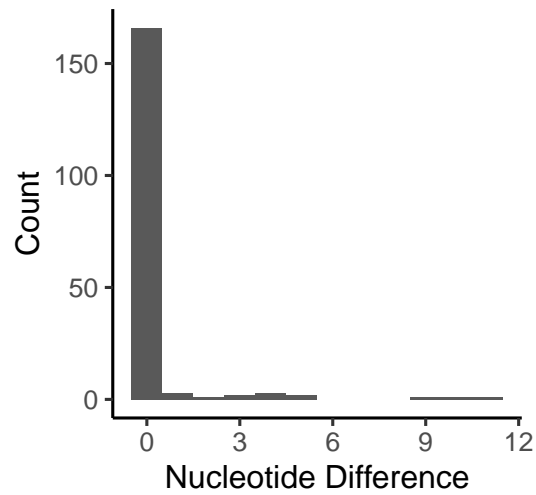


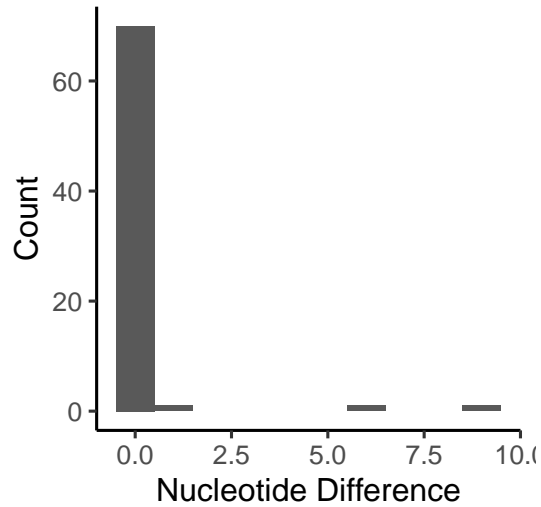
### IGHV1-2\*02

180 sequences assigned  
166 (92.2%) exact matches, in which:  
166 unique CDR3  
6 unique J



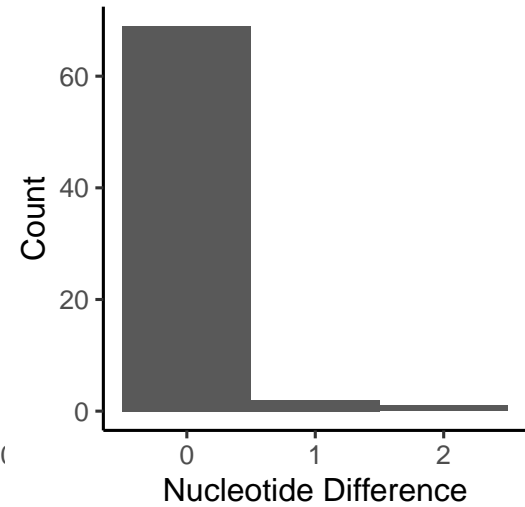
### IGHV1-8\*01

73 sequences assigned  
70 (95.9%) exact matches, in which:  
69 unique CDR3  
6 unique J



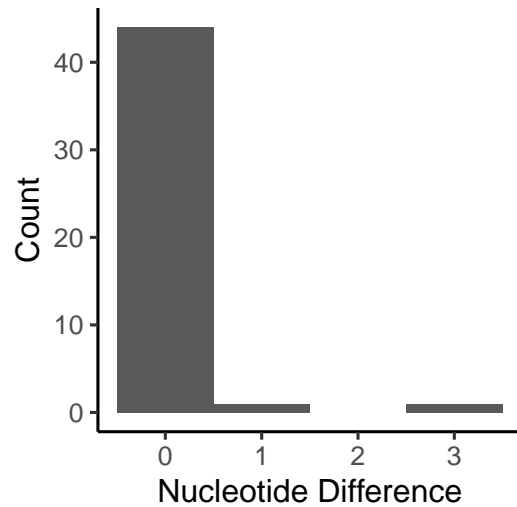
### IGHV1-24\*01

72 sequences assigned  
69 (95.8%) exact matches, in which:  
69 unique CDR3  
5 unique J



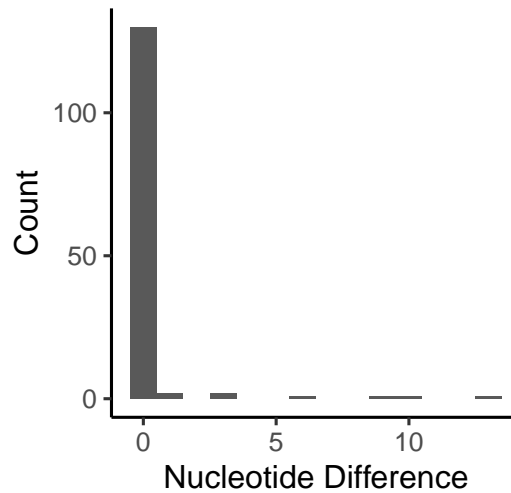
### IGHV1-2\*04

46 sequences assigned  
44 (95.7%) exact matches, in which:  
44 unique CDR3  
4 unique J



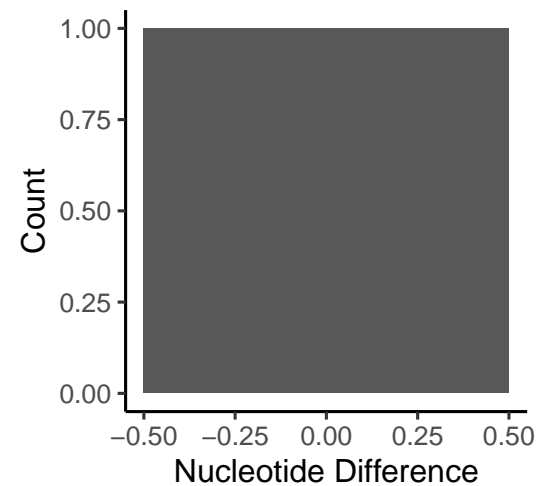
### IGHV1-18\*01

138 sequences assigned  
130 (94.2%) exact matches, in which:  
130 unique CDR3  
6 unique J



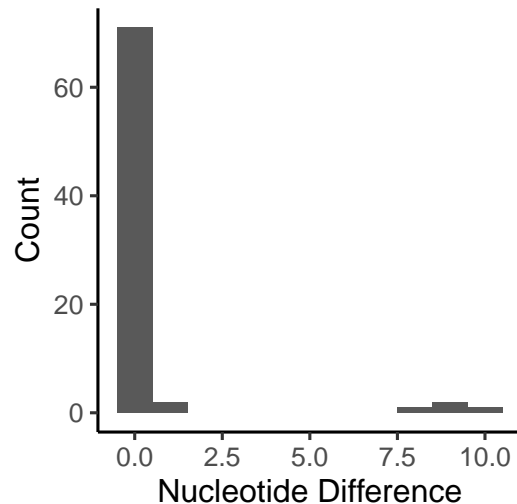
### IGHV1-45\*02

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



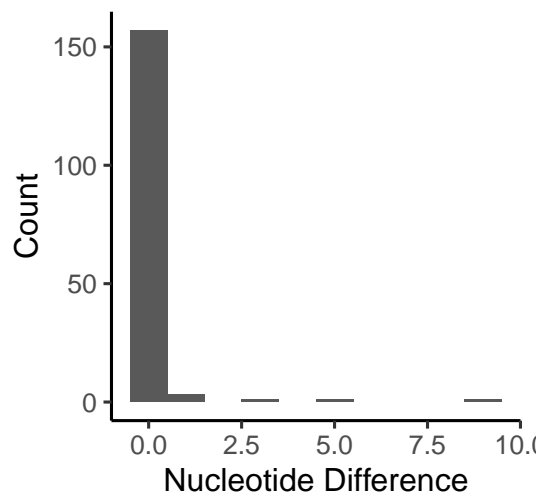
### IGHV1-3\*01

77 sequences assigned  
71 (92.2%) exact matches, in which:  
71 unique CDR3  
6 unique J



