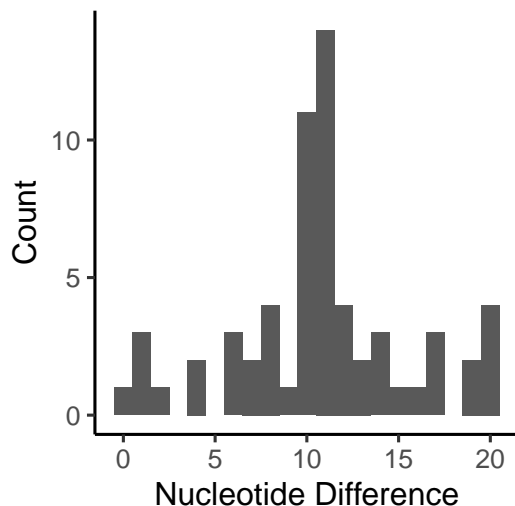


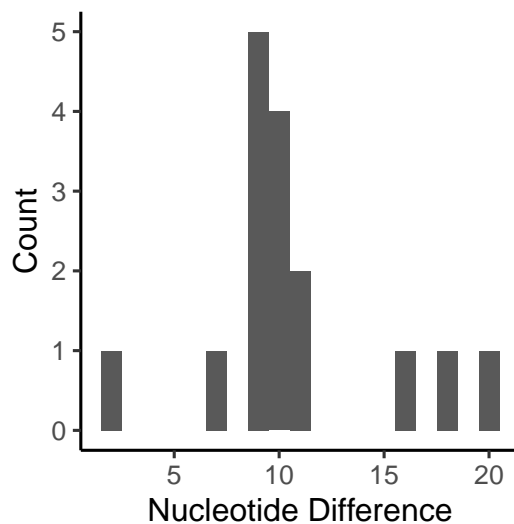
### IGHV1-2\*02

84 sequences assigned  
1 (1.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



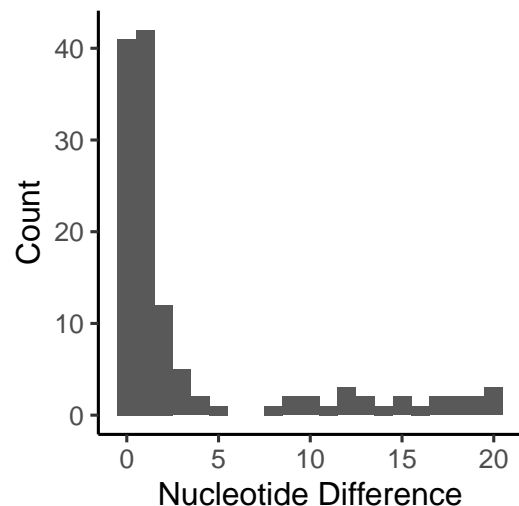
### IGHV1-8\*01

27 sequences assigned  
No exact matches.



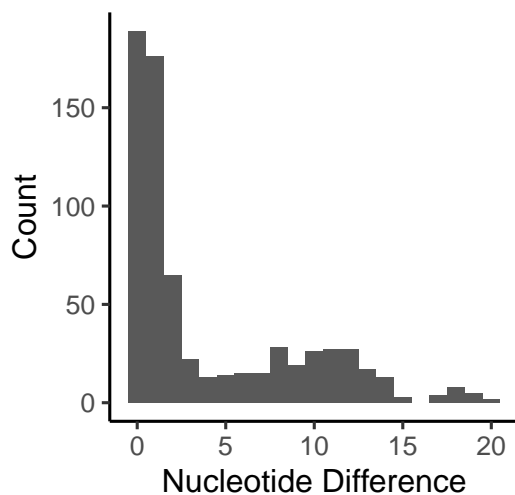
### IGHV1-24\*01

129 sequences assigned  
41 (31.8%) exact matches, in which:  
36 unique CDR3  
4 unique J



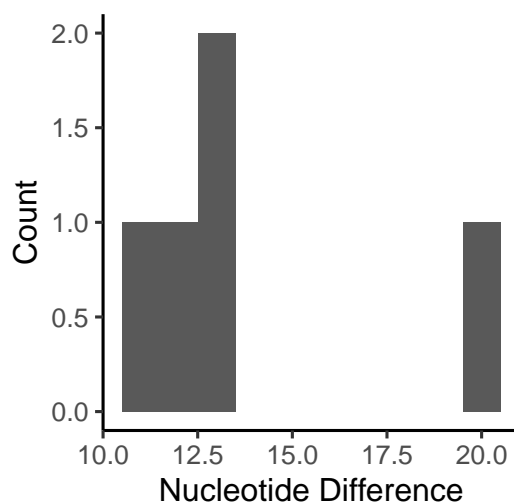
### IGHV1-2\*04

698 sequences assigned  
189 (27.1%) exact matches, in which:  
171 unique CDR3  
6 unique J



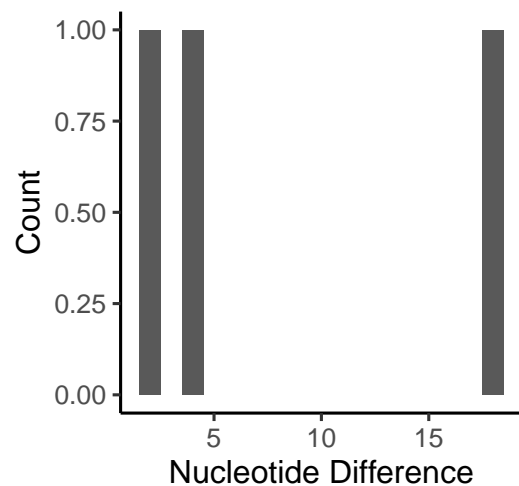
### IGHV1-8\*02

6 sequences assigned  
No exact matches.



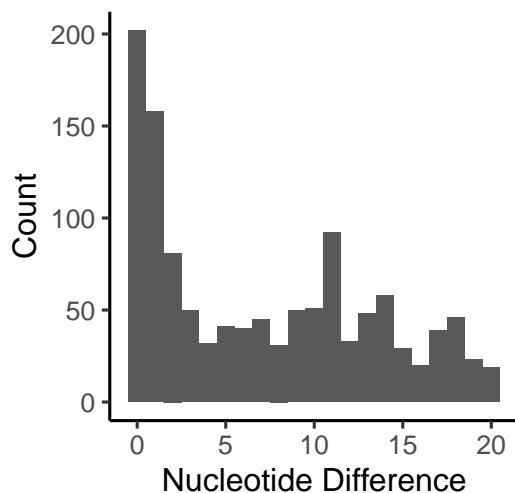
### IGHV1-45\*02

3 sequences assigned  
No exact matches.



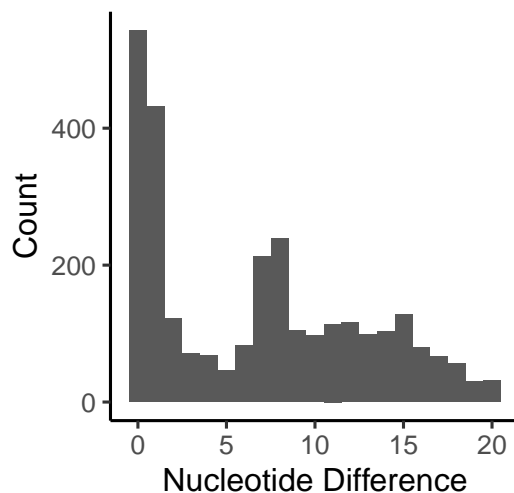
### IGHV1-3\*01\_05

1342 sequences assigned  
202 (15.1%) exact matches, in which:  
190 unique CDR3  
6 unique J



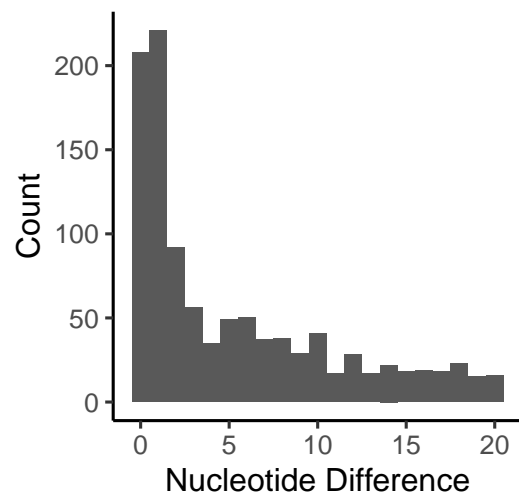
### IGHV1-18\*04

4129 sequences assigned  
543 (13.2%) exact matches, in which:  
501 unique CDR3  
6 unique J



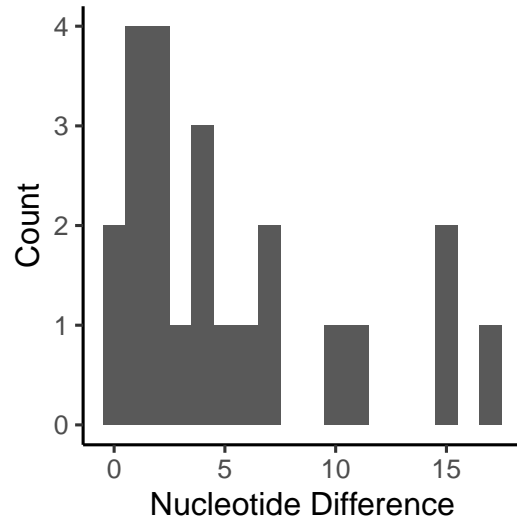
### IGHV1-46\*01

1423 sequences assigned  
208 (14.6%) exact matches, in which:  
194 unique CDR3  
5 unique J



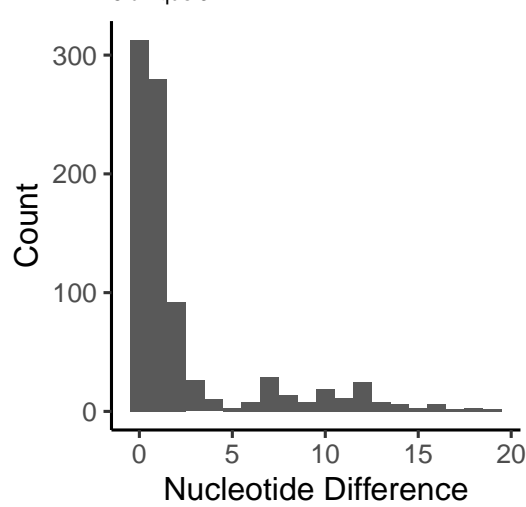
### IGHV1-58\*02

138 sequences assigned  
2 (1.4%) exact matches, in which:  
2 unique CDR3  
2 unique J



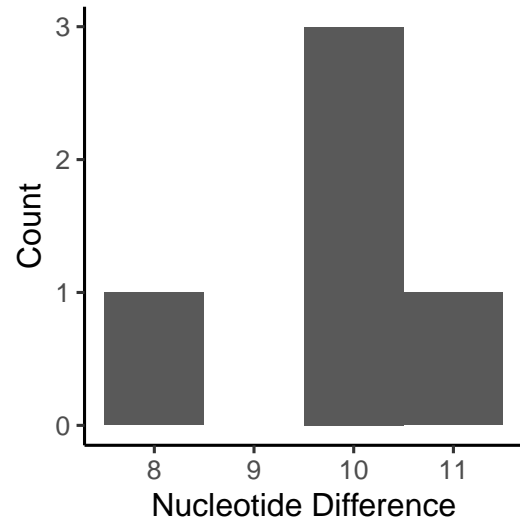
### IGHV1-69\*01\_12\_13

894 sequences assigned  
313 (35%) exact matches, in which:  
283 unique CDR3  
6 unique J



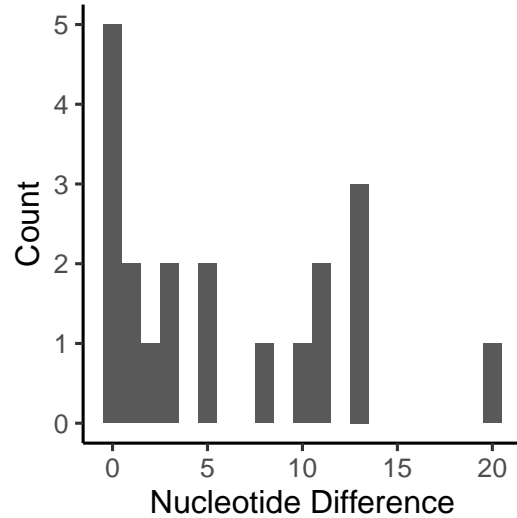
### IGHV1-NL1\*01

5 sequences assigned  
No exact matches.



