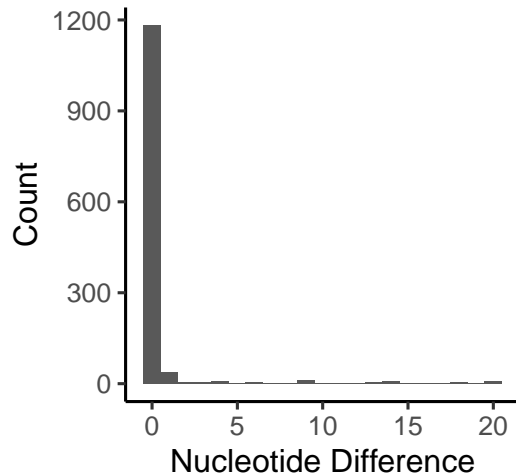


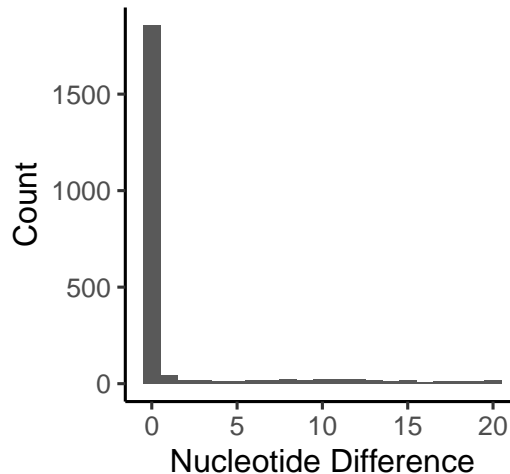
### IGHV1-2\*04

1324 sequences assigned  
1182 (89.3%) exact matches, in which:  
1176 unique CDR3  
7 unique J



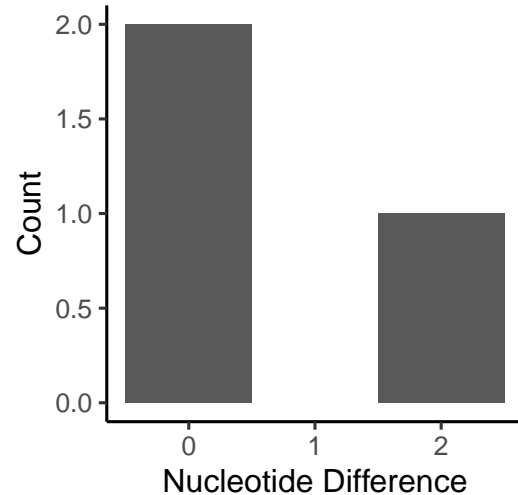
### IGHV1-18\*01

2361 sequences assigned  
1856 (78.6%) exact matches, in which:  
1843 unique CDR3  
7 unique J



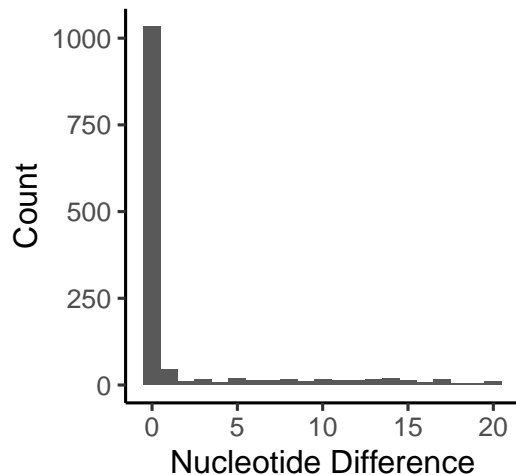
### IGHV1-45\*02

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



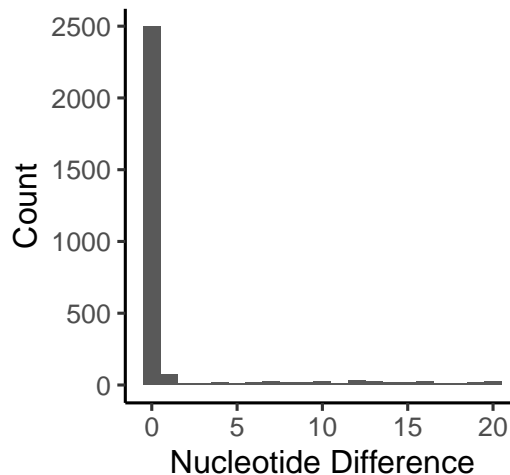
### IGHV1-3\*01\_05

1384 sequences assigned  
1033 (74.6%) exact matches, in which:  
1028 unique CDR3  
7 unique J



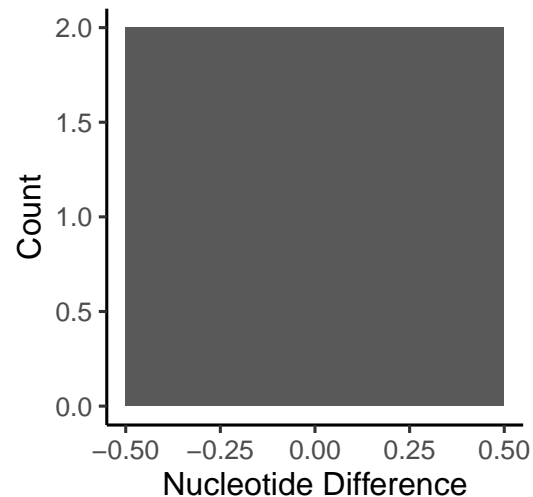
### IGHV1-18\*04

3058 sequences assigned  
2496 (81.6%) exact matches, in which:  
2475 unique CDR3  
7 unique J



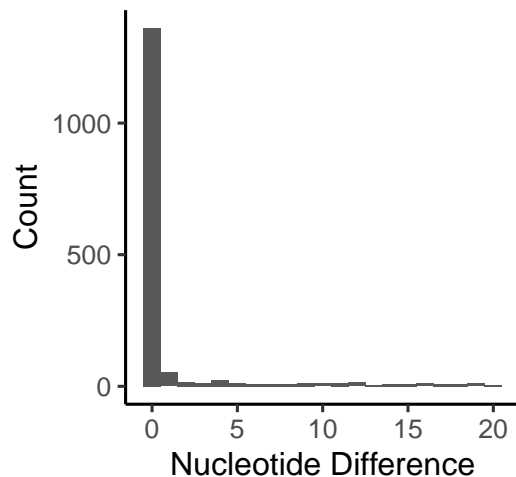
### IGHV1-45\*03

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



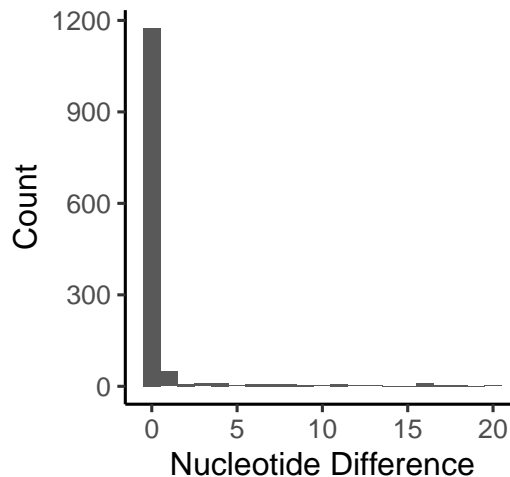
### IGHV1-8\*01

1690 sequences assigned  
1361 (80.5%) exact matches, in which:  
1354 unique CDR3  
7 unique J



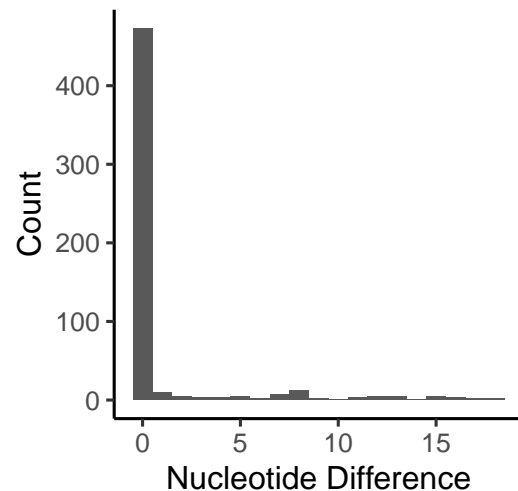
### IGHV1-24\*01

1371 sequences assigned  
1175 (85.7%) exact matches, in which:  
1160 unique CDR3  
7 unique J



