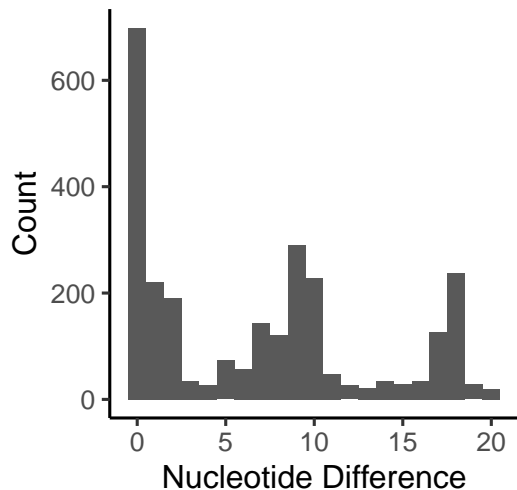


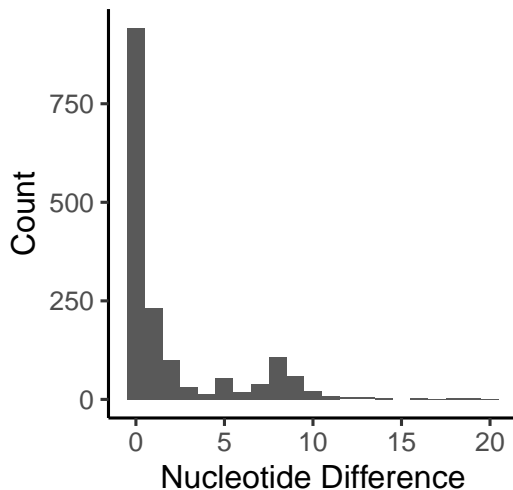
### IGHV1-2\*02

2891 sequences assigned  
699 (24.2%) exact matches, in which:  
662 unique CDR3  
6 unique J



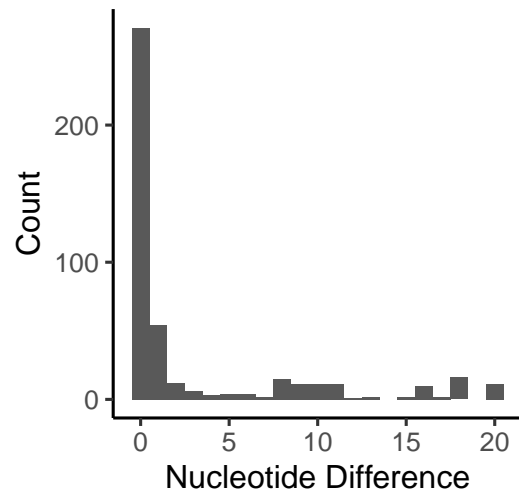
### IGHV1-8\*01

1799 sequences assigned  
943 (52.4%) exact matches, in which:  
902 unique CDR3  
6 unique J



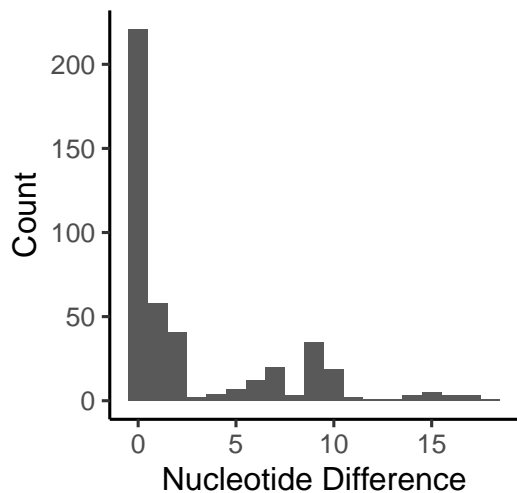
### IGHV1-24\*01

548 sequences assigned  
271 (49.5%) exact matches, in which:  
261 unique CDR3  
6 unique J



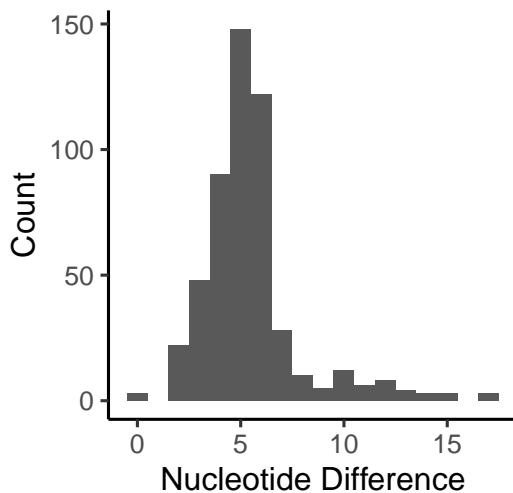
### IGHV1-2\*04

442 sequences assigned  
221 (50%) exact matches, in which:  
210 unique CDR3  
6 unique J



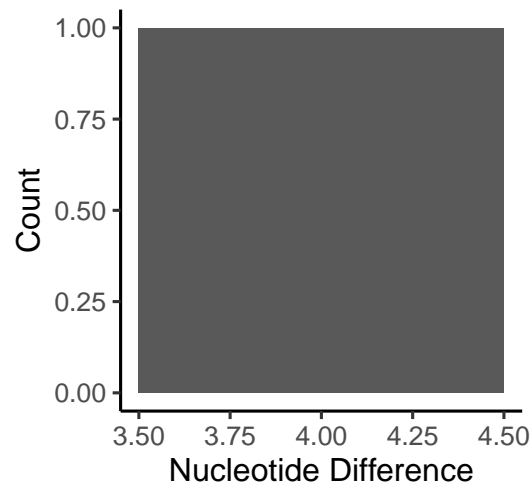
### IGHV1-8\*02

529 sequences assigned  
3 (0.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



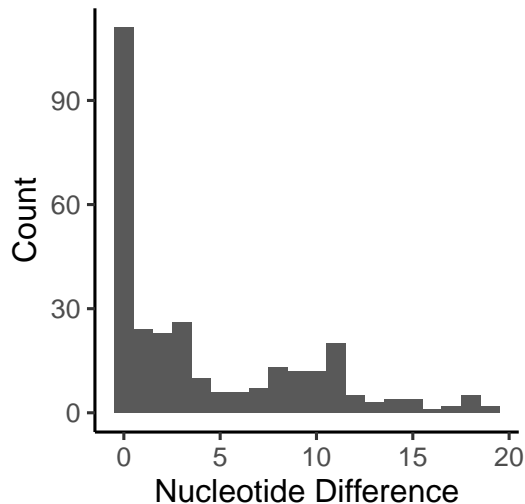
### IGHV1-45\*02

1 sequences assigned  
No exact matches.



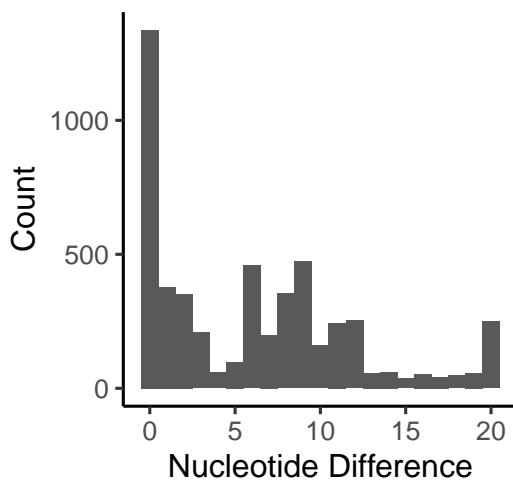
### IGHV1-3\*01\_05

373 sequences assigned  
111 (29.8%) exact matches, in which:  
103 unique CDR3  
6 unique J



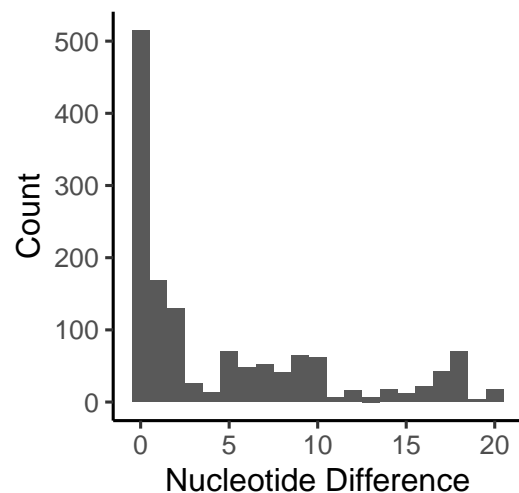
### IGHV1-18\*01

7216 sequences assigned  
1337 (18.5%) exact matches, in which:  
1250 unique CDR3  
6 unique J



