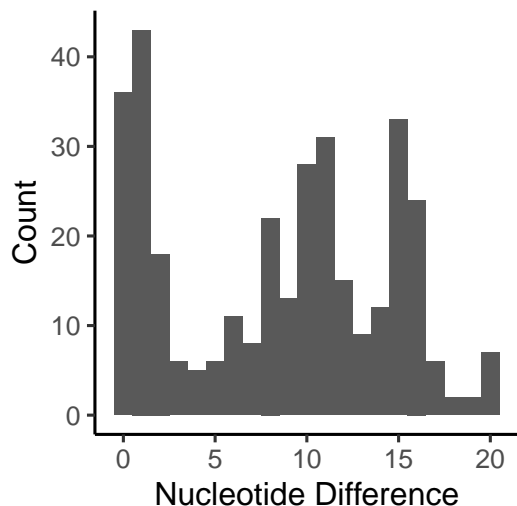


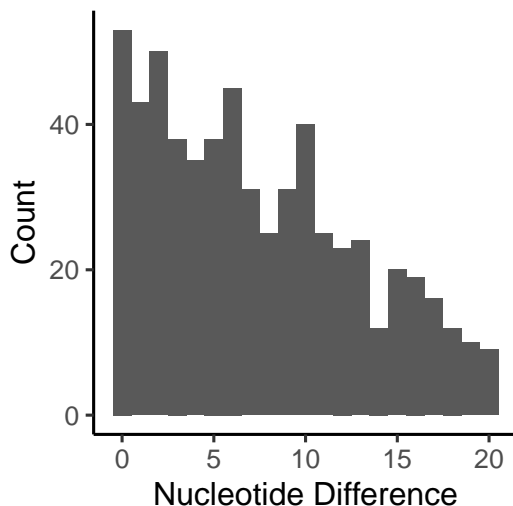
### IGHV1-2\*04

508 sequences assigned  
36 (7.1%) exact matches, in which:  
28 unique CDR3  
5 unique J



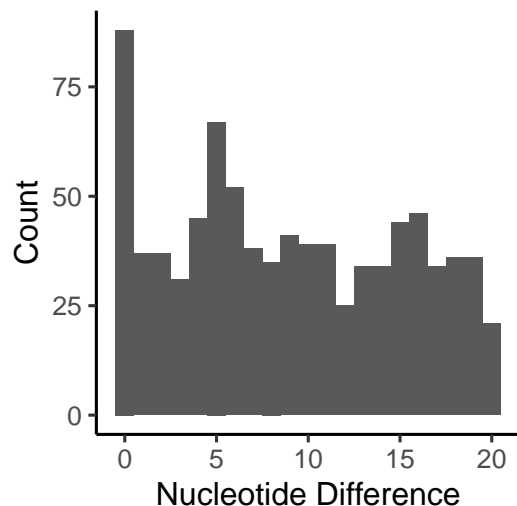
### IGHV1-8\*01

939 sequences assigned  
53 (5.6%) exact matches, in which:  
50 unique CDR3  
6 unique J



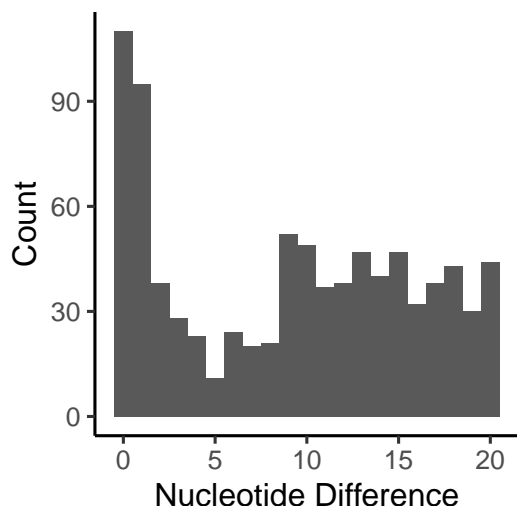
### IGHV1-46\*01

1480 sequences assigned  
88 (5.9%) exact matches, in which:  
83 unique CDR3  
6 unique J



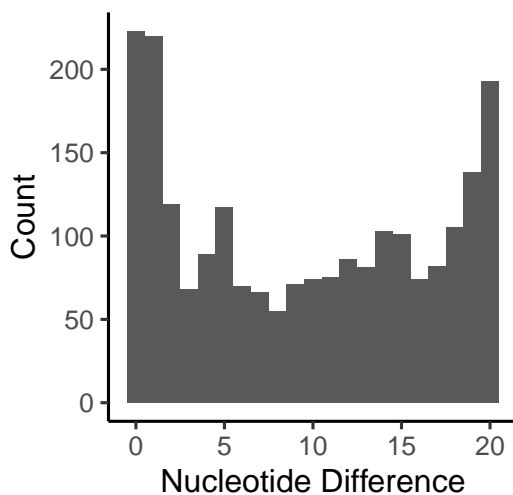
### IGHV1-3\*01

1337 sequences assigned  
110 (8.2%) exact matches, in which:  
101 unique CDR3  
6 unique J



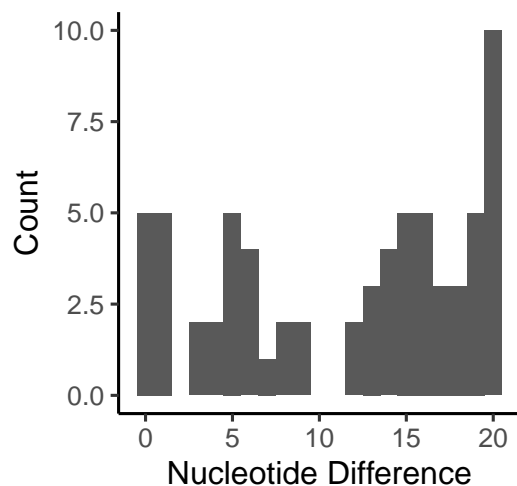
### IGHV1-18\*01

5097 sequences assigned  
223 (4.4%) exact matches, in which:  
197 unique CDR3  
7 unique J



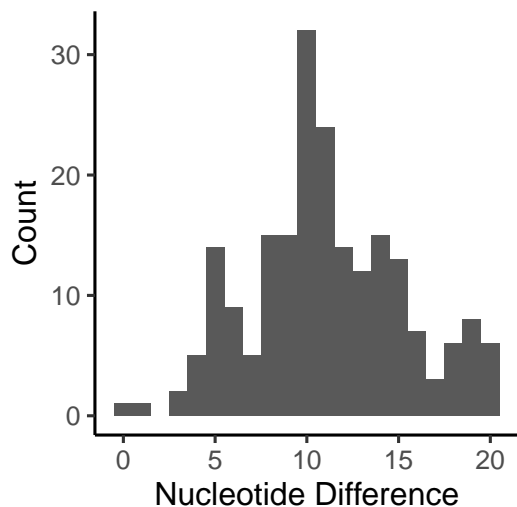
### IGHV1-58\*01

90 sequences assigned  
5 (5.6%) exact matches, in which:  
5 unique CDR3  
3 unique J



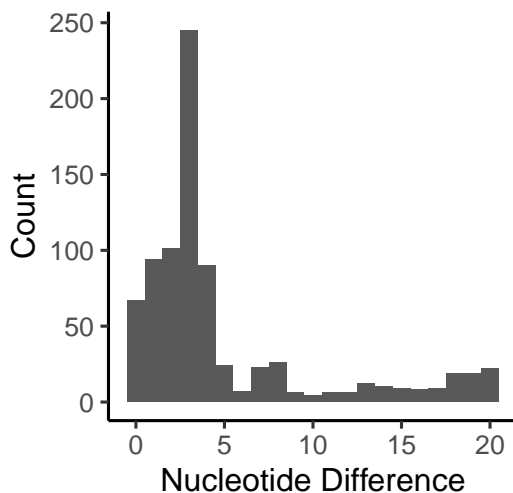
### IGHV1-3\*04

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



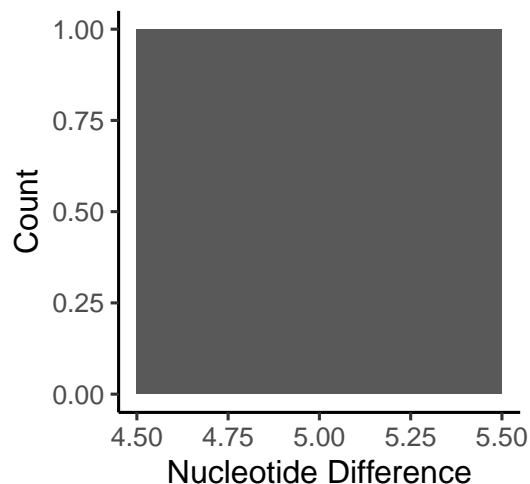
### IGHV1-24\*01

957 sequences assigned  
67 (7%) exact matches, in which:  
61 unique CDR3  
7 unique J



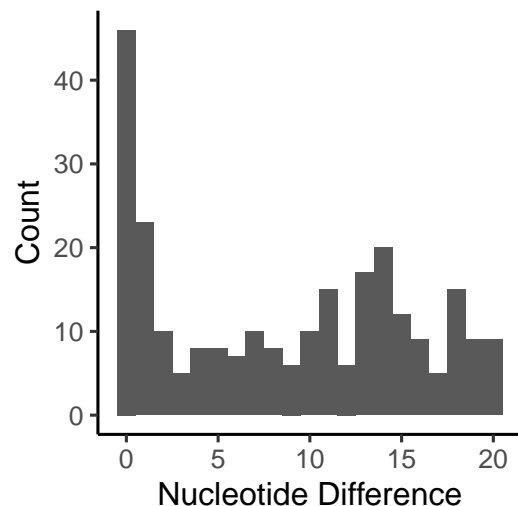
### IGHV1-68\*02

1 sequences assigned  
No exact matches.



