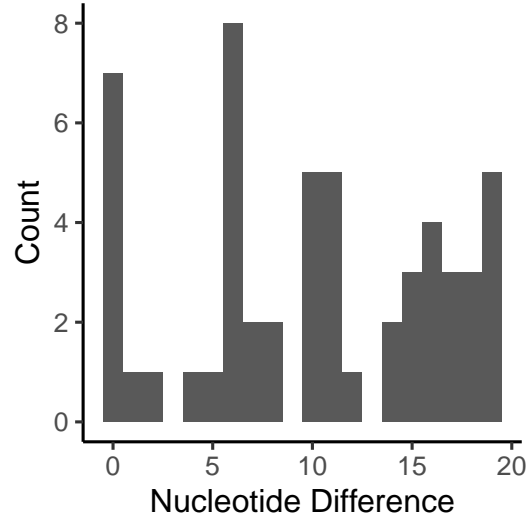


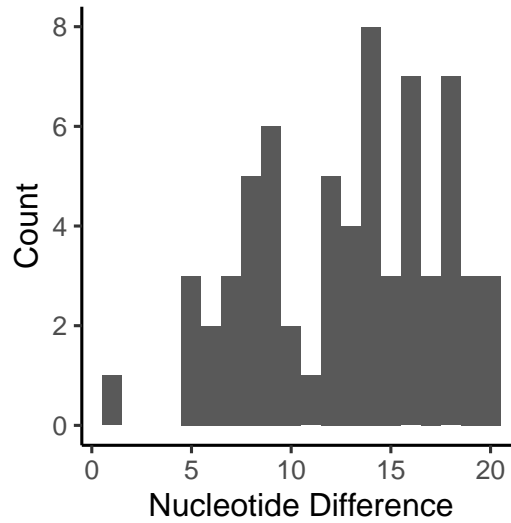
### IGHV1-2\*04

70 sequences assigned  
7 (10%) exact matches, in which:  
7 unique CDR3  
3 unique J



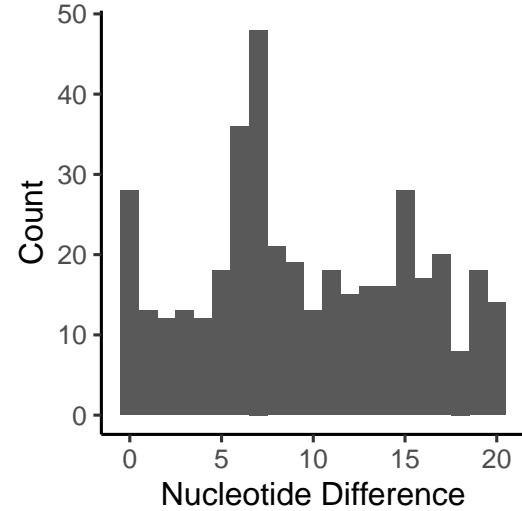
### IGHV1-3\*04

84 sequences assigned  
No exact matches.



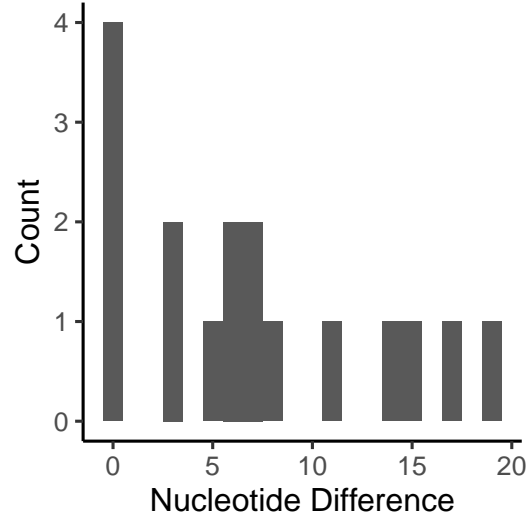
### IGHV1-18\*01

506 sequences assigned  
28 (5.5%) exact matches, in which:  
26 unique CDR3  
5 unique J



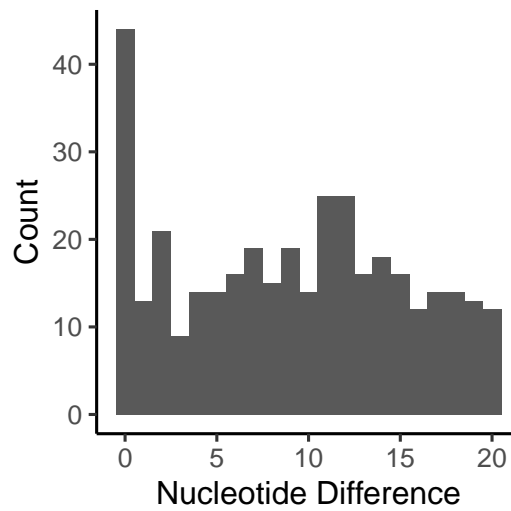
### IGHV1-2\*05

19 sequences assigned  
4 (21.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



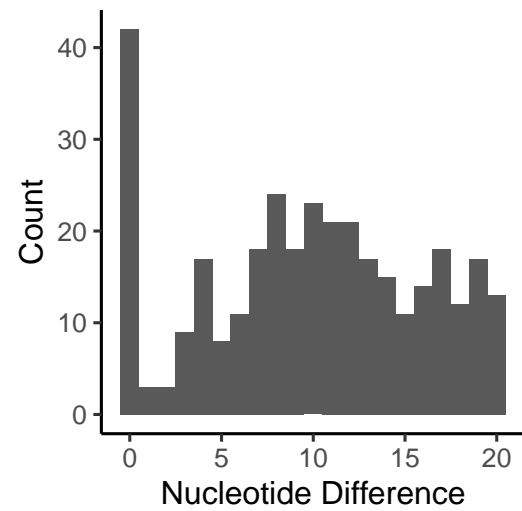
### IGHV1-3\*01\_05

446 sequences assigned  
44 (9.9%) exact matches, in which:  
44 unique CDR3  
5 unique J



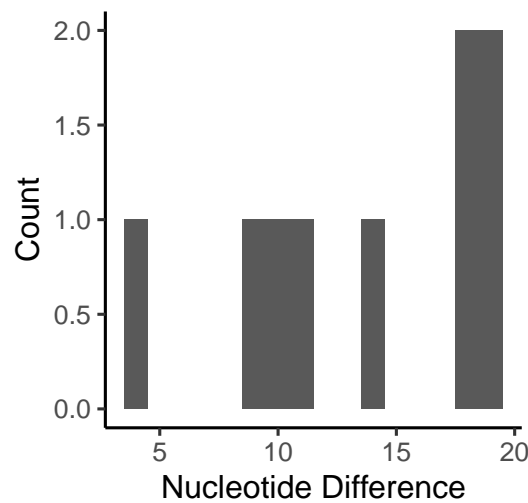
### IGHV1-18\*04

420 sequences assigned  
42 (10%) exact matches, in which:  
42 unique CDR3  
5 unique J



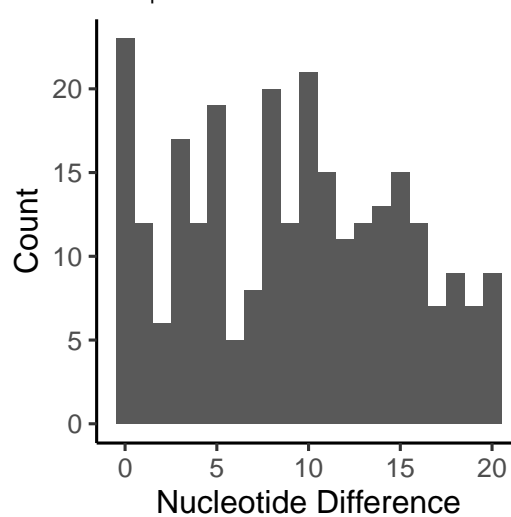
### IGHV1-2\*06

21 sequences assigned  
No exact matches.



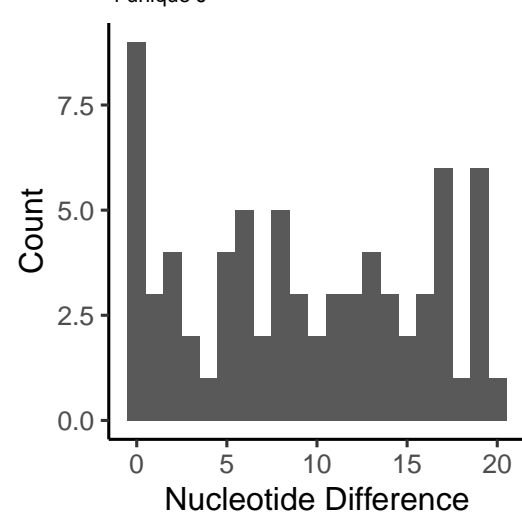
### IGHV1-8\*01

319 sequences assigned  
23 (7.2%) exact matches, in which:  
23 unique CDR3  
5 unique J



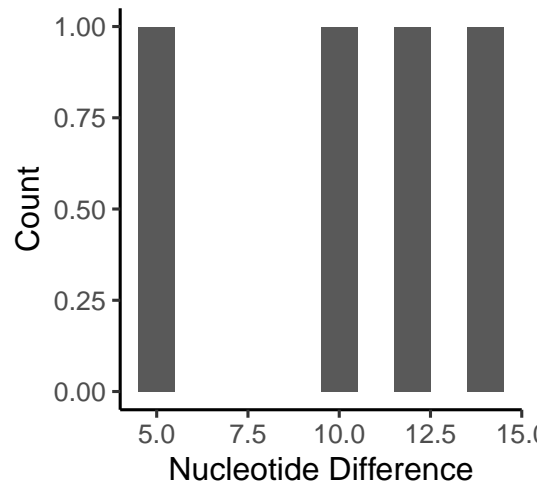
### IGHV1-24\*01

92 sequences assigned  
9 (9.8%) exact matches, in which:  
9 unique CDR3  
4 unique J



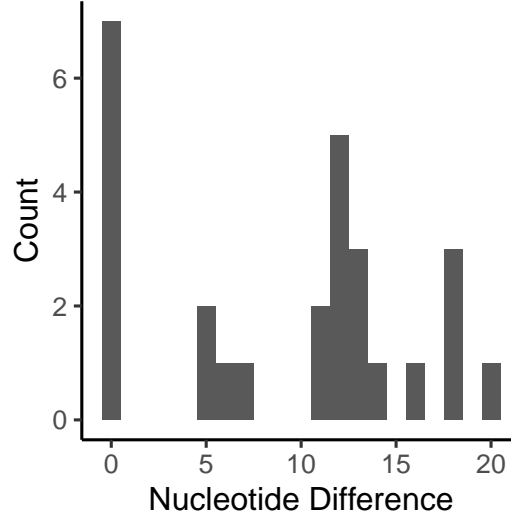
### IGHV1-45\*02

4 sequences assigned  
No exact matches.