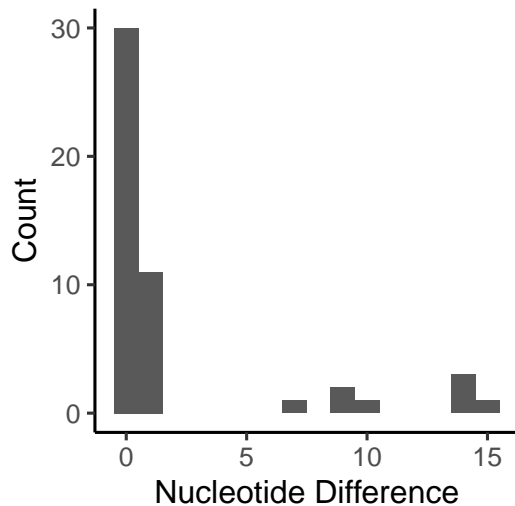
### IGHV1-46\*01

1469 sequences assigned  
515 (35.1%) exact matches, in which:  
481 unique CDR3  
6 unique J



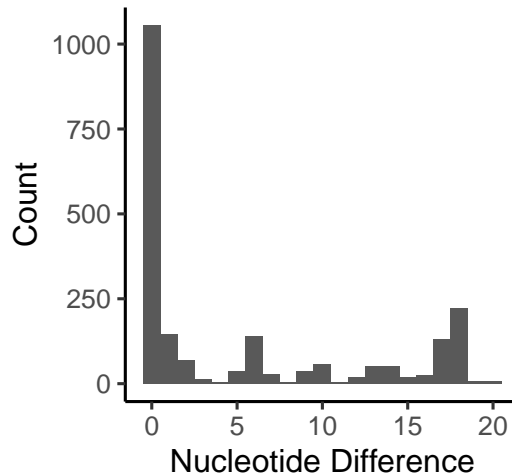
### IGHV1-58\*01\_03

52 sequences assigned  
30 (57.7%) exact matches, in which:  
28 unique CDR3  
4 unique J



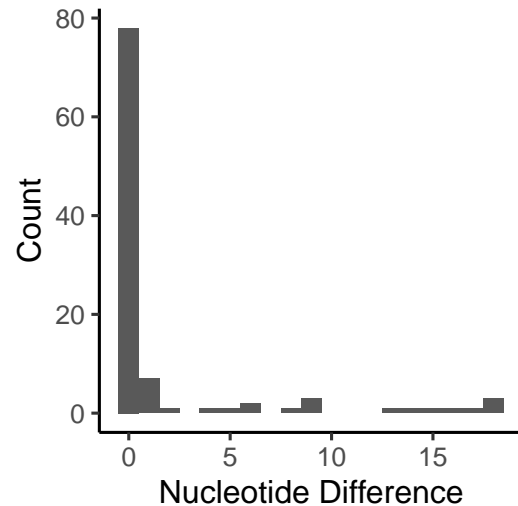
### IGHV1-69\*01\_12\_13

2222 sequences assigned  
1055 (47.5%) exact matches, in which:  
1022 unique CDR3  
6 unique J



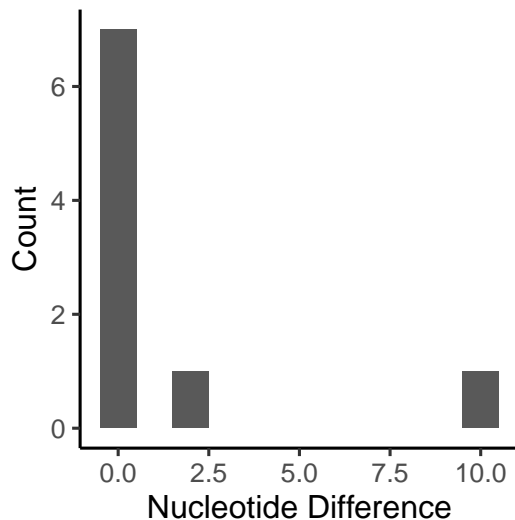
### IGHV2-26\*01

103 sequences assigned  
78 (75.7%) exact matches, in which:  
75 unique CDR3  
5 unique J



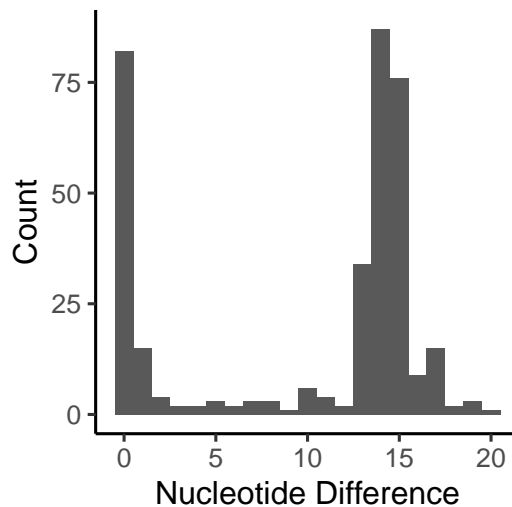
### IGHV1-69-2\*01

11 sequences assigned  
7 (63.6%) exact matches, in which:  
6 unique CDR3  
3 unique J



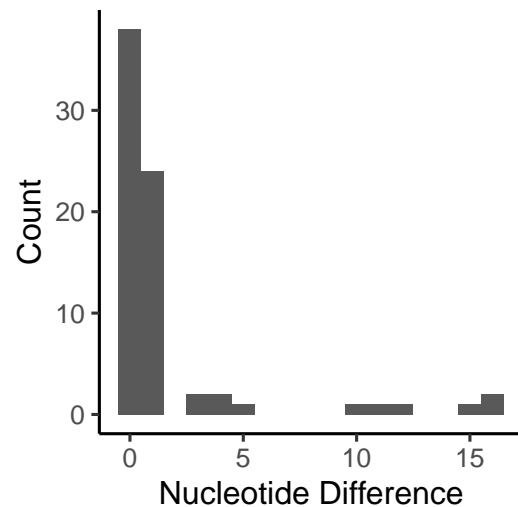
### IGHV2-5\*01

358 sequences assigned  
82 (22.9%) exact matches, in which:  
75 unique CDR3  
6 unique J



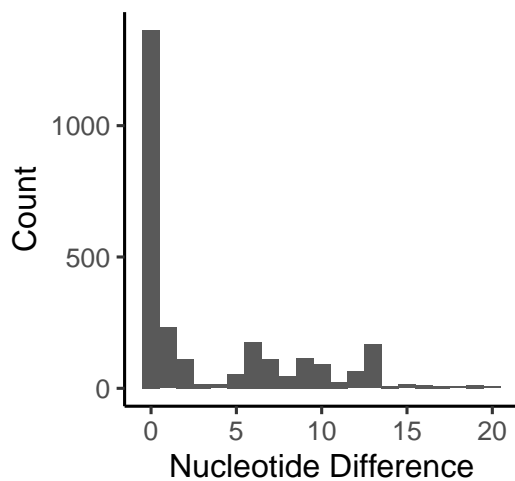
### IGHV2-70\*01

75 sequences assigned  
38 (50.7%) exact matches, in which:  
35 unique CDR3  
5 unique J



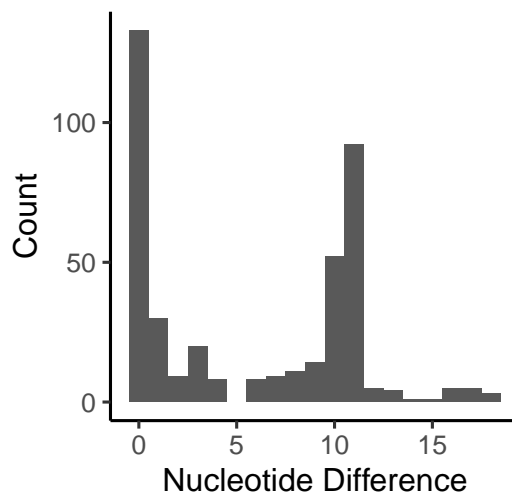
### IGHV1-69\*05

2750 sequences assigned  
1364 (49.6%) exact matches, in which:  
1315 unique CDR3  
6 unique J



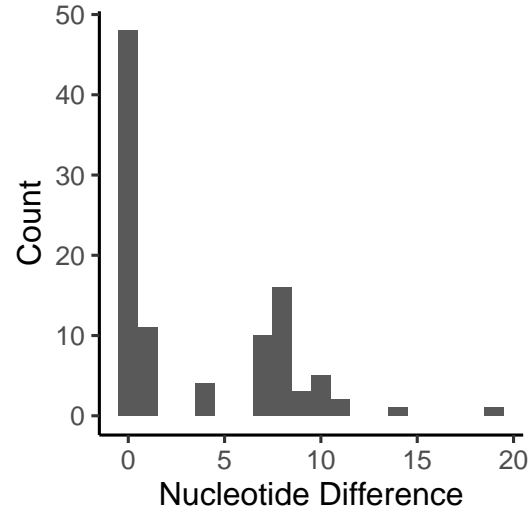
### IGHV2-5\*02

422 sequences assigned  
133 (31.5%) exact matches, in which:  
127 unique CDR3  
6 unique J