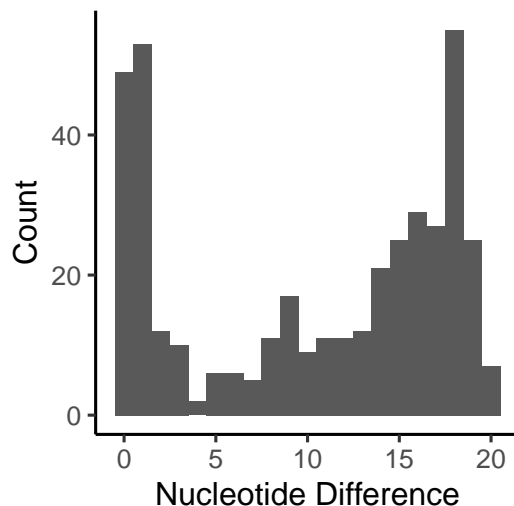
### IGHV1-69\*01

868 sequences assigned  
46 (5.3%) exact matches, in which:  
44 unique CDR3  
6 unique J



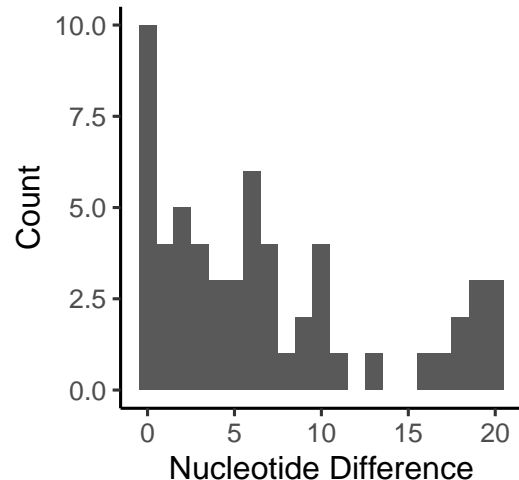
### IGHV1-69\*06

738 sequences assigned  
49 (6.6%) exact matches, in which:  
40 unique CDR3  
4 unique J



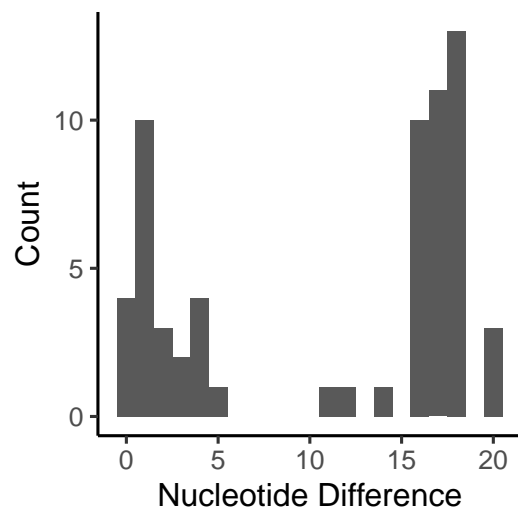
### IGHV2-70\*01

74 sequences assigned  
10 (13.5%) exact matches, in which:  
10 unique CDR3  
4 unique J



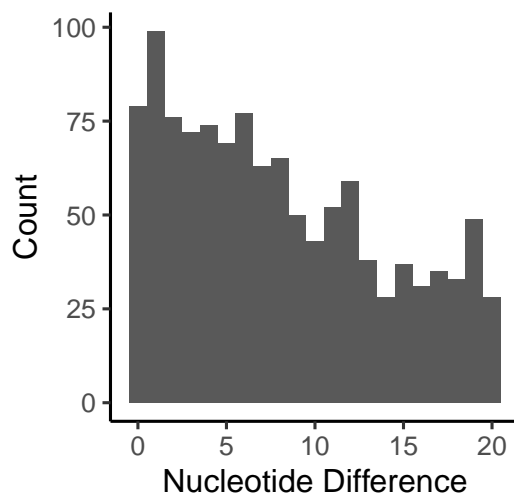
### IGHV1-69-2\*01

127 sequences assigned  
4 (3.1%) exact matches, in which:  
4 unique CDR3  
3 unique J



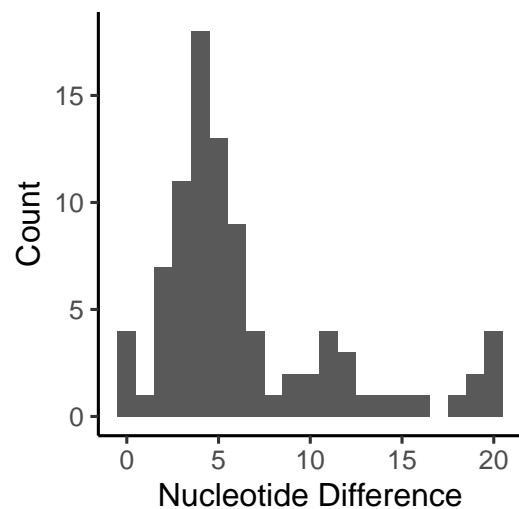
### IGHV2-5\*02

1368 sequences assigned  
79 (5.8%) exact matches, in which:  
74 unique CDR3  
5 unique J



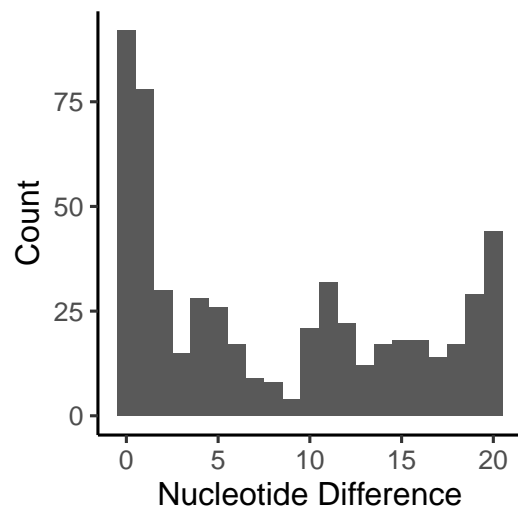
### IGHV2-70\*04

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



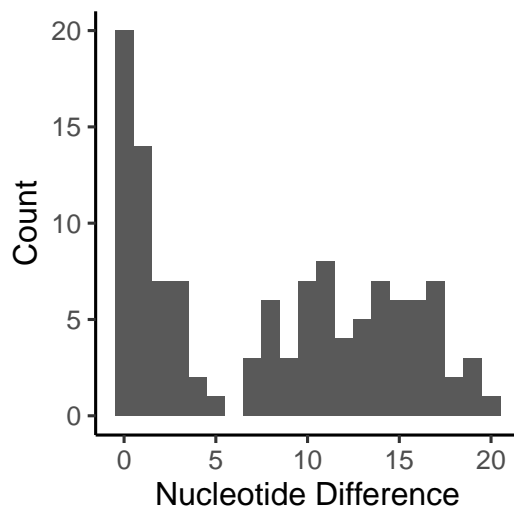
### IGHV1-69\*04

1228 sequences assigned  
92 (7.5%) exact matches, in which:  
89 unique CDR3  
6 unique J



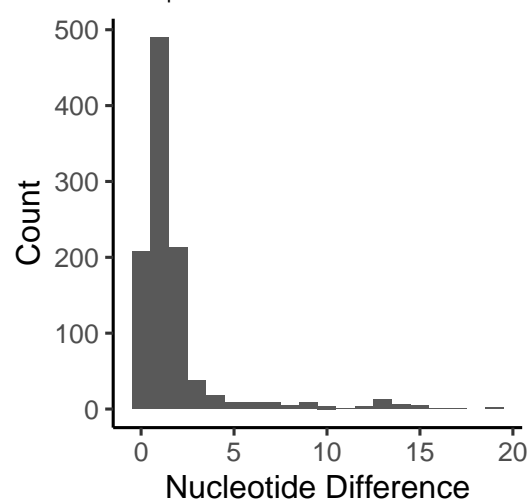
### IGHV2-26\*01

125 sequences assigned  
20 (16%) exact matches, in which:  
19 unique CDR3  
6 unique J



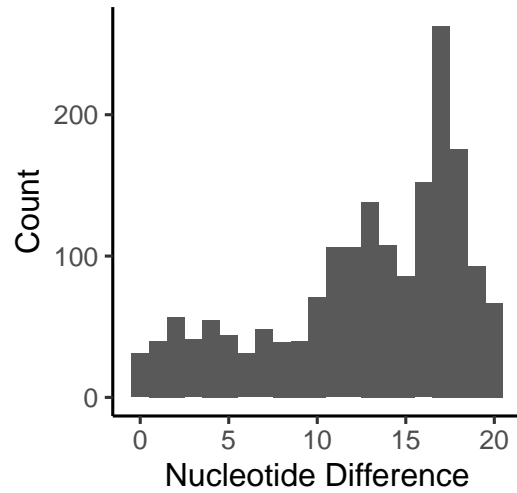
### IGHV2-70\*15

1067 sequences assigned  
208 (19.5%) exact matches, in which:  
77 unique CDR3  
4 unique J



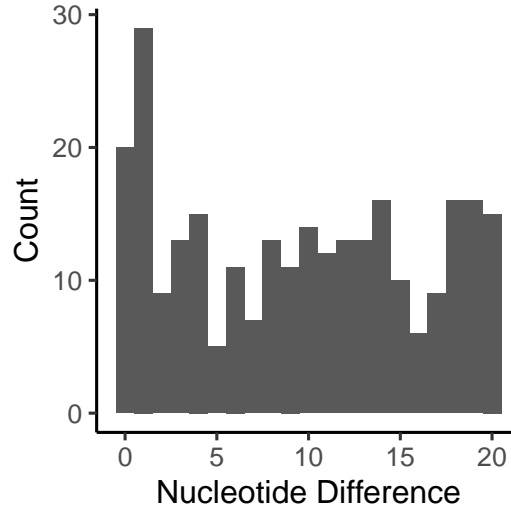
### IGHV3-7\*01

2141 sequences assigned  
31 (1.4%) exact matches, in which:  
31 unique CDR3  
5 unique J



