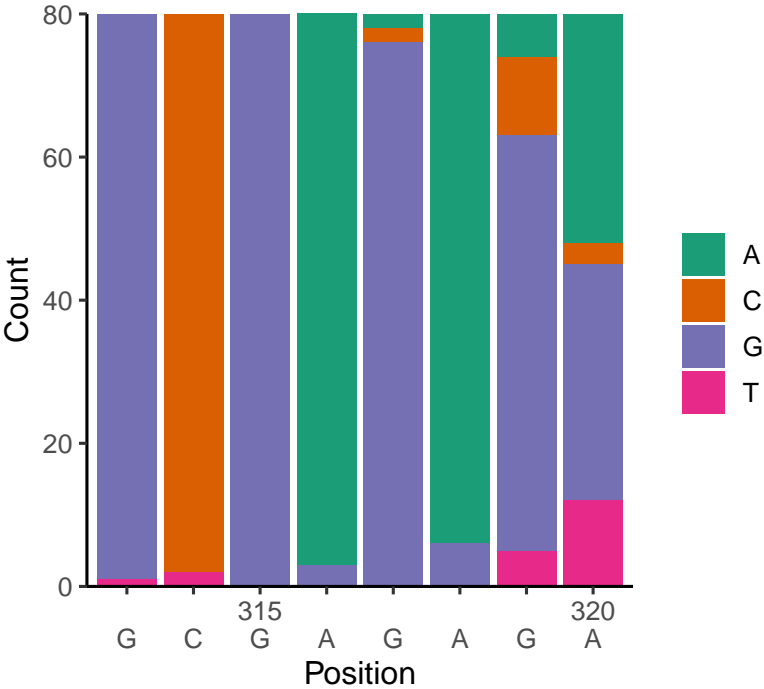
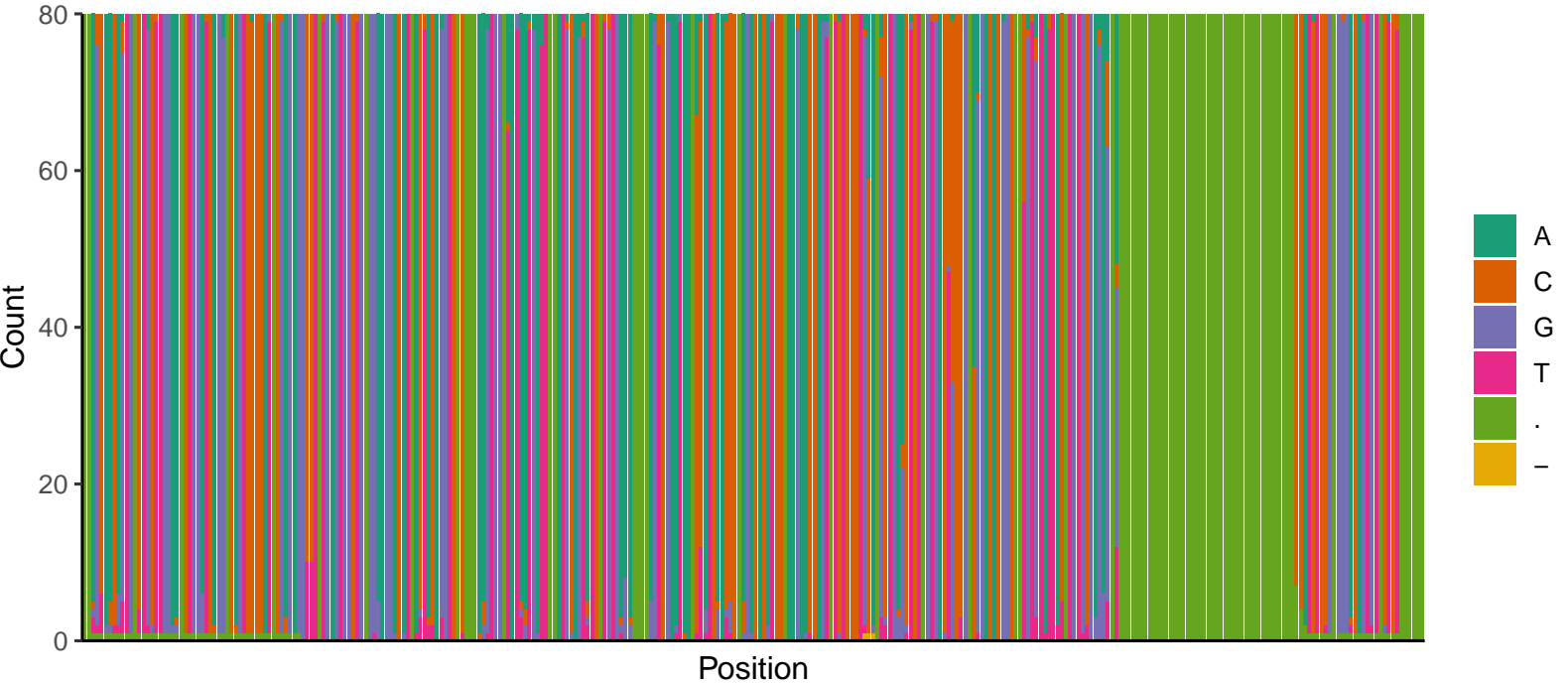


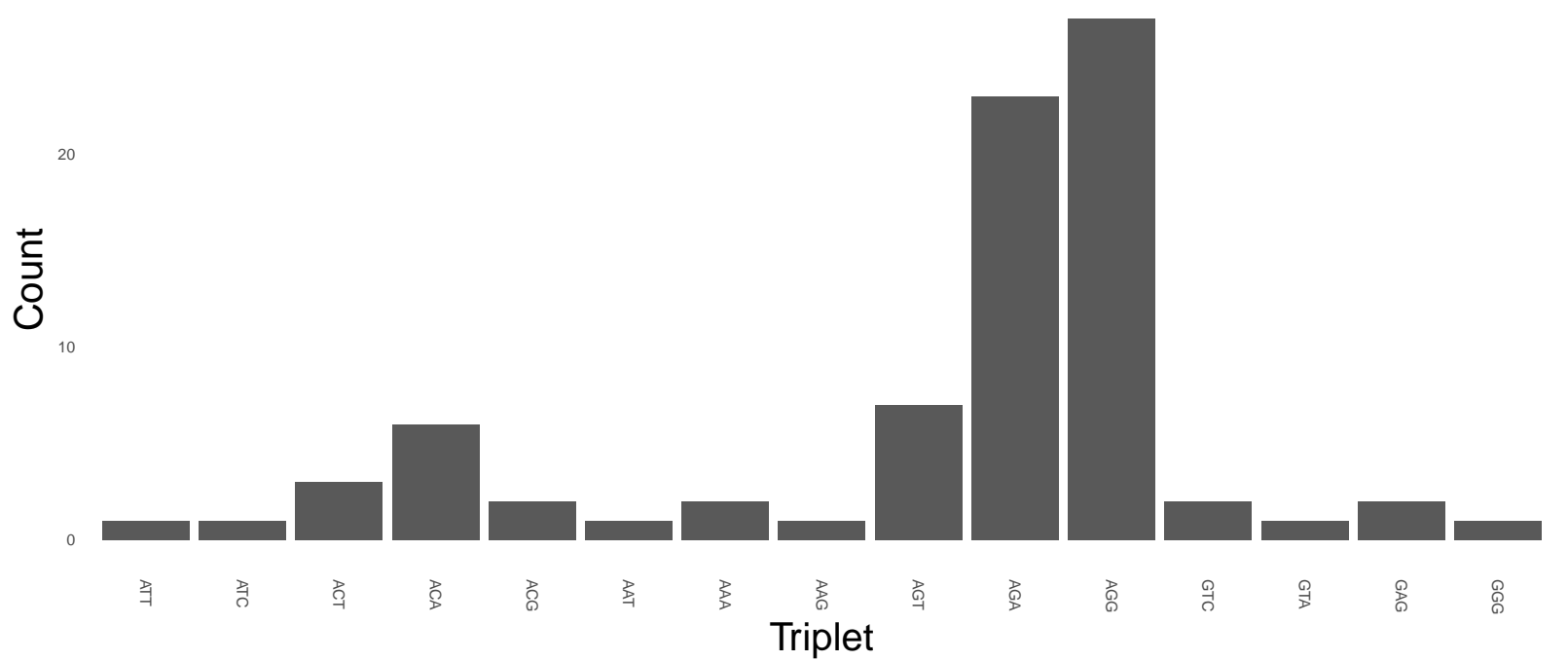
Gene IGHV6-1\*01\_02\_A315G



Gene IGHV6-1\*01\_02\_A315G

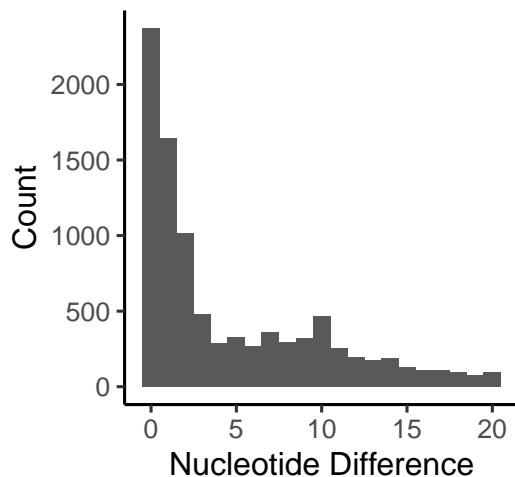


IGHV6-1\*01\_02\_A315G- Final 3 nucleotides as a triplet



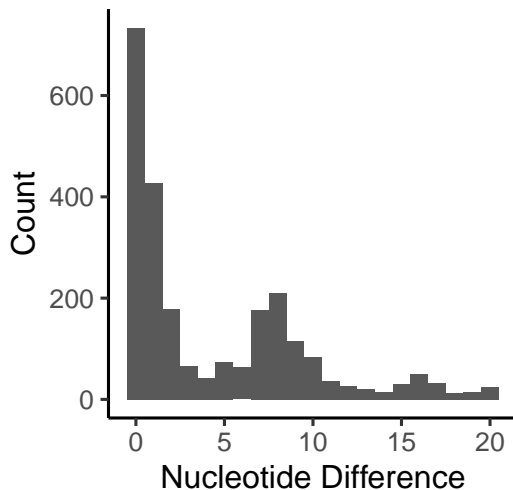
### IGHV1-2\*02

11285 sequences assigned  
2371 (21%) exact matches, in which:  
2091 unique CDR3  
7 unique J



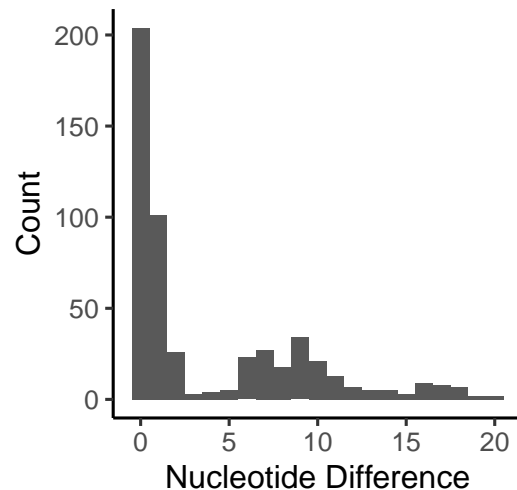
### IGHV1-8\*01

2694 sequences assigned  
734 (27.2%) exact matches, in which:  
679 unique CDR3  
7 unique J



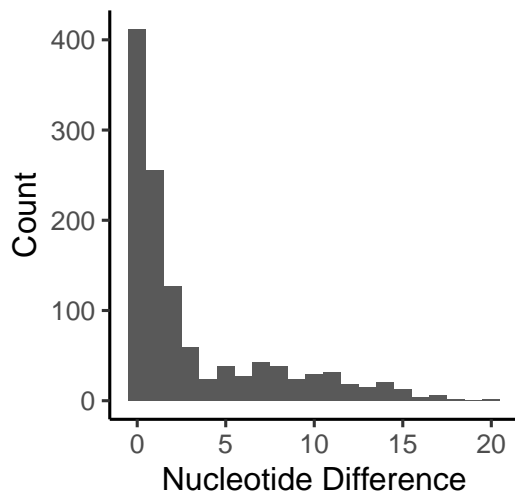
### IGHV1-24\*01

635 sequences assigned  
204 (32.1%) exact matches, in which:  
191 unique CDR3  
7 unique J



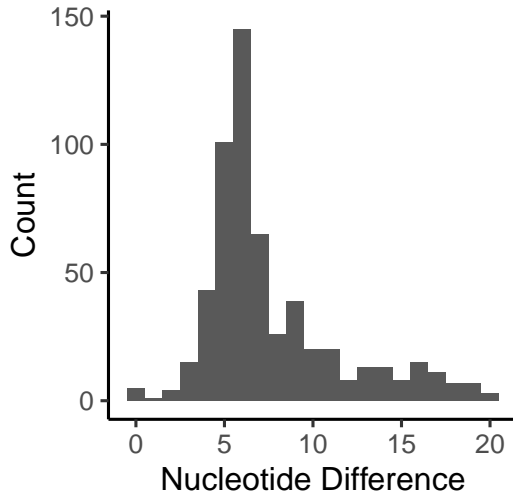
### IGHV1-2\*04

1232 sequences assigned  
412 (33.4%) exact matches, in which:  
374 unique CDR3  
7 unique J



