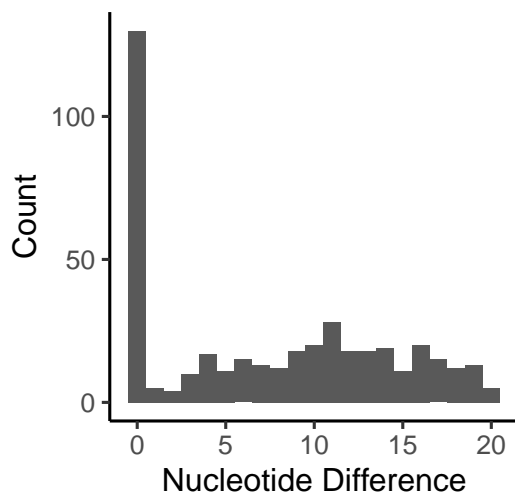


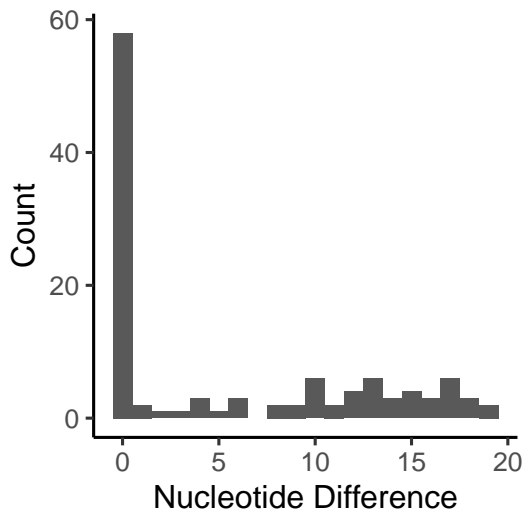
### IGHV1-2\*02

453 sequences assigned  
130 (28.7%) exact matches, in which:  
130 unique CDR3  
6 unique J



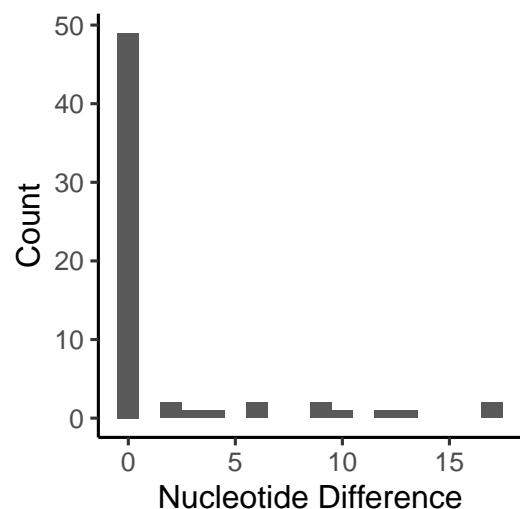
### IGHV1-8\*03

134 sequences assigned  
58 (43.3%) exact matches, in which:  
57 unique CDR3  
4 unique J



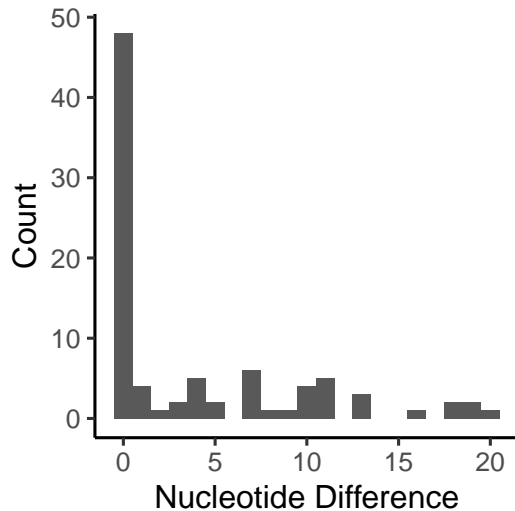
### IGHV1-24\*01

67 sequences assigned  
49 (73.1%) exact matches, in which:  
49 unique CDR3  
5 unique J



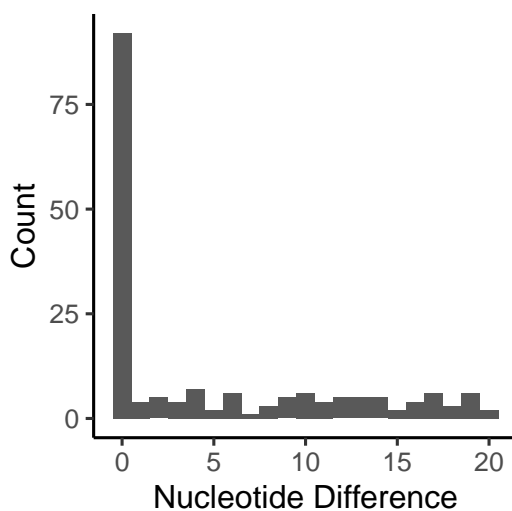
### IGHV1-2\*04

88 sequences assigned  
48 (54.5%) exact matches, in which:  
48 unique CDR3  
5 unique J



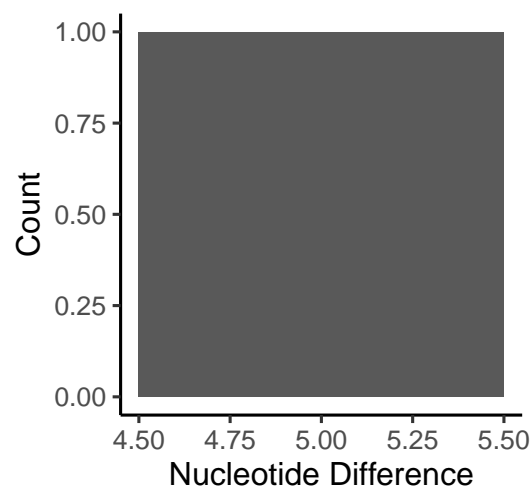
### IGHV1-18\*01

201 sequences assigned  
92 (45.8%) exact matches, in which:  
90 unique CDR3  
5 unique J



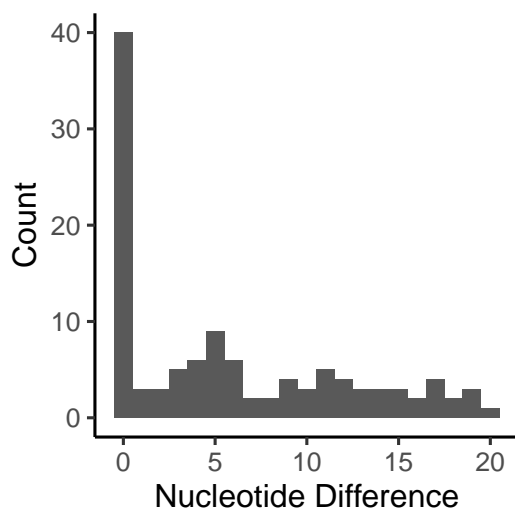
### IGHV1-45\*02

1 sequences assigned  
No exact matches.



