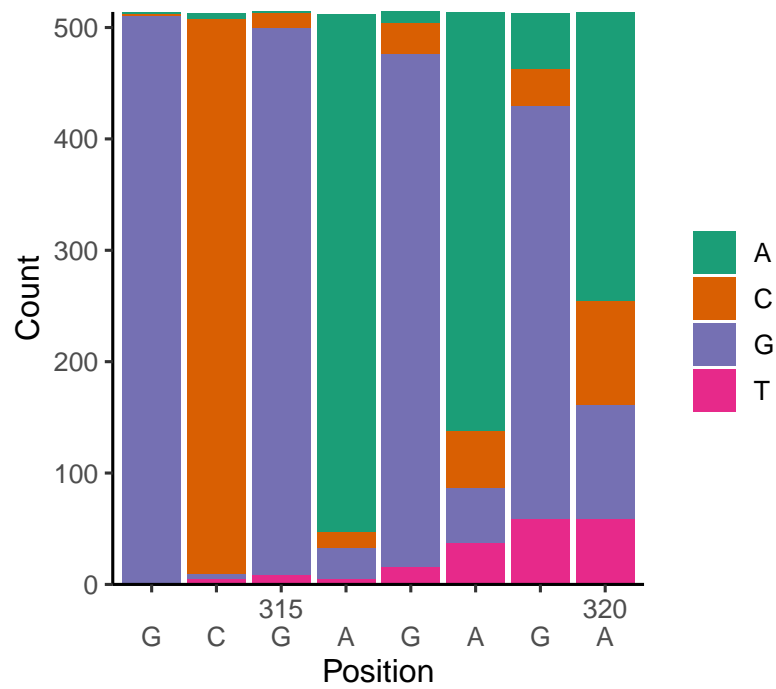
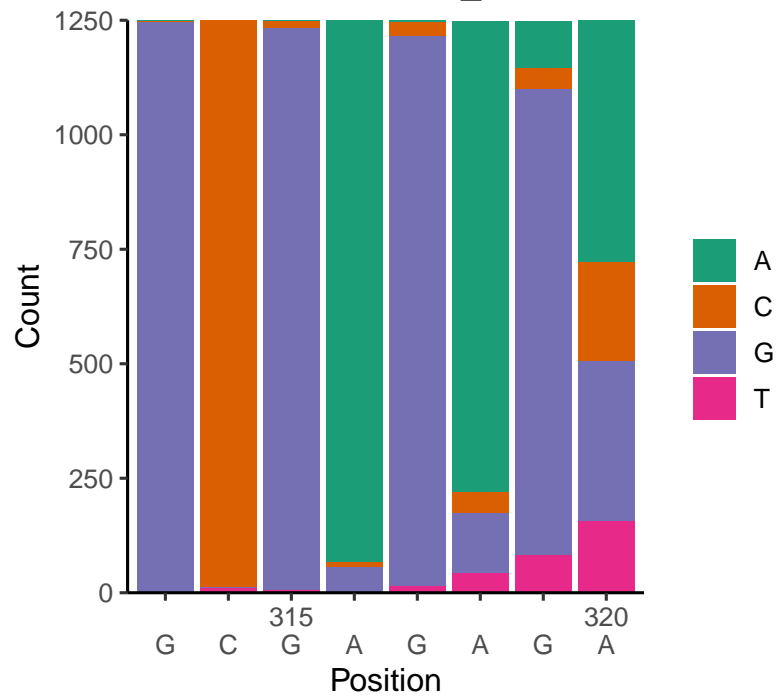


