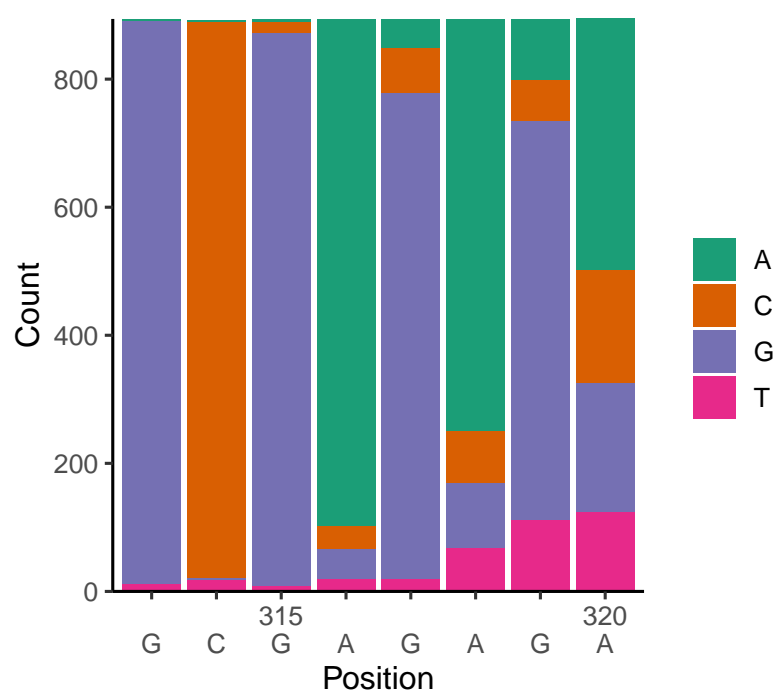
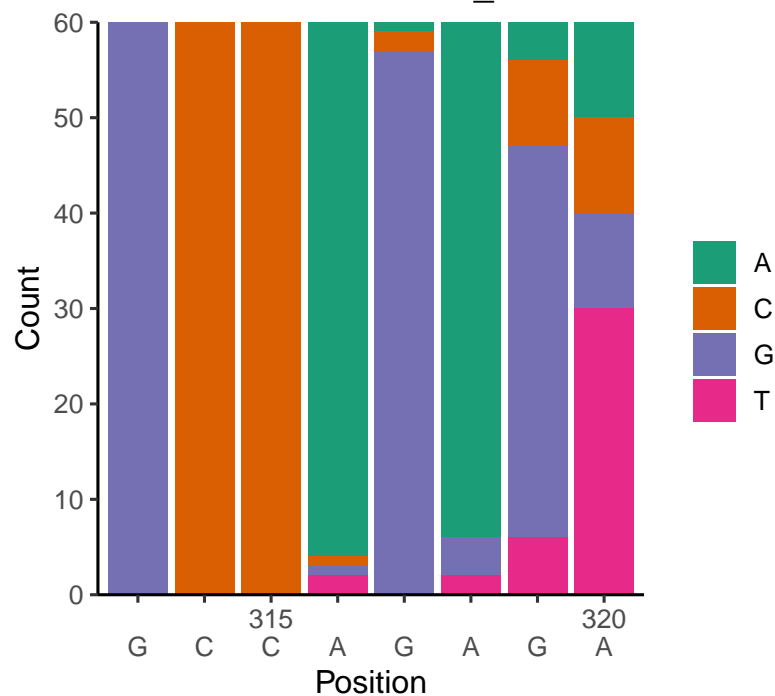


