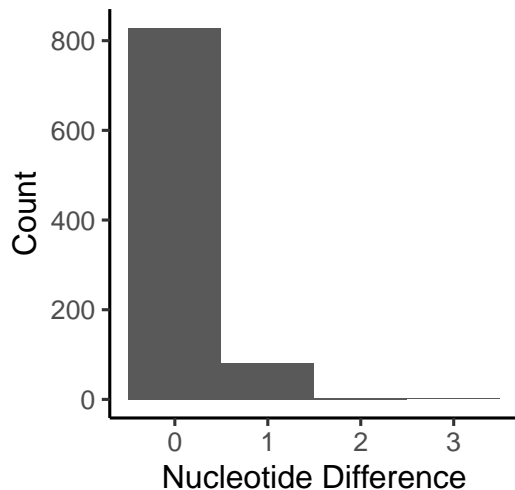


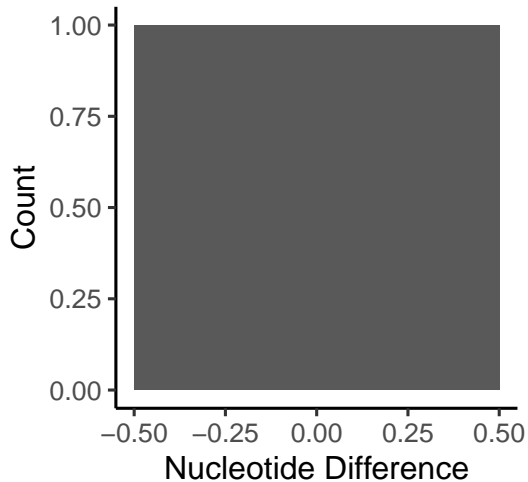
### IGHV1-2\*06

916 sequences assigned  
829 (90.5%) exact matches, in which:  
821 unique CDR3  
6 unique J



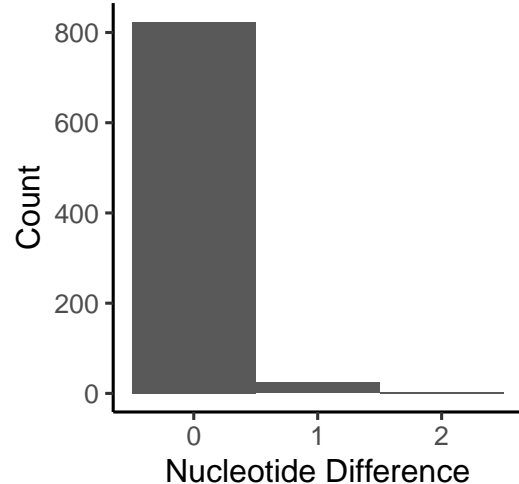
### IGHV1-8\*03

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



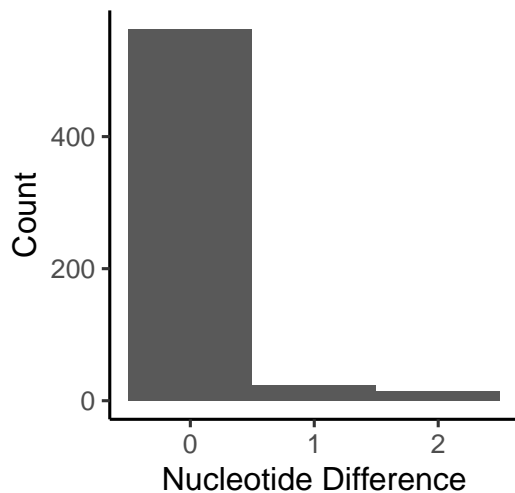
### IGHV1-24\*01

851 sequences assigned  
824 (96.8%) exact matches, in which:  
820 unique CDR3  
7 unique J



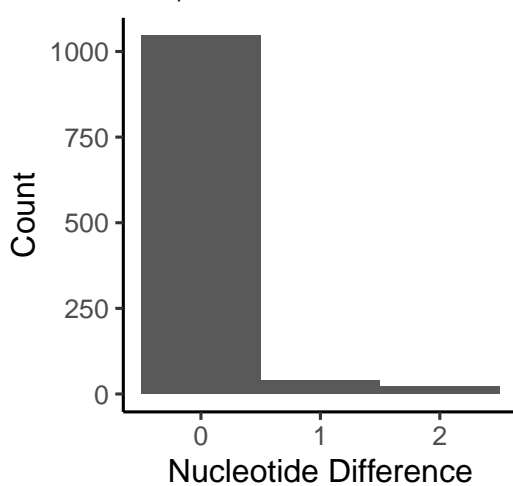
### IGHV1-3\*01\_05

600 sequences assigned  
563 (93.8%) exact matches, in which:  
563 unique CDR3  
7 unique J



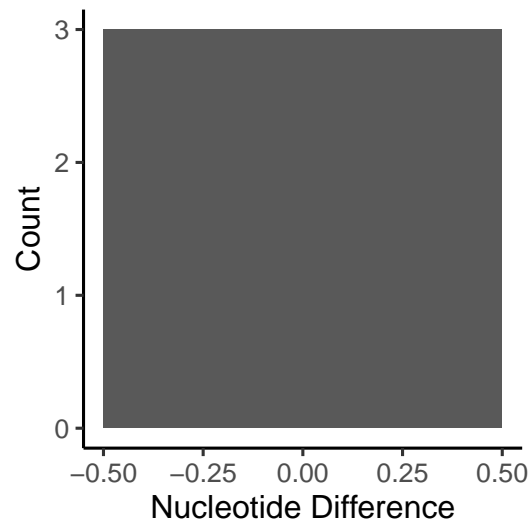
### IGHV1-18\*01

1108 sequences assigned  
1046 (94.4%) exact matches, in which:  
1039 unique CDR3  
7 unique J



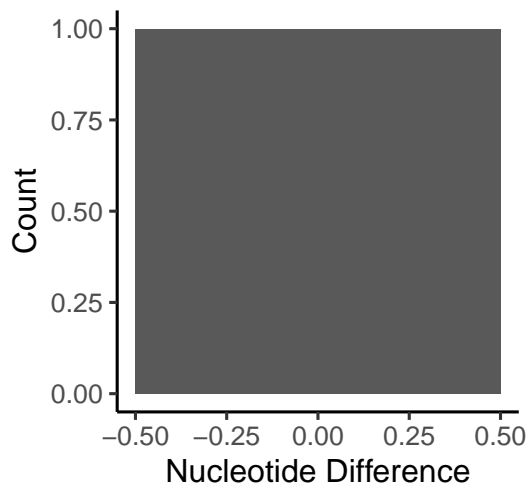
### IGHV1-45\*02

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



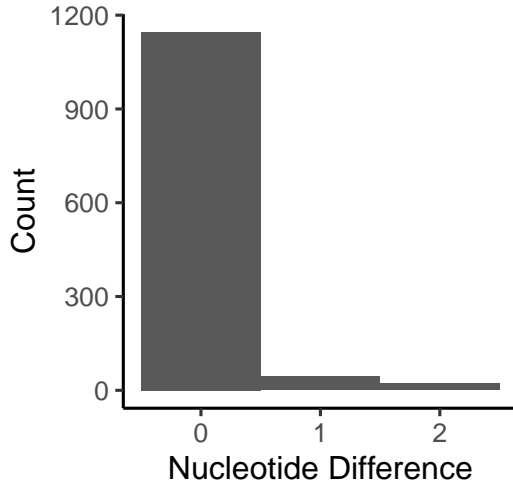
### IGHV1-8\*01

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



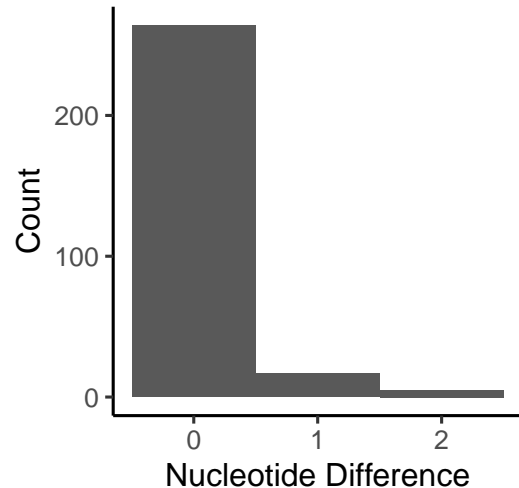
### IGHV1-18\*04

1212 sequences assigned  
1146 (94.6%) exact matches, in which:  
1138 unique CDR3  
7 unique J