Gene IGHV1-69\*08\_C191T



Gene IGHV4-61\*02\_A234G



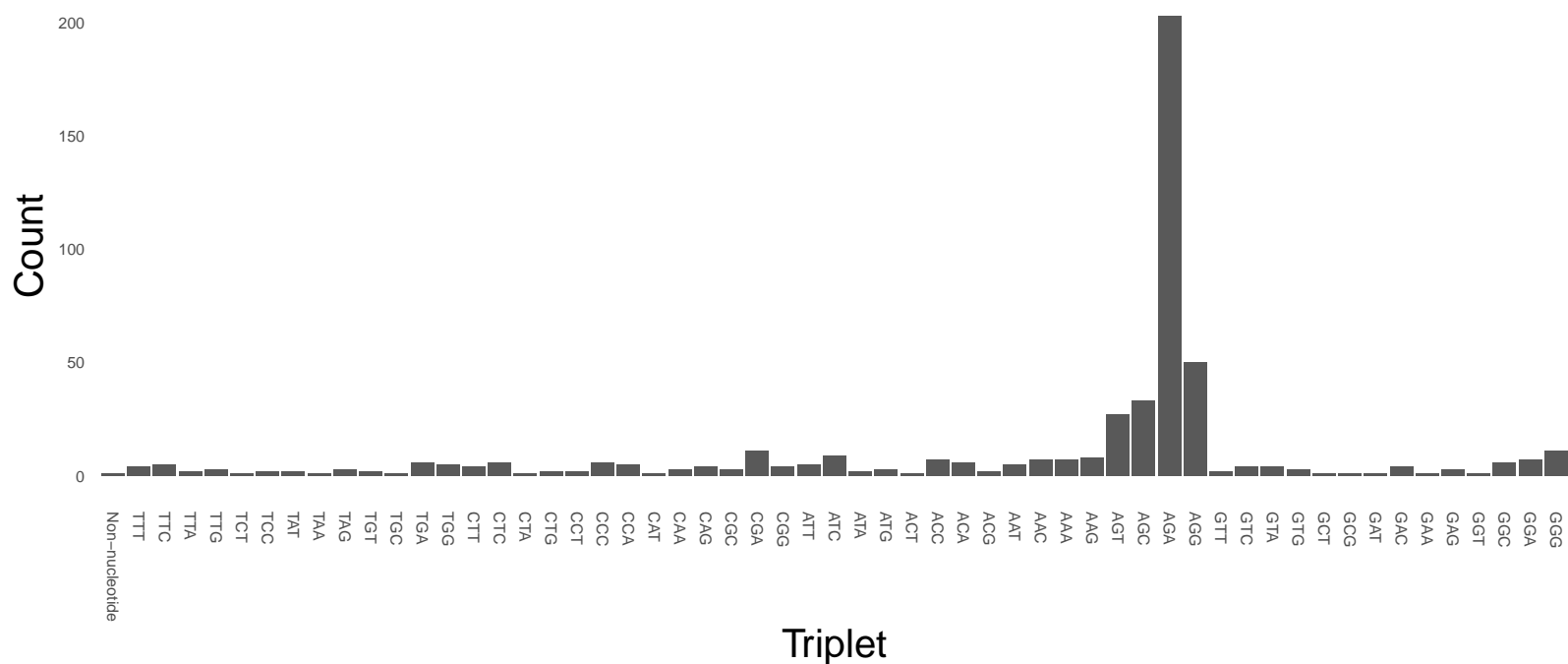
Gene IGHV1-69\*08\_C191T



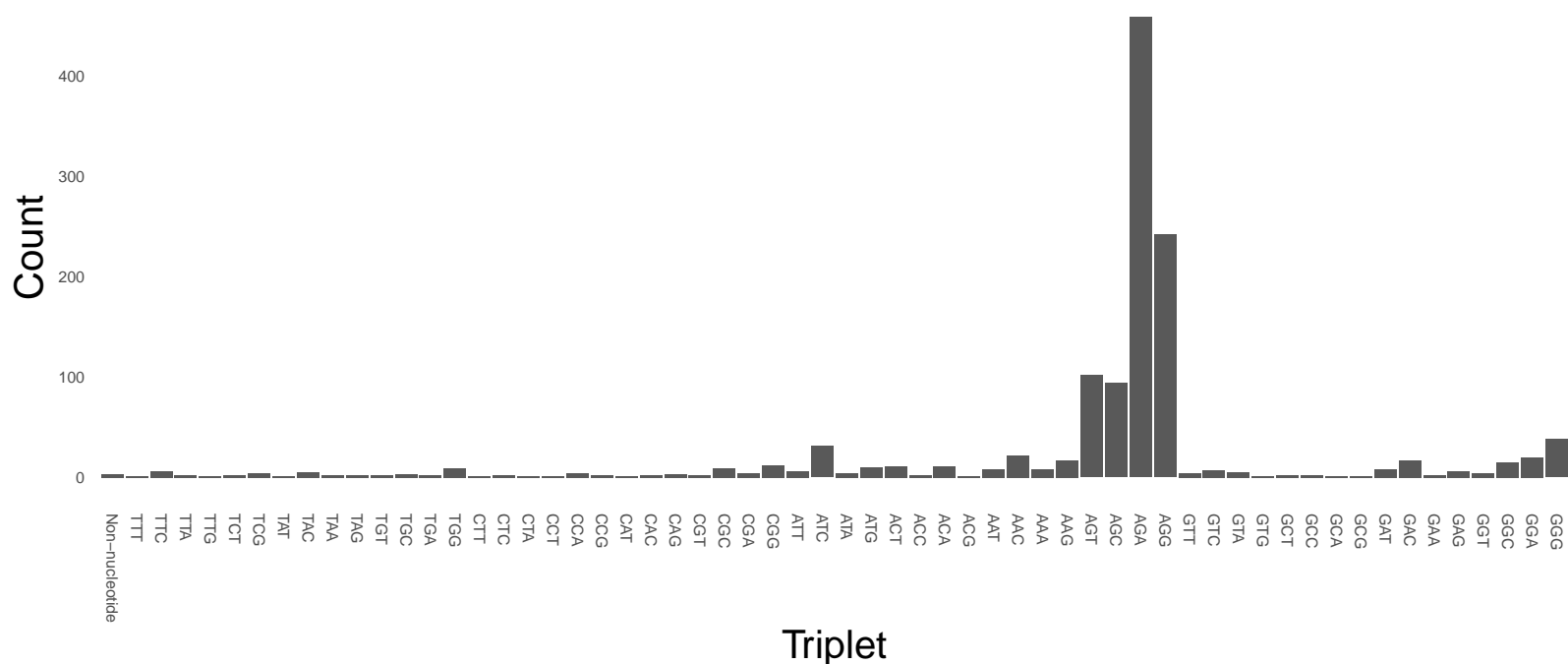
Gene IGHV4-61\*02\_A234G



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

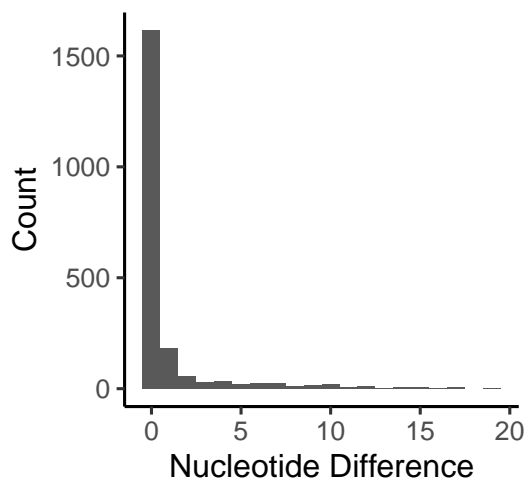


IGHV4-61\*02\_A234G- Final 3 nucleotides as a triplet



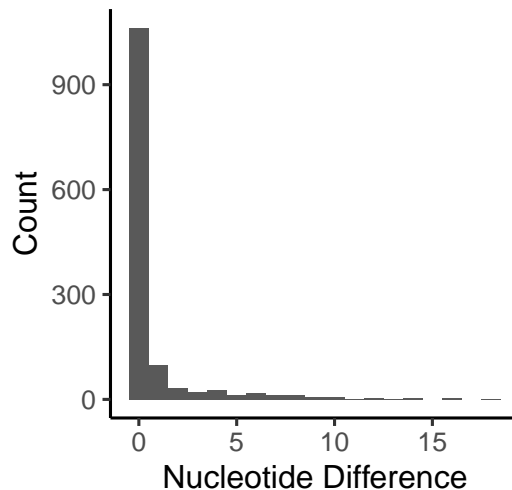
### IGHV1-2\*02

2087 sequences assigned  
1615 (77.4%) exact matches, in which:  
1472 unique CDR3  
6 unique J



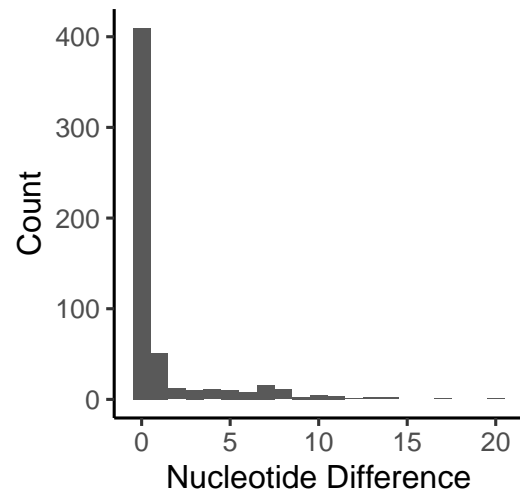
### IGHV1-18\*01

1333 sequences assigned  
1063 (79.7%) exact matches, in which:  
977 unique CDR3  
6 unique J



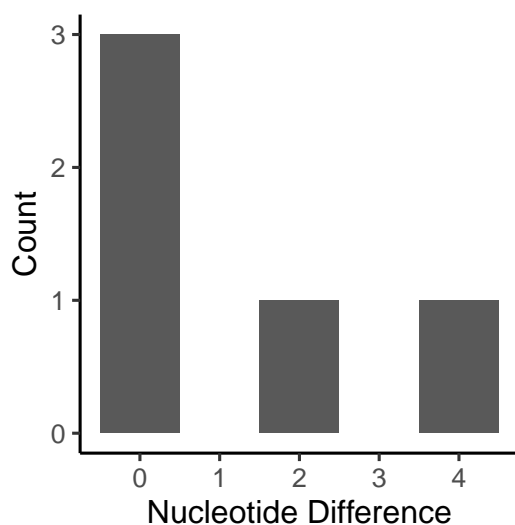
### IGHV1-46\*01

559 sequences assigned  
410 (73.3%) exact matches, in which:  
382 unique CDR3  
6 unique J



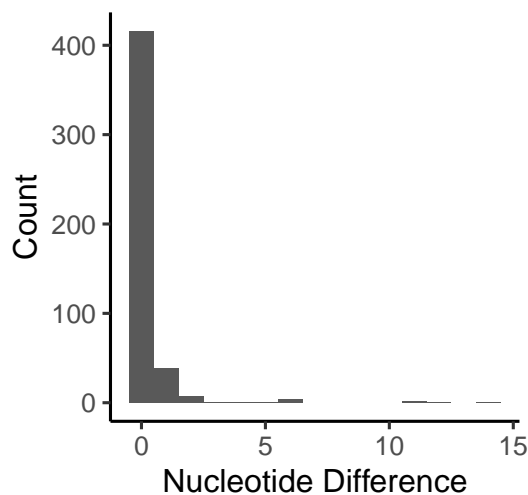
### IGHV1-3\*02

5 sequences assigned  
3 (60%) exact matches, in which:  
3 unique CDR3  
3 unique J



