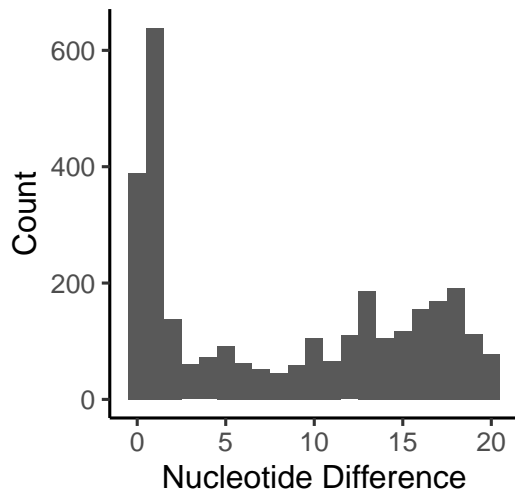


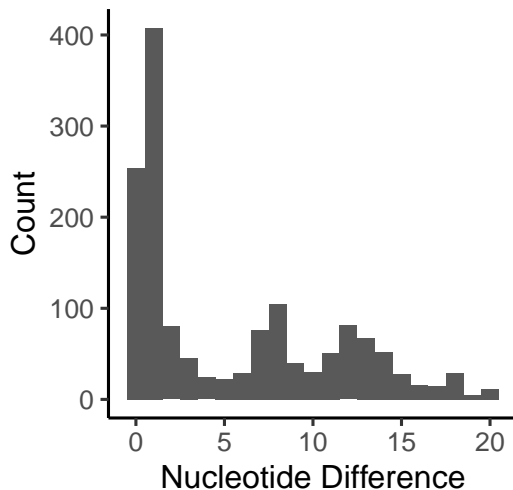
### IGHV1-2\*02

4264 sequences assigned  
389 (9.1%) exact matches, in which:  
307 unique CDR3  
6 unique J



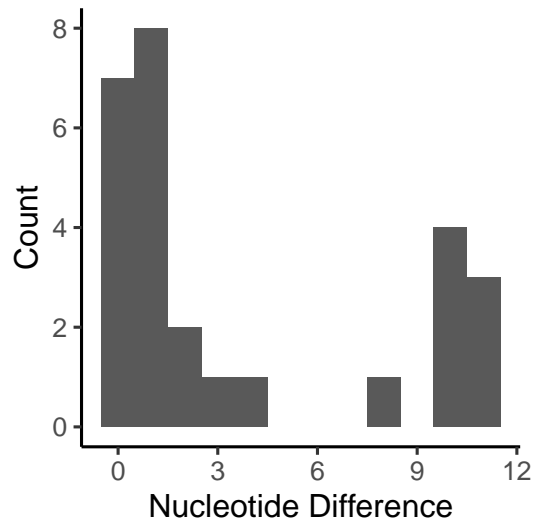
### IGHV1-8\*01

1528 sequences assigned  
254 (16.6%) exact matches, in which:  
207 unique CDR3  
6 unique J



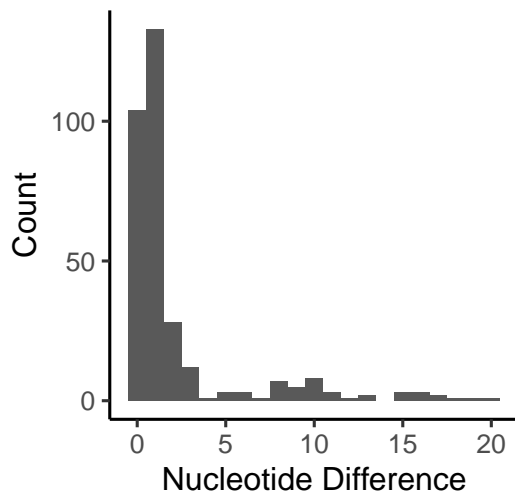
### IGHV1-45\*02

103 sequences assigned  
7 (6.8%) exact matches, in which:  
6 unique CDR3  
3 unique J



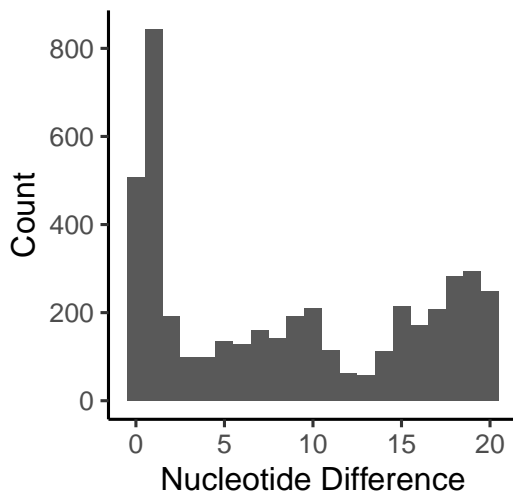
### IGHV1-2\*04

362 sequences assigned  
104 (28.7%) exact matches, in which:  
87 unique CDR3  
4 unique J



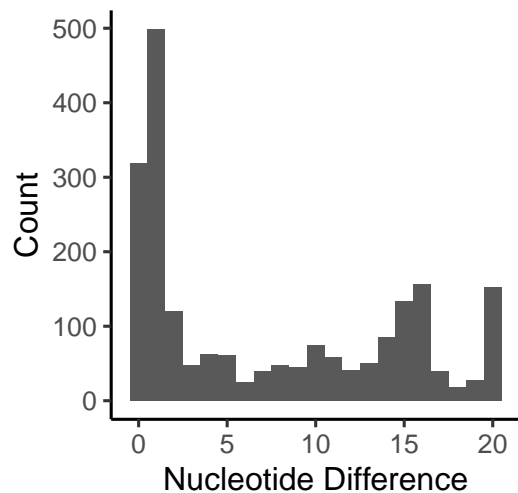
### IGHV1-18\*04

5670 sequences assigned  
508 (9%) exact matches, in which:  
379 unique CDR3  
5 unique J



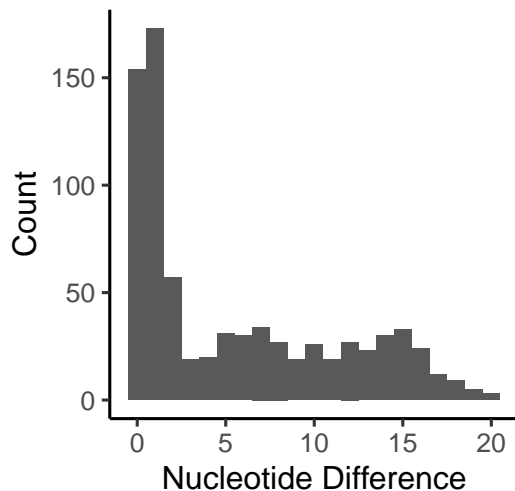
### IGHV1-46\*01

2833 sequences assigned  
319 (11.3%) exact matches, in which:  
239 unique CDR3  
6 unique J



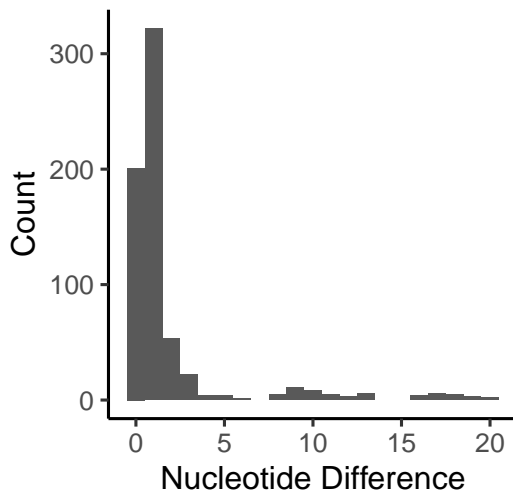
### IGHV1-3\*01\_05

825 sequences assigned  
154 (18.7%) exact matches, in which:  
123 unique CDR3  
6 unique J



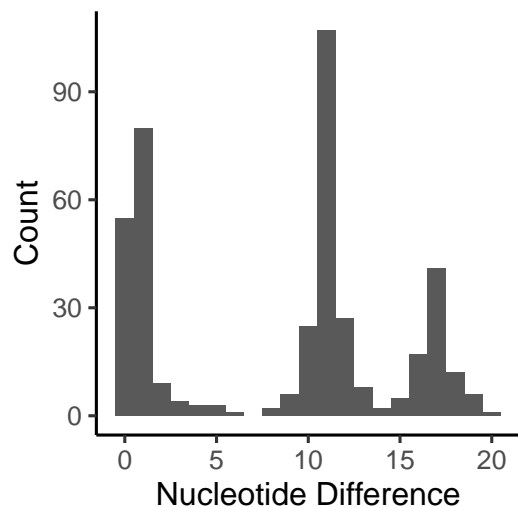
### IGHV1-24\*01

696 sequences assigned  
201 (28.9%) exact matches, in which:  
161 unique CDR3  
6 unique J



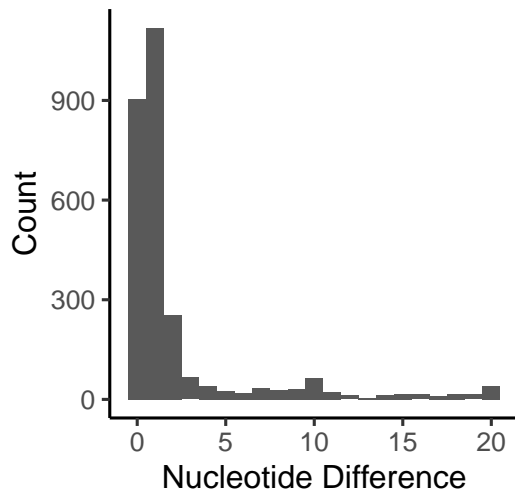
### IGHV1-58\*01\_03

501 sequences assigned  
55 (11%) exact matches, in which:  
39 unique CDR3  
4 unique J