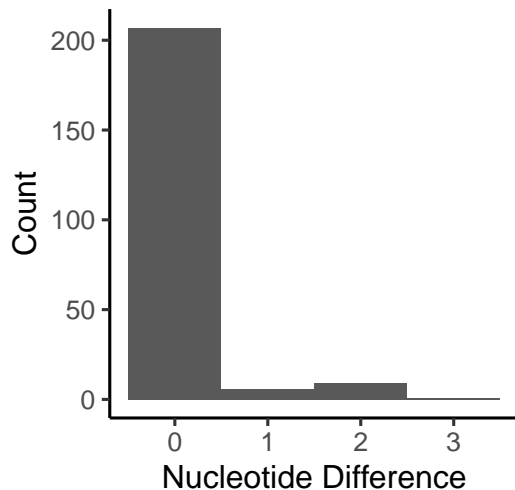
### IGHV1-46\*01

286 sequences assigned  
264 (92.3%) exact matches, in which:  
263 unique CDR3  
7 unique J



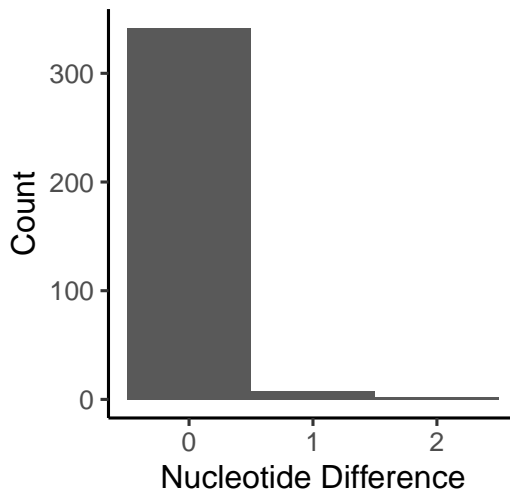
### IGHV1–46\*03

223 sequences assigned  
207 (92.8%) exact matches, in which:  
206 unique CDR3  
6 unique J



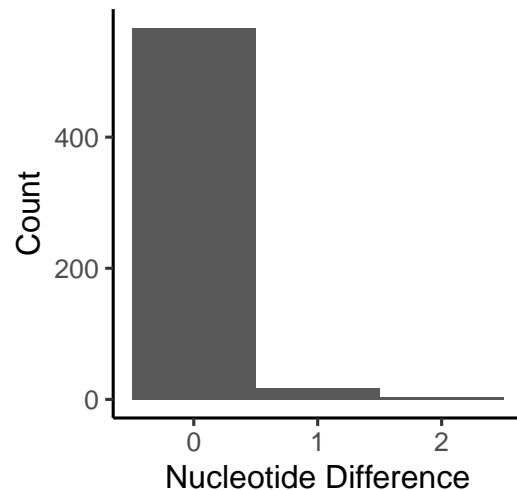
### IGHV1–69\*02

352 sequences assigned  
342 (97.2%) exact matches, in which:  
342 unique CDR3  
6 unique J



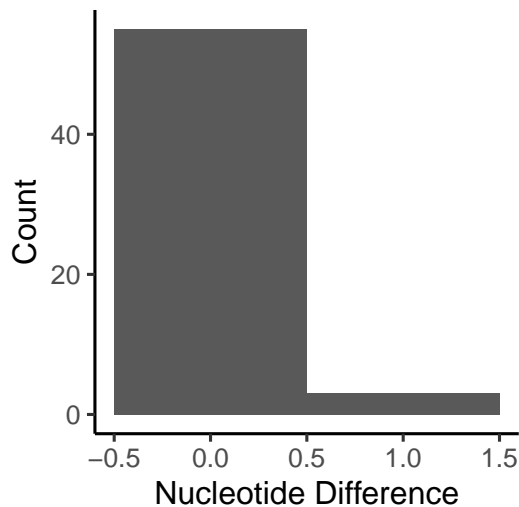
### IGHV1–69\*06\_14

588 sequences assigned  
567 (96.4%) exact matches, in which:  
567 unique CDR3  
7 unique J



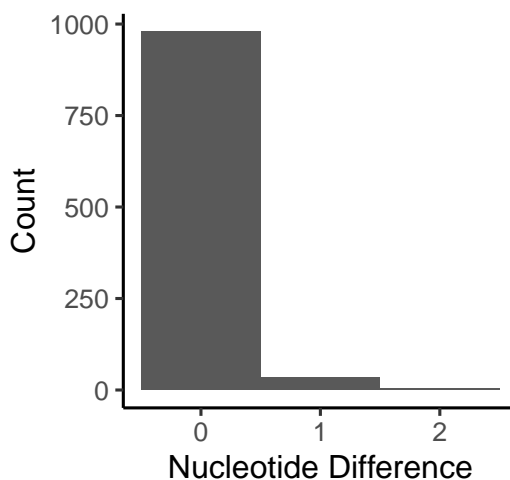
### IGHV1–58\*02

58 sequences assigned  
55 (94.8%) exact matches, in which:  
55 unique CDR3  
6 unique J



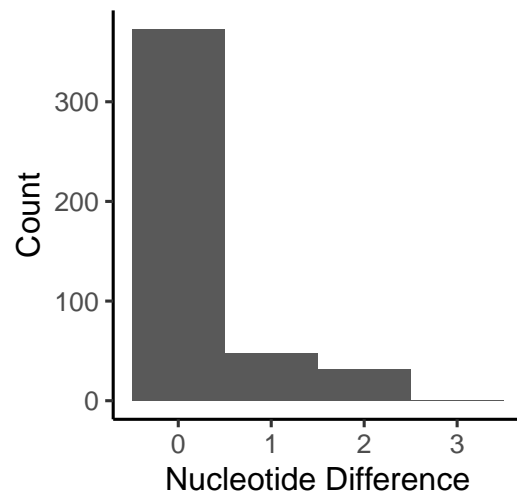
### IGHV1–69\*01\_12\_13

1018 sequences assigned  
979 (96.2%) exact matches, in which:  
978 unique CDR3  
7 unique J



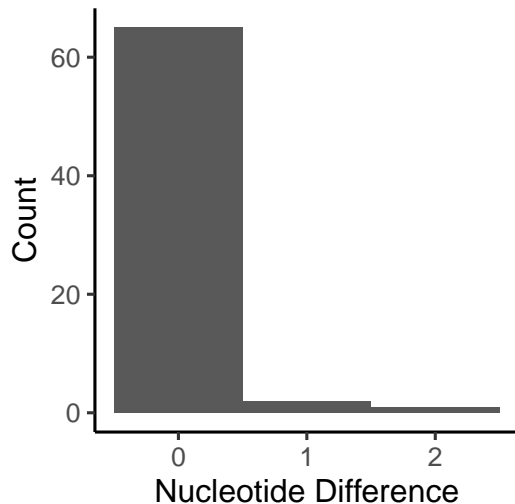
### IGHV2–5\*02

454 sequences assigned  
373 (82.2%) exact matches, in which:  
372 unique CDR3  
7 unique J