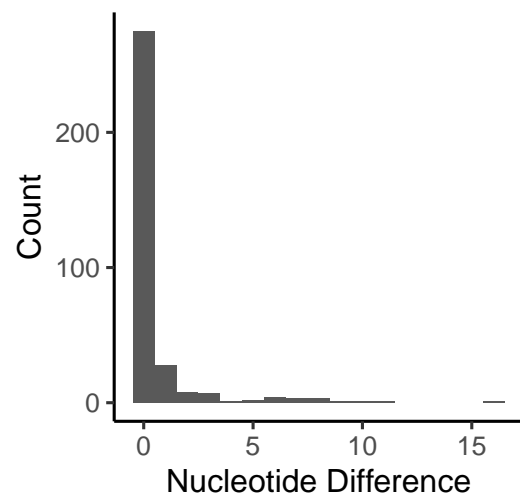
### IGHV1-24\*01

473 sequences assigned  
416 (87.9%) exact matches, in which:  
388 unique CDR3  
6 unique J



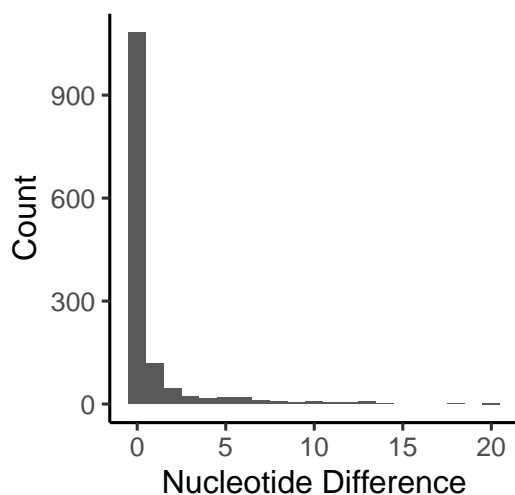
### IGHV1-46\*03

336 sequences assigned  
275 (81.8%) exact matches, in which:  
247 unique CDR3  
6 unique J



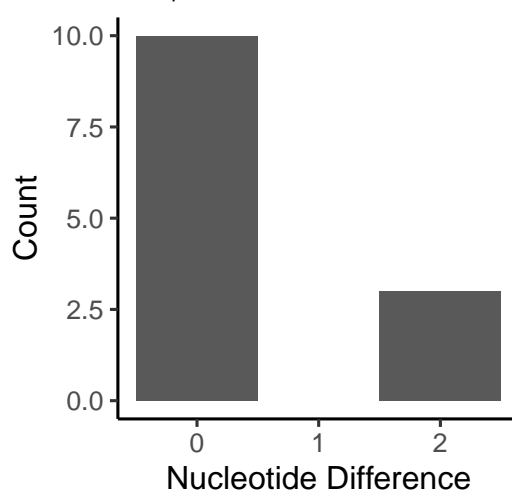
### IGHV1-8\*01

1370 sequences assigned  
1083 (79.1%) exact matches, in which:  
1009 unique CDR3  
6 unique J



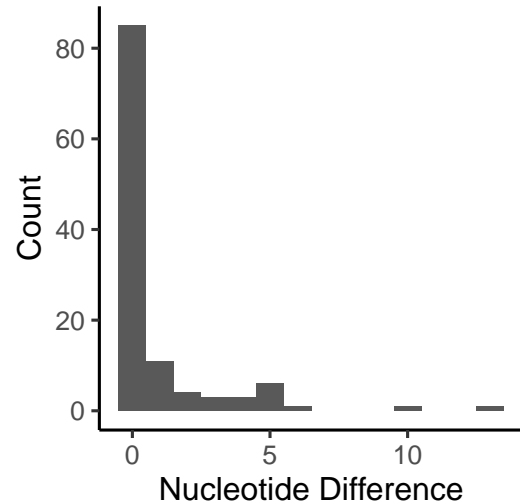
### IGHV1-45\*02

13 sequences assigned  
10 (76.9%) exact matches, in which:  
9 unique CDR3  
3 unique J



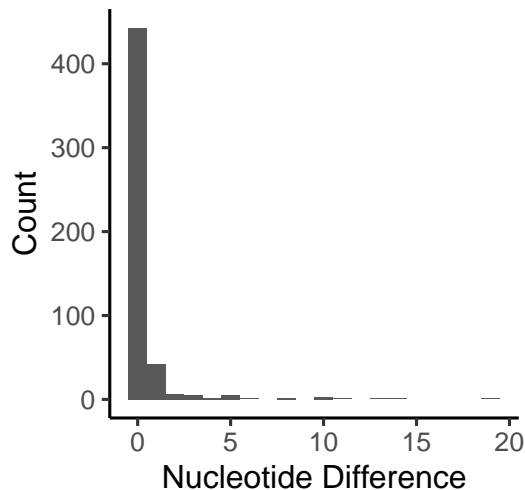
### IGHV1-58\*02

116 sequences assigned  
85 (73.3%) exact matches, in which:  
75 unique CDR3  
5 unique J



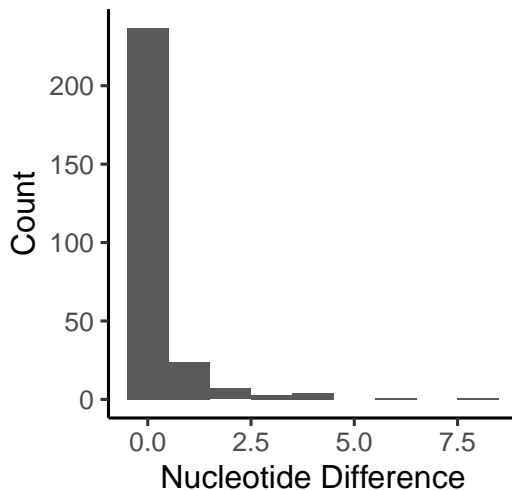
### IGHV1–69\*08\_C191T

514 sequences assigned  
443 (86.2%) exact matches, in which:  
400 unique CDR3  
6 unique J



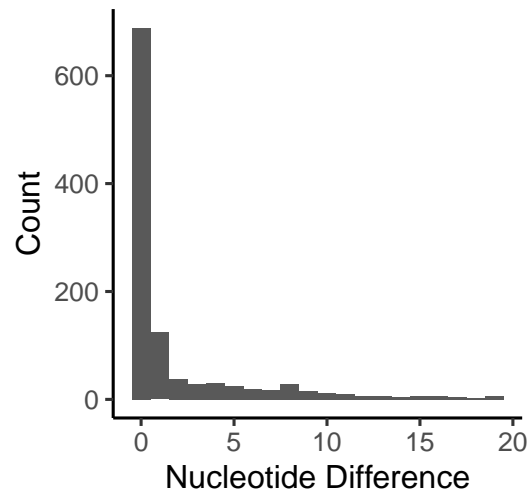
### IGHV2–26\*01

277 sequences assigned  
237 (85.6%) exact matches, in which:  
225 unique CDR3  
5 unique J



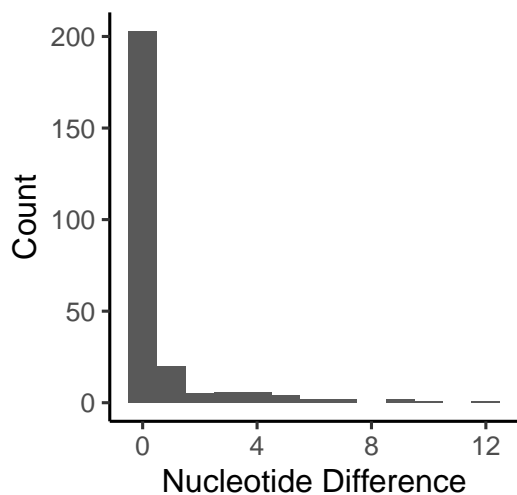
### IGHV3–7\*01

1088 sequences assigned  
689 (63.3%) exact matches, in which:  
614 unique CDR3  
6 unique J



