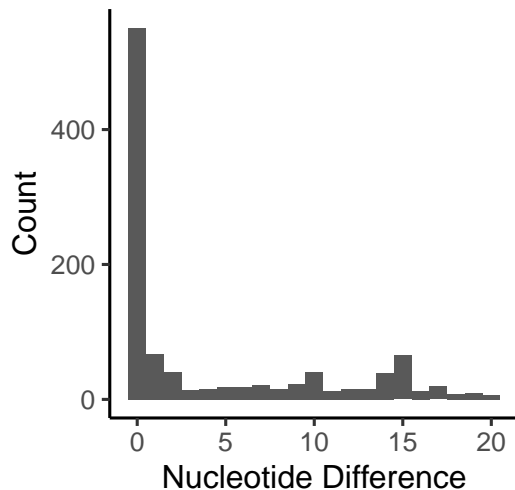


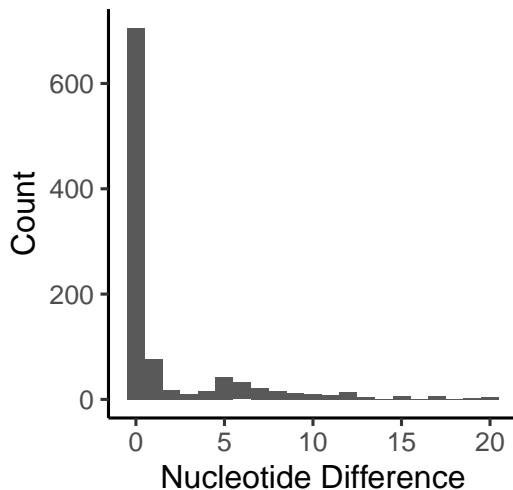
### IGHV1-2\*02

1151 sequences assigned  
551 (47.9%) exact matches, in which:  
540 unique CDR3  
6 unique J



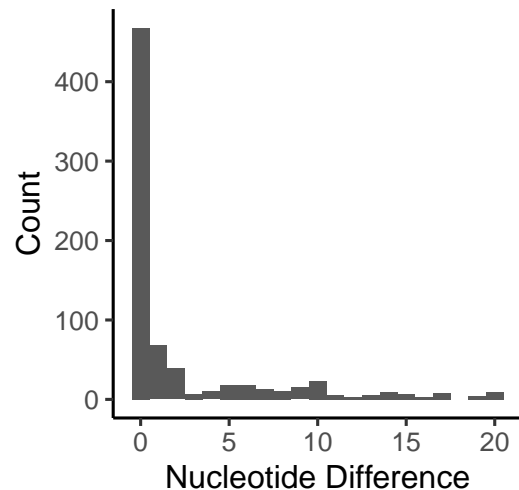
### IGHV1-8\*01

1245 sequences assigned  
706 (56.7%) exact matches, in which:  
694 unique CDR3  
6 unique J



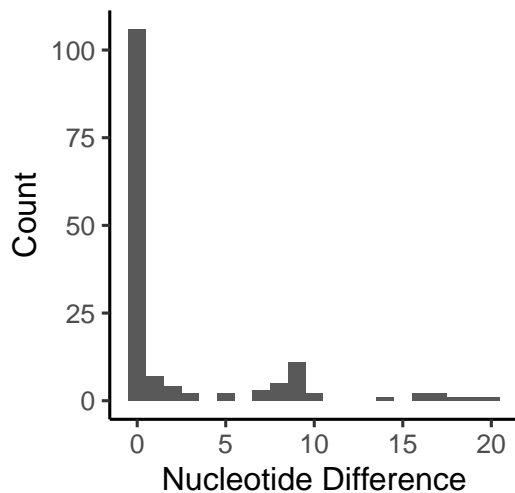
### IGHV1-46\*01

826 sequences assigned  
468 (56.7%) exact matches, in which:  
465 unique CDR3  
6 unique J



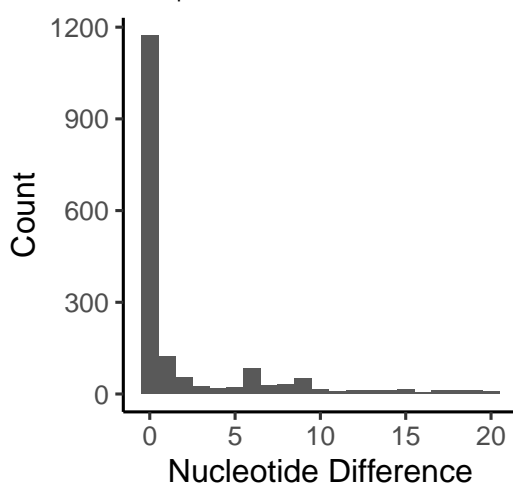
### IGHV1-2\*04

150 sequences assigned  
106 (70.7%) exact matches, in which:  
105 unique CDR3  
6 unique J



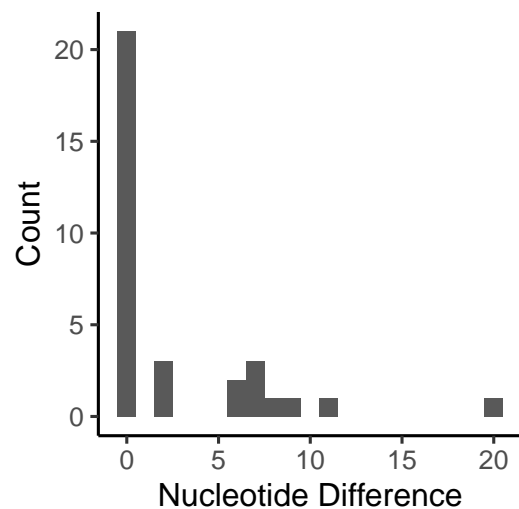
### IGHV1-18\*01

2320 sequences assigned  
1172 (50.5%) exact matches, in which:  
1132 unique CDR3  
6 unique J



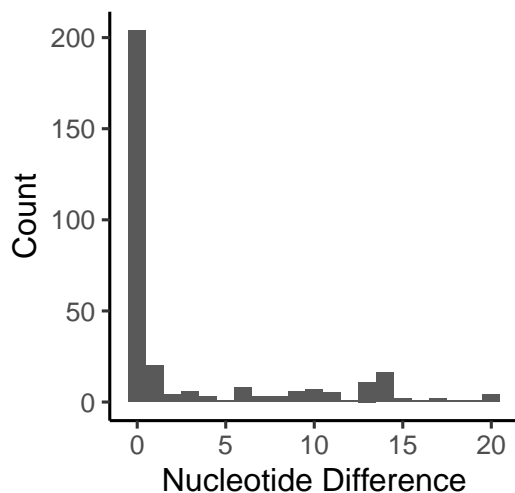
### IGHV1-58\*02

35 sequences assigned  
21 (60%) exact matches, in which:  
20 unique CDR3  
5 unique J



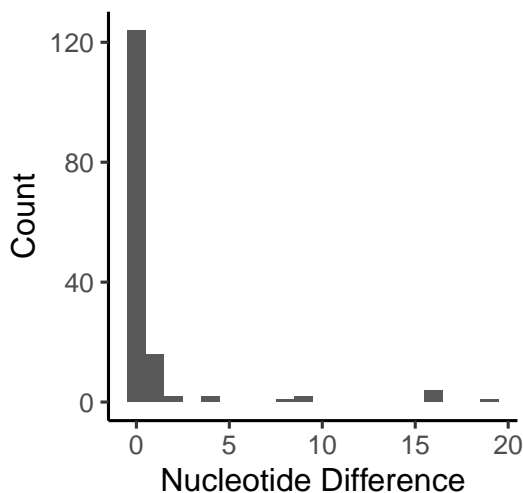
### IGHV1-3\*01\_05

344 sequences assigned  
204 (59.3%) exact matches, in which:  
196 unique CDR3  
6 unique J



