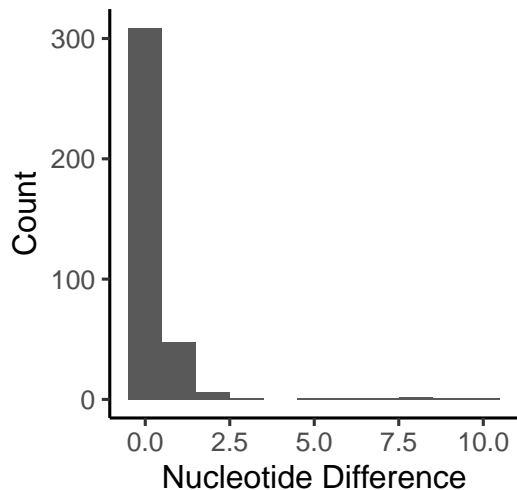


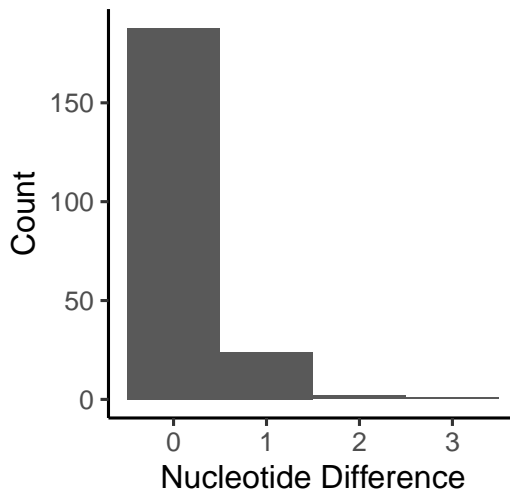
### IGHV1-2\*02

372 sequences assigned  
309 (83.1%) exact matches, in which:  
300 unique CDR3  
6 unique J



### IGHV1-8\*01

215 sequences assigned  
188 (87.4%) exact matches, in which:  
185 unique CDR3  
5 unique J



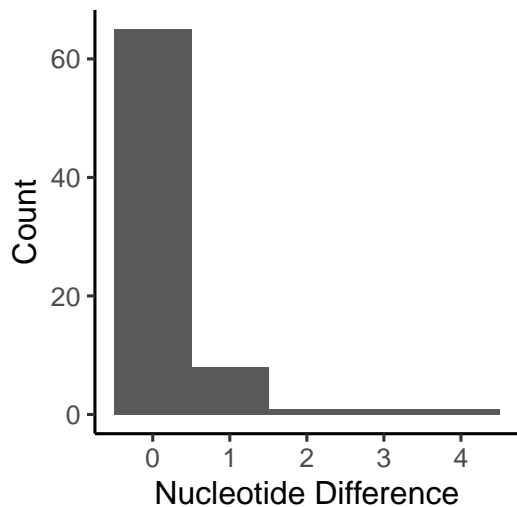
### IGHV1-45\*02

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



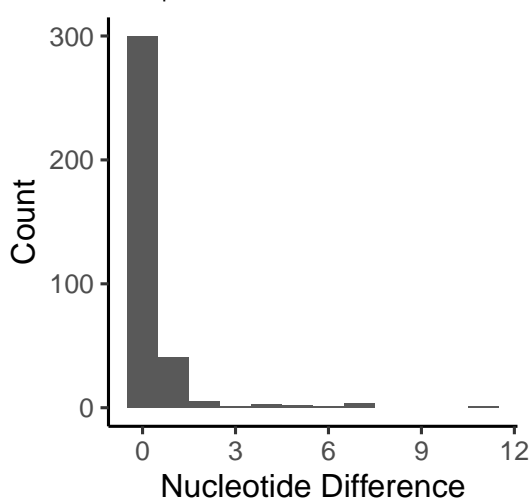
### IGHV1-2\*04

76 sequences assigned  
65 (85.5%) exact matches, in which:  
65 unique CDR3  
4 unique J



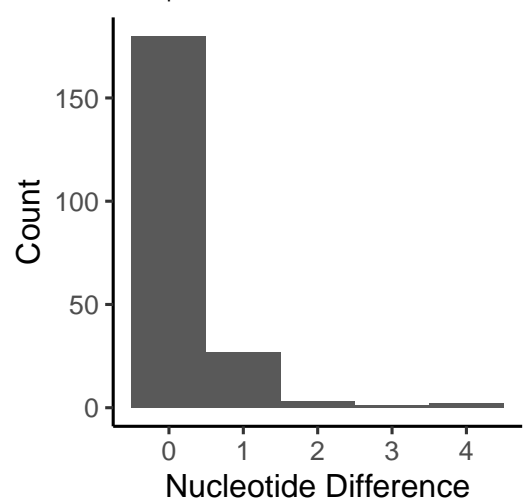
### IGHV1-18\*01

358 sequences assigned  
300 (83.8%) exact matches, in which:  
290 unique CDR3  
6 unique J



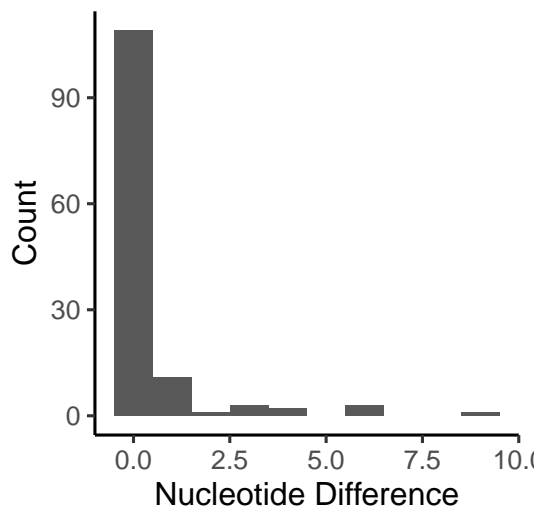
### IGHV1-46\*01

213 sequences assigned  
180 (84.5%) exact matches, in which:  
177 unique CDR3  
6 unique J



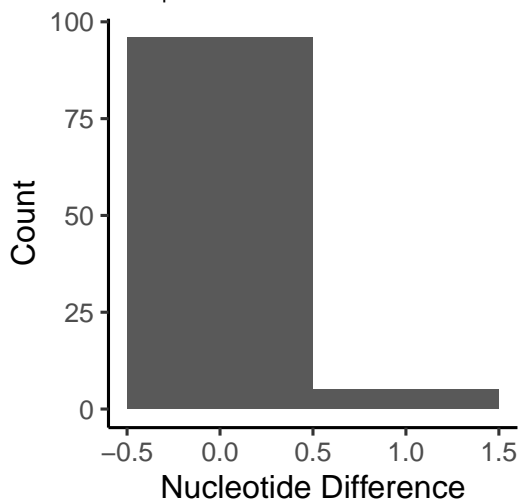
### IGHV1-3\*01

130 sequences assigned  
109 (83.8%) exact matches, in which:  
106 unique CDR3  
5 unique J



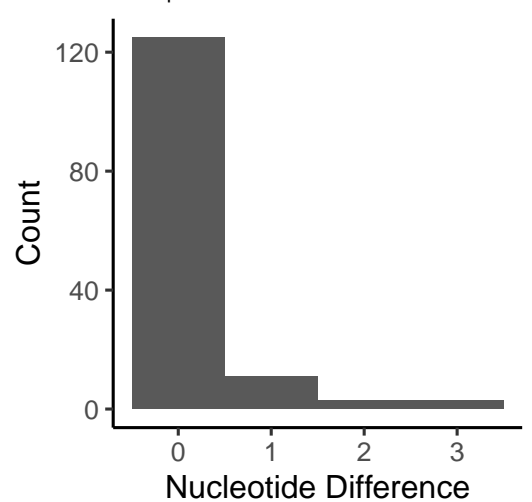
### IGHV1-24\*01

101 sequences assigned  
96 (95%) exact matches, in which:  
96 unique CDR3  
5 unique J