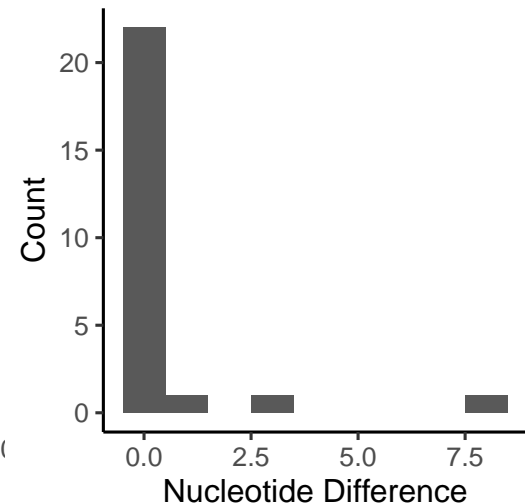
### IGHV1-18\*04

164 sequences assigned  
157 (95.7%) exact matches, in which:  
157 unique CDR3  
6 unique J



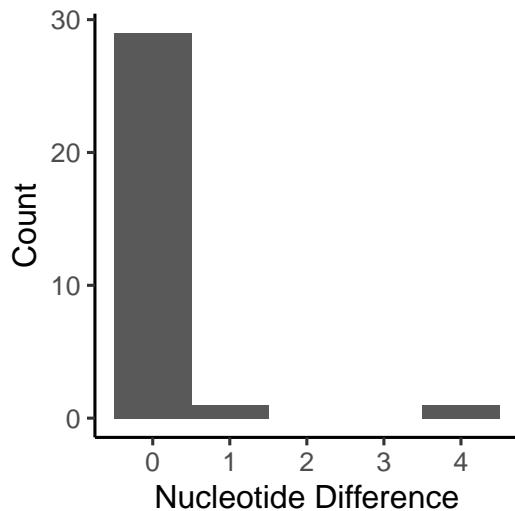
### IGHV1-46\*01

25 sequences assigned  
22 (88%) exact matches, in which:  
22 unique CDR3  
4 unique J



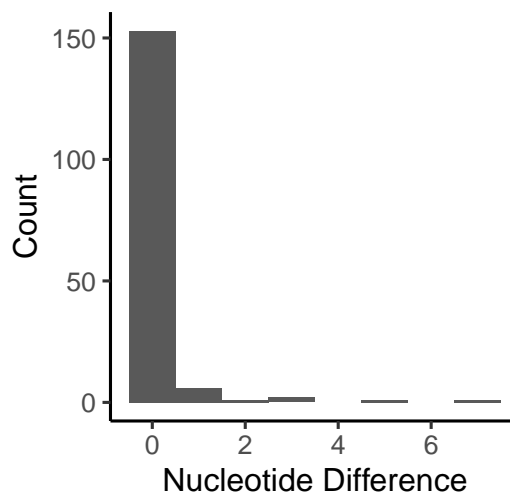
### IGHV1-46\*03

31 sequences assigned  
29 (93.5%) exact matches, in which:  
29 unique CDR3  
5 unique J



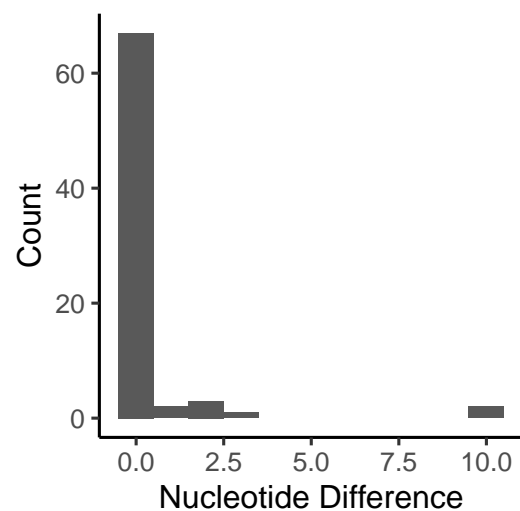
### IGHV1-69\*04

164 sequences assigned  
153 (93.3%) exact matches, in which:  
153 unique CDR3  
6 unique J



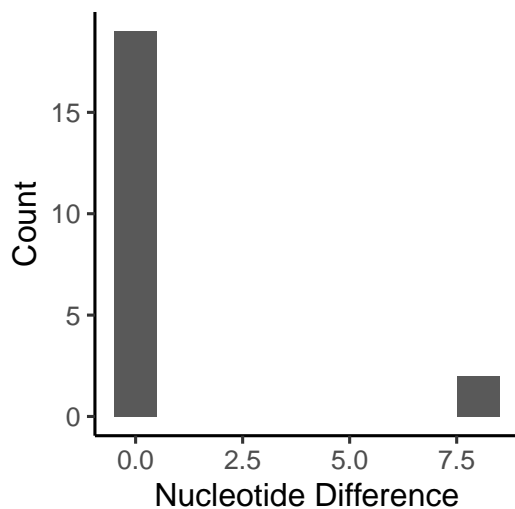
### IGHV2-5\*02

75 sequences assigned  
67 (89.3%) exact matches, in which:  
67 unique CDR3  
6 unique J



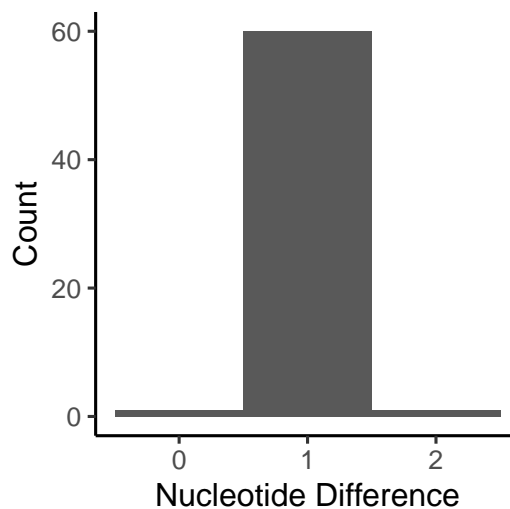
### IGHV1-58\*02

21 sequences assigned  
19 (90.5%) exact matches, in which:  
19 unique CDR3  
3 unique J



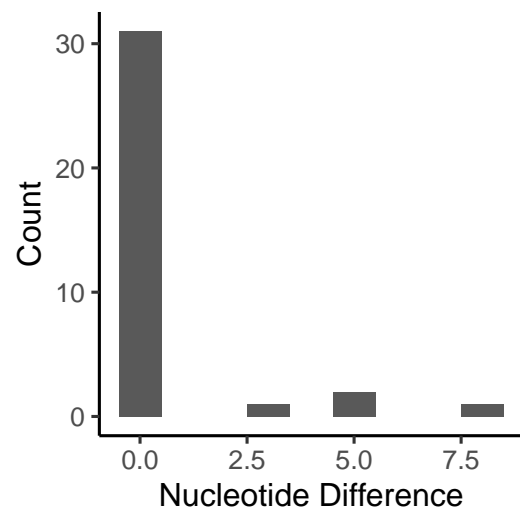
### IGHV1-69\*08

62 sequences assigned  
1 (1.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



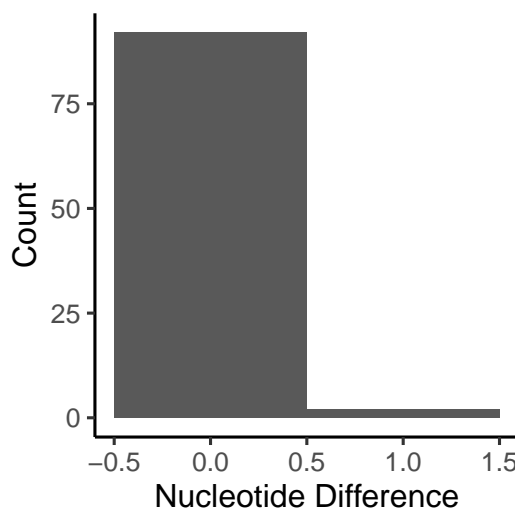
### IGHV2-26\*01

35 sequences assigned  
31 (88.6%) exact matches, in which:  
31 unique CDR3  
6 unique J