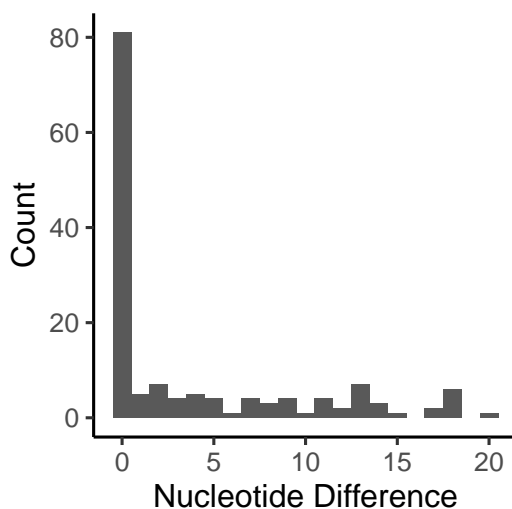
### IGHV1-3\*01\_05

125 sequences assigned  
40 (32%) exact matches, in which:  
40 unique CDR3  
5 unique J



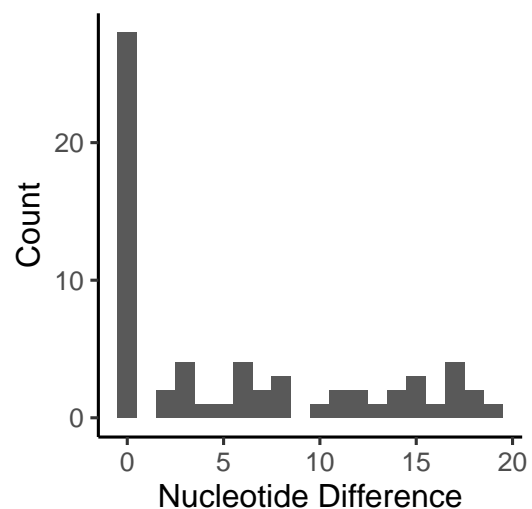
### IGHV1-18\*04

158 sequences assigned  
81 (51.3%) exact matches, in which:  
81 unique CDR3  
4 unique J



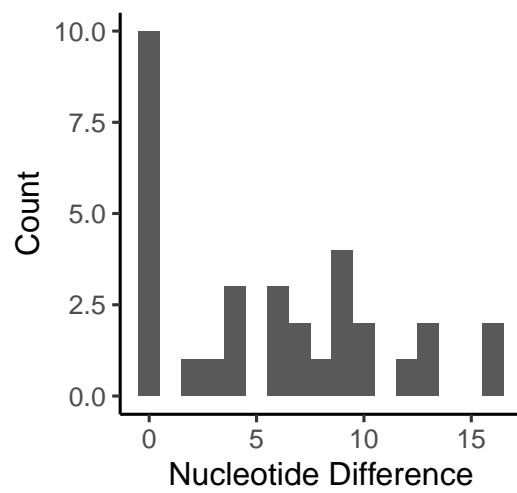
### IGHV1-46\*01

73 sequences assigned  
28 (38.4%) exact matches, in which:  
28 unique CDR3  
4 unique J



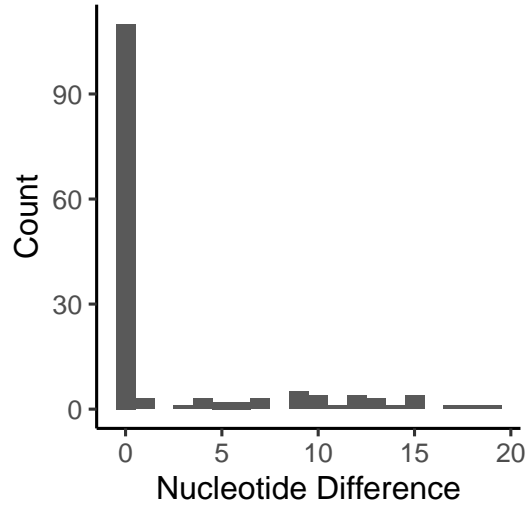
### IGHV1-46\*03

35 sequences assigned  
10 (28.6%) exact matches, in which:  
9 unique CDR3  
5 unique J



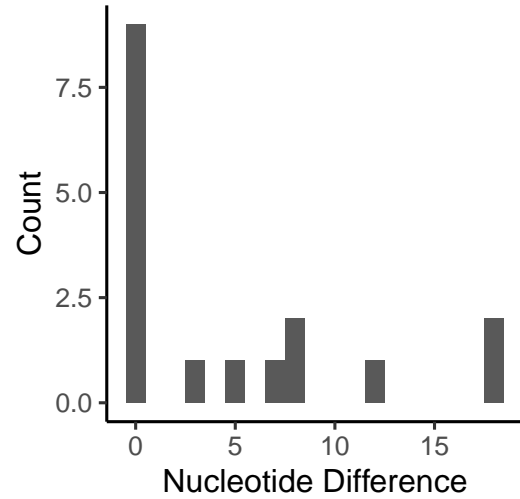
### IGHV1-69\*01\_12\_13

170 sequences assigned  
110 (64.7%) exact matches, in which:  
108 unique CDR3  
6 unique J



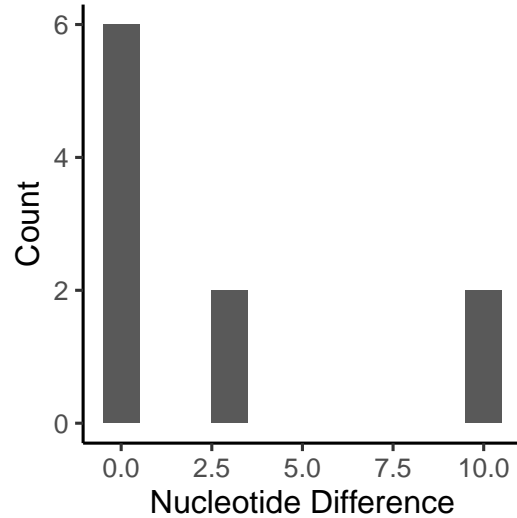
### IGHV2-26\*01

17 sequences assigned  
9 (52.9%) exact matches, in which:  
9 unique CDR3  
3 unique J



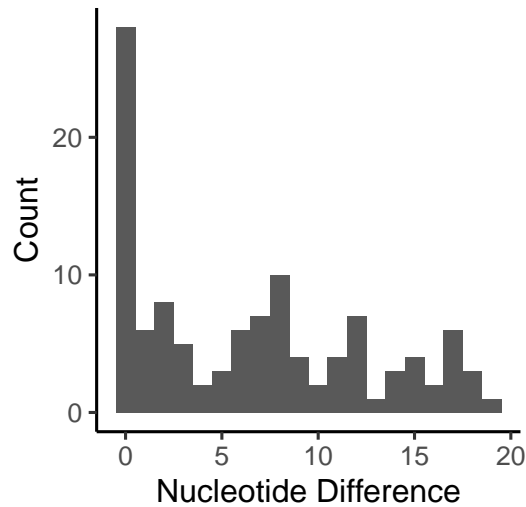
### IGHV1-58\*02

10 sequences assigned  
6 (60%) exact matches, in which:  
6 unique CDR3  
3 unique J



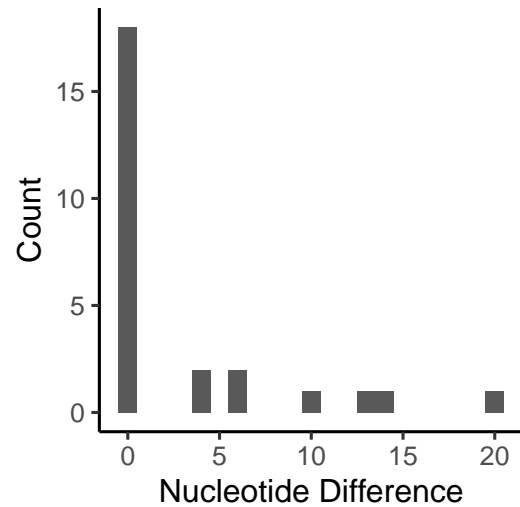
### IGHV2-5\*01

117 sequences assigned  
28 (23.9%) exact matches, in which:  
28 unique CDR3  
4 unique J



