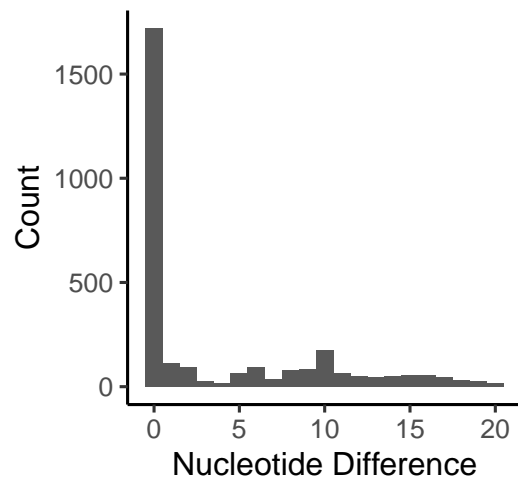


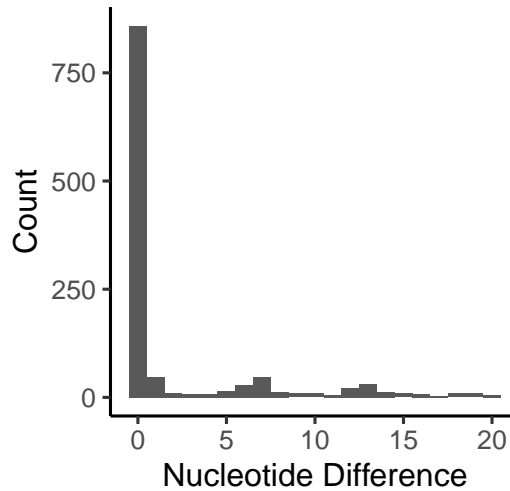
### IGHV1-2\*02

3044 sequences assigned  
1719 (56.5%) exact matches, in which:  
1701 unique CDR3  
7 unique J



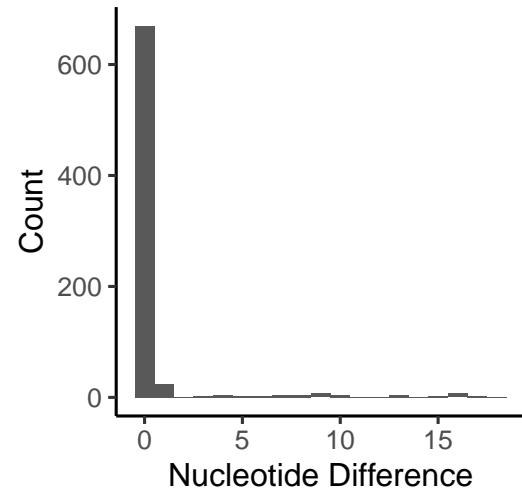
### IGHV1-8\*01

1357 sequences assigned  
859 (63.3%) exact matches, in which:  
853 unique CDR3  
7 unique J



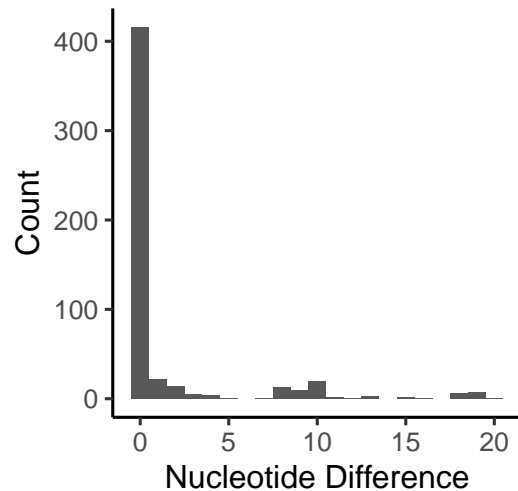
### IGHV1-24\*01

750 sequences assigned  
670 (89.3%) exact matches, in which:  
664 unique CDR3  
7 unique J



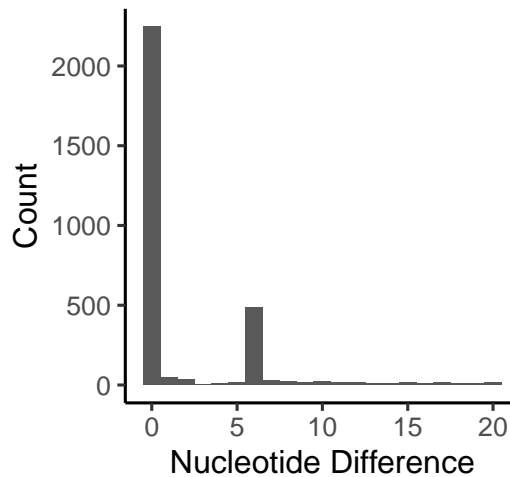
### IGHV1-2\*04

532 sequences assigned  
416 (78.2%) exact matches, in which:  
413 unique CDR3  
7 unique J



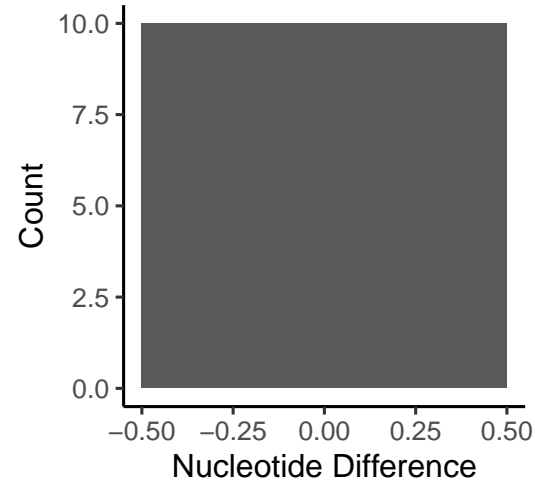
### IGHV1-18\*01

3122 sequences assigned  
2246 (71.9%) exact matches, in which:  
2235 unique CDR3  
7 unique J



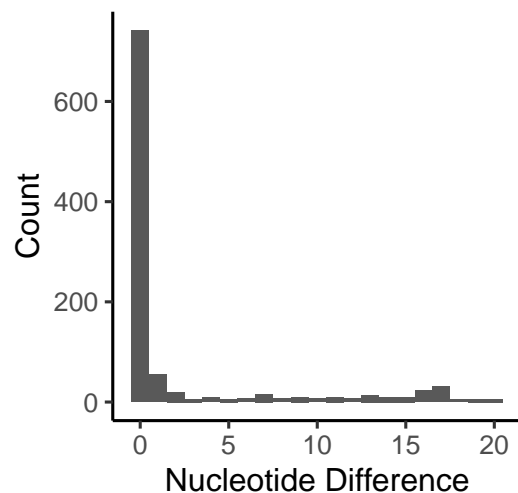
### IGHV1-45\*02

10 sequences assigned  
10 (100%) exact matches, in which:  
10 unique CDR3  
4 unique J



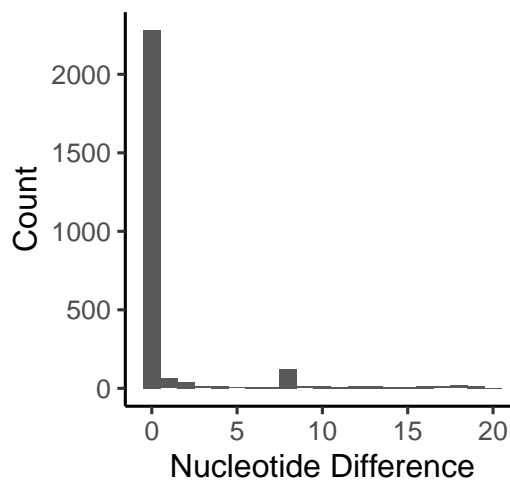
### IGHV1-3\*01\_05

1053 sequences assigned  
742 (70.5%) exact matches, in which:  
730 unique CDR3  
7 unique J



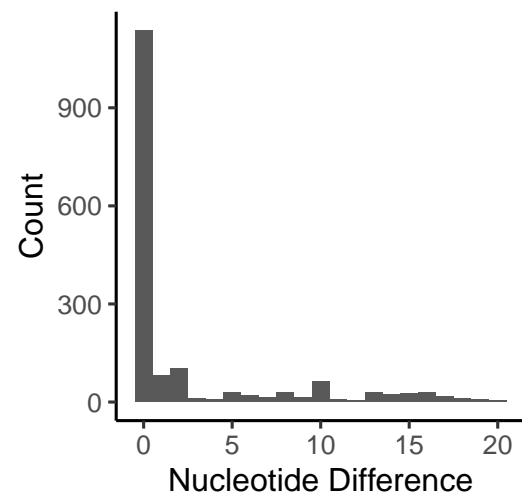
### IGHV1-18\*04

2743 sequences assigned  
2282 (83.2%) exact matches, in which:  
2270 unique CDR3  
7 unique J



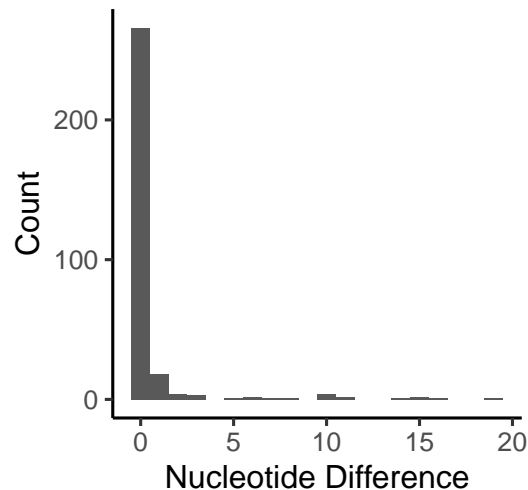
### IGHV1-46\*01

1719 sequences assigned  
1137 (66.1%) exact matches, in which:  
1126 unique CDR3  
7 unique J



