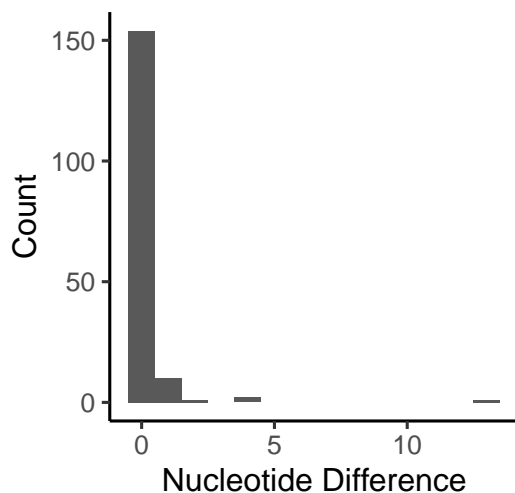


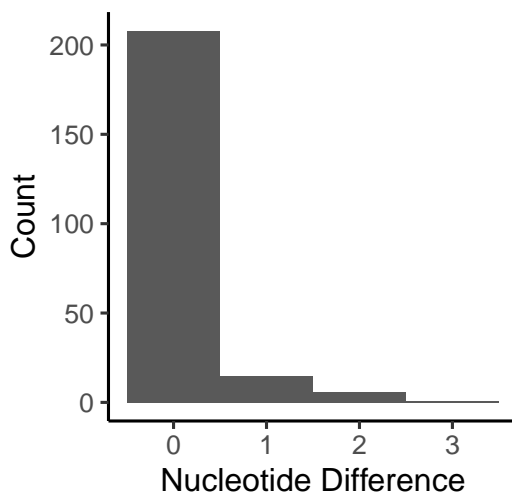
### IGHV1-2\*04

168 sequences assigned  
154 (91.7%) exact matches, in which:  
152 unique CDR3  
6 unique J



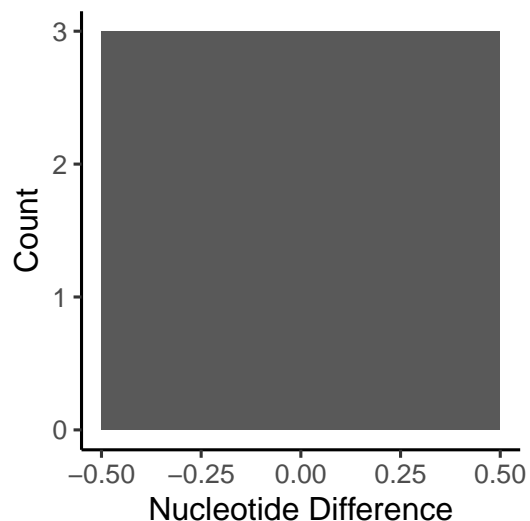
### IGHV1-8\*01

230 sequences assigned  
208 (90.4%) exact matches, in which:  
207 unique CDR3  
6 unique J



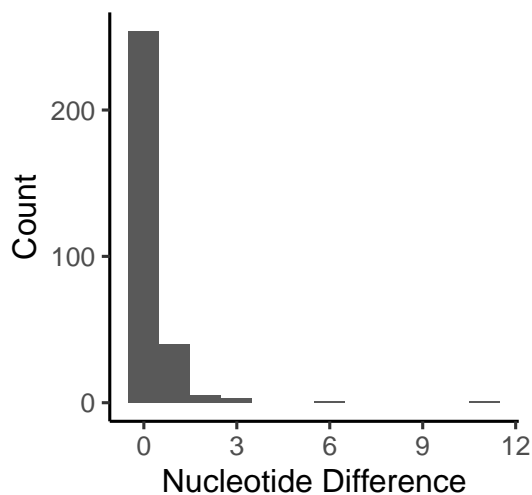
### IGHV1-45\*02

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



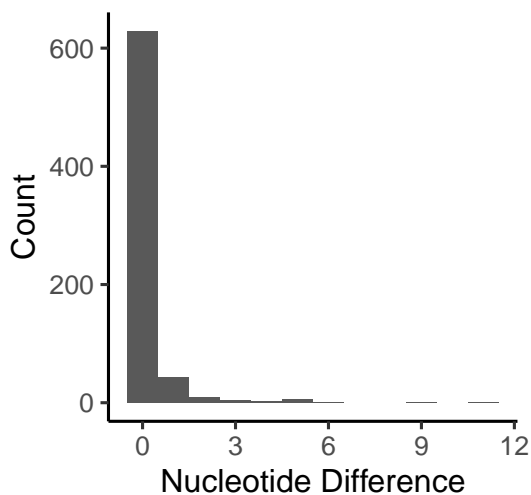
### IGHV1-2\*06

304 sequences assigned  
254 (83.6%) exact matches, in which:  
254 unique CDR3  
6 unique J



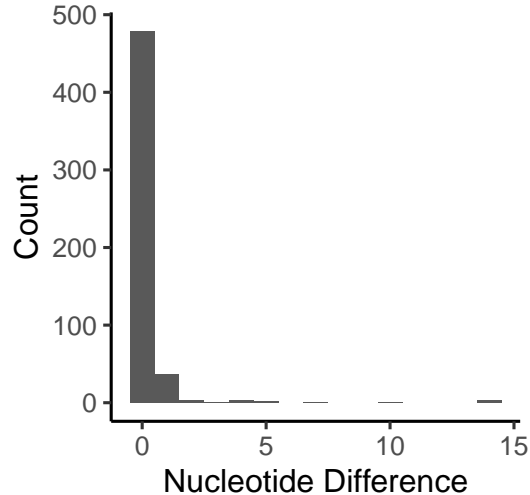
### IGHV1-18\*01

697 sequences assigned  
629 (90.2%) exact matches, in which:  
625 unique CDR3  
6 unique J



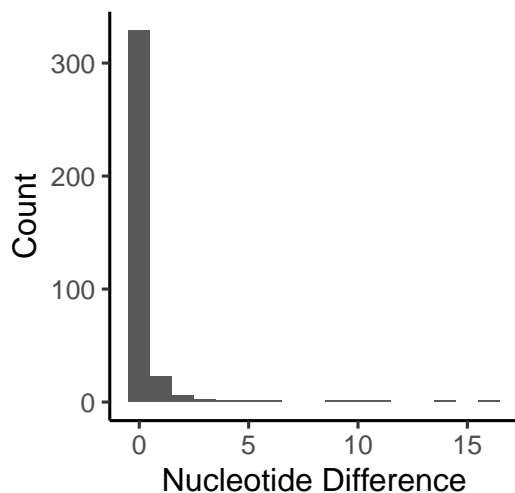
### IGHV1-46\*01

531 sequences assigned  
479 (90.2%) exact matches, in which:  
475 unique CDR3  
6 unique J



