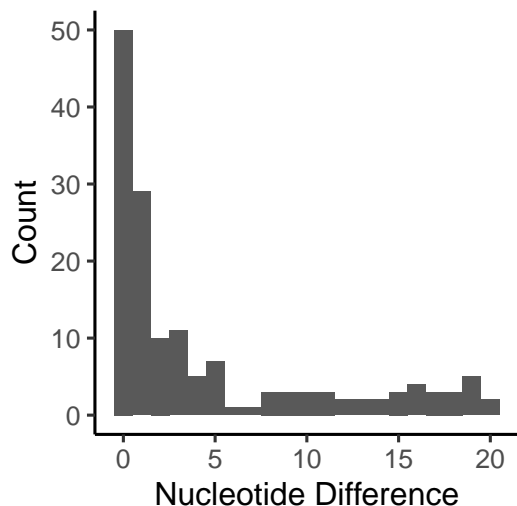


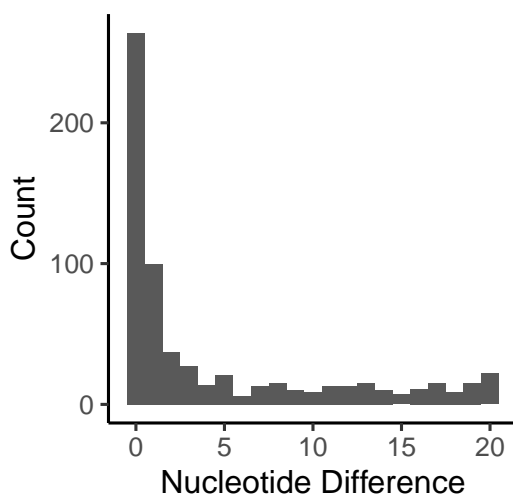
## IGHV1-2\*04

233 sequences assigned  
50 (21.5%) exact matches, in which:  
50 unique CDR3  
6 unique J



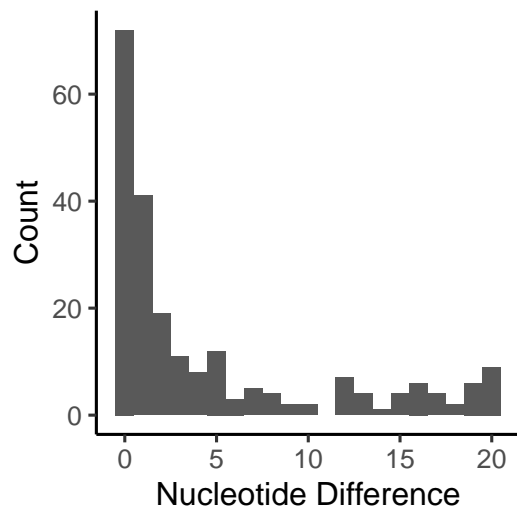
## IGHV1-18\*01

919 sequences assigned  
264 (28.7%) exact matches, in which:  
260 unique CDR3  
6 unique J



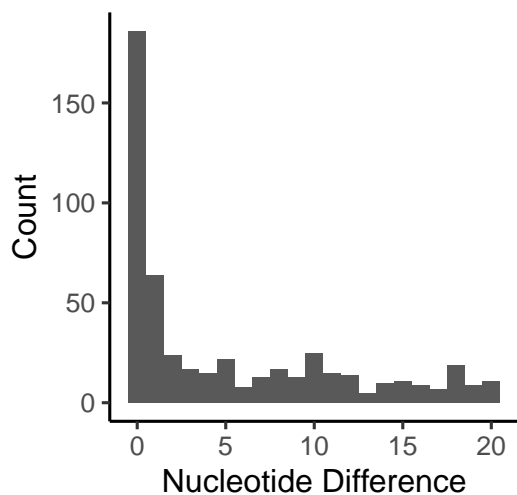
## IGHV1-46\*01

314 sequences assigned  
72 (22.9%) exact matches, in which:  
72 unique CDR3  
5 unique J



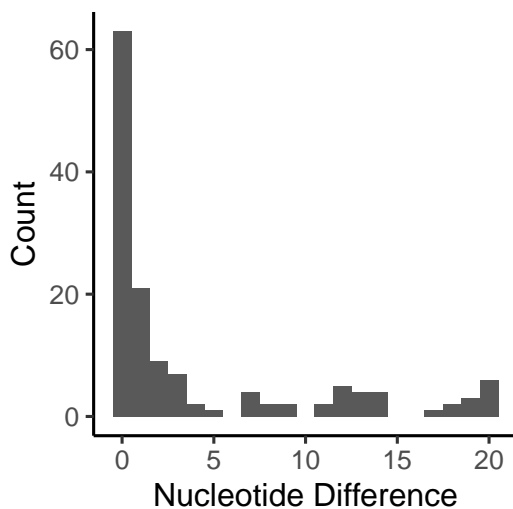
## IGHV1-3\*01

796 sequences assigned  
186 (23.4%) exact matches, in which:  
186 unique CDR3  
7 unique J



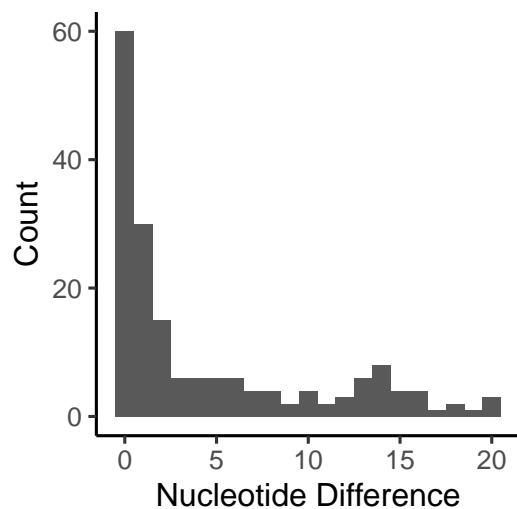
## IGHV1-24\*01

182 sequences assigned  
63 (34.6%) exact matches, in which:  
61 unique CDR3  
7 unique J



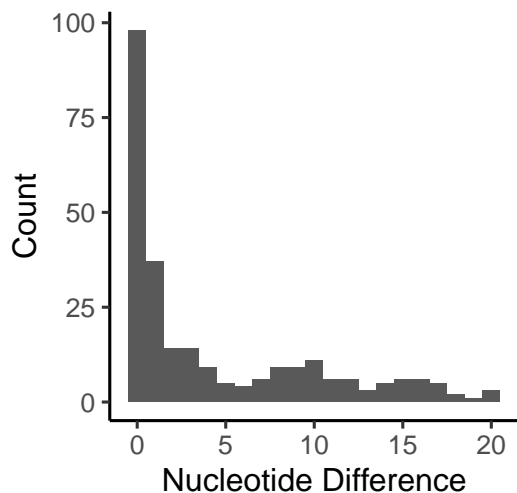
## IGHV1-46\*03

257 sequences assigned  
60 (23.3%) exact matches, in which:  
60 unique CDR3  
5 unique J



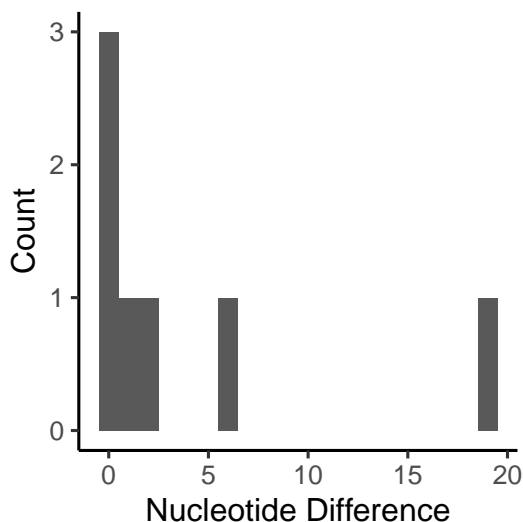
## IGHV1-8\*01

306 sequences assigned  
98 (32%) exact matches, in which:  
98 unique CDR3  
6 unique J



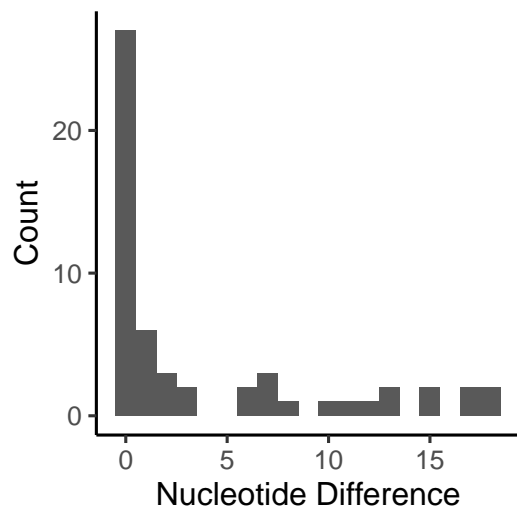
## IGHV1-45\*02

54 sequences assigned  
3 (5.6%) exact matches, in which:  
3 unique CDR3  
2 unique J



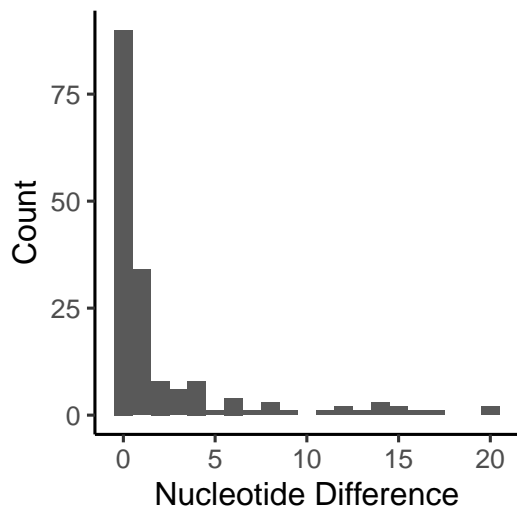
## IGHV1-58\*02

77 sequences assigned  
27 (35.1%) exact matches, in which:  
27 unique CDR3  
7 unique J