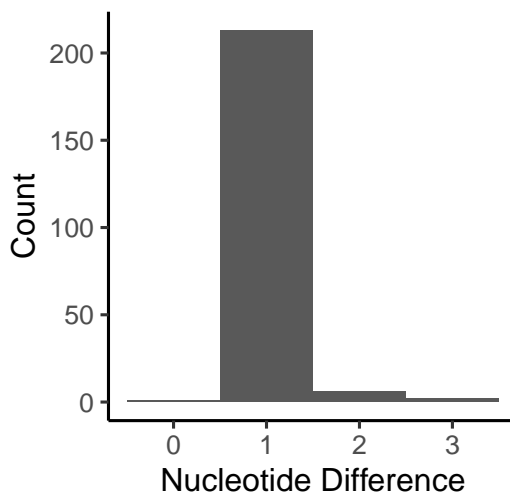
### IGHV1–58\*01\_03

68 sequences assigned  
65 (95.6%) exact matches, in which:  
65 unique CDR3  
6 unique J



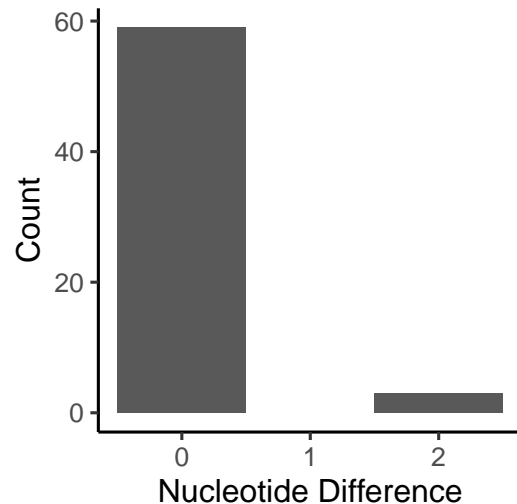
### IGHV1–69\*04\_09

222 sequences assigned  
1 (0.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



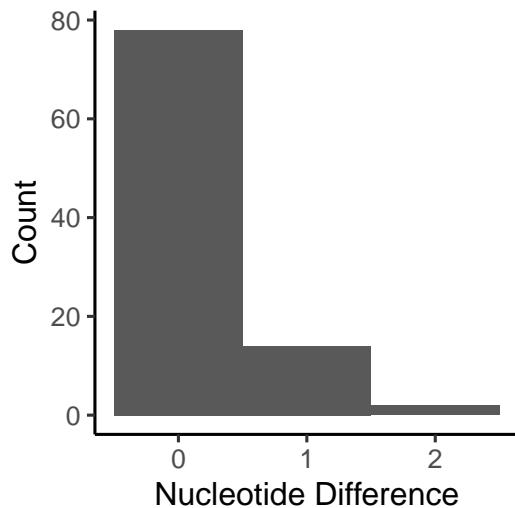
### IGHV2–26\*01

62 sequences assigned  
59 (95.2%) exact matches, in which:  
59 unique CDR3  
7 unique J



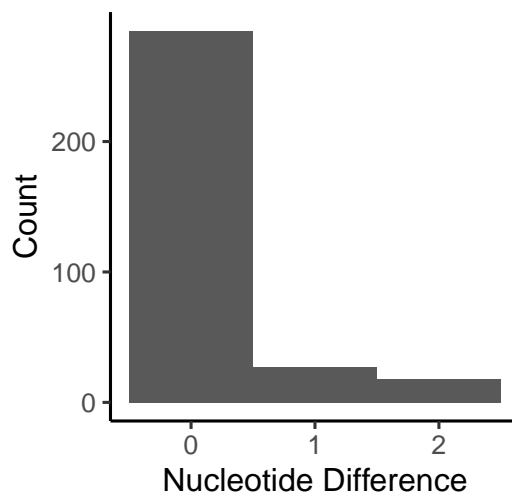
### IGHV2-70\*01

94 sequences assigned  
78 (83%) exact matches, in which:  
73 unique CDR3  
5 unique J



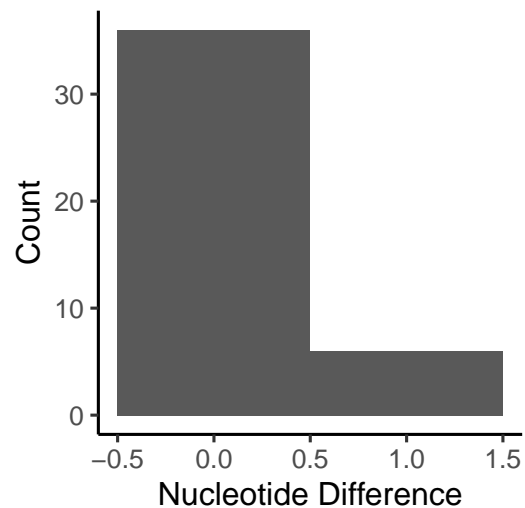
### IGHV3-11\*06

330 sequences assigned  
285 (86.4%) exact matches, in which:  
283 unique CDR3  
7 unique J



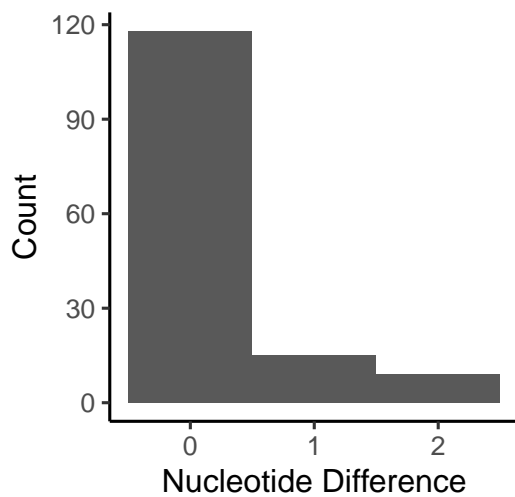
### IGHV3-20\*01\_02

42 sequences assigned  
36 (85.7%) exact matches, in which:  
36 unique CDR3  
5 unique J



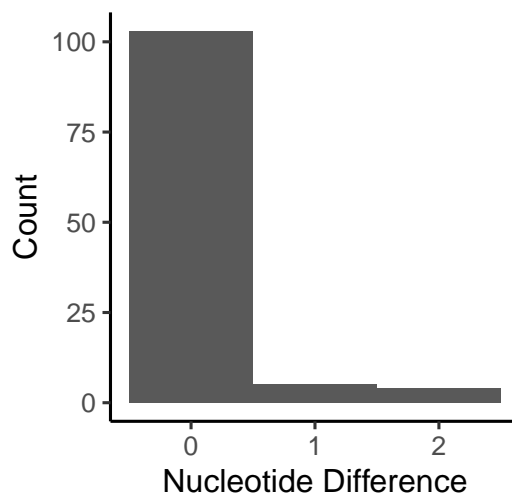
### IGHV2-70\*11\_15

142 sequences assigned  
118 (83.1%) exact matches, in which:  
118 unique CDR3  
6 unique J



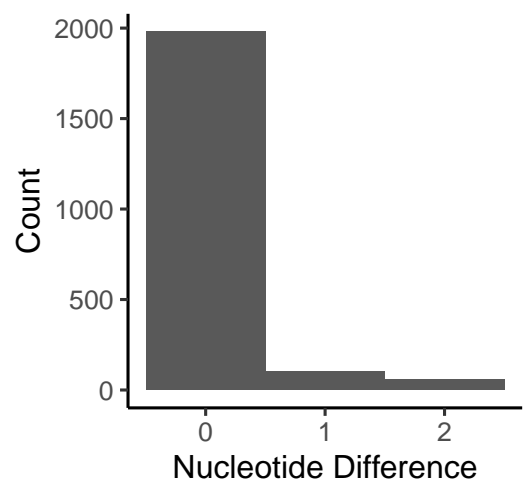
### IGHV3-13\*05

112 sequences assigned  
103 (92%) exact matches, in which:  
102 unique CDR3  
6 unique J



