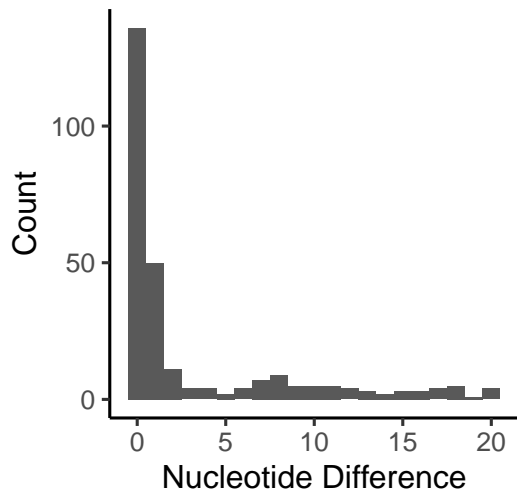


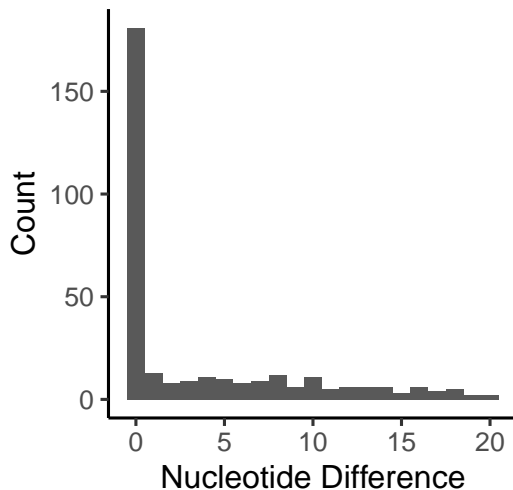
## IGHV1-2\*02

300 sequences assigned  
136 (45.3%) exact matches, in which:  
136 unique CDR3  
6 unique J



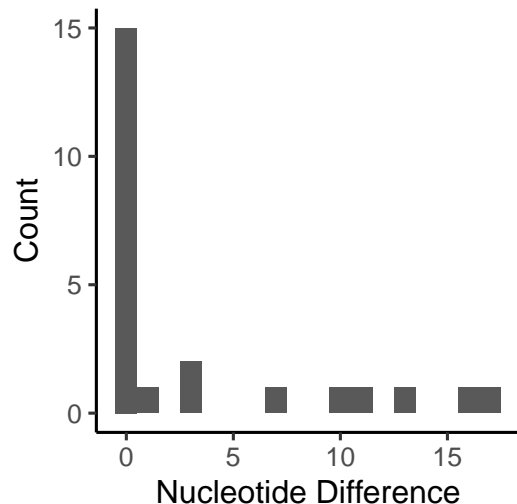
## IGHV1-18\*01

354 sequences assigned  
181 (51.1%) exact matches, in which:  
179 unique CDR3  
5 unique J



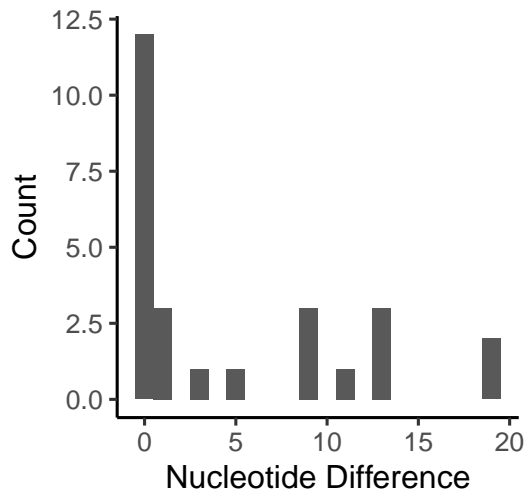
## IGHV1-46\*03

24 sequences assigned  
15 (62.5%) exact matches, in which:  
15 unique CDR3  
4 unique J



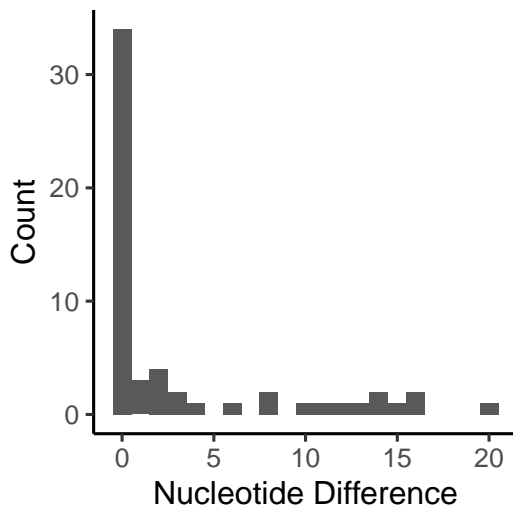
## IGHV1-3\*01\_05

29 sequences assigned  
12 (41.4%) exact matches, in which:  
12 unique CDR3  
4 unique J



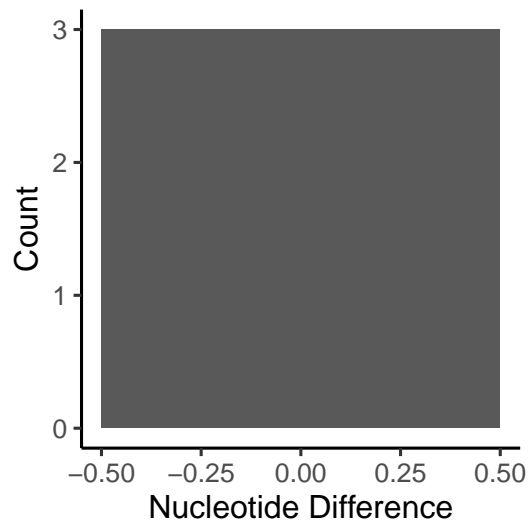
## IGHV1-24\*01

59 sequences assigned  
34 (57.6%) exact matches, in which:  
34 unique CDR3  
5 unique J



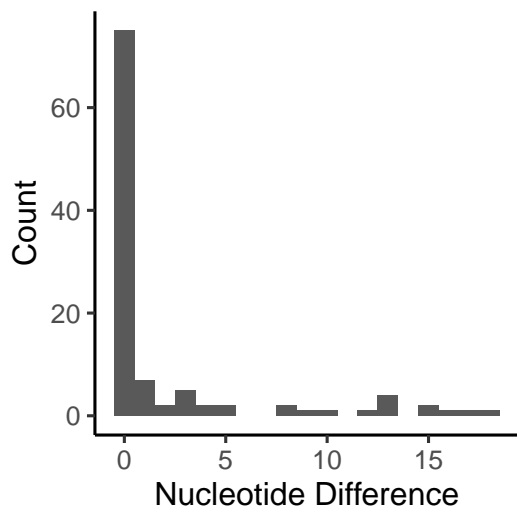
## IGHV1-58\*02

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



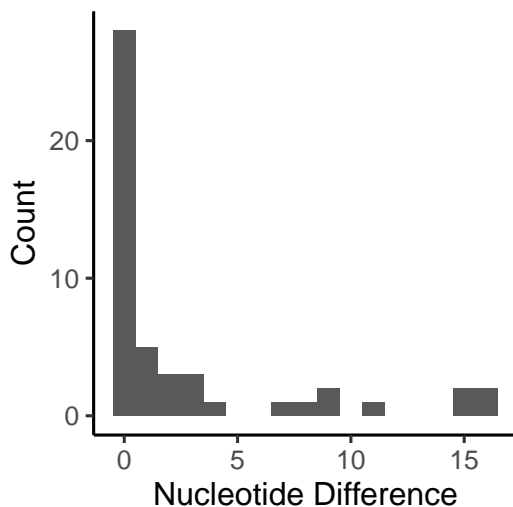
## IGHV1-8\*01

113 sequences assigned  
75 (66.4%) exact matches, in which:  
75 unique CDR3  
5 unique J



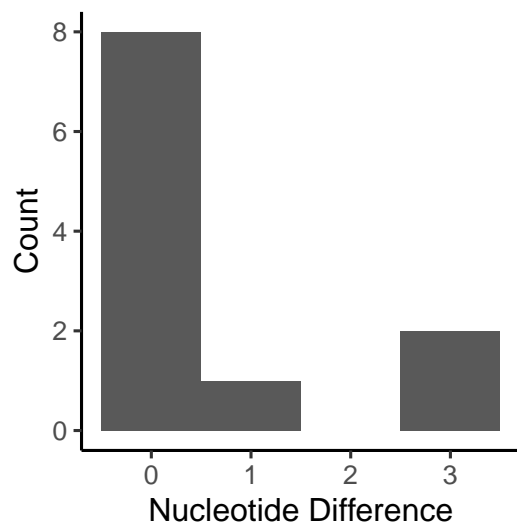
## IGHV1-46\*01

50 sequences assigned  
28 (56%) exact matches, in which:  
28 unique CDR3  
5 unique J