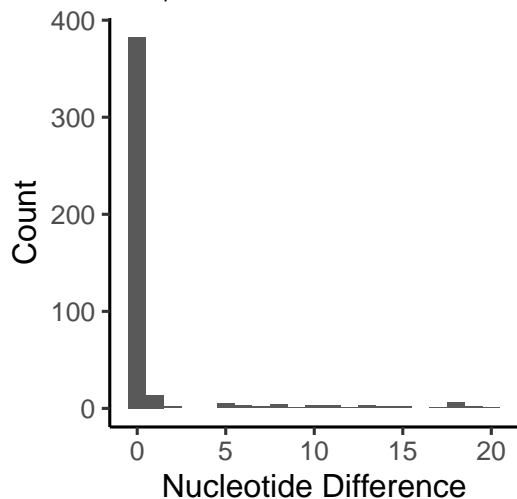
### IGHV1-46\*01

575 sequences assigned  
473 (82.3%) exact matches, in which:  
469 unique CDR3  
7 unique J



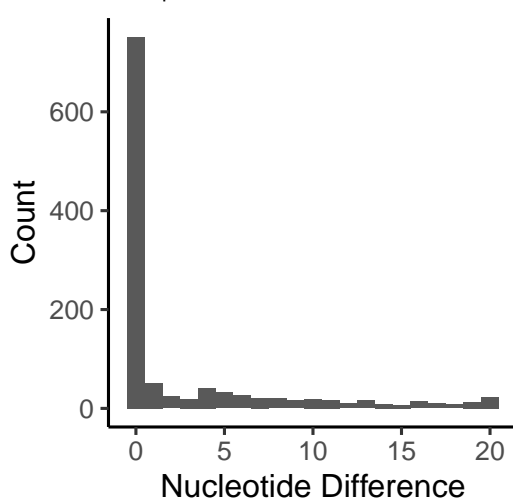
### IGHV1–46\*03

459 sequences assigned  
383 (83.4%) exact matches, in which:  
381 unique CDR3  
6 unique J



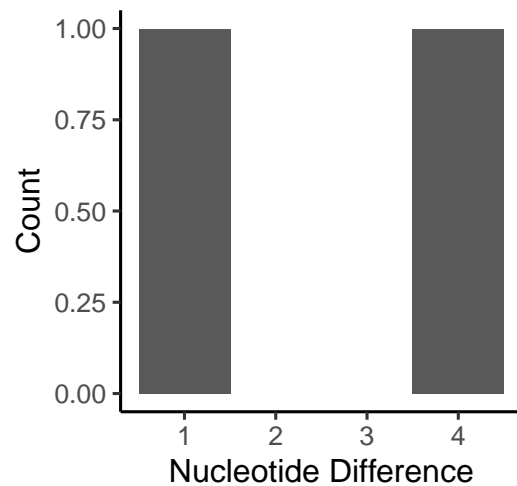
### IGHV2–5\*02

1230 sequences assigned  
752 (61.1%) exact matches, in which:  
746 unique CDR3  
7 unique J



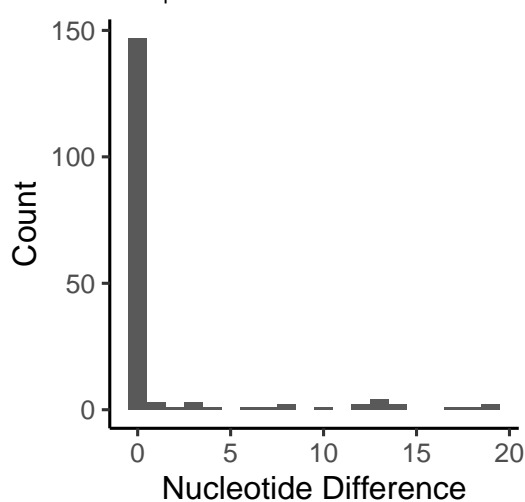
### IGHV2–70D\*04

2 sequences assigned  
No exact matches.



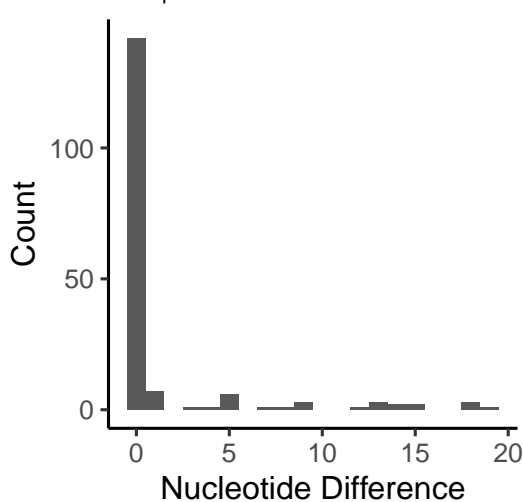
### IGHV1–58\*02

178 sequences assigned  
147 (82.6%) exact matches, in which:  
146 unique CDR3  
6 unique J



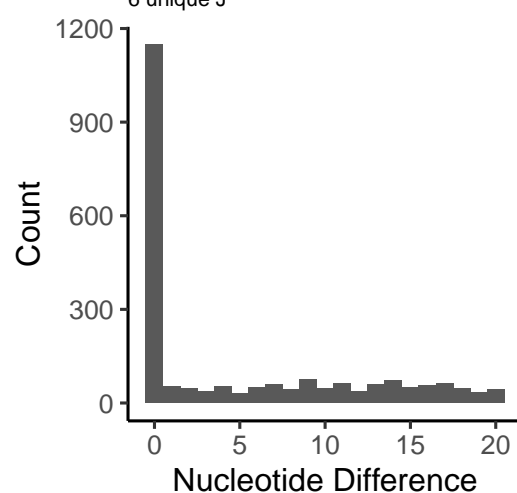
### IGHV2–26\*01

180 sequences assigned  
142 (78.9%) exact matches, in which:  
141 unique CDR3  
7 unique J



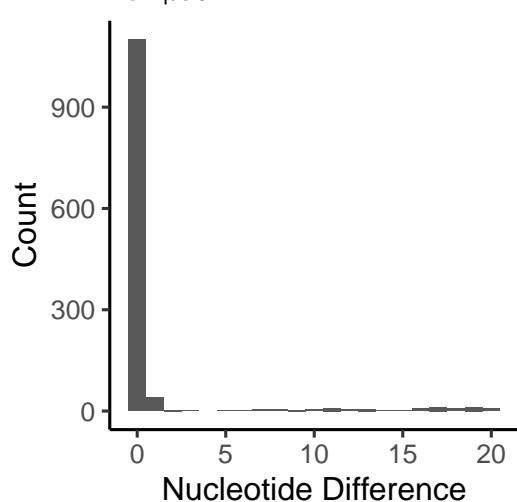
### IGHV3–7\*01

2488 sequences assigned  
1148 (46.1%) exact matches, in which:  
1119 unique CDR3  
6 unique J



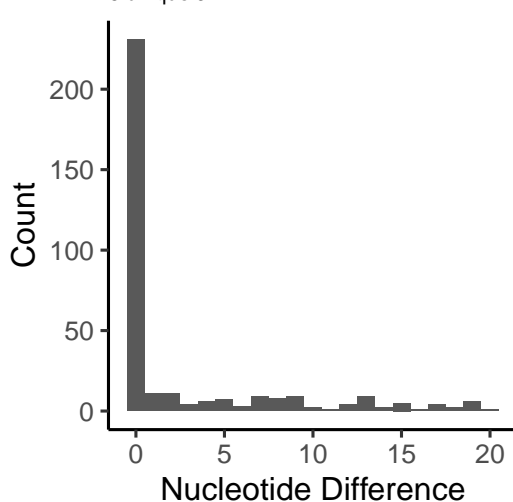
### IGHV1–69\*04\_09

1305 sequences assigned  
1101 (84.4%) exact matches, in which:  
1092 unique CDR3  
7 unique J



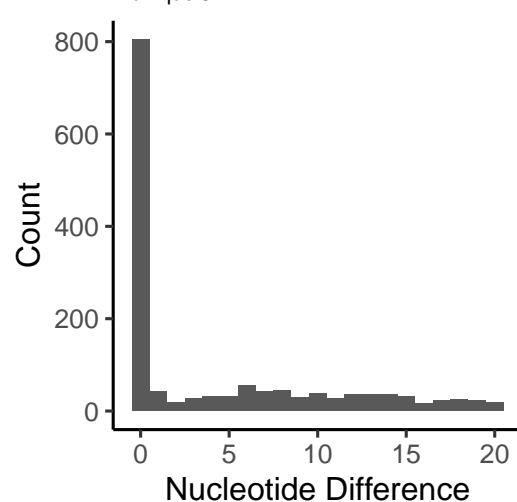
### IGHV2–70\*11\_15

346 sequences assigned  
231 (66.8%) exact matches, in which:  
228 unique CDR3  
6 unique J