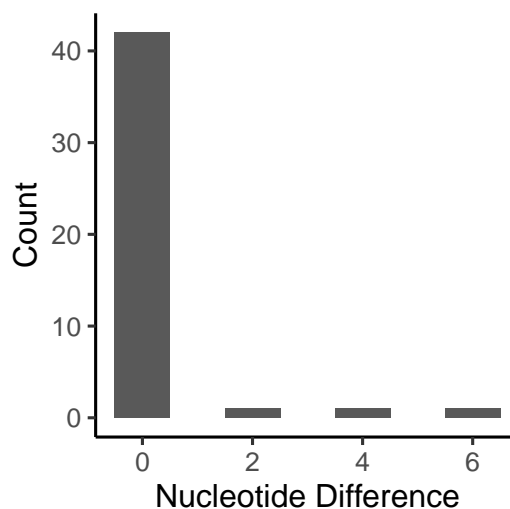
### IGHV1-69\*02

94 sequences assigned  
92 (97.9%) exact matches, in which:  
92 unique CDR3  
5 unique J



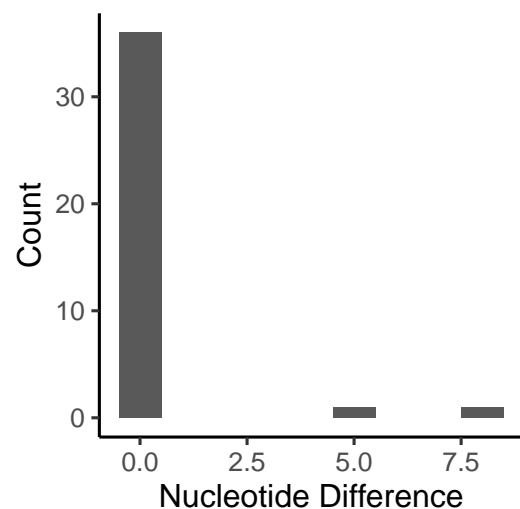
### IGHV2-5\*01

47 sequences assigned  
42 (89.4%) exact matches, in which:  
42 unique CDR3  
6 unique J



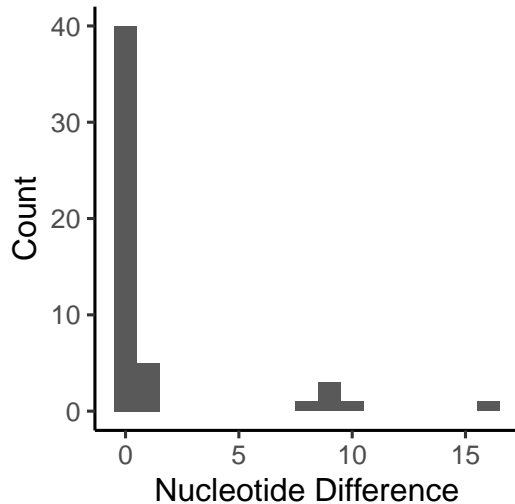
### IGHV2-70\*15

38 sequences assigned  
36 (94.7%) exact matches, in which:  
36 unique CDR3  
4 unique J



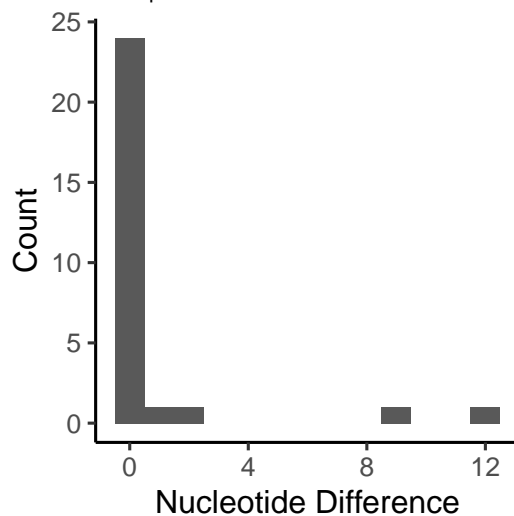
### IGHV3-7\*03

51 sequences assigned  
40 (78.4%) exact matches, in which:  
40 unique CDR3  
5 unique J



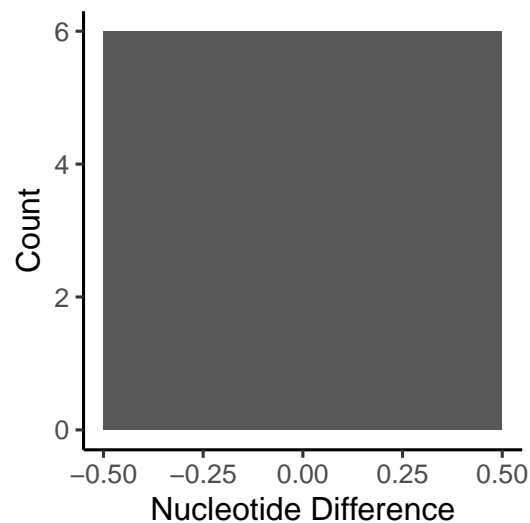
### IGHV3-11\*01

28 sequences assigned  
24 (85.7%) exact matches, in which:  
24 unique CDR3  
6 unique J



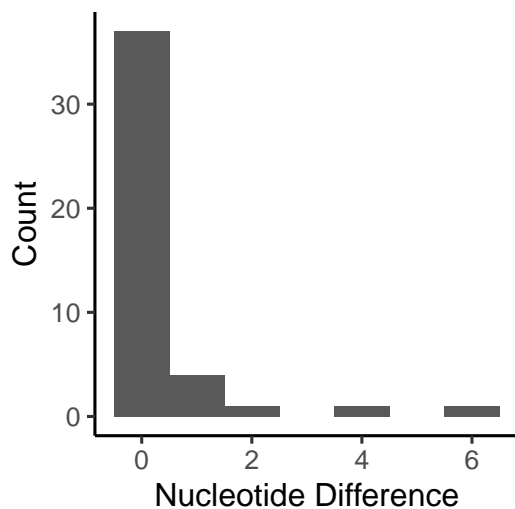
### IGHV3-13\*05

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



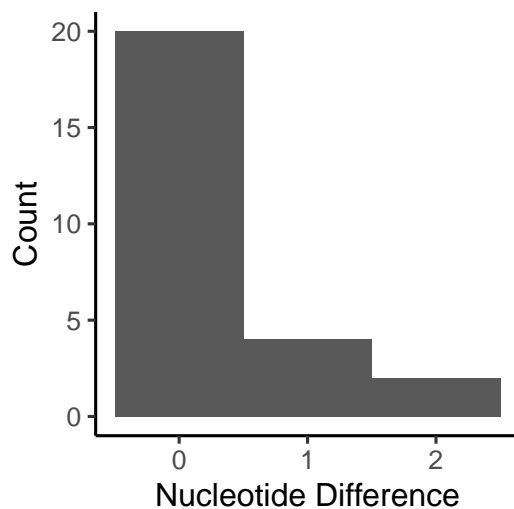
### IGHV3-7\*04

44 sequences assigned  
37 (84.1%) exact matches, in which:  
37 unique CDR3  
6 unique J



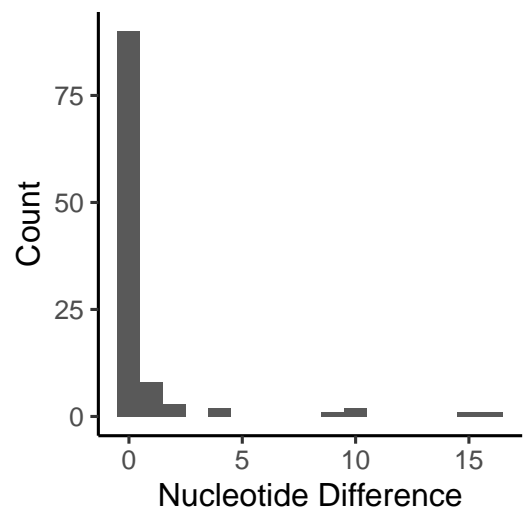
### IGHV3-11\*06

26 sequences assigned  
20 (76.9%) exact matches, in which:  
20 unique CDR3  
5 unique J