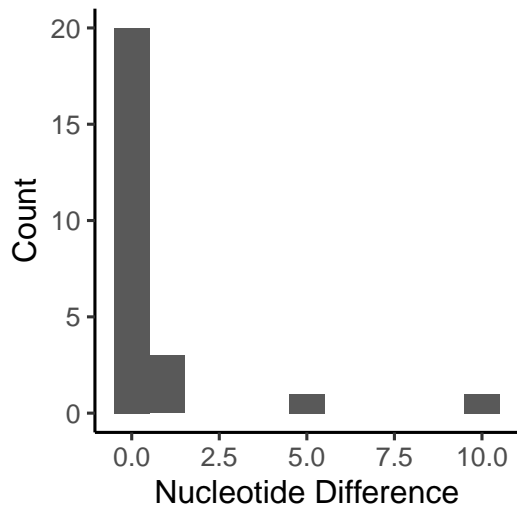
## IGHV1-58\*01\_03

12 sequences assigned  
8 (66.7%) exact matches, in which:  
8 unique CDR3  
5 unique J



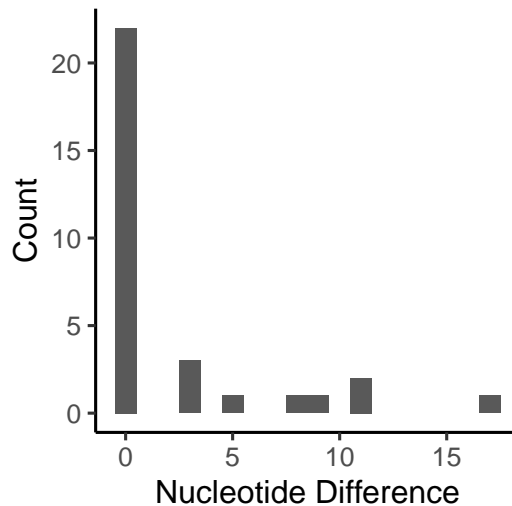
### IGHV1-69\*02

27 sequences assigned  
20 (74.1%) exact matches, in which:  
20 unique CDR3  
5 unique J



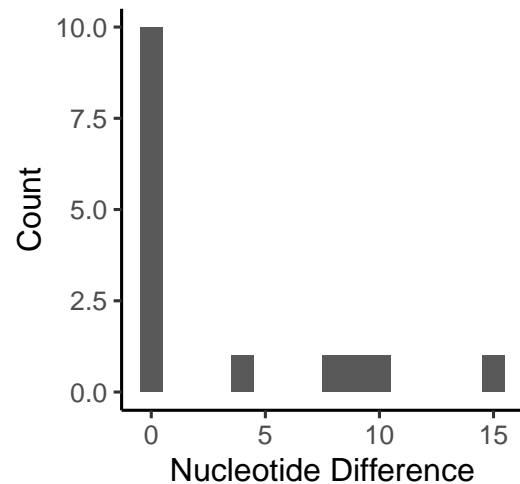
### IGHV2-5\*01

31 sequences assigned  
22 (71%) exact matches, in which:  
22 unique CDR3  
4 unique J



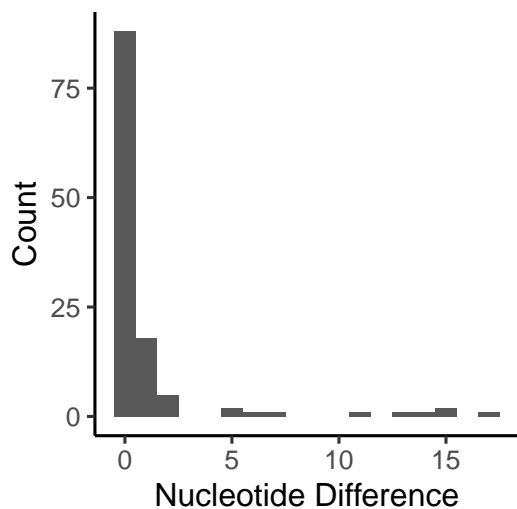
### IGHV2-70\*01

15 sequences assigned  
10 (66.7%) exact matches, in which:  
10 unique CDR3  
4 unique J



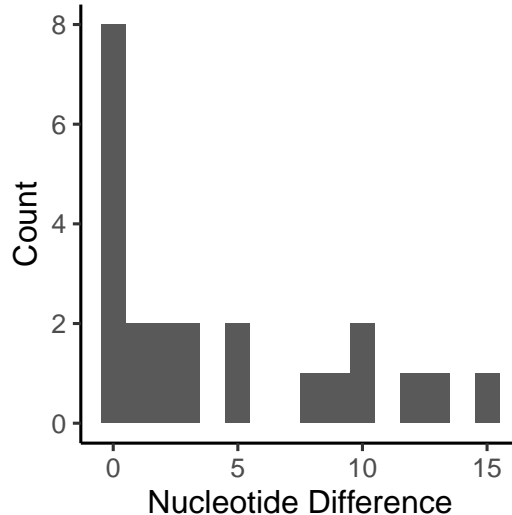
### IGHV1-69\*01\_12\_13

126 sequences assigned  
88 (69.8%) exact matches, in which:  
88 unique CDR3  
6 unique J



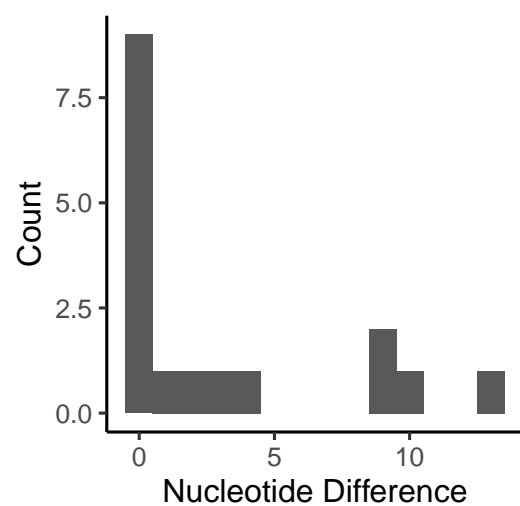
### IGHV2-5\*02

28 sequences assigned  
8 (28.6%) exact matches, in which:  
8 unique CDR3  
4 unique J



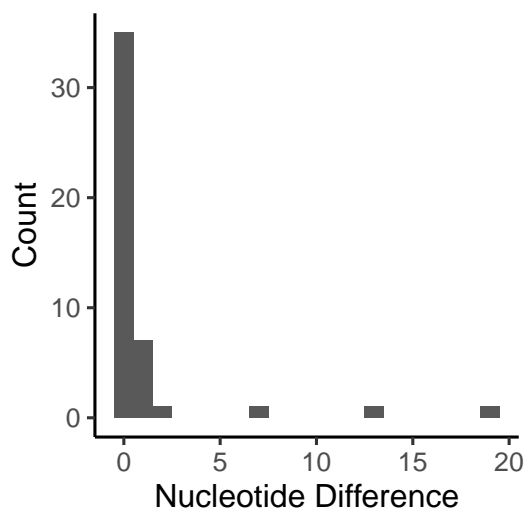
### IGHV2-70\*11\_15

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



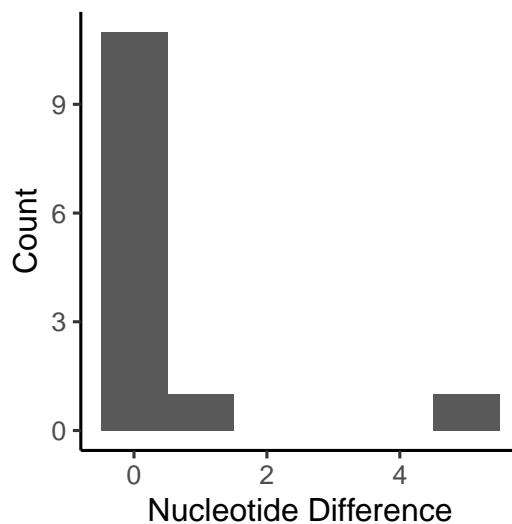
### IGHV1-69\*06\_14

54 sequences assigned  
35 (64.8%) exact matches, in which:  
35 unique CDR3  
5 unique J