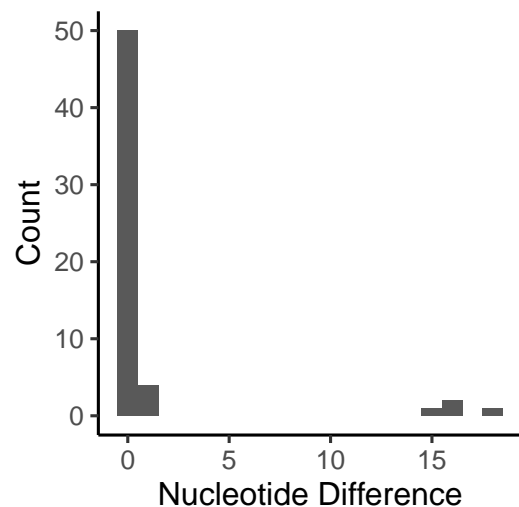
### IGHV1-24\*01

156 sequences assigned  
124 (79.5%) exact matches, in which:  
123 unique CDR3  
6 unique J



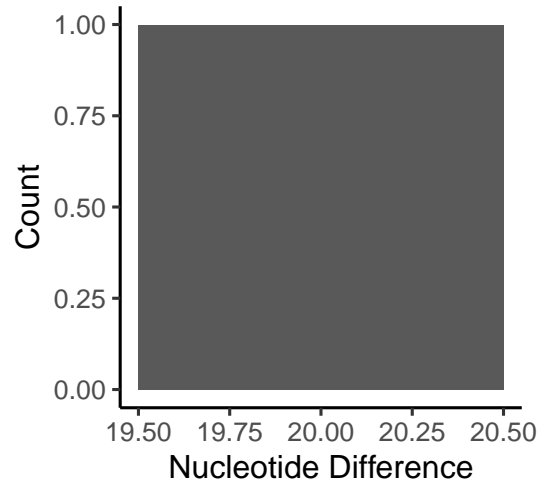
### IGHV1-58\*01\_03

67 sequences assigned  
50 (74.6%) exact matches, in which:  
50 unique CDR3  
4 unique J



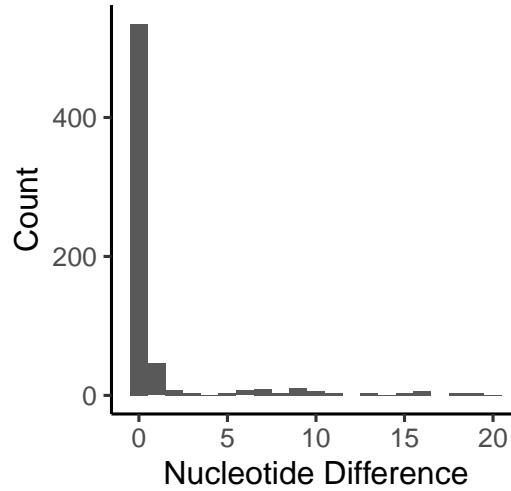
### IGHV1-69-2\*01

2 sequences assigned  
No exact matches.



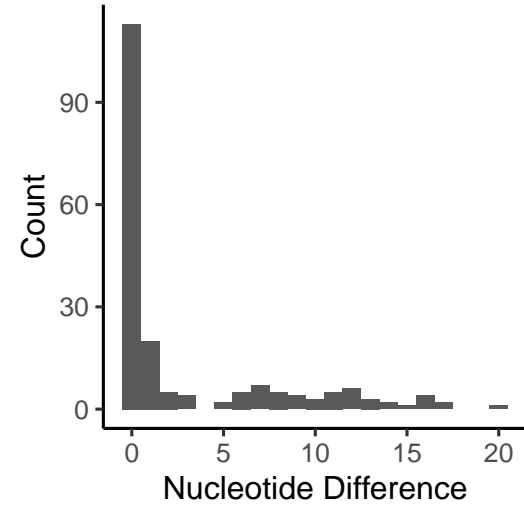
### IGHV1-69\*06\_14

725 sequences assigned  
535 (73.8%) exact matches, in which:  
521 unique CDR3  
6 unique J



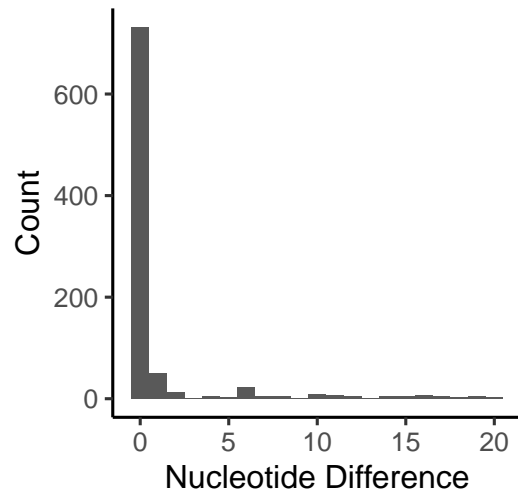
### IGHV2-5\*02

198 sequences assigned  
113 (57.1%) exact matches, in which:  
112 unique CDR3  
6 unique J



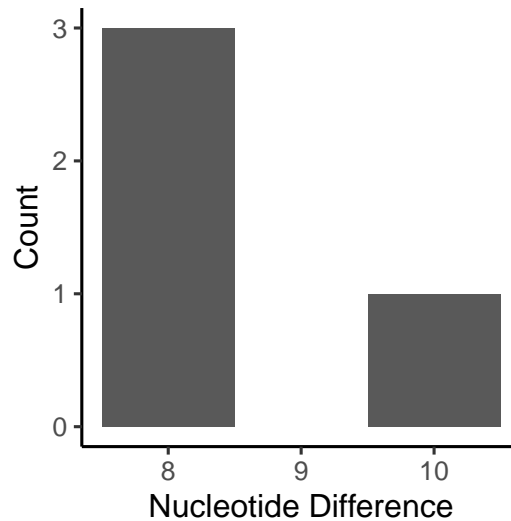
### IGHV1-69\*01\_12\_13

908 sequences assigned  
732 (80.6%) exact matches, in which:  
709 unique CDR3  
6 unique J



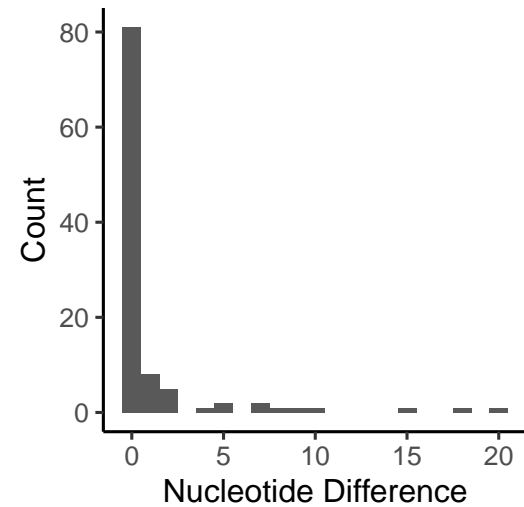
### IGHV1-NL1\*01

4 sequences assigned  
No exact matches.



