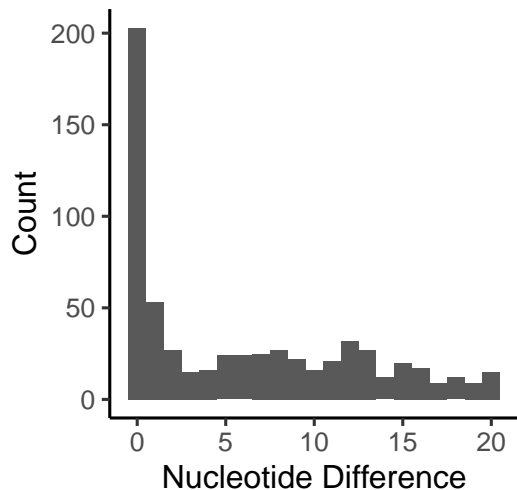


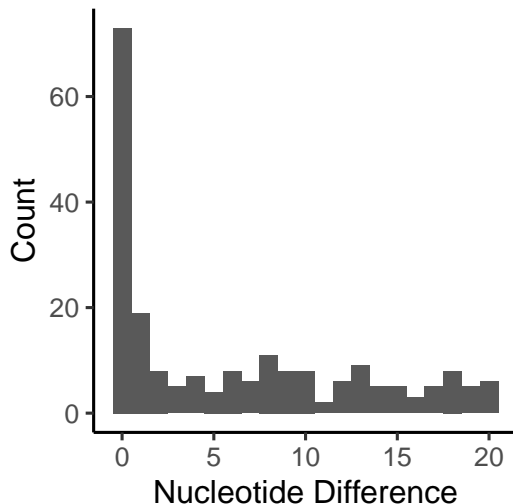
### IGHV1-2\*02

708 sequences assigned  
203 (28.7%) exact matches, in which:  
200 unique CDR3  
6 unique J



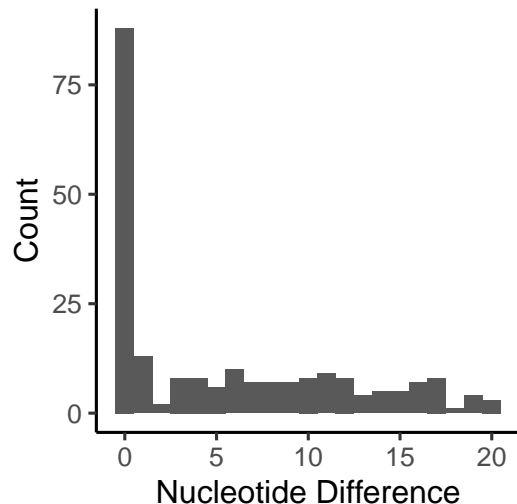
### IGHV1-18\*01

237 sequences assigned  
73 (30.8%) exact matches, in which:  
72 unique CDR3  
5 unique J



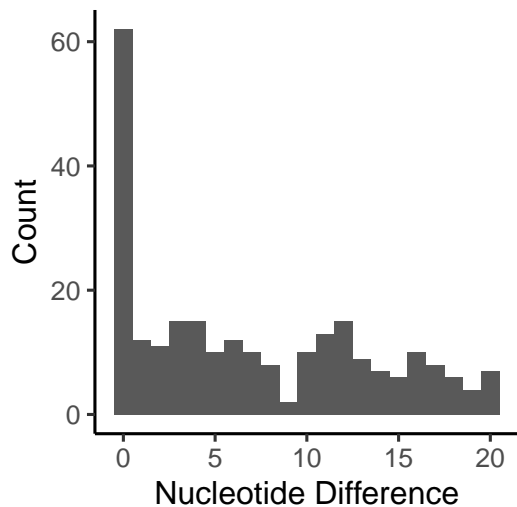
### IGHV1-46\*03

239 sequences assigned  
88 (36.8%) exact matches, in which:  
88 unique CDR3  
7 unique J



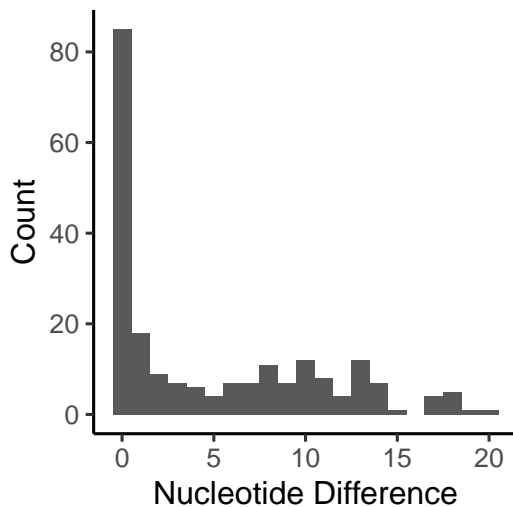
### IGHV1-3\*01

297 sequences assigned  
62 (20.9%) exact matches, in which:  
62 unique CDR3  
4 unique J



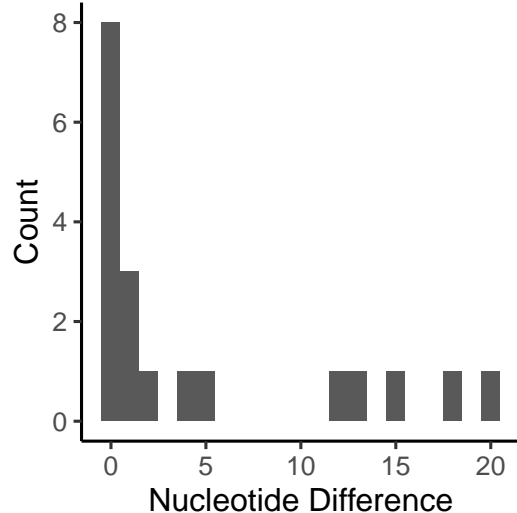
### IGHV1-18\*04

240 sequences assigned  
85 (35.4%) exact matches, in which:  
85 unique CDR3  
6 unique J



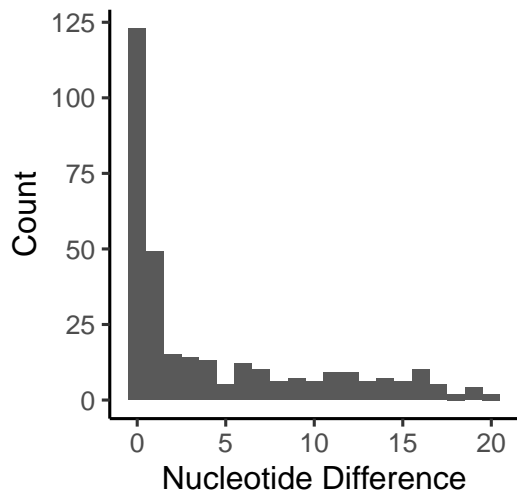
### IGHV1-58\*02

27 sequences assigned  
8 (29.6%) exact matches, in which:  
8 unique CDR3  
3 unique J



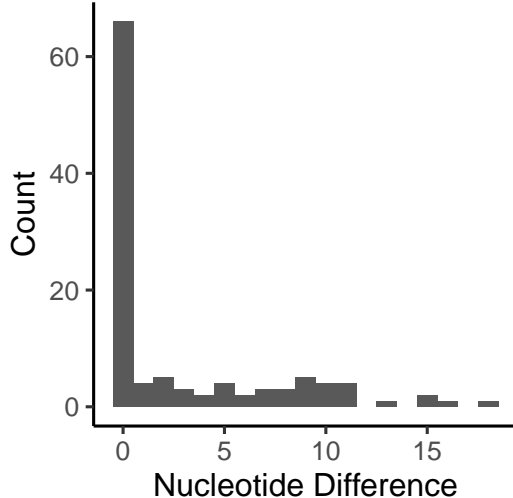
### IGHV1-8\*01

345 sequences assigned  
123 (35.7%) exact matches, in which:  
121 unique CDR3  
6 unique J