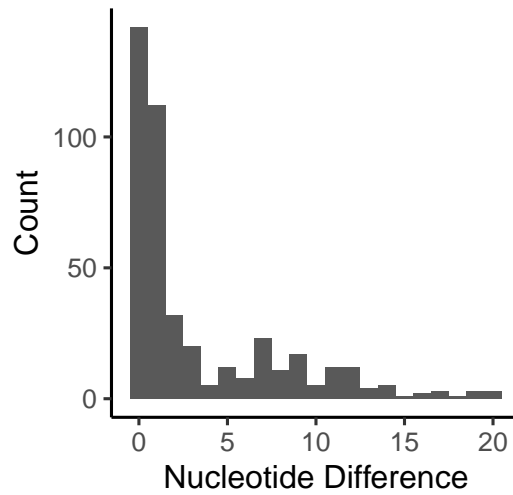
### IGHV1-58\*01\_03

66 sequences assigned  
5 (7.6%) exact matches, in which:  
5 unique CDR3  
4 unique J



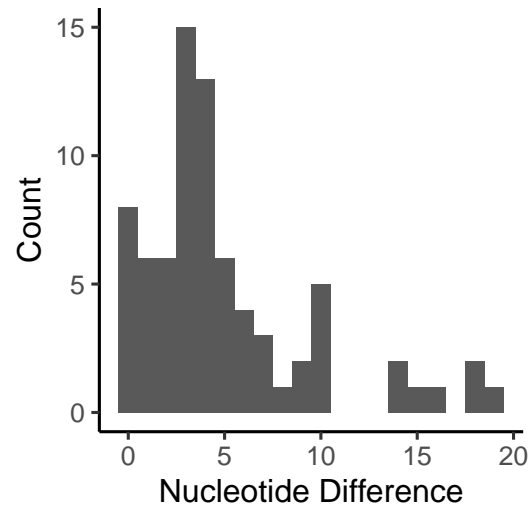
### IGHV1-69\*04\_09

478 sequences assigned  
142 (29.7%) exact matches, in which:  
139 unique CDR3  
5 unique J



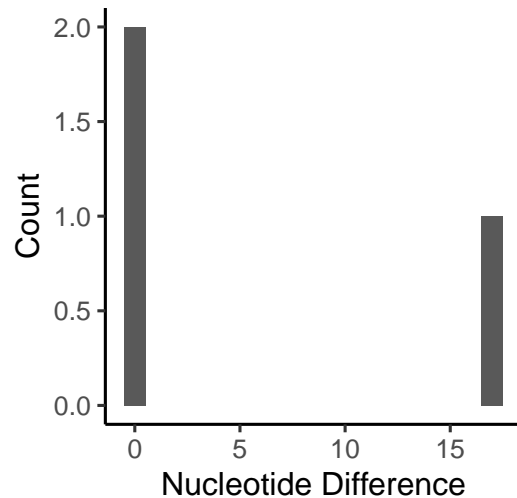
### IGHV2-5\*02

79 sequences assigned  
8 (10.1%) exact matches, in which:  
8 unique CDR3  
4 unique J



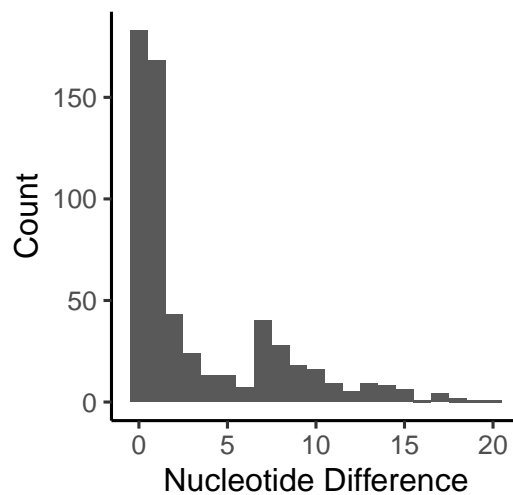
### IGHV1-69-2\*01

3 sequences assigned  
2 (66.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



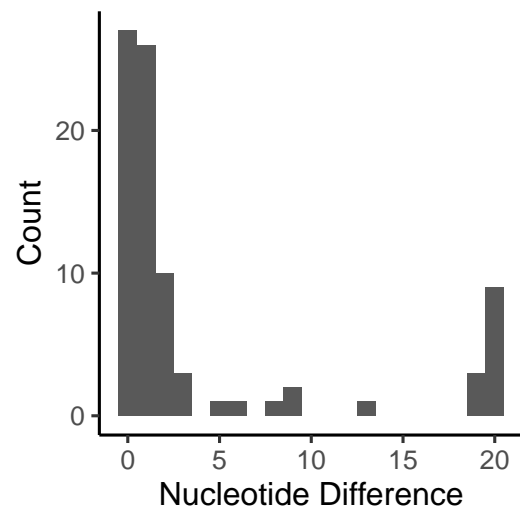
### IGHV1-69\*06\_14

616 sequences assigned  
183 (29.7%) exact matches, in which:  
172 unique CDR3  
6 unique J



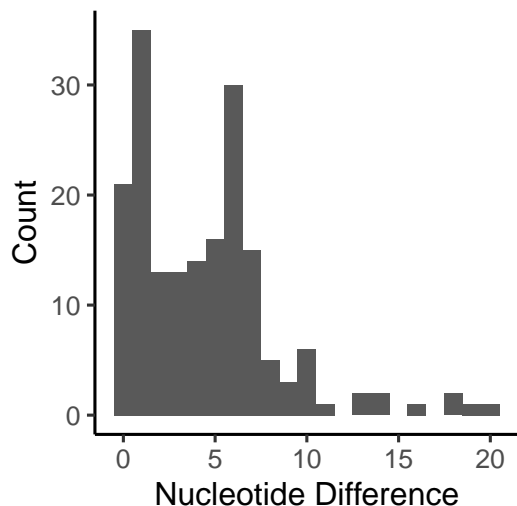
### IGHV2-26\*01

93 sequences assigned  
27 (29%) exact matches, in which:  
21 unique CDR3  
4 unique J



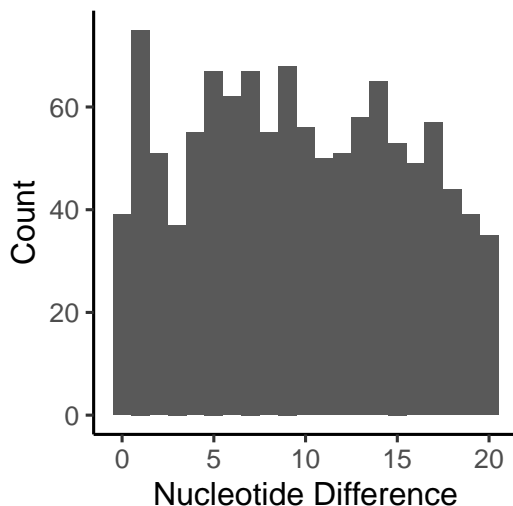
### IGHV2-70\*01

184 sequences assigned  
21 (11.4%) exact matches, in which:  
20 unique CDR3  
4 unique J



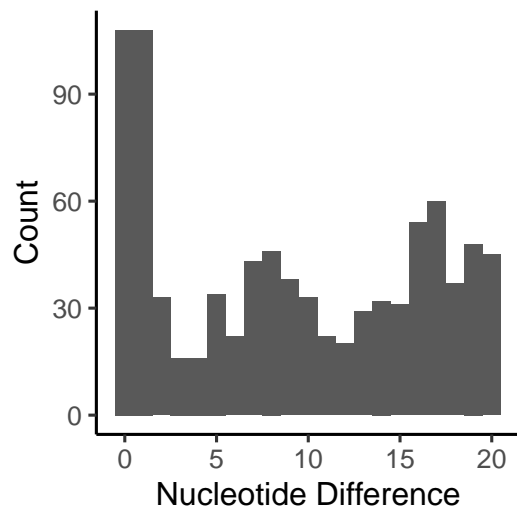
### IGHV3-7\*01

1427 sequences assigned  
39 (2.7%) exact matches, in which:  
39 unique CDR3  
4 unique J



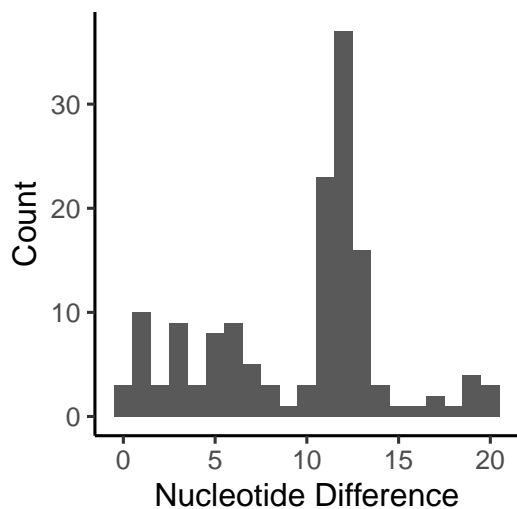
### IGHV3-11\*06

1014 sequences assigned  
108 (10.7%) exact matches, in which:  
93 unique CDR3  
6 unique J



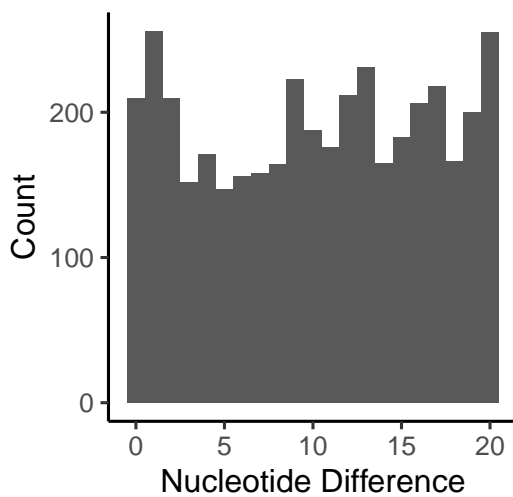
### IGHV2-70\*04

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



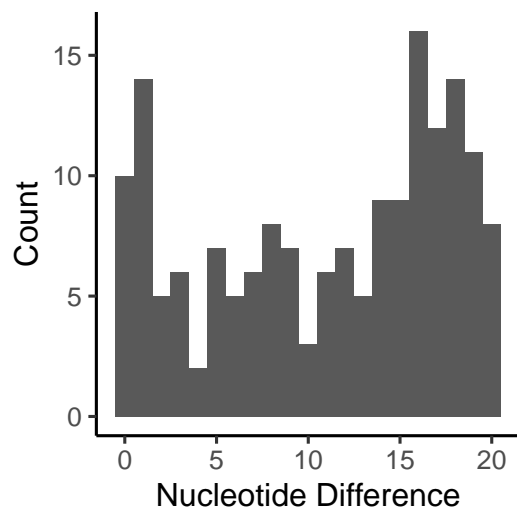
### IGHV3-7\*03

5485 sequences assigned  
210 (3.8%) exact matches, in which:  
162 unique CDR3  
6 unique J



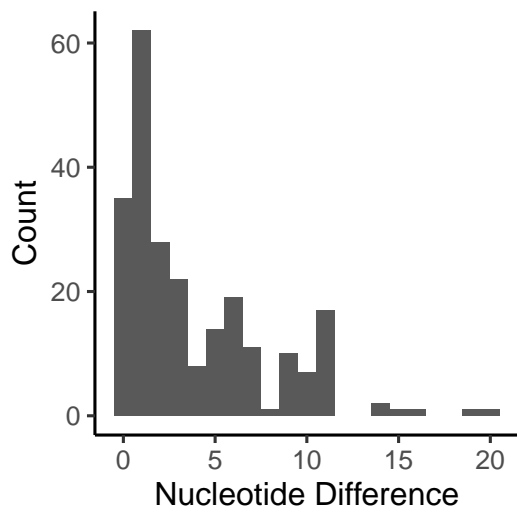
### IGHV3-11\*03\_05

212 sequences assigned  
10 (4.7%) exact matches, in which:  
9 unique CDR3  
2 unique J