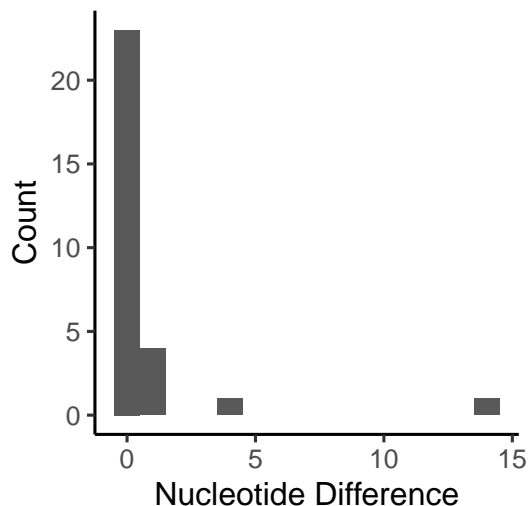
### IGHV1-46\*03

142 sequences assigned  
125 (88%) exact matches, in which:  
124 unique CDR3  
4 unique J



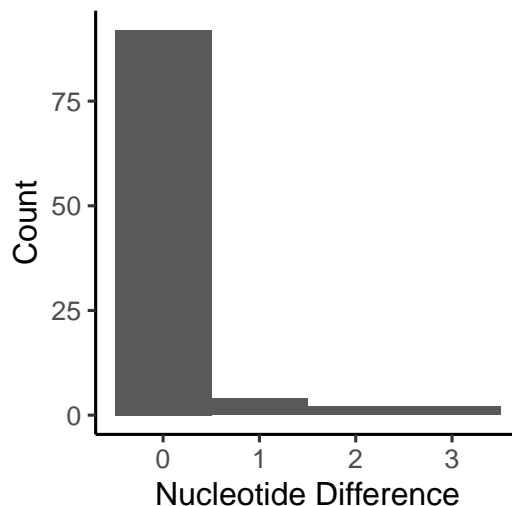
### IGHV1–58\*01

29 sequences assigned  
23 (79.3%) exact matches, in which:  
23 unique CDR3  
4 unique J



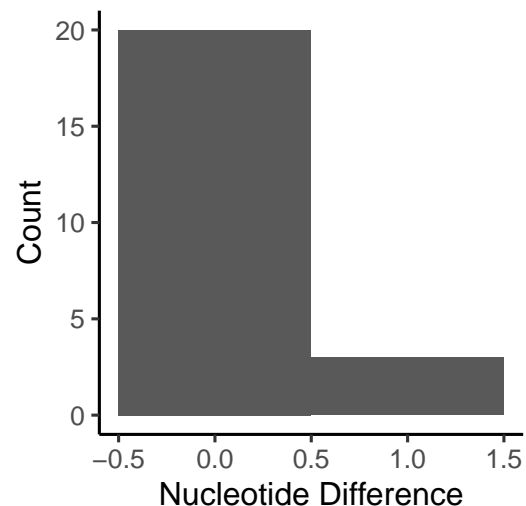
### IGHV2–5\*01

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



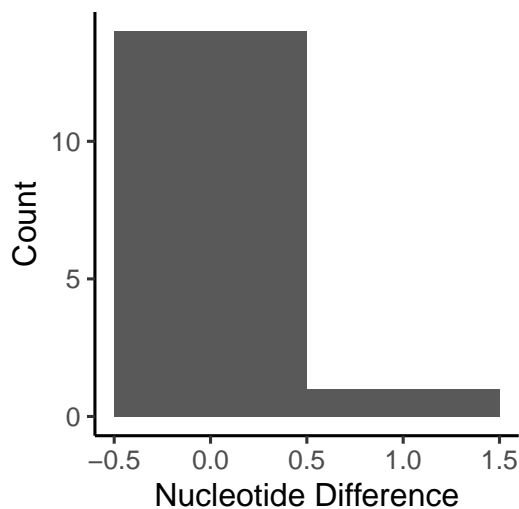
### IGHV2–70\*01

23 sequences assigned  
20 (87%) exact matches, in which:  
20 unique CDR3  
4 unique J



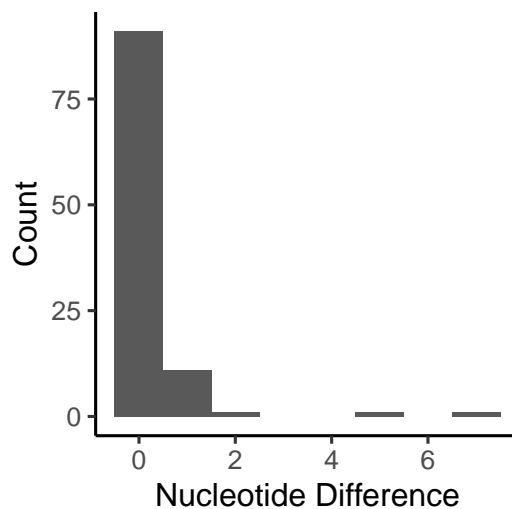
### IGHV1–58\*02

15 sequences assigned  
14 (93.3%) exact matches, in which:  
14 unique CDR3  
3 unique J



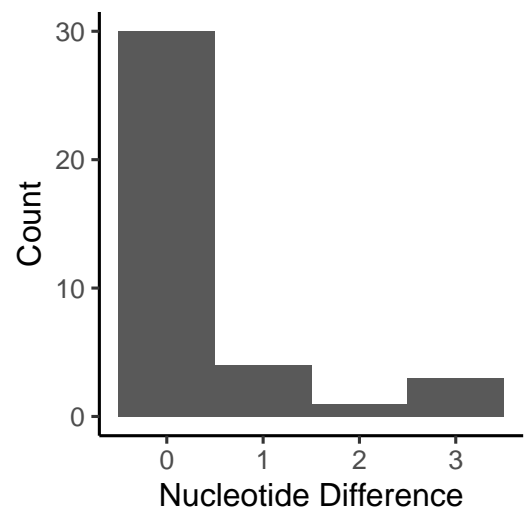
### IGHV2–5\*02

105 sequences assigned  
91 (86.7%) exact matches, in which:  
90 unique CDR3  
6 unique J



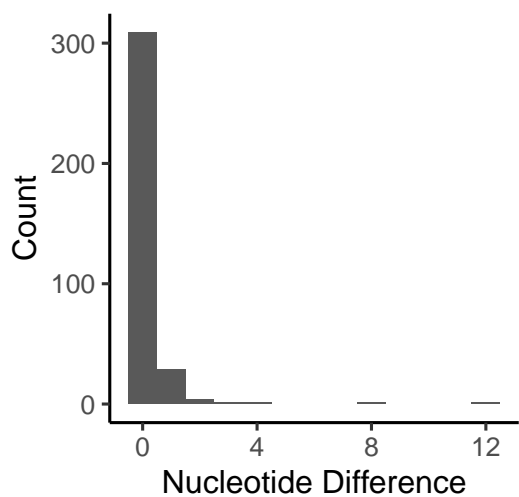
### IGHV2–70\*15

38 sequences assigned  
30 (78.9%) exact matches, in which:  
30 unique CDR3  
4 unique J



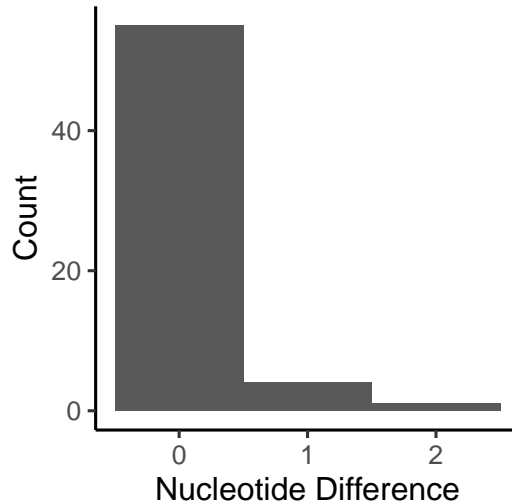
### IGHV1–69\*08\_C191T

346 sequences assigned  
309 (89.3%) exact matches, in which:  
302 unique CDR3  
6 unique J