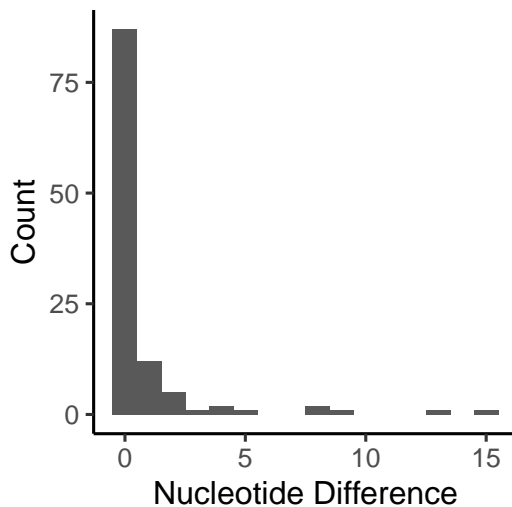
### IGHV2–5\*01

255 sequences assigned  
203 (79.6%) exact matches, in which:  
189 unique CDR3  
6 unique J



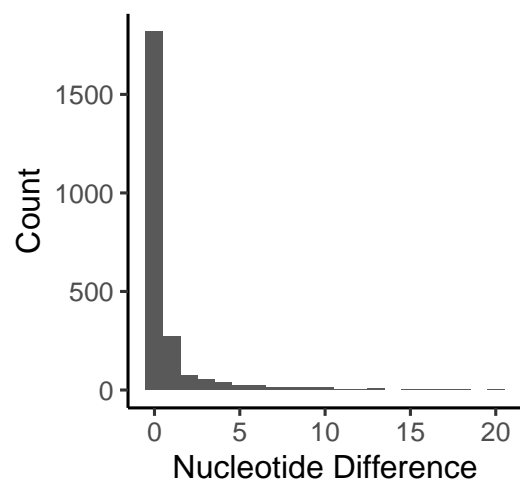
### IGHV2–70\*01

113 sequences assigned  
87 (77%) exact matches, in which:  
84 unique CDR3  
5 unique J



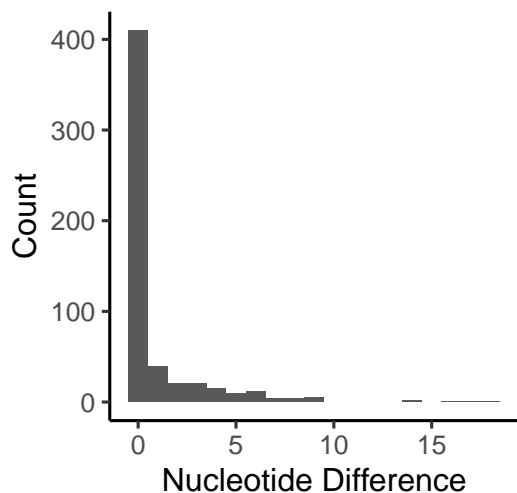
### IGHV3–9\*01

2378 sequences assigned  
1818 (76.5%) exact matches, in which:  
1556 unique CDR3  
6 unique J



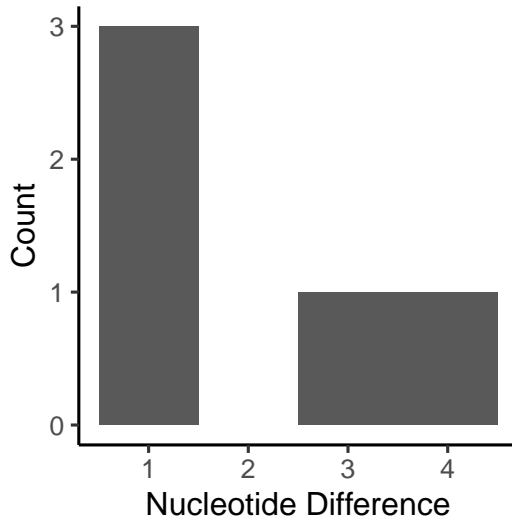
### IGHV2–5\*02

544 sequences assigned  
410 (75.4%) exact matches, in which:  
385 unique CDR3  
6 unique J



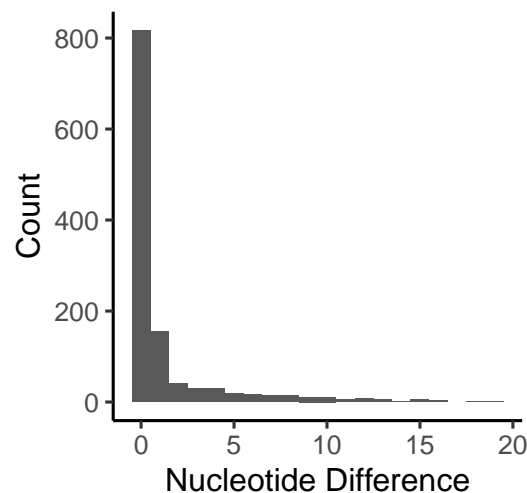
### IGHV2–70D\*04

5 sequences assigned  
No exact matches.



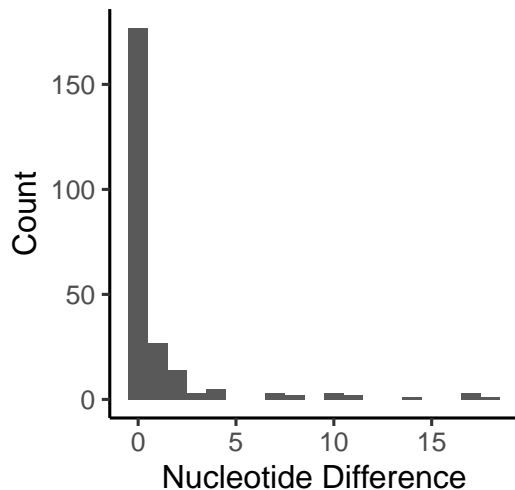
### IGHV3–11\*01

1191 sequences assigned  
817 (68.6%) exact matches, in which:  
724 unique CDR3  
6 unique J



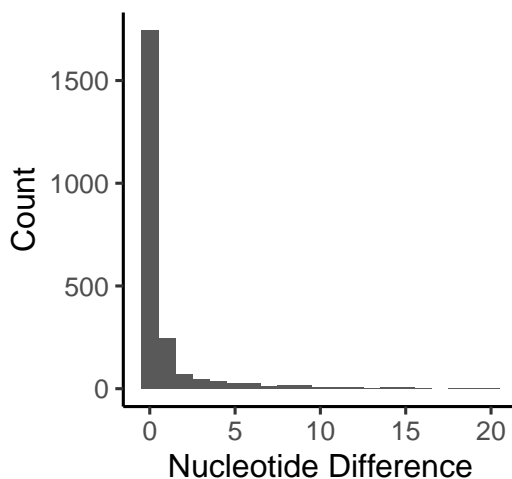
### IGHV3-13\*01

241 sequences assigned  
177 (73.4%) exact matches, in which:  
157 unique CDR3  
5 unique J



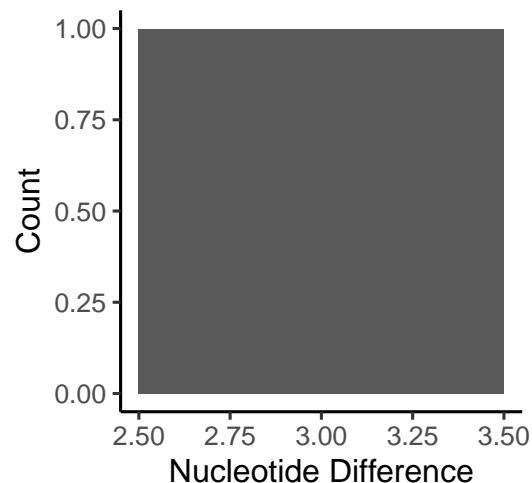
### IGHV3-21\*01

2301 sequences assigned  
1744 (75.8%) exact matches, in which:  
1513 unique CDR3  
6 unique J



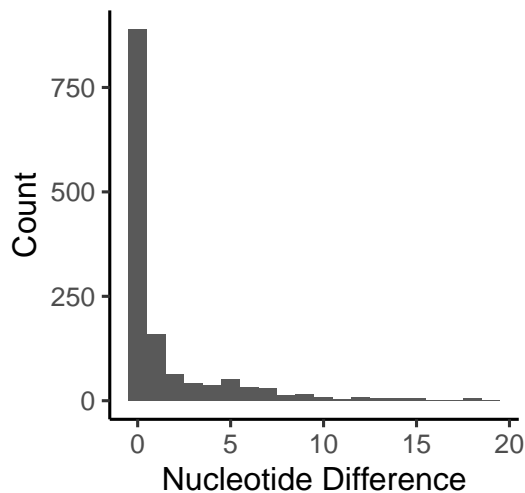
### IGHV3-41\*02

1 sequences assigned  
No exact matches.