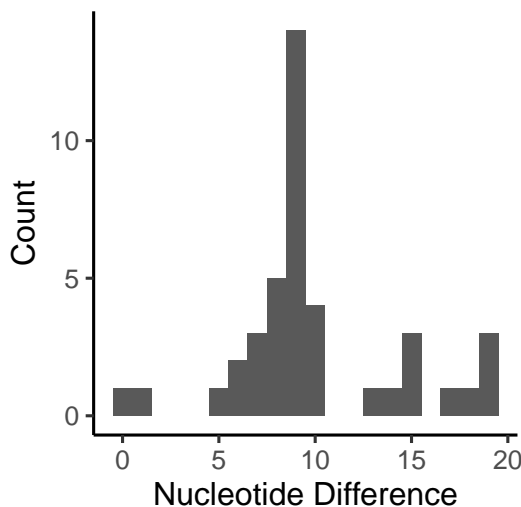
### IGHV2-70\*11\_15

247 sequences assigned  
35 (14.2%) exact matches, in which:  
24 unique CDR3  
4 unique J



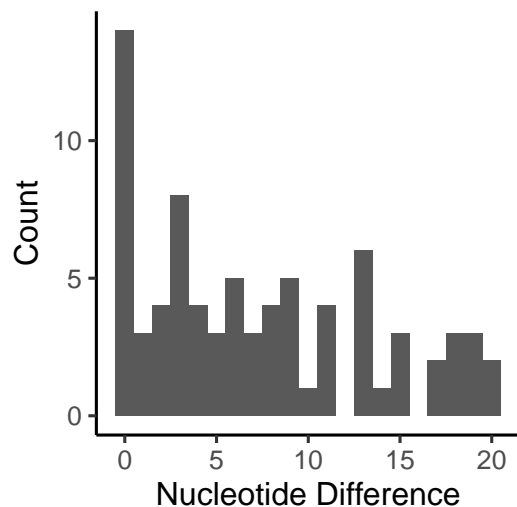
### IGHV3-9\*01

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



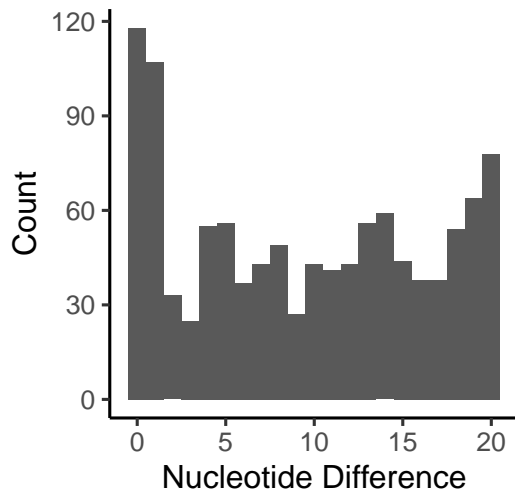
### IGHV3-13\*05

91 sequences assigned  
14 (15.4%) exact matches, in which:  
10 unique CDR3  
3 unique J



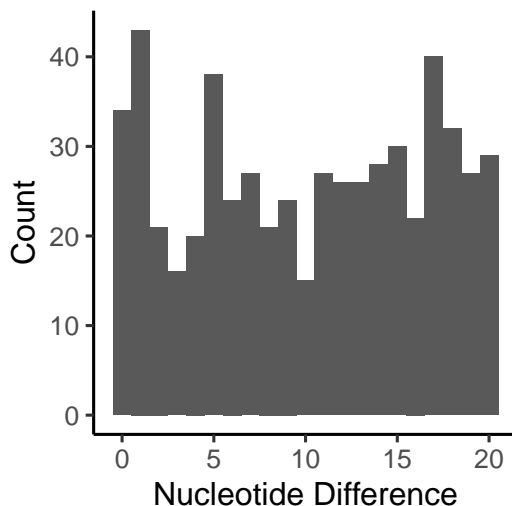
### IGHV3-15\*01\_02

1549 sequences assigned  
118 (7.6%) exact matches, in which:  
80 unique CDR3  
6 unique J



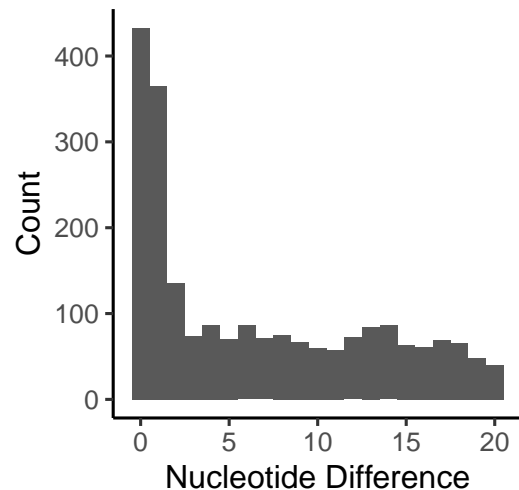
### IGHV3-21\*04

645 sequences assigned  
34 (5.3%) exact matches, in which:  
32 unique CDR3  
5 unique J



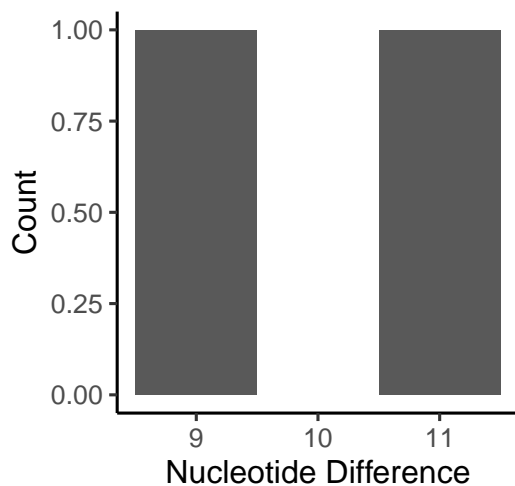
### IGHV3-30-3\*01

2480 sequences assigned  
433 (17.5%) exact matches, in which:  
336 unique CDR3  
6 unique J



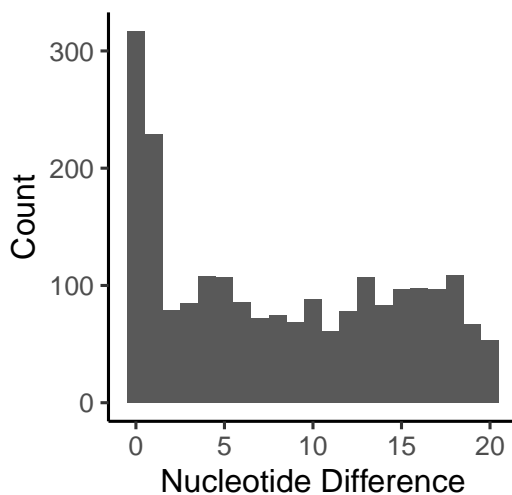
### IGHV3-19\*01

2 sequences assigned  
No exact matches.



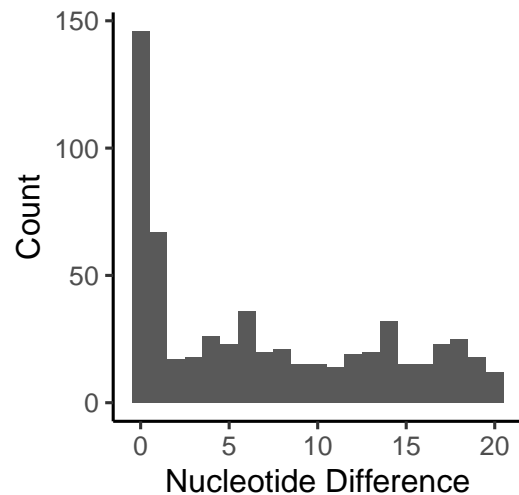
### IGHV3-21\*01\_02

2380 sequences assigned  
317 (13.3%) exact matches, in which:  
263 unique CDR3  
6 unique J



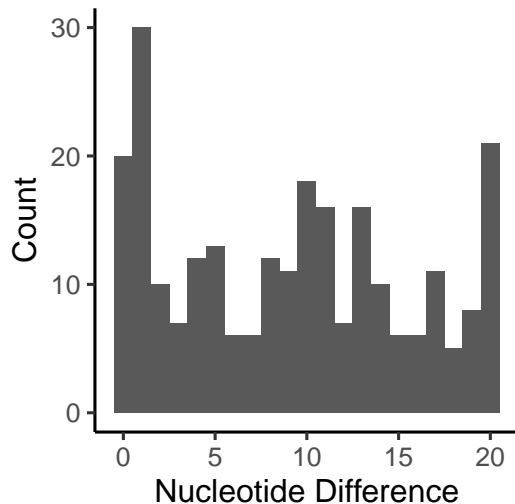
### IGHV3-30\*03

851 sequences assigned  
146 (17.2%) exact matches, in which:  
130 unique CDR3  
5 unique J



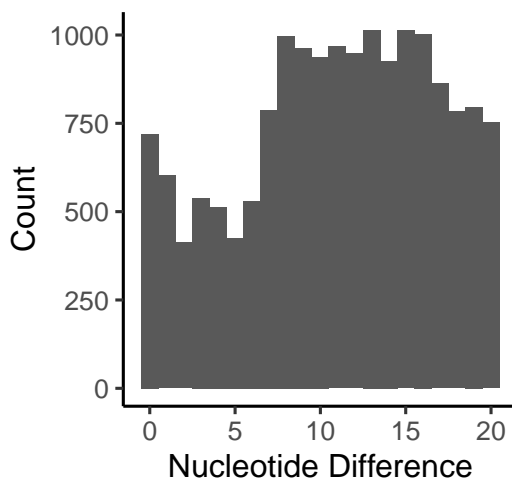
### IGHV3-20\*03\_04

358 sequences assigned  
20 (5.6%) exact matches, in which:  
15 unique CDR3  
5 unique J



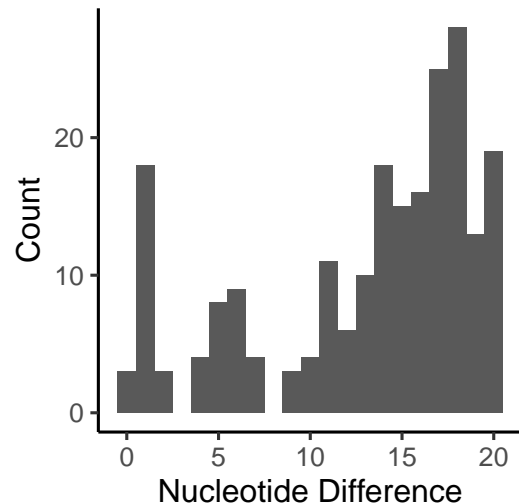
### IGHV3-23\*01\_04

20781 sequences assigned  
720 (3.5%) exact matches, in which:  
582 unique CDR3  
6 unique J



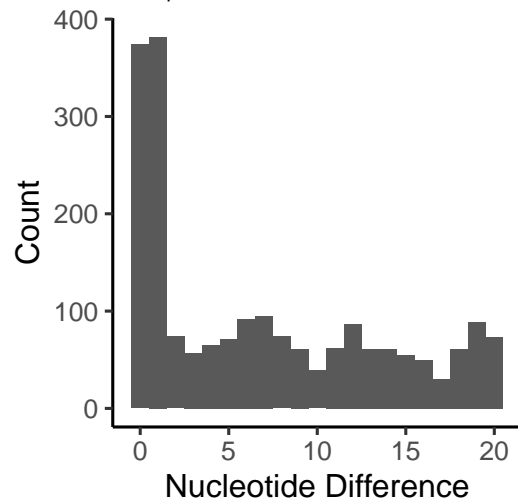
### IGHV3-30\*04

400 sequences assigned  
3 (0.8%) exact matches, in which:  
3 unique CDR3  
2 unique J