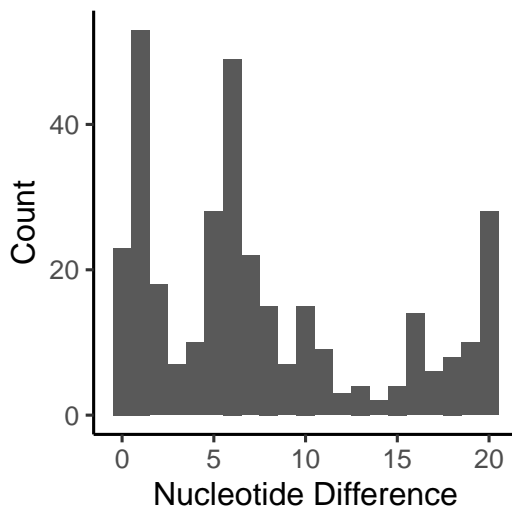
### IGHV1-69\*01\_12\_13

2941 sequences assigned  
904 (30.7%) exact matches, in which:  
781 unique CDR3  
6 unique J



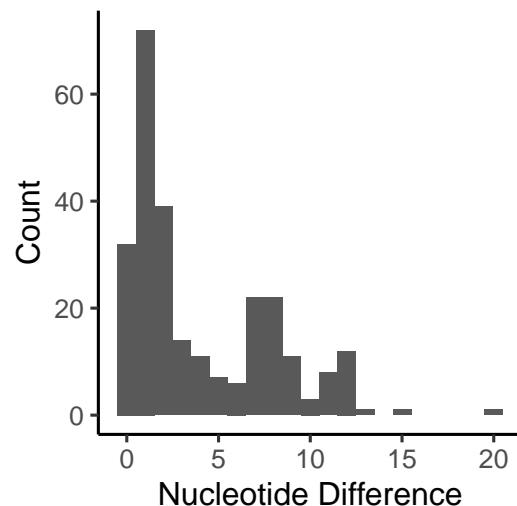
### IGHV2-5\*02

514 sequences assigned  
23 (4.5%) exact matches, in which:  
17 unique CDR3  
4 unique J



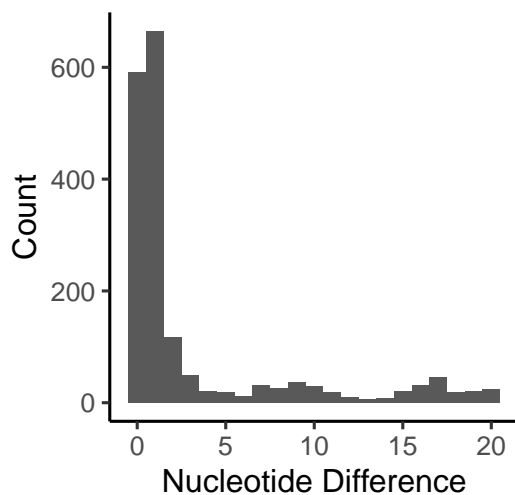
### IGHV2-70\*11\_15

265 sequences assigned  
32 (12.1%) exact matches, in which:  
27 unique CDR3  
5 unique J



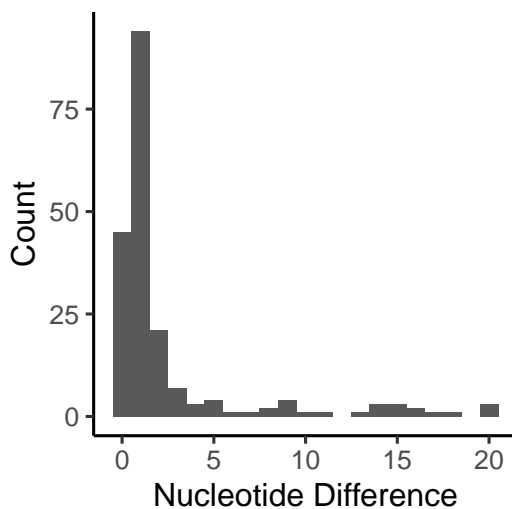
### IGHV1-69\*06\_14

2944 sequences assigned  
591 (20.1%) exact matches, in which:  
517 unique CDR3  
6 unique J



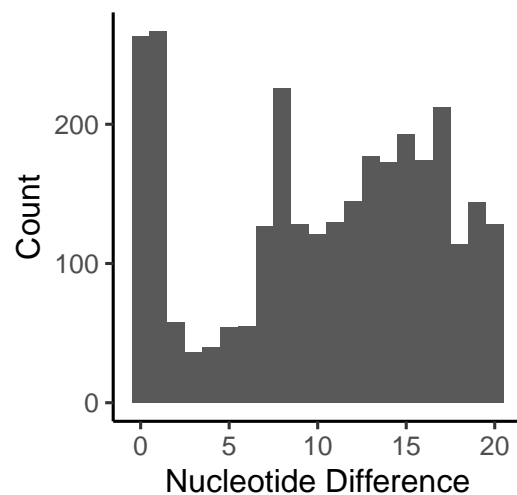
### IGHV2-26\*01

276 sequences assigned  
45 (16.3%) exact matches, in which:  
35 unique CDR3  
5 unique J



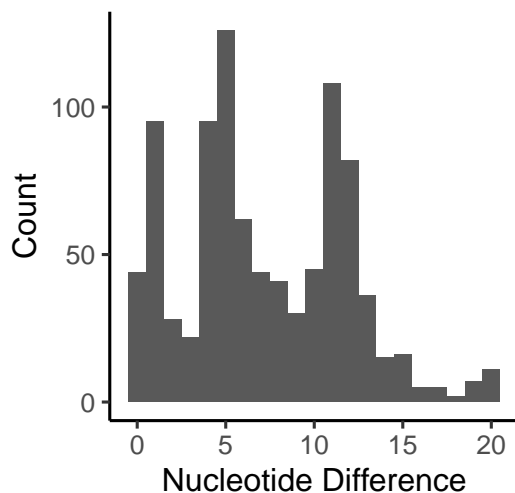
### IGHV3-7\*01

3674 sequences assigned  
263 (7.2%) exact matches, in which:  
160 unique CDR3  
5 unique J



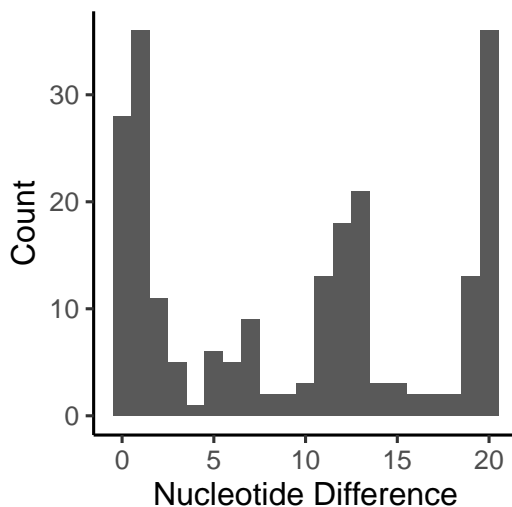
### IGHV2-5\*01

953 sequences assigned  
44 (4.6%) exact matches, in which:  
34 unique CDR3  
4 unique J



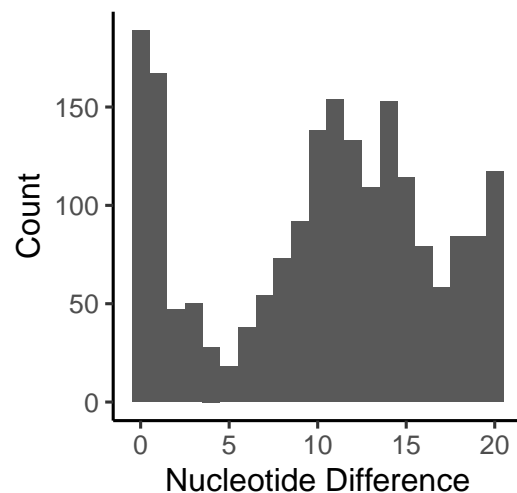
### IGHV2-70\*01

286 sequences assigned  
28 (9.8%) exact matches, in which:  
21 unique CDR3  
4 unique J



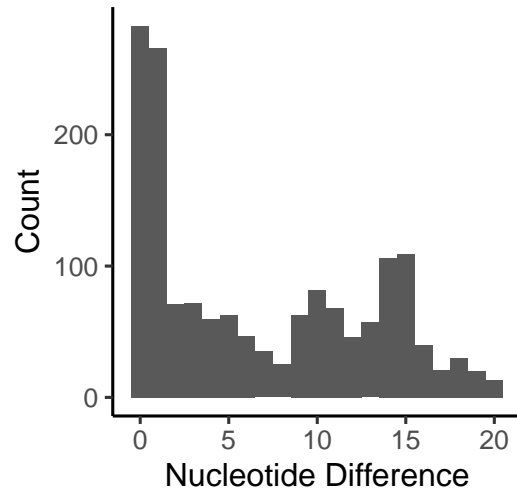
### IGHV3-7\*03

2533 sequences assigned  
189 (7.5%) exact matches, in which:  
114 unique CDR3  
6 unique J



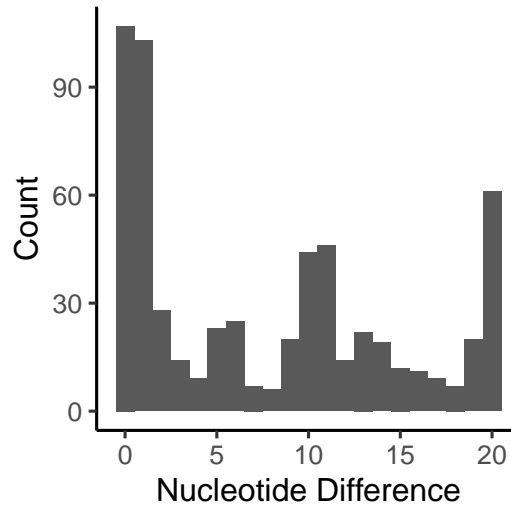
### IGHV3-9\*01

1826 sequences assigned  
283 (15.5%) exact matches, in which:  
161 unique CDR3  
6 unique J