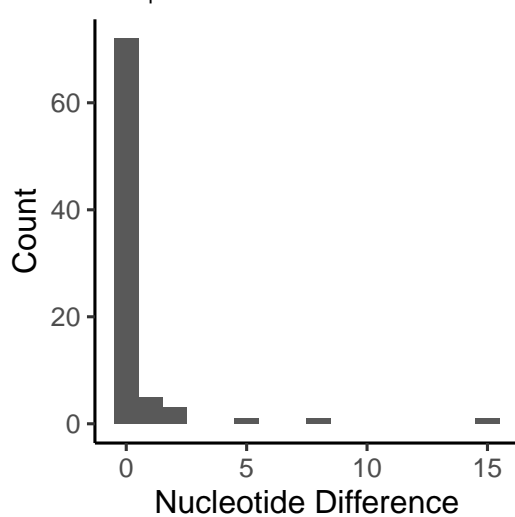
### IGHV3-15\*01

108 sequences assigned  
90 (83.3%) exact matches, in which:  
90 unique CDR3  
5 unique J



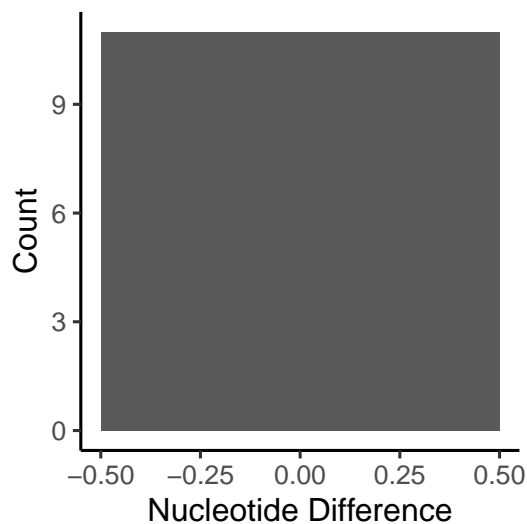
### IGHV3-9\*01

83 sequences assigned  
72 (86.7%) exact matches, in which:  
72 unique CDR3  
6 unique J



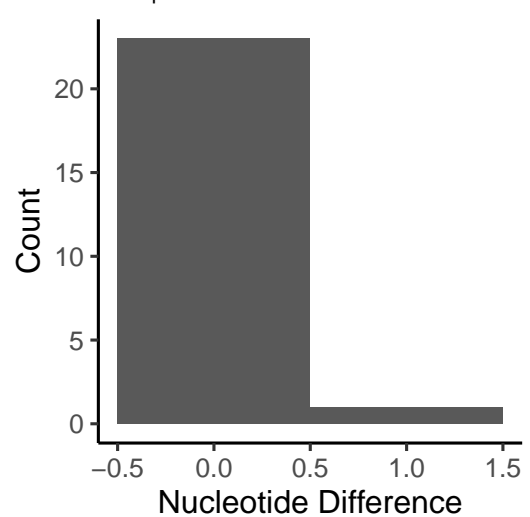
### IGHV3-13\*01

11 sequences assigned  
11 (100%) exact matches, in which:  
11 unique CDR3  
4 unique J



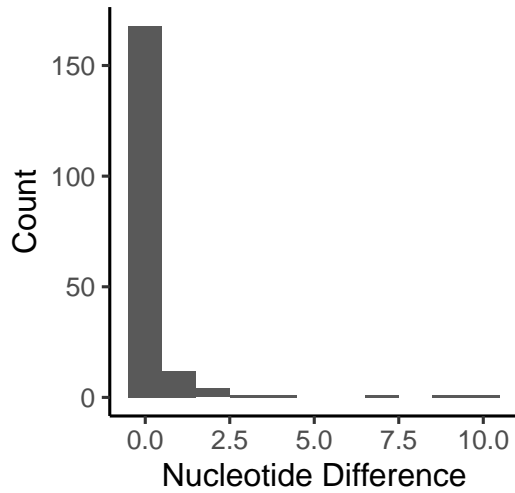
### IGHV3-20\*04

24 sequences assigned  
23 (95.8%) exact matches, in which:  
23 unique CDR3  
4 unique J



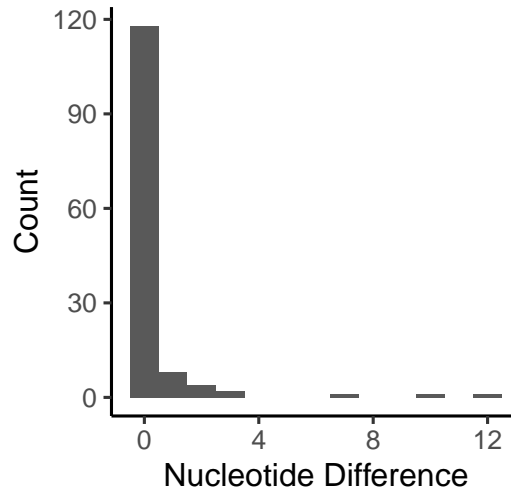
### IGHV3-21\*01

189 sequences assigned  
168 (88.9%) exact matches, in which:  
168 unique CDR3  
6 unique J



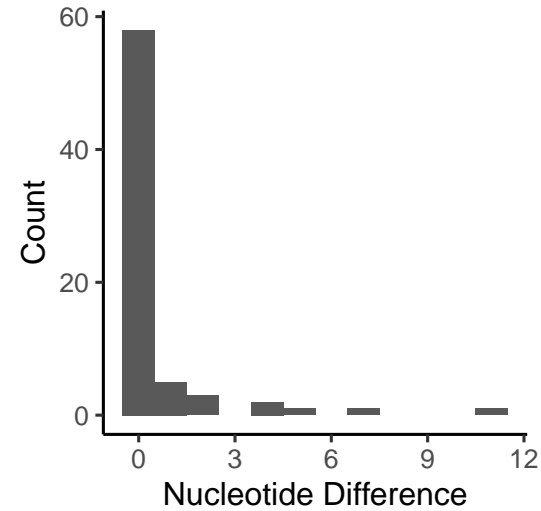
### IGHV3-30\*02

135 sequences assigned  
118 (87.4%) exact matches, in which:  
118 unique CDR3  
6 unique J



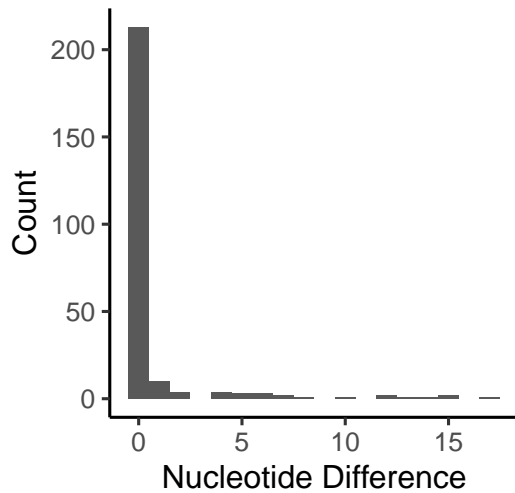
### IGHV3-33\*01

73 sequences assigned  
58 (79.5%) exact matches, in which:  
58 unique CDR3  
6 unique J



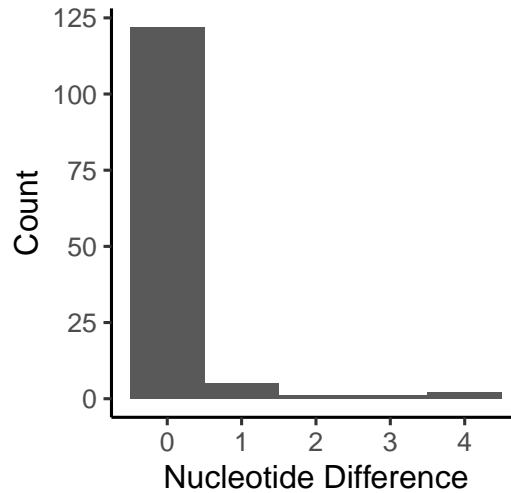
### IGHV3-23\*01

249 sequences assigned  
213 (85.5%) exact matches, in which:  
213 unique CDR3  
6 unique J