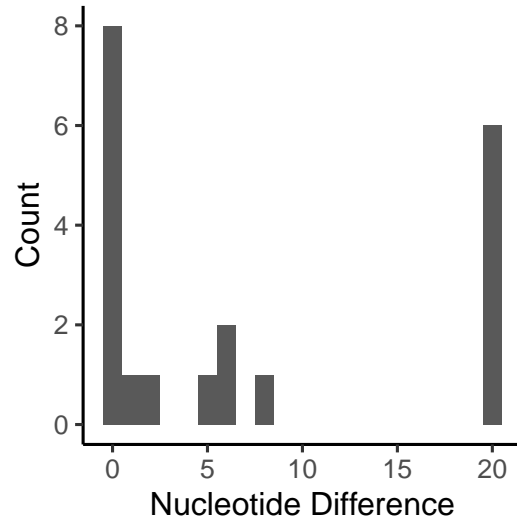
### IGHV2-70\*01

29 sequences assigned  
18 (62.1%) exact matches, in which:  
18 unique CDR3  
4 unique J



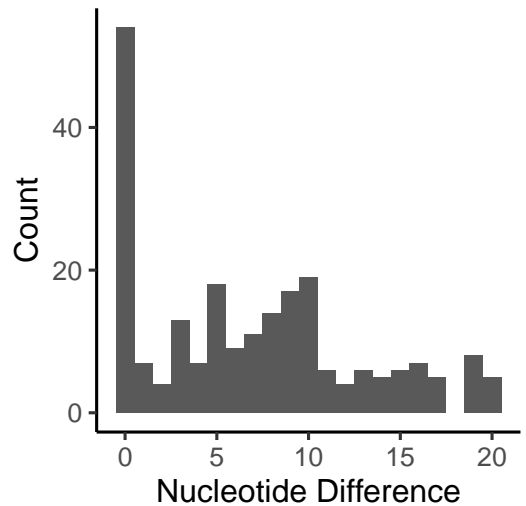
### IGHV1-58\*01\_03

23 sequences assigned  
8 (34.8%) exact matches, in which:  
8 unique CDR3  
3 unique J



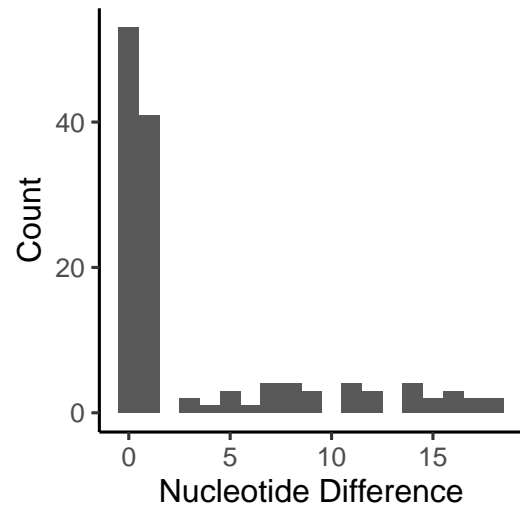
### IGHV2-5\*02

259 sequences assigned  
54 (20.8%) exact matches, in which:  
52 unique CDR3  
5 unique J



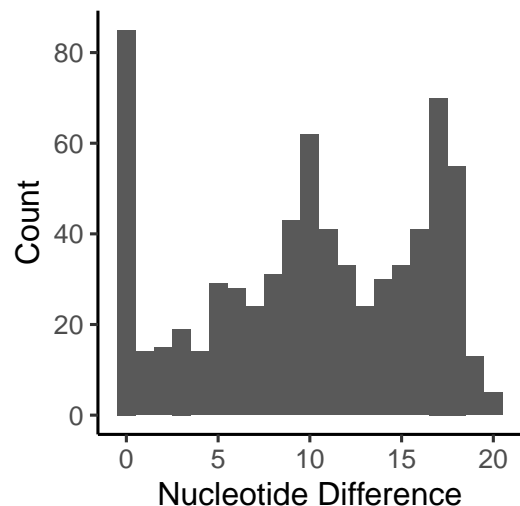
### IGHV2-70\*11\_15

135 sequences assigned  
53 (39.3%) exact matches, in which:  
34 unique CDR3  
3 unique J



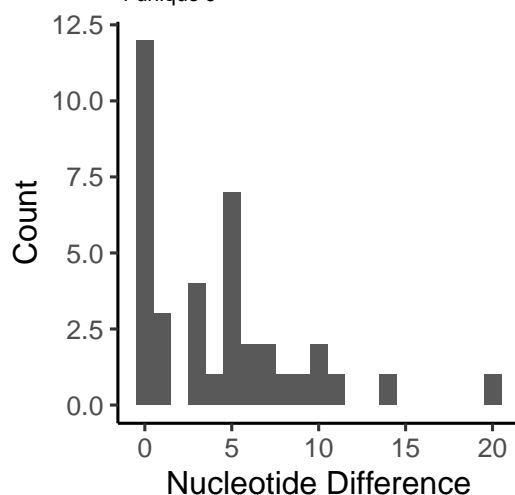
### IGHV3-7\*01

792 sequences assigned  
85 (10.7%) exact matches, in which:  
83 unique CDR3  
6 unique J



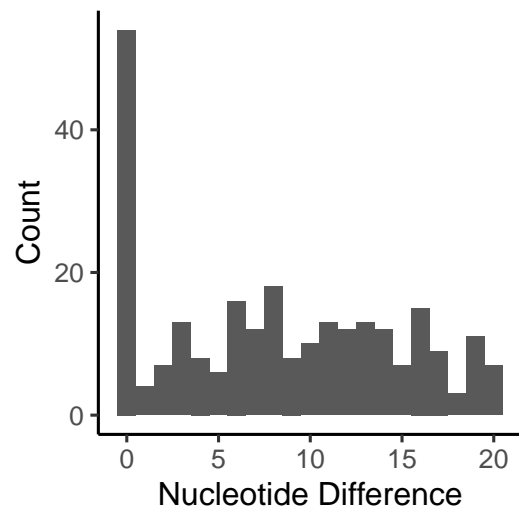
### IGHV3-9\*03

44 sequences assigned  
12 (27.3%) exact matches, in which:  
11 unique CDR3  
4 unique J



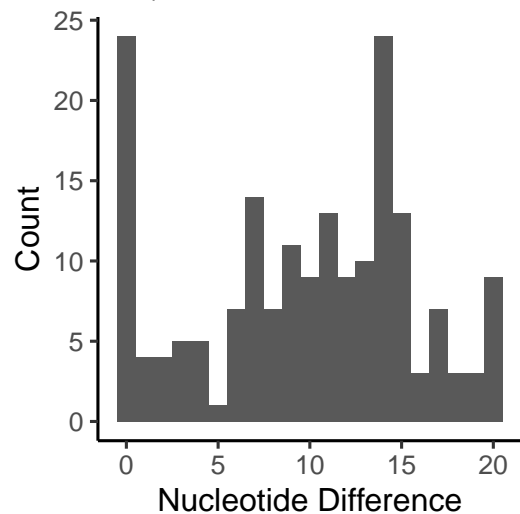
### IGHV3-15\*01\_02

305 sequences assigned  
54 (17.7%) exact matches, in which:  
51 unique CDR3  
6 unique J



