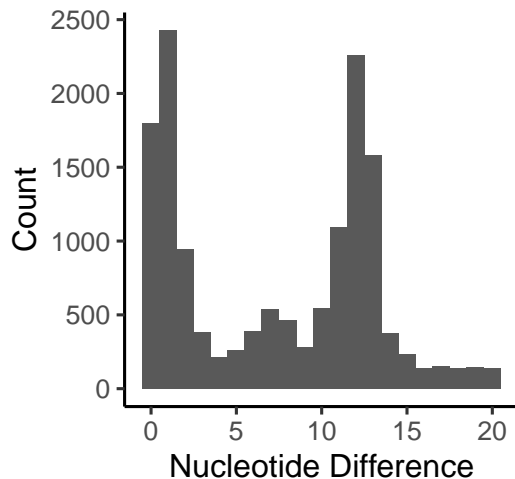


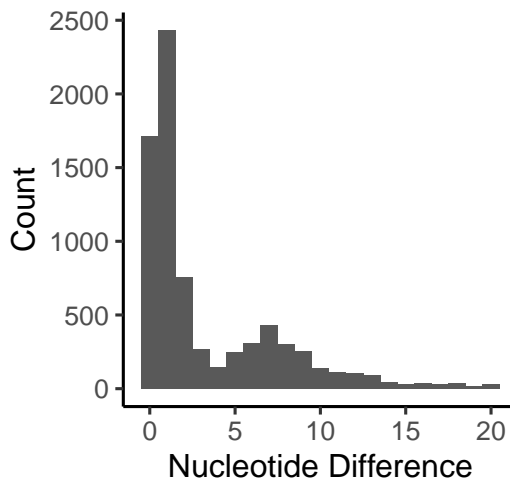
### IGHV1-2\*02

15966 sequences assigned  
1796 (11.2%) exact matches, in which:  
1392 unique CDR3  
6 unique J



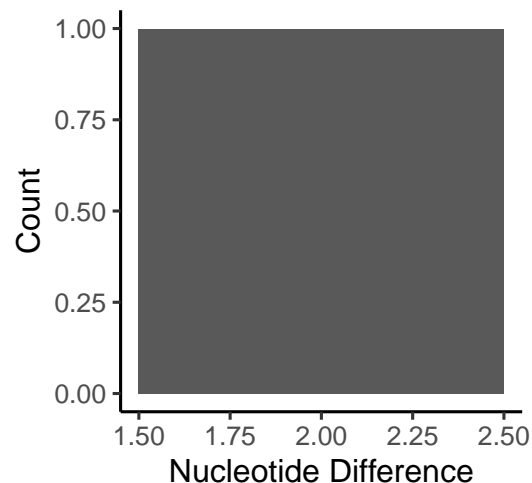
### IGHV1-8\*01

8618 sequences assigned  
1715 (19.9%) exact matches, in which:  
1351 unique CDR3  
6 unique J



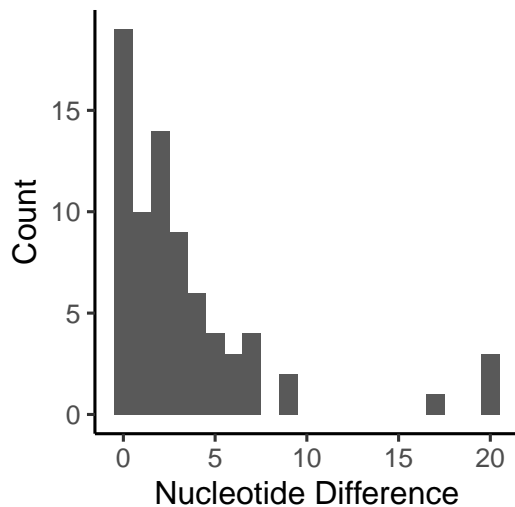
### IGHV1-38-4\*01

1 sequences assigned  
No exact matches.



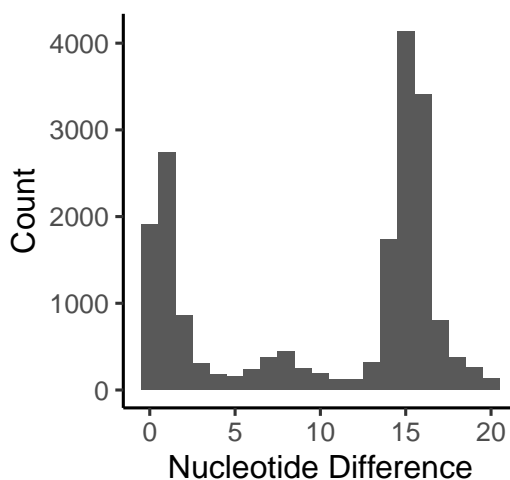
### IGHV1-3\*02

77 sequences assigned  
19 (24.7%) exact matches, in which:  
19 unique CDR3  
4 unique J



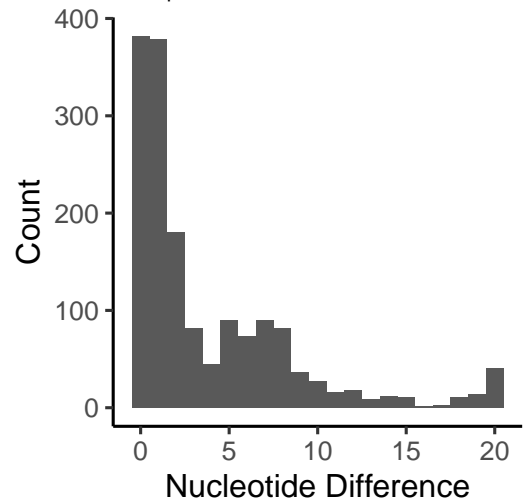
### IGHV1-18\*04

20079 sequences assigned  
1906 (9.5%) exact matches, in which:  
1485 unique CDR3  
6 unique J



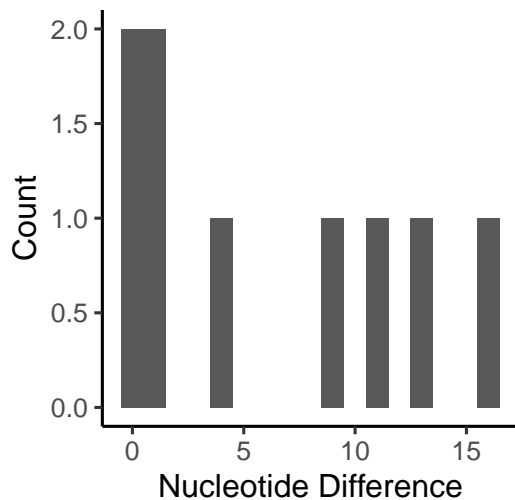
### IGHV1-46\*01

1745 sequences assigned  
382 (21.9%) exact matches, in which:  
327 unique CDR3  
6 unique J



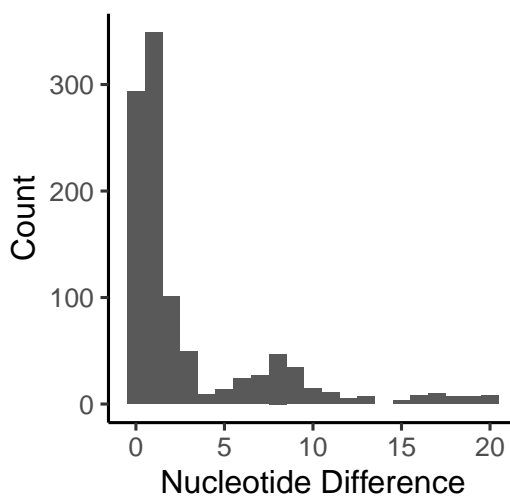
### IGHV1-3\*01\_05

11 sequences assigned  
2 (18.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



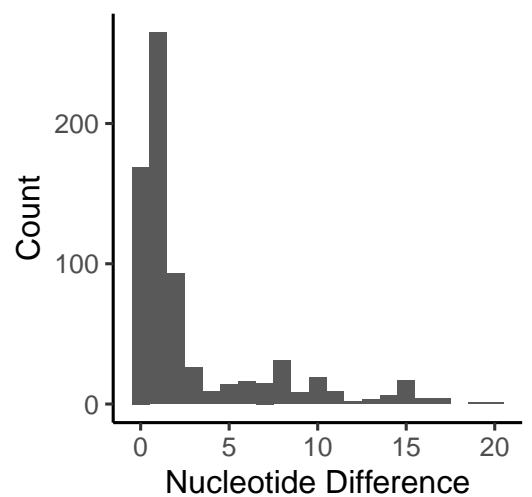
### IGHV1-24\*01

1039 sequences assigned  
293 (28.2%) exact matches, in which:  
226 unique CDR3  
6 unique J



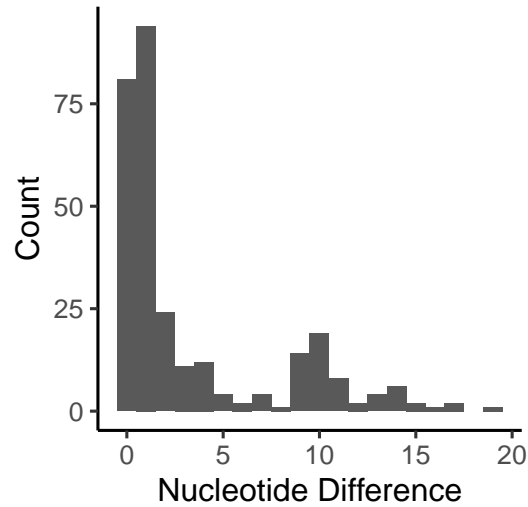
### IGHV1-46\*03

833 sequences assigned  
169 (20.3%) exact matches, in which:  
106 unique CDR3  
5 unique J



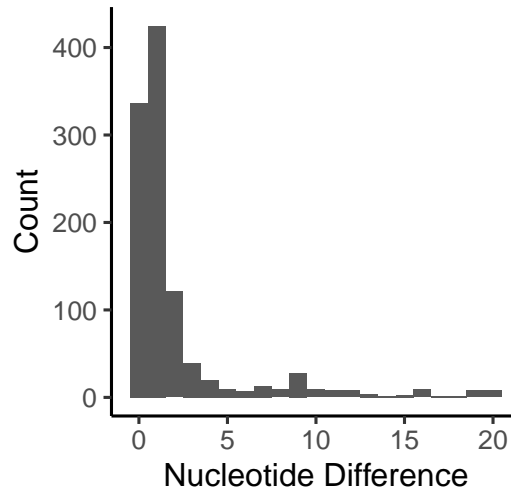
### IGHV1-58\*02

544 sequences assigned  
81 (14.9%) exact matches, in which:  
67 unique CDR3  
6 unique J



