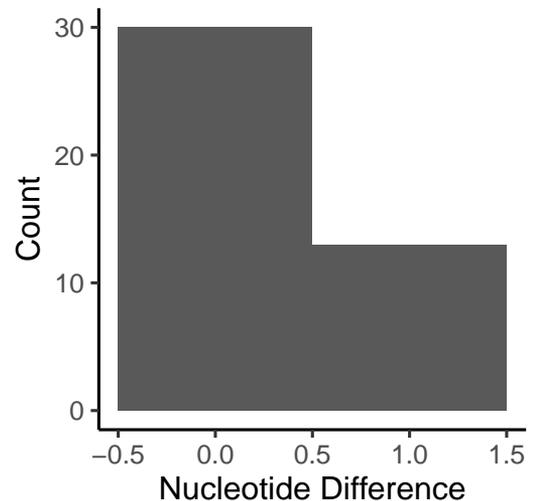
### IGHV3-66\*02

66 sequences assigned  
46 (69.7%) exact matches, in which:  
46 unique CDR3  
5 unique J



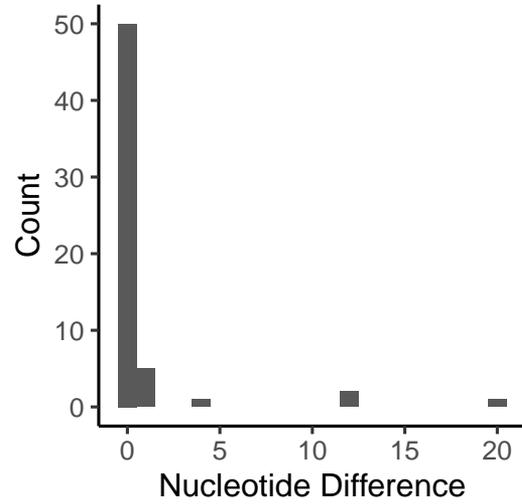
### IGHV3-73\*01

43 sequences assigned  
30 (69.8%) exact matches, in which:  
30 unique CDR3  
3 unique J



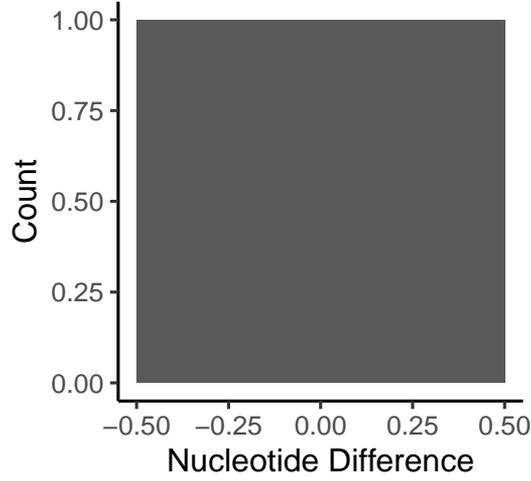
### IGHV3-74\*01

60 sequences assigned  
50 (83.3%) exact matches, in which:  
50 unique CDR3  
5 unique J