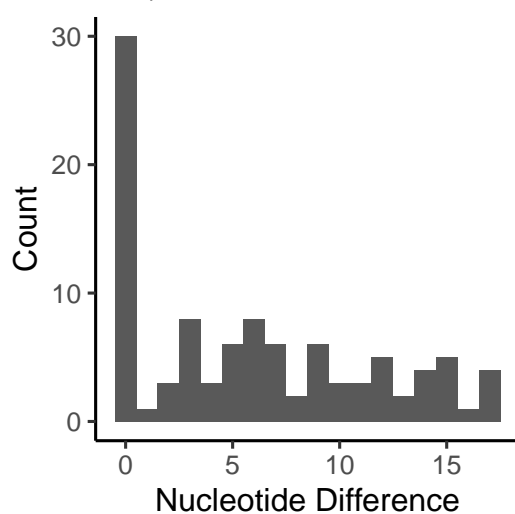
### IGHV3-7\*04

213 sequences assigned  
24 (11.3%) exact matches, in which:  
23 unique CDR3  
3 unique J



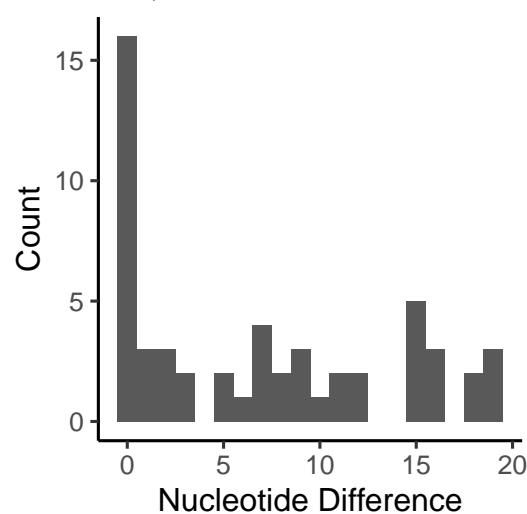
### IGHV3-11\*04

127 sequences assigned  
30 (23.6%) exact matches, in which:  
29 unique CDR3  
5 unique J



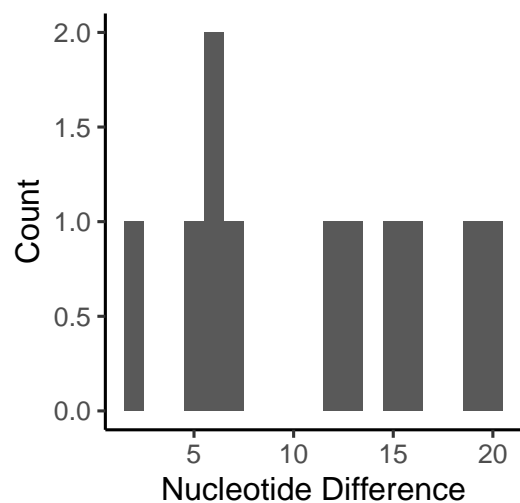
### IGHV3-20\*03\_04

62 sequences assigned  
16 (25.8%) exact matches, in which:  
15 unique CDR3  
4 unique J



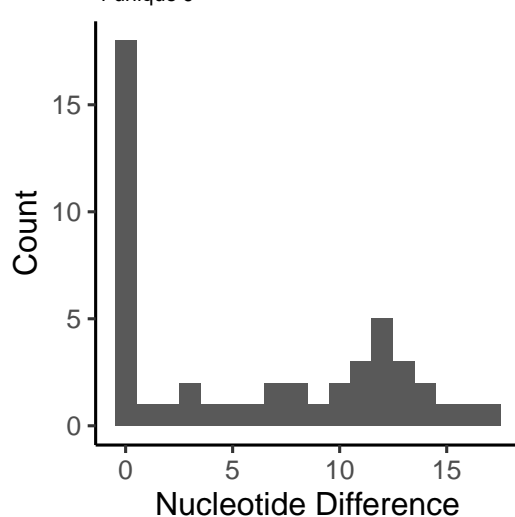
### IGHV3-9\*01

13 sequences assigned  
No exact matches.



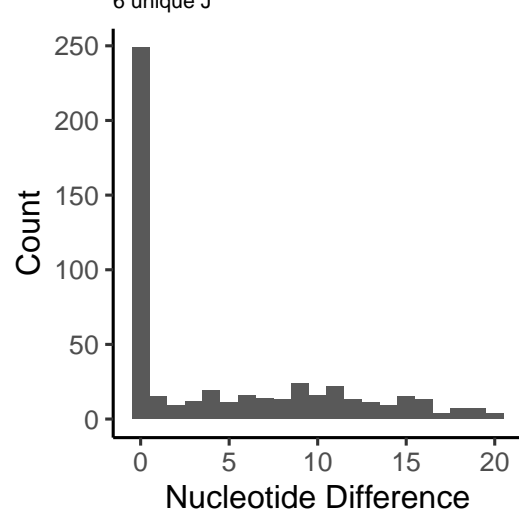
### IGHV3-13\*04

52 sequences assigned  
18 (34.6%) exact matches, in which:  
17 unique CDR3  
4 unique J



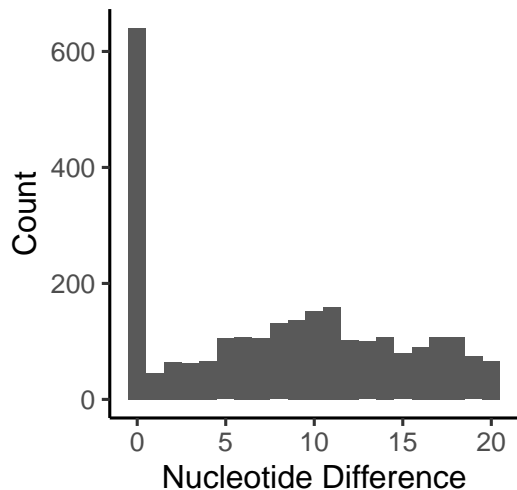
### IGHV3-21\*01\_02

563 sequences assigned  
249 (44.2%) exact matches, in which:  
234 unique CDR3  
6 unique J



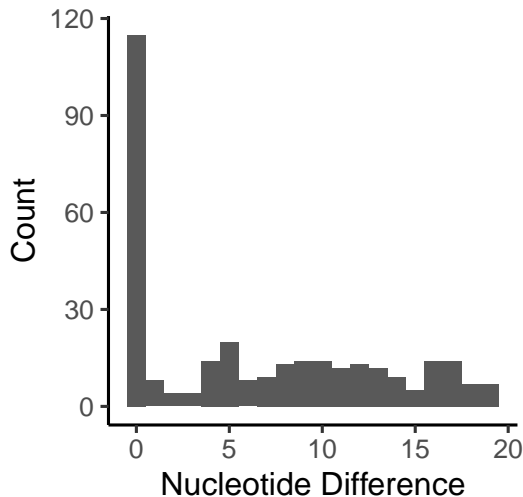
### IGHV3–23\*01\_04

2966 sequences assigned  
641 (21.6%) exact matches, in which:  
598 unique CDR3  
6 unique J



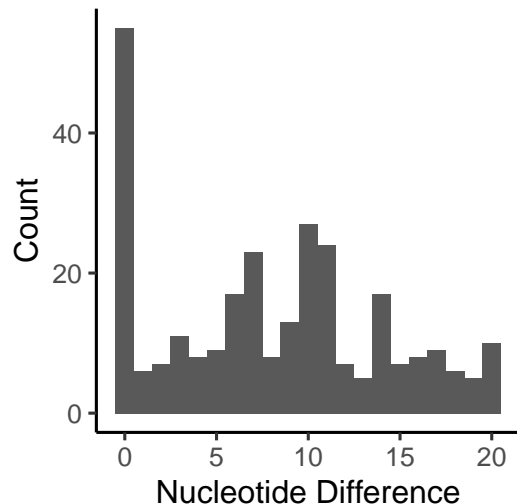
### IGHV3–33\*01

351 sequences assigned  
115 (32.8%) exact matches, in which:  
109 unique CDR3  
6 unique J