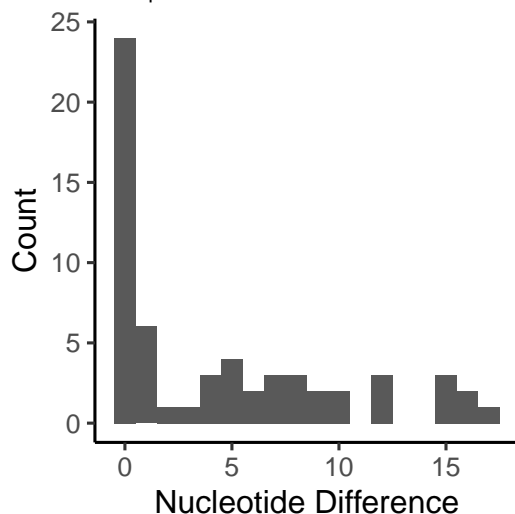
### IGHV2-70\*20

102 sequences assigned  
48 (47.1%) exact matches, in which:  
48 unique CDR3  
5 unique J



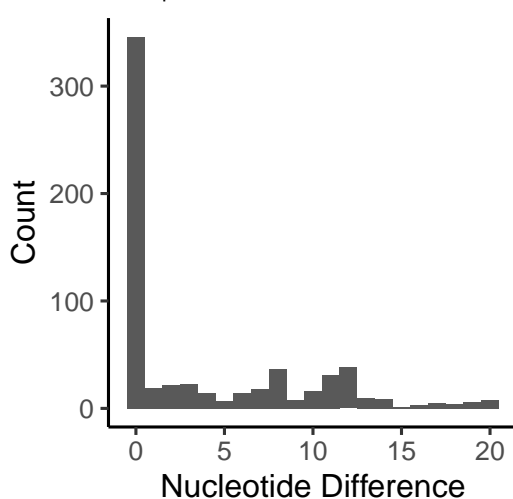
### IGHV2-70D\*14

60 sequences assigned  
24 (40%) exact matches, in which:  
24 unique CDR3  
4 unique J



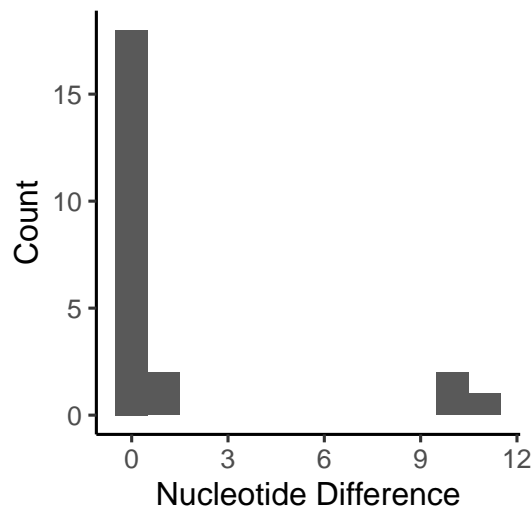
### IGHV3-11\*01

746 sequences assigned  
346 (46.4%) exact matches, in which:  
196 unique CDR3  
6 unique J



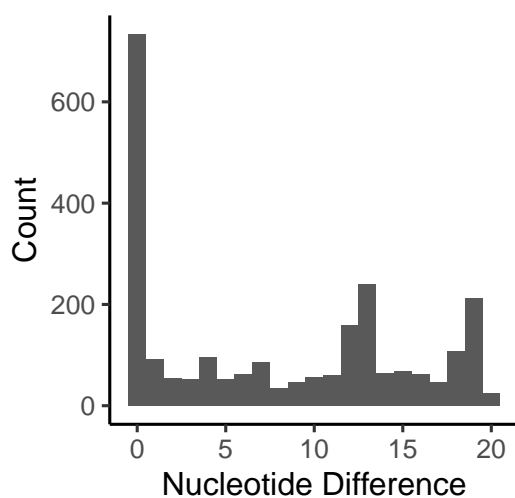
### IGHV3-13\*01\_C210T

23 sequences assigned  
18 (78.3%) exact matches, in which:  
9 unique CDR3  
4 unique J



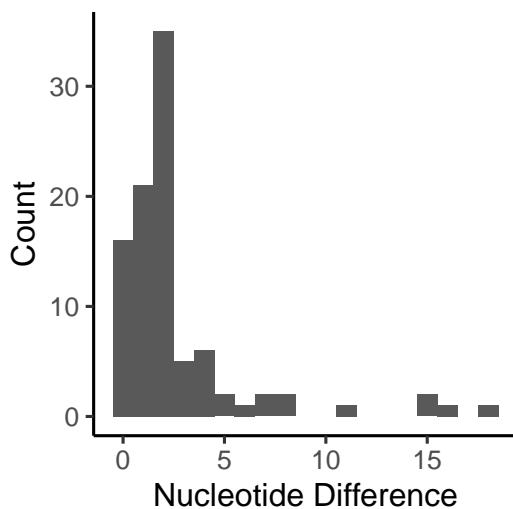
### IGHV3-7\*01

2509 sequences assigned  
734 (29.3%) exact matches, in which:  
430 unique CDR3  
6 unique J



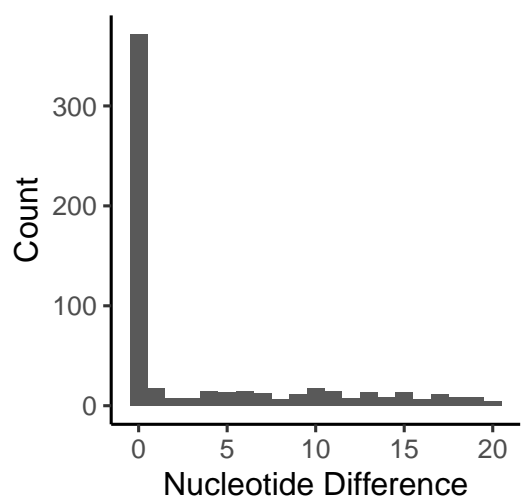
### IGHV3-11\*04

104 sequences assigned  
16 (15.4%) exact matches, in which:  
15 unique CDR3  
3 unique J



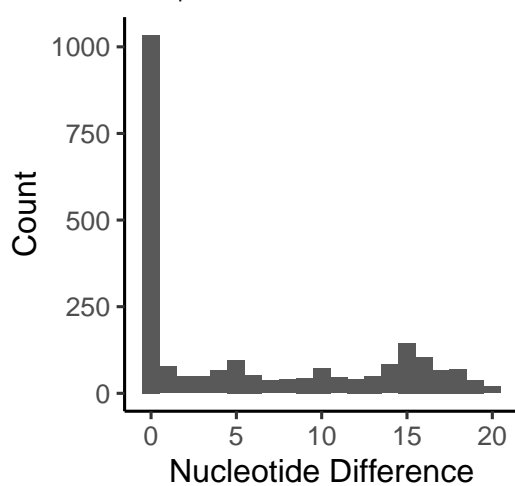
### IGHV3-15\*01\_02

849 sequences assigned  
372 (43.8%) exact matches, in which:  
218 unique CDR3  
6 unique J



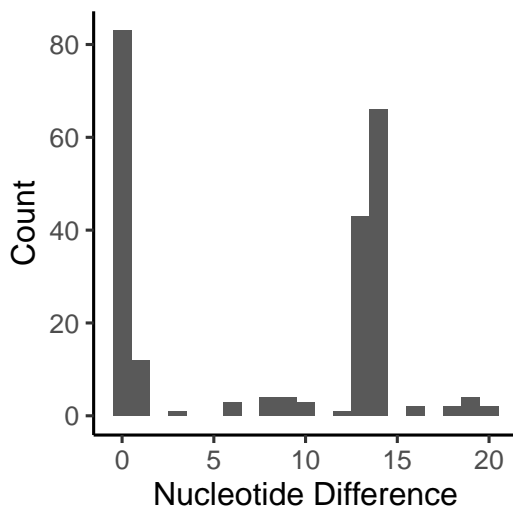
### IGHV3-9\*01

2352 sequences assigned  
1034 (44%) exact matches, in which:  
557 unique CDR3  
6 unique J



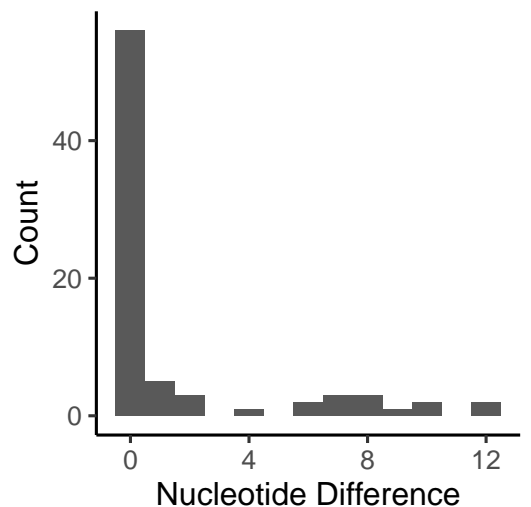
### IGHV3-13\*01

239 sequences assigned  
83 (34.7%) exact matches, in which:  
43 unique CDR3  
4 unique J