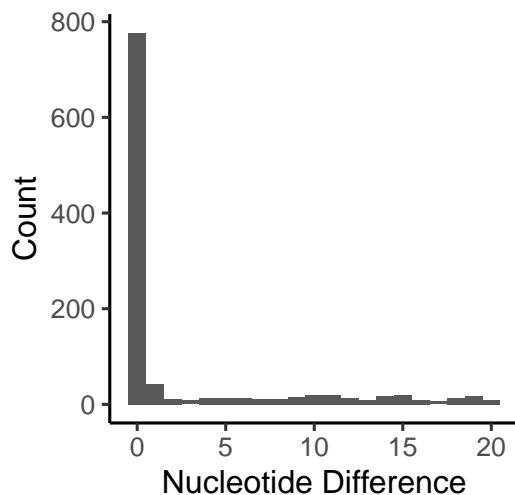
### IGHV3–7\*03

1643 sequences assigned  
805 (49%) exact matches, in which:  
786 unique CDR3  
7 unique J



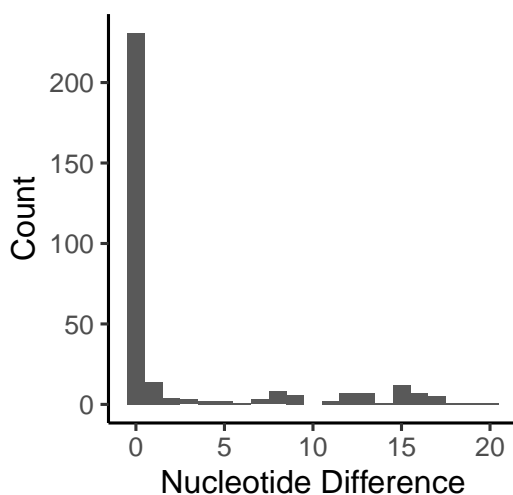
### IGHV3–9\*01

1180 sequences assigned  
777 (65.8%) exact matches, in which:  
766 unique CDR3  
6 unique J



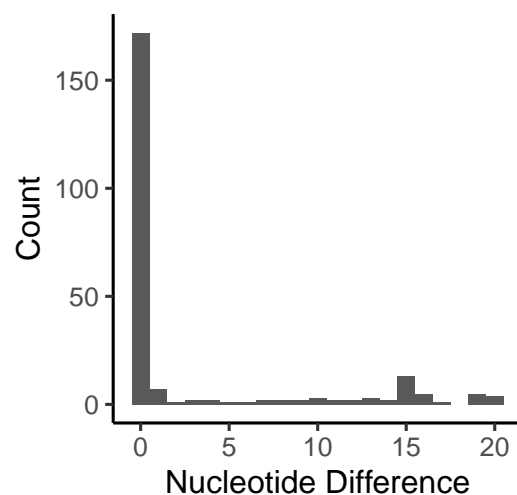
### IGHV3–13\*01

329 sequences assigned  
231 (70.2%) exact matches, in which:  
228 unique CDR3  
6 unique J



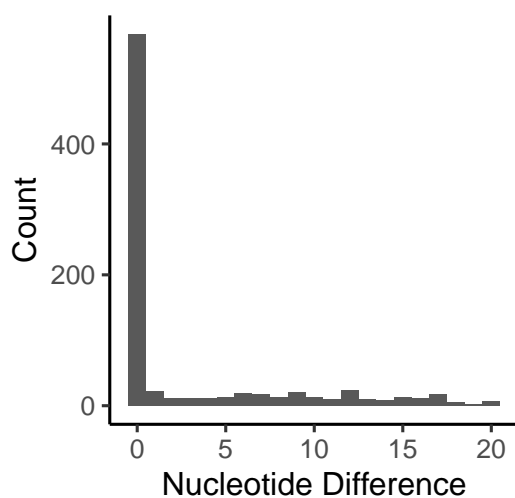
### IGHV3–20\*01\_02

266 sequences assigned  
172 (64.7%) exact matches, in which:  
170 unique CDR3  
6 unique J



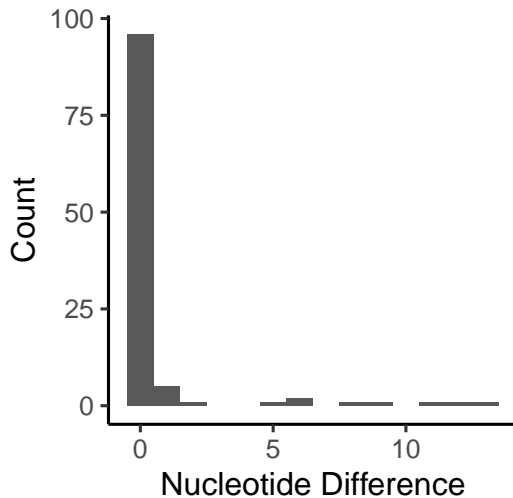
### IGHV3–11\*01

922 sequences assigned  
568 (61.6%) exact matches, in which:  
561 unique CDR3  
7 unique J



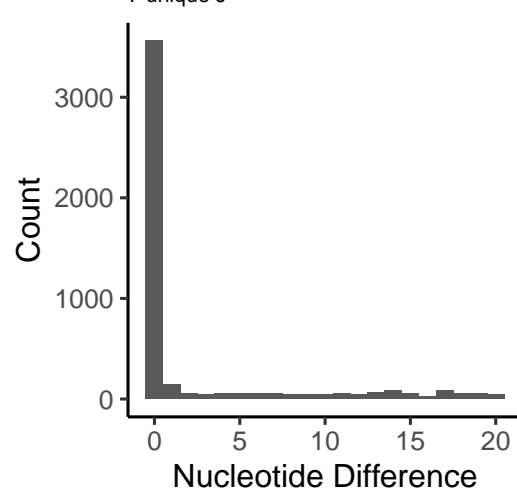
### IGHV3–13\*05

115 sequences assigned  
96 (83.5%) exact matches, in which:  
95 unique CDR3  
5 unique J



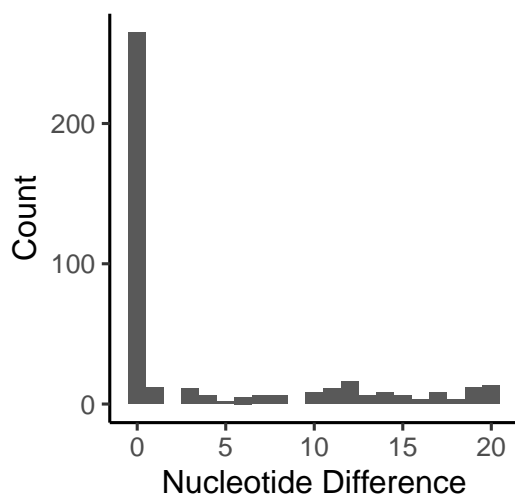
### IGHV3–21\*01\_02

5107 sequences assigned  
3562 (69.7%) exact matches, in which:  
3500 unique CDR3  
7 unique J



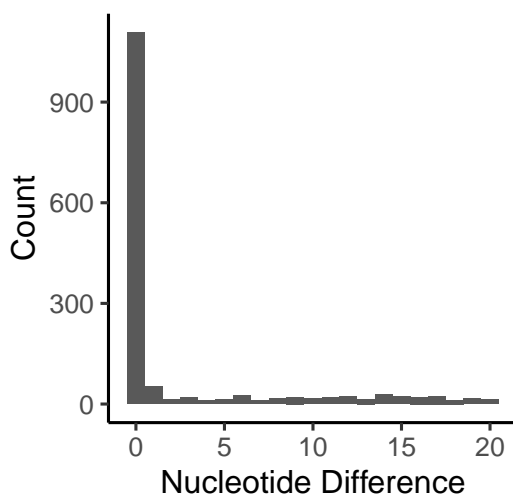
### IGHV3–11\*06

464 sequences assigned  
265 (57.1%) exact matches, in which:  
254 unique CDR3  
7 unique J



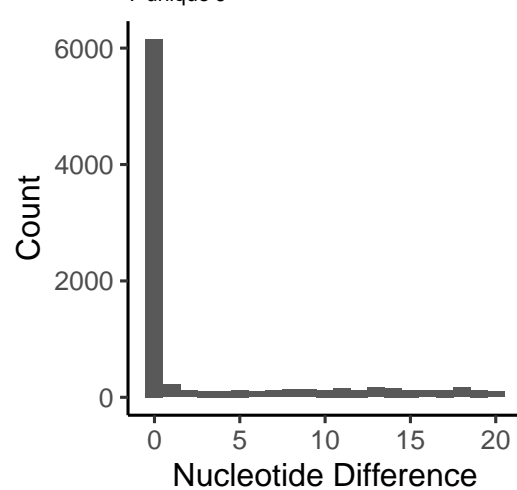
### IGHV3–15\*01\_02

1631 sequences assigned  
1108 (67.9%) exact matches, in which:  
1091 unique CDR3  
7 unique J



