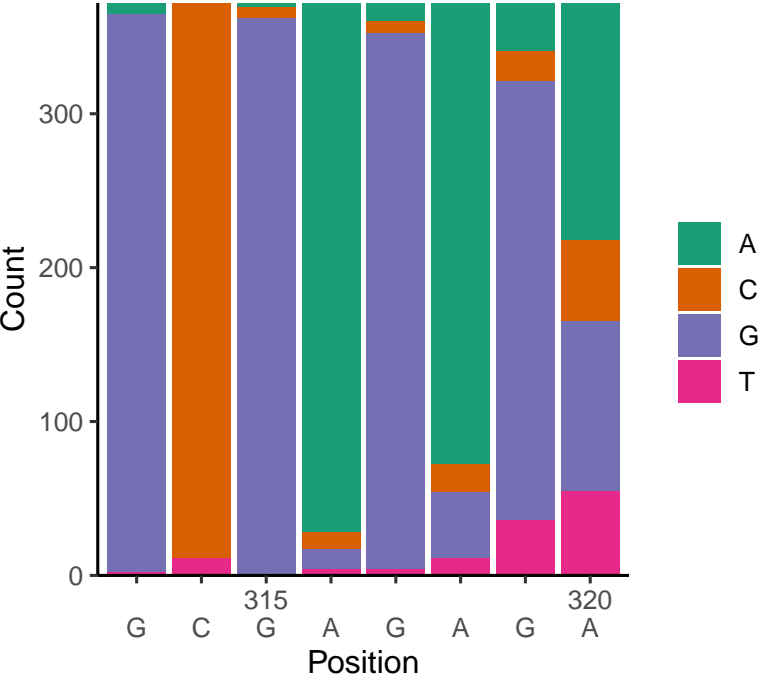
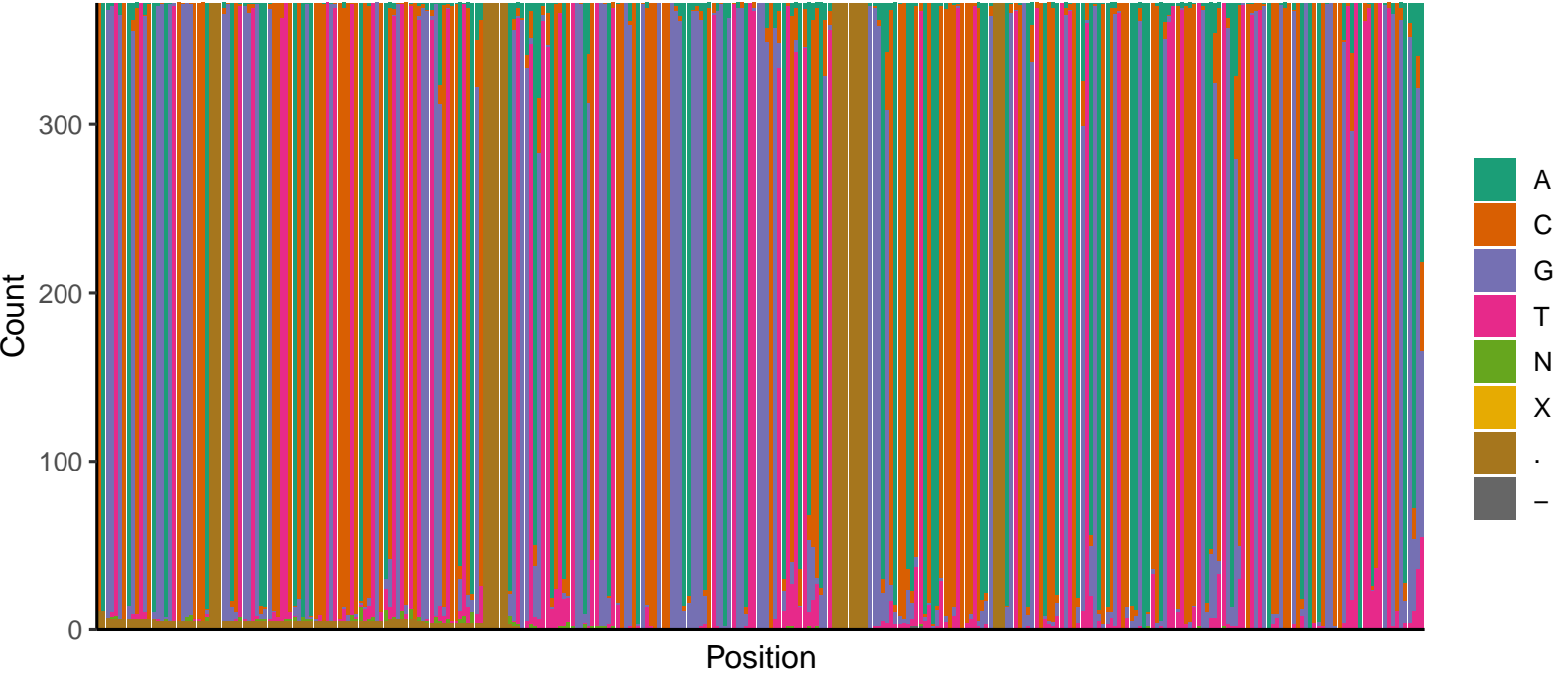