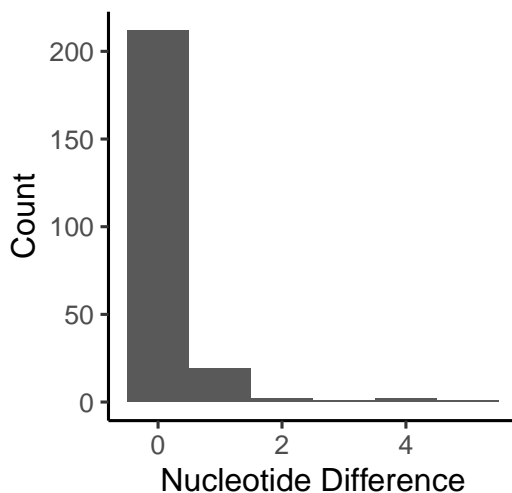
### IGHV1-3\*01

369 sequences assigned  
329 (89.2%) exact matches, in which:  
326 unique CDR3  
6 unique J



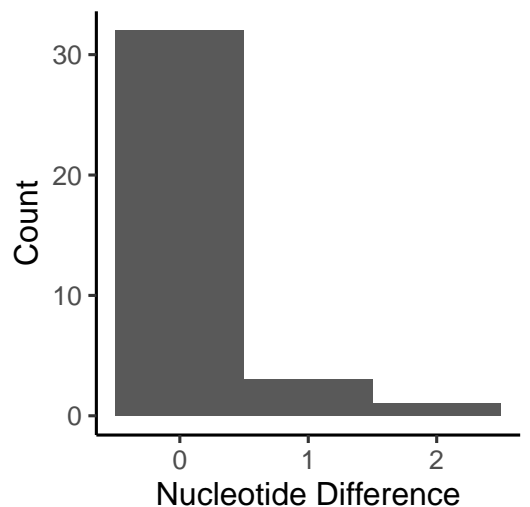
### IGHV1-24\*01

237 sequences assigned  
212 (89.5%) exact matches, in which:  
208 unique CDR3  
5 unique J



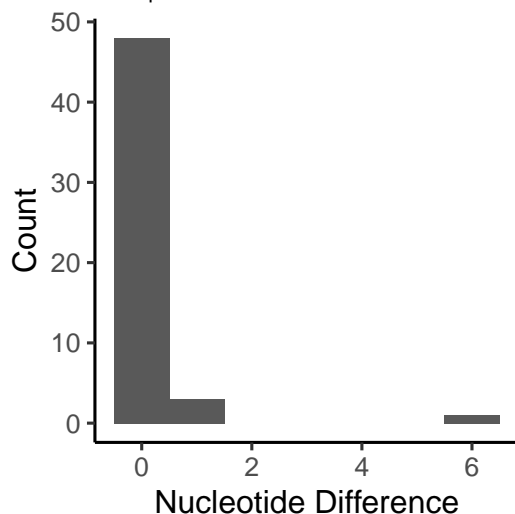
### IGHV1-58\*01

36 sequences assigned  
32 (88.9%) exact matches, in which:  
32 unique CDR3  
6 unique J



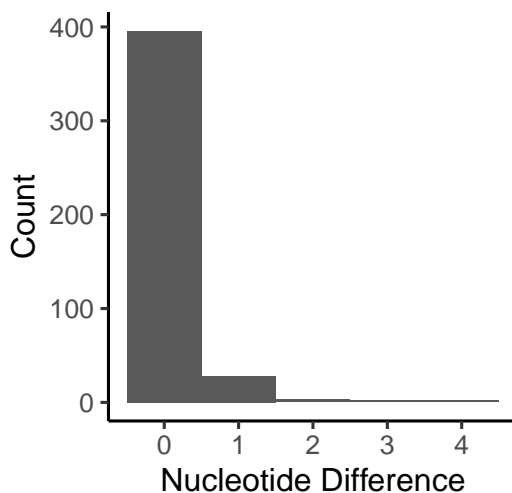
### IGHV1–58\*02

52 sequences assigned  
48 (92.3%) exact matches, in which:  
48 unique CDR3  
5 unique J



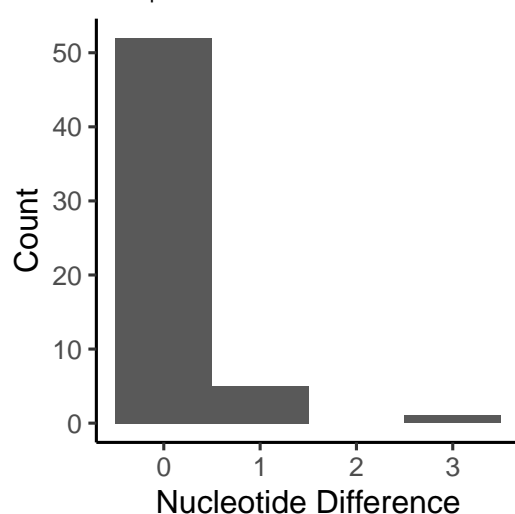
### IGHV1–69\*06

431 sequences assigned  
396 (91.9%) exact matches, in which:  
390 unique CDR3  
6 unique J



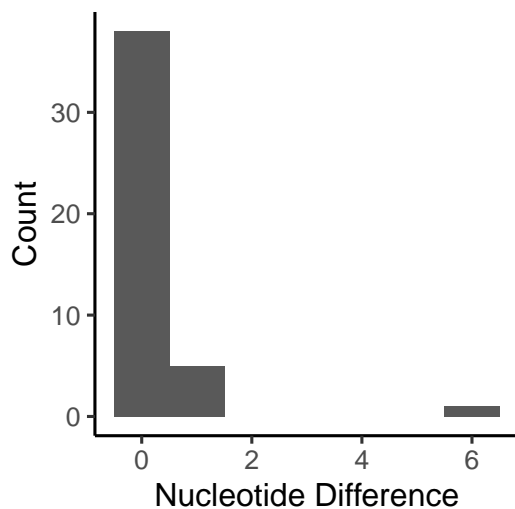
### IGHV2–70\*01

58 sequences assigned  
52 (89.7%) exact matches, in which:  
52 unique CDR3  
5 unique J



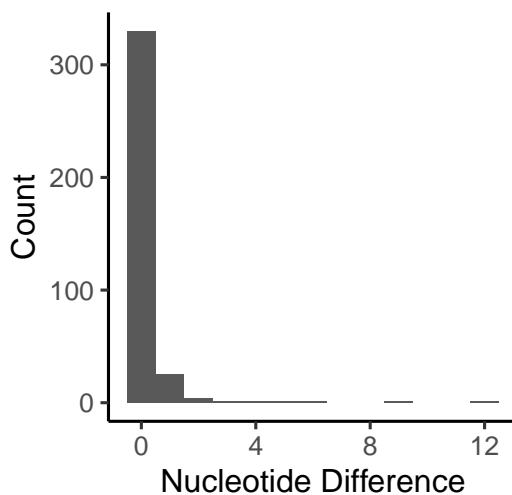
### IGHV1–69–2\*01

44 sequences assigned  
38 (86.4%) exact matches, in which:  
38 unique CDR3  
4 unique J