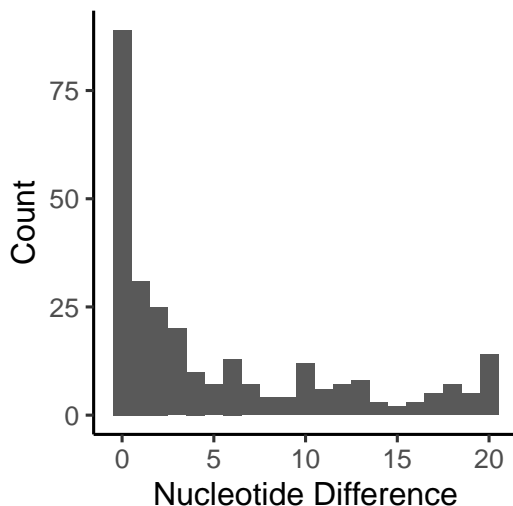
### IGHV1-69\*02

280 sequences assigned  
90 (32.1%) exact matches, in which:  
90 unique CDR3  
4 unique J



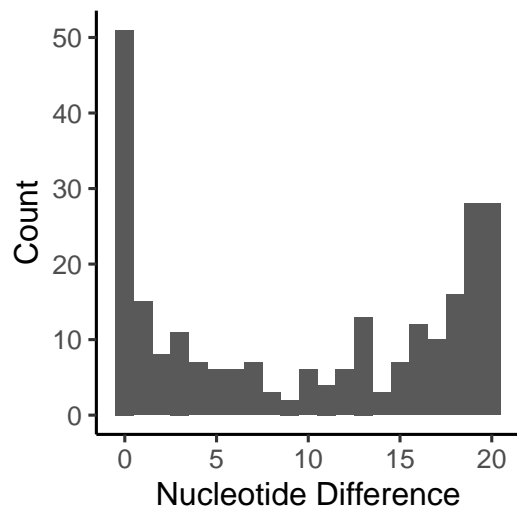
### IGHV2-5\*01

428 sequences assigned  
89 (20.8%) exact matches, in which:  
88 unique CDR3  
6 unique J



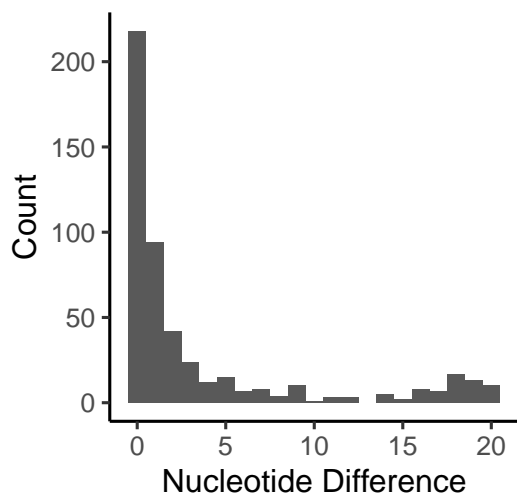
### IGHV2-70\*15

421 sequences assigned  
51 (12.1%) exact matches, in which:  
51 unique CDR3  
5 unique J



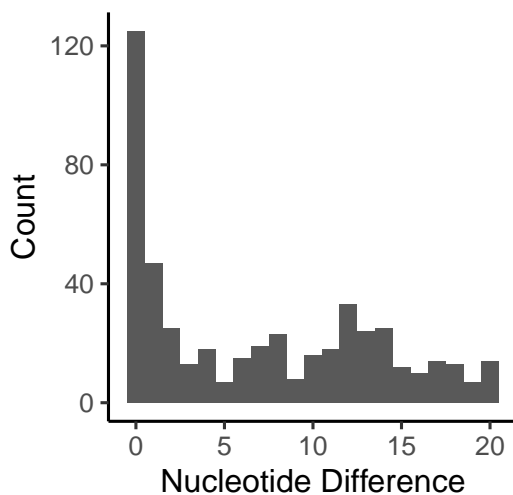
### IGHV1-69\*04

742 sequences assigned  
218 (29.4%) exact matches, in which:  
214 unique CDR3  
7 unique J



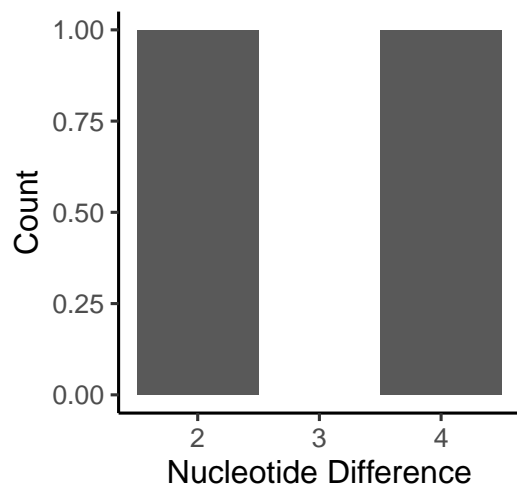
### IGHV2-5\*02

634 sequences assigned  
125 (19.7%) exact matches, in which:  
125 unique CDR3  
6 unique J



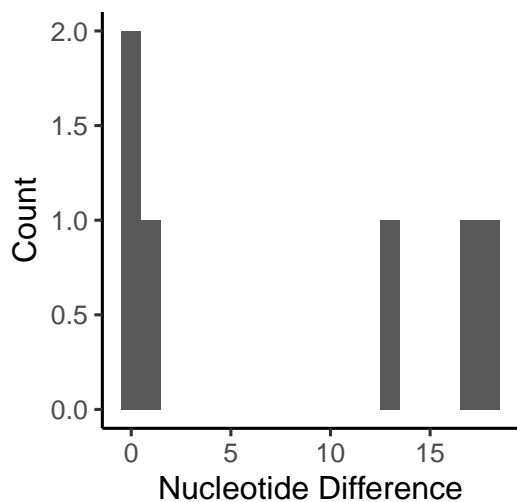
### IGHV2-70D\*04

3 sequences assigned  
No exact matches.



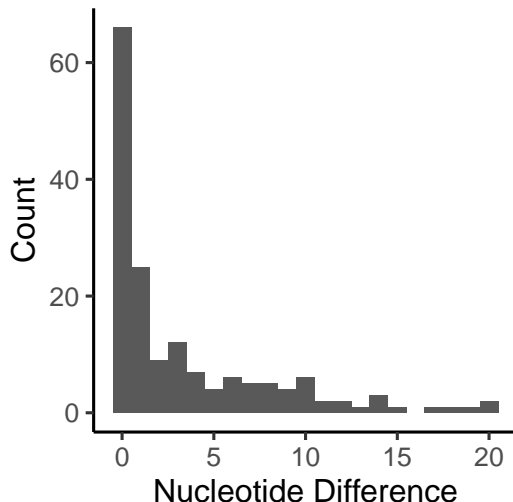
### IGHV1-69D\*01

18 sequences assigned  
2 (11.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



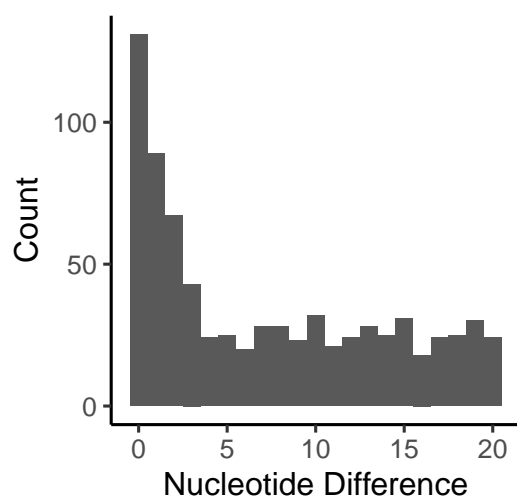
### IGHV2-26\*01

215 sequences assigned  
66 (30.7%) exact matches, in which:  
66 unique CDR3  
6 unique J



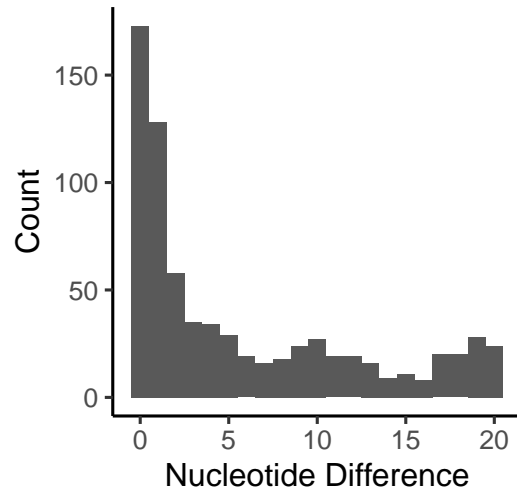
### IGHV3-7\*01

992 sequences assigned  
131 (13.2%) exact matches, in which:  
130 unique CDR3  
7 unique J