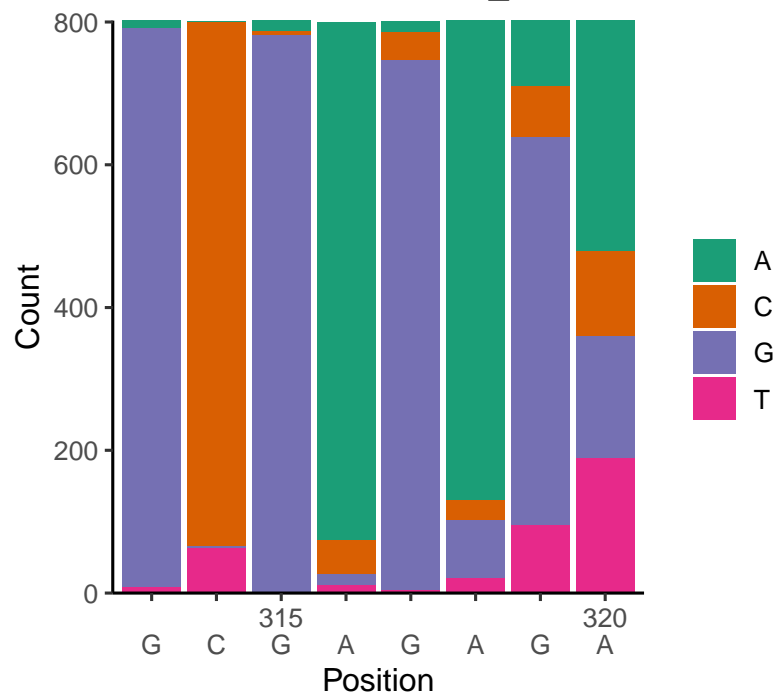
Gene IGHV1-69\*08\_C191T



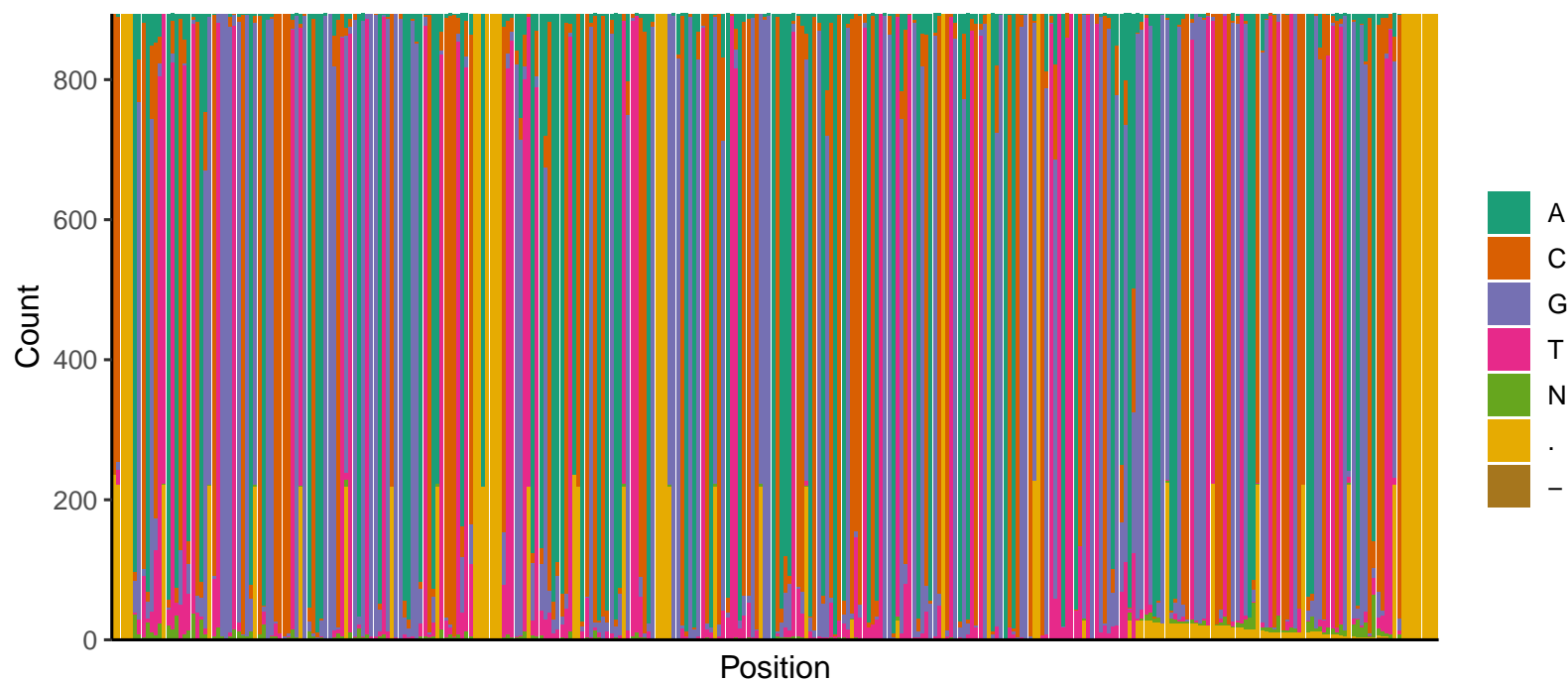
Gene IGHV4-30-2\*01\_G139C



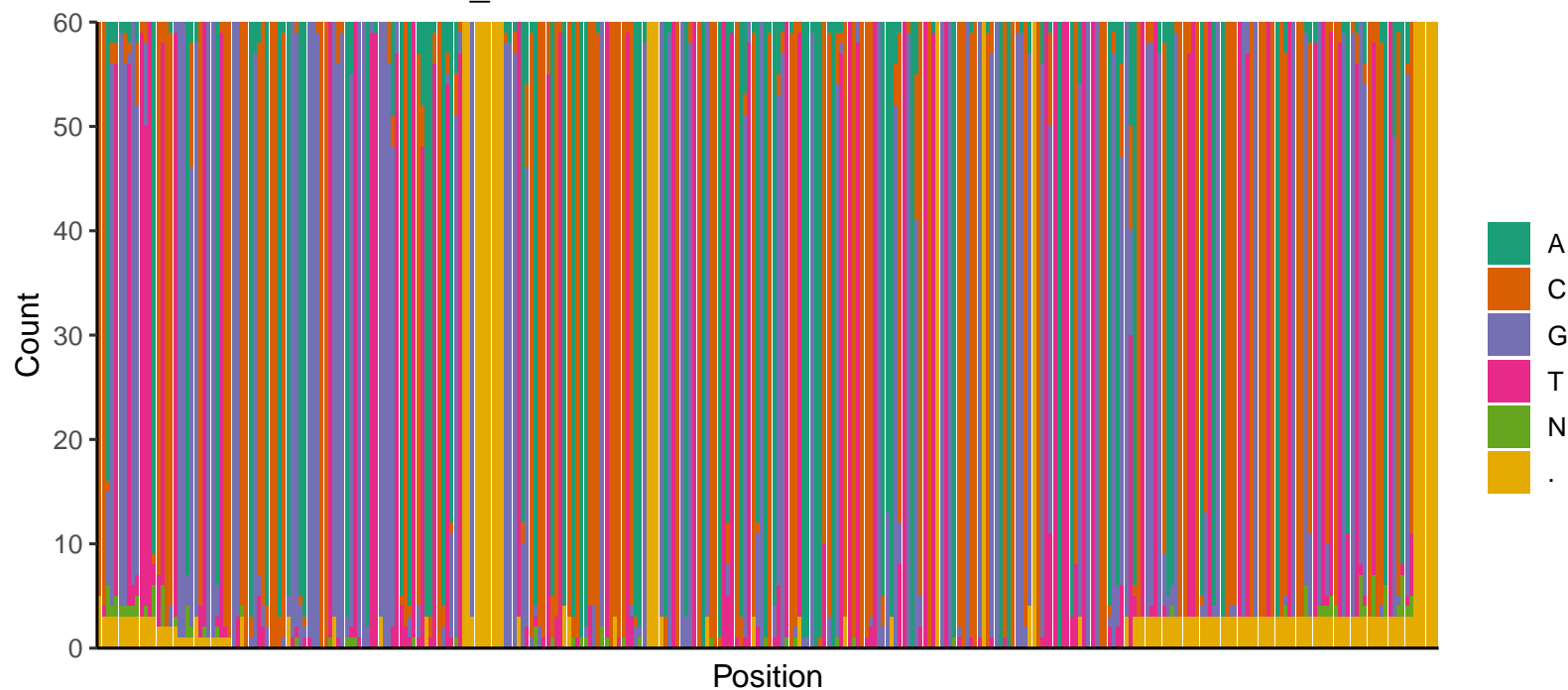
Gene IGHV4-38-2\*02\_A70G



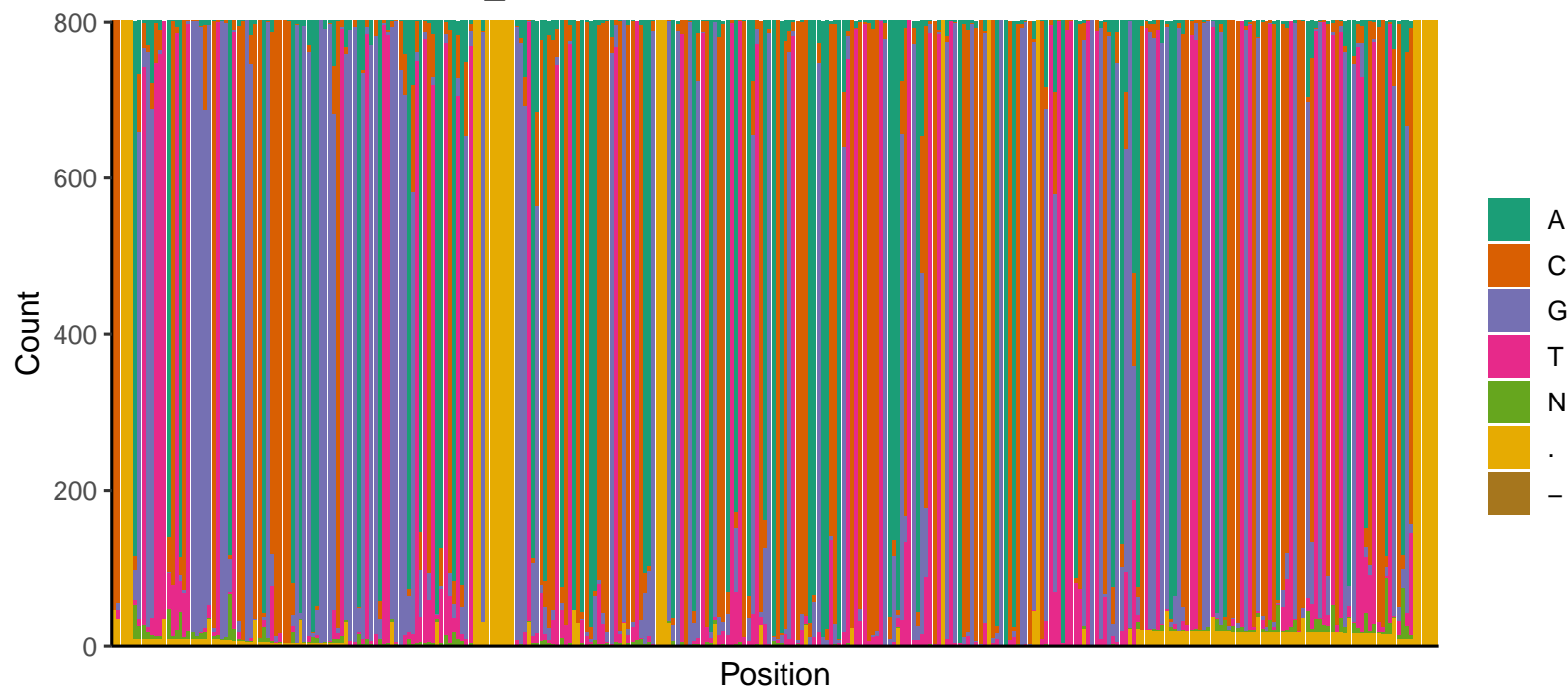
Gene IGHV1-69\*08\_C191T



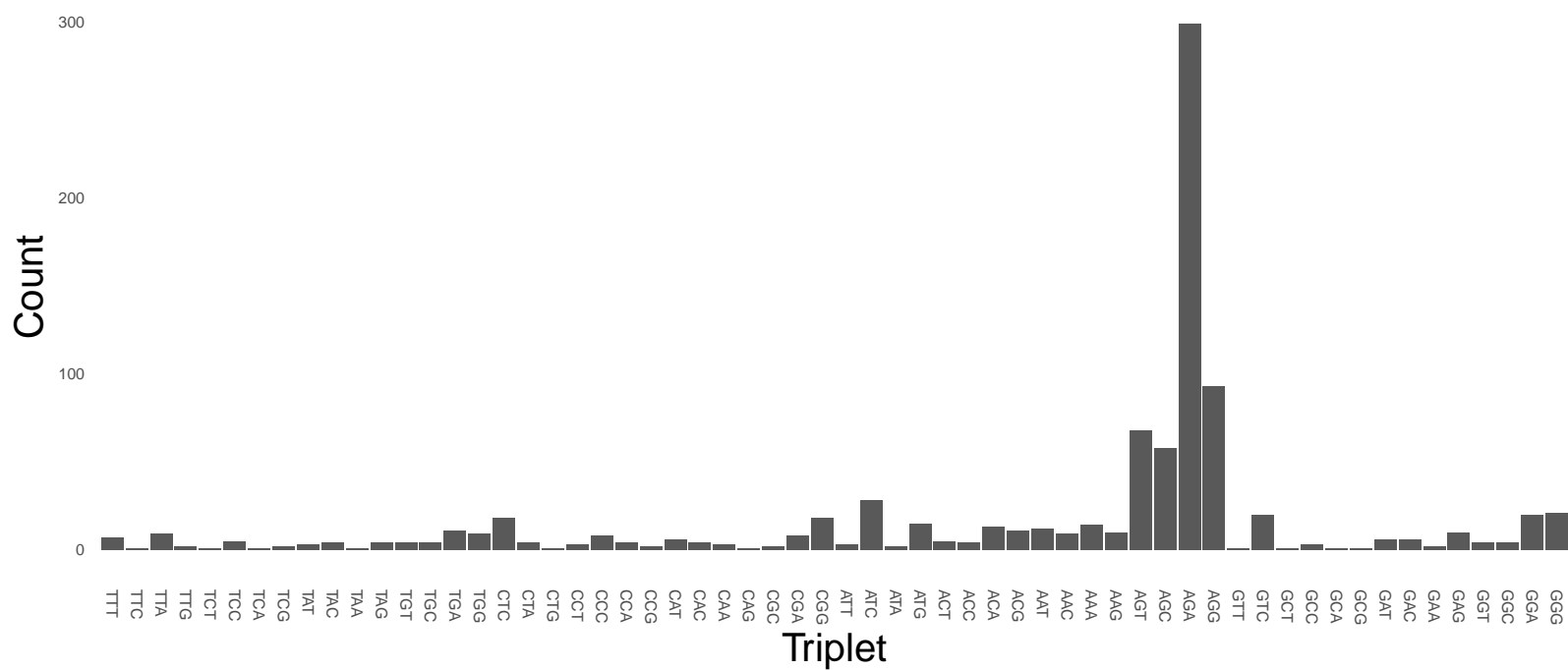
Gene IGHV4-30-2\*01\_G139C



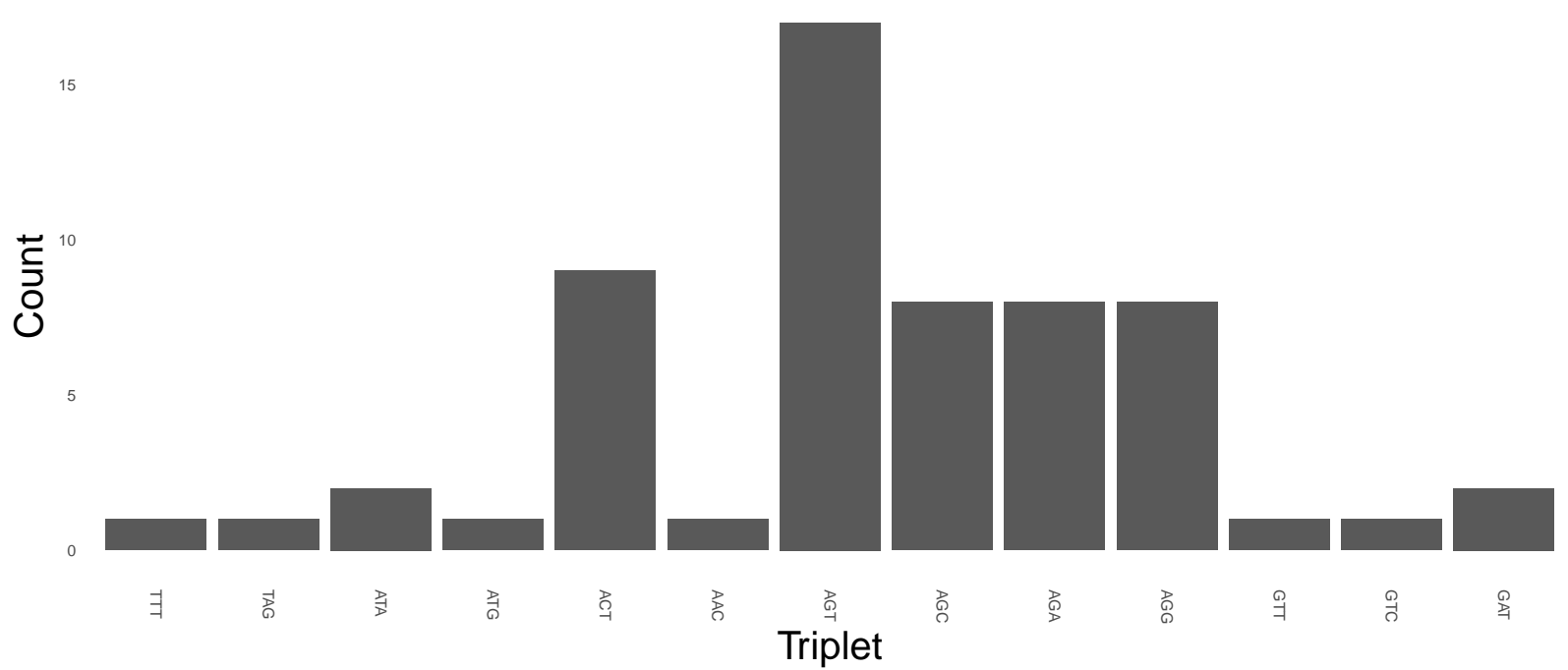
Gene IGHV4-38-2\*02\_A70G



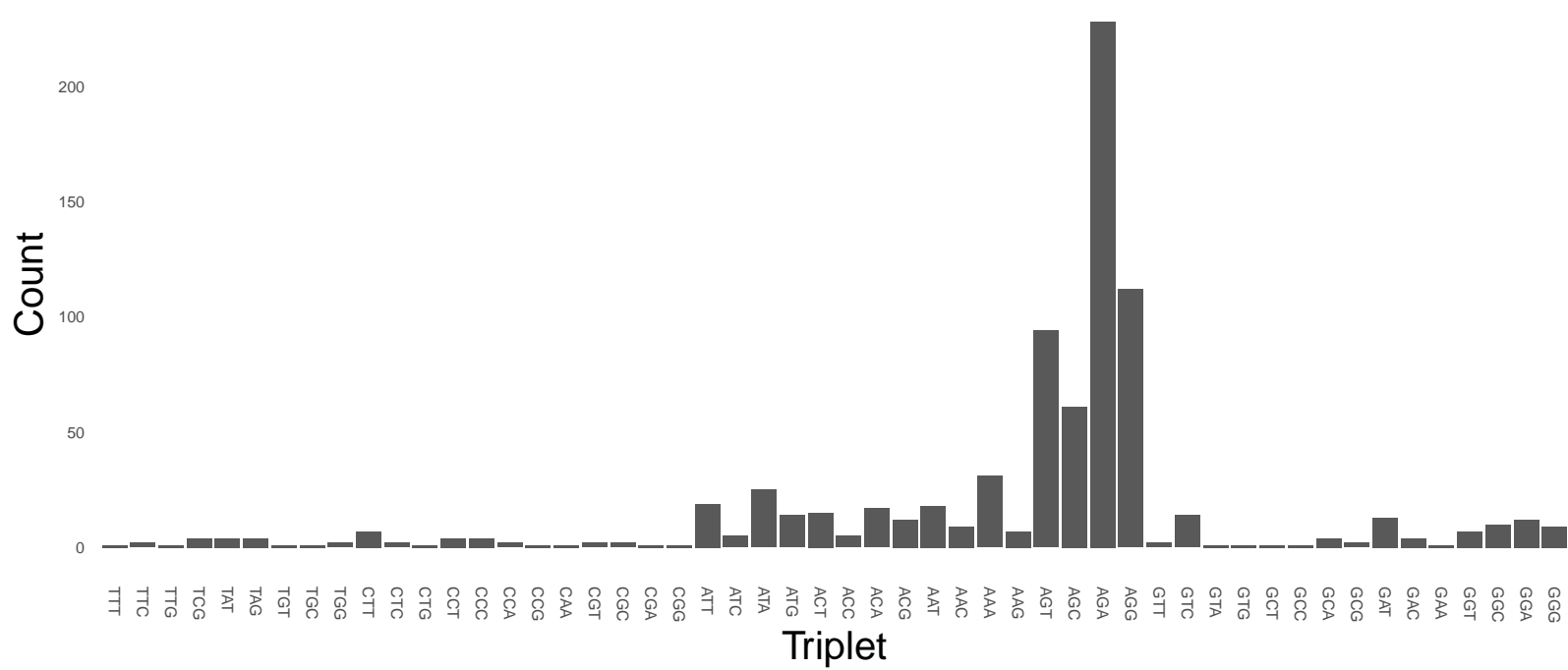
IGHV1-69\*08\_C191T- Final 3 nucleotides as a triplet