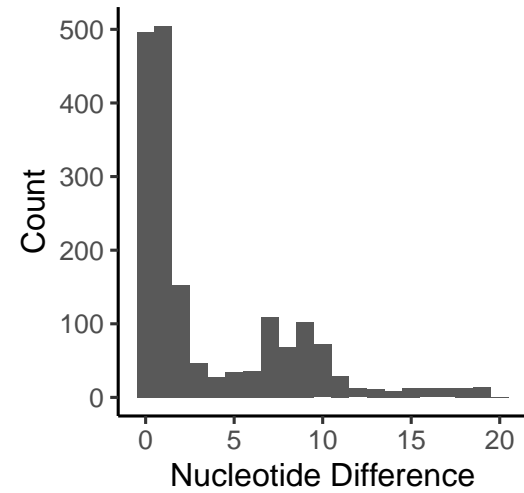
### IGHV1-69\*02

1124 sequences assigned  
337 (30%) exact matches, in which:  
279 unique CDR3  
6 unique J



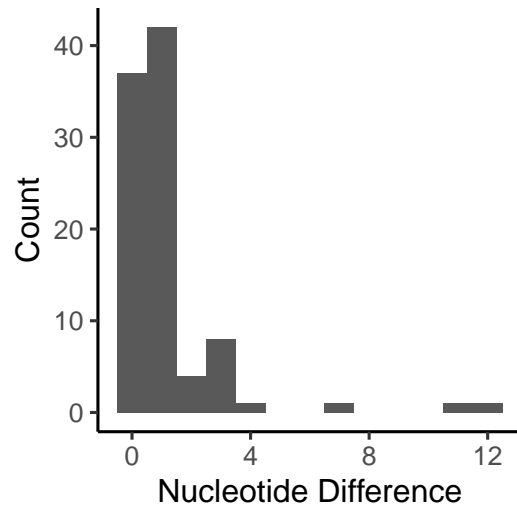
### IGHV1-69\*06\_14

1893 sequences assigned  
496 (26.2%) exact matches, in which:  
436 unique CDR3  
6 unique J



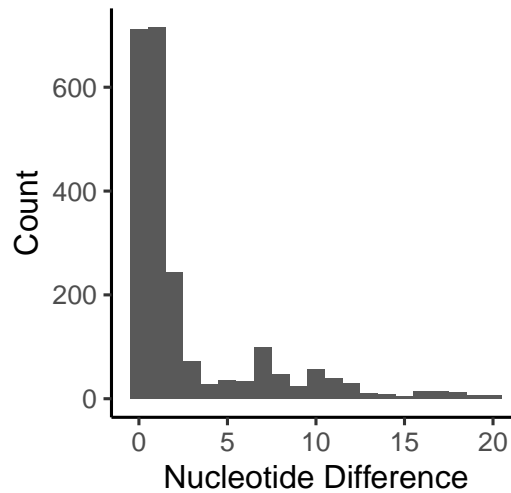
### IGHV1-58\*01\_03

96 sequences assigned  
37 (38.5%) exact matches, in which:  
31 unique CDR3  
4 unique J



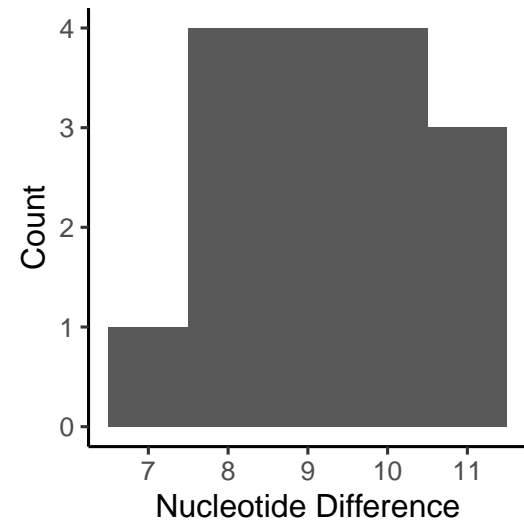
### IGHV1-69\*01\_12\_13

2284 sequences assigned  
712 (31.2%) exact matches, in which:  
601 unique CDR3  
6 unique J



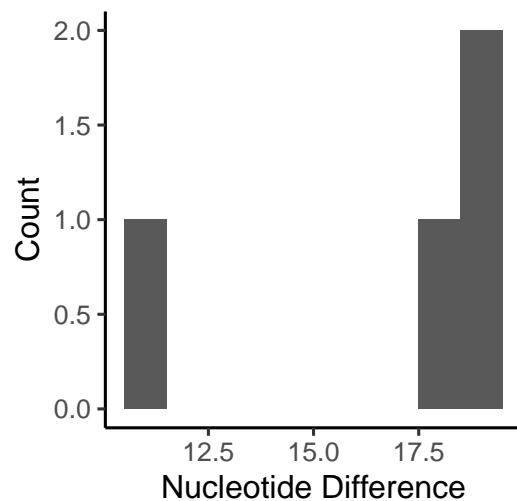
### IGHV1-NL1\*01

16 sequences assigned  
No exact matches.



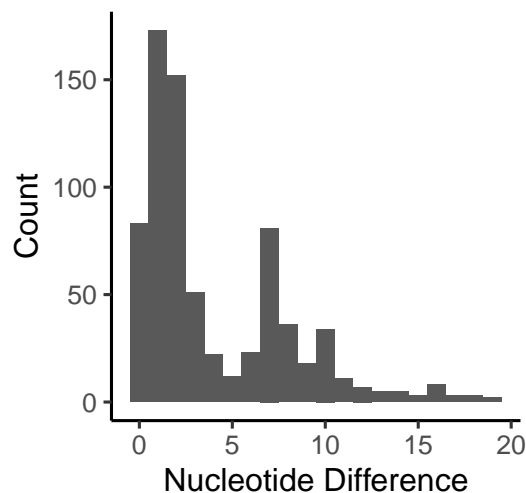
### IGHV1-69-2\*01

5 sequences assigned  
No exact matches.



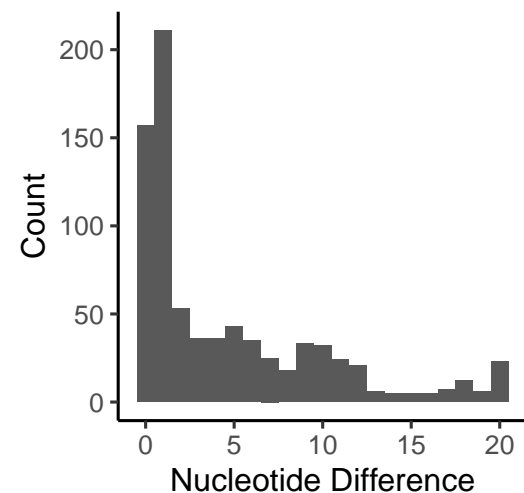
### IGHV1-69\*04\_09

748 sequences assigned  
83 (11.1%) exact matches, in which:  
80 unique CDR3  
5 unique J



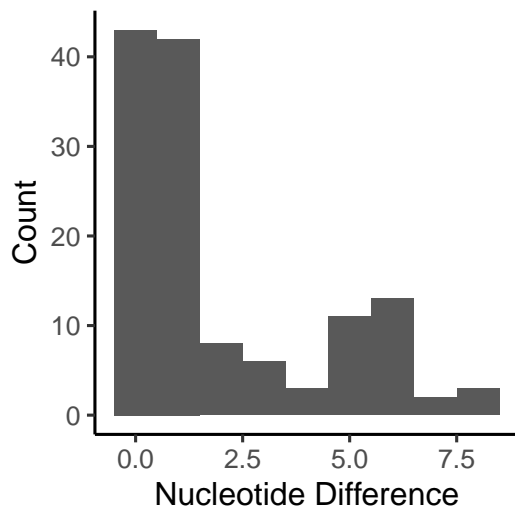
### IGHV2-5\*02

1080 sequences assigned  
157 (14.5%) exact matches, in which:  
121 unique CDR3  
5 unique J



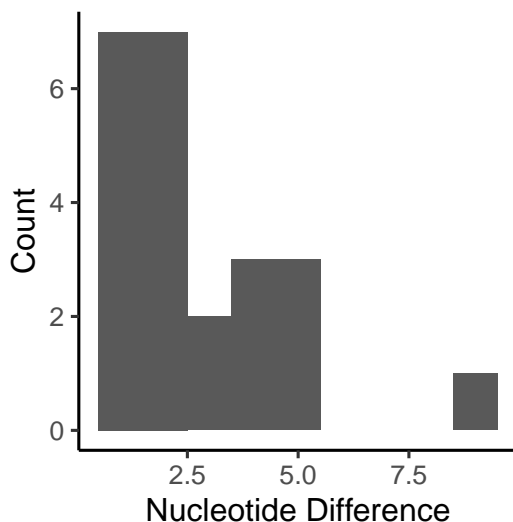
### IGHV2-26\*01

140 sequences assigned  
43 (30.7%) exact matches, in which:  
31 unique CDR3  
4 unique J



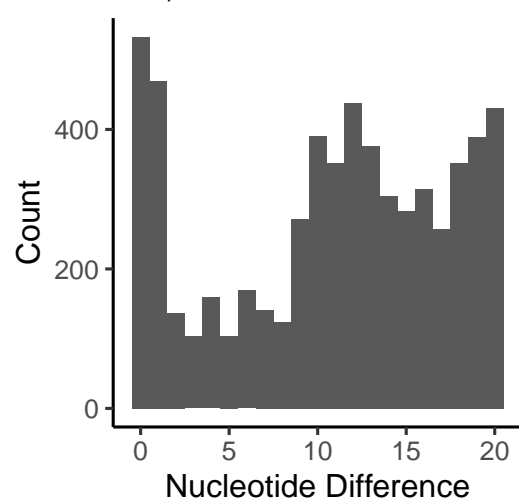
### IGHV2-70\*12

23 sequences assigned  
No exact matches.