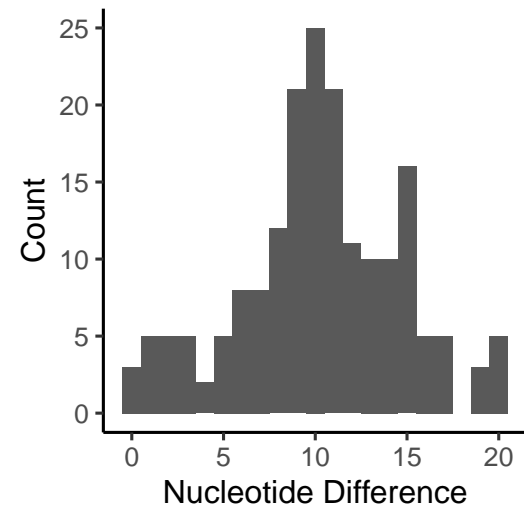
### IGHV3-11\*01

418 sequences assigned  
20 (4.8%) exact matches, in which:  
19 unique CDR3  
4 unique J



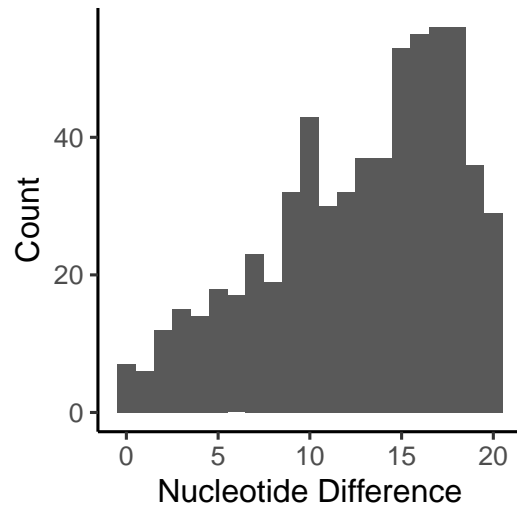
### IGHV3-15\*01

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



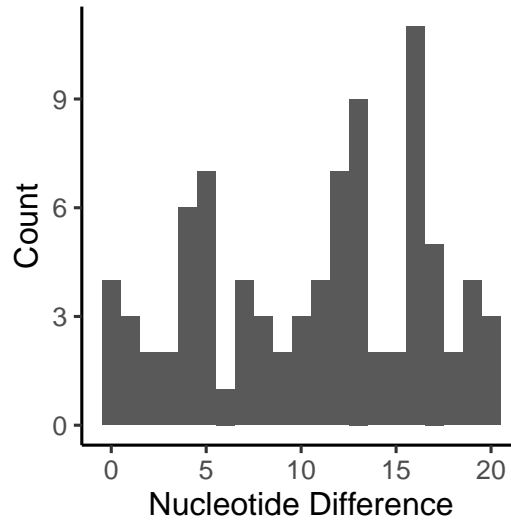
### IGHV3-7\*04

1083 sequences assigned  
7 (0.6%) exact matches, in which:  
7 unique CDR3  
3 unique J



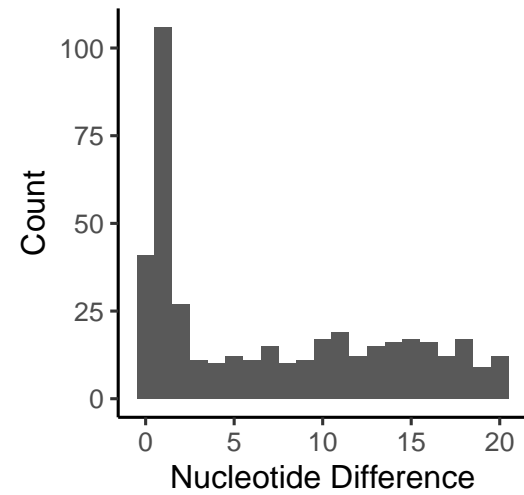
### IGHV3-11\*06

144 sequences assigned  
4 (2.8%) exact matches, in which:  
4 unique CDR3  
2 unique J



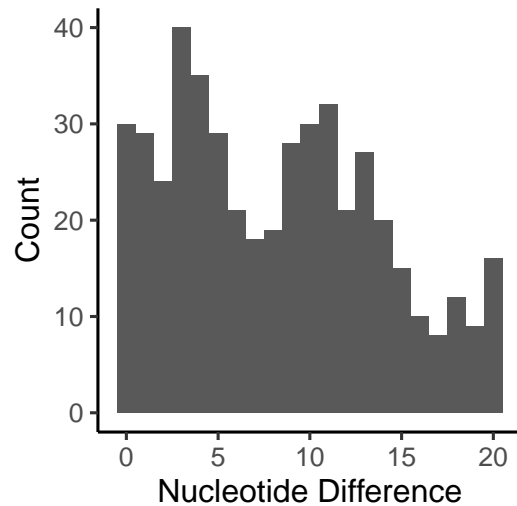
### IGHV3-15\*07

583 sequences assigned  
41 (7%) exact matches, in which:  
26 unique CDR3  
3 unique J



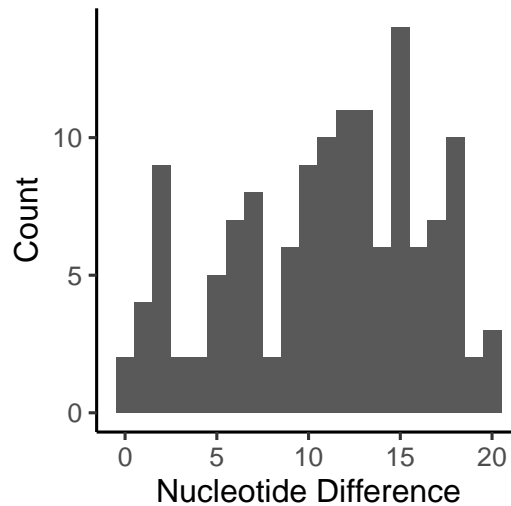
### IGHV3-9\*01

708 sequences assigned  
30 (4.2%) exact matches, in which:  
28 unique CDR3  
5 unique J



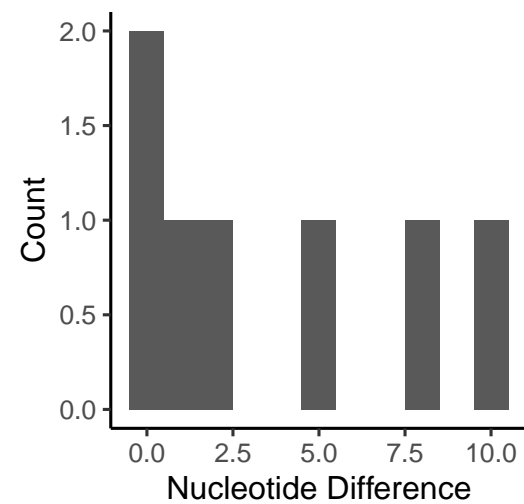
### IGHV3-13\*01

223 sequences assigned  
2 (0.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



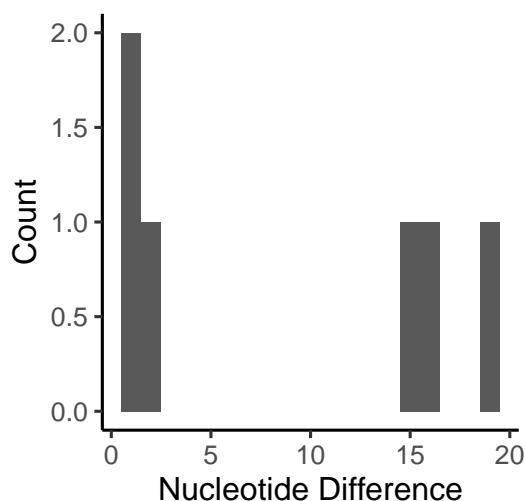
### IGHV3-20\*01

7 sequences assigned  
2 (28.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



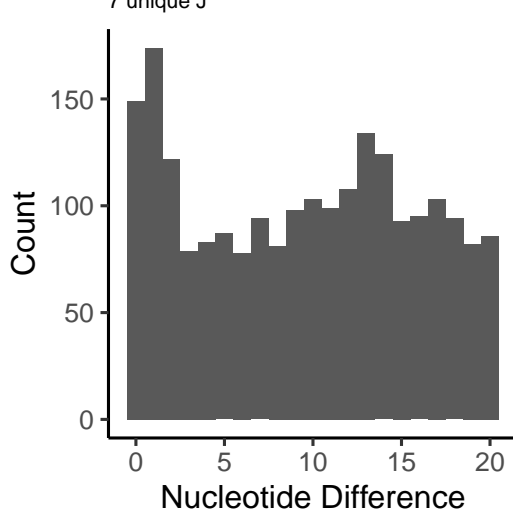
### IGHV3-20\*04

12 sequences assigned  
No exact matches.