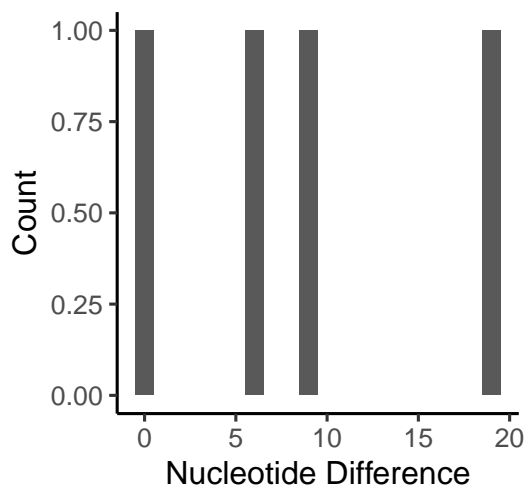
### IGHV3–48\*01

318 sequences assigned  
55 (17.3%) exact matches, in which:  
51 unique CDR3  
4 unique J



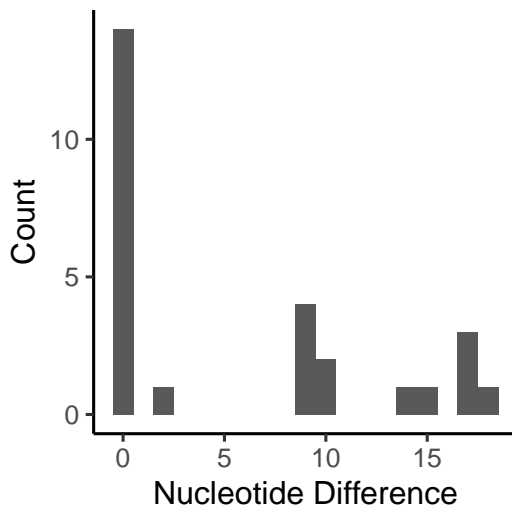
### IGHV3–30–3\*01

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



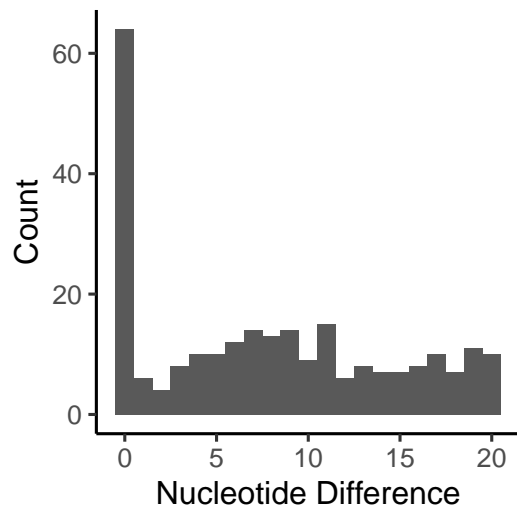
### IGHV3–43\*01

30 sequences assigned  
14 (46.7%) exact matches, in which:  
11 unique CDR3  
2 unique J



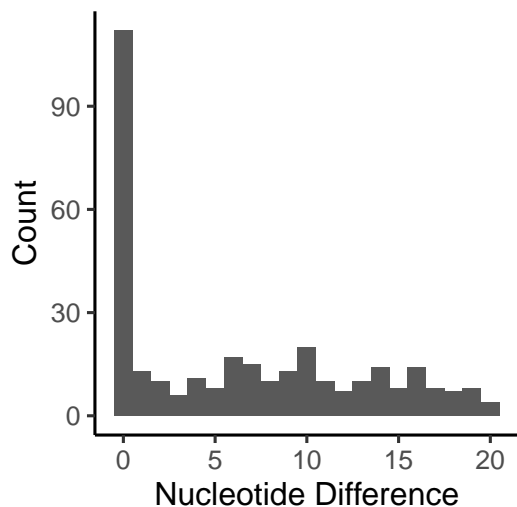
### IGHV3–48\*02

308 sequences assigned  
64 (20.8%) exact matches, in which:  
58 unique CDR3  
6 unique J



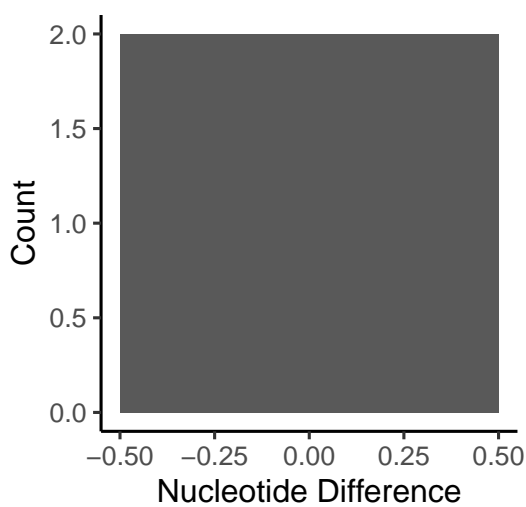
### IGHV3–30\*18

378 sequences assigned  
112 (29.6%) exact matches, in which:  
110 unique CDR3  
5 unique J



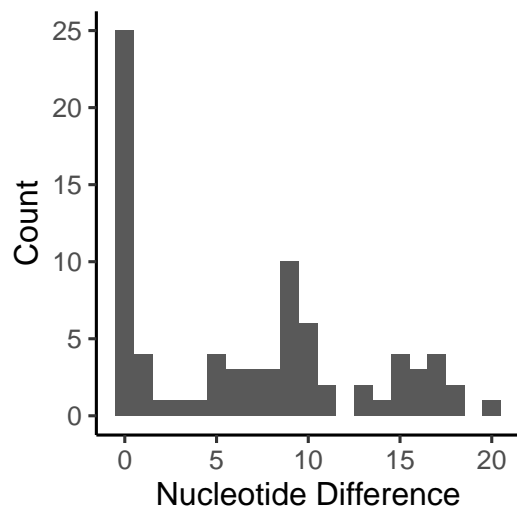
### IGHV3–47\*02

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



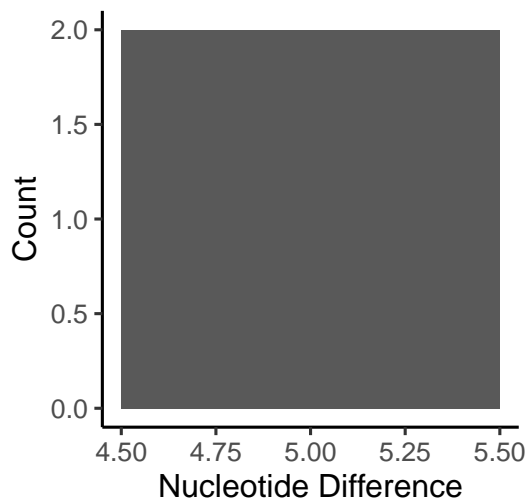
### IGHV3–49\*03\_05

92 sequences assigned  
25 (27.2%) exact matches, in which:  
24 unique CDR3  
4 unique J



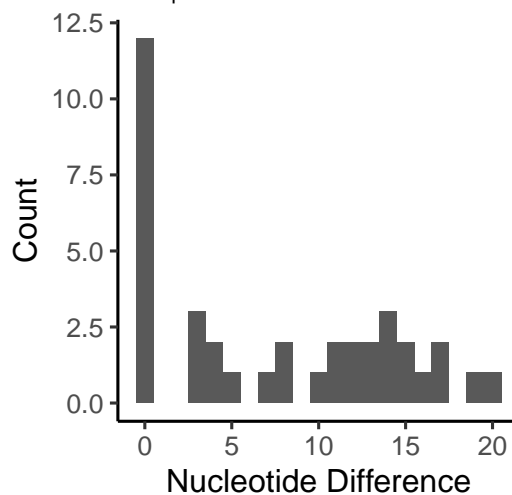
### IGHV3-52\*01\_03

2 sequences assigned  
No exact matches.