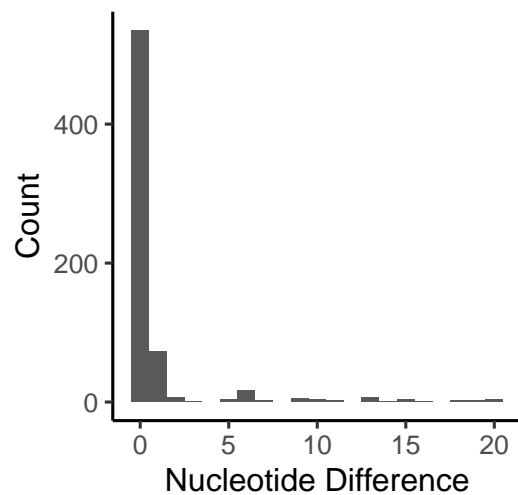
### IGHV2-26\*01

106 sequences assigned  
81 (76.4%) exact matches, in which:  
78 unique CDR3  
5 unique J



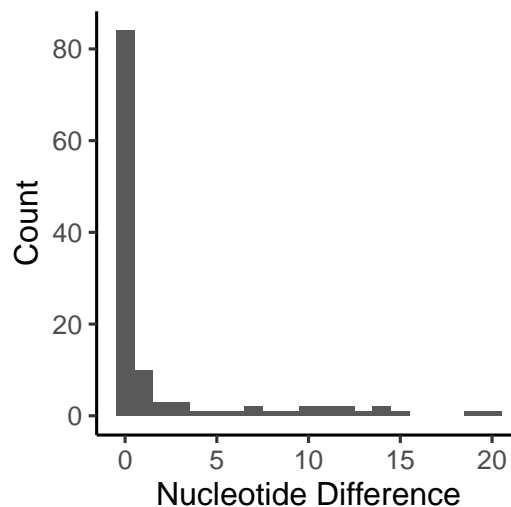
### IGHV1-69\*04\_09

709 sequences assigned  
535 (75.5%) exact matches, in which:  
524 unique CDR3  
6 unique J



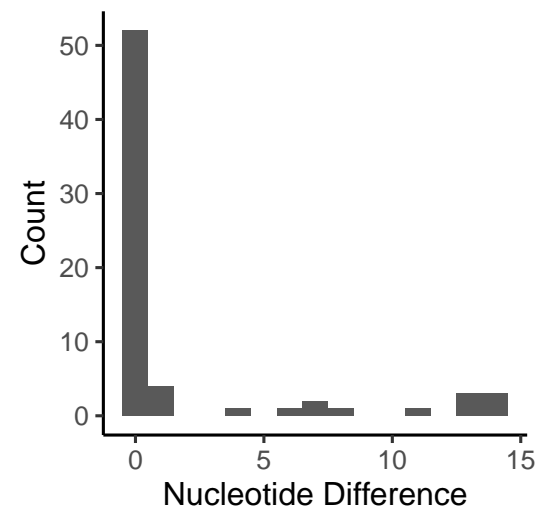
### IGHV2-5\*01

122 sequences assigned  
84 (68.9%) exact matches, in which:  
82 unique CDR3  
4 unique J



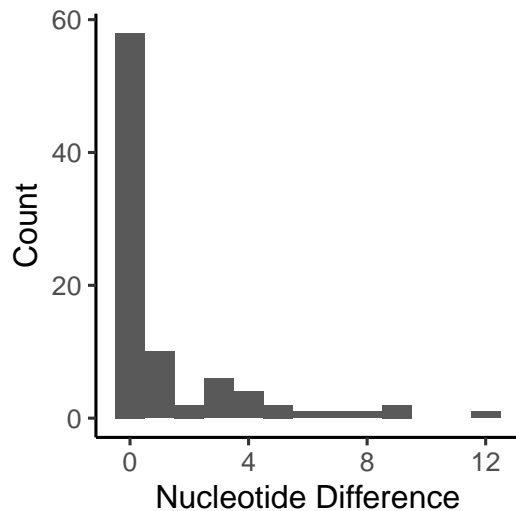
### IGHV2-70\*01

71 sequences assigned  
52 (73.2%) exact matches, in which:  
50 unique CDR3  
4 unique J



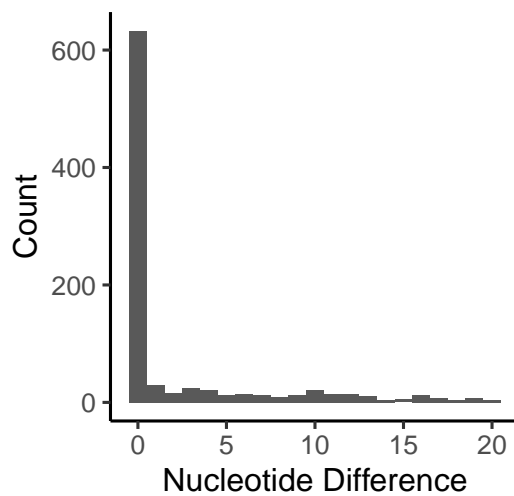
### IGHV2-70\*11\_15

89 sequences assigned  
58 (65.2%) exact matches, in which:  
56 unique CDR3  
4 unique J



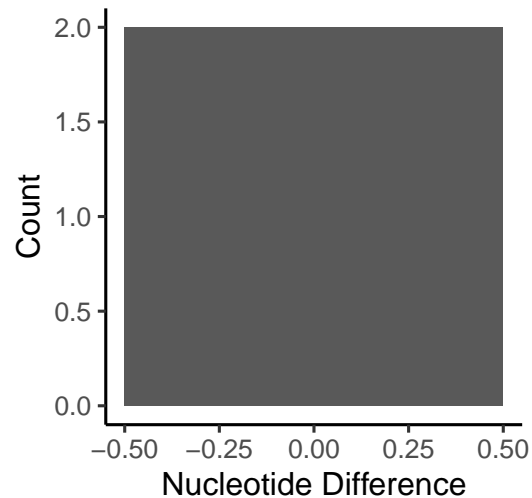
### IGHV3-11\*01

1142 sequences assigned  
633 (55.4%) exact matches, in which:  
381 unique CDR3  
6 unique J



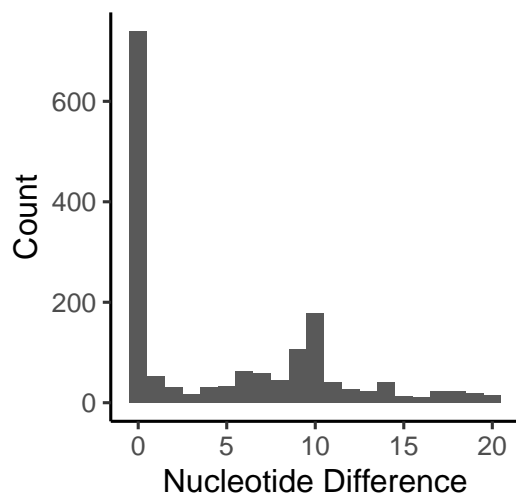
### IGHV3-19\*01

2 sequences assigned  
2 (100%) exact matches, in which:  
1 unique CDR3  
1 unique J