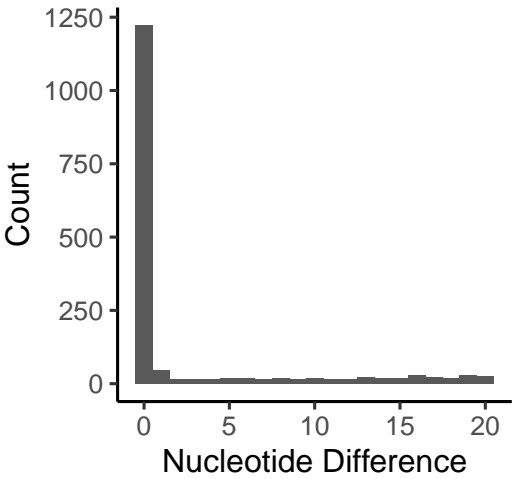
### IGHV3–23\*01\_04

9778 sequences assigned  
6156 (63%) exact matches, in which:  
6044 unique CDR3  
7 unique J



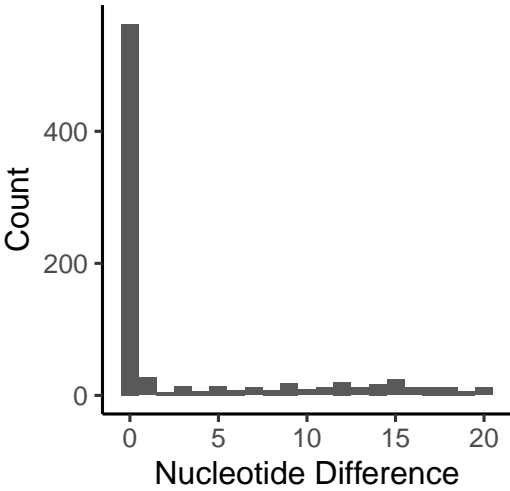
IGHV3-30-3\*01

1887 sequences assigned  
1222 (64.8%) exact matches, in which:  
1201 unique CDR3  
7 unique J



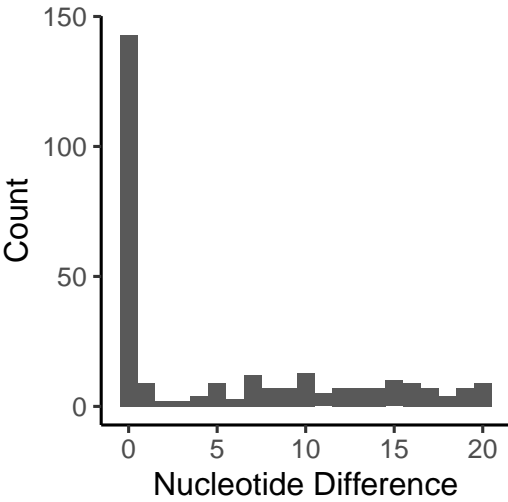
IGHV3-43\*02

895 sequences assigned  
563 (62.9%) exact matches, in which:  
549 unique CDR3  
6 unique J



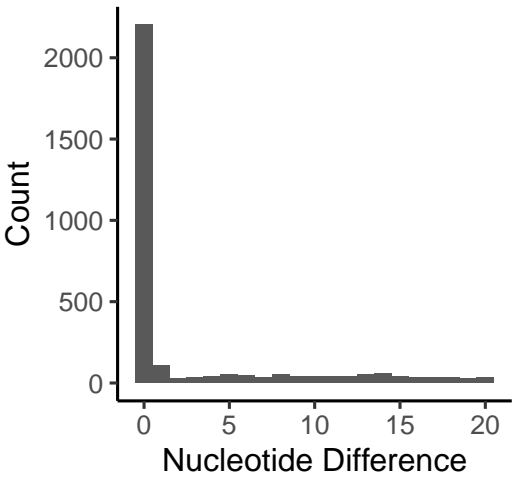
IGHV3-49\*04

383 sequences assigned  
143 (37.3%) exact matches, in which:  
141 unique CDR3  
5 unique J



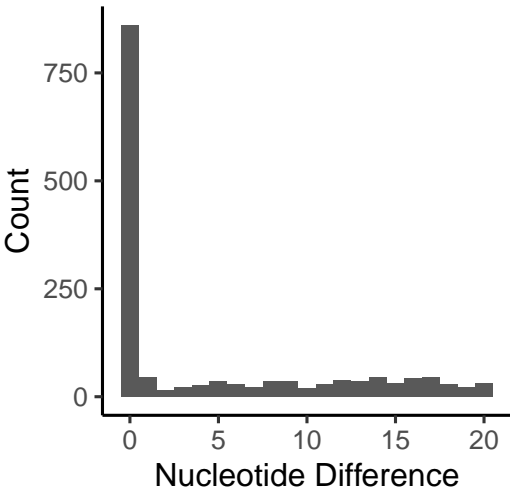
IGHV3-33\*01

3282 sequences assigned  
2203 (67.1%) exact matches, in which:  
2150 unique CDR3  
7 unique J



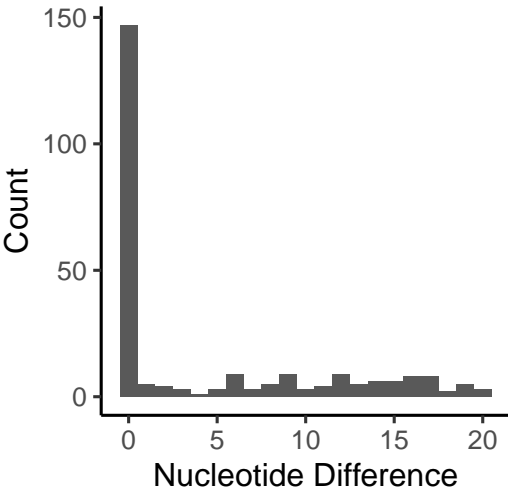
IGHV3-48\*01

1671 sequences assigned  
861 (51.5%) exact matches, in which:  
846 unique CDR3  
7 unique J



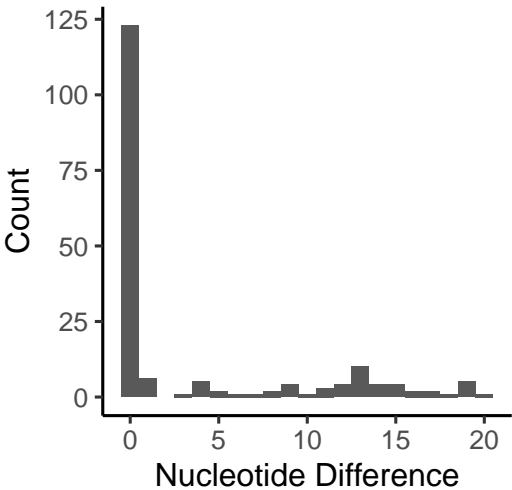
IGHV3-49\*03\_05

275 sequences assigned  
147 (53.5%) exact matches, in which:  
144 unique CDR3  
4 unique J



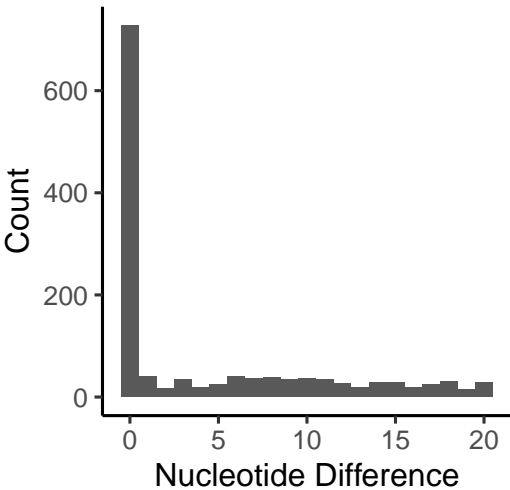
IGHV3-43\*01

193 sequences assigned  
123 (63.7%) exact matches, in which:  
118 unique CDR3  
5 unique J



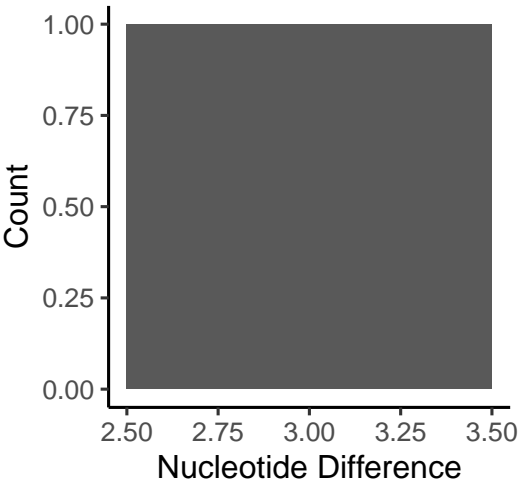
IGHV3-48\*03

1468 sequences assigned  
728 (49.6%) exact matches, in which:  
717 unique CDR3  
7 unique J



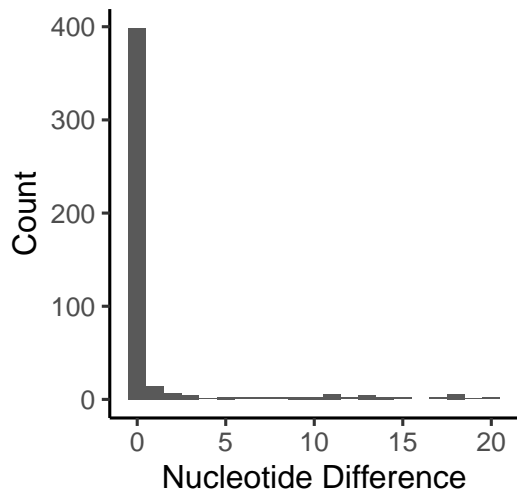
IGHV3-52\*01\_03

1 sequences assigned  
No exact matches.