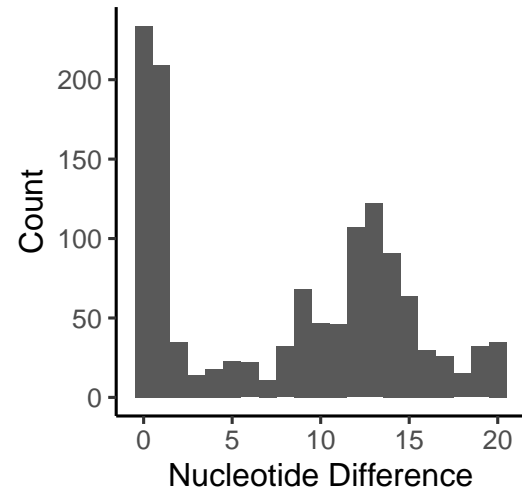
### IGHV3-11\*06

741 sequences assigned  
107 (14.4%) exact matches, in which:  
63 unique CDR3  
5 unique J



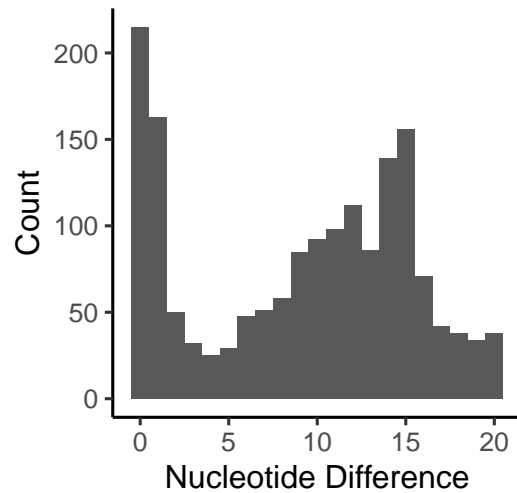
### IGHV3-15\*01\_02

1766 sequences assigned  
234 (13.3%) exact matches, in which:  
129 unique CDR3  
6 unique J



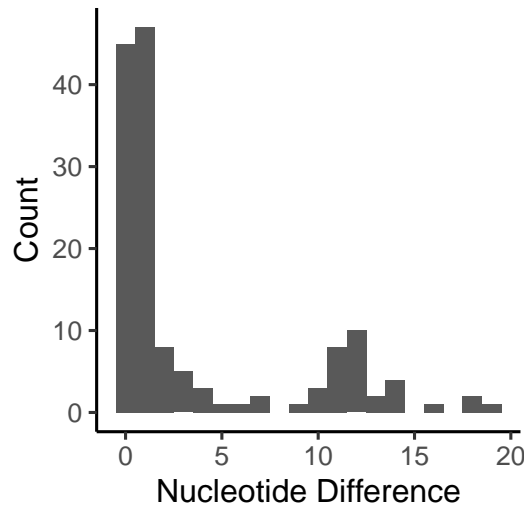
### IGHV3-11\*01

2571 sequences assigned  
215 (8.4%) exact matches, in which:  
126 unique CDR3  
6 unique J



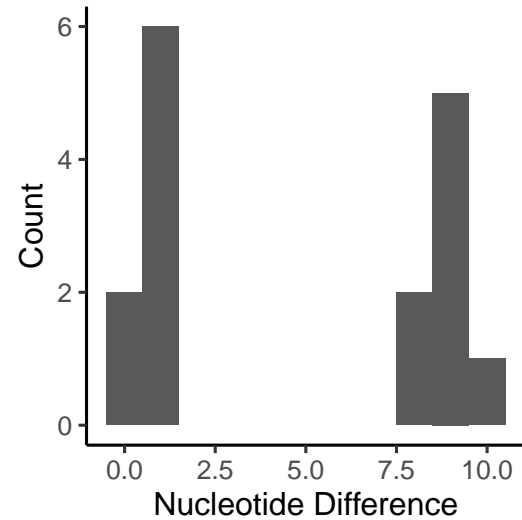
### IGHV3-13\*01

148 sequences assigned  
45 (30.4%) exact matches, in which:  
26 unique CDR3  
5 unique J



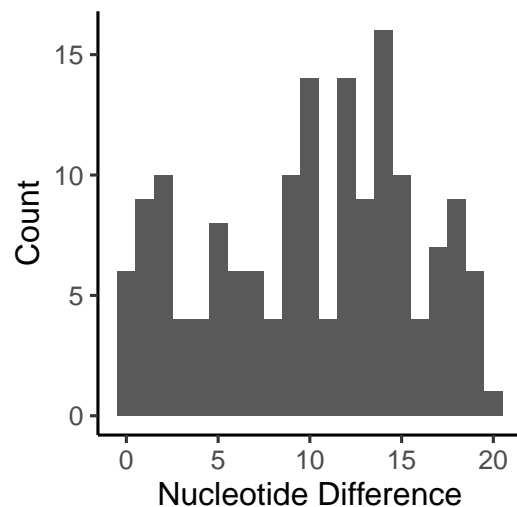
### IGHV3-20\*01\_02

16 sequences assigned  
2 (12.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



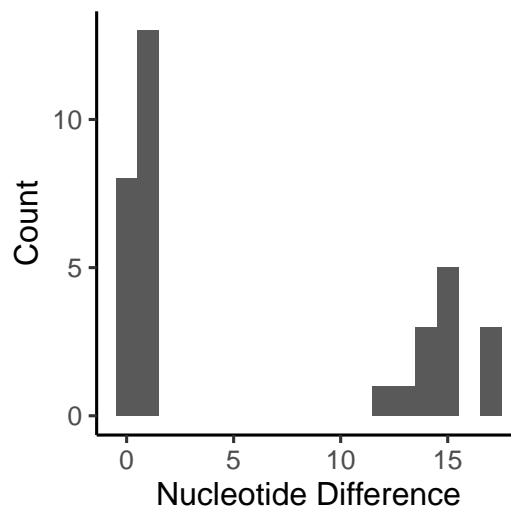
### IGHV3-11\*04

186 sequences assigned  
6 (3.2%) exact matches, in which:  
6 unique CDR3  
4 unique J



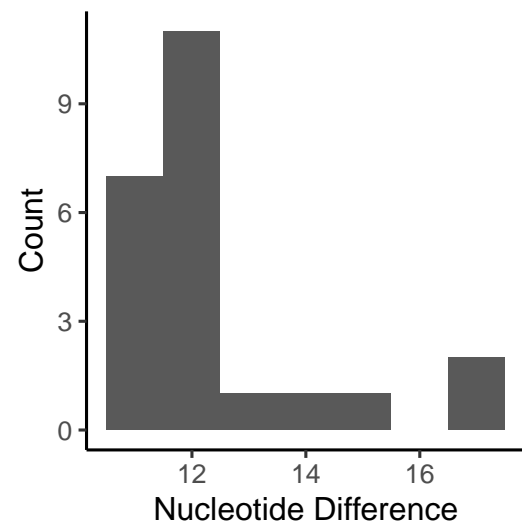
### IGHV3-13\*05

37 sequences assigned  
8 (21.6%) exact matches, in which:  
5 unique CDR3  
3 unique J



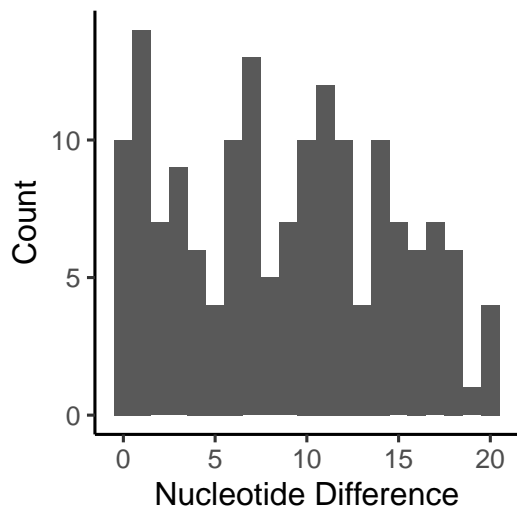
### IGHV3-20\*03\_04

26 sequences assigned  
No exact matches.



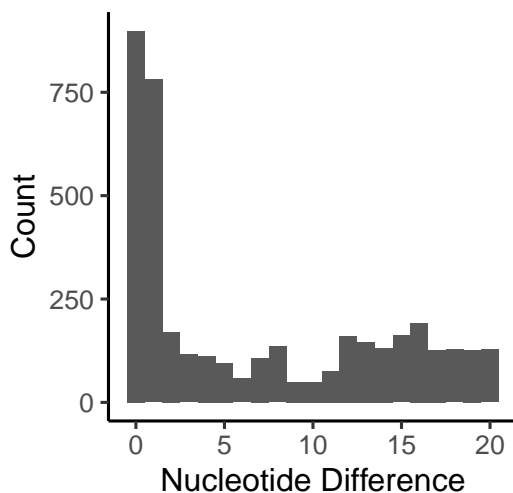
### IGHV3-21\*04

225 sequences assigned  
10 (4.4%) exact matches, in which:  
10 unique CDR3  
5 unique J



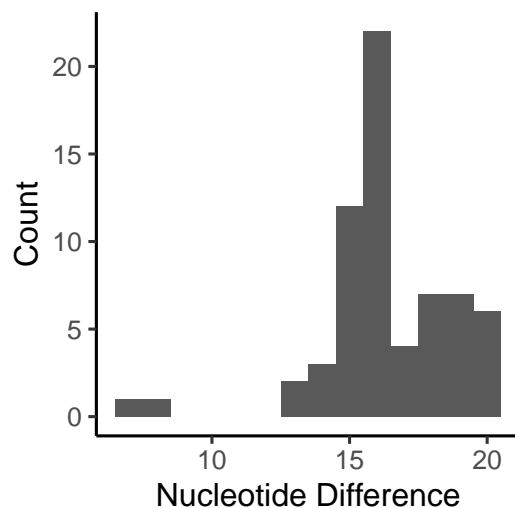
### IGHV3-30-3\*01

5069 sequences assigned  
899 (17.7%) exact matches, in which:  
526 unique CDR3  
6 unique J



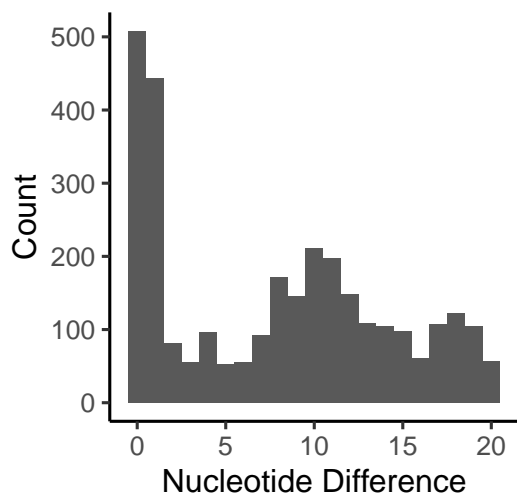
### IGHV3-33\*05

82 sequences assigned  
No exact matches.