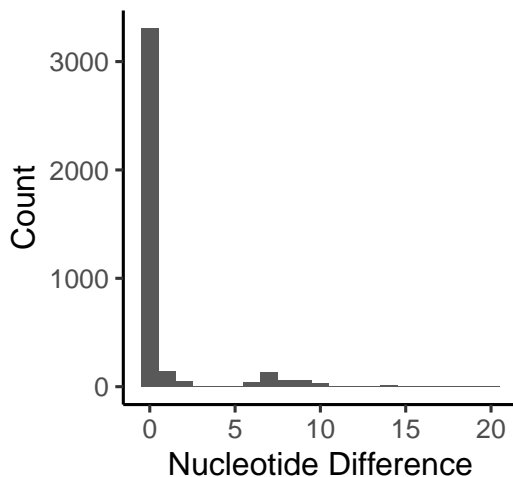
### IGHV1-58\*01\_03

315 sequences assigned  
266 (84.4%) exact matches, in which:  
262 unique CDR3  
7 unique J



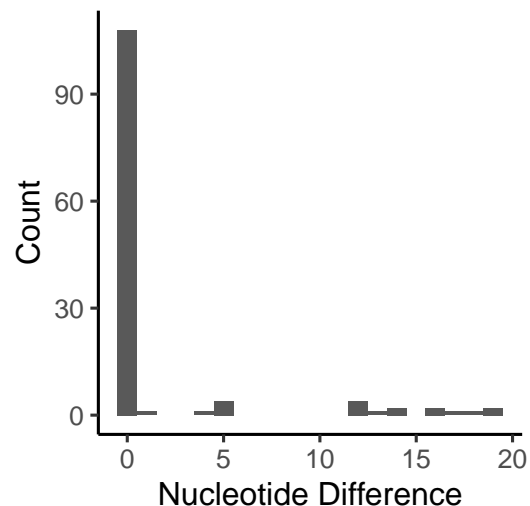
### IGHV1-69\*06\_14

3958 sequences assigned  
3306 (83.5%) exact matches, in which:  
3288 unique CDR3  
7 unique J



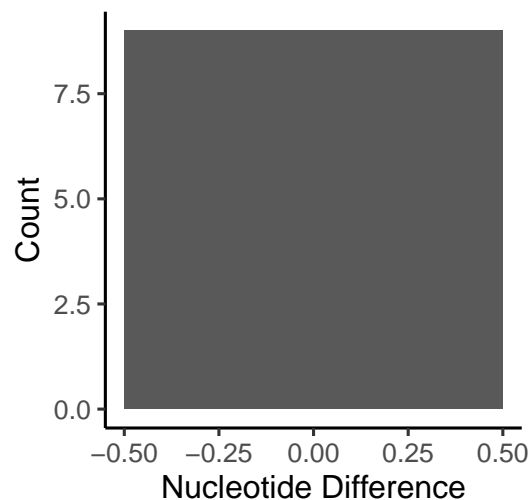
### IGHV2-26\*01

130 sequences assigned  
108 (83.1%) exact matches, in which:  
107 unique CDR3  
7 unique J



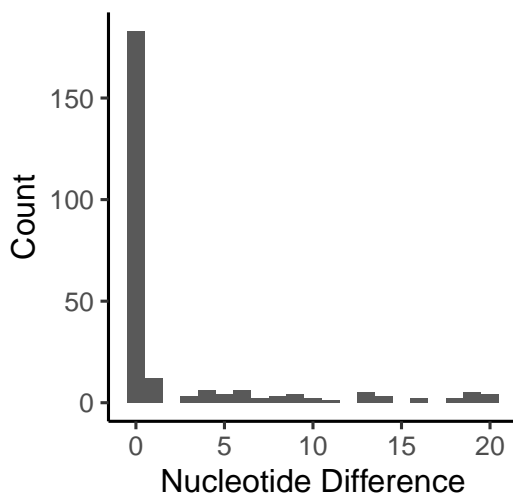
### IGHV1-69-2\*01

9 sequences assigned  
9 (100%) exact matches, in which:  
9 unique CDR3  
3 unique J



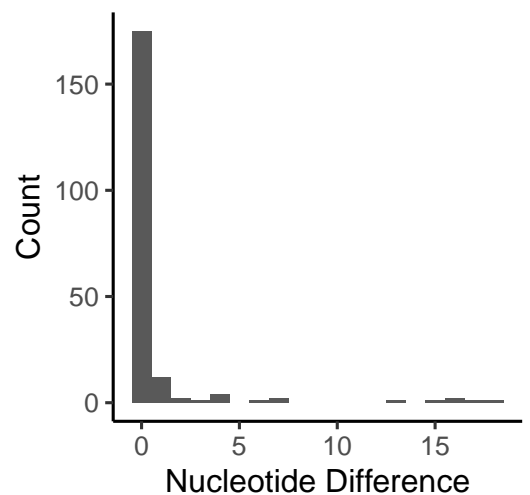
### IGHV2-5\*01

251 sequences assigned  
183 (72.9%) exact matches, in which:  
180 unique CDR3  
7 unique J



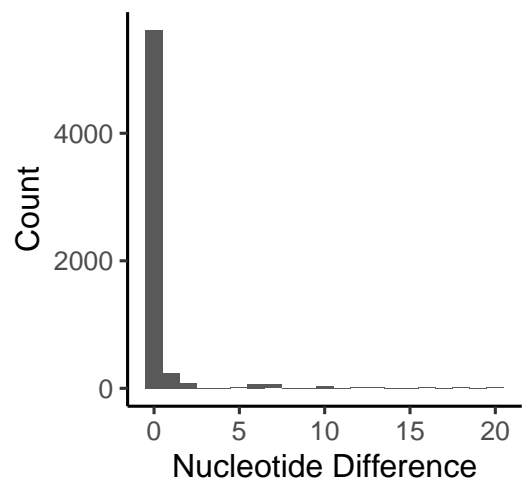
### IGHV2-70\*01

205 sequences assigned  
175 (85.4%) exact matches, in which:  
173 unique CDR3  
7 unique J



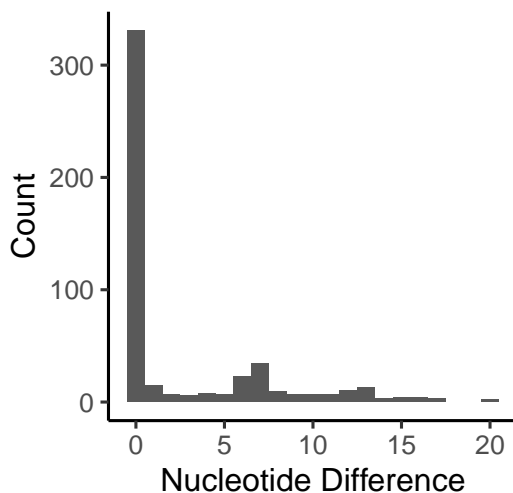
### IGHV1-69\*01\_12\_13

6287 sequences assigned  
5619 (89.4%) exact matches, in which:  
5586 unique CDR3  
7 unique J



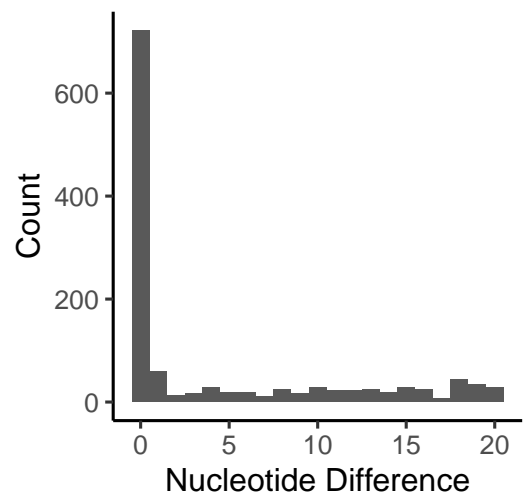
### IGHV2-5\*02

555 sequences assigned  
331 (59.6%) exact matches, in which:  
330 unique CDR3  
7 unique J



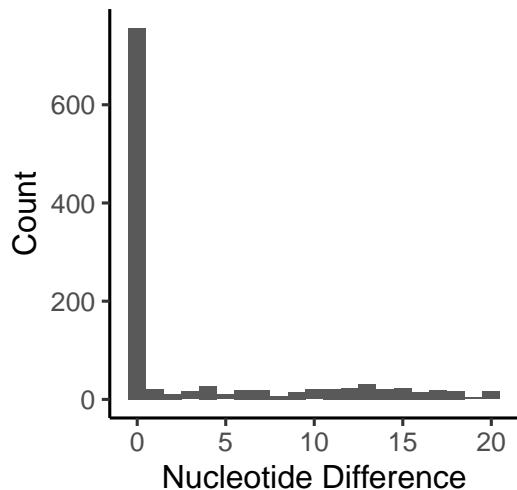
### IGHV3-7\*01

1276 sequences assigned  
722 (56.6%) exact matches, in which:  
540 unique CDR3  
7 unique J