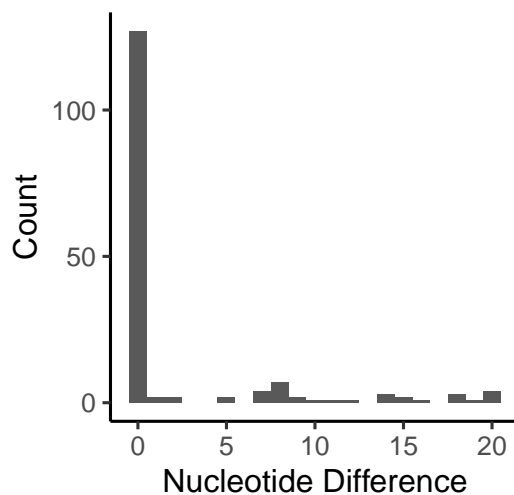
### IGHV3-7\*01

1882 sequences assigned  
740 (39.3%) exact matches, in which:  
440 unique CDR3  
6 unique J



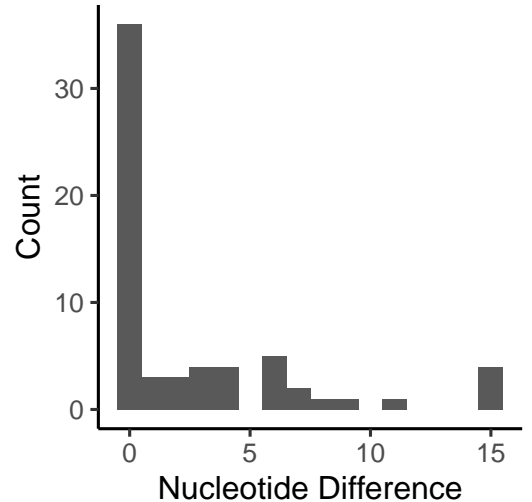
### IGHV3-13\*01

170 sequences assigned  
127 (74.7%) exact matches, in which:  
73 unique CDR3  
5 unique J



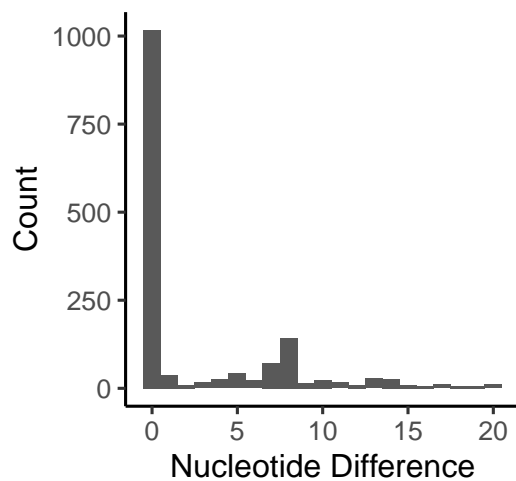
### IGHV3-20\*01\_02

64 sequences assigned  
36 (56.2%) exact matches, in which:  
21 unique CDR3  
5 unique J



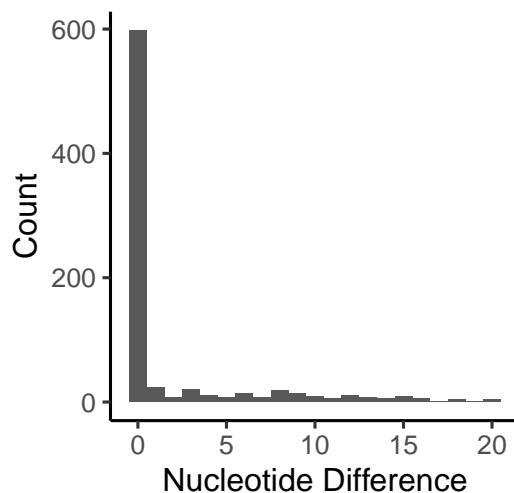
### IGHV3-9\*01

1582 sequences assigned  
1017 (64.3%) exact matches, in which:  
614 unique CDR3  
6 unique J



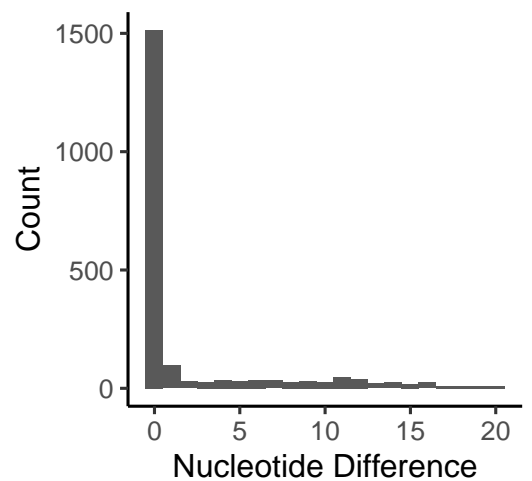
### IGHV3-15\*01\_02

815 sequences assigned  
598 (73.4%) exact matches, in which:  
377 unique CDR3  
6 unique J



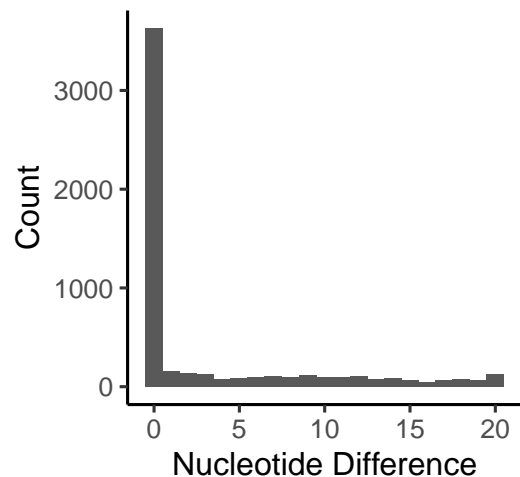
### IGHV3-21\*01\_02

2239 sequences assigned  
1514 (67.6%) exact matches, in which:  
885 unique CDR3  
6 unique J



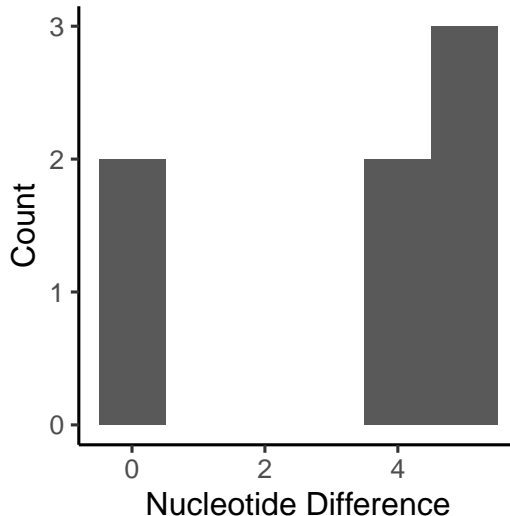
### IGHV3-23\*01\_04

6503 sequences assigned  
3628 (55.8%) exact matches, in which:  
2135 unique CDR3  
6 unique J