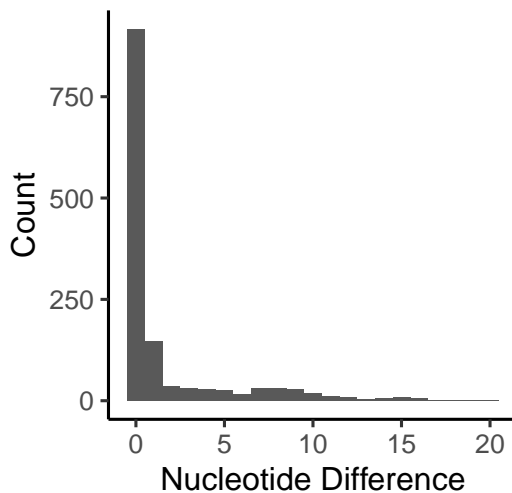
### IGHV3-15\*01

1386 sequences assigned  
890 (64.2%) exact matches, in which:  
799 unique CDR3  
6 unique J



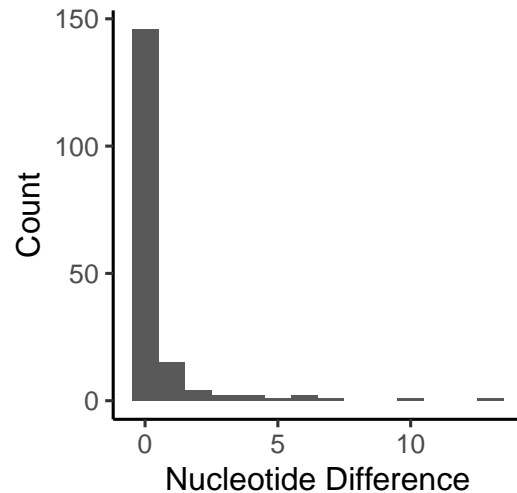
### IGHV3-23\*04

1363 sequences assigned  
917 (67.3%) exact matches, in which:  
815 unique CDR3  
6 unique J



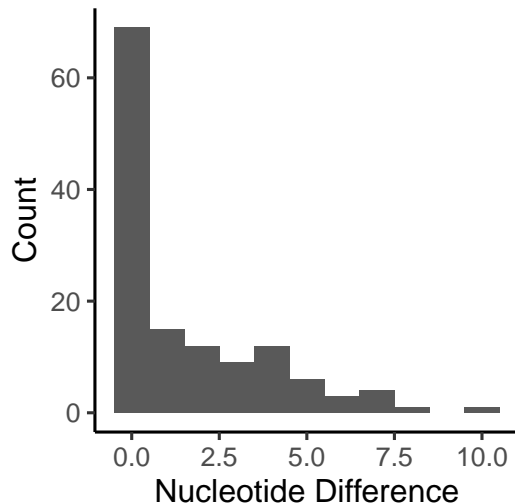
### IGHV3-43\*01

175 sequences assigned  
146 (83.4%) exact matches, in which:  
116 unique CDR3  
6 unique J



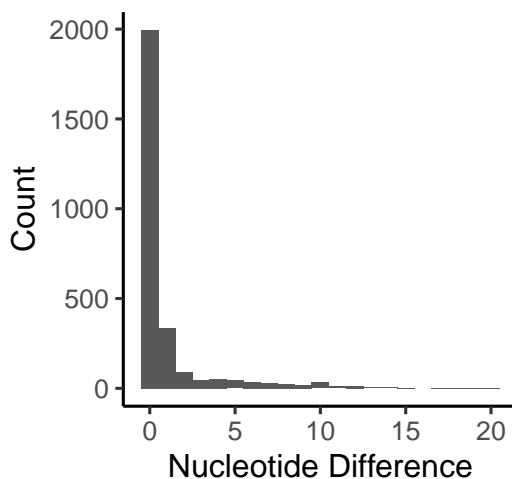
### IGHV3-20\*01

132 sequences assigned  
69 (52.3%) exact matches, in which:  
63 unique CDR3  
5 unique J



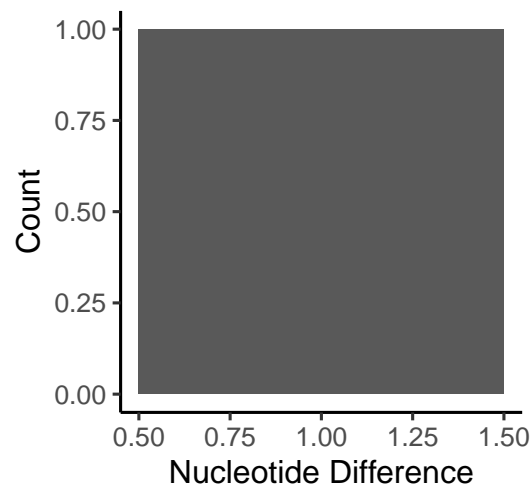
### IGHV3-33\*01

2755 sequences assigned  
1995 (72.4%) exact matches, in which:  
1742 unique CDR3  
6 unique J



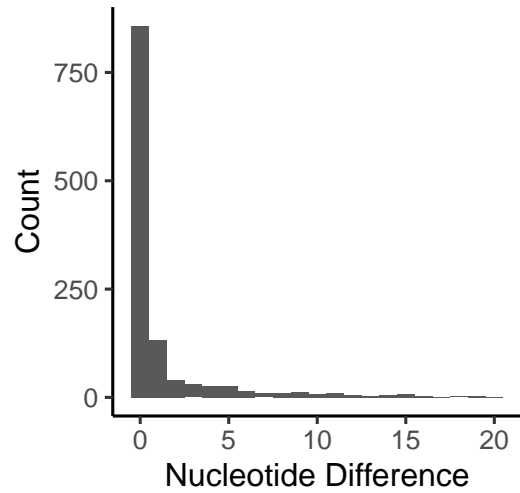
### IGHV3-47\*02

1 sequences assigned  
No exact matches.



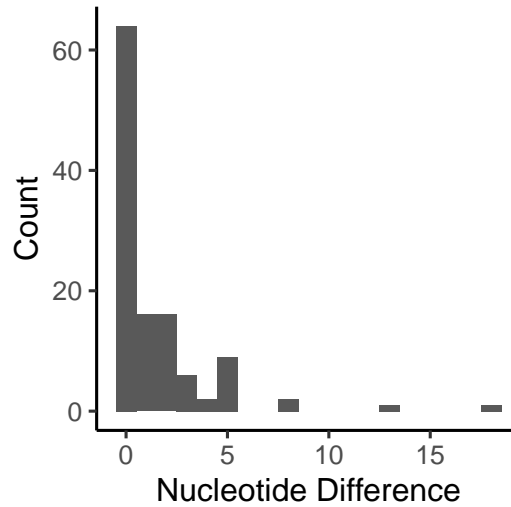
### IGHV3-48\*01

1211 sequences assigned  
858 (70.9%) exact matches, in which:  
748 unique CDR3  
6 unique J