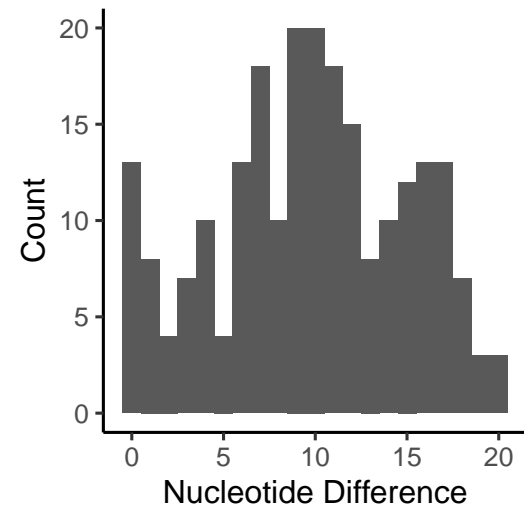
### IGHV1-58\*01\_03

34 sequences assigned  
7 (20.6%) exact matches, in which:  
7 unique CDR3  
2 unique J



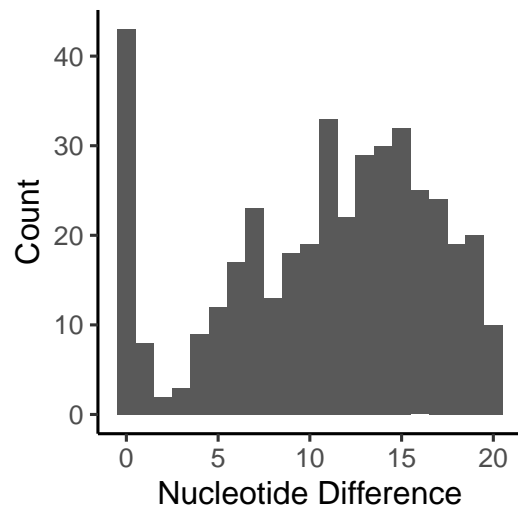
### IGHV2-5\*02

261 sequences assigned  
13 (5%) exact matches, in which:  
13 unique CDR3  
3 unique J



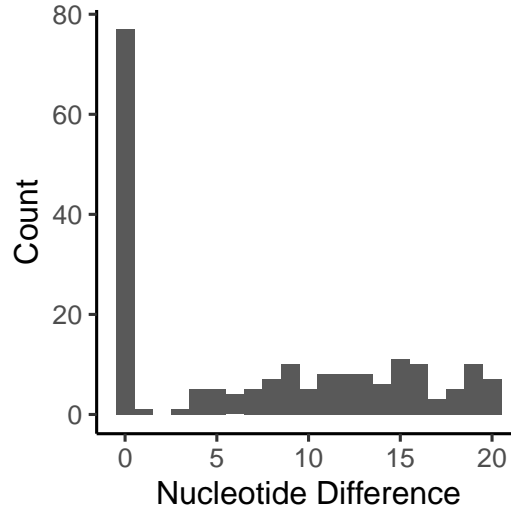
### IGHV1-46\*01

579 sequences assigned  
43 (7.4%) exact matches, in which:  
42 unique CDR3  
5 unique J



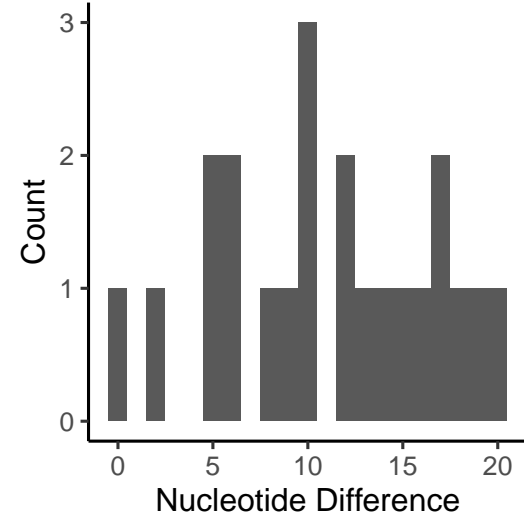
### IGHV1-69\*01\_12\_13

256 sequences assigned  
77 (30.1%) exact matches, in which:  
77 unique CDR3  
6 unique J



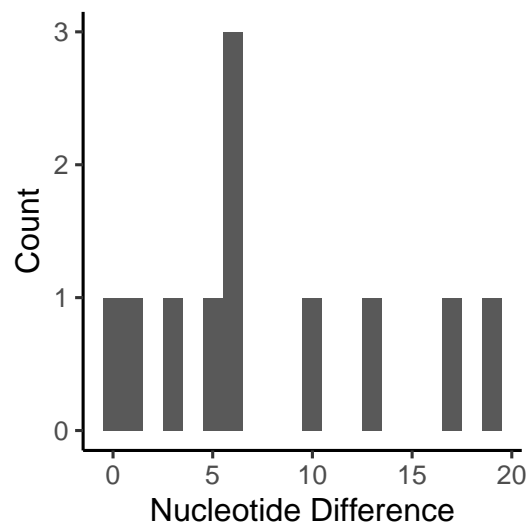
### IGHV2-26\*01

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



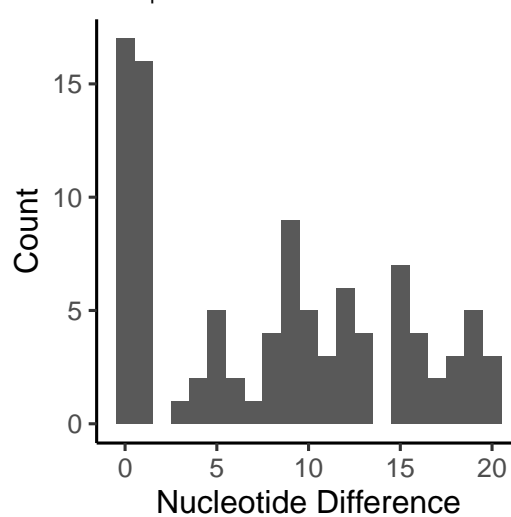
### IGHV1-58\*02

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



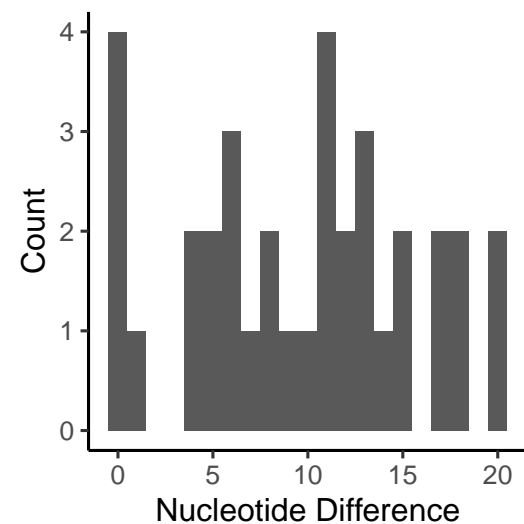
### IGHV1-69\*10

146 sequences assigned  
17 (11.6%) exact matches, in which:  
16 unique CDR3  
5 unique J



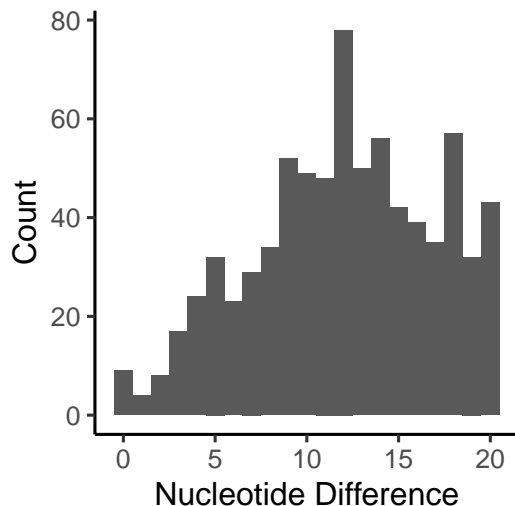
### IGHV2-70\*01

41 sequences assigned  
4 (9.8%) exact matches, in which:  
4 unique CDR3  
3 unique J