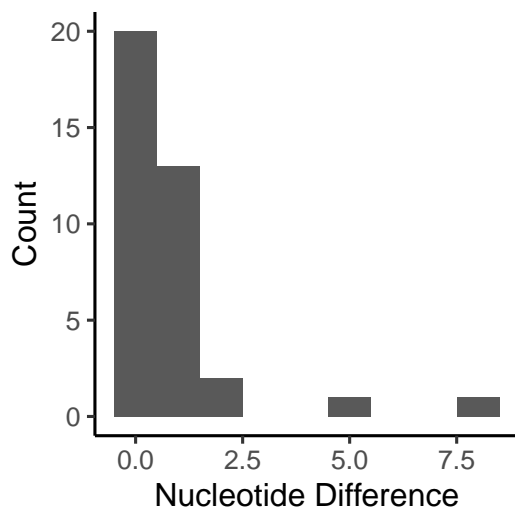
### IGHV3-7\*03

8010 sequences assigned  
533 (6.7%) exact matches, in which:  
342 unique CDR3  
5 unique J



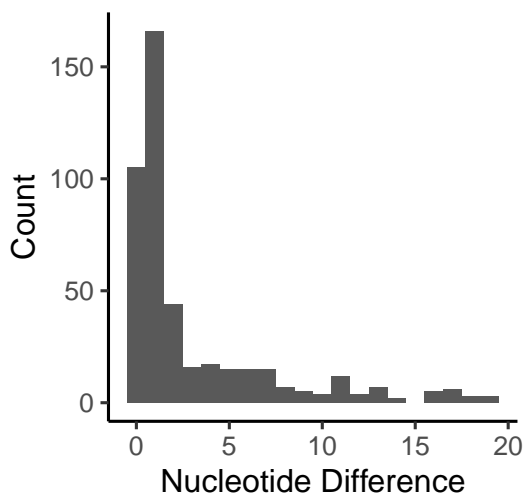
### IGHV2-26\*02

37 sequences assigned  
20 (54.1%) exact matches, in which:  
18 unique CDR3  
4 unique J



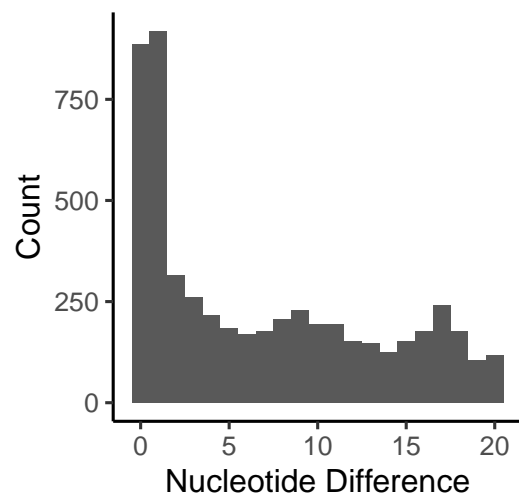
### IGHV2-70\*11\_15

463 sequences assigned  
105 (22.7%) exact matches, in which:  
76 unique CDR3  
4 unique J



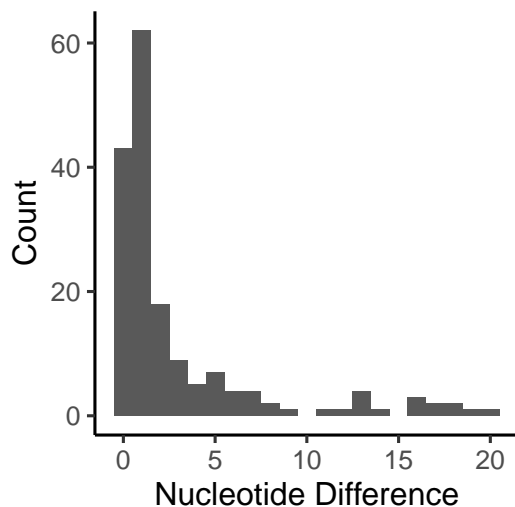
### IGHV3-9\*01

6380 sequences assigned  
887 (13.9%) exact matches, in which:  
485 unique CDR3  
6 unique J



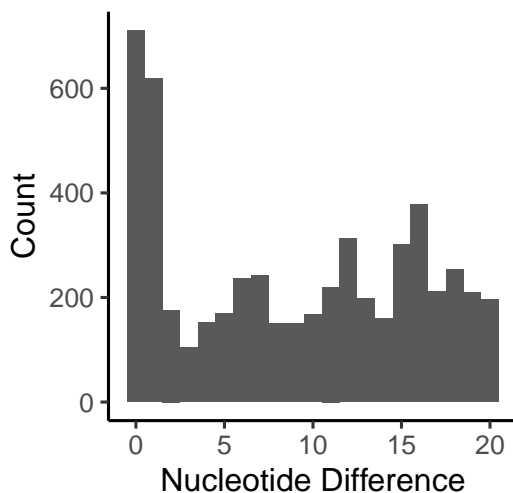
### IGHV2-70\*01

196 sequences assigned  
43 (21.9%) exact matches, in which:  
32 unique CDR3  
4 unique J



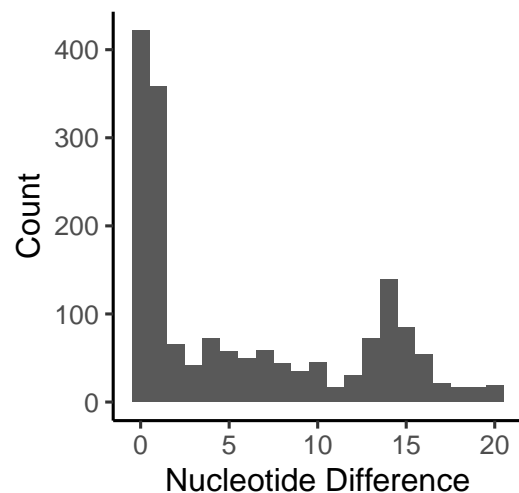
### IGHV3-7\*01

6460 sequences assigned  
711 (11%) exact matches, in which:  
499 unique CDR3  
6 unique J



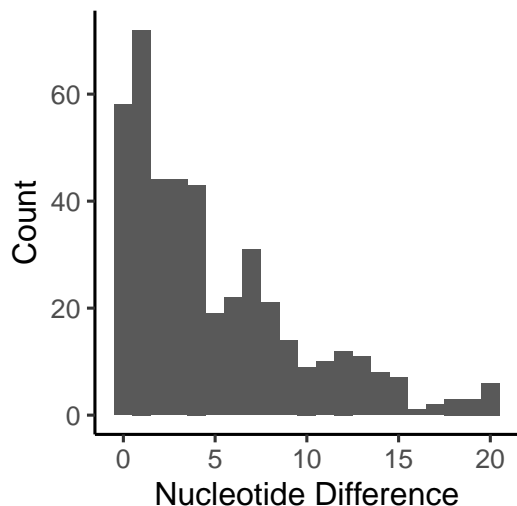
### IGHV3-11\*01

1889 sequences assigned  
422 (22.3%) exact matches, in which:  
269 unique CDR3  
6 unique J



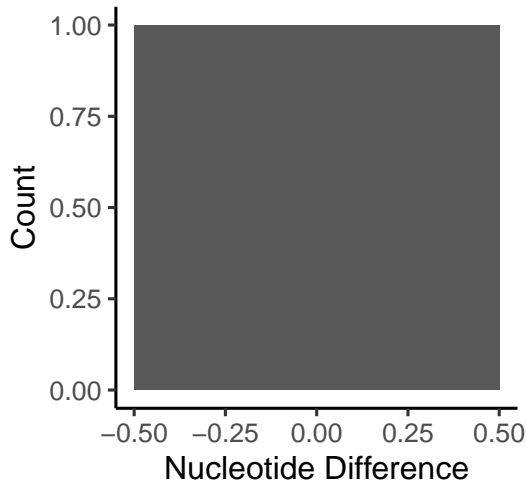
### IGHV3-11\*04

459 sequences assigned  
58 (12.6%) exact matches, in which:  
54 unique CDR3  
4 unique J



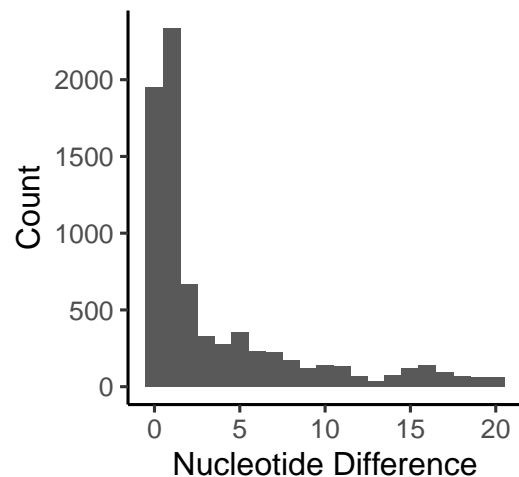
### IGHV3-20\*01\_02

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



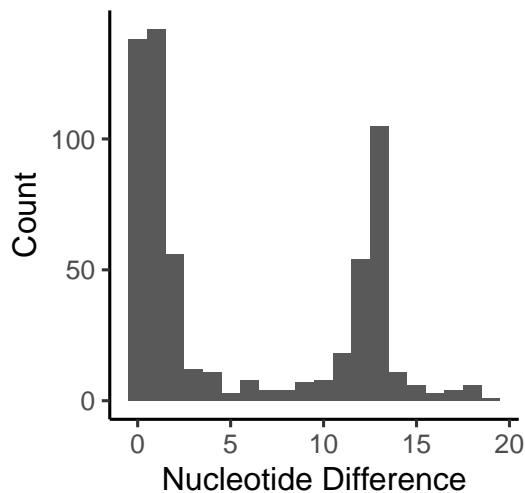
### IGHV3-21\*01\_02

9078 sequences assigned  
1950 (21.5%) exact matches, in which:  
1184 unique CDR3  
6 unique J



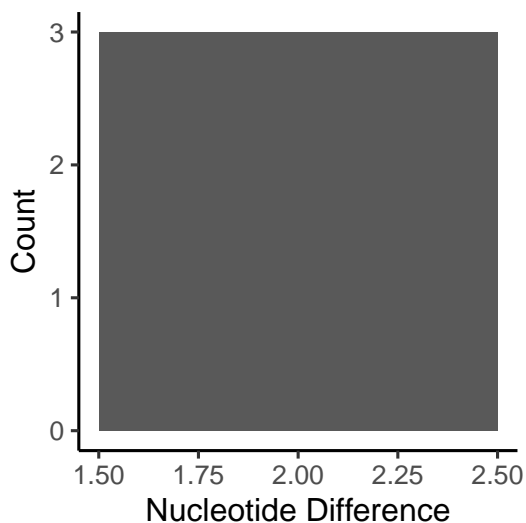
### IGHV3-13\*01

808 sequences assigned  
138 (17.1%) exact matches, in which:  
91 unique CDR3  
5 unique J



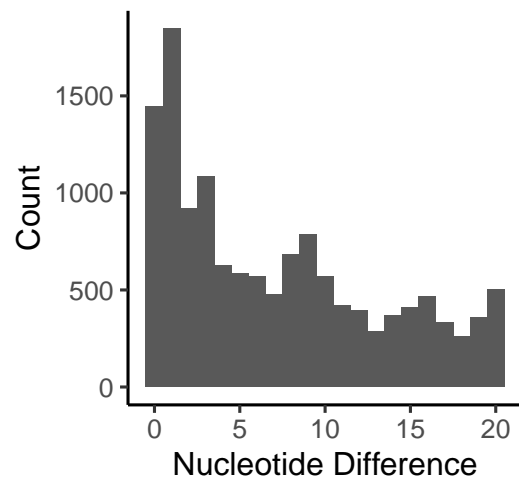
### IGHV3-20\*03\_04

7 sequences assigned  
No exact matches.



