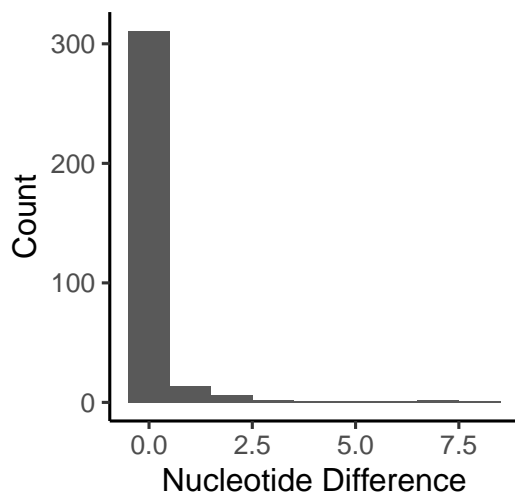


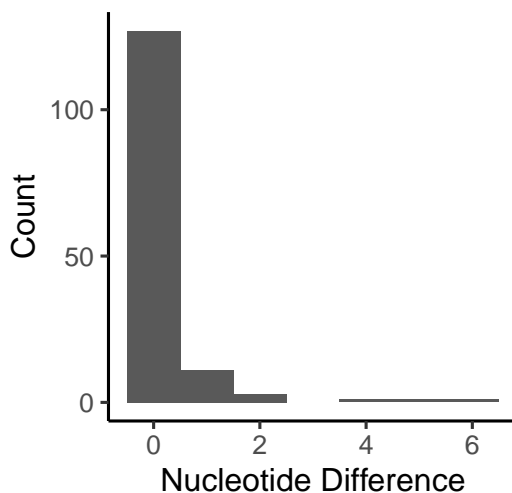
### IGHV1-2\*02

339 sequences assigned  
311 (91.7%) exact matches, in which:  
311 unique CDR3  
7 unique J



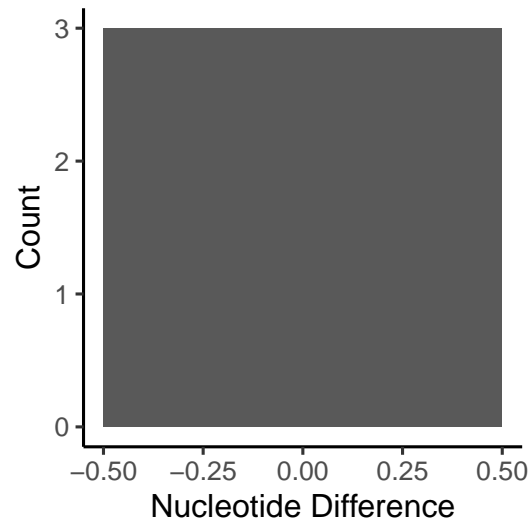
### IGHV1-8\*01

144 sequences assigned  
127 (88.2%) exact matches, in which:  
126 unique CDR3  
6 unique J



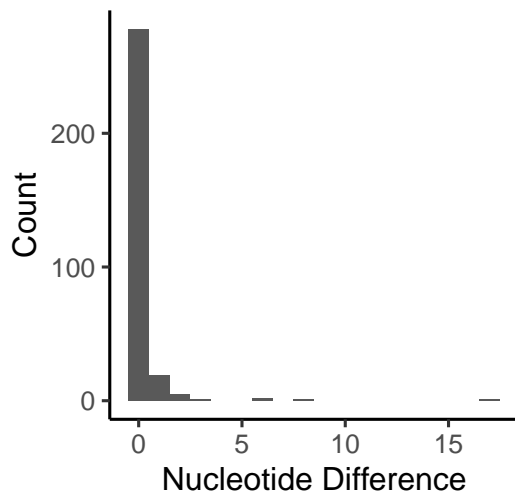
### IGHV1-45\*02

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



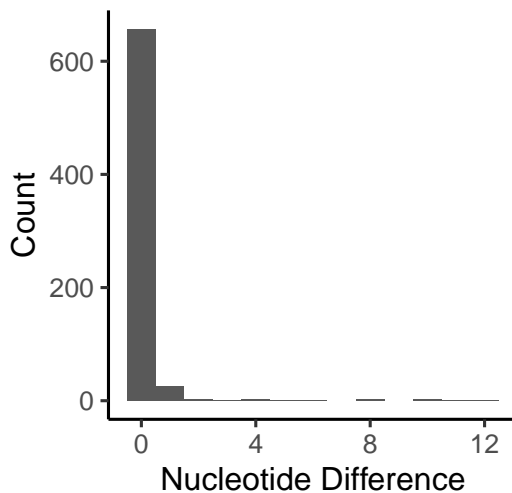
### IGHV1-2\*06

307 sequences assigned  
278 (90.6%) exact matches, in which:  
278 unique CDR3  
7 unique J



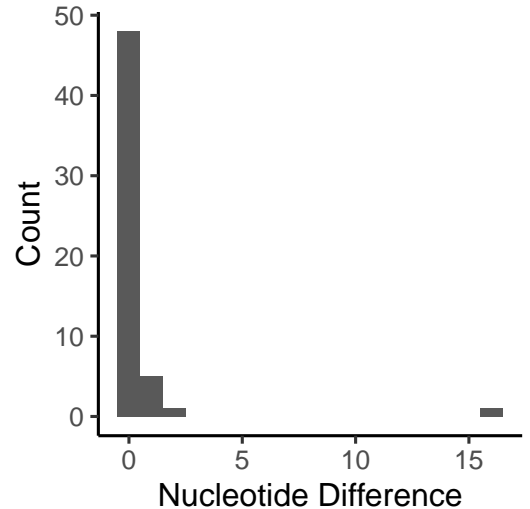
### IGHV1-18\*01

697 sequences assigned  
657 (94.3%) exact matches, in which:  
655 unique CDR3  
7 unique J



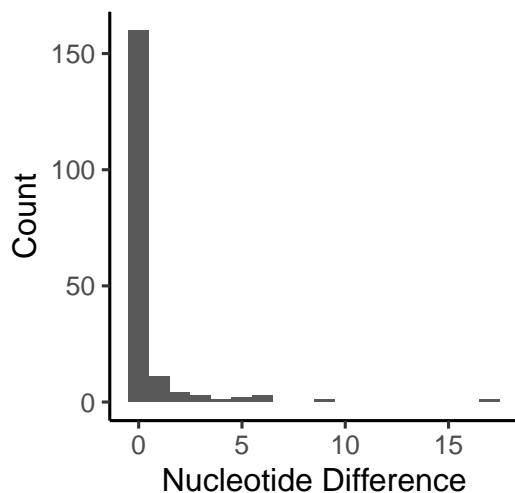
### IGHV1-46\*01

55 sequences assigned  
48 (87.3%) exact matches, in which:  
48 unique CDR3  
5 unique J



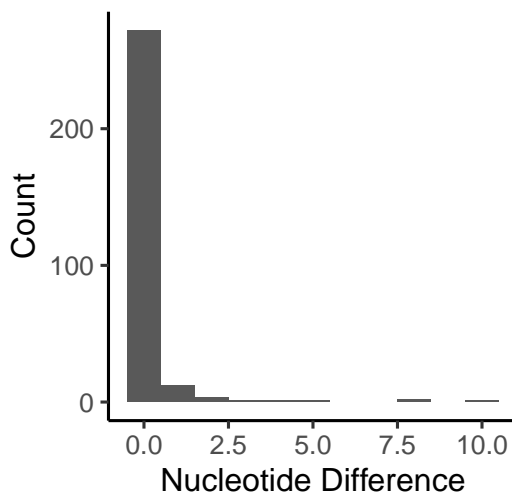
### IGHV1-3\*01

186 sequences assigned  
160 (86%) exact matches, in which:  
160 unique CDR3  
6 unique J



