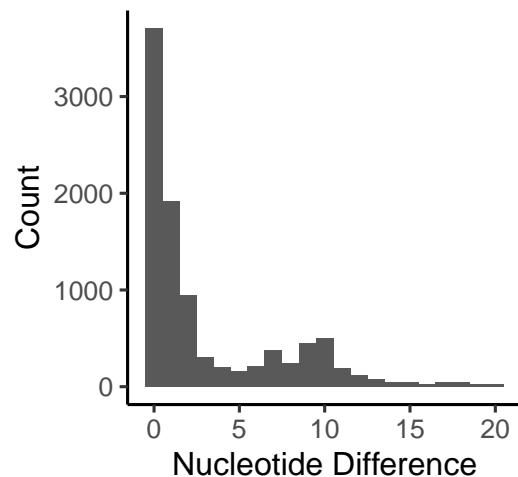


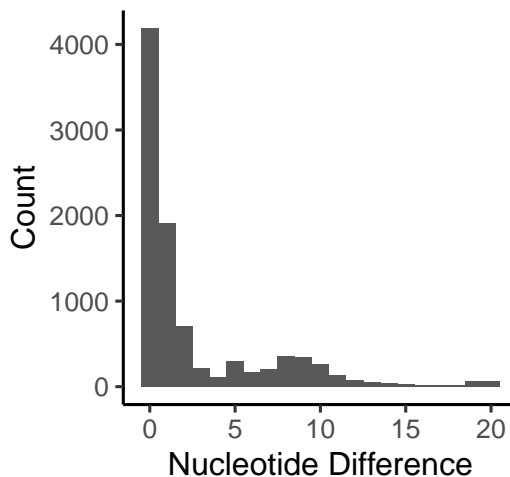
### IGHV1-2\*02

10297 sequences assigned  
3705 (36%) exact matches, in which:  
3477 unique CDR3  
7 unique J



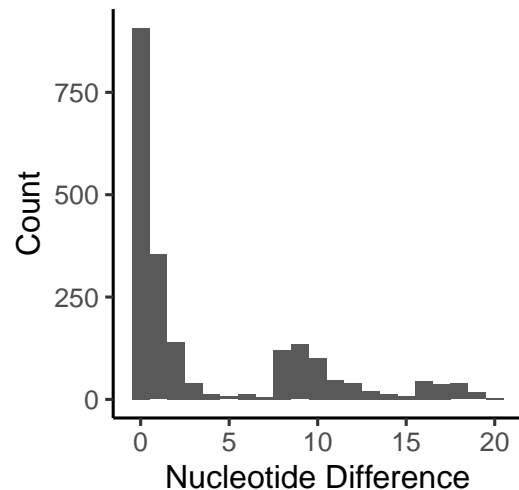
### IGHV1-8\*01

9440 sequences assigned  
4187 (44.4%) exact matches, in which:  
3980 unique CDR3  
7 unique J



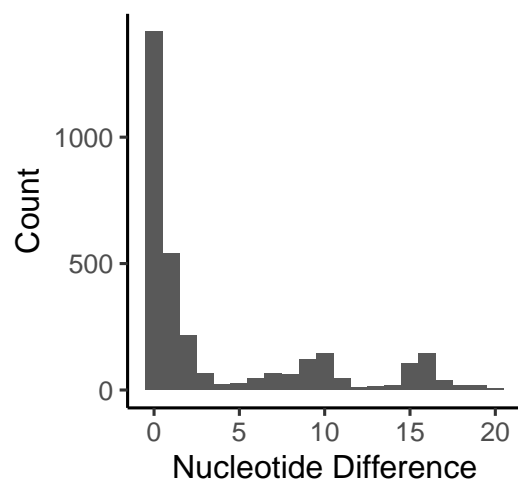
### IGHV1-24\*01

2267 sequences assigned  
908 (40.1%) exact matches, in which:  
865 unique CDR3  
7 unique J



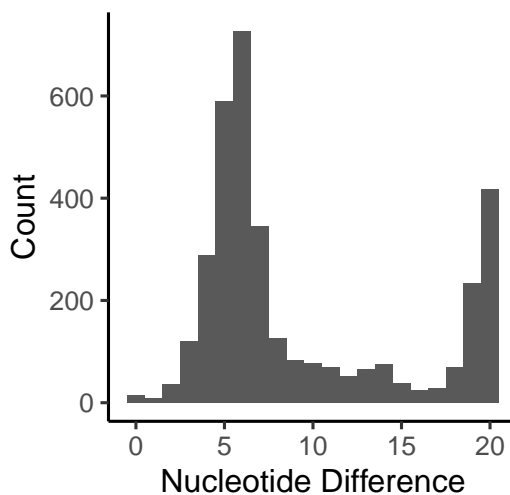
### IGHV1-2\*04

3218 sequences assigned  
1417 (44%) exact matches, in which:  
1354 unique CDR3  
7 unique J



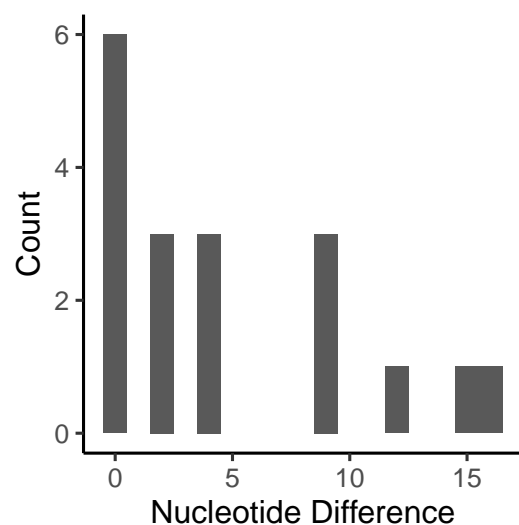
### IGHV1-8\*02

3837 sequences assigned  
15 (0.4%) exact matches, in which:  
15 unique CDR3  
5 unique J



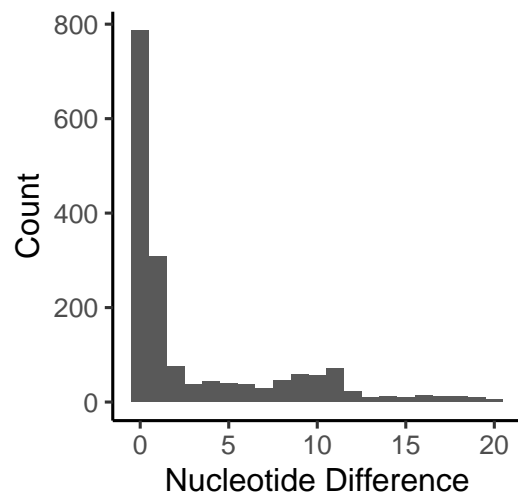
### IGHV1-45\*02

18 sequences assigned  
6 (33.3%) exact matches, in which:  
6 unique CDR3  
3 unique J



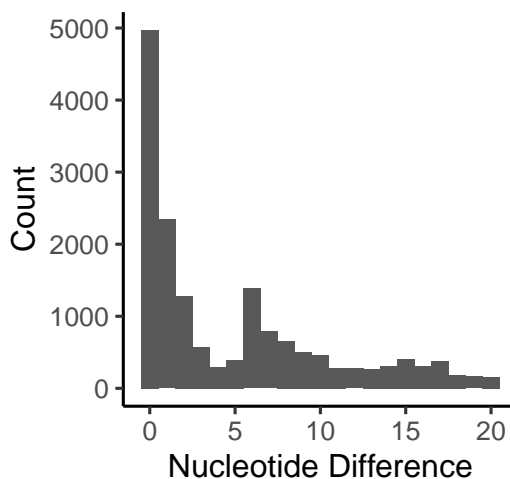
### IGHV1-3\*01\_05

1825 sequences assigned  
787 (43.1%) exact matches, in which:  
733 unique CDR3  
7 unique J



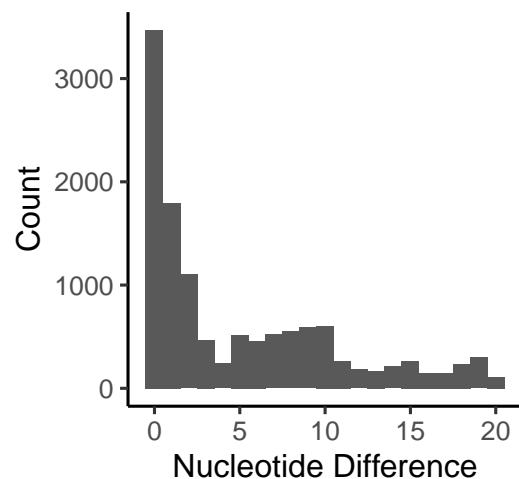
### IGHV1-18\*01

18427 sequences assigned  
4972 (27%) exact matches, in which:  
4679 unique CDR3  
7 unique J



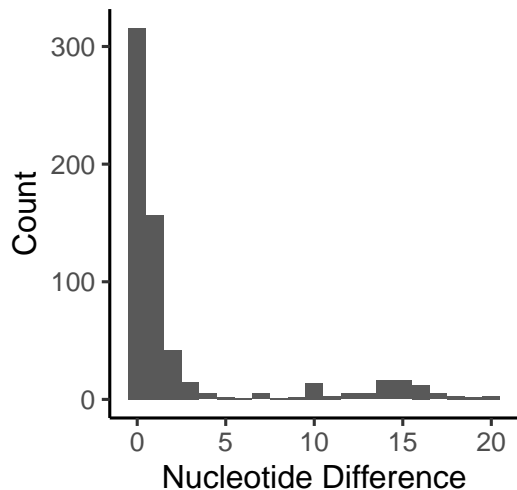
### IGHV1-46\*01

13660 sequences assigned  
3470 (25.4%) exact matches, in which:  
3289 unique CDR3  
7 unique J



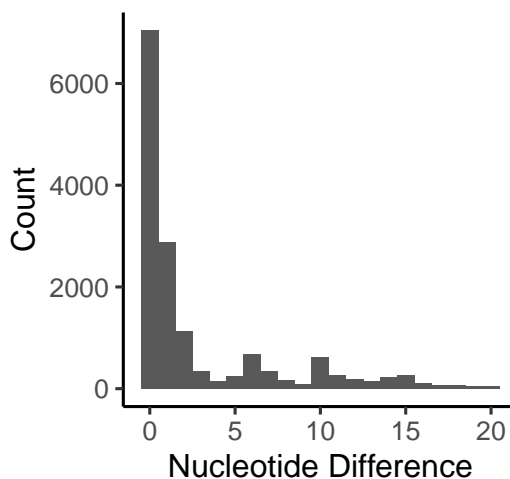
### IGHV1–58\*01\_03

645 sequences assigned  
316 (49%) exact matches, in which:  
304 unique CDR3  
7 unique J



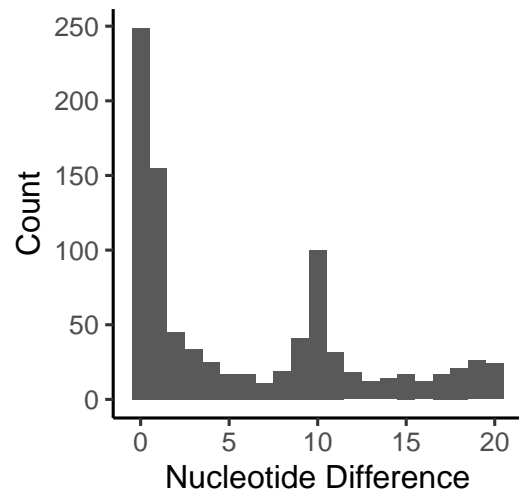
### IGHV1–69\*01\_12\_13

16411 sequences assigned  
7043 (42.9%) exact matches, in which:  
6731 unique CDR3  
7 unique J



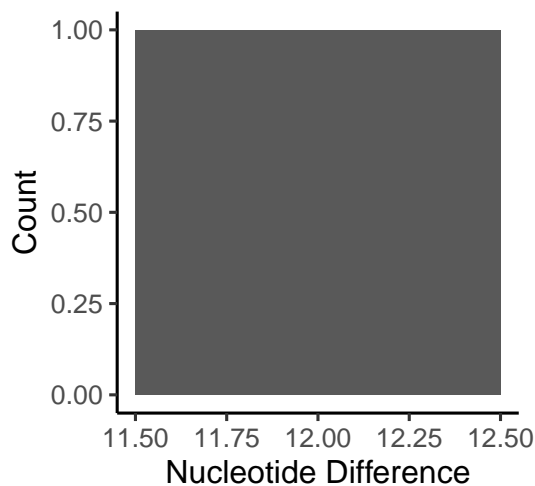
### IGHV2–5\*01

1200 sequences assigned  
249 (20.8%) exact matches, in which:  
238 unique CDR3  
7 unique J



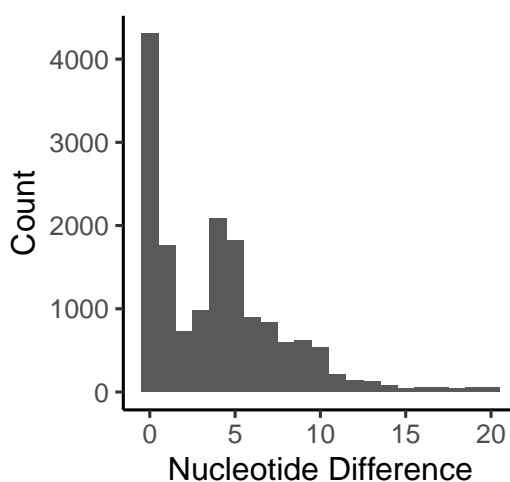
### IGHV1–68\*01

1 sequences assigned  
No exact matches.