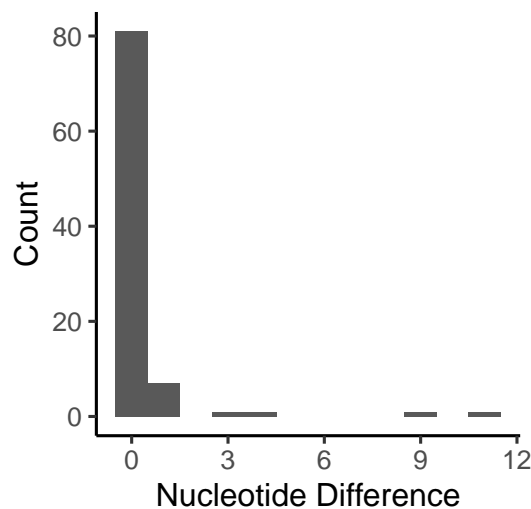
### IGHV2–5\*02

365 sequences assigned  
330 (90.4%) exact matches, in which:  
328 unique CDR3  
6 unique J



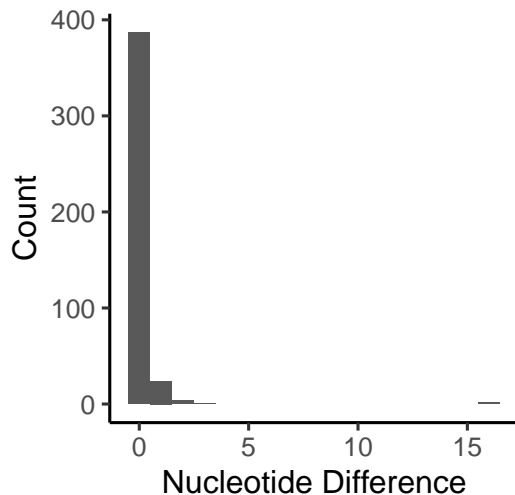
### IGHV2–70\*15

92 sequences assigned  
81 (88%) exact matches, in which:  
80 unique CDR3  
5 unique J



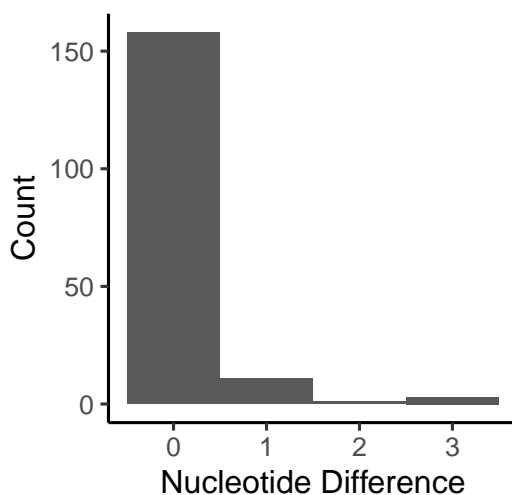
### IGHV1–69\*04

419 sequences assigned  
387 (92.4%) exact matches, in which:  
384 unique CDR3  
6 unique J



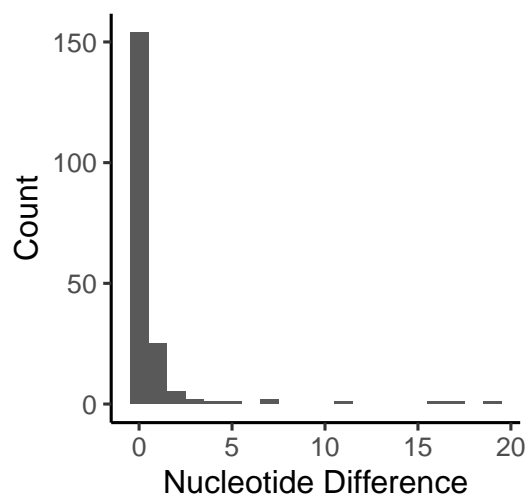
### IGHV2–26\*01

173 sequences assigned  
158 (91.3%) exact matches, in which:  
157 unique CDR3  
5 unique J



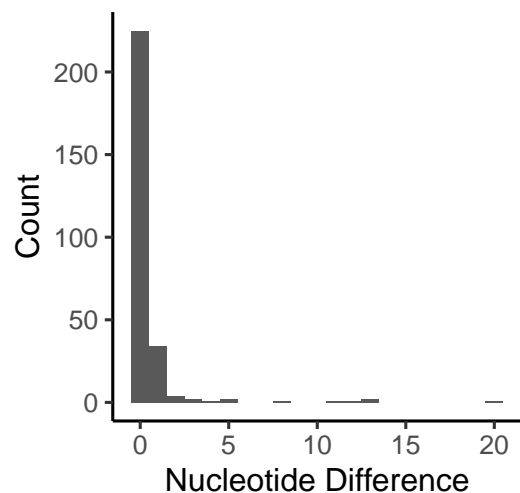
### IGHV3–7\*01

194 sequences assigned  
154 (79.4%) exact matches, in which:  
151 unique CDR3  
6 unique J



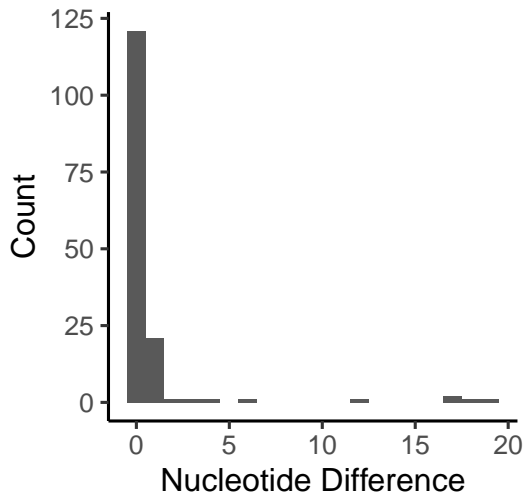
### IGHV3-7\*03

274 sequences assigned  
225 (82.1%) exact matches, in which:  
221 unique CDR3  
6 unique J



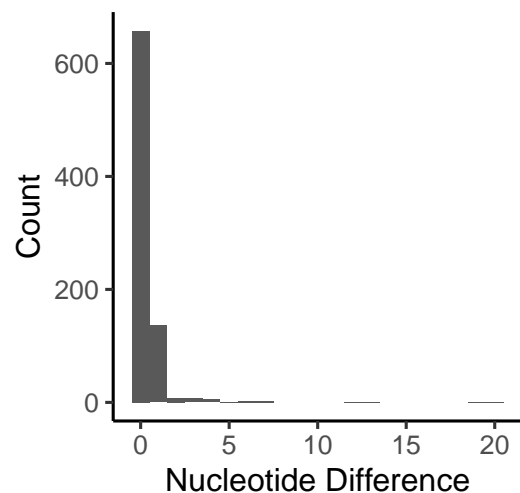
### IGHV3-11\*06

151 sequences assigned  
121 (80.1%) exact matches, in which:  
120 unique CDR3  
6 unique J



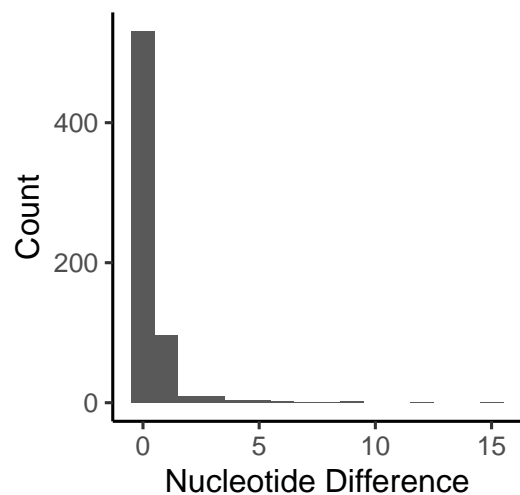
### IGHV3-15\*01

824 sequences assigned  
658 (79.9%) exact matches, in which:  
649 unique CDR3  
6 unique J