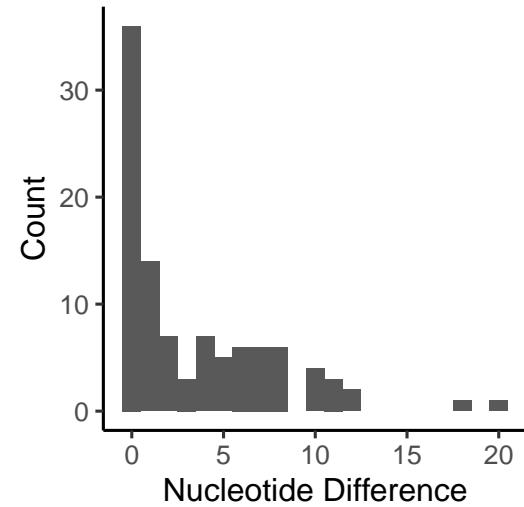
### IGHV3-64\*01

117 sequences assigned  
64 (54.7%) exact matches, in which:  
61 unique CDR3  
5 unique J



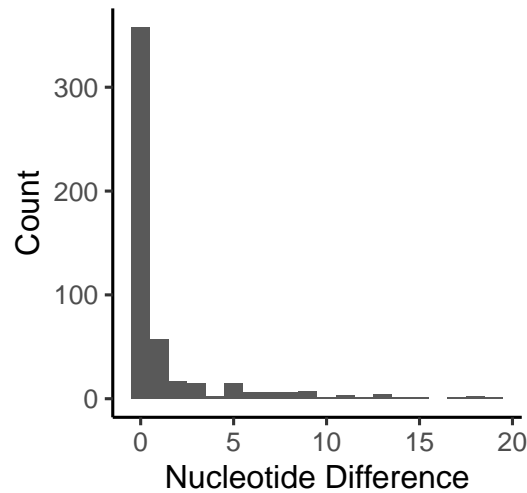
### IGHV3-72\*01

104 sequences assigned  
36 (34.6%) exact matches, in which:  
32 unique CDR3  
4 unique J



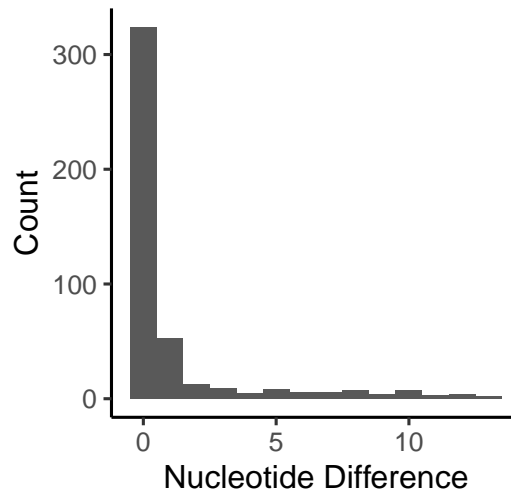
### IGHV3-49\*03

505 sequences assigned  
358 (70.9%) exact matches, in which:  
305 unique CDR3  
5 unique J



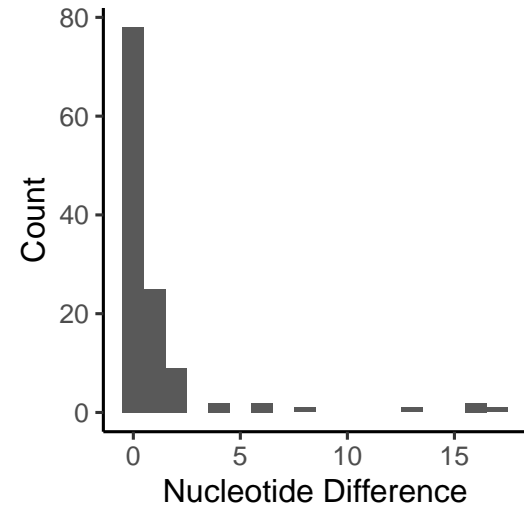
### IGHV3-66\*02

452 sequences assigned  
324 (71.7%) exact matches, in which:  
279 unique CDR3  
6 unique J



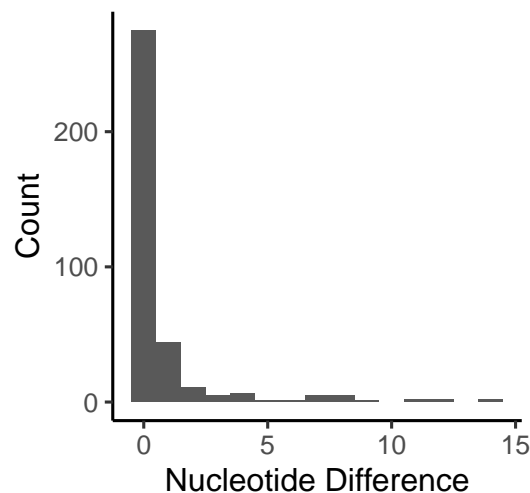
### IGHV3-73\*01

121 sequences assigned  
78 (64.5%) exact matches, in which:  
72 unique CDR3  
4 unique J



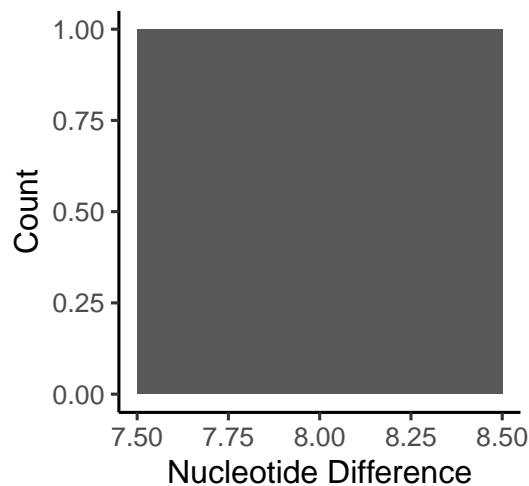
### IGHV3-53\*02

364 sequences assigned  
275 (75.5%) exact matches, in which:  
253 unique CDR3  
5 unique J



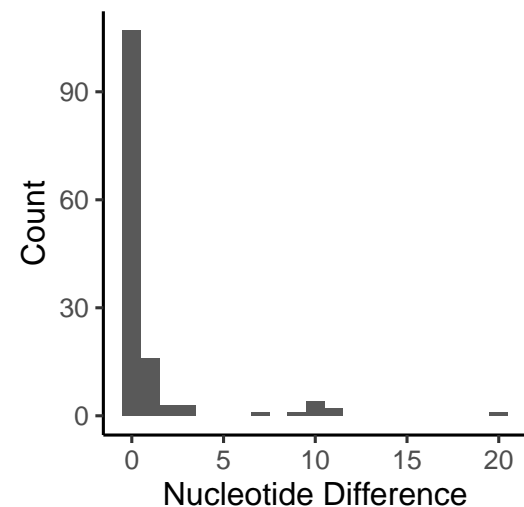
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



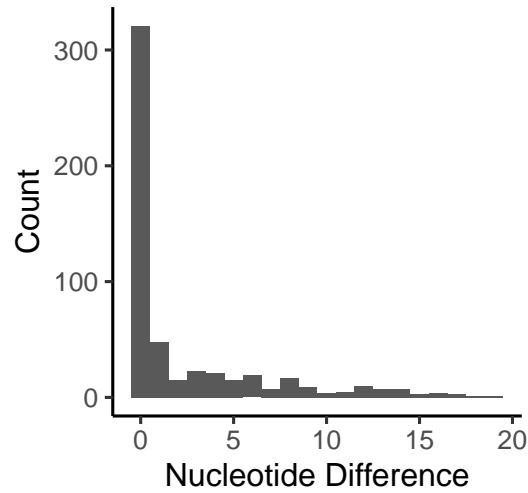
### IGHV3-73\*02

139 sequences assigned  
107 (77%) exact matches, in which:  
91 unique CDR3  
6 unique J