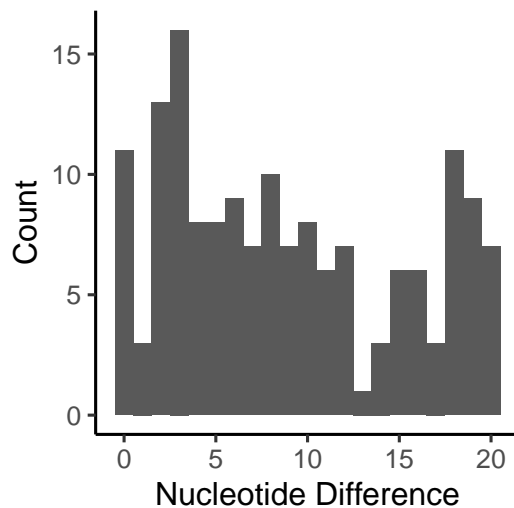
### IGHV3–30\*18

2370 sequences assigned  
374 (15.8%) exact matches, in which:  
284 unique CDR3  
6 unique J



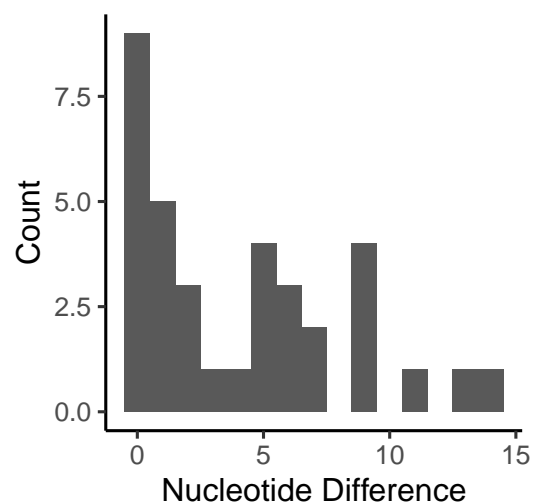
### IGHV3–33\*06

171 sequences assigned  
11 (6.4%) exact matches, in which:  
10 unique CDR3  
4 unique J



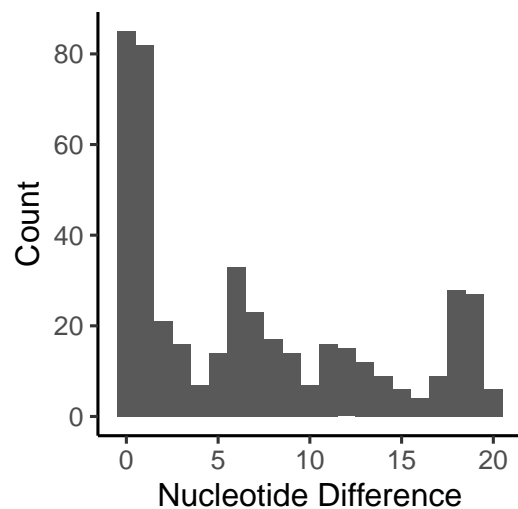
### IGHV3–38–3\*01

35 sequences assigned  
9 (25.7%) exact matches, in which:  
9 unique CDR3  
2 unique J



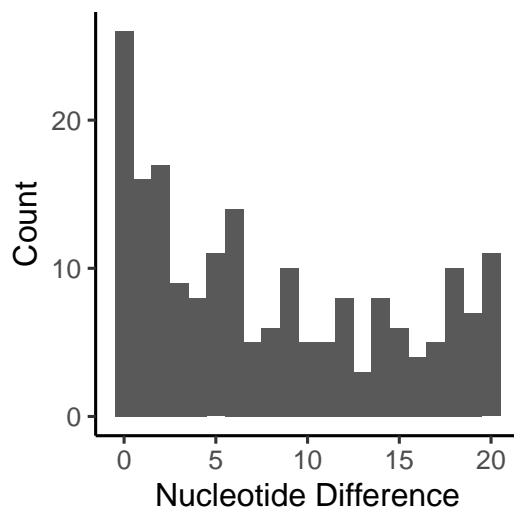
### IGHV3–33\*01

509 sequences assigned  
85 (16.7%) exact matches, in which:  
63 unique CDR3  
6 unique J



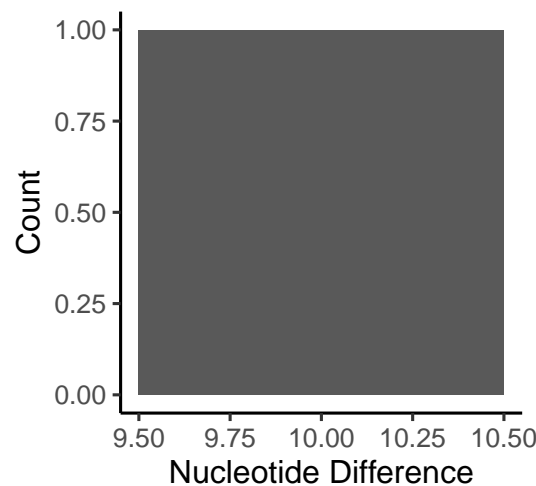
### IGHV3–33\*08

273 sequences assigned  
26 (9.5%) exact matches, in which:  
23 unique CDR3  
4 unique J



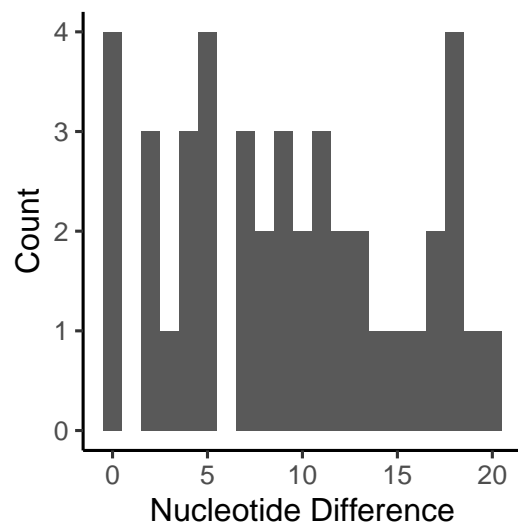
### IGHV3–38\*03

1 sequences assigned  
No exact matches.



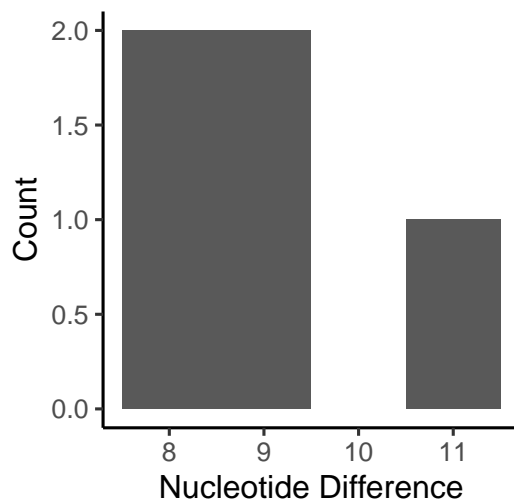
### IGHV3–33\*05

48 sequences assigned  
4 (8.3%) exact matches, in which:  
4 unique CDR3  
2 unique J



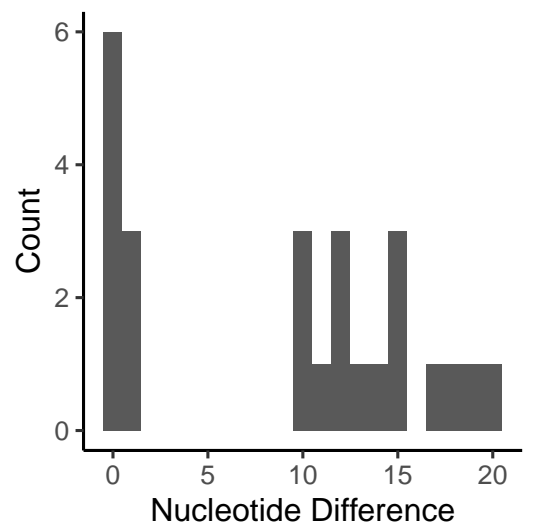
### IGHV3–35\*01

5 sequences assigned  
No exact matches.



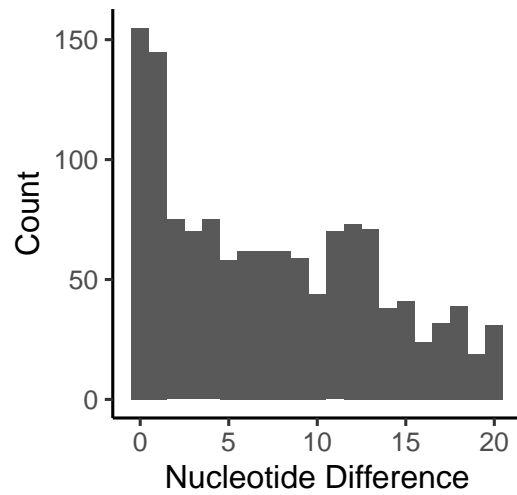
### IGHV3–43\*01

45 sequences assigned  
6 (13.3%) exact matches, in which:  
4 unique CDR3  
2 unique J



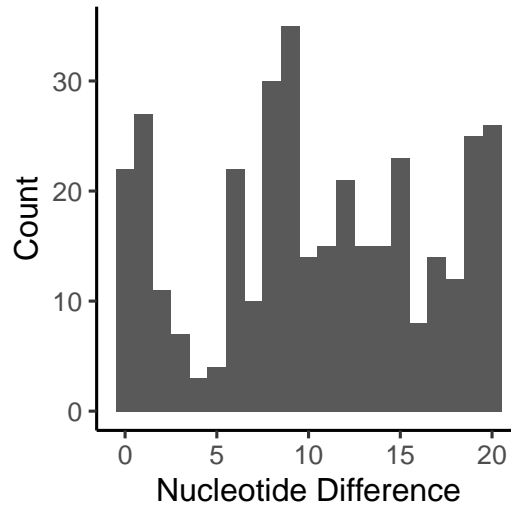
### IGHV3-48\*01

1431 sequences assigned  
155 (10.8%) exact matches, in which:  
117 unique CDR3  
5 unique J



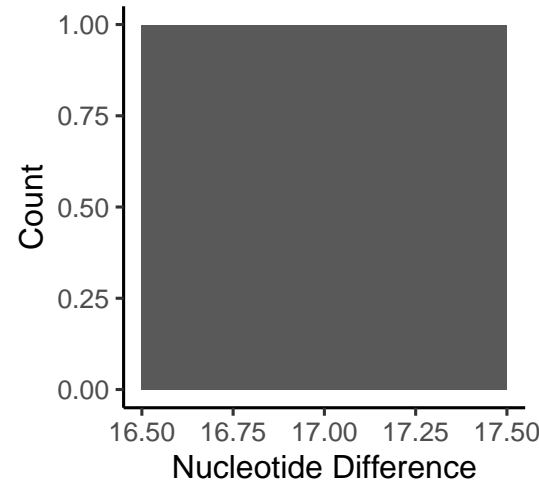
### IGHV3-49\*04

543 sequences assigned  
22 (4.1%) exact matches, in which:  
16 unique CDR3  
4 unique J



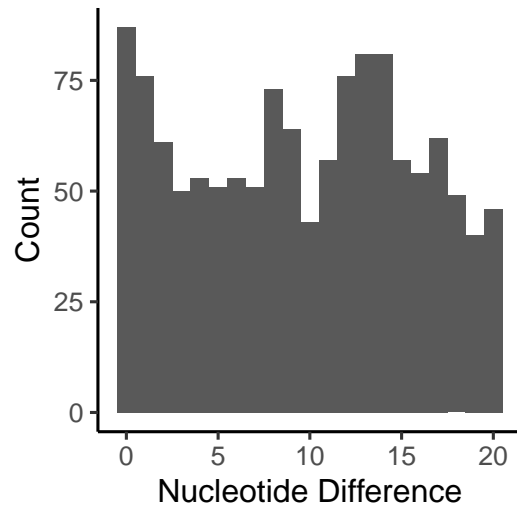
### IGHV3-52\*01\_03

1 sequences assigned  
No exact matches.