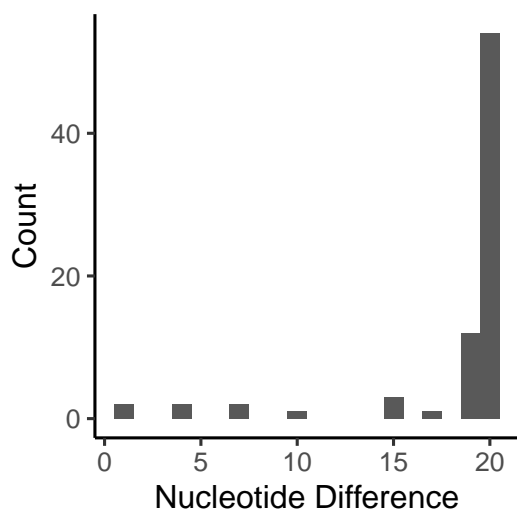
### IGHV3-20\*01\_02

82 sequences assigned  
56 (68.3%) exact matches, in which:  
34 unique CDR3  
5 unique J



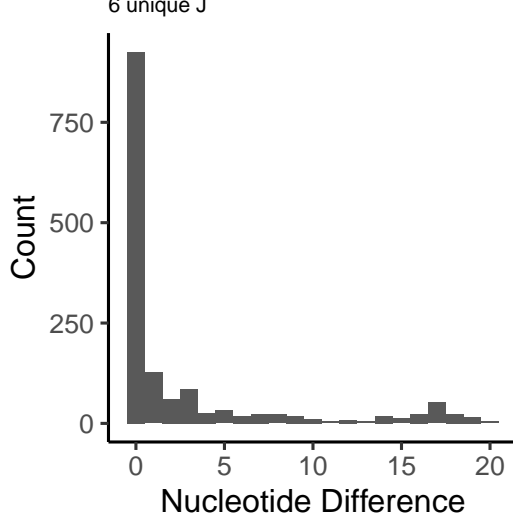
### IGHV3-20\*03\_04

216 sequences assigned  
No exact matches.



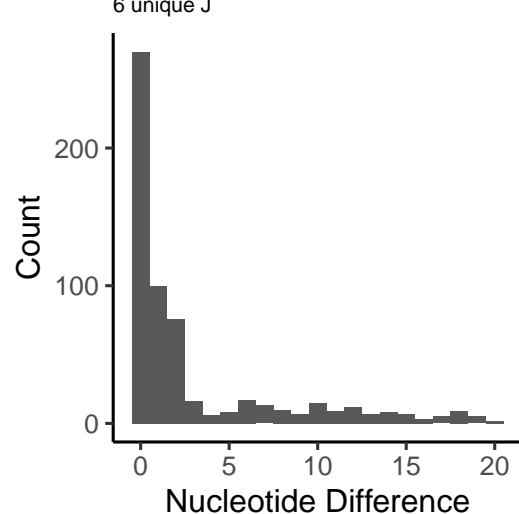
### IGHV3-30-3\*01

1603 sequences assigned  
926 (57.8%) exact matches, in which:  
551 unique CDR3  
6 unique J



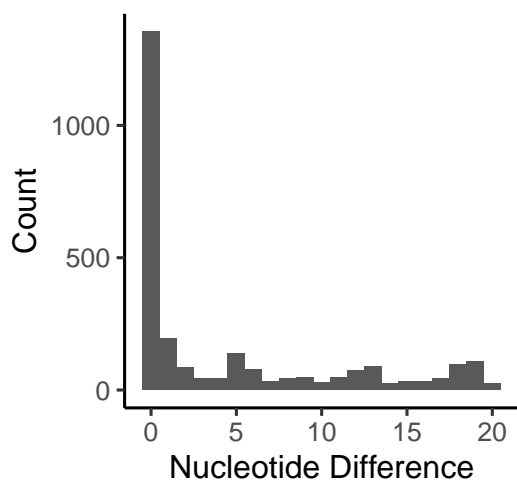
### IGHV3-33\*06

634 sequences assigned  
270 (42.6%) exact matches, in which:  
161 unique CDR3  
6 unique J



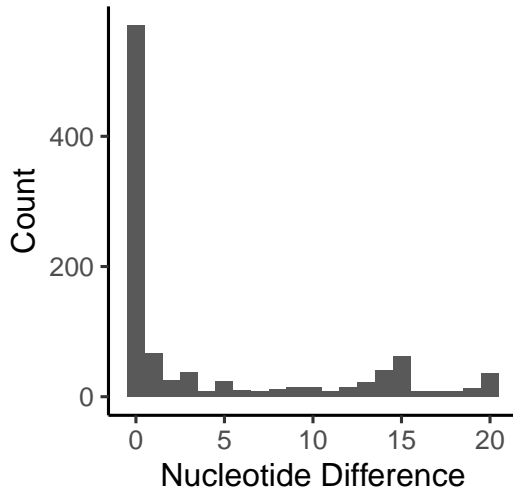
### IGHV3-21\*01\_02

3584 sequences assigned  
1354 (37.8%) exact matches, in which:  
774 unique CDR3  
6 unique J



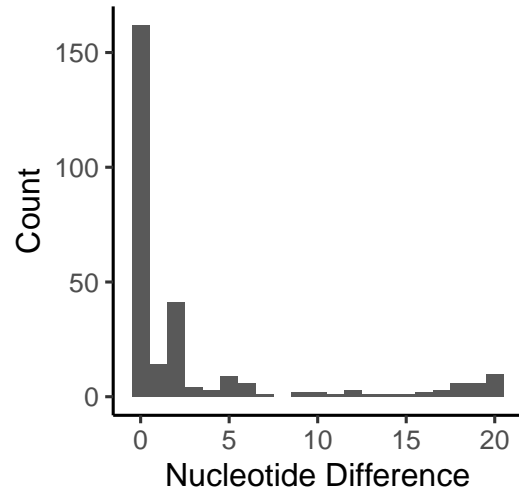
### IGHV3-30\*01

1239 sequences assigned  
571 (46.1%) exact matches, in which:  
359 unique CDR3  
6 unique J



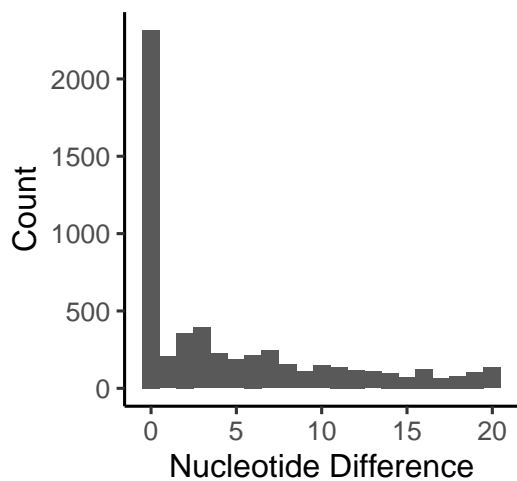
### IGHV3-33\*08

304 sequences assigned  
162 (53.3%) exact matches, in which:  
126 unique CDR3  
5 unique J



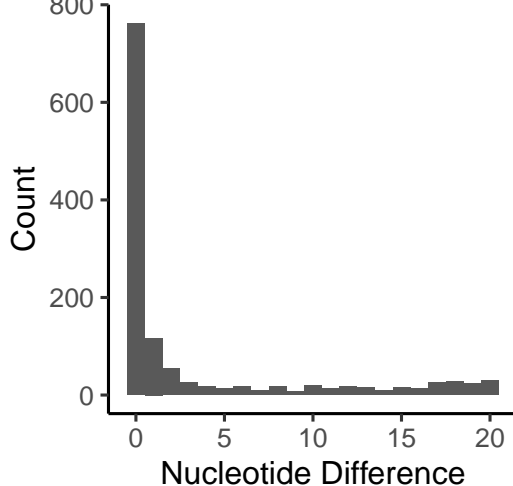
### IGHV3-23\*01\_04

7025 sequences assigned  
2316 (33%) exact matches, in which:  
1281 unique CDR3  
6 unique J



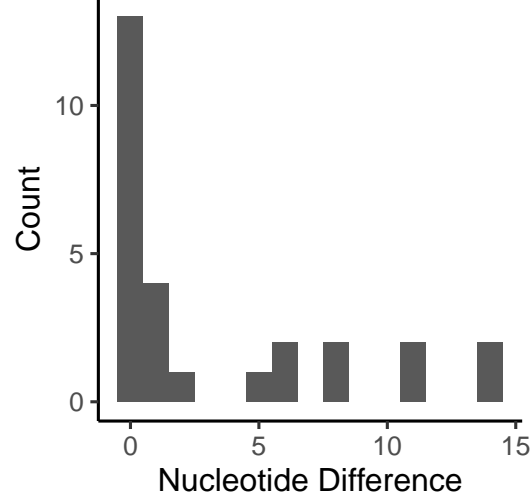
### IGHV3-33\*01

1343 sequences assigned  
762 (56.7%) exact matches, in which:  
463 unique CDR3  
6 unique J