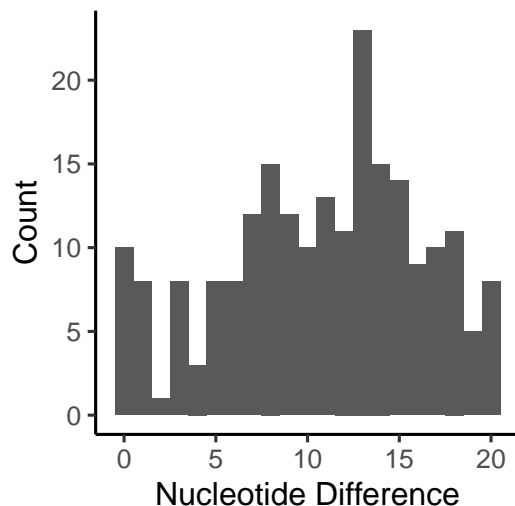
### IGHV3-7\*01

1030 sequences assigned  
9 (0.9%) exact matches, in which:  
9 unique CDR3  
5 unique J



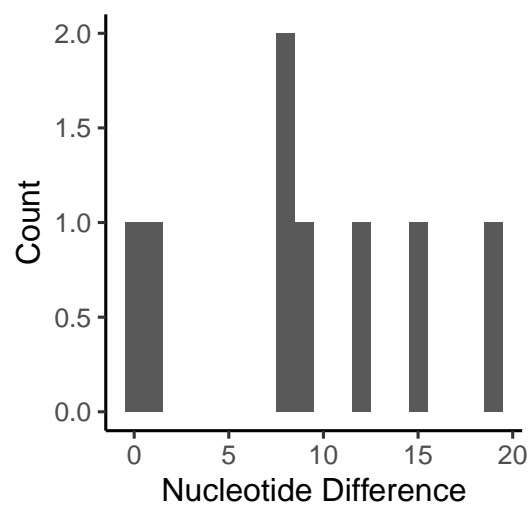
### IGHV3-11\*01

297 sequences assigned  
10 (3.4%) exact matches, in which:  
10 unique CDR3  
3 unique J



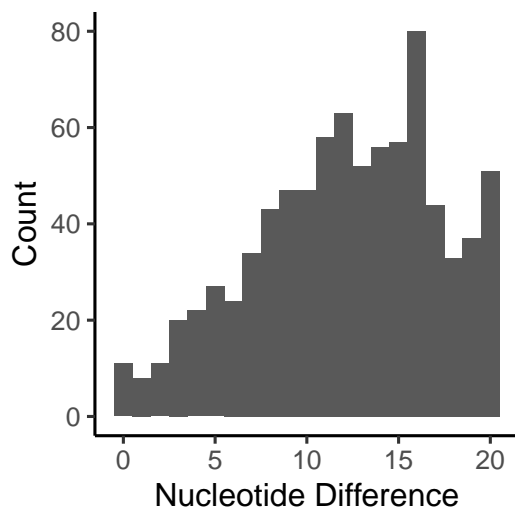
### IGHV3-13\*05

8 sequences assigned  
1 (12.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



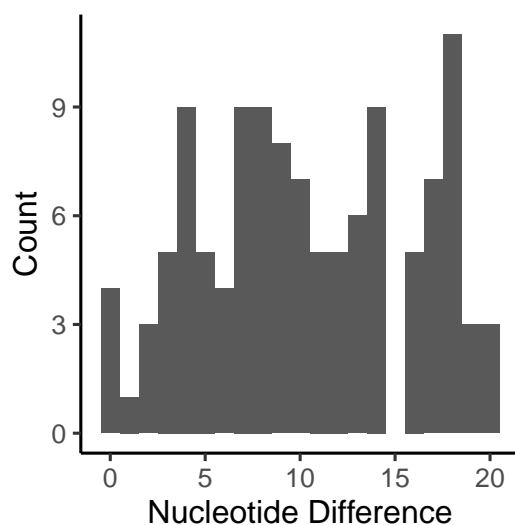
### IGHV3-7\*03

1047 sequences assigned  
11 (1.1%) exact matches, in which:  
10 unique CDR3  
3 unique J



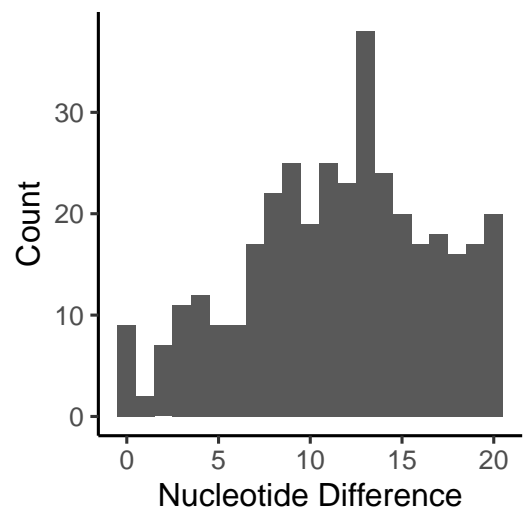
### IGHV3-11\*06

150 sequences assigned  
4 (2.7%) exact matches, in which:  
4 unique CDR3  
1 unique J



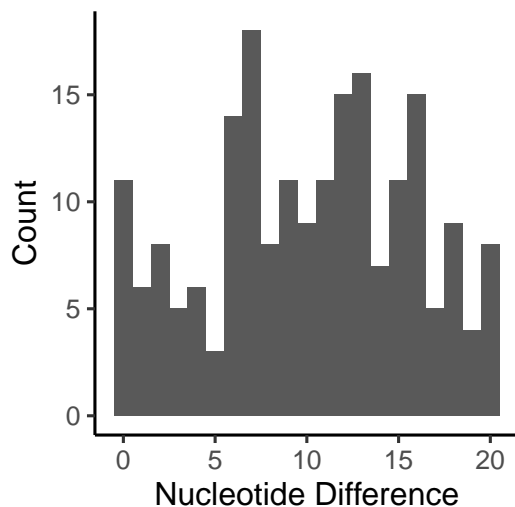
### IGHV3-15\*01\_02

491 sequences assigned  
9 (1.8%) exact matches, in which:  
9 unique CDR3  
4 unique J



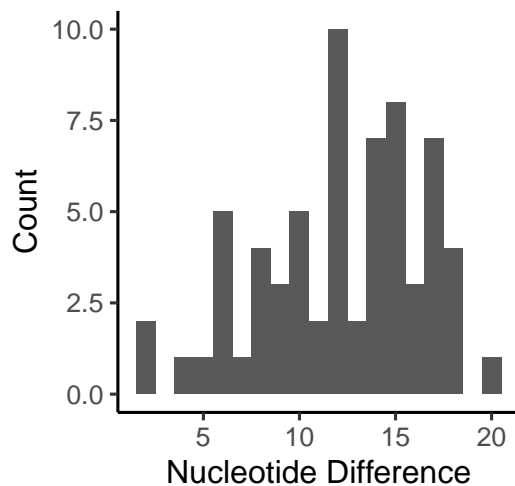
### IGHV3-9\*01

236 sequences assigned  
11 (4.7%) exact matches, in which:  
11 unique CDR3  
3 unique J



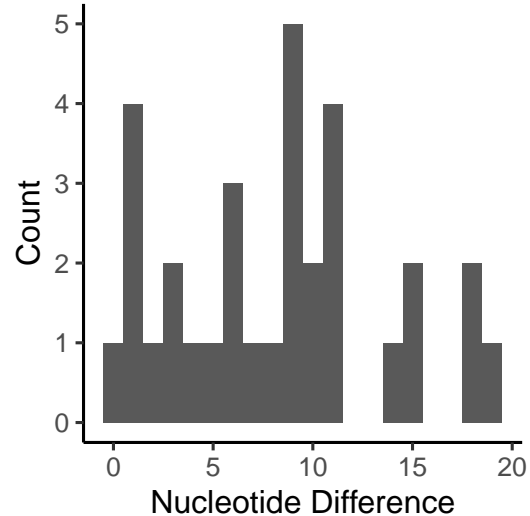
### IGHV3-13\*01

83 sequences assigned  
No exact matches.



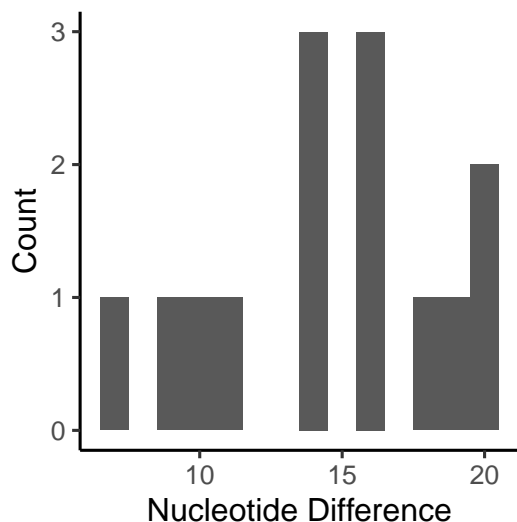
### IGHV3-20\*01\_02

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



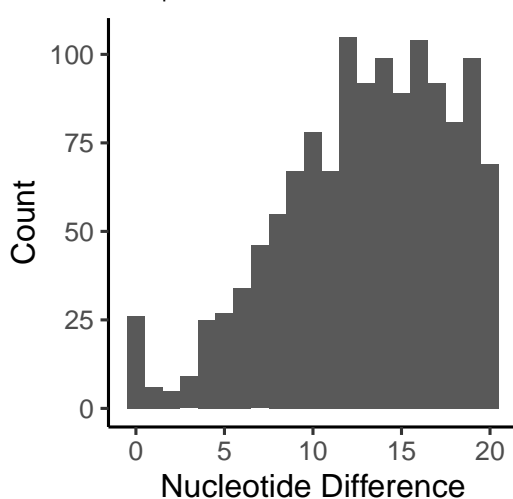
### IGHV3-20\*03\_04

22 sequences assigned  
No exact matches.