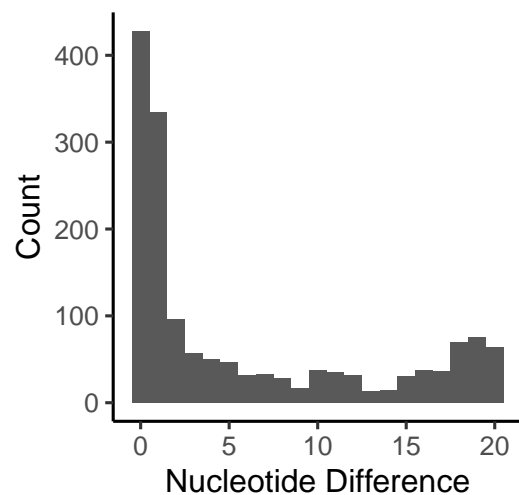
### IGHV1–69\*06\_14

16315 sequences assigned  
4305 (26.4%) exact matches, in which:  
4148 unique CDR3  
7 unique J



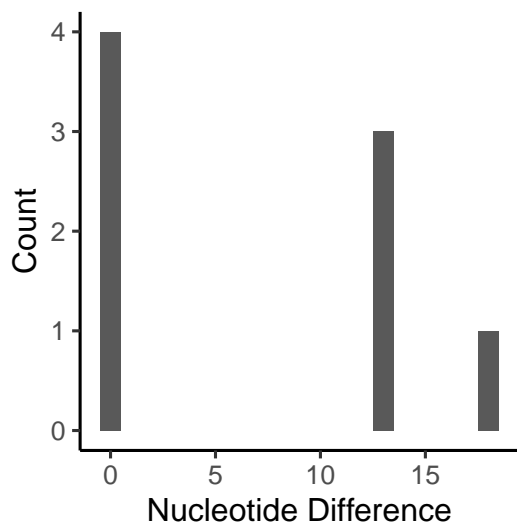
### IGHV2–5\*02

2215 sequences assigned  
428 (19.3%) exact matches, in which:  
405 unique CDR3  
7 unique J



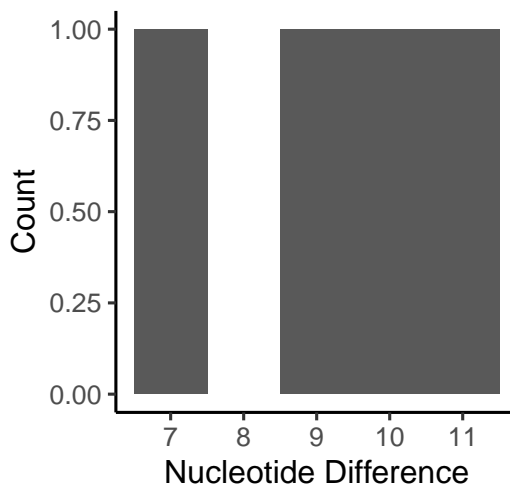
### IGHV1–69–2\*01

87 sequences assigned  
4 (4.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



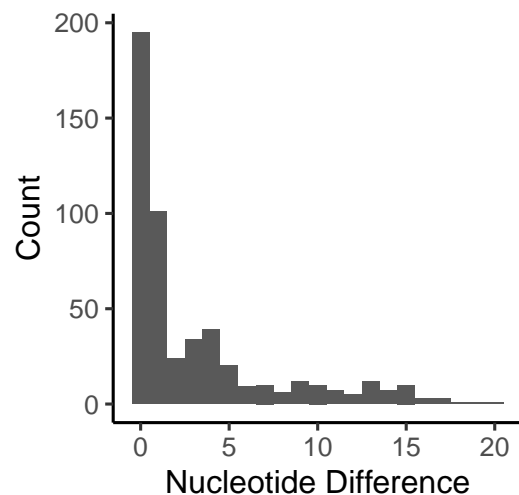
### IGHV1–NL1\*01

4 sequences assigned  
No exact matches.



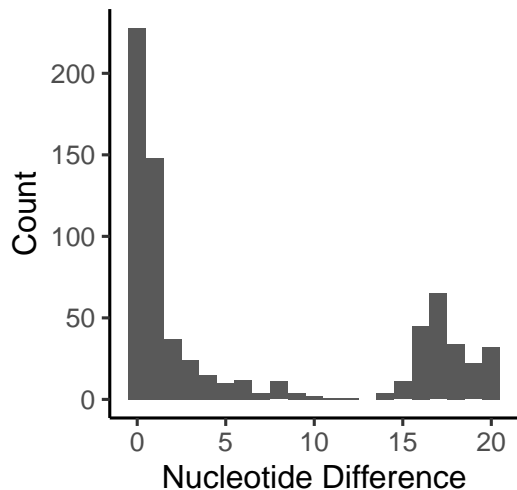
### IGHV2–26\*01

537 sequences assigned  
195 (36.3%) exact matches, in which:  
189 unique CDR3  
7 unique J



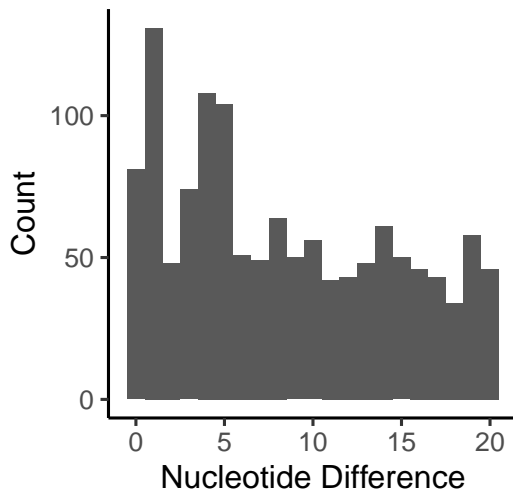
### IGHV2-70\*01

769 sequences assigned  
228 (29.6%) exact matches, in which:  
215 unique CDR3  
7 unique J



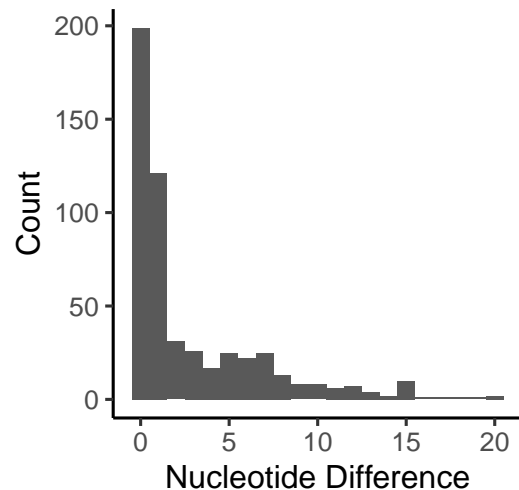
### IGHV3-7\*03

2239 sequences assigned  
81 (3.6%) exact matches, in which:  
74 unique CDR3  
7 unique J



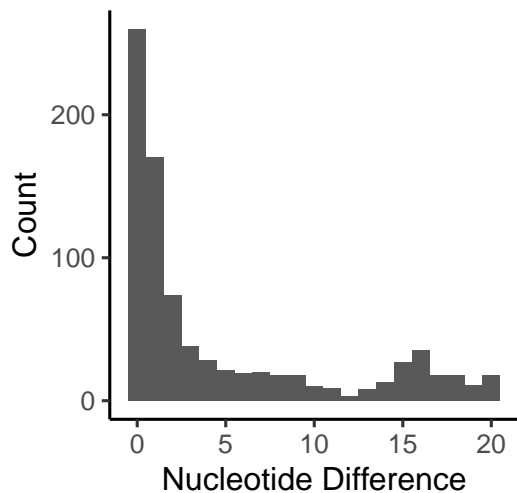
### IGHV3-11\*04

555 sequences assigned  
199 (35.9%) exact matches, in which:  
198 unique CDR3  
7 unique J



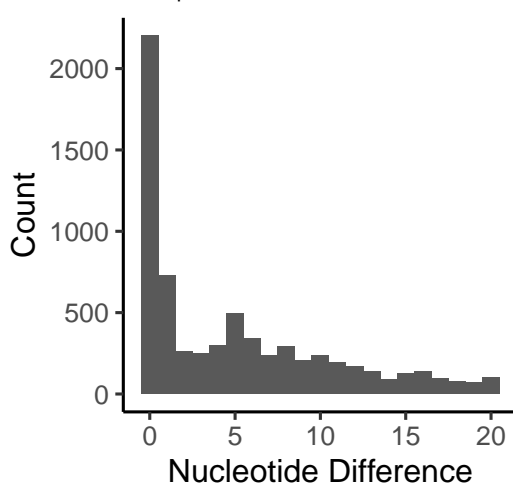
### IGHV2-70\*11\_15

1194 sequences assigned  
260 (21.8%) exact matches, in which:  
243 unique CDR3  
7 unique J



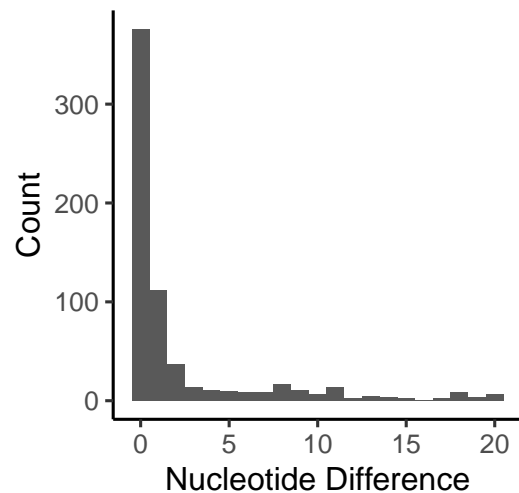
### IGHV3-9\*01

8122 sequences assigned  
2202 (27.1%) exact matches, in which:  
1748 unique CDR3  
7 unique J



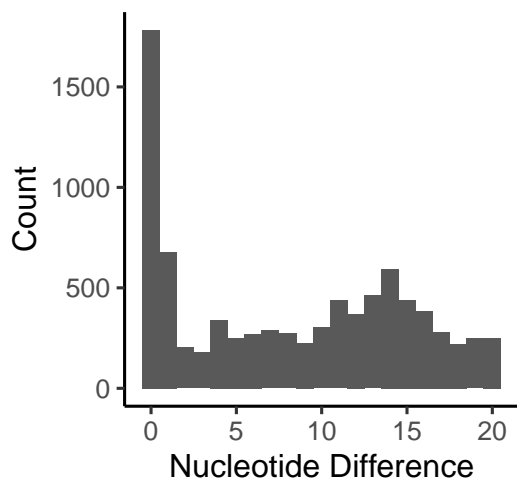
### IGHV3-13\*01

698 sequences assigned  
376 (53.9%) exact matches, in which:  
306 unique CDR3  
7 unique J



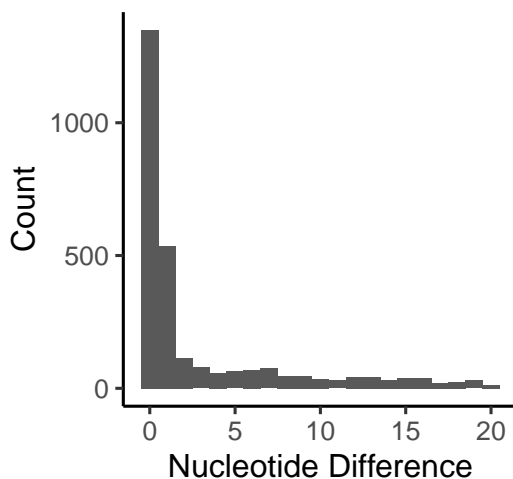
### IGHV3-7\*01

11272 sequences assigned  
1783 (15.8%) exact matches, in which:  
1478 unique CDR3  
7 unique J