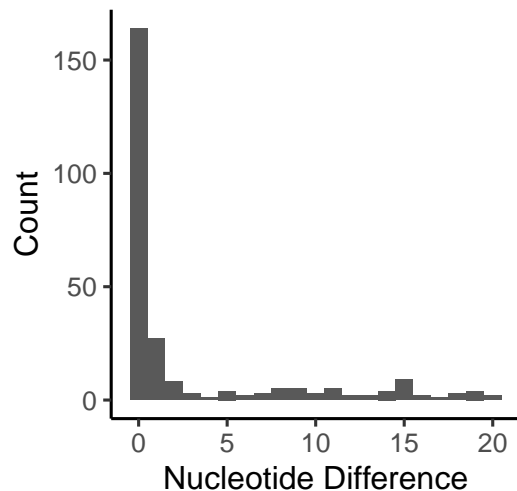
### IGHV1-24\*01

121 sequences assigned  
66 (54.5%) exact matches, in which:  
66 unique CDR3  
6 unique J



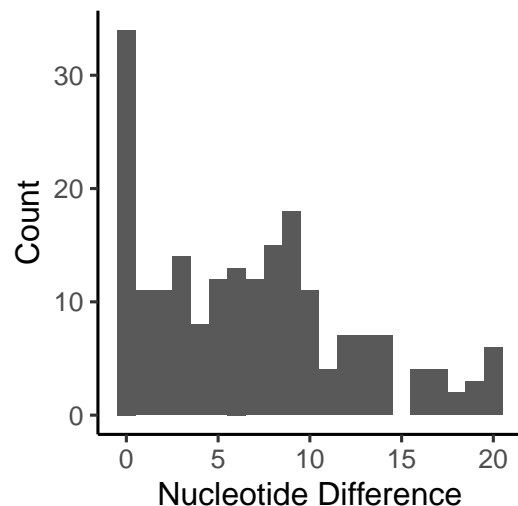
### IGHV1-69\*04

312 sequences assigned  
164 (52.6%) exact matches, in which:  
162 unique CDR3  
6 unique J



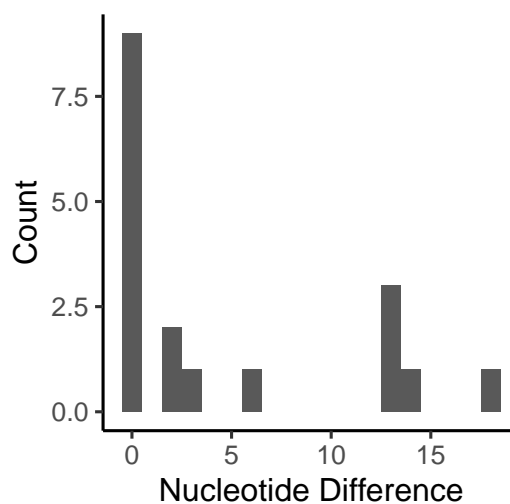
### IGHV2-5\*01

223 sequences assigned  
34 (15.2%) exact matches, in which:  
34 unique CDR3  
4 unique J



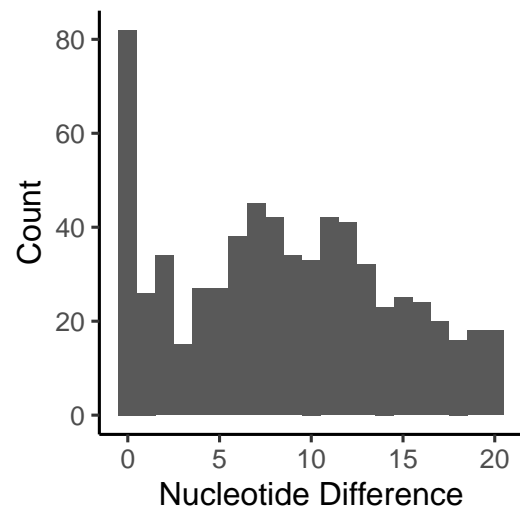
### IGHV2-70\*01

25 sequences assigned  
9 (36%) exact matches, in which:  
9 unique CDR3  
4 unique J



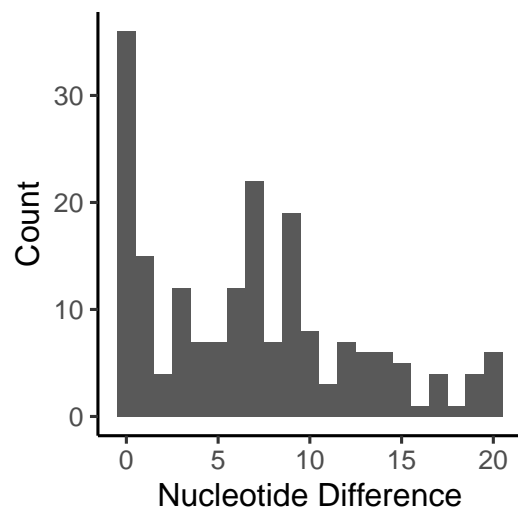
### IGHV3-7\*03

767 sequences assigned  
82 (10.7%) exact matches, in which:  
81 unique CDR3  
6 unique J



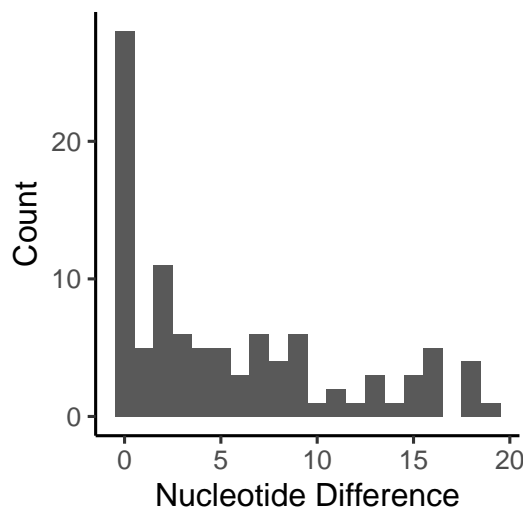
### IGHV2-5\*02

227 sequences assigned  
36 (15.9%) exact matches, in which:  
36 unique CDR3  
5 unique J



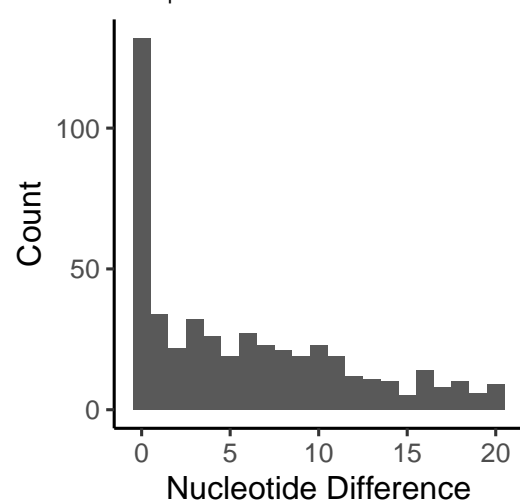
### IGHV2-70\*15

111 sequences assigned  
28 (25.2%) exact matches, in which:  
27 unique CDR3  
5 unique J