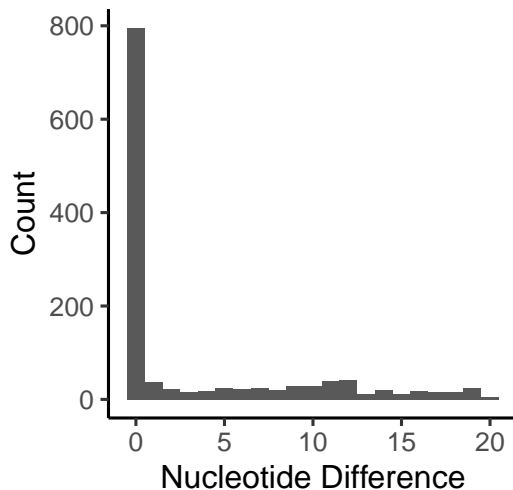
### IGHV3–53\*04

486 sequences assigned  
399 (82.1%) exact matches, in which:  
394 unique CDR3  
7 unique J



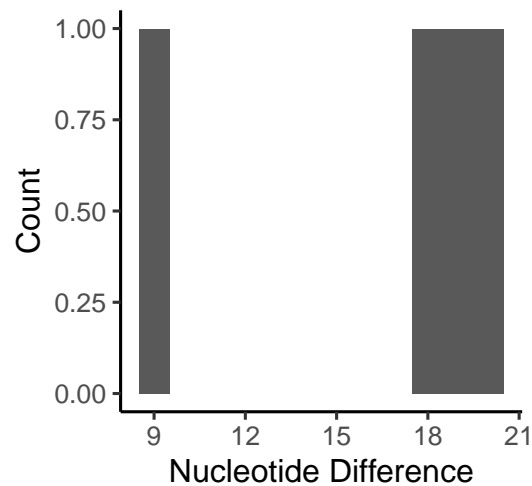
### IGHV3–66\*01

1318 sequences assigned  
796 (60.4%) exact matches, in which:  
773 unique CDR3  
7 unique J



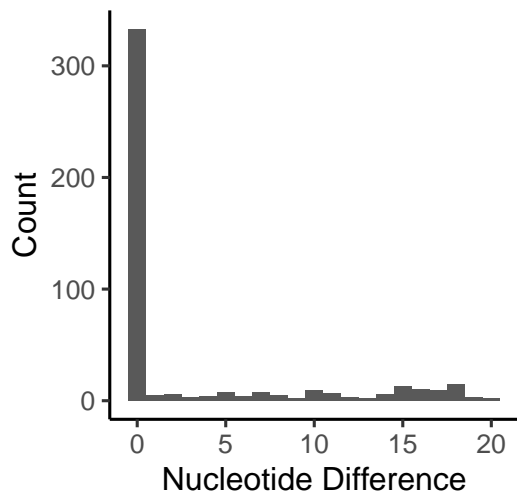
### IGHV3–69–1\*02

5 sequences assigned  
No exact matches.



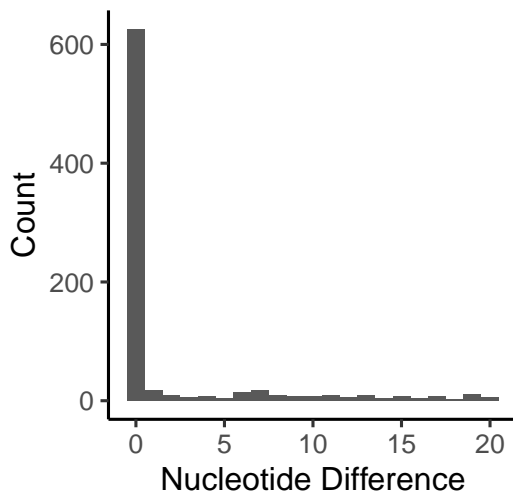
### IGHV3–53\*01\_02

525 sequences assigned  
333 (63.4%) exact matches, in which:  
328 unique CDR3  
6 unique J



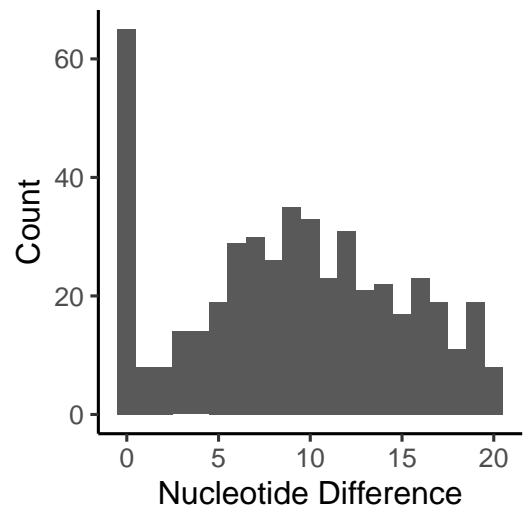
### IGHV3–66\*02

892 sequences assigned  
626 (70.2%) exact matches, in which:  
619 unique CDR3  
7 unique J



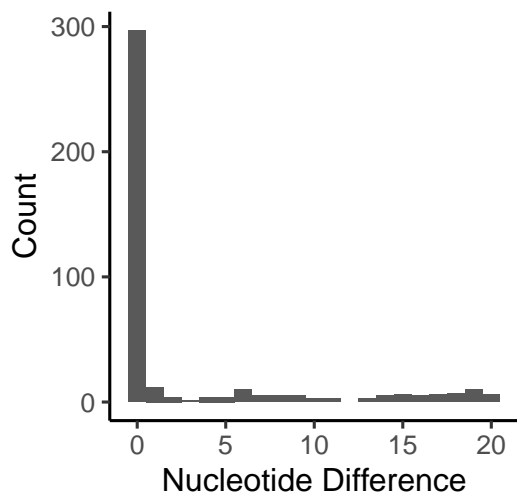
### IGHV3–72\*01

531 sequences assigned  
65 (12.2%) exact matches, in which:  
63 unique CDR3  
7 unique J



### IGHV3–64\*01

451 sequences assigned  
297 (65.9%) exact matches, in which:  
292 unique CDR3  
7 unique J



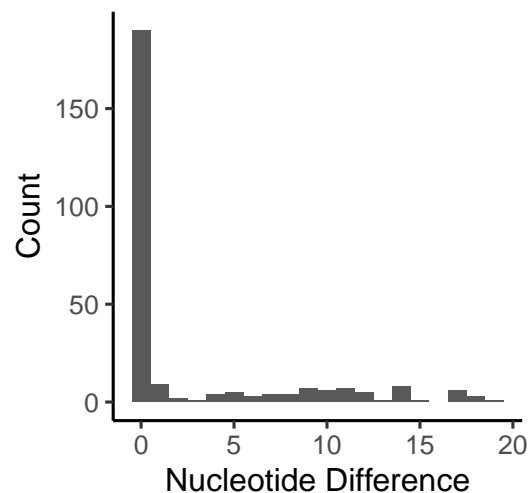
### IGHV3–69–1\*01

5 sequences assigned  
No exact matches.