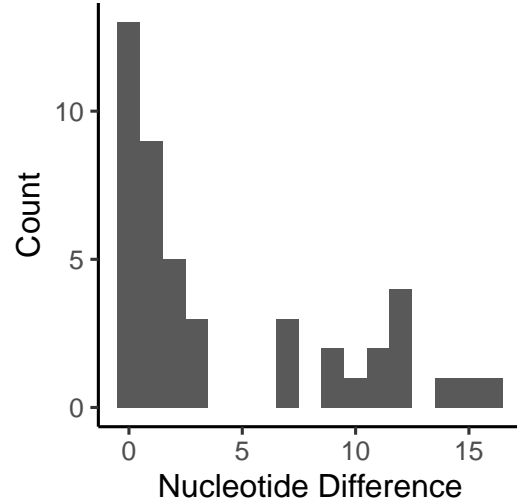
### IGHV1-8\*02

618 sequences assigned  
5 (0.8%) exact matches, in which:  
5 unique CDR3  
3 unique J



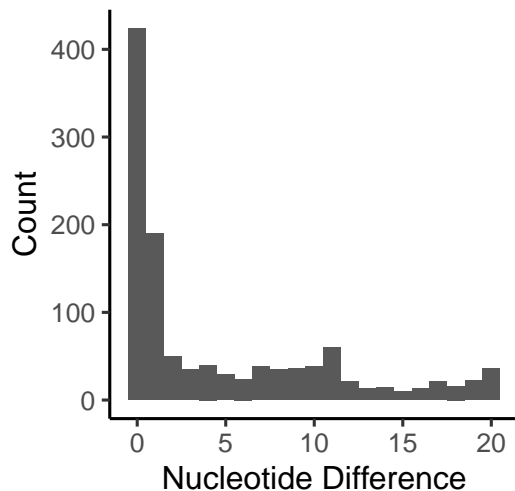
### IGHV1-45\*02

45 sequences assigned  
13 (28.9%) exact matches, in which:  
11 unique CDR3  
2 unique J



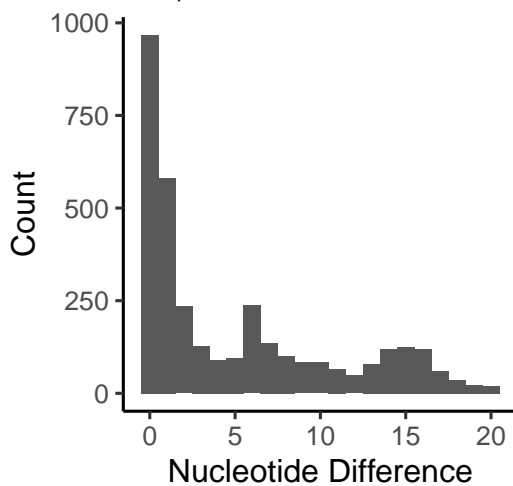
### IGHV1-3\*01\_05

1377 sequences assigned  
424 (30.8%) exact matches, in which:  
376 unique CDR3  
7 unique J



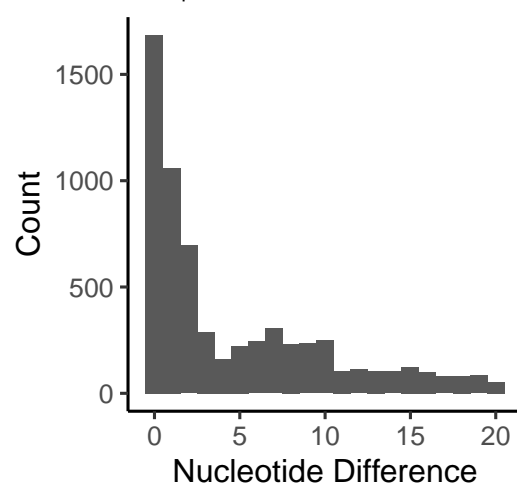
### IGHV1-18\*01

4380 sequences assigned  
967 (22.1%) exact matches, in which:  
893 unique CDR3  
7 unique J



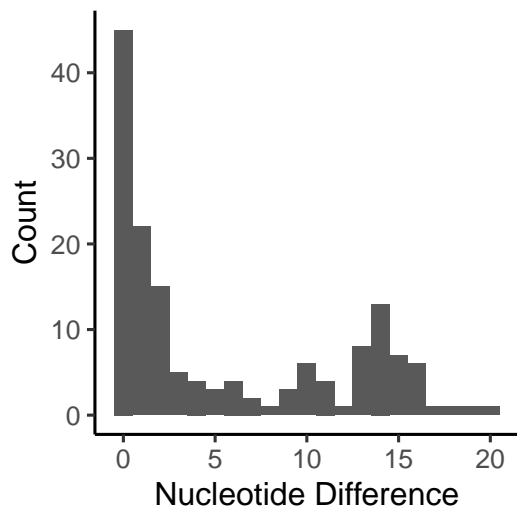
### IGHV1-46\*01

7045 sequences assigned  
1685 (23.9%) exact matches, in which:  
1554 unique CDR3  
7 unique J



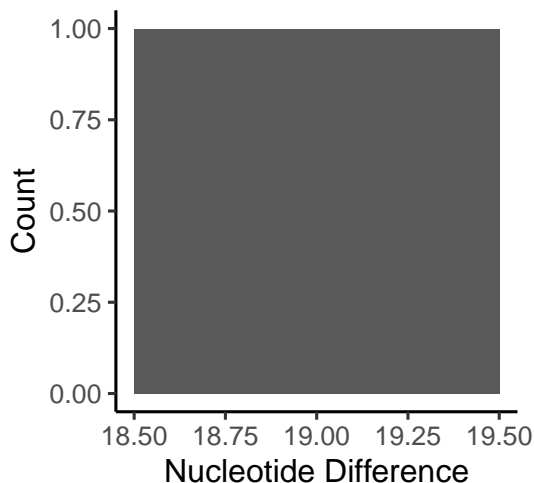
### IGHV1-58\*02

185 sequences assigned  
45 (24.3%) exact matches, in which:  
44 unique CDR3  
7 unique J



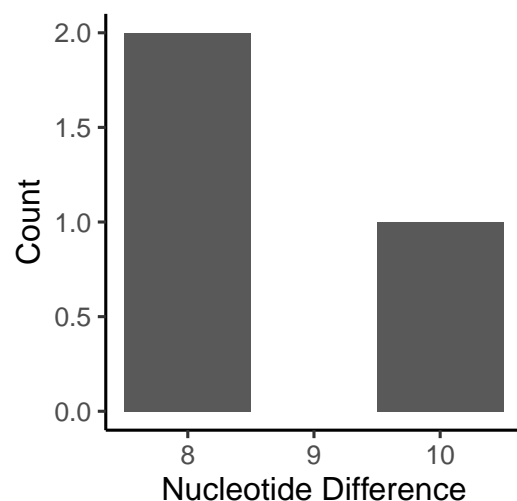
### IGHV1-69-2\*01

1 sequences assigned  
No exact matches.



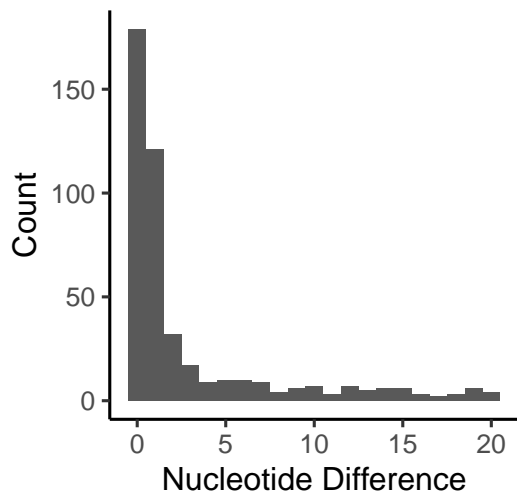
### IGHV1-NL1\*01

3 sequences assigned  
No exact matches.



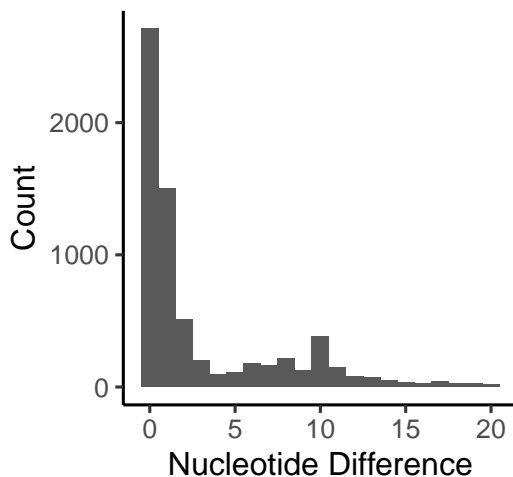
### IGHV1-58\*01\_03

463 sequences assigned  
179 (38.7%) exact matches, in which:  
169 unique CDR3  
6 unique J



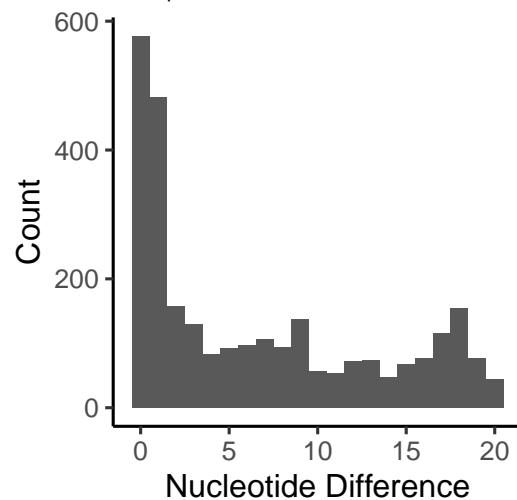
### IGHV1-69\*01\_12\_13

6869 sequences assigned  
2711 (39.5%) exact matches, in which:  
2537 unique CDR3  
7 unique J



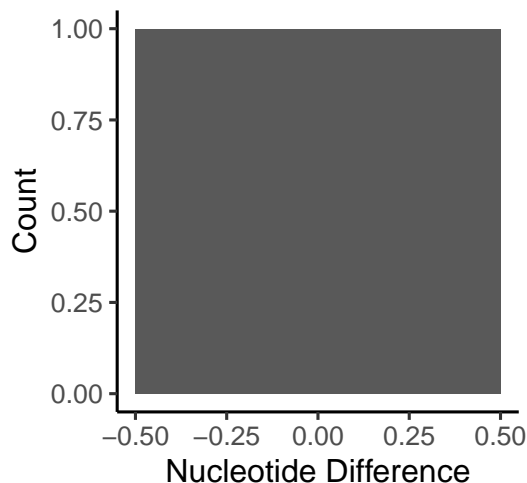
### IGHV2-5\*02

3108 sequences assigned  
577 (18.6%) exact matches, in which:  
517 unique CDR3  
7 unique J



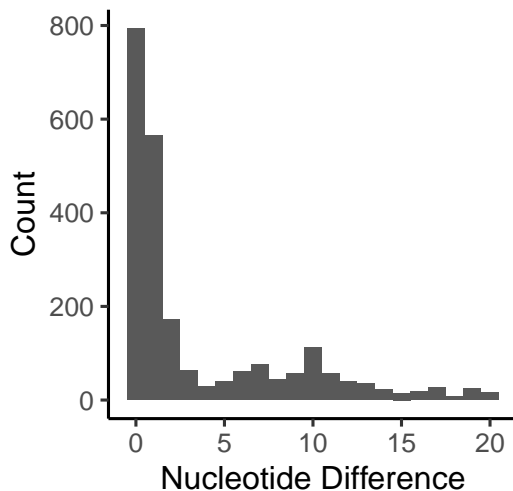
### IGHV1-68\*01

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



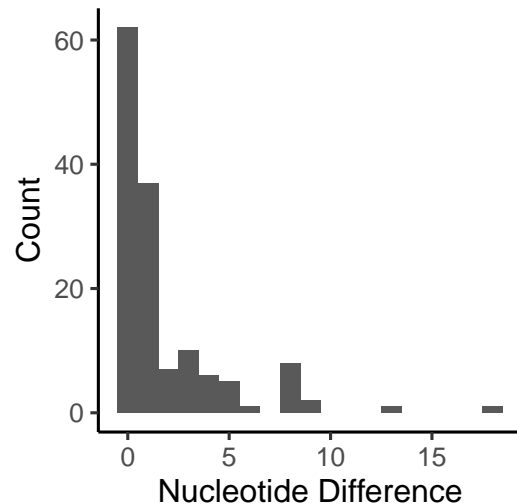
### IGHV1-69\*10

2445 sequences assigned  
794 (32.5%) exact matches, in which:  
741 unique CDR3  
7 unique J



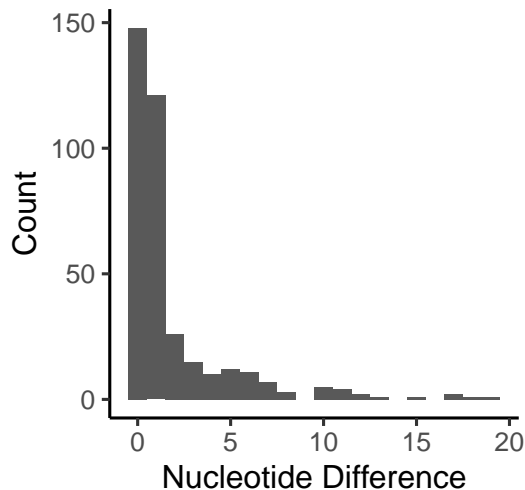
### IGHV2-26\*01

141 sequences assigned  
62 (44%) exact matches, in which:  
56 unique CDR3  
6 unique J



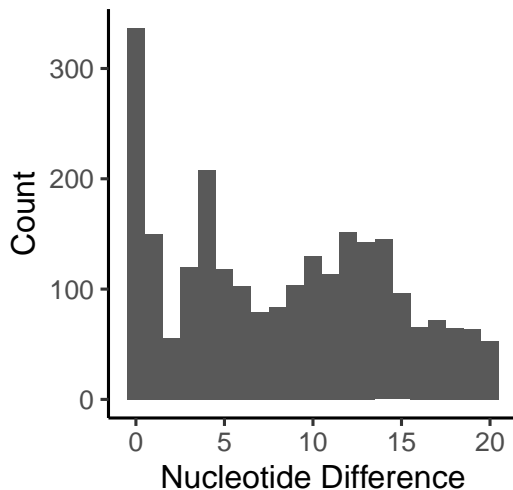
### IGHV2-70\*01

381 sequences assigned  
148 (38.8%) exact matches, in which:  
127 unique CDR3  
6 unique J