### IGHV3-43\*01

38 sequences assigned  
13 (34.2%) exact matches, in which:  
9 unique CDR3  
2 unique J



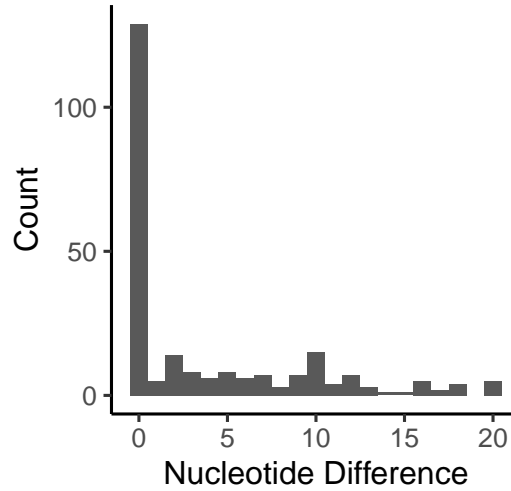
### IGHV3-47\*01

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



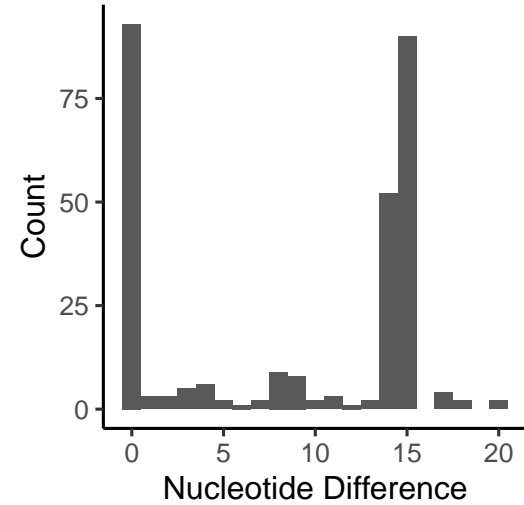
### IGHV3-49\*04

257 sequences assigned  
129 (50.2%) exact matches, in which:  
71 unique CDR3  
4 unique J



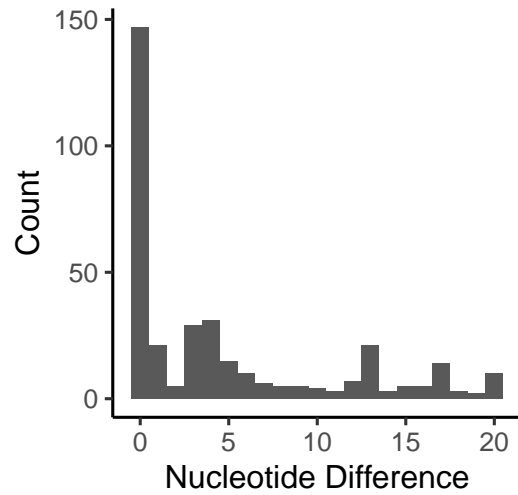
### IGHV3-53\*04

296 sequences assigned  
93 (31.4%) exact matches, in which:  
53 unique CDR3  
5 unique J



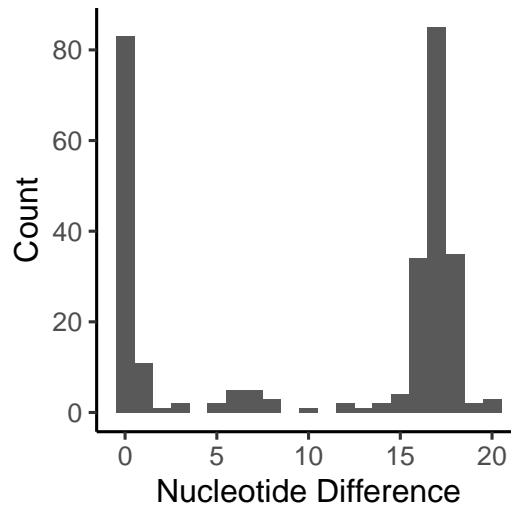
### IGHV3-48\*01

392 sequences assigned  
147 (37.5%) exact matches, in which:  
89 unique CDR3  
6 unique J



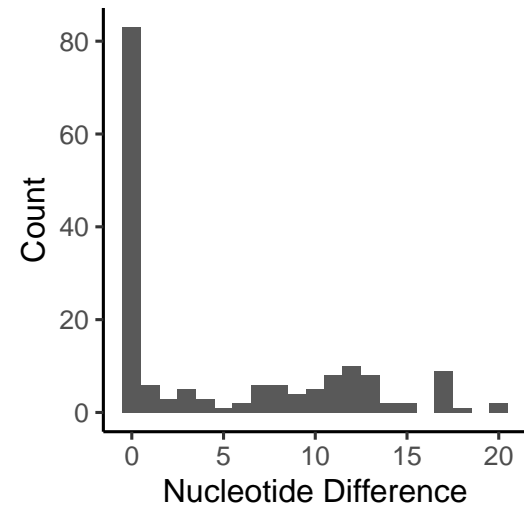
### IGHV3-49\*03\_05

291 sequences assigned  
83 (28.5%) exact matches, in which:  
45 unique CDR3  
6 unique J



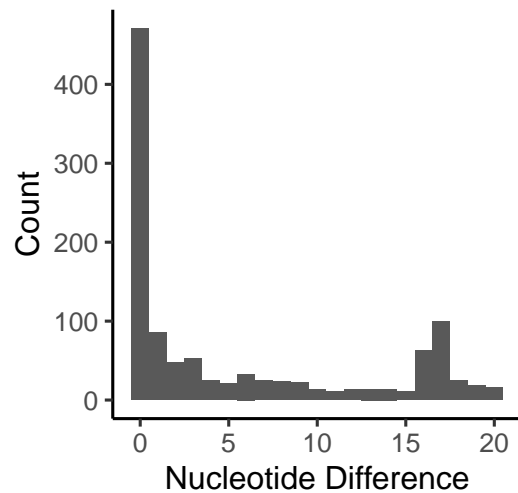
### IGHV3-53\*01\_02

177 sequences assigned  
83 (46.9%) exact matches, in which:  
48 unique CDR3  
5 unique J



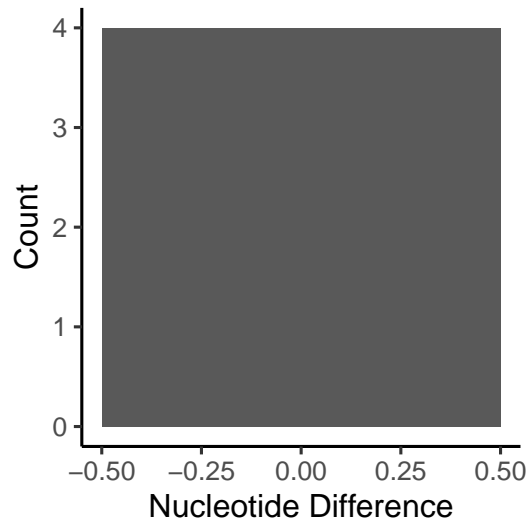
### IGHV3-48\*03

1410 sequences assigned  
471 (33.4%) exact matches, in which:  
266 unique CDR3  
6 unique J



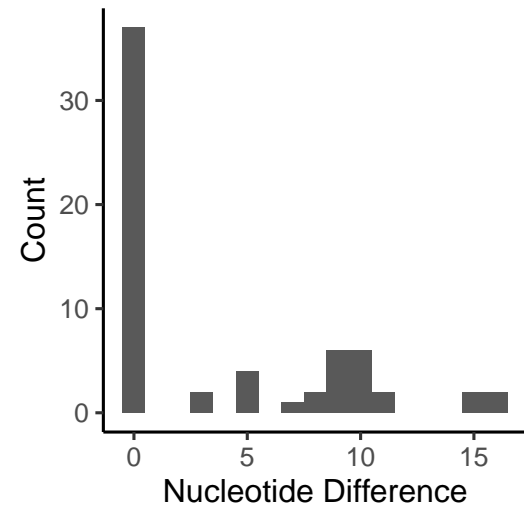
### IGHV3-52\*01\_03

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



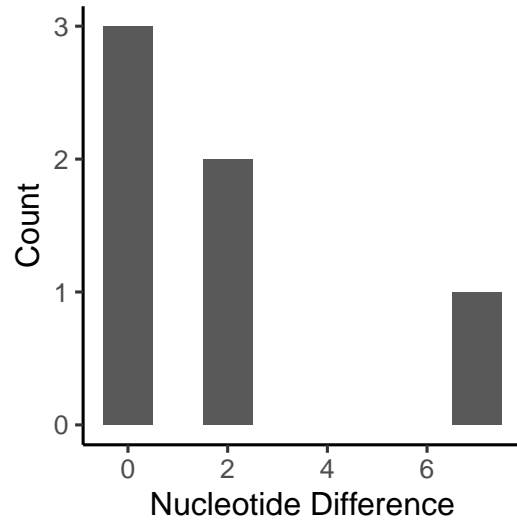
### IGHV3-64\*02\_07

70 sequences assigned  
37 (52.9%) exact matches, in which:  
21 unique CDR3  
5 unique J