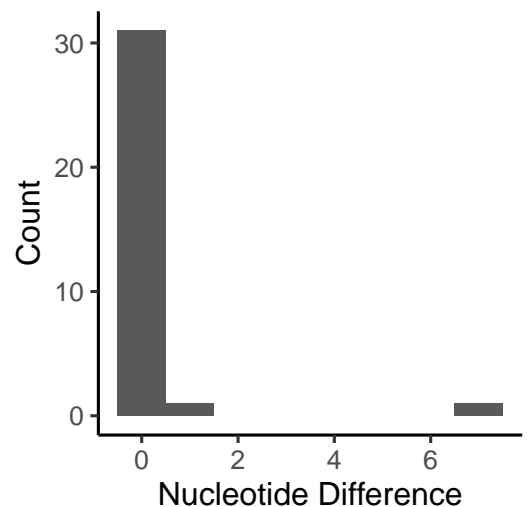
### IGHV1-24\*01

294 sequences assigned  
272 (92.5%) exact matches, in which:  
272 unique CDR3  
7 unique J



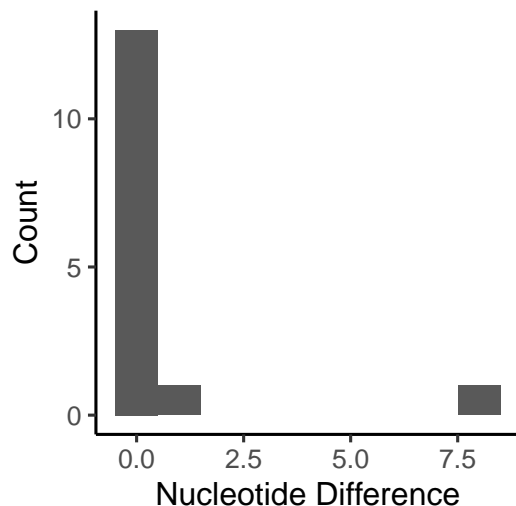
### IGHV1-46\*03

33 sequences assigned  
31 (93.9%) exact matches, in which:  
31 unique CDR3  
5 unique J



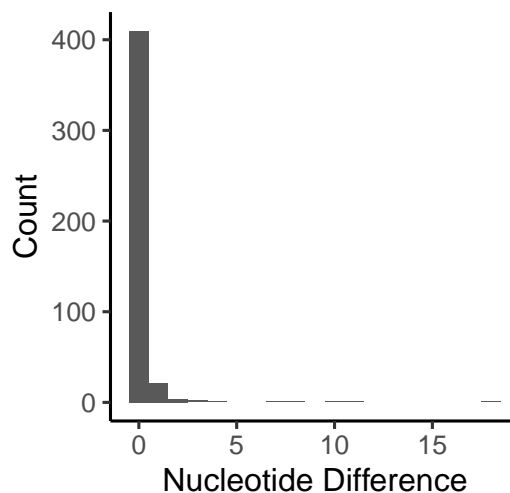
### IGHV1-58\*01

15 sequences assigned  
13 (86.7%) exact matches, in which:  
13 unique CDR3  
4 unique J



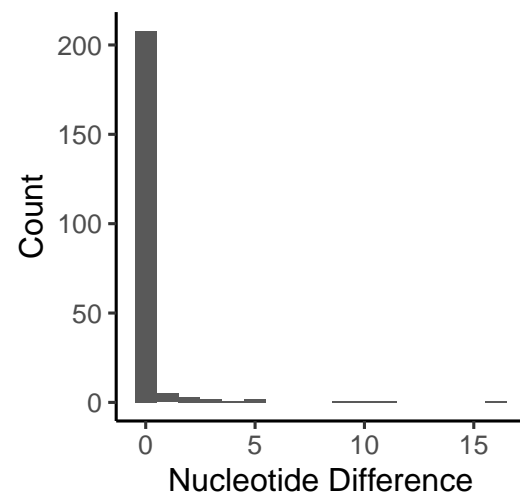
### IGHV1-69\*04

444 sequences assigned  
410 (92.3%) exact matches, in which:  
410 unique CDR3  
7 unique J



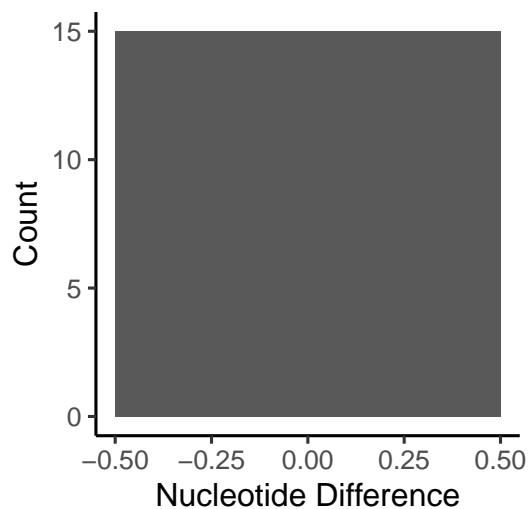
### IGHV2-5\*02

225 sequences assigned  
208 (92.4%) exact matches, in which:  
208 unique CDR3  
6 unique J



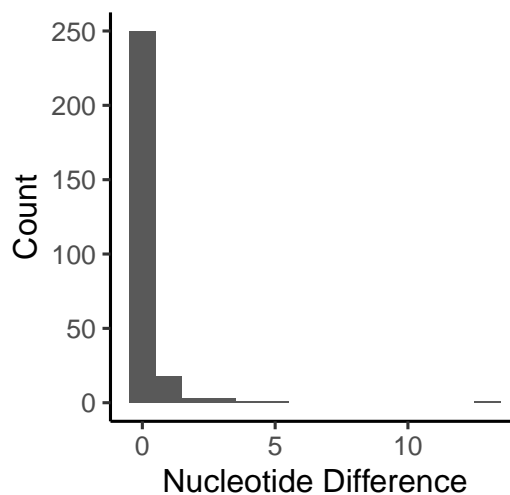
### IGHV1-58\*02

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



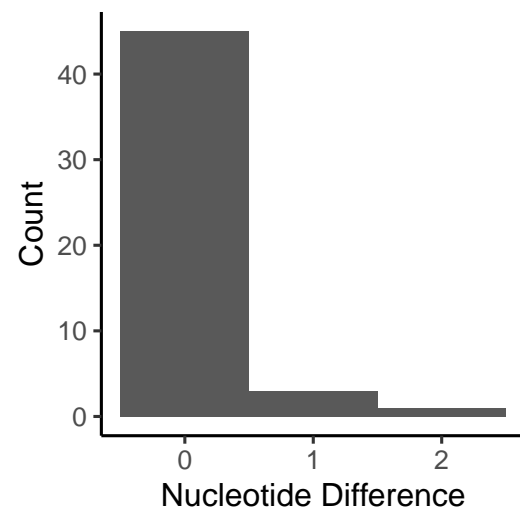
### IGHV1-69\*06

277 sequences assigned  
250 (90.3%) exact matches, in which:  
250 unique CDR3  
7 unique J



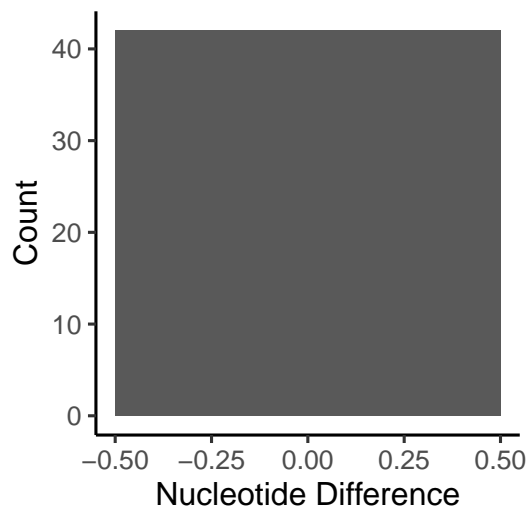
### IGHV2-26\*01

49 sequences assigned  
45 (91.8%) exact matches, in which:  
45 unique CDR3  
6 unique J