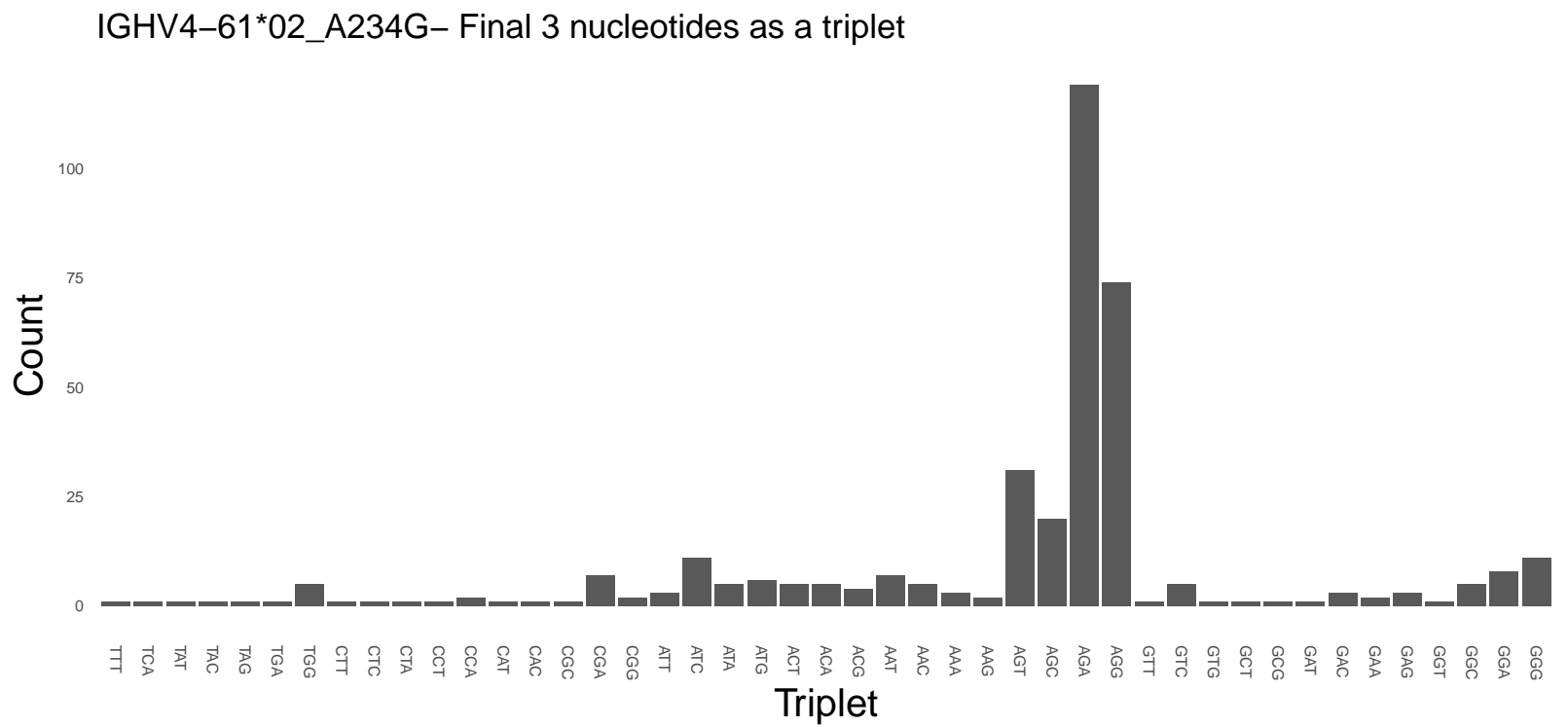
Gene IGHV4-61\*02\_A234G



Gene IGHV4-61\*02\_A234G

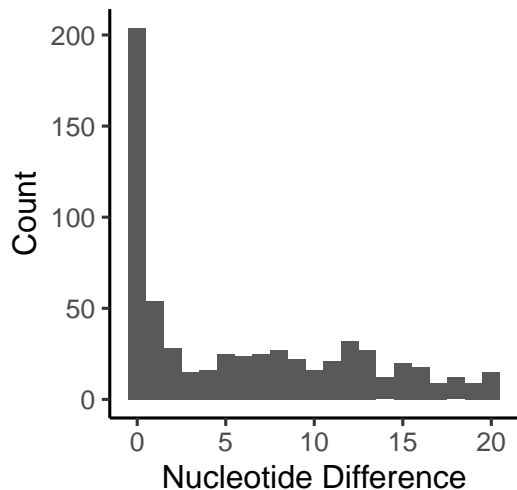


IGHV4-61\*02\_A234G- Final 3 nucleotides as a triplet



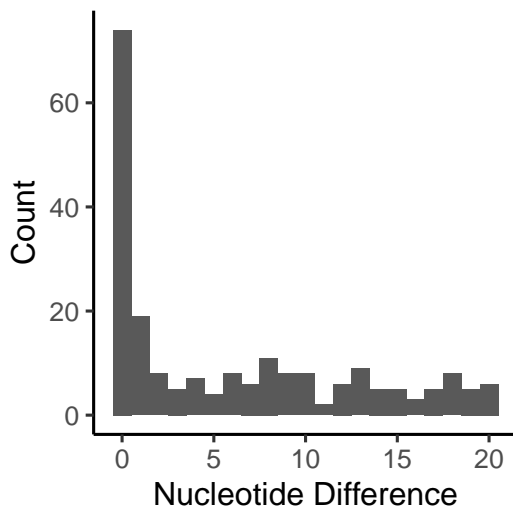
### IGHV1-2\*02

713 sequences assigned  
204 (28.6%) exact matches, in which:  
200 unique CDR3  
6 unique J



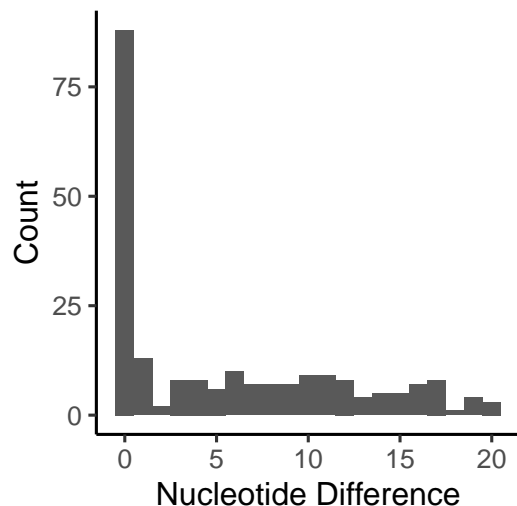
### IGHV1-18\*01

238 sequences assigned  
74 (31.1%) exact matches, in which:  
72 unique CDR3  
5 unique J



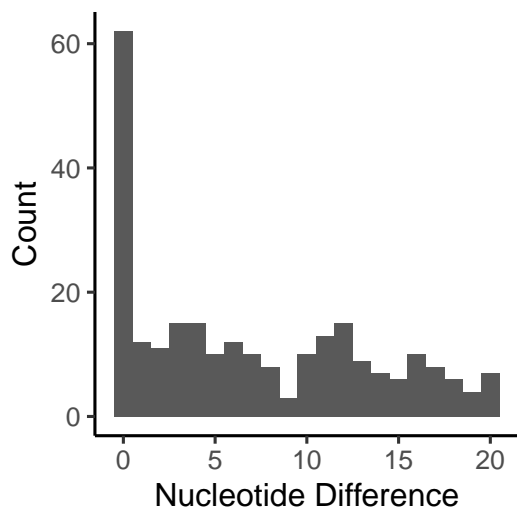
### IGHV1-46\*03

240 sequences assigned  
88 (36.7%) exact matches, in which:  
88 unique CDR3  
7 unique J



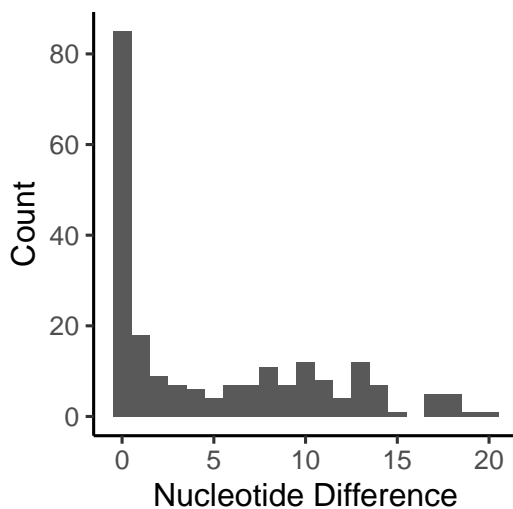
### IGHV1-3\*01

298 sequences assigned  
62 (20.8%) exact matches, in which:  
62 unique CDR3  
4 unique J



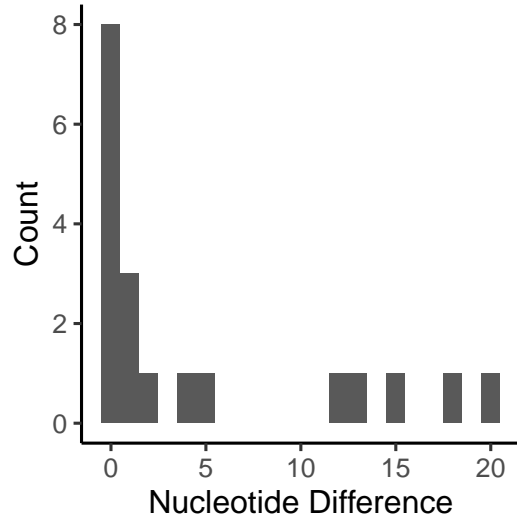
### IGHV1-18\*04

241 sequences assigned  
85 (35.3%) exact matches, in which:  
85 unique CDR3  
6 unique J



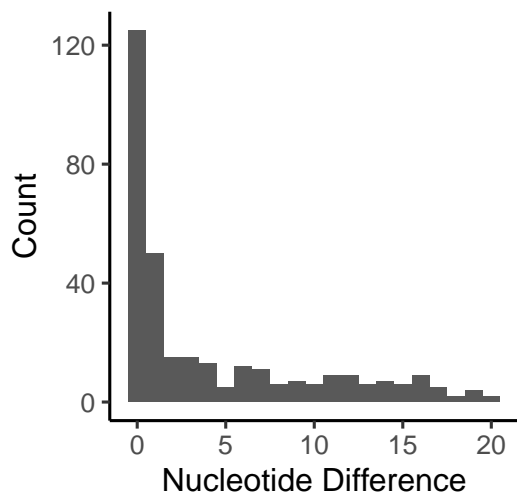
### IGHV1-58\*02

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



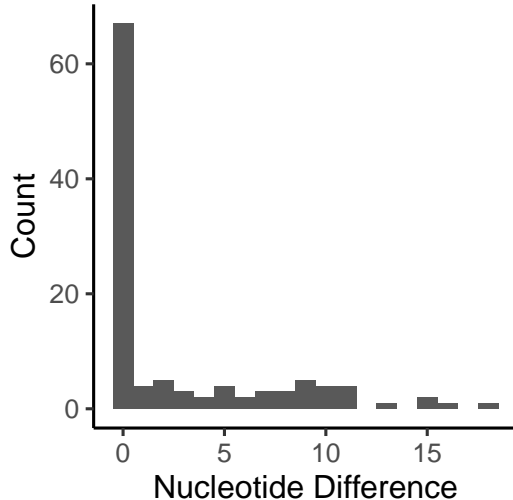
### IGHV1-8\*01

349 sequences assigned  
125 (35.8%) exact matches, in which:  
121 unique CDR3  
6 unique J



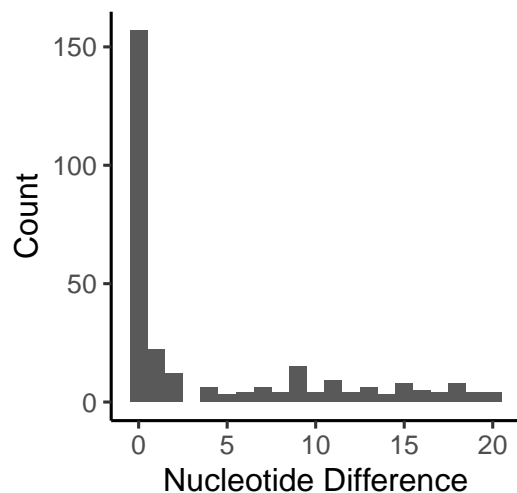
### IGHV1-24\*01

122 sequences assigned  
67 (54.9%) exact matches, in which:  
66 unique CDR3  
6 unique J



