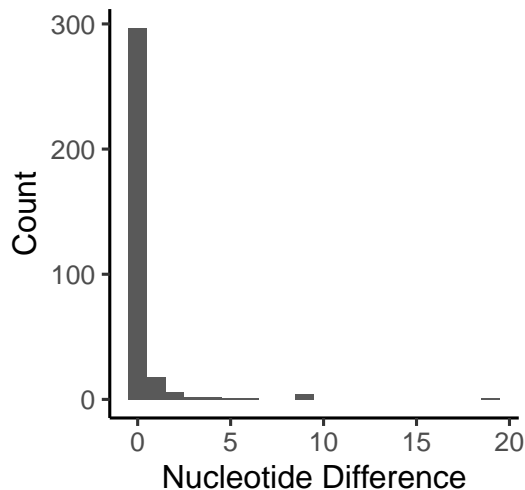


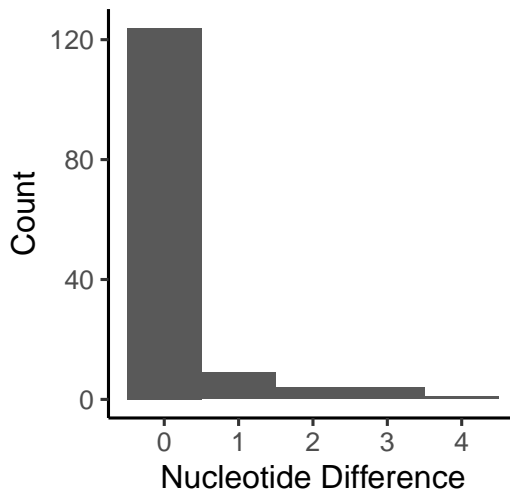
### IGHV1-2\*02

332 sequences assigned  
297 (89.5%) exact matches, in which:  
297 unique CDR3  
6 unique J



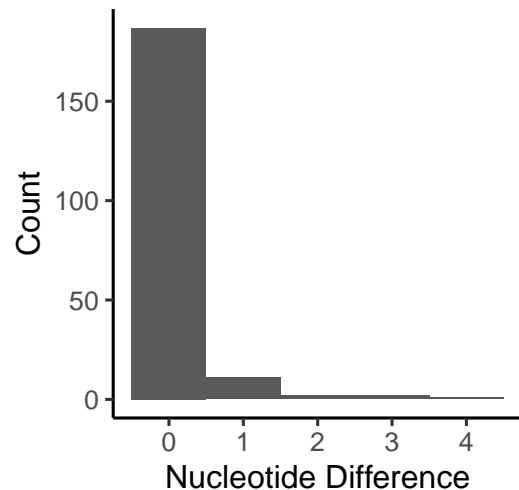
### IGHV1-8\*01

142 sequences assigned  
124 (87.3%) exact matches, in which:  
124 unique CDR3  
5 unique J



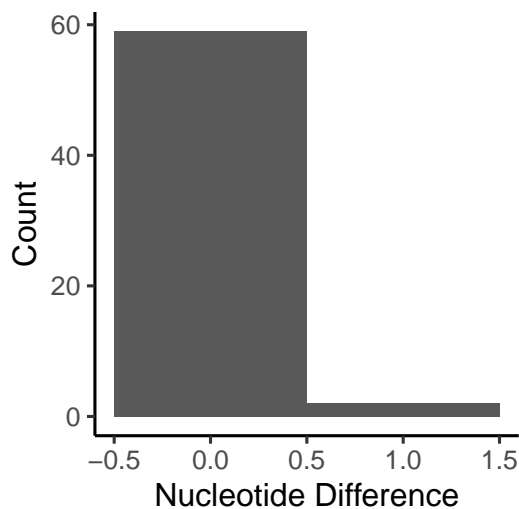
### IGHV1-24\*01

203 sequences assigned  
187 (92.1%) exact matches, in which:  
187 unique CDR3  
6 unique J



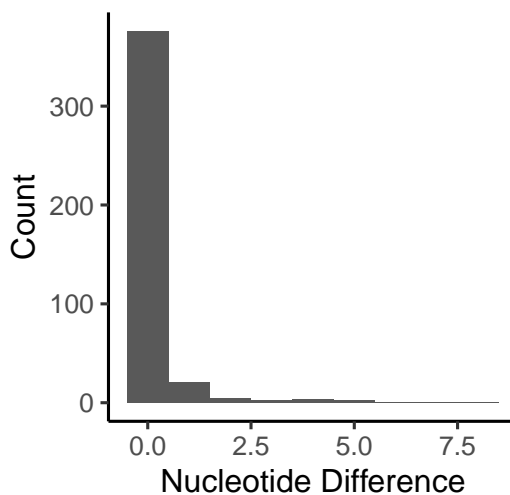
### IGHV1-2\*04

61 sequences assigned  
59 (96.7%) exact matches, in which:  
59 unique CDR3  
6 unique J



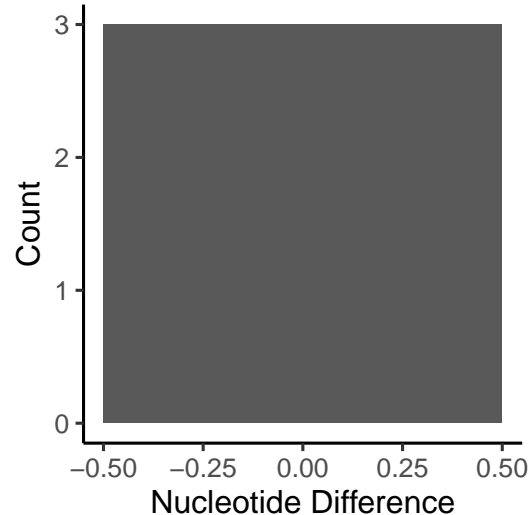
### IGHV1-18\*01

415 sequences assigned  
376 (90.6%) exact matches, in which:  
376 unique CDR3  
6 unique J



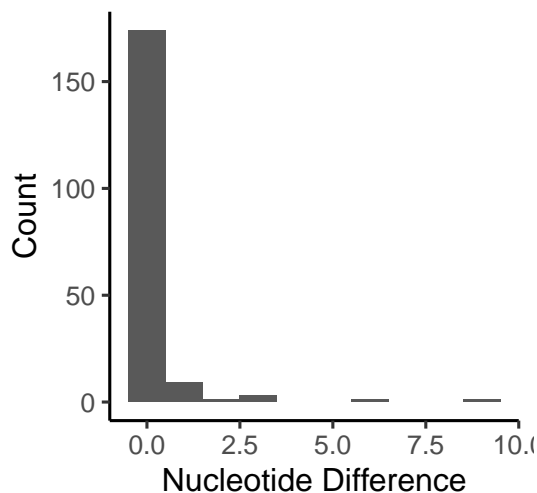
### IGHV1-45\*02

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



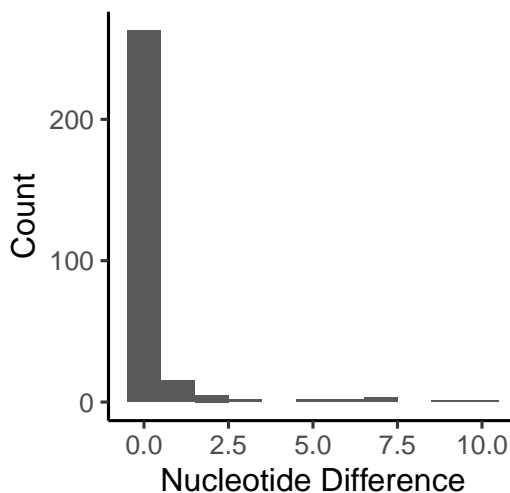
### IGHV1-3\*01

190 sequences assigned  
174 (91.6%) exact matches, in which:  
174 unique CDR3  
6 unique J