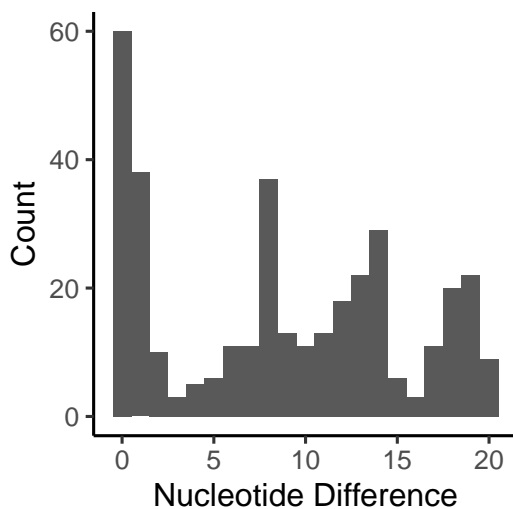
### IGHV3-21\*01\_02

3563 sequences assigned  
508 (14.3%) exact matches, in which:  
297 unique CDR3  
6 unique J



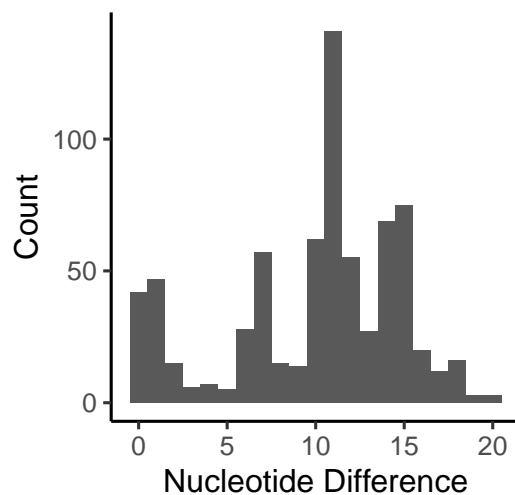
### IGHV3-30\*03

485 sequences assigned  
60 (12.4%) exact matches, in which:  
54 unique CDR3  
4 unique J



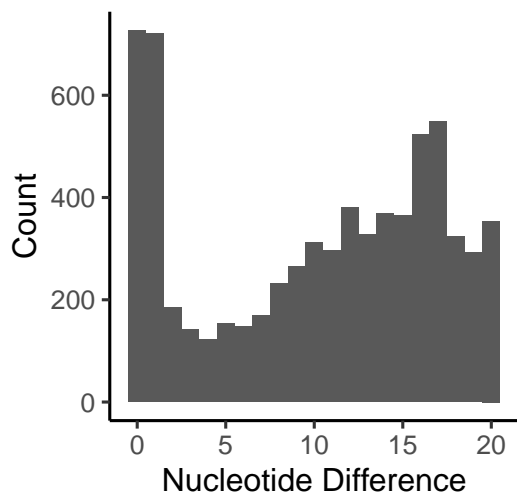
### IGHV3-43\*01

866 sequences assigned  
42 (4.8%) exact matches, in which:  
24 unique CDR3  
4 unique J



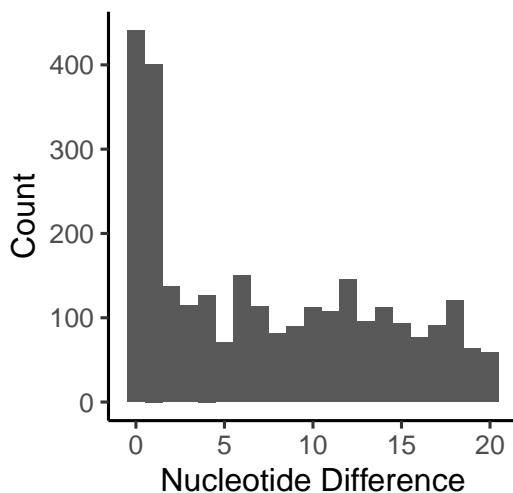
### IGHV3-23\*01\_04

11908 sequences assigned  
727 (6.1%) exact matches, in which:  
405 unique CDR3  
6 unique J



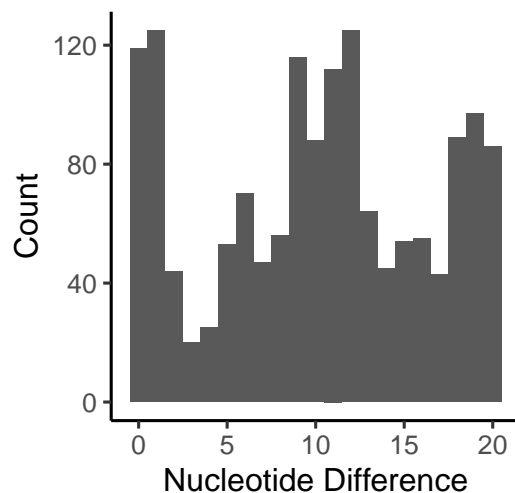
### IGHV3-33\*01

3608 sequences assigned  
441 (12.2%) exact matches, in which:  
257 unique CDR3  
6 unique J



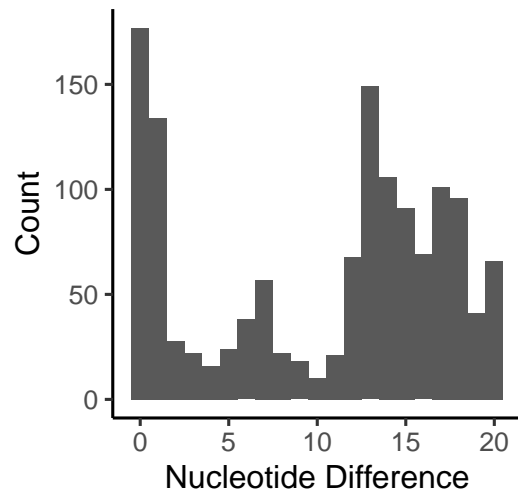
### IGHV3-48\*01

1808 sequences assigned  
119 (6.6%) exact matches, in which:  
66 unique CDR3  
6 unique J



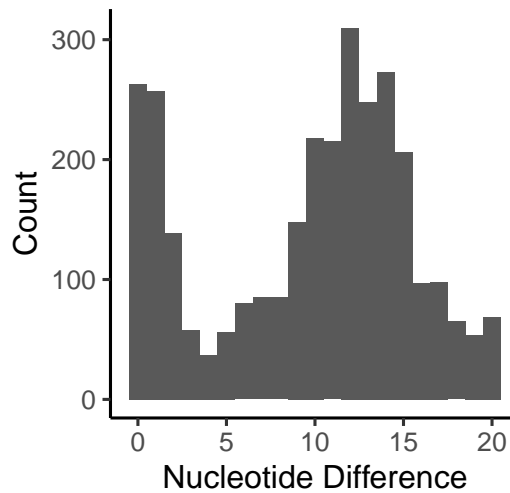
### IGHV3-48\*02

1866 sequences assigned  
177 (9.5%) exact matches, in which:  
98 unique CDR3  
4 unique J



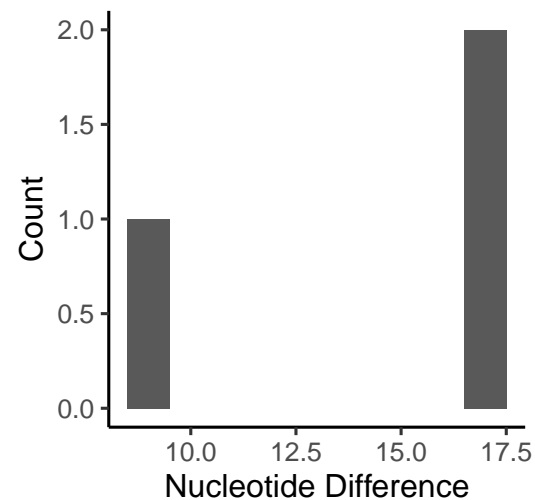
### IGHV3-53\*01\_02

3708 sequences assigned  
263 (7.1%) exact matches, in which:  
161 unique CDR3  
6 unique J



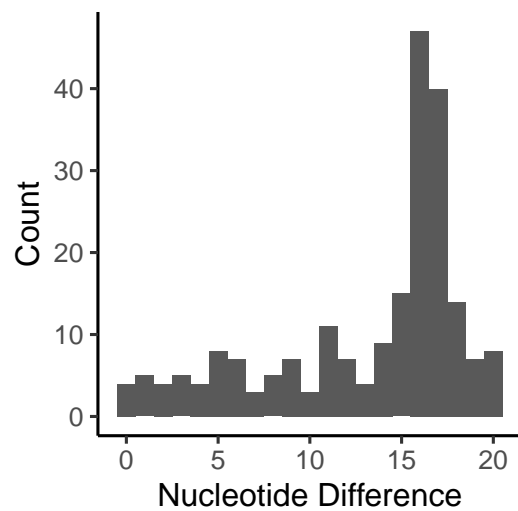
### IGHV3-66\*01

3 sequences assigned  
No exact matches.