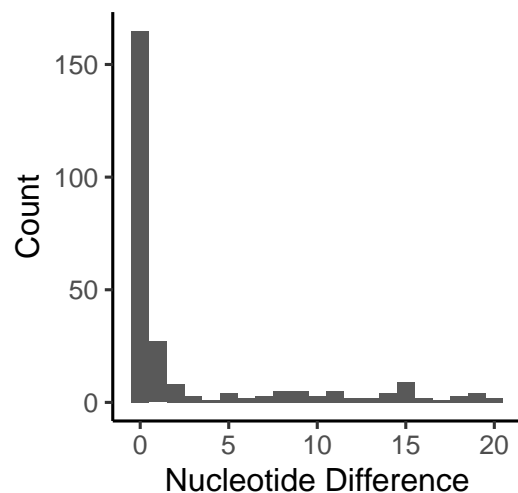
### IGHV1-69\*01

346 sequences assigned  
157 (45.4%) exact matches, in which:  
156 unique CDR3  
5 unique J



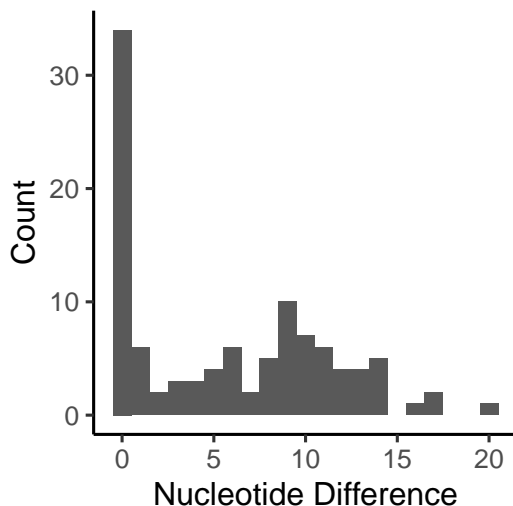
### IGHV1–69\*04

313 sequences assigned  
165 (52.7%) exact matches, in which:  
162 unique CDR3  
6 unique J



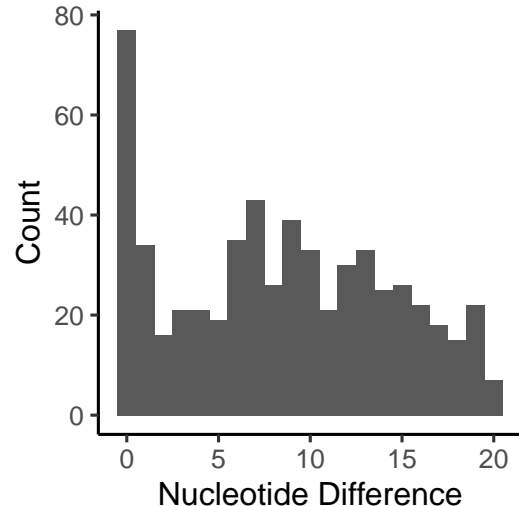
### IGHV2–26\*01

111 sequences assigned  
34 (30.6%) exact matches, in which:  
34 unique CDR3  
7 unique J



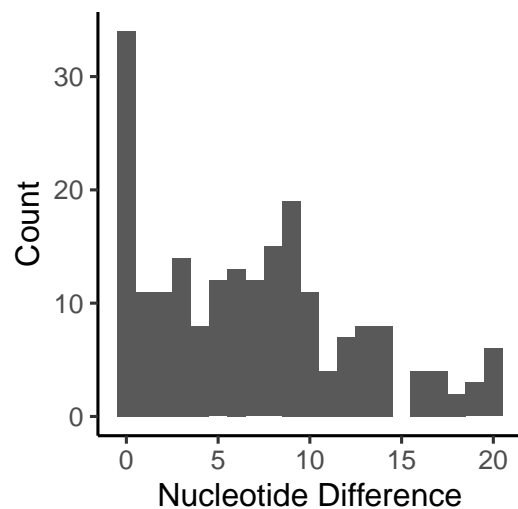
### IGHV3–7\*01

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



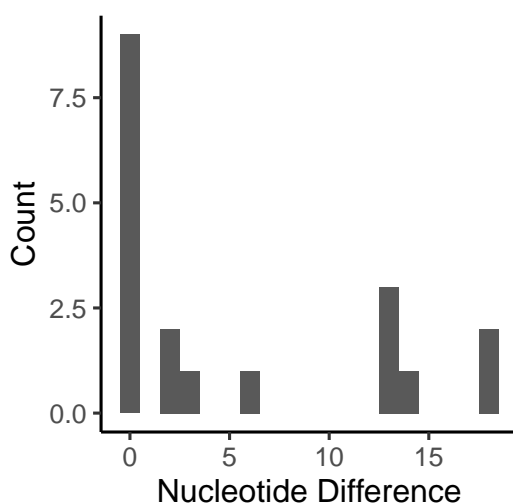
### IGHV2–5\*01

226 sequences assigned  
34 (15%) exact matches, in which:  
34 unique CDR3  
4 unique J



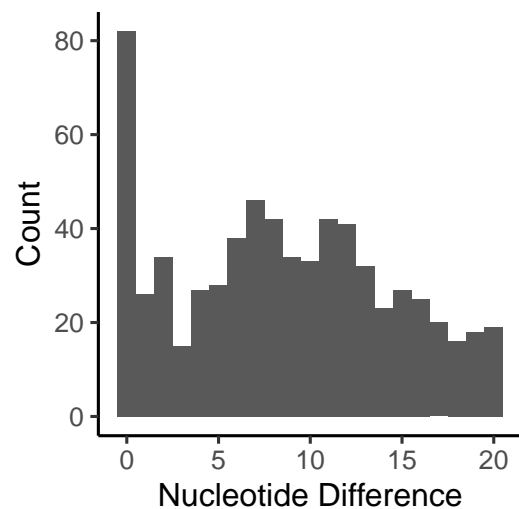
### IGHV2–70\*01

26 sequences assigned  
9 (34.6%) exact matches, in which:  
9 unique CDR3  
4 unique J



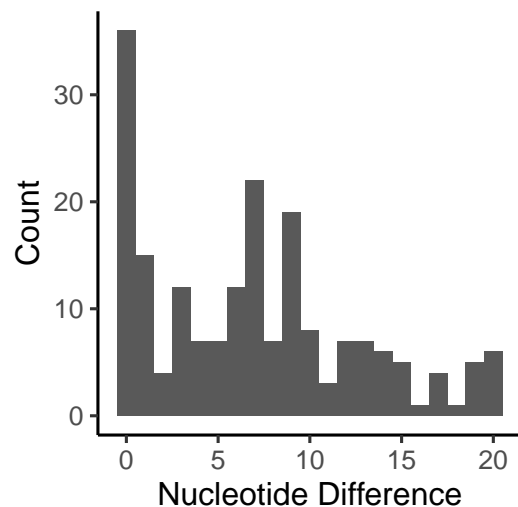
### IGHV3–7\*03

774 sequences assigned  
82 (10.6%) exact matches, in which:  
81 unique CDR3  
6 unique J



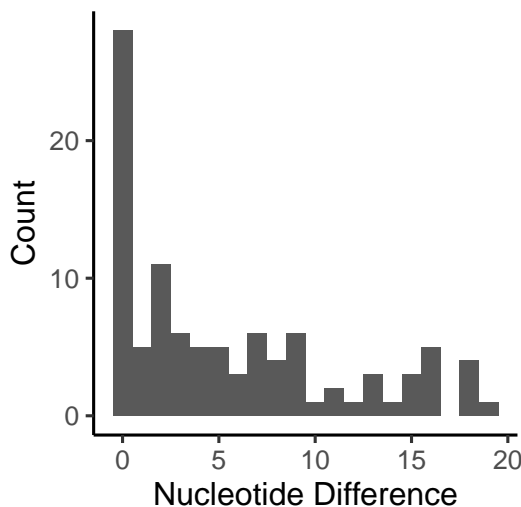
### IGHV2–5\*02

229 sequences assigned  
36 (15.7%) exact matches, in which:  
36 unique CDR3  
5 unique J