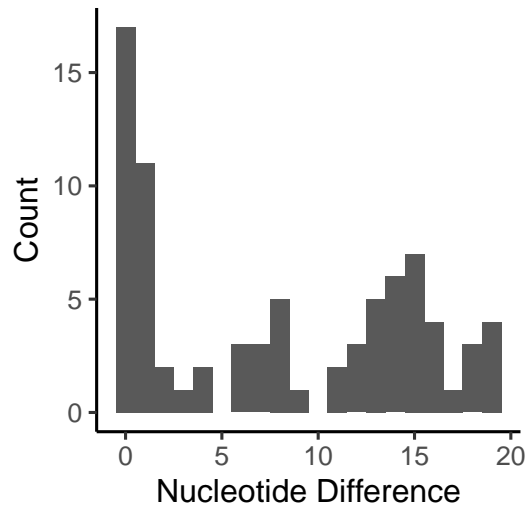
### IGHV3-48\*03

1521 sequences assigned  
87 (5.7%) exact matches, in which:  
68 unique CDR3  
6 unique J



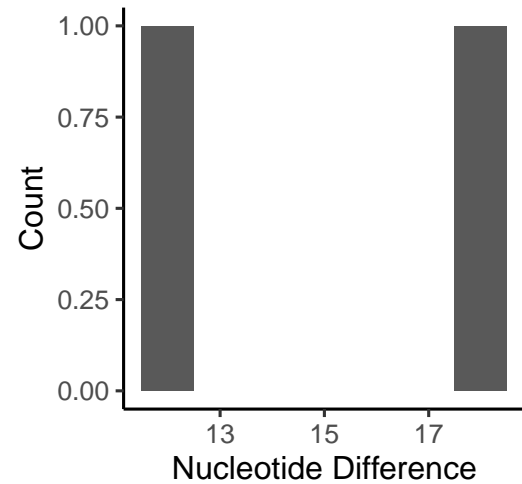
### IGHV3-49\*03\_05

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



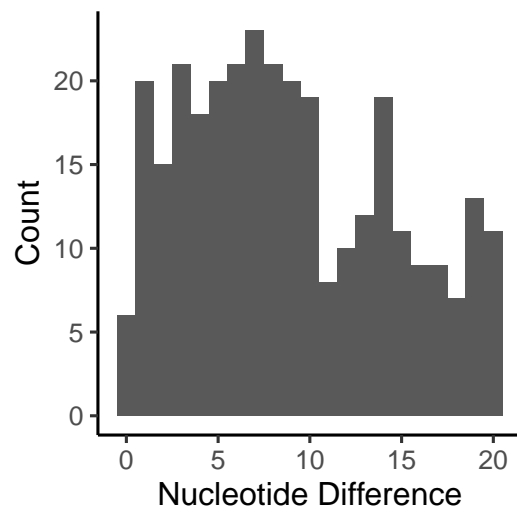
### IGHV3-53\*05

3 sequences assigned  
No exact matches.



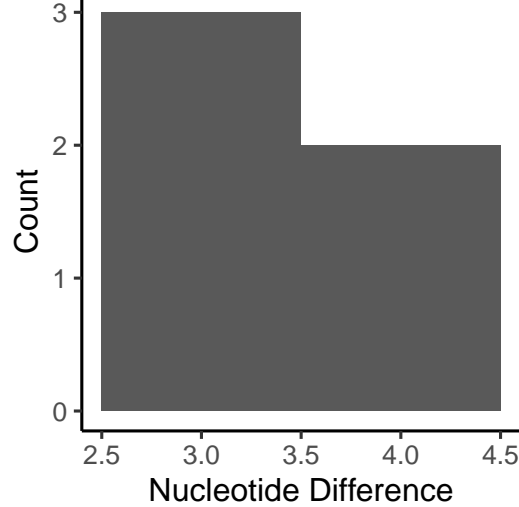
### IGHV3-48\*04

358 sequences assigned  
6 (1.7%) exact matches, in which:  
6 unique CDR3  
4 unique J



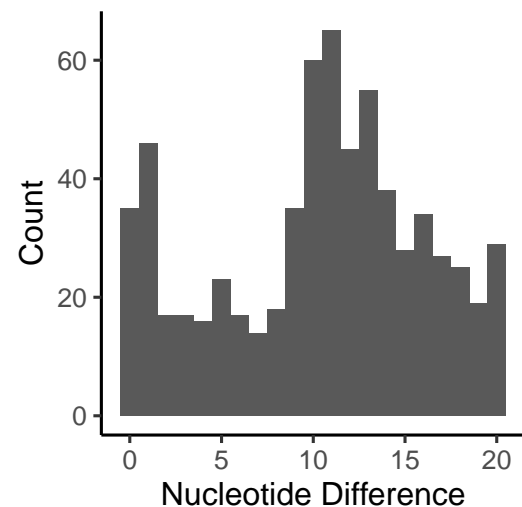
### IGHV3-52\*02

5 sequences assigned  
No exact matches.



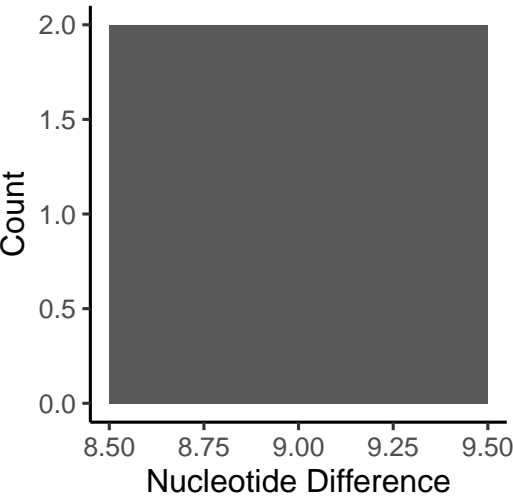
### IGHV3-53\*01\_02

849 sequences assigned  
35 (4.1%) exact matches, in which:  
26 unique CDR3  
5 unique J



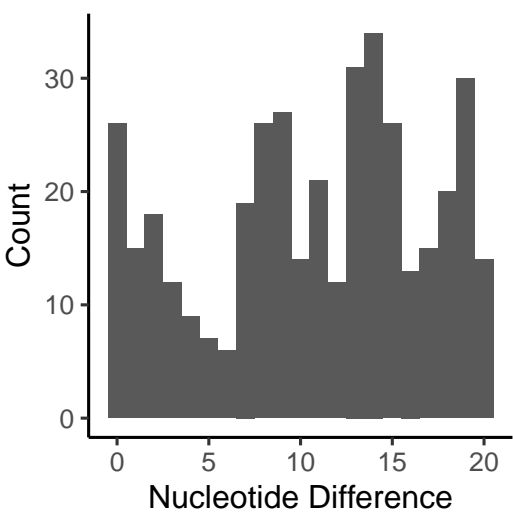
IGHV3-62\*04

2 sequences assigned  
No exact matches.



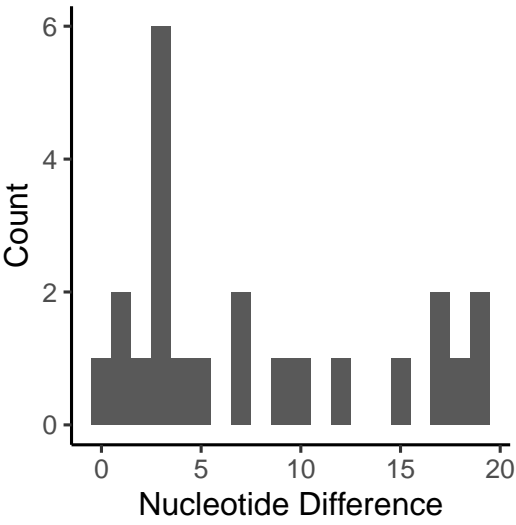
IGHV3-66\*01

481 sequences assigned  
26 (5.4%) exact matches, in which:  
20 unique CDR3  
4 unique J



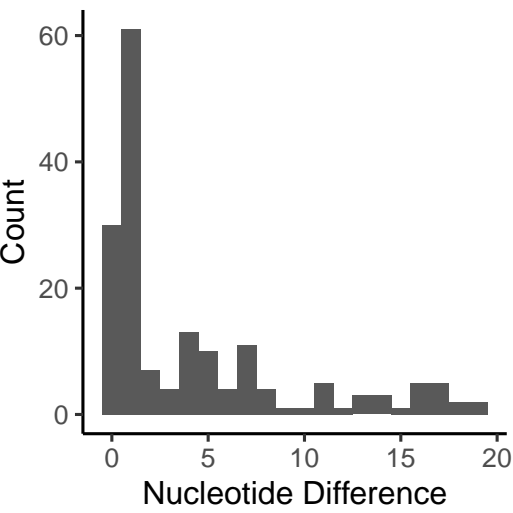
IGHV3-69-1\*01

34 sequences assigned  
1 (2.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



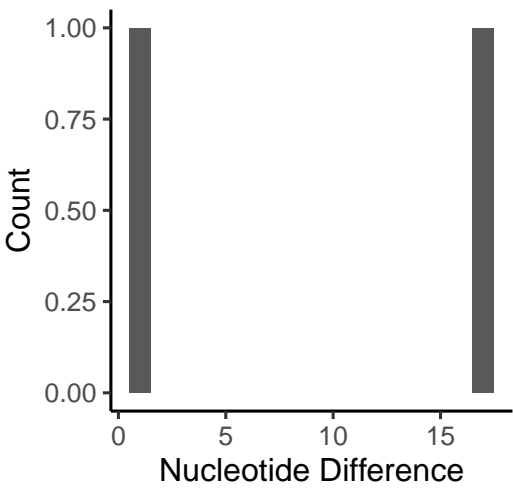
IGHV3-64\*01

226 sequences assigned  
30 (13.3%) exact matches, in which:  
20 unique CDR3  
4 unique J



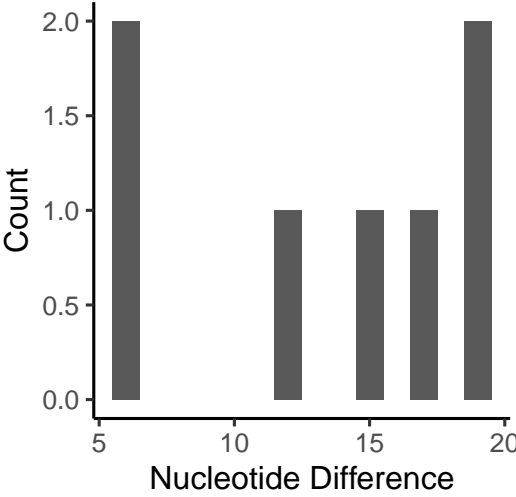
IGHV3-66\*03

10 sequences assigned  
No exact matches.



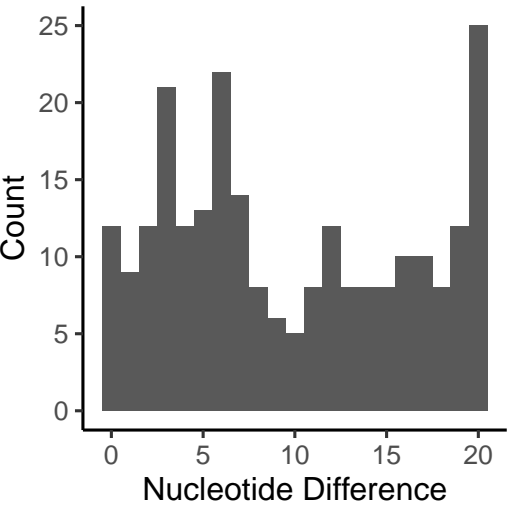
IGHV3-69-1\*02

20 sequences assigned  
No exact matches.