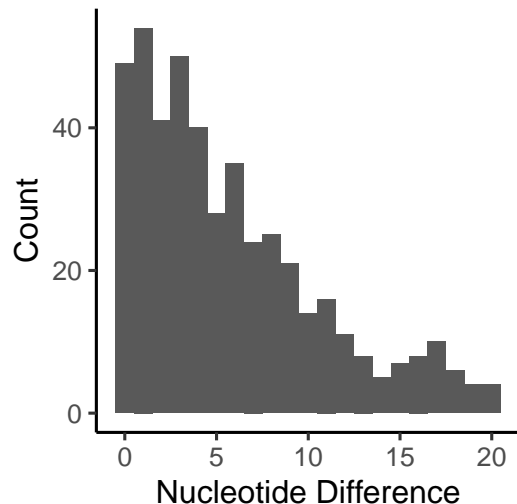
### IGHV3-7\*04

2983 sequences assigned  
337 (11.3%) exact matches, in which:  
247 unique CDR3  
7 unique J



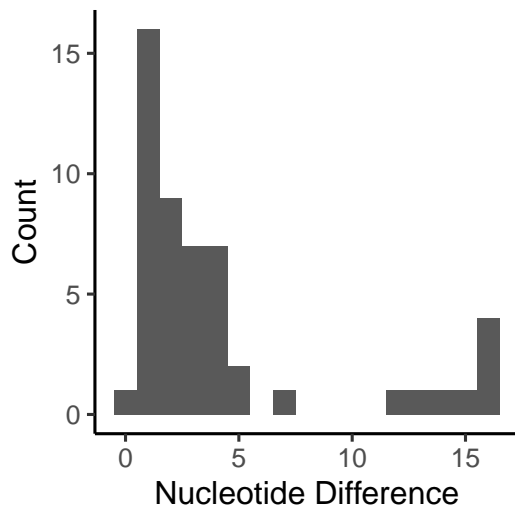
### IGHV3-11\*04

549 sequences assigned  
49 (8.9%) exact matches, in which:  
49 unique CDR3  
5 unique J



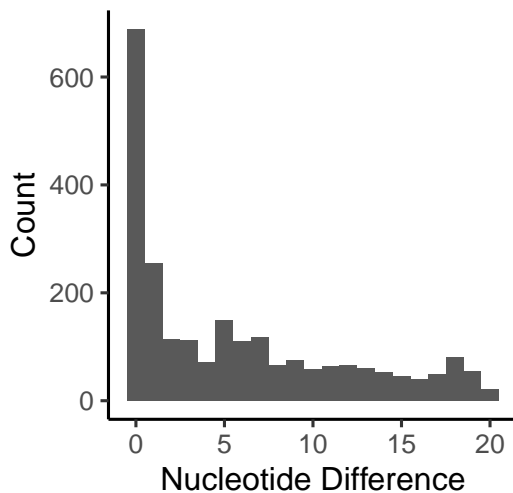
### IGHV2-70\*12

52 sequences assigned  
1 (1.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



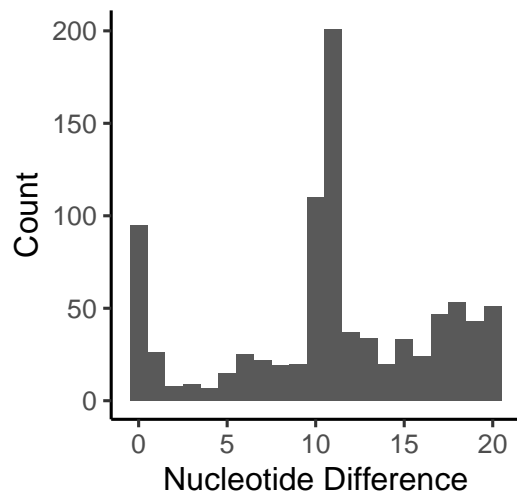
### IGHV3-9\*01

2570 sequences assigned  
689 (26.8%) exact matches, in which:  
483 unique CDR3  
7 unique J



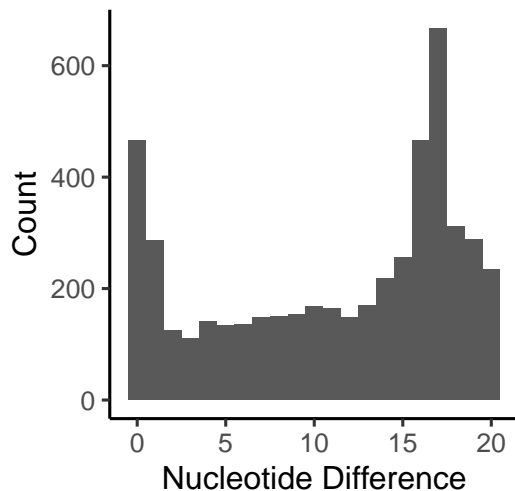
### IGHV3-13\*01

1315 sequences assigned  
95 (7.2%) exact matches, in which:  
66 unique CDR3  
7 unique J



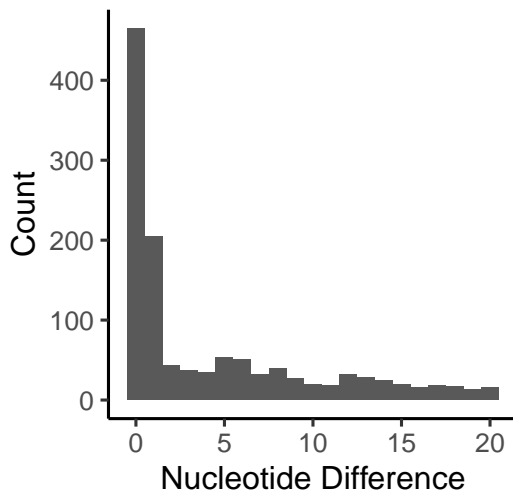
### IGHV3-7\*01

6405 sequences assigned  
466 (7.3%) exact matches, in which:  
354 unique CDR3  
7 unique J



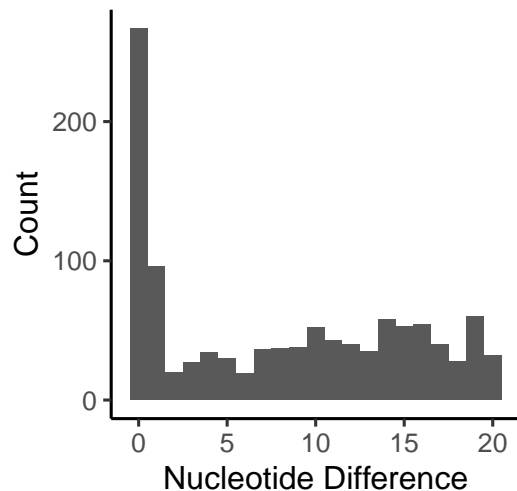
### IGHV3-11\*01

1403 sequences assigned  
465 (33.1%) exact matches, in which:  
343 unique CDR3  
7 unique J



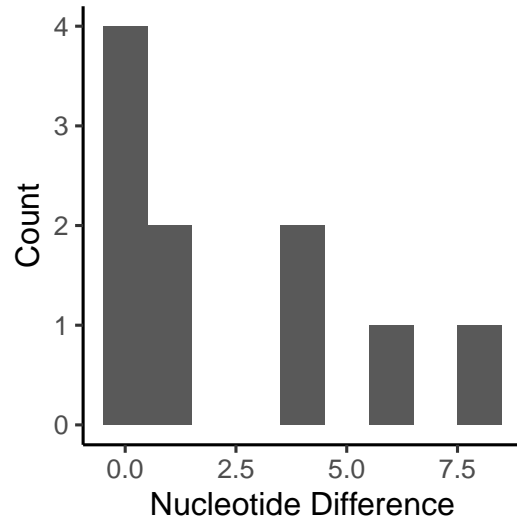
### IGHV3-15\*01\_02

1796 sequences assigned  
267 (14.9%) exact matches, in which:  
195 unique CDR3  
7 unique J



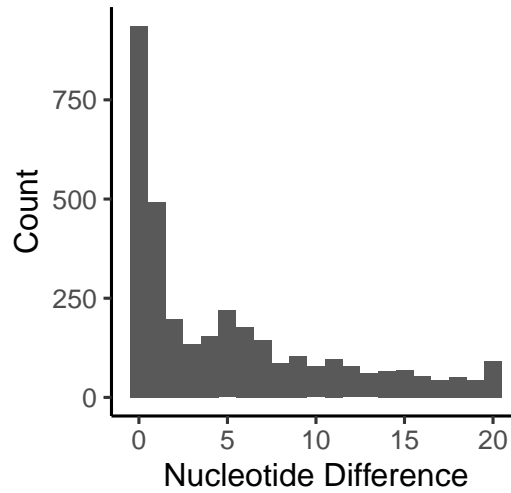
### IGHV3-19\*01

10 sequences assigned  
4 (40%) exact matches, in which:  
3 unique CDR3  
2 unique J



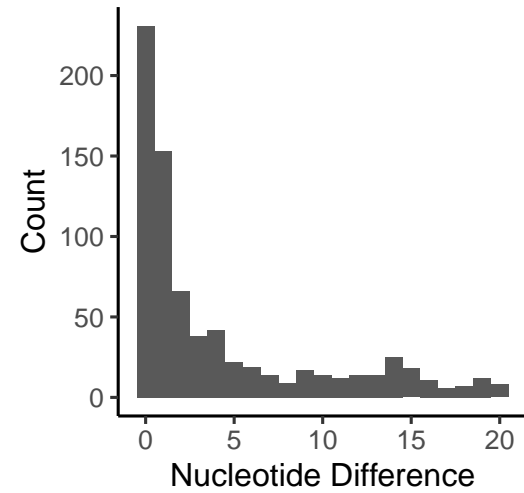
### IGHV3-21\*01\_02

4354 sequences assigned  
937 (21.5%) exact matches, in which:  
698 unique CDR3  
7 unique J



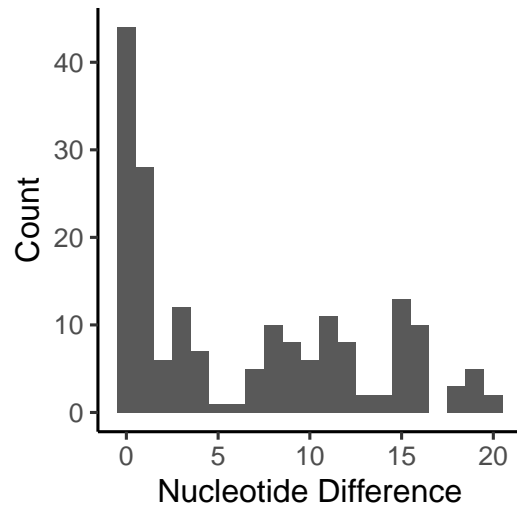
### IGHV3-30\*03

840 sequences assigned  
231 (27.5%) exact matches, in which:  
221 unique CDR3  
7 unique J



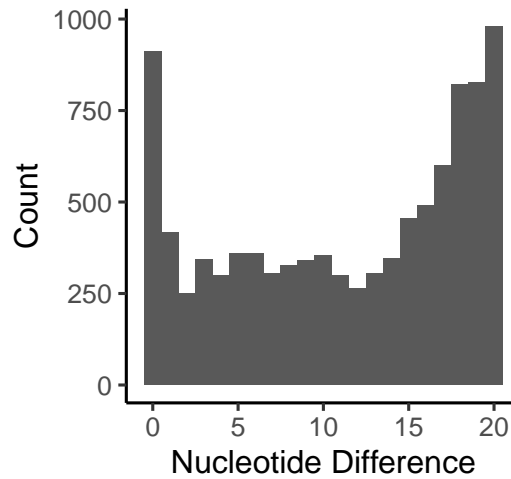
### IGHV3-20\*01\_02

188 sequences assigned  
44 (23.4%) exact matches, in which:  
31 unique CDR3  
5 unique J



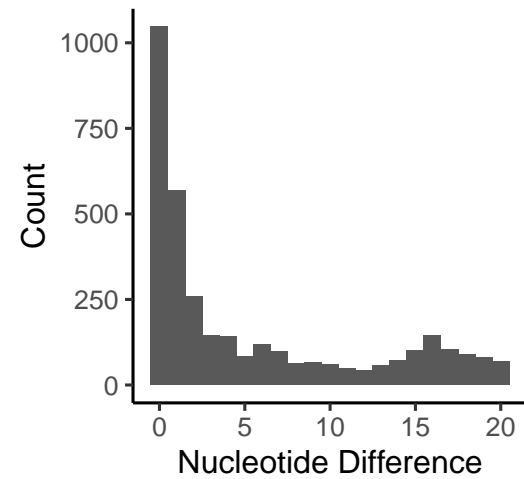
### IGHV3-23\*01\_04

17280 sequences assigned  
911 (5.3%) exact matches, in which:  
621 unique CDR3  
7 unique J



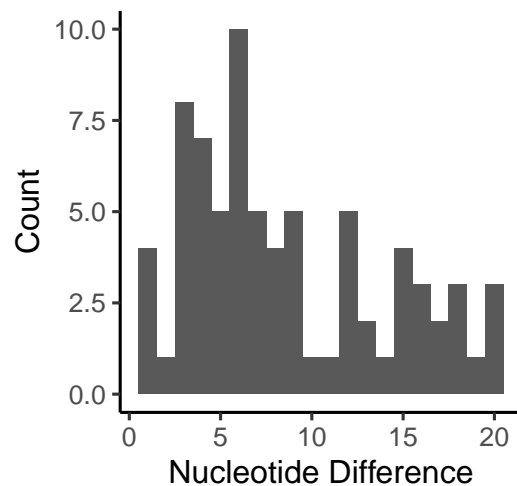
### IGHV3-33\*01

3967 sequences assigned  
1047 (26.4%) exact matches, in which:  
815 unique CDR3  
7 unique J



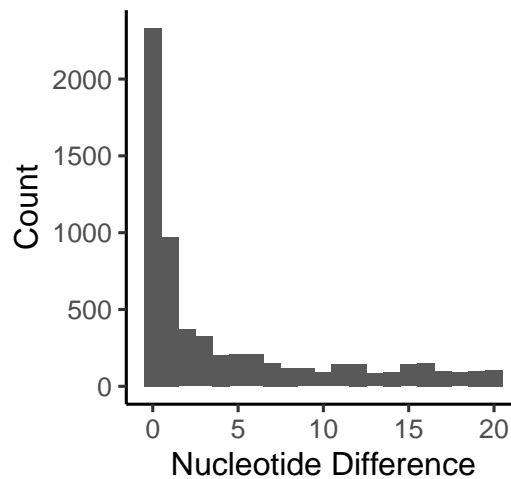
### IGHV3-20\*03\_04

102 sequences assigned  
No exact matches.