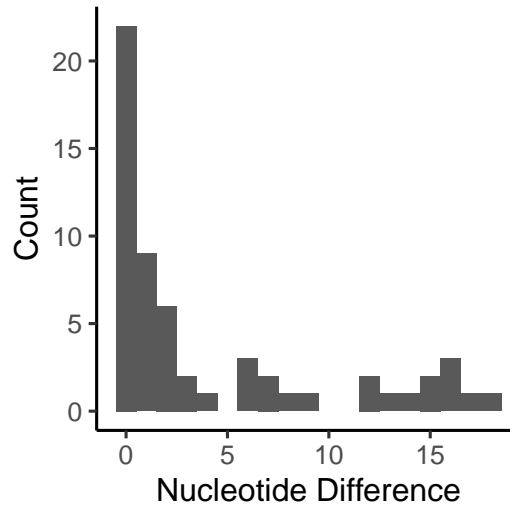
### IGHV3-9\*01

1120 sequences assigned  
173 (15.4%) exact matches, in which:  
172 unique CDR3  
6 unique J



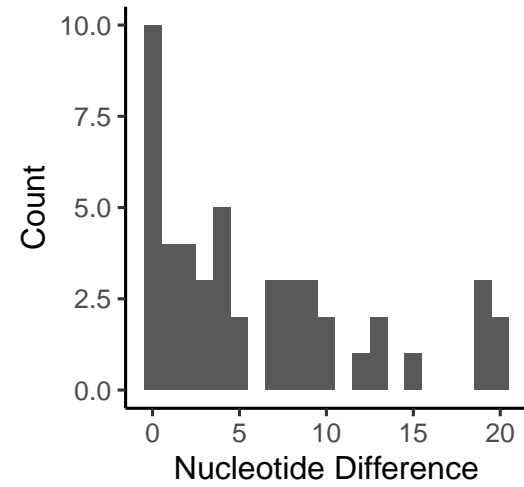
### IGHV3-13\*01

84 sequences assigned  
22 (26.2%) exact matches, in which:  
22 unique CDR3  
4 unique J



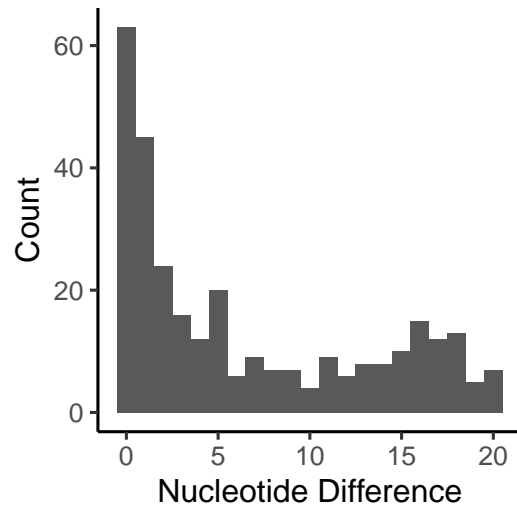
### IGHV3-20\*01

57 sequences assigned  
10 (17.5%) exact matches, in which:  
10 unique CDR3  
5 unique J



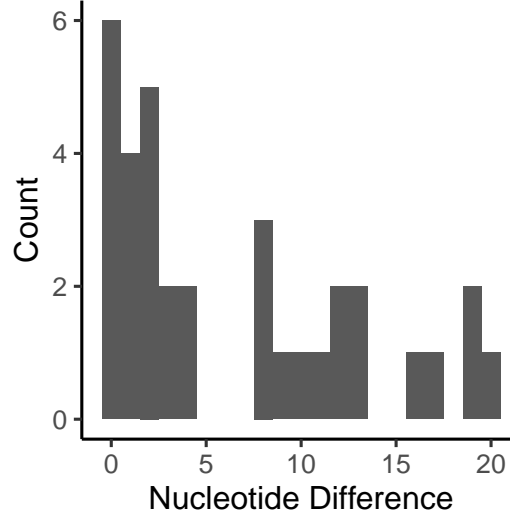
### IGHV3-11\*01

837 sequences assigned  
63 (7.5%) exact matches, in which:  
61 unique CDR3  
6 unique J



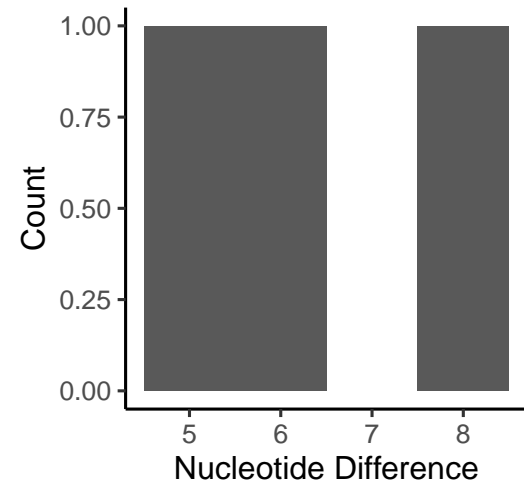
### IGHV3-13\*05

36 sequences assigned  
6 (16.7%) exact matches, in which:  
6 unique CDR3  
3 unique J



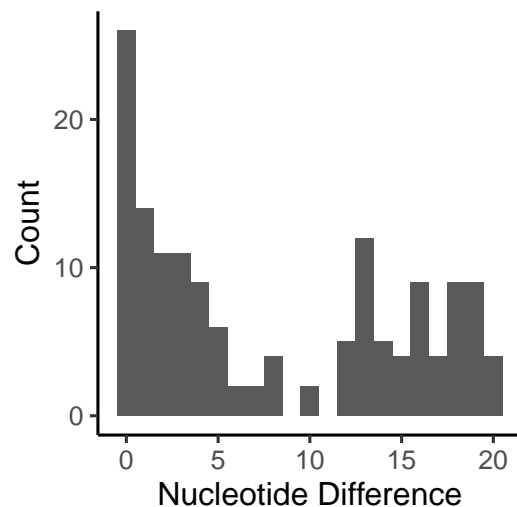
### IGHV3-20\*04

21 sequences assigned  
No exact matches.



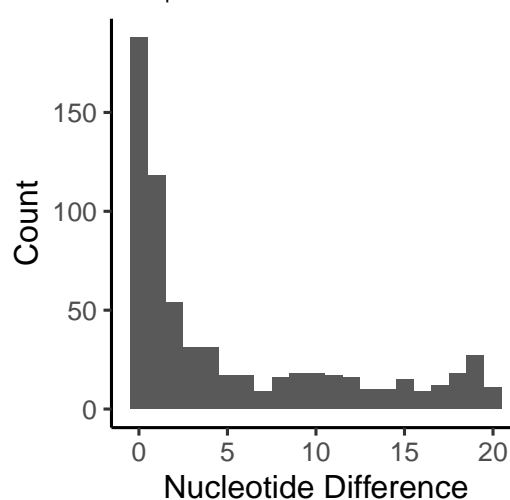
### IGHV3-11\*06

210 sequences assigned  
26 (12.4%) exact matches, in which:  
26 unique CDR3  
4 unique J



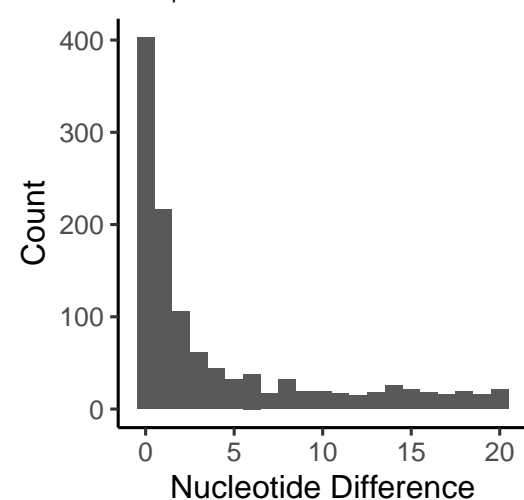
### IGHV3-15\*01

919 sequences assigned  
188 (20.5%) exact matches, in which:  
183 unique CDR3  
7 unique J



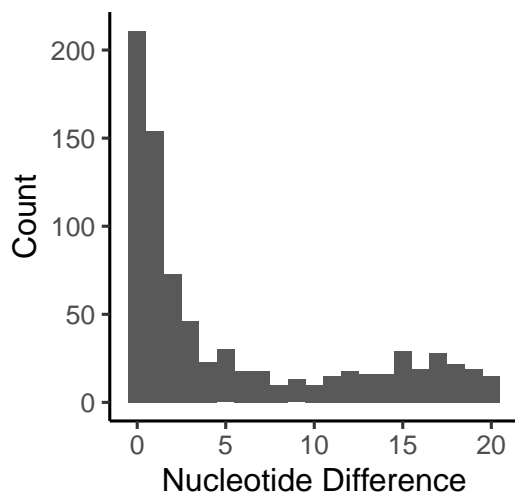
### IGHV3-21\*01

1446 sequences assigned  
403 (27.9%) exact matches, in which:  
402 unique CDR3  
7 unique J



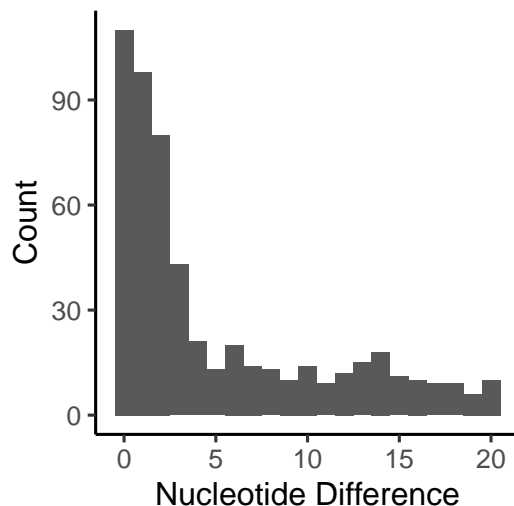
### IGHV3-23\*04

1136 sequences assigned  
211 (18.6%) exact matches, in which:  
210 unique CDR3  
6 unique J