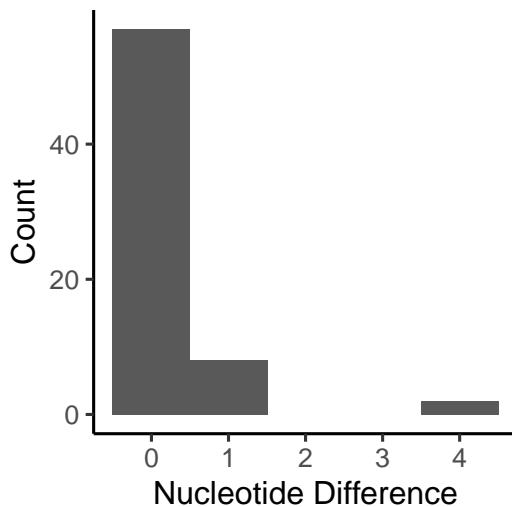
### IGHV3-9\*01

660 sequences assigned  
531 (80.5%) exact matches, in which:  
526 unique CDR3  
6 unique J



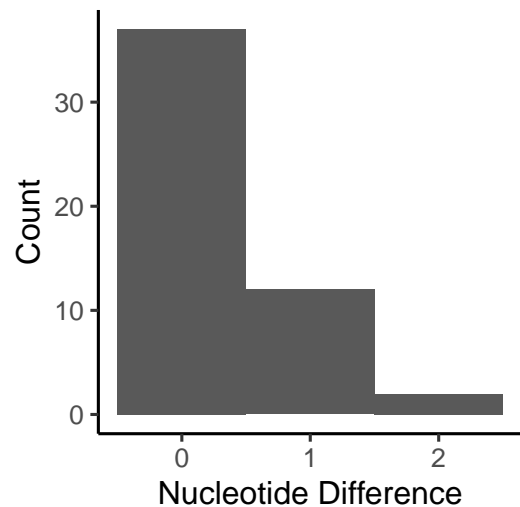
### IGHV3-13\*01

67 sequences assigned  
57 (85.1%) exact matches, in which:  
57 unique CDR3  
5 unique J



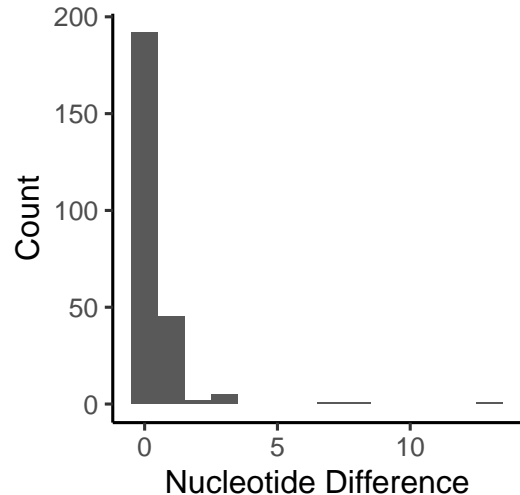
### IGHV3-20\*01

51 sequences assigned  
37 (72.5%) exact matches, in which:  
37 unique CDR3  
5 unique J



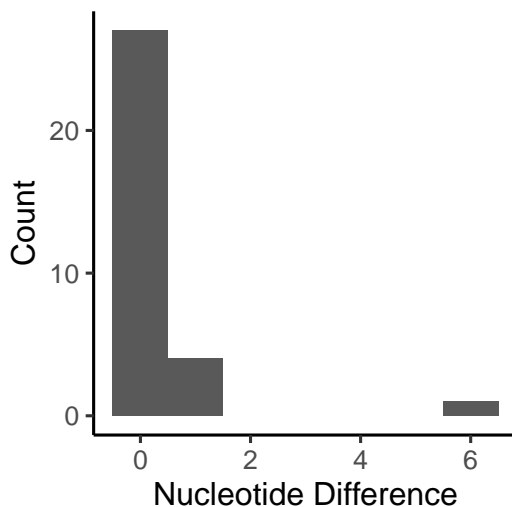
### IGHV3-11\*01

248 sequences assigned  
192 (77.4%) exact matches, in which:  
191 unique CDR3  
6 unique J



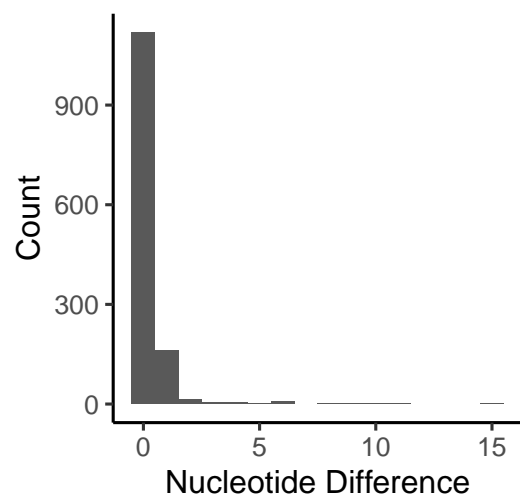
### IGHV3-13\*05

32 sequences assigned  
27 (84.4%) exact matches, in which:  
27 unique CDR3  
4 unique J



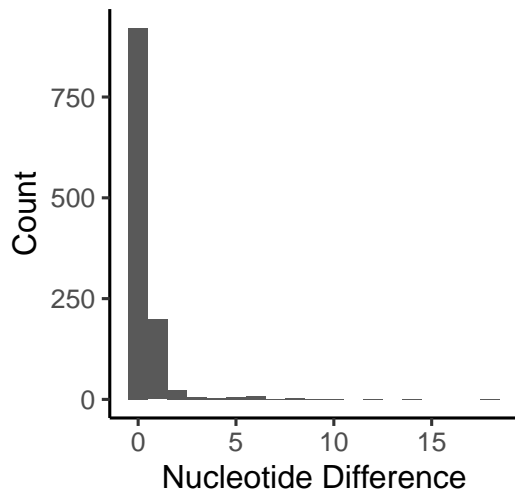
### IGHV3-21\*01

1323 sequences assigned  
1119 (84.6%) exact matches, in which:  
1106 unique CDR3  
6 unique J



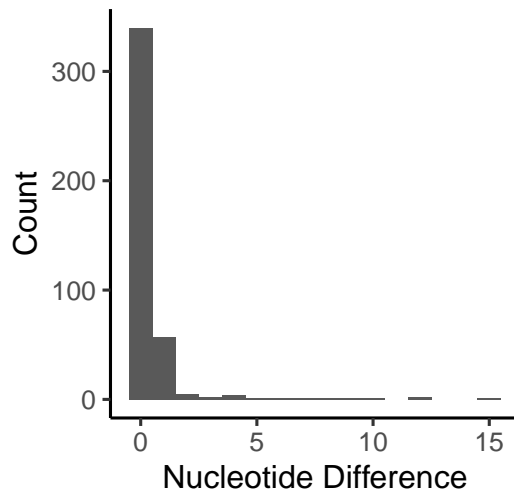
### IGHV3–33\*01

1179 sequences assigned  
922 (78.2%) exact matches, in which:  
899 unique CDR3  
6 unique J