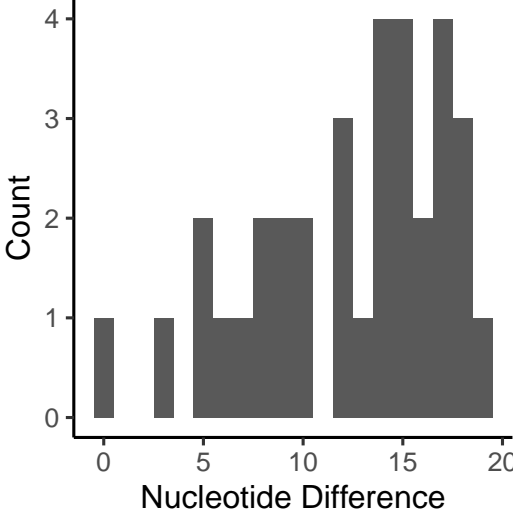
IGHV3-64\*04

328 sequences assigned  
12 (3.7%) exact matches, in which:  
12 unique CDR3  
4 unique J



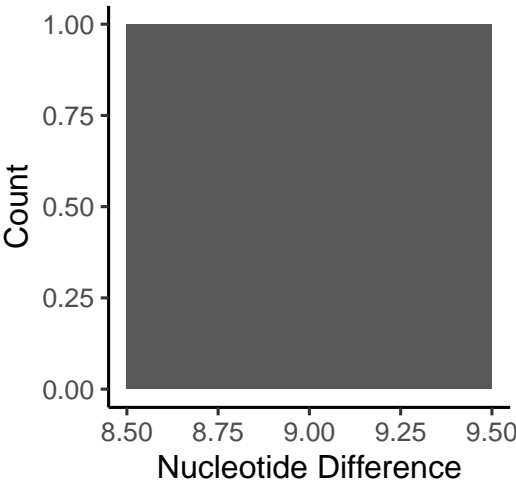
IGHV3-66\*04

38 sequences assigned  
1 (2.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



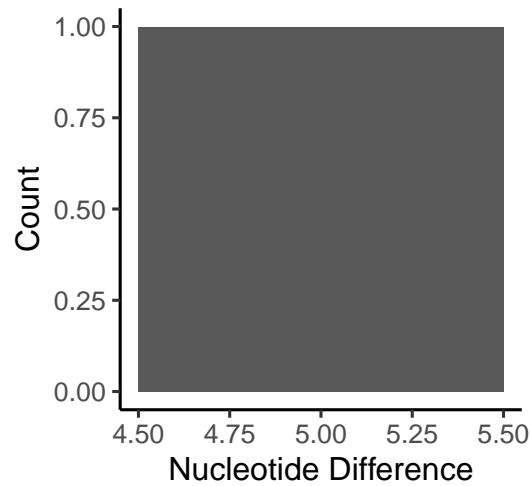
IGHV3-71\*03

1 sequences assigned  
No exact matches.



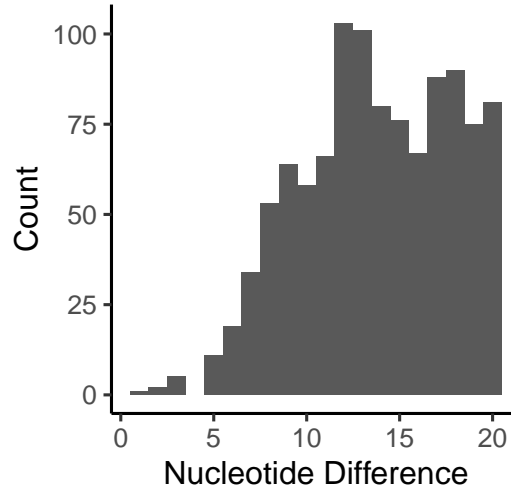
### IGHV3-71\*01\_04

2 sequences assigned  
No exact matches.



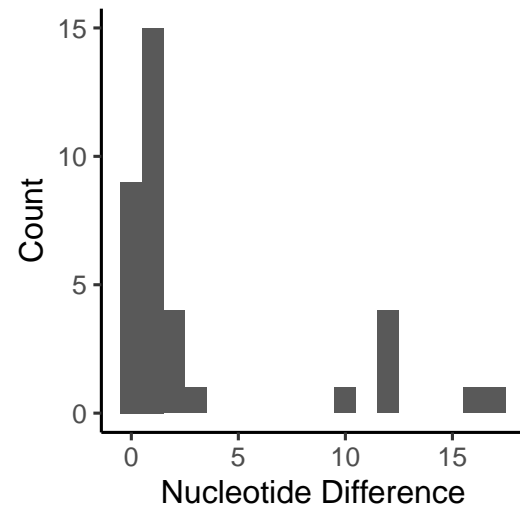
### IGHV3-74\*03

1868 sequences assigned  
No exact matches.



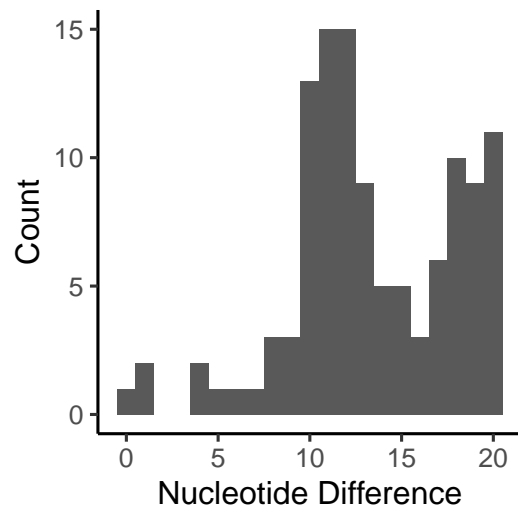
### IGHV3-43D\*04

57 sequences assigned  
9 (15.8%) exact matches, in which:  
3 unique CDR3  
2 unique J



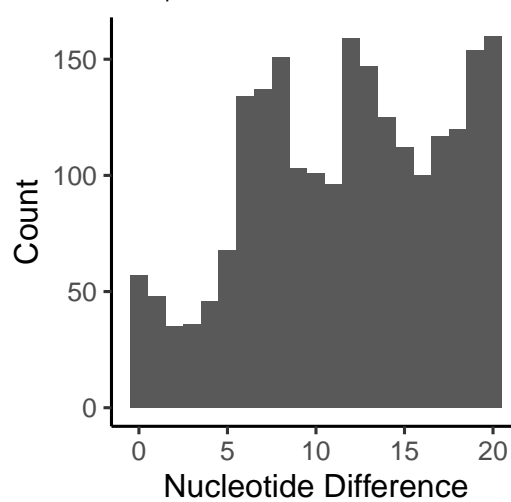
### IGHV3-72\*01

155 sequences assigned  
1 (0.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



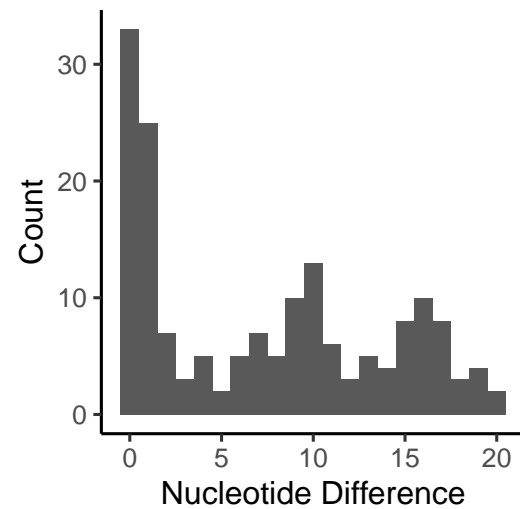
### IGHV3-74\*01\_02

3059 sequences assigned  
57 (1.9%) exact matches, in which:  
48 unique CDR3  
4 unique J



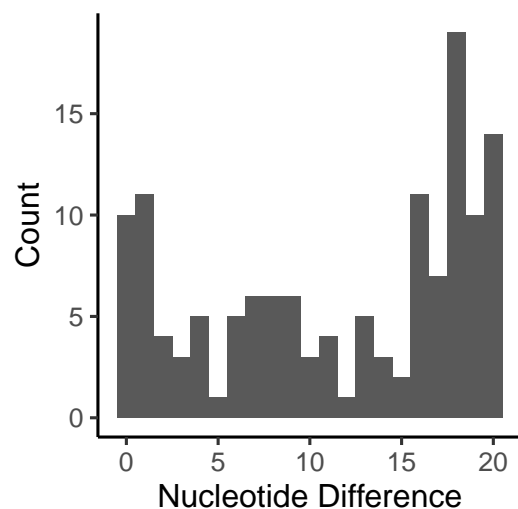
### IGHV3-64D\*06

264 sequences assigned  
33 (12.5%) exact matches, in which:  
26 unique CDR3  
3 unique J



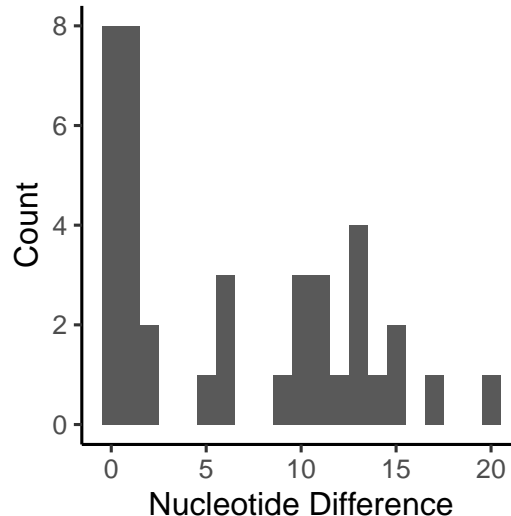
### IGHV3-73\*01\_02

187 sequences assigned  
10 (5.3%) exact matches, in which:  
8 unique CDR3  
4 unique J



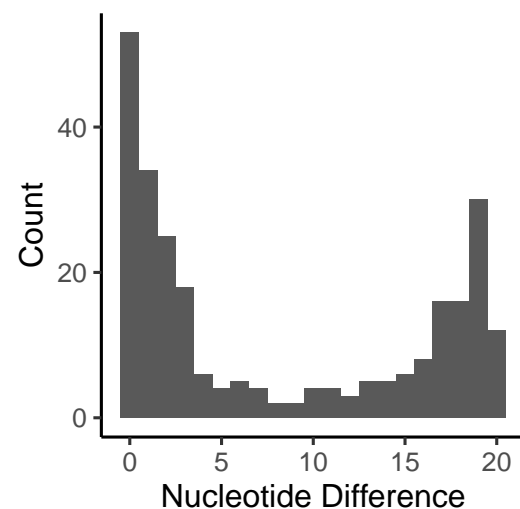
### IGHV3-43D\*03

43 sequences assigned  
8 (18.6%) exact matches, in which:  
7 unique CDR3  
2 unique J



### IGHV3-64D\*09

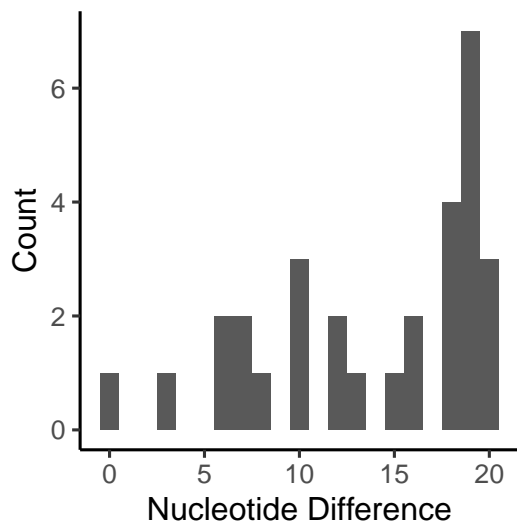
305 sequences assigned  
53 (17.4%) exact matches, in which:  
43 unique CDR3  
4 unique J





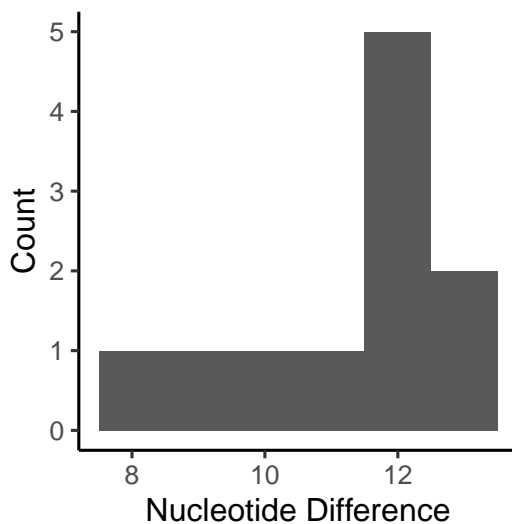
### IGHV3–NL1\*01

75 sequences assigned  
1 (1.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



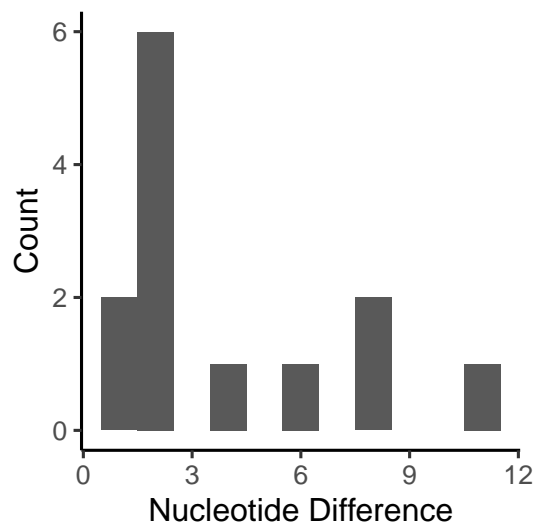
### IGHV4–28\*01\_07

13 sequences assigned  
No exact matches.