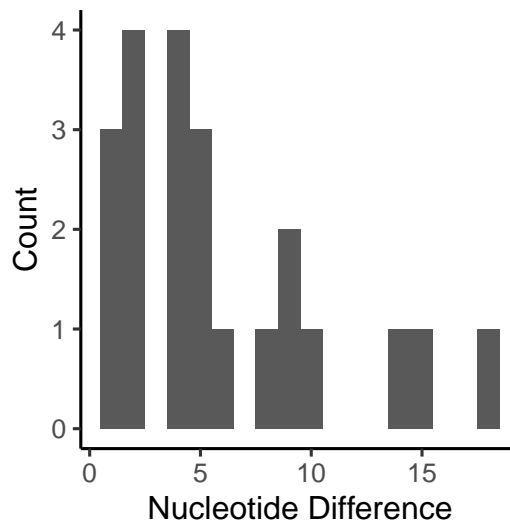
### IGHV3-48\*04

263 sequences assigned  
4 (1.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



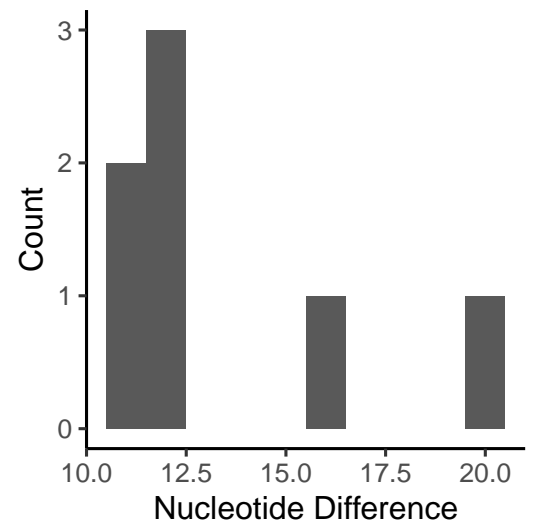
### IGHV3-64\*04

27 sequences assigned  
No exact matches.



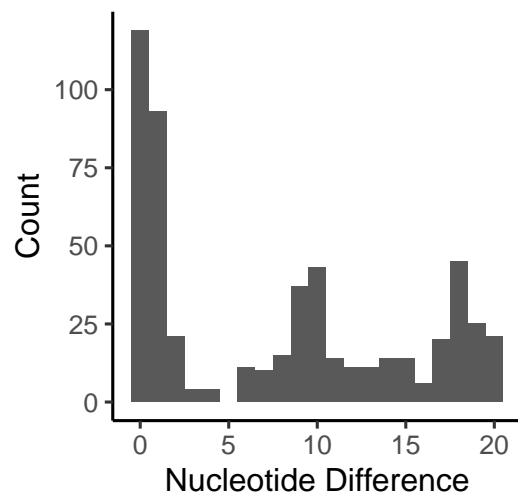
### IGHV3-66\*02

10 sequences assigned  
No exact matches.



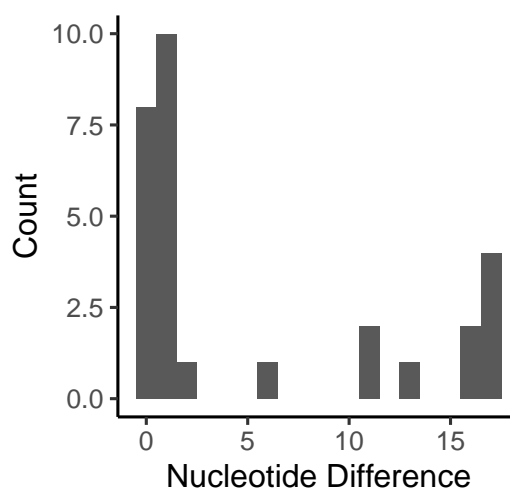
### IGHV3-49\*03\_05

640 sequences assigned  
119 (18.6%) exact matches, in which:  
63 unique CDR3  
5 unique J



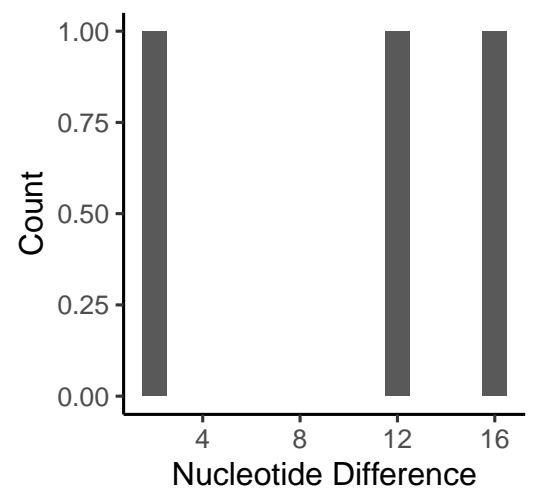
### IGHV3-64\*02\_07

29 sequences assigned  
8 (27.6%) exact matches, in which:  
6 unique CDR3  
2 unique J



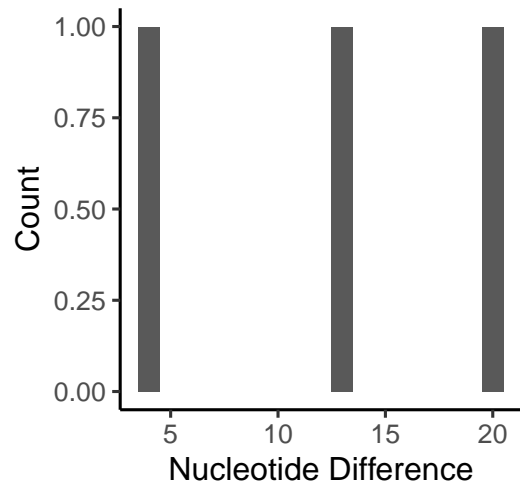
### IGHV3-66\*03

6 sequences assigned  
No exact matches.



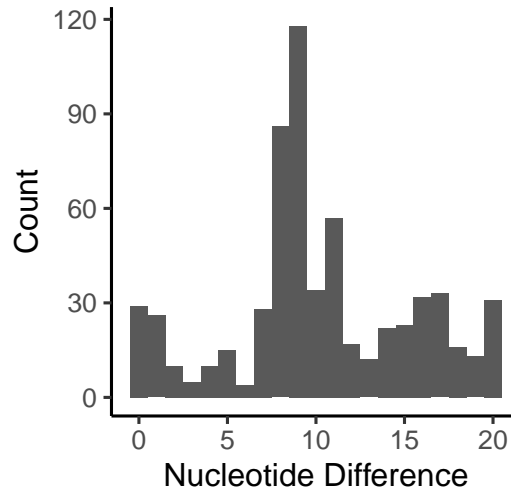
### IGHV3-66\*04

5 sequences assigned  
No exact matches.



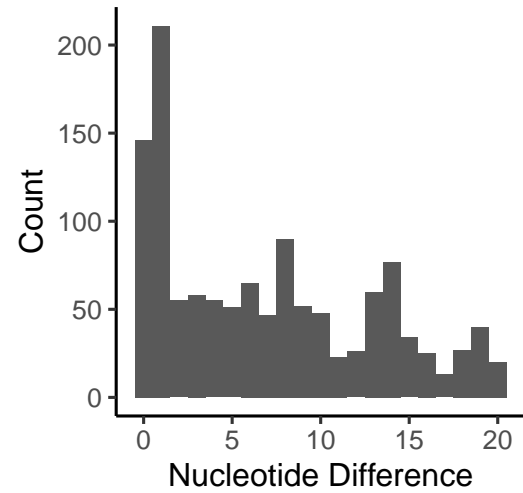
### IGHV3-72\*01

690 sequences assigned  
29 (4.2%) exact matches, in which:  
19 unique CDR3  
3 unique J



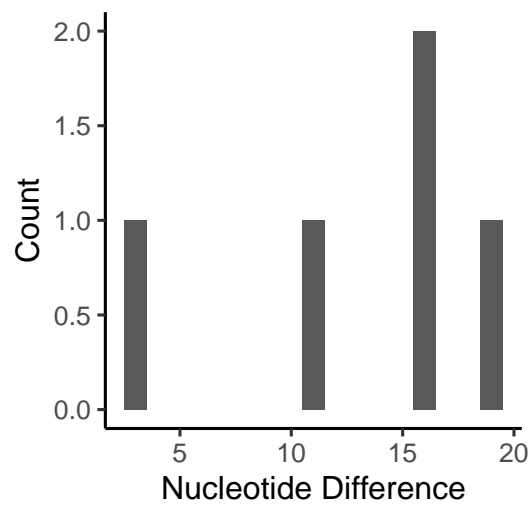
### IGHV3-74\*01\_02

1584 sequences assigned  
146 (9.2%) exact matches, in which:  
83 unique CDR3  
5 unique J



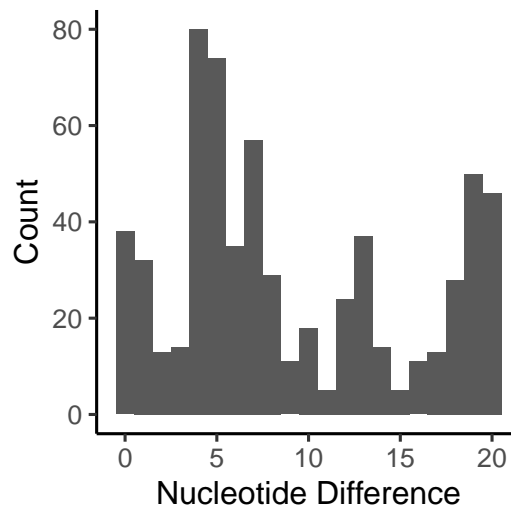
### IGHV3-69-1\*01

9 sequences assigned  
No exact matches.