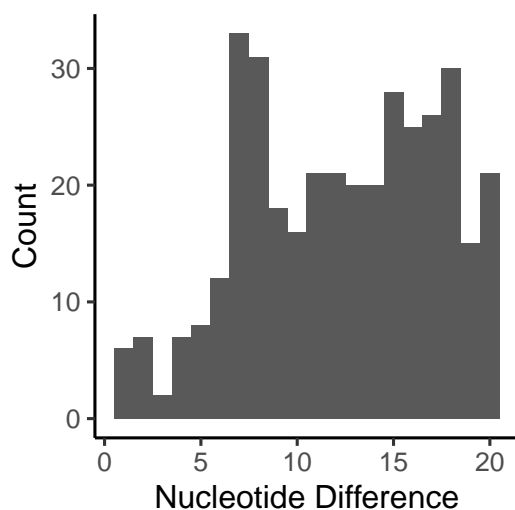
### IGHV3–73\*01\_02

291 sequences assigned  
190 (65.3%) exact matches, in which:  
188 unique CDR3  
6 unique J



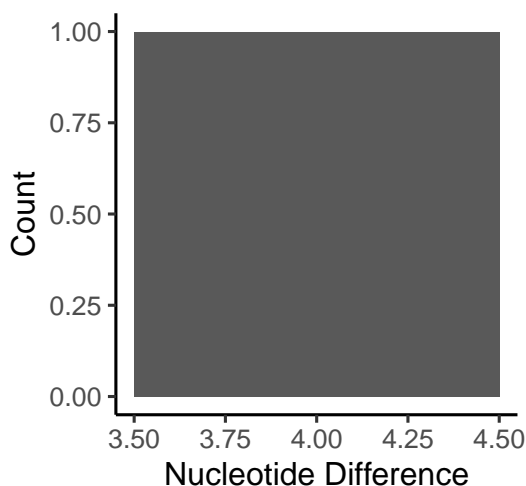
### IGHV3-74\*03

595 sequences assigned  
No exact matches.



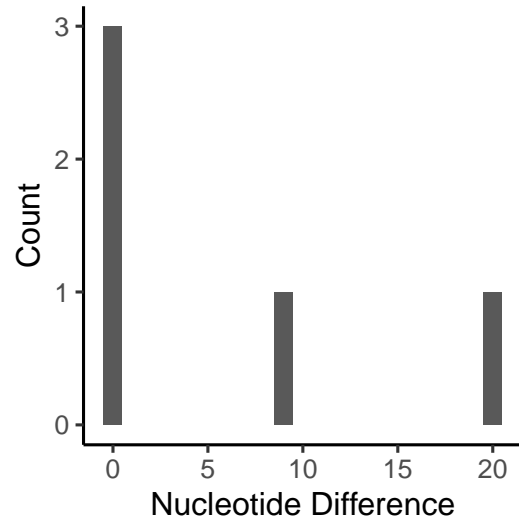
### IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



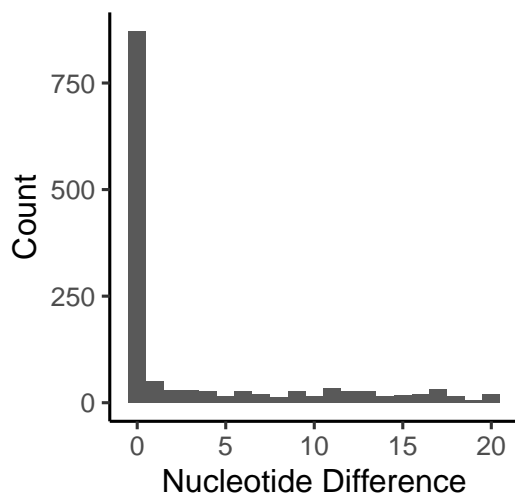
### IGHV4-28\*01\_07

5 sequences assigned  
3 (60%) exact matches, in which:  
3 unique CDR3  
3 unique J



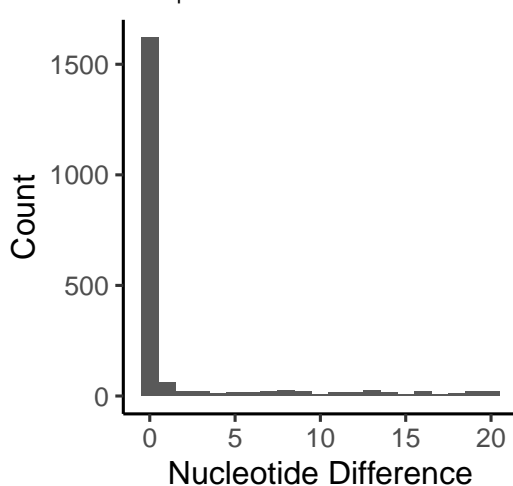
### IGHV3-74\*01\_02

1440 sequences assigned  
872 (60.6%) exact matches, in which:  
840 unique CDR3  
7 unique J



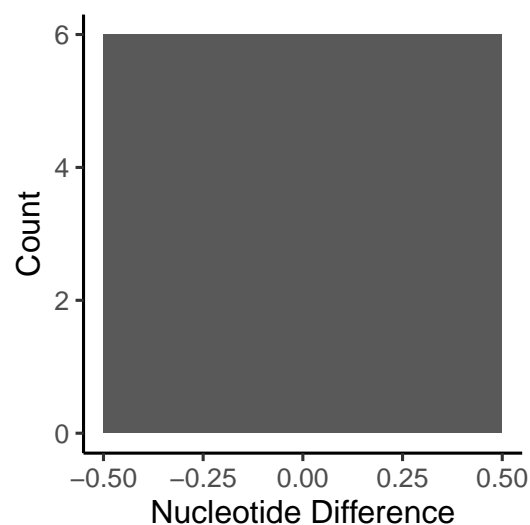
### IGHV4-4\*02\_03

2245 sequences assigned  
1620 (72.2%) exact matches, in which:  
1591 unique CDR3  
7 unique J



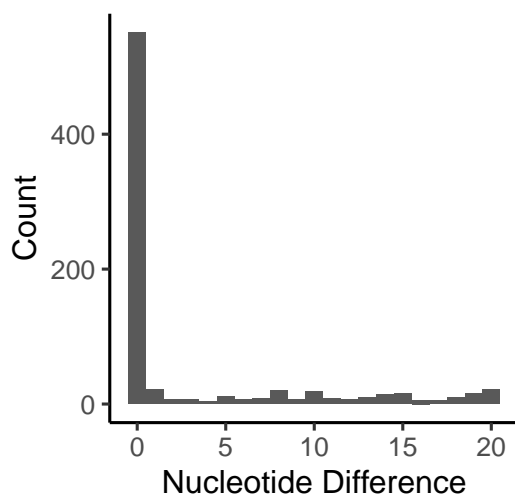
### IGHV4-28\*02\_05

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



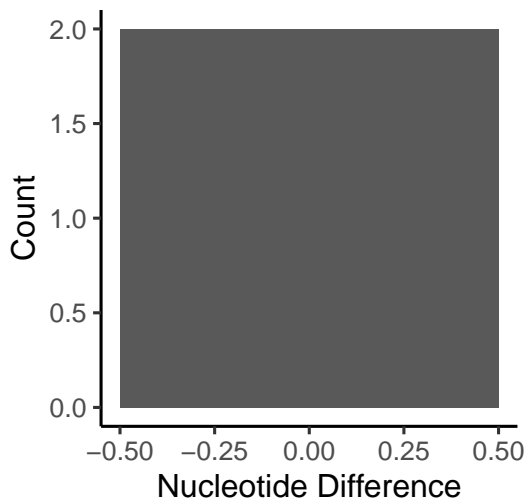
### IGHV3-64D\*09

913 sequences assigned  
551 (60.4%) exact matches, in which:  
539 unique CDR3  
6 unique J



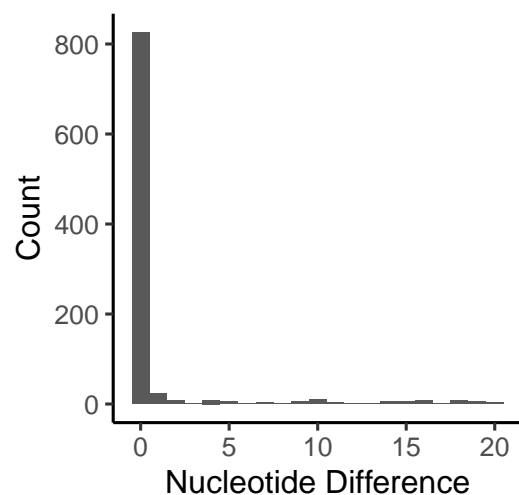
### IGHV4-28\*03

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



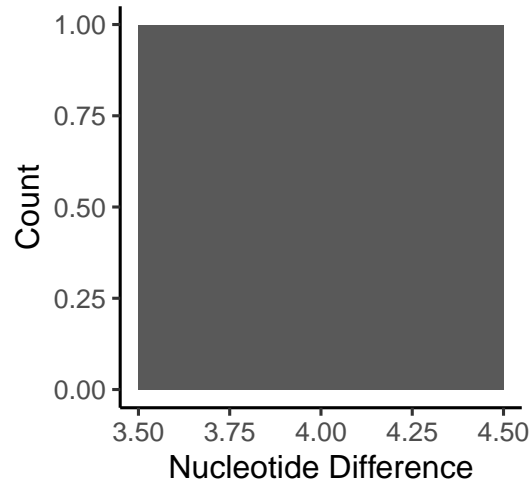
### IGHV4-30-2\*01

974 sequences assigned  
826 (84.8%) exact matches, in which:  
804 unique CDR3  
6 unique J



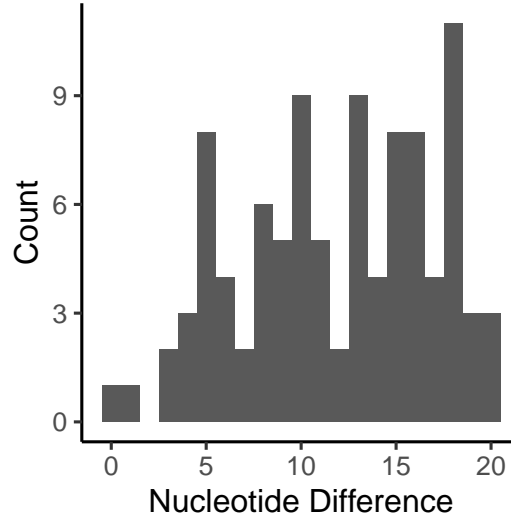
### IGHV4-30-4\*08

1 sequences assigned  
No exact matches.