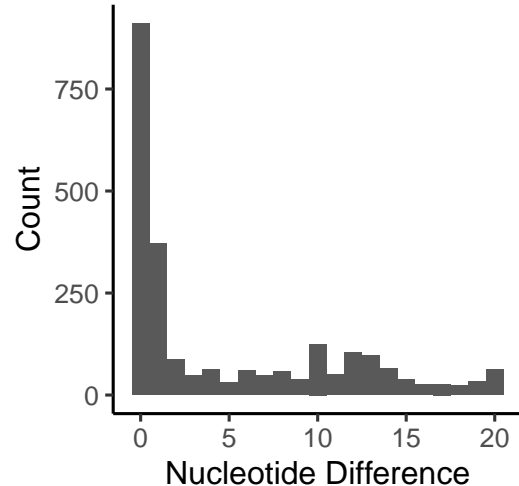
### IGHV3-11\*01

3536 sequences assigned  
1349 (38.2%) exact matches, in which:  
1148 unique CDR3  
7 unique J



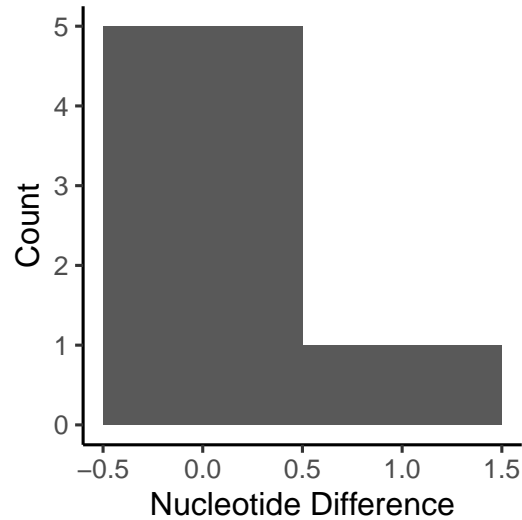
### IGHV3-15\*01\_02

2986 sequences assigned  
911 (30.5%) exact matches, in which:  
743 unique CDR3  
7 unique J



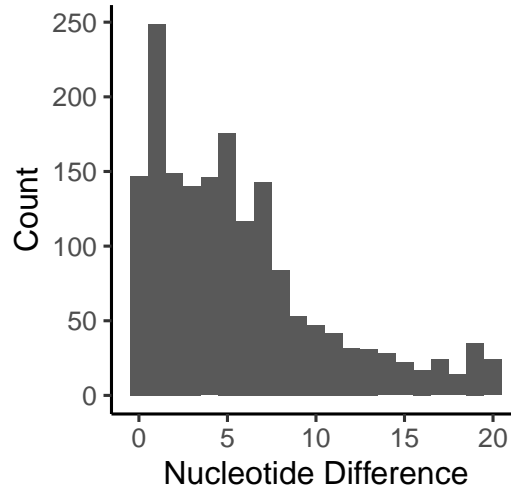
### IGHV3-19\*01

6 sequences assigned  
5 (83.3%) exact matches, in which:  
4 unique CDR3  
2 unique J



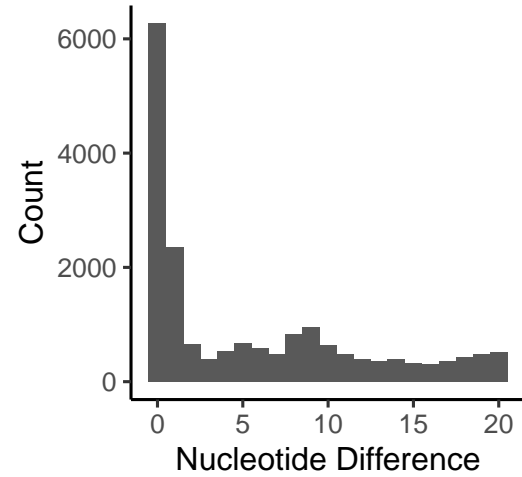
### IGHV3-21\*04

1994 sequences assigned  
147 (7.4%) exact matches, in which:  
145 unique CDR3  
7 unique J



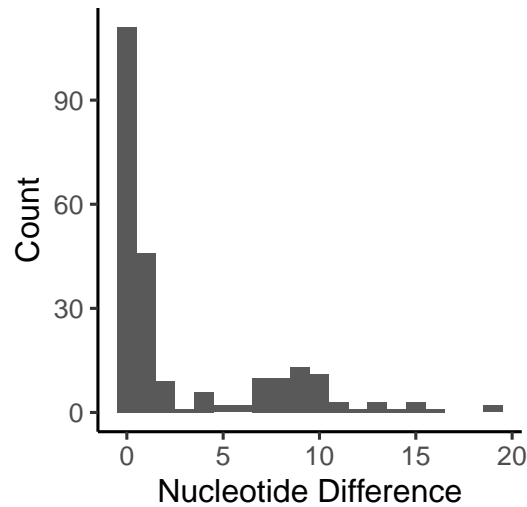
### IGHV3-23\*01\_04

25362 sequences assigned  
6270 (24.7%) exact matches, in which:  
4871 unique CDR3  
7 unique J



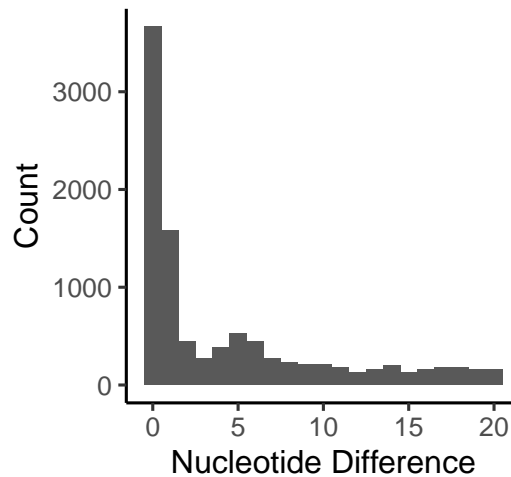
### IGHV3-20\*01\_02

239 sequences assigned  
111 (46.4%) exact matches, in which:  
88 unique CDR3  
6 unique J



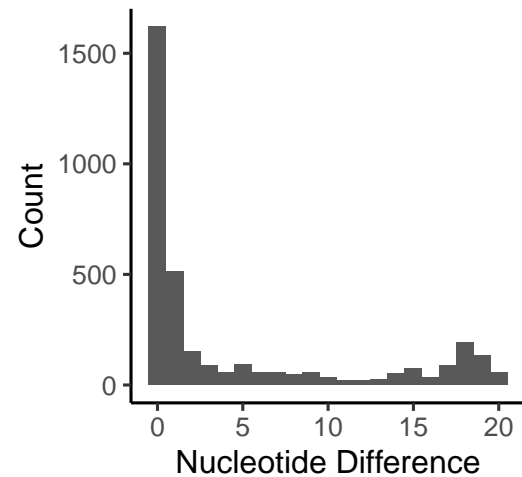
### IGHV3-21\*01\_02

11386 sequences assigned  
3665 (32.2%) exact matches, in which:  
2990 unique CDR3  
7 unique J



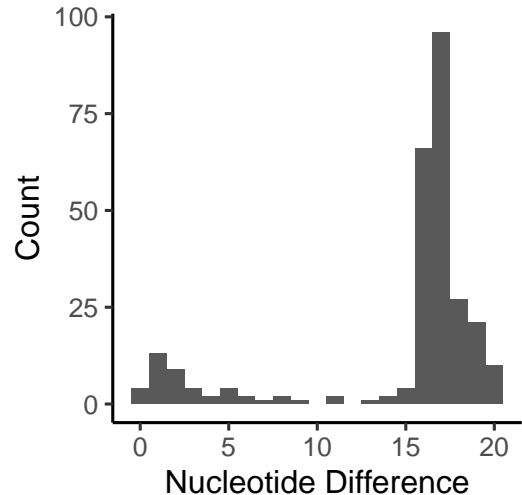
### IGHV3-30\*01

3732 sequences assigned  
1620 (43.4%) exact matches, in which:  
1382 unique CDR3  
7 unique J



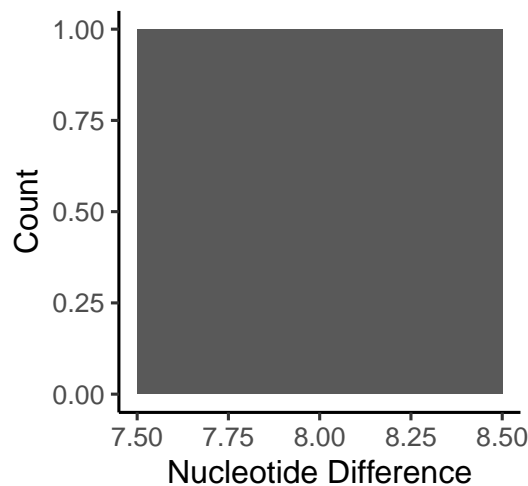
### IGHV3-20\*03\_04

357 sequences assigned  
4 (1.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



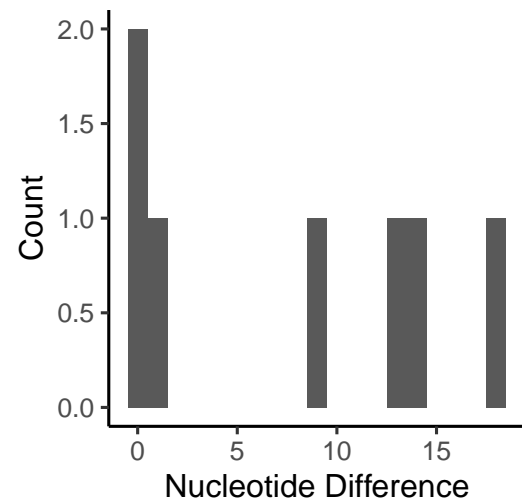
### IGHV3-22\*01\_02

5 sequences assigned  
No exact matches.



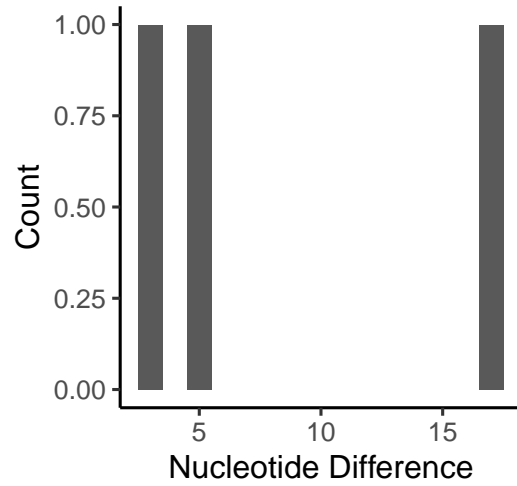
### IGHV3-30-3\*01

9 sequences assigned  
2 (22.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



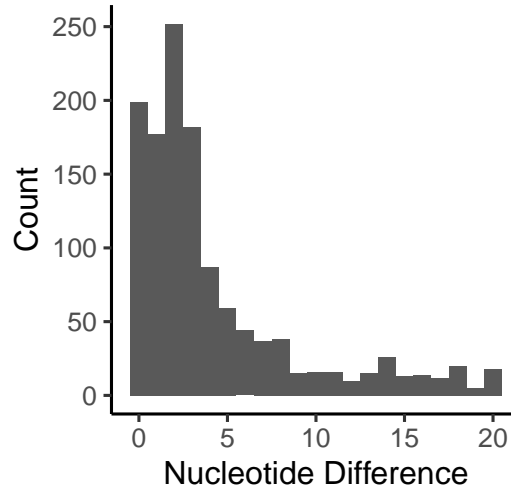
### IGHV3-30-3\*02

5 sequences assigned  
No exact matches.