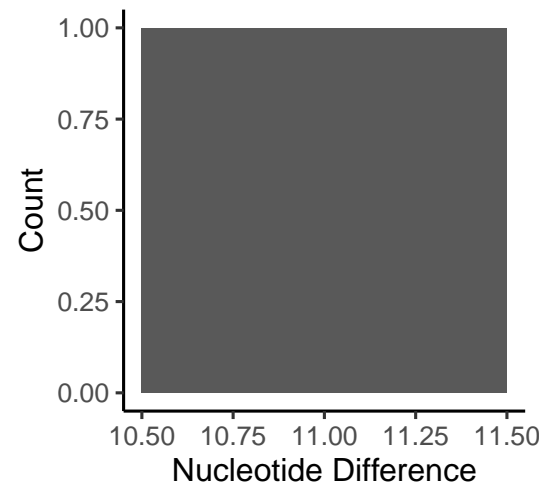
### IGHV3-73\*01\_02

756 sequences assigned  
38 (5%) exact matches, in which:  
19 unique CDR3  
3 unique J



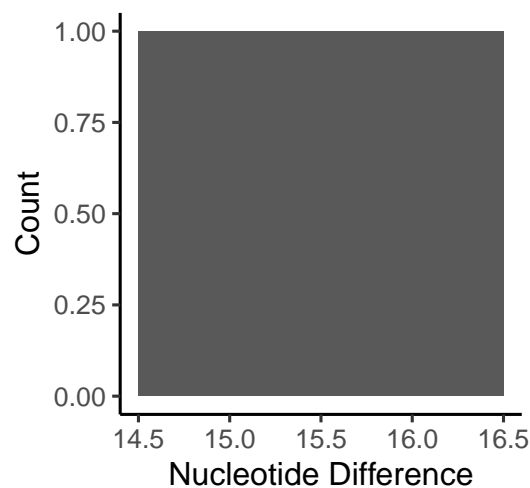
### IGHV3-43D\*04

5 sequences assigned  
No exact matches.



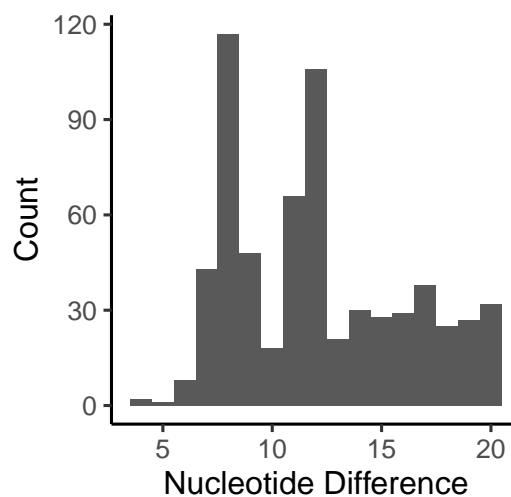
### IGHV3-69-1\*02

3 sequences assigned  
No exact matches.



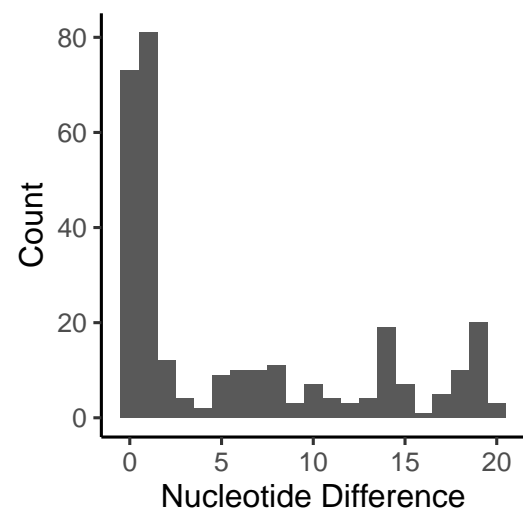
### IGHV3-74\*03

828 sequences assigned  
No exact matches.



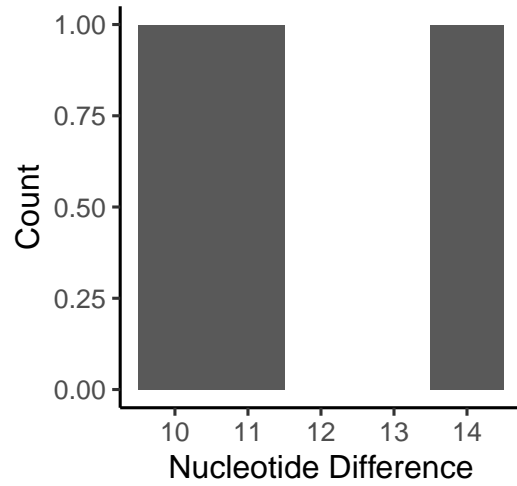
### IGHV3-64D\*06

488 sequences assigned  
73 (15%) exact matches, in which:  
36 unique CDR3  
4 unique J



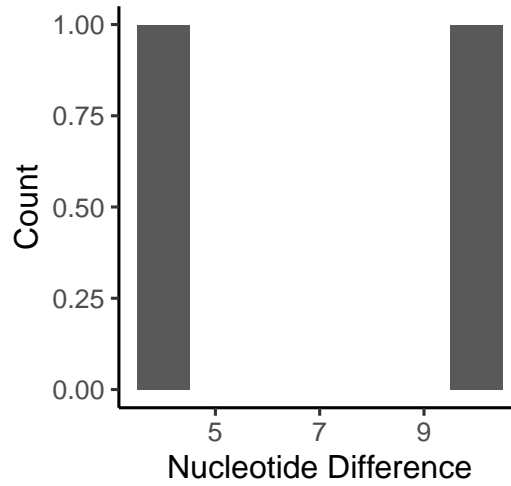
### IGHV3–NL1\*01

8 sequences assigned  
No exact matches.



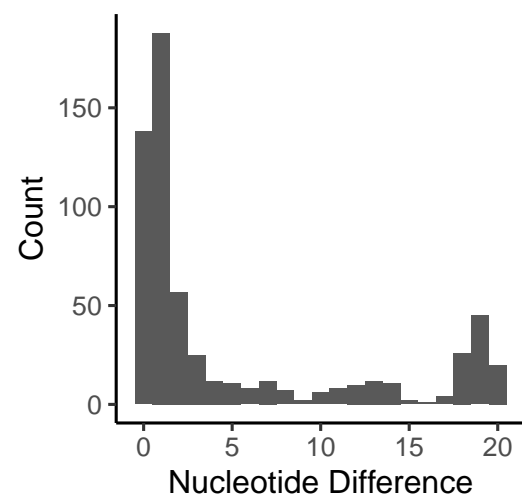
### IGHV4–28\*03

15 sequences assigned  
No exact matches.



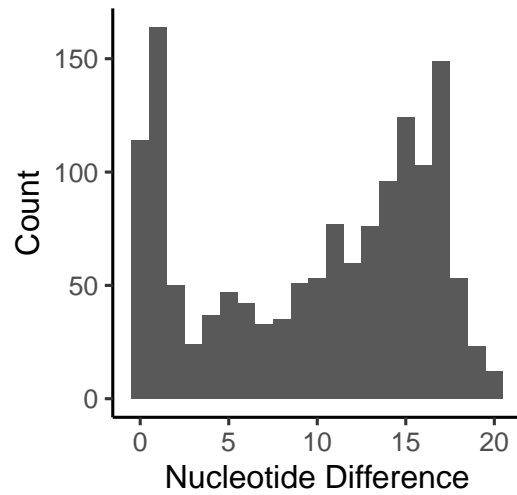
### IGHV4–30–2\*01

742 sequences assigned  
138 (18.6%) exact matches, in which:  
91 unique CDR3  
5 unique J



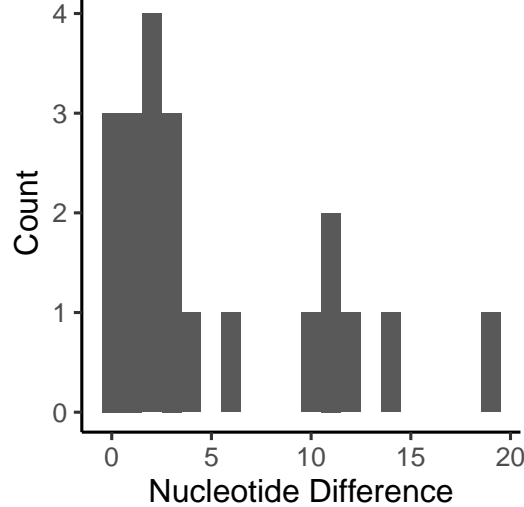
### IGHV4–4\*07

1651 sequences assigned  
114 (6.9%) exact matches, in which:  
79 unique CDR3  
6 unique J



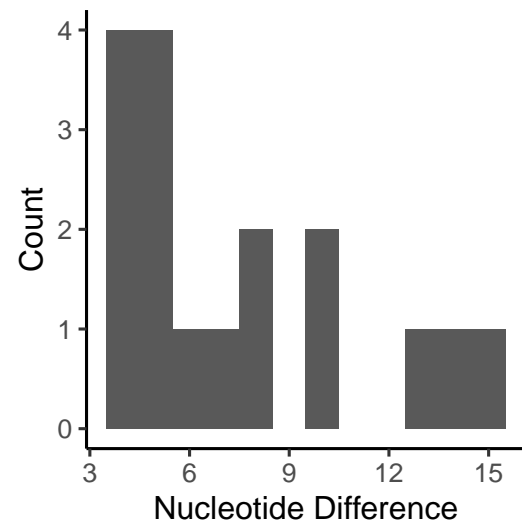
### IGHV4–28\*01\_07

21 sequences assigned  
3 (14.3%) exact matches, in which:  
2 unique CDR3  
1 unique J



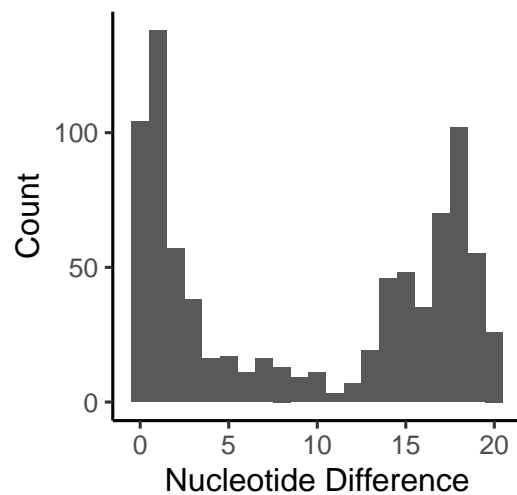
### IGHV4–30–2\*03

23 sequences assigned  
No exact matches.