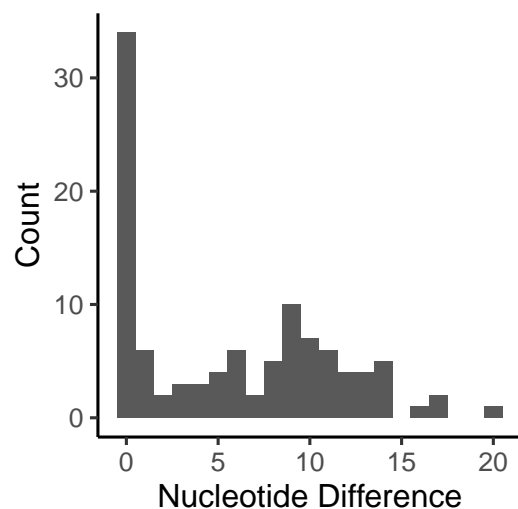
### IGHV3-9\*01

534 sequences assigned  
132 (24.7%) exact matches, in which:  
132 unique CDR3  
6 unique J



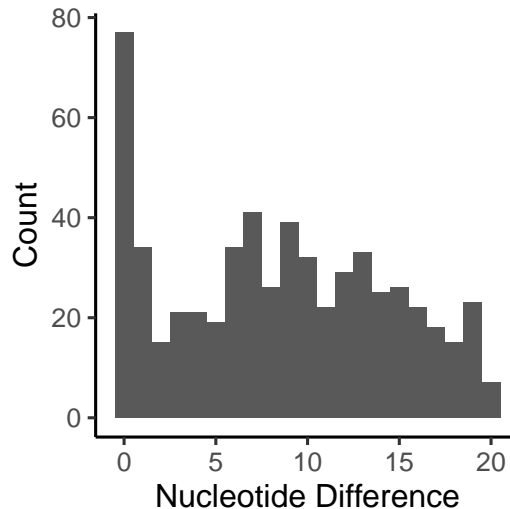
### IGHV2-26\*01

112 sequences assigned  
34 (30.4%) exact matches, in which:  
34 unique CDR3  
7 unique J



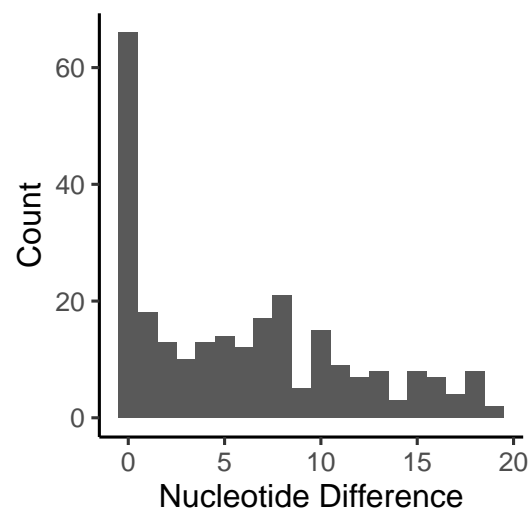
### IGHV3-7\*01

661 sequences assigned  
77 (11.6%) exact matches, in which:  
77 unique CDR3  
6 unique J



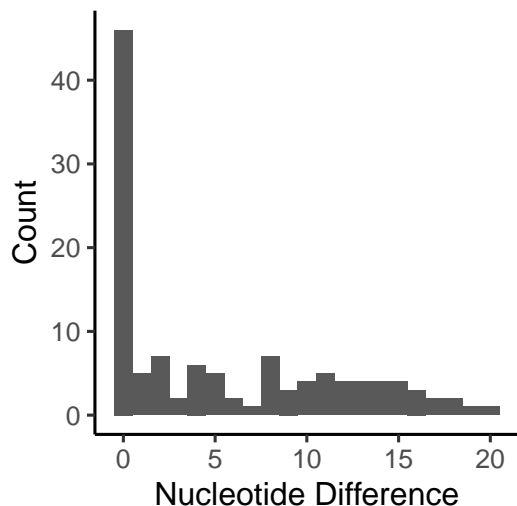
### IGHV3-11\*01

280 sequences assigned  
66 (23.6%) exact matches, in which:  
66 unique CDR3  
5 unique J



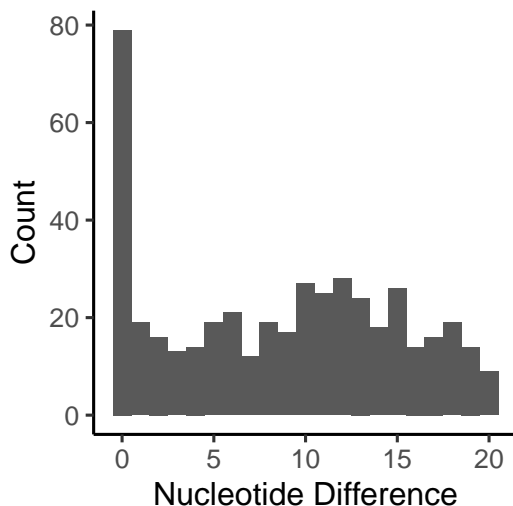
### IGHV3-11\*06

145 sequences assigned  
46 (31.7%) exact matches, in which:  
45 unique CDR3  
5 unique J



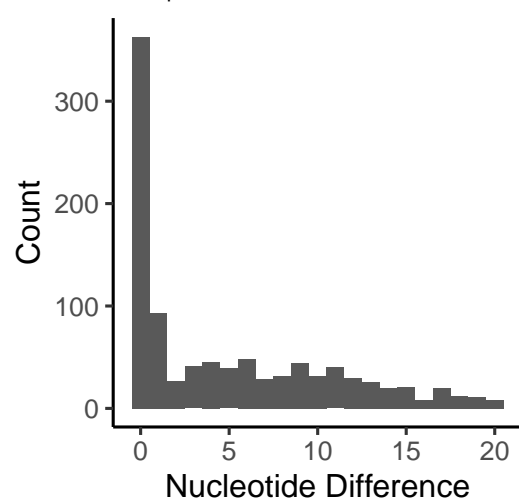
### IGHV3-15\*01

555 sequences assigned  
79 (14.2%) exact matches, in which:  
79 unique CDR3  
6 unique J



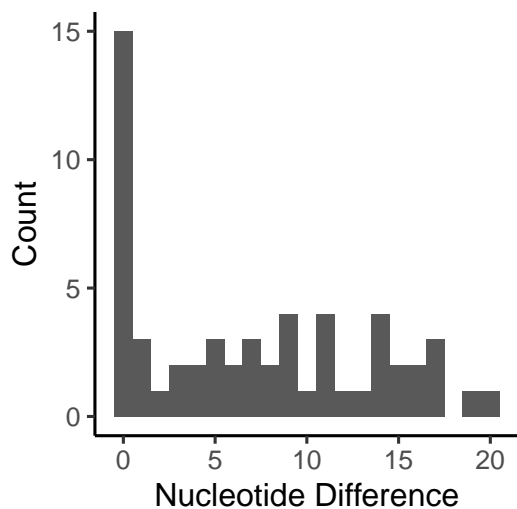
### IGHV3-21\*01

1071 sequences assigned  
363 (33.9%) exact matches, in which:  
359 unique CDR3  
6 unique J



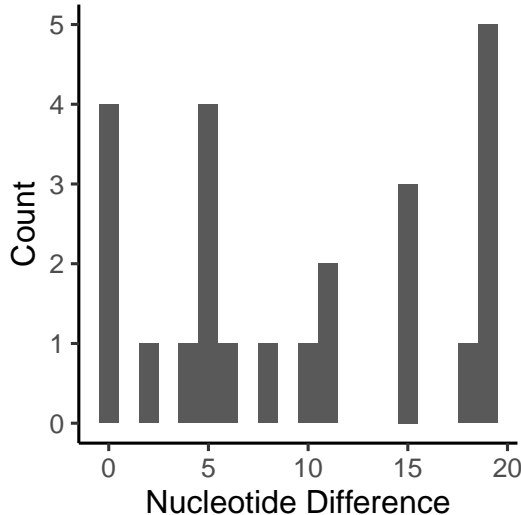
### IGHV3-13\*01

65 sequences assigned  
15 (23.1%) exact matches, in which:  
15 unique CDR3  
4 unique J