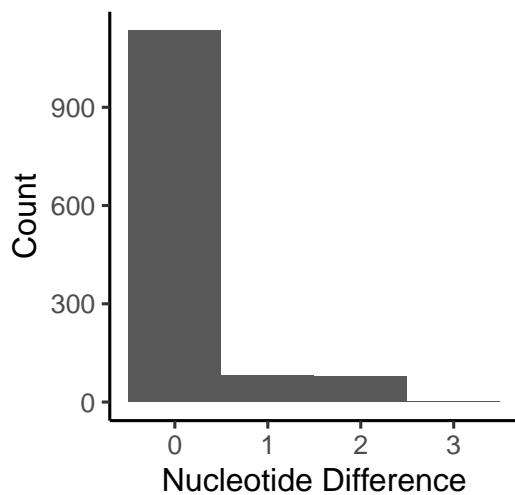
### IGHV3-21\*01\_02

2143 sequences assigned  
1980 (92.4%) exact matches, in which:  
1938 unique CDR3  
7 unique J



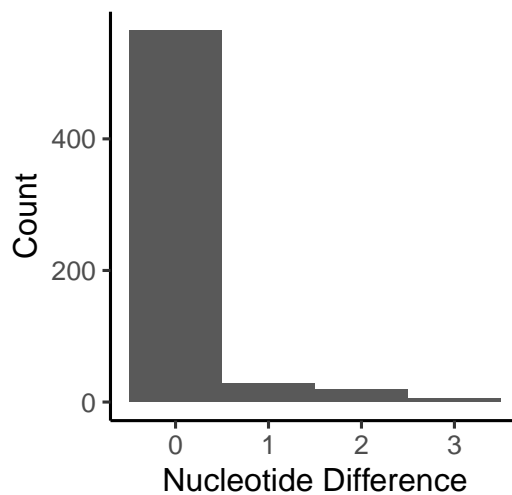
### IGHV3-7\*03

1295 sequences assigned  
1135 (87.6%) exact matches, in which:  
1111 unique CDR3  
7 unique J



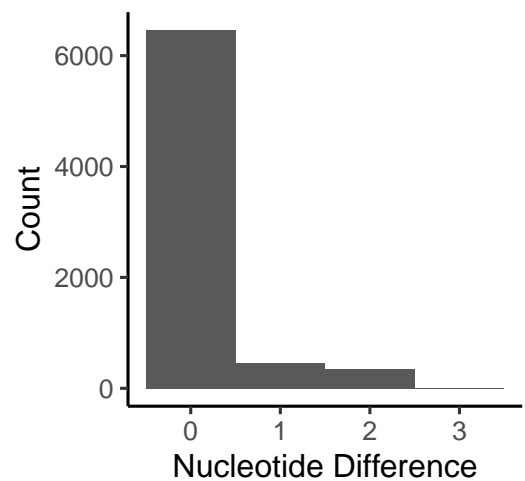
### IGHV3-15\*01\_02

617 sequences assigned  
565 (91.6%) exact matches, in which:  
559 unique CDR3  
7 unique J



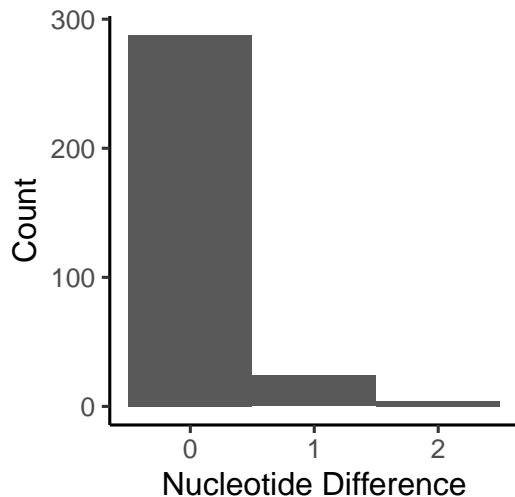
### IGHV3-23\*01\_04

7257 sequences assigned  
6461 (89%) exact matches, in which:  
6325 unique CDR3  
7 unique J



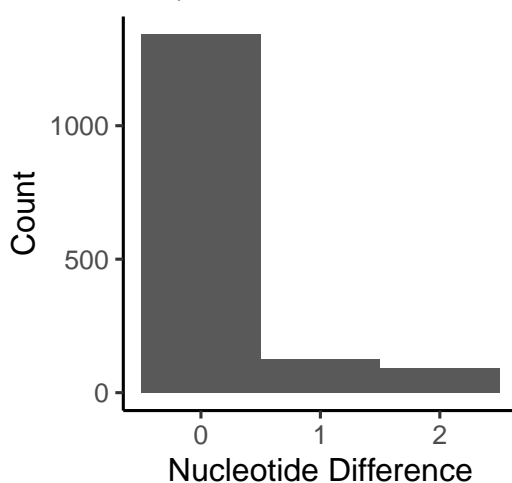
### IGHV3-33\*01

316 sequences assigned  
288 (91.1%) exact matches, in which:  
284 unique CDR3  
7 unique J



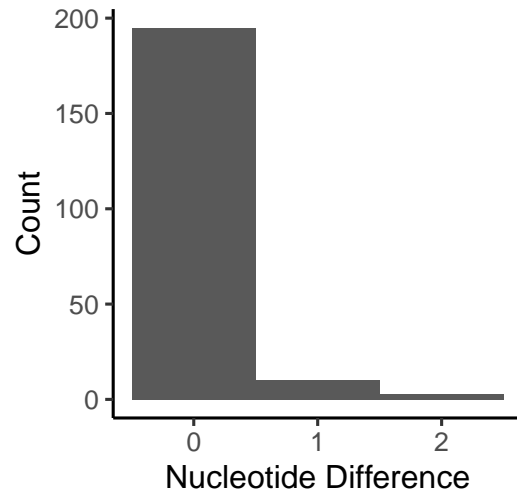
### IGHV3-48\*02

1556 sequences assigned  
1342 (86.2%) exact matches, in which:  
1316 unique CDR3  
7 unique J



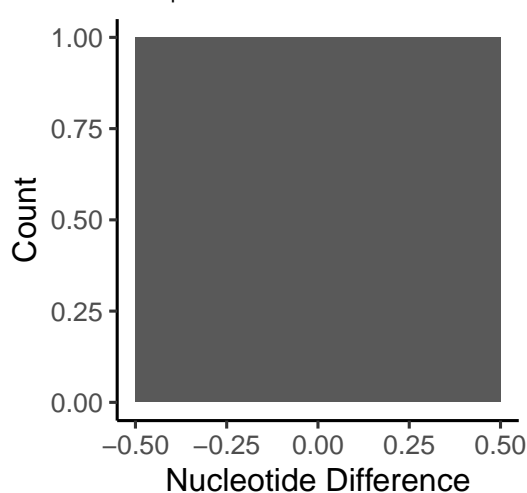
### IGHV3-53\*04

208 sequences assigned  
195 (93.8%) exact matches, in which:  
192 unique CDR3  
6 unique J