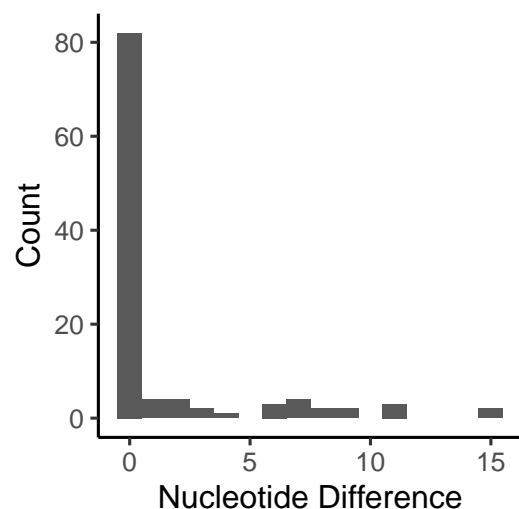
### IGHV3-47\*01

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



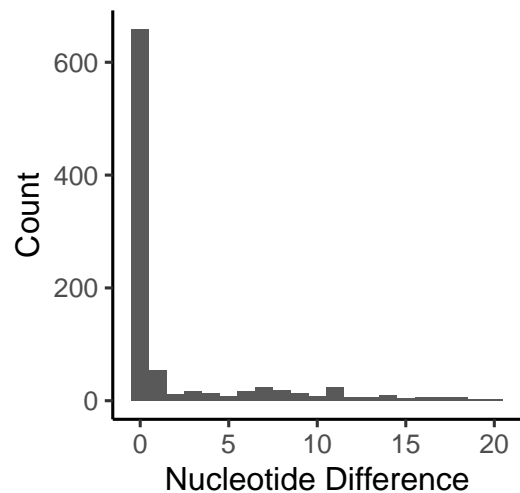
### IGHV3-53\*04

112 sequences assigned  
82 (73.2%) exact matches, in which:  
49 unique CDR3  
5 unique J



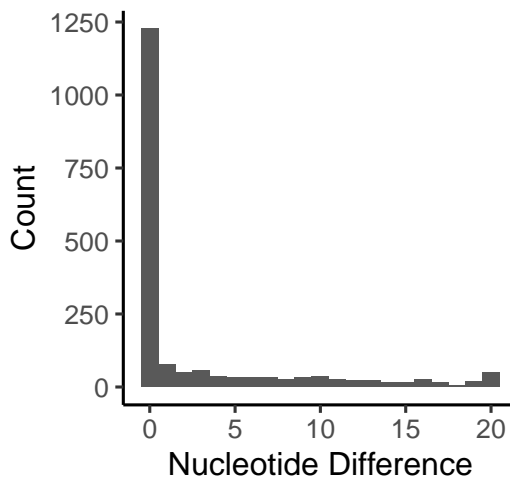
### IGHV3-33\*01

942 sequences assigned  
659 (70%) exact matches, in which:  
416 unique CDR3  
6 unique J



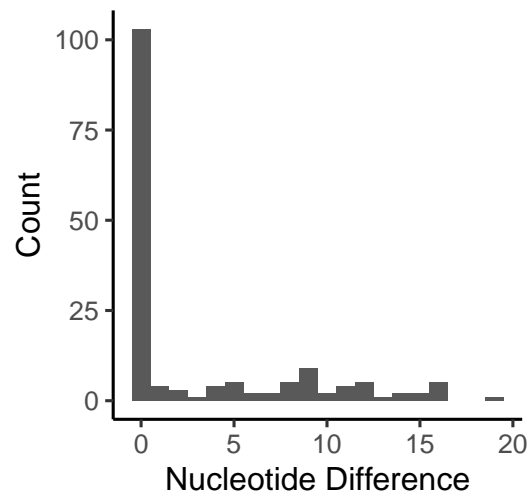
### IGHV3-48\*03

2058 sequences assigned  
1227 (59.6%) exact matches, in which:  
751 unique CDR3  
6 unique J



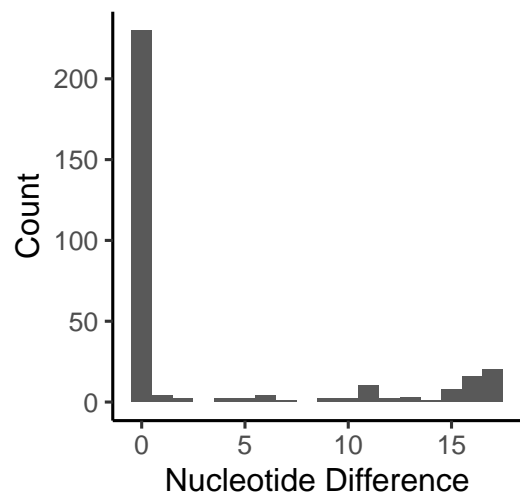
### IGHV3-53\*01\_02

167 sequences assigned  
103 (61.7%) exact matches, in which:  
62 unique CDR3  
5 unique J



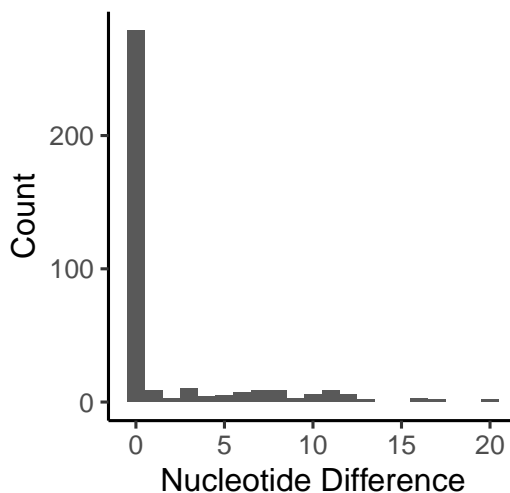
### IGHV3-43\*02

314 sequences assigned  
230 (73.2%) exact matches, in which:  
143 unique CDR3  
5 unique J



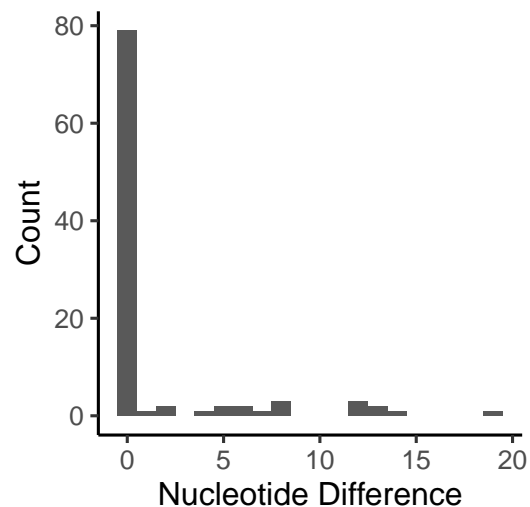
### IGHV3-49\*04

410 sequences assigned  
279 (68%) exact matches, in which:  
178 unique CDR3  
6 unique J



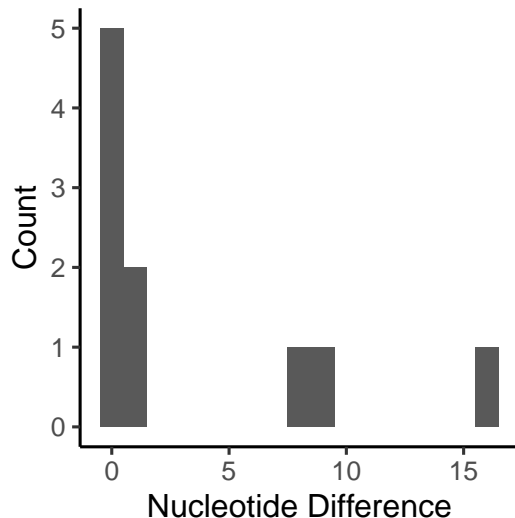
### IGHV3-64\*01

99 sequences assigned  
79 (79.8%) exact matches, in which:  
46 unique CDR3  
4 unique J