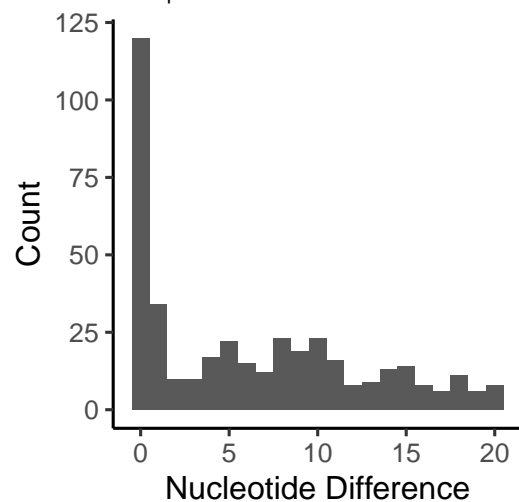
### IGHV3-20\*01

24 sequences assigned  
4 (16.7%) exact matches, in which:  
4 unique CDR3  
4 unique J



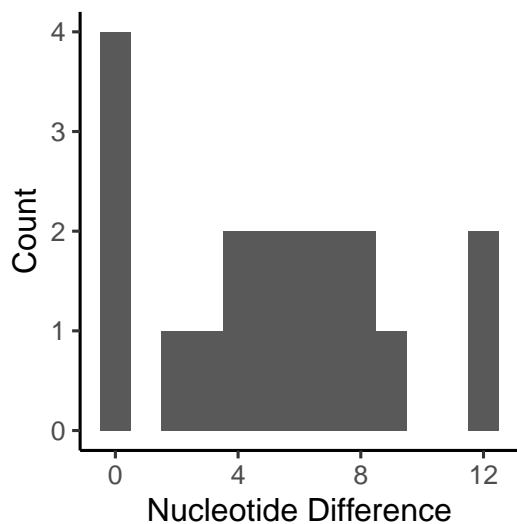
### IGHV3-30-3\*01

464 sequences assigned  
120 (25.9%) exact matches, in which:  
120 unique CDR3  
5 unique J



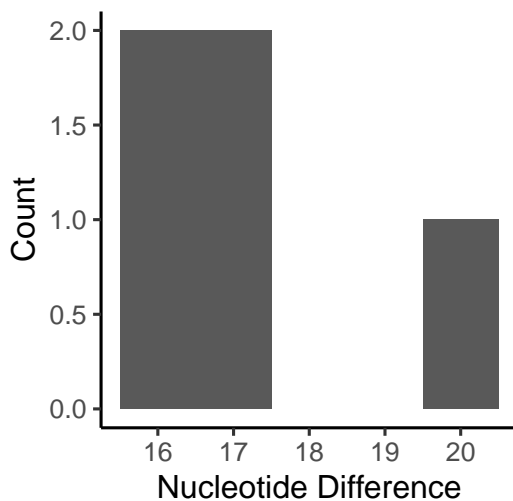
### IGHV3-13\*05

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



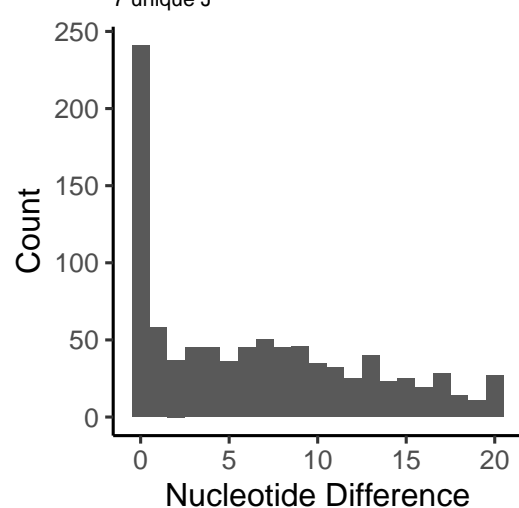
### IGHV3-20\*04

13 sequences assigned  
No exact matches.



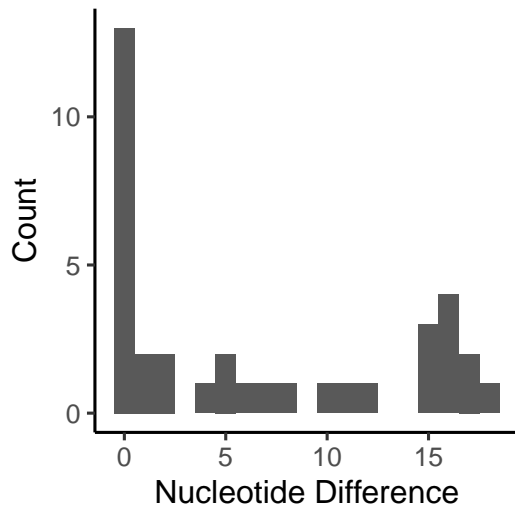
### IGHV3-33\*01

1035 sequences assigned  
241 (23.3%) exact matches, in which:  
238 unique CDR3  
7 unique J



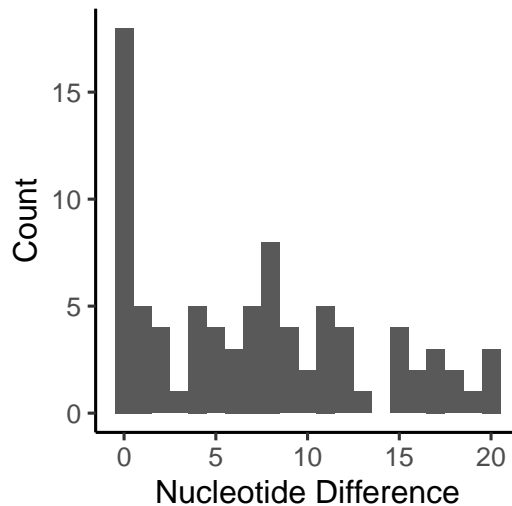
### IGHV3-43\*01

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



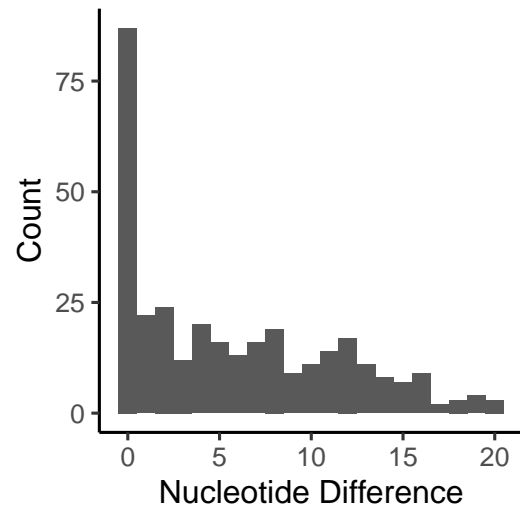
### IGHV3-53\*02

89 sequences assigned  
18 (20.2%) exact matches, in which:  
18 unique CDR3  
3 unique J