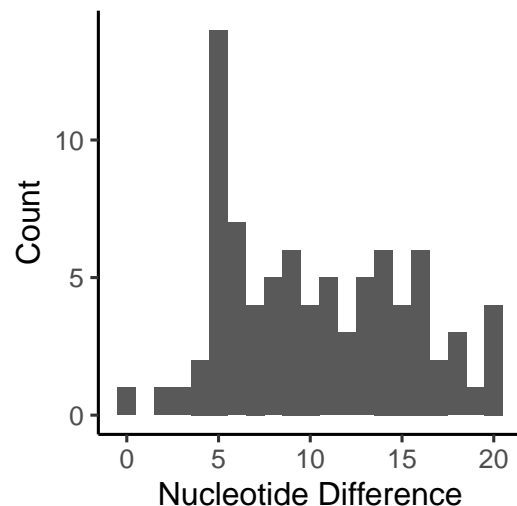
### IGHV3-64\*01

41 sequences assigned  
12 (29.3%) exact matches, in which:  
11 unique CDR3  
3 unique J



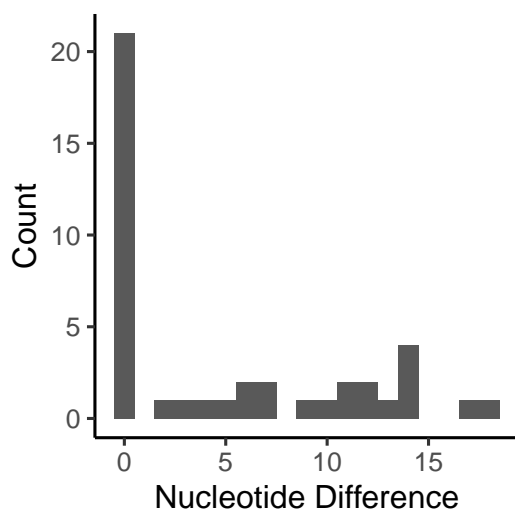
### IGHV3-72\*01

88 sequences assigned  
1 (1.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



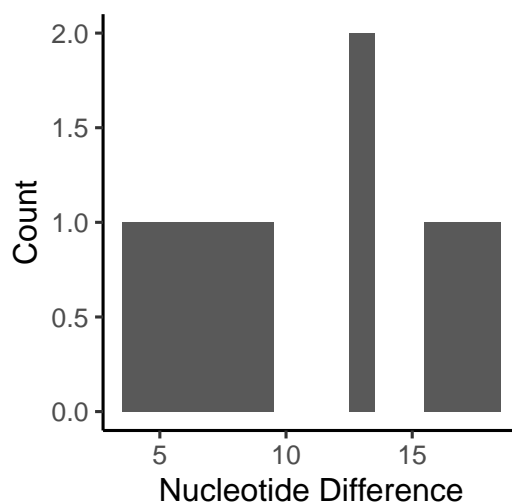
### IGHV3-53\*04

52 sequences assigned  
21 (40.4%) exact matches, in which:  
18 unique CDR3  
3 unique J



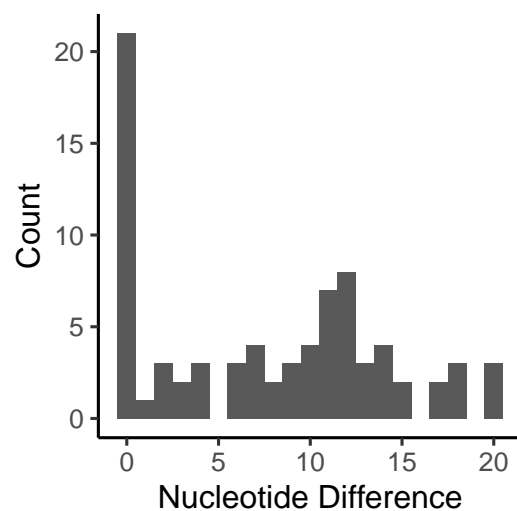
### IGHV3-64\*02\_07

11 sequences assigned  
No exact matches.



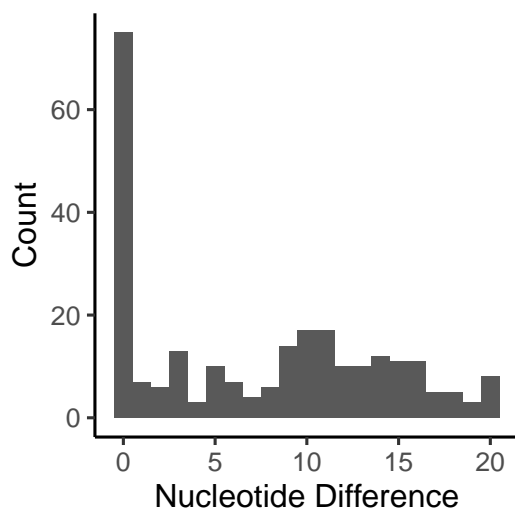
### IGHV3-73\*01\_02

91 sequences assigned  
21 (23.1%) exact matches, in which:  
20 unique CDR3  
4 unique J



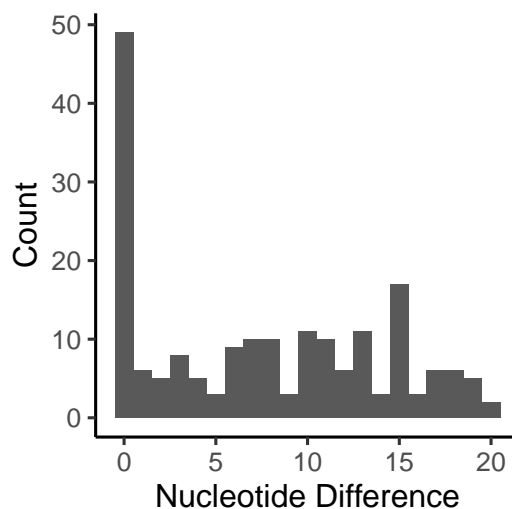
### IGHV3-53\*01\_02

269 sequences assigned  
75 (27.9%) exact matches, in which:  
65 unique CDR3  
5 unique J



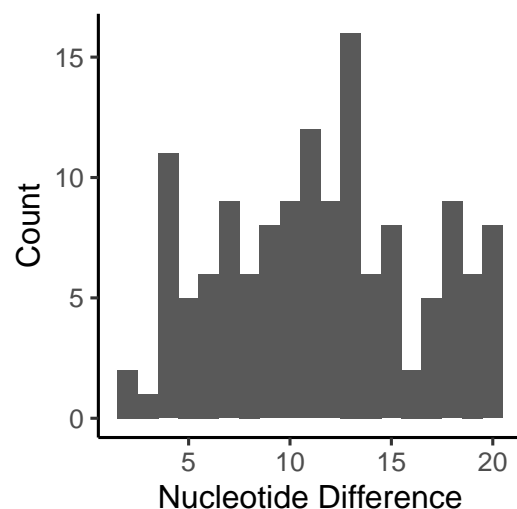
### IGHV3-66\*01

193 sequences assigned  
49 (25.4%) exact matches, in which:  
43 unique CDR3  
6 unique J



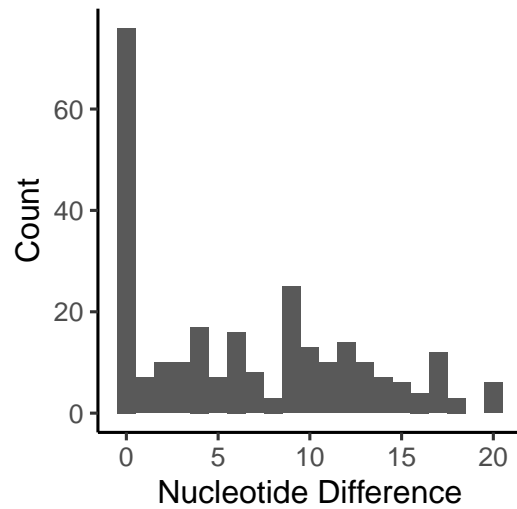
### IGHV3-74\*03

160 sequences assigned  
No exact matches.