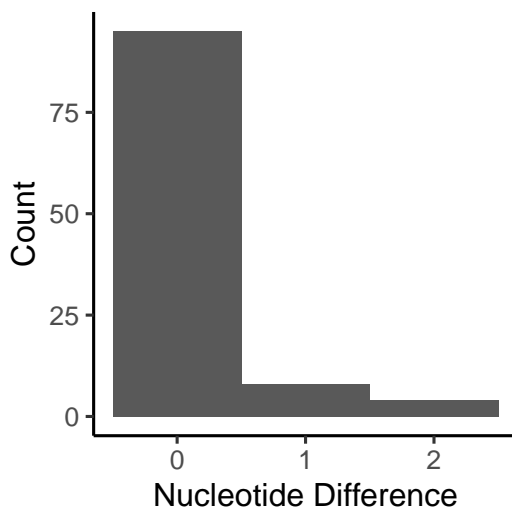
### IGHV3-38-3\*01

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



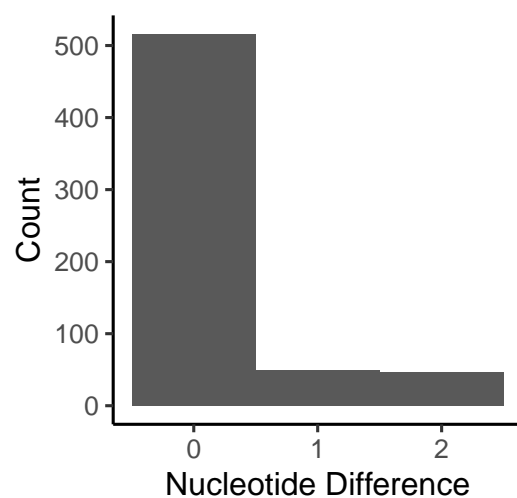
### IGHV3-49\*04

107 sequences assigned  
95 (88.8%) exact matches, in which:  
95 unique CDR3  
6 unique J



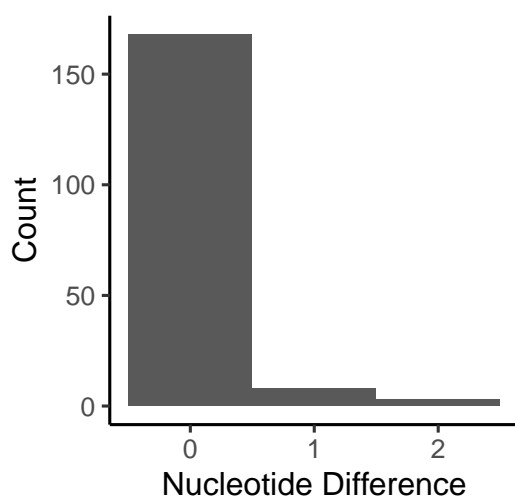
### IGHV3-53\*01\_02

611 sequences assigned  
516 (84.5%) exact matches, in which:  
506 unique CDR3  
7 unique J



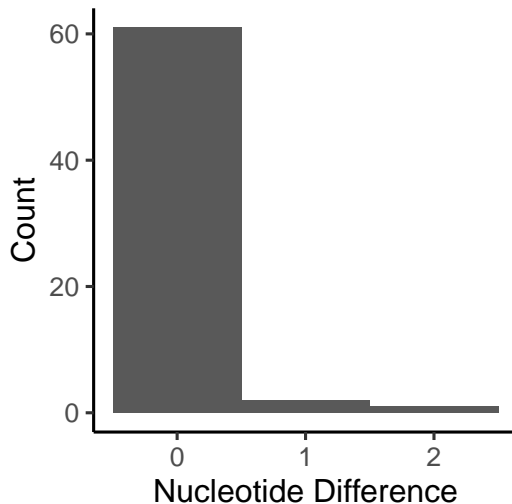
### IGHV3-43\*01

179 sequences assigned  
168 (93.9%) exact matches, in which:  
167 unique CDR3  
7 unique J



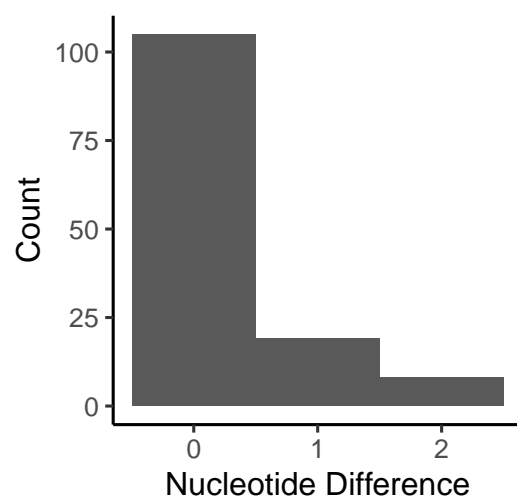
### IGHV3-49\*03\_05

64 sequences assigned  
61 (95.3%) exact matches, in which:  
60 unique CDR3  
6 unique J



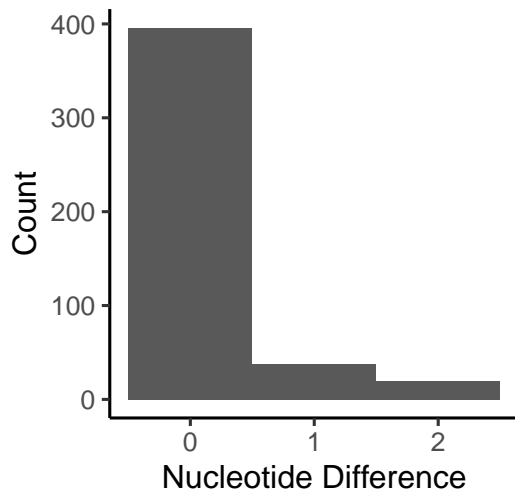
### IGHV3-64\*01

132 sequences assigned  
105 (79.5%) exact matches, in which:  
101 unique CDR3  
6 unique J



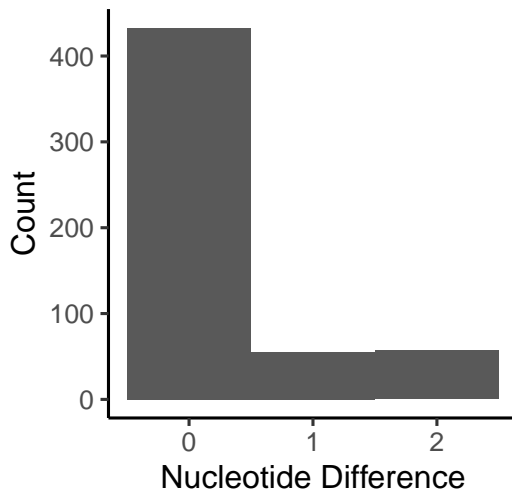
### IGHV3-66\*01

454 sequences assigned  
396 (87.2%) exact matches, in which:  
390 unique CDR3  
7 unique J



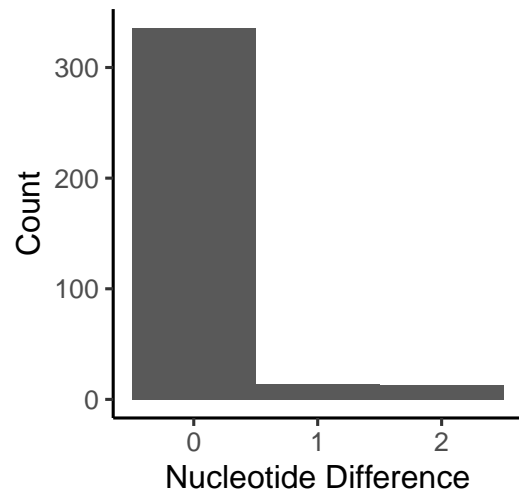
### IGHV3-74\*01\_02

545 sequences assigned  
433 (79.4%) exact matches, in which:  
426 unique CDR3  
7 unique J



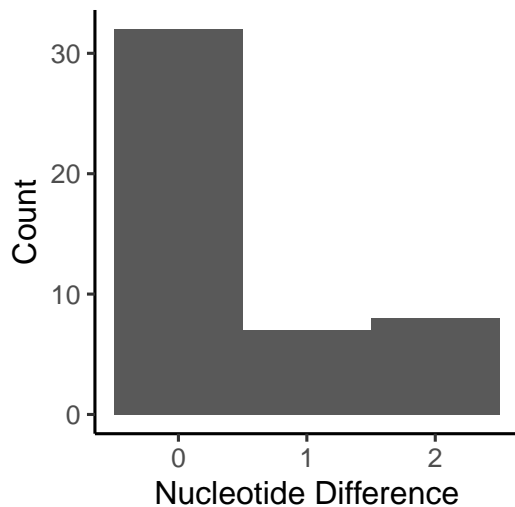
### IGHV4-4\*02\_03

363 sequences assigned  
336 (92.6%) exact matches, in which:  
334 unique CDR3  
6 unique J