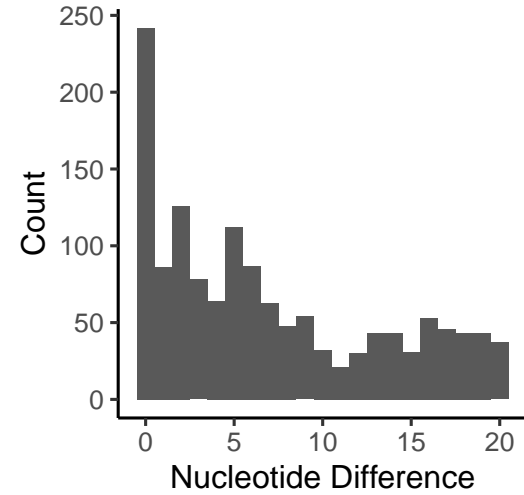
### IGHV3-30\*07

1315 sequences assigned  
199 (15.1%) exact matches, in which:  
197 unique CDR3  
7 unique J



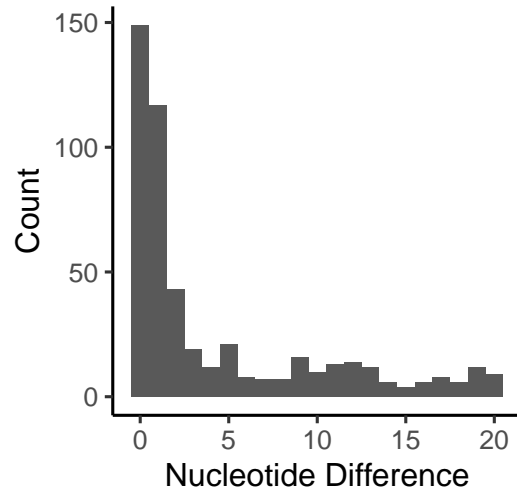
### IGHV3-33\*08

1570 sequences assigned  
242 (15.4%) exact matches, in which:  
238 unique CDR3  
7 unique J



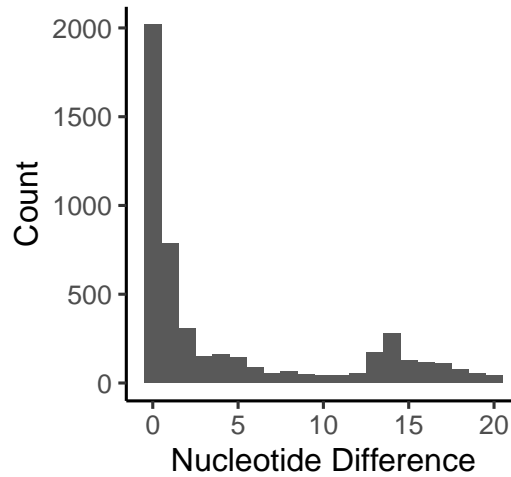
### IGHV3-30\*03

571 sequences assigned  
149 (26.1%) exact matches, in which:  
148 unique CDR3  
7 unique J



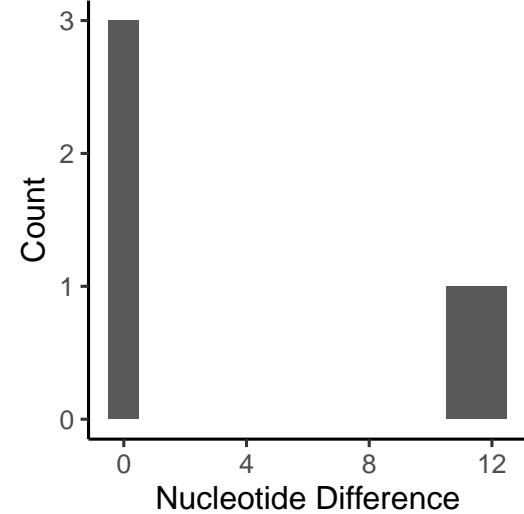
### IGHV3-33\*01

5240 sequences assigned  
2018 (38.5%) exact matches, in which:  
1695 unique CDR3  
7 unique J



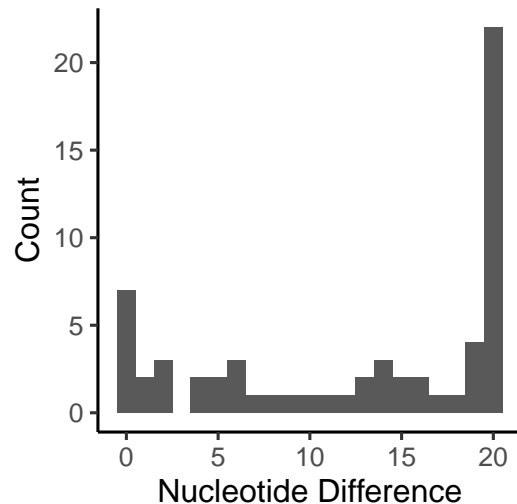
### IGHV3-35\*01

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



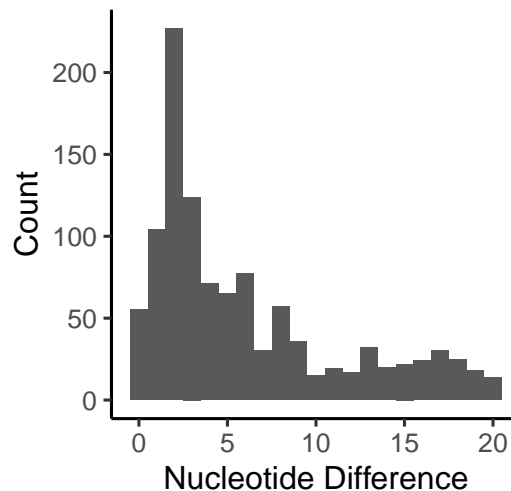
### IGHV3-30-3\*03

225 sequences assigned  
7 (3.1%) exact matches, in which:  
7 unique CDR3  
3 unique J



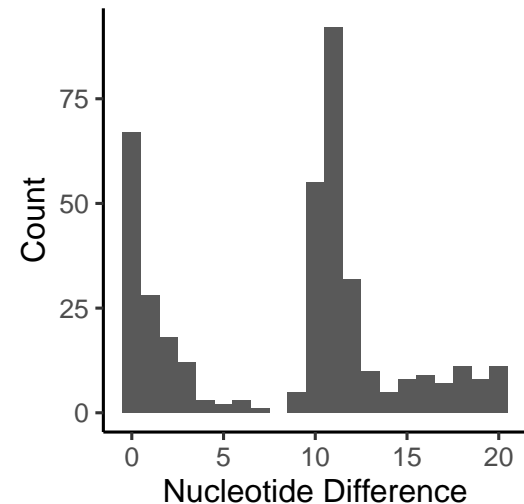
### IGHV3-33\*06

1381 sequences assigned  
55 (4%) exact matches, in which:  
54 unique CDR3  
6 unique J



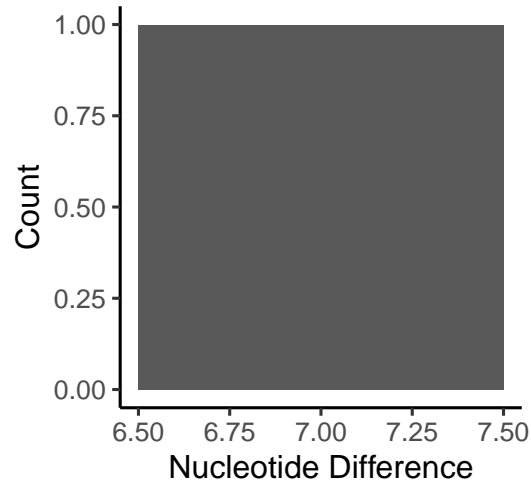
### IGHV3-43\*01

521 sequences assigned  
67 (12.9%) exact matches, in which:  
56 unique CDR3  
5 unique J



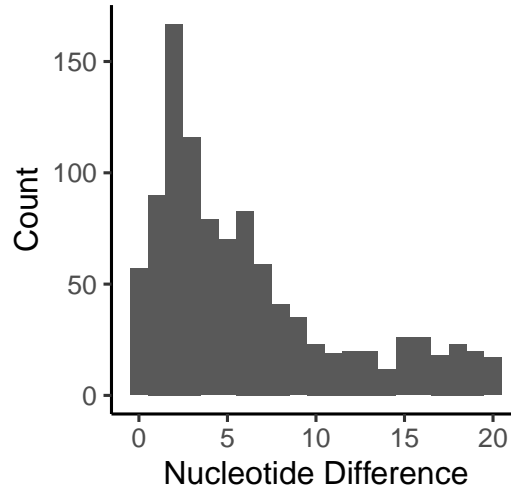
### IGHV3-47\*02

3 sequences assigned  
No exact matches.



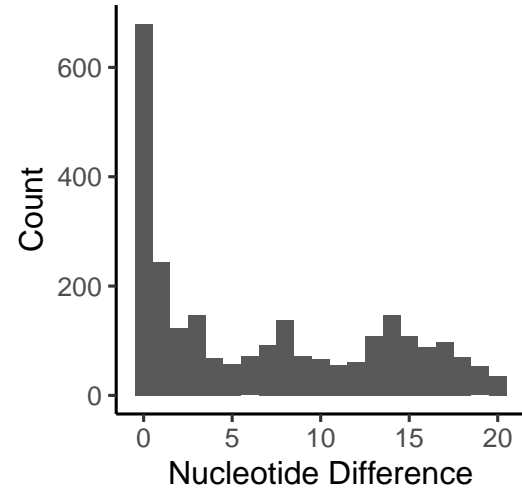
### IGHV3-48\*04

1395 sequences assigned  
57 (4.1%) exact matches, in which:  
57 unique CDR3  
6 unique J



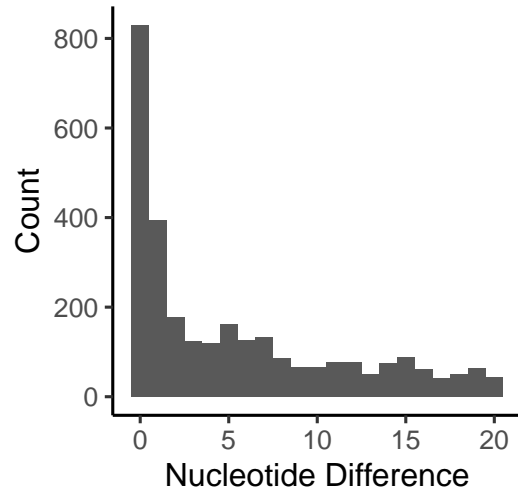
### IGHV3-53\*01\_02

3316 sequences assigned  
680 (20.5%) exact matches, in which:  
579 unique CDR3  
7 unique J



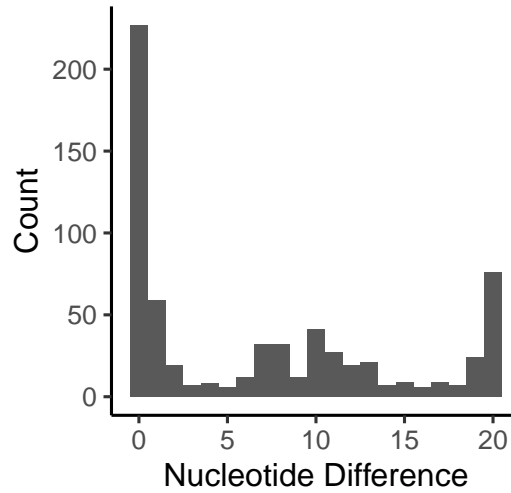
### IGHV3-48\*01

5138 sequences assigned  
830 (16.2%) exact matches, in which:  
691 unique CDR3  
7 unique J



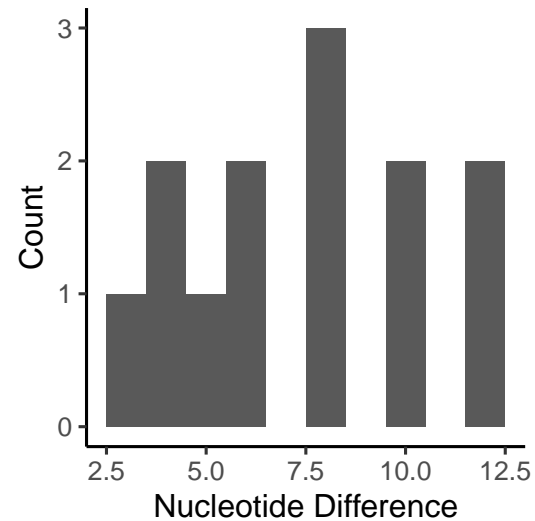
### IGHV3-49\*04

1022 sequences assigned  
227 (22.2%) exact matches, in which:  
198 unique CDR3  
7 unique J



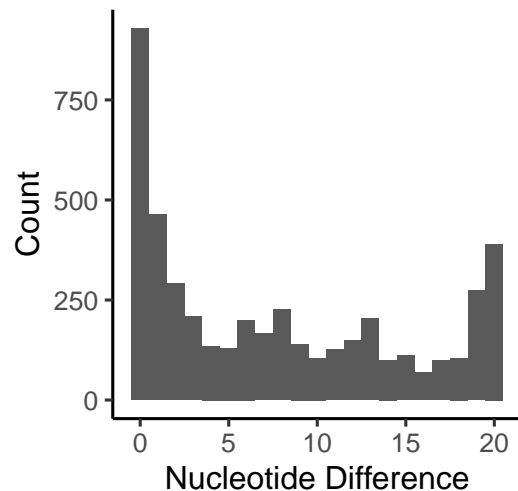
### IGHV3-64\*04

19 sequences assigned  
No exact matches.