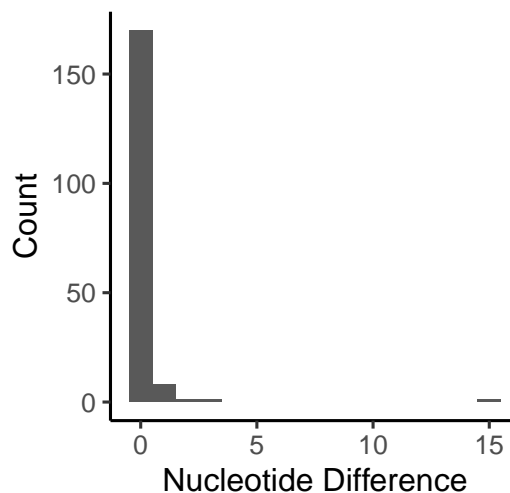
### IGHV1-69-2\*01

42 sequences assigned  
42 (100%) exact matches, in which:  
42 unique CDR3  
5 unique J



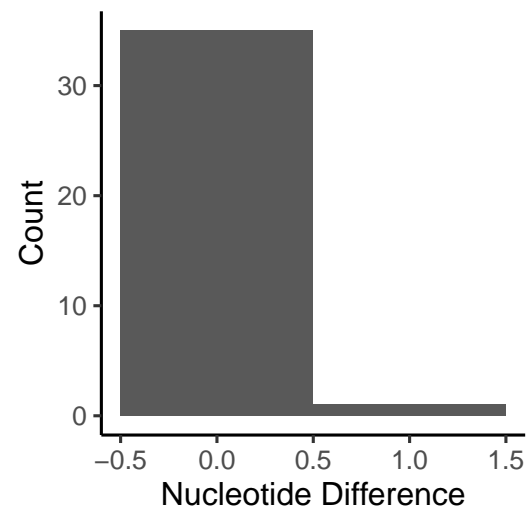
### IGHV2-5\*01

181 sequences assigned  
170 (93.9%) exact matches, in which:  
169 unique CDR3  
6 unique J



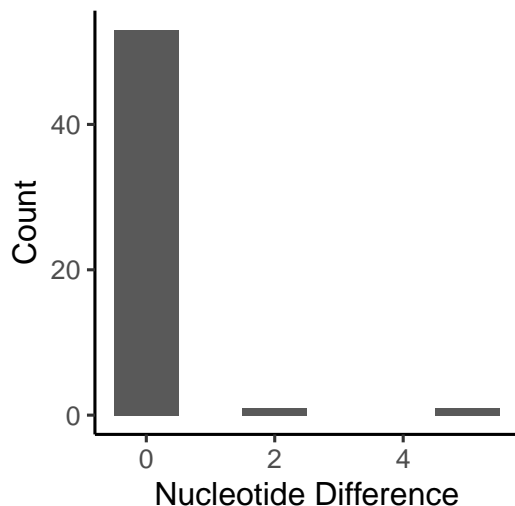
### IGHV2-70\*01

36 sequences assigned  
35 (97.2%) exact matches, in which:  
35 unique CDR3  
6 unique J



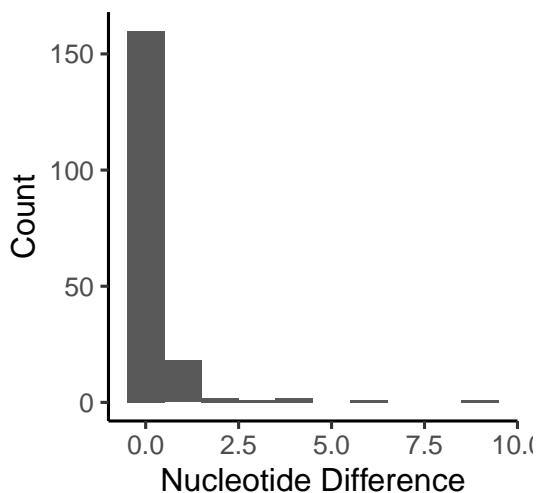
### IGHV2-70\*15

55 sequences assigned  
53 (96.4%) exact matches, in which:  
53 unique CDR3  
5 unique J



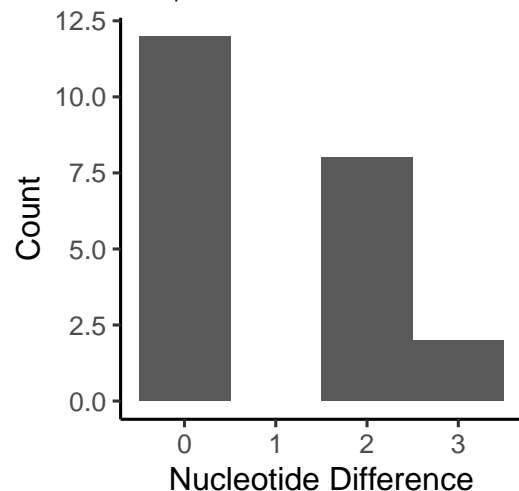
### IGHV3-9\*01

185 sequences assigned  
160 (86.5%) exact matches, in which:  
160 unique CDR3  
7 unique J



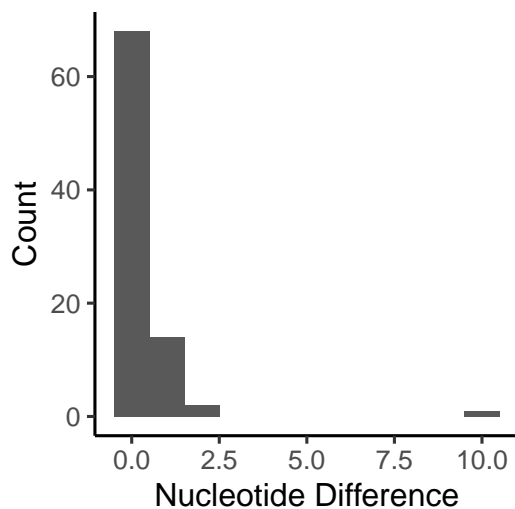
### IGHV3-13\*01

22 sequences assigned  
12 (54.5%) exact matches, in which:  
12 unique CDR3  
4 unique J



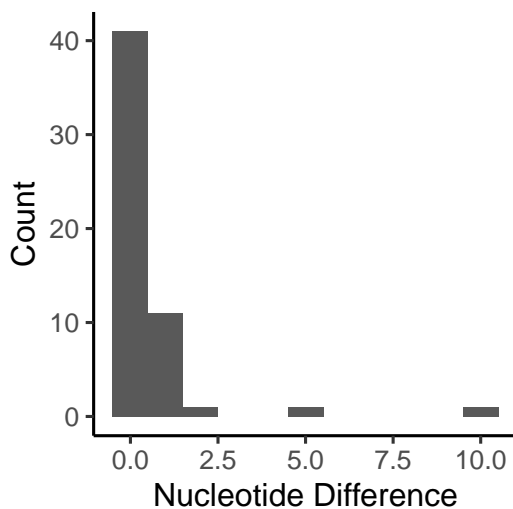
### IGHV3-7\*01

85 sequences assigned  
68 (80%) exact matches, in which:  
68 unique CDR3  
7 unique J



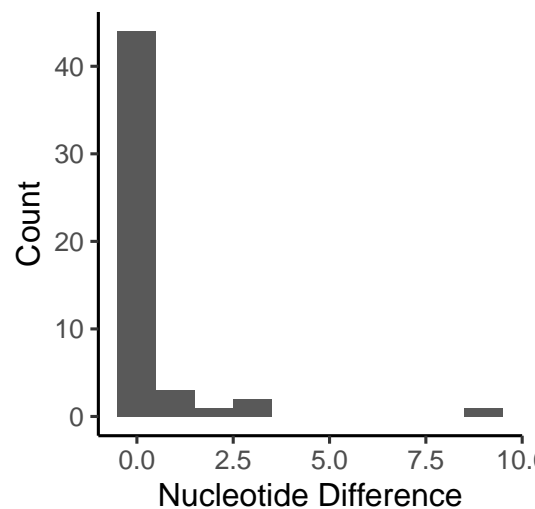
### IGHV3-11\*01

55 sequences assigned  
41 (74.5%) exact matches, in which:  
41 unique CDR3  
6 unique J