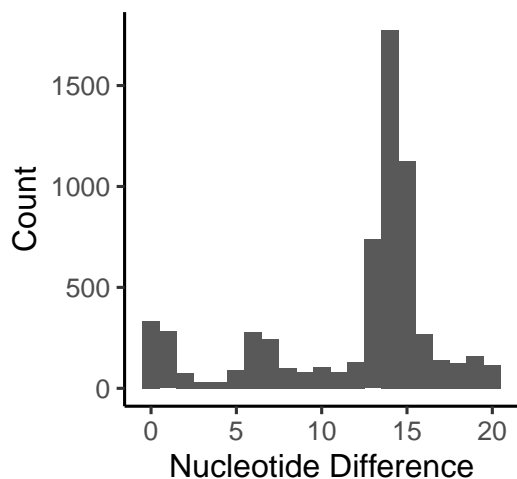
### IGHV3-23\*01\_04

18079 sequences assigned  
1445 (8%) exact matches, in which:  
834 unique CDR3  
6 unique J



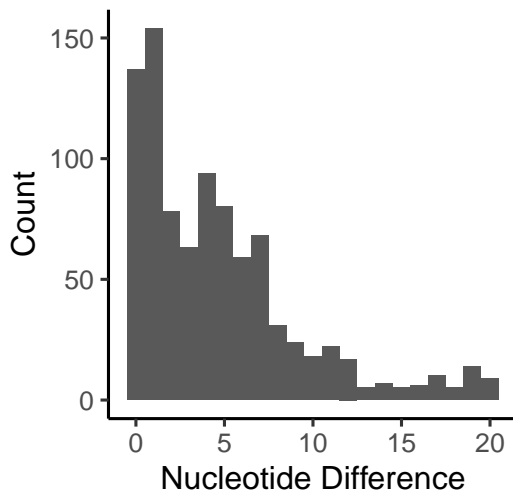
### IGHV3-15\*01\_02

6849 sequences assigned  
335 (4.9%) exact matches, in which:  
190 unique CDR3  
6 unique J



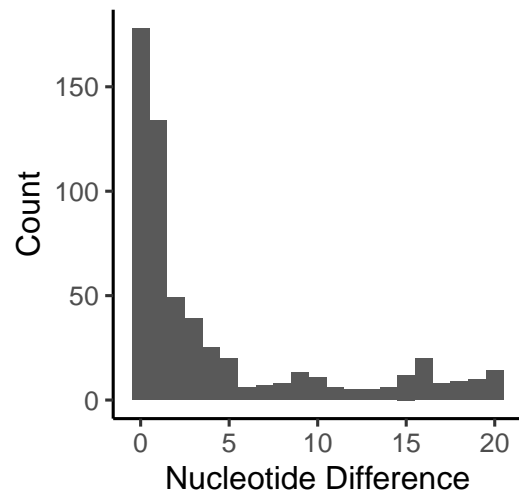
### IGHV3-21\*04

1261 sequences assigned  
137 (10.9%) exact matches, in which:  
120 unique CDR3  
5 unique J



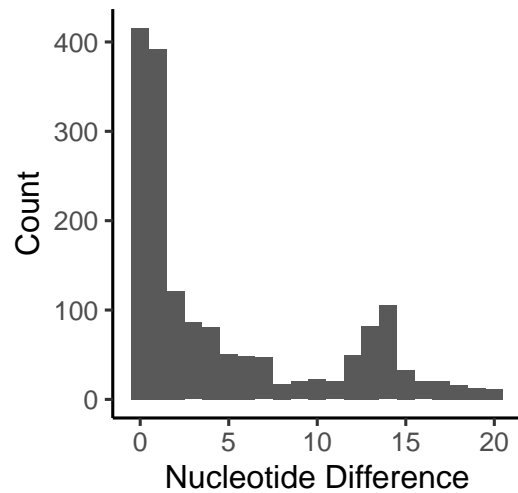
### IGHV3-30\*03

802 sequences assigned  
178 (22.2%) exact matches, in which:  
161 unique CDR3  
6 unique J



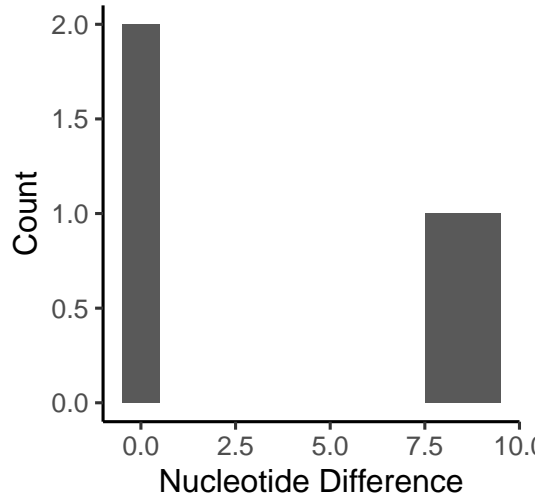
### IGHV3-33\*01

2362 sequences assigned  
416 (17.6%) exact matches, in which:  
269 unique CDR3  
5 unique J



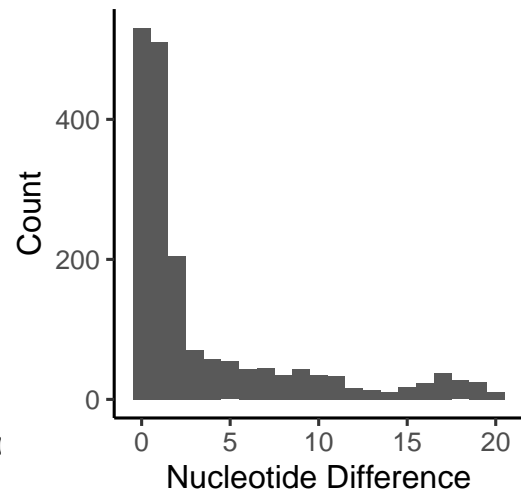
### IGHV3-35\*01

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



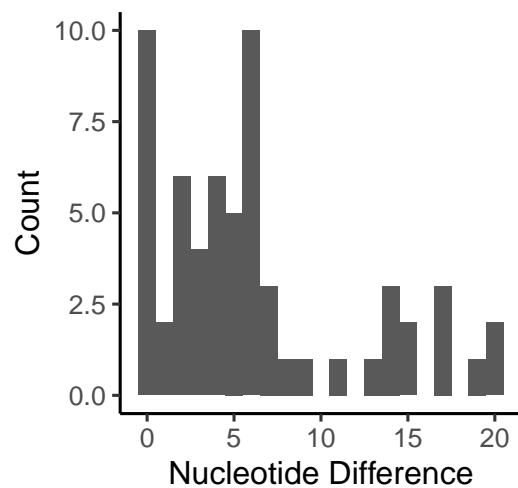
### IGHV3-48\*02

2300 sequences assigned  
531 (23.1%) exact matches, in which:  
322 unique CDR3  
6 unique J



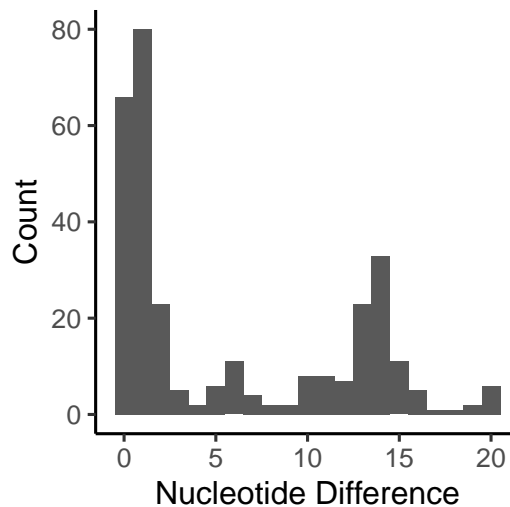
### IGHV3-33\*05

84 sequences assigned  
10 (11.9%) exact matches, in which:  
10 unique CDR3  
4 unique J



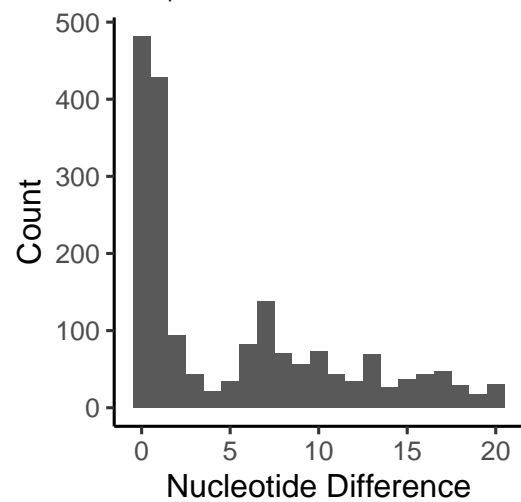
### IGHV3-43\*01

425 sequences assigned  
66 (15.5%) exact matches, in which:  
38 unique CDR3  
4 unique J



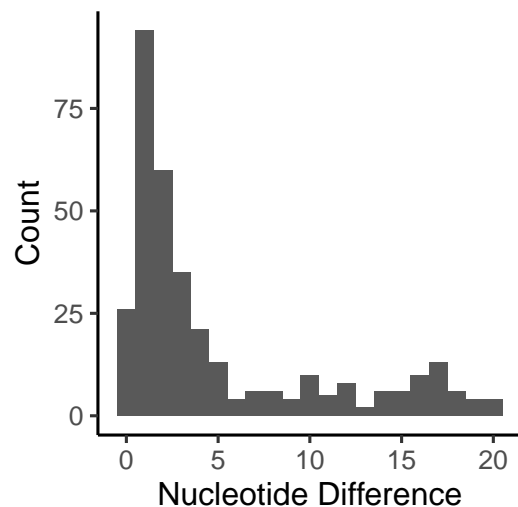
### IGHV3-48\*03

2607 sequences assigned  
482 (18.5%) exact matches, in which:  
287 unique CDR3  
6 unique J