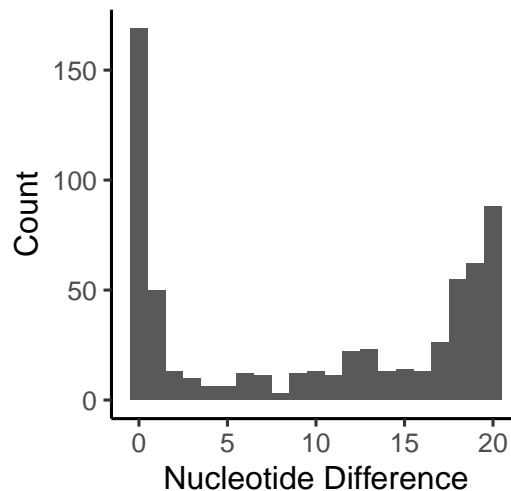
### IGHV3-48\*03

5748 sequences assigned  
929 (16.2%) exact matches, in which:  
762 unique CDR3  
7 unique J



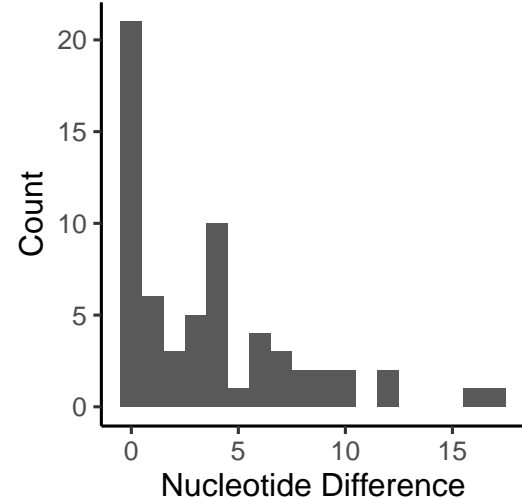
### IGHV3-49\*03\_05

1062 sequences assigned  
169 (15.9%) exact matches, in which:  
141 unique CDR3  
7 unique J



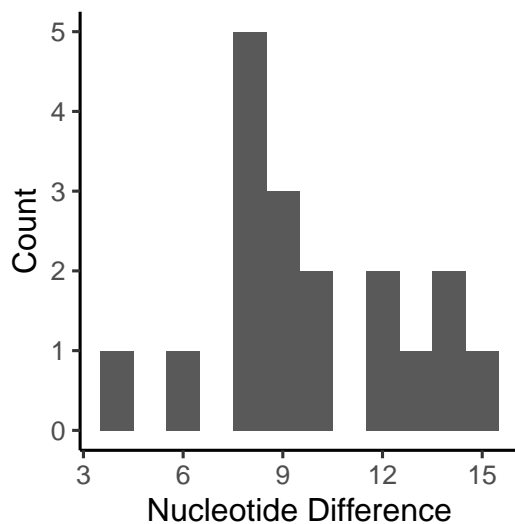
### IGHV3-64\*02\_07

64 sequences assigned  
21 (32.8%) exact matches, in which:  
20 unique CDR3  
6 unique J



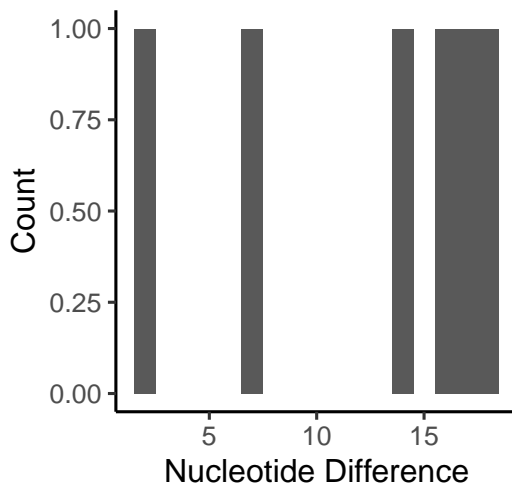
### IGHV3-66\*01

23 sequences assigned  
No exact matches.



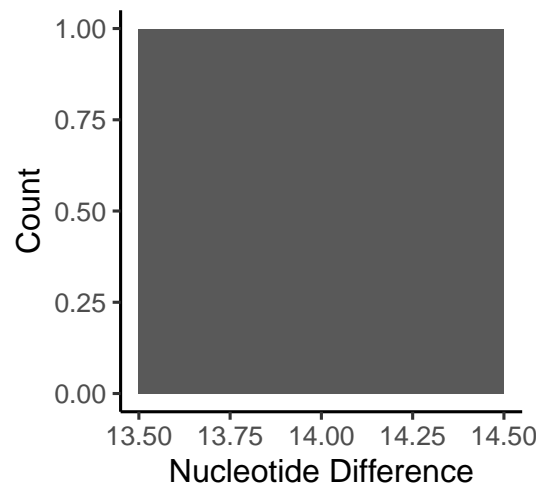
### IGHV3-66\*04

10 sequences assigned  
No exact matches.



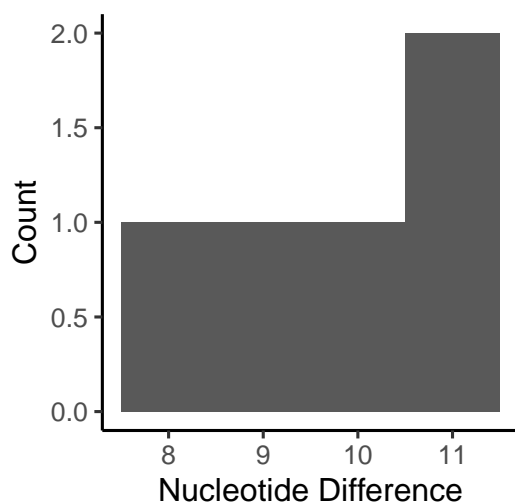
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



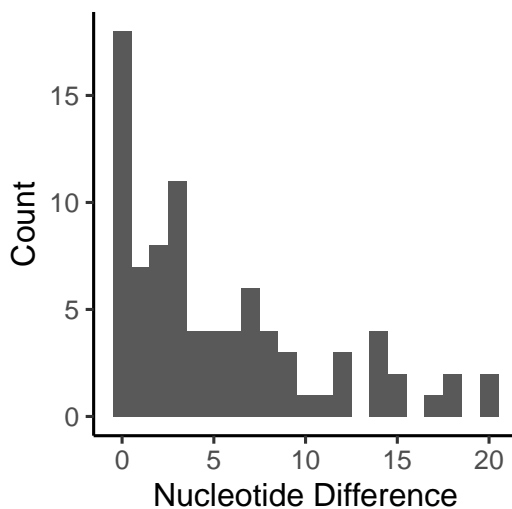
### IGHV3-66\*02

5 sequences assigned  
No exact matches.



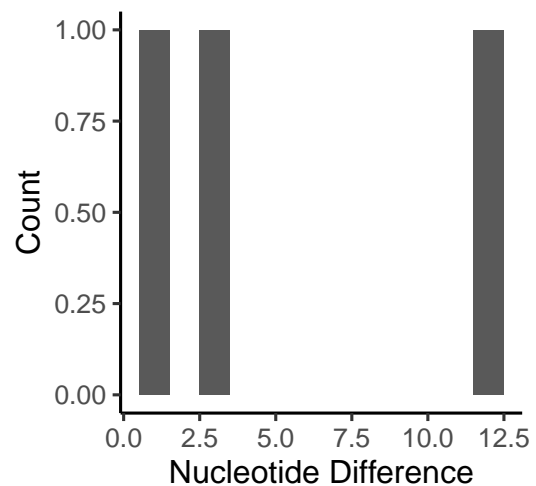
### IGHV3-69-1\*01

113 sequences assigned  
18 (15.9%) exact matches, in which:  
17 unique CDR3  
6 unique J



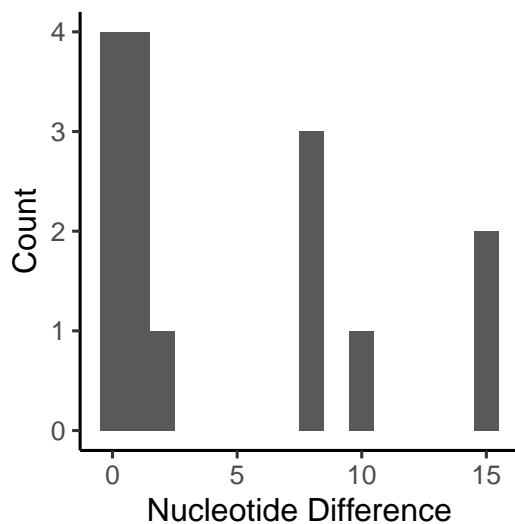
### IGHV3-71\*01\_04

5 sequences assigned  
No exact matches.



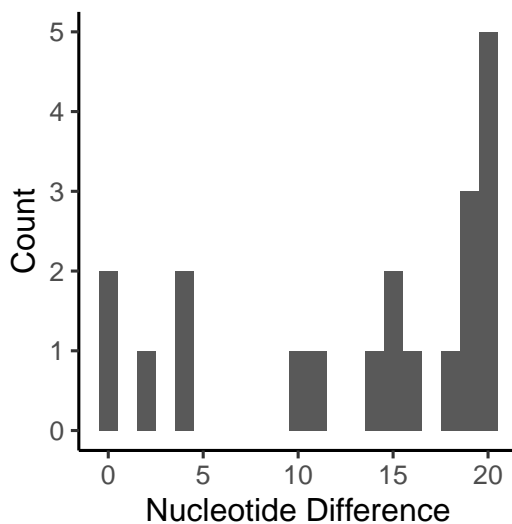
### IGHV3-66\*03

15 sequences assigned  
4 (26.7%) exact matches, in which:  
4 unique CDR3  
2 unique J



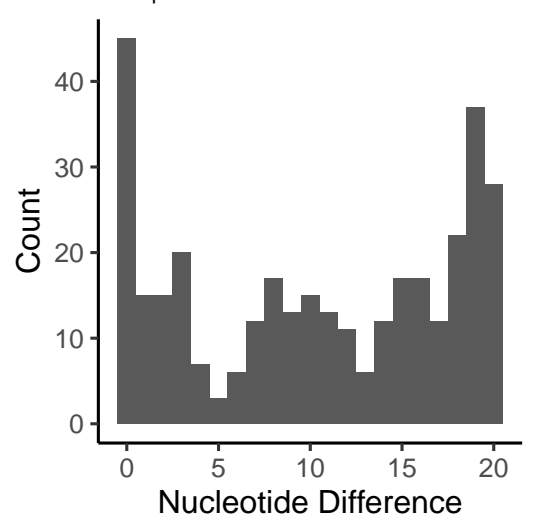
### IGHV3-69-1\*02

38 sequences assigned  
2 (5.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



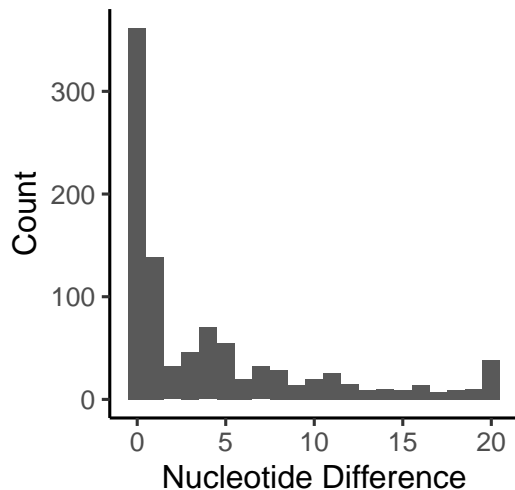
### IGHV3-72\*01

455 sequences assigned  
45 (9.9%) exact matches, in which:  
39 unique CDR3  
6 unique J



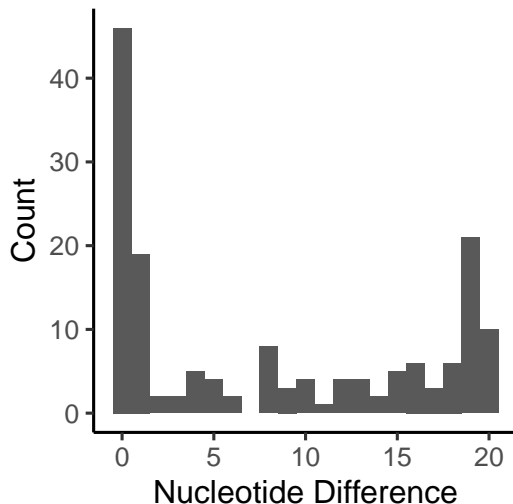
### IGHV3-73\*01\_02

1163 sequences assigned  
362 (31.1%) exact matches, in which:  
307 unique CDR3  
7 unique J



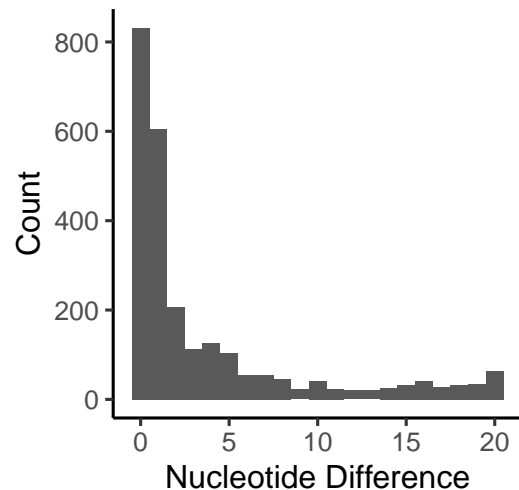
### IGHV3-43D\*04

186 sequences assigned  
46 (24.7%) exact matches, in which:  
41 unique CDR3  
3 unique J



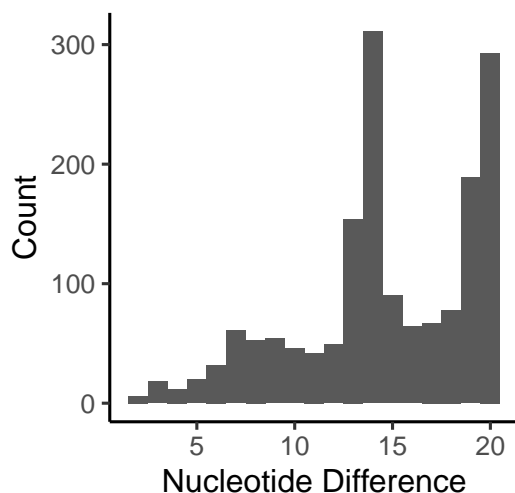
### IGHV4-4\*07

4397 sequences assigned  
832 (18.9%) exact matches, in which:  
788 unique CDR3  
7 unique J



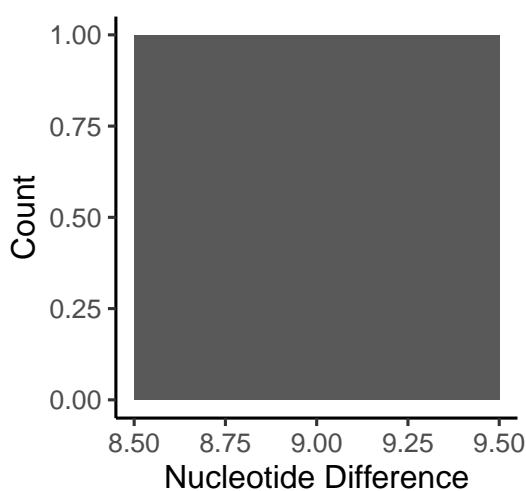
### IGHV3-74\*03

3370 sequences assigned  
No exact matches.