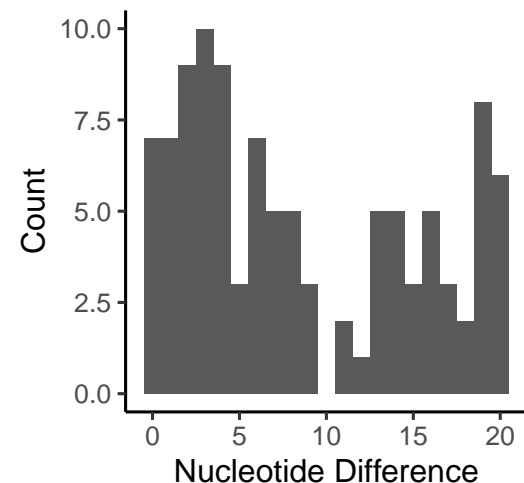
### IGHV3-30-3\*01

6753 sequences assigned  
2332 (34.5%) exact matches, in which:  
1769 unique CDR3  
7 unique J



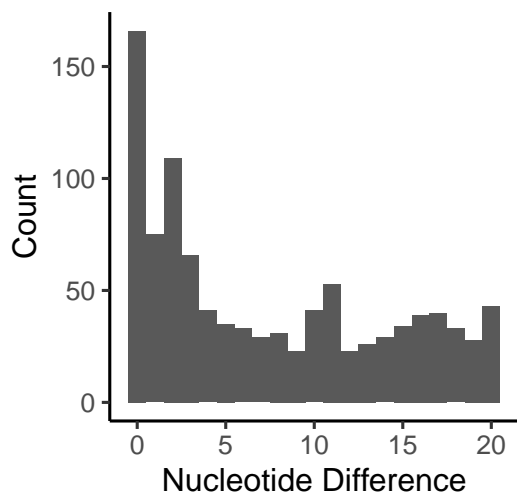
### IGHV3-33\*05

219 sequences assigned  
7 (3.2%) exact matches, in which:  
7 unique CDR3  
3 unique J



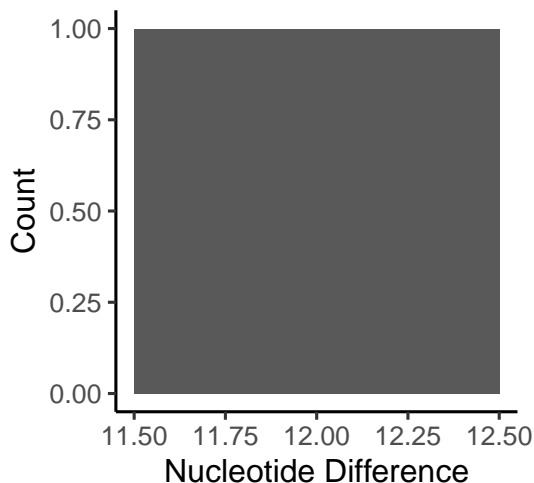
### IGHV3–33\*08

1290 sequences assigned  
166 (12.9%) exact matches, in which:  
156 unique CDR3  
7 unique J



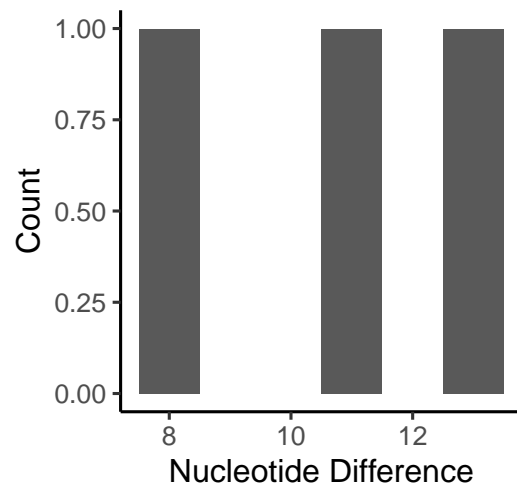
### IGHV3–38\*03

1 sequences assigned  
No exact matches.



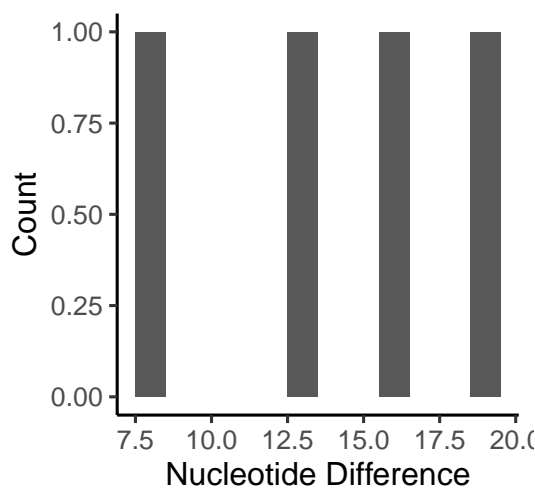
### IGHV3–47\*02

3 sequences assigned  
No exact matches.



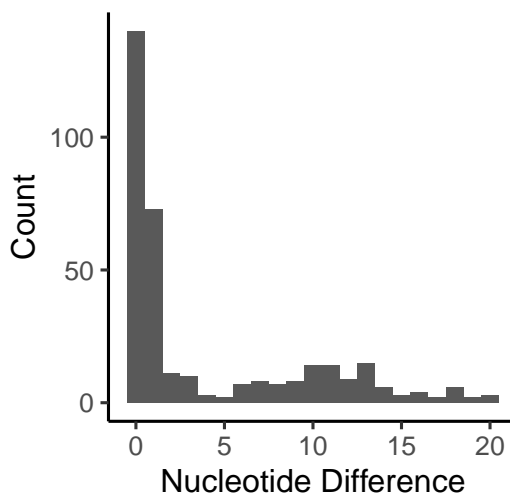
### IGHV3–35\*01

5 sequences assigned  
No exact matches.



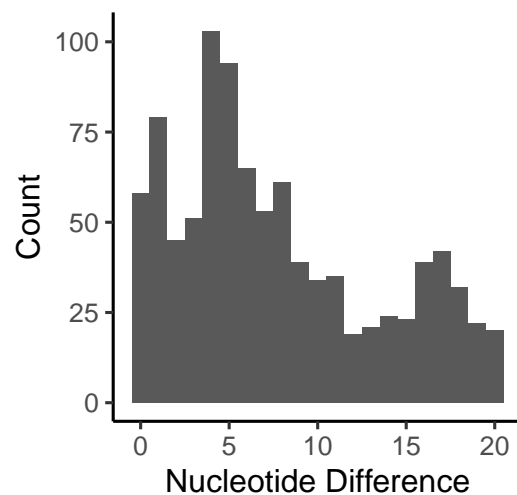
### IGHV3–43\*01

402 sequences assigned  
140 (34.8%) exact matches, in which:  
106 unique CDR3  
7 unique J



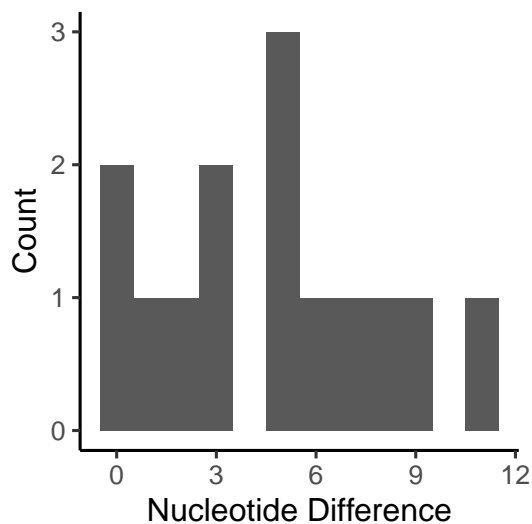
### IGHV3–48\*01

1120 sequences assigned  
58 (5.2%) exact matches, in which:  
57 unique CDR3  
7 unique J



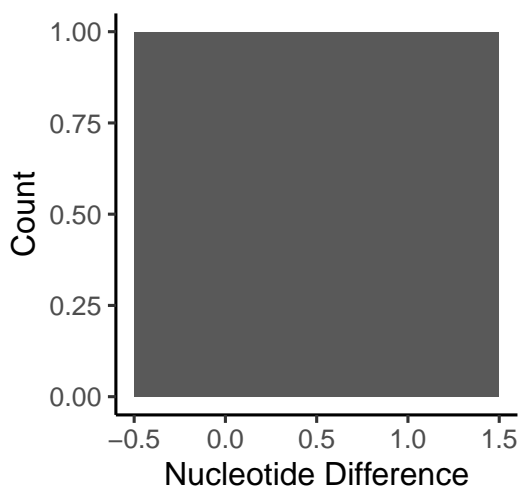
### IGHV3–38–3\*01

14 sequences assigned  
2 (14.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



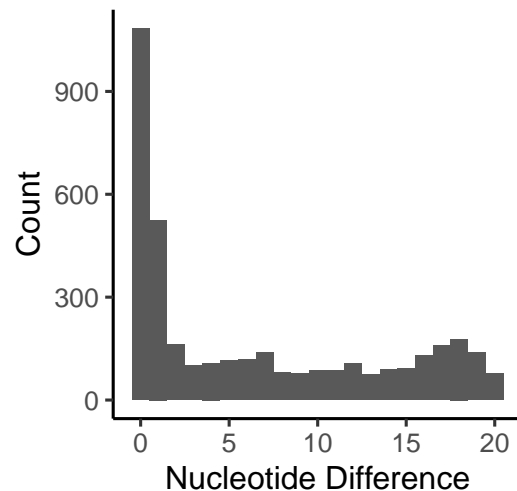
### IGHV3–47\*01

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



### IGHV3–48\*02

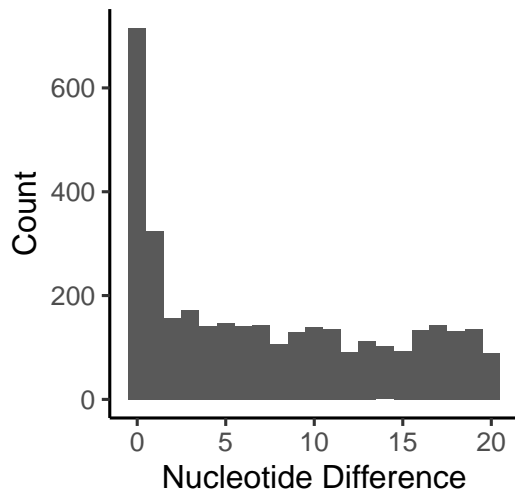
4461 sequences assigned  
1084 (24.3%) exact matches, in which:  
753 unique CDR3  
7 unique J





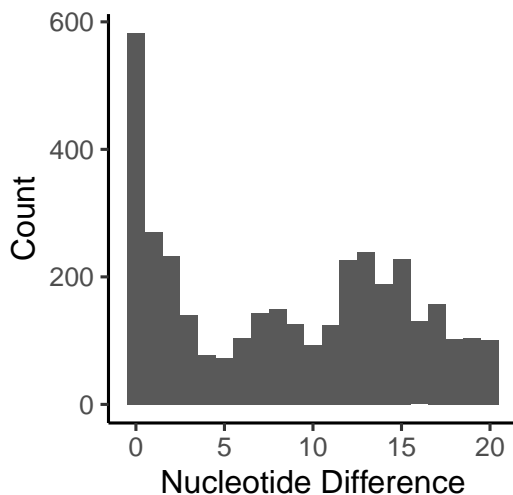
### IGHV3-48\*04

4561 sequences assigned  
716 (15.7%) exact matches, in which:  
526 unique CDR3  
7 unique J



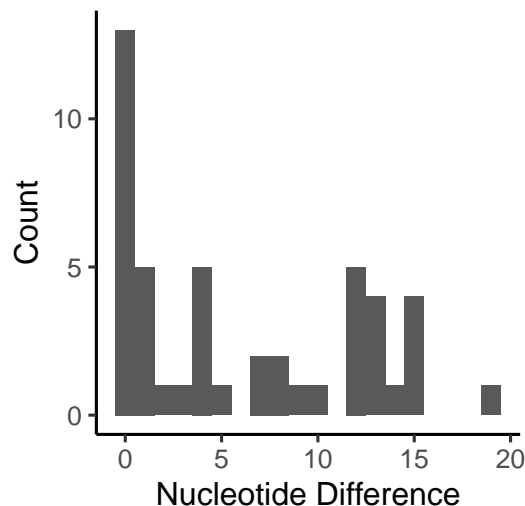
### IGHV3-53\*01\_02

4537 sequences assigned  
583 (12.8%) exact matches, in which:  
455 unique CDR3  
7 unique J