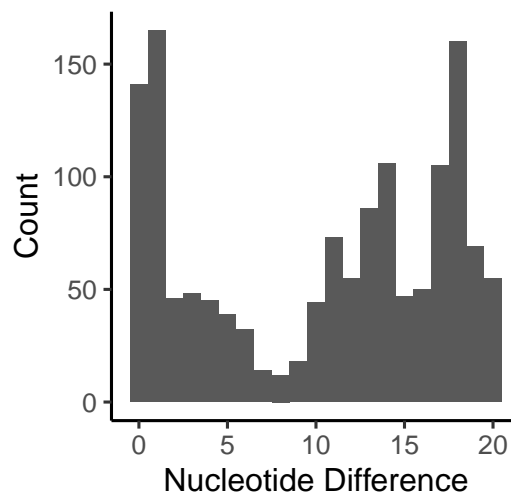
### IGHV4–4\*02\_03

1459 sequences assigned  
104 (7.1%) exact matches, in which:  
79 unique CDR3  
6 unique J



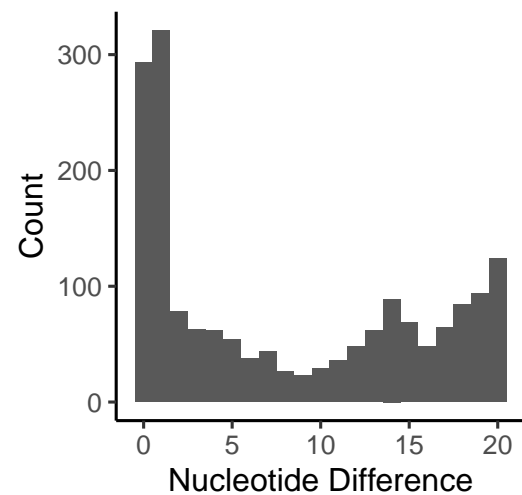
### IGHV4–30–4\*01

2488 sequences assigned  
141 (5.7%) exact matches, in which:  
112 unique CDR3  
5 unique J



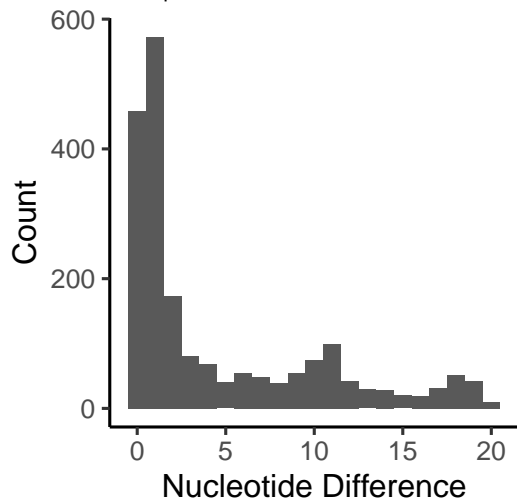
### IGHV4–31\*02

2366 sequences assigned  
293 (12.4%) exact matches, in which:  
246 unique CDR3  
6 unique J



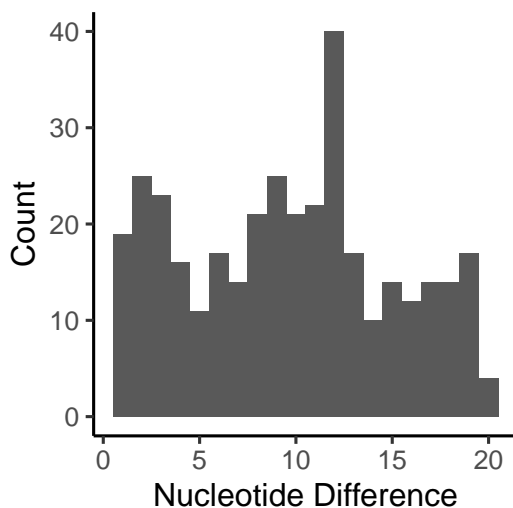
### IGHV4-34\*01\_02

2439 sequences assigned  
458 (18.8%) exact matches, in which:  
323 unique CDR3  
5 unique J



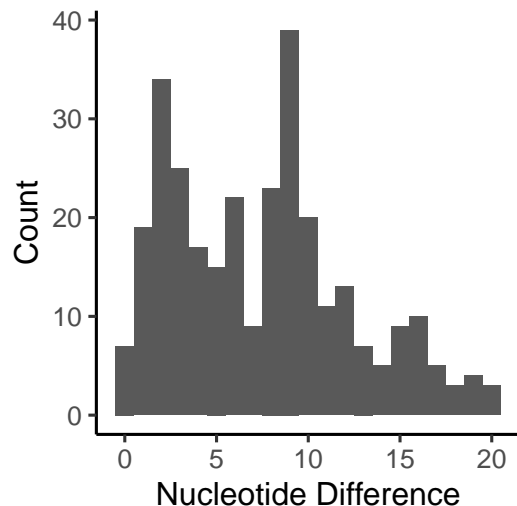
### IGHV4-39\*07

477 sequences assigned  
No exact matches.



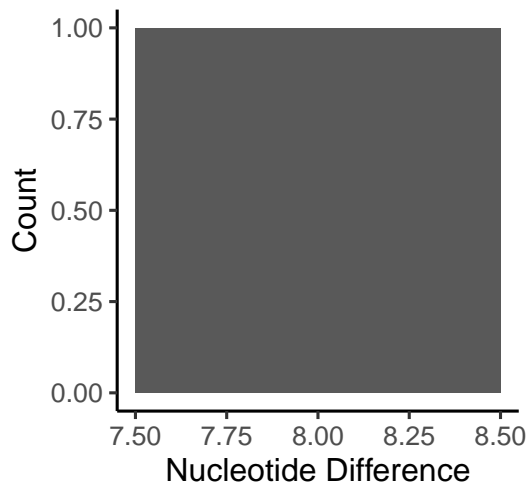
### IGHV4-59\*12

406 sequences assigned  
7 (1.7%) exact matches, in which:  
7 unique CDR3  
3 unique J



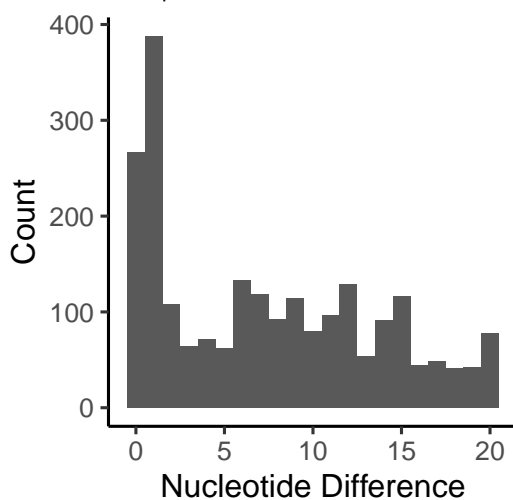
### IGHV4-38-2\*01

1 sequences assigned  
No exact matches.



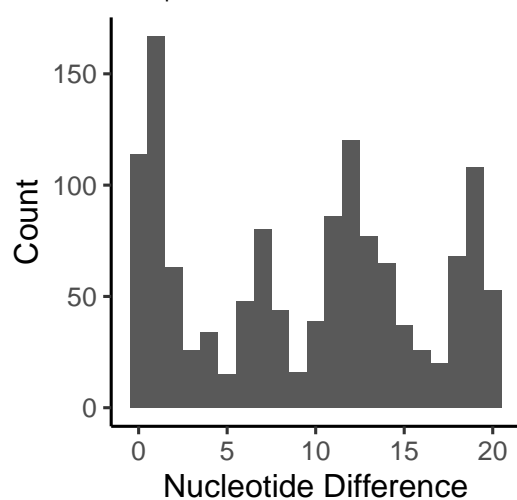
### IGHV4-59\*01\_07

3880 sequences assigned  
267 (6.9%) exact matches, in which:  
200 unique CDR3  
5 unique J



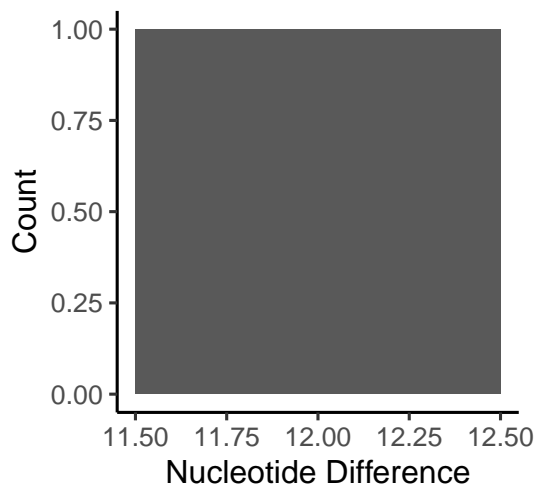
### IGHV4-61\*01

1771 sequences assigned  
114 (6.4%) exact matches, in which:  
96 unique CDR3  
6 unique J



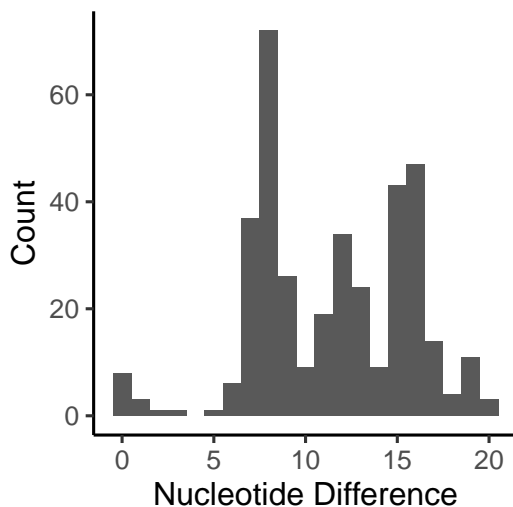
### IGHV4-38-2\*02

48 sequences assigned  
No exact matches.