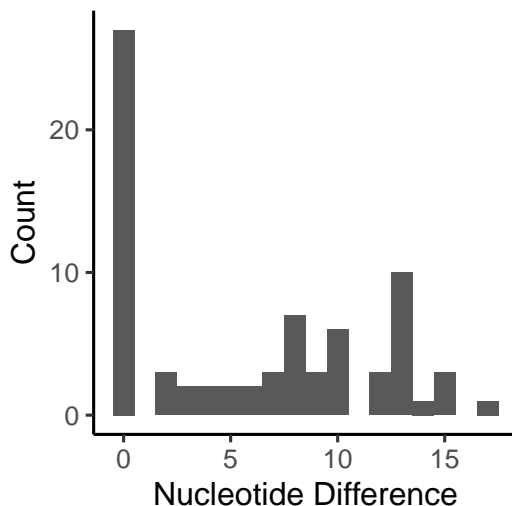
### IGHV3-64\*02\_07

17 sequences assigned  
5 (29.4%) exact matches, in which:  
3 unique CDR3  
2 unique J



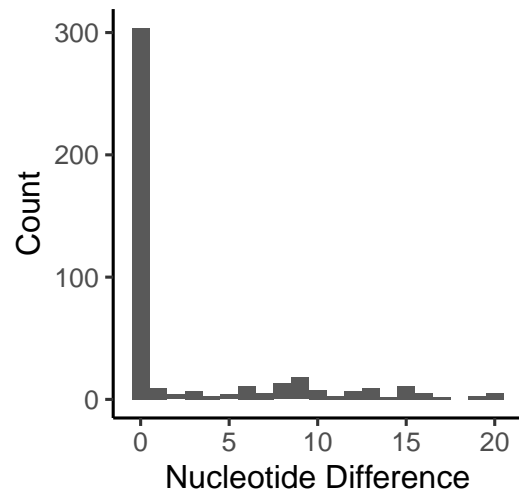
### IGHV3-72\*01

82 sequences assigned  
27 (32.9%) exact matches, in which:  
15 unique CDR3  
4 unique J



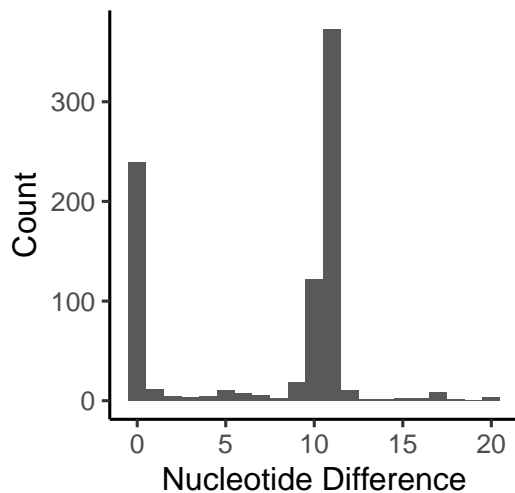
### IGHV3-74\*01\_02

453 sequences assigned  
304 (67.1%) exact matches, in which:  
178 unique CDR3  
5 unique J



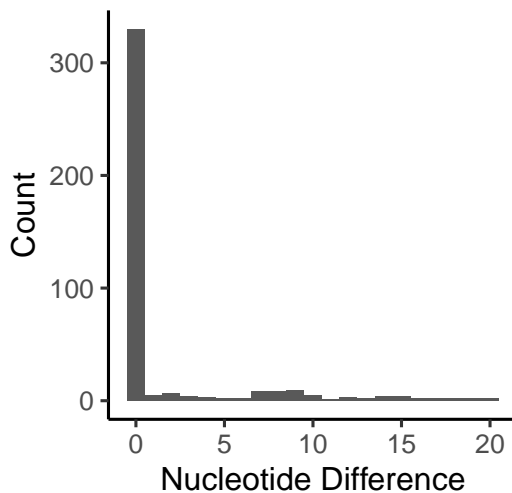
### IGHV3-66\*01

866 sequences assigned  
239 (27.6%) exact matches, in which:  
141 unique CDR3  
5 unique J



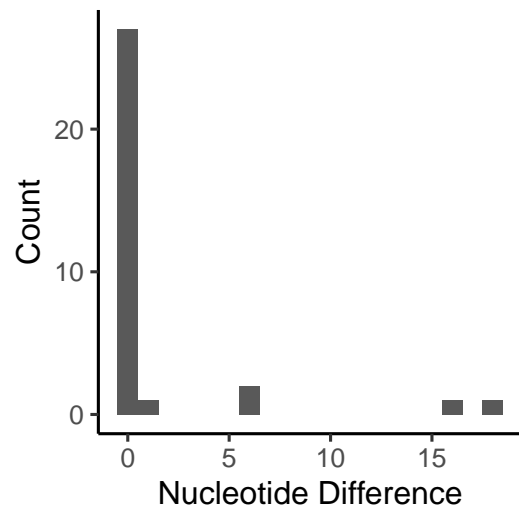
### IGHV3-73\*01\_02

477 sequences assigned  
330 (69.2%) exact matches, in which:  
194 unique CDR3  
6 unique J



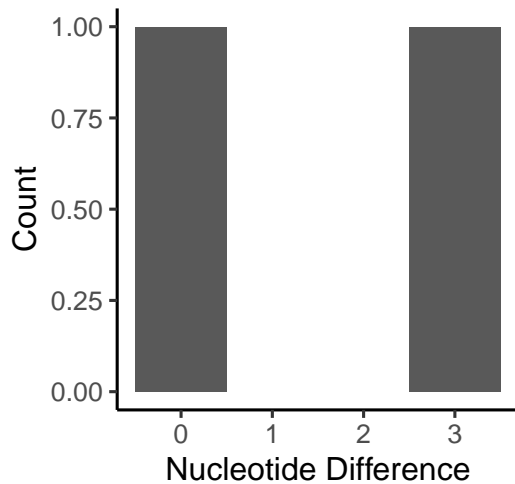
### IGHV3-43D\*04

32 sequences assigned  
27 (84.4%) exact matches, in which:  
17 unique CDR3  
3 unique J



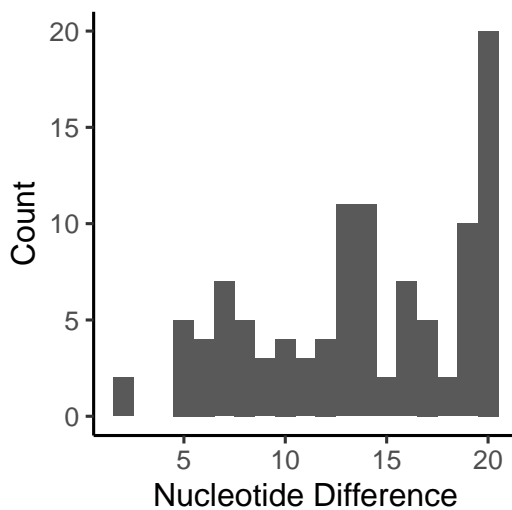
### IGHV3-69-1\*01

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



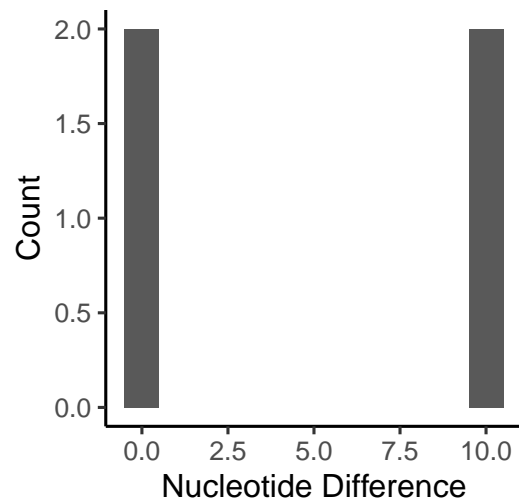
### IGHV3-74\*03

165 sequences assigned  
No exact matches.