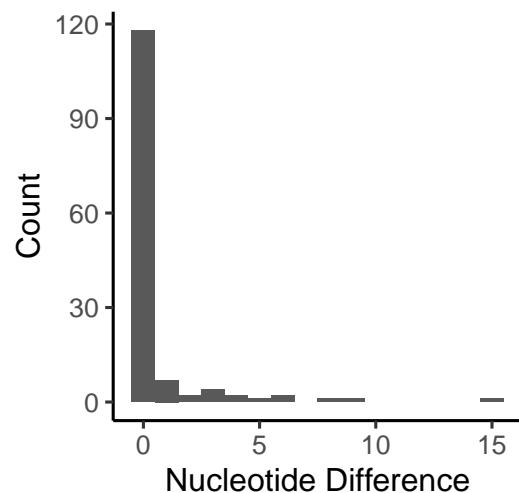
### IGHV1-18\*04

294 sequences assigned  
263 (89.5%) exact matches, in which:  
263 unique CDR3  
6 unique J



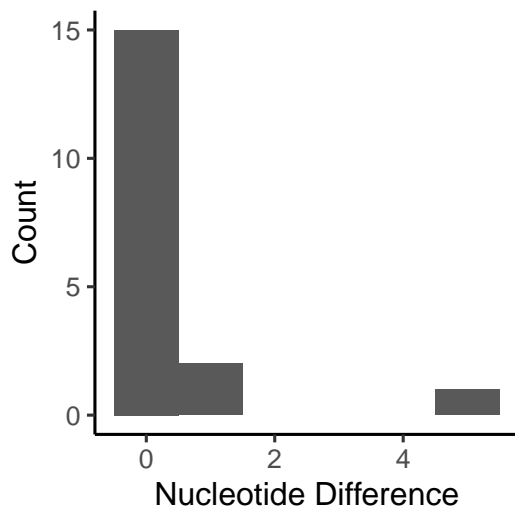
### IGHV1-46\*01

139 sequences assigned  
118 (84.9%) exact matches, in which:  
118 unique CDR3  
6 unique J



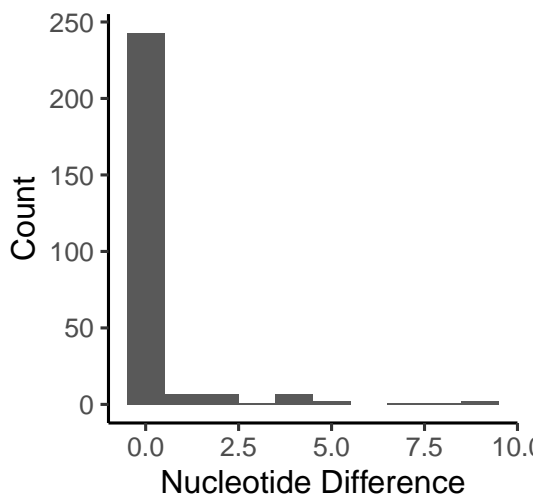
### IGHV1-58\*02

18 sequences assigned  
15 (83.3%) exact matches, in which:  
15 unique CDR3  
5 unique J



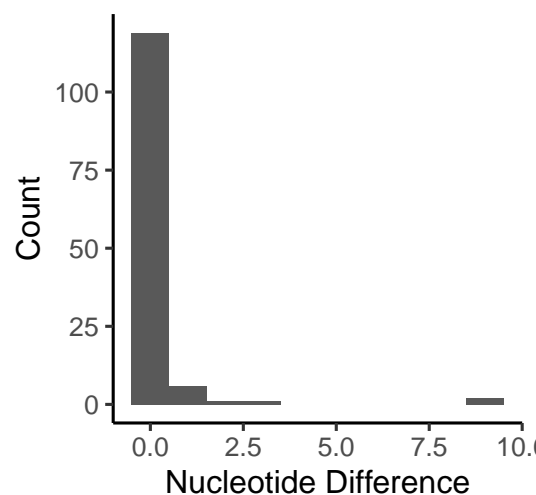
### IGHV2-5\*01

271 sequences assigned  
243 (89.7%) exact matches, in which:  
243 unique CDR3  
6 unique J



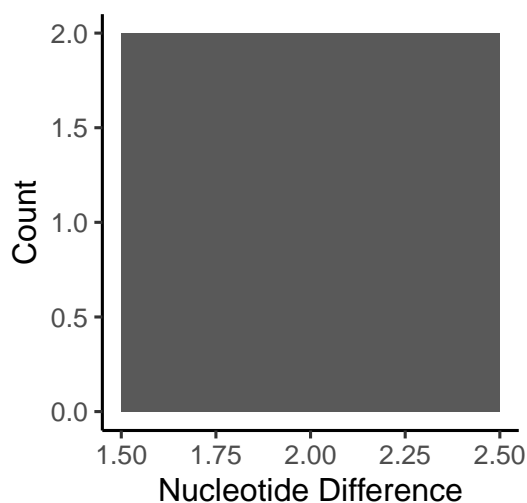
### IGHV2-70\*15

129 sequences assigned  
119 (92.2%) exact matches, in which:  
119 unique CDR3  
5 unique J



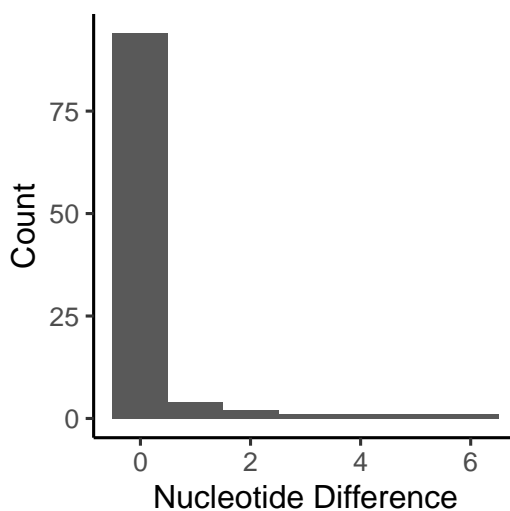
### IGHV1-68\*02

2 sequences assigned  
No exact matches.



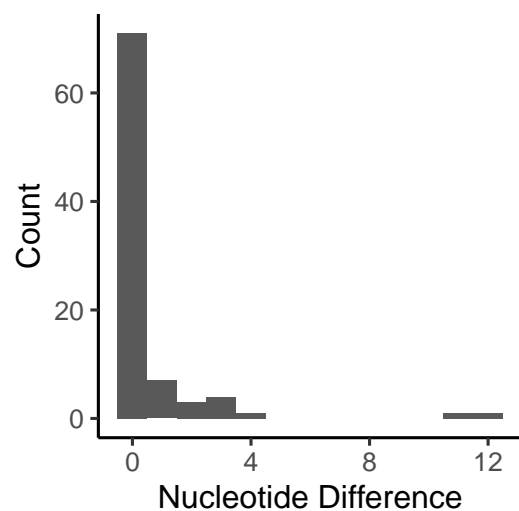
### IGHV2-5\*02

104 sequences assigned  
94 (90.4%) exact matches, in which:  
94 unique CDR3  
6 unique J