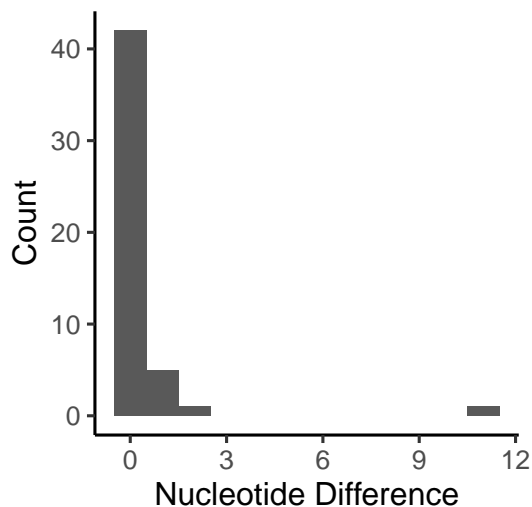
### IGHV3-15\*01

51 sequences assigned  
44 (86.3%) exact matches, in which:  
44 unique CDR3  
6 unique J



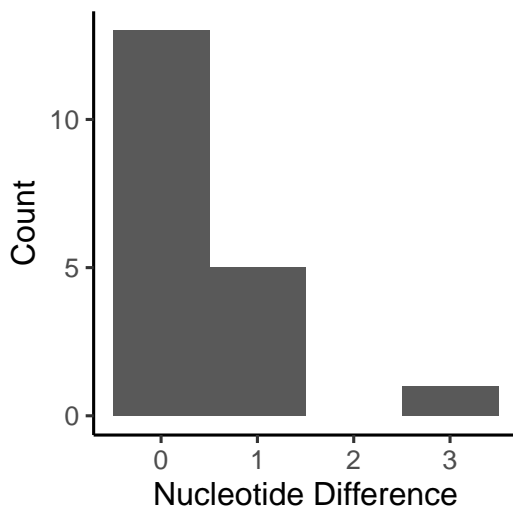
### IGHV3-7\*04

49 sequences assigned  
42 (85.7%) exact matches, in which:  
42 unique CDR3  
6 unique J



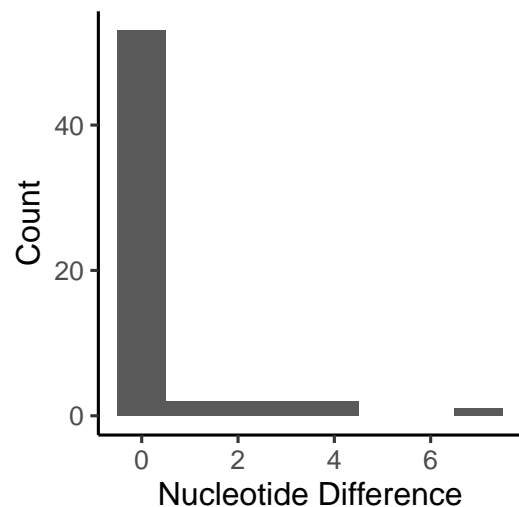
### IGHV3-11\*06

19 sequences assigned  
13 (68.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



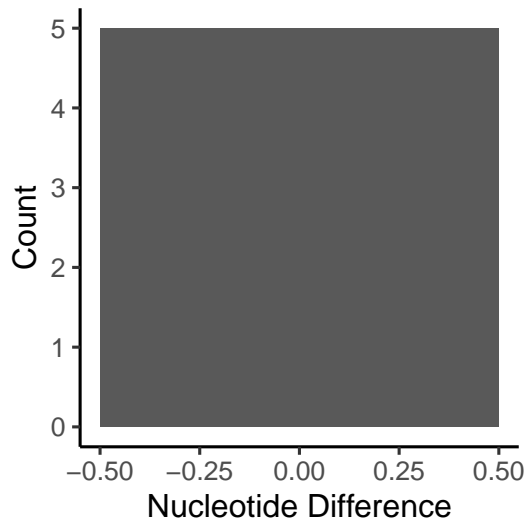
### IGHV3-15\*07

62 sequences assigned  
53 (85.5%) exact matches, in which:  
53 unique CDR3  
4 unique J



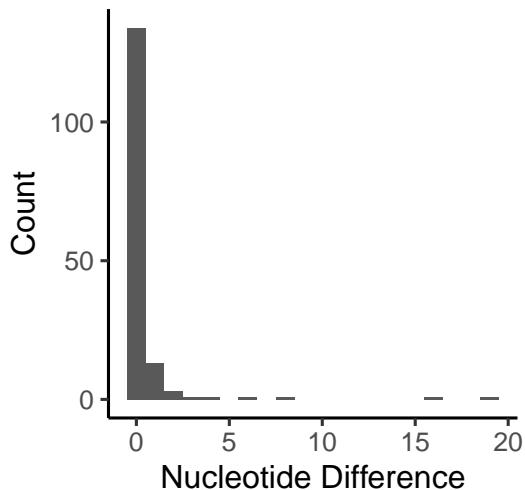
### IGHV3–20\*01

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



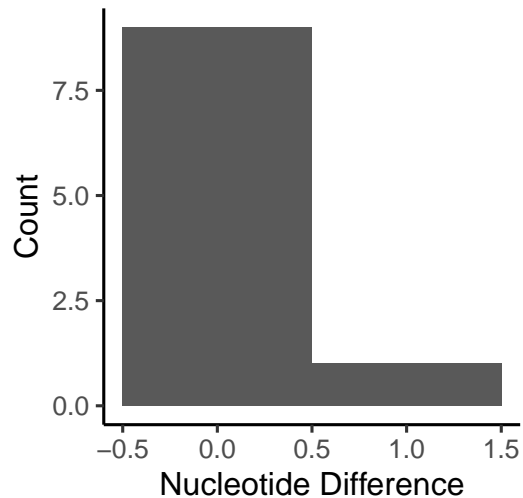
### IGHV3–30\*01

156 sequences assigned  
134 (85.9%) exact matches, in which:  
134 unique CDR3  
7 unique J



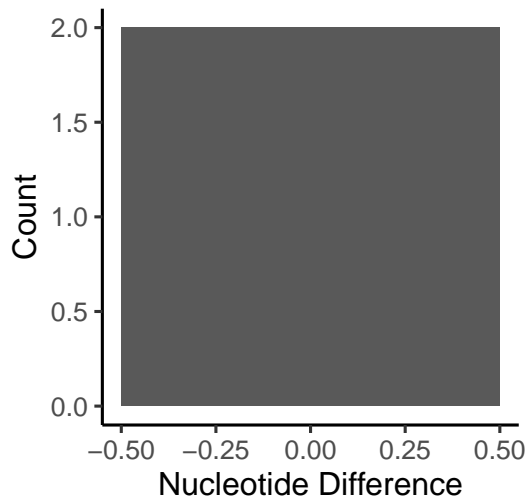
### IGHV3–43\*01

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



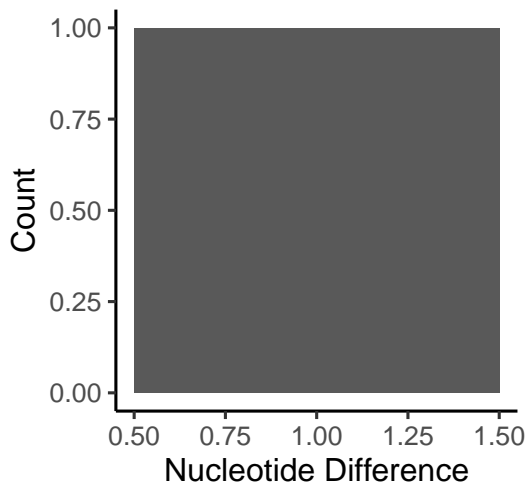
### IGHV3–20\*04

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



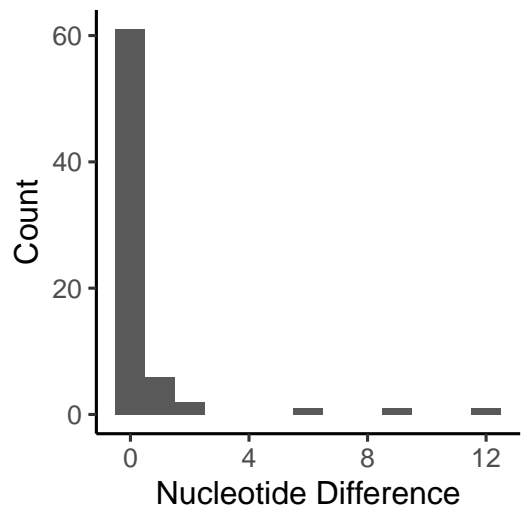
### IGHV3–30–3\*03

1 sequences assigned  
No exact matches.