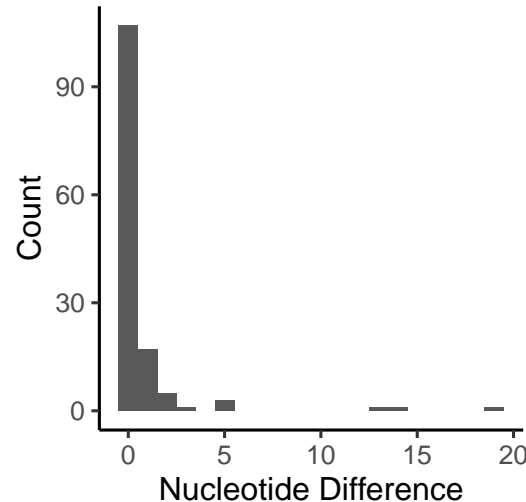
### IGHV2–26\*01

60 sequences assigned  
55 (91.7%) exact matches, in which:  
55 unique CDR3  
5 unique J



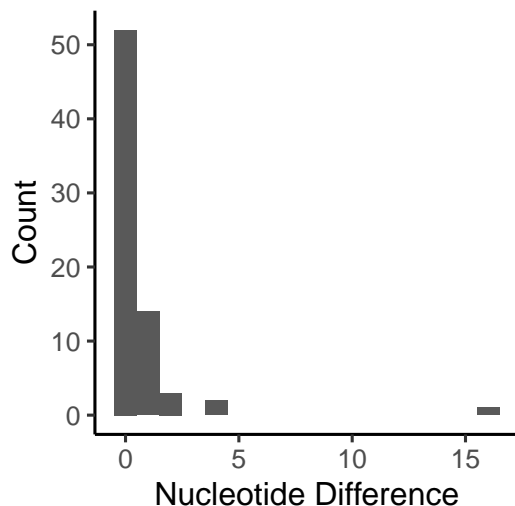
### IGHV3–7\*01

136 sequences assigned  
107 (78.7%) exact matches, in which:  
103 unique CDR3  
6 unique J



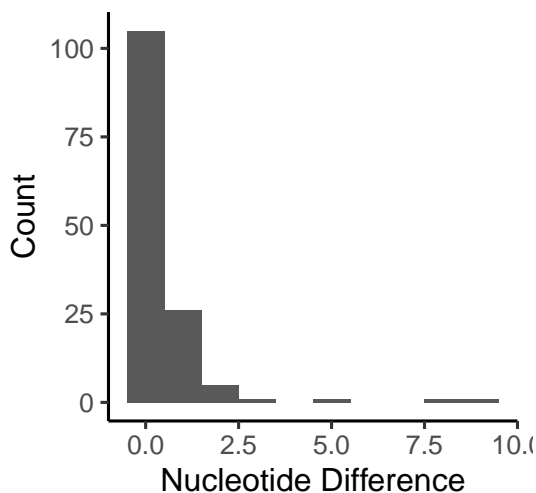
### IGHV3-7\*04

72 sequences assigned  
52 (72.2%) exact matches, in which:  
52 unique CDR3  
5 unique J



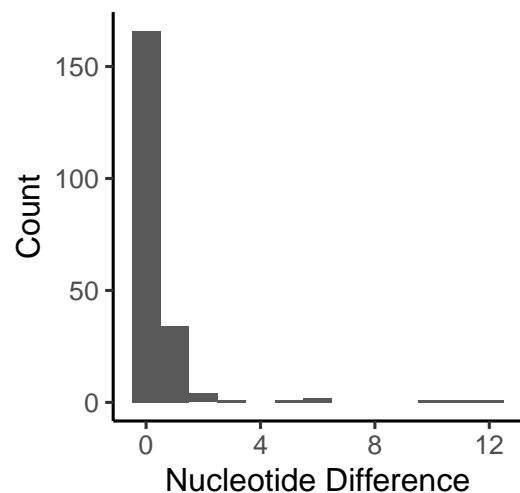
### IGHV3-11\*05

140 sequences assigned  
105 (75%) exact matches, in which:  
104 unique CDR3  
6 unique J



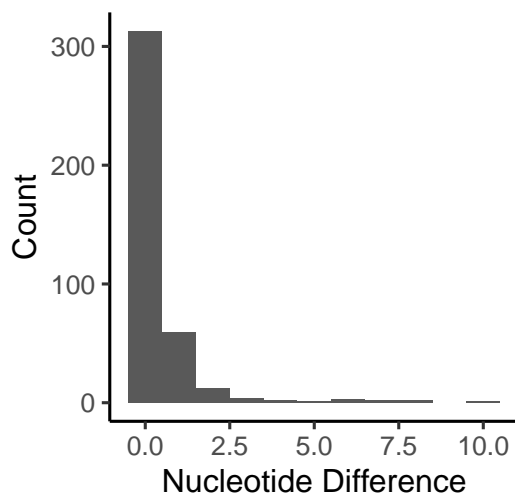
### IGHV3-15\*01

211 sequences assigned  
166 (78.7%) exact matches, in which:  
165 unique CDR3  
6 unique J



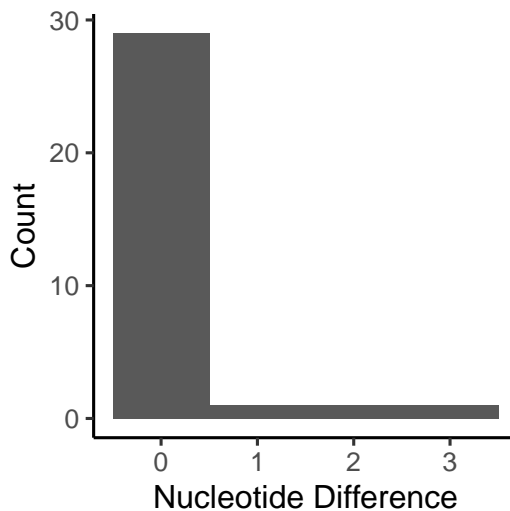
### IGHV3-9\*01

399 sequences assigned  
313 (78.4%) exact matches, in which:  
306 unique CDR3  
6 unique J



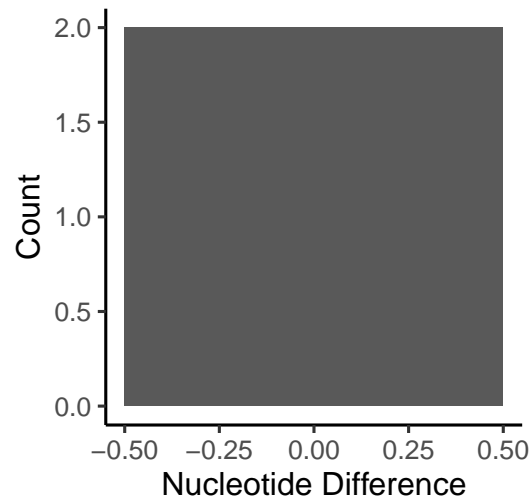
### IGHV3-13\*01

32 sequences assigned  
29 (90.6%) exact matches, in which:  
29 unique CDR3  
5 unique J