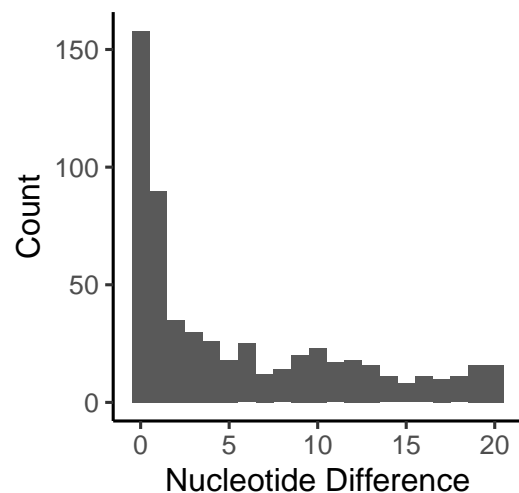
### IGHV3-33\*01

726 sequences assigned  
110 (15.2%) exact matches, in which:  
108 unique CDR3  
6 unique J



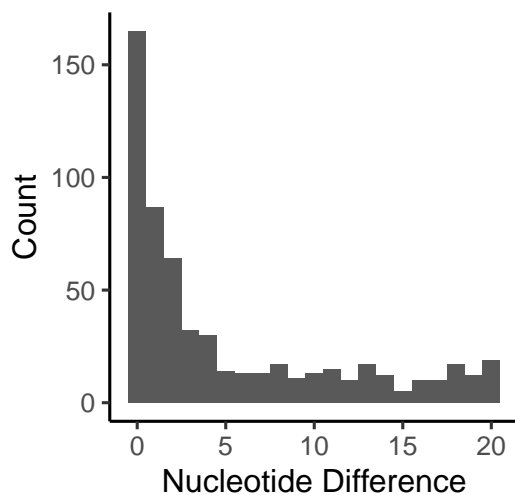
### IGHV3-48\*03

891 sequences assigned  
158 (17.7%) exact matches, in which:  
158 unique CDR3  
7 unique J



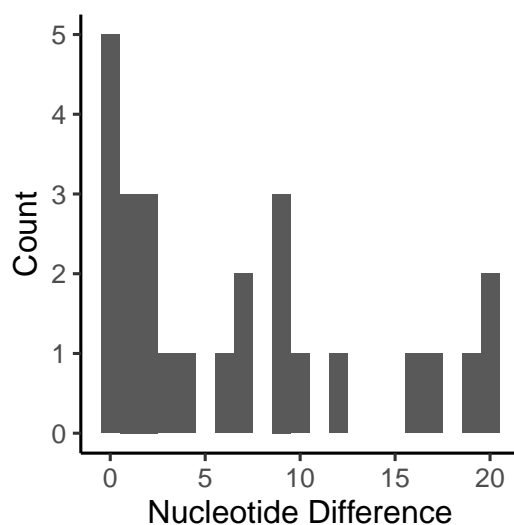
### IGHV3-30\*01

819 sequences assigned  
165 (20.1%) exact matches, in which:  
165 unique CDR3  
6 unique J



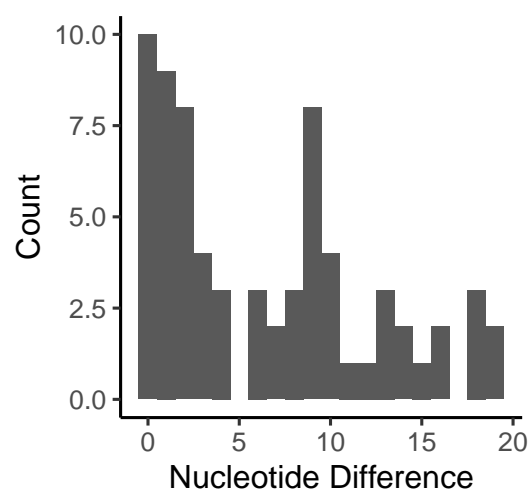
### IGHV3-43\*01

48 sequences assigned  
5 (10.4%) exact matches, in which:  
5 unique CDR3  
2 unique J



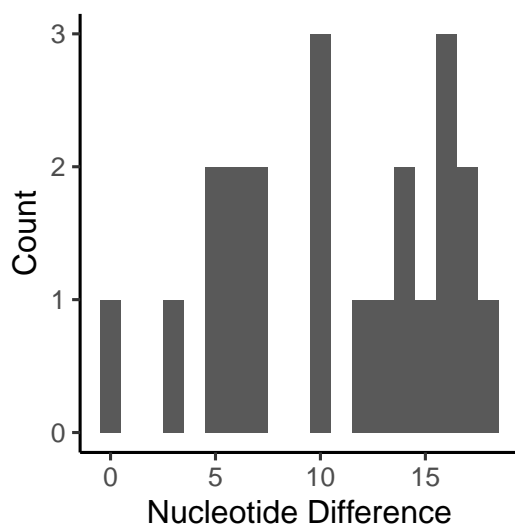
### IGHV3-49\*03

124 sequences assigned  
10 (8.1%) exact matches, in which:  
10 unique CDR3  
4 unique J



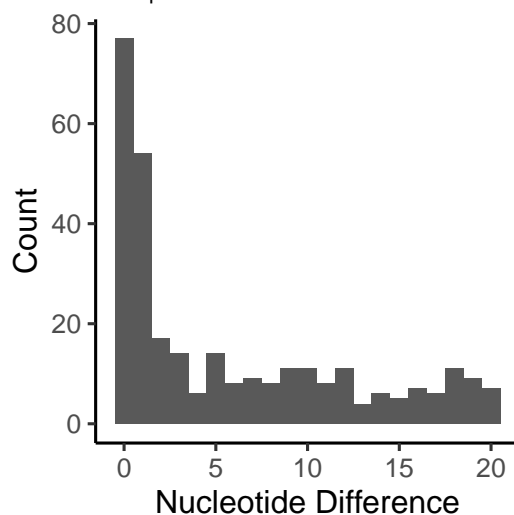
### IGHV3-30-3\*03

59 sequences assigned  
1 (1.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



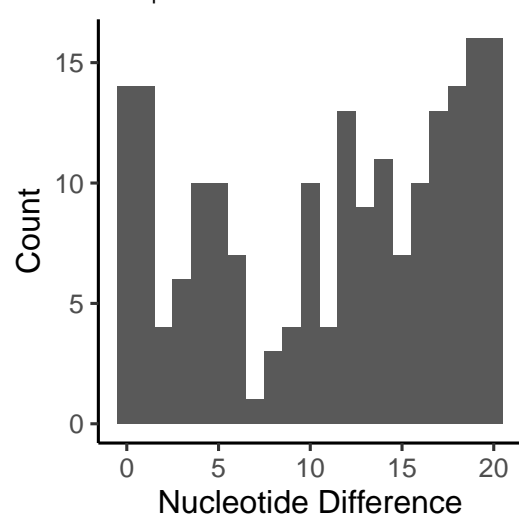
### IGHV3-48\*01

403 sequences assigned  
77 (19.1%) exact matches, in which:  
77 unique CDR3  
6 unique J



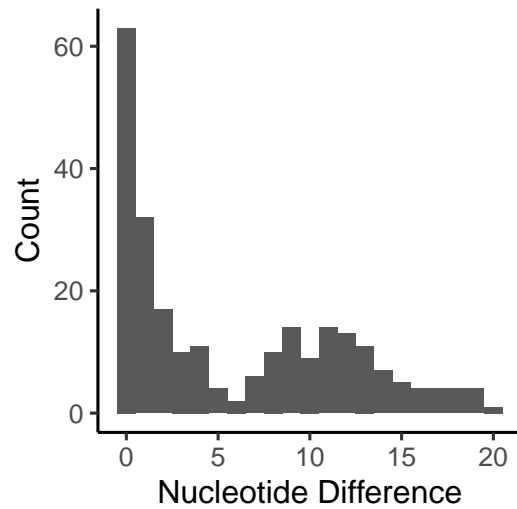
### IGHV3-49\*04

318 sequences assigned  
14 (4.4%) exact matches, in which:  
14 unique CDR3  
4 unique J



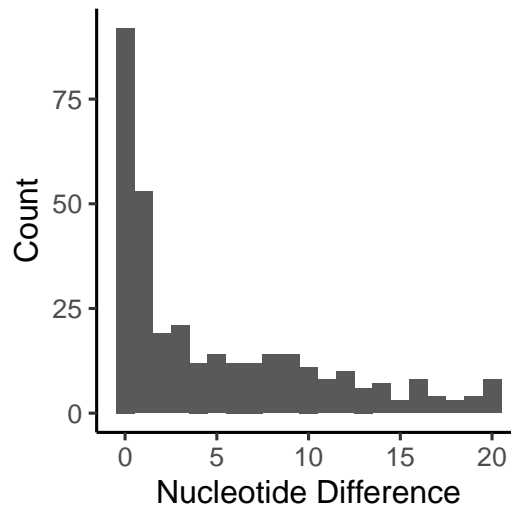
### IGHV3-53\*01

316 sequences assigned  
63 (19.9%) exact matches, in which:  
63 unique CDR3  
6 unique J