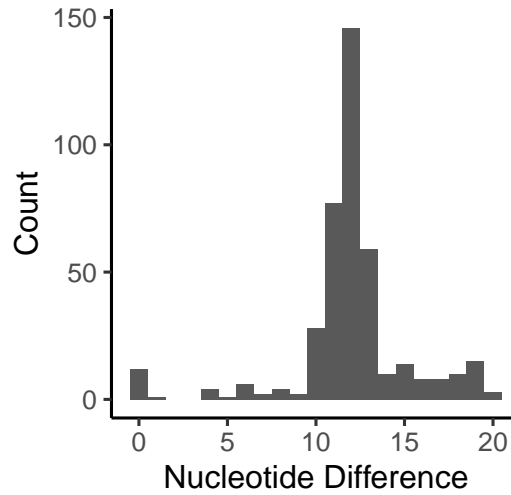
### IGHV3-66\*03

6 sequences assigned  
3 (50%) exact matches, in which:  
2 unique CDR3  
2 unique J



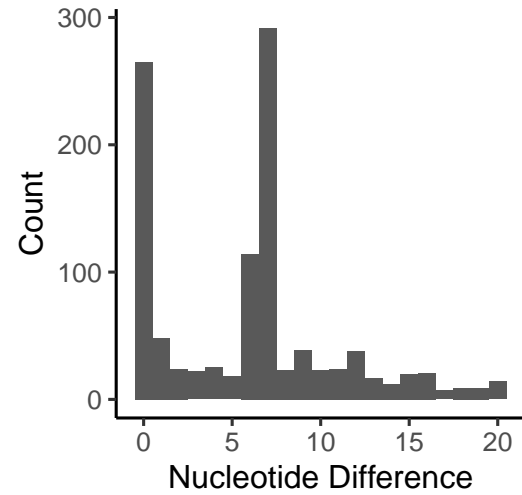
### IGHV3-72\*01

432 sequences assigned  
12 (2.8%) exact matches, in which:  
6 unique CDR3  
2 unique J



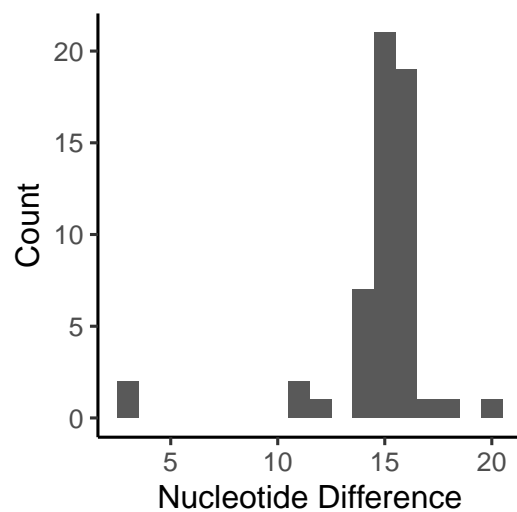
### IGHV3-74\*01\_02

1111 sequences assigned  
265 (23.9%) exact matches, in which:  
145 unique CDR3  
6 unique J



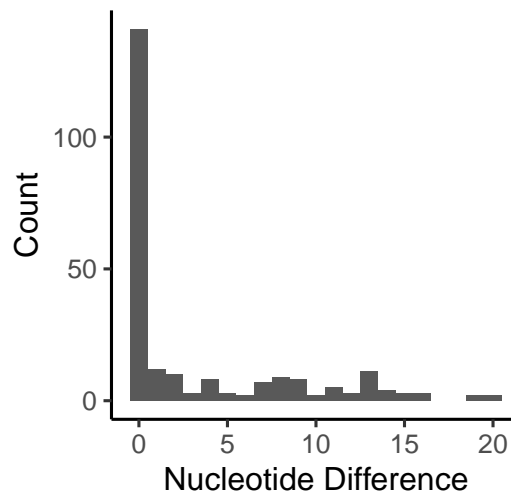
### IGHV3-69-1\*01

58 sequences assigned  
No exact matches.



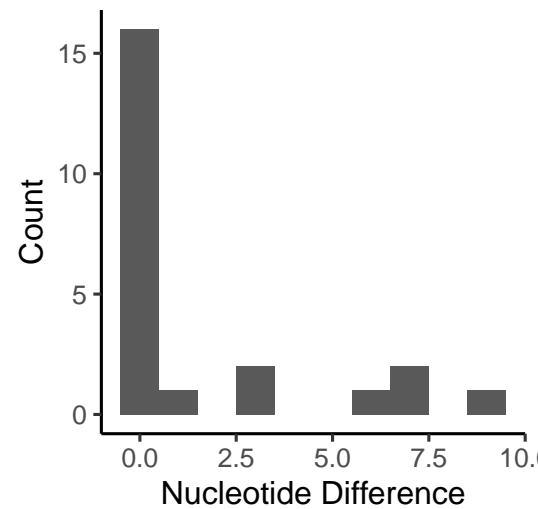
### IGHV3-73\*01\_02

263 sequences assigned  
141 (53.6%) exact matches, in which:  
79 unique CDR3  
5 unique J



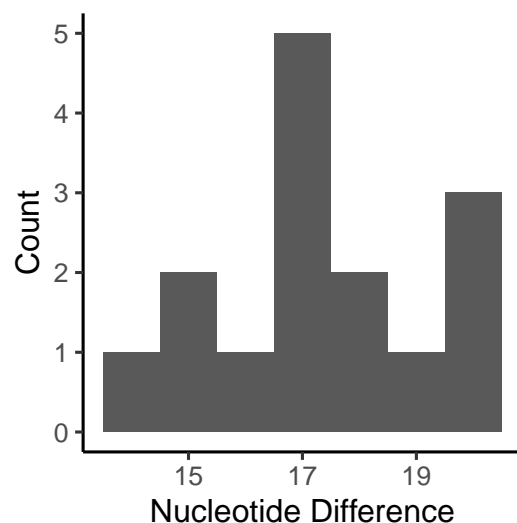
### IGHV3-43D\*04

23 sequences assigned  
16 (69.6%) exact matches, in which:  
9 unique CDR3  
2 unique J



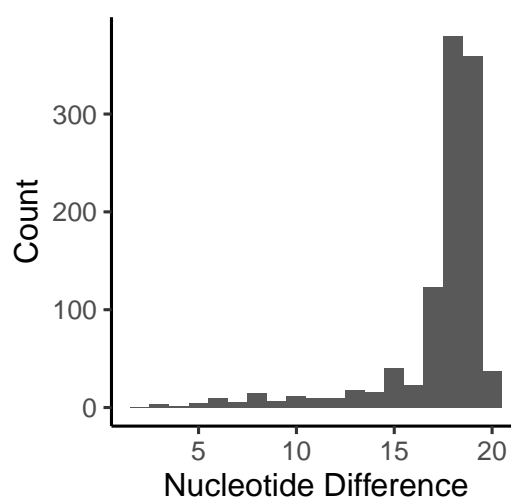
### IGHV3-69-1\*02

50 sequences assigned  
No exact matches.



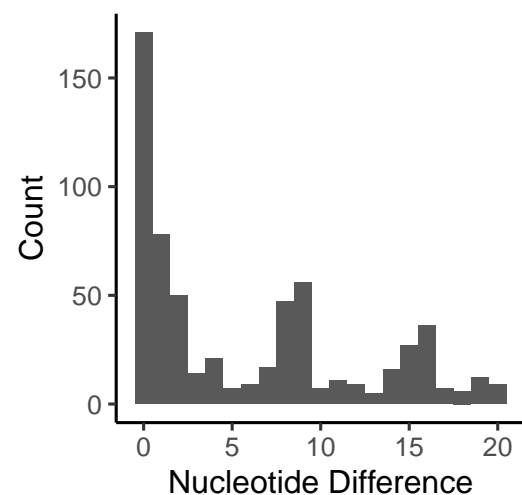
### IGHV3-74\*03

1206 sequences assigned  
No exact matches.