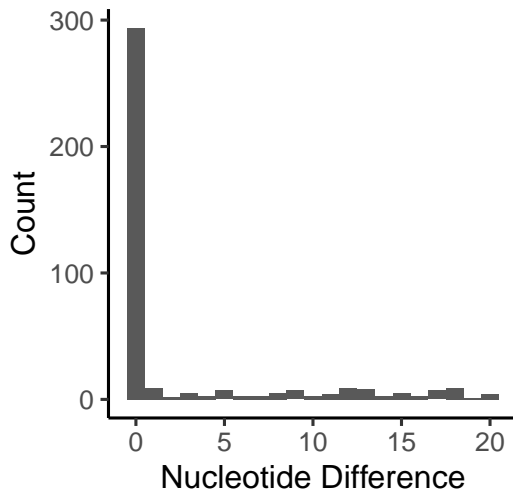
### IGHV3-7\*03

1176 sequences assigned  
757 (64.4%) exact matches, in which:  
541 unique CDR3  
7 unique J



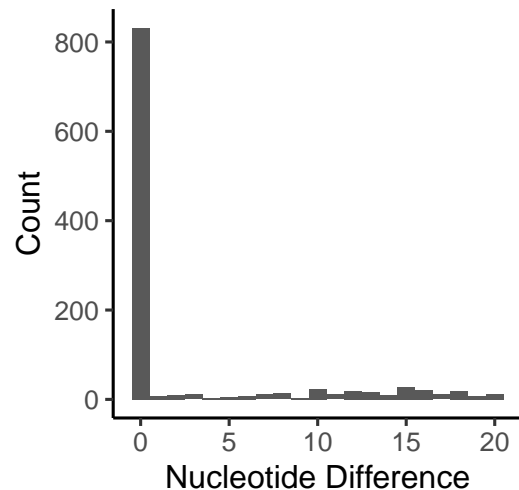
### IGHV3-11\*06

414 sequences assigned  
294 (71%) exact matches, in which:  
231 unique CDR3  
6 unique J



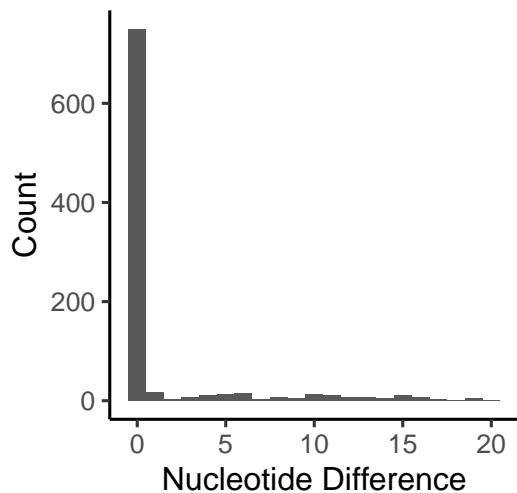
### IGHV3-15\*01\_02

1166 sequences assigned  
832 (71.4%) exact matches, in which:  
659 unique CDR3  
7 unique J



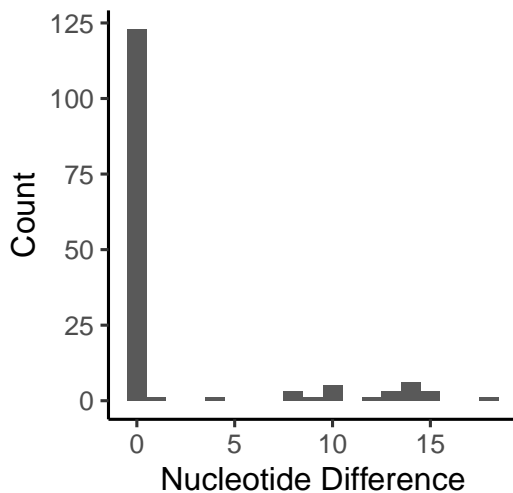
### IGHV3-9\*01

930 sequences assigned  
750 (80.6%) exact matches, in which:  
558 unique CDR3  
6 unique J



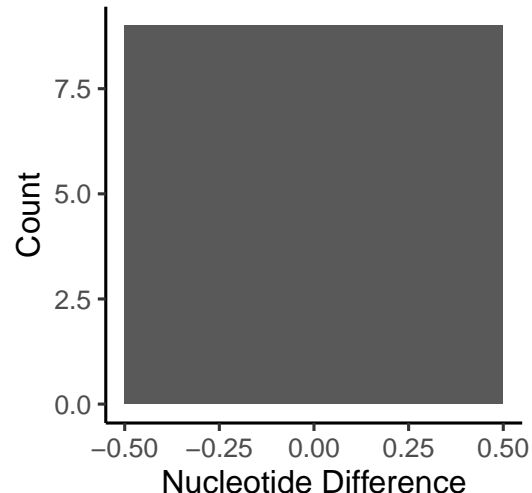
### IGHV3-13\*01

153 sequences assigned  
123 (80.4%) exact matches, in which:  
90 unique CDR3  
6 unique J



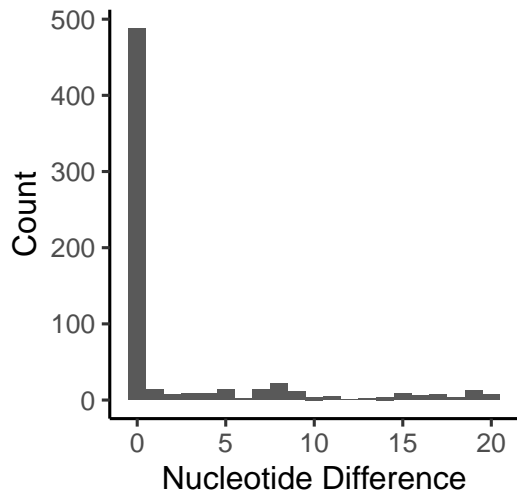
### IGHV3-19\*01

9 sequences assigned  
9 (100%) exact matches, in which:  
5 unique CDR3  
3 unique J



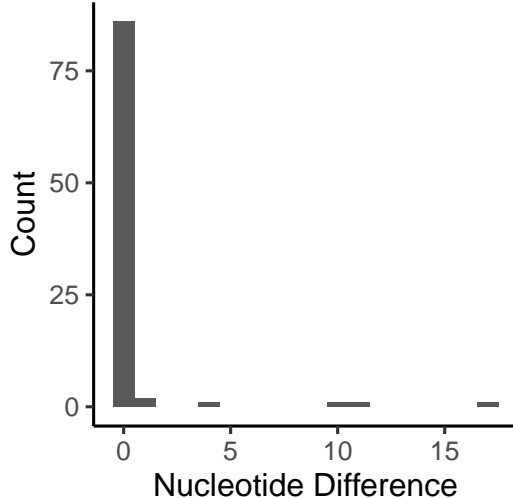
### IGHV3-11\*01

707 sequences assigned  
488 (69%) exact matches, in which:  
373 unique CDR3  
6 unique J



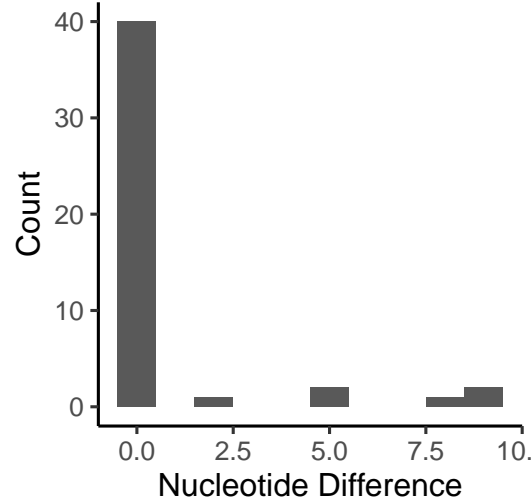
### IGHV3-13\*05

93 sequences assigned  
86 (92.5%) exact matches, in which:  
65 unique CDR3  
5 unique J



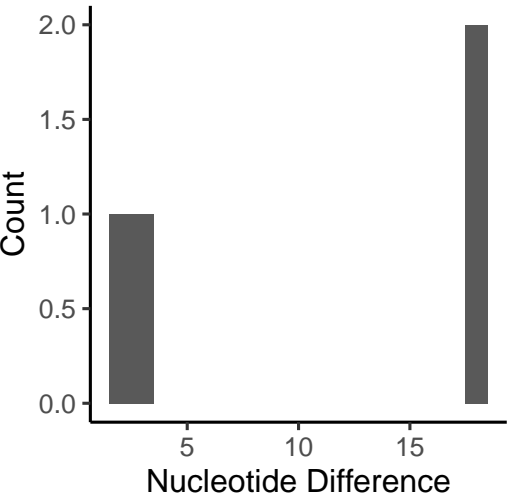
### IGHV3-20\*01\_02

46 sequences assigned  
40 (87%) exact matches, in which:  
30 unique CDR3  
5 unique J



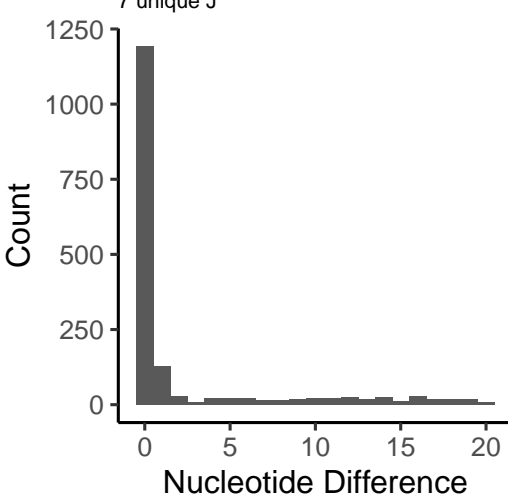
IGHV3-20\*03\_04

8 sequences assigned  
No exact matches.