IGHV4-30-2\*01\_G139C- Final 3 nucleotides as a triplet

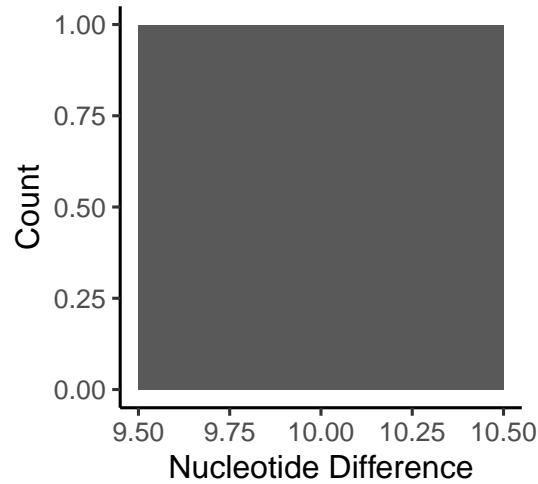


IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



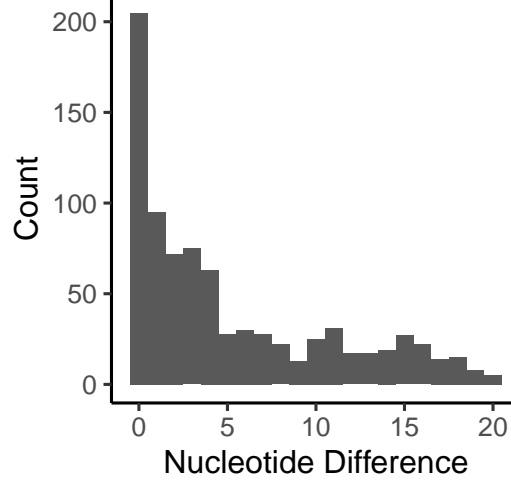
### IGHV1/OR21-1\*01

1 sequences assigned  
No exact matches.



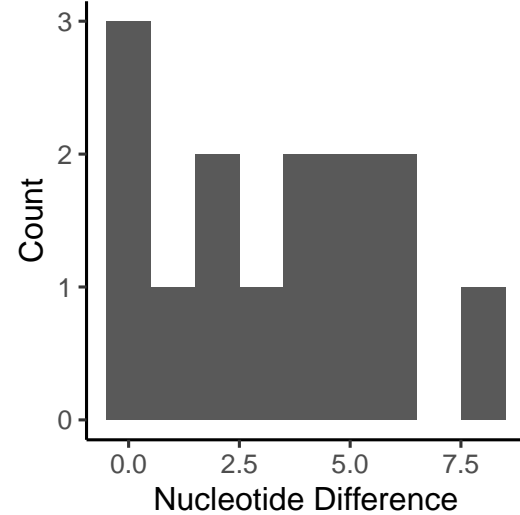
### IGHV1-8\*01

944 sequences assigned  
205 (21.7%) exact matches, in which:  
195 unique CDR3  
6 unique J



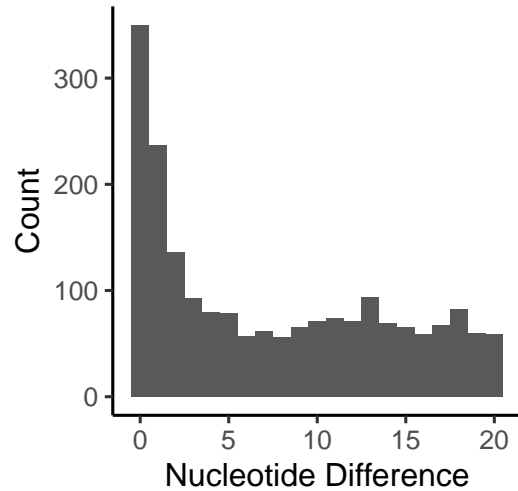
### IGHV1-45\*02

16 sequences assigned  
3 (18.8%) exact matches, in which:  
3 unique CDR3  
2 unique J



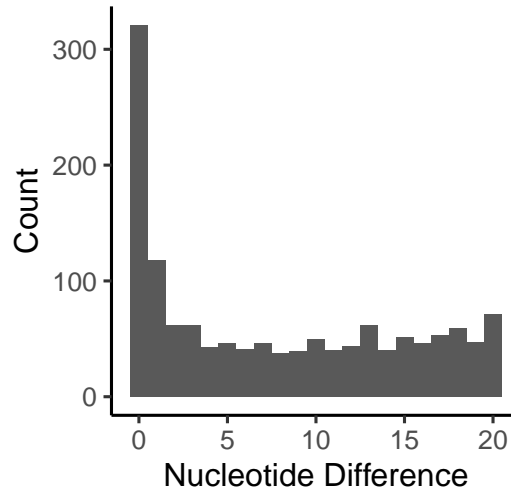
### IGHV1-2\*02

3166 sequences assigned  
350 (11.1%) exact matches, in which:  
341 unique CDR3  
6 unique J



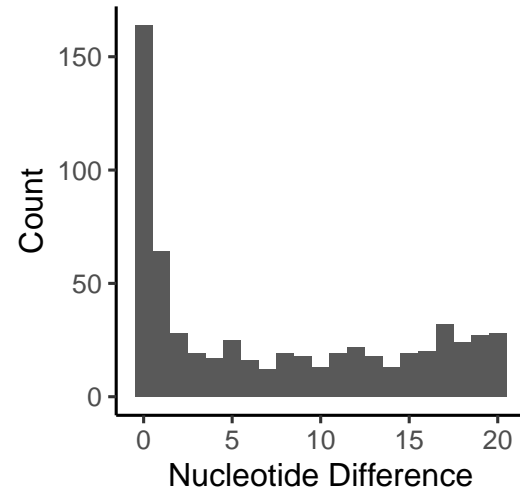
### IGHV1-18\*01

2222 sequences assigned  
321 (14.4%) exact matches, in which:  
312 unique CDR3  
5 unique J



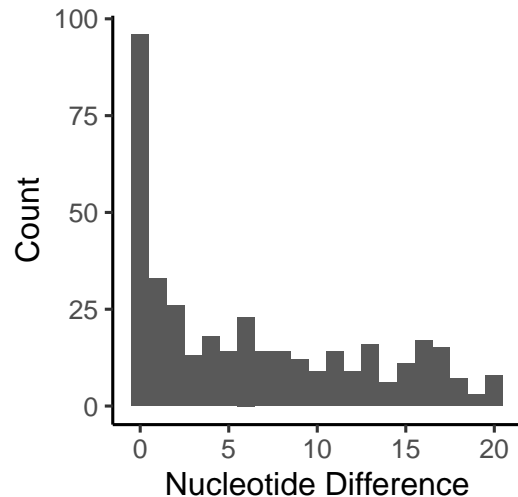
### IGHV1-46\*01

1079 sequences assigned  
164 (15.2%) exact matches, in which:  
161 unique CDR3  
6 unique J



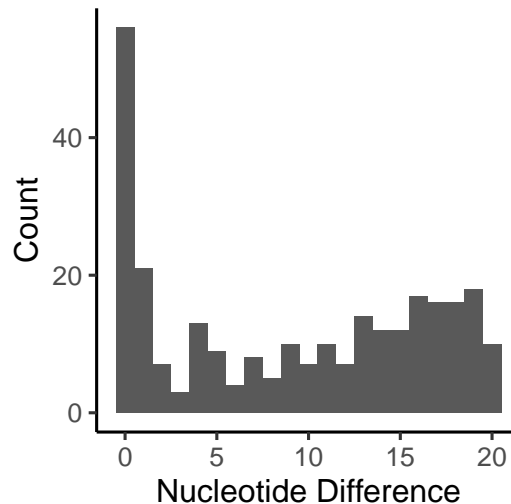
### IGHV1-3\*01

553 sequences assigned  
96 (17.4%) exact matches, in which:  
95 unique CDR3  
6 unique J



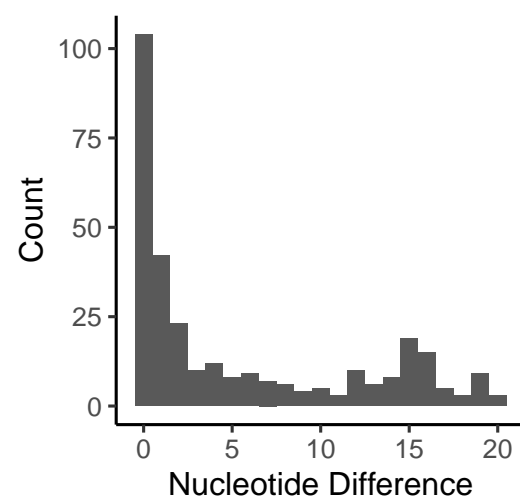
### IGHV1-24\*01

348 sequences assigned  
56 (16.1%) exact matches, in which:  
55 unique CDR3  
6 unique J



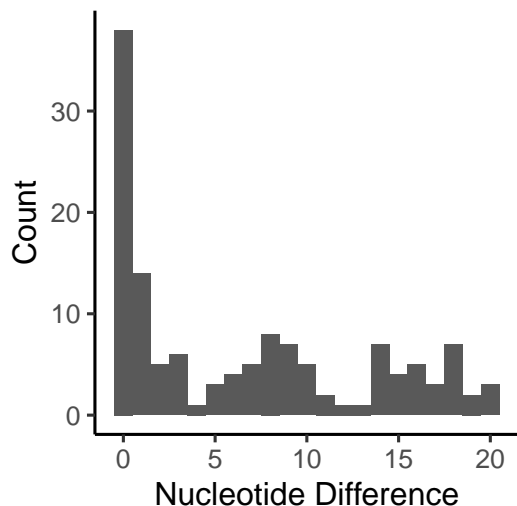
### IGHV1-46\*03

476 sequences assigned  
104 (21.8%) exact matches, in which:  
102 unique CDR3  
5 unique J



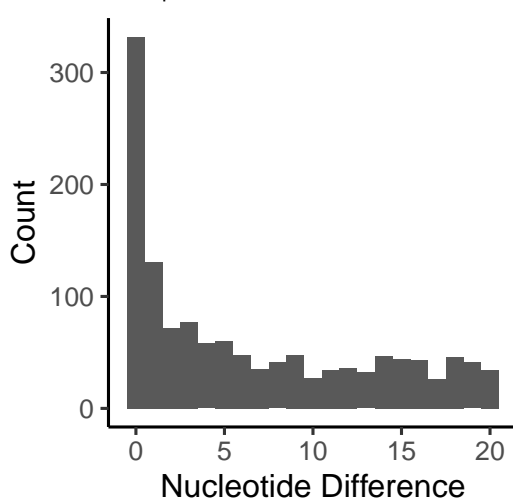
### IGHV1-58\*02

153 sequences assigned  
38 (24.8%) exact matches, in which:  
38 unique CDR3  
5 unique J