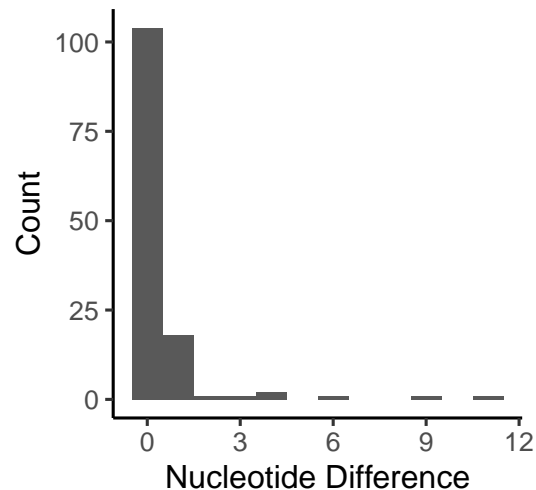
### IGHV3–48\*02

417 sequences assigned  
340 (81.5%) exact matches, in which:  
335 unique CDR3  
6 unique J



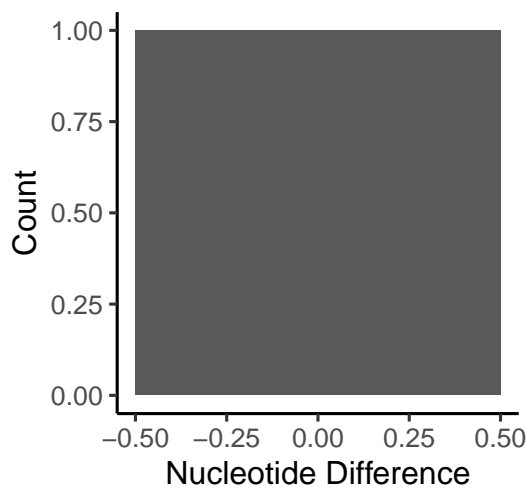
### IGHV3–49\*05

129 sequences assigned  
104 (80.6%) exact matches, in which:  
102 unique CDR3  
4 unique J



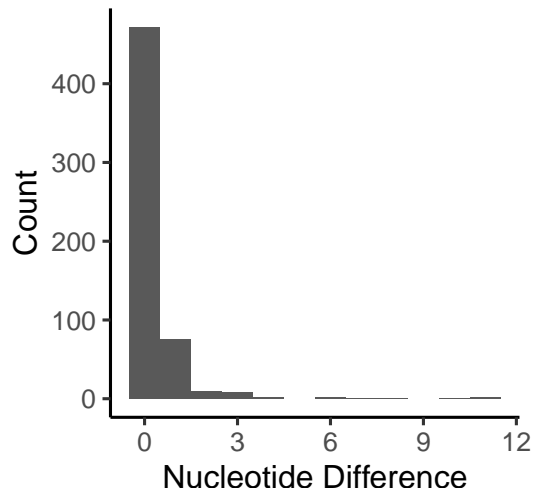
### IGHV3–38–3\*01

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



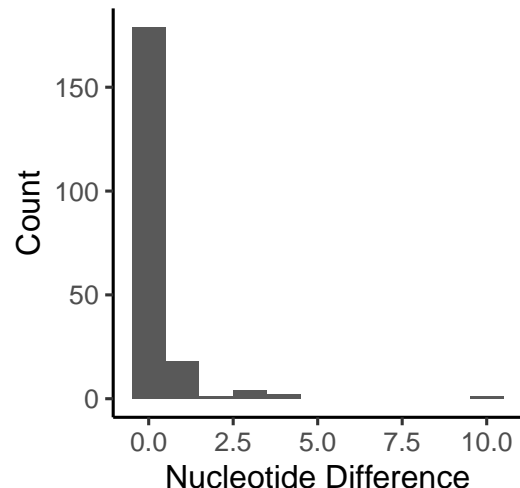
### IGHV3–48\*03

576 sequences assigned  
472 (81.9%) exact matches, in which:  
465 unique CDR3  
6 unique J



### IGHV3–53\*01

205 sequences assigned  
179 (87.3%) exact matches, in which:  
179 unique CDR3  
6 unique J



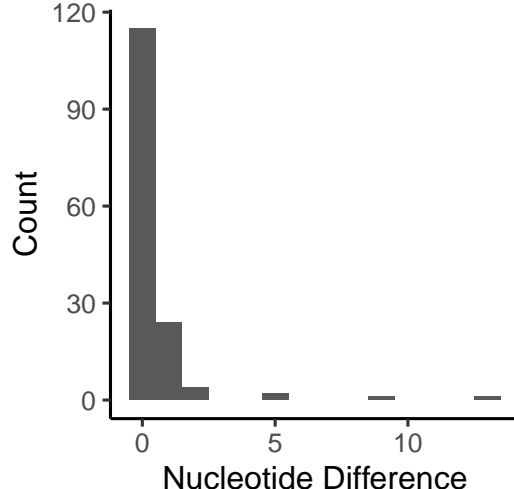
### IGHV3–47\*01

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



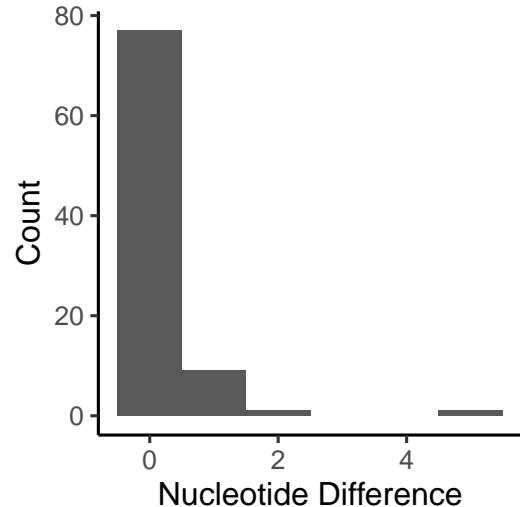
### IGHV3–49\*04

149 sequences assigned  
115 (77.2%) exact matches, in which:  
114 unique CDR3  
4 unique J



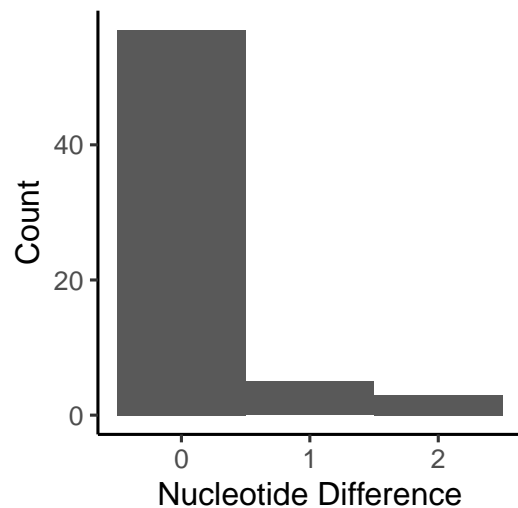
### IGHV3–53\*02

88 sequences assigned  
77 (87.5%) exact matches, in which:  
77 unique CDR3  
5 unique J