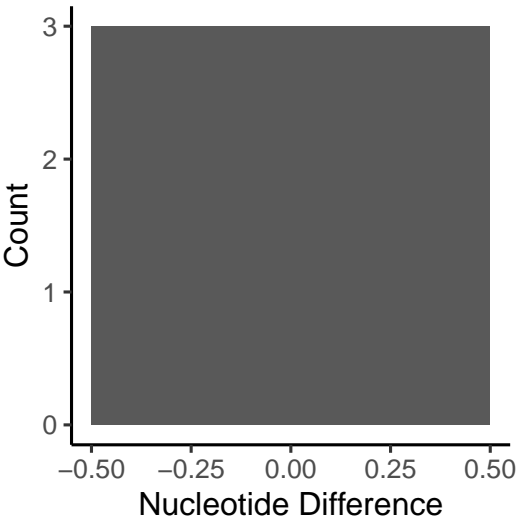
IGHV3-33\*01

1749 sequences assigned  
1192 (68.2%) exact matches, in which:  
944 unique CDR3  
7 unique J



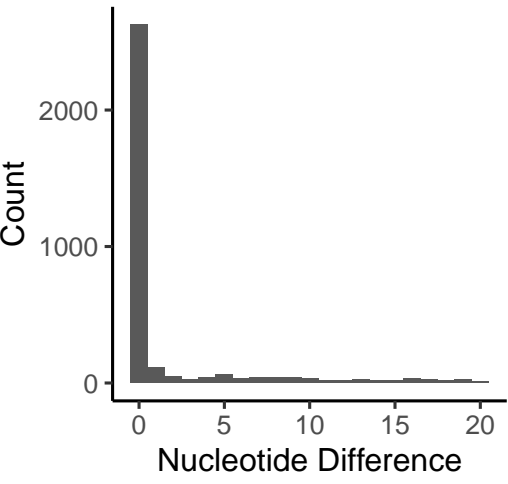
IGHV3-52\*01\_03

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



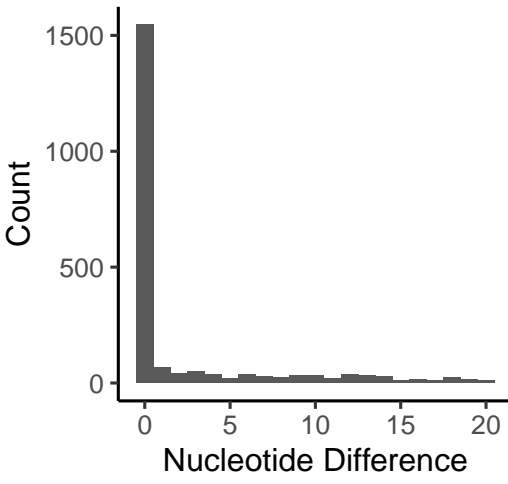
IGHV3-21\*01\_02

3372 sequences assigned  
2625 (77.8%) exact matches, in which:  
1878 unique CDR3  
7 unique J



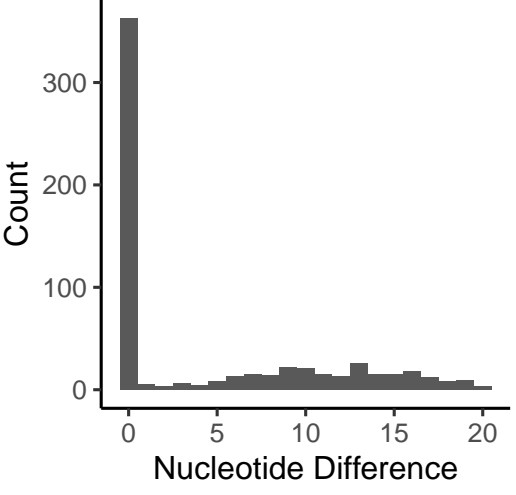
IGHV3-48\*03

2193 sequences assigned  
1546 (70.5%) exact matches, in which:  
1183 unique CDR3  
7 unique J



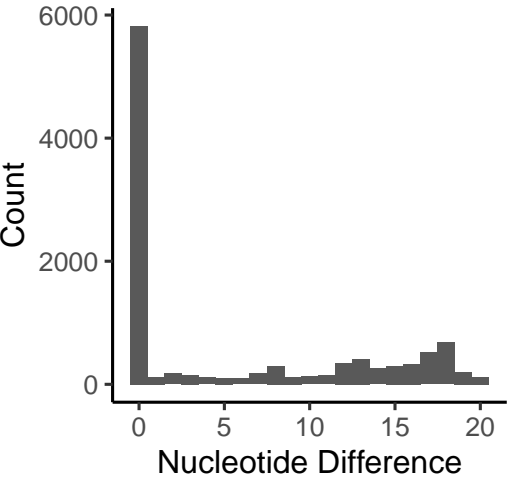
IGHV3-53\*01\_02

650 sequences assigned  
363 (55.8%) exact matches, in which:  
270 unique CDR3  
6 unique J



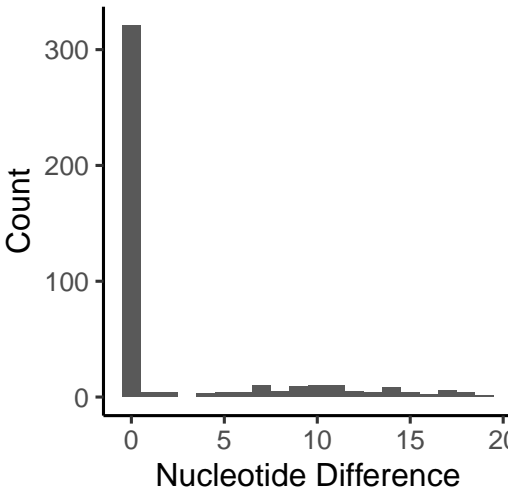
IGHV3-23\*01\_04

11376 sequences assigned  
5821 (51.2%) exact matches, in which:  
4029 unique CDR3  
7 unique J



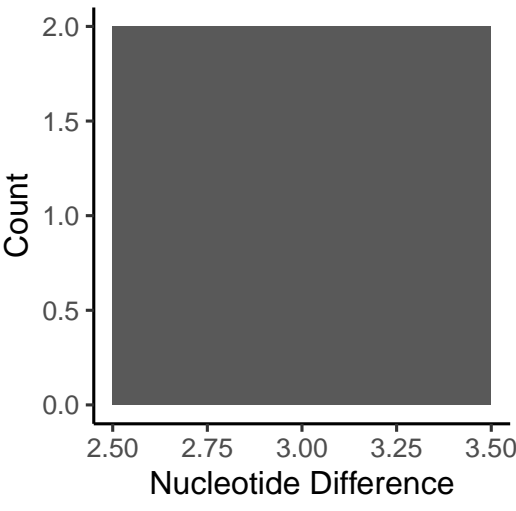
IGHV3-49\*04

434 sequences assigned  
321 (74%) exact matches, in which:  
265 unique CDR3  
7 unique J



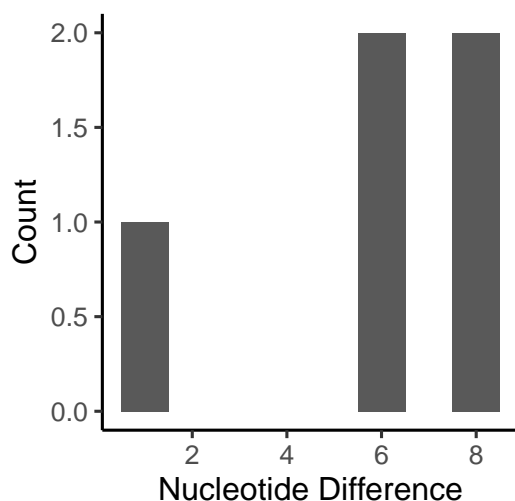
IGHV3-62\*03

2 sequences assigned  
No exact matches.



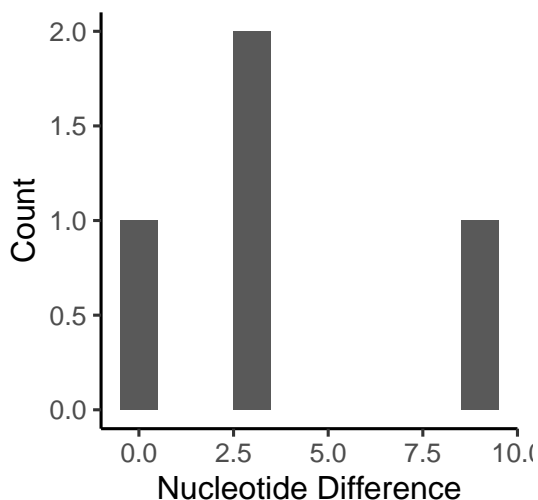
### IGHV3-64\*04

5 sequences assigned  
No exact matches.