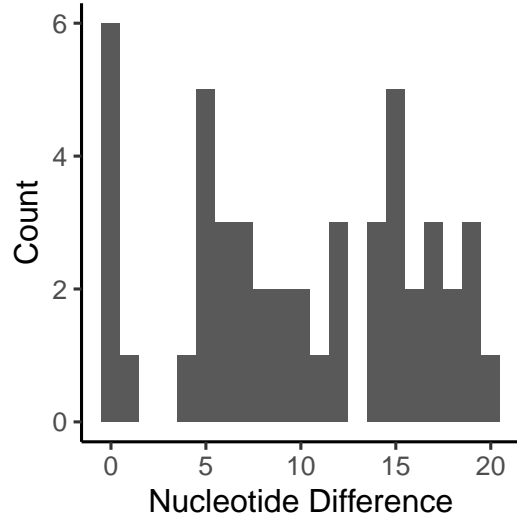
### IGHV3-23\*01\_04

1816 sequences assigned  
26 (1.4%) exact matches, in which:  
26 unique CDR3  
6 unique J



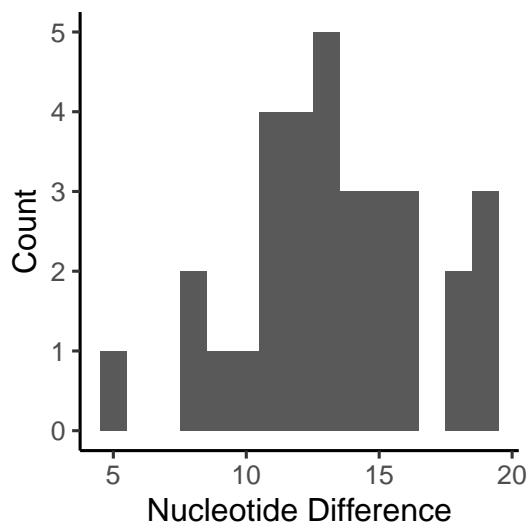
### IGHV3-43\*01

70 sequences assigned  
6 (8.6%) exact matches, in which:  
6 unique CDR3  
3 unique J



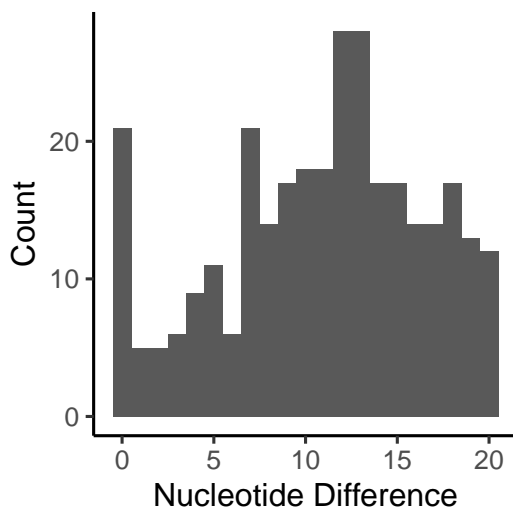
### IGHV3-21\*06

61 sequences assigned  
No exact matches.



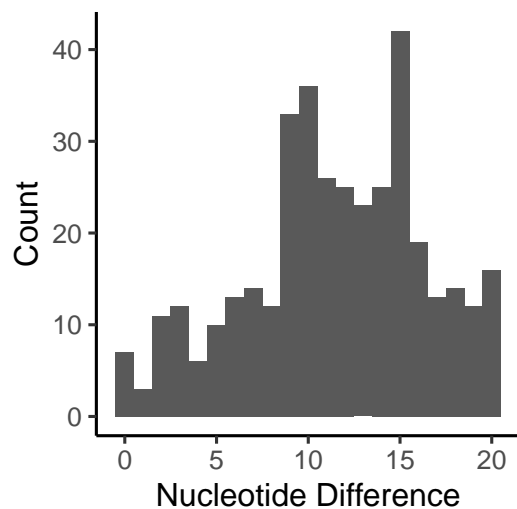
### IGHV3-30-3\*01

424 sequences assigned  
21 (5%) exact matches, in which:  
21 unique CDR3  
3 unique J



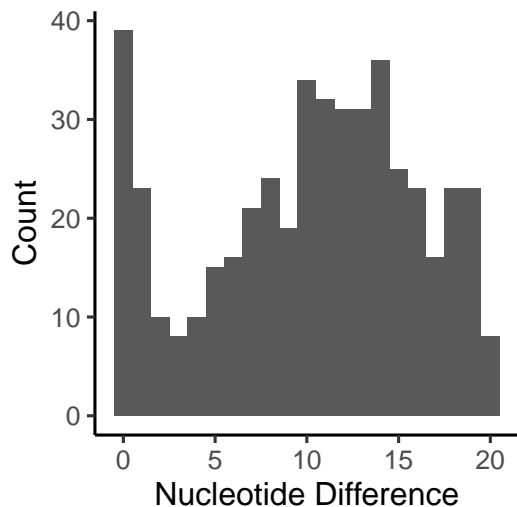
### IGHV3-48\*02

459 sequences assigned  
7 (1.5%) exact matches, in which:  
6 unique CDR3  
3 unique J



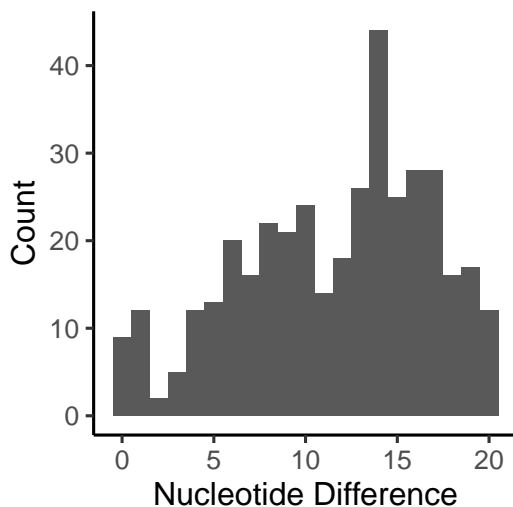
### IGHV3-21\*01\_02

561 sequences assigned  
39 (7%) exact matches, in which:  
34 unique CDR3  
6 unique J



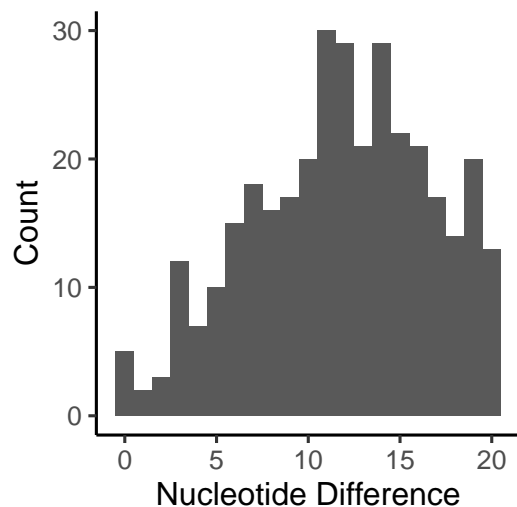
### IGHV3-33\*01

489 sequences assigned  
9 (1.8%) exact matches, in which:  
8 unique CDR3  
3 unique J



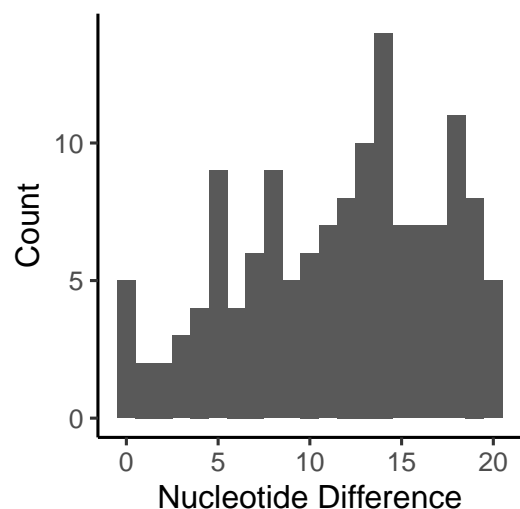
### IGHV3-48\*04

465 sequences assigned  
5 (1.1%) exact matches, in which:  
5 unique CDR3  
3 unique J



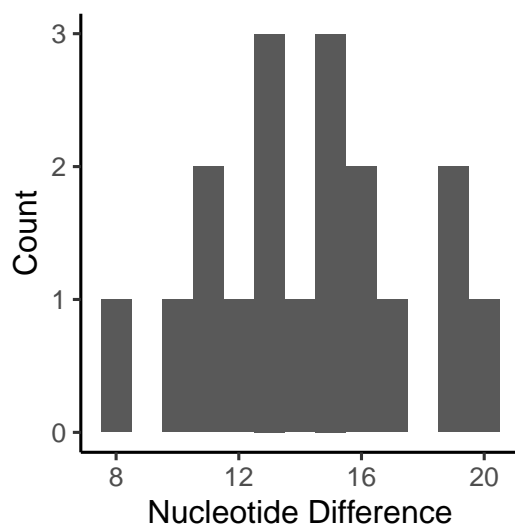
### IGHV3-49\*03\_05

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



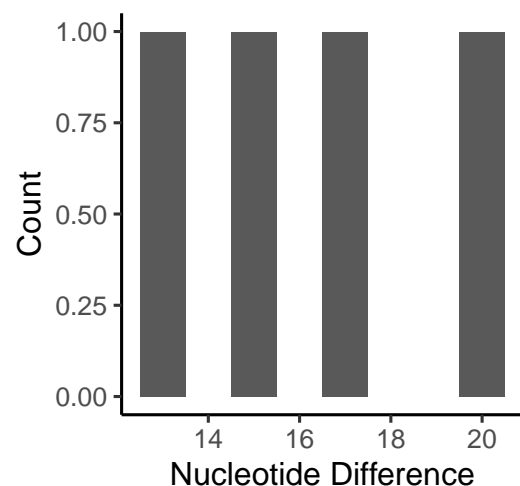
### IGHV3-64\*02\_07

37 sequences assigned  
No exact matches.