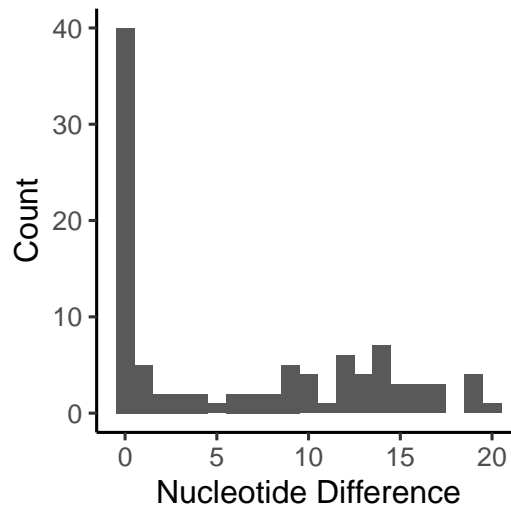
### IGHV3-74\*01\_02

283 sequences assigned  
76 (26.9%) exact matches, in which:  
73 unique CDR3  
5 unique J



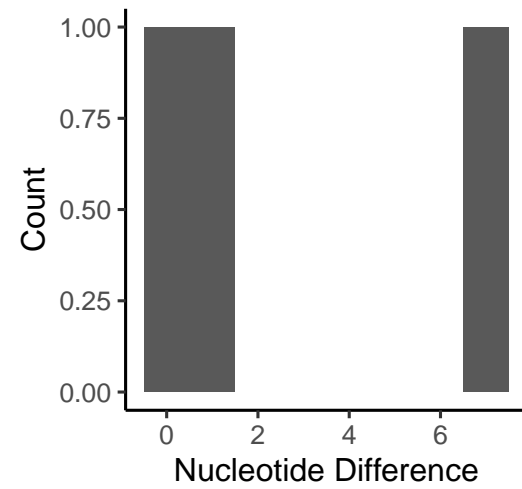
### IGHV4-4\*02\_03

113 sequences assigned  
40 (35.4%) exact matches, in which:  
38 unique CDR3  
6 unique J



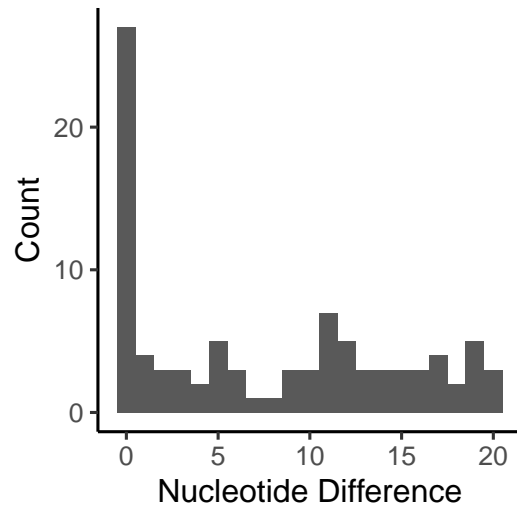
### IGHV4-38-2\*02

4 sequences assigned  
1 (25%) exact matches, in which:  
1 unique CDR3  
1 unique J



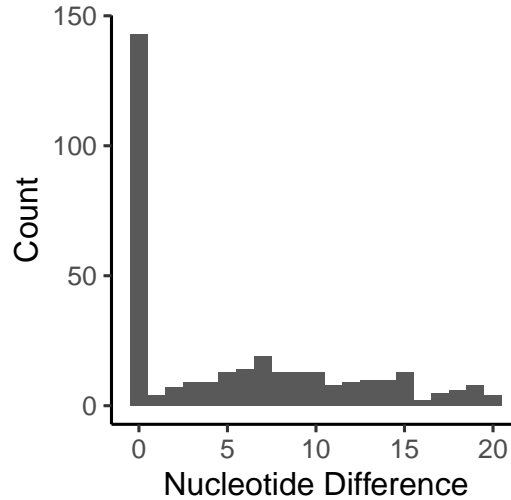
### IGHV3-64D\*06

110 sequences assigned  
27 (24.5%) exact matches, in which:  
26 unique CDR3  
4 unique J



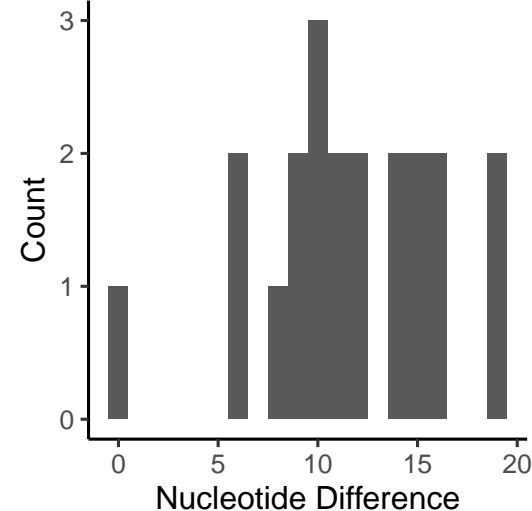
### IGHV4-31\*02

361 sequences assigned  
143 (39.6%) exact matches, in which:  
138 unique CDR3  
6 unique J



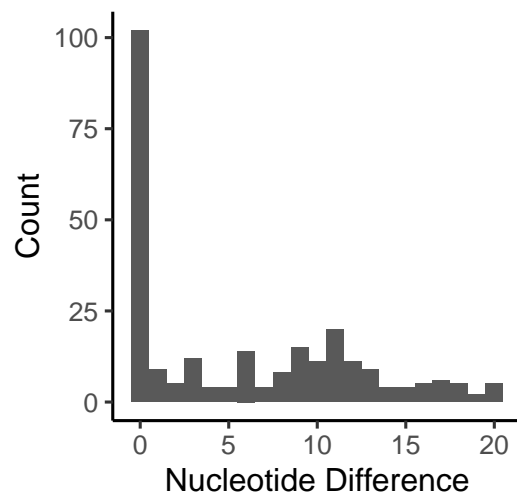
### IGHV4-39\*02

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



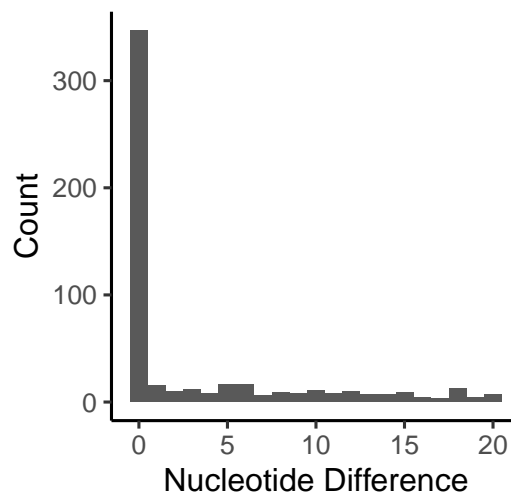
### IGHV4-4\*07

296 sequences assigned  
102 (34.5%) exact matches, in which:  
98 unique CDR3  
5 unique J