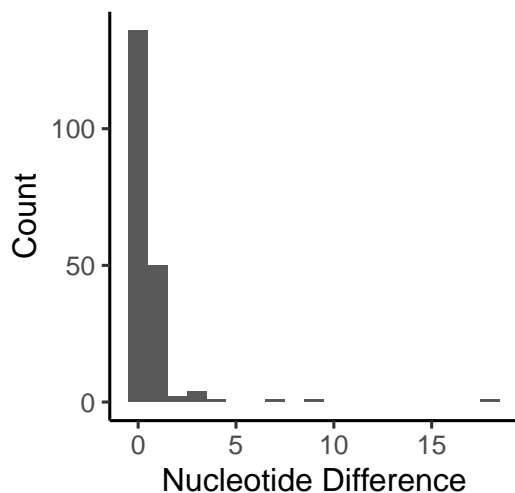
### IGHV3-19\*01

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



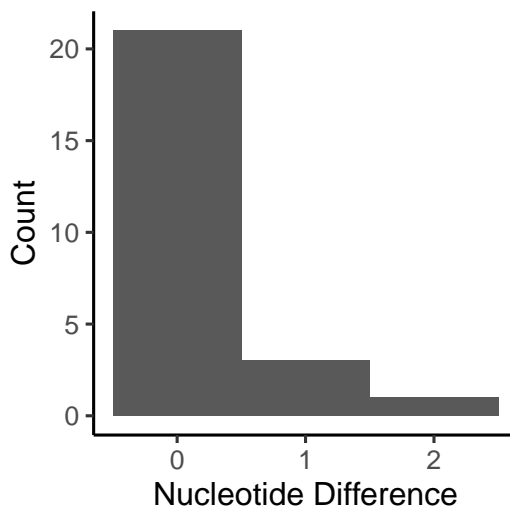
### IGHV3-11\*01

196 sequences assigned  
136 (69.4%) exact matches, in which:  
135 unique CDR3  
6 unique J



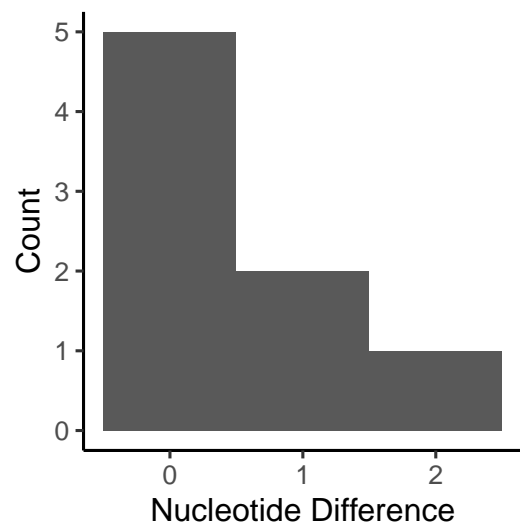
### IGHV3-13\*04

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



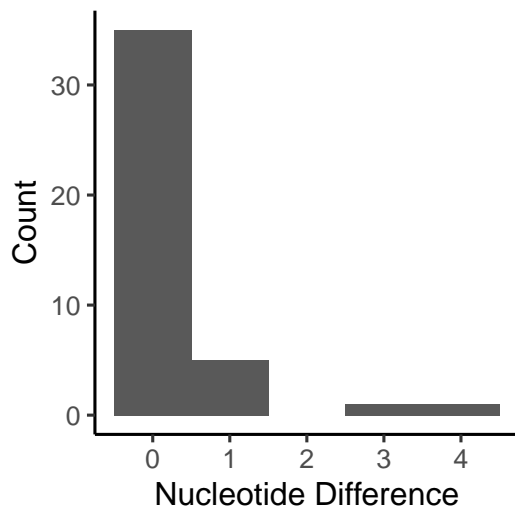
### IGHV3-20\*01

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



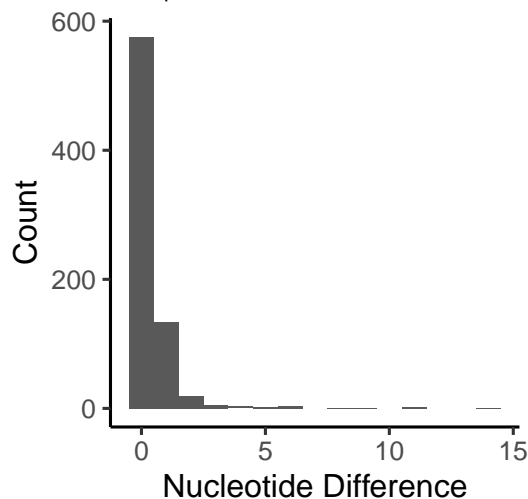
### IGHV3–20\*04

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



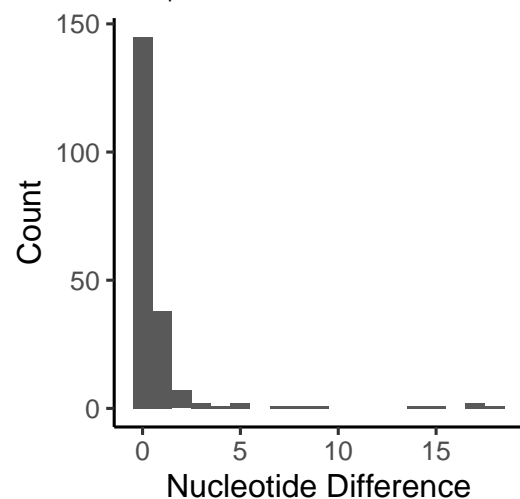
### IGHV3–33\*01

750 sequences assigned  
576 (76.8%) exact matches, in which:  
558 unique CDR3  
6 unique J



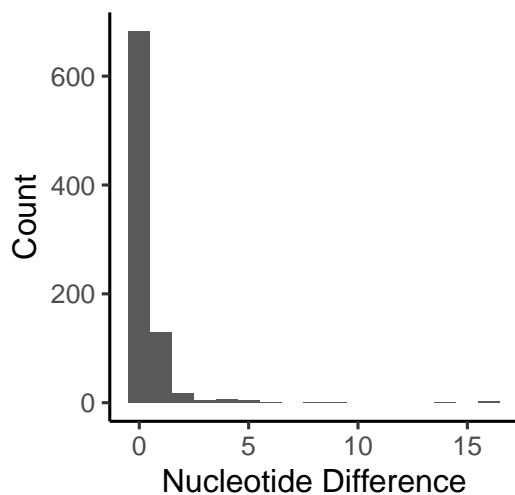
### IGHV3–48\*02

204 sequences assigned  
145 (71.1%) exact matches, in which:  
144 unique CDR3  
6 unique J



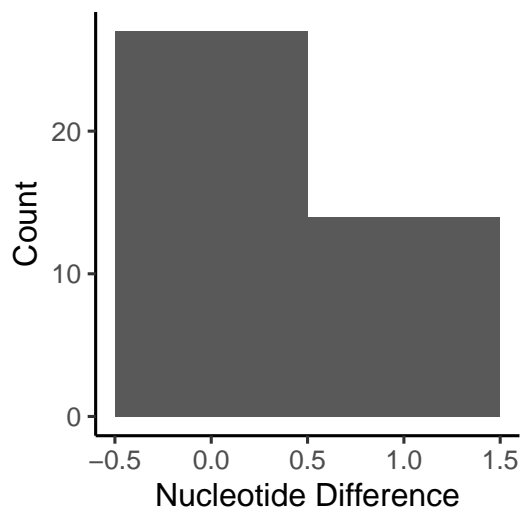
### IGHV3–21\*01

850 sequences assigned  
683 (80.4%) exact matches, in which:  
670 unique CDR3  
6 unique J



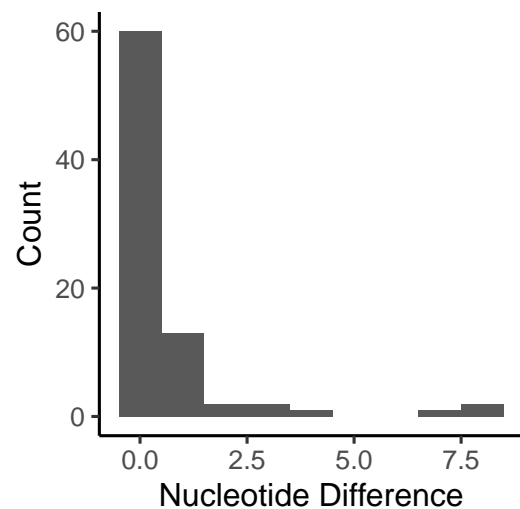
### IGHV3–43\*01

41 sequences assigned  
27 (65.9%) exact matches, in which:  
27 unique CDR3  
5 unique J