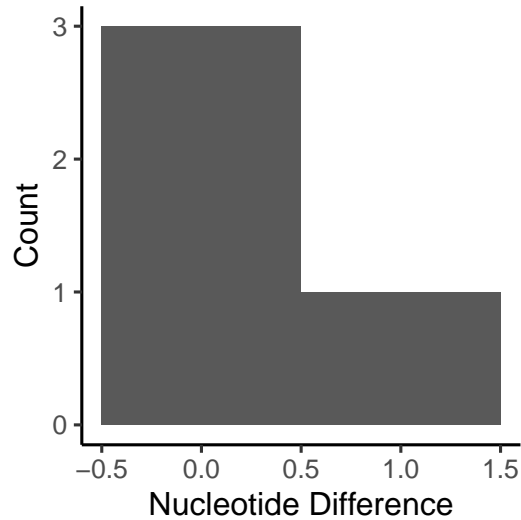
### IGHV3-74\*01

542 sequences assigned  
321 (59.2%) exact matches, in which:  
298 unique CDR3  
6 unique J



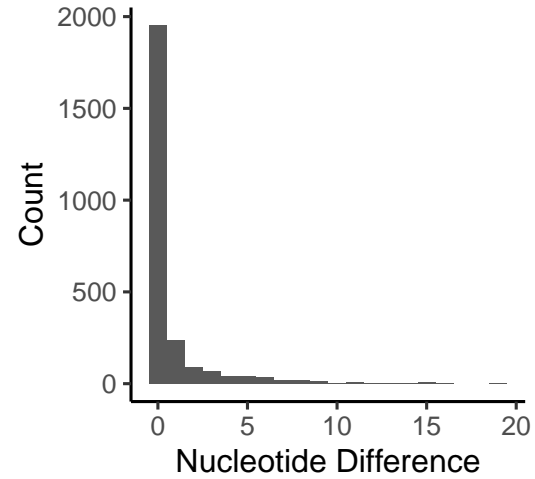
### IGHV4-28\*07

4 sequences assigned  
3 (75%) exact matches, in which:  
2 unique CDR3  
2 unique J



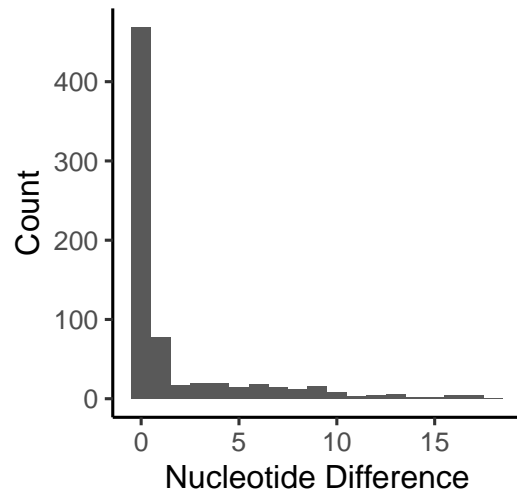
### IGHV4-34\*01

2546 sequences assigned  
1952 (76.7%) exact matches, in which:  
1717 unique CDR3  
6 unique J



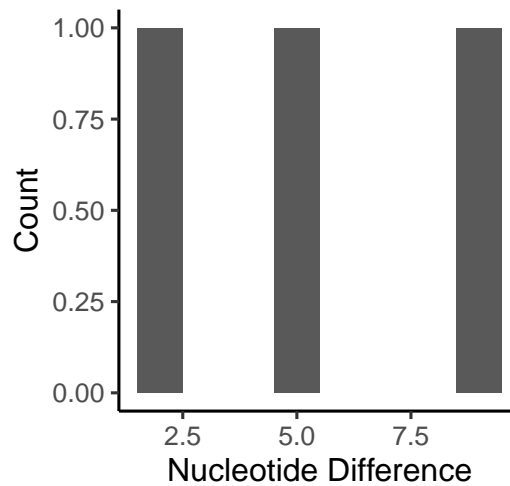
### IGHV4-4\*07

717 sequences assigned  
469 (65.4%) exact matches, in which:  
430 unique CDR3  
6 unique J



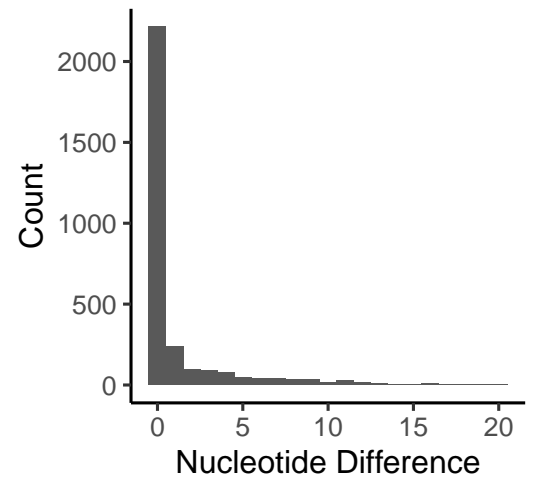
### IGHV4-30-2\*03

4 sequences assigned  
No exact matches.



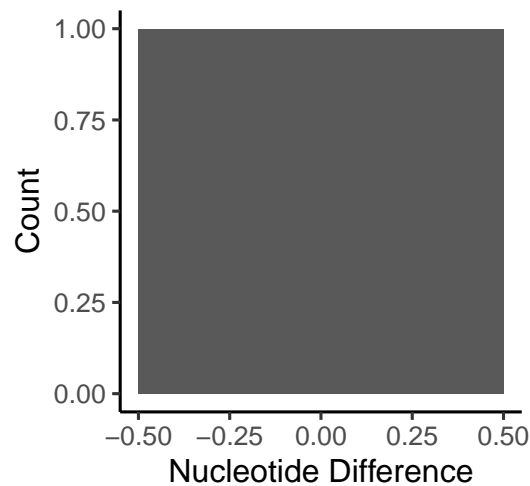
### IGHV4-39\*01

3014 sequences assigned  
2215 (73.5%) exact matches, in which:  
1988 unique CDR3  
6 unique J



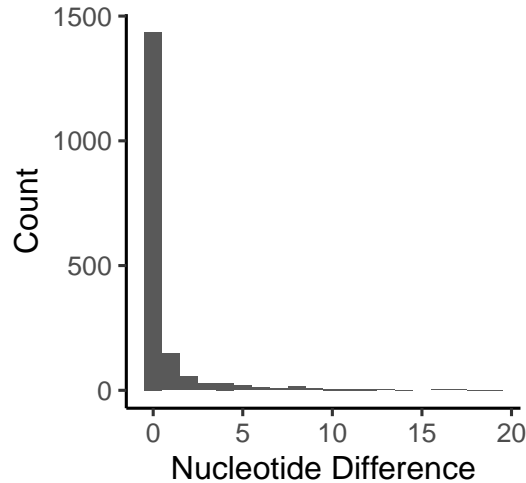
### IGHV4-28\*05

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



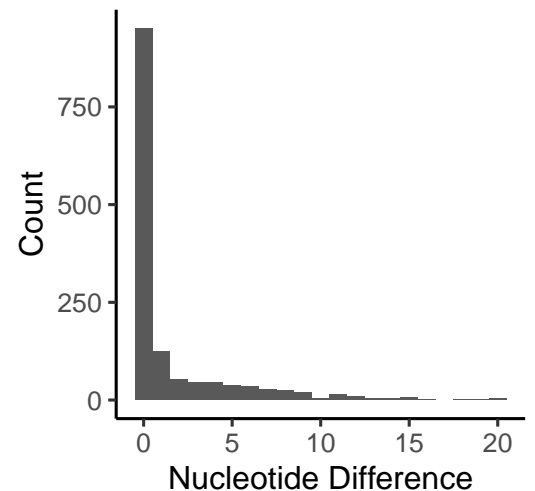
### IGHV4-31\*03

1789 sequences assigned  
1436 (80.3%) exact matches, in which:  
1312 unique CDR3  
6 unique J