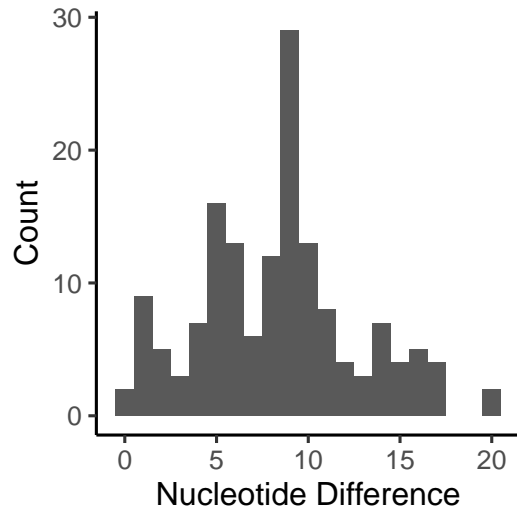
### IGHV4-59\*11

550 sequences assigned  
8 (1.5%) exact matches, in which:  
8 unique CDR3  
3 unique J



### IGHV4-61\*08

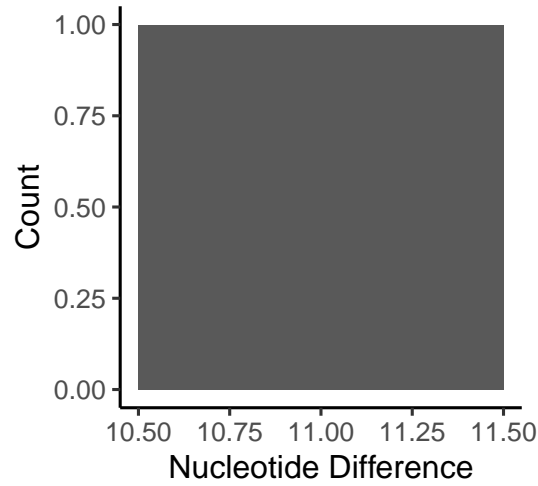
497 sequences assigned  
2 (0.4%) exact matches, in which:  
2 unique CDR3  
2 unique J





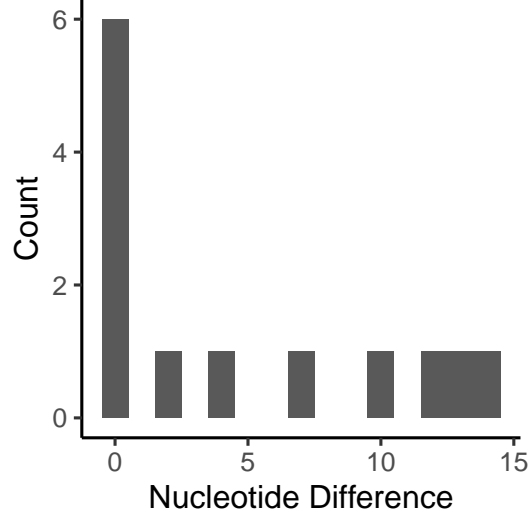
### IGHV4/OR15–8\*01

1 sequences assigned  
No exact matches.



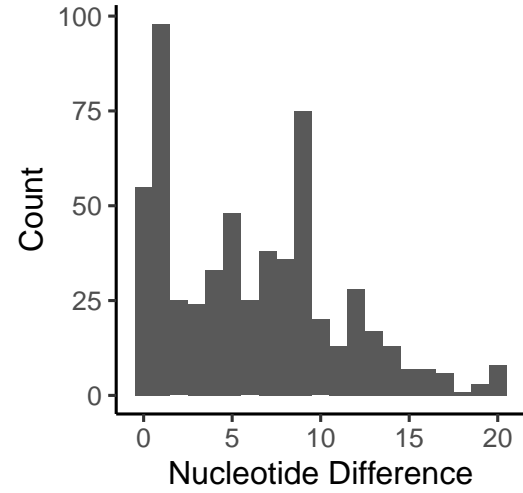
### IGHV5–51\*04

19 sequences assigned  
6 (31.6%) exact matches, in which:  
6 unique CDR3  
3 unique J



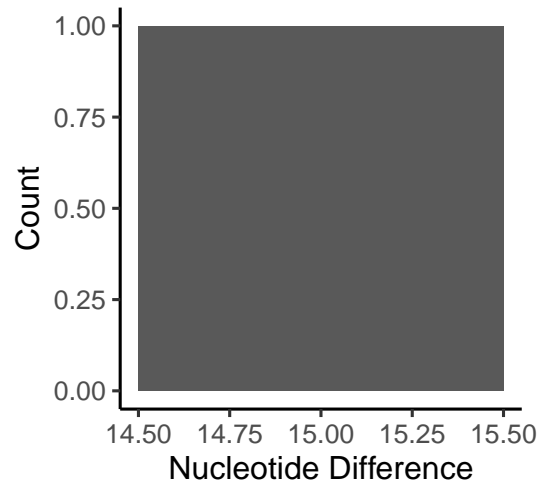
### IGHV6–1\*01\_02

758 sequences assigned  
55 (7.3%) exact matches, in which:  
40 unique CDR3  
5 unique J



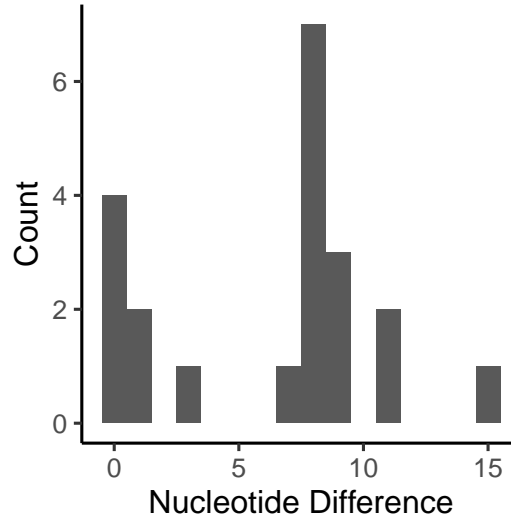
### IGHV4/OR15–8\*02

3 sequences assigned  
No exact matches.



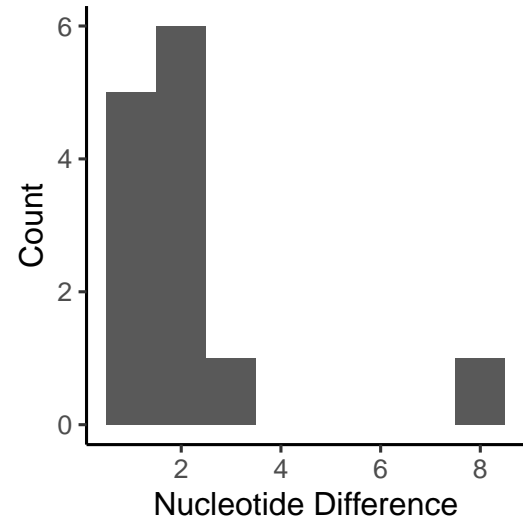
### IGHV5–51\*06

22 sequences assigned  
4 (18.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



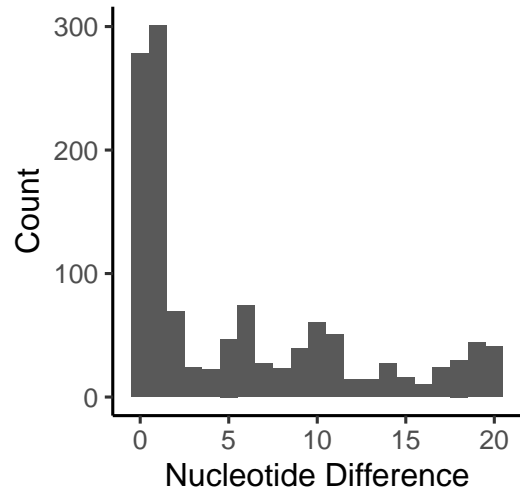
### IGHV7–4–1\*01

13 sequences assigned  
No exact matches.



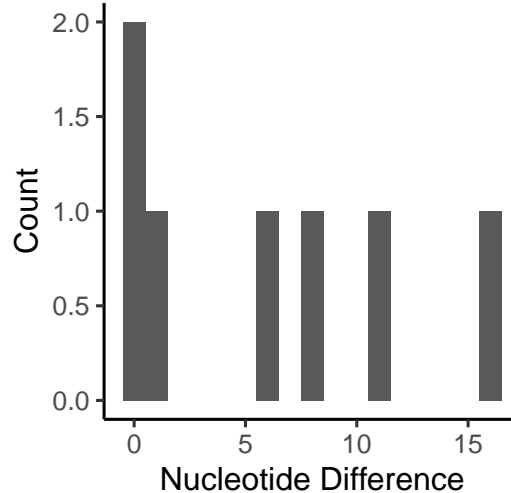
### IGHV5–10–1\*01\_03

1412 sequences assigned  
278 (19.7%) exact matches, in which:  
150 unique CDR3  
5 unique J



### IGHV5–51\*07

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





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