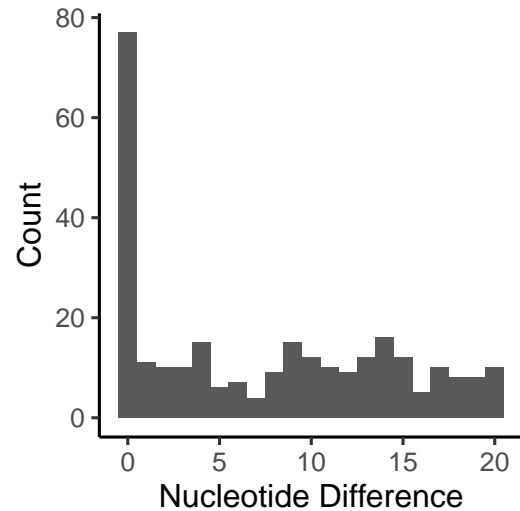
### IGHV2-26\*01

13 sequences assigned  
11 (84.6%) exact matches, in which:  
11 unique CDR3  
4 unique J



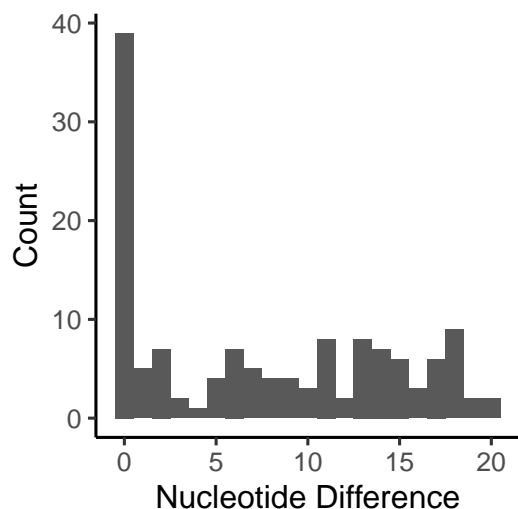
### IGHV3-7\*01

308 sequences assigned  
77 (25%) exact matches, in which:  
77 unique CDR3  
5 unique J



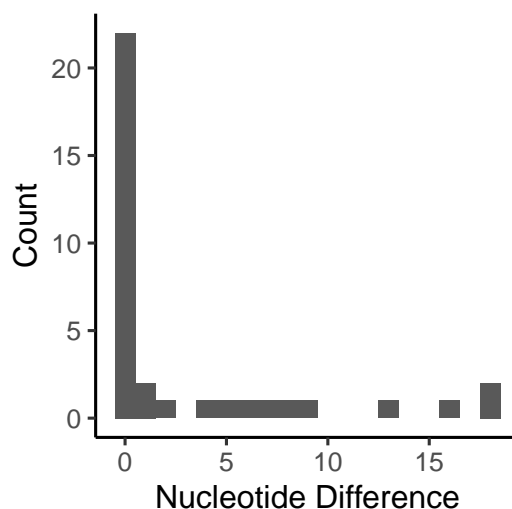
### IGHV3-7\*03

150 sequences assigned  
39 (26%) exact matches, in which:  
39 unique CDR3  
5 unique J



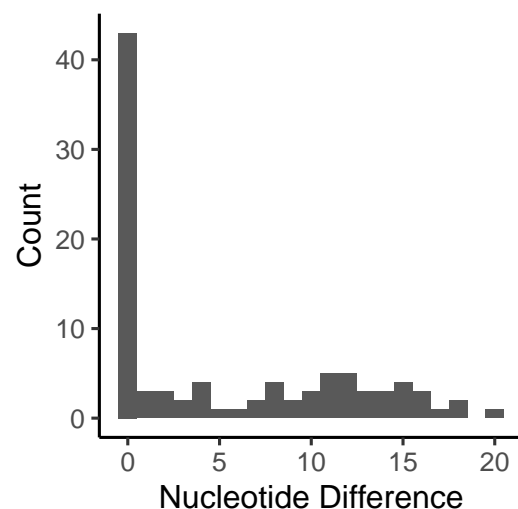
### IGHV3-11\*06

38 sequences assigned  
22 (57.9%) exact matches, in which:  
22 unique CDR3  
4 unique J



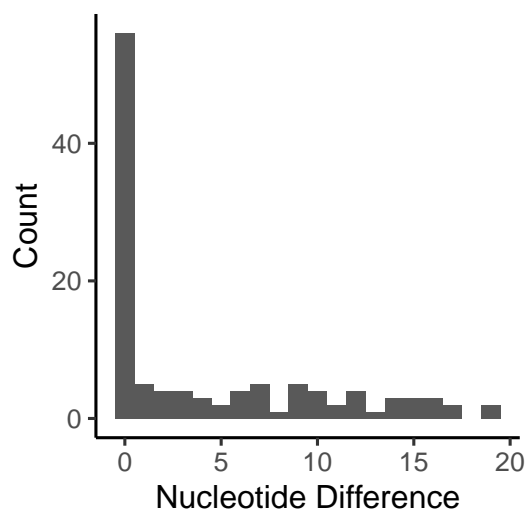
### IGHV3-15\*01\_02

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



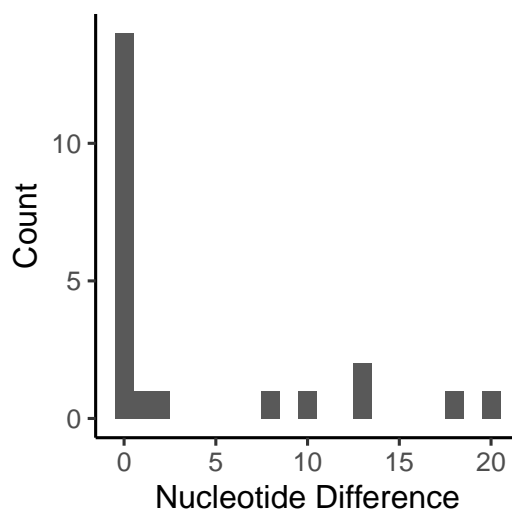
### IGHV3-9\*01

117 sequences assigned  
56 (47.9%) exact matches, in which:  
55 unique CDR3  
6 unique J



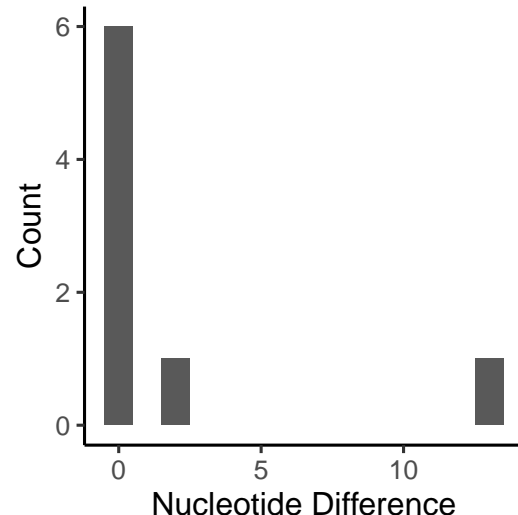
### IGHV3-13\*01

24 sequences assigned  
14 (58.3%) exact matches, in which:  
14 unique CDR3  
4 unique J



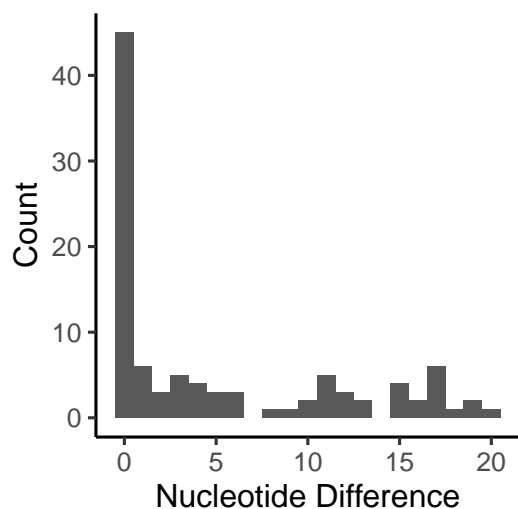
### IGHV3-20\*01\_02

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



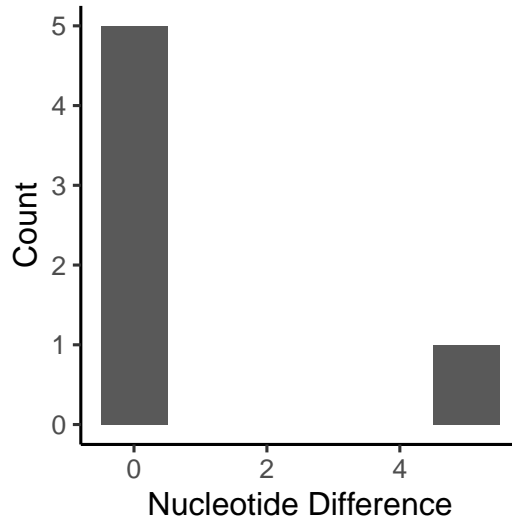
### IGHV3-11\*01

110 sequences assigned  
45 (40.9%) exact matches, in which:  
44 unique CDR3  
5 unique J