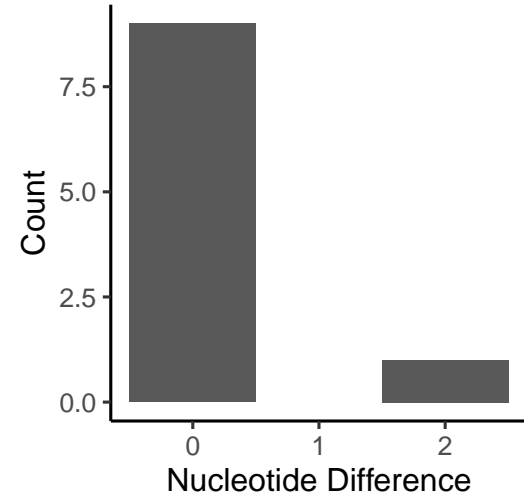
### IGHV3-30\*04

132 sequences assigned  
122 (92.4%) exact matches, in which:  
121 unique CDR3  
5 unique J



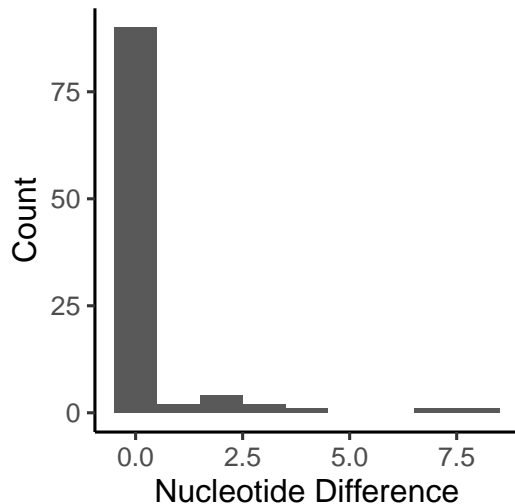
### IGHV3-43\*01

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



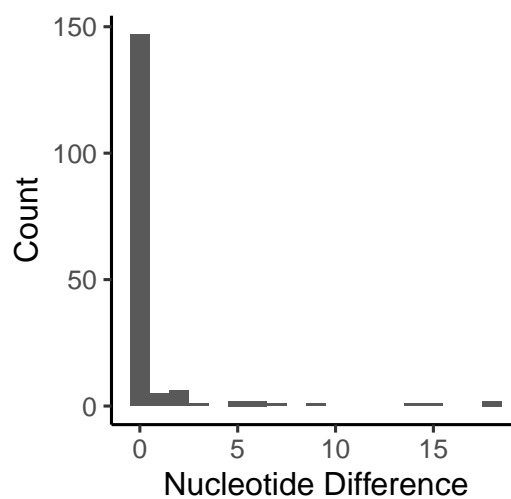
### IGHV3-30-3\*01

102 sequences assigned  
90 (88.2%) exact matches, in which:  
90 unique CDR3  
6 unique J



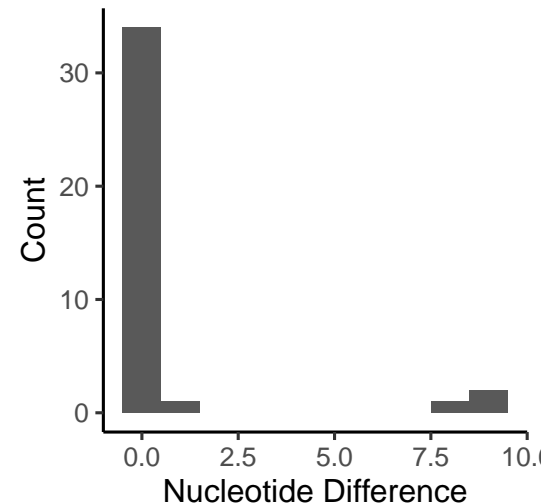
### IGHV3-30\*18

170 sequences assigned  
147 (86.5%) exact matches, in which:  
147 unique CDR3  
6 unique J



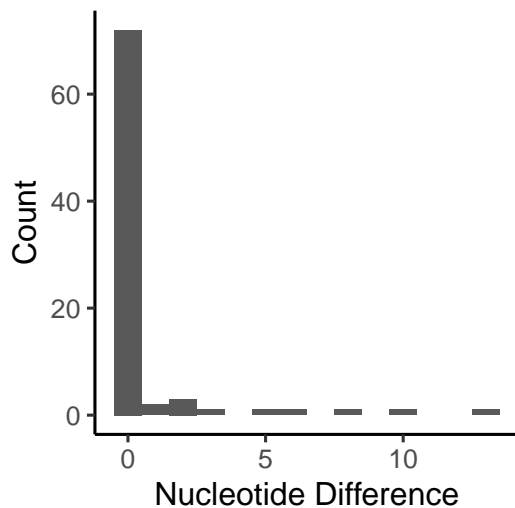
### IGHV3-43\*02

38 sequences assigned  
34 (89.5%) exact matches, in which:  
34 unique CDR3  
5 unique J



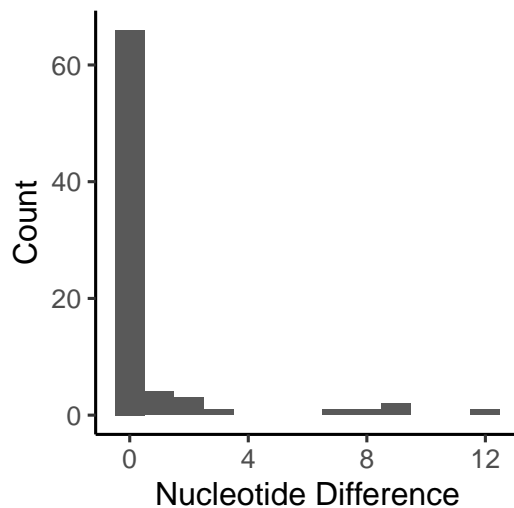
### IGHV3-48\*02

83 sequences assigned  
72 (86.7%) exact matches, in which:  
72 unique CDR3  
5 unique J



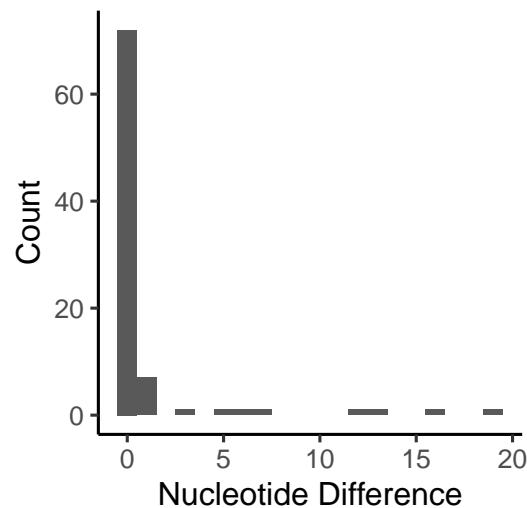
### IGHV3-53\*01

80 sequences assigned  
66 (82.5%) exact matches, in which:  
66 unique CDR3  
6 unique J



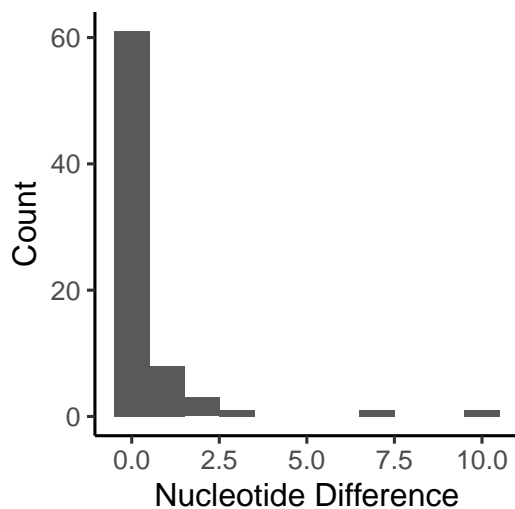
### IGHV3-66\*01

87 sequences assigned  
72 (82.8%) exact matches, in which:  
72 unique CDR3  
5 unique J