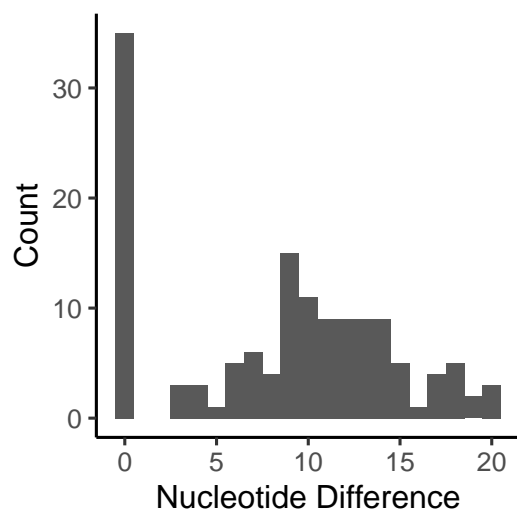
### IGHV3-66\*04

5 sequences assigned  
1 (20%) exact matches, in which:  
1 unique CDR3  
1 unique J



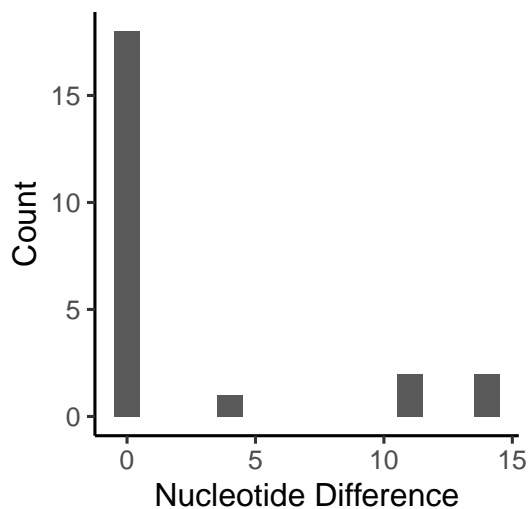
### IGHV3-72\*01

172 sequences assigned  
35 (20.3%) exact matches, in which:  
28 unique CDR3  
7 unique J



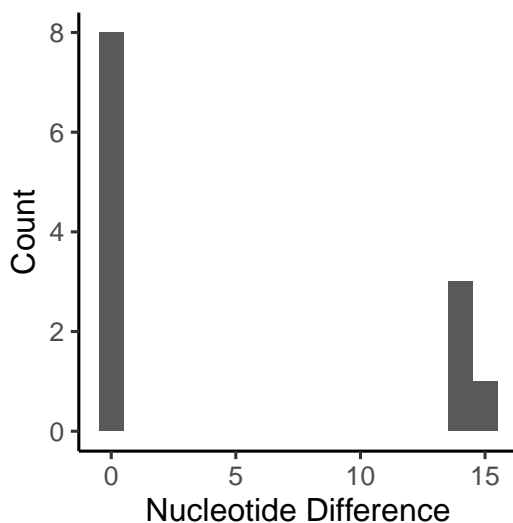
### IGHV3-64\*02\_07

24 sequences assigned  
18 (75%) exact matches, in which:  
11 unique CDR3  
3 unique J



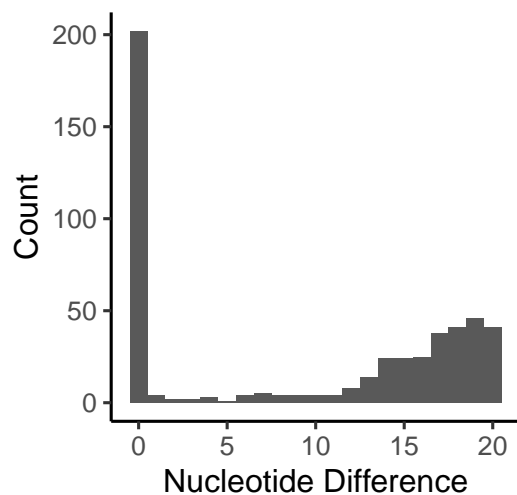
### IGHV3-69-1\*01

13 sequences assigned  
8 (61.5%) exact matches, in which:  
7 unique CDR3  
4 unique J



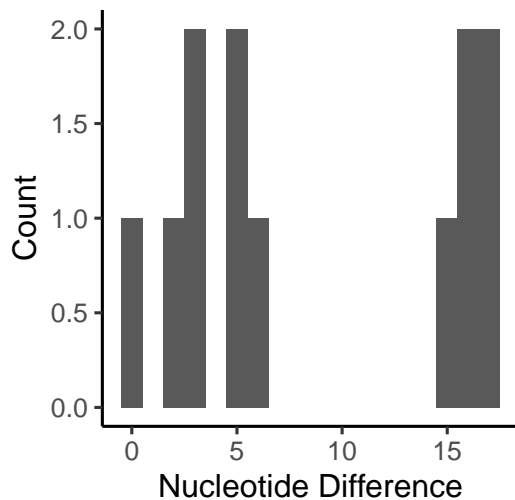
### IGHV3-73\*01\_02

556 sequences assigned  
202 (36.3%) exact matches, in which:  
162 unique CDR3  
7 unique J



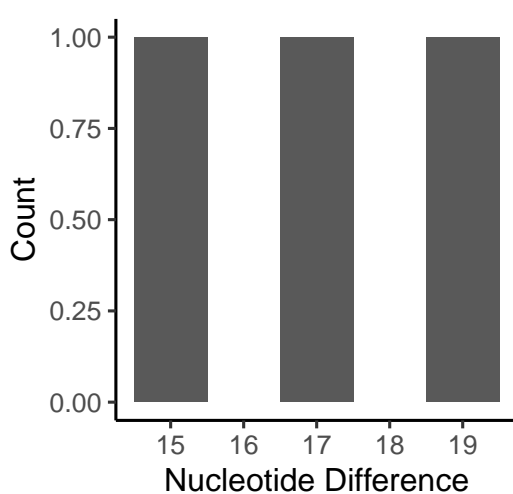
### IGHV3-66\*03

12 sequences assigned  
1 (8.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



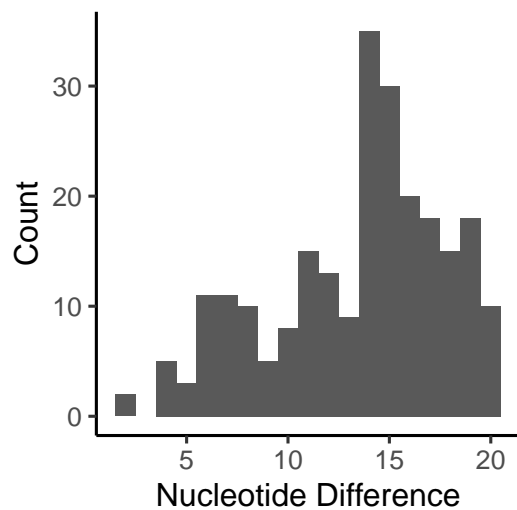
### IGHV3-69-1\*02

3 sequences assigned  
No exact matches.



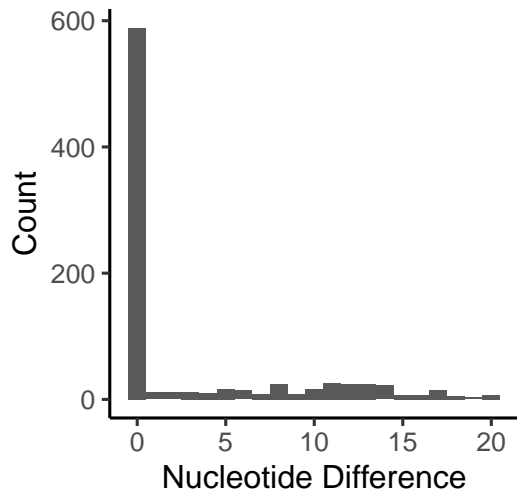
### IGHV3-74\*03

332 sequences assigned  
No exact matches.



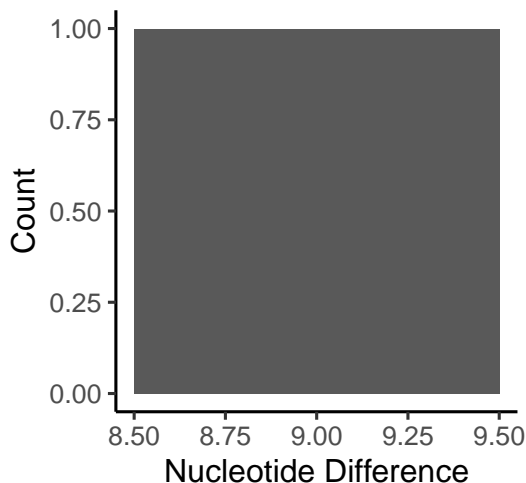
### IGHV3-74\*01\_02

899 sequences assigned  
589 (65.5%) exact matches, in which:  
406 unique CDR3  
7 unique J



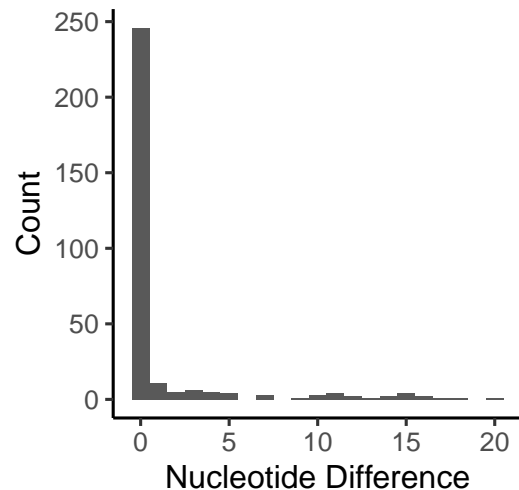
### IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