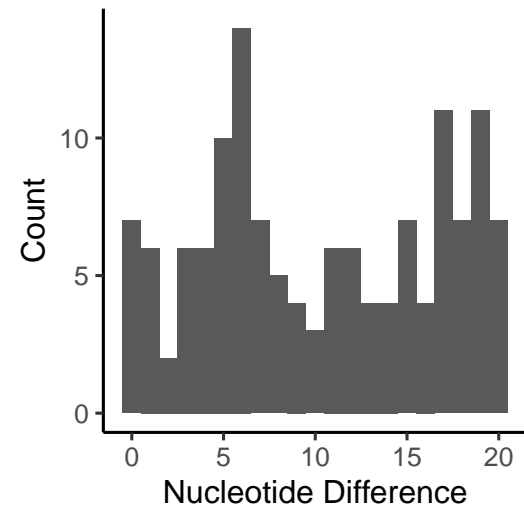
### IGHV3-66\*01

470 sequences assigned  
92 (19.6%) exact matches, in which:  
92 unique CDR3  
6 unique J



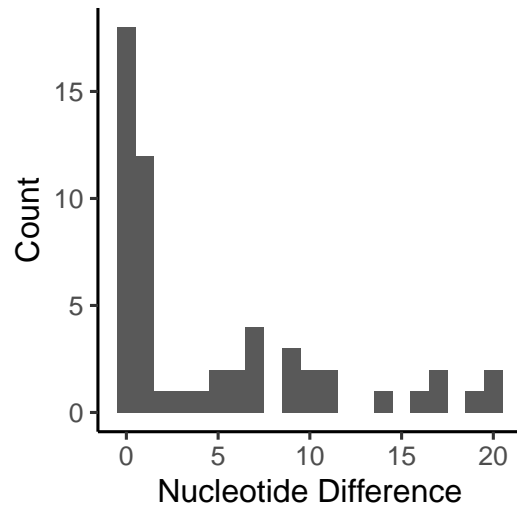
### IGHV3-72\*01

196 sequences assigned  
7 (3.6%) exact matches, in which:  
7 unique CDR3  
3 unique J



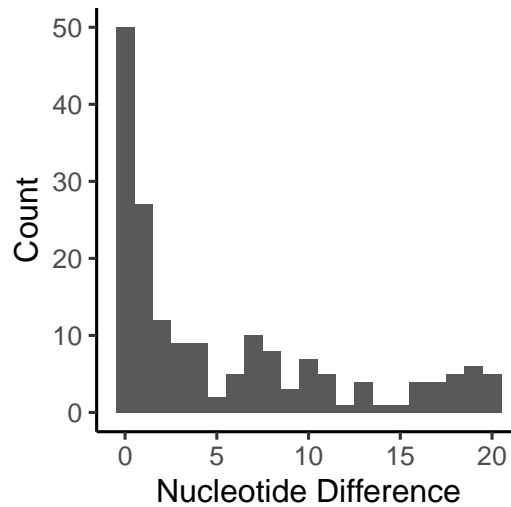
### IGHV3-53\*02

63 sequences assigned  
18 (28.6%) exact matches, in which:  
18 unique CDR3  
5 unique J



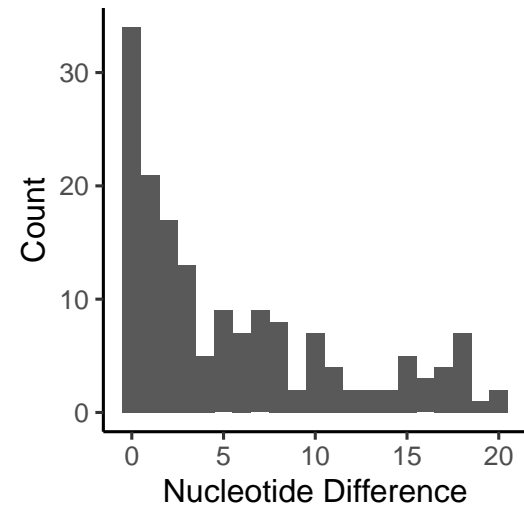
### IGHV3-66\*02

247 sequences assigned  
50 (20.2%) exact matches, in which:  
50 unique CDR3  
5 unique J



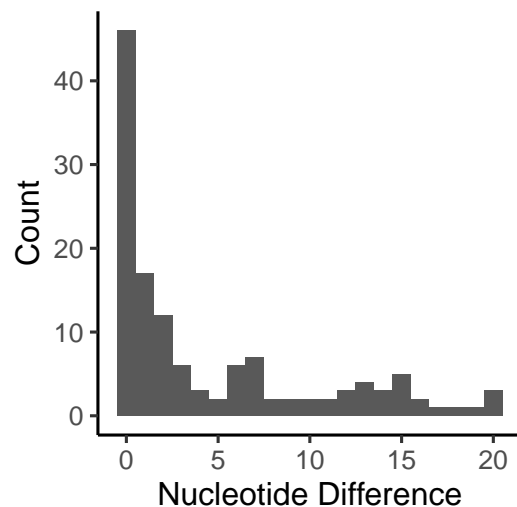
### IGHV3-73\*01

205 sequences assigned  
34 (16.6%) exact matches, in which:  
34 unique CDR3  
6 unique J



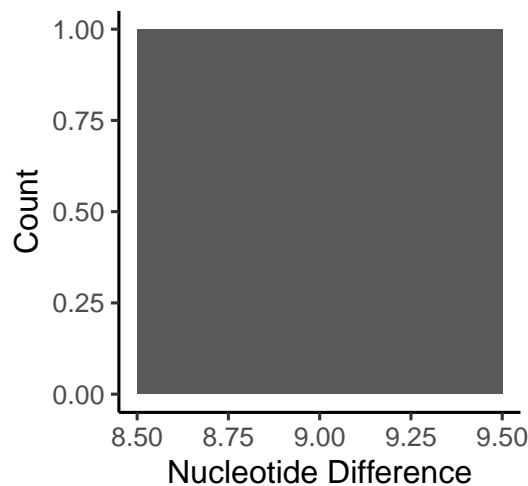
### IGHV3-64\*01

154 sequences assigned  
46 (29.9%) exact matches, in which:  
46 unique CDR3  
7 unique J



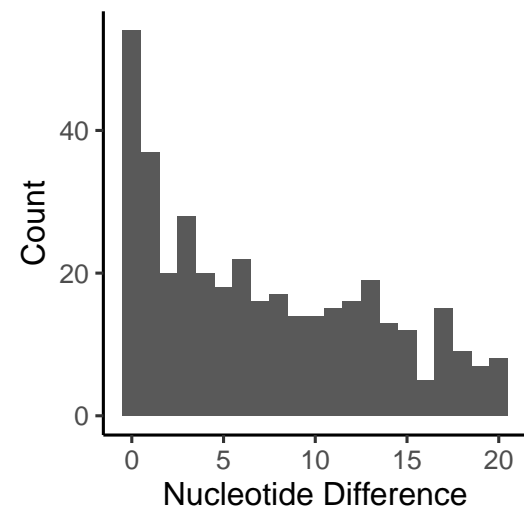
### IGHV3-71\*03

1 sequences assigned  
No exact matches.



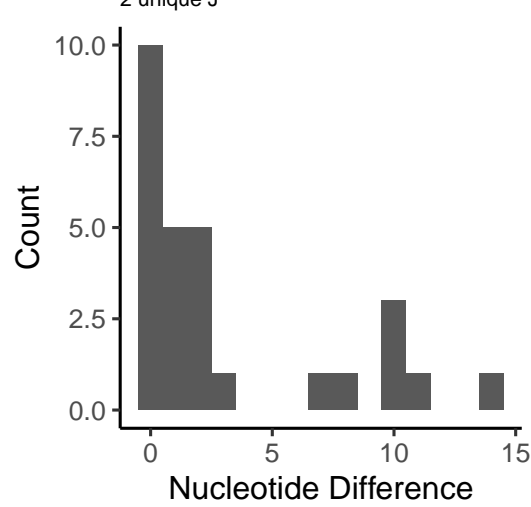
### IGHV3-74\*01

572 sequences assigned  
54 (9.4%) exact matches, in which:  
53 unique CDR3  
5 unique J



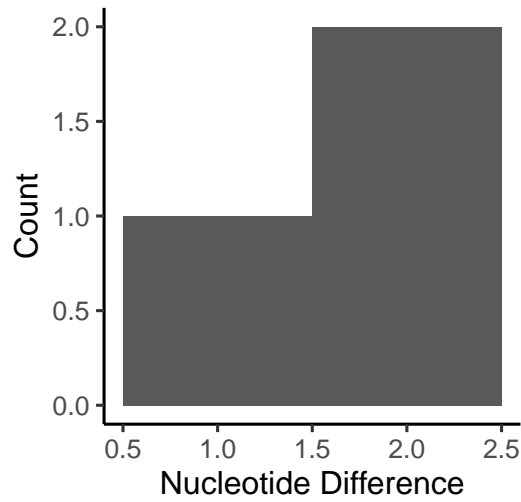
### IGHV3-43D\*04

43 sequences assigned  
10 (23.3%) exact matches, in which:  
8 unique CDR3  
2 unique J



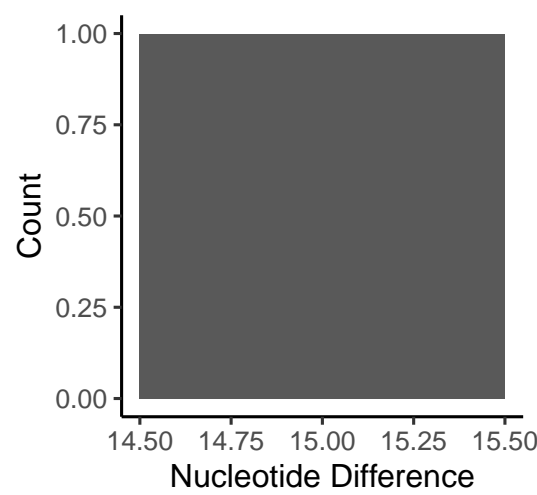
### IGHV4-28\*04

3 sequences assigned  
No exact matches.