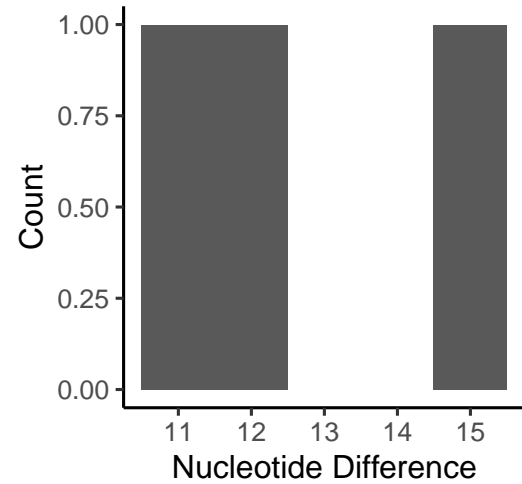
### IGHV4-39\*02

148 sequences assigned  
1 (0.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



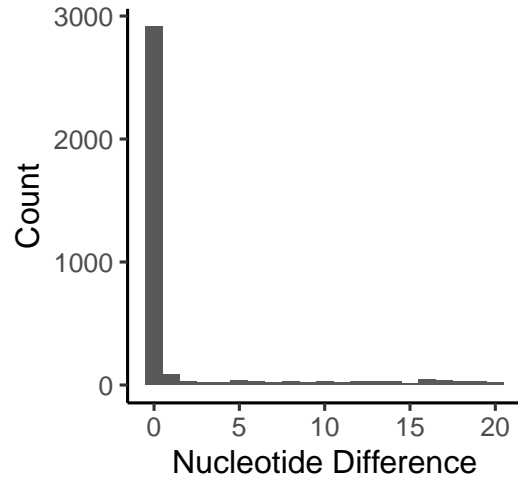
### IGHV4/OR15-8\*01

6 sequences assigned  
No exact matches.



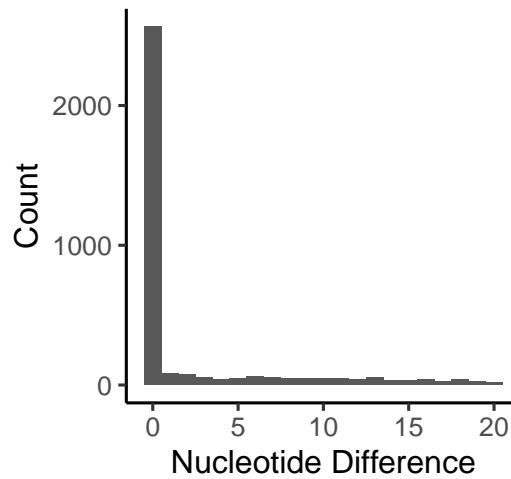
### IGHV4-31\*02

3741 sequences assigned  
2913 (77.9%) exact matches, in which:  
2883 unique CDR3  
7 unique J



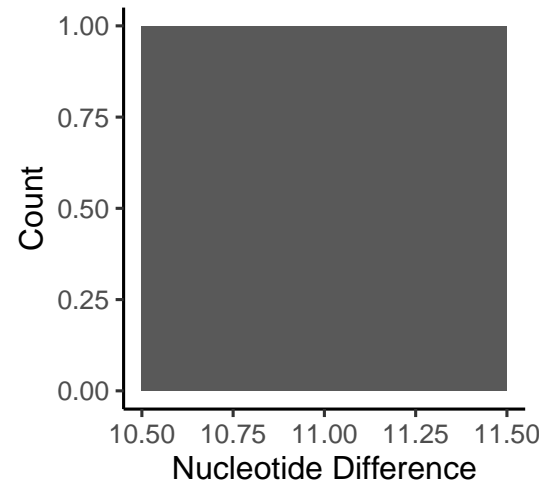
### IGHV4-59\*08

3828 sequences assigned  
2564 (67%) exact matches, in which:  
2519 unique CDR3  
7 unique J



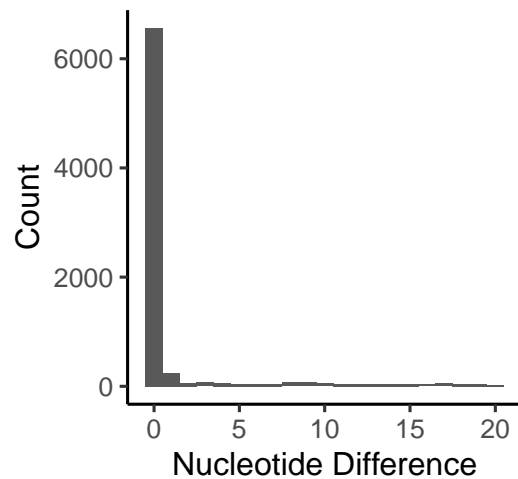
### IGHV4/OR15-8\*02

11 sequences assigned  
No exact matches.



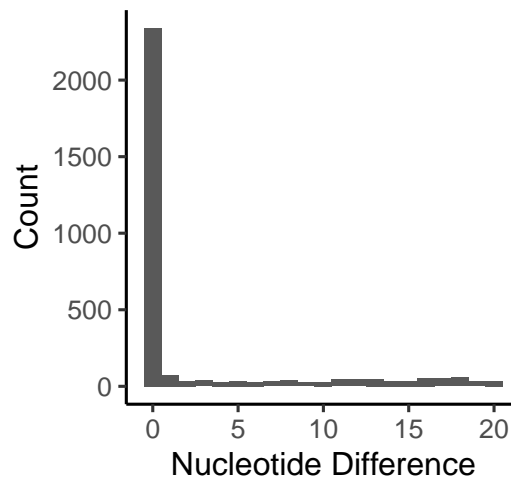
### IGHV4-34\*01\_02

8057 sequences assigned  
6562 (81.4%) exact matches, in which:  
6415 unique CDR3  
7 unique J



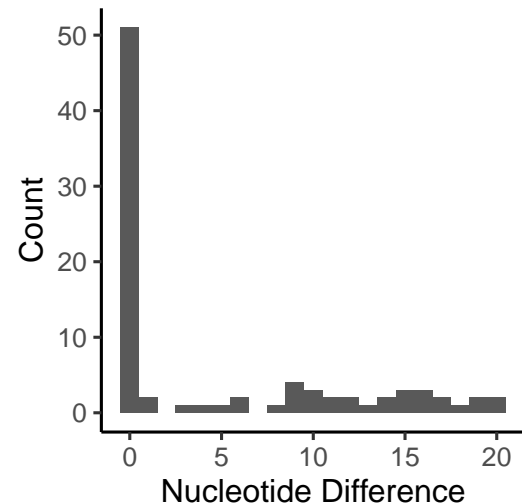
### IGHV4-61\*02

3516 sequences assigned  
2340 (66.6%) exact matches, in which:  
2315 unique CDR3  
7 unique J



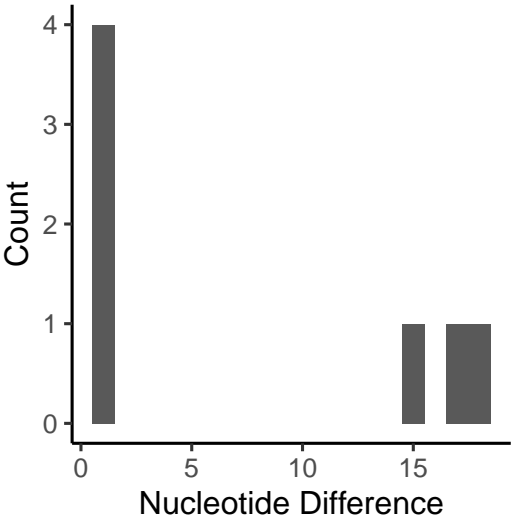
### IGHV5-10-1\*01\_03

102 sequences assigned  
51 (50%) exact matches, in which:  
50 unique CDR3  
4 unique J



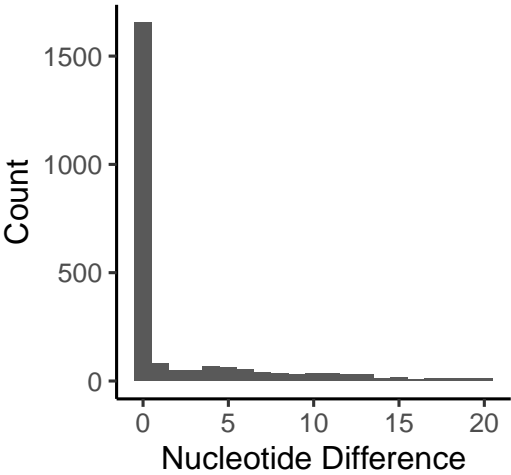
IGHV5–51\*04

7 sequences assigned  
No exact matches.