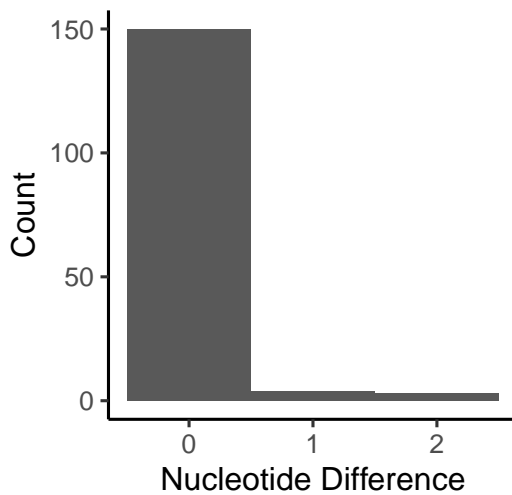
### IGHV3-72\*01

47 sequences assigned  
32 (68.1%) exact matches, in which:  
32 unique CDR3  
4 unique J



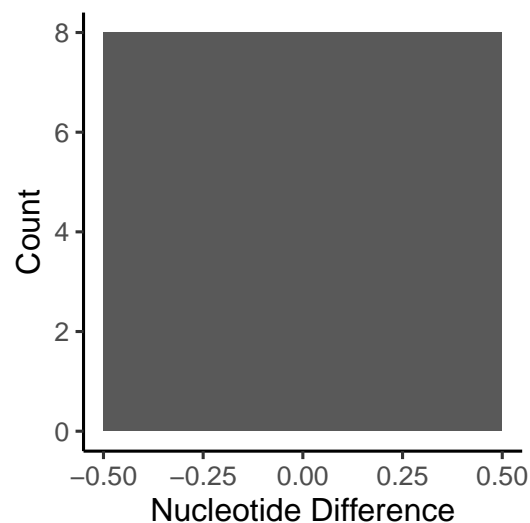
### IGHV3-43D\*03

157 sequences assigned  
150 (95.5%) exact matches, in which:  
145 unique CDR3  
7 unique J



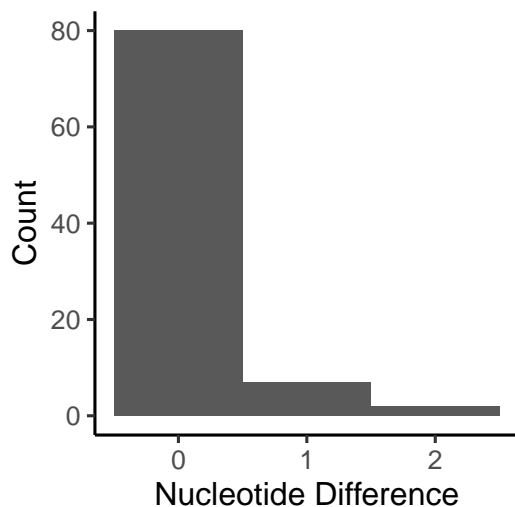
### IGHV4-28\*01\_07

8 sequences assigned  
8 (100%) exact matches, in which:  
8 unique CDR3  
4 unique J



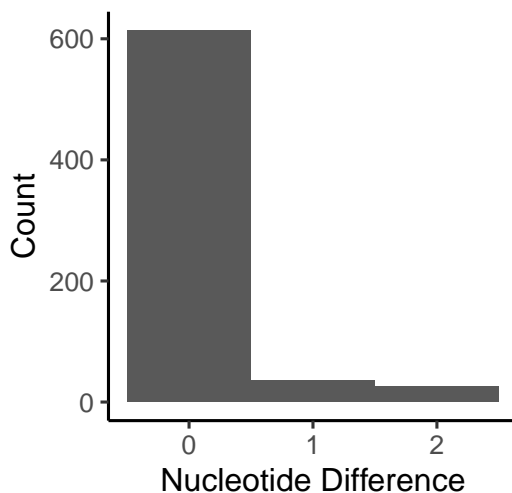
### IGHV3-73\*01\_02

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



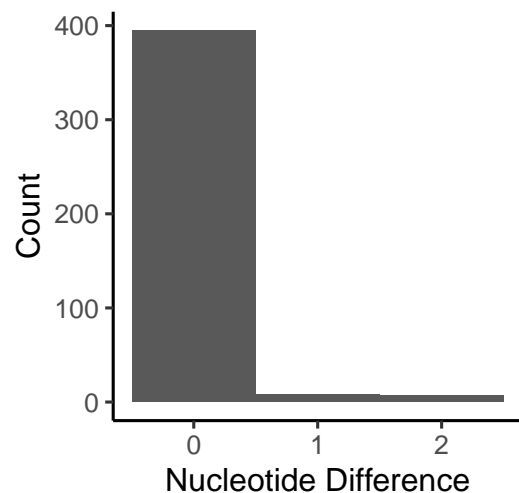
### IGHV3-64D\*06

676 sequences assigned  
614 (90.8%) exact matches, in which:  
607 unique CDR3  
7 unique J



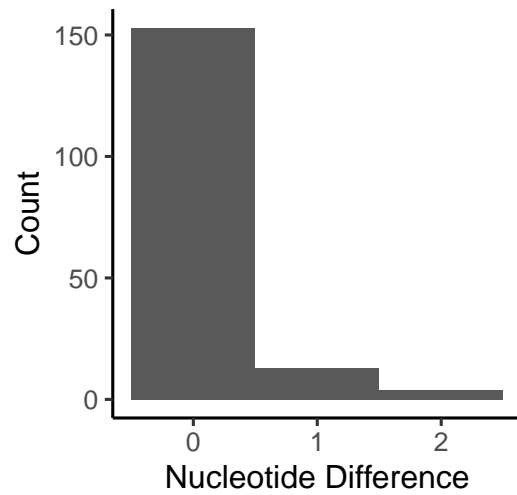
### IGHV4-30-2\*01

410 sequences assigned  
395 (96.3%) exact matches, in which:  
391 unique CDR3  
6 unique J



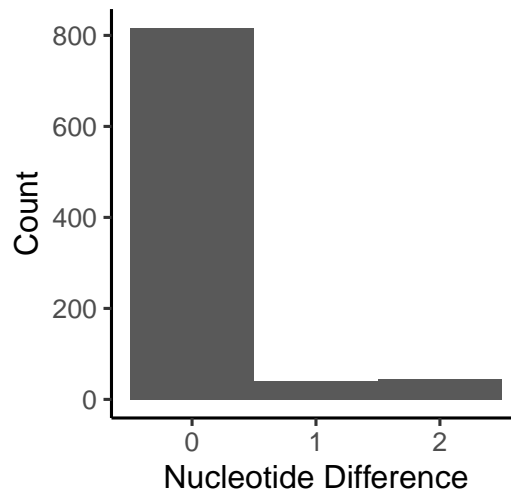
### IGHV4-30-4\*07

170 sequences assigned  
153 (90%) exact matches, in which:  
151 unique CDR3  
6 unique J



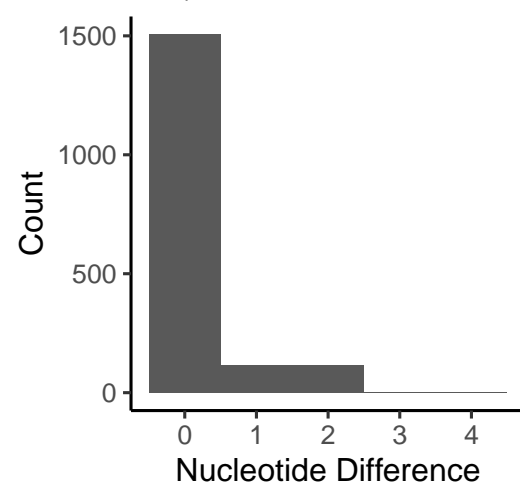
### IGHV4-38-2\*02

902 sequences assigned  
817 (90.6%) exact matches, in which:  
802 unique CDR3  
6 unique J