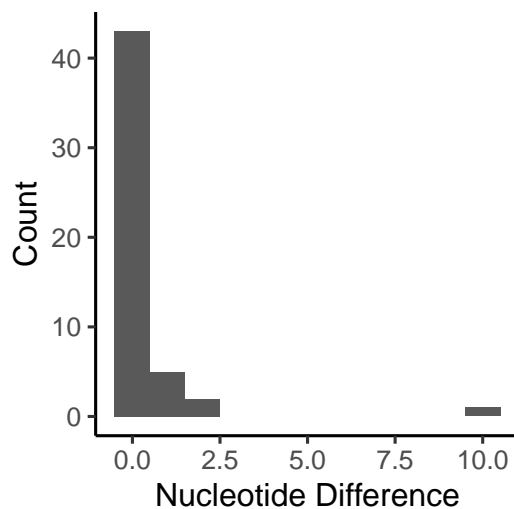
### IGHV3-48\*03

77 sequences assigned  
61 (79.2%) exact matches, in which:  
61 unique CDR3  
6 unique J



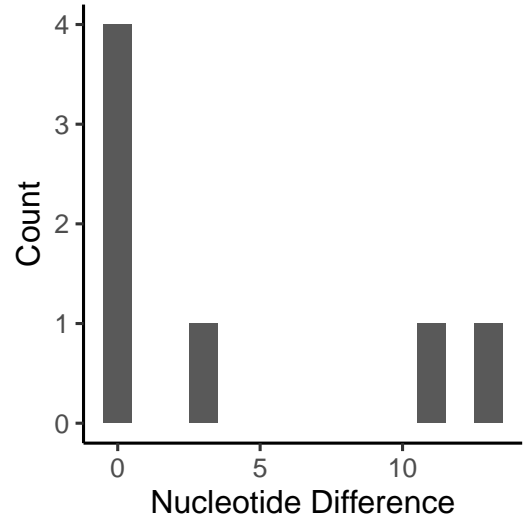
### IGHV3-53\*04

51 sequences assigned  
43 (84.3%) exact matches, in which:  
43 unique CDR3  
5 unique J



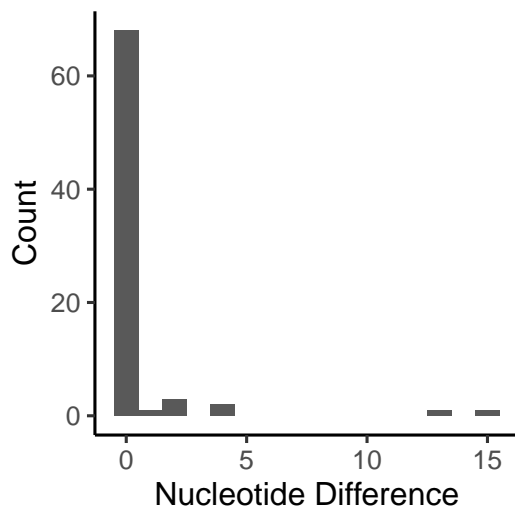
### IGHV3-72\*01

7 sequences assigned  
4 (57.1%) exact matches, in which:  
4 unique CDR3  
4 unique J



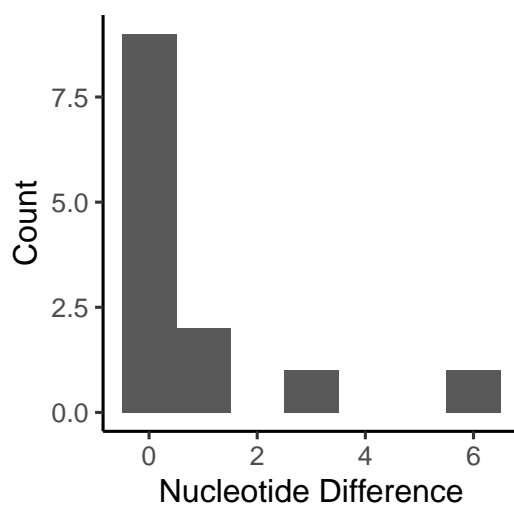
### IGHV3-49\*04

76 sequences assigned  
68 (89.5%) exact matches, in which:  
68 unique CDR3  
5 unique J



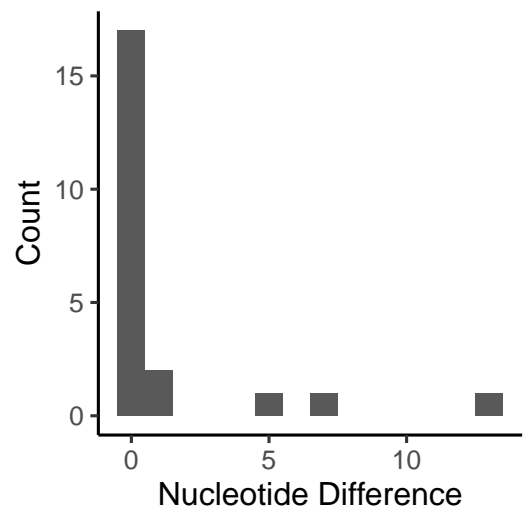
### IGHV3-64\*01

13 sequences assigned  
9 (69.2%) exact matches, in which:  
9 unique CDR3  
3 unique J



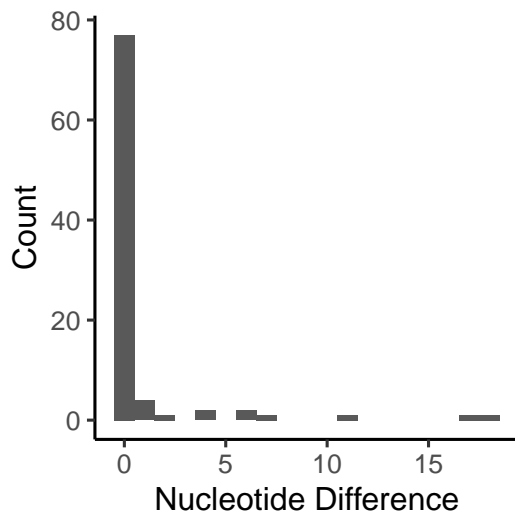
### IGHV3-73\*01

22 sequences assigned  
17 (77.3%) exact matches, in which:  
17 unique CDR3  
4 unique J



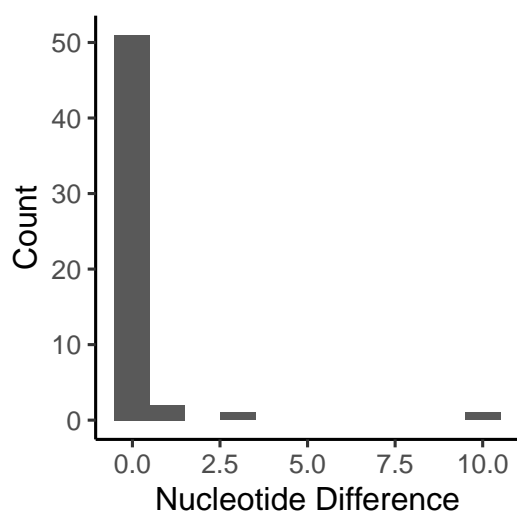
### IGHV3-74\*01

92 sequences assigned  
77 (83.7%) exact matches, in which:  
77 unique CDR3  
5 unique J



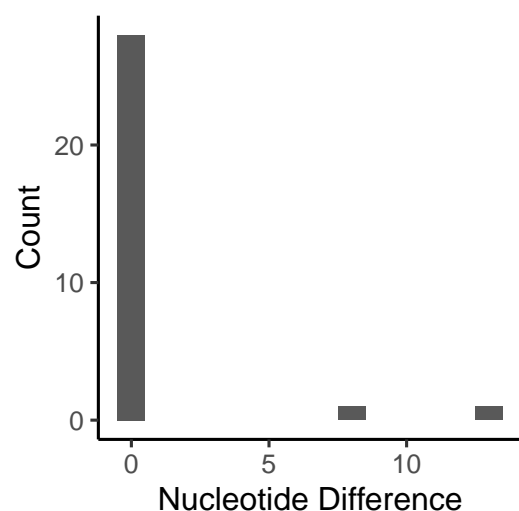
### IGHV4-4\*02

56 sequences assigned  
51 (91.1%) exact matches, in which:  
51 unique CDR3  
4 unique J