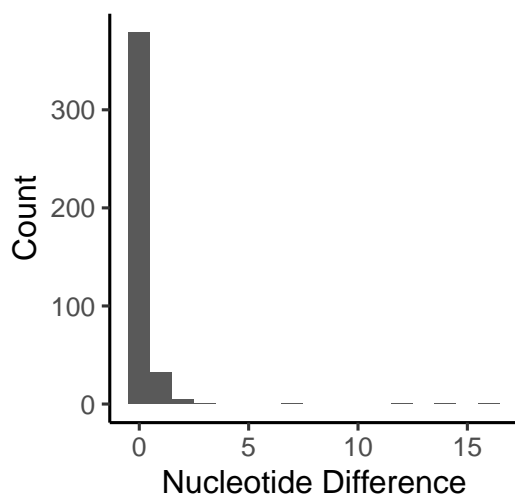
### IGHV3-7\*01

90 sequences assigned  
71 (78.9%) exact matches, in which:  
71 unique CDR3  
5 unique J



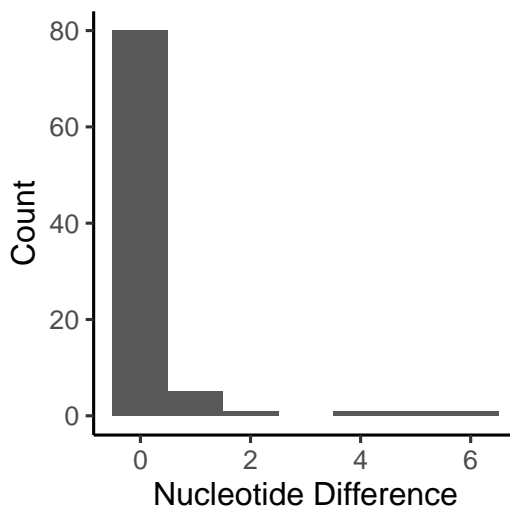
### IGHV1-69\*04

421 sequences assigned  
379 (90%) exact matches, in which:  
379 unique CDR3  
6 unique J



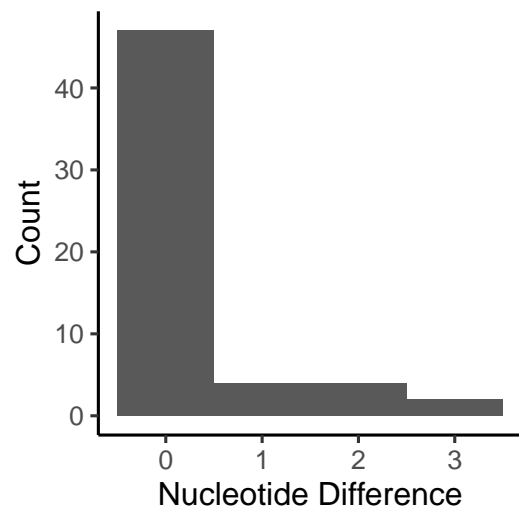
### IGHV2-26\*01

89 sequences assigned  
80 (89.9%) exact matches, in which:  
80 unique CDR3  
5 unique J



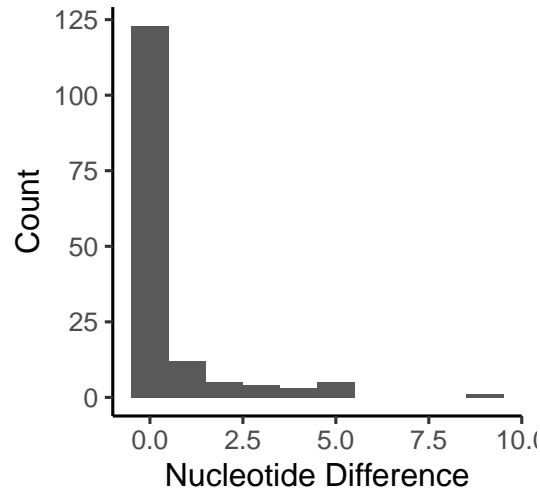
### IGHV3-7\*03

57 sequences assigned  
47 (82.5%) exact matches, in which:  
47 unique CDR3  
5 unique J



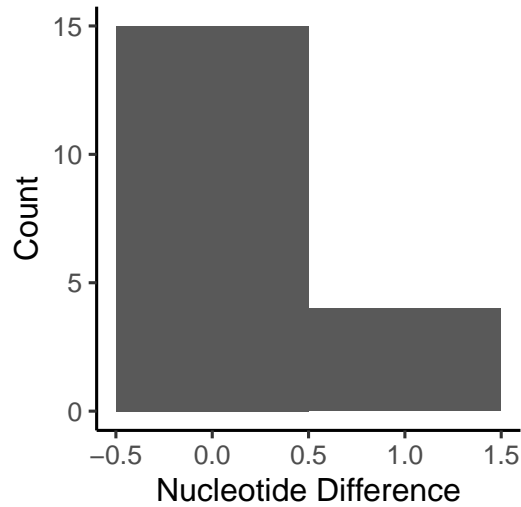
### IGHV3-9\*01

153 sequences assigned  
123 (80.4%) exact matches, in which:  
123 unique CDR3  
6 unique J



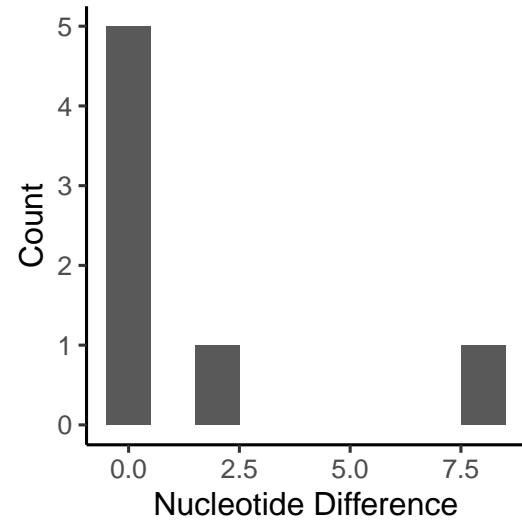
### IGHV3-13\*01

19 sequences assigned  
15 (78.9%) exact matches, in which:  
15 unique CDR3  
4 unique J



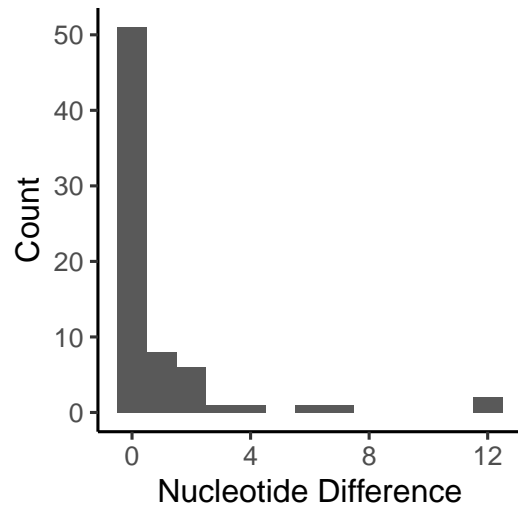
### IGHV3-20\*01

7 sequences assigned  
5 (71.4%) exact matches, in which:  
5 unique CDR3  
3 unique J