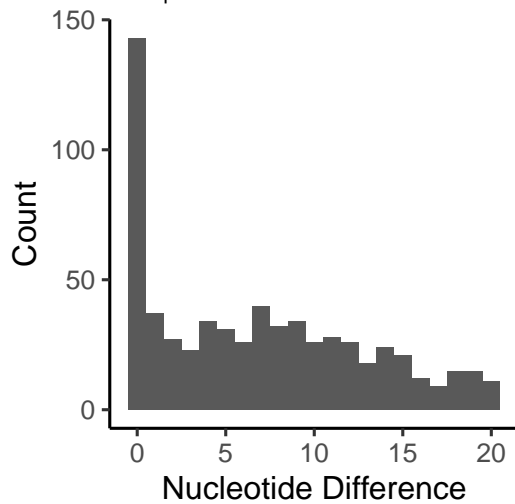
### IGHV3-66\*01

395 sequences assigned  
87 (22%) exact matches, in which:  
87 unique CDR3  
6 unique J



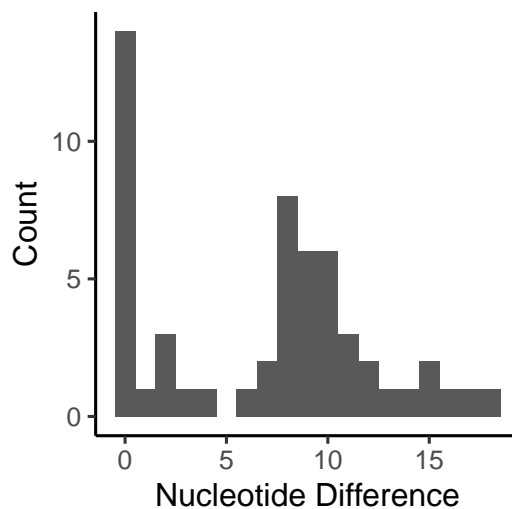
### IGHV3-48\*01

716 sequences assigned  
143 (20%) exact matches, in which:  
143 unique CDR3  
7 unique J



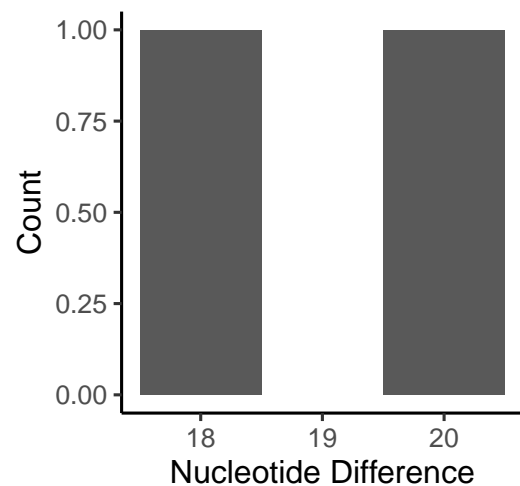
### IGHV3-64\*01

56 sequences assigned  
14 (25%) exact matches, in which:  
14 unique CDR3  
4 unique J



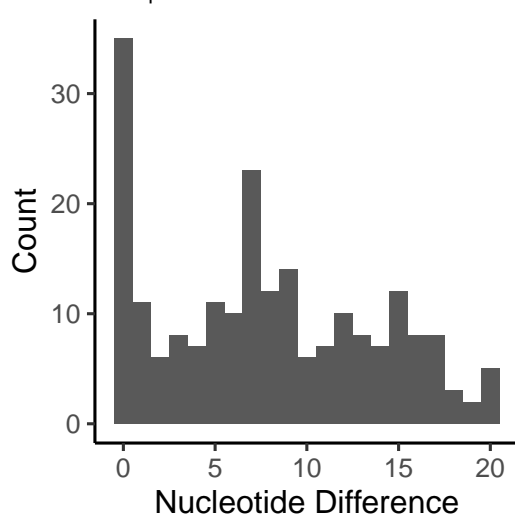
### IGHV3-69-1\*01

5 sequences assigned  
No exact matches.



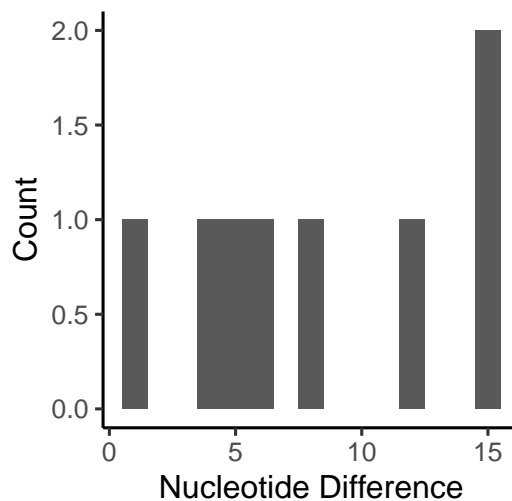
### IGHV3-49\*03

241 sequences assigned  
35 (14.5%) exact matches, in which:  
35 unique CDR3  
6 unique J



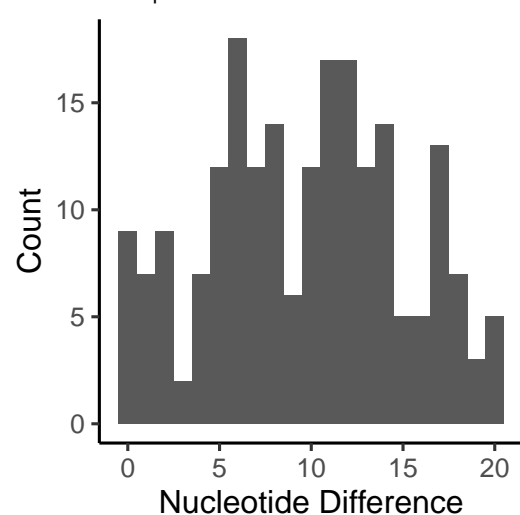
### IGHV3-64\*07

12 sequences assigned  
No exact matches.



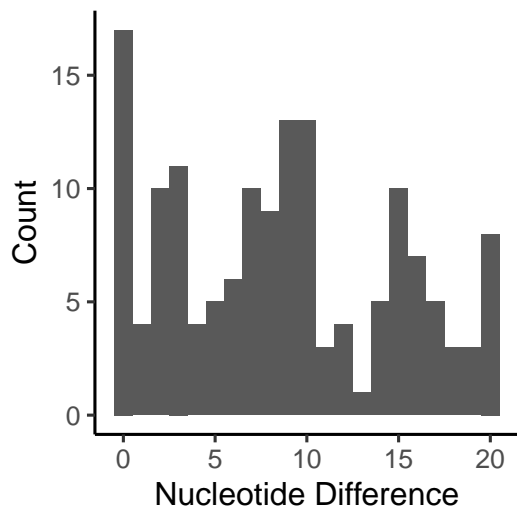
### IGHV3-72\*01

229 sequences assigned  
9 (3.9%) exact matches, in which:  
9 unique CDR3  
4 unique J



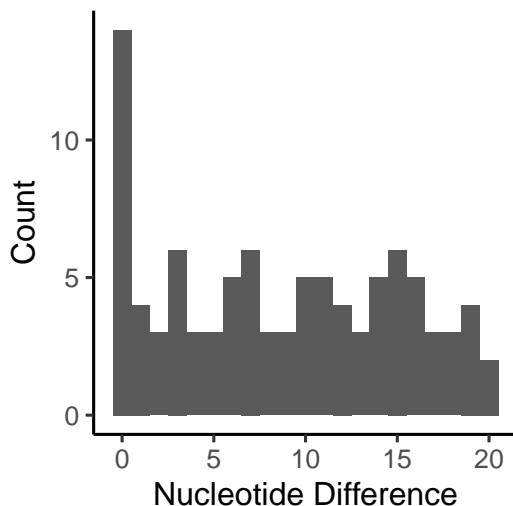
### IGHV3-73\*01

199 sequences assigned  
17 (8.5%) exact matches, in which:  
17 unique CDR3  
3 unique J