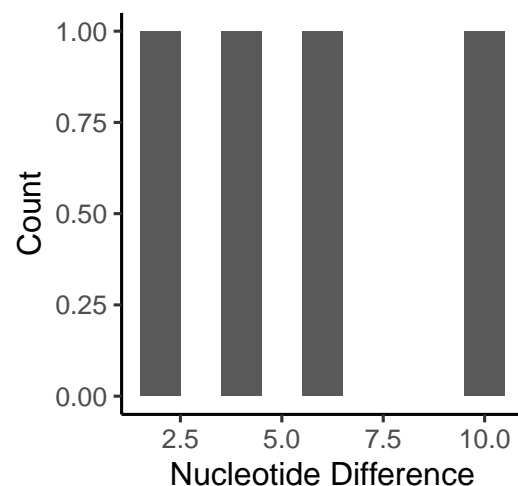
### IGHV3-13\*05

6 sequences assigned  
5 (83.3%) exact matches, in which:  
5 unique CDR3  
3 unique J



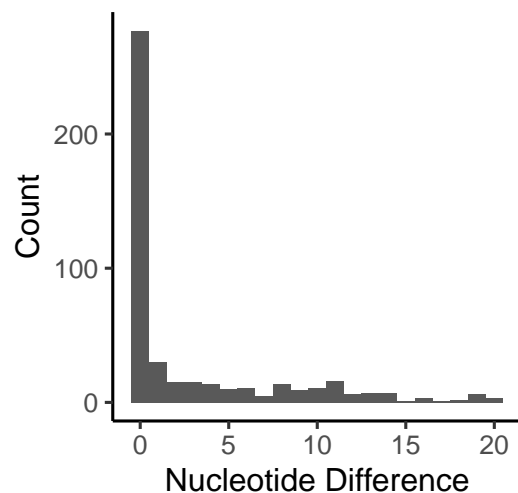
### IGHV3-20\*03\_04

4 sequences assigned  
No exact matches.



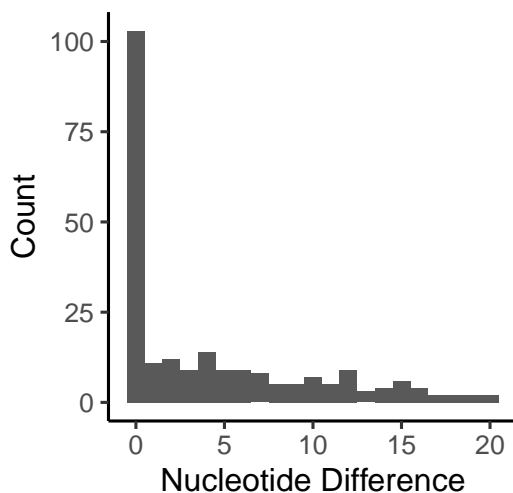
### IGHV3–21\*01\_02

486 sequences assigned  
277 (57%) exact matches, in which:  
276 unique CDR3  
6 unique J



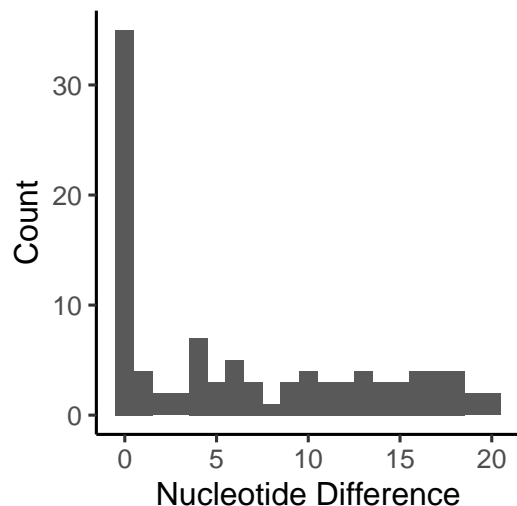
### IGHV3–33\*01

253 sequences assigned  
103 (40.7%) exact matches, in which:  
103 unique CDR3  
4 unique J



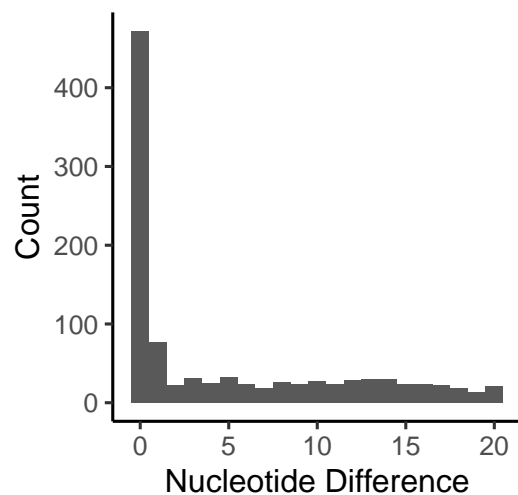
### IGHV3–48\*01

121 sequences assigned  
35 (28.9%) exact matches, in which:  
32 unique CDR3  
6 unique J



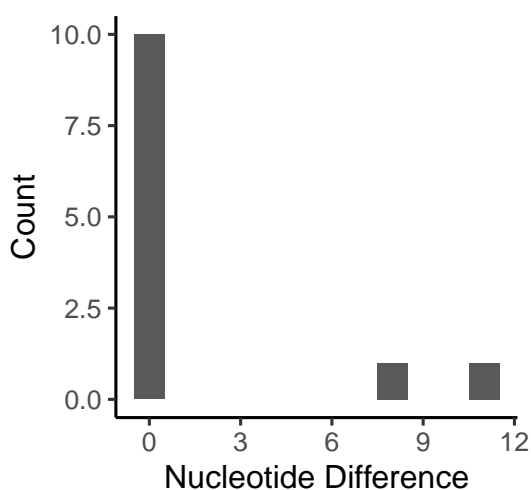
### IGHV3–23\*01\_04

1112 sequences assigned  
472 (42.4%) exact matches, in which:  
470 unique CDR3  
6 unique J



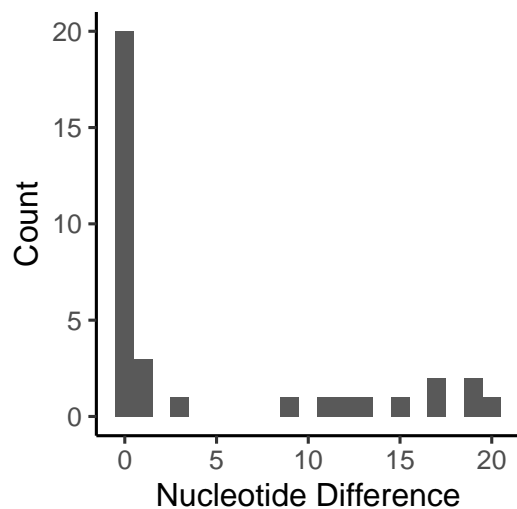
### IGHV3–43\*01

16 sequences assigned  
10 (62.5%) exact matches, in which:  
10 unique CDR3  
3 unique J