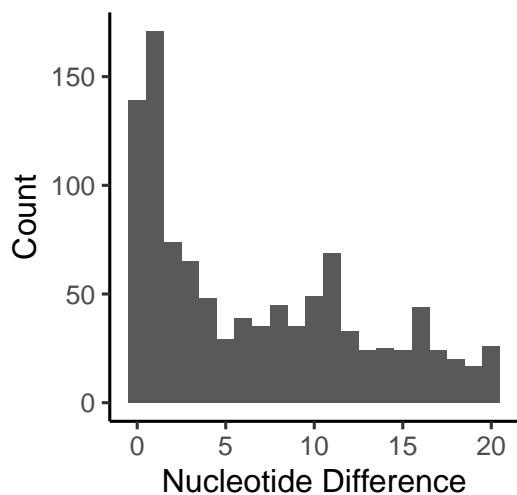
### IGHV4–30–2\*05

13 sequences assigned  
No exact matches.



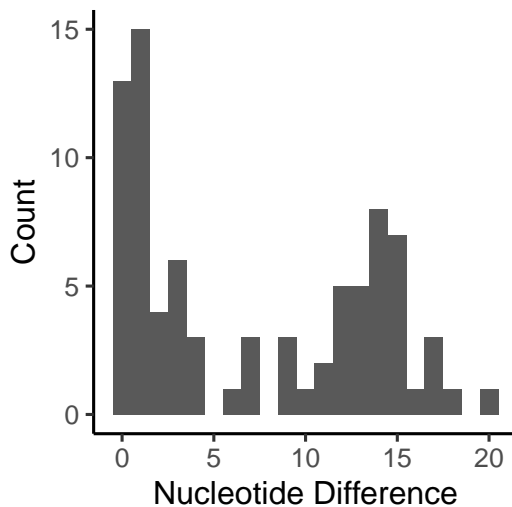
### IGHV4–4\*02\_03

1168 sequences assigned  
139 (11.9%) exact matches, in which:  
120 unique CDR3  
6 unique J



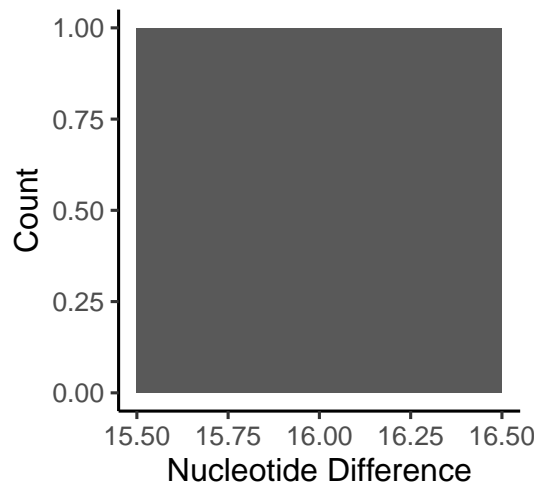
### IGHV4–30–2\*01

92 sequences assigned  
13 (14.1%) exact matches, in which:  
10 unique CDR3  
4 unique J



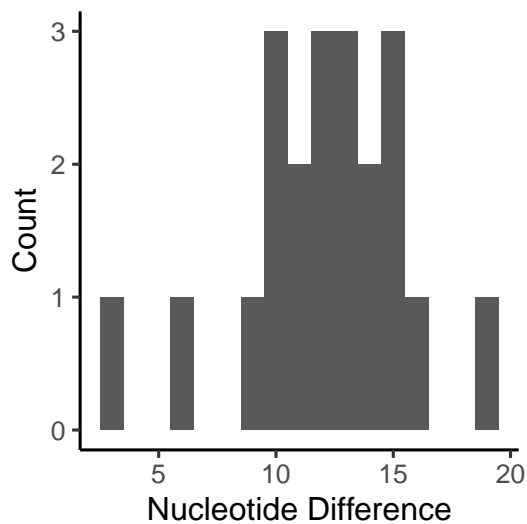
### IGHV4–30–2\*06

8 sequences assigned  
No exact matches.



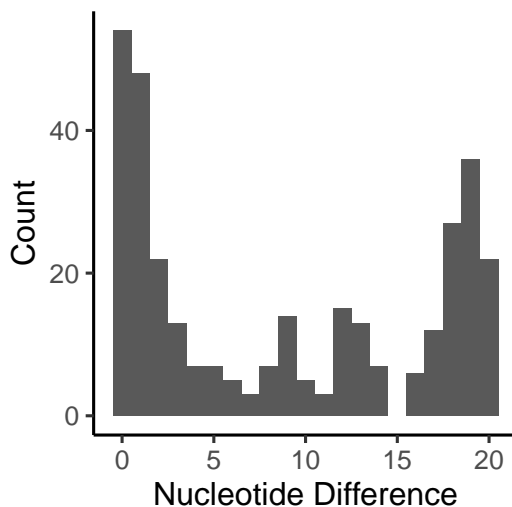
### IGHV4–28\*03

23 sequences assigned  
No exact matches.



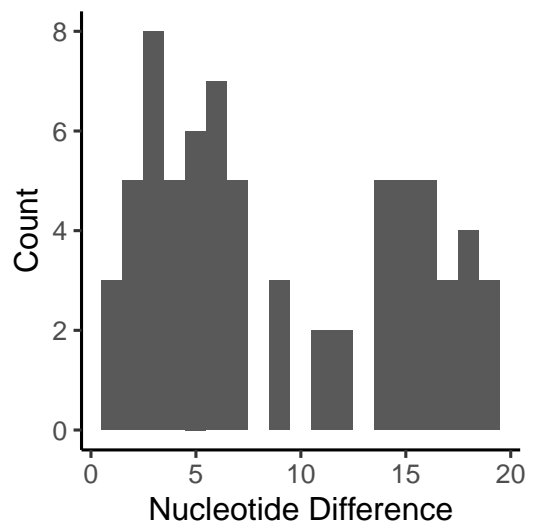
### IGHV4–30–4\*01

416 sequences assigned  
54 (13%) exact matches, in which:  
48 unique CDR3  
6 unique J



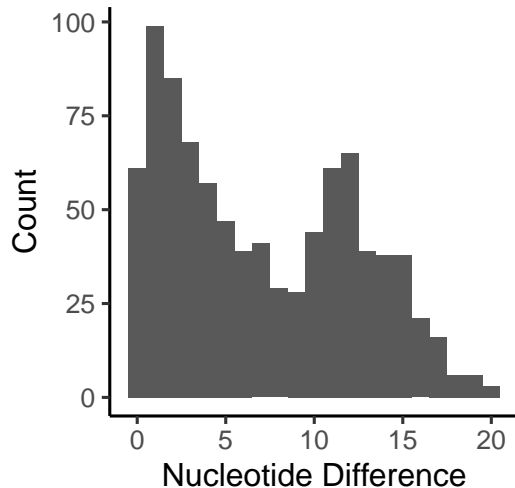
### IGHV4–30–4\*08

88 sequences assigned  
No exact matches.



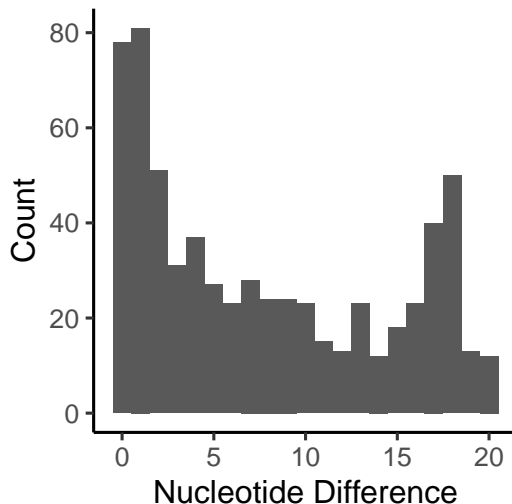
### IGHV4-31\*02

943 sequences assigned  
61 (6.5%) exact matches, in which:  
55 unique CDR3  
5 unique J



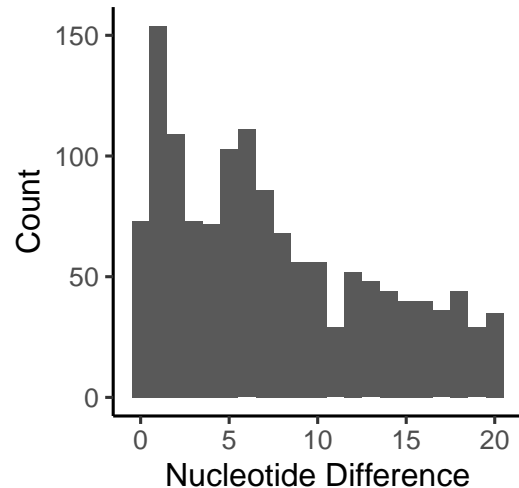
### IGHV4-38-2\*02

707 sequences assigned  
78 (11%) exact matches, in which:  
71 unique CDR3  
4 unique J



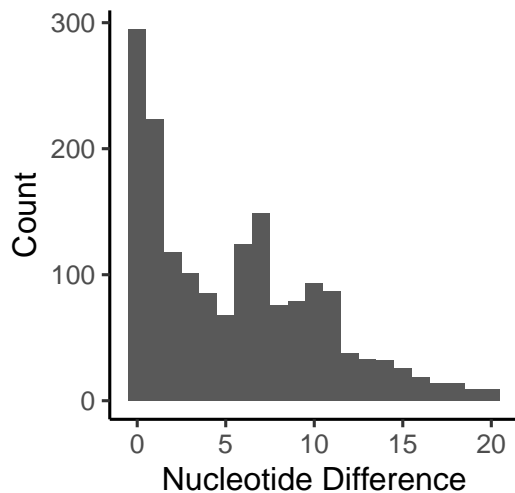
### IGHV4-59\*12

1563 sequences assigned  
73 (4.7%) exact matches, in which:  
72 unique CDR3  
5 unique J



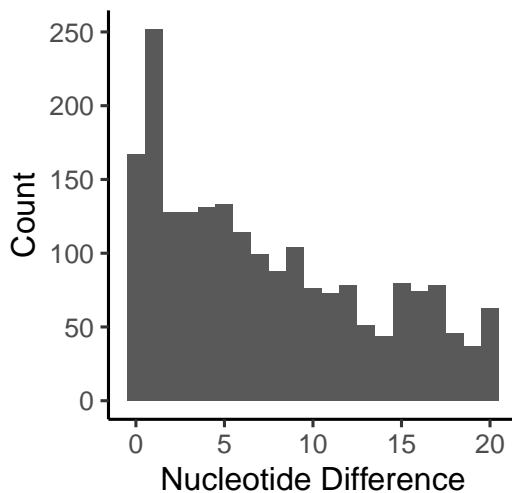
### IGHV4-34\*01\_02

1832 sequences assigned  
295 (16.1%) exact matches, in which:  
267 unique CDR3  
6 unique J



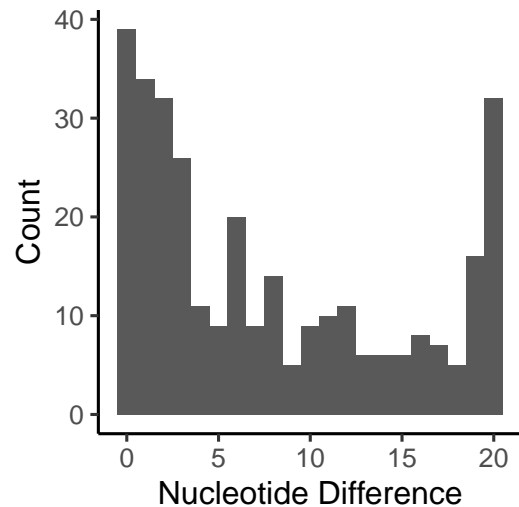
### IGHV4-39\*07

2261 sequences assigned  
167 (7.4%) exact matches, in which:  
151 unique CDR3  
5 unique J