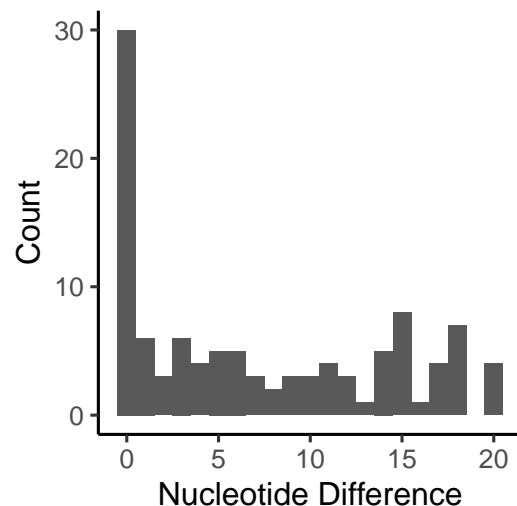
### IGHV3-64D\*06

102 sequences assigned  
14 (13.7%) exact matches, in which:  
14 unique CDR3  
3 unique J



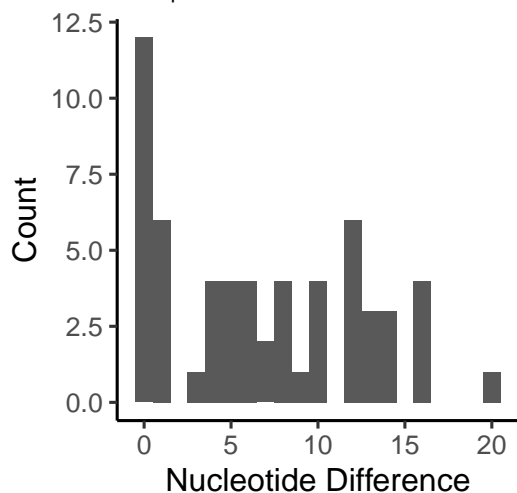
### IGHV4-30-4\*01

129 sequences assigned  
30 (23.3%) exact matches, in which:  
30 unique CDR3  
4 unique J



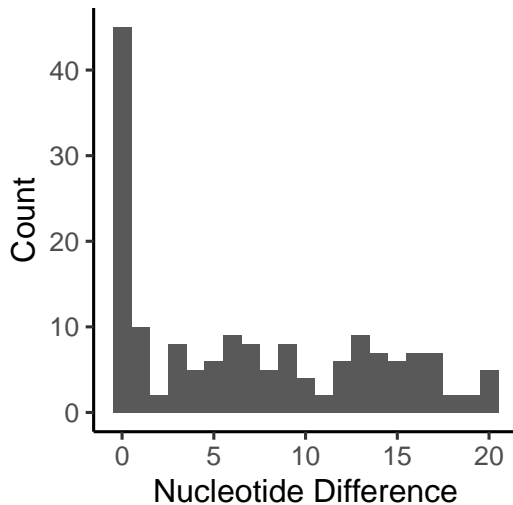
### IGHV3-73\*02

71 sequences assigned  
12 (16.9%) exact matches, in which:  
12 unique CDR3  
3 unique J



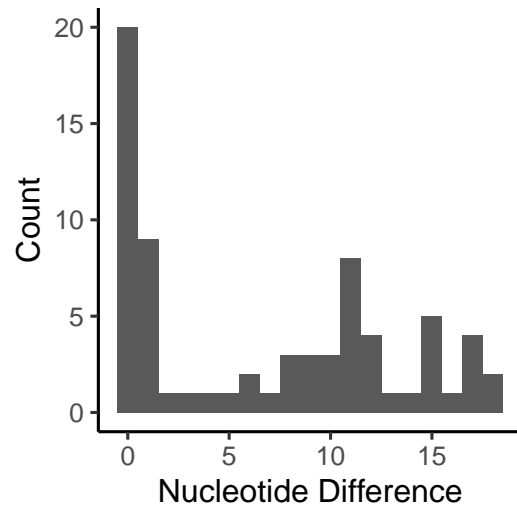
### IGHV4-4\*07

187 sequences assigned  
45 (24.1%) exact matches, in which:  
45 unique CDR3  
4 unique J



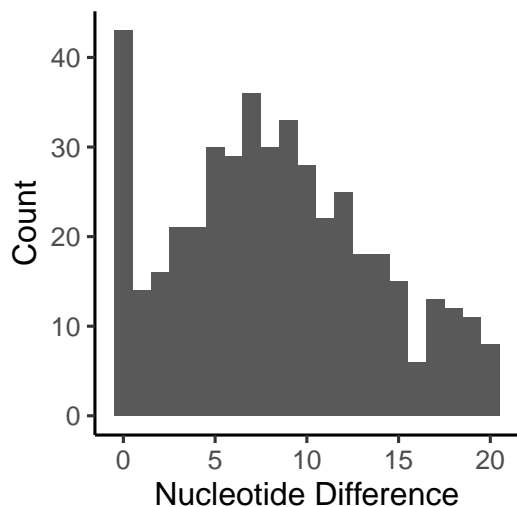
### IGHV4-30-2\*01

83 sequences assigned  
20 (24.1%) exact matches, in which:  
19 unique CDR3  
6 unique J



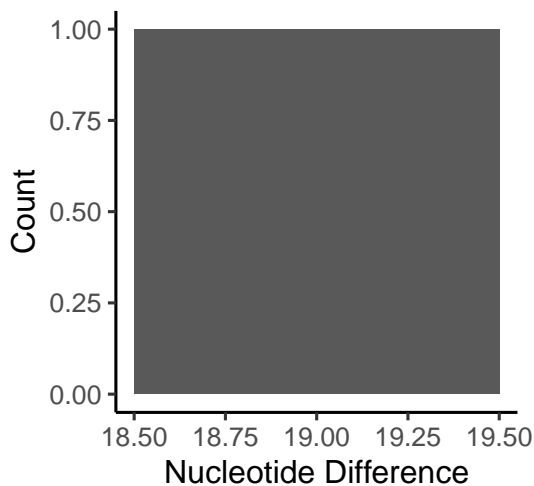
### IGHV3-74\*01

516 sequences assigned  
43 (8.3%) exact matches, in which:  
42 unique CDR3  
5 unique J



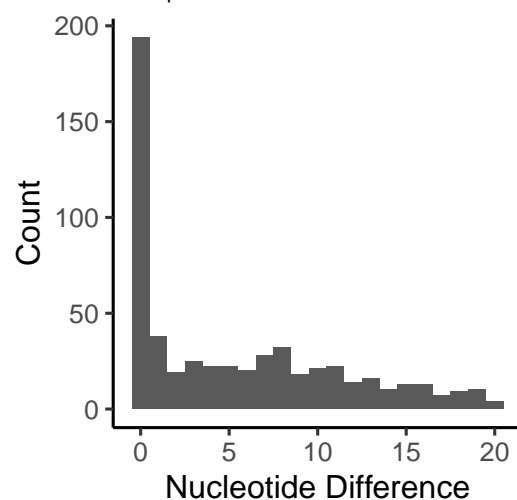
### IGHV4-28\*05

1 sequences assigned  
No exact matches.