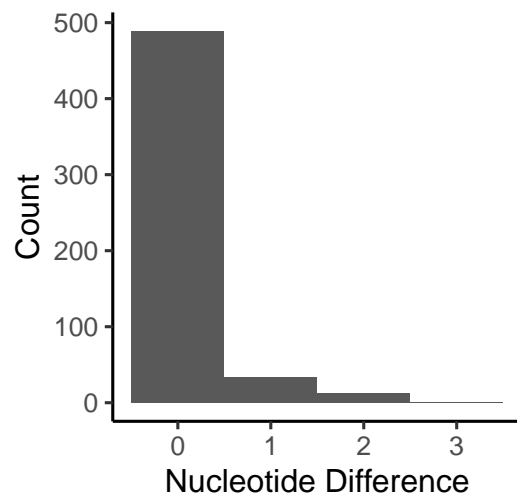
### IGHV4-59\*08

1743 sequences assigned  
1506 (86.4%) exact matches, in which:  
1479 unique CDR3  
7 unique J



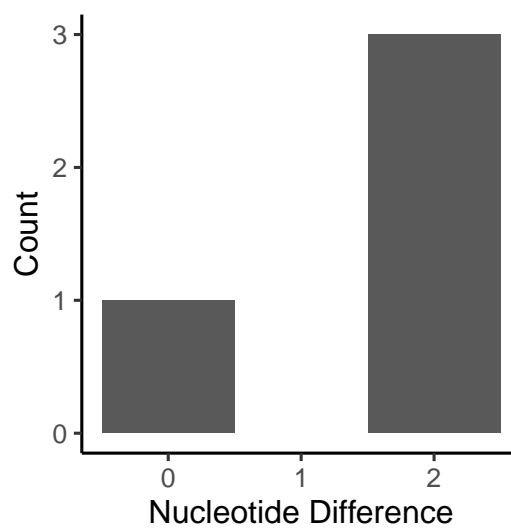
### IGHV4-31\*02

536 sequences assigned  
489 (91.2%) exact matches, in which:  
488 unique CDR3  
6 unique J



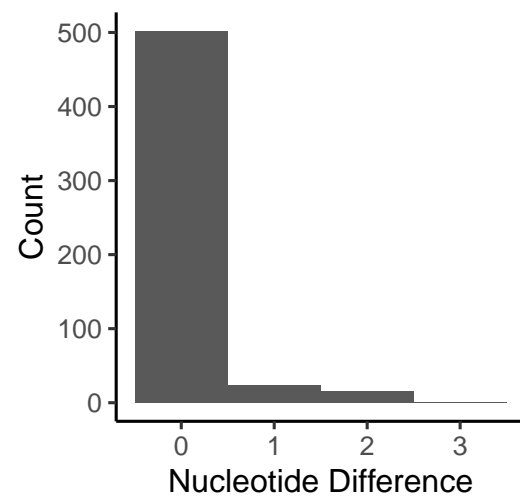
### IGHV4-39\*02

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



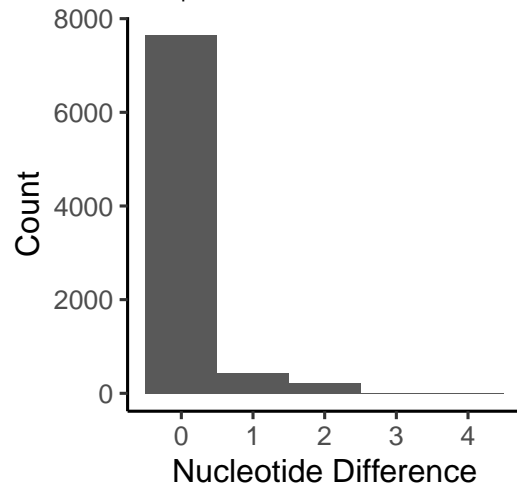
### IGHV4-61\*01

542 sequences assigned  
502 (92.6%) exact matches, in which:  
499 unique CDR3  
6 unique J



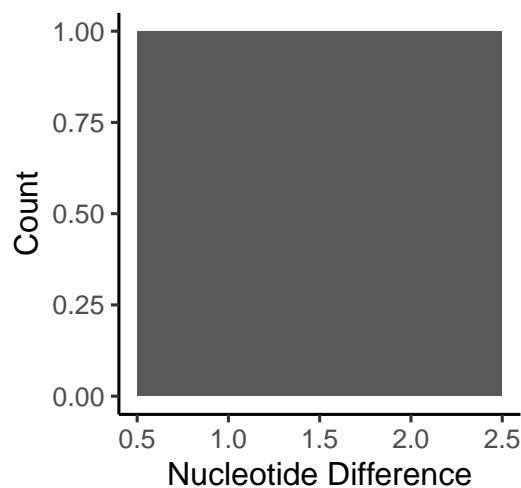
### IGHV4-34\*01\_02

8309 sequences assigned  
7650 (92.1%) exact matches, in which:  
7510 unique CDR3  
7 unique J



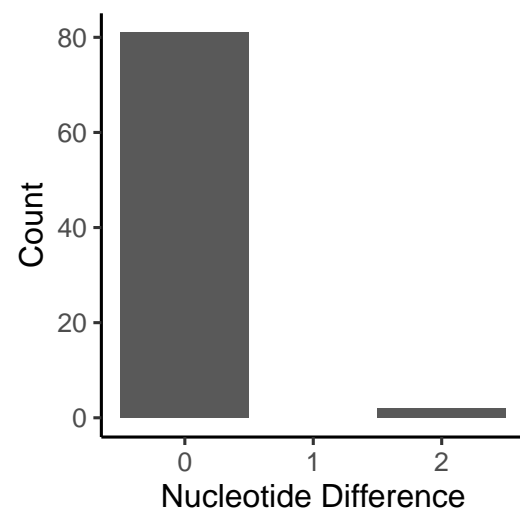
### IGHV4-39\*07

2 sequences assigned  
No exact matches.



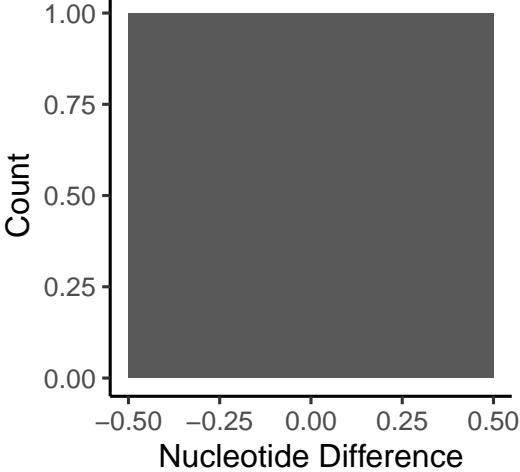
### IGHV5-10-1\*01\_03

83 sequences assigned  
81 (97.6%) exact matches, in which:  
81 unique CDR3  
7 unique J