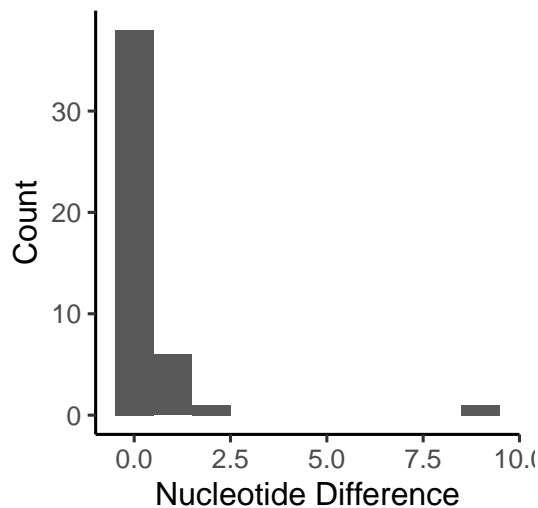
### IGHV3-64\*01

65 sequences assigned  
57 (87.7%) exact matches, in which:  
57 unique CDR3  
4 unique J



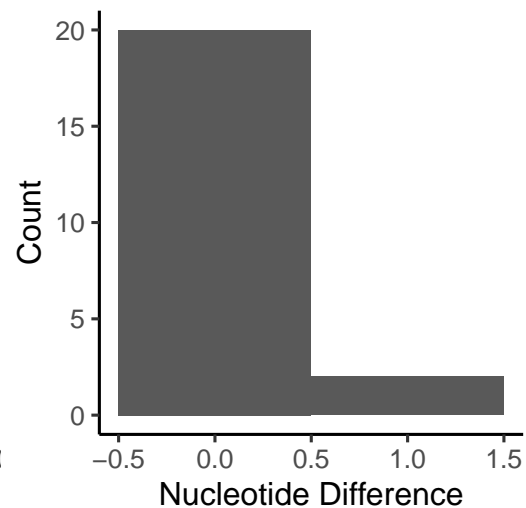
### IGHV3-73\*01

46 sequences assigned  
38 (82.6%) exact matches, in which:  
38 unique CDR3  
3 unique J



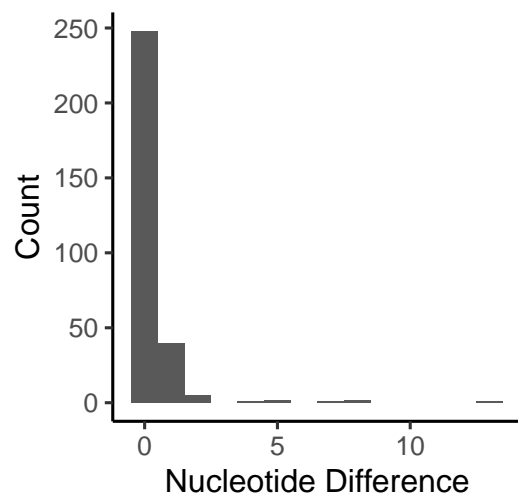
### IGHV3-43D\*04

22 sequences assigned  
20 (90.9%) exact matches, in which:  
20 unique CDR3  
3 unique J



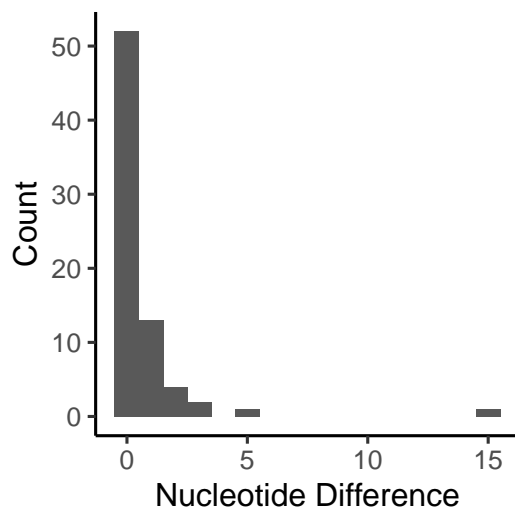
### IGHV3-66\*01

300 sequences assigned  
248 (82.7%) exact matches, in which:  
244 unique CDR3  
6 unique J



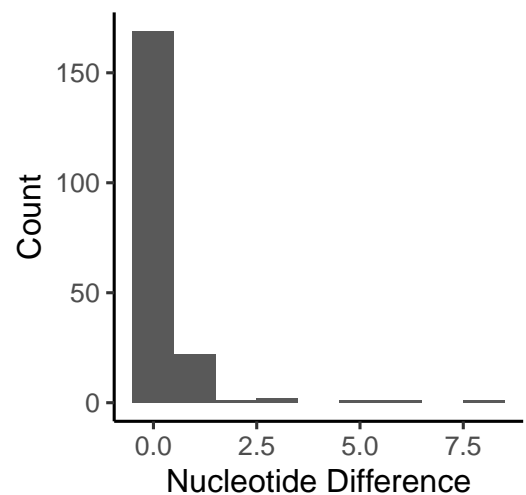
### IGHV3-73\*02

73 sequences assigned  
52 (71.2%) exact matches, in which:  
52 unique CDR3  
4 unique J



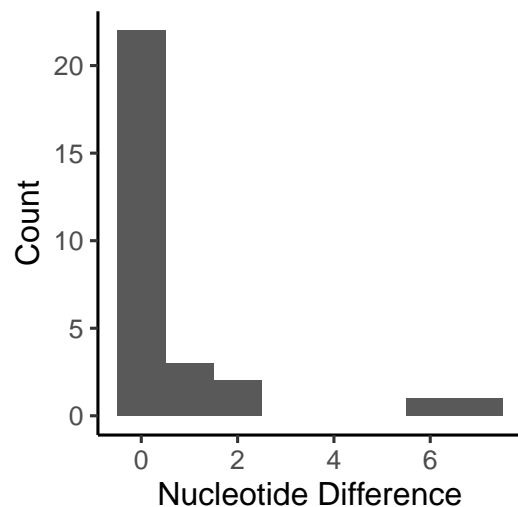
### IGHV3-64D\*06

197 sequences assigned  
169 (85.8%) exact matches, in which:  
161 unique CDR3  
6 unique J



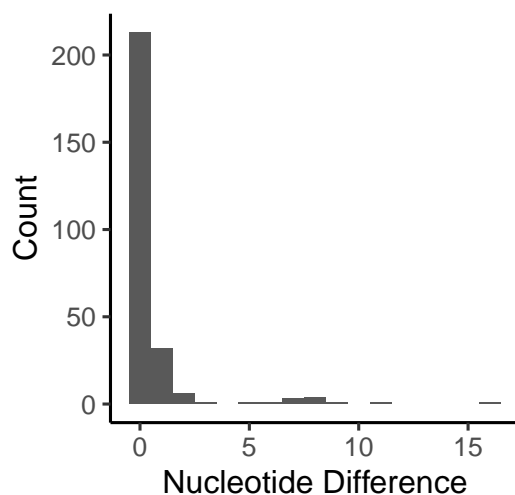
### IGHV3-72\*01

29 sequences assigned  
22 (75.9%) exact matches, in which:  
20 unique CDR3  
3 unique J