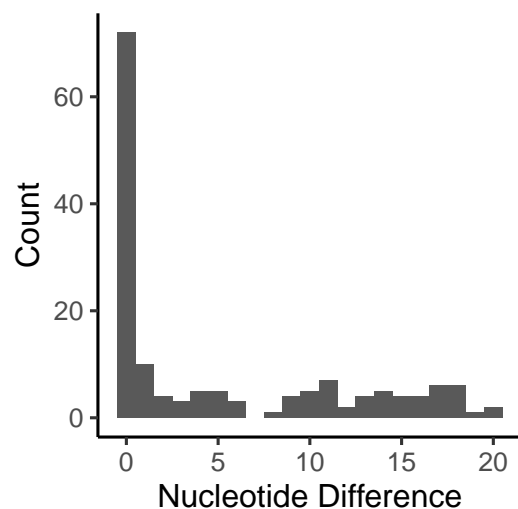
### IGHV3–48\*02

41 sequences assigned  
20 (48.8%) exact matches, in which:  
20 unique CDR3  
4 unique J



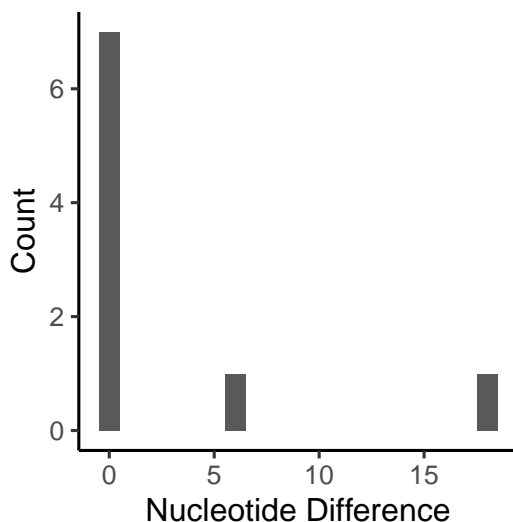
### IGHV3–30–3\*01

167 sequences assigned  
72 (43.1%) exact matches, in which:  
72 unique CDR3  
5 unique J



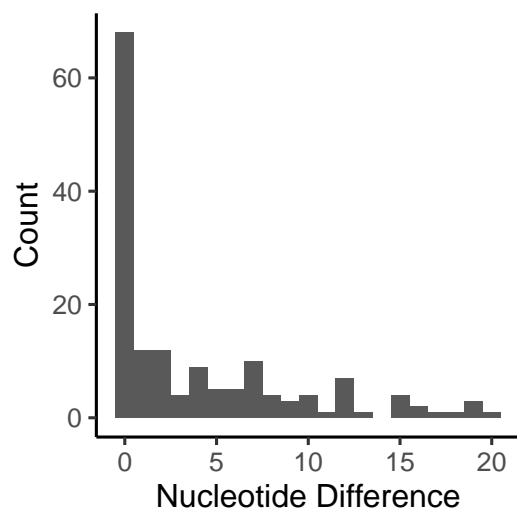
### IGHV3–43\*02

9 sequences assigned  
7 (77.8%) exact matches, in which:  
7 unique CDR3  
2 unique J



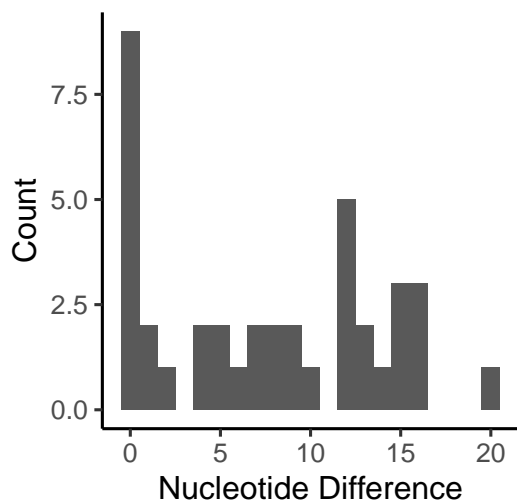
### IGHV3–48\*03

172 sequences assigned  
68 (39.5%) exact matches, in which:  
68 unique CDR3  
6 unique J



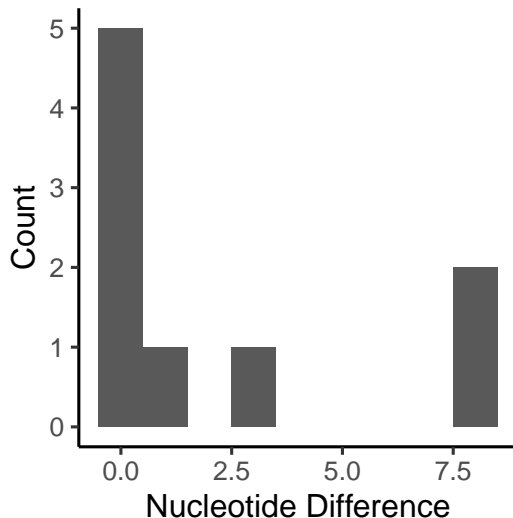
### IGHV3-49\*04

44 sequences assigned  
9 (20.5%) exact matches, in which:  
9 unique CDR3  
3 unique J



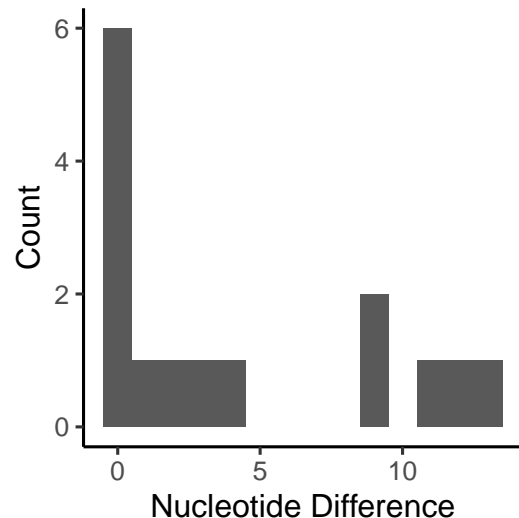
### IGHV3-64\*01

11 sequences assigned  
5 (45.5%) exact matches, in which:  
5 unique CDR3  
2 unique J



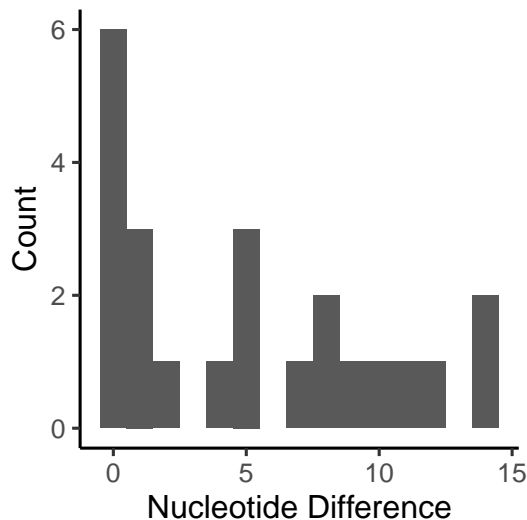
### IGHV3-66\*02

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



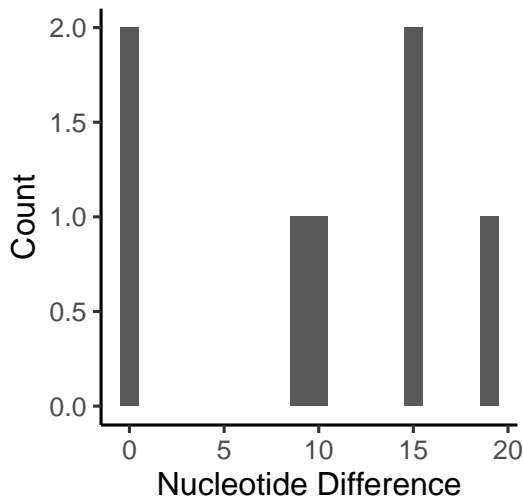
### IGHV3-49\*03\_05

23 sequences assigned  
6 (26.1%) exact matches, in which:  
6 unique CDR3  
4 unique J