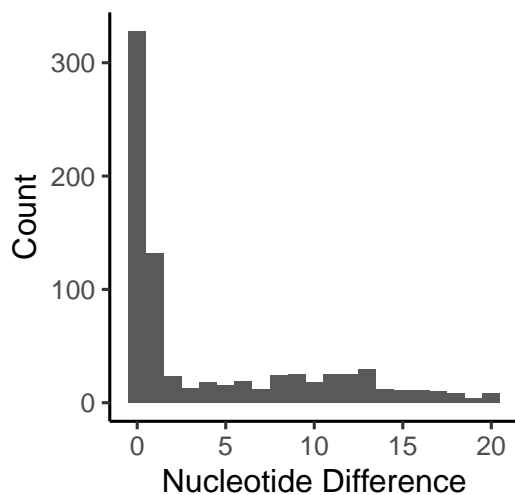
### IGHV3-64\*02\_07

57 sequences assigned  
13 (22.8%) exact matches, in which:  
11 unique CDR3  
5 unique J



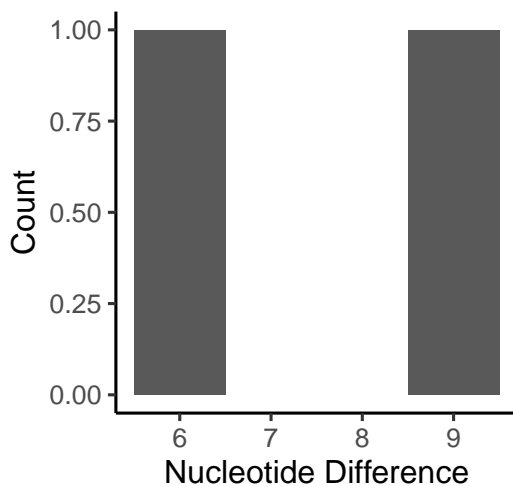
### IGHV3-49\*03\_05

947 sequences assigned  
328 (34.6%) exact matches, in which:  
247 unique CDR3  
7 unique J



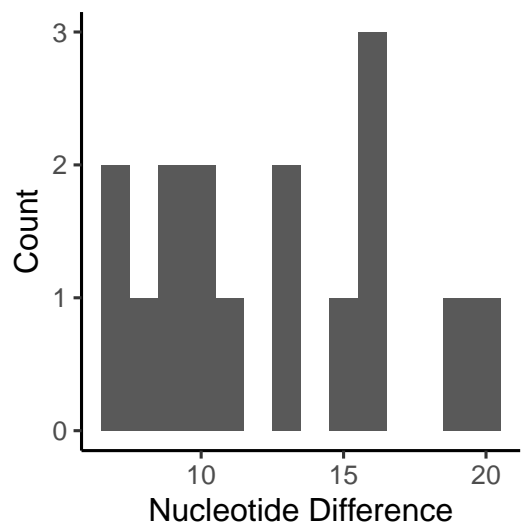
### IGHV3-62\*04

2 sequences assigned  
No exact matches.



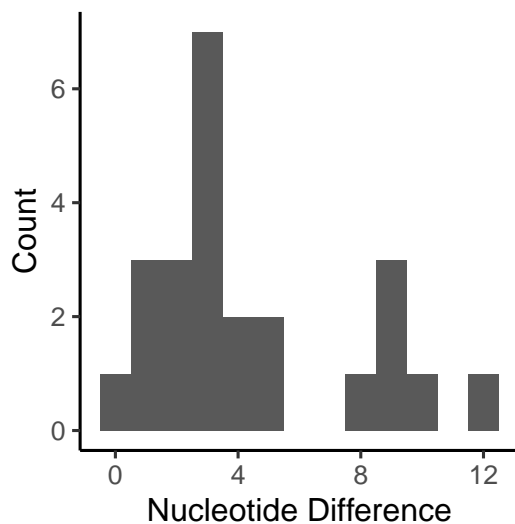
### IGHV3-66\*01

31 sequences assigned  
No exact matches.



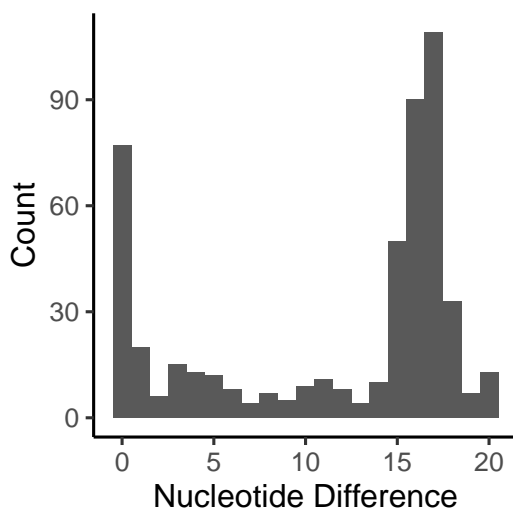
### IGHV3-52\*01\_03

24 sequences assigned  
1 (4.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



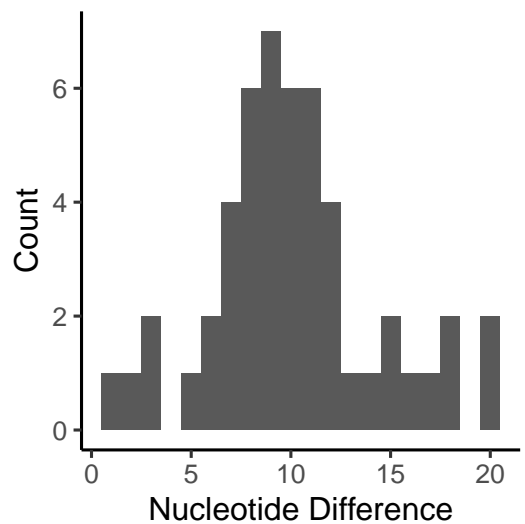
### IGHV3-64\*01

563 sequences assigned  
77 (13.7%) exact matches, in which:  
56 unique CDR3  
5 unique J



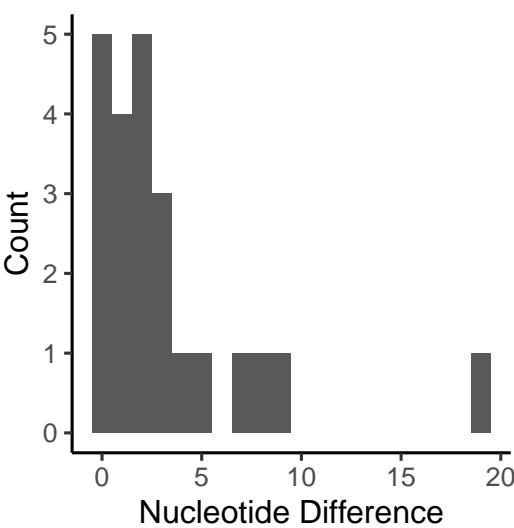
### IGHV3-66\*02

64 sequences assigned  
No exact matches.



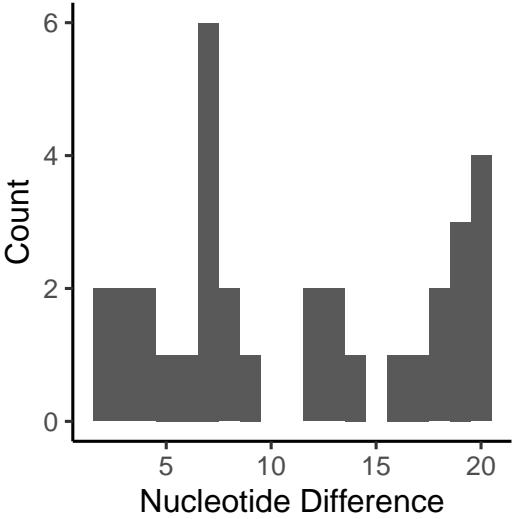
IGHV3-66\*03

24 sequences assigned  
5 (20.8%) exact matches, in which:  
5 unique CDR3  
4 unique J



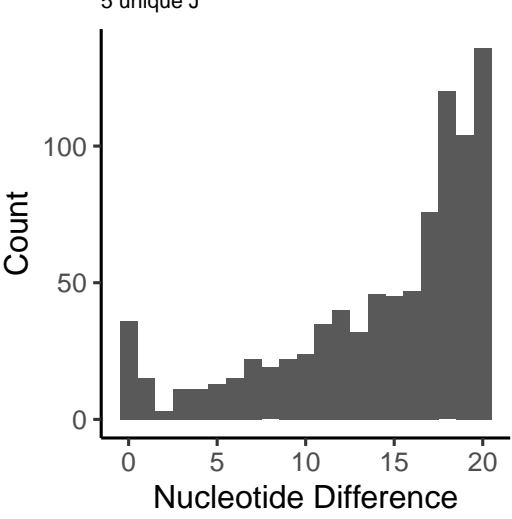
IGHV3-69-1\*02

51 sequences assigned  
No exact matches.



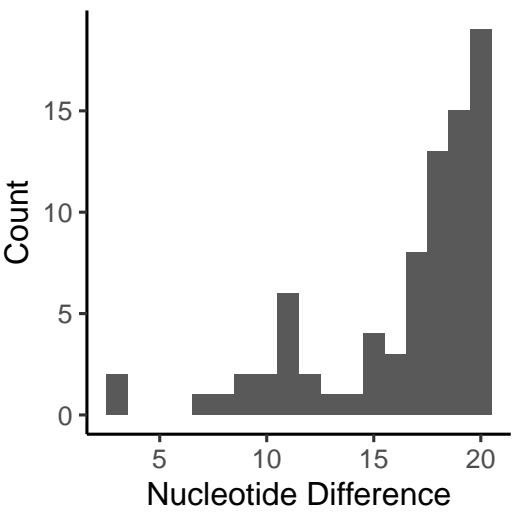
IGHV3-72\*01

2202 sequences assigned  
36 (1.6%) exact matches, in which:  
29 unique CDR3  
5 unique J



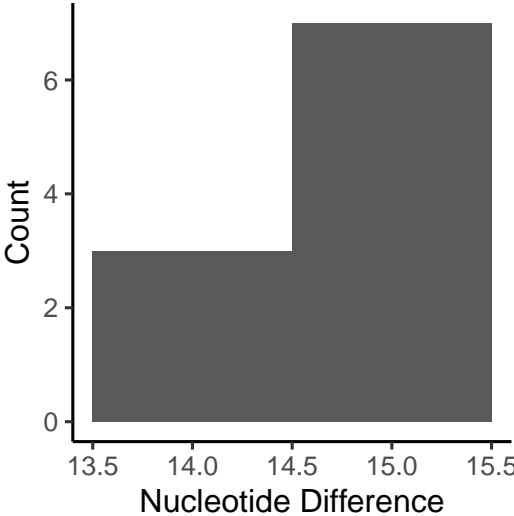
IGHV3-66\*04

149 sequences assigned  
No exact matches.



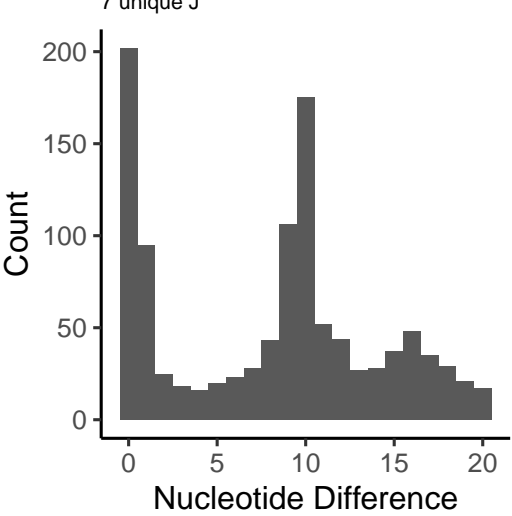
IGHV3-71\*02

10 sequences assigned  
No exact matches.



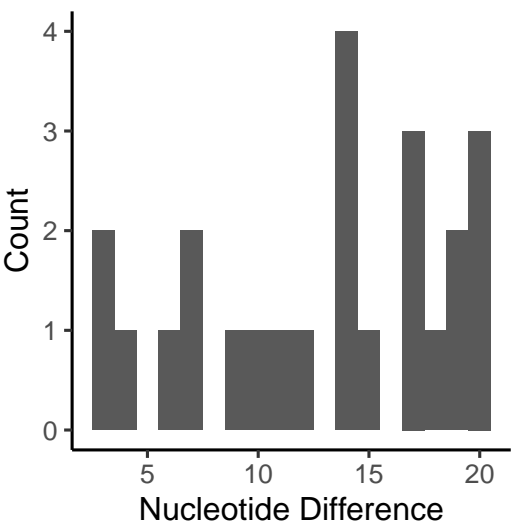
IGHV3-73\*01\_02

1273 sequences assigned  
202 (15.9%) exact matches, in which:  
162 unique CDR3  
7 unique J



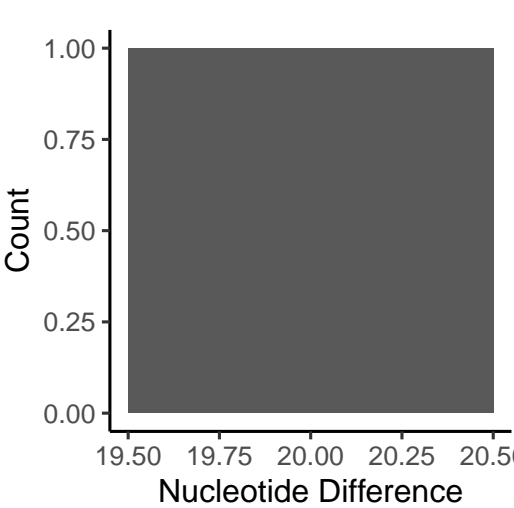
IGHV3-69-1\*01

44 sequences assigned  
No exact matches.