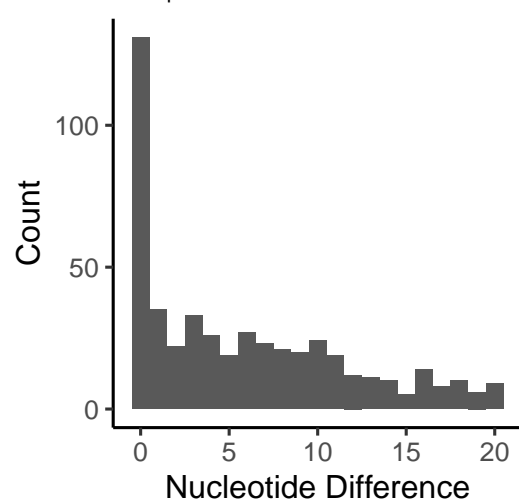
### IGHV2–70\*15

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



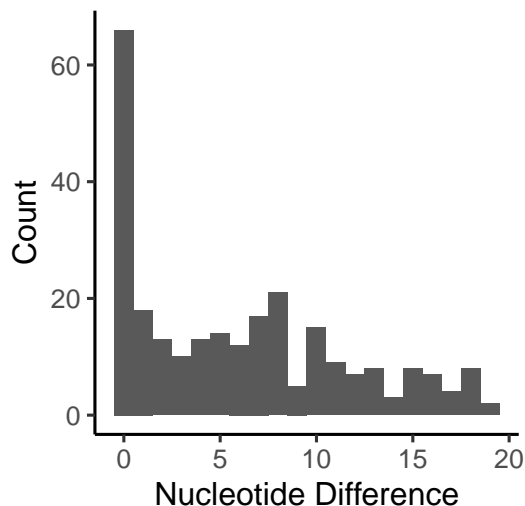
### IGHV3–9\*01

537 sequences assigned  
131 (24.4%) exact matches, in which:  
131 unique CDR3  
6 unique J



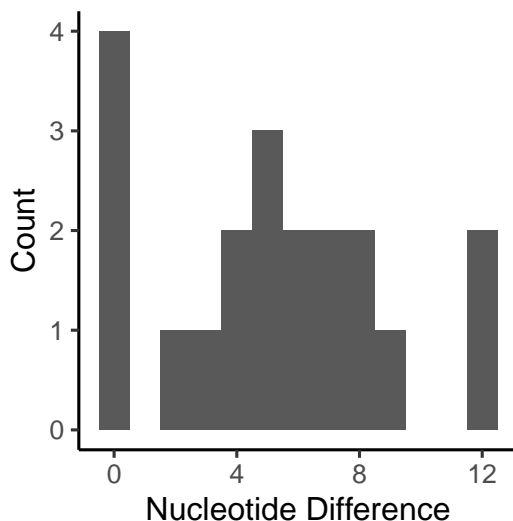
### IGHV3-11\*01

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



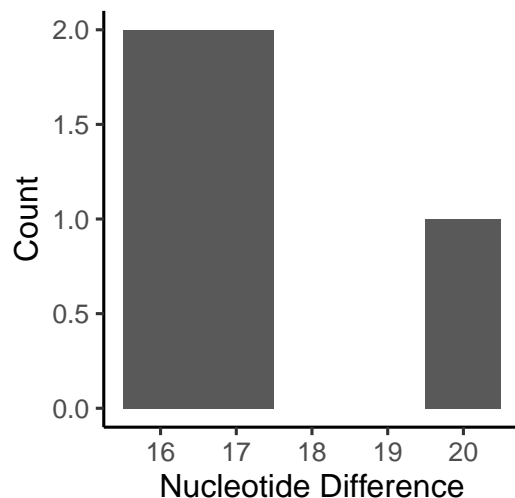
### IGHV3-13\*05

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



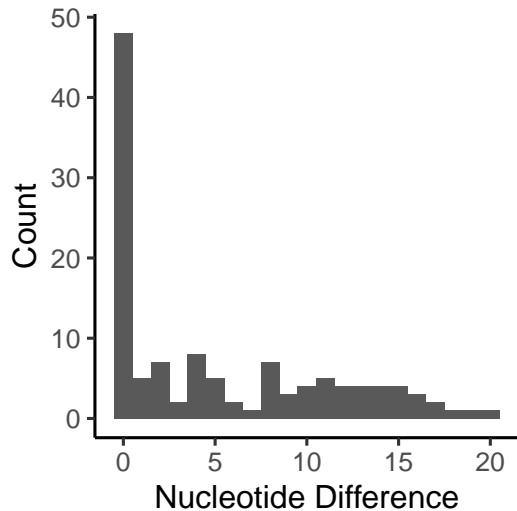
### IGHV3-20\*04

13 sequences assigned  
No exact matches.



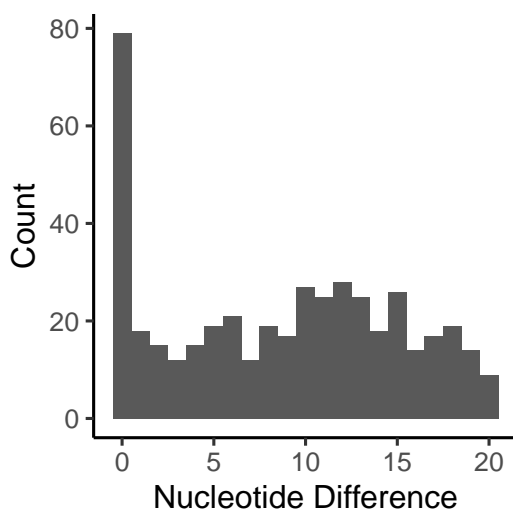
### IGHV3-11\*06

148 sequences assigned  
48 (32.4%) exact matches, in which:  
45 unique CDR3  
5 unique J



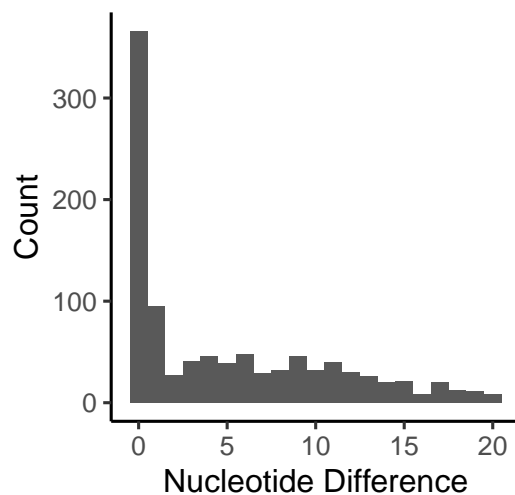
### IGHV3-15\*01

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



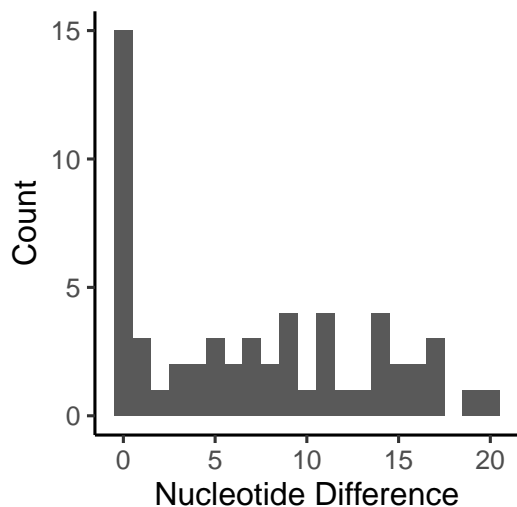
### IGHV3-21\*01

1081 sequences assigned  
366 (33.9%) exact matches, in which:  
359 unique CDR3  
6 unique J



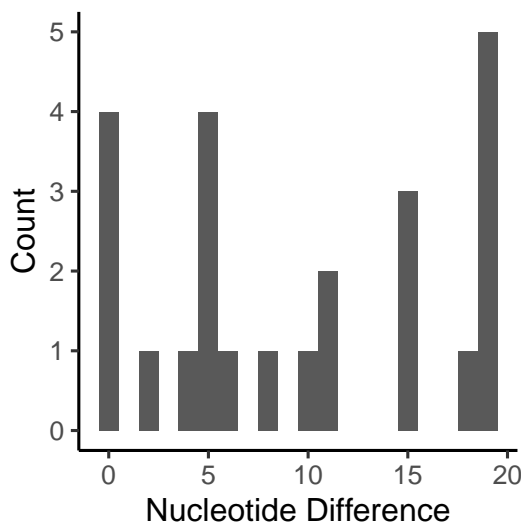
### IGHV3-13\*01

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



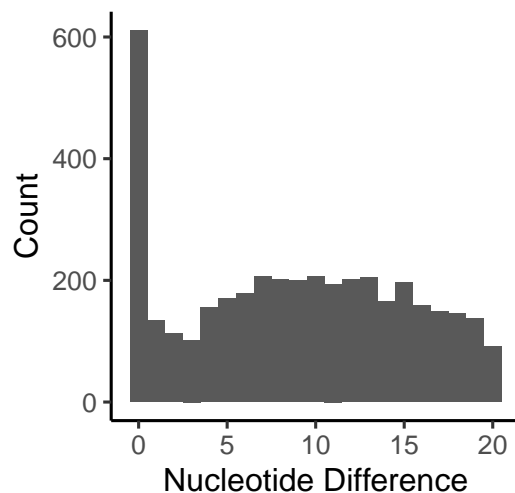
### IGHV3-20\*01

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



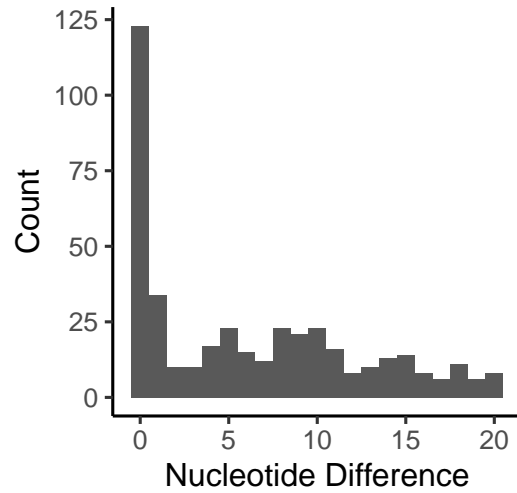
### IGHV3-23\*01

4593 sequences assigned  
611 (13.3%) exact matches, in which:  
603 unique CDR3  
7 unique J