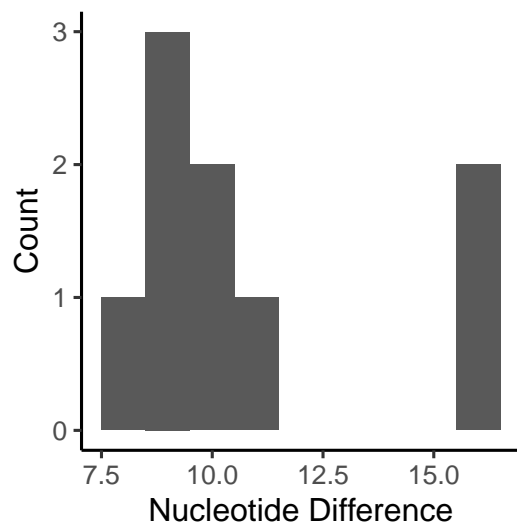
### IGHV2-5\*02

1602 sequences assigned  
332 (20.7%) exact matches, in which:  
326 unique CDR3  
6 unique J



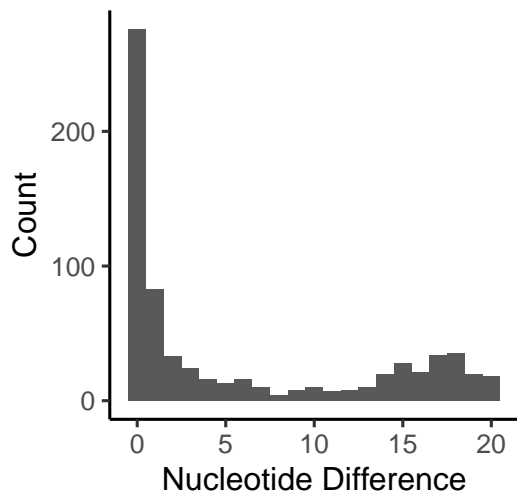
### IGHV2-70D\*04

11 sequences assigned  
No exact matches.



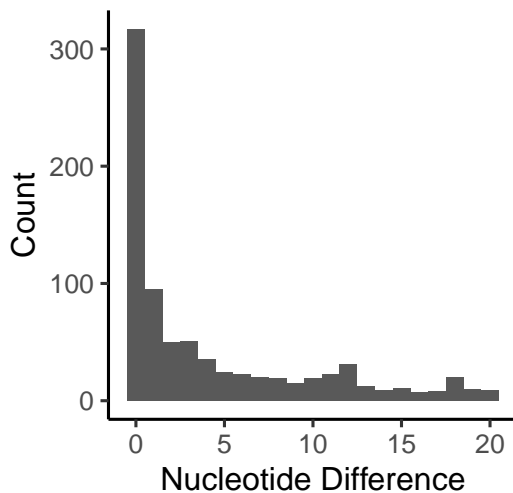
### IGHV1-69\*04

1208 sequences assigned  
276 (22.8%) exact matches, in which:  
261 unique CDR3  
6 unique J



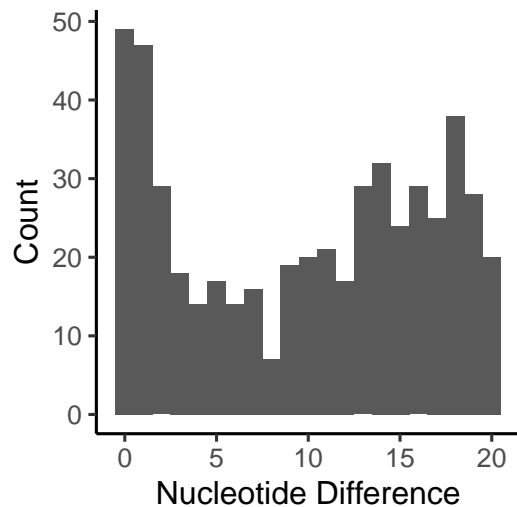
### IGHV2-26\*01

883 sequences assigned  
317 (35.9%) exact matches, in which:  
308 unique CDR3  
6 unique J



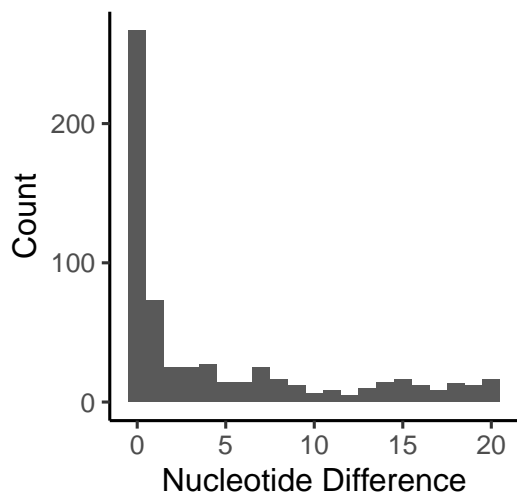
### IGHV3-7\*01

716 sequences assigned  
49 (6.8%) exact matches, in which:  
47 unique CDR3  
5 unique J



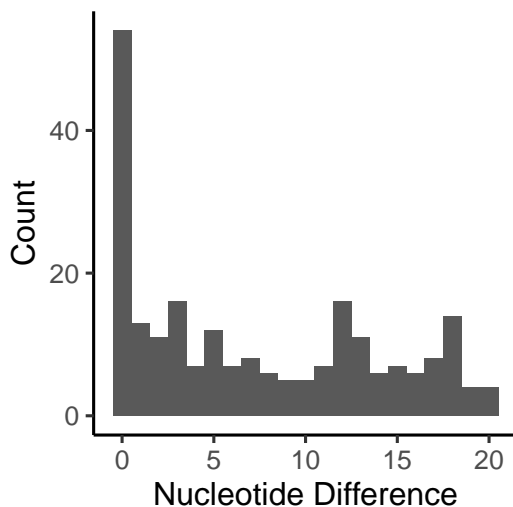
### IGHV1-69\*08\_C191T

894 sequences assigned  
267 (29.9%) exact matches, in which:  
263 unique CDR3  
6 unique J



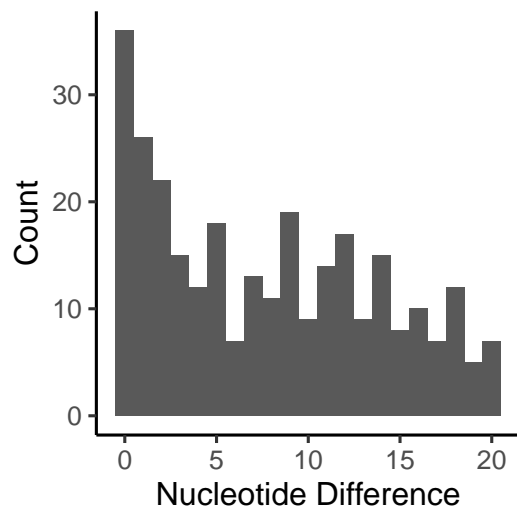
### IGHV2-70\*15

338 sequences assigned  
54 (16%) exact matches, in which:  
50 unique CDR3  
4 unique J



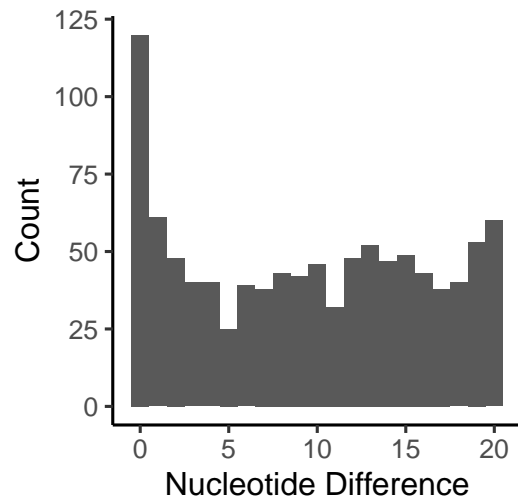
### IGHV3-7\*04

364 sequences assigned  
36 (9.9%) exact matches, in which:  
36 unique CDR3  
4 unique J



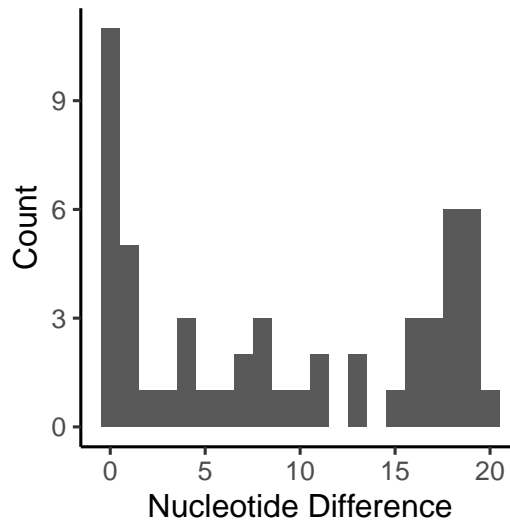
### IGHV3-9\*01

1573 sequences assigned  
120 (7.6%) exact matches, in which:  
117 unique CDR3  
6 unique J



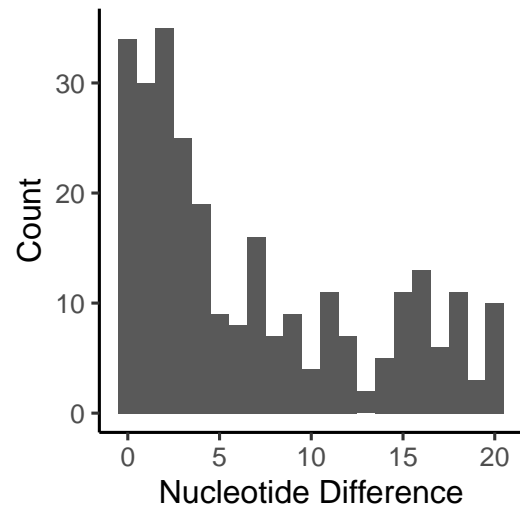
### IGHV3-13\*05

65 sequences assigned  
11 (16.9%) exact matches, in which:  
11 unique CDR3  
3 unique J



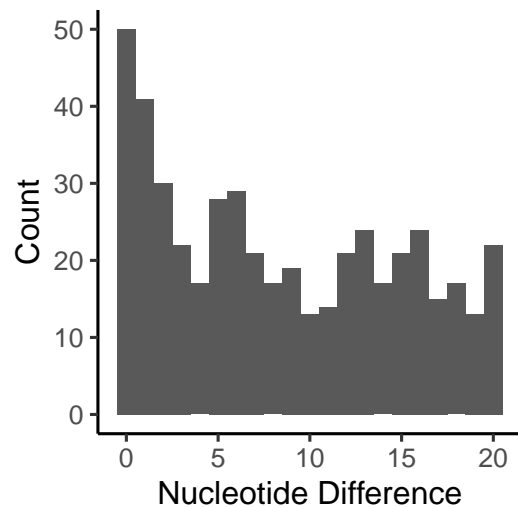
### IGHV3-20\*04

379 sequences assigned  
34 (9%) exact matches, in which:  
33 unique CDR3  
5 unique J



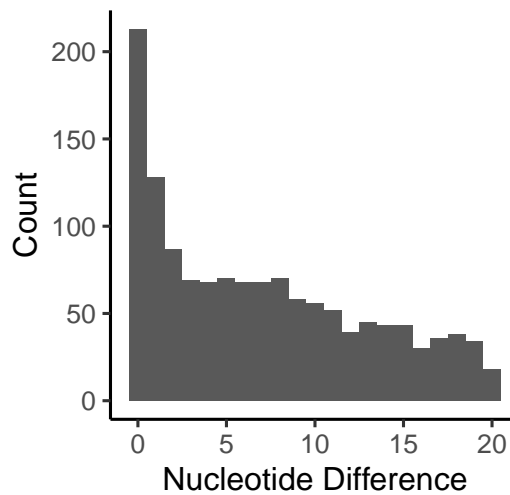
### IGHV3-11\*04

705 sequences assigned  
50 (7.1%) exact matches, in which:  
50 unique CDR3  
6 unique J