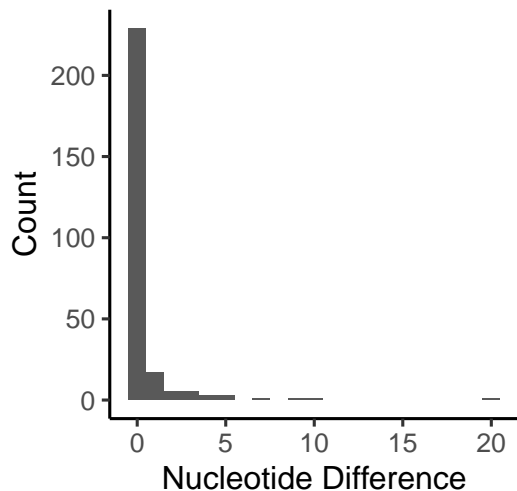
### IGHV3–43\*02

72 sequences assigned  
61 (84.7%) exact matches, in which:  
61 unique CDR3  
6 unique J



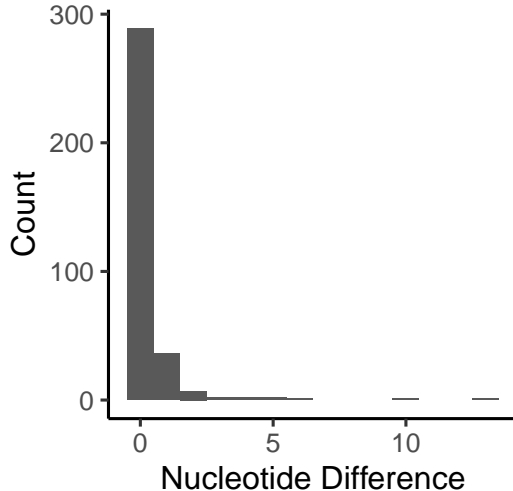
### IGHV3–21\*01

266 sequences assigned  
229 (86.1%) exact matches, in which:  
229 unique CDR3  
7 unique J



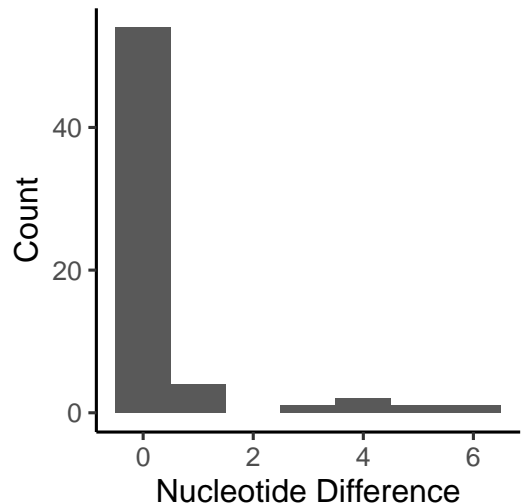
### IGHV3–33\*01

342 sequences assigned  
289 (84.5%) exact matches, in which:  
289 unique CDR3  
7 unique J



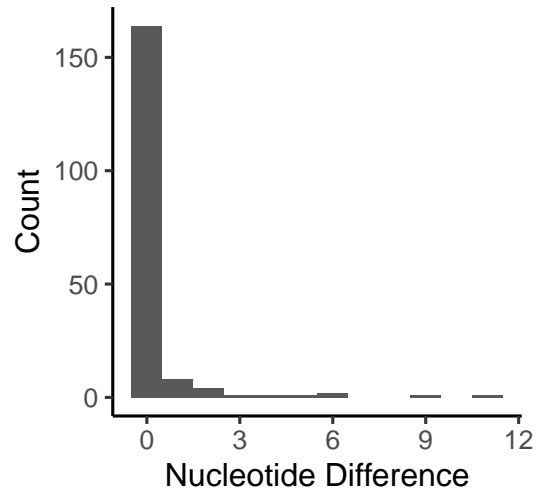
### IGHV3–48\*02

64 sequences assigned  
54 (84.4%) exact matches, in which:  
54 unique CDR3  
6 unique J



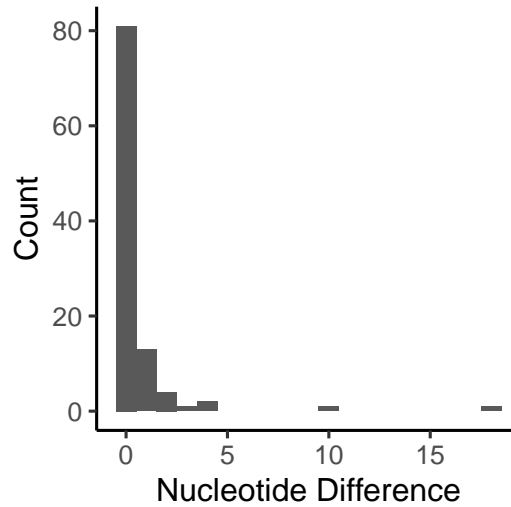
### IGHV3-48\*03

183 sequences assigned  
164 (89.6%) exact matches, in which:  
164 unique CDR3  
6 unique J



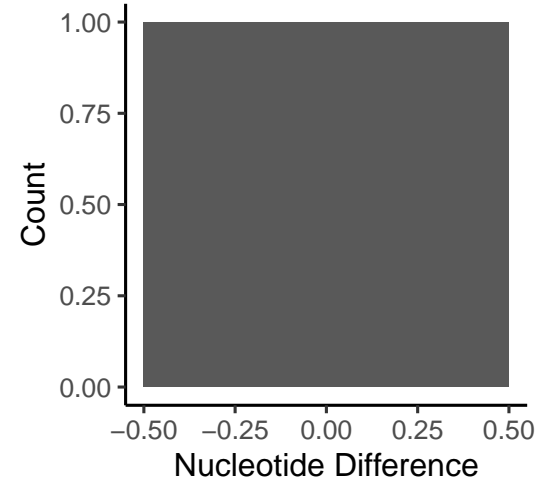
### IGHV3-53\*01

103 sequences assigned  
81 (78.6%) exact matches, in which:  
81 unique CDR3  
6 unique J



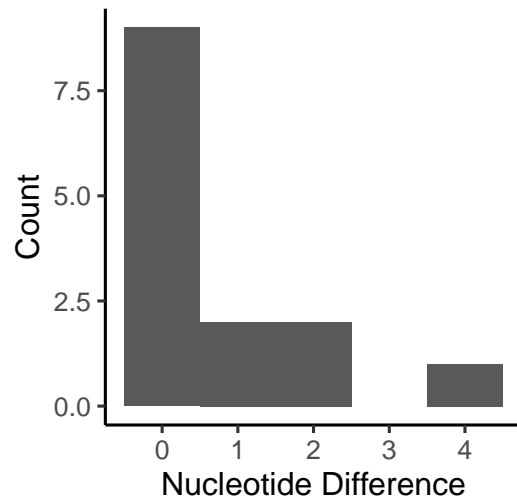
### IGHV3-64\*02

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



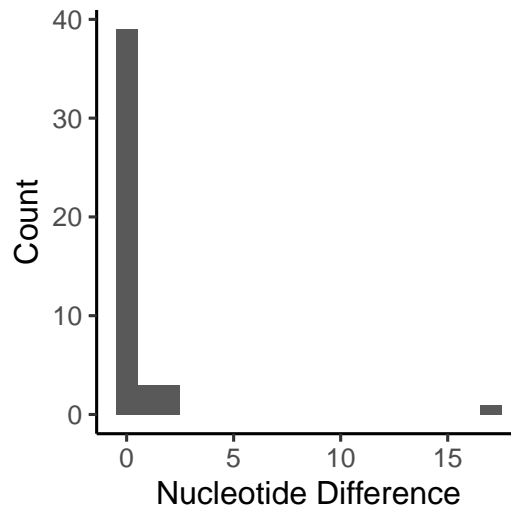
### IGHV3-49\*04

14 sequences assigned  
9 (64.3%) exact matches, in which:  
9 unique CDR3  
2 unique J