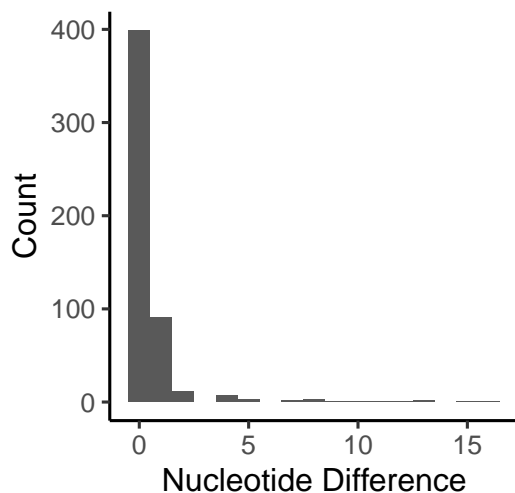
### IGHV3–49\*03

90 sequences assigned  
60 (66.7%) exact matches, in which:  
60 unique CDR3  
6 unique J



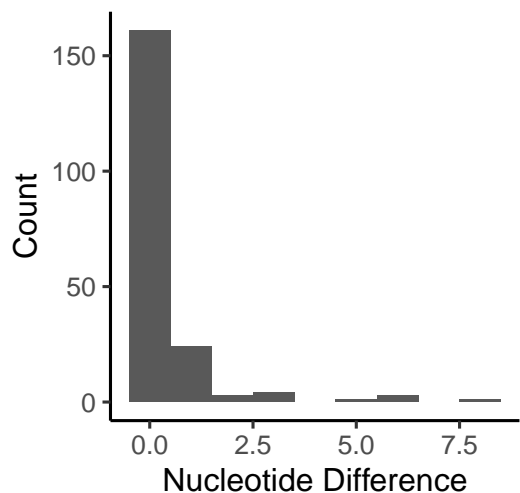
### IGHV3–30–3\*01

524 sequences assigned  
399 (76.1%) exact matches, in which:  
387 unique CDR3  
6 unique J



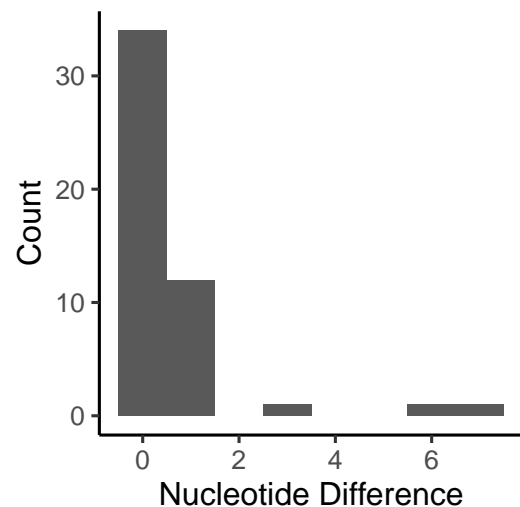
### IGHV3–48\*01

197 sequences assigned  
161 (81.7%) exact matches, in which:  
160 unique CDR3  
6 unique J



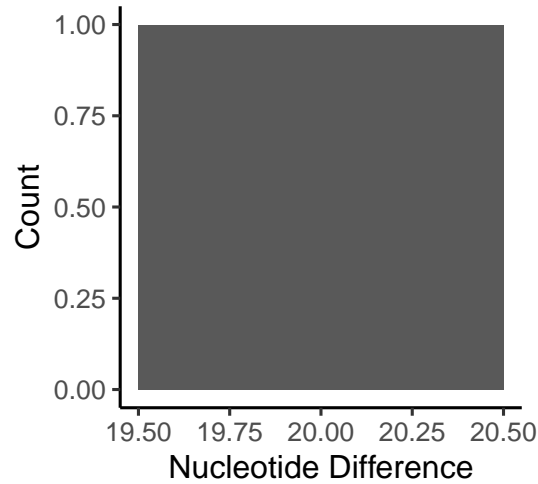
### IGHV3–49\*05

49 sequences assigned  
34 (69.4%) exact matches, in which:  
34 unique CDR3  
4 unique J



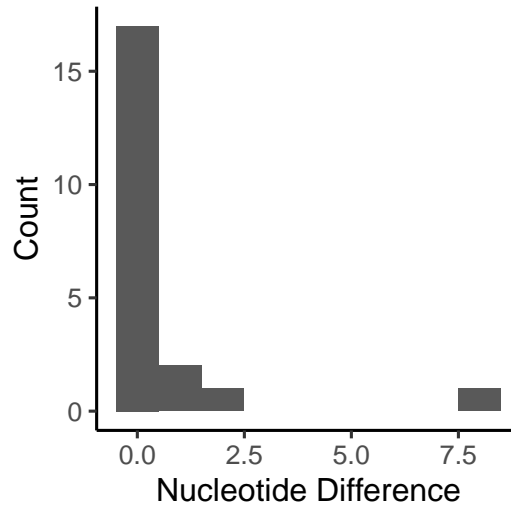
### IGHV3-52\*01

1 sequences assigned  
No exact matches.



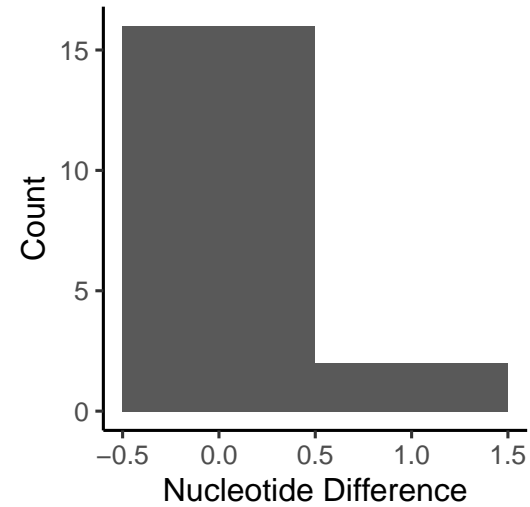
### IGHV3-64\*01

21 sequences assigned  
17 (81%) exact matches, in which:  
17 unique CDR3  
4 unique J



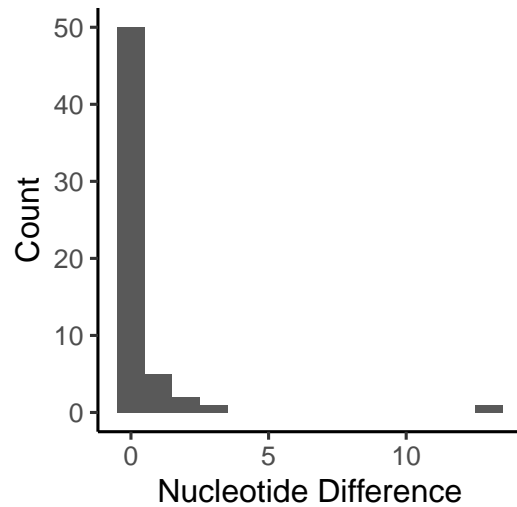
### IGHV3-73\*01

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



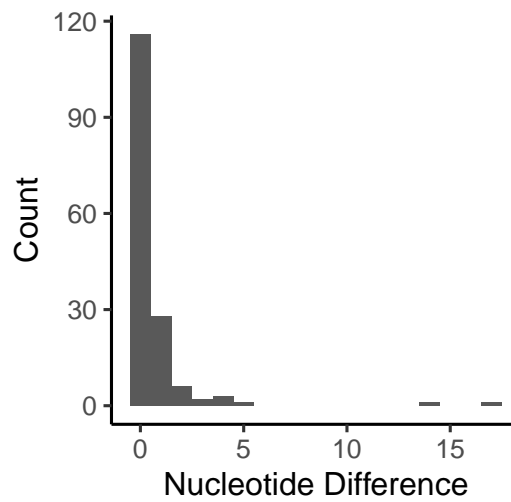
### IGHV3-53\*02

59 sequences assigned  
50 (84.7%) exact matches, in which:  
50 unique CDR3  
5 unique J