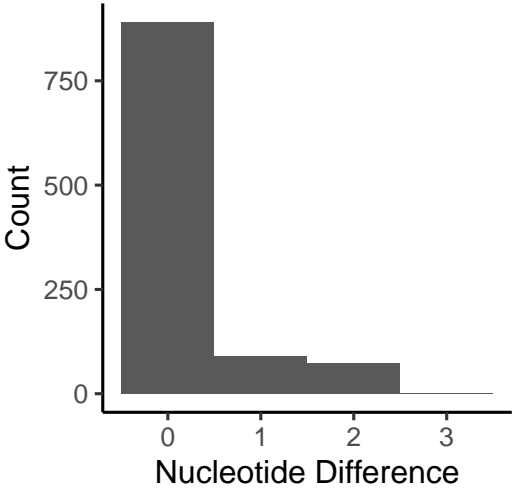
IGHV5-51\*01\_03

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



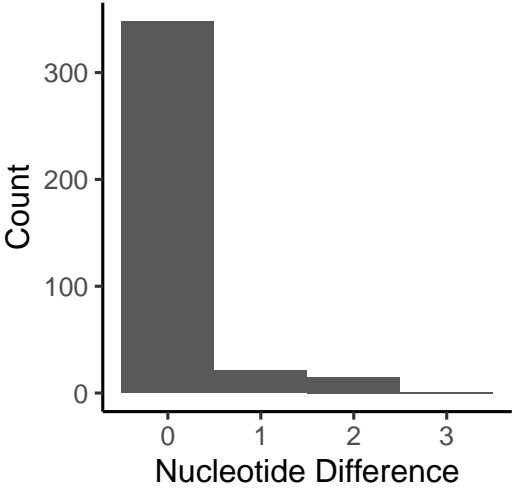
IGHV6-1\*01\_02

1057 sequences assigned  
891 (84.3%) exact matches, in which:  
871 unique CDR3  
7 unique J

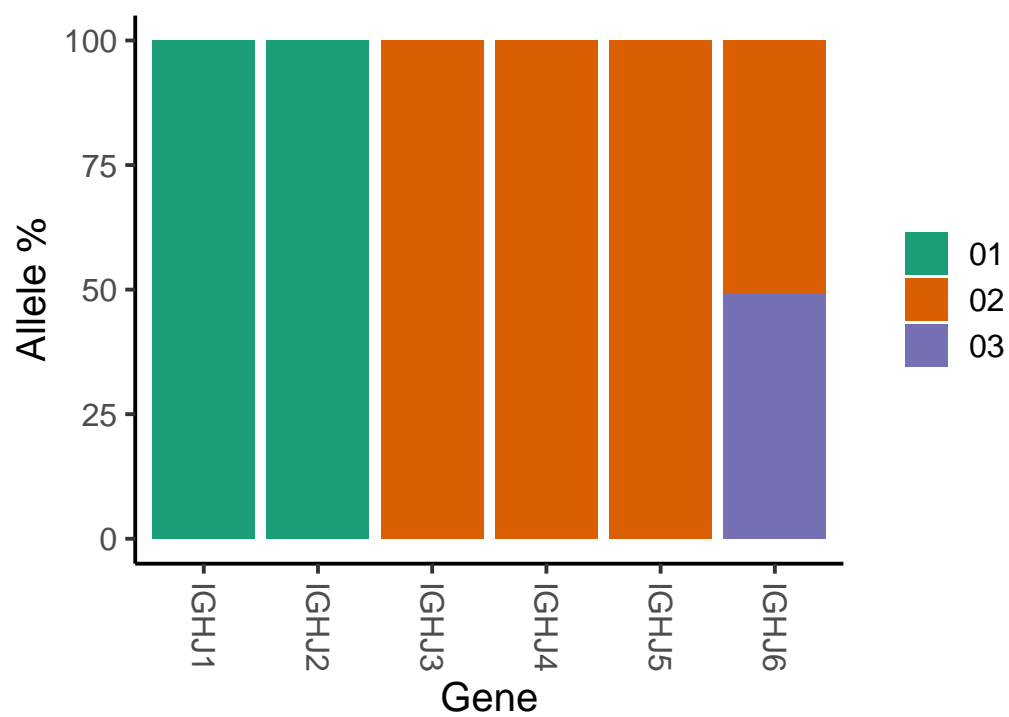


IGHV7-4-1\*02

385 sequences assigned  
348 (90.4%) exact matches, in which:  
348 unique CDR3  
7 unique J

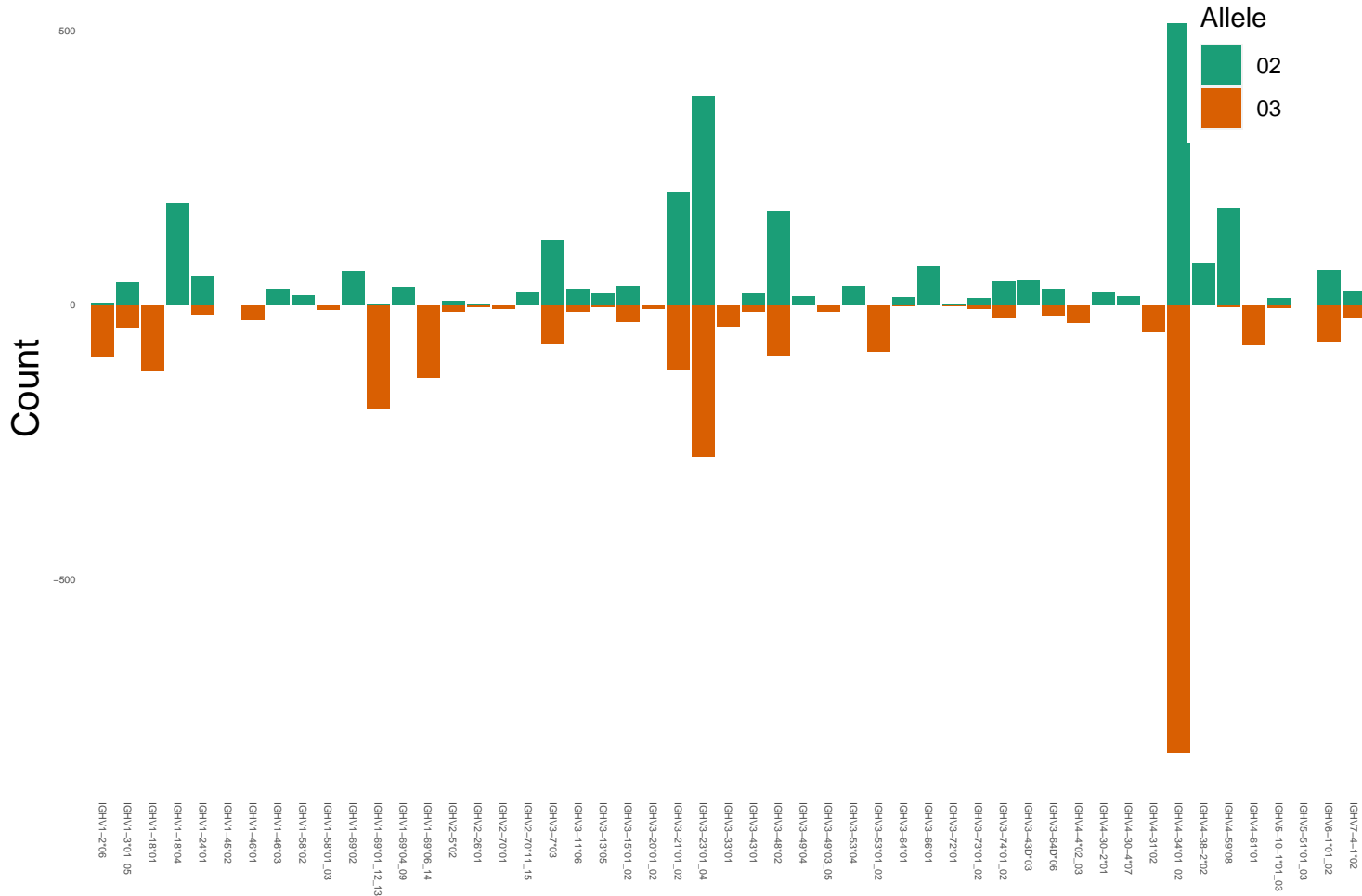


Allele Usage





Sequence Count by IGHJ6 allele usage



[illegible]