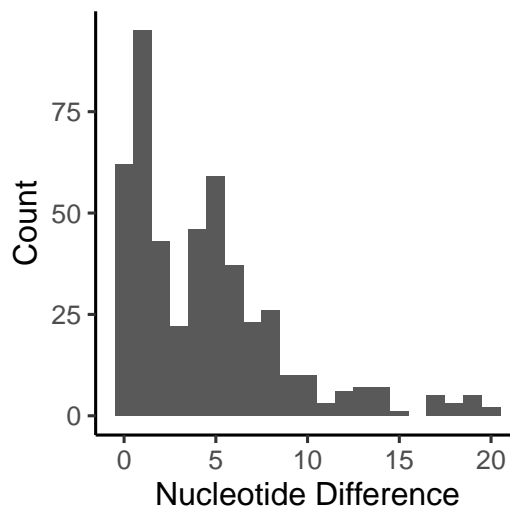
### IGHV3-33\*06

405 sequences assigned  
26 (6.4%) exact matches, in which:  
25 unique CDR3  
5 unique J



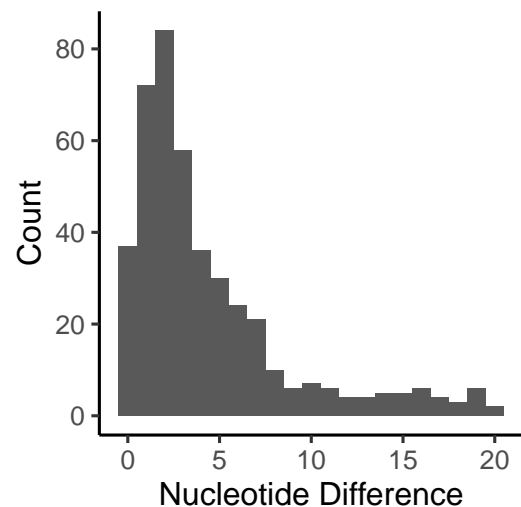
### IGHV3-48\*01

519 sequences assigned  
62 (11.9%) exact matches, in which:  
59 unique CDR3  
5 unique J



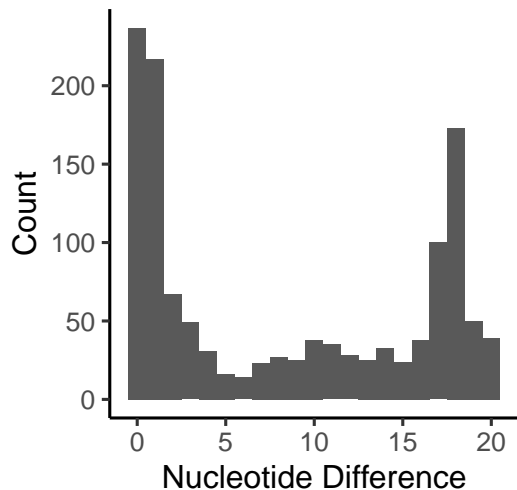
### IGHV3-48\*04

479 sequences assigned  
37 (7.7%) exact matches, in which:  
35 unique CDR3  
4 unique J



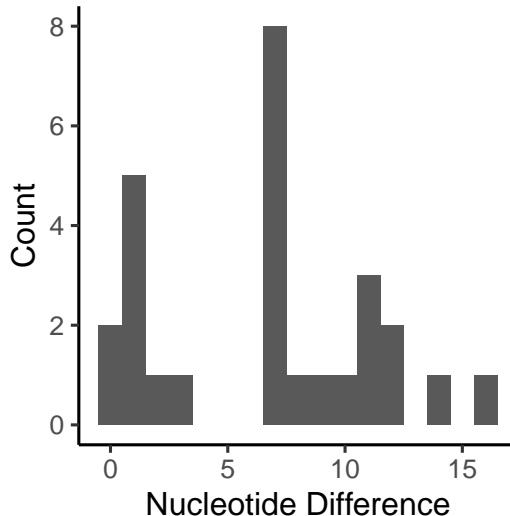
### IGHV3-49\*04

1898 sequences assigned  
237 (12.5%) exact matches, in which:  
133 unique CDR3  
6 unique J



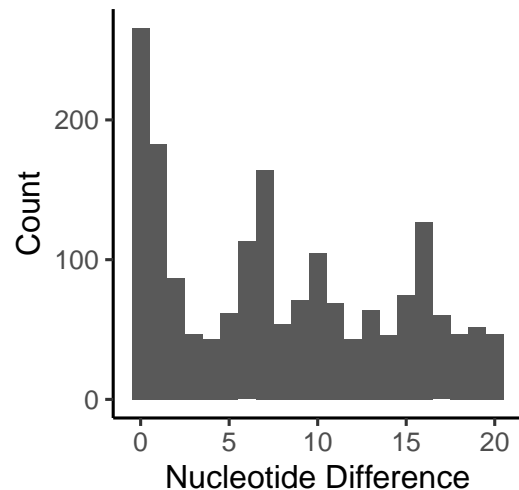
### IGHV3-53\*05

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



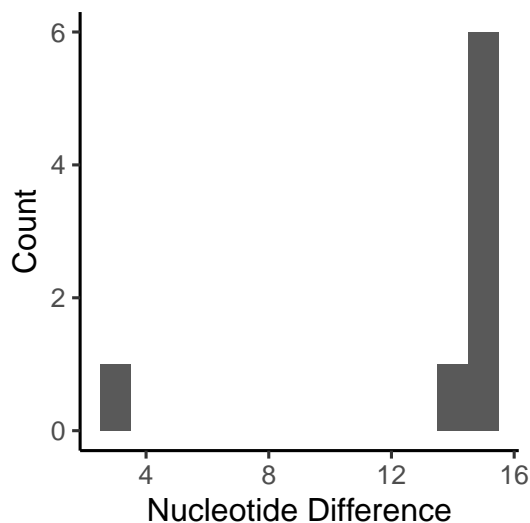
### IGHV3-66\*01

2505 sequences assigned  
266 (10.6%) exact matches, in which:  
184 unique CDR3  
5 unique J



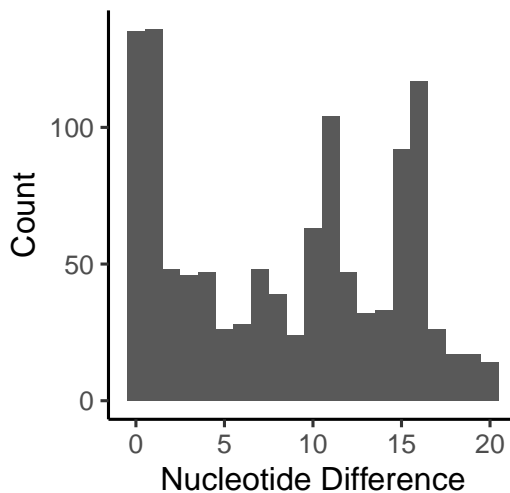
### IGHV3-52\*01\_03

8 sequences assigned  
No exact matches.



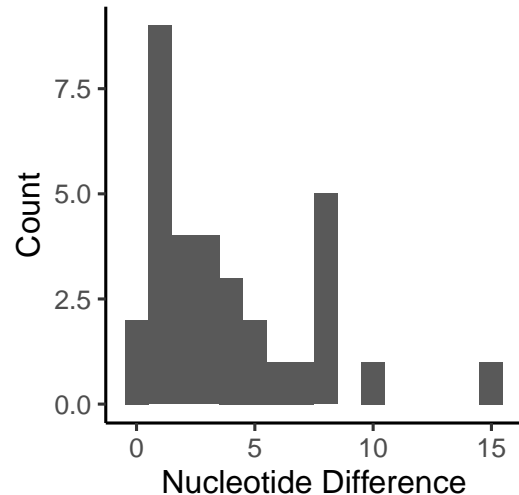
### IGHV3-53\*01\_02

1404 sequences assigned  
135 (9.6%) exact matches, in which:  
91 unique CDR3  
5 unique J



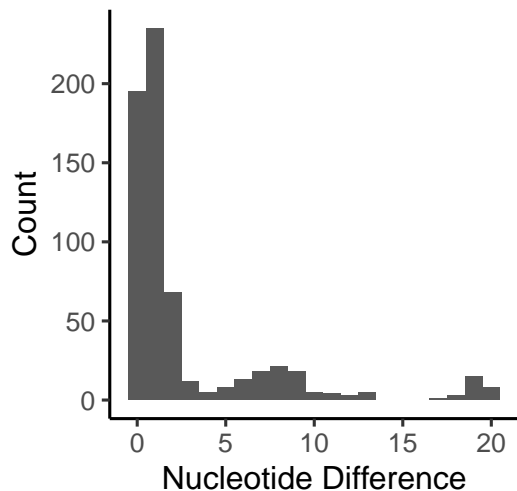
### IGHV3-66\*03

33 sequences assigned  
2 (6.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



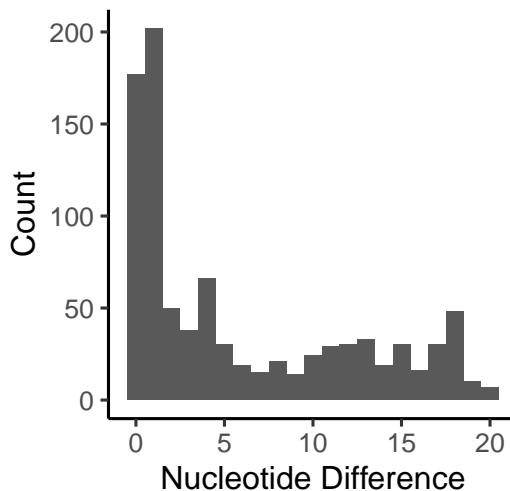
### IGHV3-53\*04

666 sequences assigned  
195 (29.3%) exact matches, in which:  
132 unique CDR3  
5 unique J



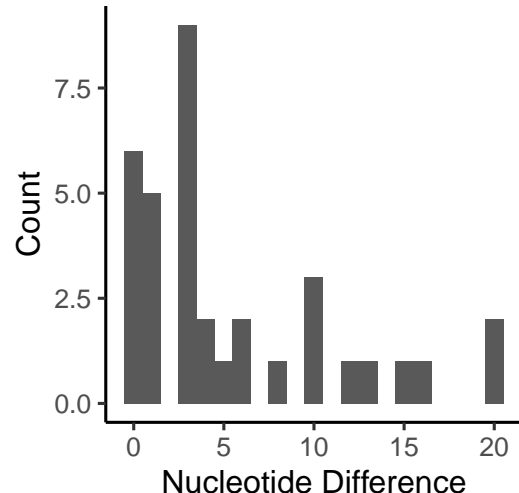
### IGHV3-64\*01

1010 sequences assigned  
177 (17.5%) exact matches, in which:  
112 unique CDR3  
5 unique J