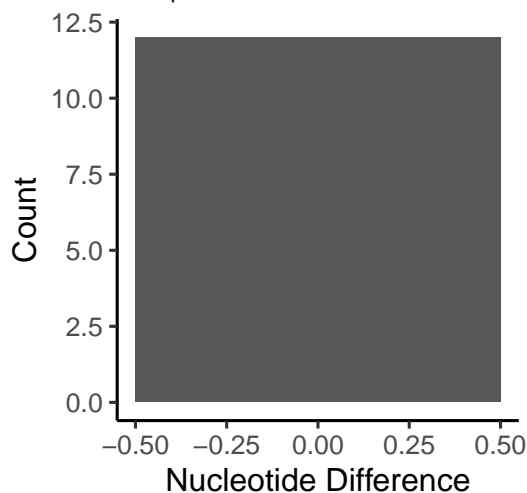
### IGHV4-30-4\*01

30 sequences assigned  
28 (93.3%) exact matches, in which:  
28 unique CDR3  
5 unique J



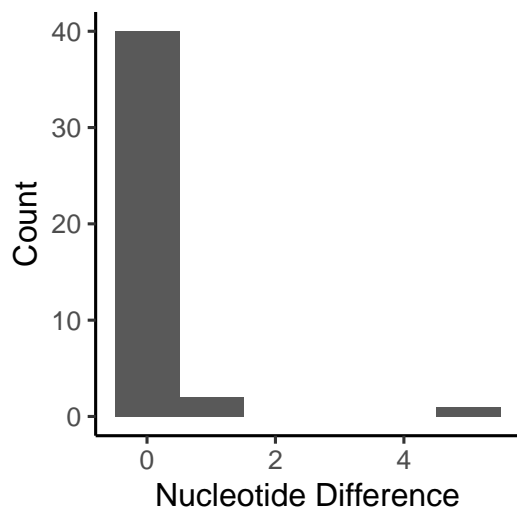
### IGHV3-43D\*03

12 sequences assigned  
12 (100%) exact matches, in which:  
12 unique CDR3  
4 unique J



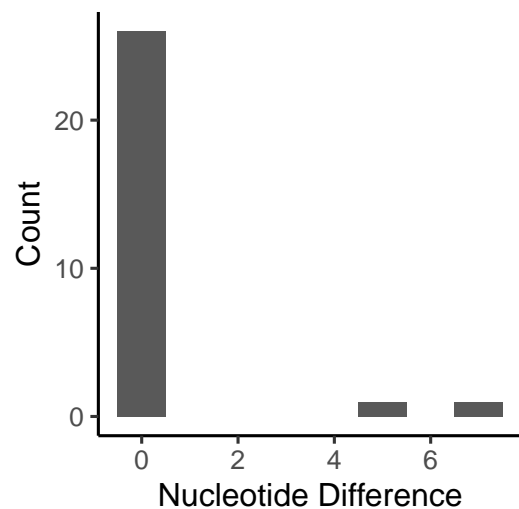
### IGHV4-4\*07

43 sequences assigned  
40 (93%) exact matches, in which:  
40 unique CDR3  
5 unique J



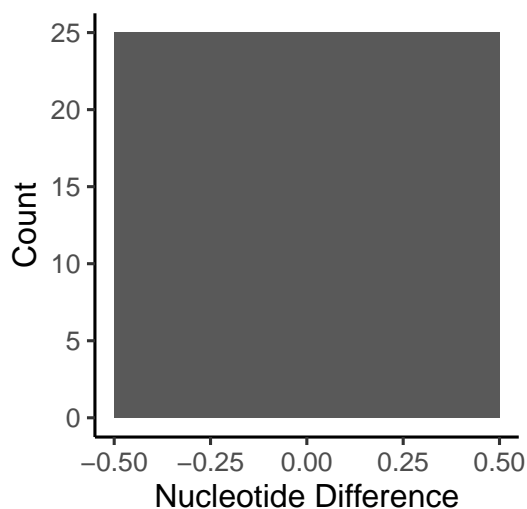
### IGHV4-30-2\*01

28 sequences assigned  
26 (92.9%) exact matches, in which:  
26 unique CDR3  
5 unique J



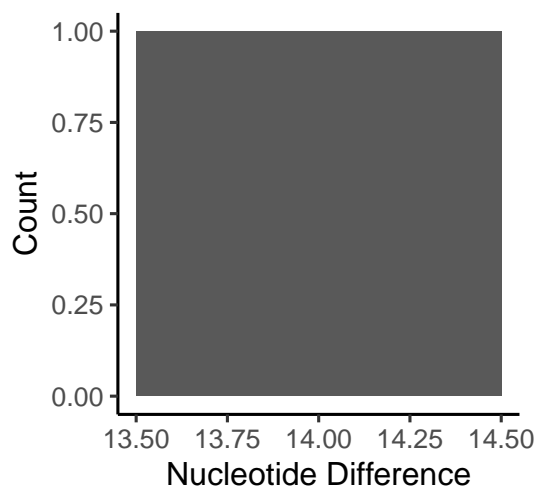
### IGHV3-64D\*06

25 sequences assigned  
25 (100%) exact matches, in which:  
25 unique CDR3  
5 unique J



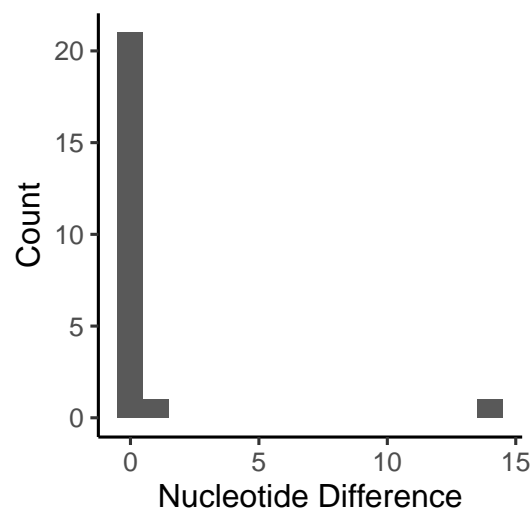
### IGHV4-28\*01

1 sequences assigned  
No exact matches.



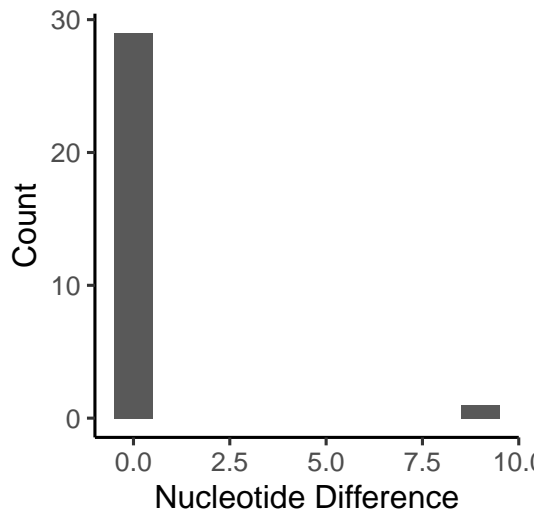
### IGHV4-30-4\*07

23 sequences assigned  
21 (91.3%) exact matches, in which:  
21 unique CDR3  
5 unique J



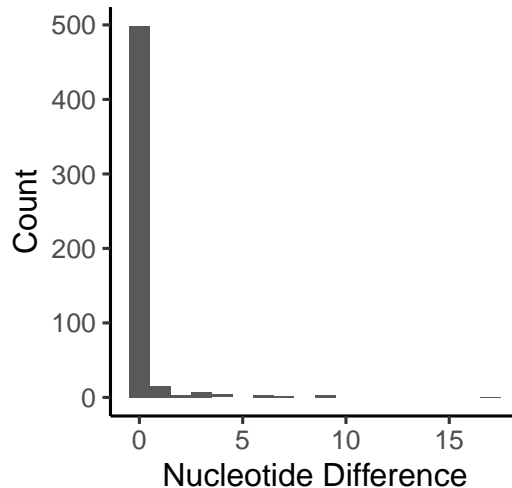
### IGHV4-31\*03

30 sequences assigned  
29 (96.7%) exact matches, in which:  
29 unique CDR3  
4 unique J