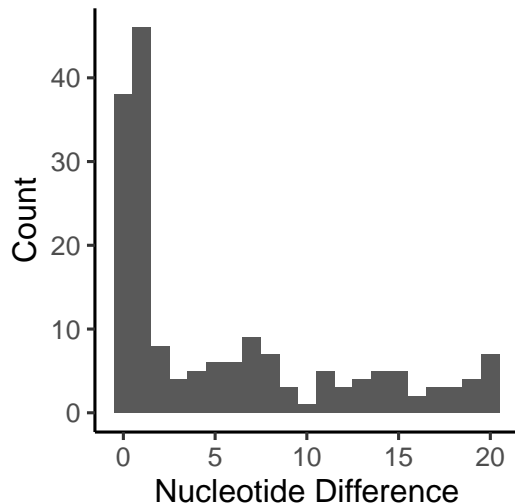
### IGHV4-61\*01

391 sequences assigned  
39 (10%) exact matches, in which:  
36 unique CDR3  
4 unique J



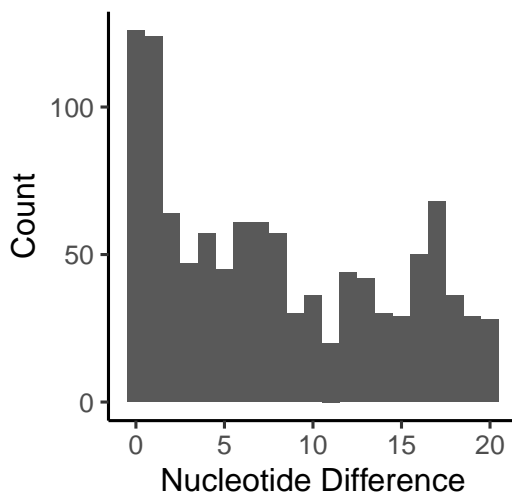
### IGHV4-38-2\*01

217 sequences assigned  
38 (17.5%) exact matches, in which:  
36 unique CDR3  
4 unique J



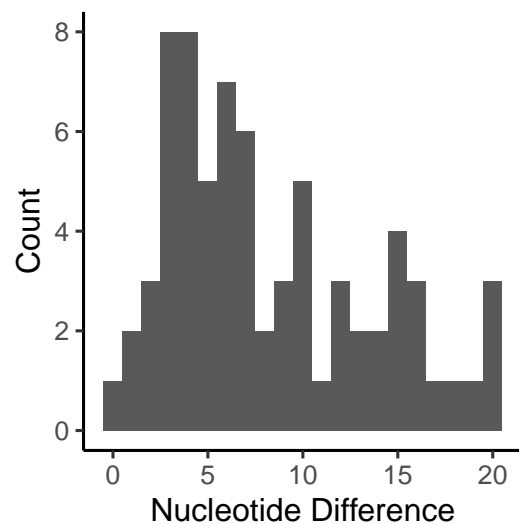
### IGHV4-59\*08

1405 sequences assigned  
126 (9%) exact matches, in which:  
121 unique CDR3  
6 unique J



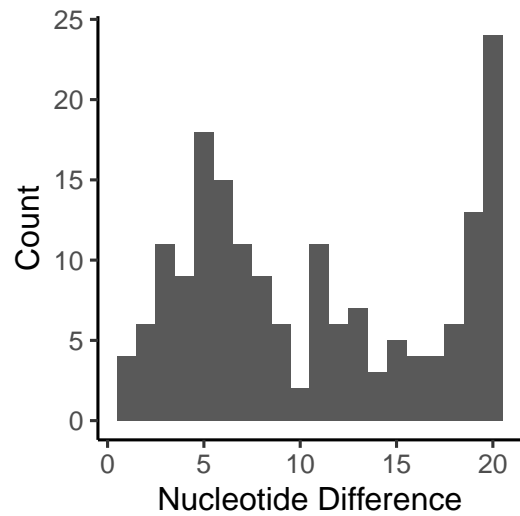
### IGHV4-61\*05

77 sequences assigned  
1 (1.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



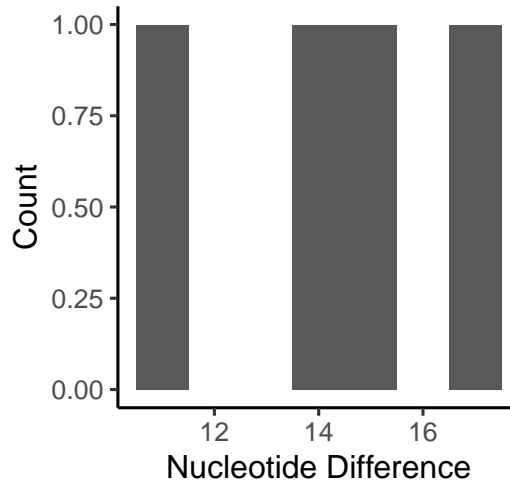
### IGHV4-61\*08

199 sequences assigned  
No exact matches.



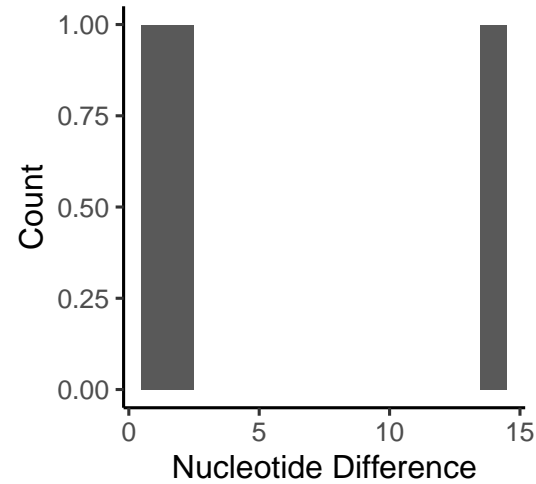
### IGHV1/OR15-3\*02

4 sequences assigned  
No exact matches.



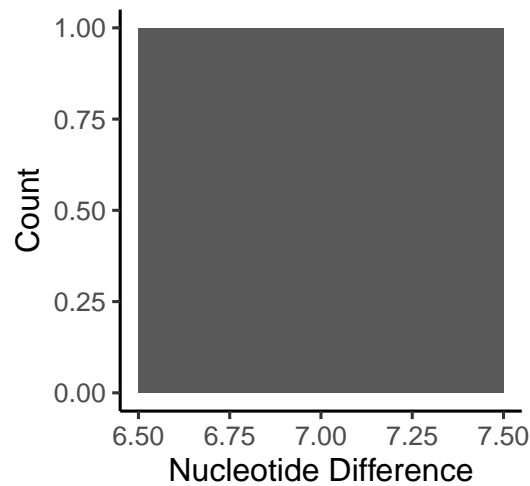
### IGHV5-51\*06

4 sequences assigned  
No exact matches.



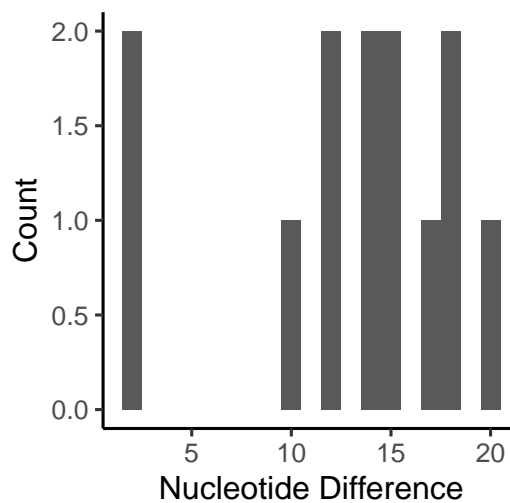
### IGHV1/OR15-2\*01

1 sequences assigned  
No exact matches.



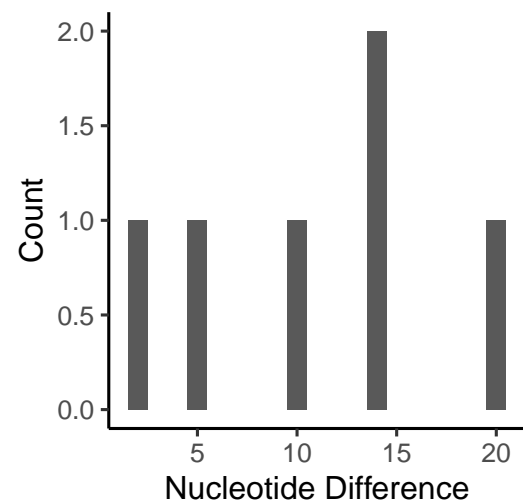
### IGHV4/OR15-8\*01

19 sequences assigned  
No exact matches.



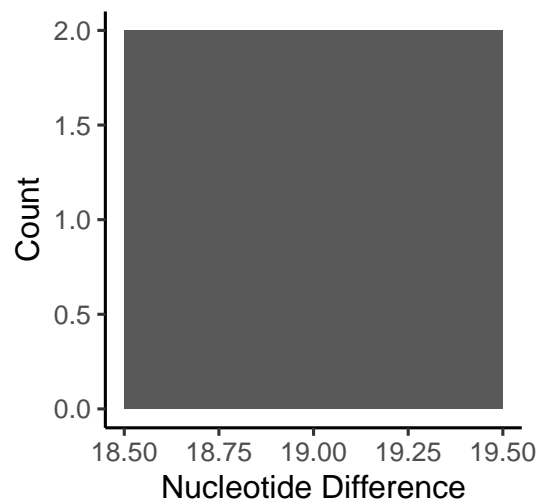
### IGHV5-51\*07

7 sequences assigned  
No exact matches.



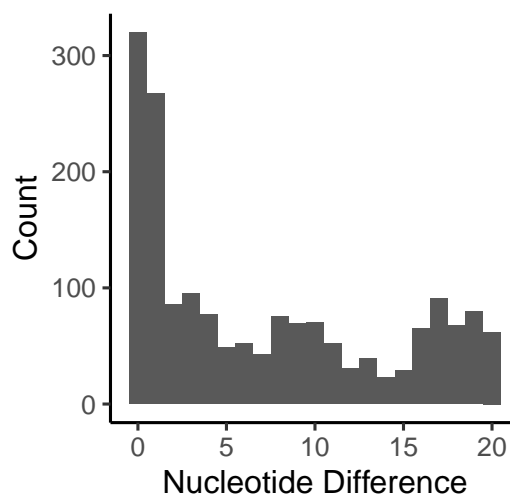
### IGHV1/OR15-2\*02\_03

10 sequences assigned  
No exact matches.



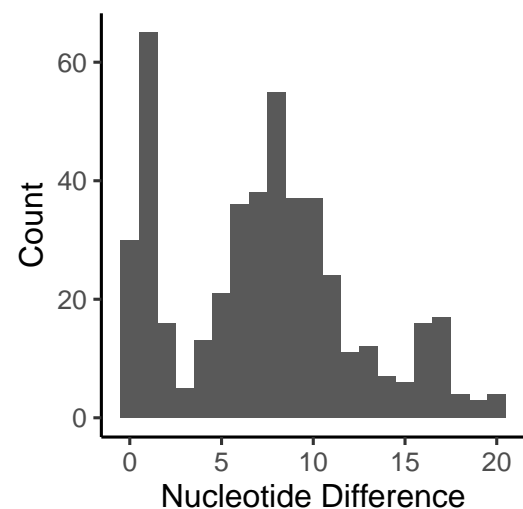
### IGHV5-10-1\*01\_03

1870 sequences assigned  
320 (17.1%) exact matches, in which:  
270 unique CDR3  
5 unique J



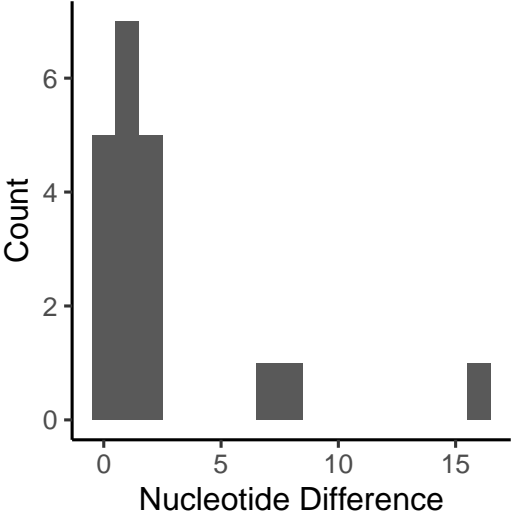
### IGHV6-1\*01\_02

479 sequences assigned  
30 (6.3%) exact matches, in which:  
26 unique CDR3  
4 unique J



# IGHV7-4-1\*01

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





Warning – no inferred sequences found.