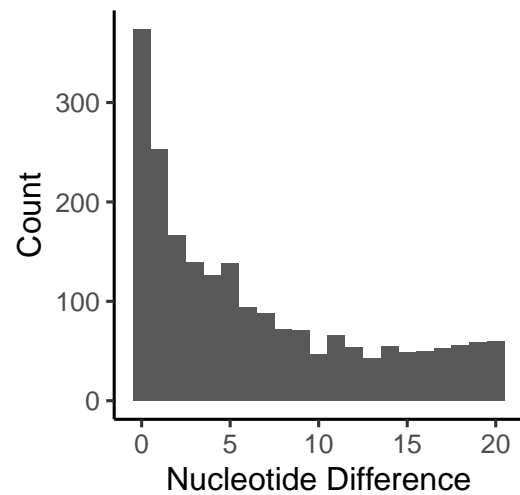
### IGHV3-15\*01

1701 sequences assigned  
213 (12.5%) exact matches, in which:  
210 unique CDR3  
6 unique J



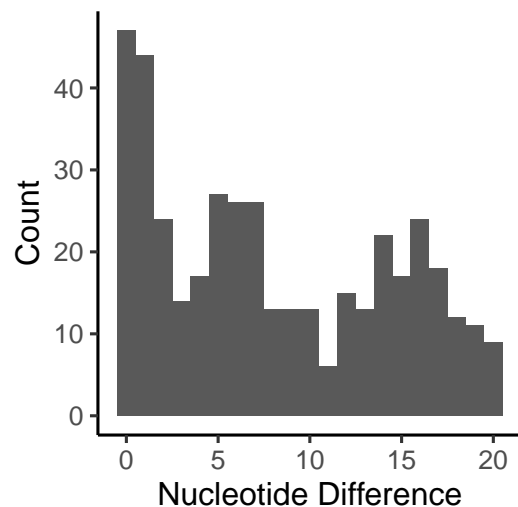
### IGHV3-21\*01

2673 sequences assigned  
374 (14%) exact matches, in which:  
359 unique CDR3  
6 unique J



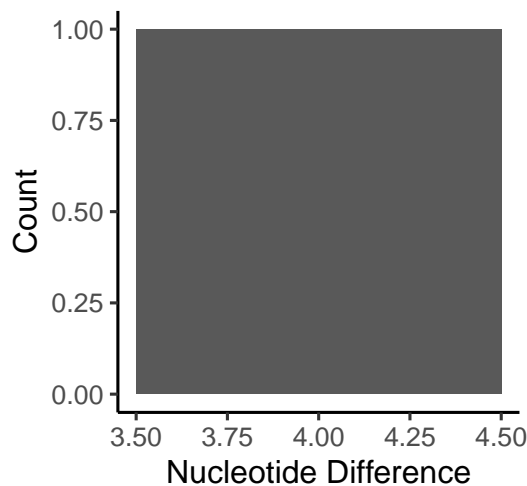
### IGHV3-11\*06

579 sequences assigned  
47 (8.1%) exact matches, in which:  
47 unique CDR3  
4 unique J



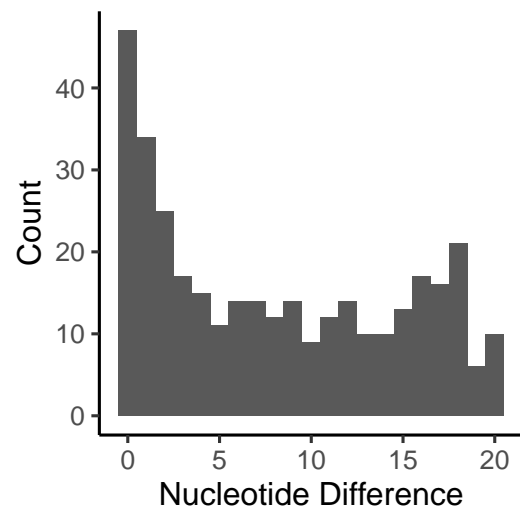
### IGHV3-19\*01

1 sequences assigned  
No exact matches.



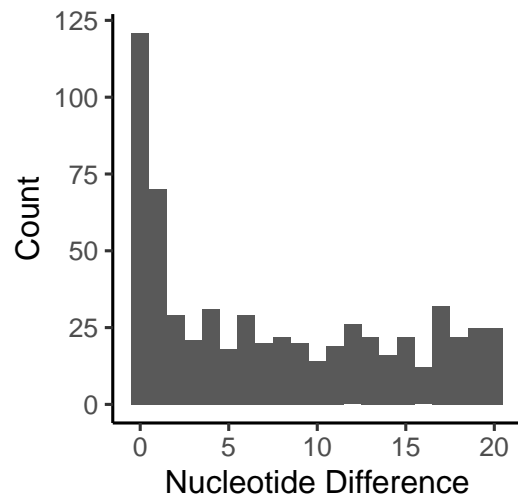
### IGHV3-23\*03

578 sequences assigned  
47 (8.1%) exact matches, in which:  
47 unique CDR3  
6 unique J



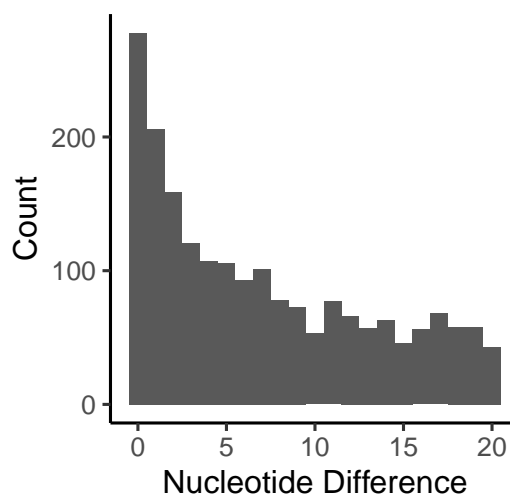
### IGHV3-23\*04

968 sequences assigned  
121 (12.5%) exact matches, in which:  
120 unique CDR3  
6 unique J



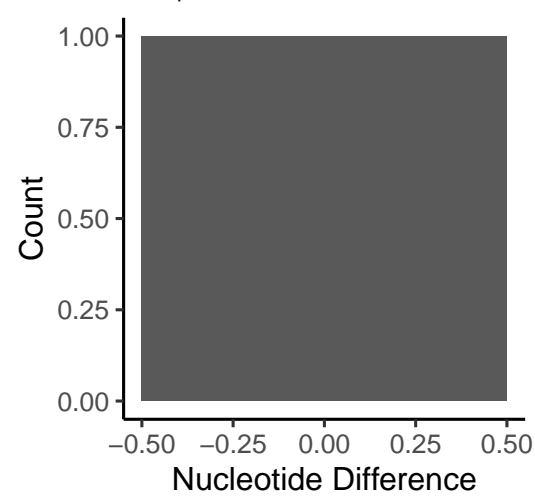
### IGHV3-33\*01

2570 sequences assigned  
278 (10.8%) exact matches, in which:  
273 unique CDR3  
6 unique J



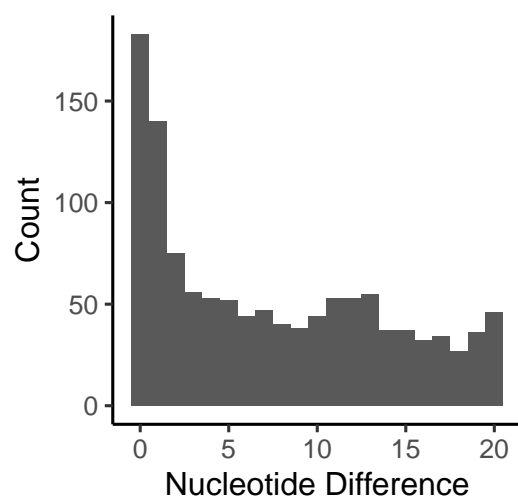
### IGHV3-47\*02

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



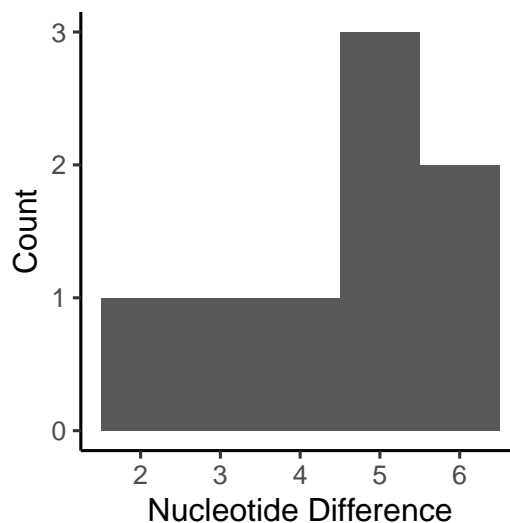
### IGHV3-30-3\*01

1696 sequences assigned  
183 (10.8%) exact matches, in which:  
181 unique CDR3  
6 unique J



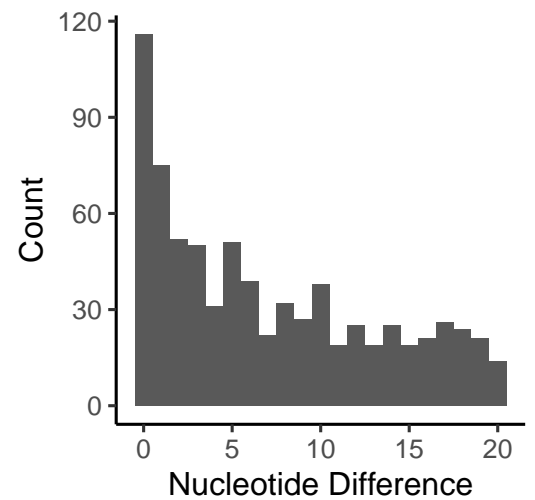
### IGHV3-35\*01

8 sequences assigned  
No exact matches.



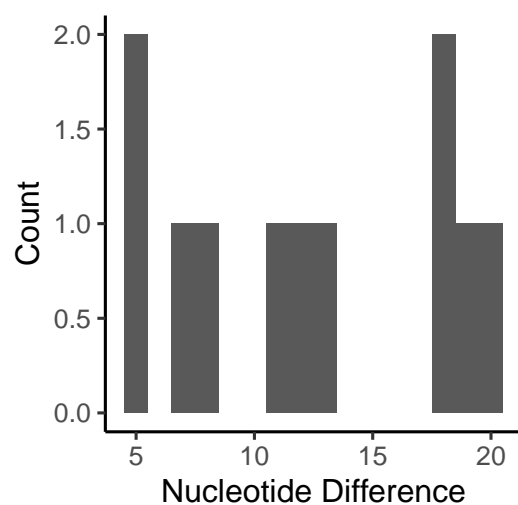
### IGHV3-48\*01

976 sequences assigned  
116 (11.9%) exact matches, in which:  
108 unique CDR3  
5 unique J



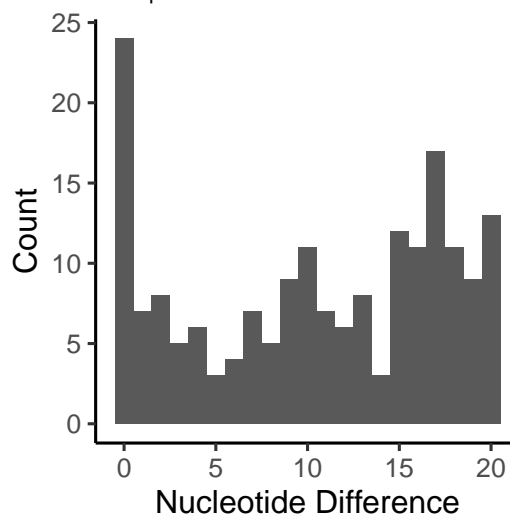
### IGHV3-30-3\*02

35 sequences assigned  
No exact matches.