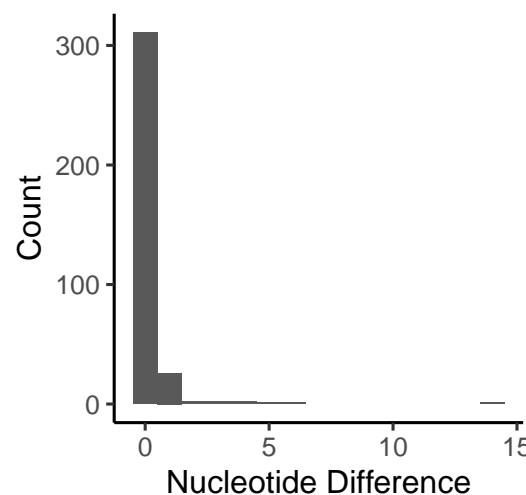
### IGHV3-74\*01

264 sequences assigned  
213 (80.7%) exact matches, in which:  
212 unique CDR3  
5 unique J



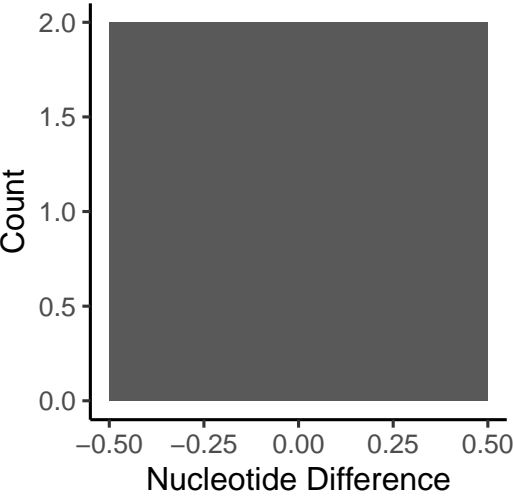
### IGHV4-4\*02

346 sequences assigned  
311 (89.9%) exact matches, in which:  
310 unique CDR3  
6 unique J



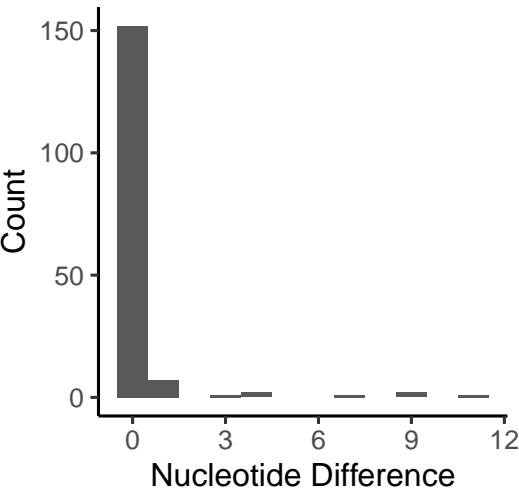
IGHV4-28\*05

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



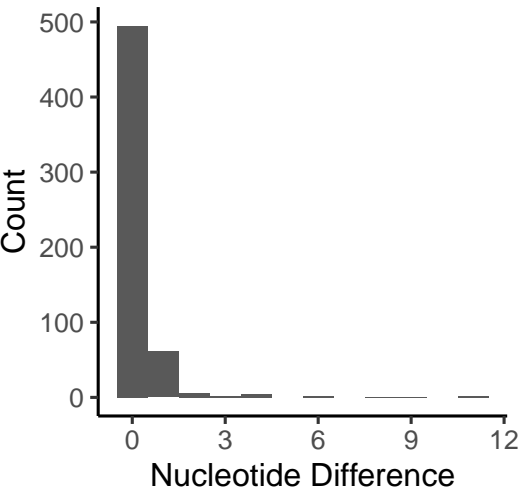
IGHV4-38-2\*01

167 sequences assigned  
152 (91%) exact matches, in which:  
151 unique CDR3  
6 unique J



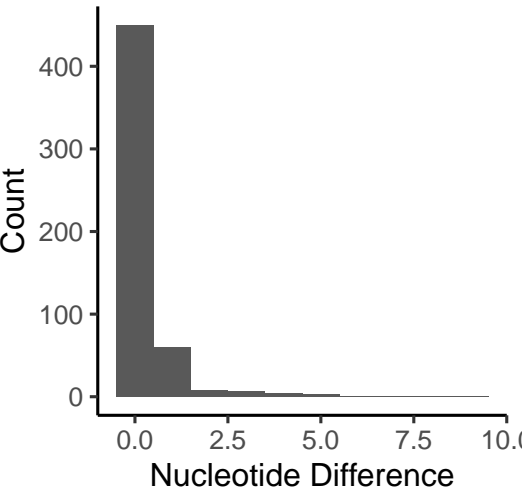
IGHV4-59\*01

575 sequences assigned  
495 (86.1%) exact matches, in which:  
492 unique CDR3  
6 unique J



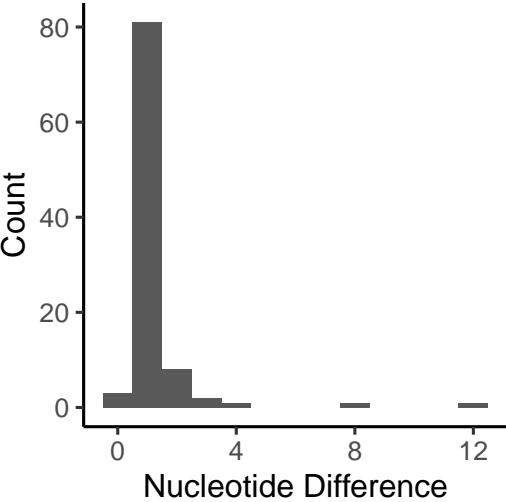
IGHV4-31\*03

536 sequences assigned  
450 (84%) exact matches, in which:  
448 unique CDR3  
6 unique J



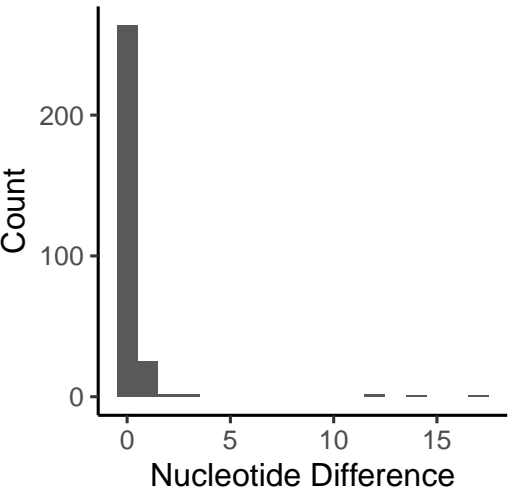
IGHV4-38-2\*02

97 sequences assigned  
3 (3.1%) exact matches, in which:  
3 unique CDR3  
3 unique J