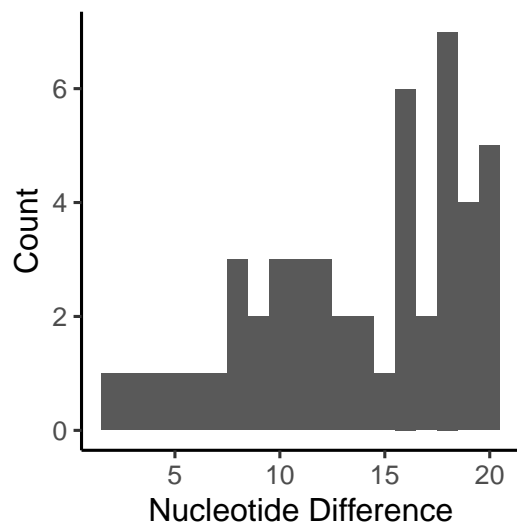
### IGHV3-23\*01

3527 sequences assigned  
149 (4.2%) exact matches, in which:  
139 unique CDR3  
7 unique J



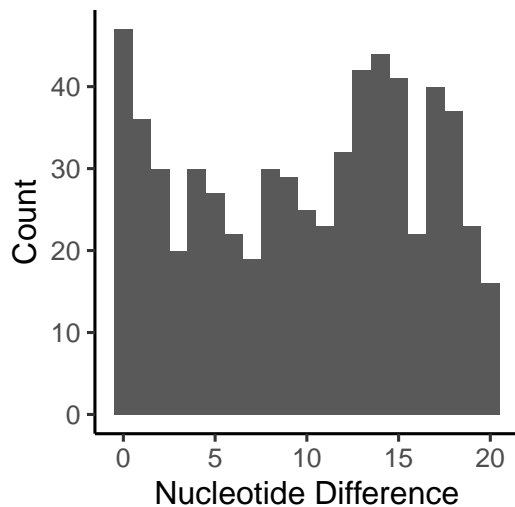
### IGHV3-30\*04

145 sequences assigned  
No exact matches.



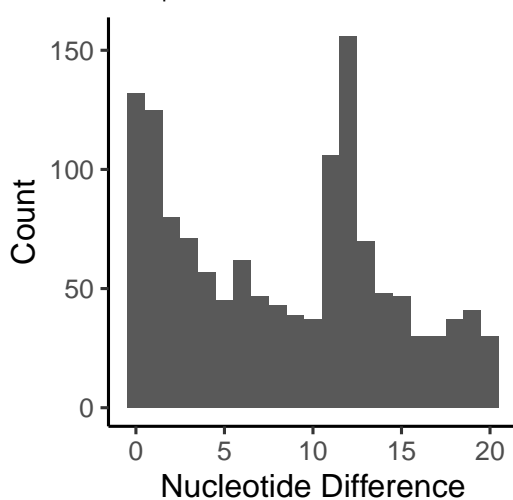
### IGHV3-21\*01

1052 sequences assigned  
47 (4.5%) exact matches, in which:  
43 unique CDR3  
7 unique J



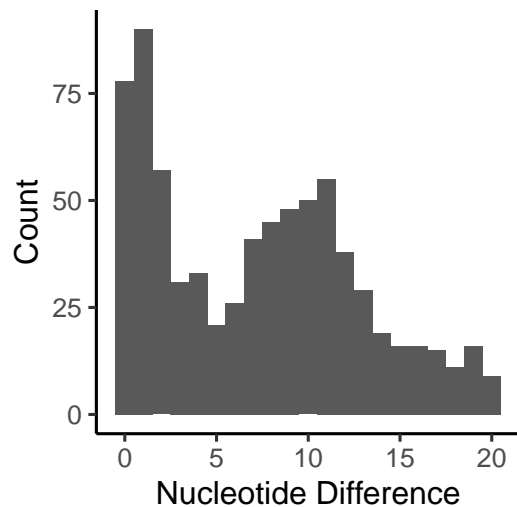
### IGHV3-30-3\*01

1826 sequences assigned  
132 (7.2%) exact matches, in which:  
115 unique CDR3  
7 unique J



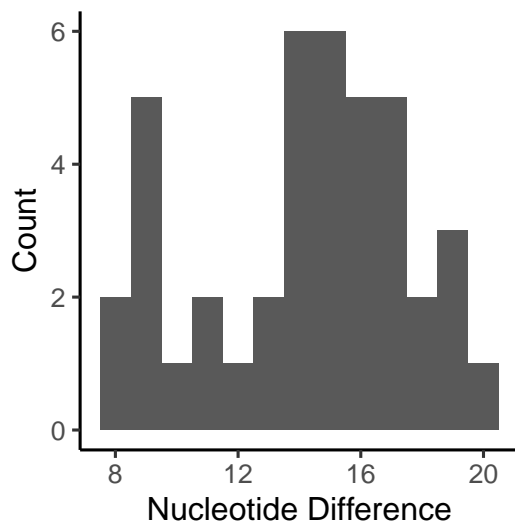
### IGHV3-30\*18

948 sequences assigned  
78 (8.2%) exact matches, in which:  
55 unique CDR3  
5 unique J



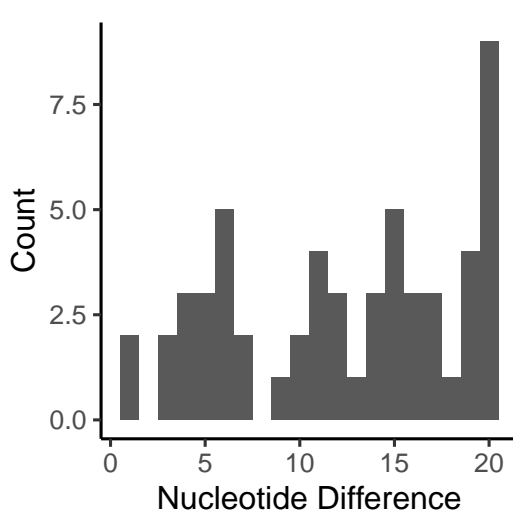
### IGHV3-21\*02

217 sequences assigned  
No exact matches.



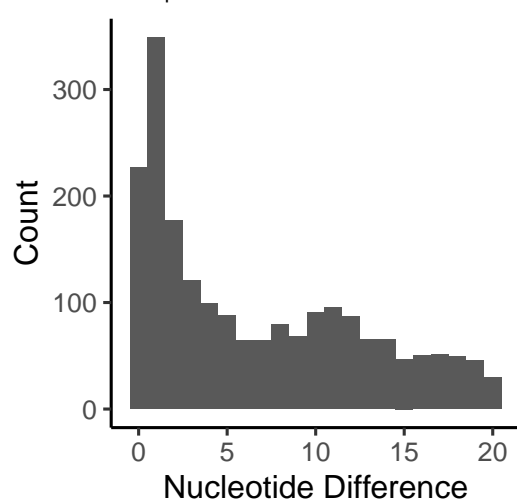
### IGHV3-30\*03

180 sequences assigned  
No exact matches.



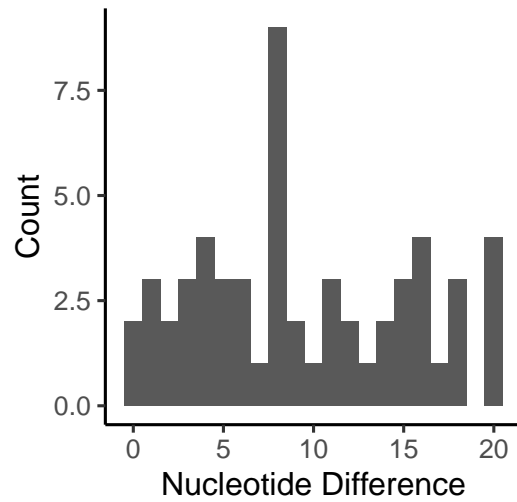
### IGHV3-33\*01

2523 sequences assigned  
227 (9%) exact matches, in which:  
158 unique CDR3  
6 unique J



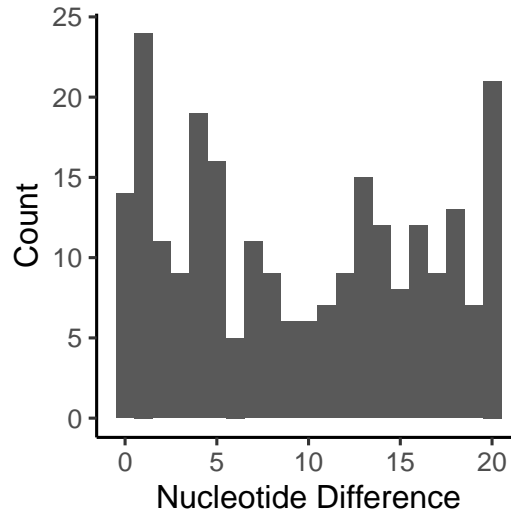
### IGHV3-43\*01

93 sequences assigned  
2 (2.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



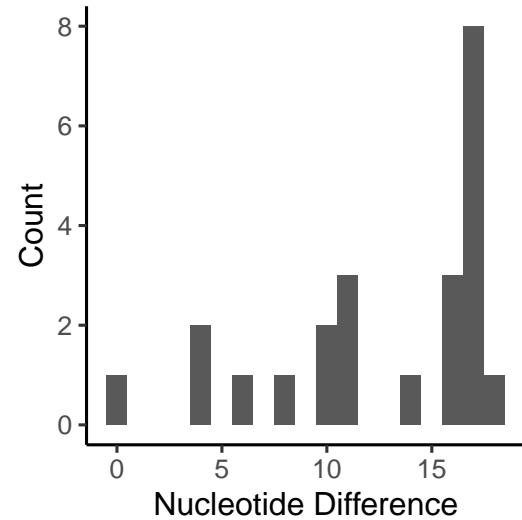
### IGHV3-49\*03

323 sequences assigned  
14 (4.3%) exact matches, in which:  
12 unique CDR3  
3 unique J