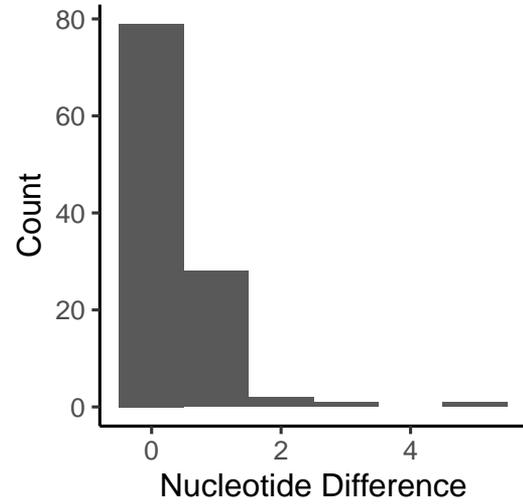
### IGHV4-28\*03

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



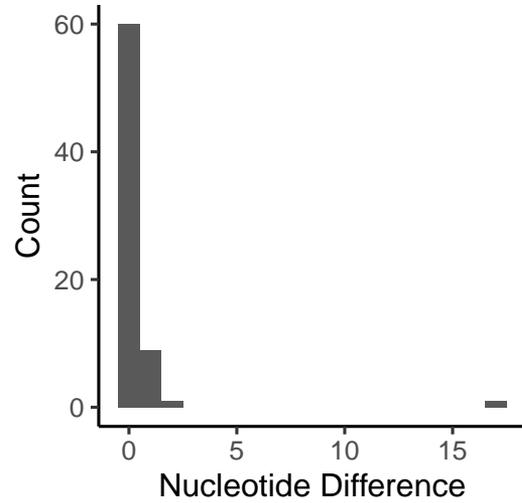
### IGHV4-31\*03

113 sequences assigned  
79 (69.9%) exact matches, in which:  
79 unique CDR3  
6 unique J



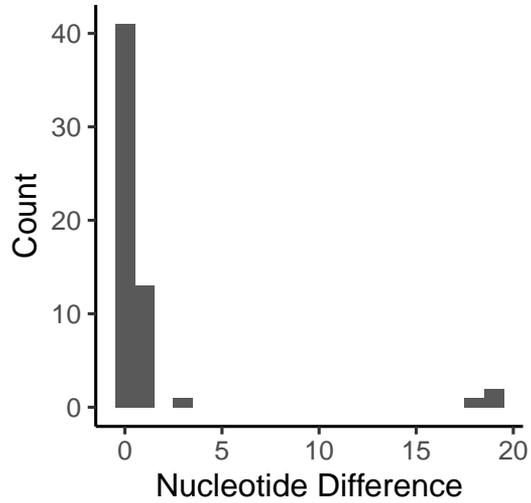
### IGHV3-64D\*06

71 sequences assigned  
60 (84.5%) exact matches, in which:  
60 unique CDR3  
6 unique J



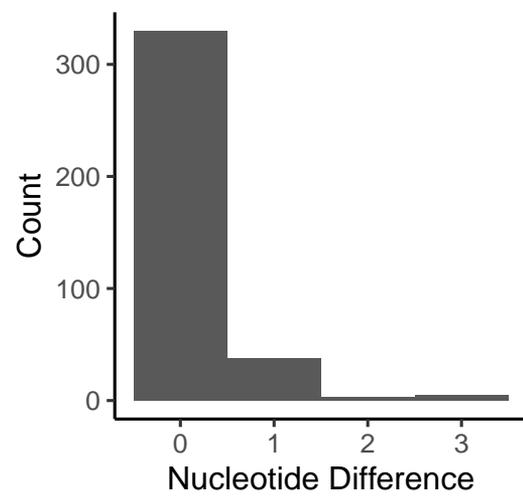
### IGHV4-30-2\*01

58 sequences assigned  
41 (70.7%) exact matches, in which:  
41 unique CDR3  
5 unique J



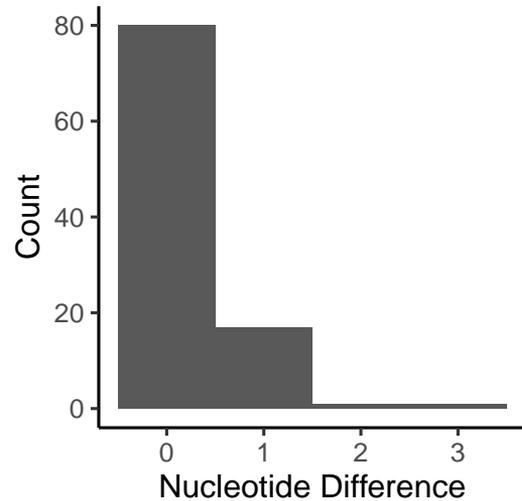
### IGHV4-34\*01

376 sequences assigned  
330 (87.8%) exact matches, in which:  
329 unique CDR3  
5 unique J