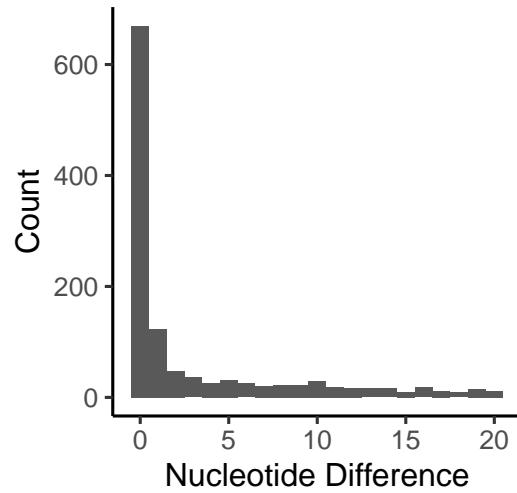
### IGHV4-31\*03

624 sequences assigned  
194 (31.1%) exact matches, in which:  
194 unique CDR3  
7 unique J



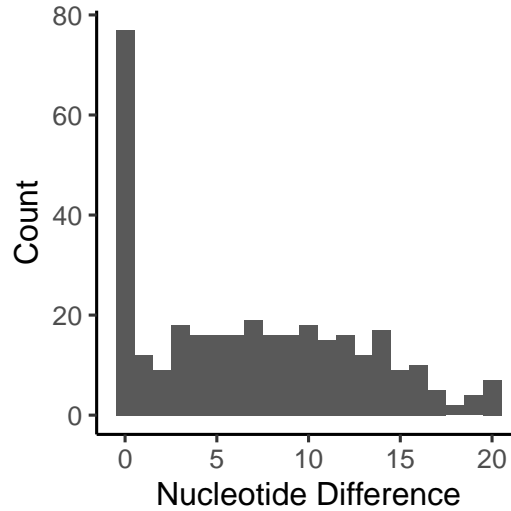
### IGHV4-34\*01

1310 sequences assigned  
670 (51.1%) exact matches, in which:  
662 unique CDR3  
7 unique J



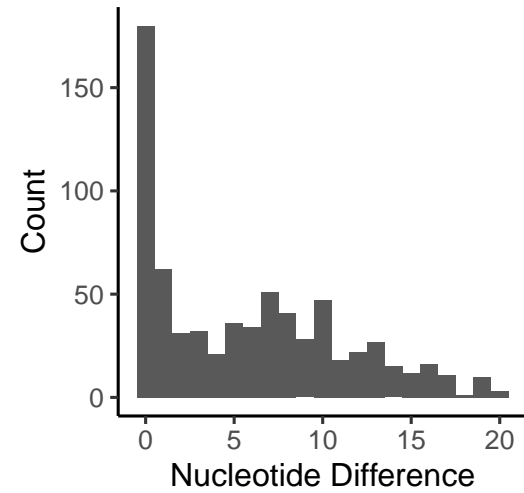
### IGHV4-59\*08

385 sequences assigned  
77 (20%) exact matches, in which:  
77 unique CDR3  
6 unique J



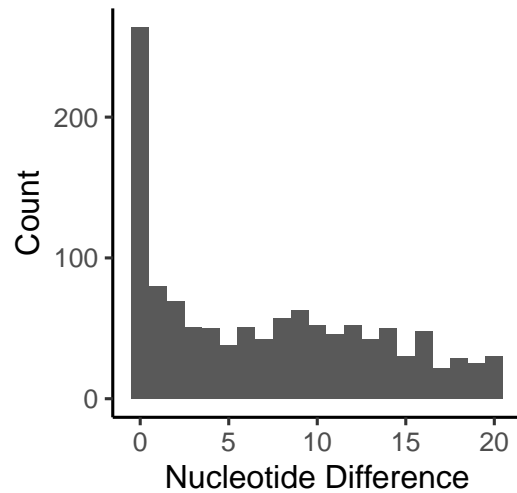
### IGHV5-51\*01\_C45G

756 sequences assigned  
180 (23.8%) exact matches, in which:  
178 unique CDR3  
7 unique J



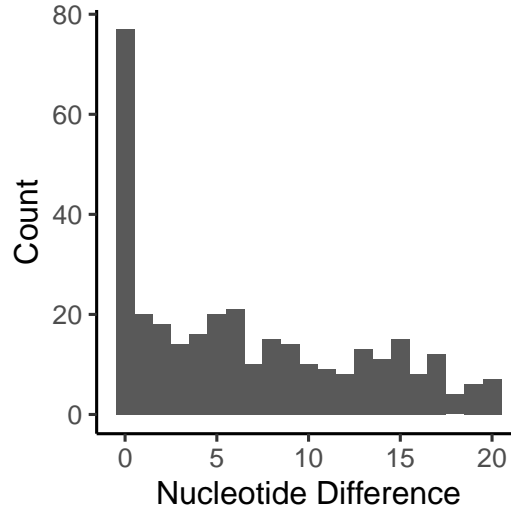
### IGHV4-39\*01

1342 sequences assigned  
264 (19.7%) exact matches, in which:  
262 unique CDR3  
7 unique J



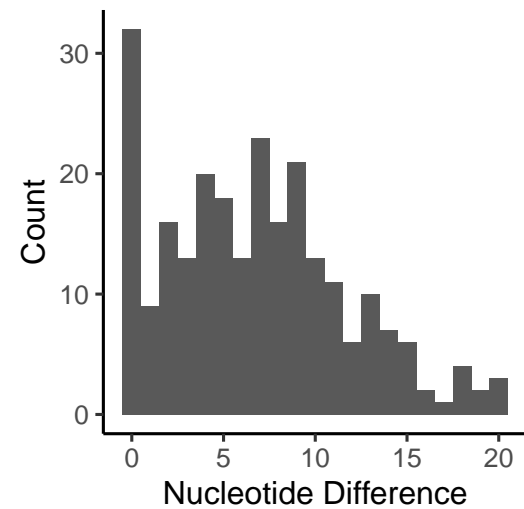
### IGHV4-61\*02\_A234G

373 sequences assigned  
77 (20.6%) exact matches, in which:  
75 unique CDR3  
6 unique J



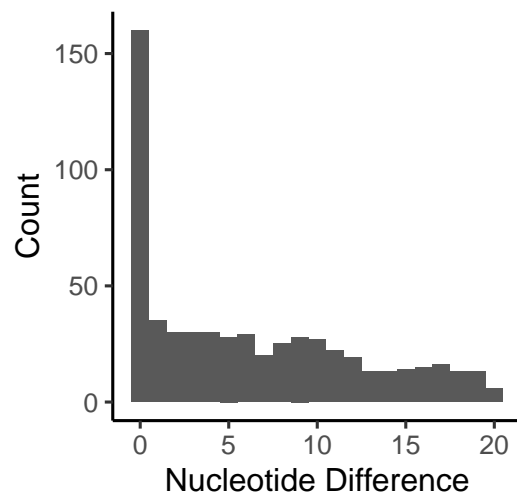
### IGHV6-1\*01

258 sequences assigned  
32 (12.4%) exact matches, in which:  
31 unique CDR3  
5 unique J



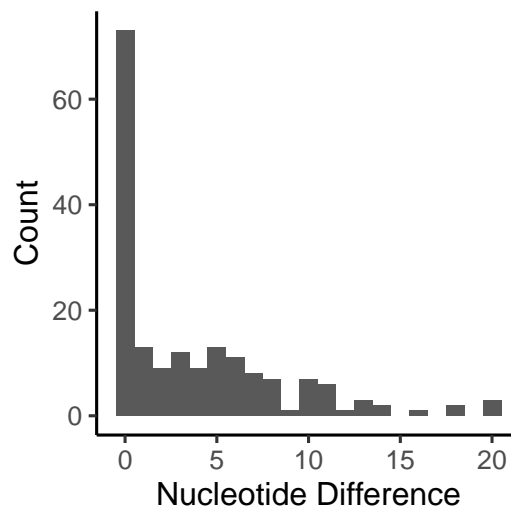
### IGHV4-59\*01

660 sequences assigned  
160 (24.2%) exact matches, in which:  
160 unique CDR3  
7 unique J