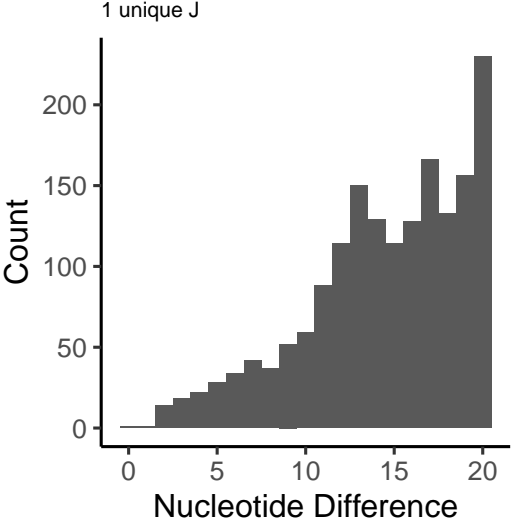
IGHV3-71\*01\_04

6 sequences assigned  
No exact matches.



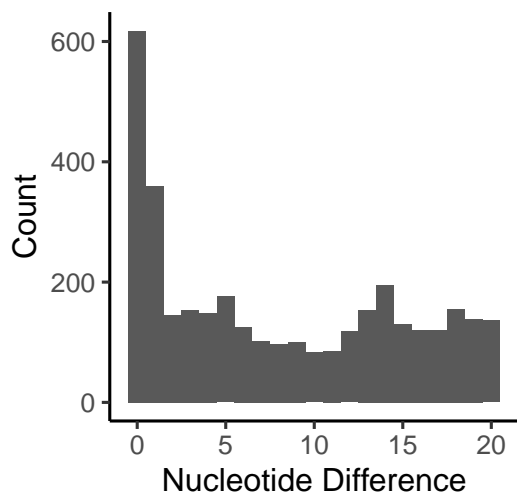
IGHV3-74\*03

4663 sequences assigned  
1 (0%) exact matches, in which:  
1 unique CDR3  
1 unique J



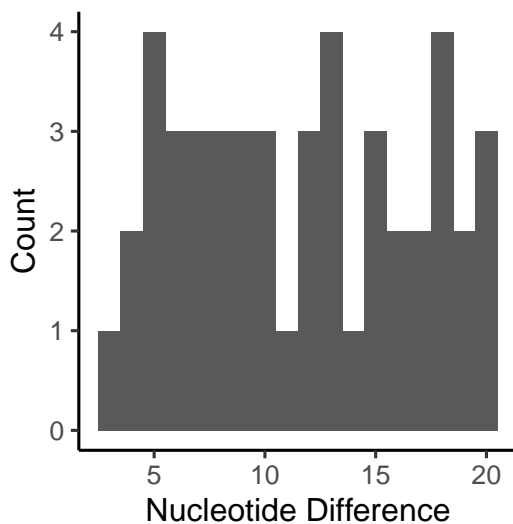
### IGHV3-74\*01\_02

4499 sequences assigned  
618 (13.7%) exact matches, in which:  
438 unique CDR3  
7 unique J



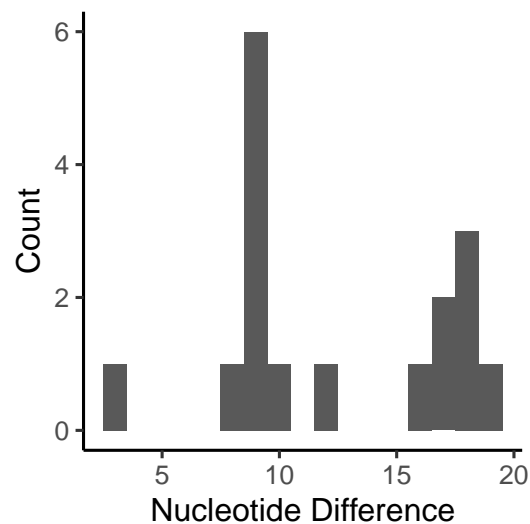
### IGHV3-NL1\*01

70 sequences assigned  
No exact matches.



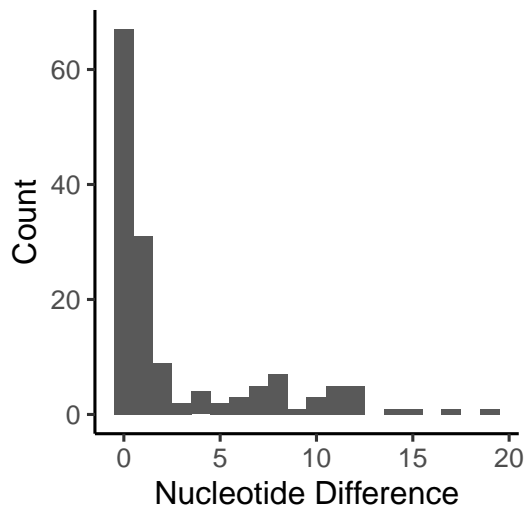
### IGHV4-28\*02\_05

17 sequences assigned  
No exact matches.



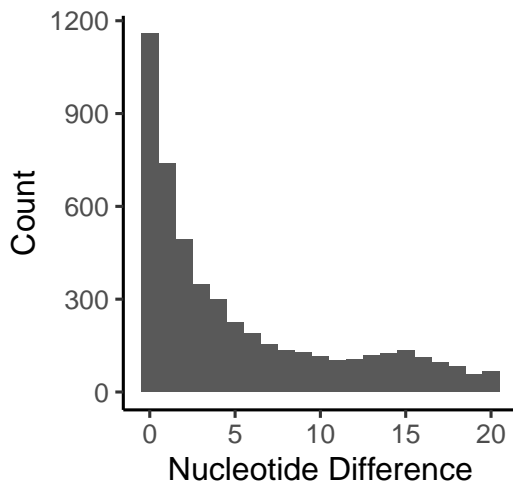
### IGHV3-43D\*03

149 sequences assigned  
67 (45%) exact matches, in which:  
52 unique CDR3  
4 unique J



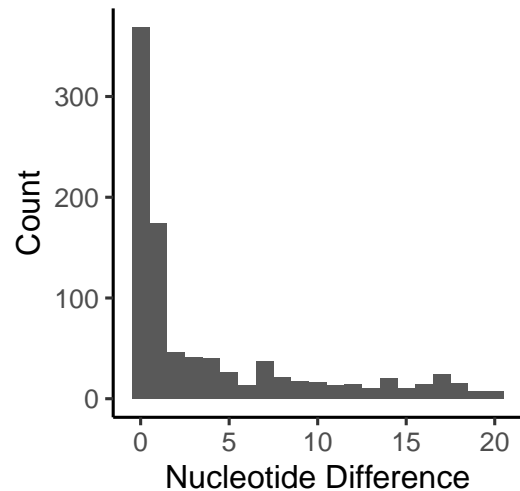
### IGHV4-4\*02\_03

5768 sequences assigned  
1158 (20.1%) exact matches, in which:  
1006 unique CDR3  
7 unique J



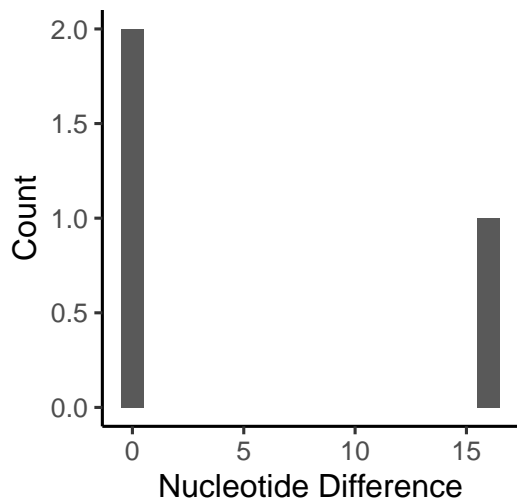
### IGHV4-30-4\*01

1069 sequences assigned  
369 (34.5%) exact matches, in which:  
343 unique CDR3  
7 unique J



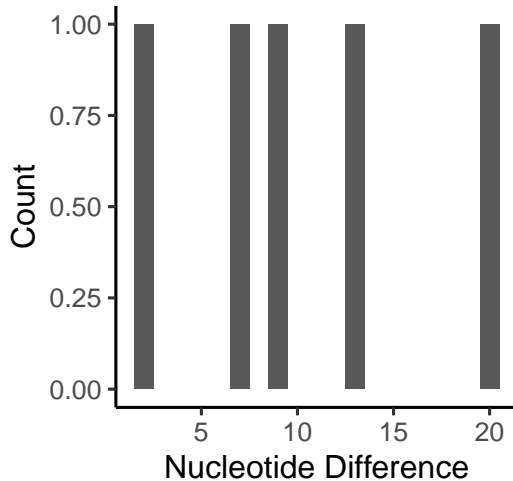
### IGHV3-64D\*06

59 sequences assigned  
2 (3.4%) exact matches, in which:  
2 unique CDR3  
1 unique J



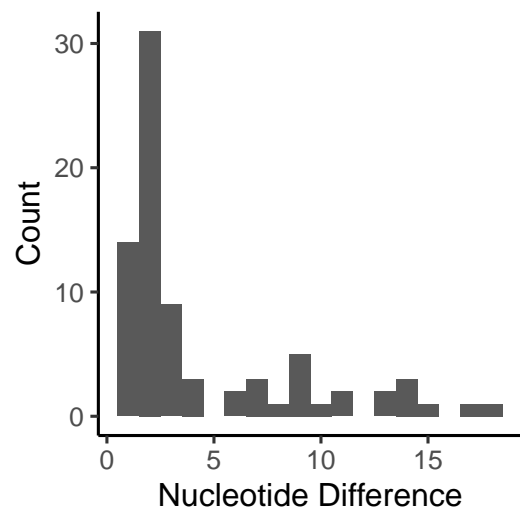
### IGHV4-28\*03

5 sequences assigned  
No exact matches.



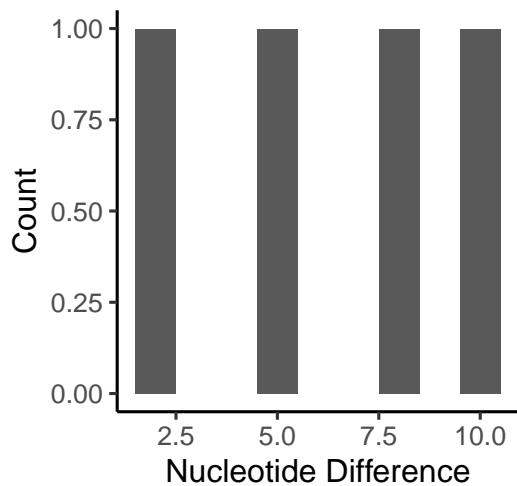
### IGHV4-30-2\*03

223 sequences assigned  
No exact matches.



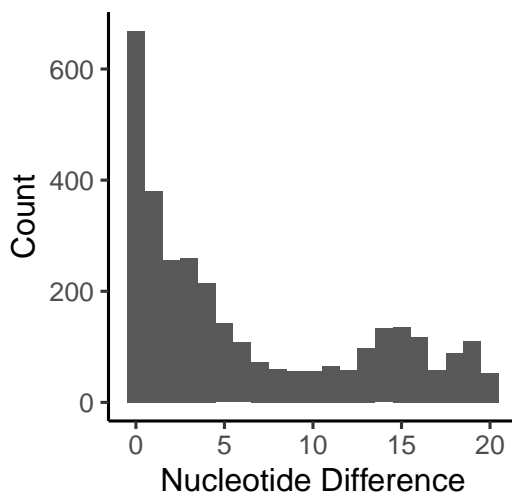
### IGHV4-30-2\*04

5 sequences assigned  
No exact matches.



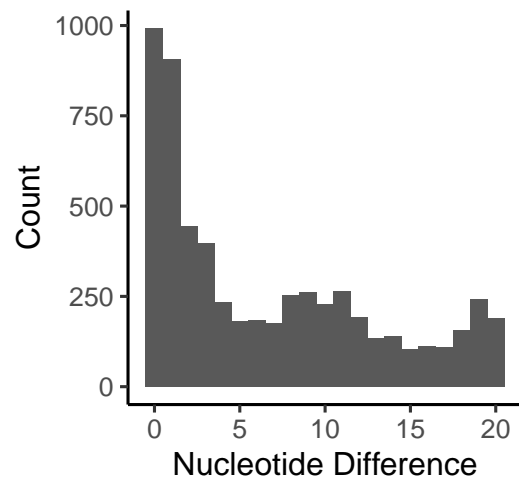
### IGHV4-31\*02

3427 sequences assigned  
669 (19.5%) exact matches, in which:  
622 unique CDR3  
7 unique J



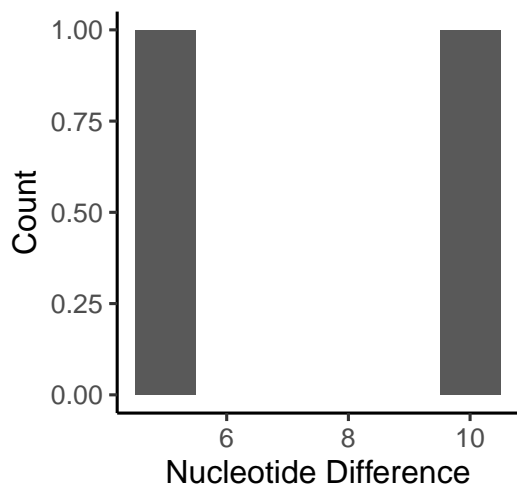
### IGHV4-39\*07

7340 sequences assigned  
992 (13.5%) exact matches, in which:  
894 unique CDR3  
7 unique J



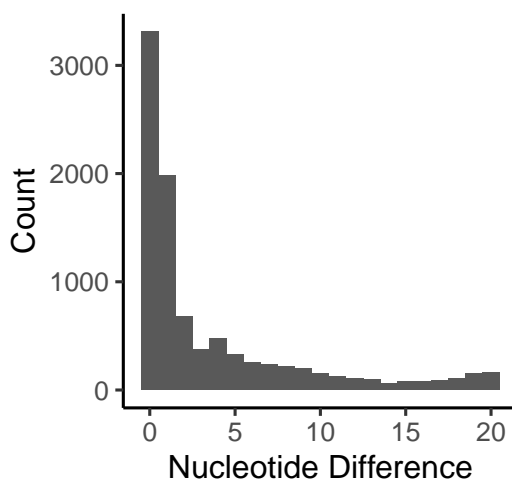
### IGHV4-30-2\*05

2 sequences assigned  
No exact matches.