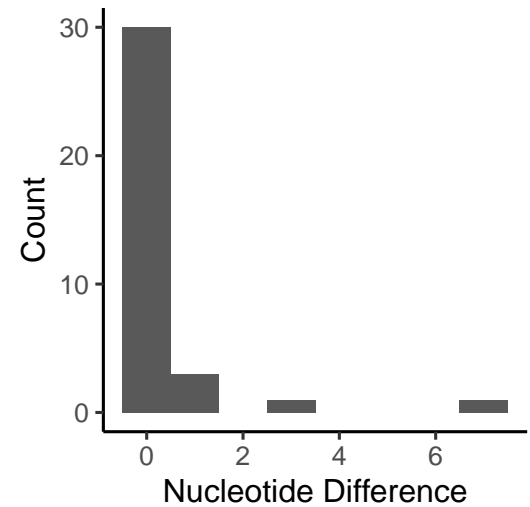
### IGHV3-66\*01

159 sequences assigned  
116 (73%) exact matches, in which:  
112 unique CDR3  
6 unique J



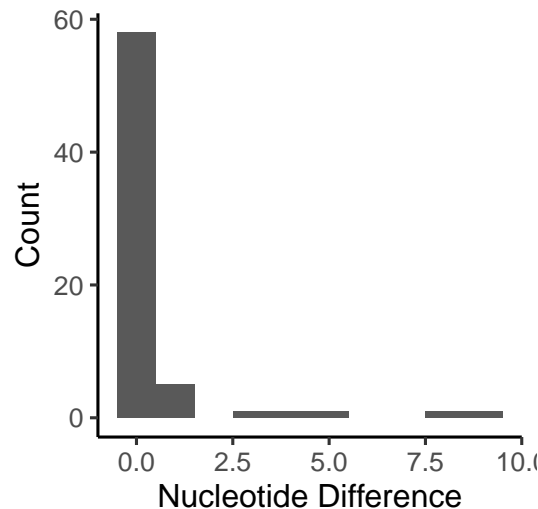
### IGHV3-73\*02

35 sequences assigned  
30 (85.7%) exact matches, in which:  
30 unique CDR3  
5 unique J



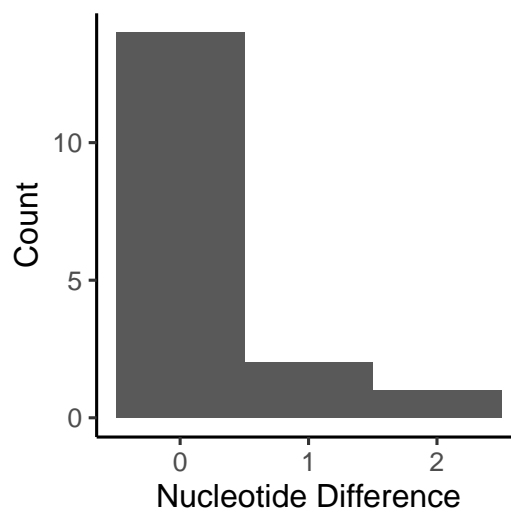
### IGHV3-53\*04

68 sequences assigned  
58 (85.3%) exact matches, in which:  
56 unique CDR3  
5 unique J



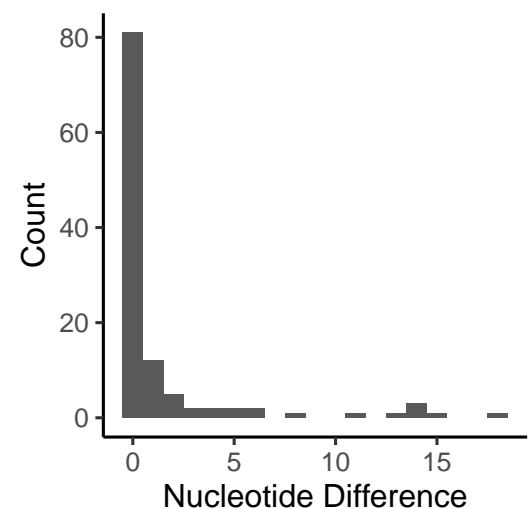
### IGHV3-72\*01

17 sequences assigned  
14 (82.4%) exact matches, in which:  
14 unique CDR3  
4 unique J



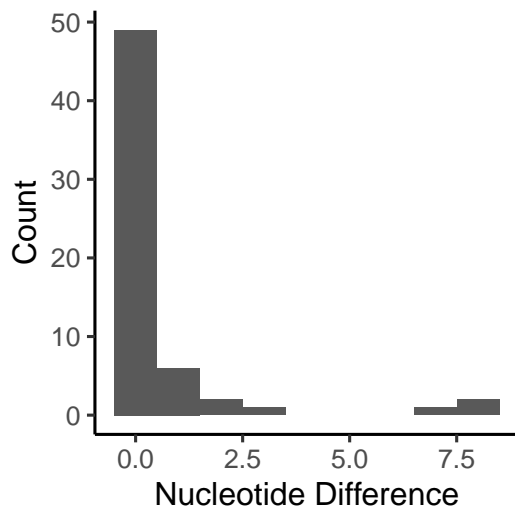
### IGHV3-74\*01

114 sequences assigned  
81 (71.1%) exact matches, in which:  
80 unique CDR3  
6 unique J



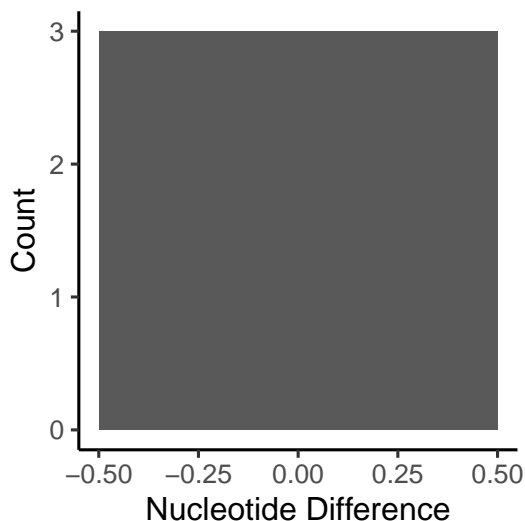
### IGHV3-64D\*06

61 sequences assigned  
49 (80.3%) exact matches, in which:  
44 unique CDR3  
4 unique J



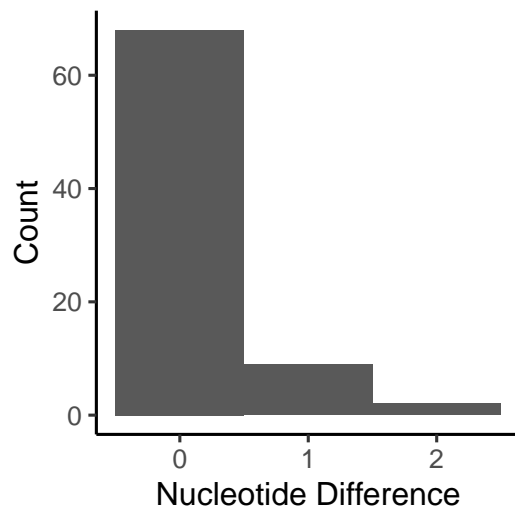
### IGHV4-28\*01

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



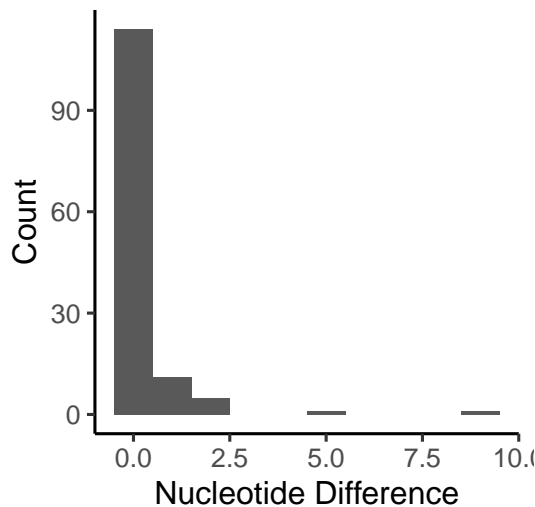
### IGHV4-30-2\*01

79 sequences assigned  
68 (86.1%) exact matches, in which:  
65 unique CDR3  
5 unique J