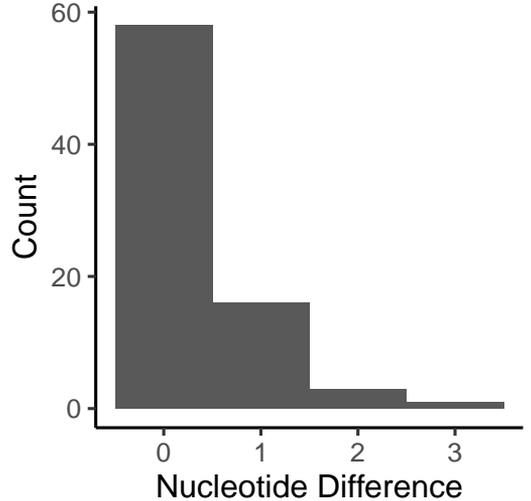
### IGHV4-4\*02

99 sequences assigned  
80 (80.8%) exact matches, in which:  
80 unique CDR3  
6 unique J



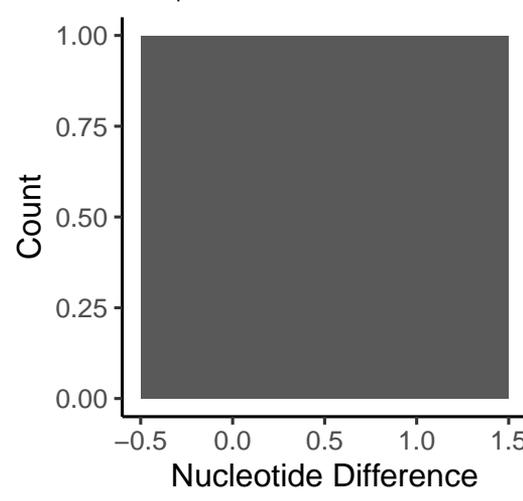
### IGHV4-30-4\*01

78 sequences assigned  
58 (74.4%) exact matches, in which:  
58 unique CDR3  
4 unique J



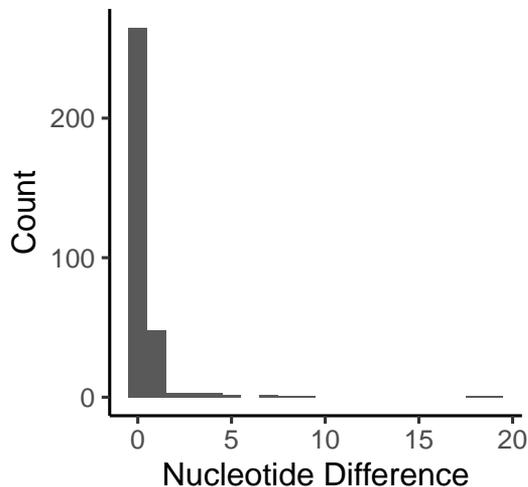
### IGHV4-38-2\*02

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



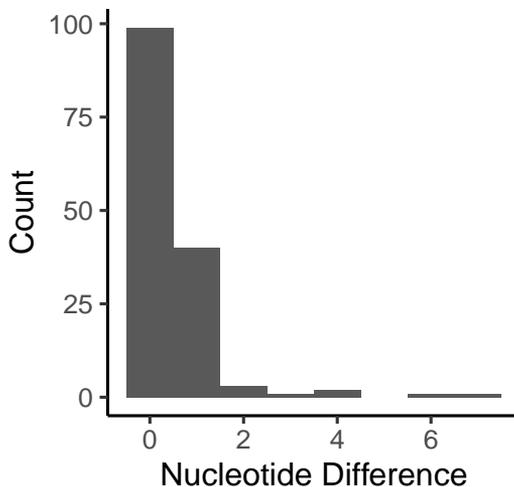
### IGHV4-39\*01

330 sequences assigned  
265 (80.3%) exact matches, in which:  
263 unique CDR3  
6 unique J