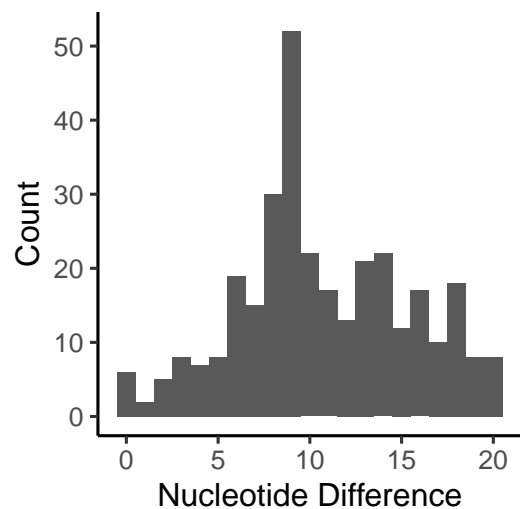
### IGHV3-69-1\*01

12 sequences assigned  
No exact matches.



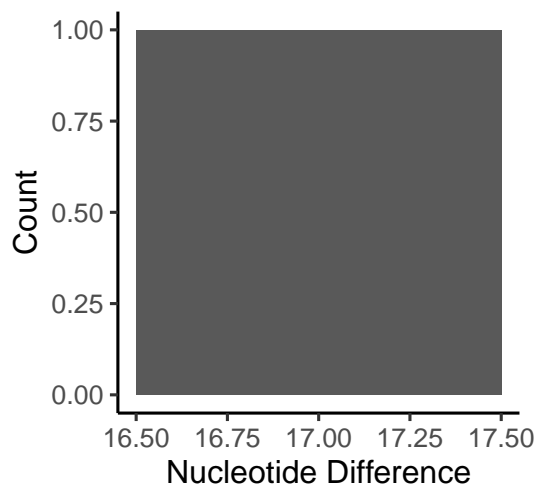
### IGHV3-53\*01\_02

418 sequences assigned  
6 (1.4%) exact matches, in which:  
6 unique CDR3  
3 unique J



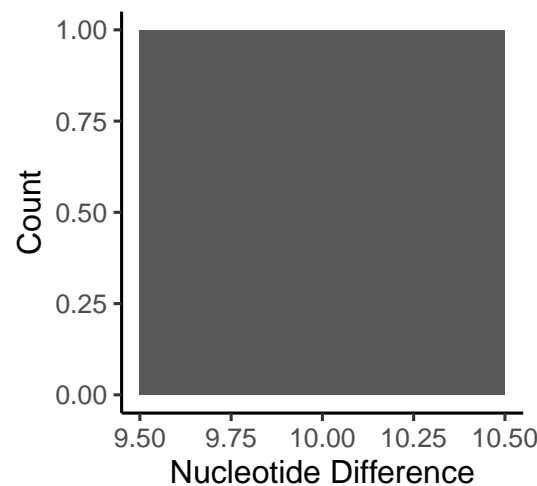
### IGHV3-66\*02

3 sequences assigned  
No exact matches.



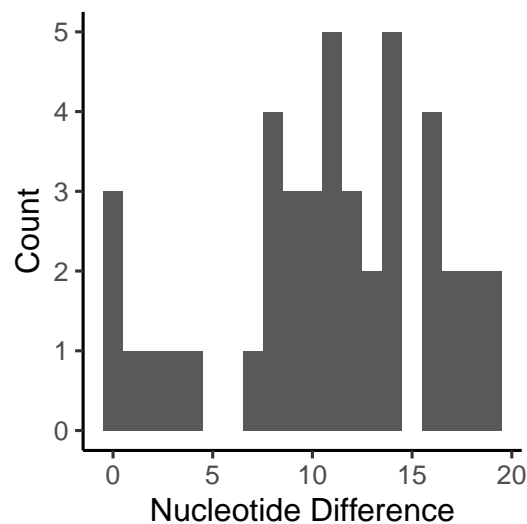
### IGHV3-69-1\*02

3 sequences assigned  
No exact matches.



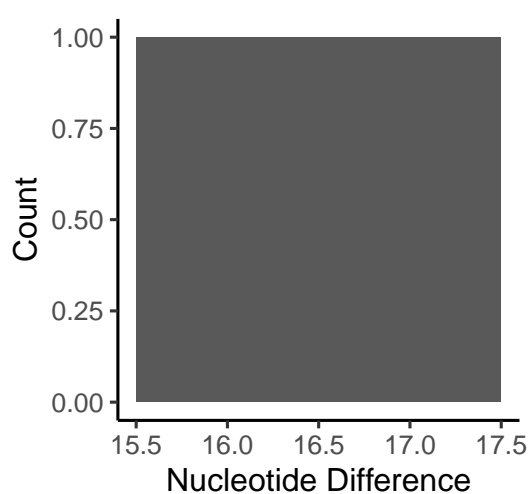
### IGHV3-64\*01

56 sequences assigned  
3 (5.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



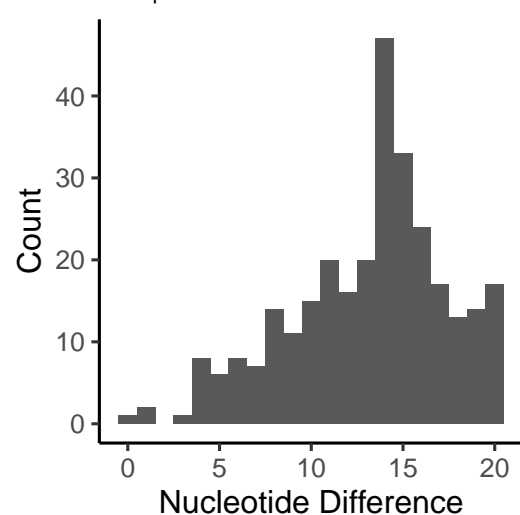
### IGHV3-66\*04

2 sequences assigned  
No exact matches.



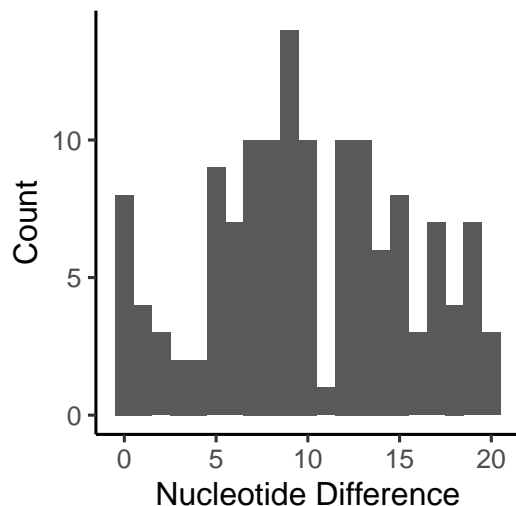
### IGHV3-72\*01

366 sequences assigned  
1 (0.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



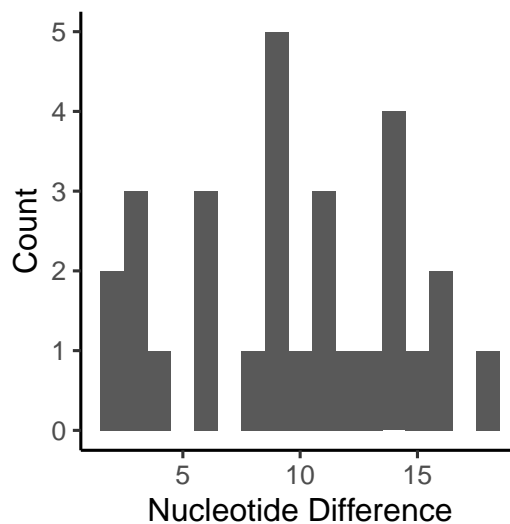
### IGHV3-73\*01\_02

152 sequences assigned  
8 (5.3%) exact matches, in which:  
8 unique CDR3  
4 unique J



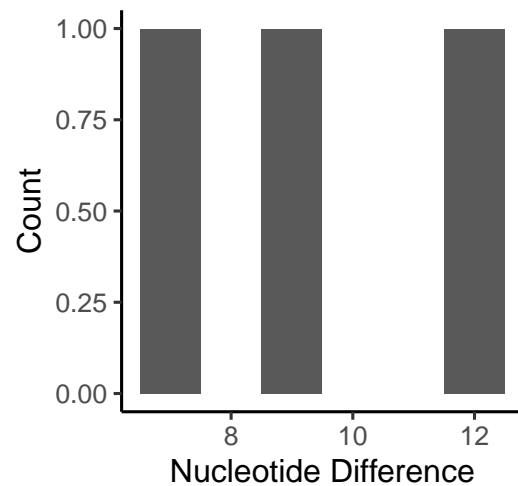
### IGHV3-43D\*03

33 sequences assigned  
No exact matches.