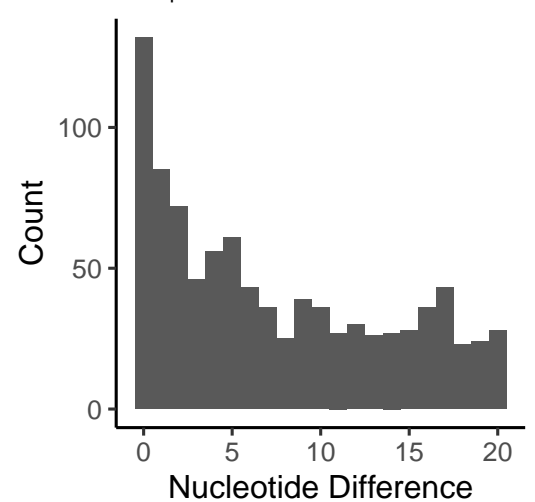
### IGHV3-43\*01

320 sequences assigned  
24 (7.5%) exact matches, in which:  
24 unique CDR3  
4 unique J



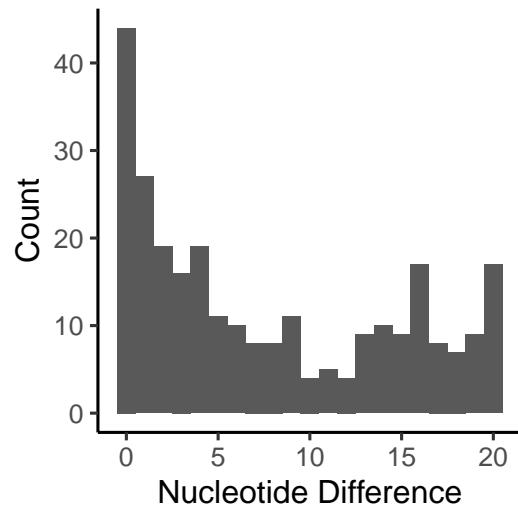
### IGHV3-48\*03

1258 sequences assigned  
132 (10.5%) exact matches, in which:  
127 unique CDR3  
6 unique J



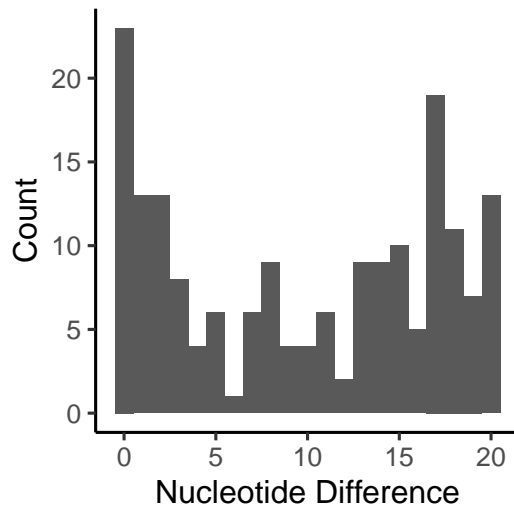
### IGHV3-49\*03

468 sequences assigned  
44 (9.4%) exact matches, in which:  
44 unique CDR3  
4 unique J



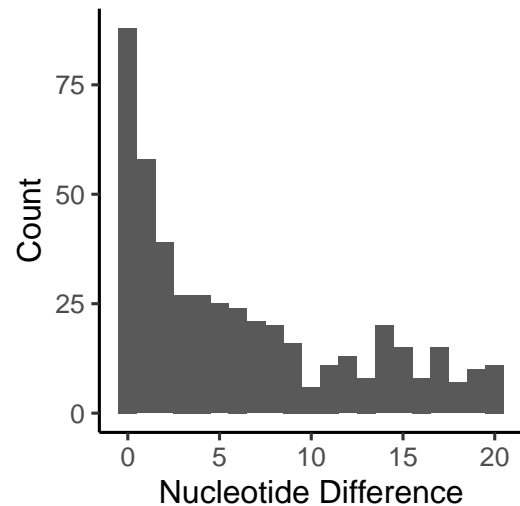
### IGHV3-53\*02

311 sequences assigned  
23 (7.4%) exact matches, in which:  
23 unique CDR3  
4 unique J



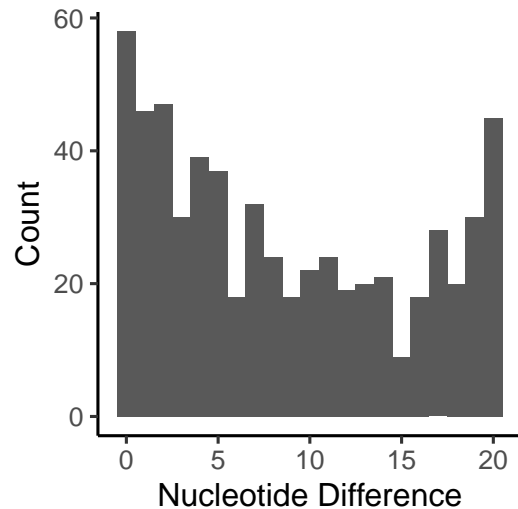
### IGHV3-66\*02

660 sequences assigned  
88 (13.3%) exact matches, in which:  
86 unique CDR3  
5 unique J



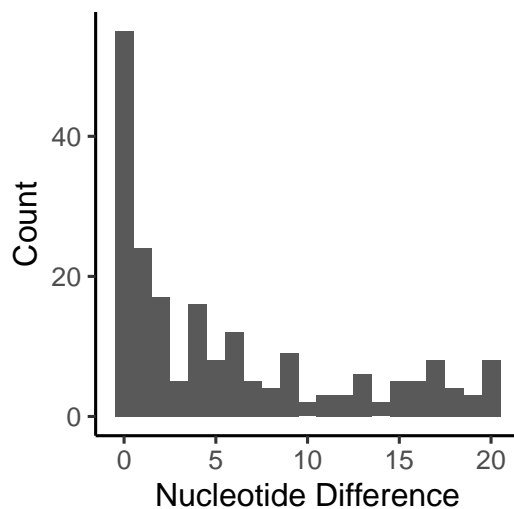
### IGHV3-49\*04

921 sequences assigned  
58 (6.3%) exact matches, in which:  
53 unique CDR3  
6 unique J



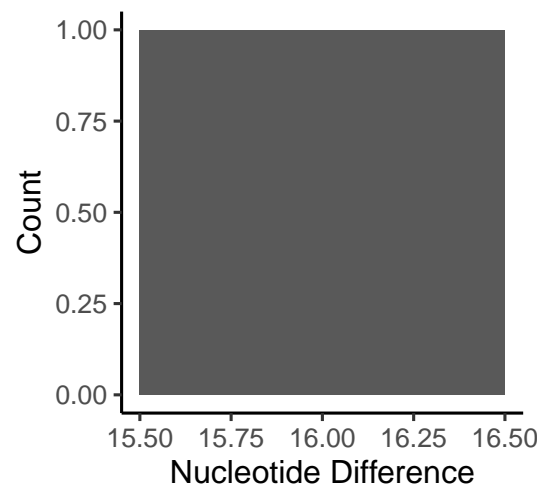
### IGHV3-64\*01

286 sequences assigned  
55 (19.2%) exact matches, in which:  
54 unique CDR3  
6 unique J



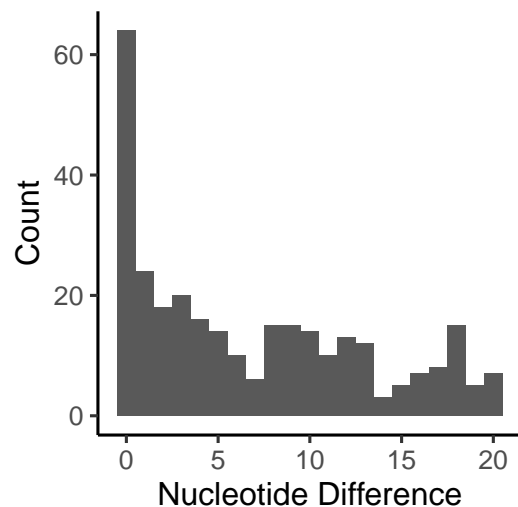
### IGHV3-69-1\*02

1 sequences assigned  
No exact matches.



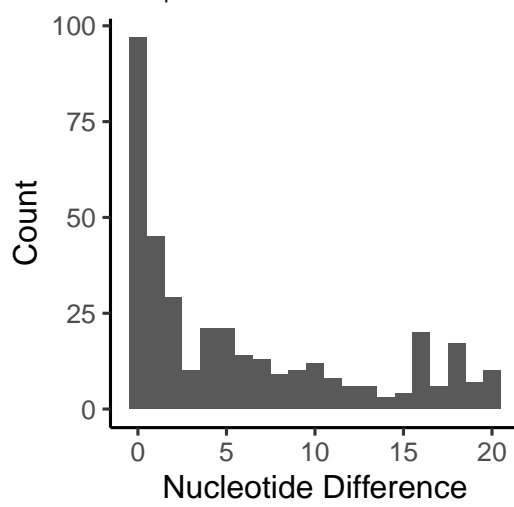
### IGHV3-53\*01

493 sequences assigned  
64 (13%) exact matches, in which:  
64 unique CDR3  
6 unique J



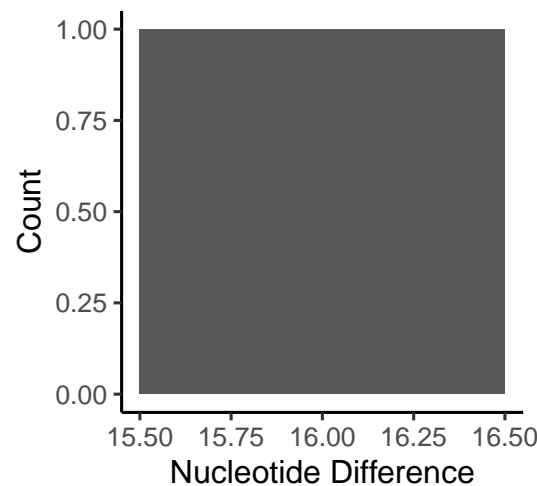
### IGHV3-66\*01

547 sequences assigned  
97 (17.7%) exact matches, in which:  
95 unique CDR3  
6 unique J



### IGHV3-71\*03

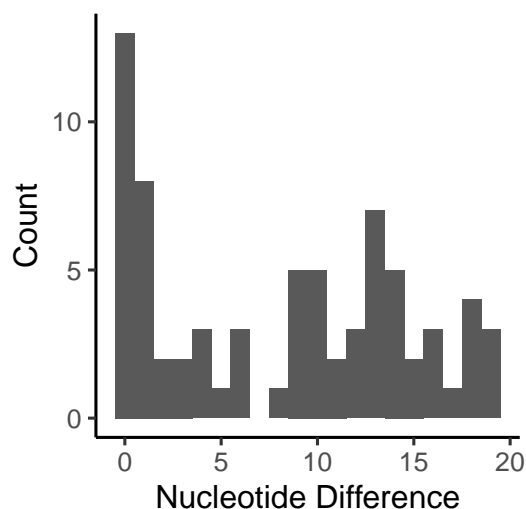
1 sequences assigned  
No exact matches.





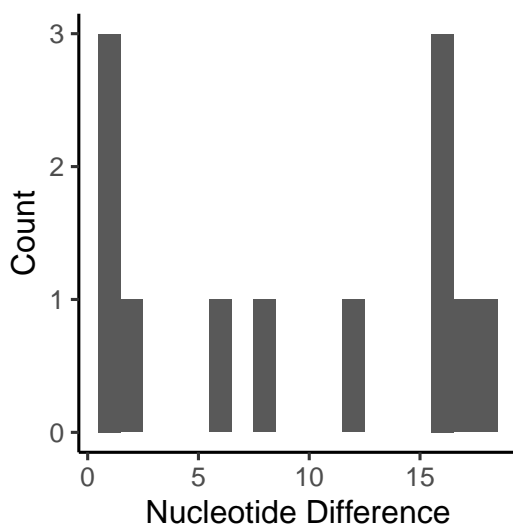
### IGHV3-72\*01

105 sequences assigned  
13 (12.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



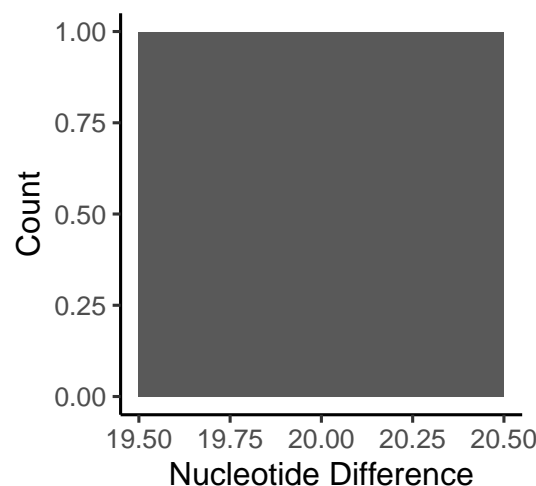
### IGHV3-43D\*04

18 sequences assigned  
No exact matches.