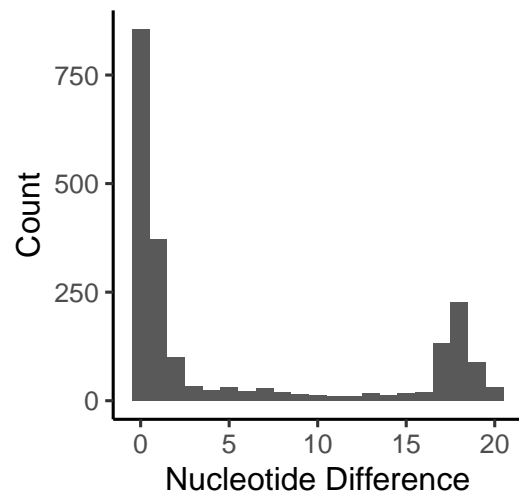
### IGHV3-64D\*06

6 sequences assigned  
No exact matches.



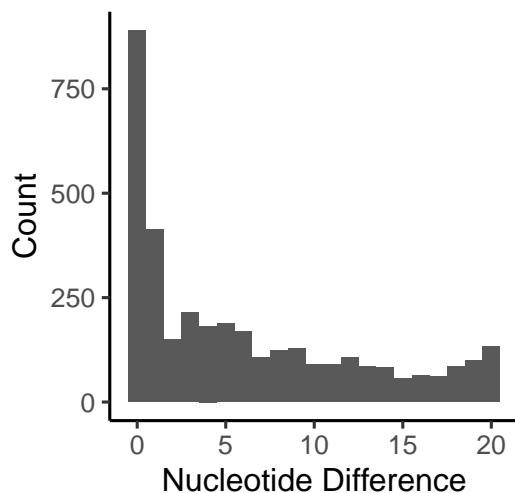
### IGHV4-4\*02\_03

2355 sequences assigned  
856 (36.3%) exact matches, in which:  
795 unique CDR3  
7 unique J



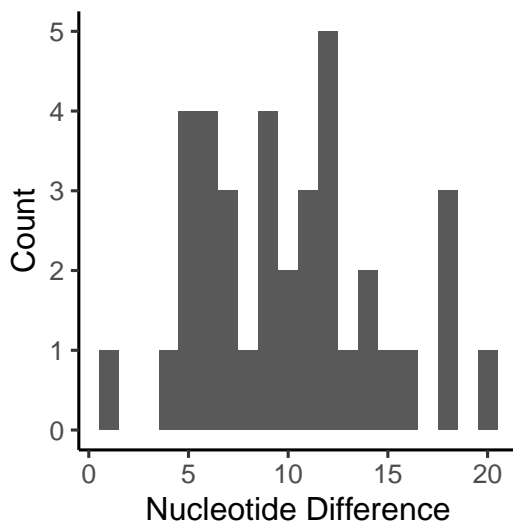
### IGHV3-74\*01\_02

4121 sequences assigned  
890 (21.6%) exact matches, in which:  
716 unique CDR3  
7 unique J



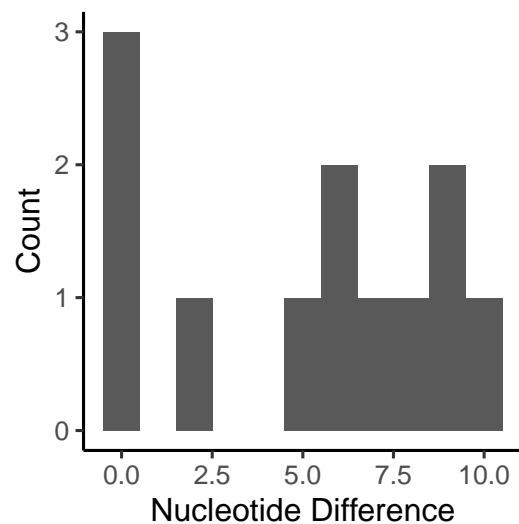
### IGHV3-NL1\*01

51 sequences assigned  
No exact matches.



### IGHV4-28\*03

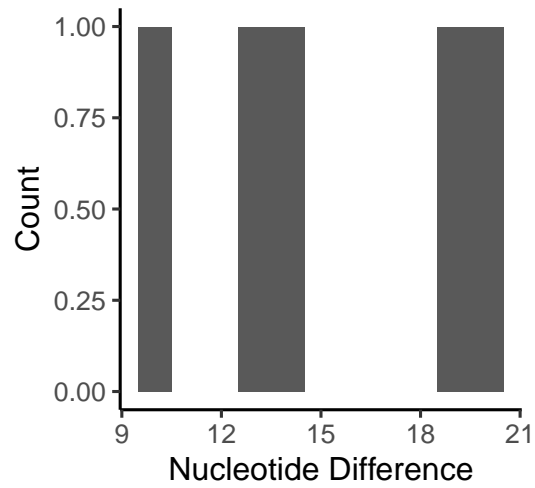
14 sequences assigned  
3 (21.4%) exact matches, in which:  
3 unique CDR3  
2 unique J





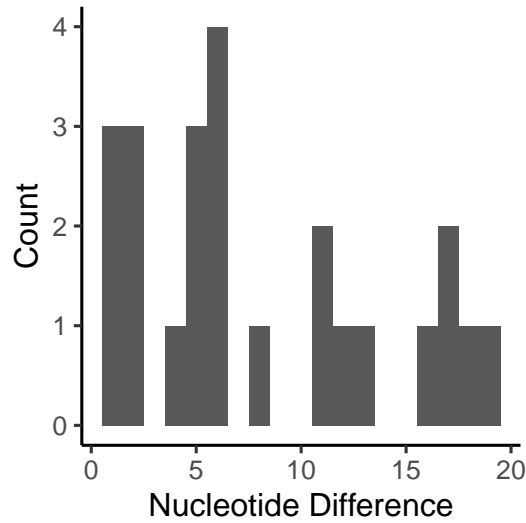
### IGHV4-28\*01\_07

5 sequences assigned  
No exact matches.



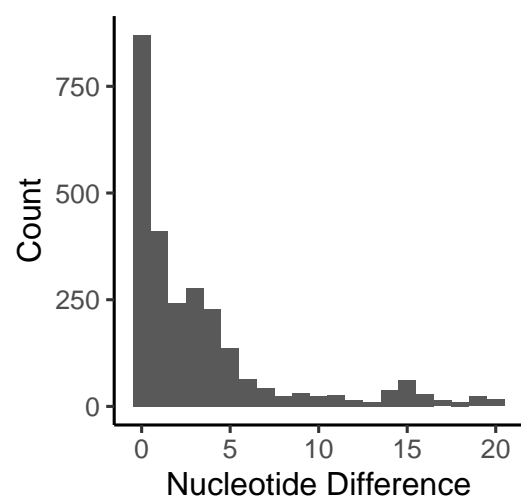
### IGHV4-30-2\*03

50 sequences assigned  
No exact matches.



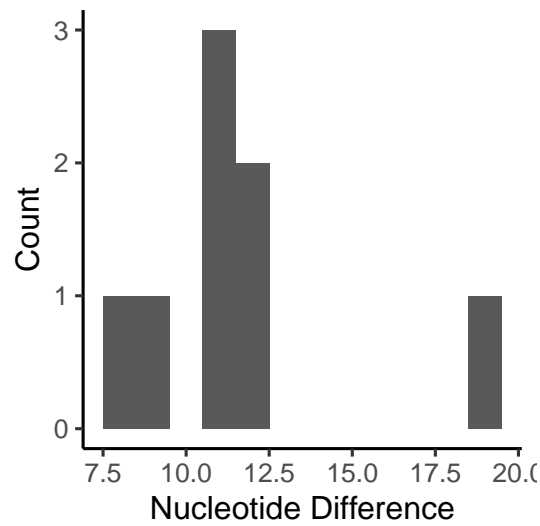
### IGHV4-31\*02

4211 sequences assigned  
871 (20.7%) exact matches, in which:  
815 unique CDR3  
7 unique J



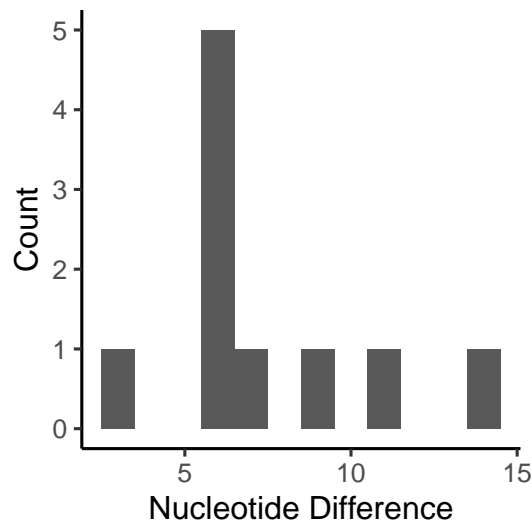
### IGHV4-30-2\*01

11 sequences assigned  
No exact matches.



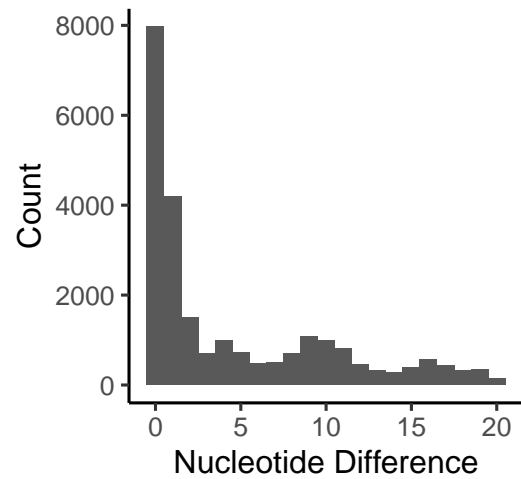
### IGHV4-30-4\*08

22 sequences assigned  
No exact matches.



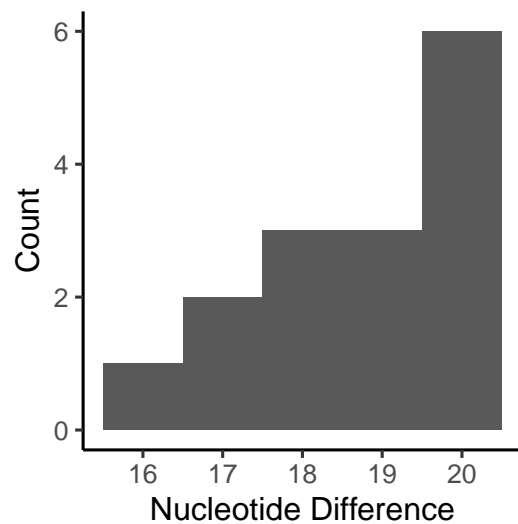
### IGHV4-34\*01\_02

38869 sequences assigned  
7970 (20.5%) exact matches, in which:  
6846 unique CDR3  
7 unique J



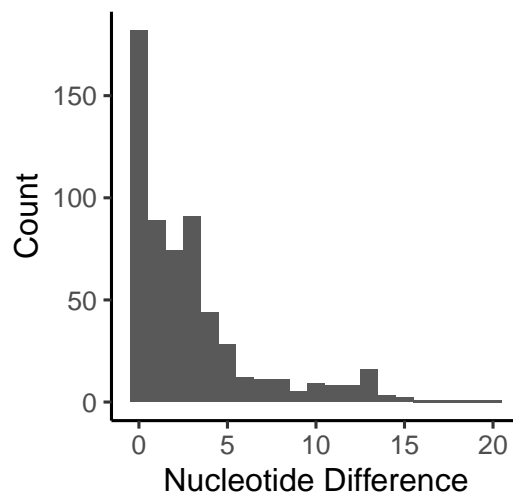
### IGHV4-30-4\*01

76 sequences assigned  
No exact matches.