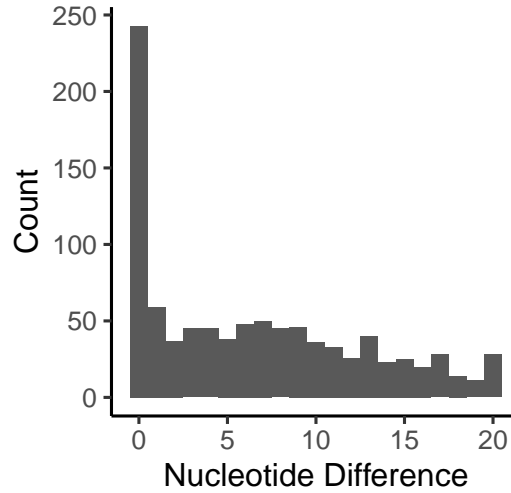
### IGHV3-30-3\*01

471 sequences assigned  
123 (26.1%) exact matches, in which:  
120 unique CDR3  
5 unique J



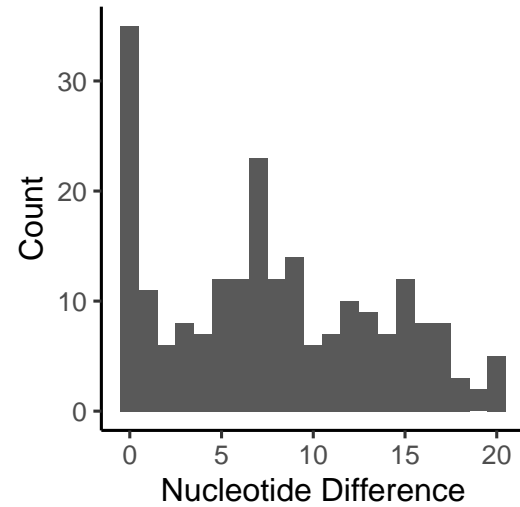
### IGHV3-33\*01

1050 sequences assigned  
243 (23.1%) exact matches, in which:  
238 unique CDR3  
7 unique J



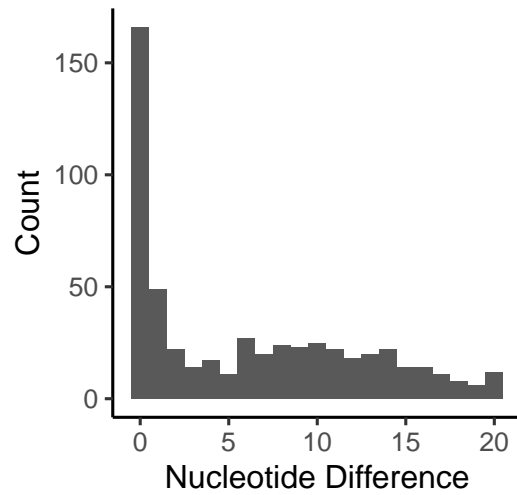
### IGHV3-49\*03

245 sequences assigned  
35 (14.3%) exact matches, in which:  
35 unique CDR3  
6 unique J



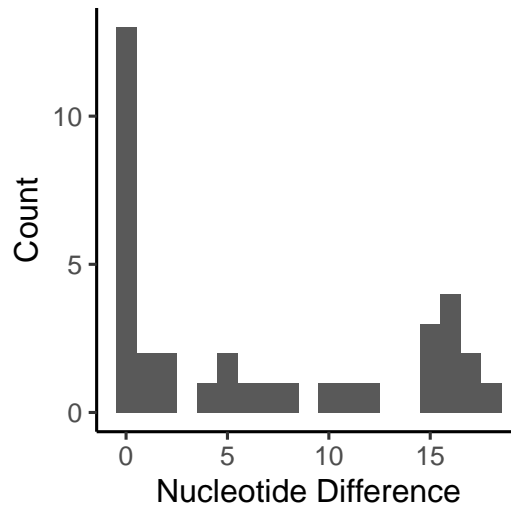
### IGHV3-30\*04

638 sequences assigned  
166 (26%) exact matches, in which:  
164 unique CDR3  
6 unique J



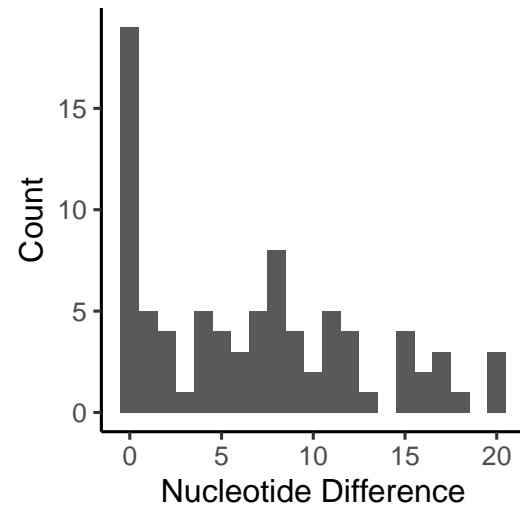
### IGHV3-43\*01

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



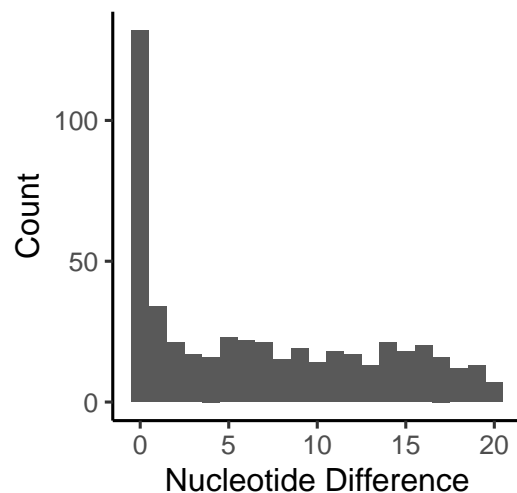
### IGHV3-53\*02

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



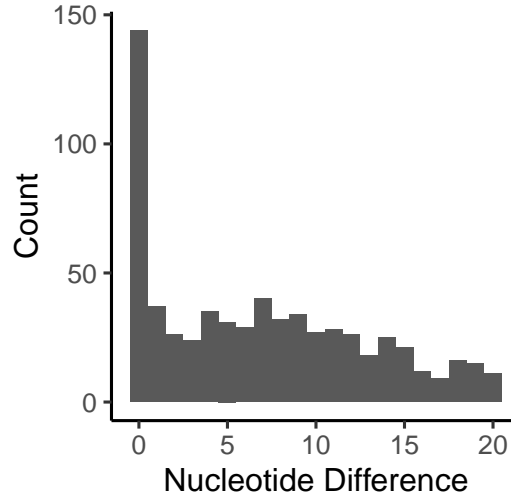
### IGHV3-30\*18

559 sequences assigned  
132 (23.6%) exact matches, in which:  
130 unique CDR3  
5 unique J



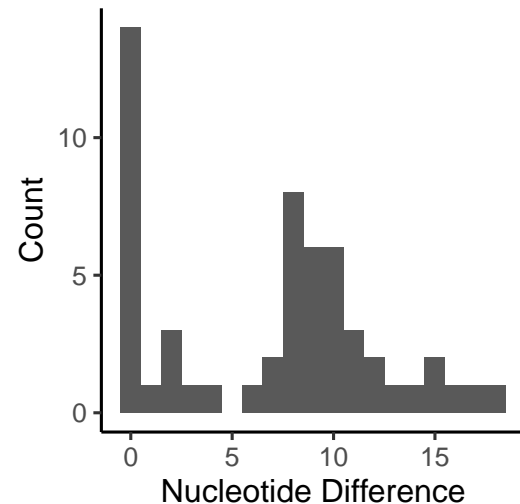
### IGHV3-48\*01

724 sequences assigned  
144 (19.9%) exact matches, in which:  
142 unique CDR3  
7 unique J