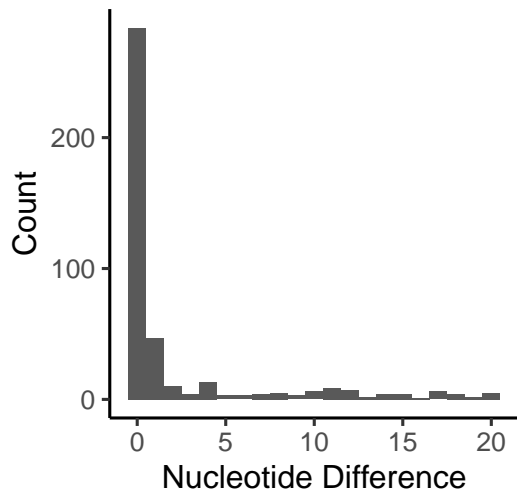
### IGHV3-64D\*06

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



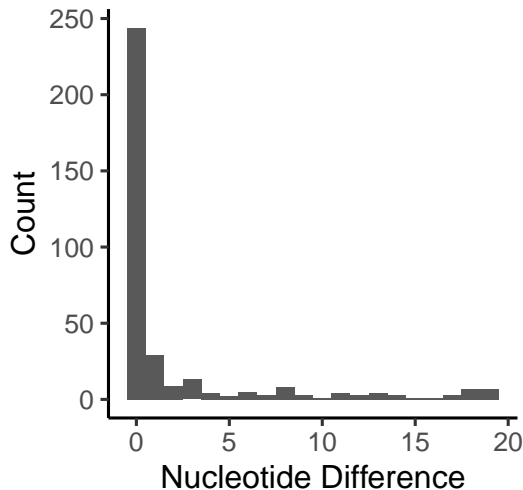
### IGHV4-4\*07

450 sequences assigned  
284 (63.1%) exact matches, in which:  
276 unique CDR3  
6 unique J



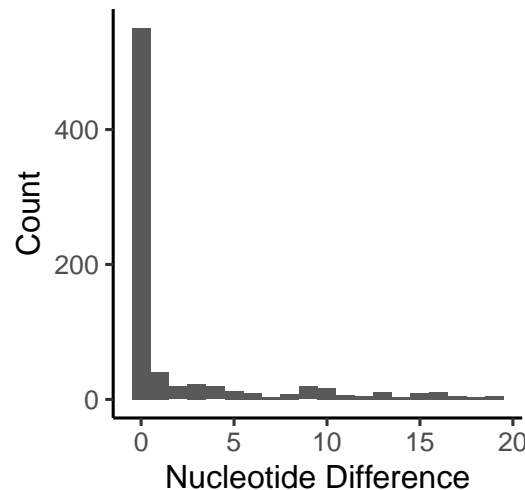
### IGHV4-31\*02

407 sequences assigned  
244 (60%) exact matches, in which:  
233 unique CDR3  
5 unique J



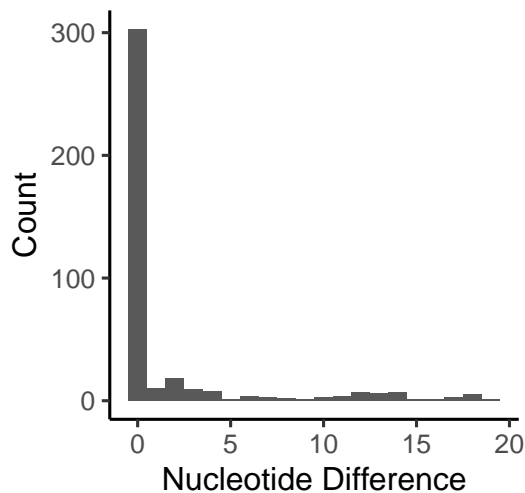
### IGHV4-39\*02\_C258G

1013 sequences assigned  
551 (54.4%) exact matches, in which:  
528 unique CDR3  
6 unique J



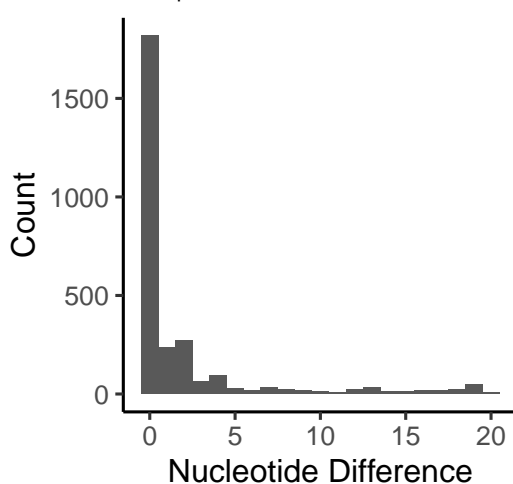
### IGHV4-4\*02\_03

472 sequences assigned  
303 (64.2%) exact matches, in which:  
289 unique CDR3  
6 unique J



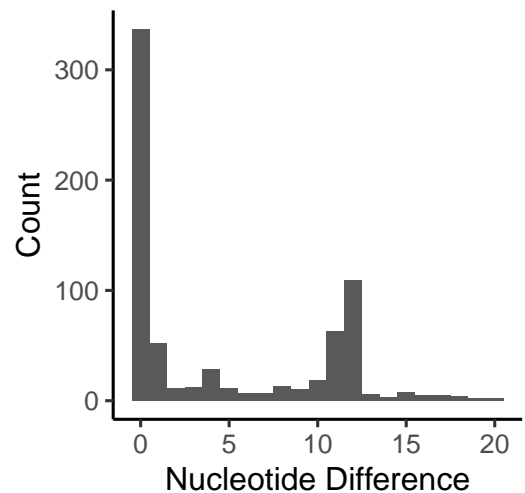
### IGHV4-34\*01\_02

3199 sequences assigned  
1818 (56.8%) exact matches, in which:  
1692 unique CDR3  
6 unique J



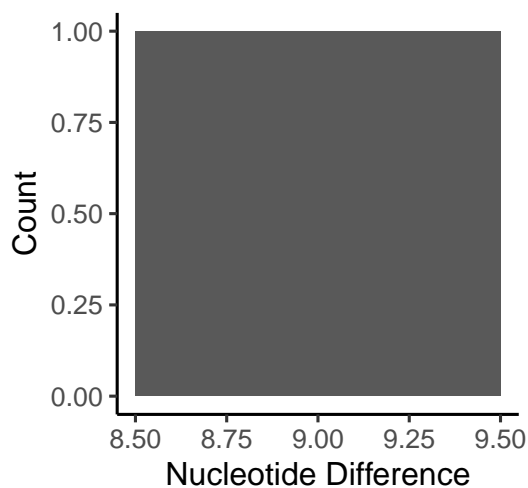
### IGHV4-59\*08

737 sequences assigned  
337 (45.7%) exact matches, in which:  
324 unique CDR3  
6 unique J



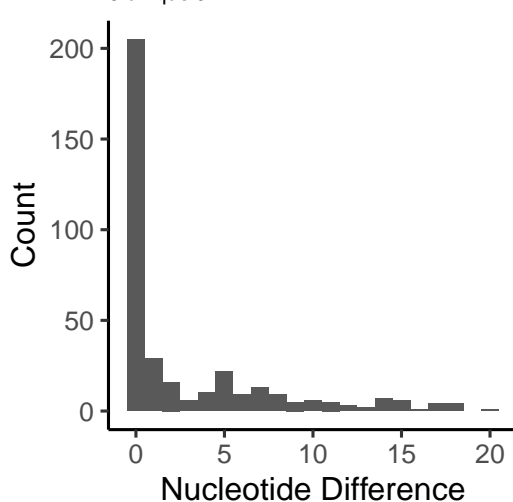
### IGHV4-28\*02\_05

1 sequences assigned  
No exact matches.