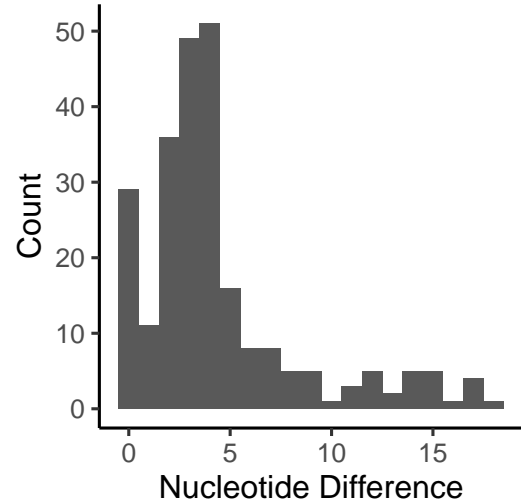
### IGHV4-31\*01

806 sequences assigned  
182 (22.6%) exact matches, in which:  
173 unique CDR3  
7 unique J



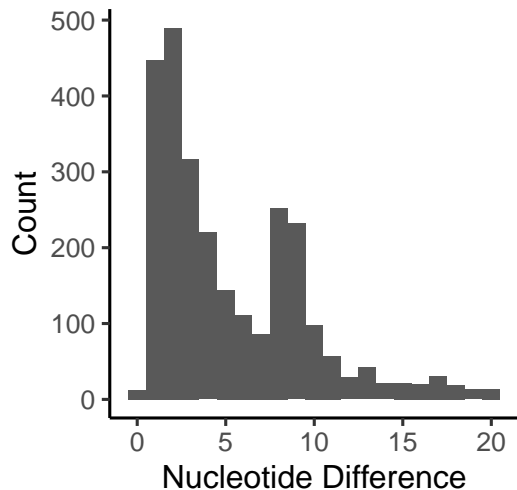
### IGHV4-38-2\*02

407 sequences assigned  
29 (7.1%) exact matches, in which:  
29 unique CDR3  
7 unique J



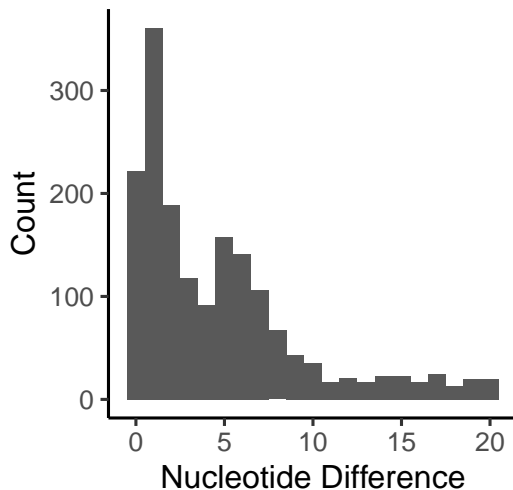
### IGHV4–39\*07

2917 sequences assigned  
12 (0.4%) exact matches, in which:  
12 unique CDR3  
6 unique J



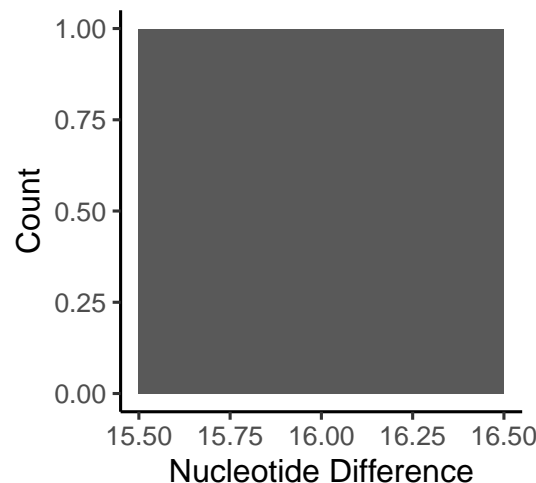
### IGHV4–59\*12

2113 sequences assigned  
222 (10.5%) exact matches, in which:  
221 unique CDR3  
7 unique J



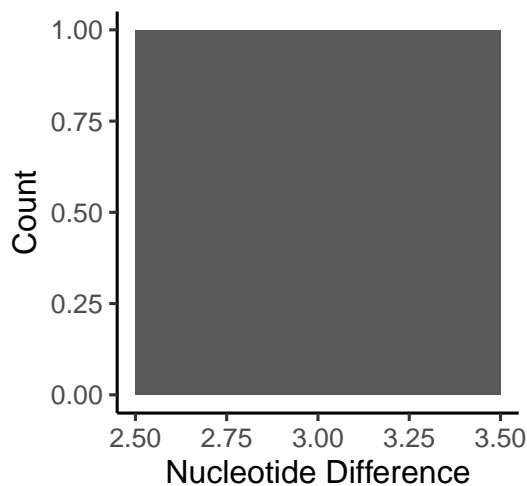
### IGHV1/OR15–2\*01

1 sequences assigned  
No exact matches.



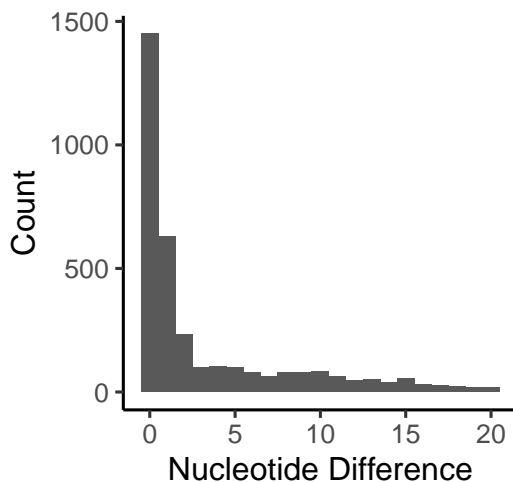
### IGHV4–55\*09

1 sequences assigned  
No exact matches.



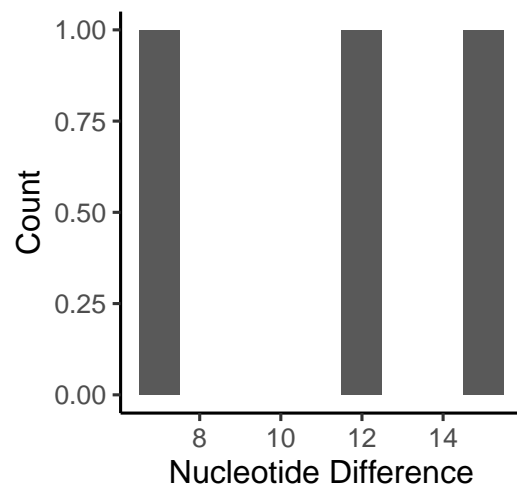
### IGHV4–61\*01

4030 sequences assigned  
1450 (36%) exact matches, in which:  
1407 unique CDR3  
7 unique J



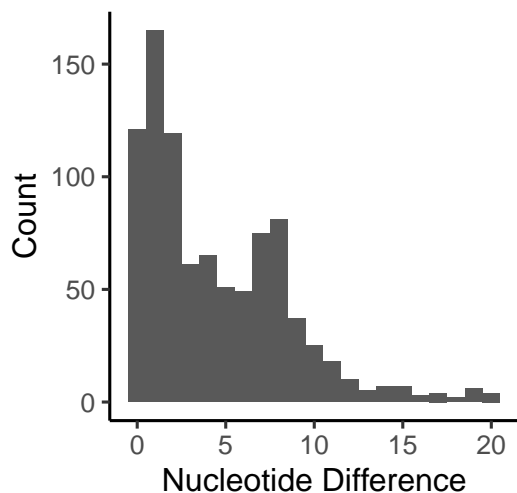
### IGHV1/OR15–2\*02\_03

4 sequences assigned  
No exact matches.



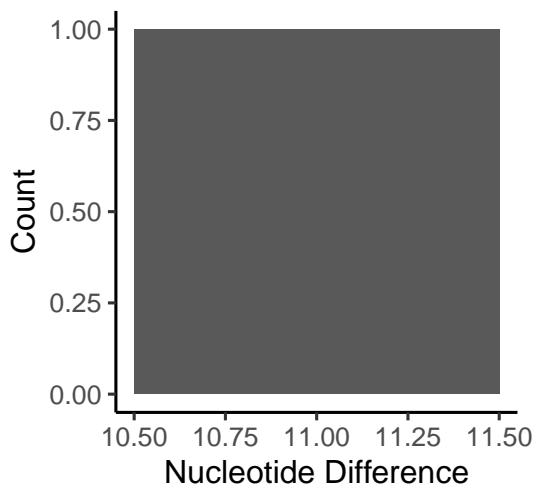
### IGHV4–59\*08

1000 sequences assigned  
121 (12.1%) exact matches, in which:  
116 unique CDR3  
7 unique J



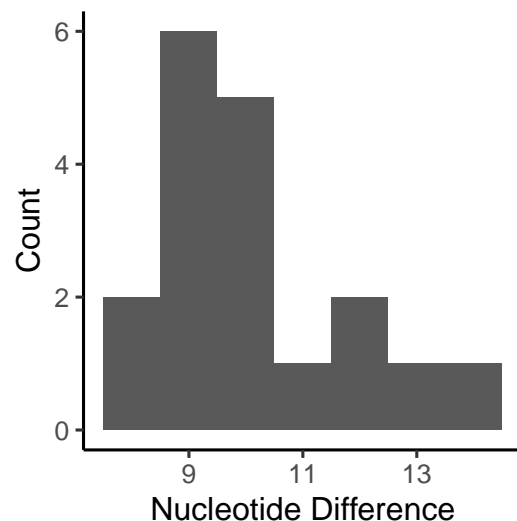
### IGHV1/OR15–1\*04

4 sequences assigned  
No exact matches.



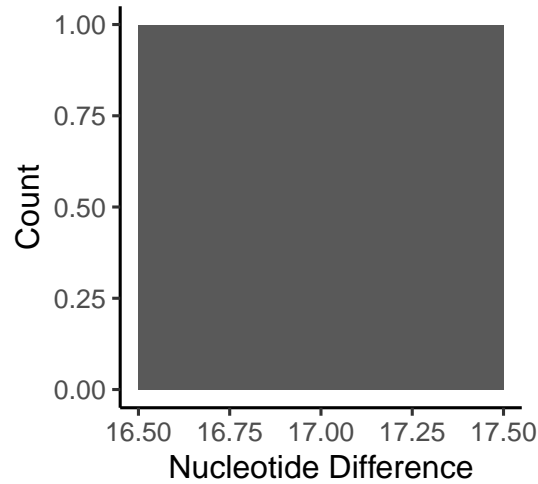
### IGHV1/OR15–3\*02

18 sequences assigned  
No exact matches.



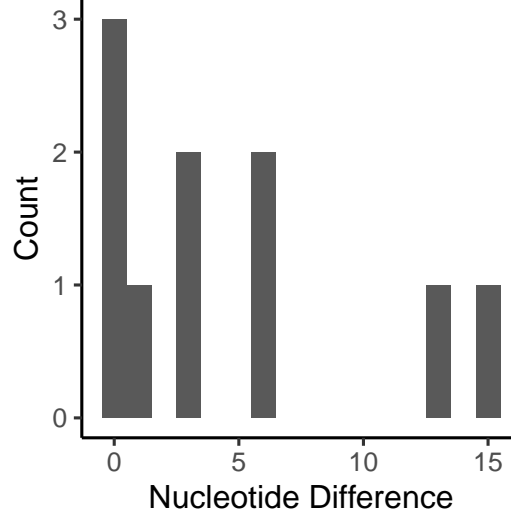
### IGHV1/OR15-4\*01

1 sequences assigned  
No exact matches.