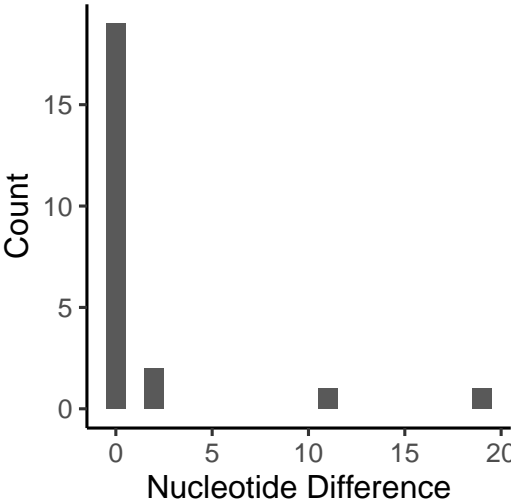
IGHV6–1\*01\_02

2363 sequences assigned  
1654 (70%) exact matches, in which:  
1632 unique CDR3  
7 unique J



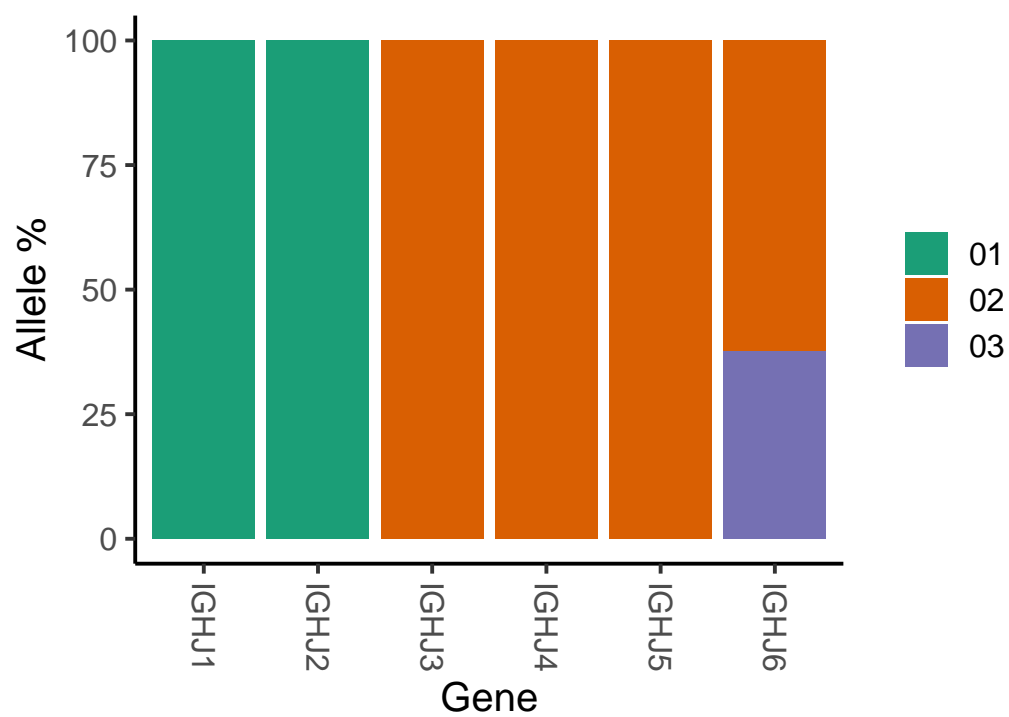
IGHV7–4–1\*01

24 sequences assigned  
19 (79.2%) exact matches, in which:  
19 unique CDR3  
5 unique J

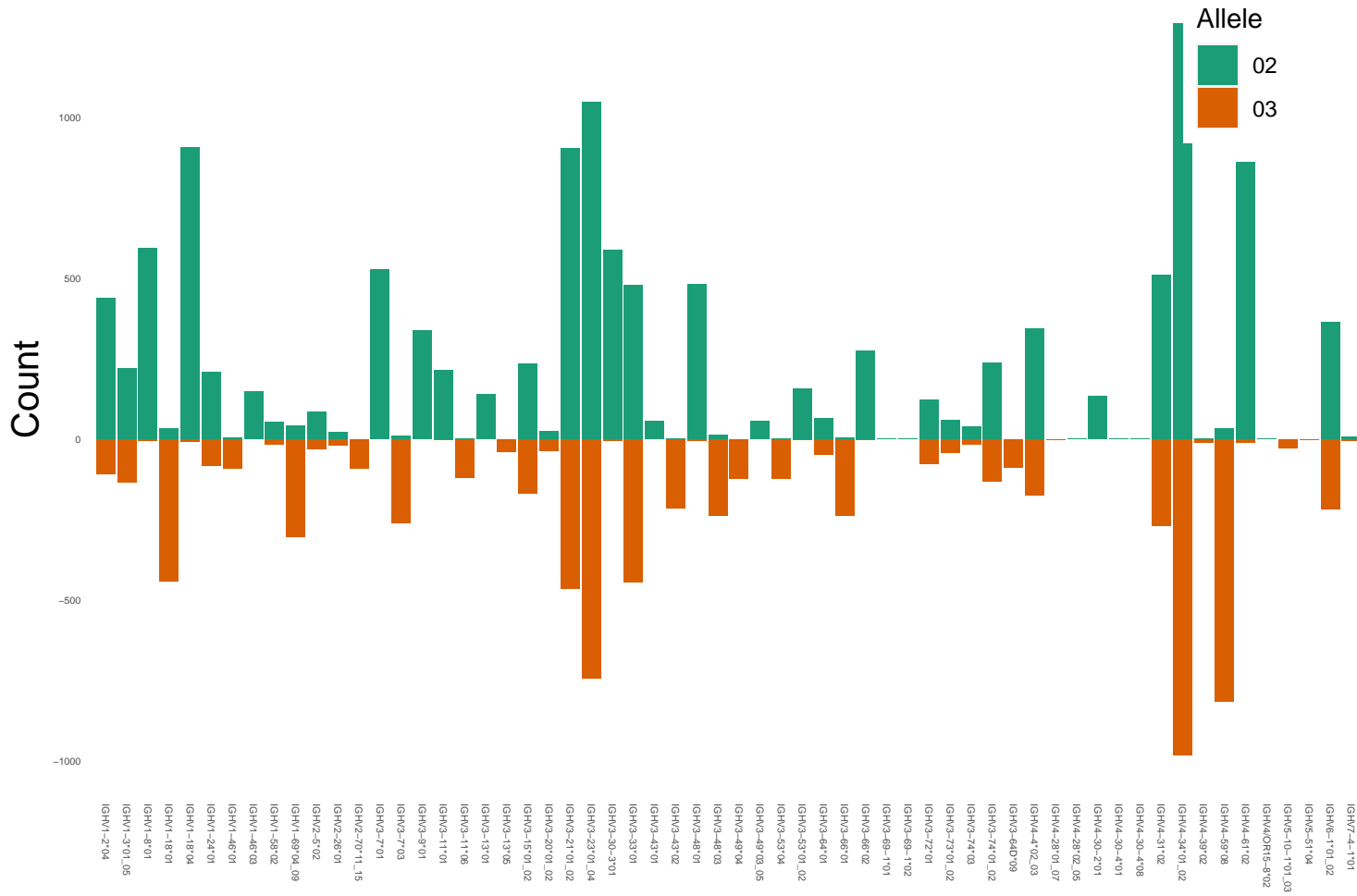




Allele Usage



Sequence Count by IGHJ6 allele usage



[illegible]