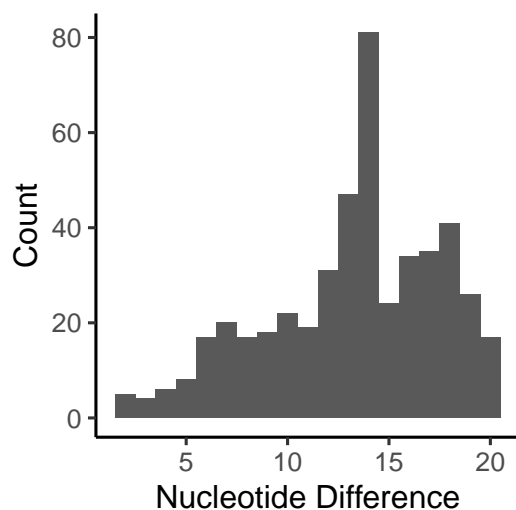
### IGHV4-28\*01\_07

3 sequences assigned  
No exact matches.



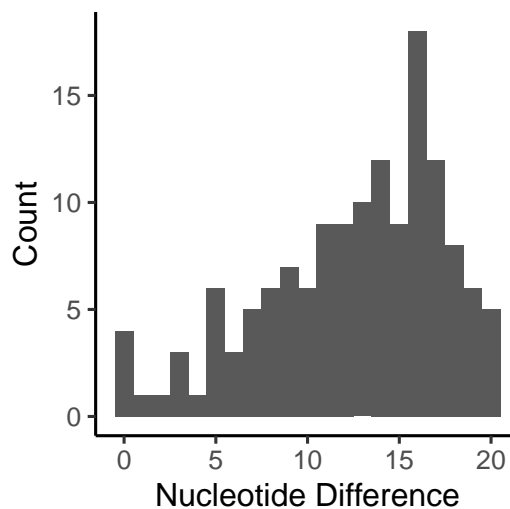
### IGHV3-74\*03

621 sequences assigned  
No exact matches.



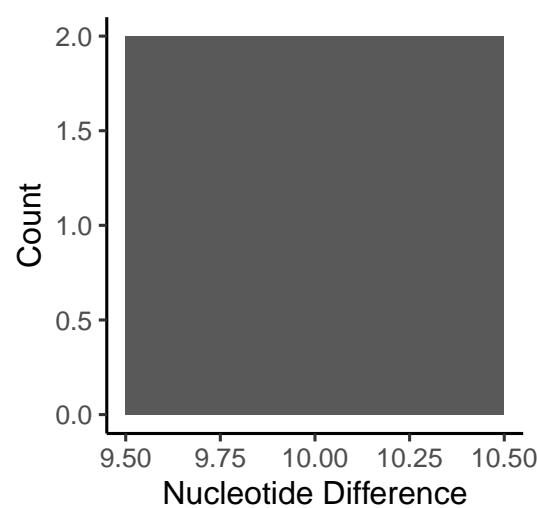
### IGHV3-64D\*06

195 sequences assigned  
4 (2.1%) exact matches, in which:  
4 unique CDR3  
2 unique J



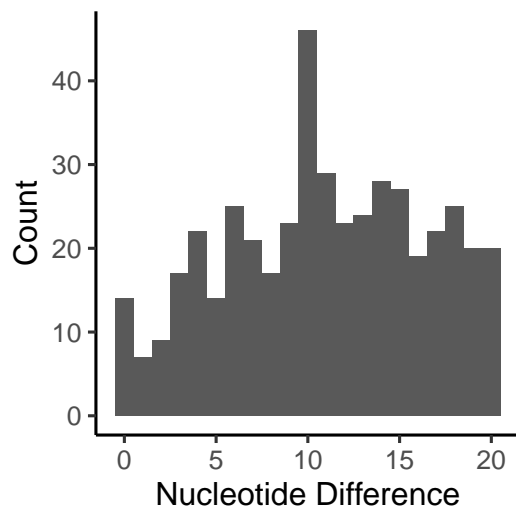
### IGHV4-28\*02\_05

2 sequences assigned  
No exact matches.



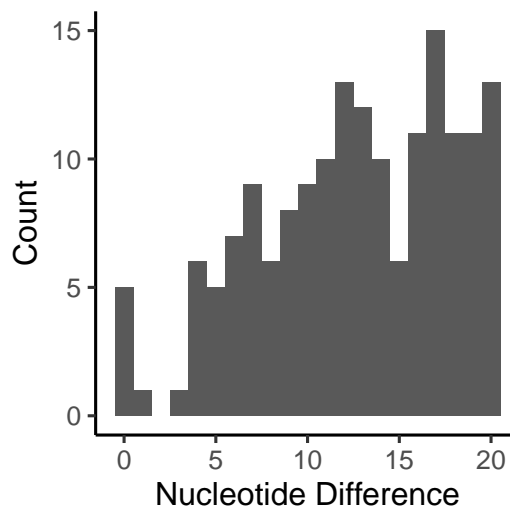
### IGHV3-74\*01\_02

513 sequences assigned  
14 (2.7%) exact matches, in which:  
14 unique CDR3  
3 unique J



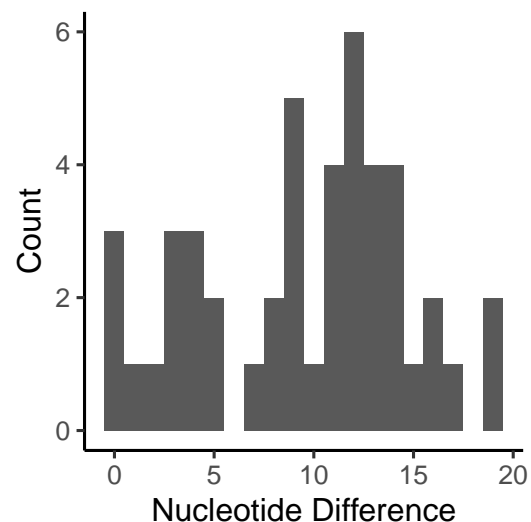
### IGHV4-4\*02\_03

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



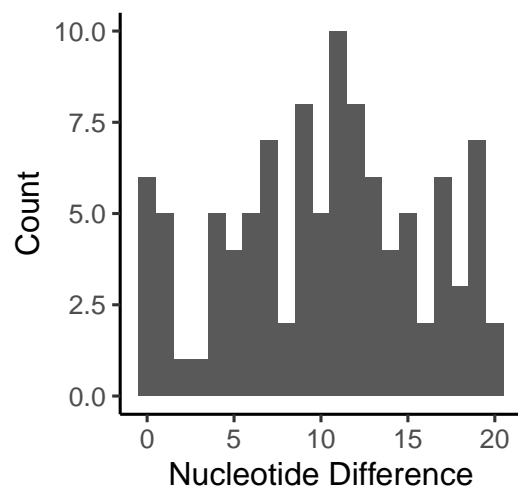
### IGHV4-30-2\*01

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



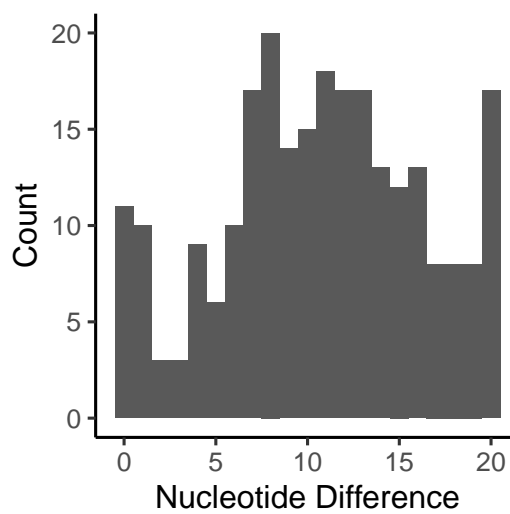
### IGHV4-30-4\*01

133 sequences assigned  
6 (4.5%) exact matches, in which:  
6 unique CDR3  
3 unique J



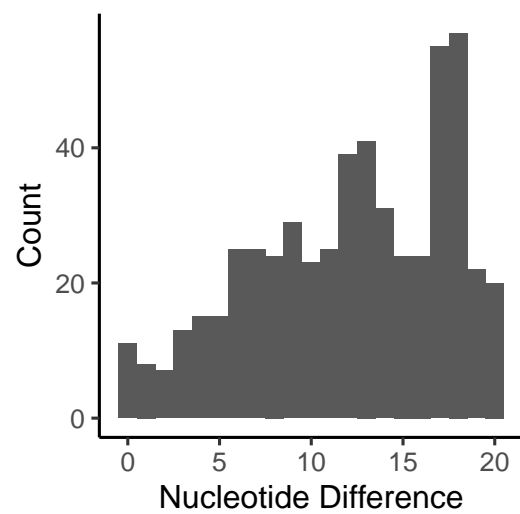
### IGHV4-38-2\*02

368 sequences assigned  
11 (3%) exact matches, in which:  
11 unique CDR3  
5 unique J



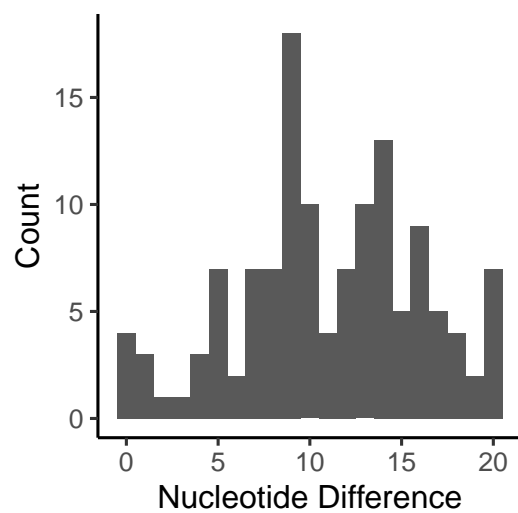
### IGHV4-59\*08

743 sequences assigned  
11 (1.5%) exact matches, in which:  
11 unique CDR3  
4 unique J