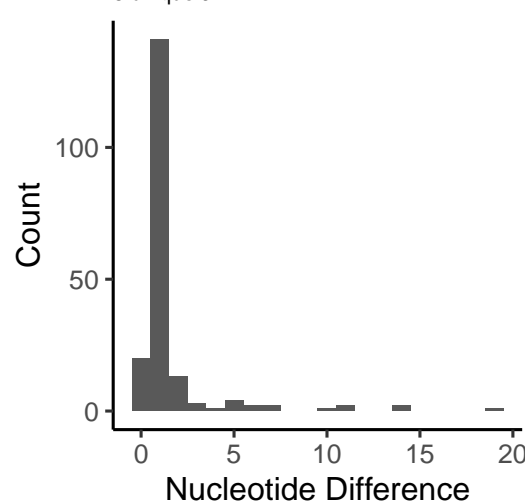
### IGHV4-38-2\*02\_A70G

548 sequences assigned  
205 (37.4%) exact matches, in which:  
189 unique CDR3  
5 unique J



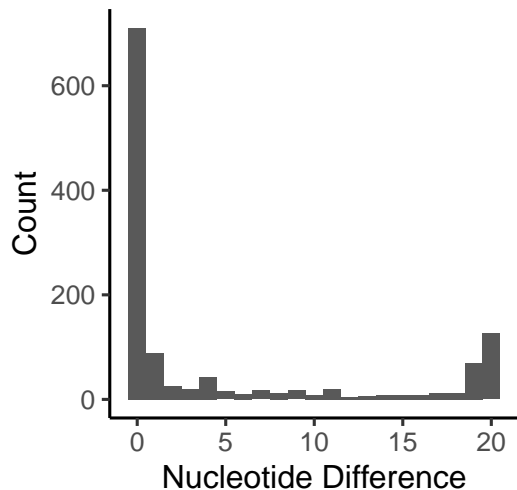
### IGHV4-59\*12

555 sequences assigned  
20 (3.6%) exact matches, in which:  
20 unique CDR3  
5 unique J



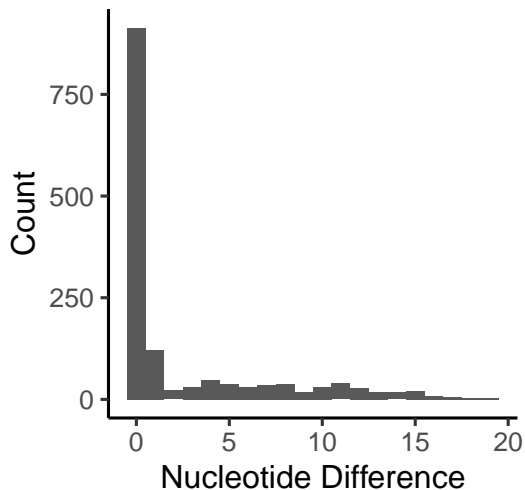
### IGHV4–59\*02\_G88A

1572 sequences assigned  
711 (45.2%) exact matches, in which:  
694 unique CDR3  
6 unique J



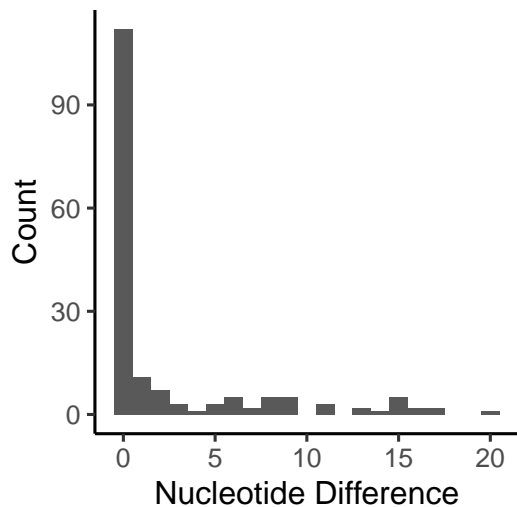
### IGHV5–51\*07\_A128G

1760 sequences assigned  
914 (51.9%) exact matches, in which:  
774 unique CDR3  
6 unique J



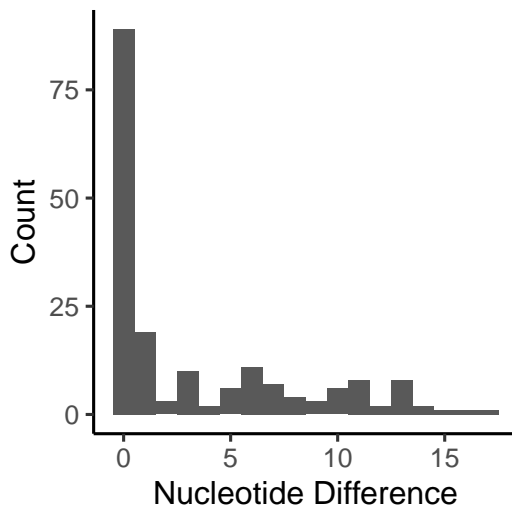
### IGHV4–61\*01

191 sequences assigned  
112 (58.6%) exact matches, in which:  
109 unique CDR3  
5 unique J



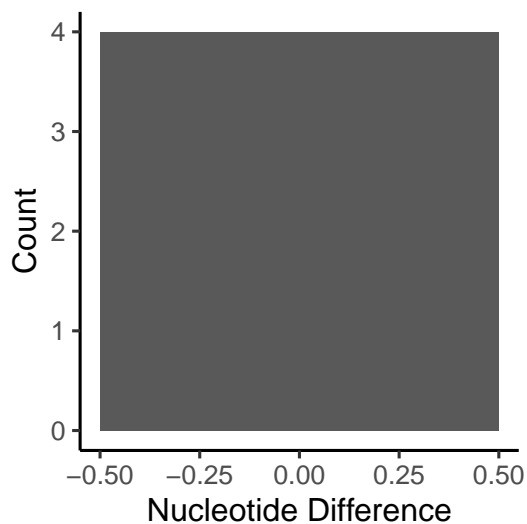
### IGHV6–1\*01\_02

196 sequences assigned  
89 (45.4%) exact matches, in which:  
89 unique CDR3  
4 unique J



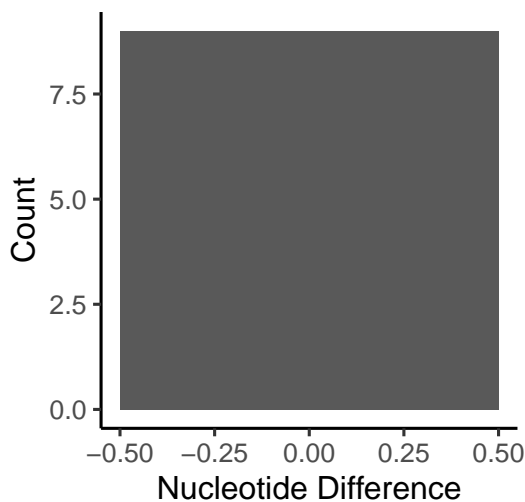
### IGHV5–10–1\*01\_03

4 sequences assigned  
4 (100%) exact matches, in which:  
4 unique CDR3  
4 unique J



### IGHV7–4–1\*01

9 sequences assigned  
9 (100%) exact matches, in which:  
8 unique CDR3  
4 unique J







Warning – no inferred sequences found.