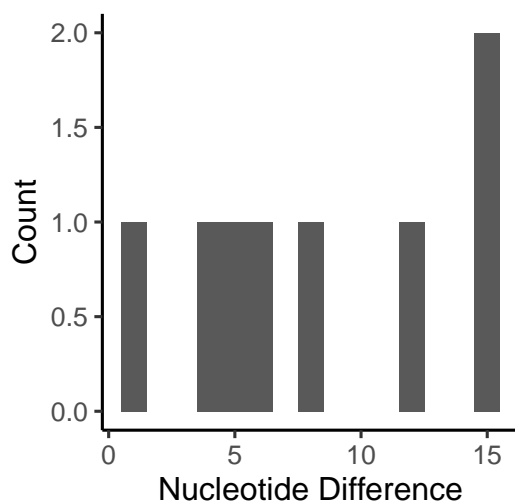
### IGHV3-64\*01

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



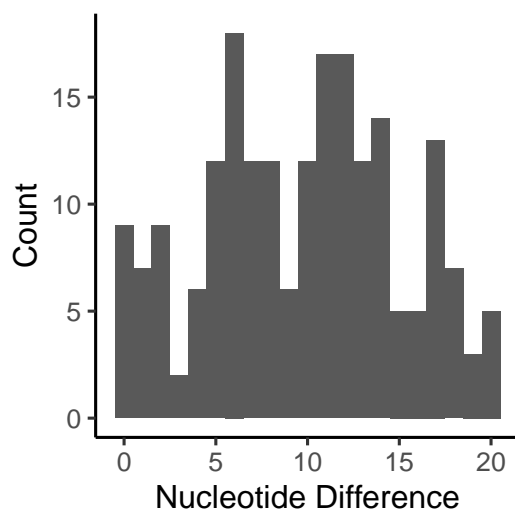
### IGHV3-64\*07

12 sequences assigned  
No exact matches.



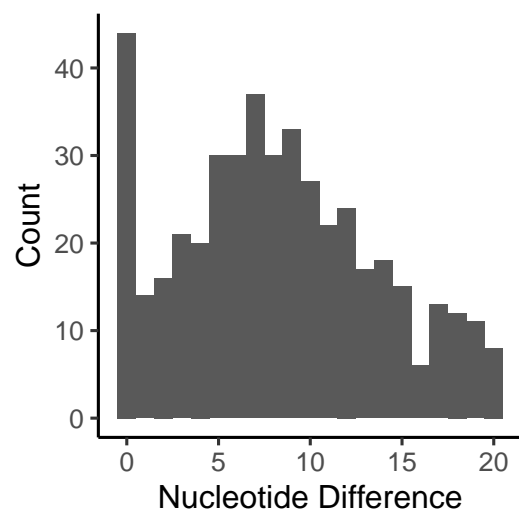
### IGHV3-72\*01

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



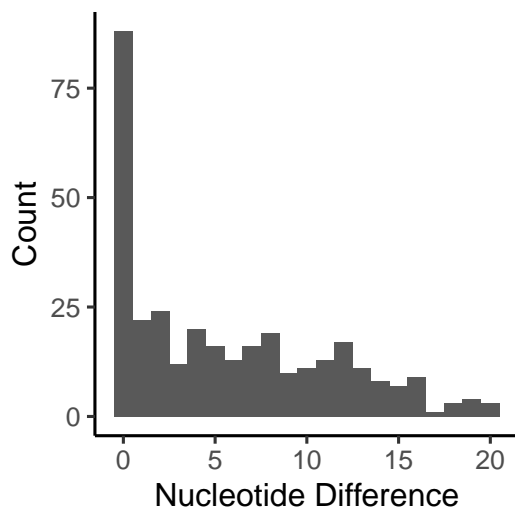
### IGHV3-74\*01

515 sequences assigned  
44 (8.5%) exact matches, in which:  
42 unique CDR3  
5 unique J



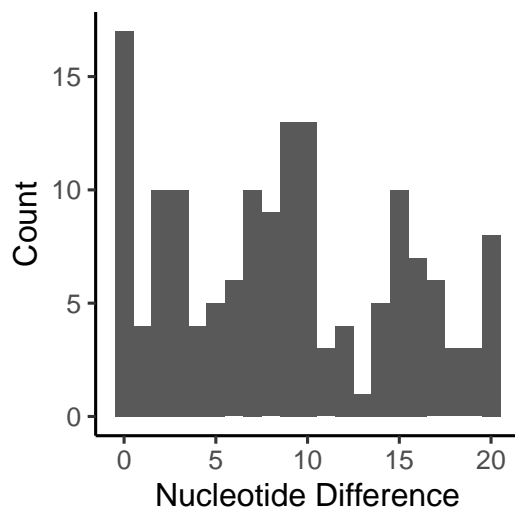
### IGHV3-66\*01

395 sequences assigned  
88 (22.3%) exact matches, in which:  
87 unique CDR3  
6 unique J



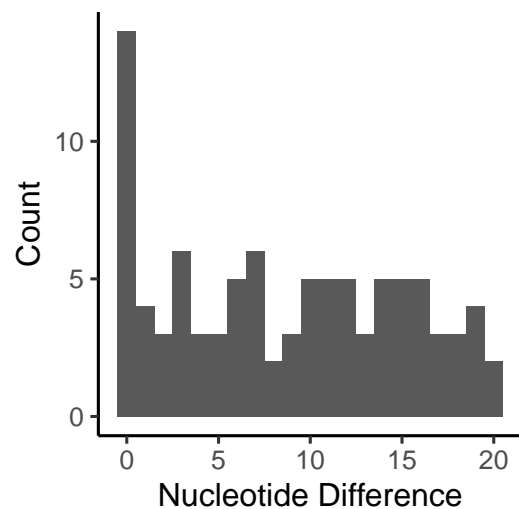
### IGHV3-73\*01

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



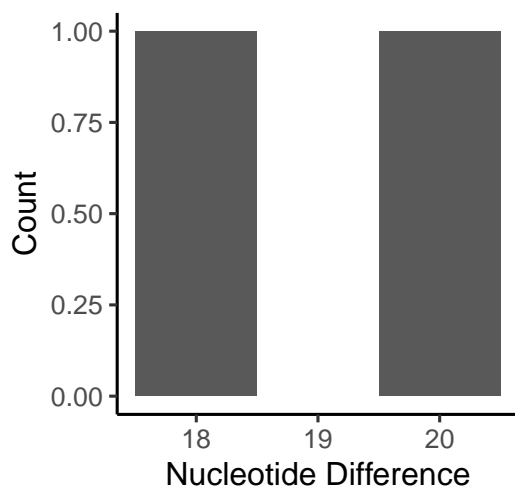
### IGHV3-64D\*06

101 sequences assigned  
14 (13.9%) exact matches, in which:  
14 unique CDR3  
3 unique J



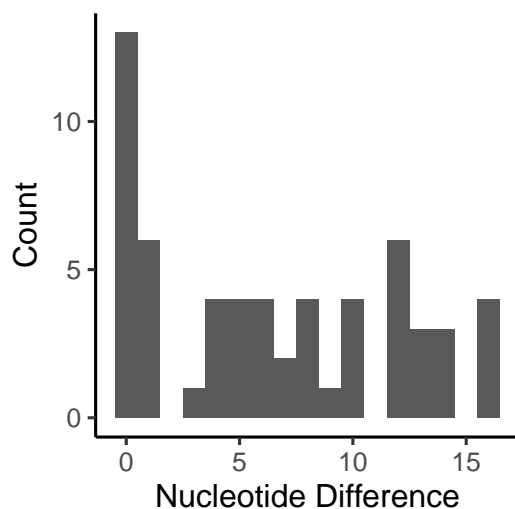
### IGHV3-69-1\*01

5 sequences assigned  
No exact matches.