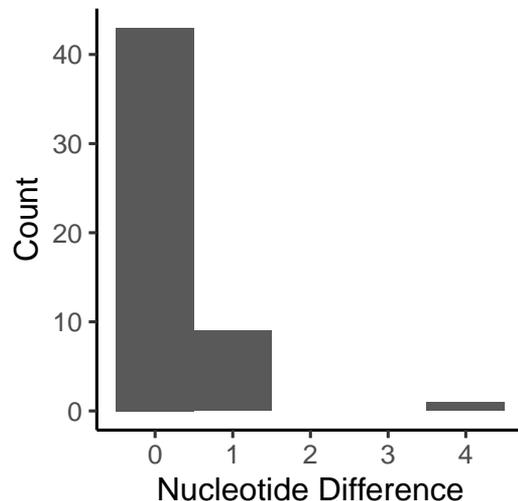
### IGHV4-61\*02

147 sequences assigned  
99 (67.3%) exact matches, in which:  
99 unique CDR3  
6 unique J



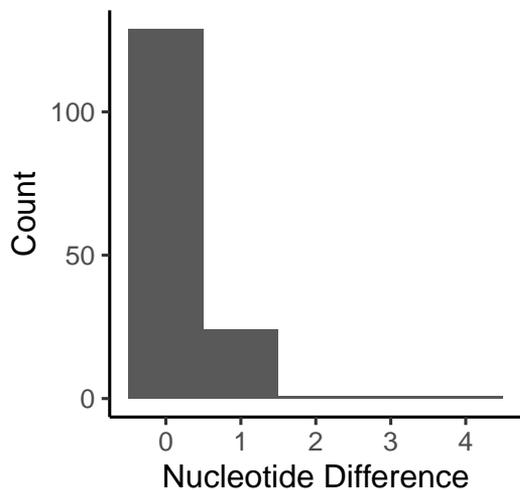
### IGHV5-51\*03

53 sequences assigned  
43 (81.1%) exact matches, in which:  
43 unique CDR3  
5 unique J



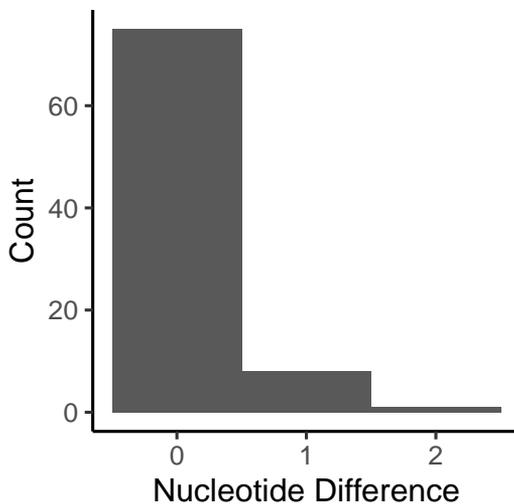
### IGHV4-59\*01

159 sequences assigned  
129 (81.1%) exact matches, in which:  
129 unique CDR3  
5 unique J