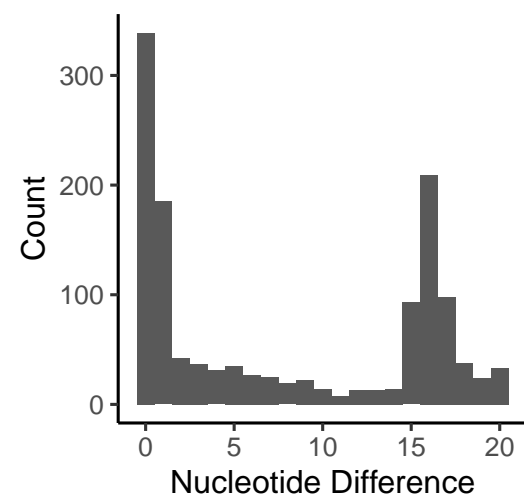
### IGHV5-51\*04

23 sequences assigned  
3 (13%) exact matches, in which:  
3 unique CDR3  
2 unique J



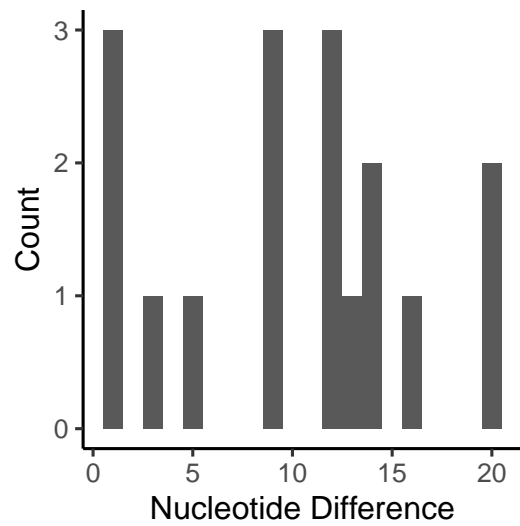
### IGHV6-1\*01\_02

1532 sequences assigned  
339 (22.1%) exact matches, in which:  
318 unique CDR3  
7 unique J



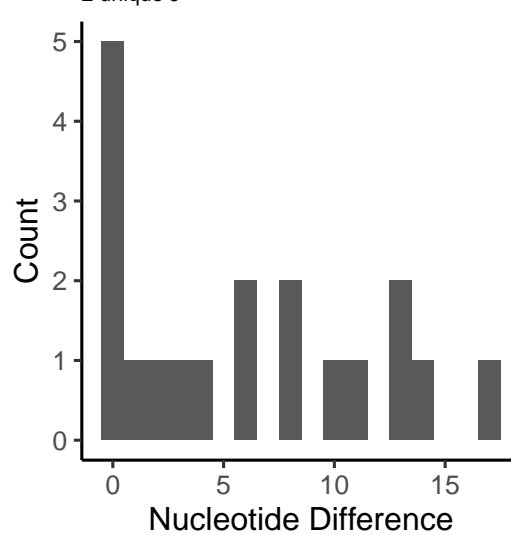
### IGHV4/OR15-8\*01

21 sequences assigned  
No exact matches.



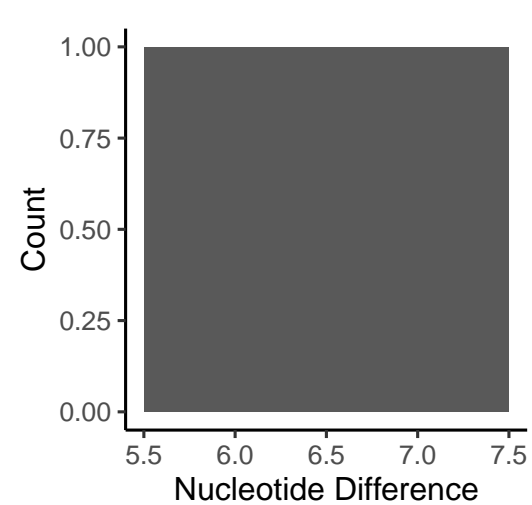
### IGHV5-51\*06

22 sequences assigned  
5 (22.7%) exact matches, in which:  
5 unique CDR3  
2 unique J



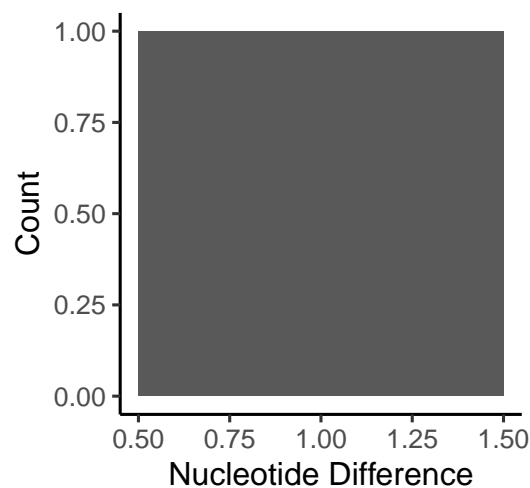
### IGHV3/OR16-10\*01\_03

6 sequences assigned  
No exact matches.



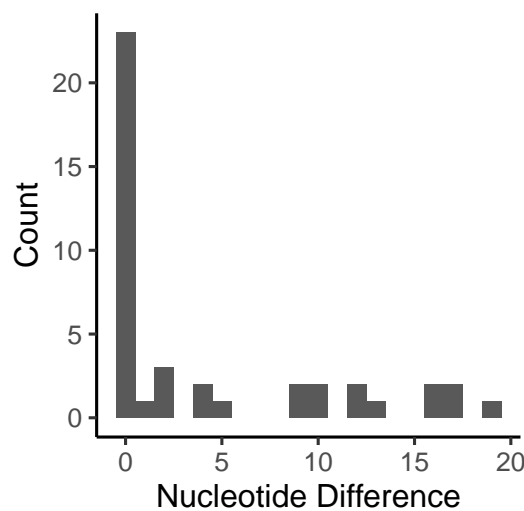
### IGHV5-10-1\*01\_03

1 sequences assigned  
No exact matches.



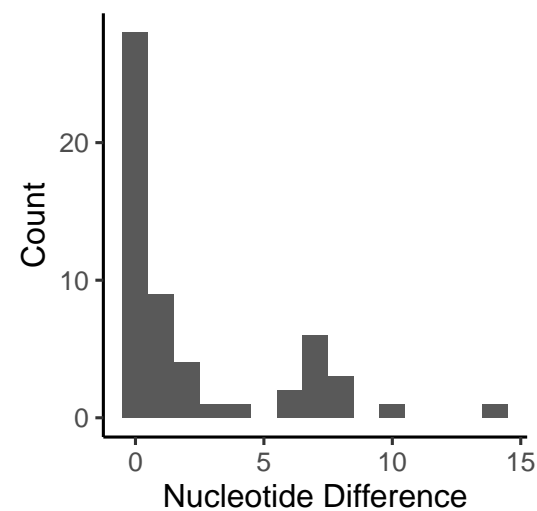
### IGHV5-51\*07

45 sequences assigned  
23 (51.1%) exact matches, in which:  
23 unique CDR3  
6 unique J

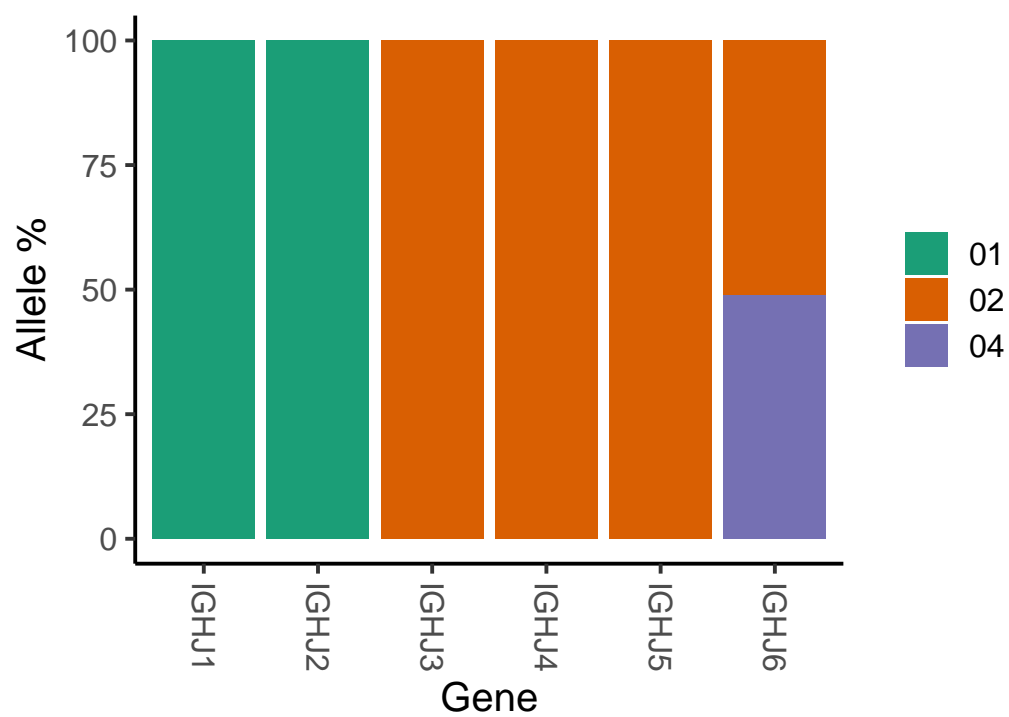


### IGHV7-4-1\*01

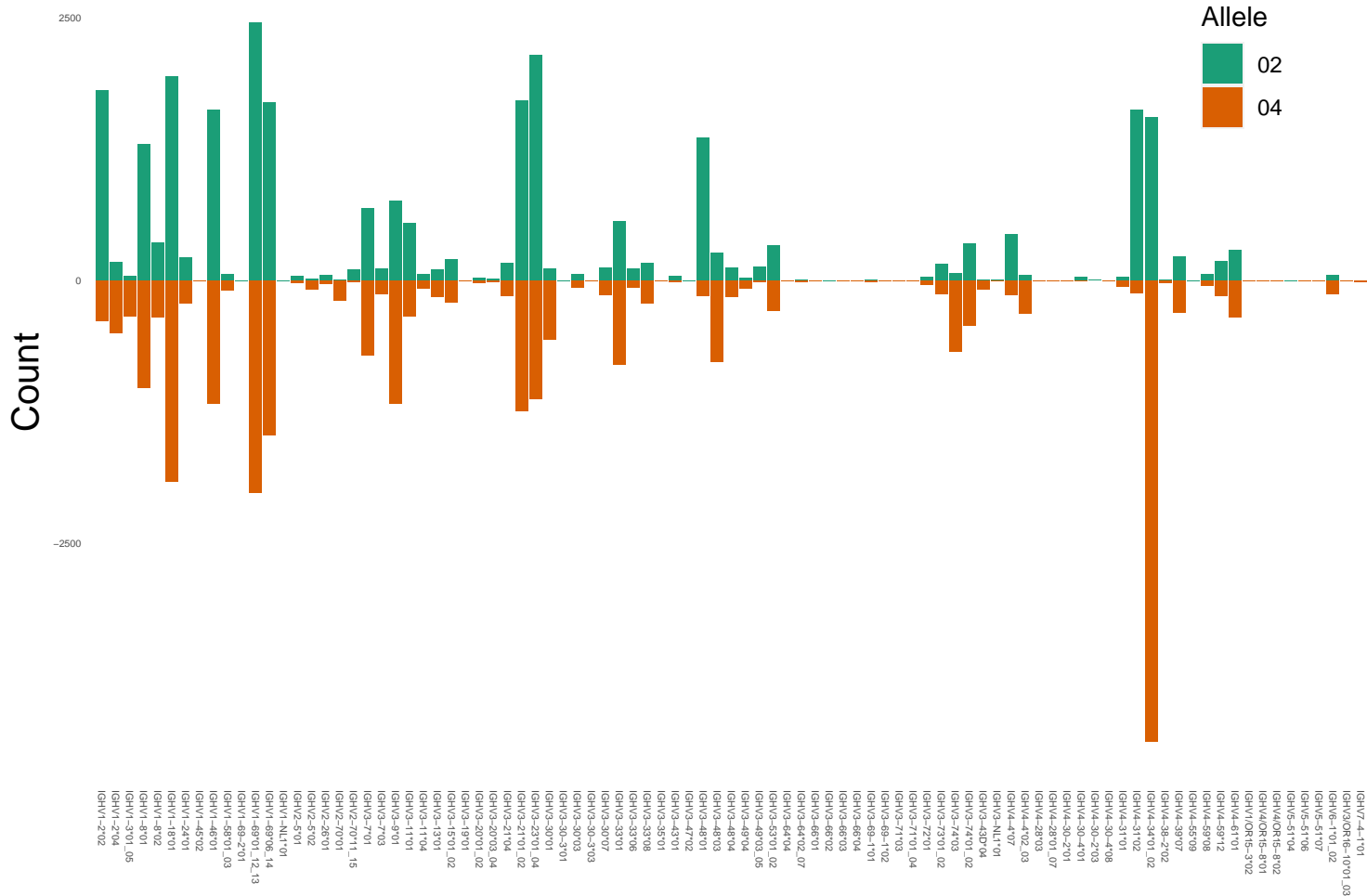
56 sequences assigned  
28 (50%) exact matches, in which:  
26 unique CDR3  
4 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.