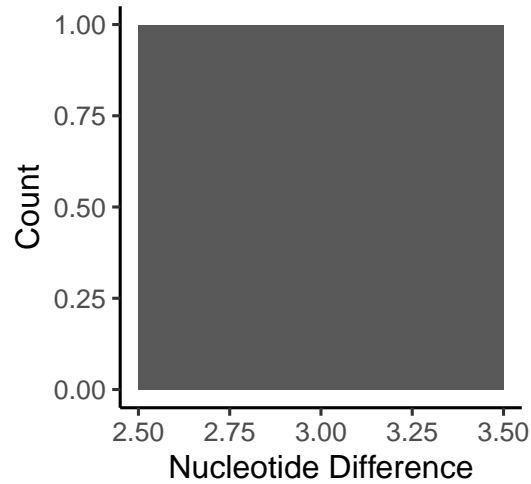
### IGHV3-69-1\*01

313 sequences assigned  
6 (1.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



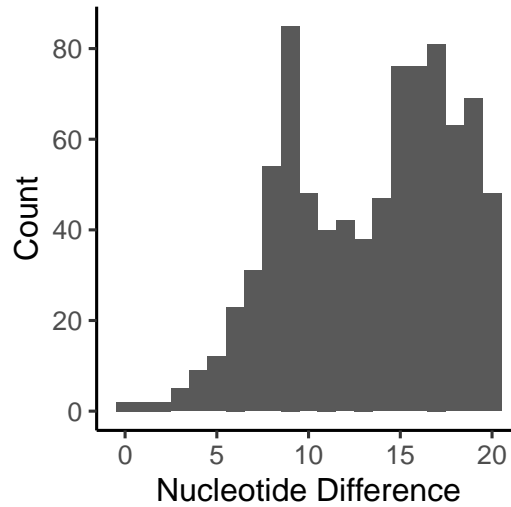
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



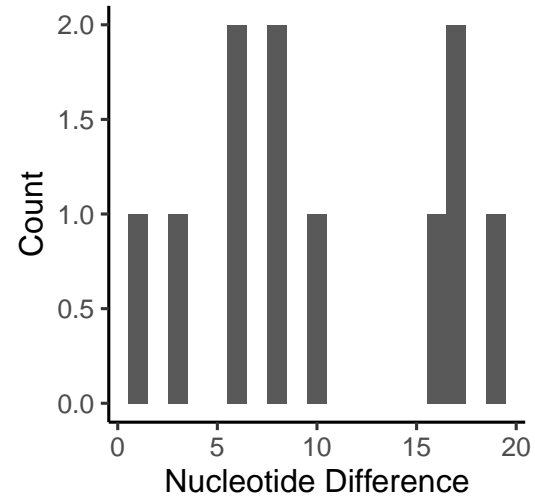
### IGHV3-74\*03

2029 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



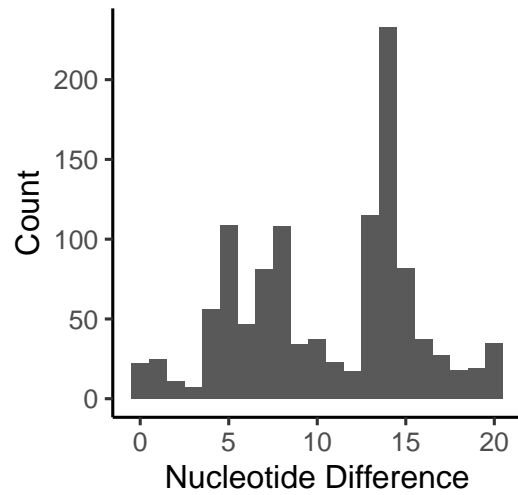
### IGHV3-64D\*06

15 sequences assigned  
No exact matches.



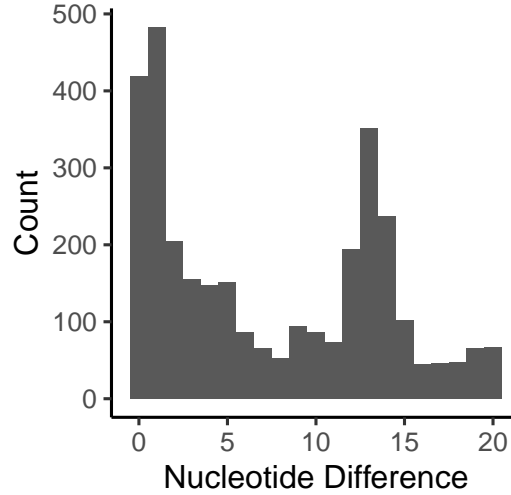
### IGHV3-72\*01

1295 sequences assigned  
22 (1.7%) exact matches, in which:  
17 unique CDR3  
4 unique J



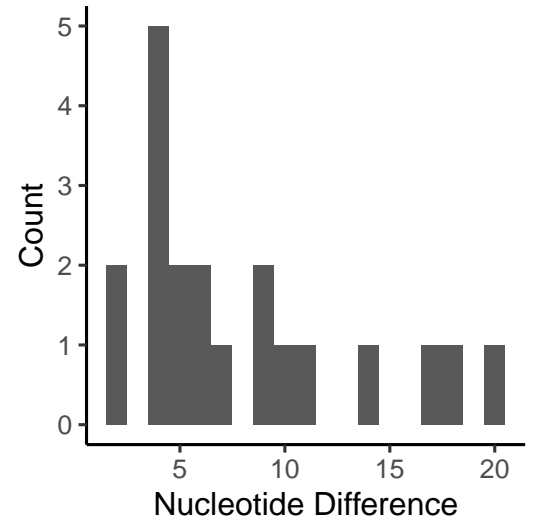
### IGHV3-74\*01\_02

3696 sequences assigned  
419 (11.3%) exact matches, in which:  
276 unique CDR3  
6 unique J



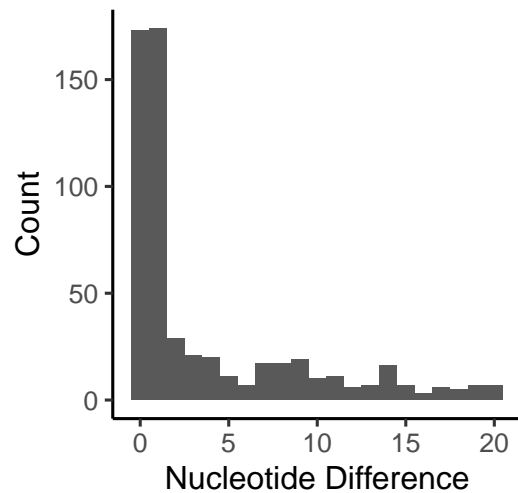
### IGHV3-NL1\*01

32 sequences assigned  
No exact matches.



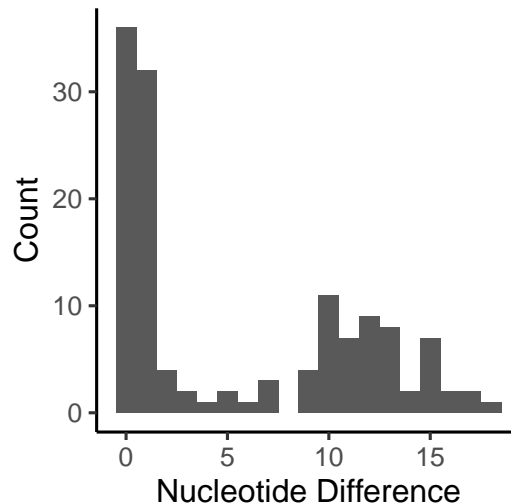
### IGHV3-73\*01\_02

734 sequences assigned  
173 (23.6%) exact matches, in which:  
96 unique CDR3  
5 unique J



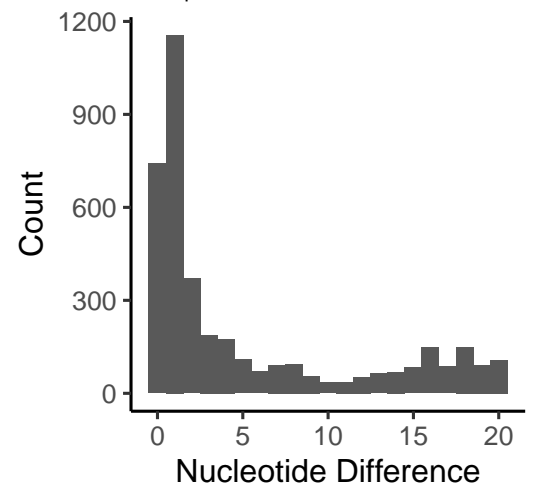
### IGHV3-43D\*04

141 sequences assigned  
36 (25.5%) exact matches, in which:  
21 unique CDR3  
2 unique J



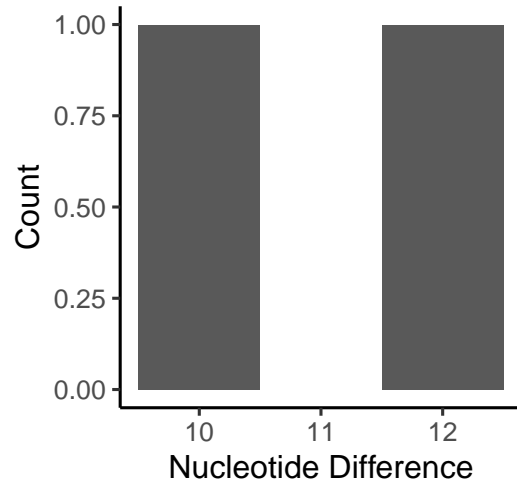
### IGHV4-4\*07

4704 sequences assigned  
741 (15.8%) exact matches, in which:  
592 unique CDR3  
6 unique J



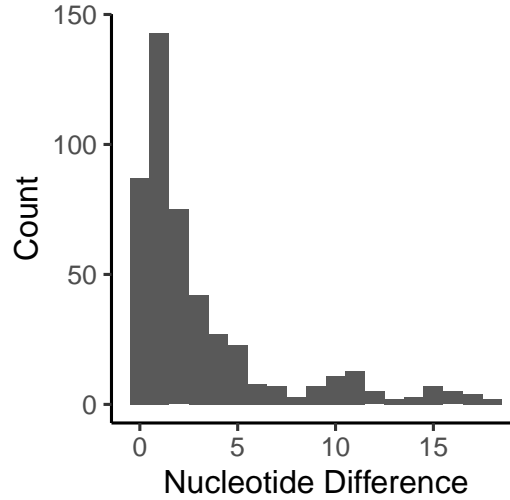
### IGHV4-28\*03

12 sequences assigned  
No exact matches.