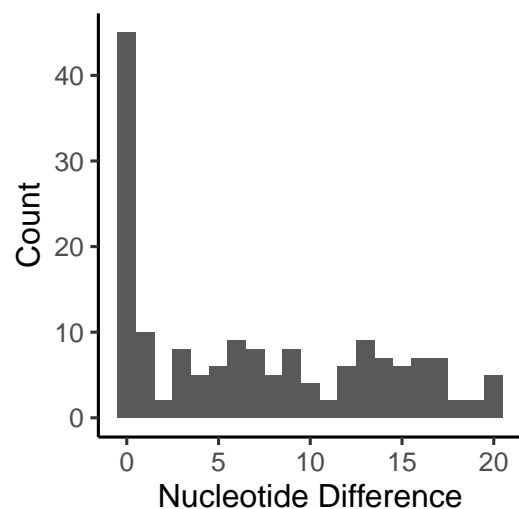
### IGHV3-73\*02

72 sequences assigned  
13 (18.1%) exact matches, in which:  
12 unique CDR3  
3 unique J



### IGHV4-4\*07

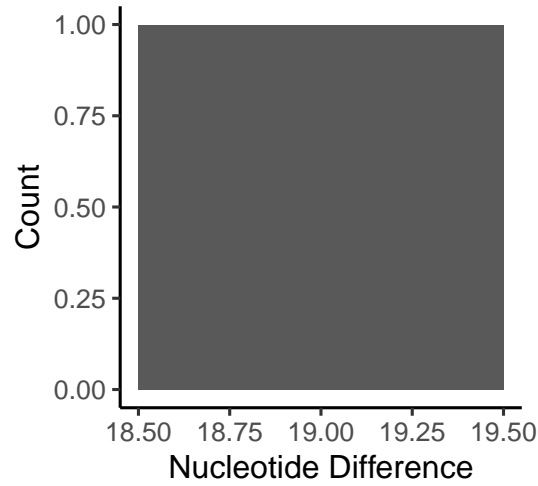
187 sequences assigned  
45 (24.1%) exact matches, in which:  
45 unique CDR3  
4 unique J





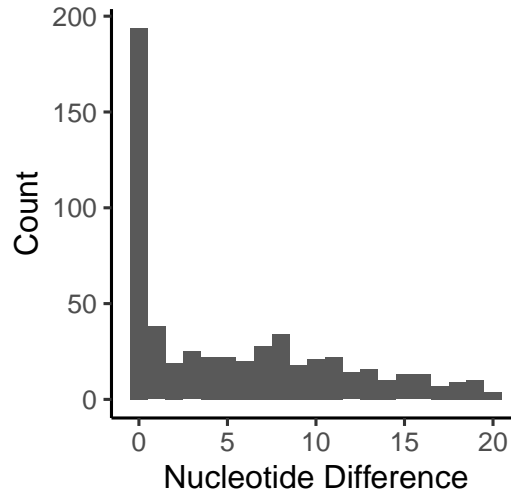
### IGHV4-28\*05

1 sequences assigned  
No exact matches.



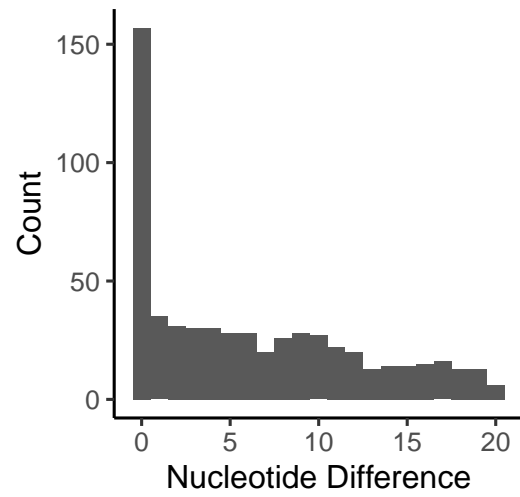
### IGHV4-31\*03

626 sequences assigned  
194 (31%) exact matches, in which:  
194 unique CDR3  
7 unique J



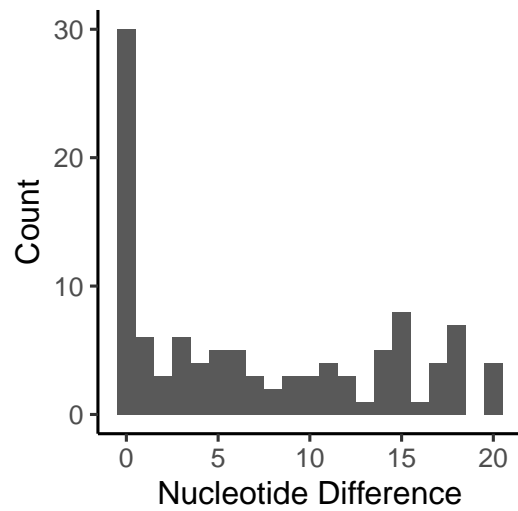
### IGHV4-59\*01

660 sequences assigned  
157 (23.8%) exact matches, in which:  
157 unique CDR3  
7 unique J



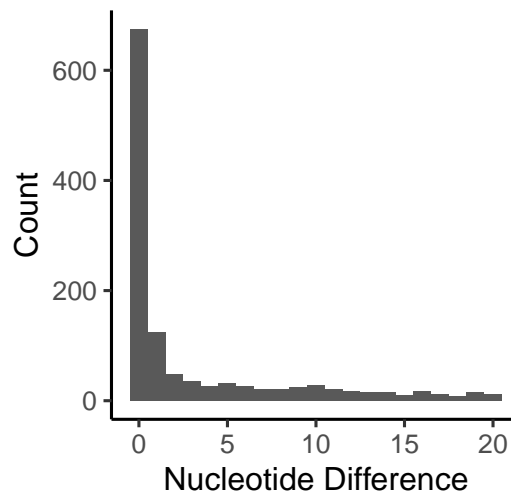
### IGHV4-30-4\*01

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



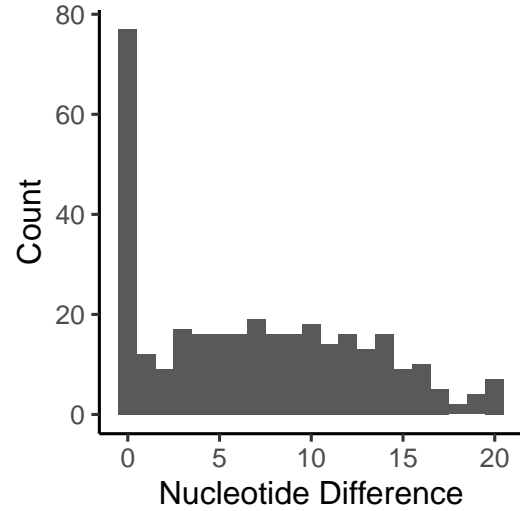
### IGHV4-34\*01

1320 sequences assigned  
675 (51.1%) exact matches, in which:  
659 unique CDR3  
7 unique J



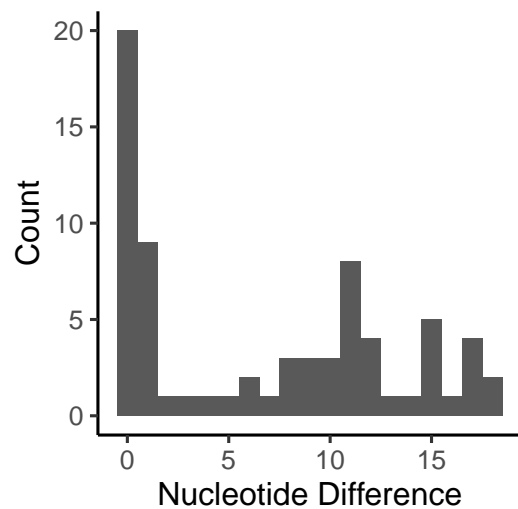
### IGHV4-59\*08

383 sequences assigned  
77 (20.1%) exact matches, in which:  
77 unique CDR3  
6 unique J



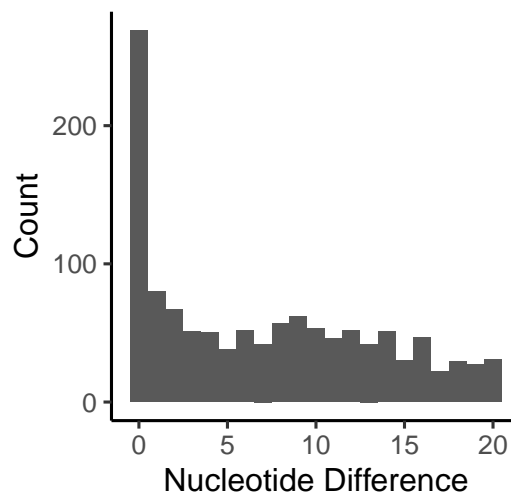
### IGHV4-30-2\*01

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



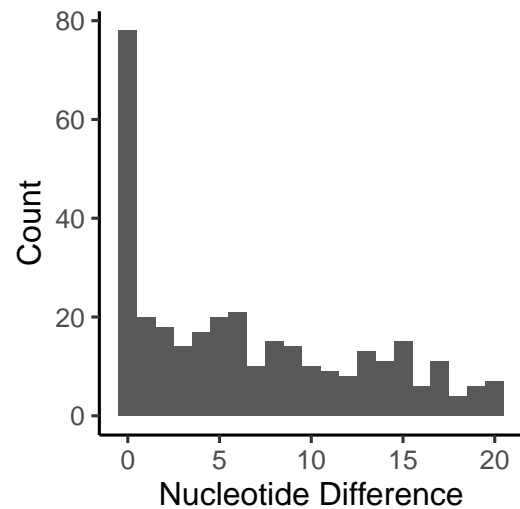
### IGHV4-39\*01

1350 sequences assigned  
269 (19.9%) exact matches, in which:  
263 unique CDR3  
7 unique J