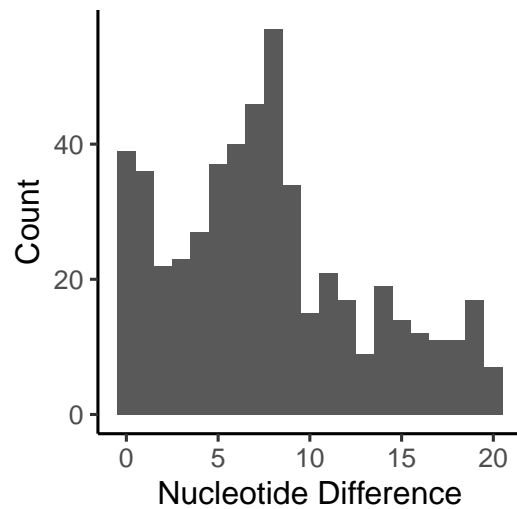
### IGHV3-64\*02

26 sequences assigned  
1 (3.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



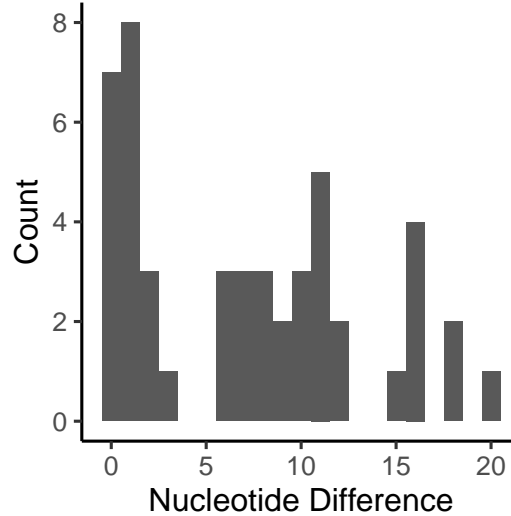
### IGHV3-48\*01

710 sequences assigned  
39 (5.5%) exact matches, in which:  
33 unique CDR3  
4 unique J



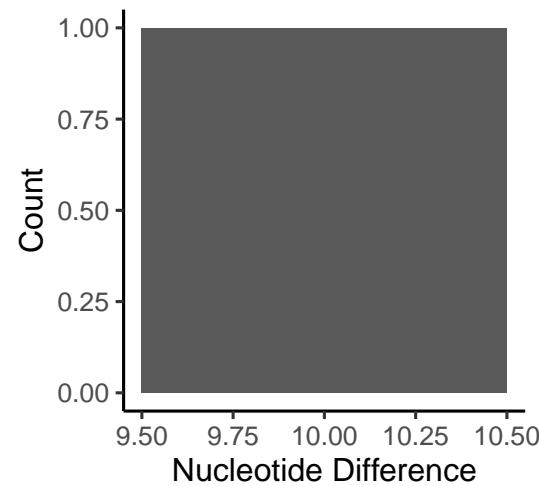
### IGHV3-49\*05

84 sequences assigned  
7 (8.3%) exact matches, in which:  
7 unique CDR3  
3 unique J



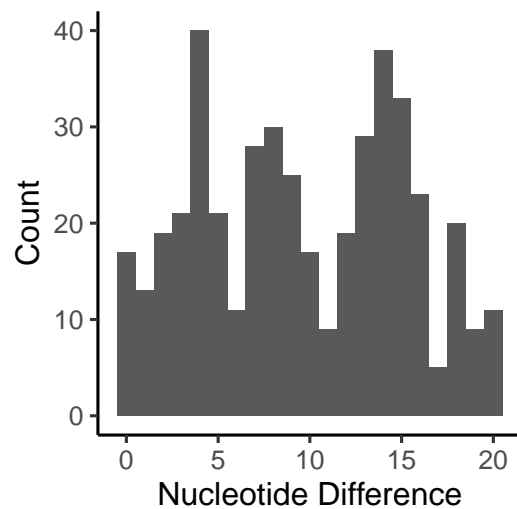
### IGHV3-64\*04

1 sequences assigned  
No exact matches.



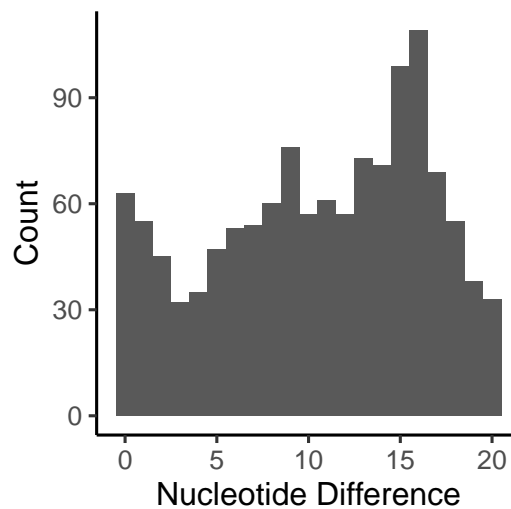
### IGHV3-48\*02

638 sequences assigned  
17 (2.7%) exact matches, in which:  
14 unique CDR3  
4 unique J



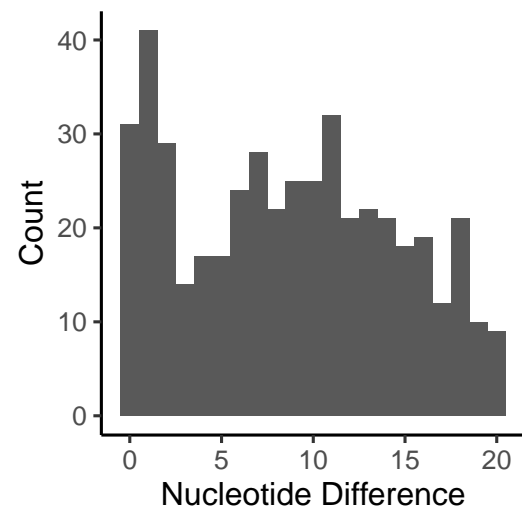
### IGHV3-53\*01

1912 sequences assigned  
63 (3.3%) exact matches, in which:  
62 unique CDR3  
6 unique J



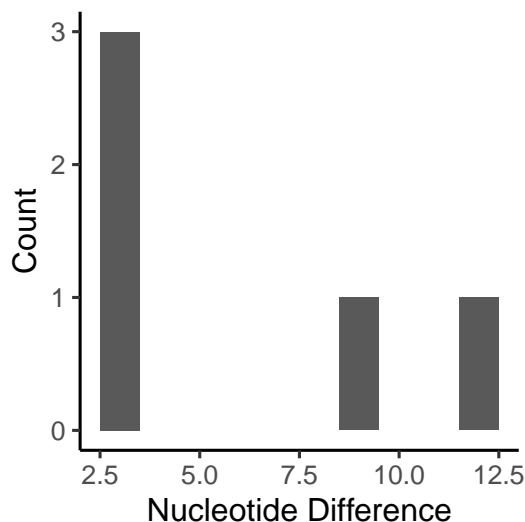
### IGHV3-66\*01

561 sequences assigned  
31 (5.5%) exact matches, in which:  
28 unique CDR3  
4 unique J



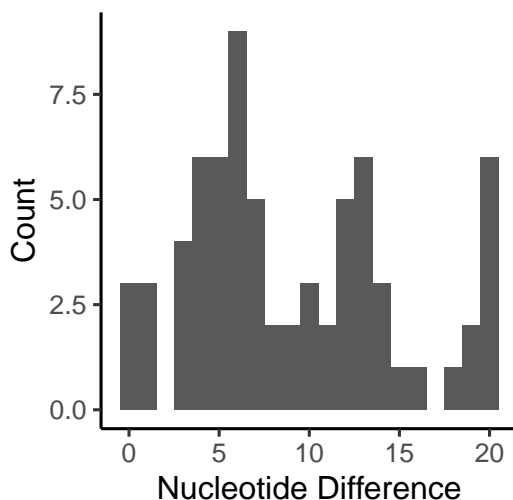
### IGHV3-69-1\*01

10 sequences assigned  
No exact matches.



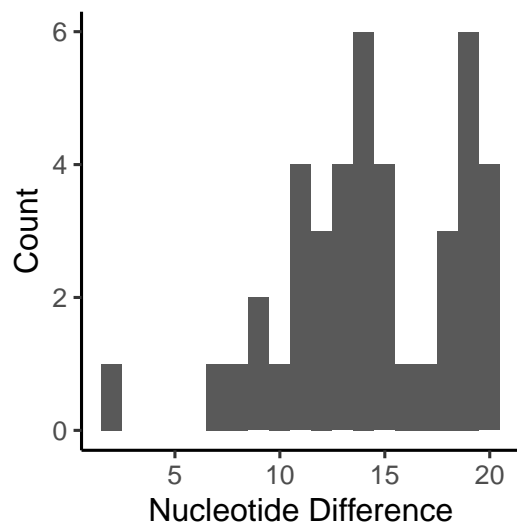
### IGHV3-73\*01

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



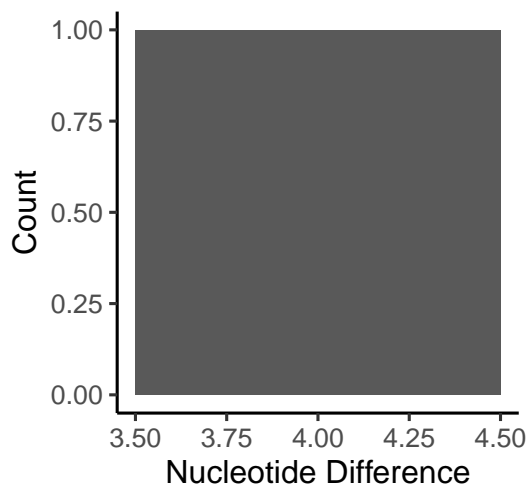
### IGHV3-74\*03

259 sequences assigned  
No exact matches.