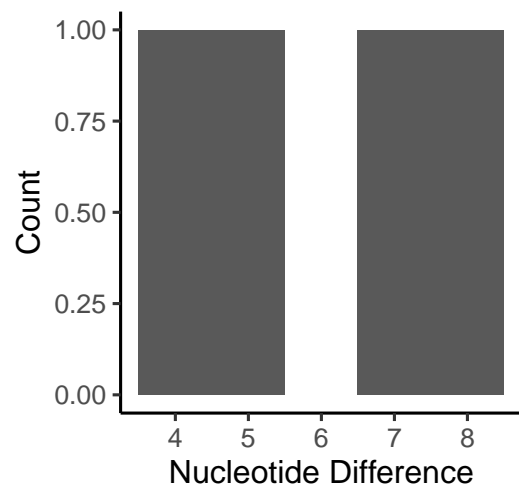
### IGHV4-34\*01\_02

10025 sequences assigned  
3311 (33%) exact matches, in which:  
2859 unique CDR3  
7 unique J



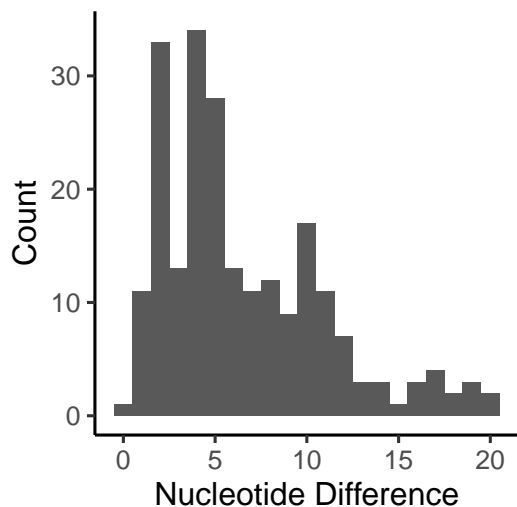
### IGHV4-55\*09

7 sequences assigned  
No exact matches.



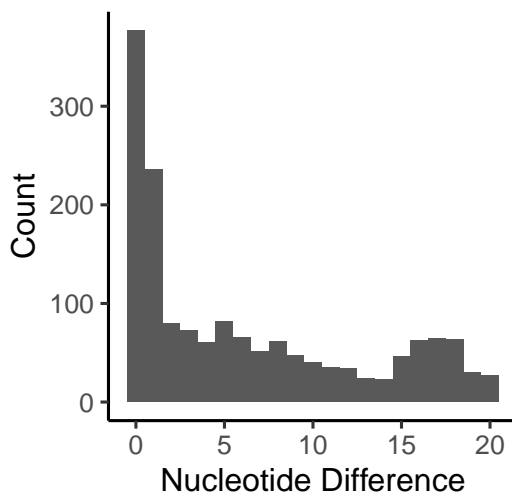
### IGHV4-30-4\*08

261 sequences assigned  
1 (0.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



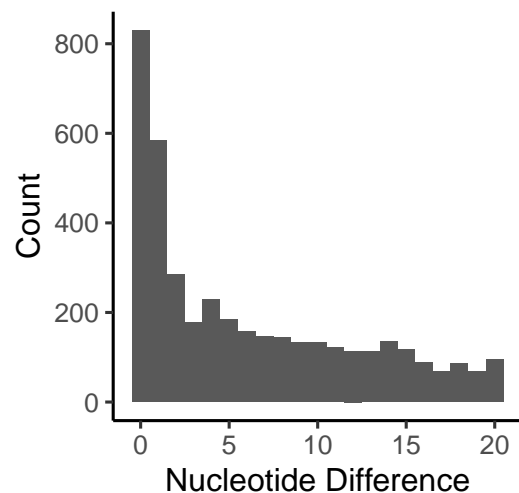
### IGHV4-38-2\*02

1985 sequences assigned  
377 (19%) exact matches, in which:  
347 unique CDR3  
7 unique J



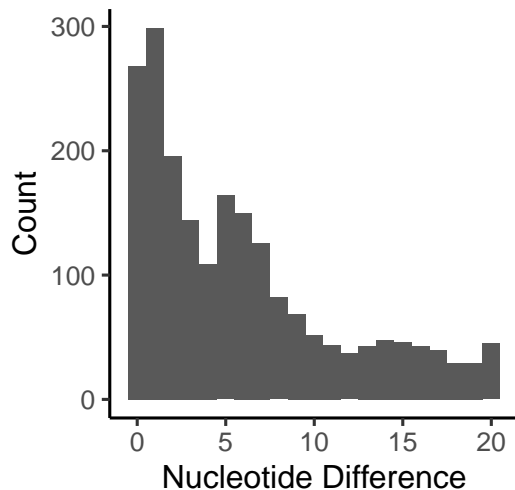
### IGHV4-59\*08

4913 sequences assigned  
830 (16.9%) exact matches, in which:  
747 unique CDR3  
7 unique J



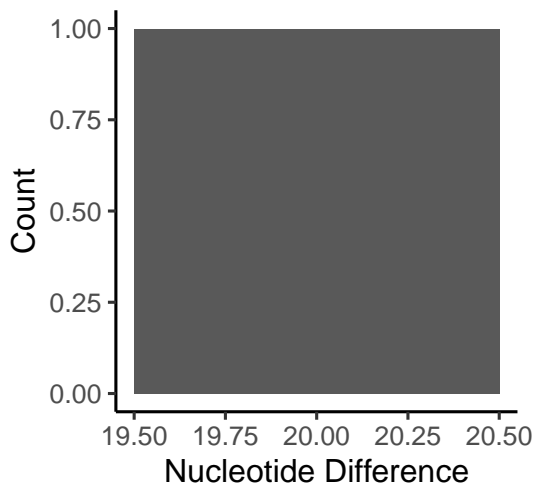
### IGHV4–59\*12

2478 sequences assigned  
268 (10.8%) exact matches, in which:  
266 unique CDR3  
7 unique J



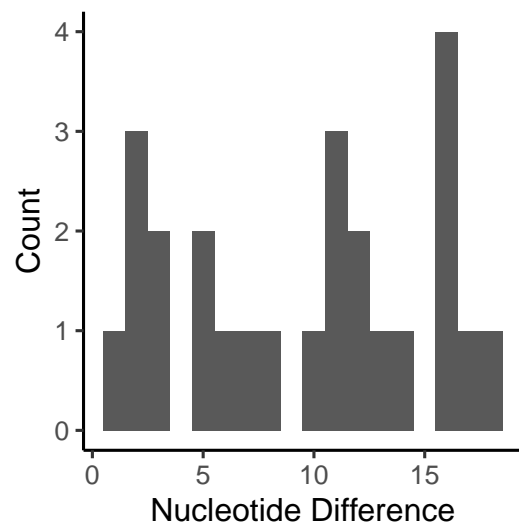
### IGHV1/OR15–1\*04

1 sequences assigned  
No exact matches.



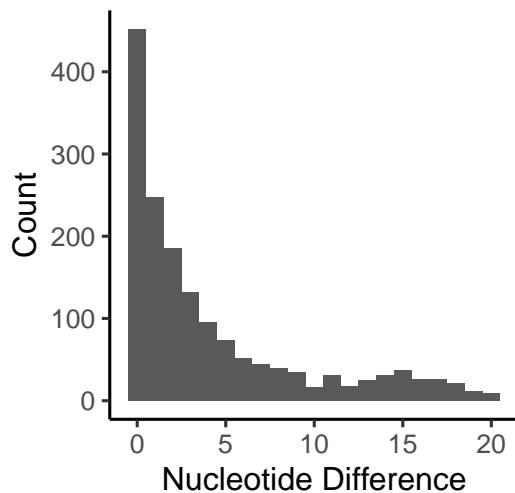
### IGHV4/OR15–8\*01

37 sequences assigned  
No exact matches.



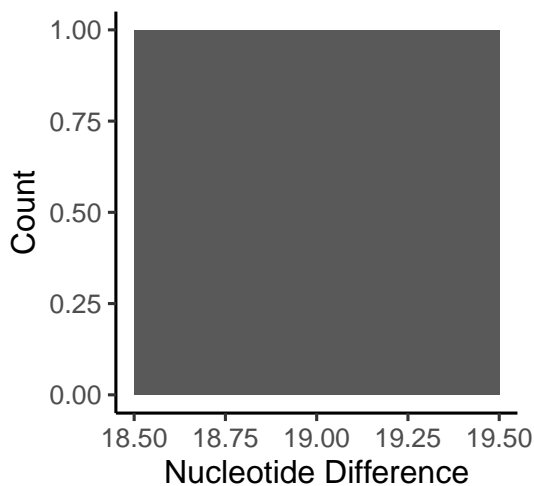
### IGHV4–61\*01

1749 sequences assigned  
452 (25.8%) exact matches, in which:  
426 unique CDR3  
7 unique J



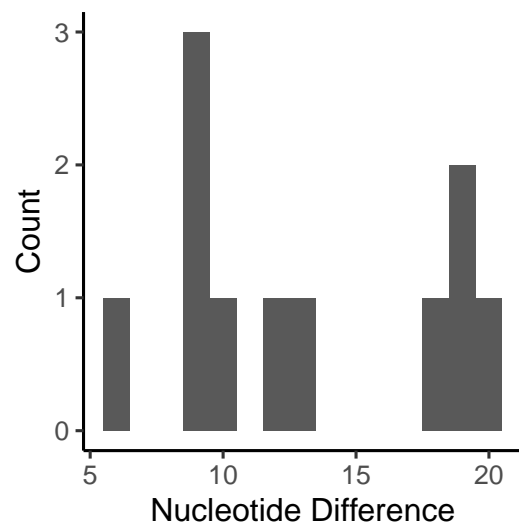
### IGHV1/OR15–2\*02\_03

12 sequences assigned  
No exact matches.



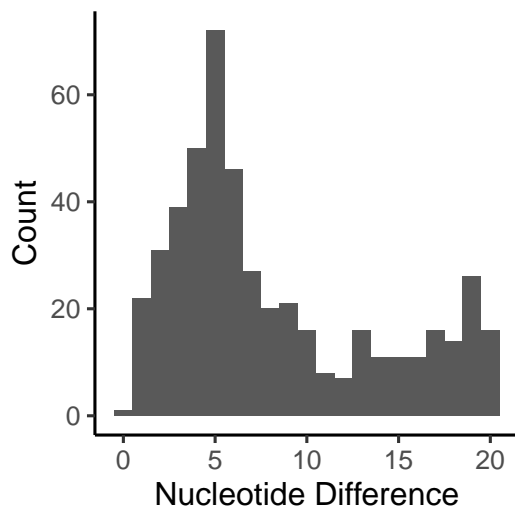
### IGHV4/OR15–8\*02

18 sequences assigned  
No exact matches.



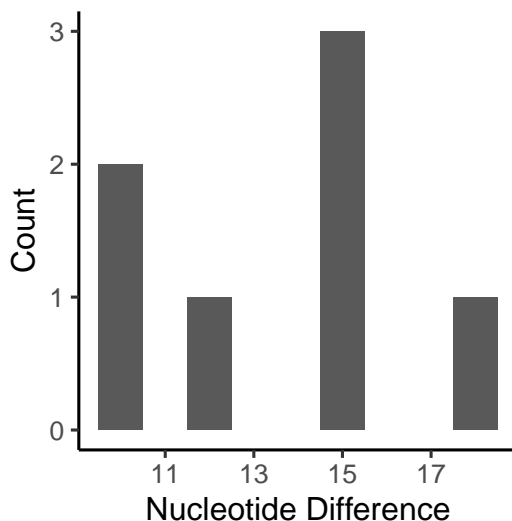
### IGHV4–61\*08

664 sequences assigned  
1 (0.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



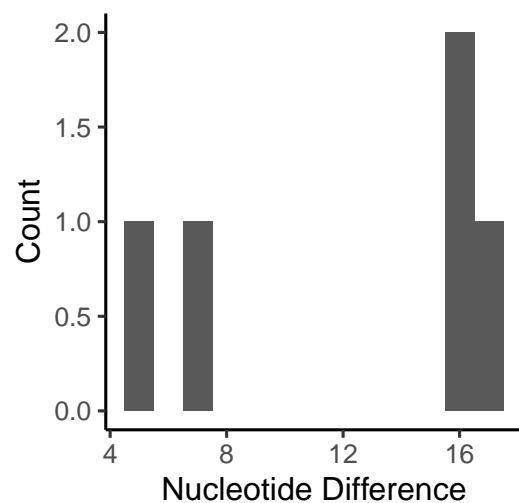
### IGHV1/OR15–3\*02

7 sequences assigned  
No exact matches.