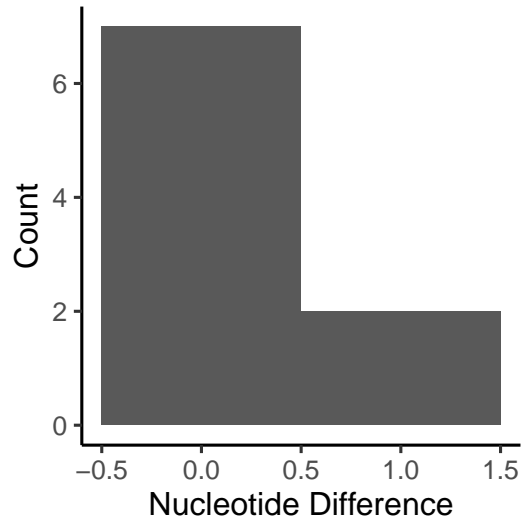
### IGHV3-11\*01

71 sequences assigned  
51 (71.8%) exact matches, in which:  
51 unique CDR3  
6 unique J



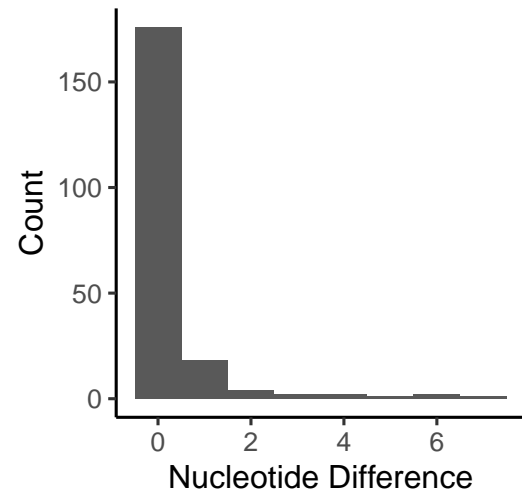
### IGHV3-13\*05

9 sequences assigned  
7 (77.8%) exact matches, in which:  
7 unique CDR3  
4 unique J



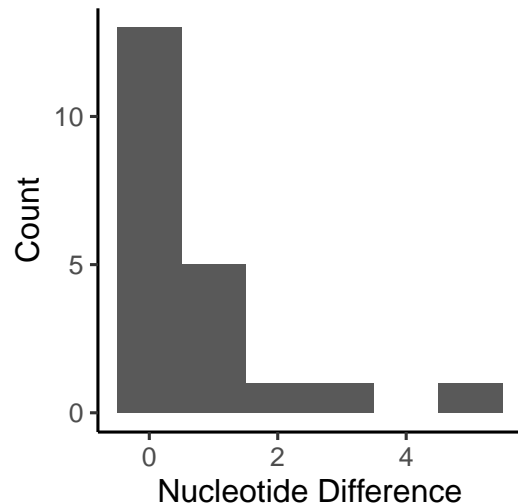
### IGHV3-21\*01

206 sequences assigned  
176 (85.4%) exact matches, in which:  
176 unique CDR3  
6 unique J



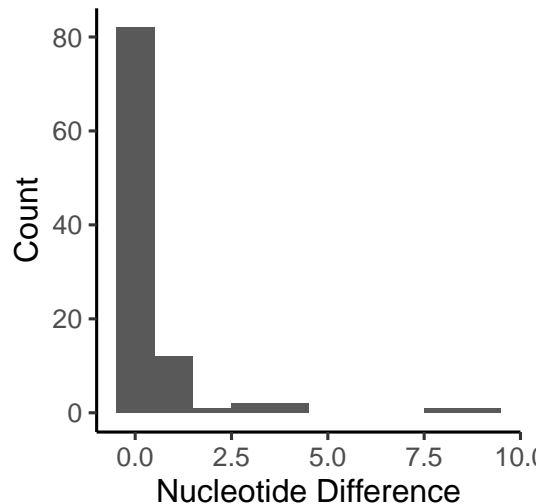
### IGHV3-11\*06

22 sequences assigned  
13 (59.1%) exact matches, in which:  
13 unique CDR3  
3 unique J



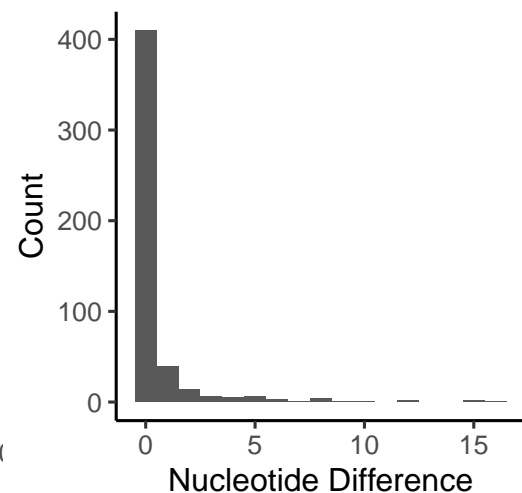
### IGHV3-15\*01

101 sequences assigned  
82 (81.2%) exact matches, in which:  
81 unique CDR3  
6 unique J



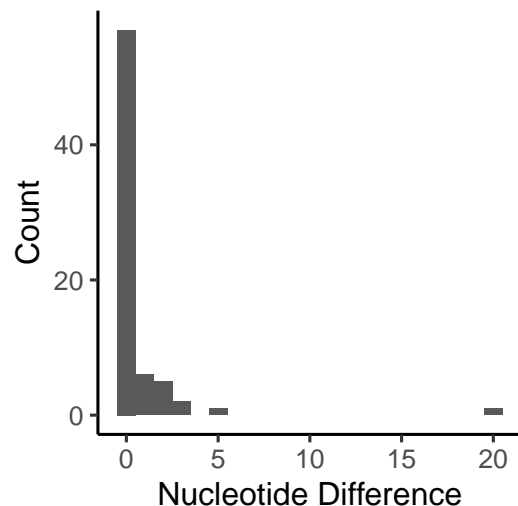
### IGHV3-23\*01

496 sequences assigned  
410 (82.7%) exact matches, in which:  
410 unique CDR3  
6 unique J



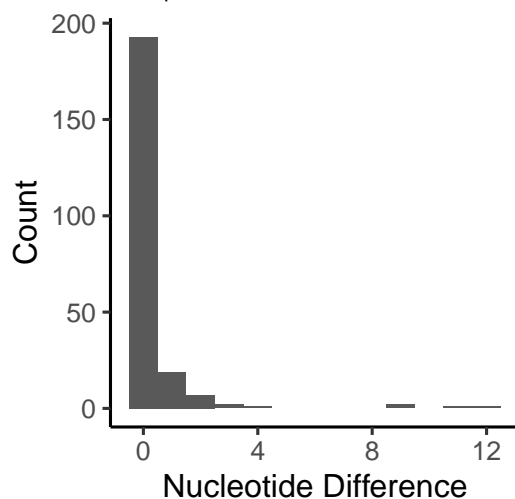
### IGHV3-30-3\*01

72 sequences assigned  
57 (79.2%) exact matches, in which:  
57 unique CDR3  
4 unique J



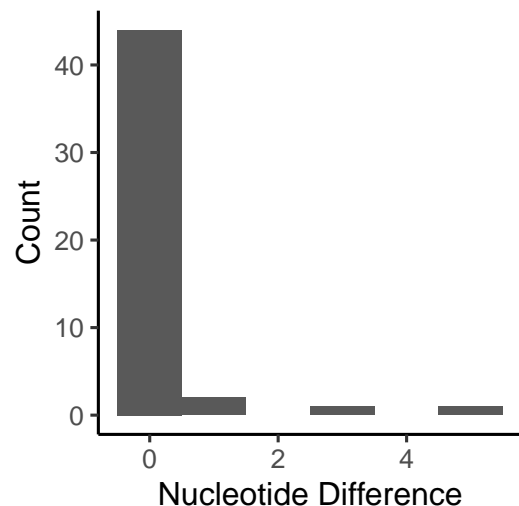
### IGHV3-33\*01

227 sequences assigned  
193 (85%) exact matches, in which:  
193 unique CDR3  
6 unique J