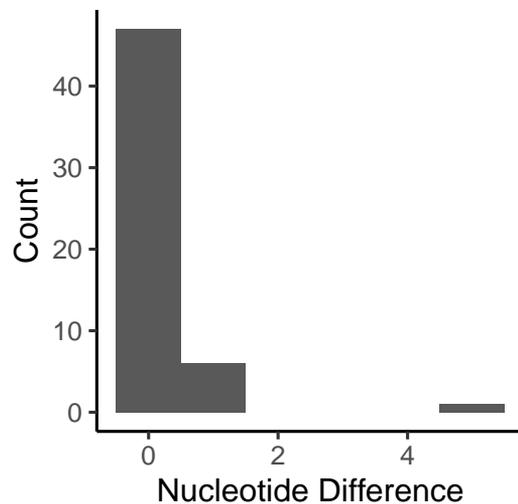
### IGHV5-10-1\*03

84 sequences assigned  
75 (89.3%) exact matches, in which:  
74 unique CDR3  
6 unique J



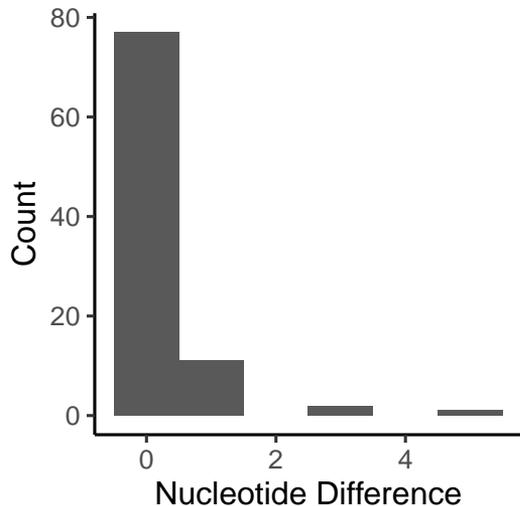
### IGHV6-1\*01

54 sequences assigned  
47 (87%) exact matches, in which:  
47 unique CDR3  
5 unique J



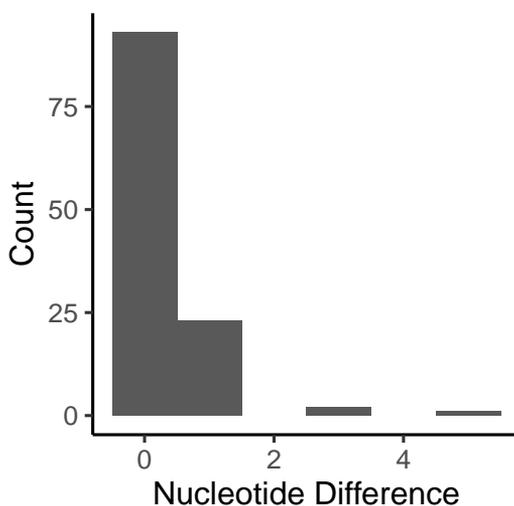
### IGHV4-59\*08

91 sequences assigned  
77 (84.6%) exact matches, in which:  
77 unique CDR3  
6 unique J



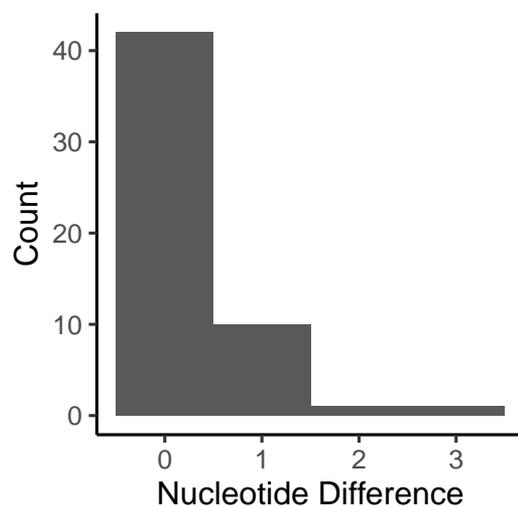
### IGHV5-51\*01

119 sequences assigned  
93 (78.2%) exact matches, in which:  
93 unique CDR3  
5 unique J



### IGHV7-4-1\*02

54 sequences assigned  
42 (77.8%) exact matches, in which:  
42 unique CDR3  
6 unique J



# Allele Usage