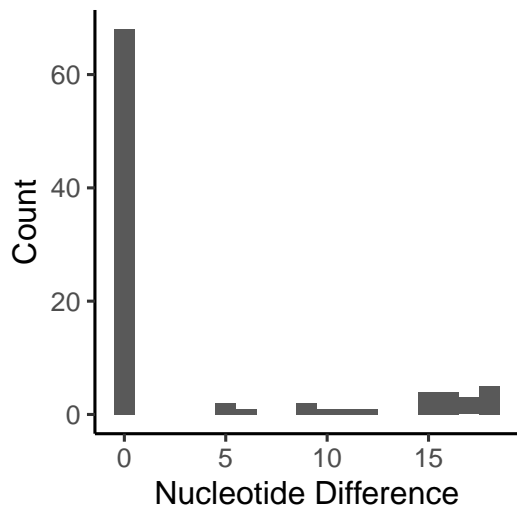
### IGHV4-30-4\*01

316 sequences assigned  
246 (77.8%) exact matches, in which:  
243 unique CDR3  
7 unique J



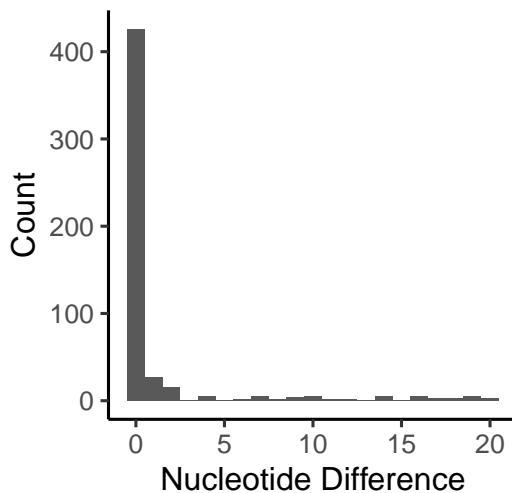
### IGHV3-43D\*04

93 sequences assigned  
68 (73.1%) exact matches, in which:  
55 unique CDR3  
6 unique J



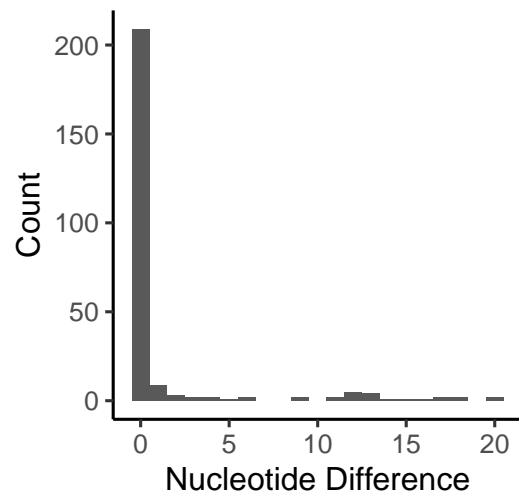
### IGHV4-4\*07

541 sequences assigned  
426 (78.7%) exact matches, in which:  
424 unique CDR3  
6 unique J



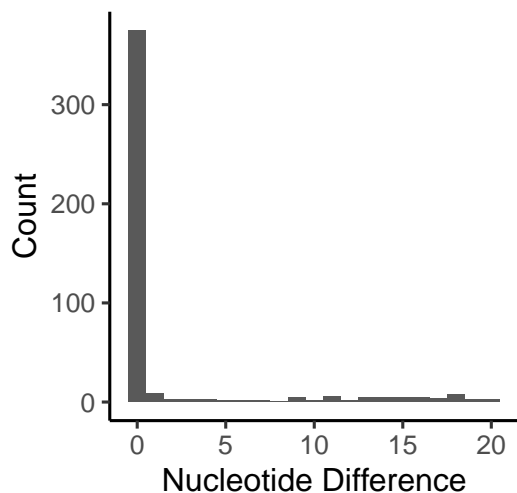
### IGHV4-30-2\*01

257 sequences assigned  
209 (81.3%) exact matches, in which:  
202 unique CDR3  
7 unique J



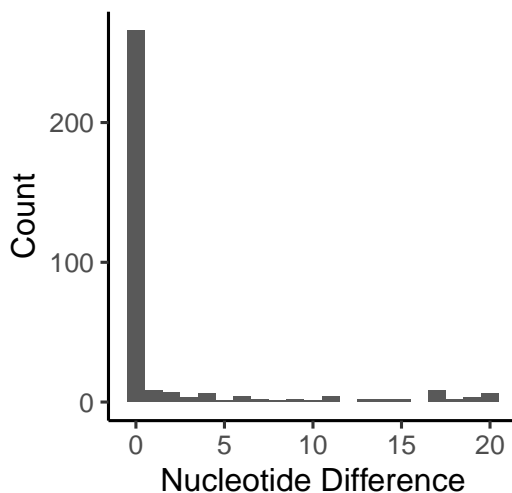
### IGHV3-64D\*06

478 sequences assigned  
375 (78.5%) exact matches, in which:  
269 unique CDR3  
6 unique J



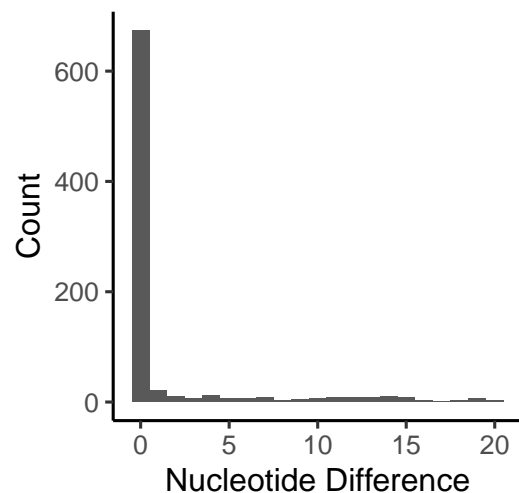
### IGHV4-4\*02\_03

366 sequences assigned  
266 (72.7%) exact matches, in which:  
262 unique CDR3  
7 unique J



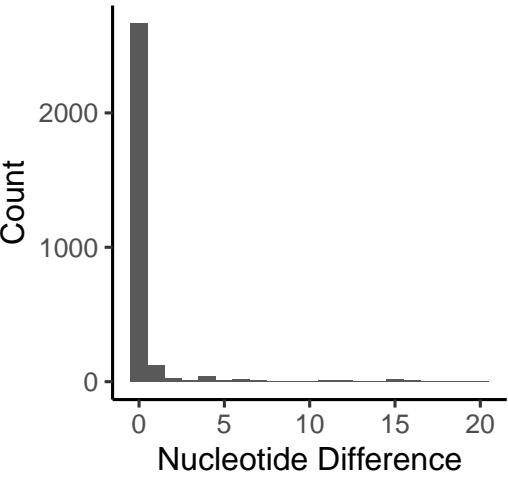
### IGHV4-31\*02

865 sequences assigned  
674 (77.9%) exact matches, in which:  
668 unique CDR3  
7 unique J



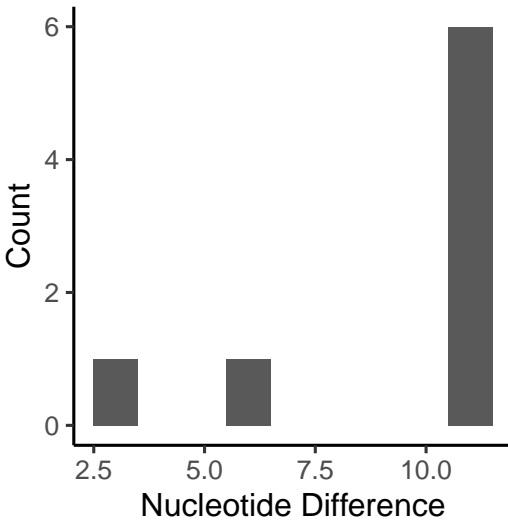
IGHV4–34\*01\_02

3030 sequences assigned  
2666 (88%) exact matches, in which:  
2627 unique CDR3  
7 unique J



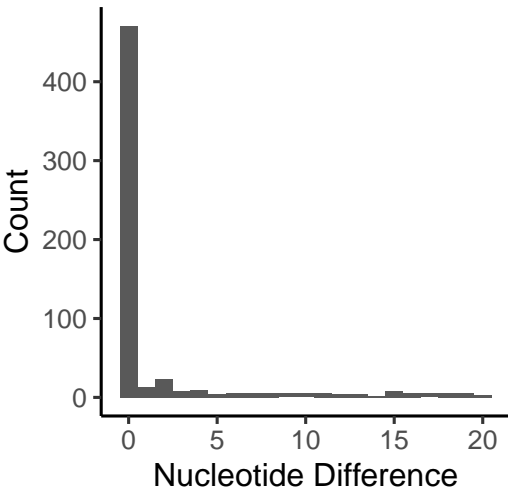
IGHV4–39\*07

11 sequences assigned  
No exact matches.