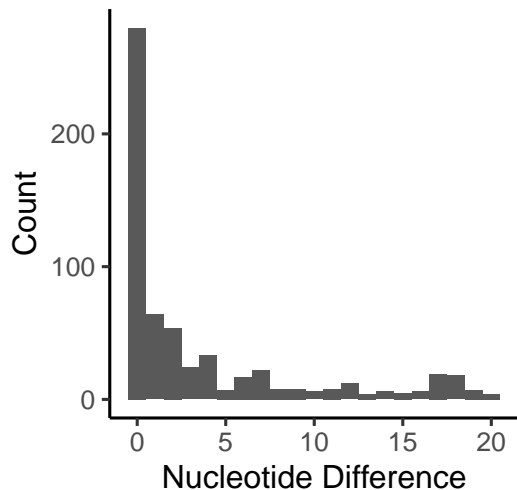
### IGHV4-4\*07

929 sequences assigned  
171 (18.4%) exact matches, in which:  
154 unique CDR3  
6 unique J



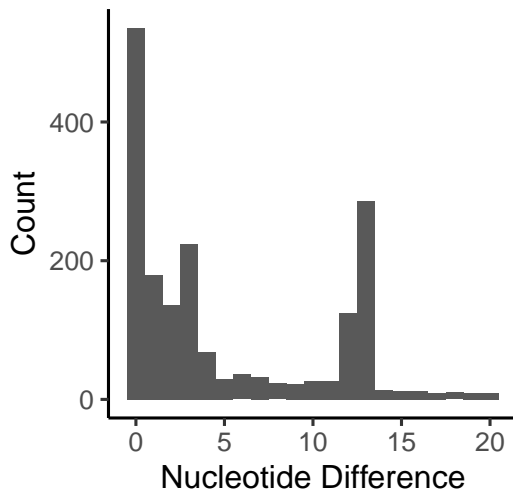
### IGHV4-4\*02\_03

680 sequences assigned  
280 (41.2%) exact matches, in which:  
237 unique CDR3  
6 unique J



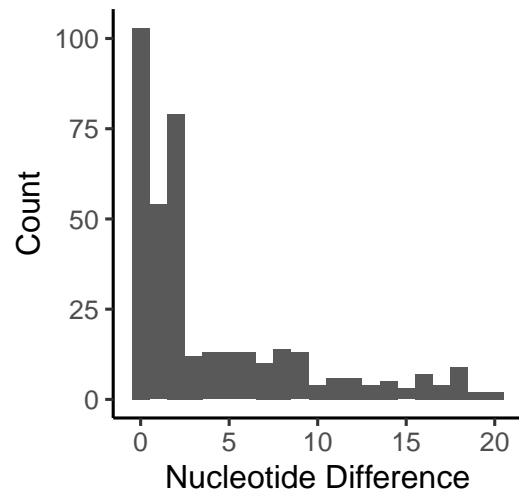
### IGHV4-31\*02

2072 sequences assigned  
536 (25.9%) exact matches, in which:  
503 unique CDR3  
6 unique J



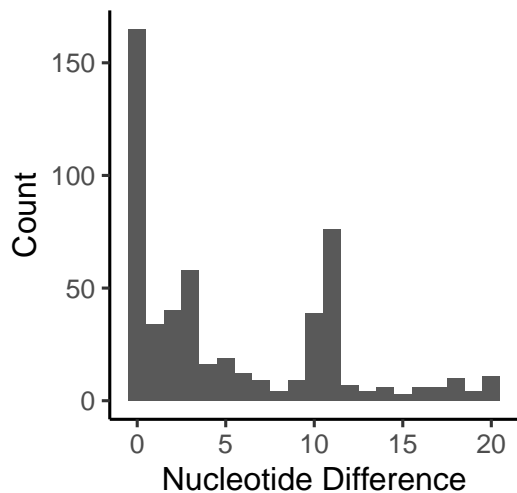
### IGHV4-38-2\*01

396 sequences assigned  
103 (26%) exact matches, in which:  
100 unique CDR3  
6 unique J



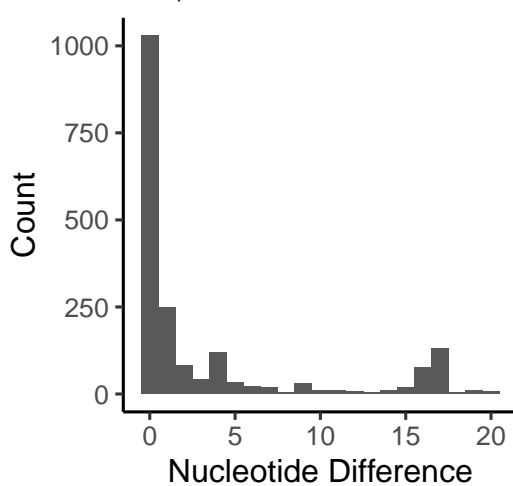
### IGHV4-30-4\*01

733 sequences assigned  
165 (22.5%) exact matches, in which:  
148 unique CDR3  
6 unique J



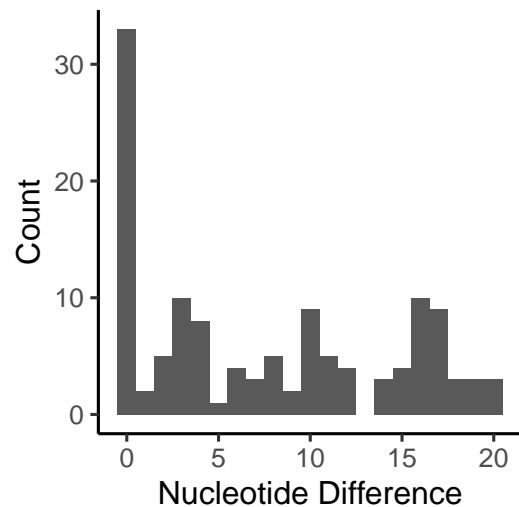
### IGHV4-34\*01\_02

1992 sequences assigned  
1029 (51.7%) exact matches, in which:  
836 unique CDR3  
6 unique J



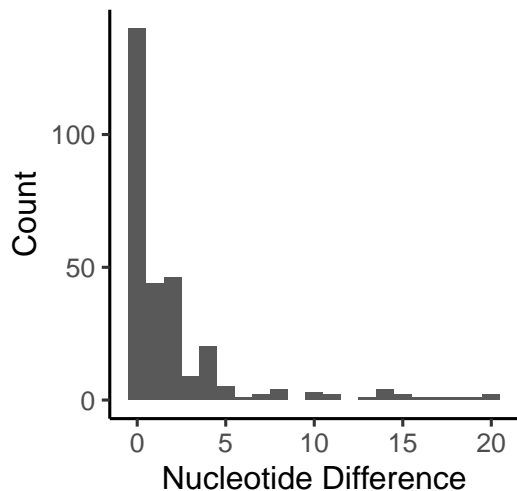
### IGHV4-38-2\*02

147 sequences assigned  
33 (22.4%) exact matches, in which:  
30 unique CDR3  
5 unique J



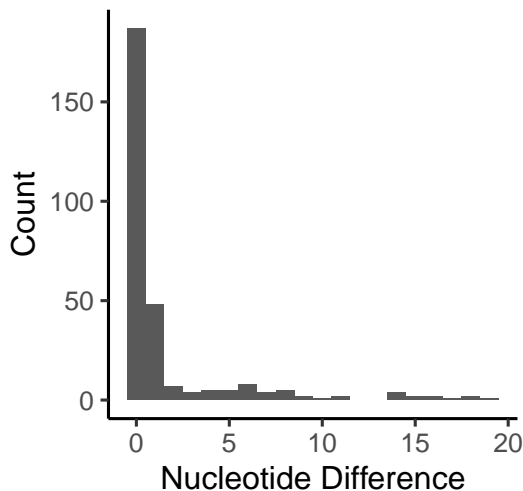
### IGHV4-30-2\*01

305 sequences assigned  
140 (45.9%) exact matches, in which:  
96 unique CDR3  
6 unique J



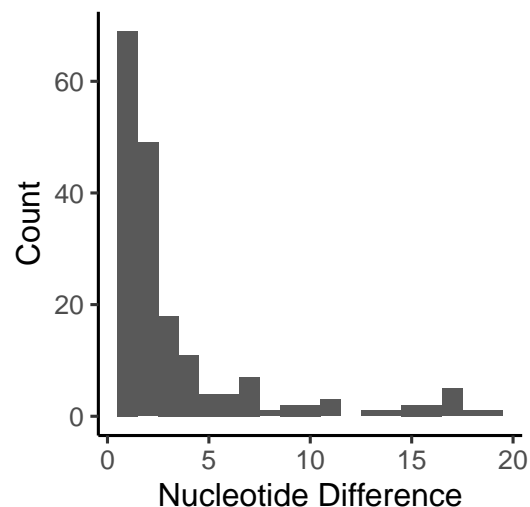
### IGHV4-34\*01\_02\_C288T

295 sequences assigned  
187 (63.4%) exact matches, in which:  
183 unique CDR3  
6 unique J



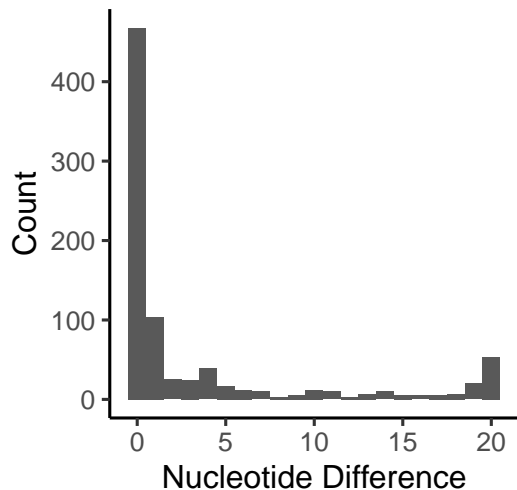
### IGHV4-39\*07

189 sequences assigned  
No exact matches.