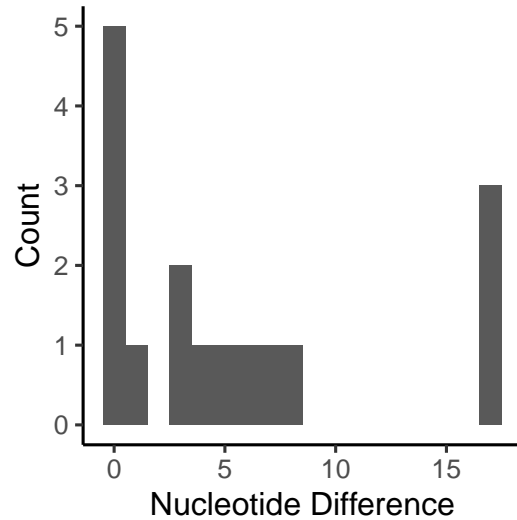
### IGHV5–10–1\*01\_03

5 sequences assigned  
No exact matches.



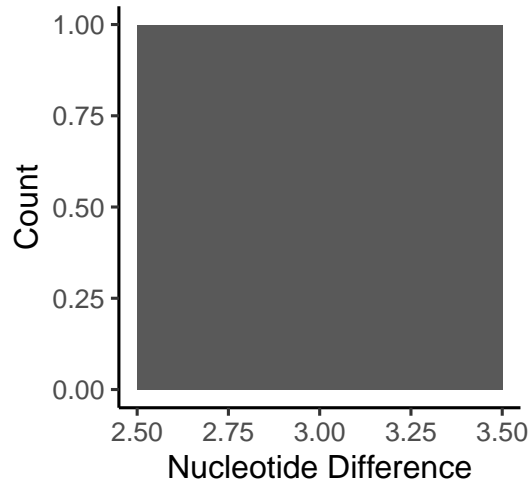
### IGHV5-51\*04

18 sequences assigned  
5 (27.8%) exact matches, in which:  
5 unique CDR3  
3 unique J



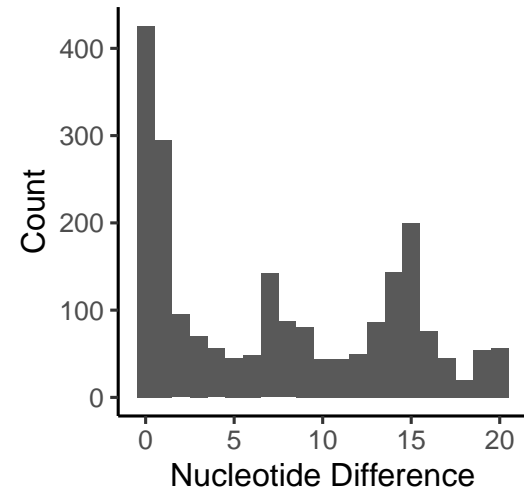
### IGHV5-78\*01

1 sequences assigned  
No exact matches.



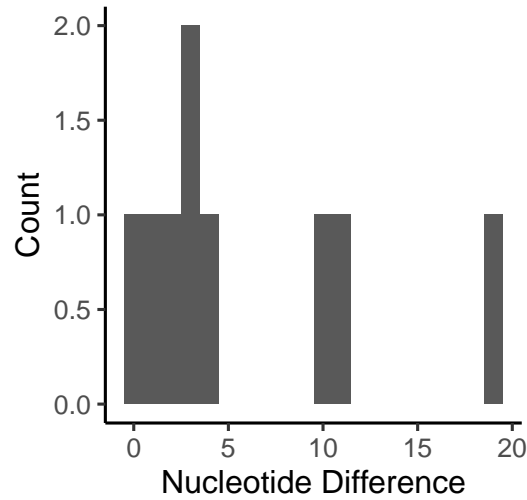
### IGHV7-4-1\*02

2499 sequences assigned  
426 (17%) exact matches, in which:  
388 unique CDR3  
7 unique J



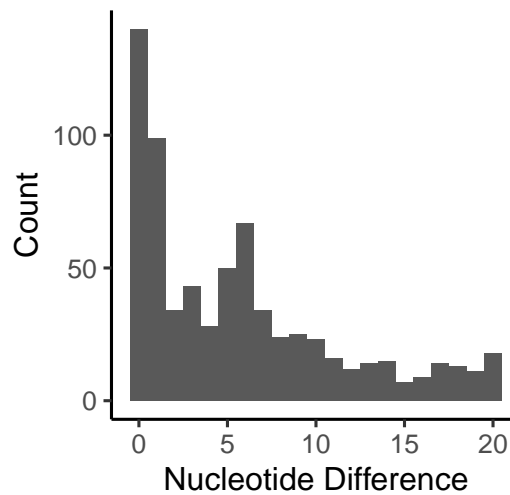
### IGHV5-51\*06

9 sequences assigned  
1 (11.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



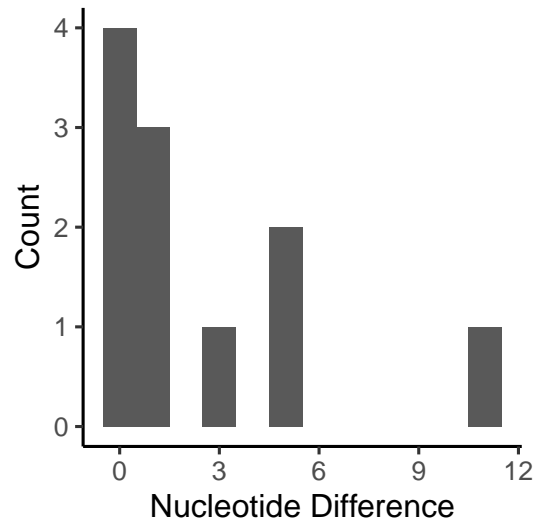
### IGHV6-1\*01\_02

755 sequences assigned  
140 (18.5%) exact matches, in which:  
129 unique CDR3  
6 unique J



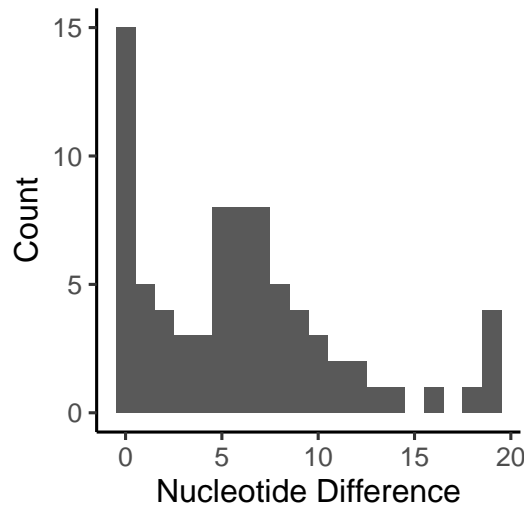
### IGHV5-51\*07

11 sequences assigned  
4 (36.4%) exact matches, in which:  
3 unique CDR3  
2 unique J

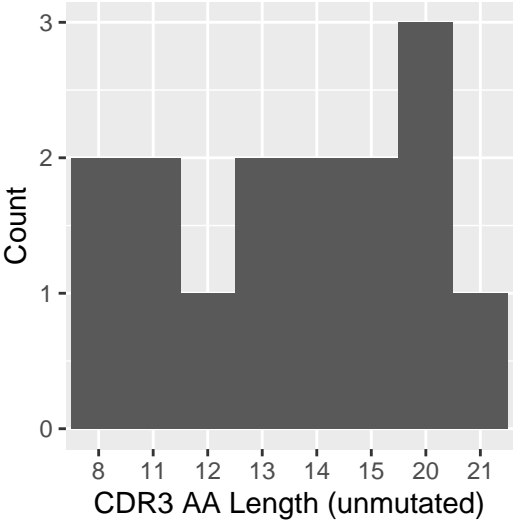


### IGHV6-1\*01\_02\_A315G

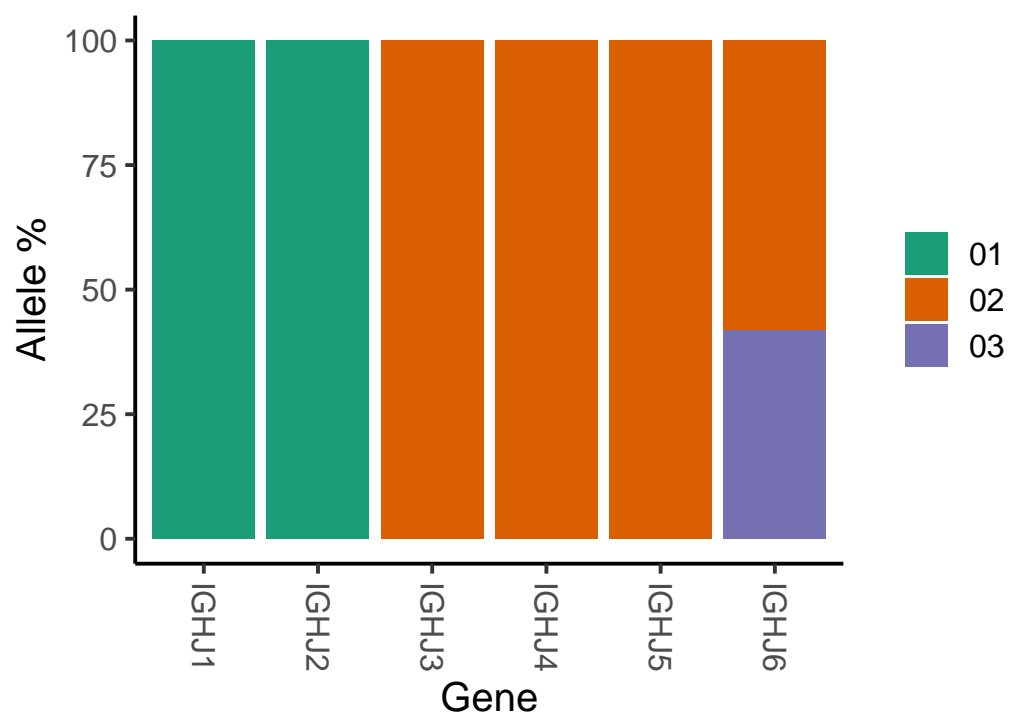
80 sequences assigned  
15 (18.8%) exact matches, in which:  
15 unique CDR3  
5 unique J



IGHV6-1\*01\_02\_A315G

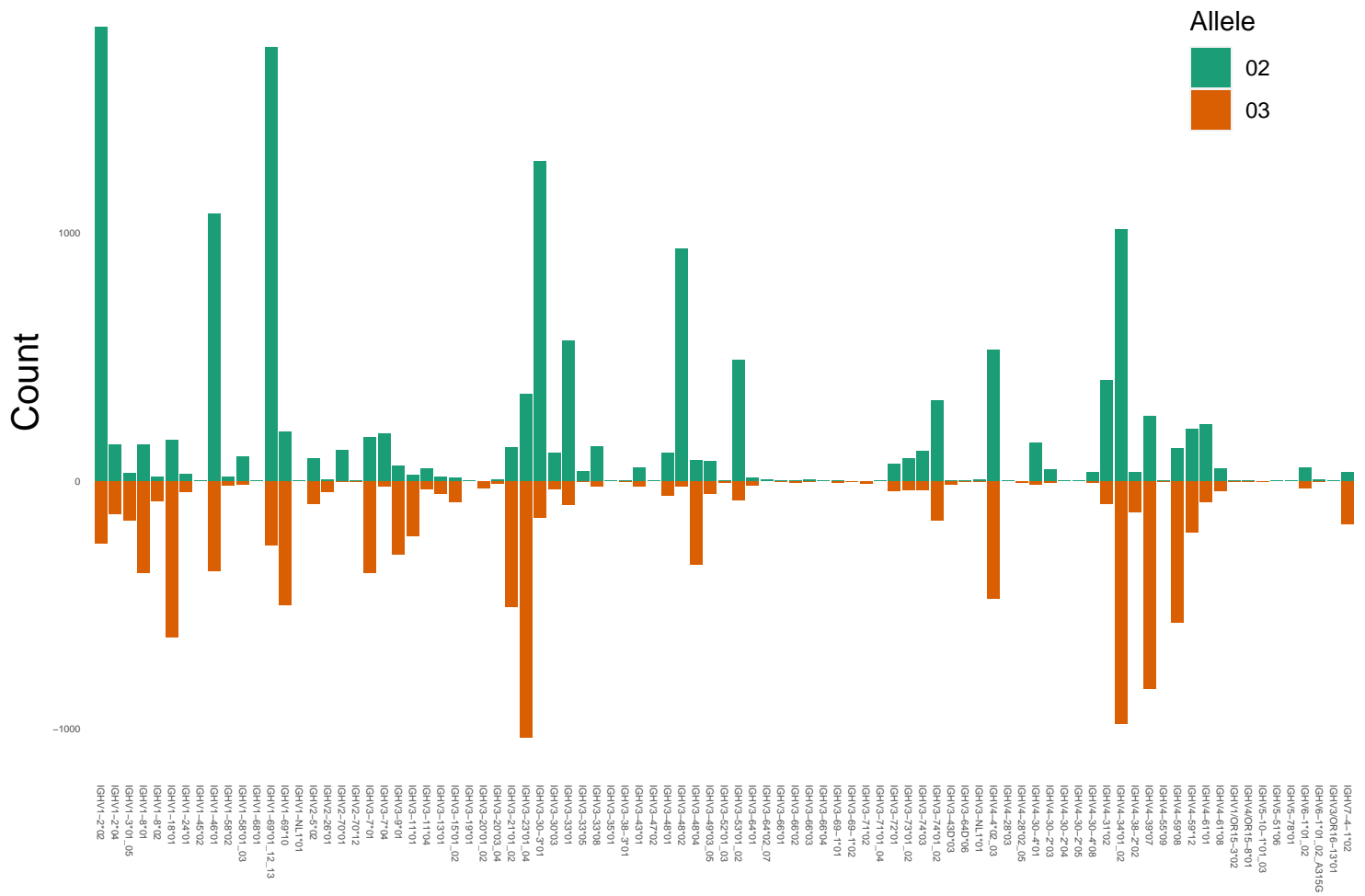


Allele Usage





Sequence Count by IGHJ6 allele usage



[illegible]