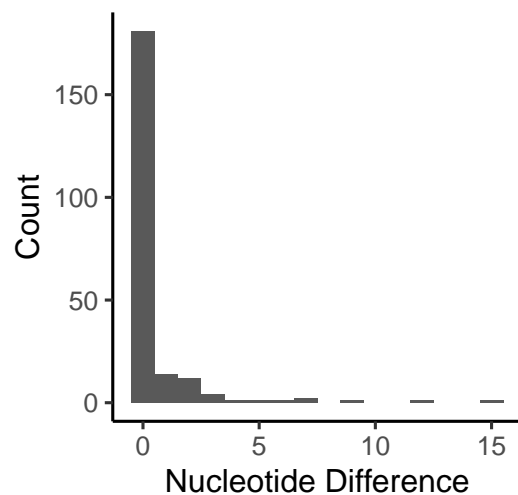
### IGHV3-48\*02

48 sequences assigned  
44 (91.7%) exact matches, in which:  
44 unique CDR3  
5 unique J



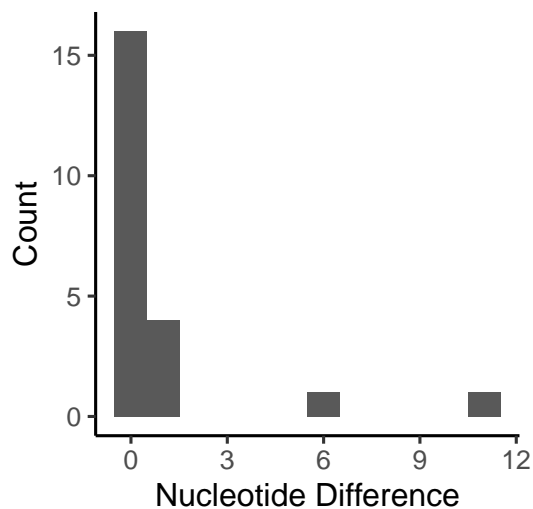
### IGHV3-30\*03

220 sequences assigned  
181 (82.3%) exact matches, in which:  
181 unique CDR3  
6 unique J



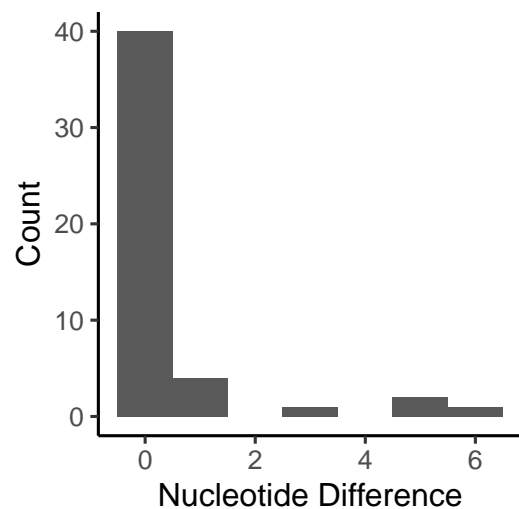
### IGHV3-43\*01

22 sequences assigned  
16 (72.7%) exact matches, in which:  
16 unique CDR3  
4 unique J



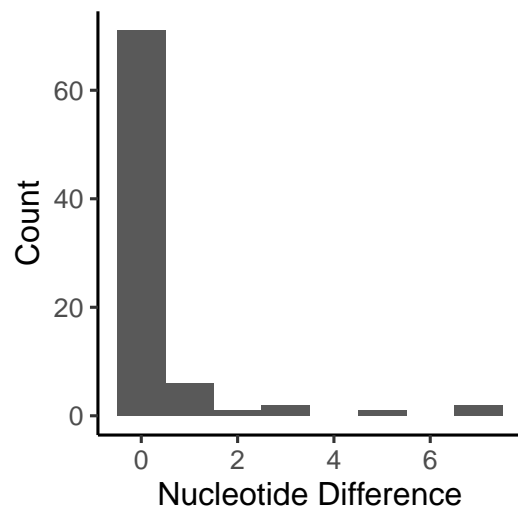
### IGHV3-49\*03

48 sequences assigned  
40 (83.3%) exact matches, in which:  
40 unique CDR3  
5 unique J



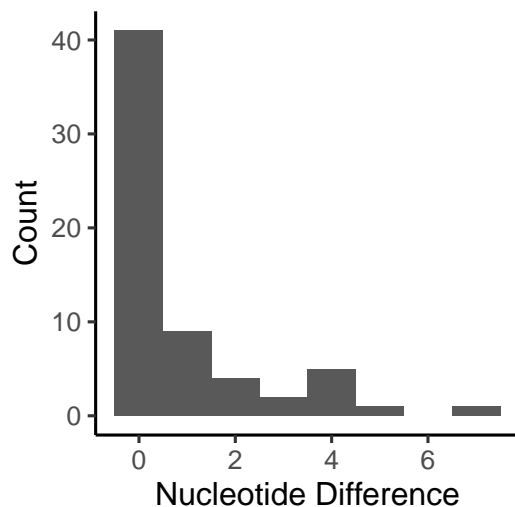
### IGHV3-30\*18

83 sequences assigned  
71 (85.5%) exact matches, in which:  
71 unique CDR3  
6 unique J



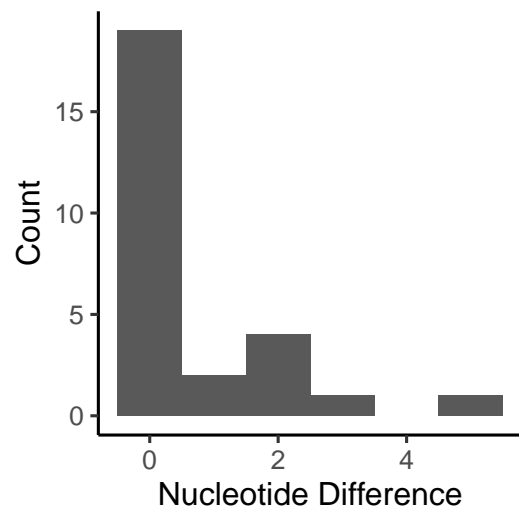
### IGHV3-48\*01

63 sequences assigned  
41 (65.1%) exact matches, in which:  
41 unique CDR3  
5 unique J



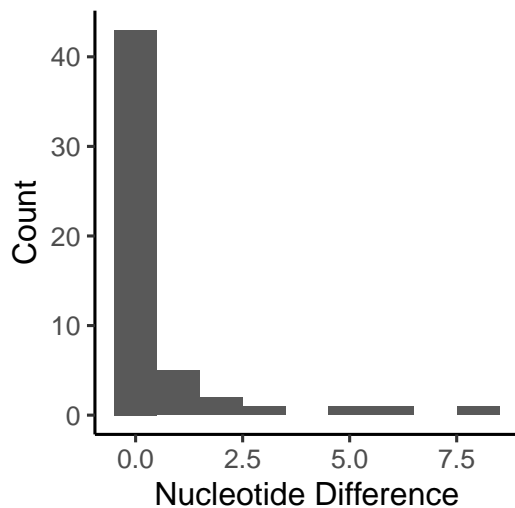
### IGHV3-49\*05

27 sequences assigned  
19 (70.4%) exact matches, in which:  
19 unique CDR3  
4 unique J