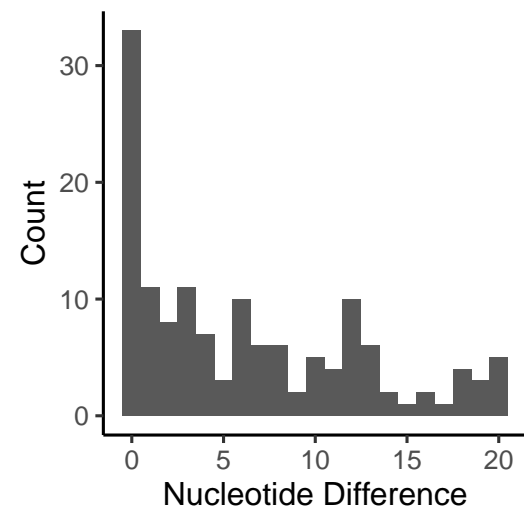
### IGHV5-10-1\*03

219 sequences assigned  
73 (33.3%) exact matches, in which:  
73 unique CDR3  
5 unique J

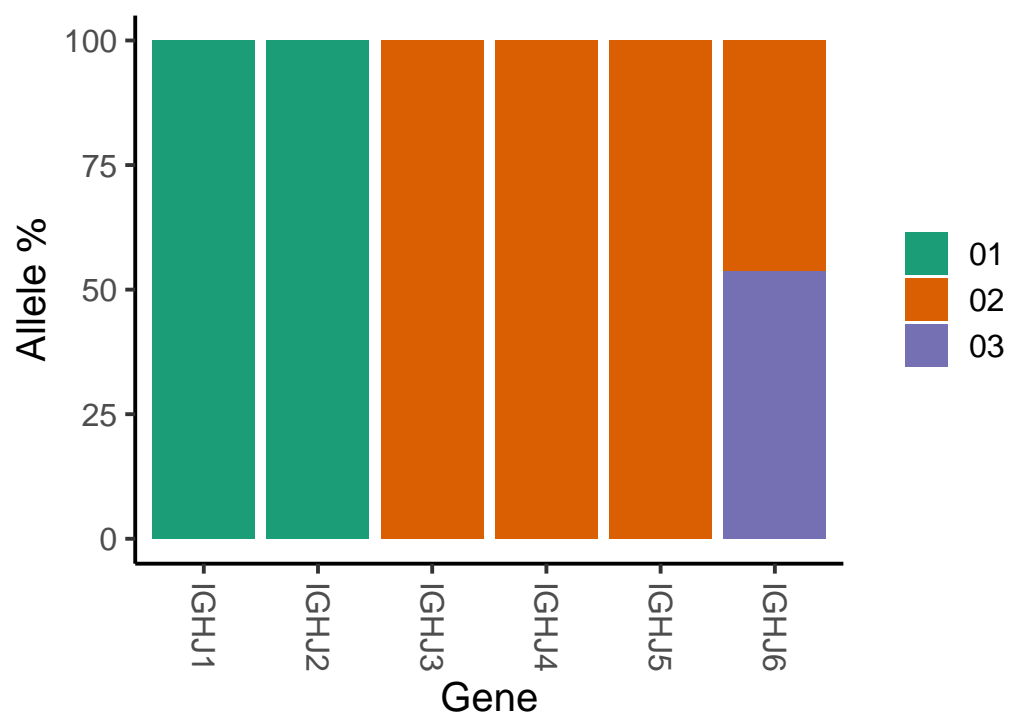


### IGHV7-4-1\*02

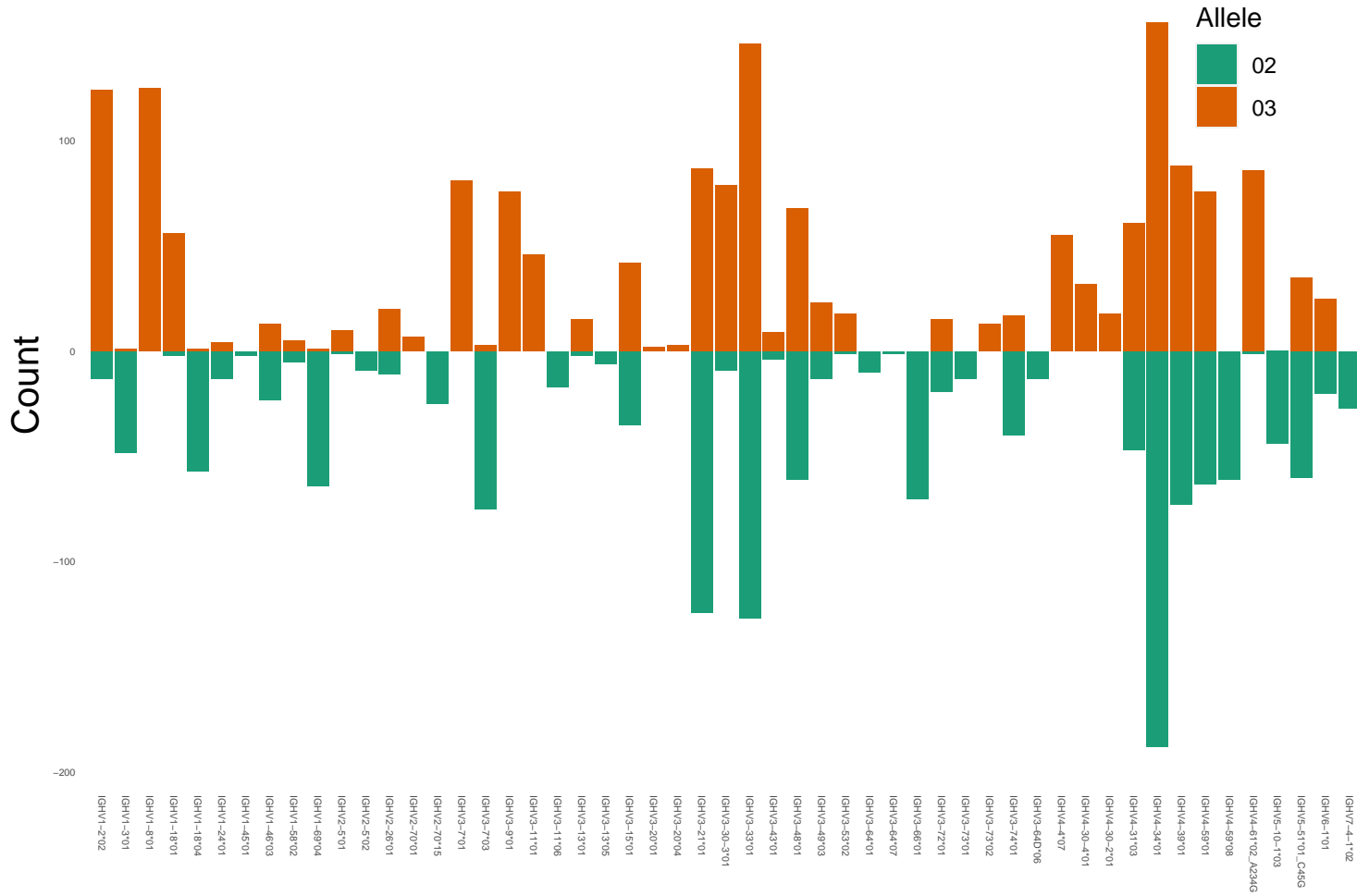
155 sequences assigned  
33 (21.3%) exact matches, in which:  
33 unique CDR3  
6 unique J



Allele Usage



Sequence Count by IGHJ6 allele usage





Warning – no inferred sequences found.