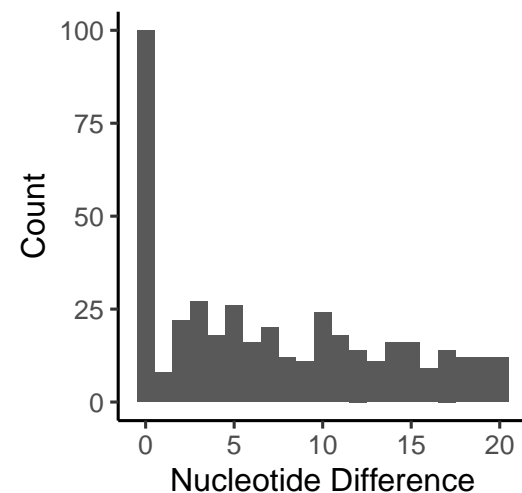
### IGHV4-34\*01\_02

583 sequences assigned  
347 (59.5%) exact matches, in which:  
323 unique CDR3  
6 unique J



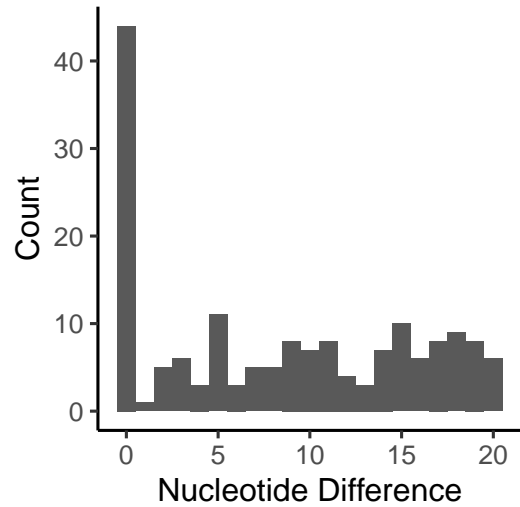
### IGHV4-59\*08

475 sequences assigned  
100 (21.1%) exact matches, in which:  
96 unique CDR3  
5 unique J



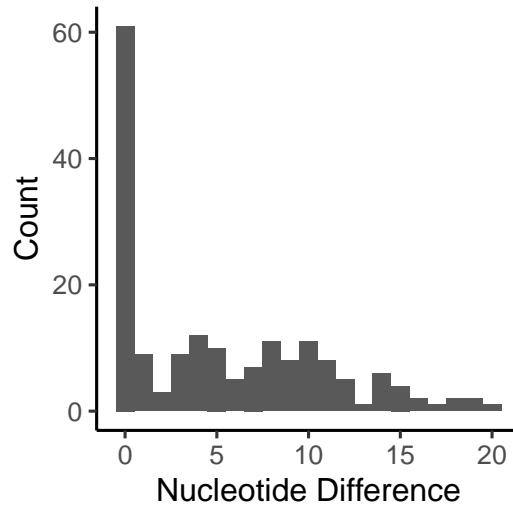
### IGHV4-61\*01

198 sequences assigned  
44 (22.2%) exact matches, in which:  
42 unique CDR3  
5 unique J



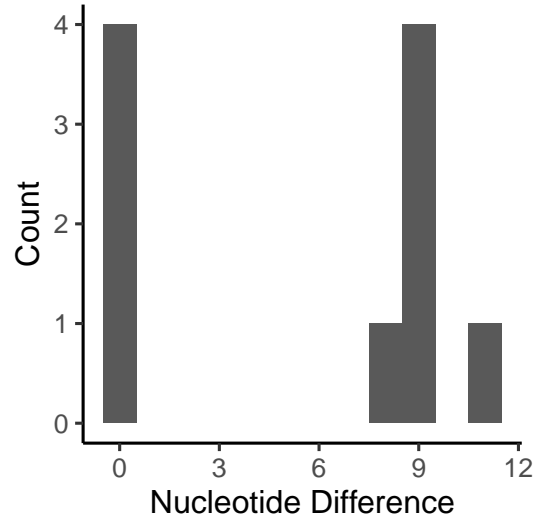
### IGHV5-51\*01\_03

193 sequences assigned  
61 (31.6%) exact matches, in which:  
60 unique CDR3  
5 unique J



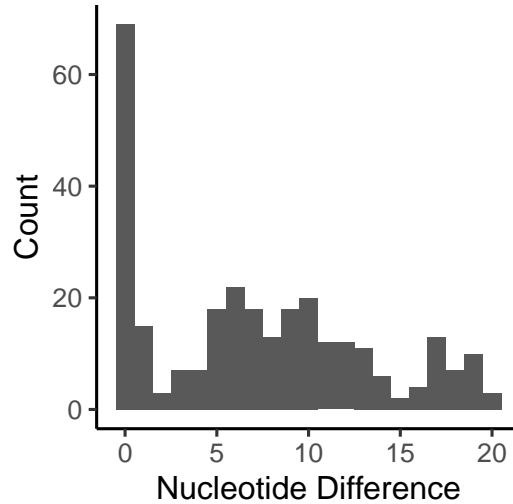
### IGHV5-10-1\*01\_03

14 sequences assigned  
4 (28.6%) exact matches, in which:  
4 unique CDR3  
2 unique J



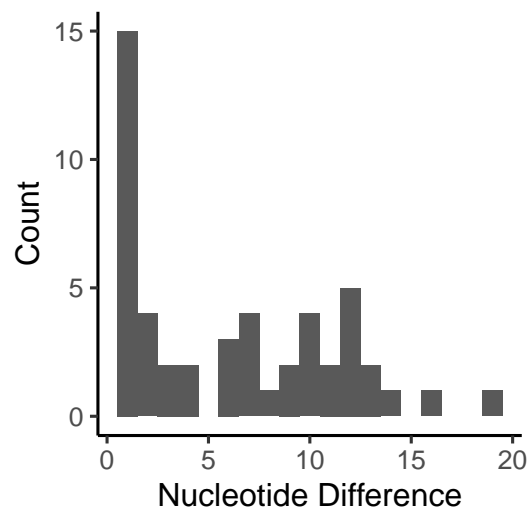
### IGHV6-1\*01\_02

293 sequences assigned  
69 (23.5%) exact matches, in which:  
64 unique CDR3  
5 unique J



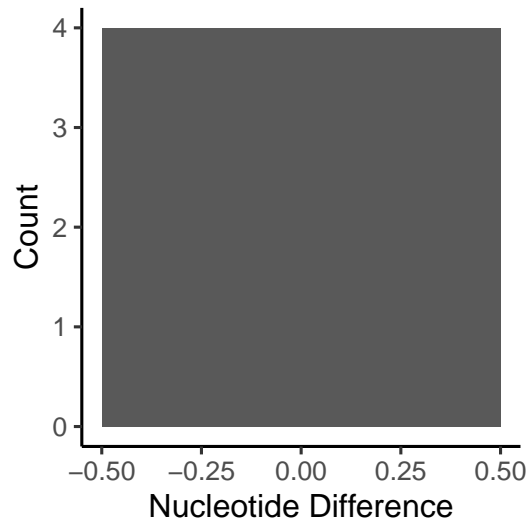
### IGHV5-51\*07

52 sequences assigned  
No exact matches.



### IGHV7-4-1\*01

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







Warning – no inferred sequences found.