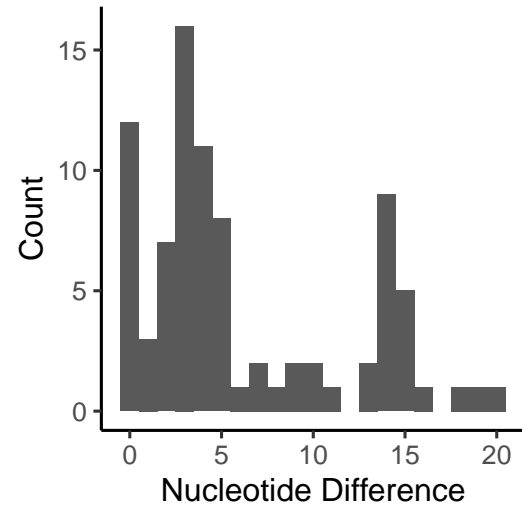
### IGHV4-30-2\*01

492 sequences assigned  
87 (17.7%) exact matches, in which:  
64 unique CDR3  
5 unique J



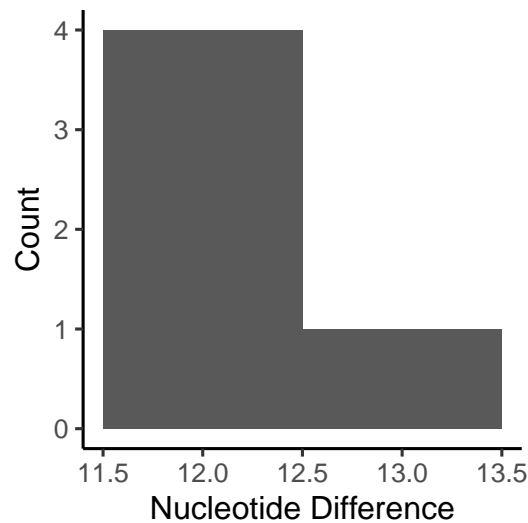
### IGHV4-38-2\*02

91 sequences assigned  
12 (13.2%) exact matches, in which:  
12 unique CDR3  
5 unique J



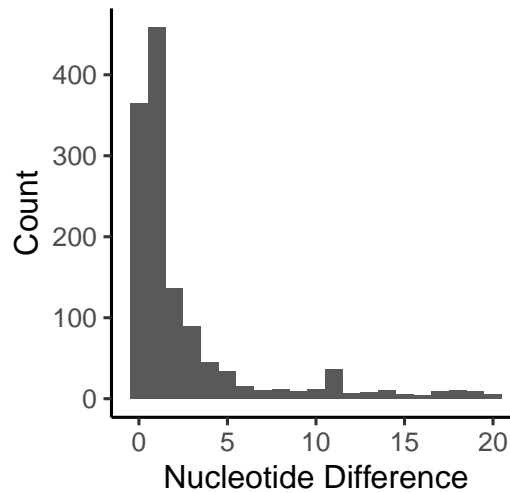
### IGHV4-28\*01\_07

5 sequences assigned  
No exact matches.



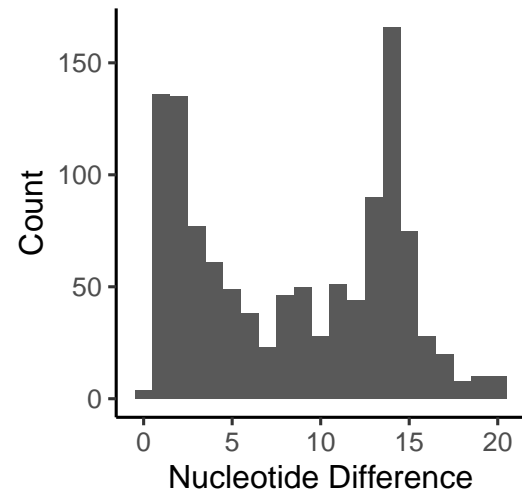
### IGHV4-31\*02

1365 sequences assigned  
365 (26.7%) exact matches, in which:  
289 unique CDR3  
6 unique J



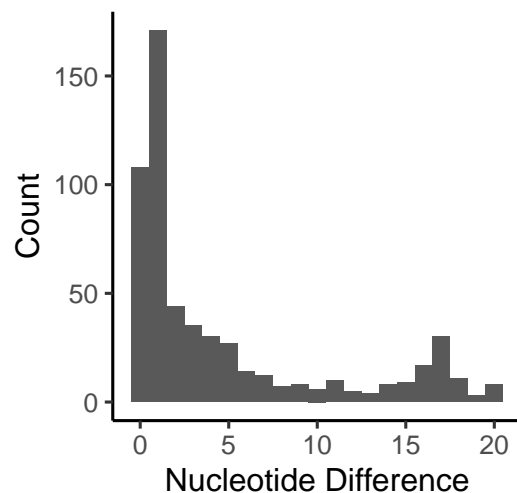
### IGHV4-39\*07

1268 sequences assigned  
4 (0.3%) exact matches, in which:  
4 unique CDR3  
2 unique J



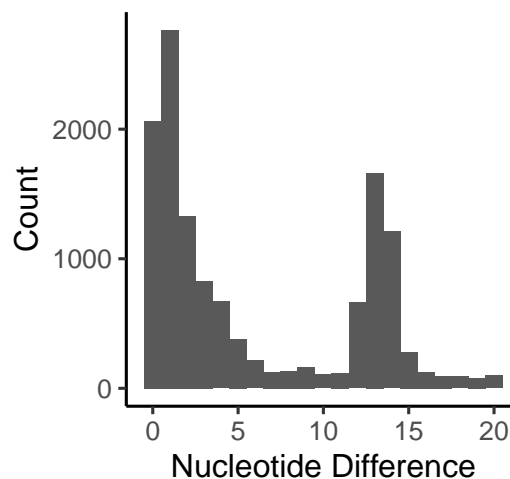
### IGHV4-30-4\*01

595 sequences assigned  
108 (18.2%) exact matches, in which:  
79 unique CDR3  
5 unique J



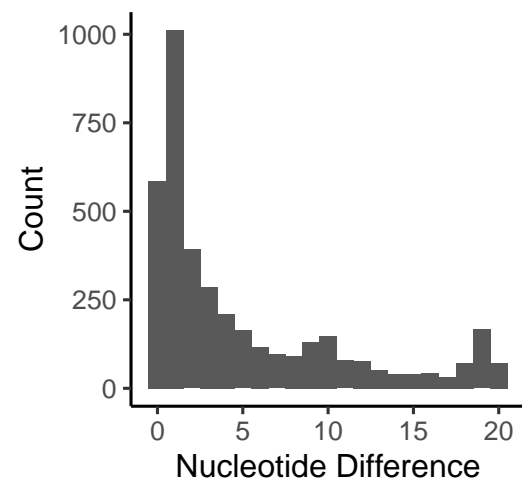
### IGHV4-34\*01\_02

14275 sequences assigned  
2061 (14.4%) exact matches, in which:  
1528 unique CDR3  
6 unique J



### IGHV4-59\*08

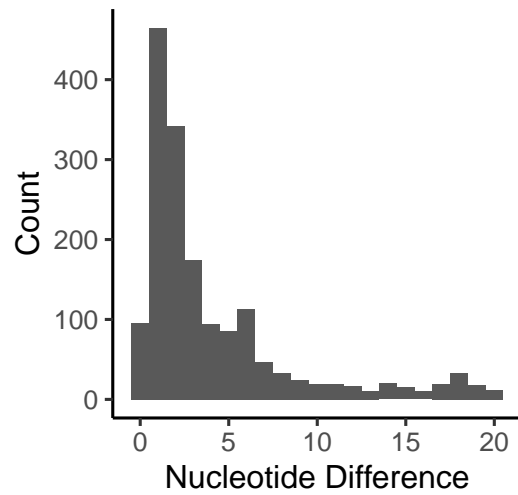
4452 sequences assigned  
586 (13.2%) exact matches, in which:  
453 unique CDR3  
6 unique J





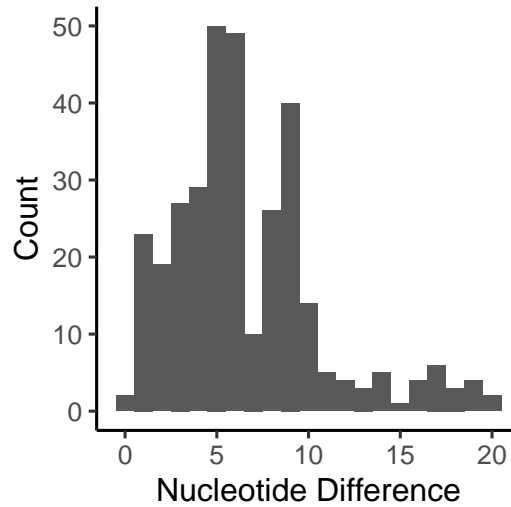
### IGHV4–59\*12

2391 sequences assigned  
96 (4%) exact matches, in which:  
93 unique CDR3  
5 unique J



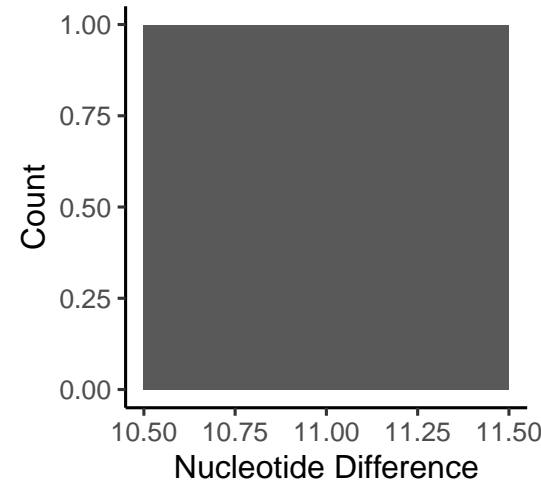
### IGHV4–61\*08

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



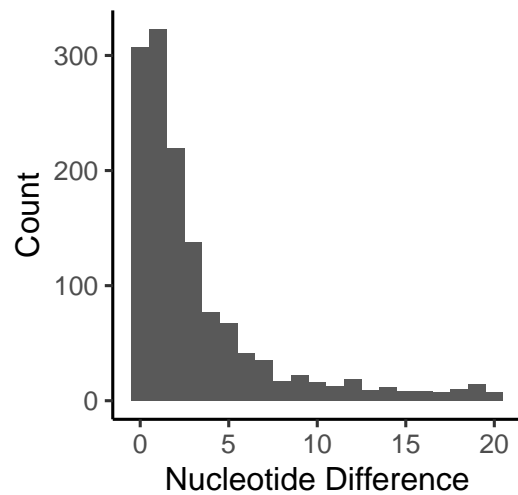
### IGHV1/OR15–9\*01

1 sequences assigned  
No exact matches.