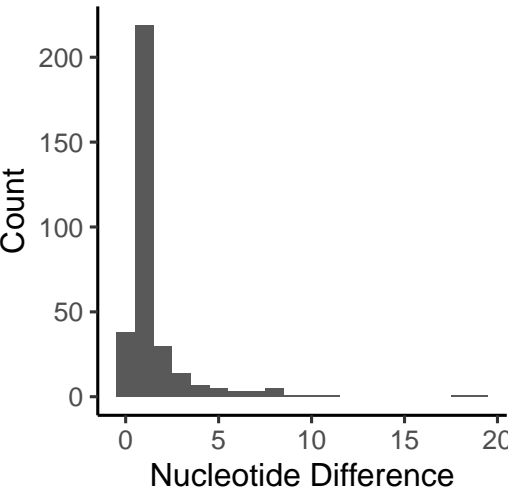
IGHV4–61\*01

633 sequences assigned  
471 (74.4%) exact matches, in which:  
470 unique CDR3  
7 unique J



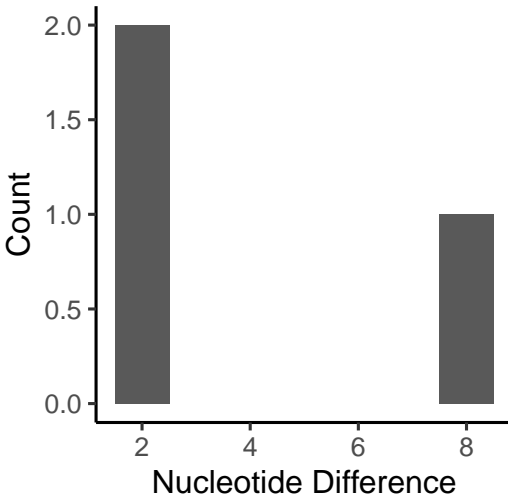
IGHV4–34\*01\_02\_T300C

330 sequences assigned  
38 (11.5%) exact matches, in which:  
38 unique CDR3  
5 unique J



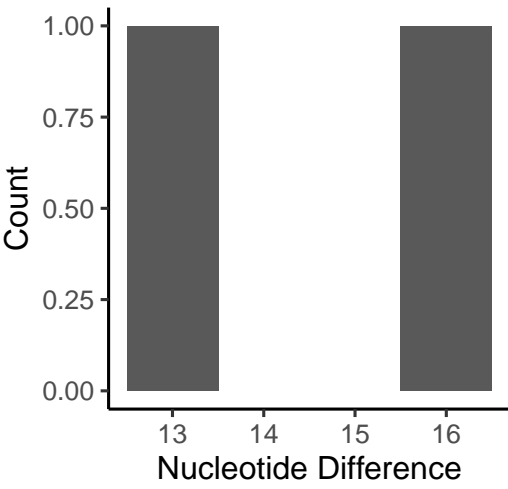
IGHV4–55\*09

3 sequences assigned  
No exact matches.



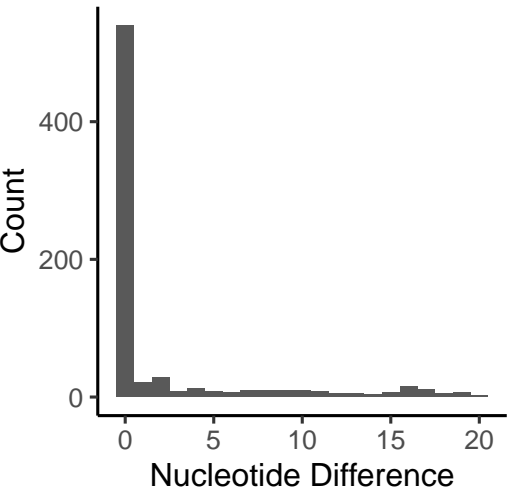
IGHV4/OR15–8\*02

6 sequences assigned  
No exact matches.



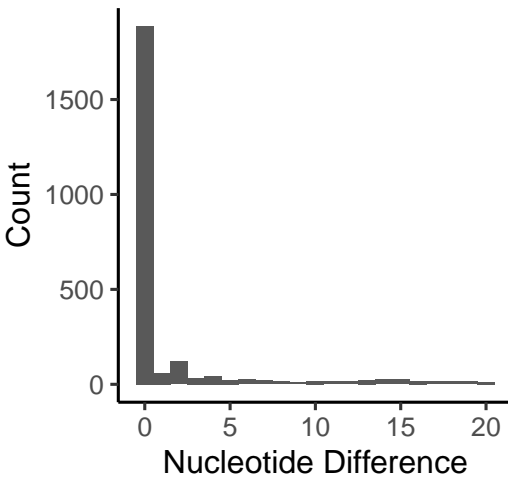
IGHV4–38–2\*02\_A70G

773 sequences assigned  
540 (69.9%) exact matches, in which:  
537 unique CDR3  
7 unique J



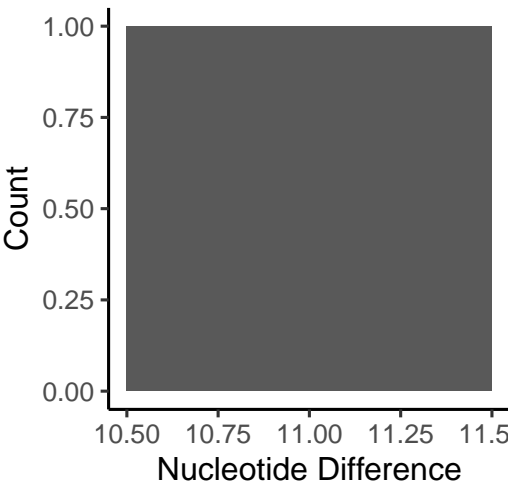
IGHV4–59\*02\_G88A

2505 sequences assigned  
1887 (75.3%) exact matches, in which:  
1877 unique CDR3  
7 unique J



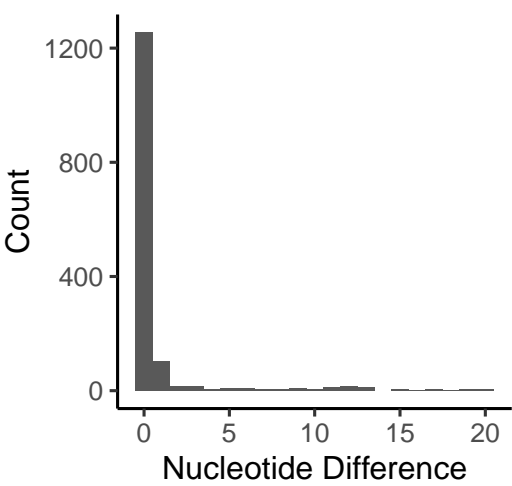
IGHV1/OR15–9\*01

1 sequences assigned  
No exact matches.



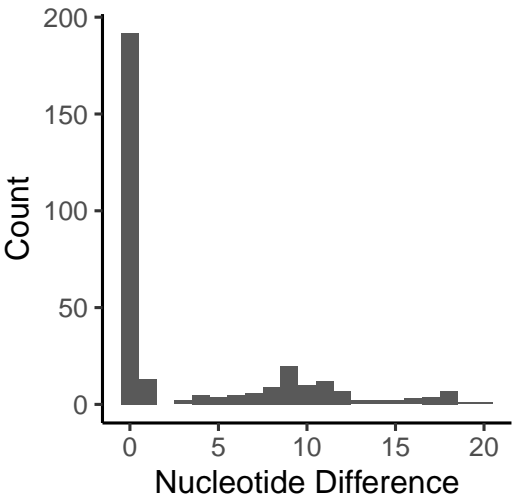
IGHV5-10-1\*01\_03

1534 sequences assigned  
1255 (81.8%) exact matches, in which:  
1060 unique CDR3  
7 unique J



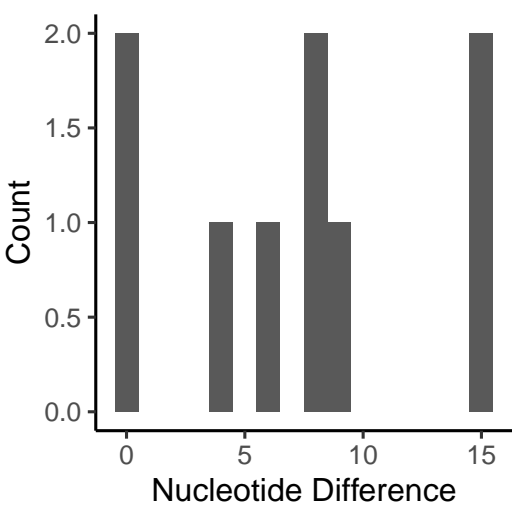
IGHV6-1\*01\_02

324 sequences assigned  
192 (59.3%) exact matches, in which:  
191 unique CDR3  
6 unique J



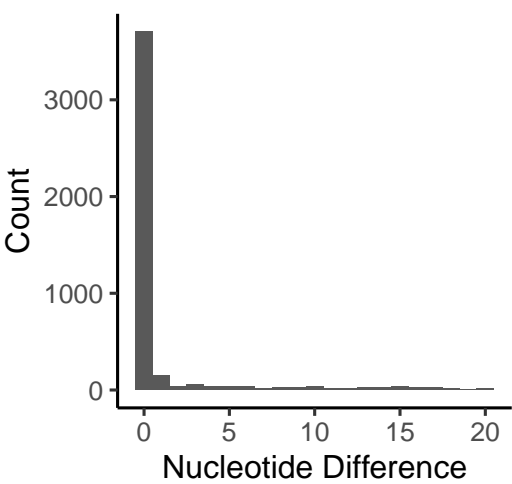
IGHV7-4-1\*02

12 sequences assigned  
2 (16.7%) exact matches, in which:  
2 unique CDR3  
1 unique J