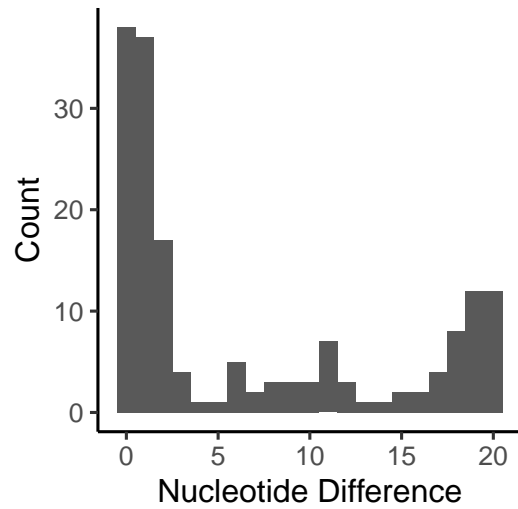
### IGHV4-30-2\*04

1 sequences assigned  
No exact matches.



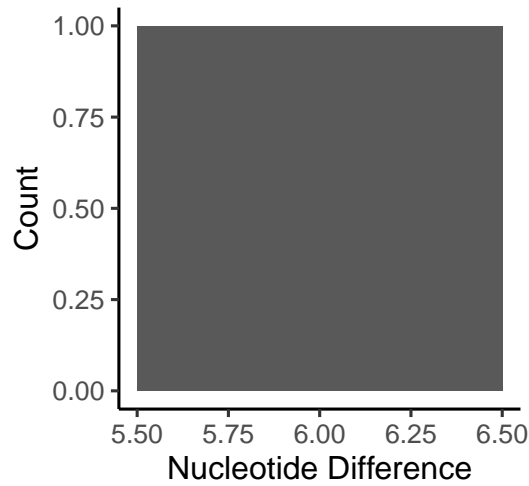
### IGHV3-64D\*06

264 sequences assigned  
38 (14.4%) exact matches, in which:  
36 unique CDR3  
5 unique J



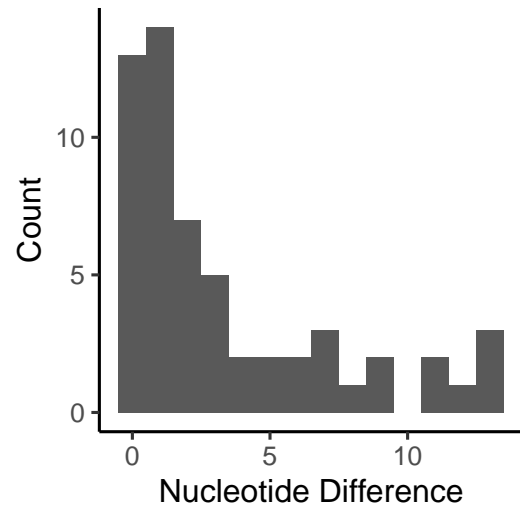
### IGHV4-28\*07

2 sequences assigned  
No exact matches.



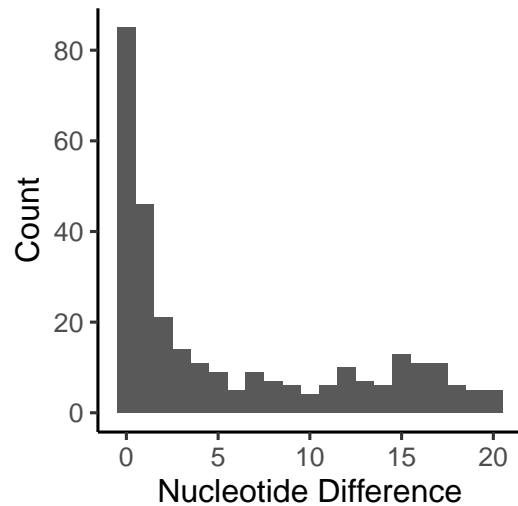
### IGHV4-31\*01

65 sequences assigned  
13 (20%) exact matches, in which:  
12 unique CDR3  
5 unique J



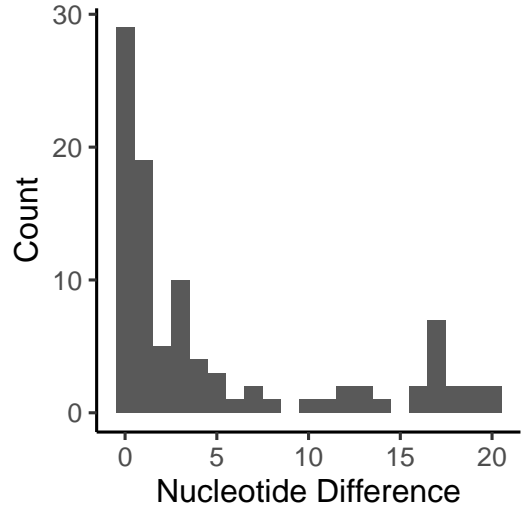
### IGHV4-4\*02

426 sequences assigned  
85 (20%) exact matches, in which:  
83 unique CDR3  
6 unique J



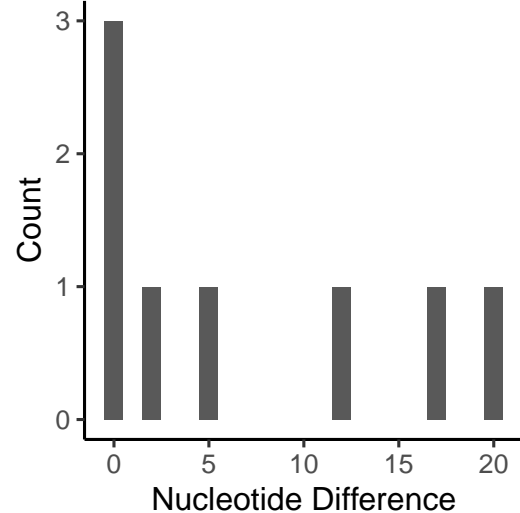
### IGHV4-30-2\*01

173 sequences assigned  
29 (16.8%) exact matches, in which:  
29 unique CDR3  
5 unique J



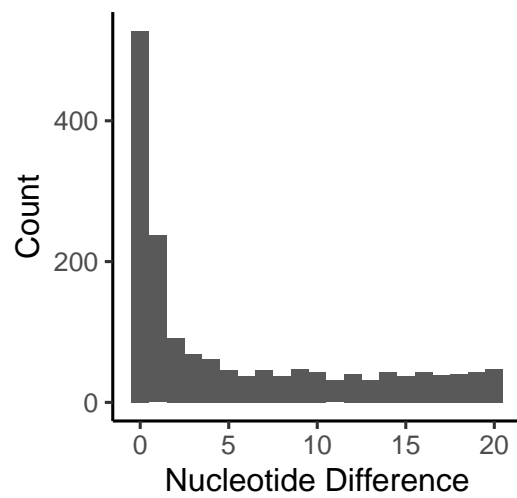
### IGHV4-31\*03

28 sequences assigned  
3 (10.7%) exact matches, in which:  
3 unique CDR3  
2 unique J



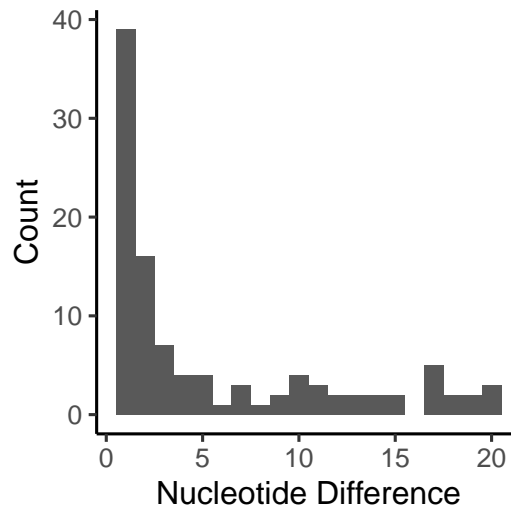
### IGHV4-34\*01

2192 sequences assigned  
528 (24.1%) exact matches, in which:  
526 unique CDR3  
7 unique J



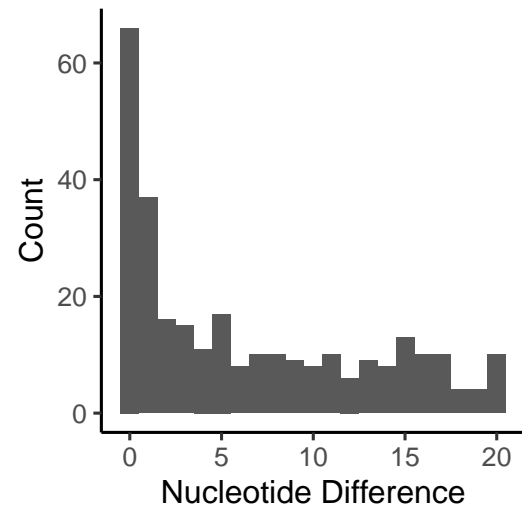
### IGHV4-38-2\*02

220 sequences assigned  
No exact matches.