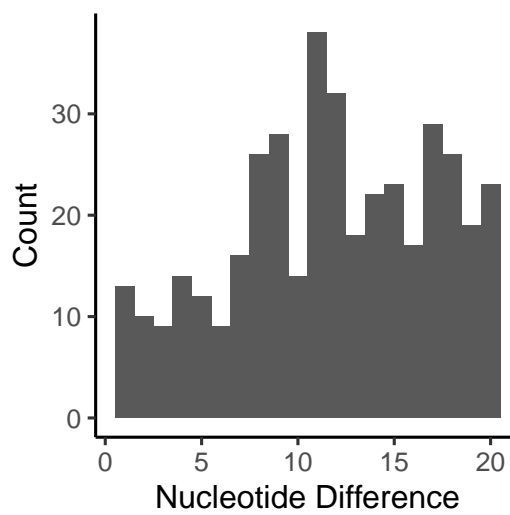
### IGHV4-31\*02

168 sequences assigned  
4 (2.4%) exact matches, in which:  
4 unique CDR3  
4 unique J



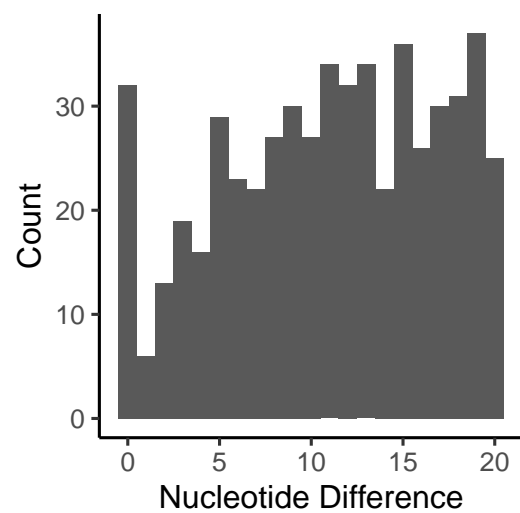
### IGHV4-39\*02

643 sequences assigned  
No exact matches.



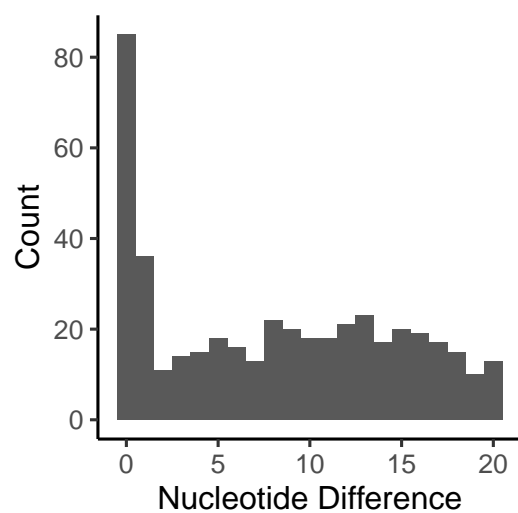
### IGHV4-59\*01\_07

712 sequences assigned  
32 (4.5%) exact matches, in which:  
32 unique CDR3  
6 unique J



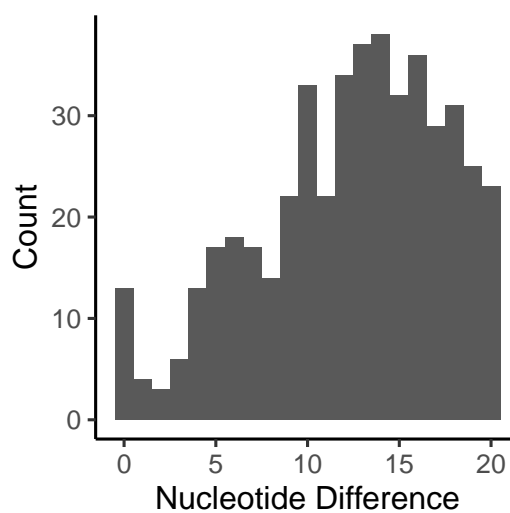
### IGHV4-34\*01\_02

578 sequences assigned  
85 (14.7%) exact matches, in which:  
79 unique CDR3  
6 unique J



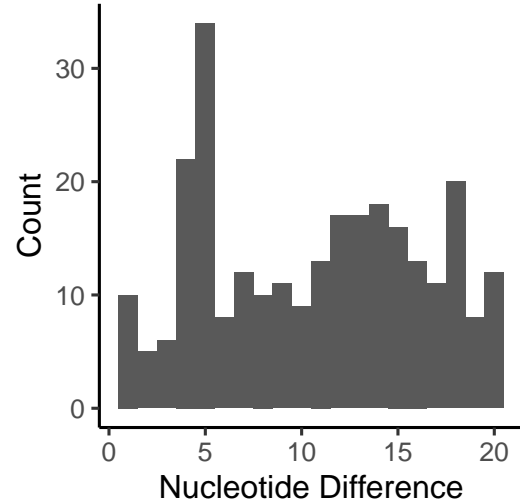
### IGHV4-39\*07

682 sequences assigned  
13 (1.9%) exact matches, in which:  
13 unique CDR3  
3 unique J



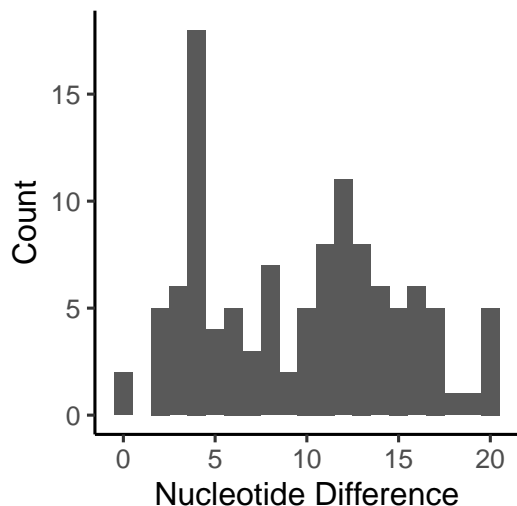
### IGHV4-59\*11

374 sequences assigned  
No exact matches.



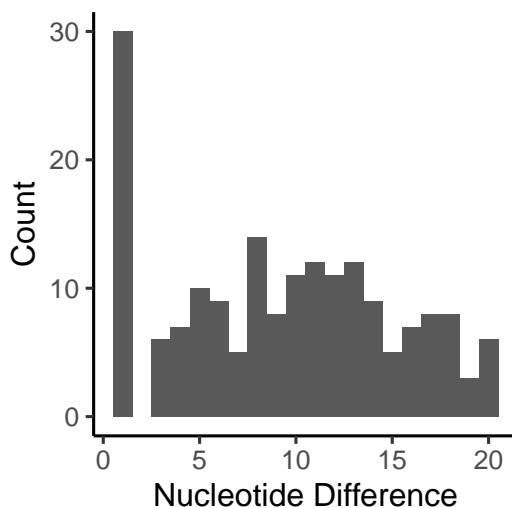
### IGHV4-61\*01

147 sequences assigned  
2 (1.4%) exact matches, in which:  
2 unique CDR3  
2 unique J



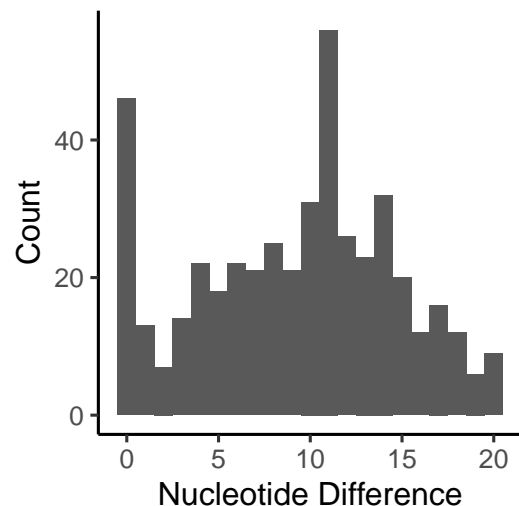
### IGHV5-51\*07

205 sequences assigned  
No exact matches.



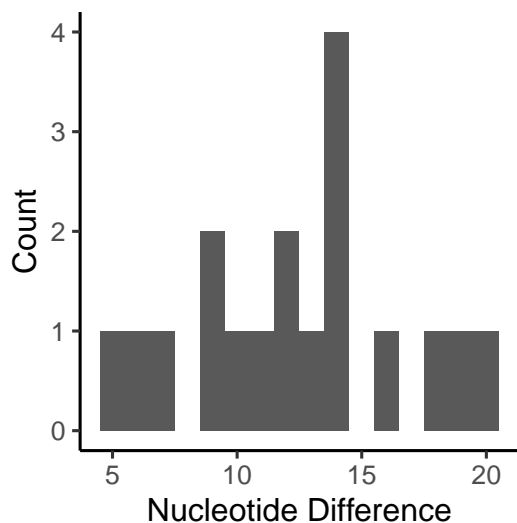
### IGHV7-4-1\*02\_T63C

532 sequences assigned  
46 (8.6%) exact matches, in which:  
46 unique CDR3  
6 unique J



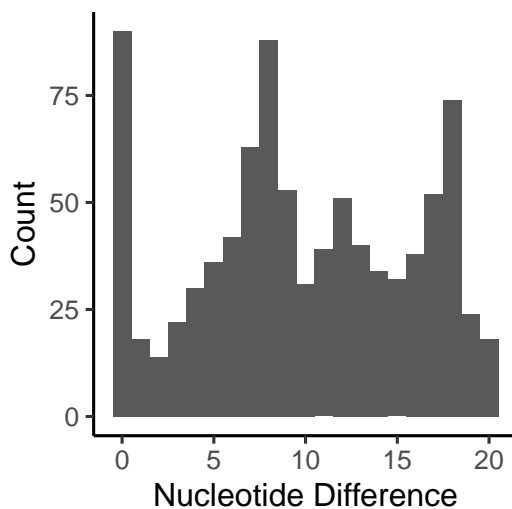
### IGHV4-61\*08

40 sequences assigned  
No exact matches.