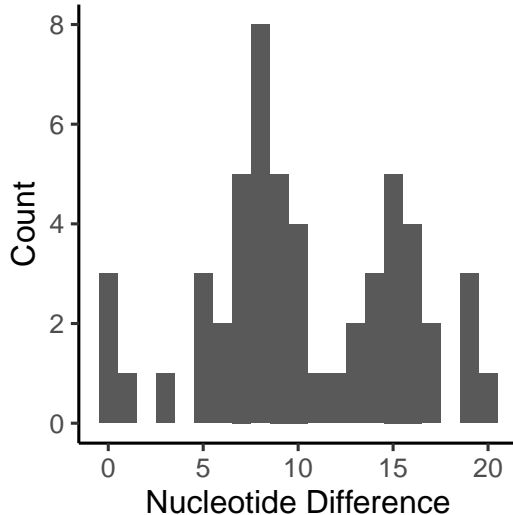
### IGHV3-69-1\*02

8 sequences assigned  
No exact matches.



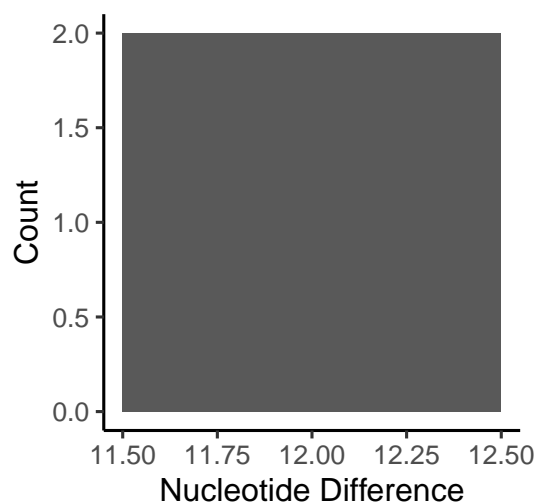
### IGHV3-73\*02

104 sequences assigned  
3 (2.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



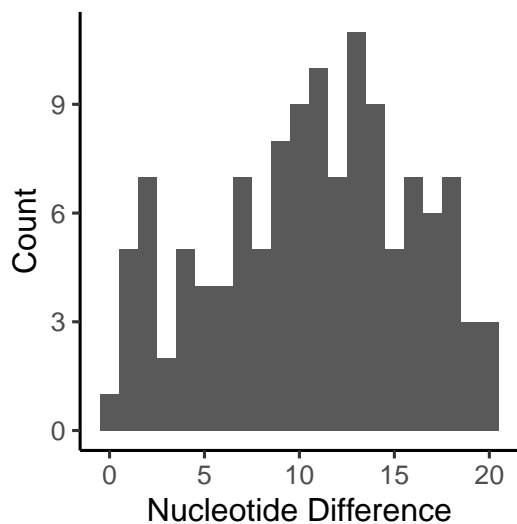
### IGHV3-43D\*04

9 sequences assigned  
No exact matches.



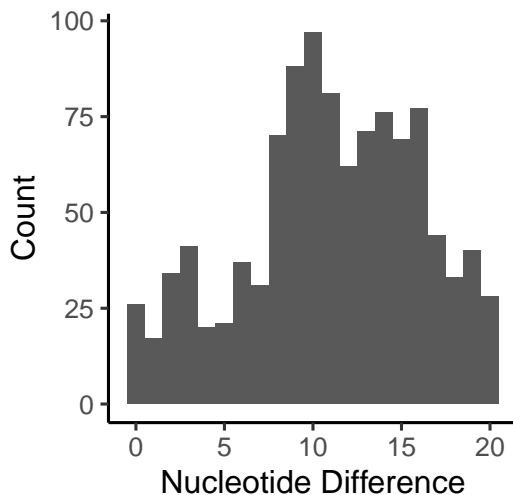
### IGHV3-72\*01

165 sequences assigned  
1 (0.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



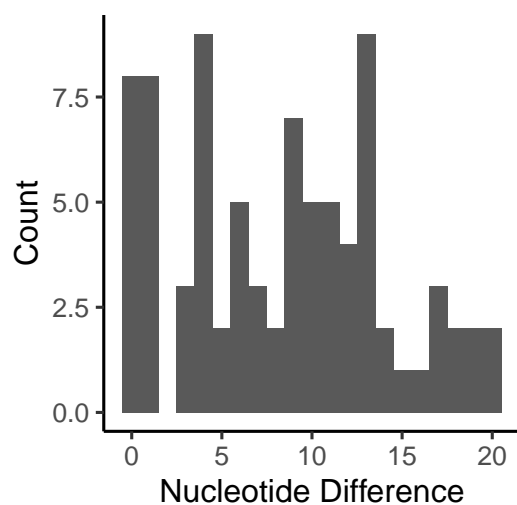
### IGHV3-74\*01

1462 sequences assigned  
26 (1.8%) exact matches, in which:  
21 unique CDR3  
5 unique J



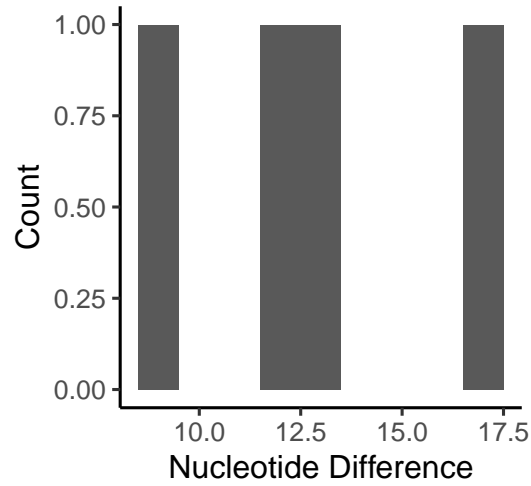
### IGHV3-64D\*06

88 sequences assigned  
8 (9.1%) exact matches, in which:  
7 unique CDR3  
1 unique J



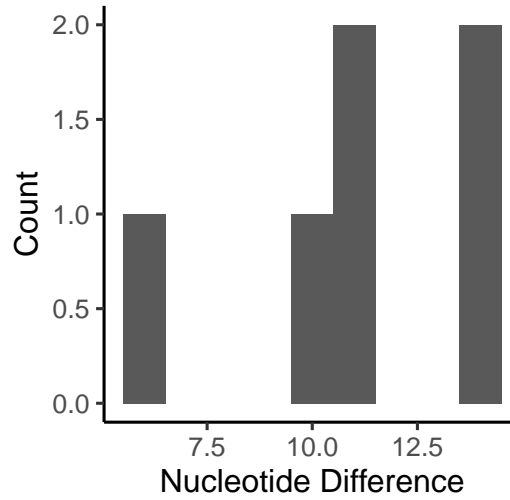
### IGHV3-64D\*08

8 sequences assigned  
No exact matches.



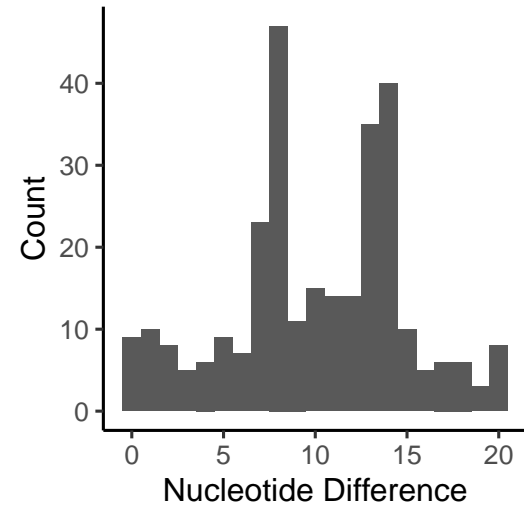
### IGHV4-28\*01

6 sequences assigned  
No exact matches.



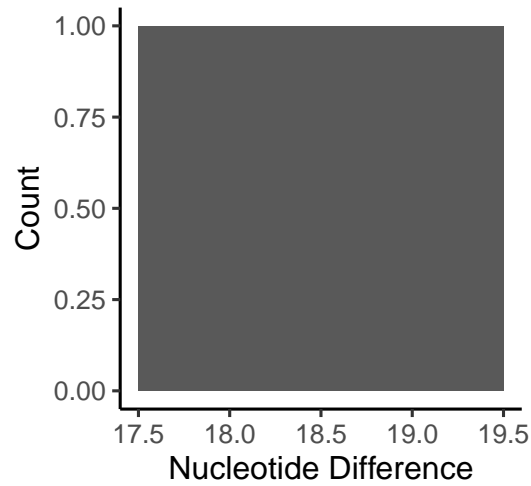
### IGHV4-30-2\*01

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



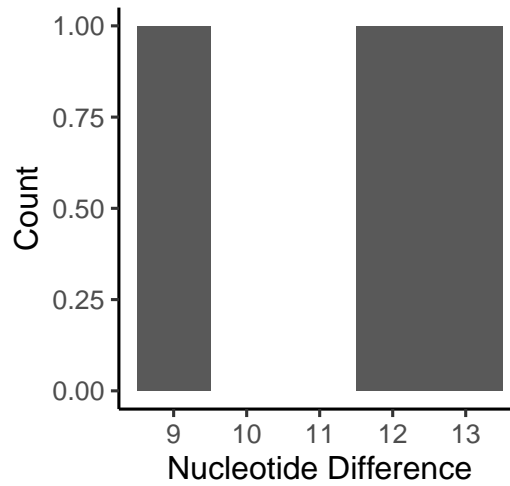
### IGHV3-NL1\*01

2 sequences assigned  
No exact matches.