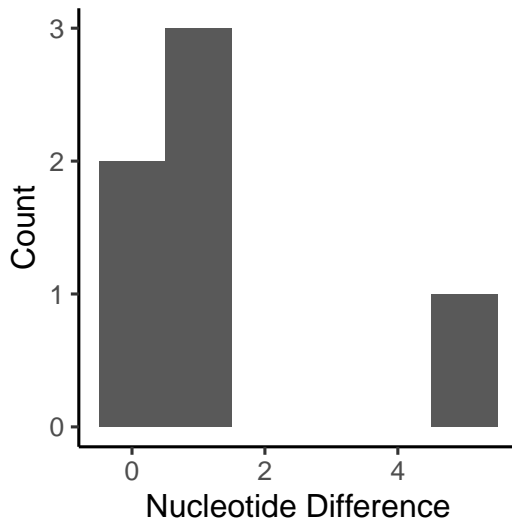
### IGHV3-53\*01

54 sequences assigned  
43 (79.6%) exact matches, in which:  
43 unique CDR3  
6 unique J



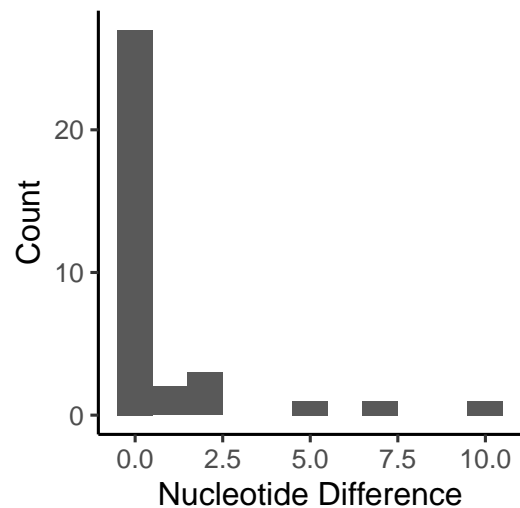
### IGHV3-72\*01

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



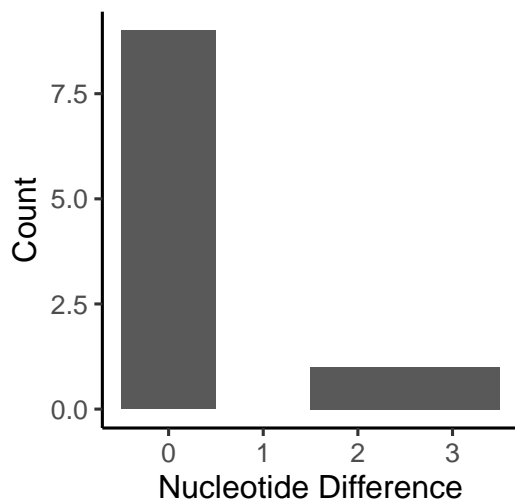
### IGHV3-64D\*06

35 sequences assigned  
27 (77.1%) exact matches, in which:  
27 unique CDR3  
5 unique J



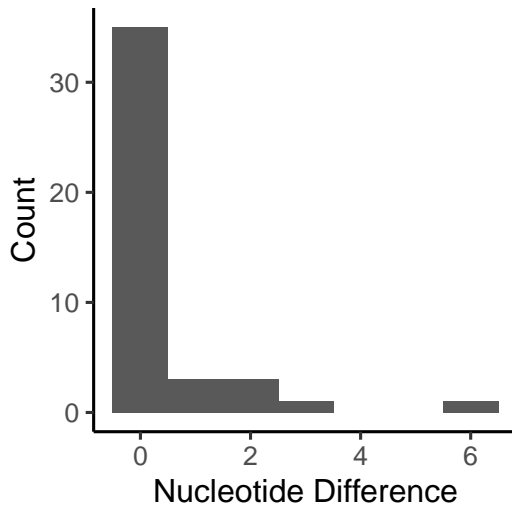
### IGHV3-64\*01

11 sequences assigned  
9 (81.8%) exact matches, in which:  
9 unique CDR3  
3 unique J



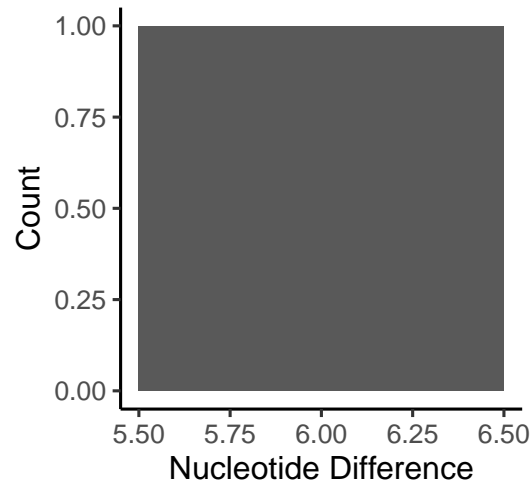
### IGHV3-73\*01

43 sequences assigned  
35 (81.4%) exact matches, in which:  
35 unique CDR3  
6 unique J



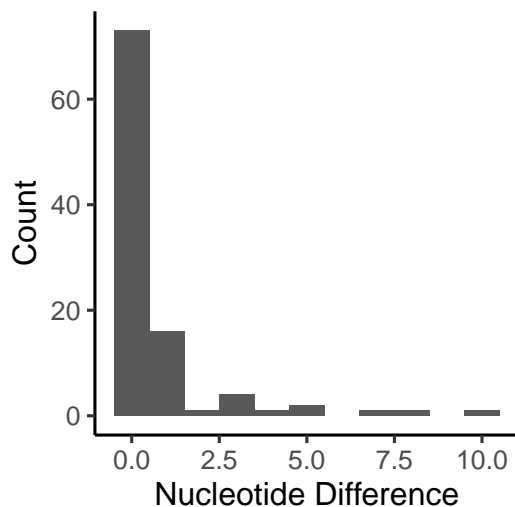
### IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



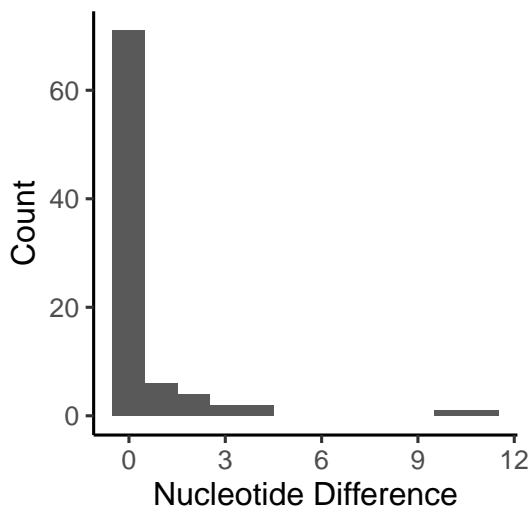
### IGHV3-66\*01

100 sequences assigned  
73 (73%) exact matches, in which:  
73 unique CDR3  
5 unique J



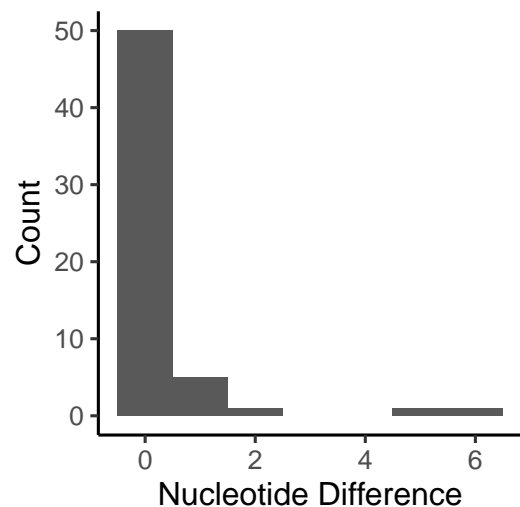
### IGHV3-74\*01

87 sequences assigned  
71 (81.6%) exact matches, in which:  
71 unique CDR3  
6 unique J