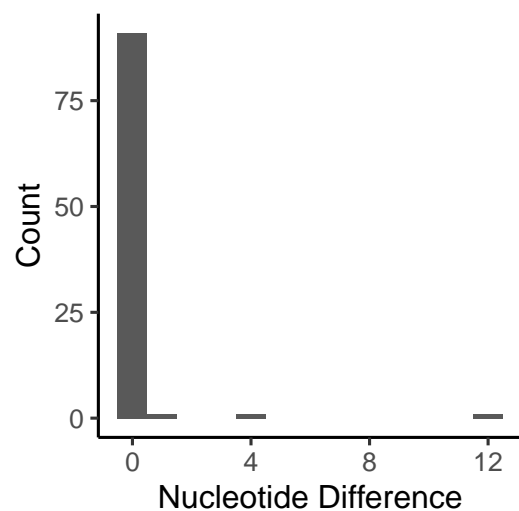
### IGHV4-39\*01

539 sequences assigned  
499 (92.6%) exact matches, in which:  
498 unique CDR3  
6 unique J



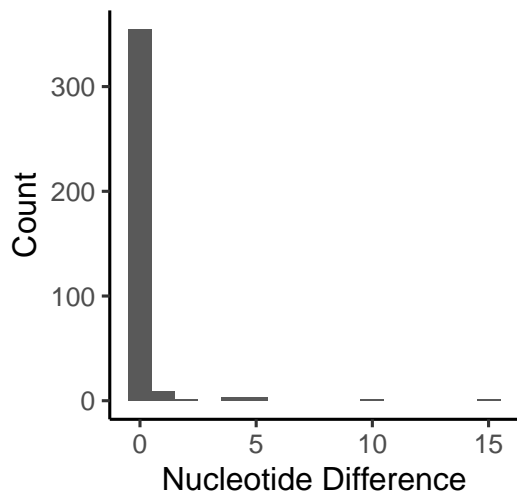
### IGHV5-10-1\*03

95 sequences assigned  
91 (95.8%) exact matches, in which:  
90 unique CDR3  
5 unique J



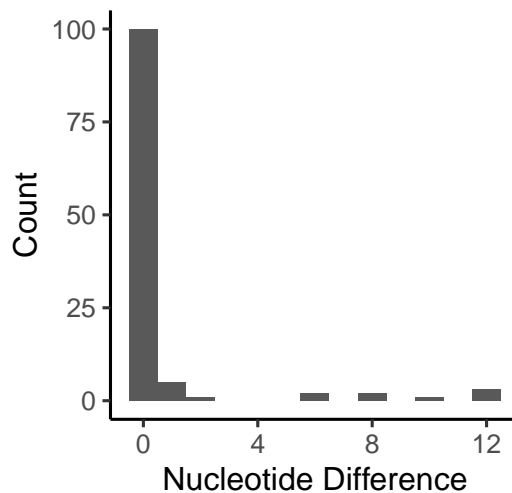
### IGHV4-34\*01

373 sequences assigned  
355 (95.2%) exact matches, in which:  
355 unique CDR3  
6 unique J



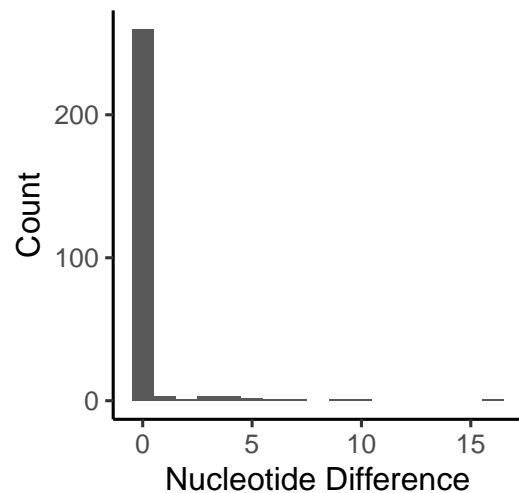
### IGHV4-59\*01

114 sequences assigned  
100 (87.7%) exact matches, in which:  
100 unique CDR3  
6 unique J



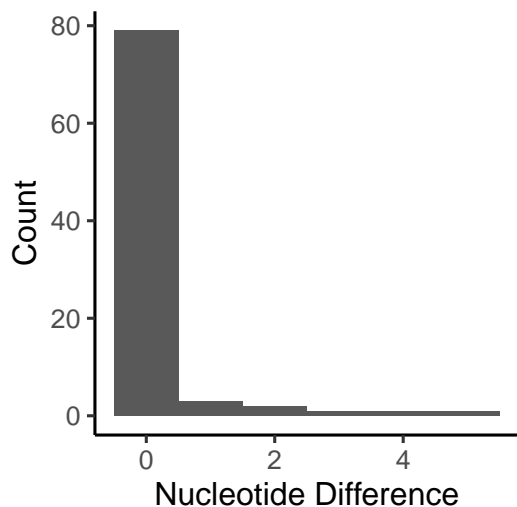
### IGHV5-51\*01

277 sequences assigned  
260 (93.9%) exact matches, in which:  
260 unique CDR3  
6 unique J



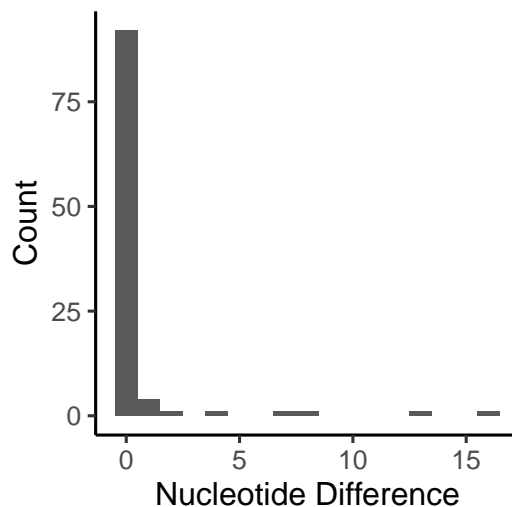
### IGHV4-38-2\*02

87 sequences assigned  
79 (90.8%) exact matches, in which:  
79 unique CDR3  
5 unique J



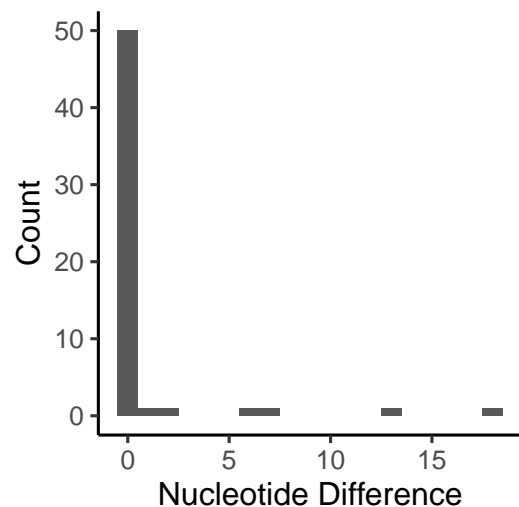
### IGHV4-59\*08

102 sequences assigned  
92 (90.2%) exact matches, in which:  
92 unique CDR3  
6 unique J



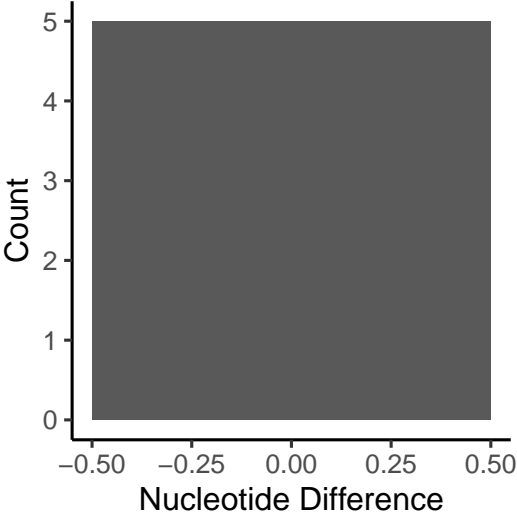
### IGHV6-1\*01

56 sequences assigned  
50 (89.3%) exact matches, in which:  
50 unique CDR3  
5 unique J



# IGHV7-4-1\*01

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







Warning – no inferred sequences found.