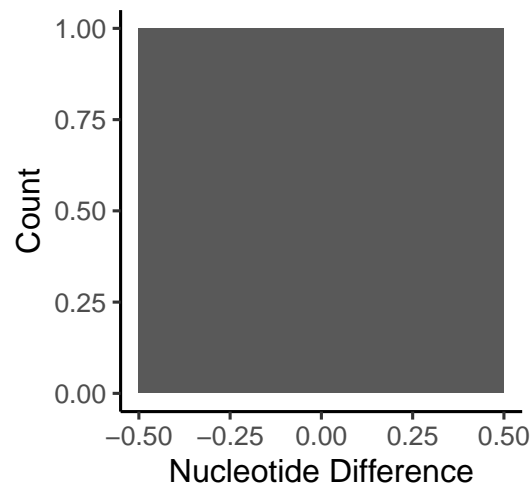
### IGHV3-64\*02\_07

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



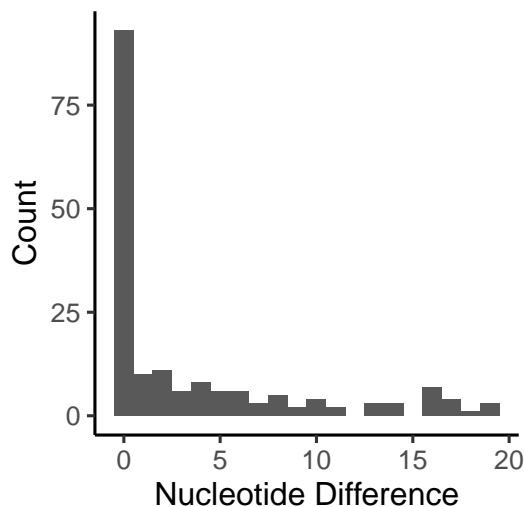
### IGHV3-69-1\*01

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



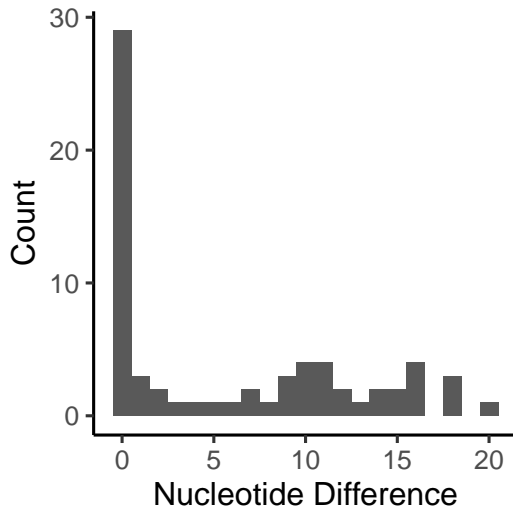
### IGHV3-53\*01\_02

207 sequences assigned  
93 (44.9%) exact matches, in which:  
92 unique CDR3  
6 unique J



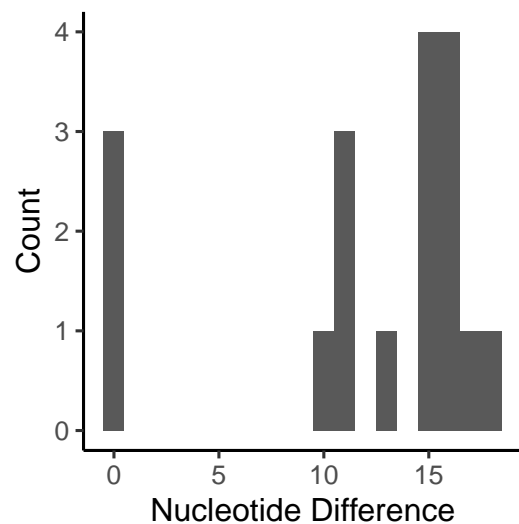
### IGHV3-66\*01

71 sequences assigned  
29 (40.8%) exact matches, in which:  
29 unique CDR3  
4 unique J



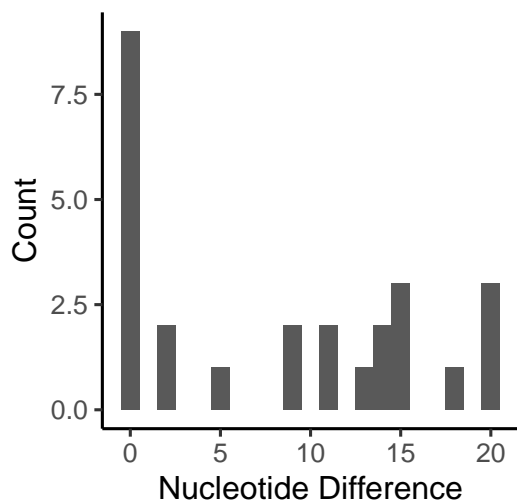
### IGHV3-72\*01

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



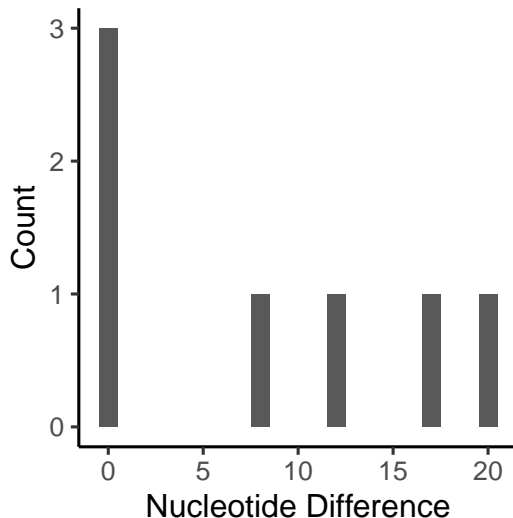
### IGHV3-73\*01\_02

29 sequences assigned  
9 (31%) exact matches, in which:  
3 unique CDR3  
3 unique J



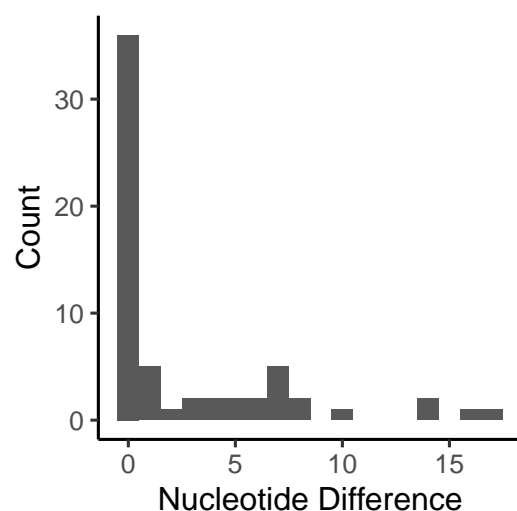
### IGHV3-43D\*04

7 sequences assigned  
3 (42.9%) exact matches, in which:  
3 unique CDR3  
2 unique J



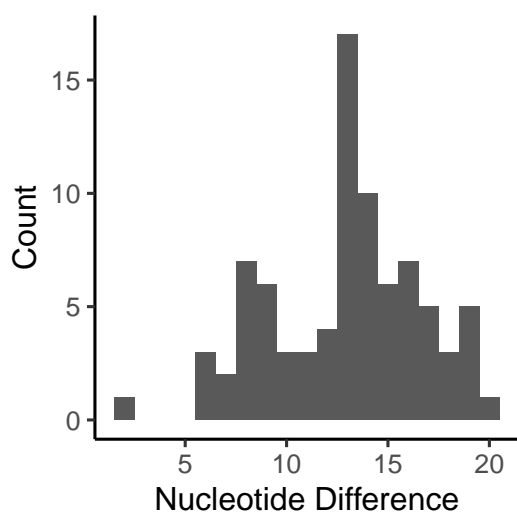
### IGHV4-4\*02\_03

72 sequences assigned  
36 (50%) exact matches, in which:  
36 unique CDR3  
4 unique J



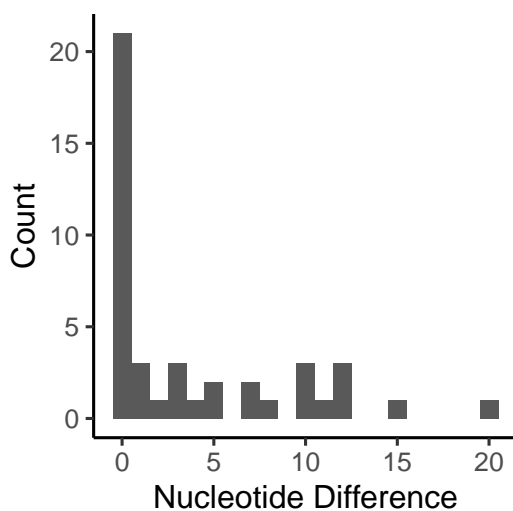
### IGHV3-74\*03

93 sequences assigned  
No exact matches.