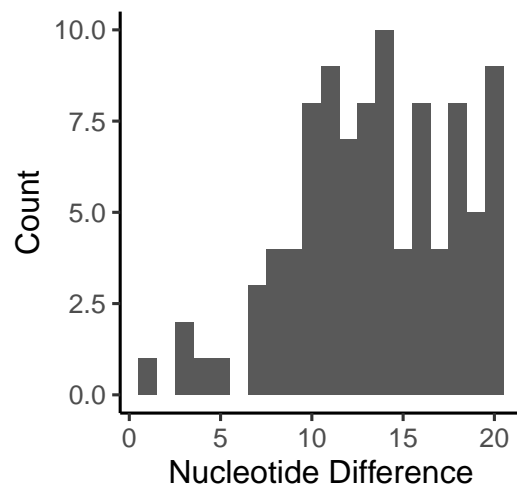
### IGHV4-59\*08

398 sequences assigned  
66 (16.6%) exact matches, in which:  
66 unique CDR3  
6 unique J



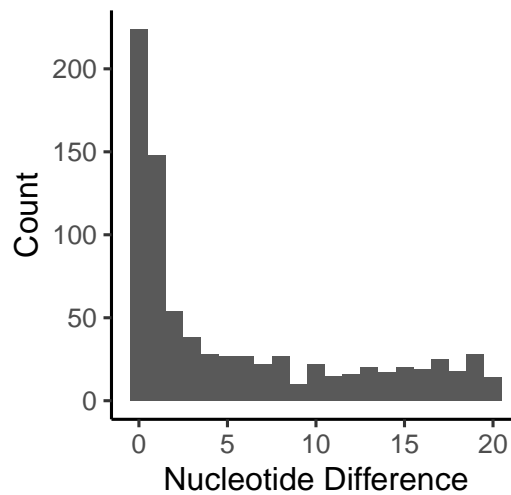
### IGHV4-34\*02

449 sequences assigned  
No exact matches.



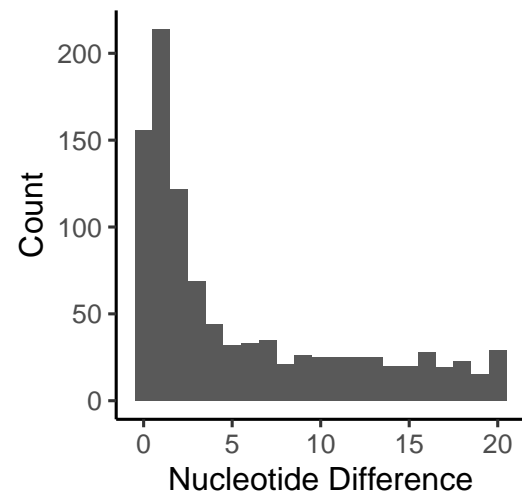
### IGHV4-39\*01

1321 sequences assigned  
224 (17%) exact matches, in which:  
223 unique CDR3  
6 unique J



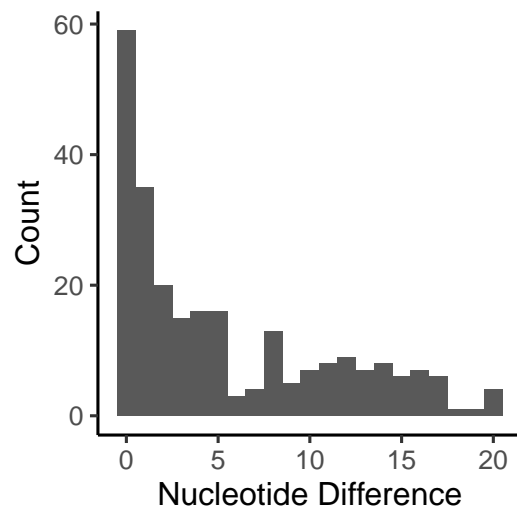
### IGHV4-61\*02

1551 sequences assigned  
156 (10.1%) exact matches, in which:  
156 unique CDR3  
6 unique J



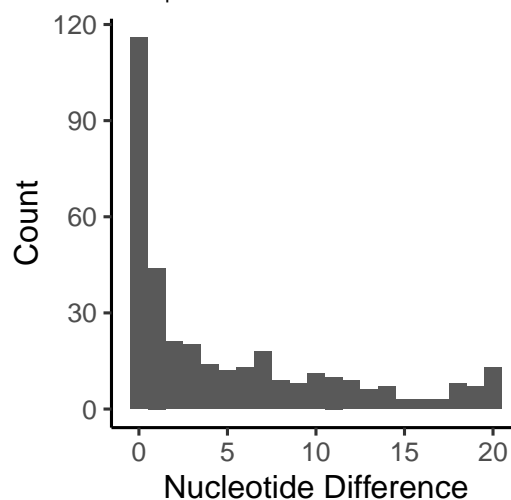
### IGHV4-38-2\*01

328 sequences assigned  
59 (18%) exact matches, in which:  
59 unique CDR3  
4 unique J



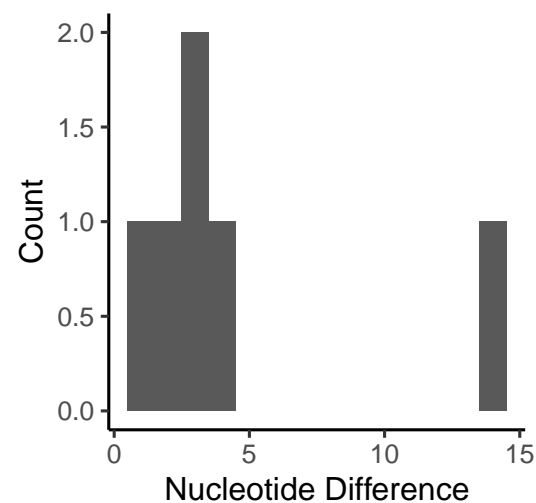
### IGHV4-59\*01

551 sequences assigned  
116 (21.1%) exact matches, in which:  
115 unique CDR3  
5 unique J



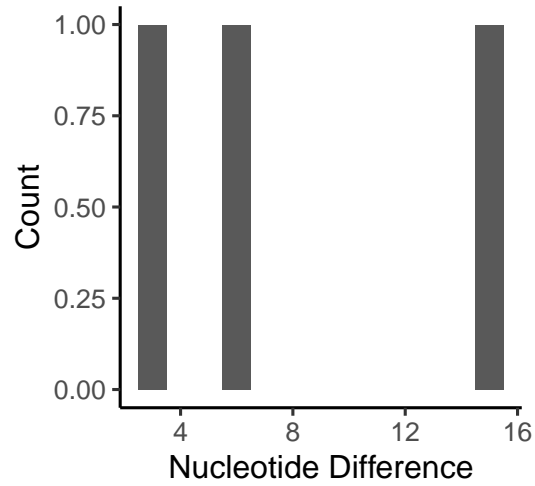
### IGHV1/OR15-1\*04

7 sequences assigned  
No exact matches.



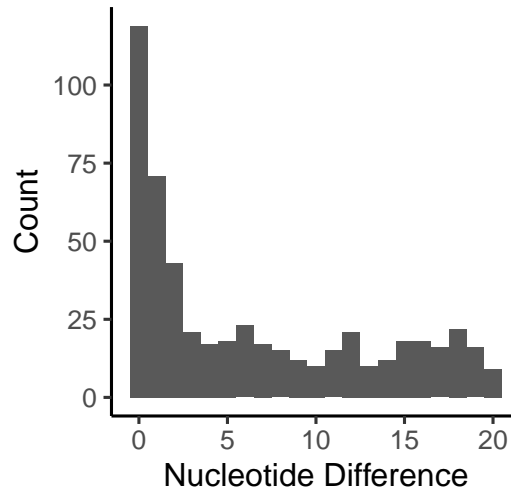
### IGHV4/OR15–8\*02

3 sequences assigned  
No exact matches.



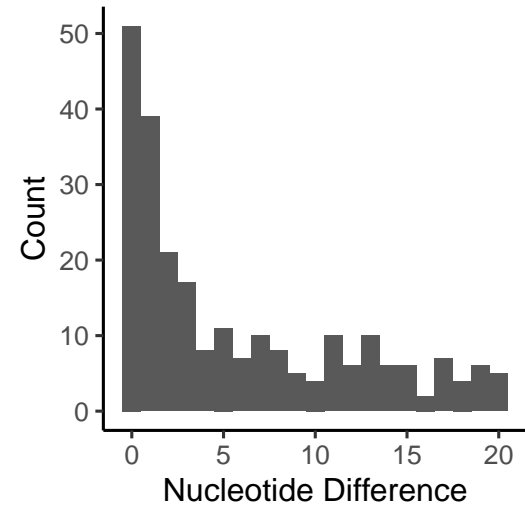
### IGHV5–51\*01

741 sequences assigned  
119 (16.1%) exact matches, in which:  
119 unique CDR3  
7 unique J



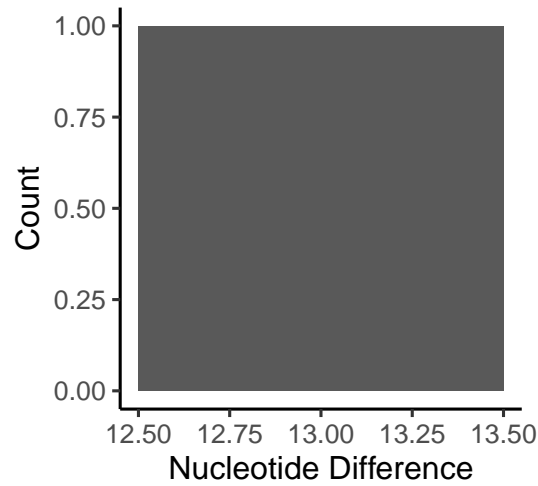
### IGHV6–1\*01

333 sequences assigned  
51 (15.3%) exact matches, in which:  
50 unique CDR3  
5 unique J



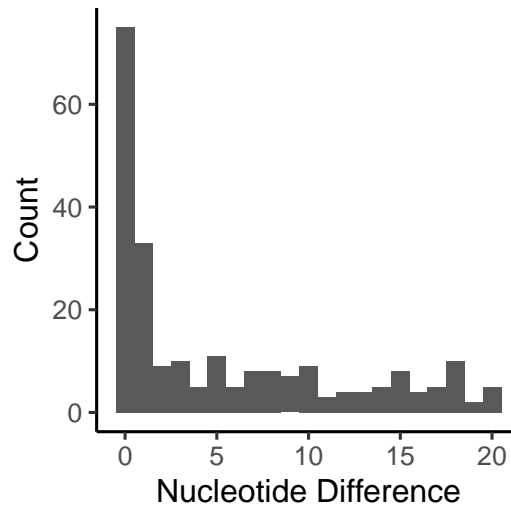
### IGHV1/OR15–9\*01

1 sequences assigned  
No exact matches.