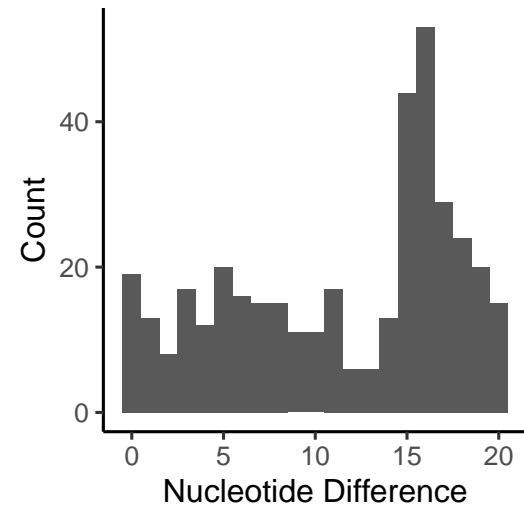
### IGHV4-28\*07

3 sequences assigned  
No exact matches.



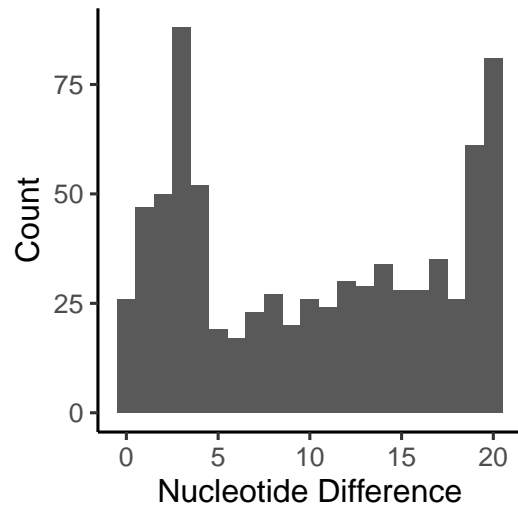
### IGHV4-31\*03

654 sequences assigned  
19 (2.9%) exact matches, in which:  
17 unique CDR3  
6 unique J



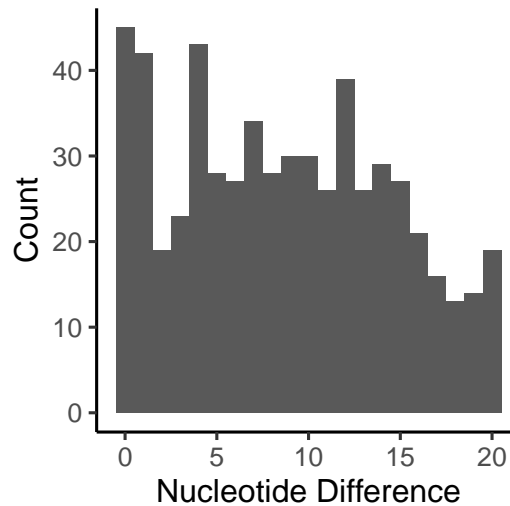
### IGHV4-4\*02

1230 sequences assigned  
26 (2.1%) exact matches, in which:  
22 unique CDR3  
7 unique J



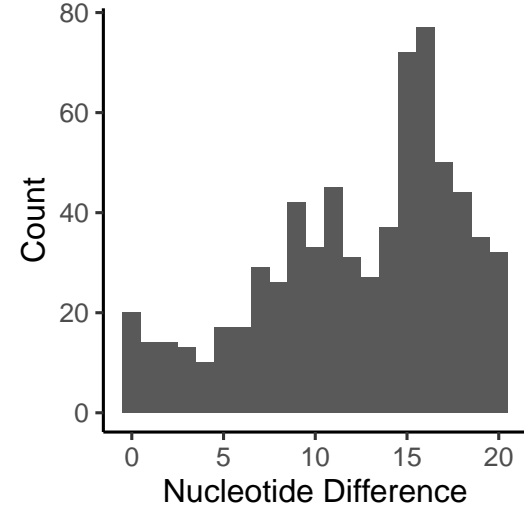
### IGHV4-30-4\*01

813 sequences assigned  
45 (5.5%) exact matches, in which:  
43 unique CDR3  
6 unique J



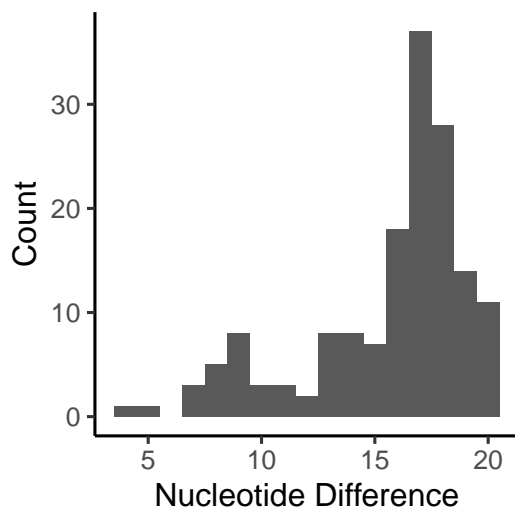
### IGHV4-34\*01

984 sequences assigned  
20 (2%) exact matches, in which:  
16 unique CDR3  
6 unique J



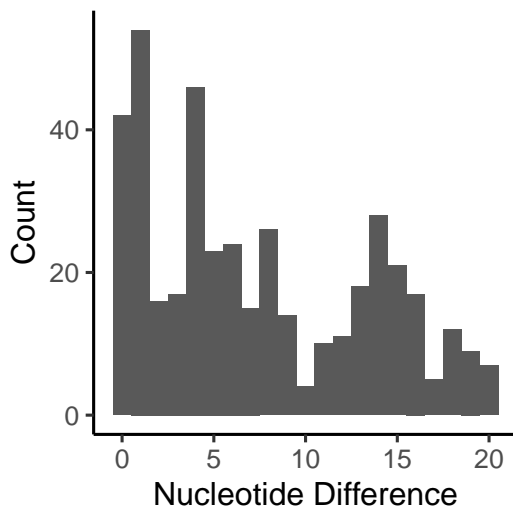
### IGHV4–34\*02

278 sequences assigned  
No exact matches.



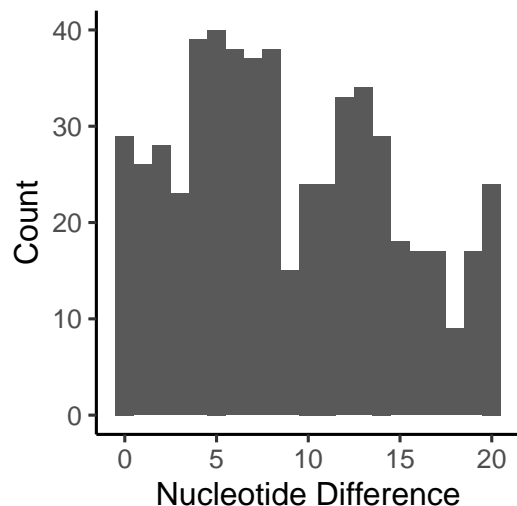
### IGHV4–61\*01

540 sequences assigned  
42 (7.8%) exact matches, in which:  
28 unique CDR3  
6 unique J



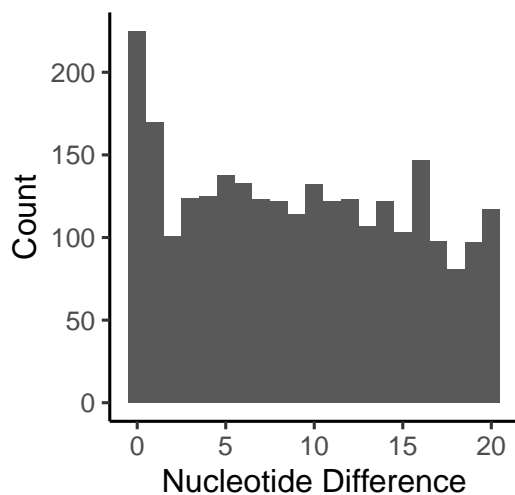
### IGHV5–51\*01

963 sequences assigned  
29 (3%) exact matches, in which:  
27 unique CDR3  
5 unique J



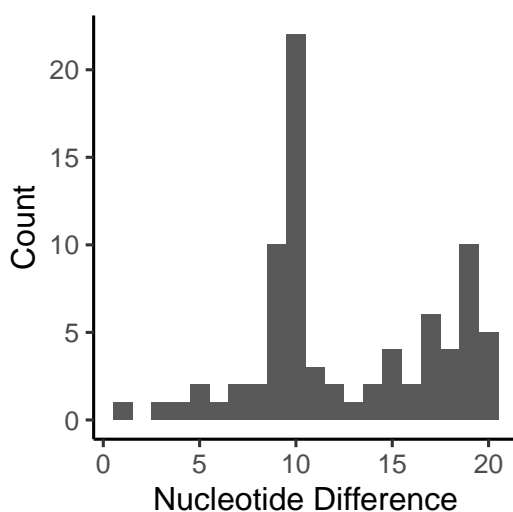
### IGHV4–39\*01

4464 sequences assigned  
225 (5%) exact matches, in which:  
201 unique CDR3  
7 unique J



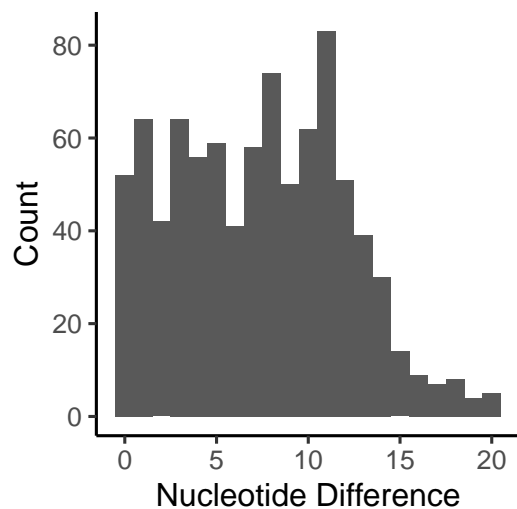
### IGHV4–61\*08

108 sequences assigned  
No exact matches.