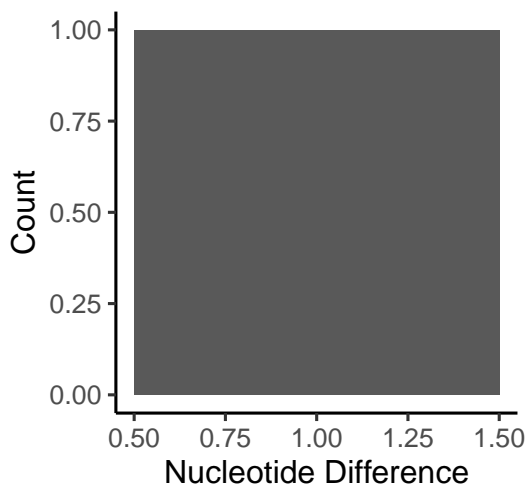
### IGHV4-4\*02

132 sequences assigned  
114 (86.4%) exact matches, in which:  
114 unique CDR3  
6 unique J



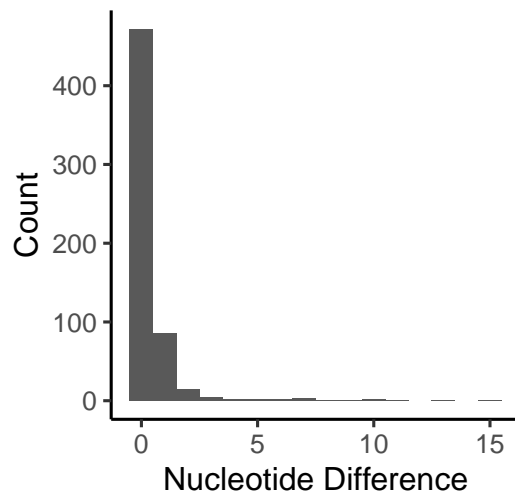
### IGHV4-28\*04

1 sequences assigned  
No exact matches.



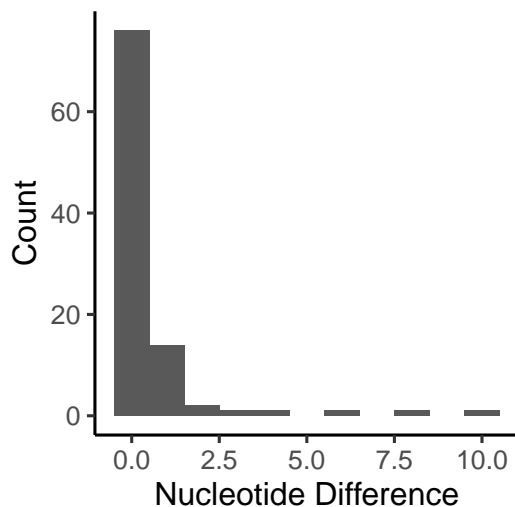
### IGHV4-31\*03

595 sequences assigned  
472 (79.3%) exact matches, in which:  
468 unique CDR3  
6 unique J



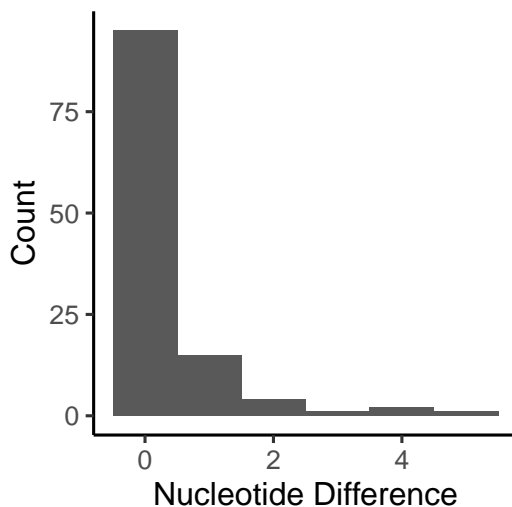
### IGHV4-4\*07

97 sequences assigned  
76 (78.4%) exact matches, in which:  
74 unique CDR3  
5 unique J



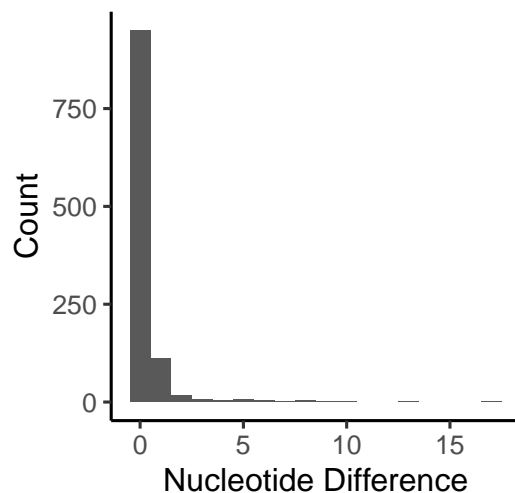
### IGHV4-30-4\*01

118 sequences assigned  
95 (80.5%) exact matches, in which:  
92 unique CDR3  
5 unique J



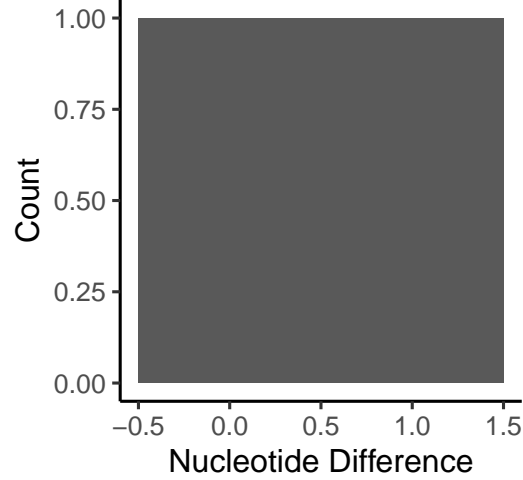
### IGHV4-34\*01

1107 sequences assigned  
950 (85.8%) exact matches, in which:  
937 unique CDR3  
6 unique J



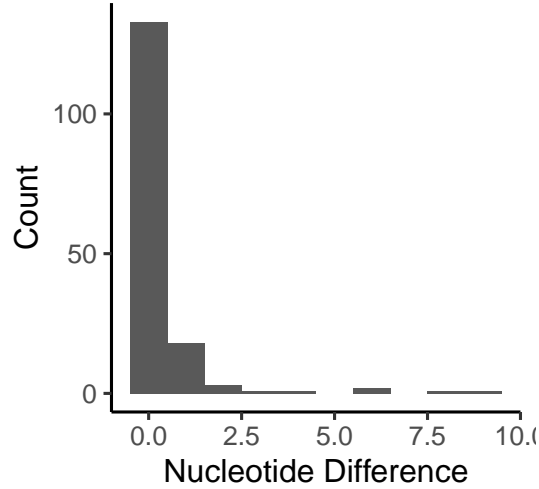
### IGHV4-38-2\*02

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



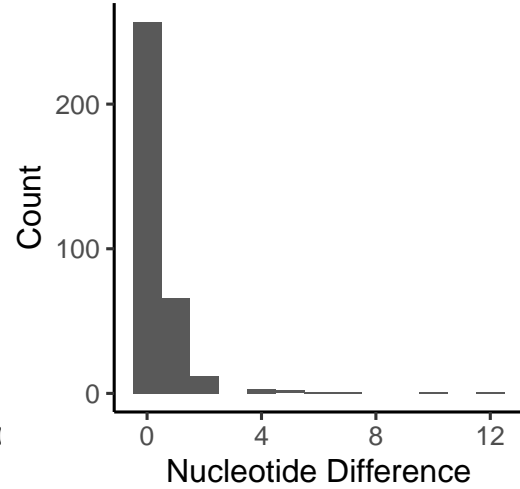
### IGHV4-59\*08

160 sequences assigned  
133 (83.1%) exact matches, in which:  
133 unique CDR3  
6 unique J