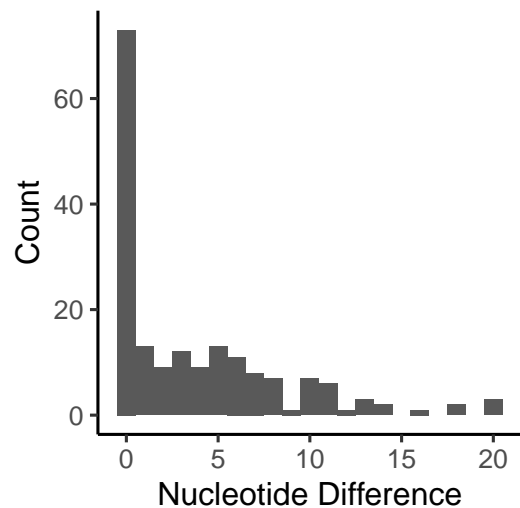
### IGHV4-61\*02\_A234G

372 sequences assigned  
78 (21%) exact matches, in which:  
75 unique CDR3  
6 unique J



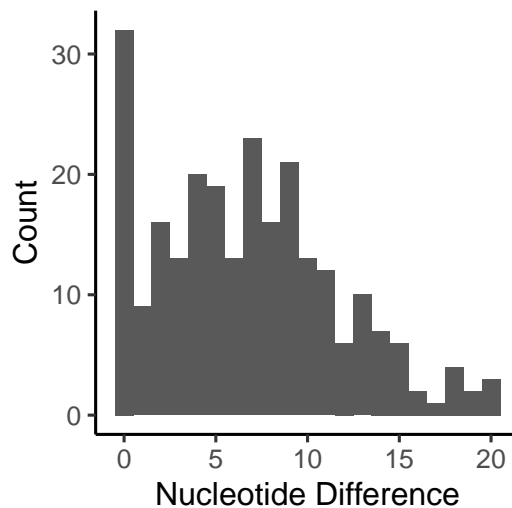
## IGHV5-10-1\*03

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



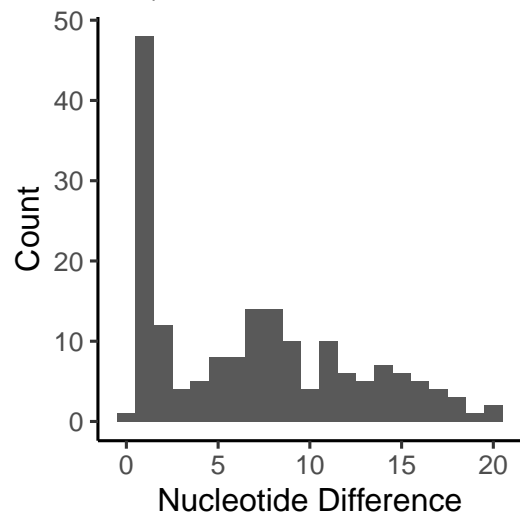
## IGHV6-1\*01

260 sequences assigned  
32 (12.3%) exact matches, in which:  
31 unique CDR3  
5 unique J



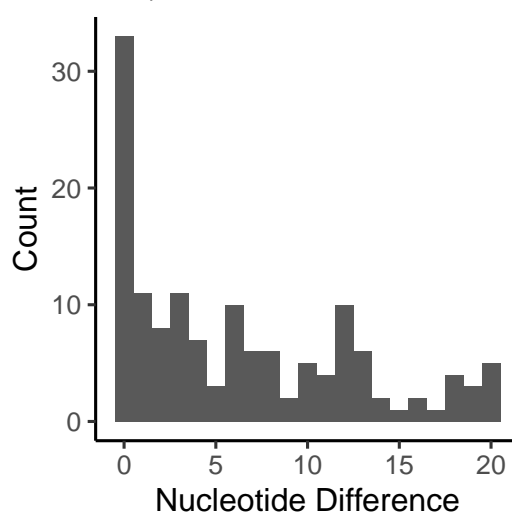
## IGHV5-51\*01

193 sequences assigned  
1 (0.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



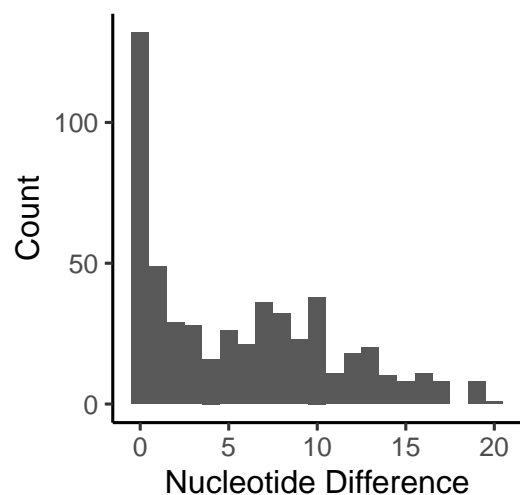
## IGHV7-4-1\*02

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

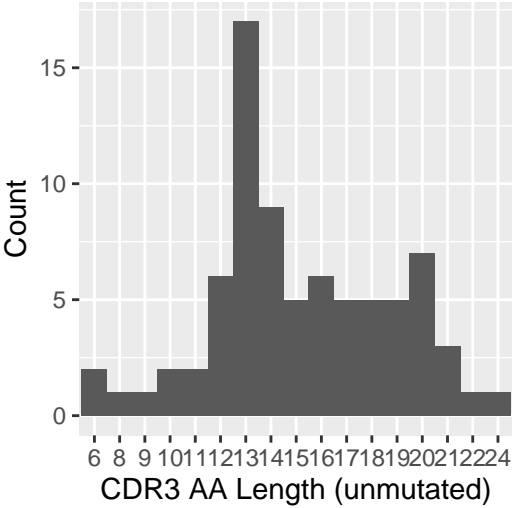


## IGHV5-51\*03

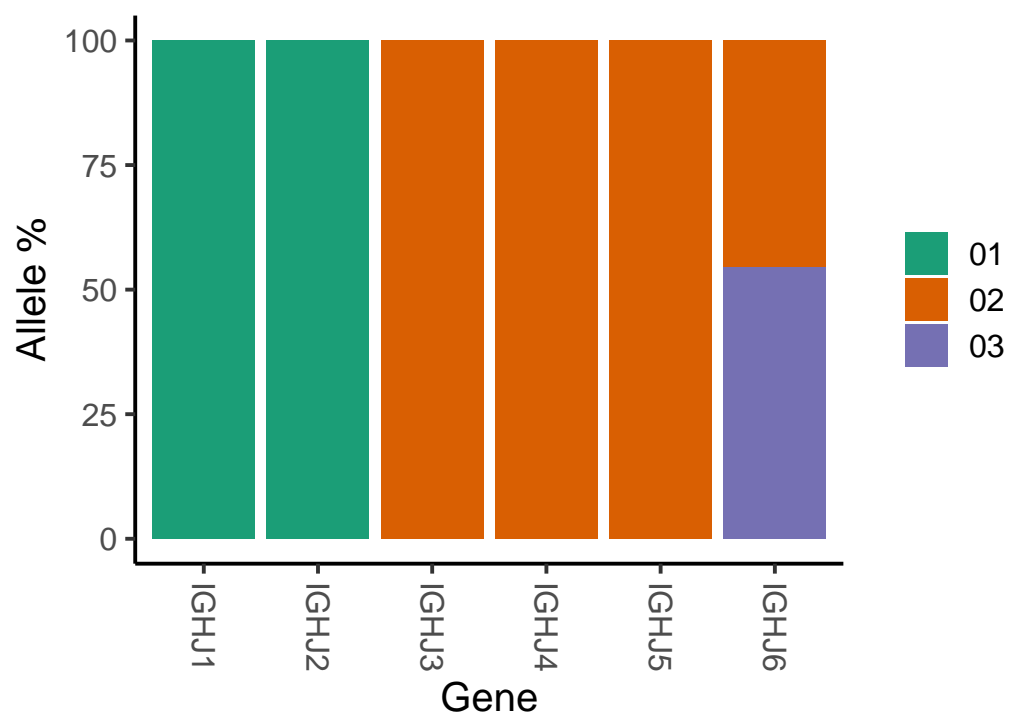
568 sequences assigned  
132 (23.2%) exact matches, in which:  
128 unique CDR3  
7 unique J



IGHV4-61\*02\_A234G



Allele Usage



Sequence Count by IGHJ6 allele usage