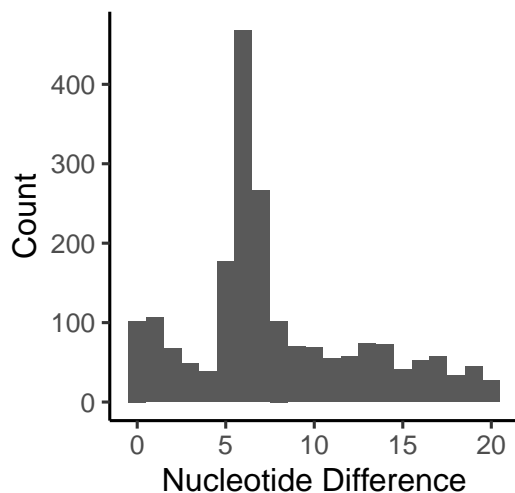
### IGHV6–1\*01

947 sequences assigned  
52 (5.5%) exact matches, in which:  
48 unique CDR3  
5 unique J



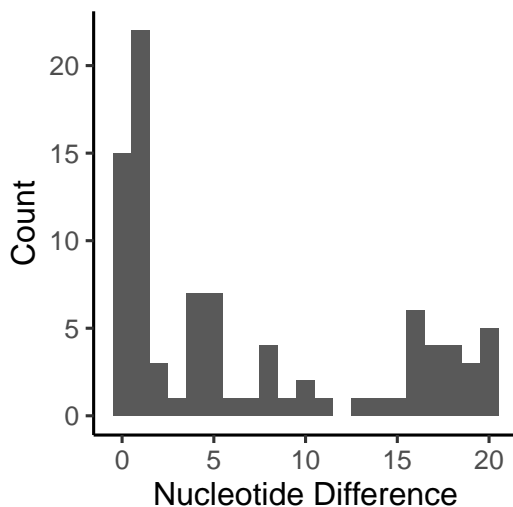
### IGHV4–59\*01

2797 sequences assigned  
102 (3.6%) exact matches, in which:  
76 unique CDR3  
7 unique J



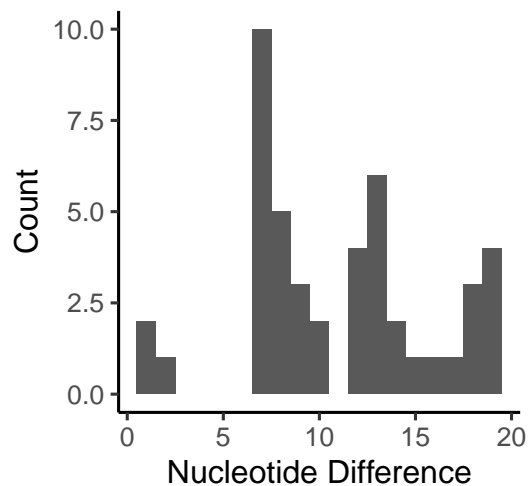
### IGHV5–10–1\*03

138 sequences assigned  
15 (10.9%) exact matches, in which:  
10 unique CDR3  
3 unique J

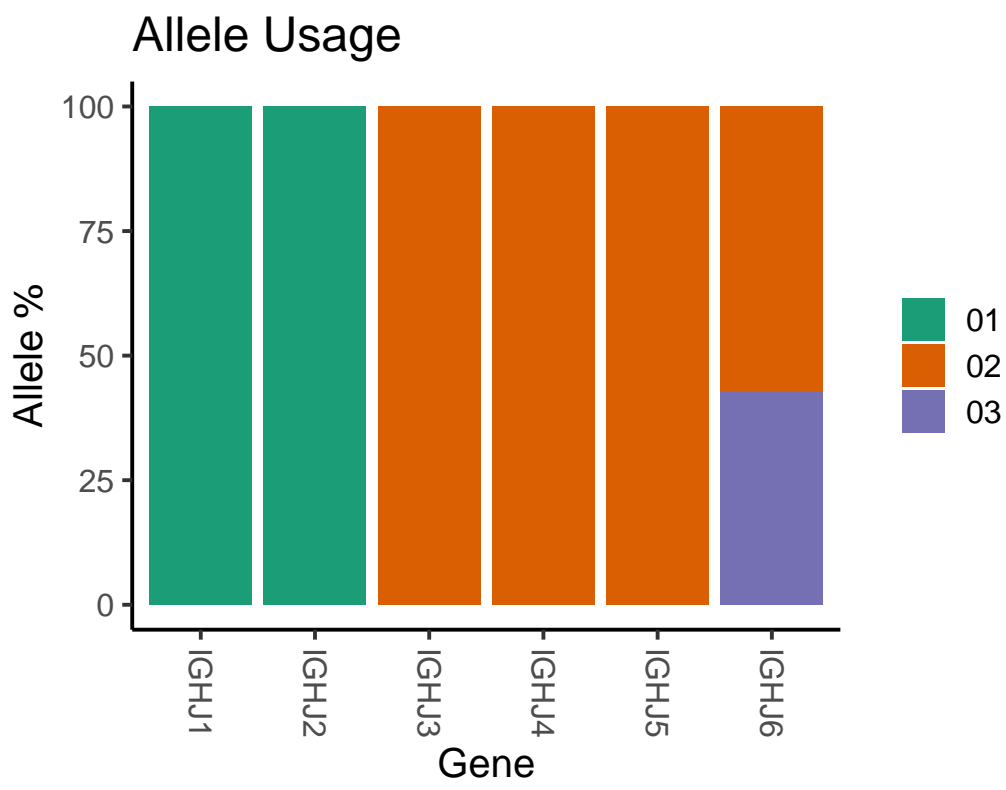


### IGHV7–4–1\*01

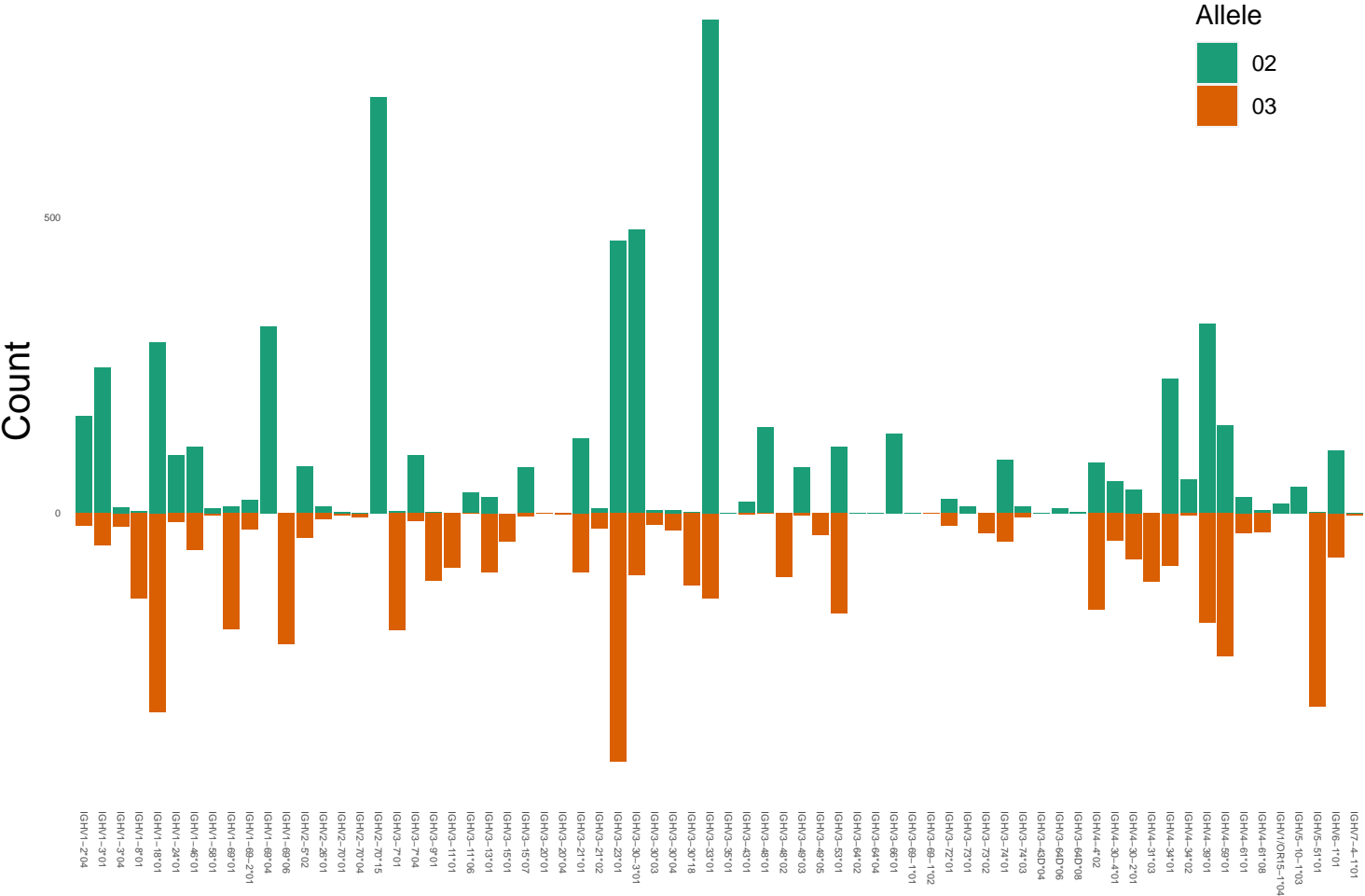
80 sequences assigned  
No exact matches.







Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.