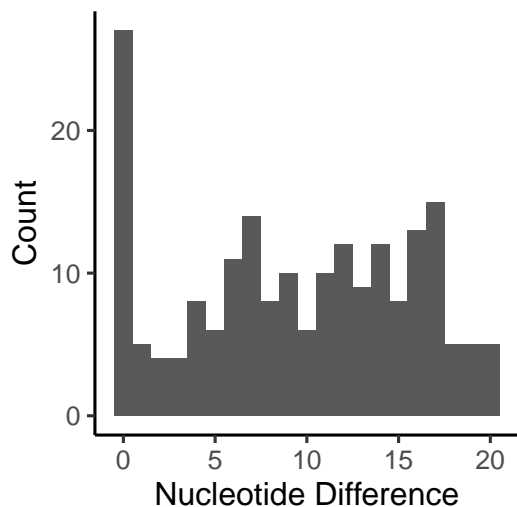
### IGHV5-51\*01\_03

1042 sequences assigned  
90 (8.6%) exact matches, in which:  
89 unique CDR3  
6 unique J



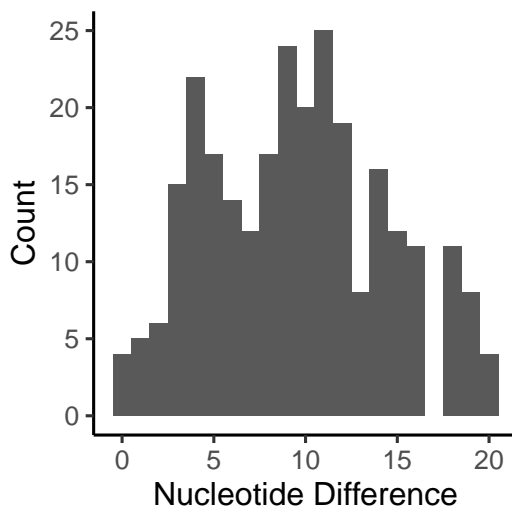
### IGHV5-10-1\*01\_03

233 sequences assigned  
27 (11.6%) exact matches, in which:  
27 unique CDR3  
5 unique J

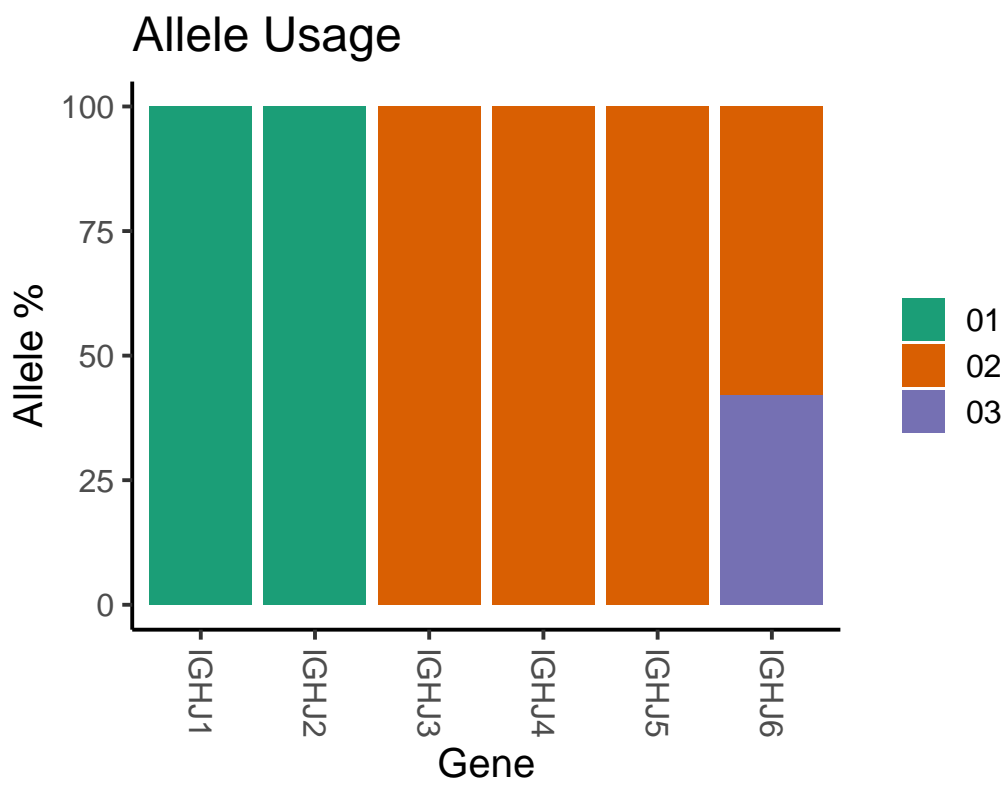


### IGHV6-1\*01\_02

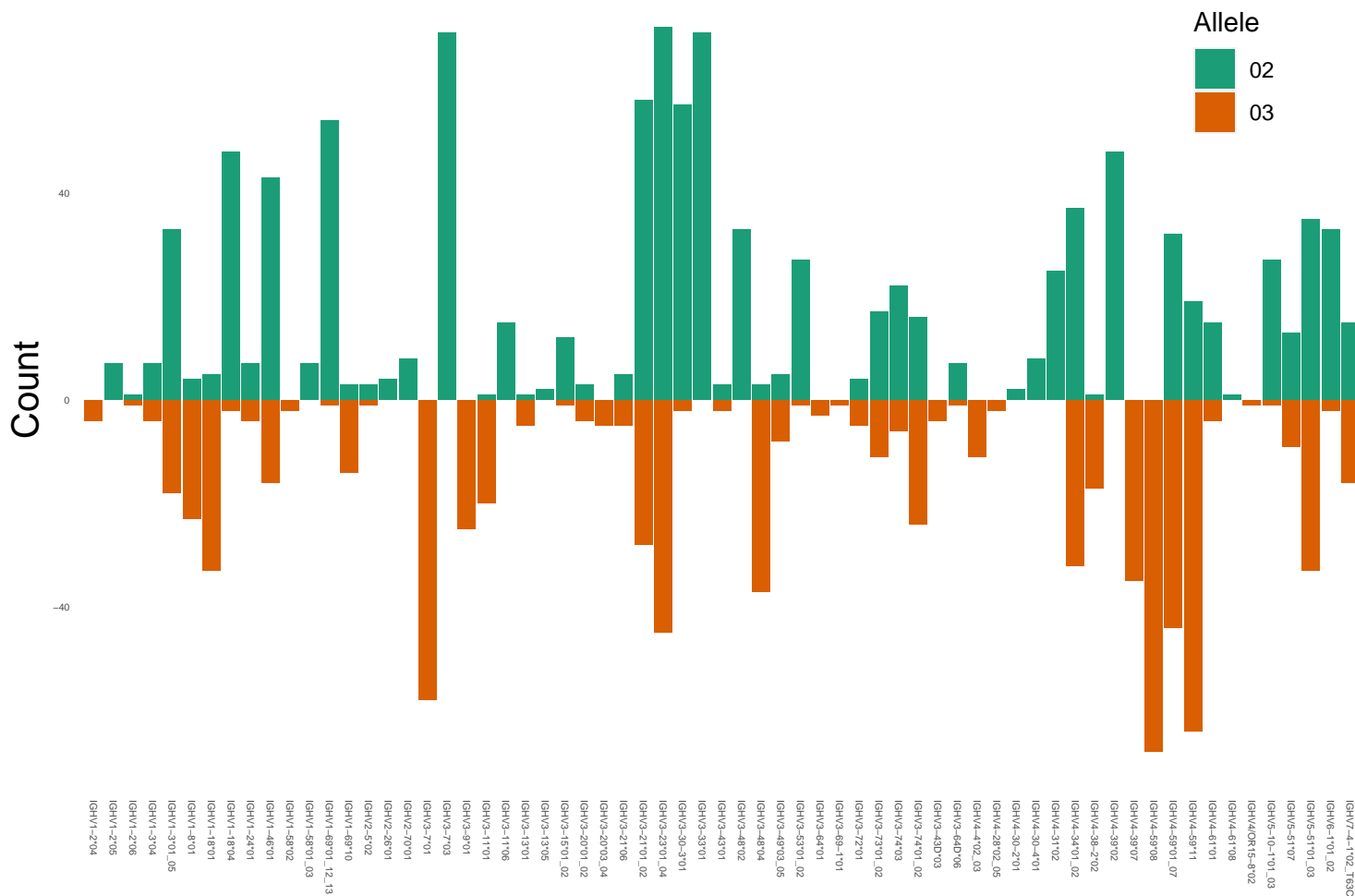
281 sequences assigned  
4 (1.4%) exact matches, in which:  
4 unique CDR3  
2 unique J







Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.