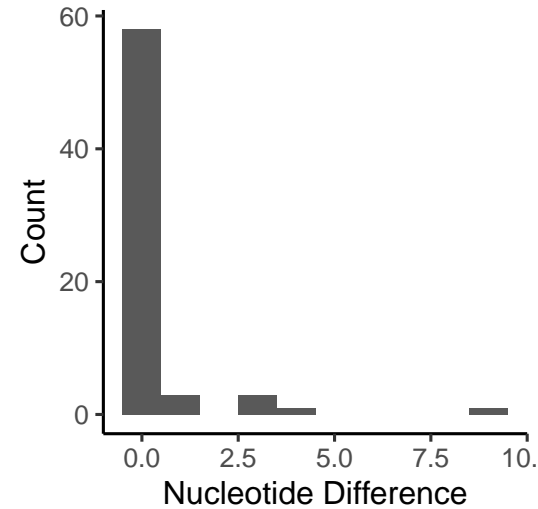
### IGHV3-53\*04

46 sequences assigned  
39 (84.8%) exact matches, in which:  
39 unique CDR3  
6 unique J



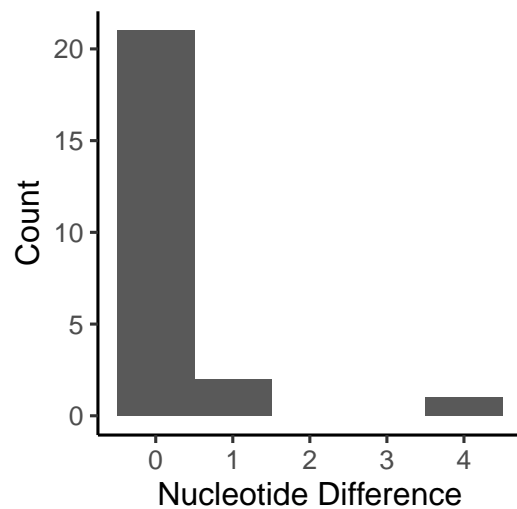
### IGHV3-66\*01

66 sequences assigned  
58 (87.9%) exact matches, in which:  
58 unique CDR3  
5 unique J



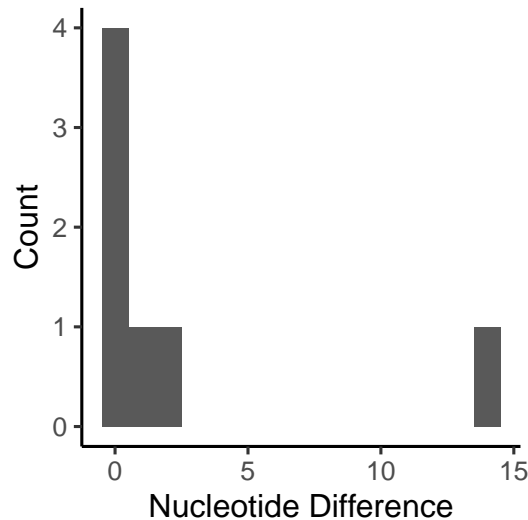
### IGHV3-49\*05

24 sequences assigned  
21 (87.5%) exact matches, in which:  
21 unique CDR3  
5 unique J



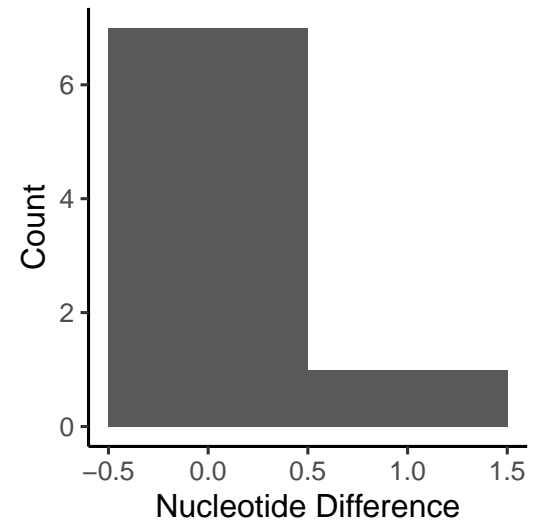
### IGHV3-64\*01

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



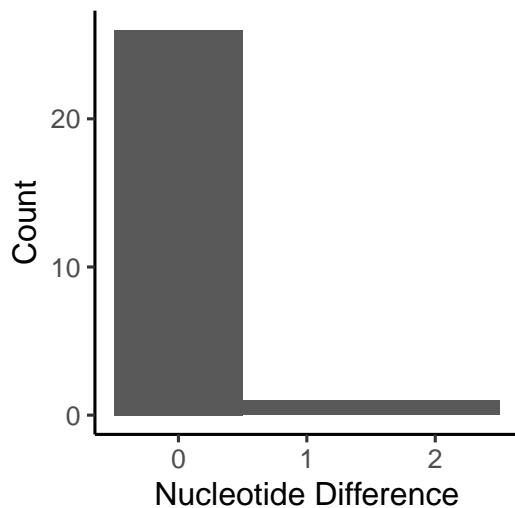
### IGHV3-72\*01

8 sequences assigned  
7 (87.5%) exact matches, in which:  
7 unique CDR3  
3 unique J



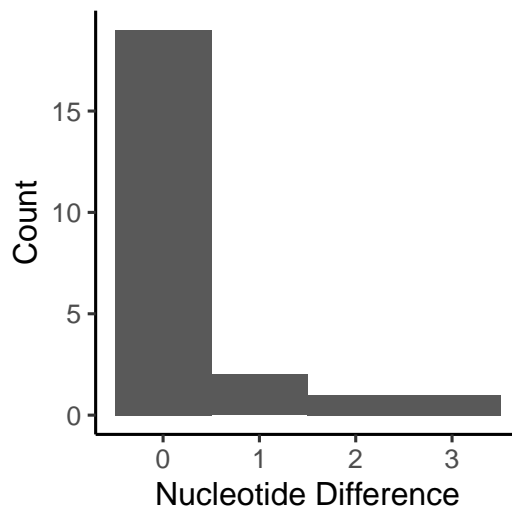
### IGHV3-73\*01

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



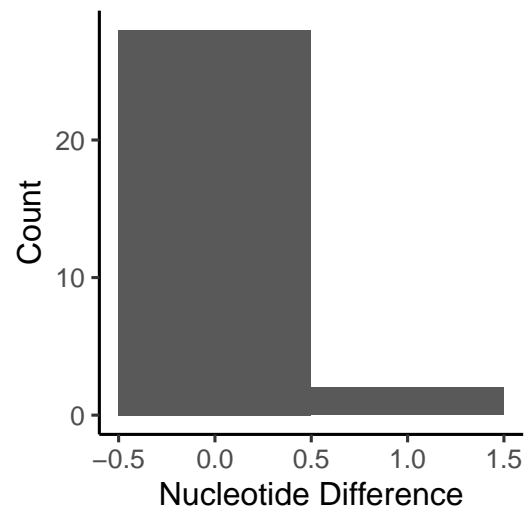
### IGHV3-64D\*06

23 sequences assigned  
19 (82.6%) exact matches, in which:  
19 unique CDR3  
7 unique J