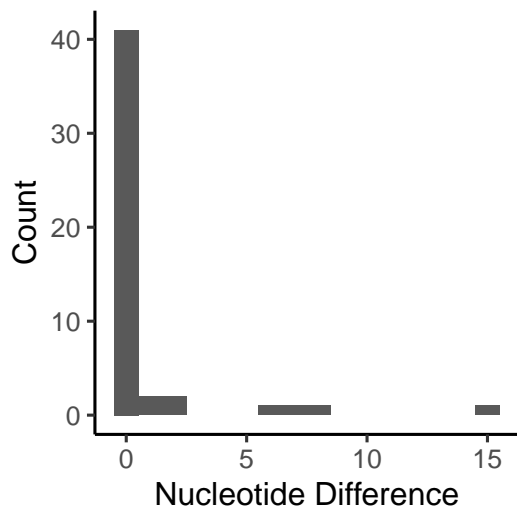
### IGHV4-4\*02

58 sequences assigned  
50 (86.2%) exact matches, in which:  
50 unique CDR3  
4 unique J



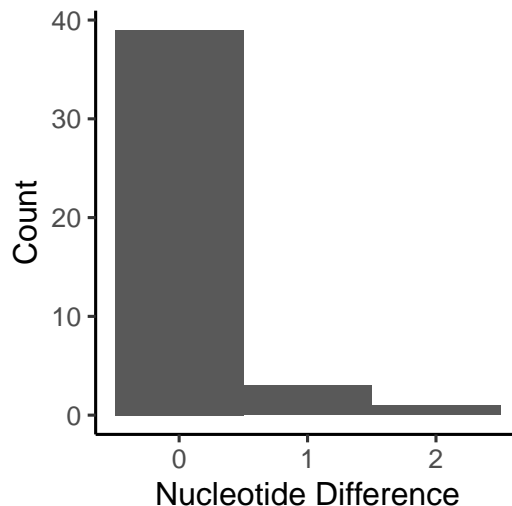
### IGHV4-4\*07

49 sequences assigned  
41 (83.7%) exact matches, in which:  
41 unique CDR3  
5 unique J



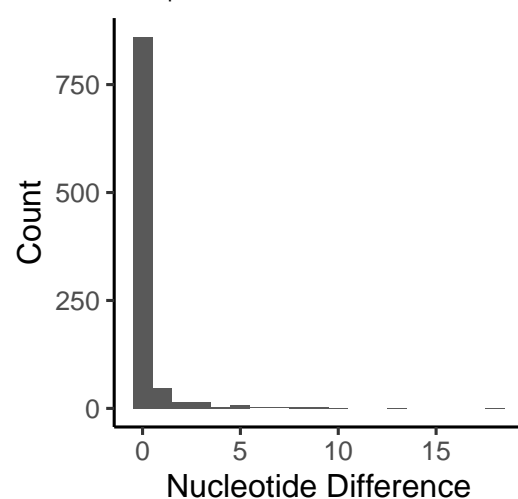
### IGHV4-30-4\*01

43 sequences assigned  
39 (90.7%) exact matches, in which:  
39 unique CDR3  
5 unique J



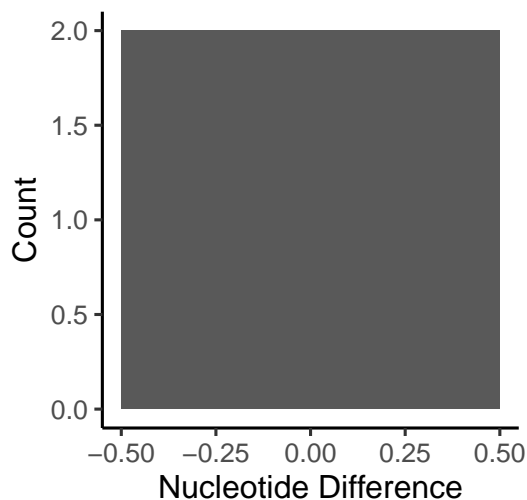
### IGHV4-39\*01

964 sequences assigned  
861 (89.3%) exact matches, in which:  
861 unique CDR3  
6 unique J



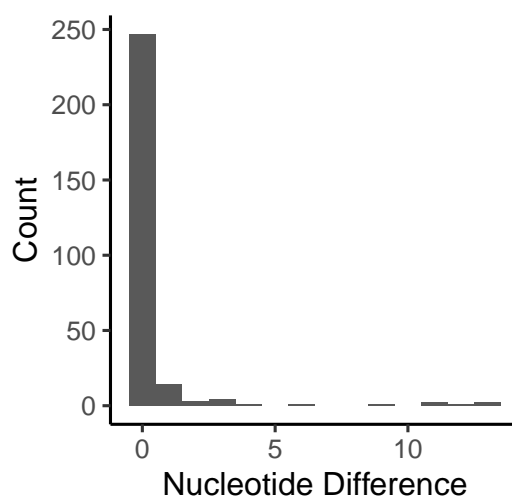
### IGHV4-28\*03

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



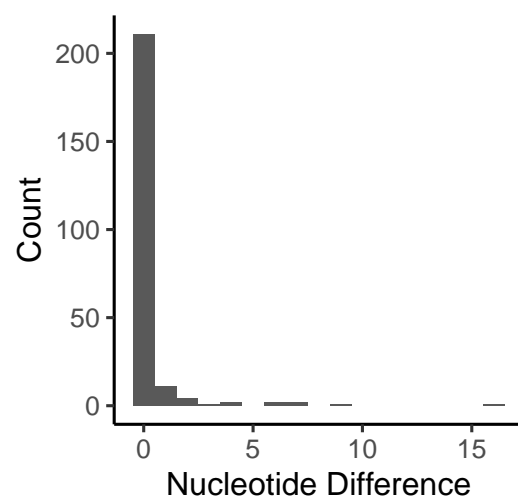
### IGHV4-31\*03

276 sequences assigned  
247 (89.5%) exact matches, in which:  
247 unique CDR3  
6 unique J



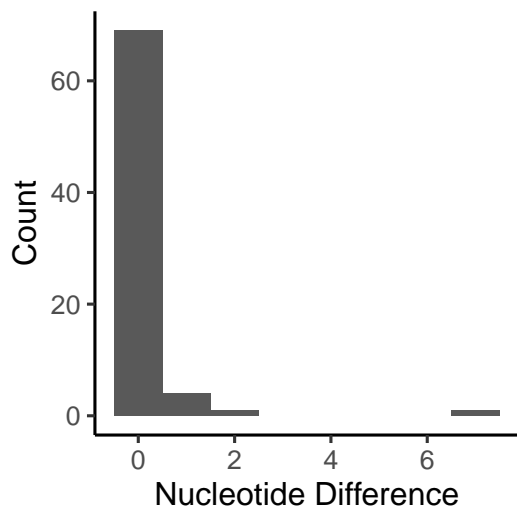
### IGHV4-59\*01

235 sequences assigned  
211 (89.8%) exact matches, in which:  
211 unique CDR3  
6 unique J