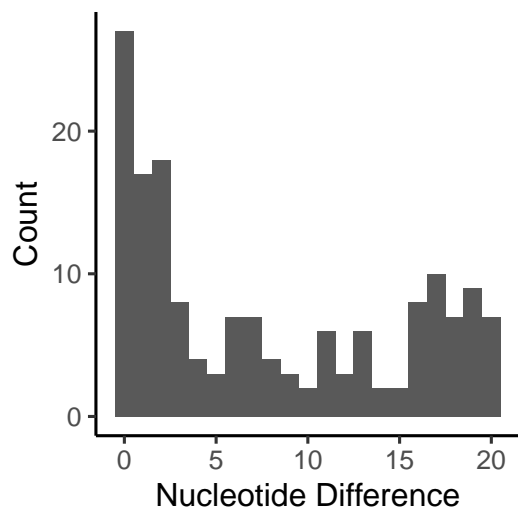
### IGHV4-28\*01

5 sequences assigned  
No exact matches.



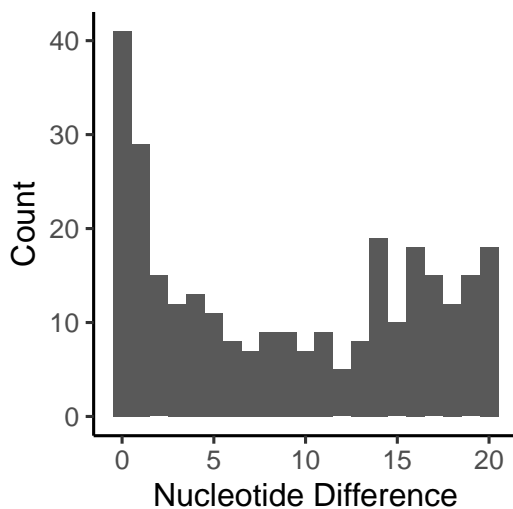
### IGHV3-73\*01

196 sequences assigned  
27 (13.8%) exact matches, in which:  
27 unique CDR3  
5 unique J



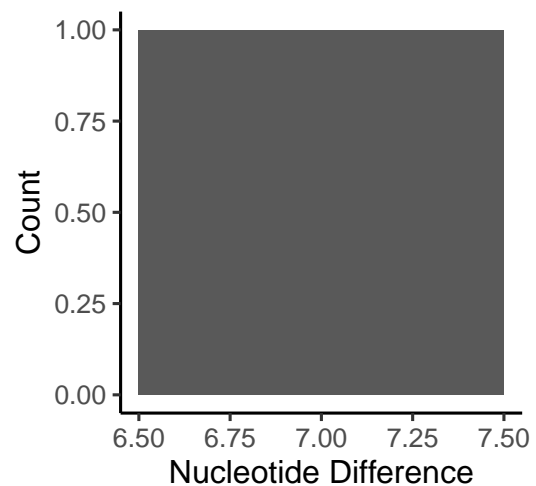
### IGHV3-64D\*06

465 sequences assigned  
41 (8.8%) exact matches, in which:  
41 unique CDR3  
4 unique J



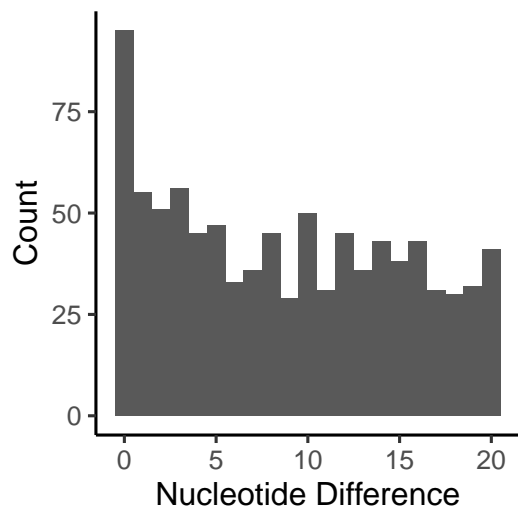
### IGHV4-28\*03

1 sequences assigned  
No exact matches.



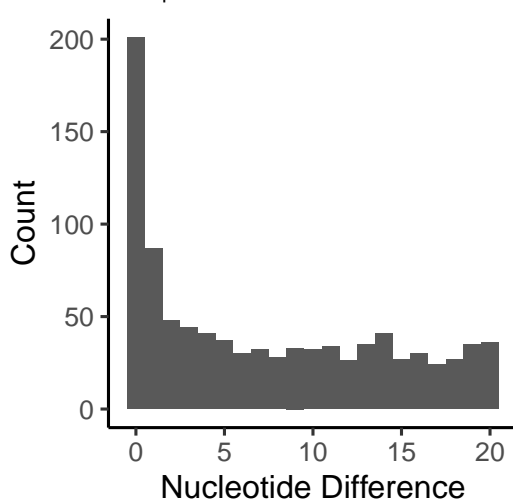
### IGHV3-74\*01

1356 sequences assigned  
95 (7%) exact matches, in which:  
94 unique CDR3  
6 unique J



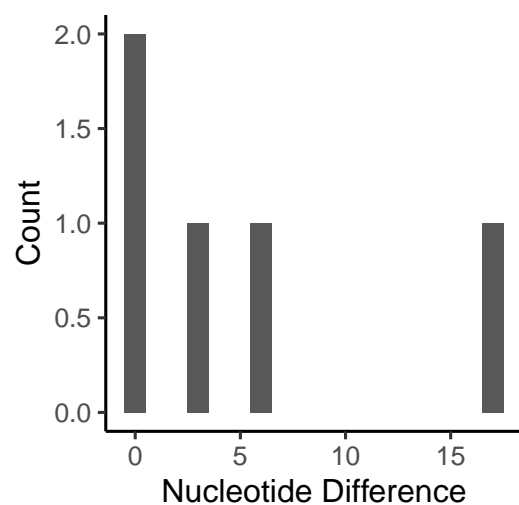
### IGHV4-4\*07

1393 sequences assigned  
201 (14.4%) exact matches, in which:  
196 unique CDR3  
6 unique J



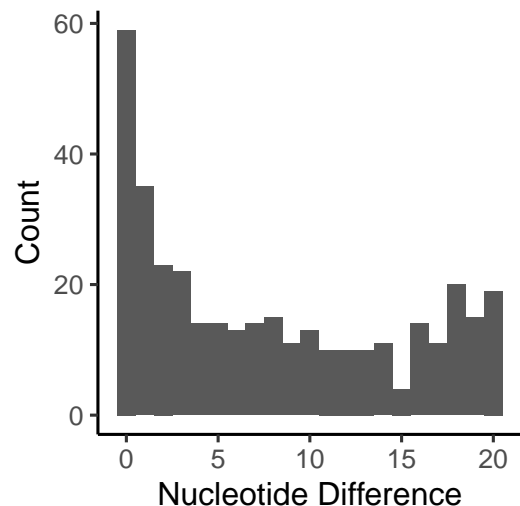
### IGHV4-30-2\*05

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
1 unique J



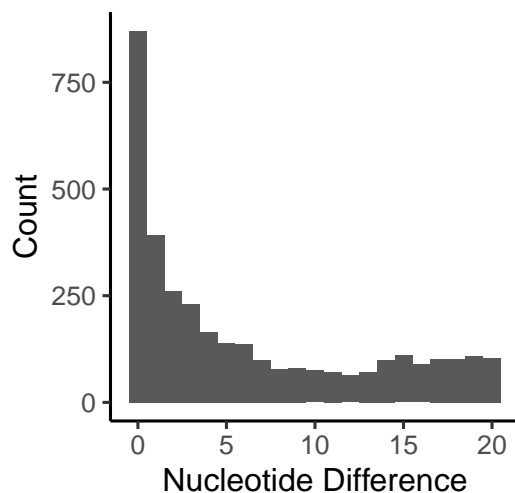
### IGHV4-30-4\*08

616 sequences assigned  
59 (9.6%) exact matches, in which:  
58 unique CDR3  
5 unique J



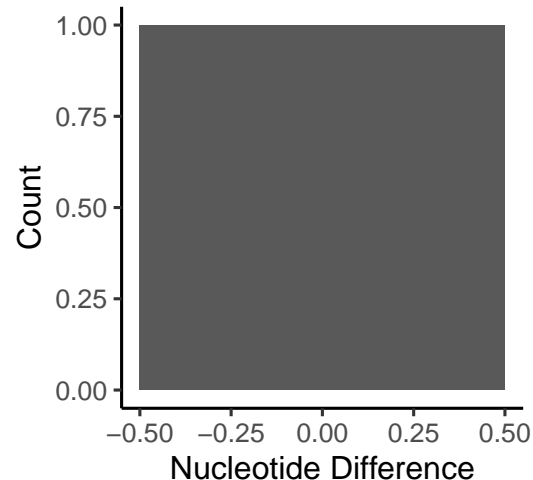
### IGHV4-34\*01

4531 sequences assigned  
871 (19.2%) exact matches, in which:  
811 unique CDR3  
6 unique J



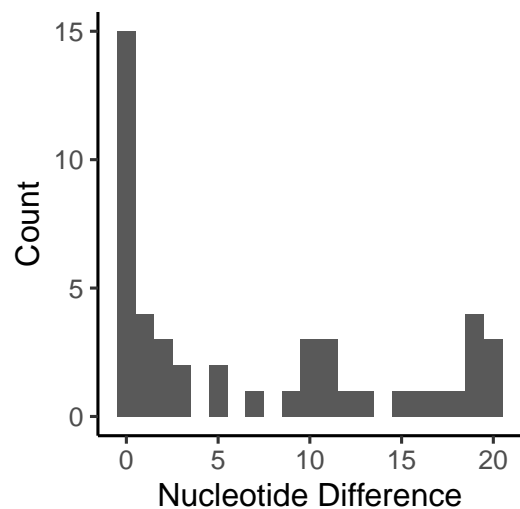
### IGHV4-55\*01

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



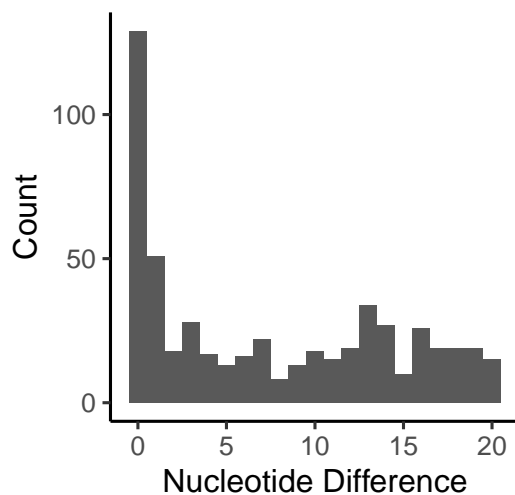
### IGHV4-30-2\*01\_G139C

60 sequences assigned  
15 (25%) exact matches, in which:  
15 unique CDR3  
5 unique J



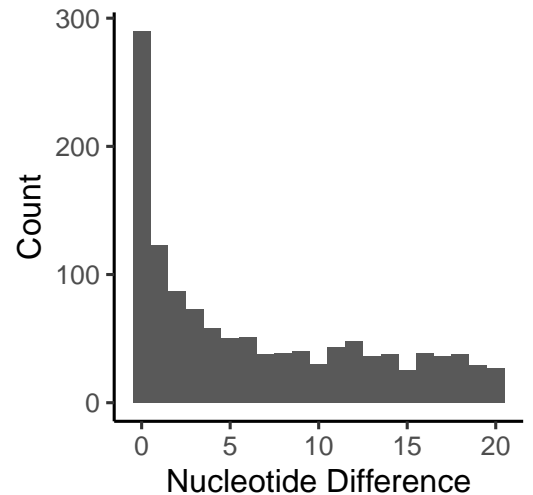
### IGHV4-38-2\*02\_A70G

802 sequences assigned  
129 (16.1%) exact matches, in which:  
128 unique CDR3  
6 unique J