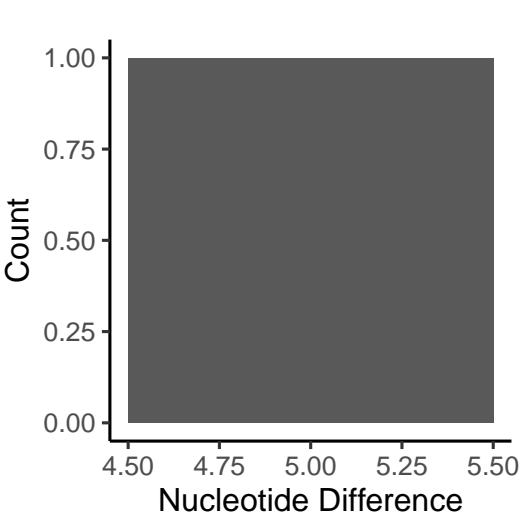
IGHV5-51\*07\_A128G

4415 sequences assigned  
3704 (83.9%) exact matches, in which:  
2961 unique CDR3  
7 unique J



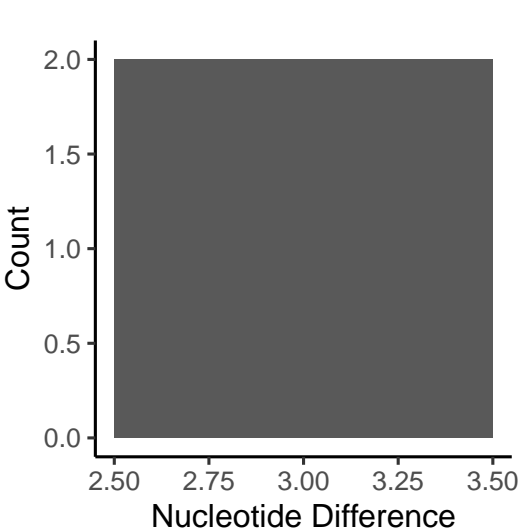
IGHV3/OR16-9\*01

1 sequences assigned  
No exact matches.



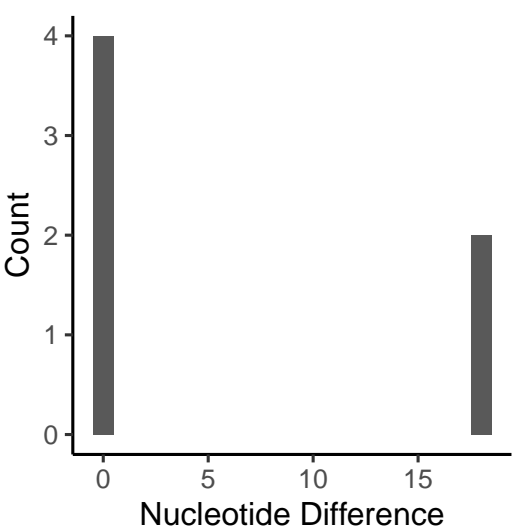
IGHV5-78\*01

2 sequences assigned  
No exact matches.



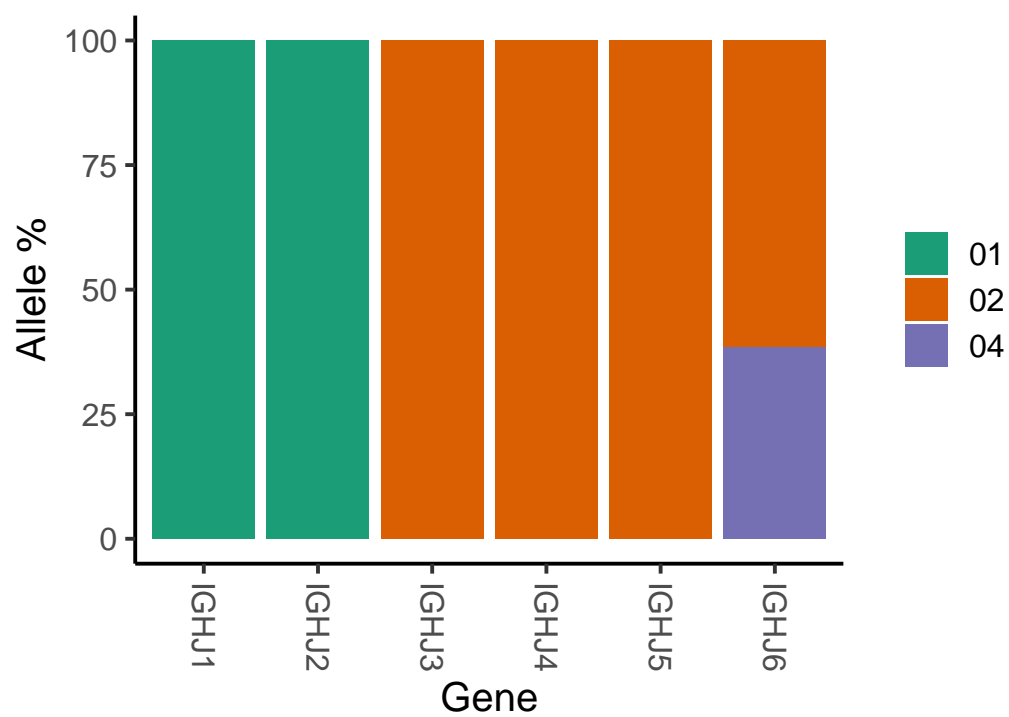
IGHV7-4-1\*01

6 sequences assigned  
4 (66.7%) exact matches, in which:  
4 unique CDR3  
2 unique J

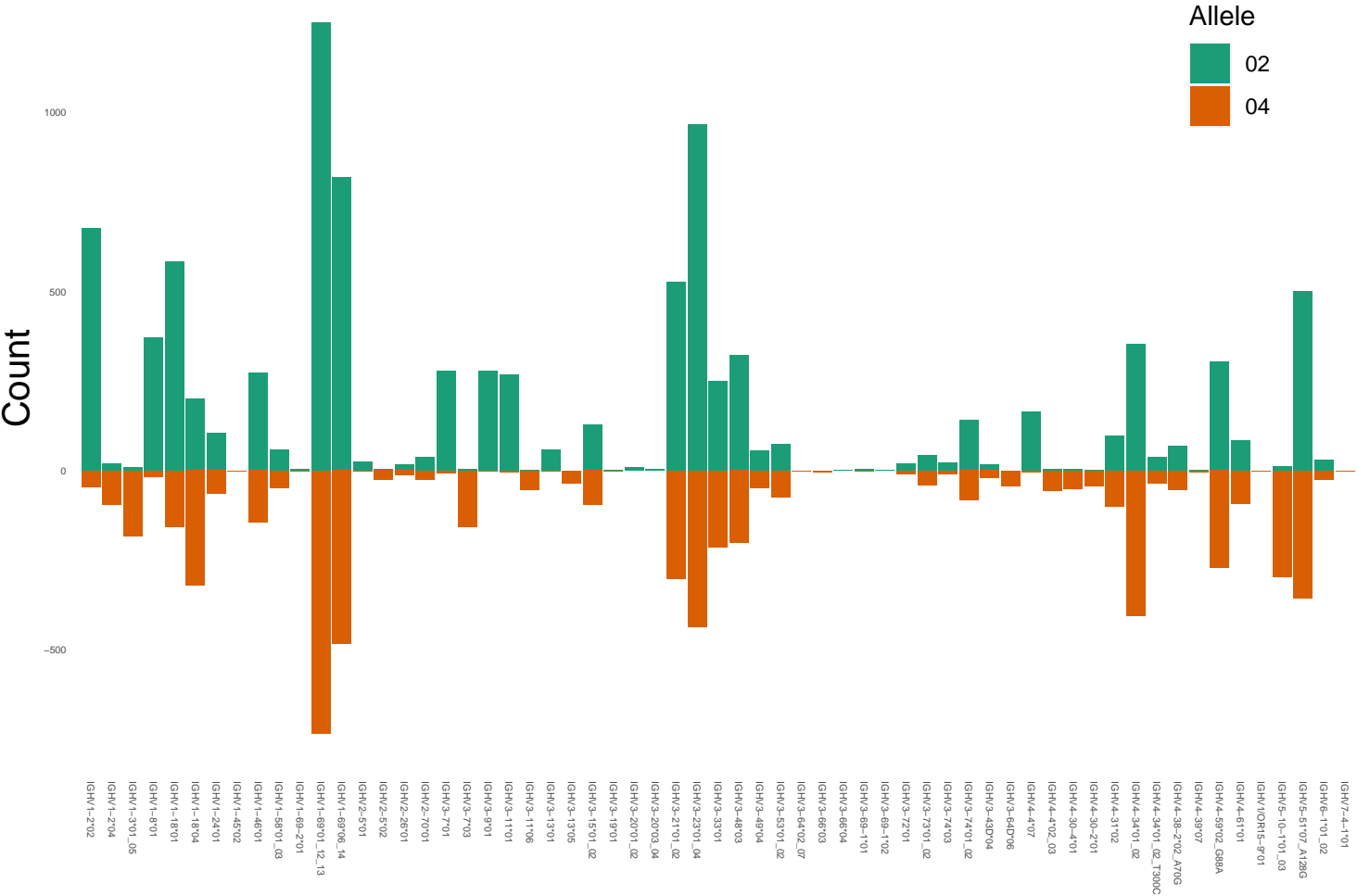




Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.