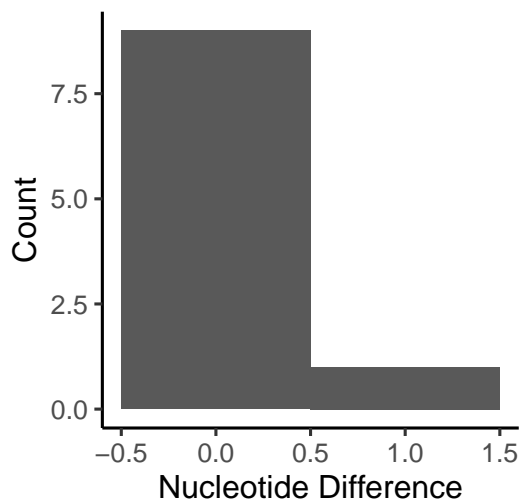
### IGHV4-31\*01

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



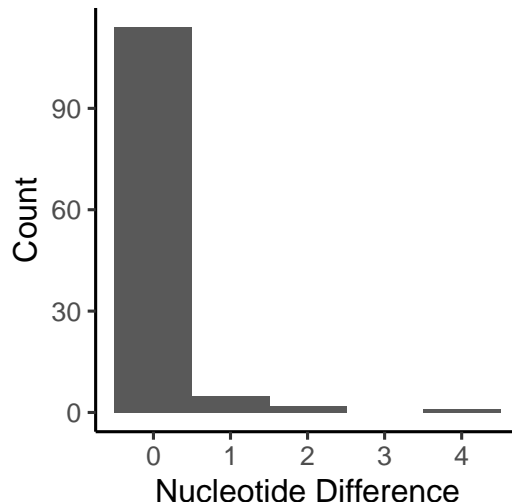
### IGHV3-73\*02

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



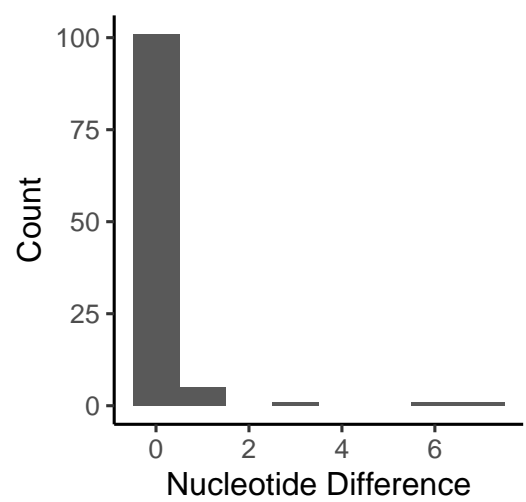
### IGHV4-4\*02

122 sequences assigned  
114 (93.4%) exact matches, in which:  
114 unique CDR3  
6 unique J



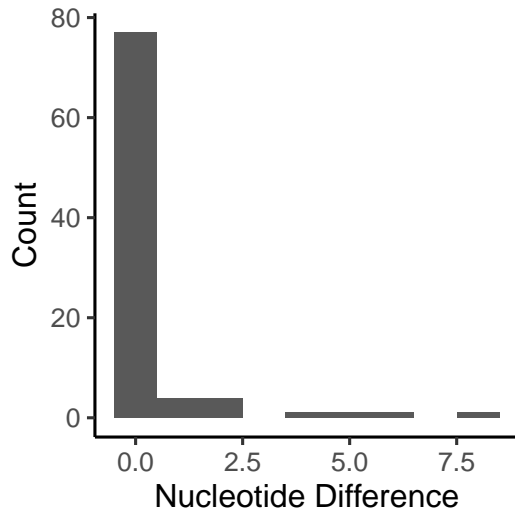
### IGHV4-31\*03

109 sequences assigned  
101 (92.7%) exact matches, in which:  
101 unique CDR3  
7 unique J



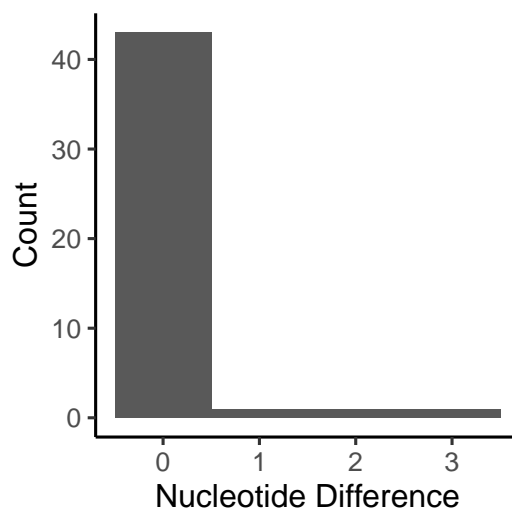
### IGHV3-74\*01

89 sequences assigned  
77 (86.5%) exact matches, in which:  
77 unique CDR3  
5 unique J



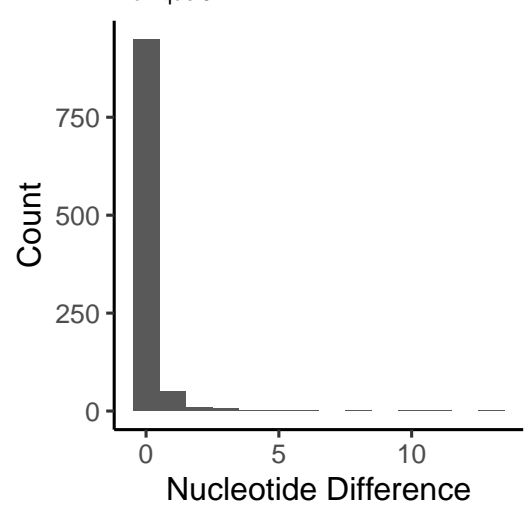
### IGHV4-4\*07

46 sequences assigned  
43 (93.5%) exact matches, in which:  
43 unique CDR3  
5 unique J



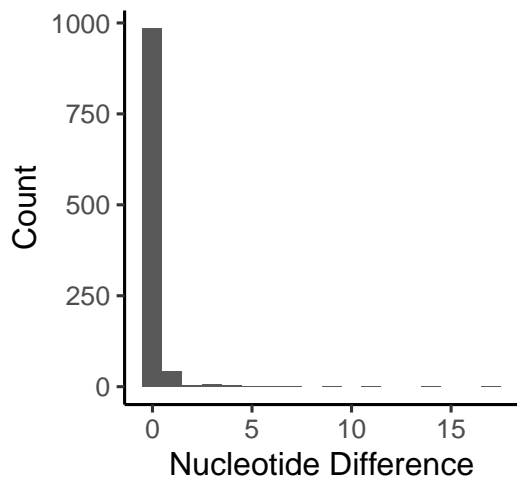
### IGHV4-34\*01

1025 sequences assigned  
949 (92.6%) exact matches, in which:  
949 unique CDR3  
7 unique J



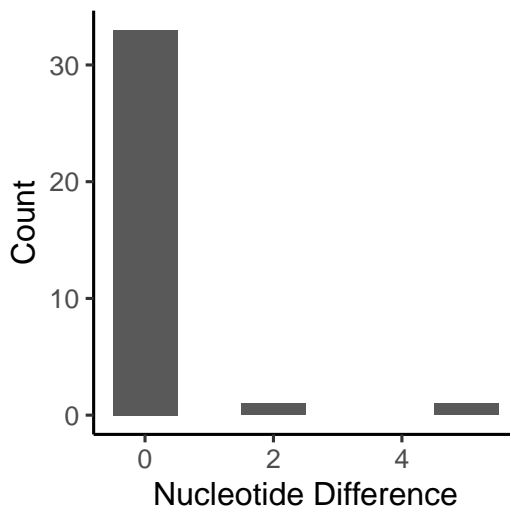
### IGHV4-39\*01

1052 sequences assigned  
985 (93.6%) exact matches, in which:  
984 unique CDR3  
7 unique J



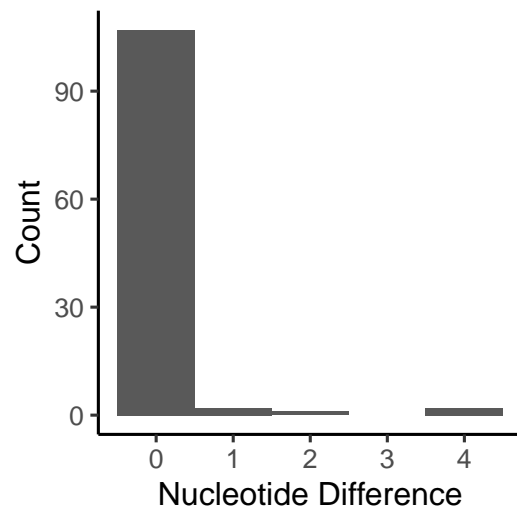
### IGHV4-61\*01

35 sequences assigned  
33 (94.3%) exact matches, in which:  
33 unique CDR3  
5 unique J