### IGHV4-59\*01

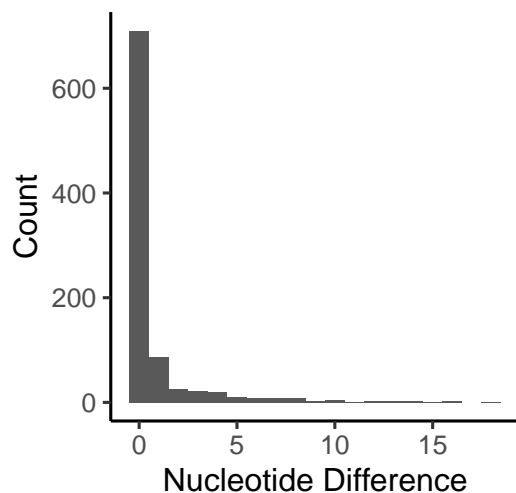
1414 sequences assigned  
951 (67.3%) exact matches, in which:  
894 unique CDR3  
6 unique J





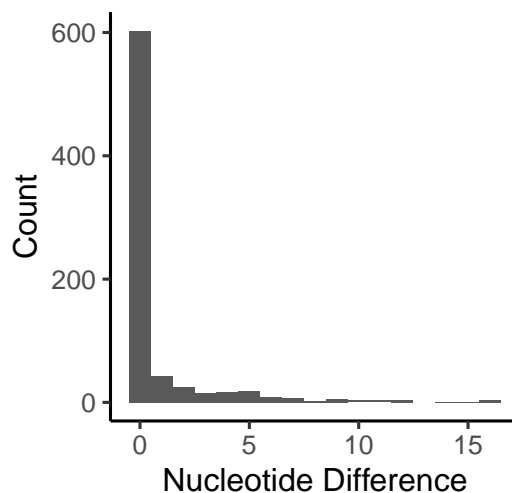
## IGHV4-61\*02

922 sequences assigned  
710 (77%) exact matches, in which:  
662 unique CDR3  
6 unique J



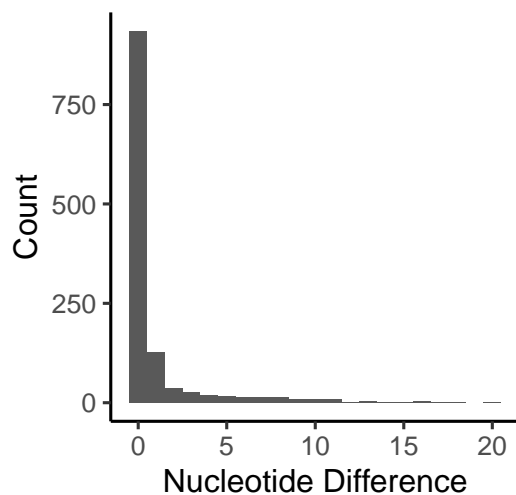
## IGHV5-51\*03

762 sequences assigned  
603 (79.1%) exact matches, in which:  
563 unique CDR3  
6 unique J



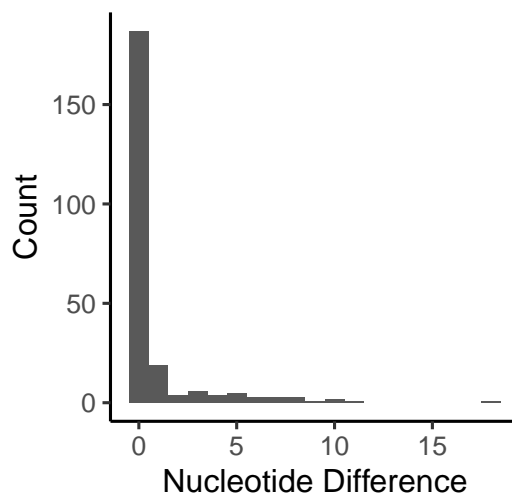
## IGHV4-61\*02\_A234G

1250 sequences assigned  
935 (74.8%) exact matches, in which:  
869 unique CDR3  
6 unique J



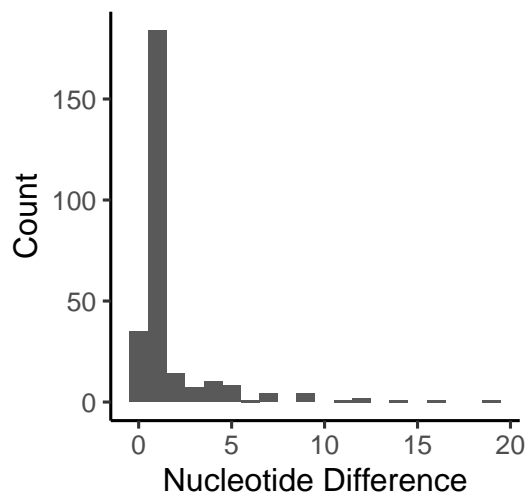
## IGHV6-1\*01

239 sequences assigned  
187 (78.2%) exact matches, in which:  
162 unique CDR3  
6 unique J



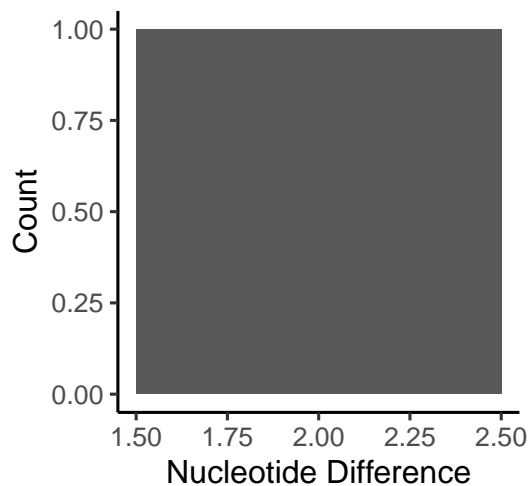
## IGHV5-51\*01

273 sequences assigned  
35 (12.8%) exact matches, in which:  
35 unique CDR3  
5 unique J

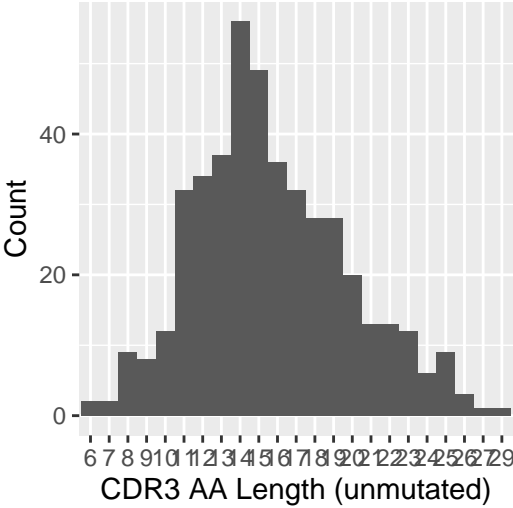


## IGHV3/OR16-12\*01

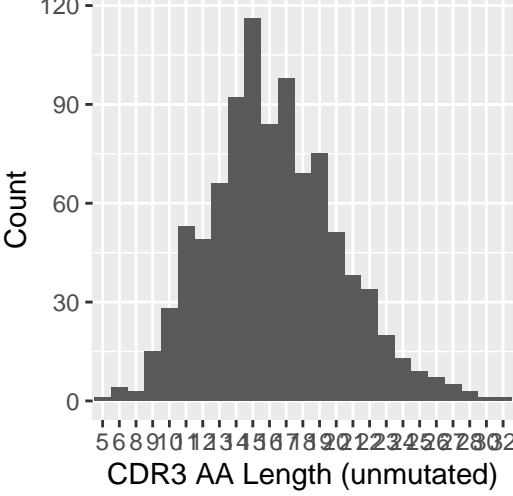
1 sequences assigned  
No exact matches.



IGHV1-69\*08\_C191T



IGHV4-61\*02\_A234G





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