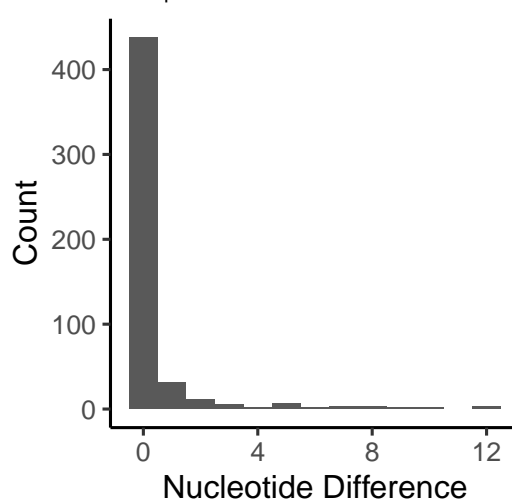
### IGHV4-30-2\*01

75 sequences assigned  
69 (92%) exact matches, in which:  
69 unique CDR3  
6 unique J



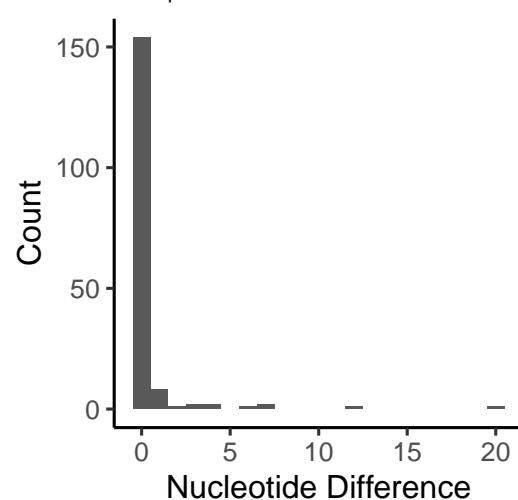
### IGHV4-34\*01

508 sequences assigned  
438 (86.2%) exact matches, in which:  
435 unique CDR3  
6 unique J



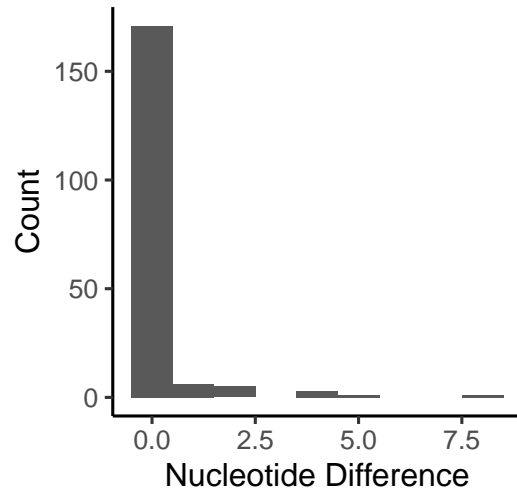
### IGHV4-59\*08

172 sequences assigned  
154 (89.5%) exact matches, in which:  
154 unique CDR3  
6 unique J



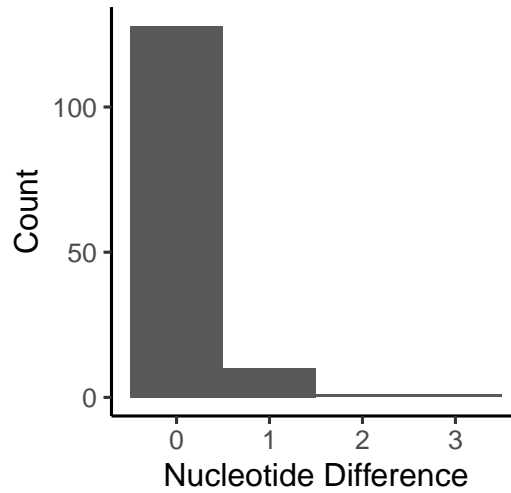
### IGHV5-10-1\*03

188 sequences assigned  
171 (91%) exact matches, in which:  
171 unique CDR3  
6 unique J



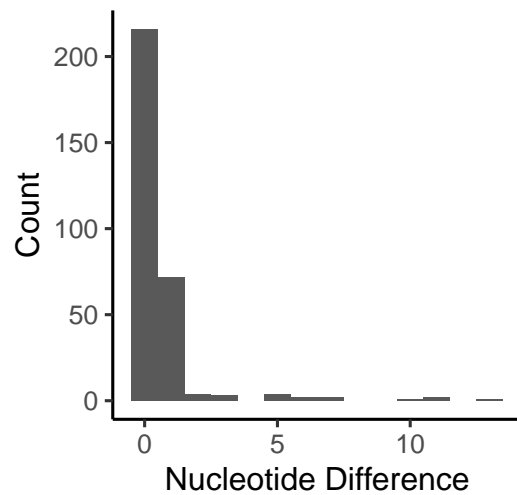
### IGHV6-1\*01

140 sequences assigned  
128 (91.4%) exact matches, in which:  
128 unique CDR3  
6 unique J



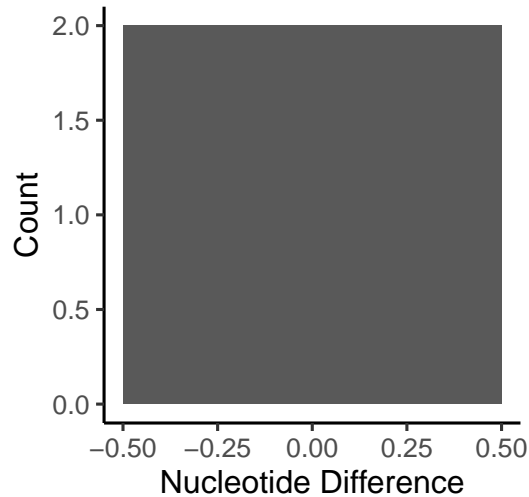
### IGHV5-51\*01

307 sequences assigned  
216 (70.4%) exact matches, in which:  
216 unique CDR3  
6 unique J



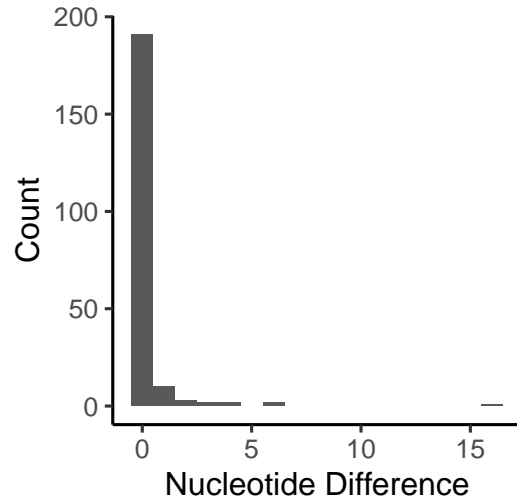
### IGHV7-4-1\*01

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



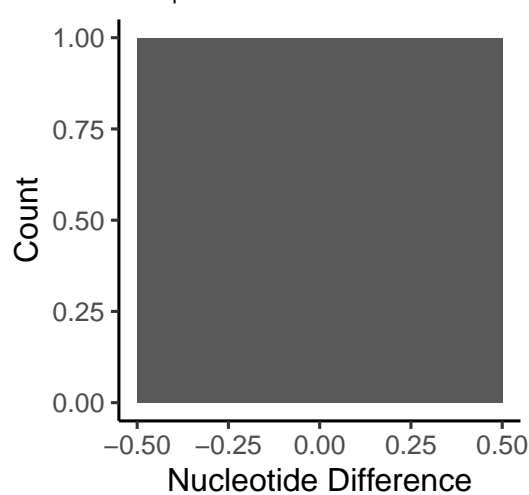
### IGHV5-51\*03

211 sequences assigned  
191 (90.5%) exact matches, in which:  
190 unique CDR3  
5 unique J



### IGHV7-81\*01

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







Warning – no inferred sequences found.