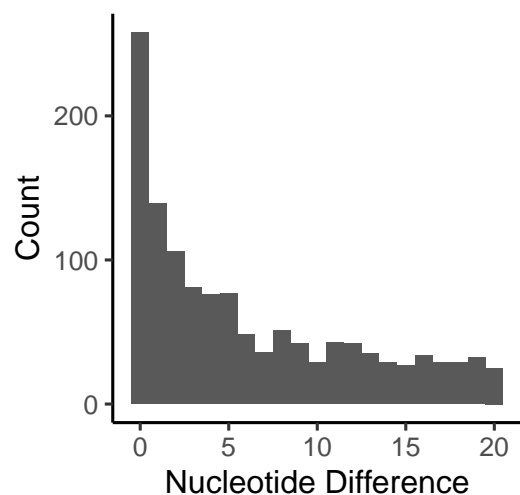
### IGHV4-59\*01

1801 sequences assigned  
290 (16.1%) exact matches, in which:  
284 unique CDR3  
6 unique J



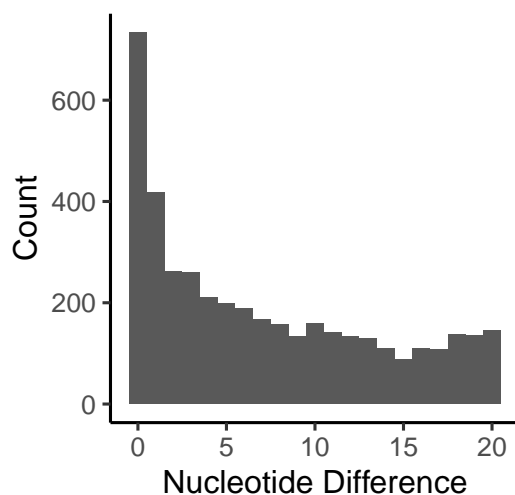
### IGHV4-31\*03

1684 sequences assigned  
258 (15.3%) exact matches, in which:  
249 unique CDR3  
6 unique J



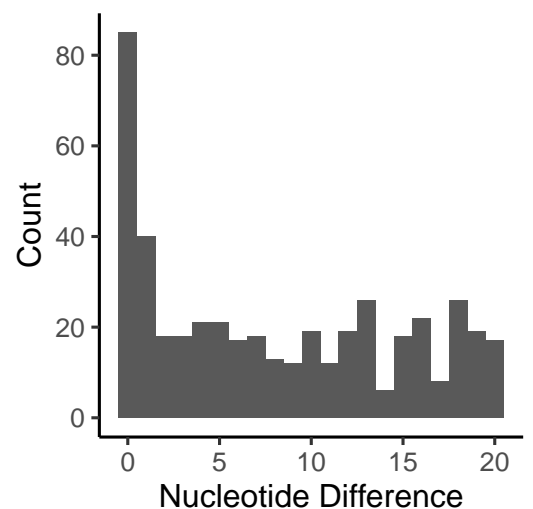
### IGHV4-39\*01

6199 sequences assigned  
734 (11.8%) exact matches, in which:  
712 unique CDR3  
6 unique J



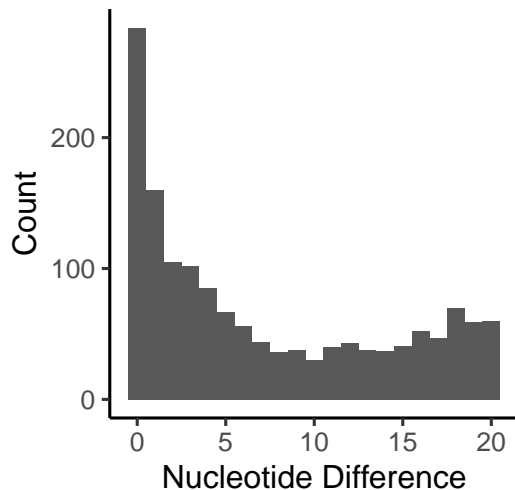
### IGHV4-59\*08

700 sequences assigned  
85 (12.1%) exact matches, in which:  
82 unique CDR3  
6 unique J



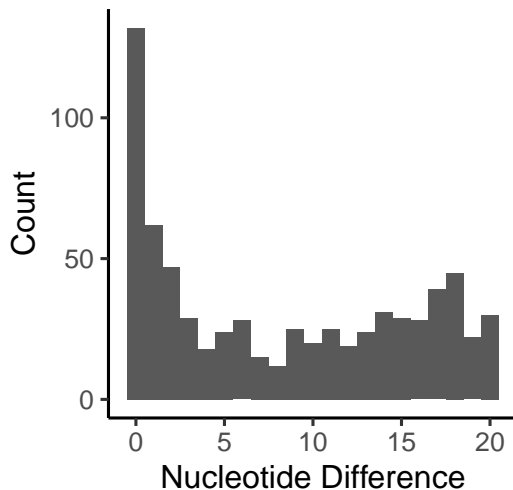
### IGHV4–61\*02

2203 sequences assigned  
284 (12.9%) exact matches, in which:  
281 unique CDR3  
6 unique J



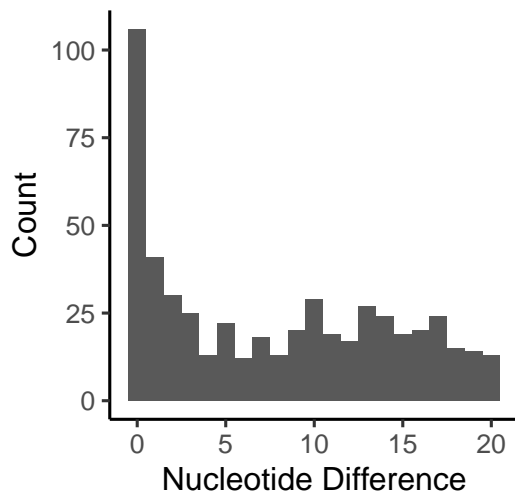
### IGHV5–51\*03

1058 sequences assigned  
132 (12.5%) exact matches, in which:  
130 unique CDR3  
6 unique J



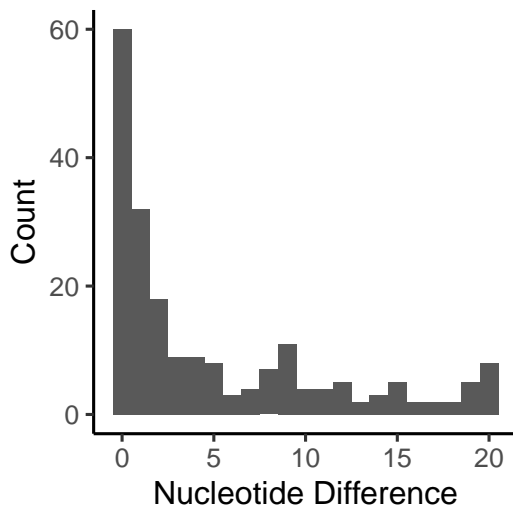
### IGHV5–10–1\*03

676 sequences assigned  
106 (15.7%) exact matches, in which:  
104 unique CDR3  
5 unique J



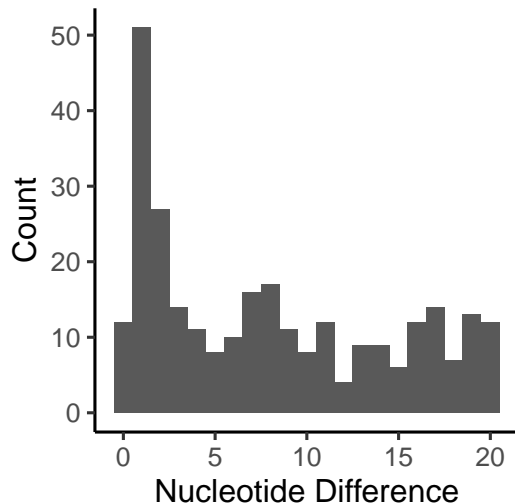
### IGHV6–1\*01

259 sequences assigned  
60 (23.2%) exact matches, in which:  
57 unique CDR3  
6 unique J



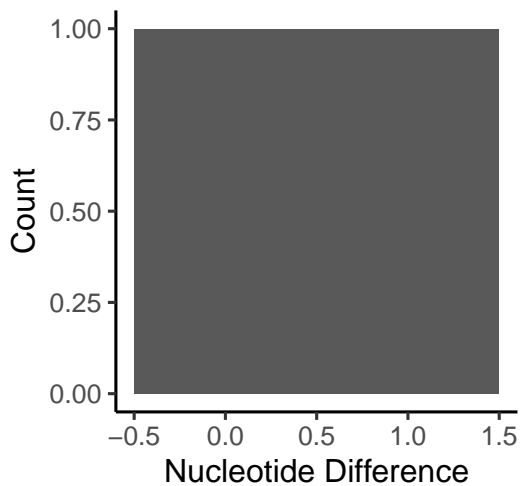
### IGHV5–51\*01

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

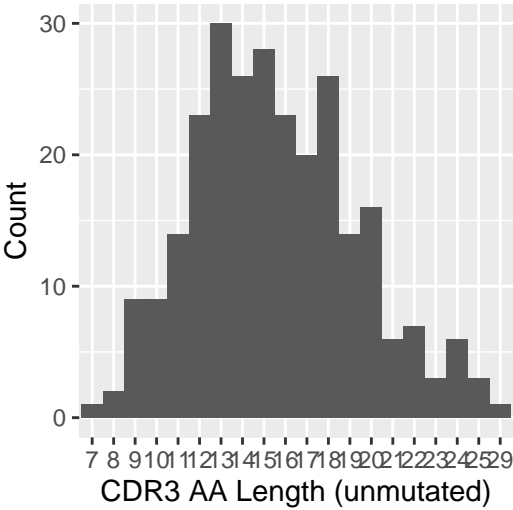


### IGHV7–4–1\*01

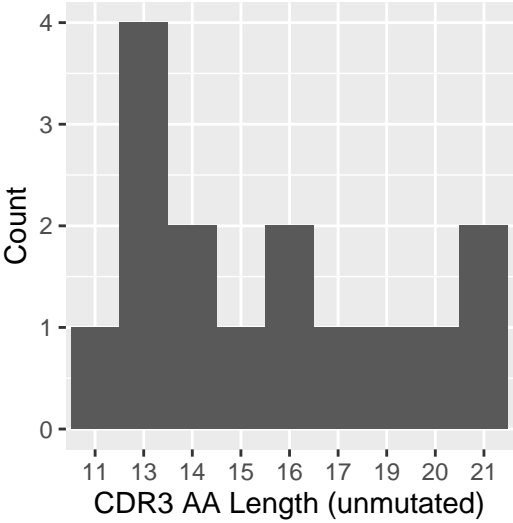
2 sequences assigned  
1 (50%) exact matches, in which:  
1 unique CDR3  
1 unique J



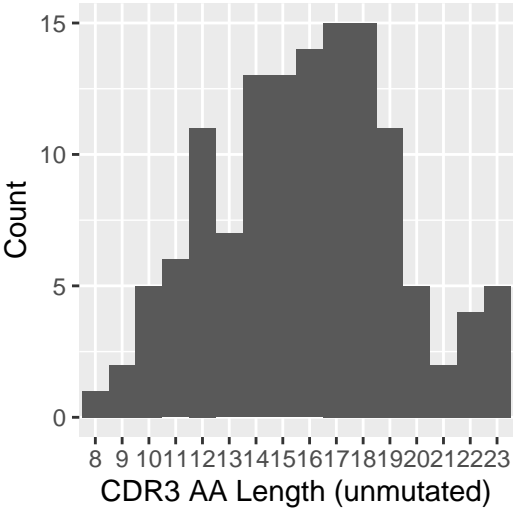
IGHV1-69\*08\_C191T



IGHV4-30-2\*01\_G139C



IGHV4-38-2\*02\_A70G





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