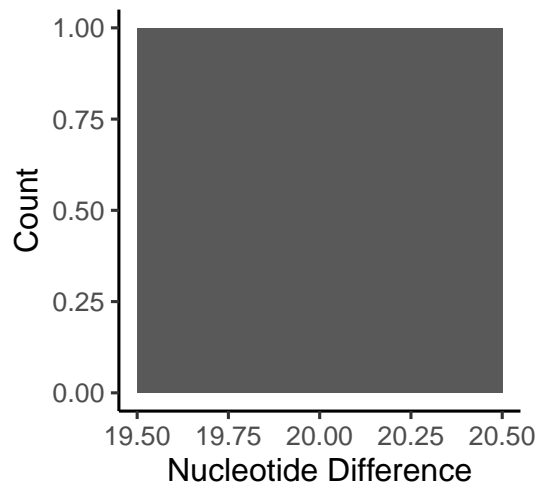
### IGHV4–61\*01

1401 sequences assigned  
307 (21.9%) exact matches, in which:  
265 unique CDR3  
5 unique J



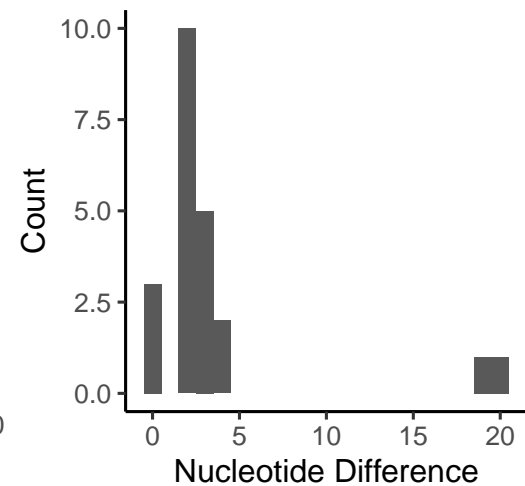
### IGHV1/OR15–2\*02\_03

1 sequences assigned  
No exact matches.



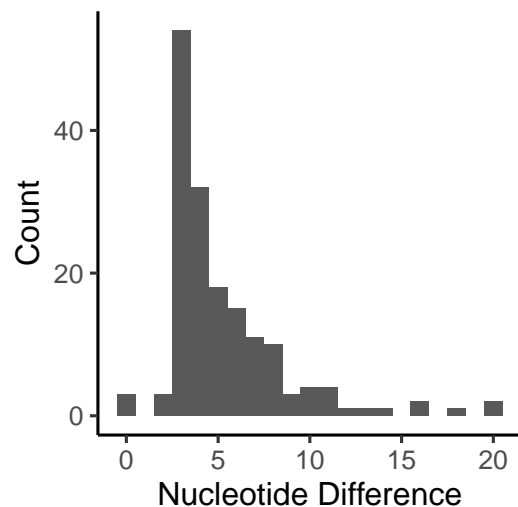
### IGHV5–10–1\*01\_03

23 sequences assigned  
3 (13%) exact matches, in which:  
3 unique CDR3  
2 unique J



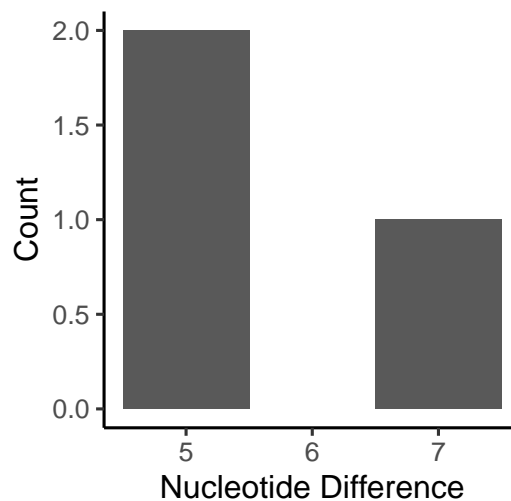
### IGHV4–61\*02

171 sequences assigned  
3 (1.8%) exact matches, in which:  
3 unique CDR3  
2 unique J



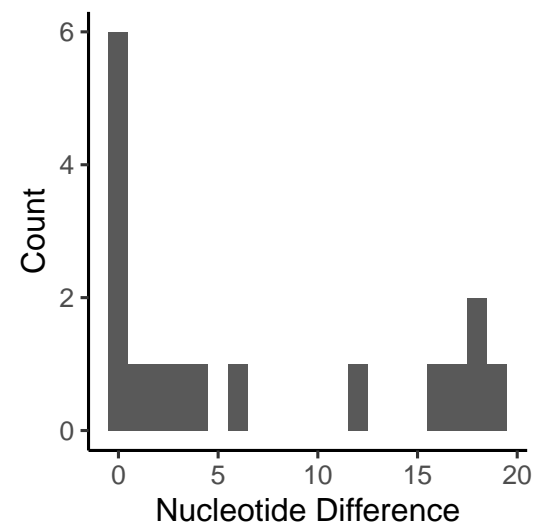
### IGHV4/OR15–8\*01

3 sequences assigned  
No exact matches.



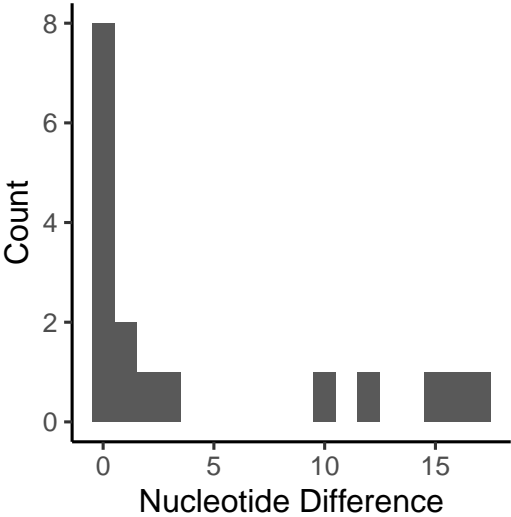
### IGHV5–51\*04

18 sequences assigned  
6 (33.3%) exact matches, in which:  
6 unique CDR3  
2 unique J



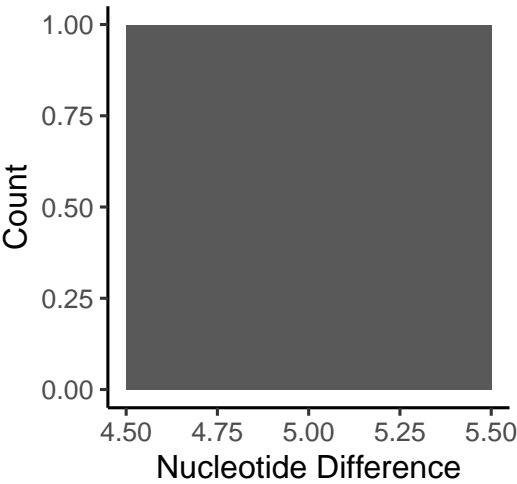
IGHV5–51\*06

19 sequences assigned  
8 (42.1%) exact matches, in which:  
8 unique CDR3  
4 unique J



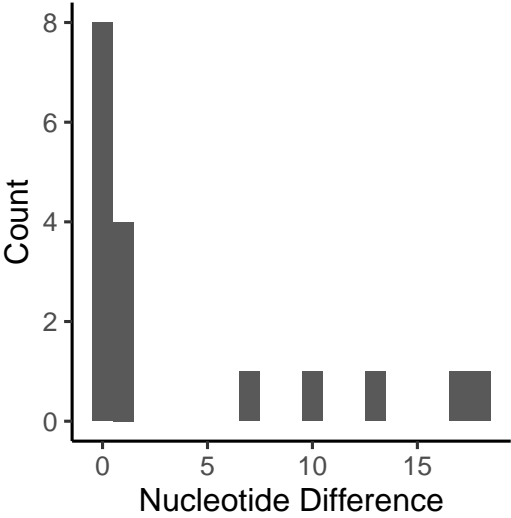
IGHV3/OR16–9\*01

1 sequences assigned  
No exact matches.



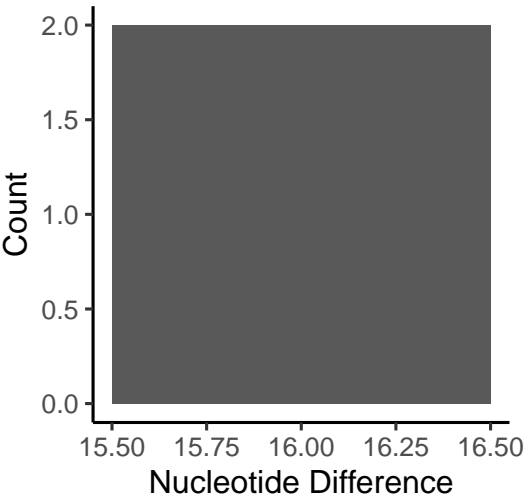
IGHV5–51\*07

20 sequences assigned  
8 (40%) exact matches, in which:  
8 unique CDR3  
3 unique J



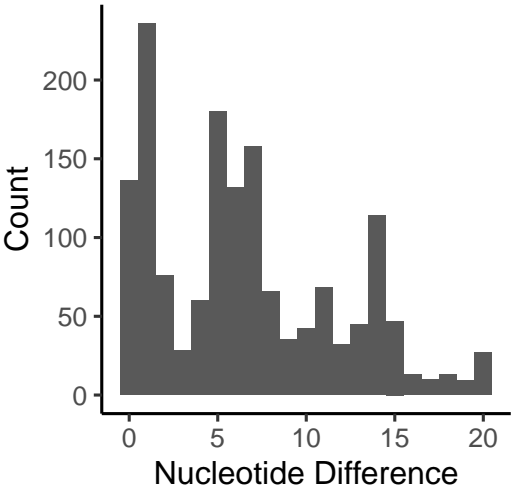
IGHV3/OR16–10\*01\_03

2 sequences assigned  
No exact matches.



IGHV6–1\*01\_02

1604 sequences assigned  
136 (8.5%) exact matches, in which:  
111 unique CDR3  
4 unique J





Warning – no inferred sequences found.