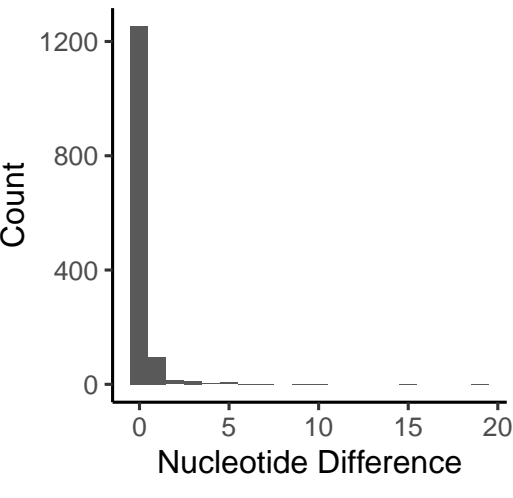
IGHV4-59\*08

300 sequences assigned  
264 (88%) exact matches, in which:  
263 unique CDR3  
6 unique J



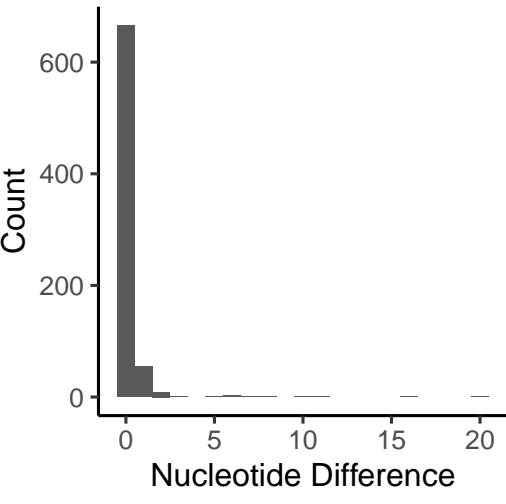
IGHV4-34\*01

1393 sequences assigned  
1254 (90%) exact matches, in which:  
1247 unique CDR3  
6 unique J



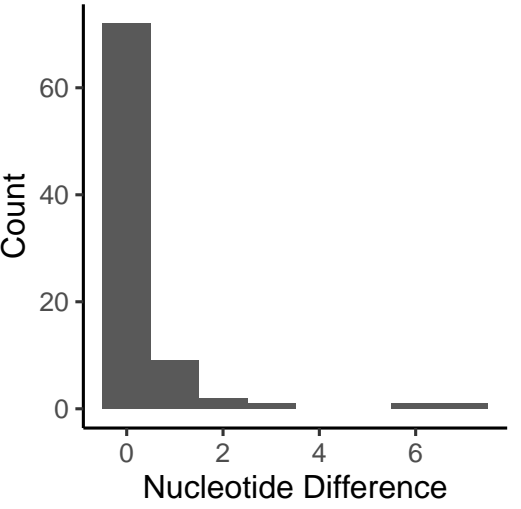
IGHV4-39\*01

742 sequences assigned  
666 (89.8%) exact matches, in which:  
662 unique CDR3  
6 unique J



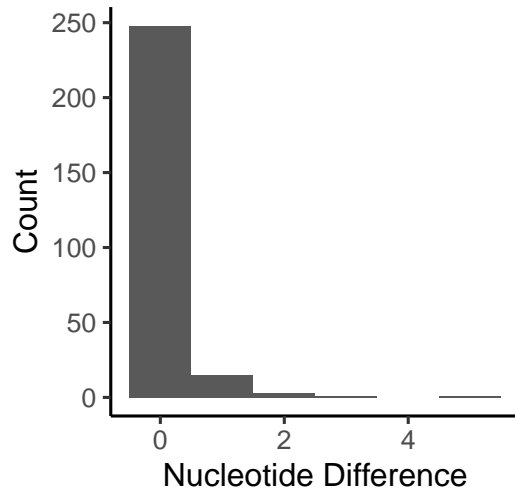
IGHV4-61\*01

86 sequences assigned  
72 (83.7%) exact matches, in which:  
72 unique CDR3  
4 unique J



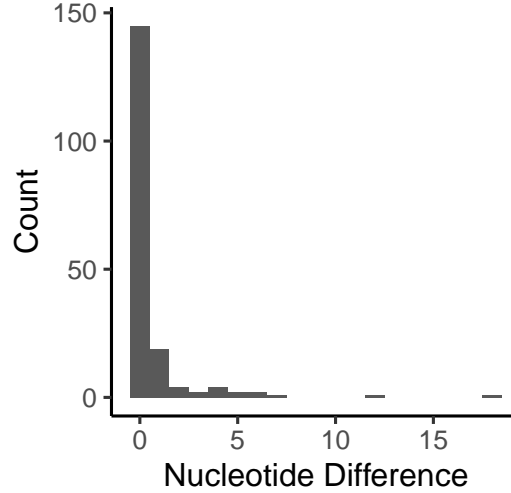
### IGHV5-10-1\*03

271 sequences assigned  
248 (91.5%) exact matches, in which:  
247 unique CDR3  
6 unique J



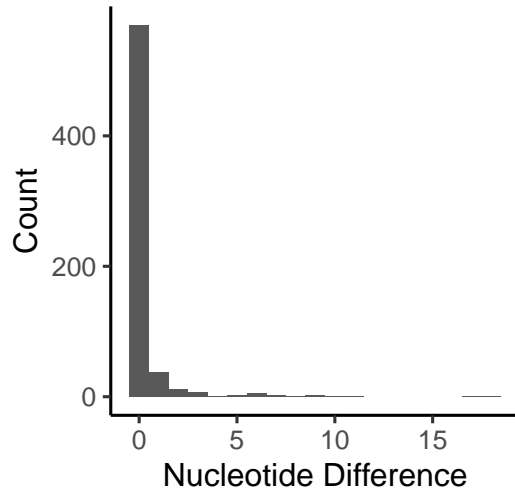
### IGHV7-4-1\*02

181 sequences assigned  
145 (80.1%) exact matches, in which:  
145 unique CDR3  
6 unique J



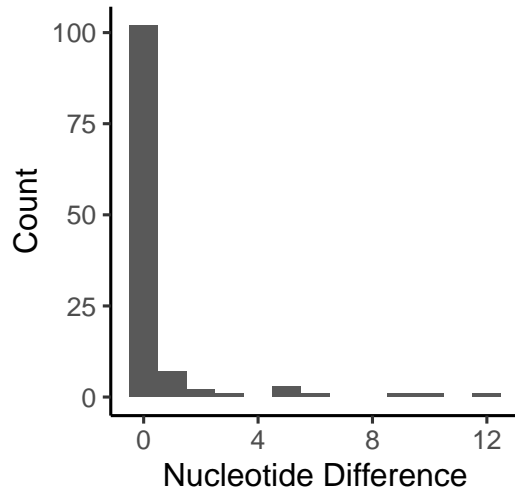
### IGHV5-51\*01

644 sequences assigned  
570 (88.5%) exact matches, in which:  
565 unique CDR3  
6 unique J



### IGHV6-1\*01

119 sequences assigned  
102 (85.7%) exact matches, in which:  
102 unique CDR3  
4 unique J







[illegible]