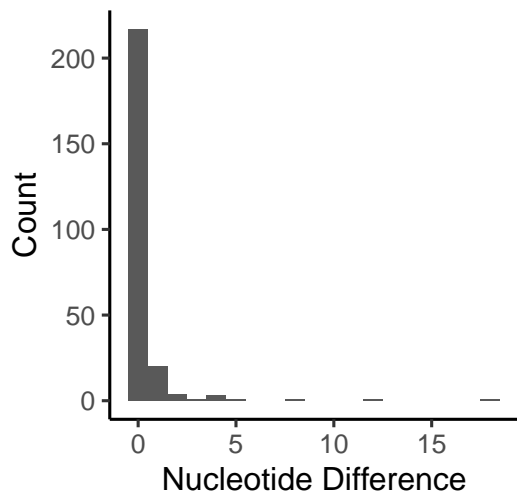
### IGHV6-1\*01

112 sequences assigned  
107 (95.5%) exact matches, in which:  
107 unique CDR3  
6 unique J



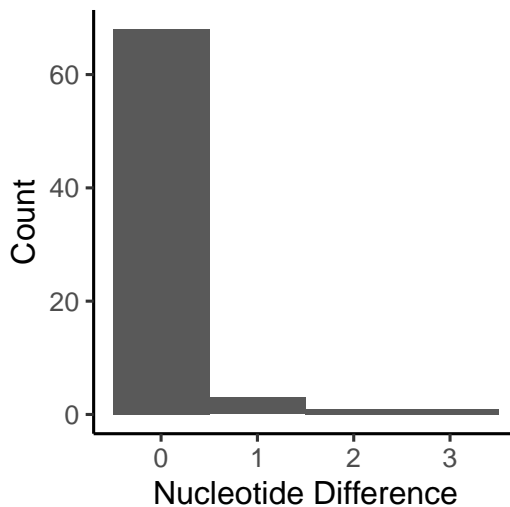
### IGHV4-59\*01

249 sequences assigned  
217 (87.1%) exact matches, in which:  
217 unique CDR3  
7 unique J



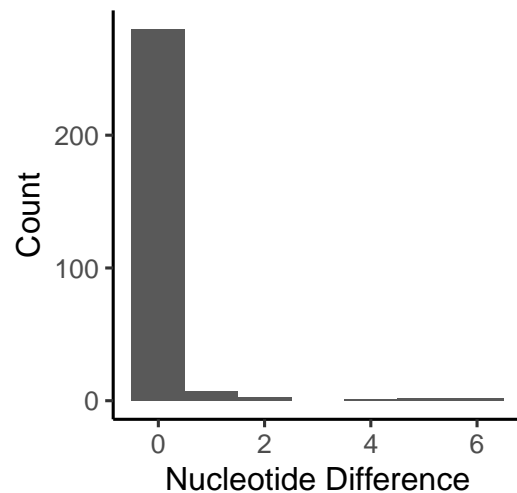
### IGHV5-10-1\*03

73 sequences assigned  
68 (93.2%) exact matches, in which:  
68 unique CDR3  
5 unique J



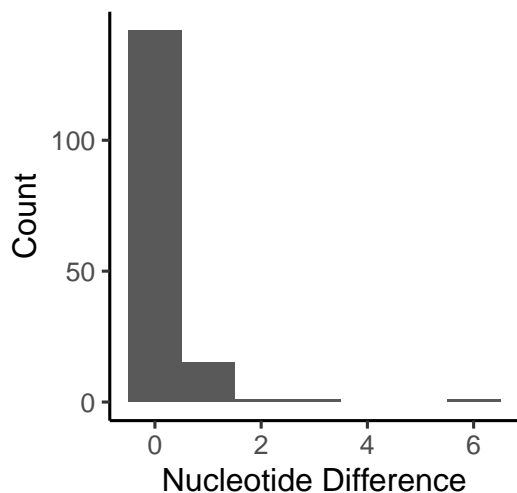
### IGHV7-4-1\*02

295 sequences assigned  
280 (94.9%) exact matches, in which:  
280 unique CDR3  
7 unique J



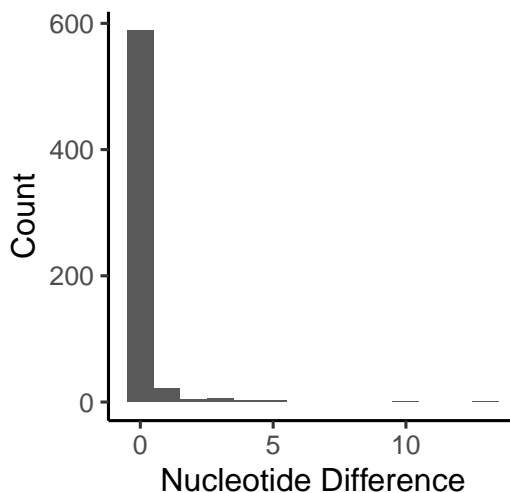
### IGHV4-59\*08

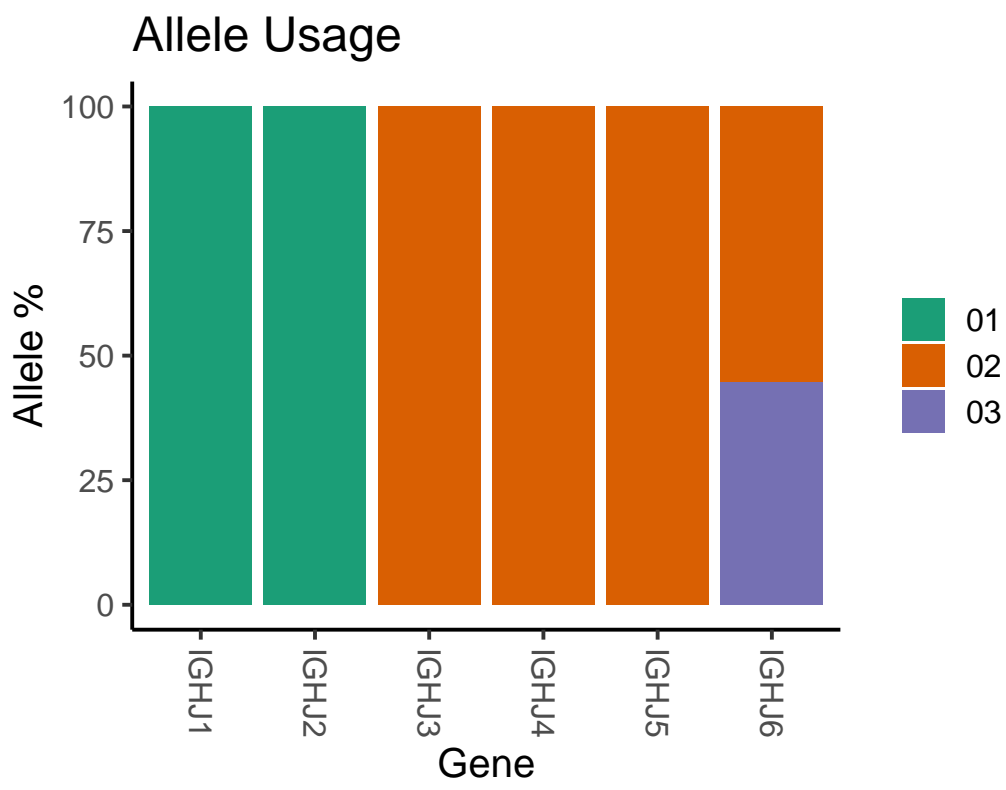
160 sequences assigned  
142 (88.8%) exact matches, in which:  
142 unique CDR3  
5 unique J



### IGHV5-51\*01

627 sequences assigned  
589 (93.9%) exact matches, in which:  
589 unique CDR3  
7 unique J







### Sequence Count by IGHJ6 allele usage



[illegible]