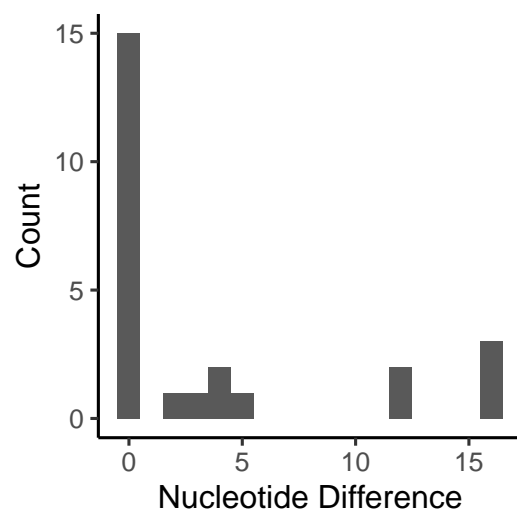
### IGHV3-64D\*06

49 sequences assigned  
21 (42.9%) exact matches, in which:  
21 unique CDR3  
5 unique J



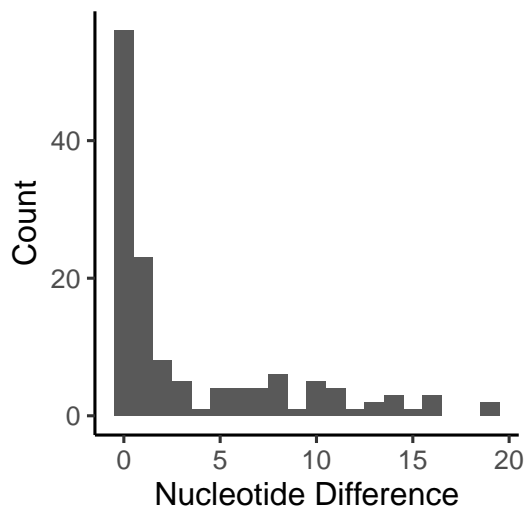
### IGHV4-30-2\*01

28 sequences assigned  
15 (53.6%) exact matches, in which:  
15 unique CDR3  
4 unique J



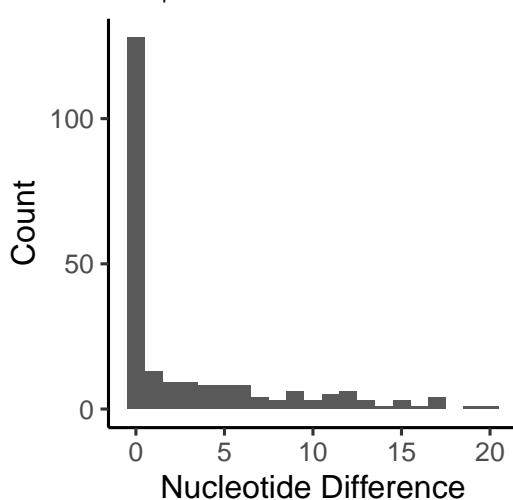
### IGHV3-74\*01\_02

141 sequences assigned  
56 (39.7%) exact matches, in which:  
54 unique CDR3  
6 unique J



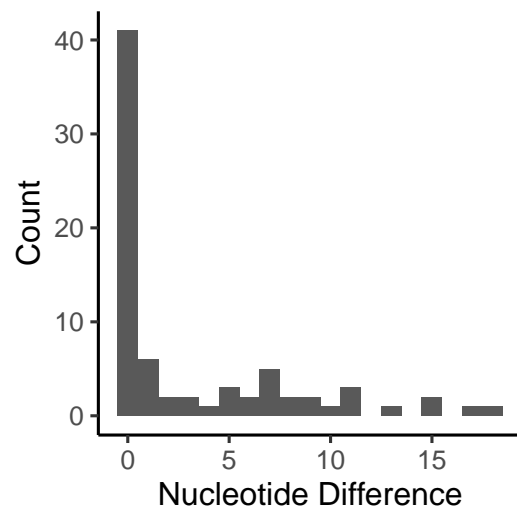
### IGHV4-4\*07

239 sequences assigned  
128 (53.6%) exact matches, in which:  
127 unique CDR3  
6 unique J



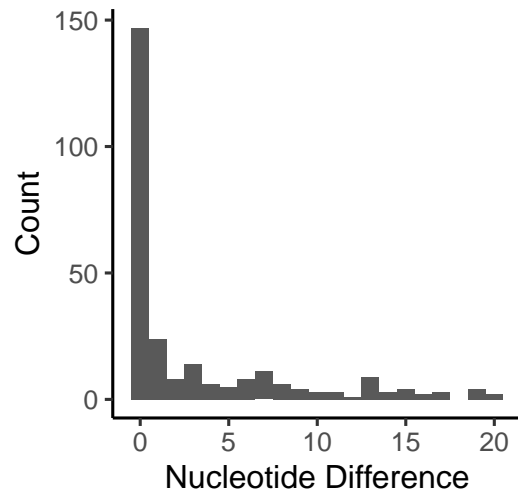
### IGHV4-30-4\*01

81 sequences assigned  
41 (50.6%) exact matches, in which:  
41 unique CDR3  
5 unique J



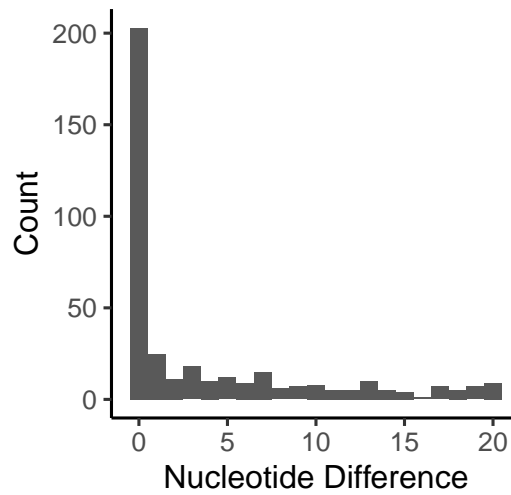
### IGHV4-31\*02

284 sequences assigned  
147 (51.8%) exact matches, in which:  
147 unique CDR3  
6 unique J



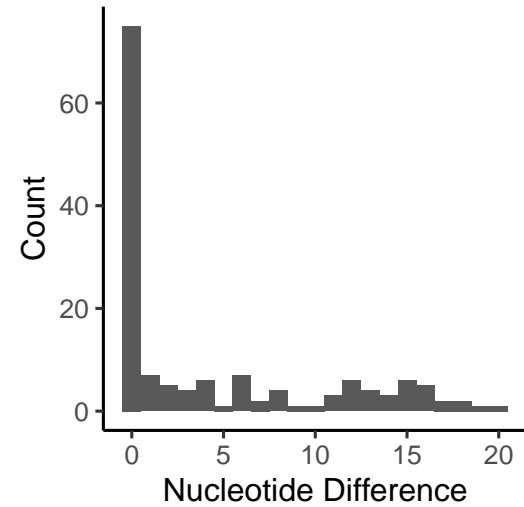
### IGHV4-39\*02\_C258G

416 sequences assigned  
203 (48.8%) exact matches, in which:  
202 unique CDR3  
6 unique J



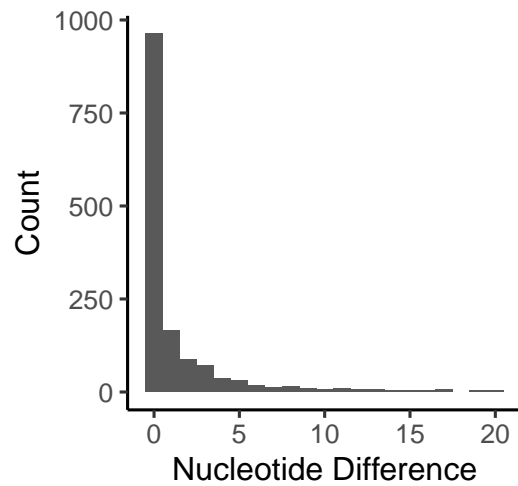
### IGHV4-61\*02

163 sequences assigned  
75 (46%) exact matches, in which:  
75 unique CDR3  
5 unique J



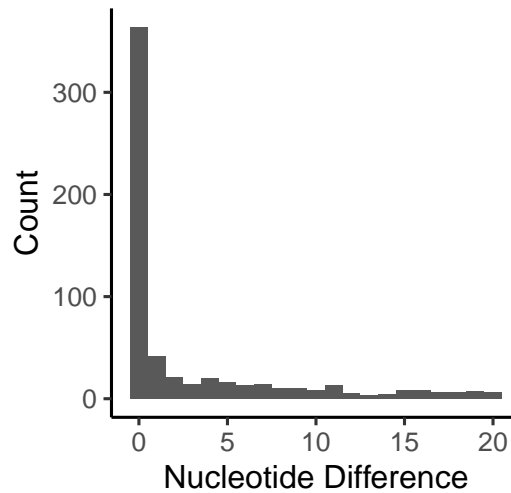
### IGHV4-34\*01\_02

1497 sequences assigned  
963 (64.3%) exact matches, in which:  
956 unique CDR3  
6 unique J