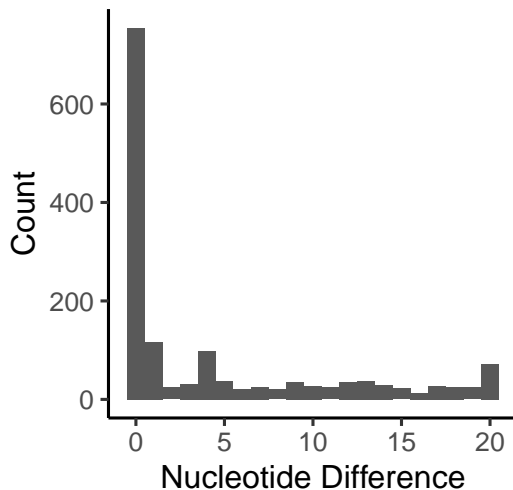
### IGHV4-39\*02\_C258G

987 sequences assigned  
468 (47.4%) exact matches, in which:  
418 unique CDR3  
6 unique J



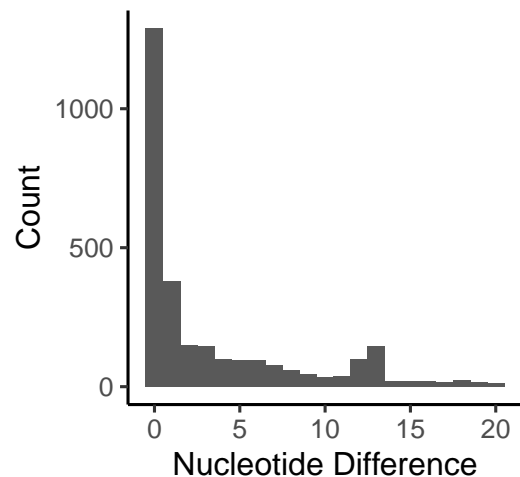
### IGHV4-59\*02\_G88A

2168 sequences assigned  
755 (34.8%) exact matches, in which:  
707 unique CDR3  
6 unique J



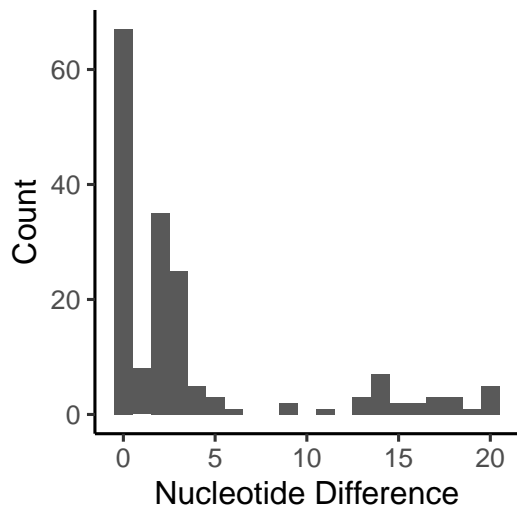
### IGHV5-51\*07\_A128G

3083 sequences assigned  
1289 (41.8%) exact matches, in which:  
716 unique CDR3  
6 unique J



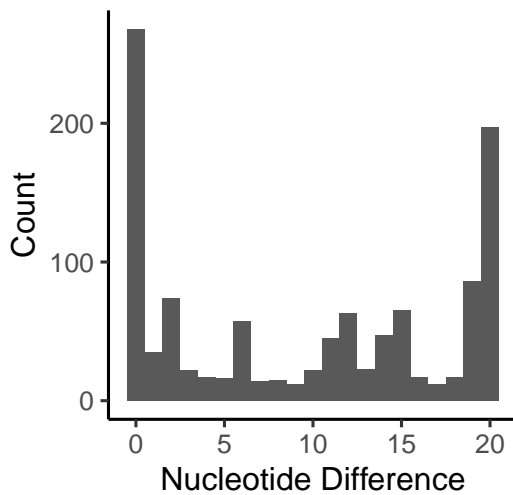
### IGHV4-39\*07\_A103G\_A103G

181 sequences assigned  
67 (37%) exact matches, in which:  
67 unique CDR3  
5 unique J



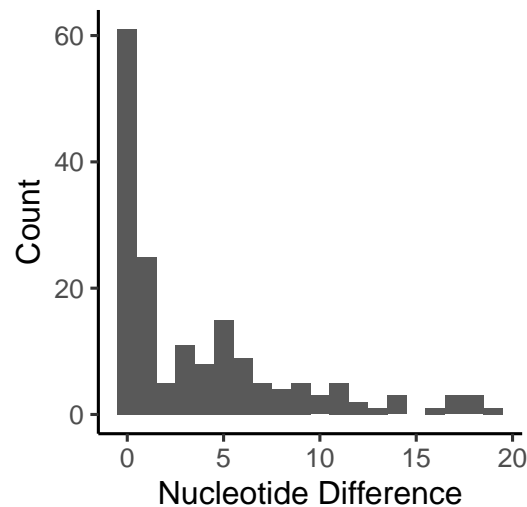
### IGHV4-61\*01

1347 sequences assigned  
268 (19.9%) exact matches, in which:  
261 unique CDR3  
6 unique J



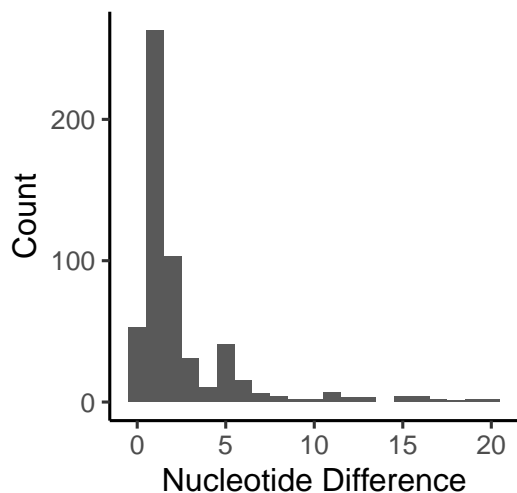
### IGHV6-1\*01\_02

171 sequences assigned  
61 (35.7%) exact matches, in which:  
59 unique CDR3  
5 unique J



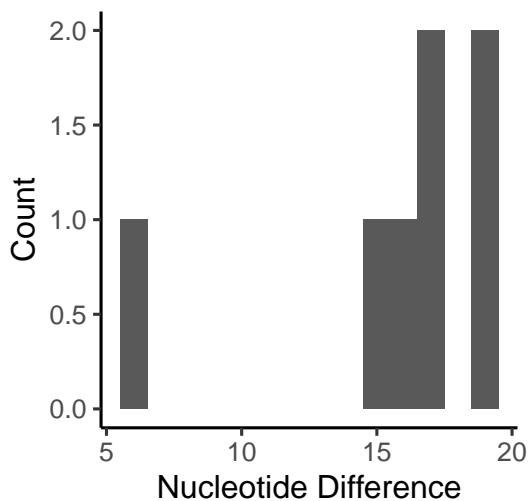
### IGHV4-59\*12

584 sequences assigned  
53 (9.1%) exact matches, in which:  
53 unique CDR3  
5 unique J



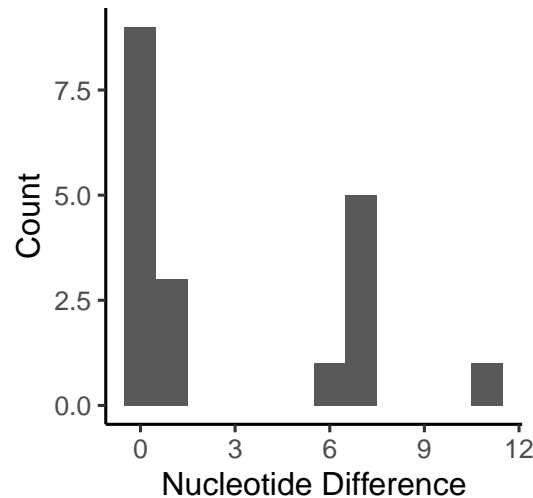
### IGHV4/OR15-8\*02

306 sequences assigned  
No exact matches.



### IGHV7-4-1\*01

19 sequences assigned  
9 (47.4%) exact matches, in which:  
9 unique CDR3  
3 unique J







Warning – no inferred sequences found.