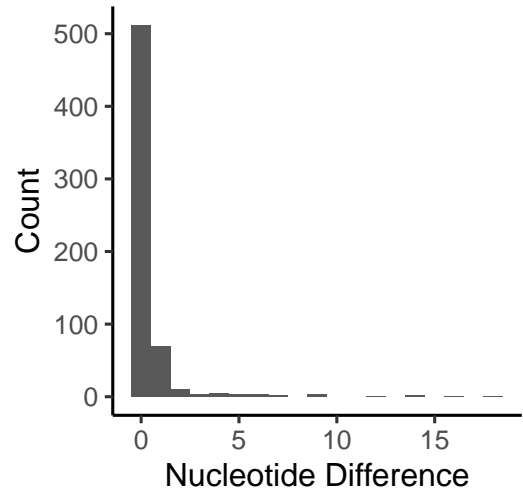
### IGHV5-51\*01

344 sequences assigned  
257 (74.7%) exact matches, in which:  
254 unique CDR3  
6 unique J



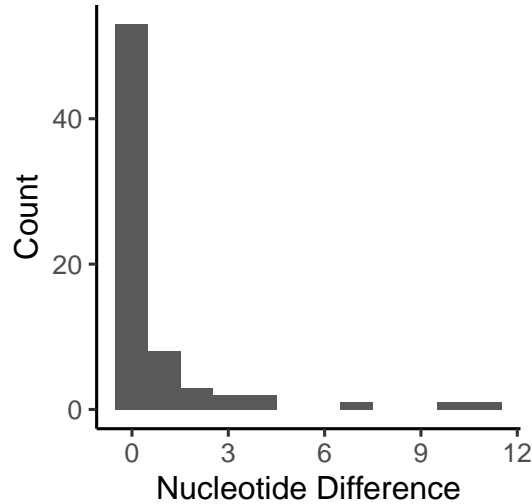
### IGHV4-39\*01

618 sequences assigned  
512 (82.8%) exact matches, in which:  
503 unique CDR3  
6 unique J



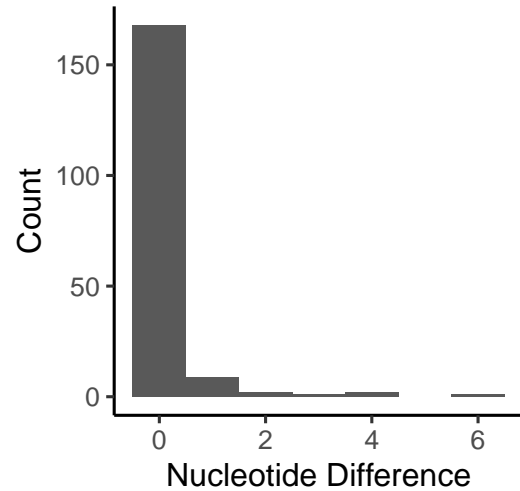
### IGHV4-61\*01

71 sequences assigned  
53 (74.6%) exact matches, in which:  
52 unique CDR3  
5 unique J



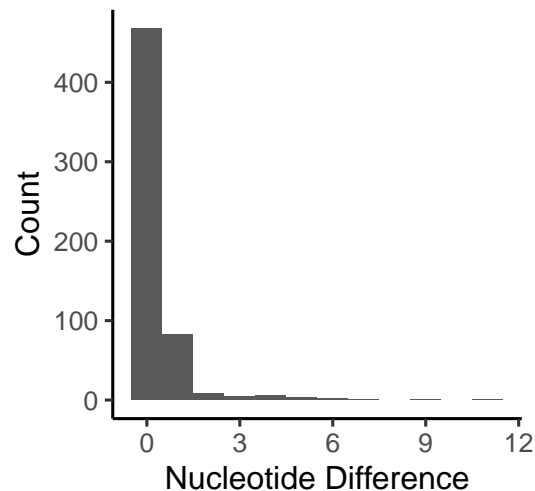
### IGHV5-51\*03

183 sequences assigned  
168 (91.8%) exact matches, in which:  
164 unique CDR3  
6 unique J



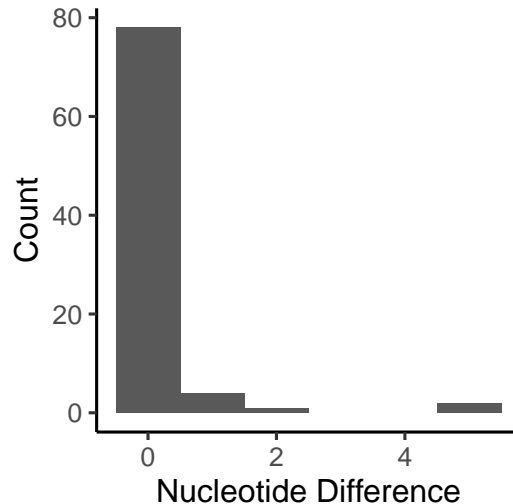
### IGHV4-59\*01

576 sequences assigned  
468 (81.2%) exact matches, in which:  
462 unique CDR3  
6 unique J



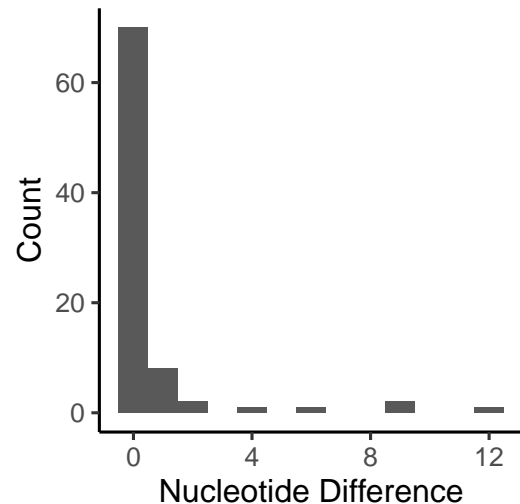
### IGHV5-10-1\*01

85 sequences assigned  
78 (91.8%) exact matches, in which:  
77 unique CDR3  
6 unique J



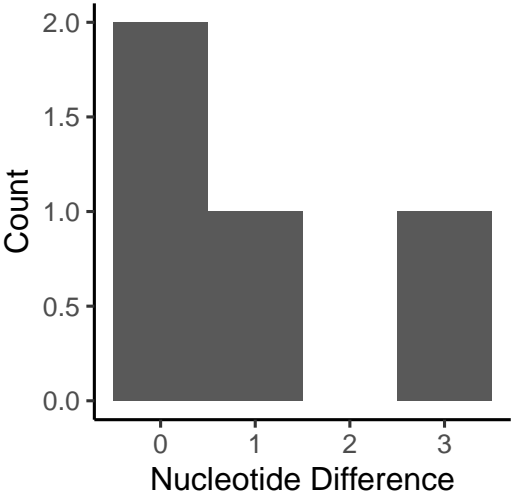
### IGHV6-1\*01

85 sequences assigned  
70 (82.4%) exact matches, in which:  
70 unique CDR3  
5 unique J



IGHV7-4-1\*01

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







Warning – no inferred sequences found.