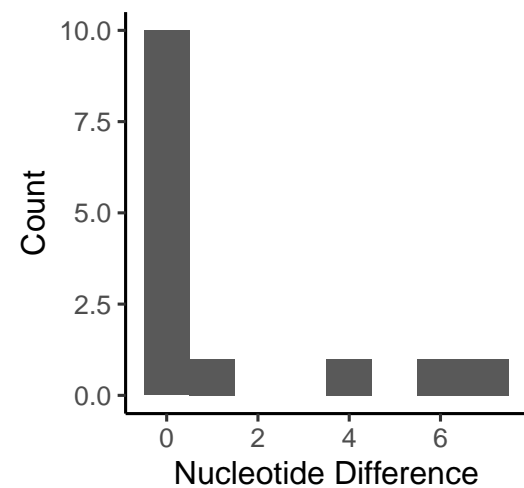
### IGHV4-59\*02\_G88A

647 sequences assigned  
364 (56.3%) exact matches, in which:  
360 unique CDR3  
6 unique J



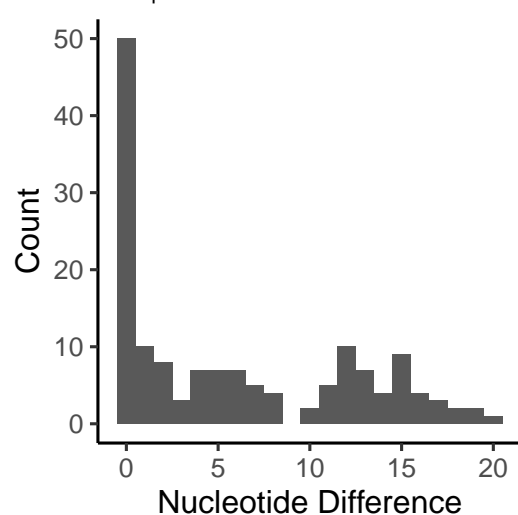
### IGHV5-10-1\*01\_03

17 sequences assigned  
10 (58.8%) exact matches, in which:  
10 unique CDR3  
3 unique J



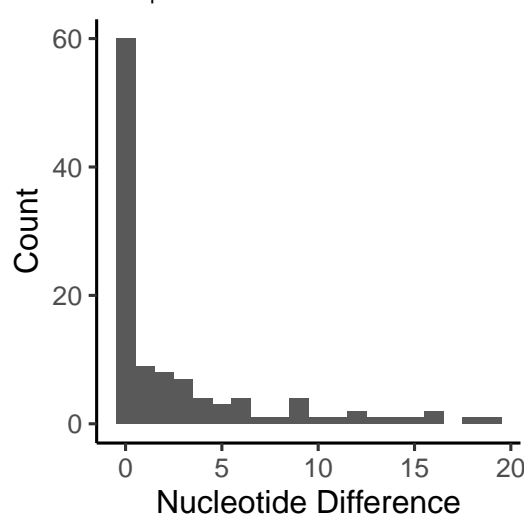
### IGHV4-38-2\*02\_A70G

168 sequences assigned  
50 (29.8%) exact matches, in which:  
50 unique CDR3  
5 unique J



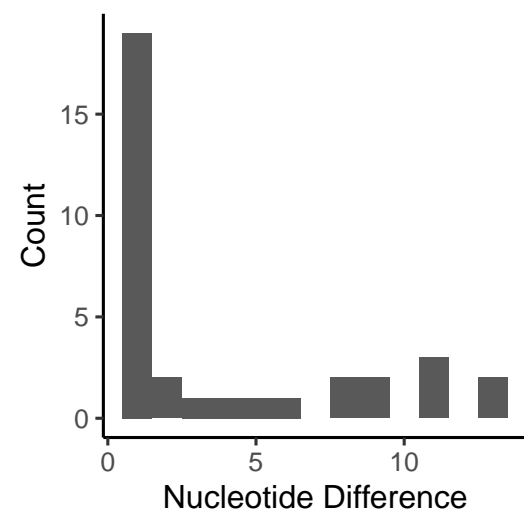
### IGHV4-61\*01

116 sequences assigned  
60 (51.7%) exact matches, in which:  
60 unique CDR3  
6 unique J



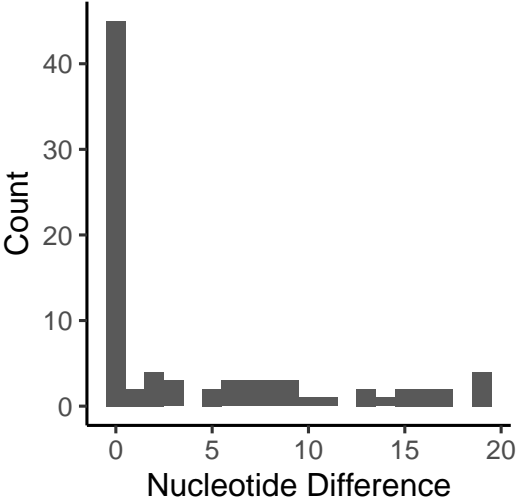
### IGHV5-51\*07

35 sequences assigned  
No exact matches.



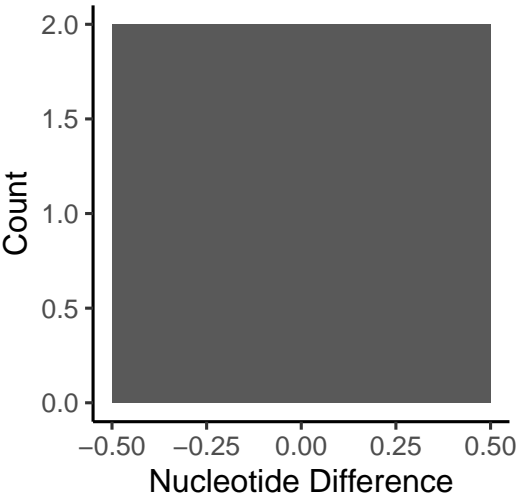
IGHV5-51\*01\_03

85 sequences assigned  
45 (52.9%) exact matches, in which:  
45 unique CDR3  
4 unique J



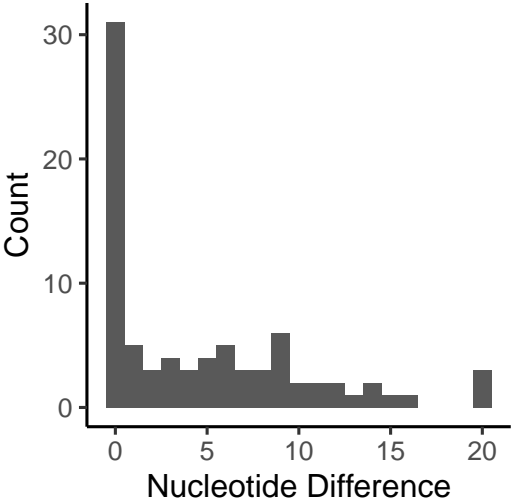
IGHV7-4-1\*02

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



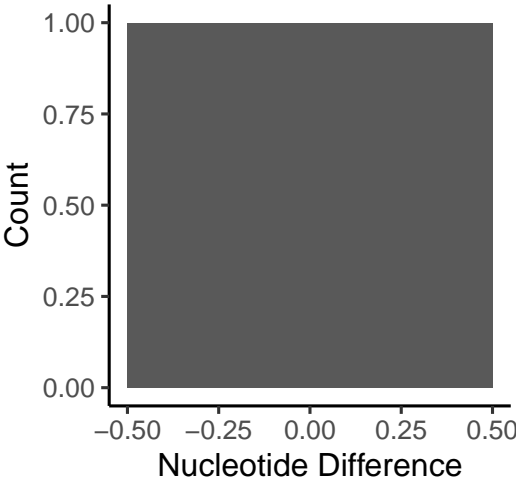
IGHV6-1\*01\_02

87 sequences assigned  
31 (35.6%) exact matches, in which:  
31 unique CDR3  
4 unique J



IGHV7-4-1\*01

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







Warning – no inferred sequences found.