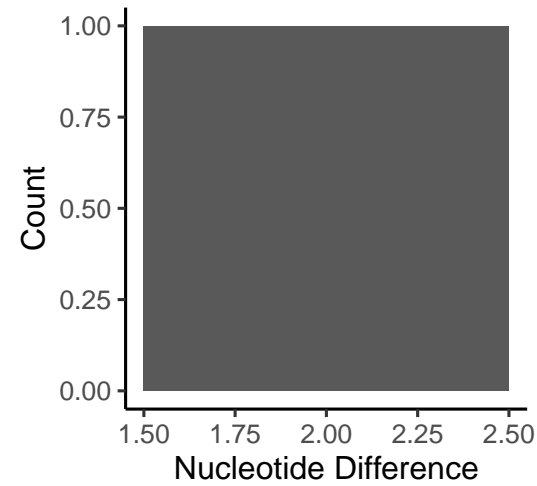
### IGHV5–51\*03

338 sequences assigned  
75 (22.2%) exact matches, in which:  
74 unique CDR3  
5 unique J



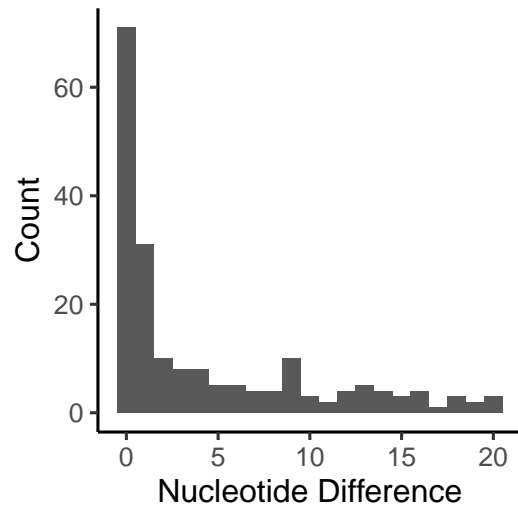
### IGHV3/OR16–12\*01

3 sequences assigned  
No exact matches.



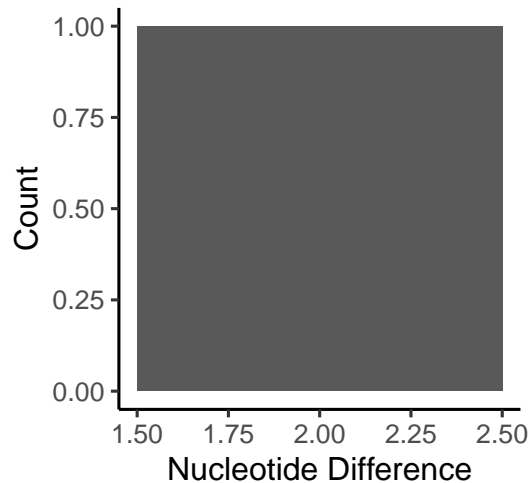
### IGHV5–10–1\*03

296 sequences assigned  
71 (24%) exact matches, in which:  
71 unique CDR3  
5 unique J



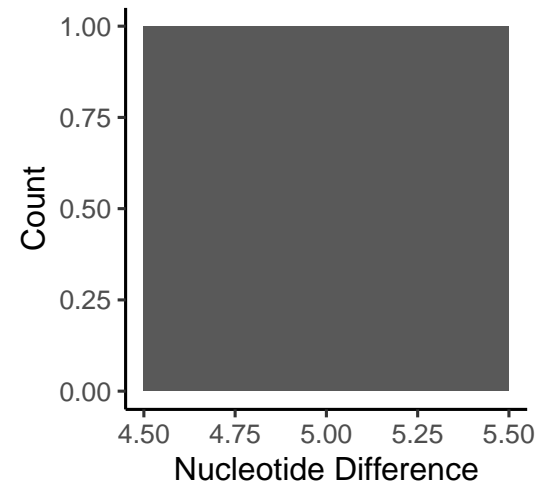
### IGHV5–78\*01

1 sequences assigned  
No exact matches.



### IGHV3/OR16–15\*02

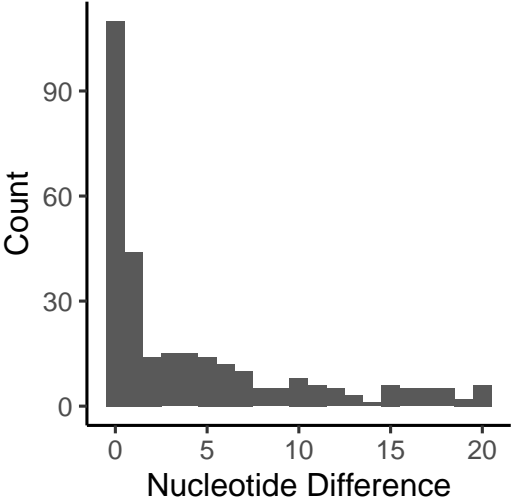
1 sequences assigned  
No exact matches.





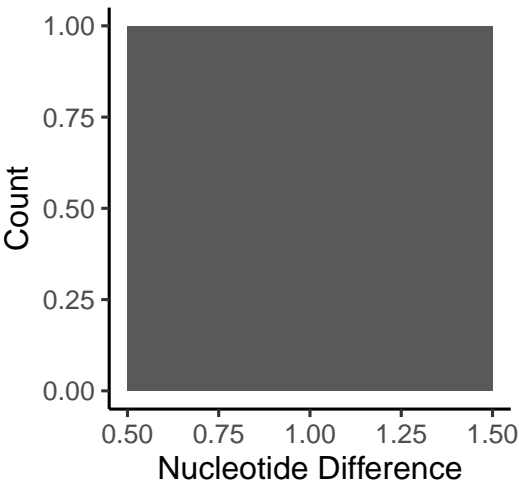
# IGHV7-4-1\*02

377 sequences assigned  
110 (29.2%) exact matches, in which:  
110 unique CDR3  
6 unique J

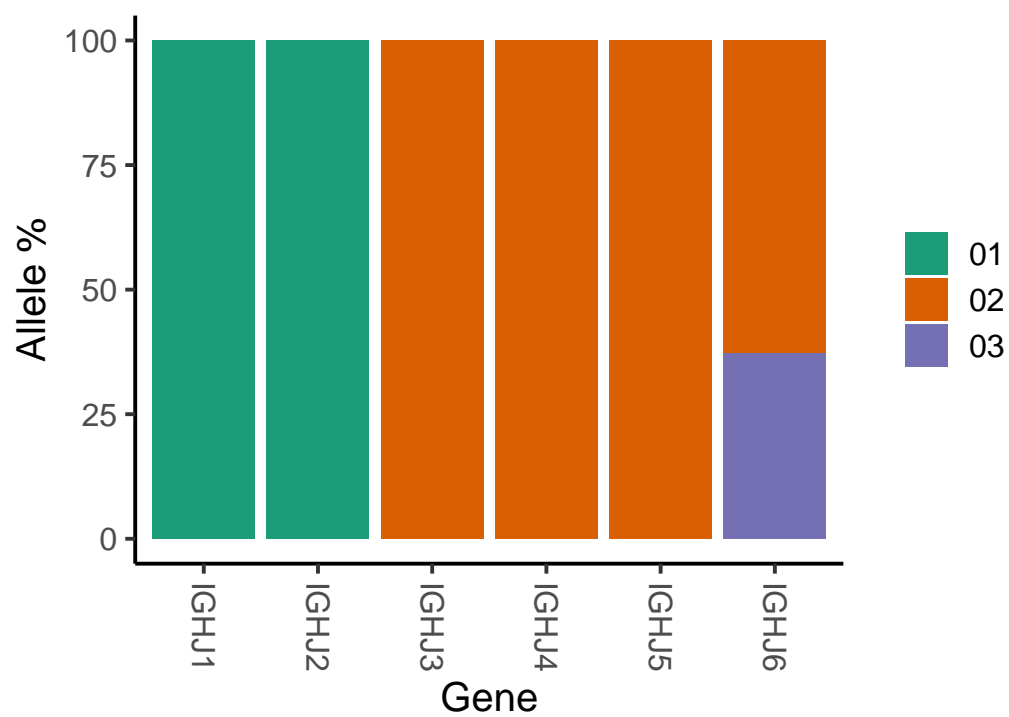


# IGHV7-81\*01

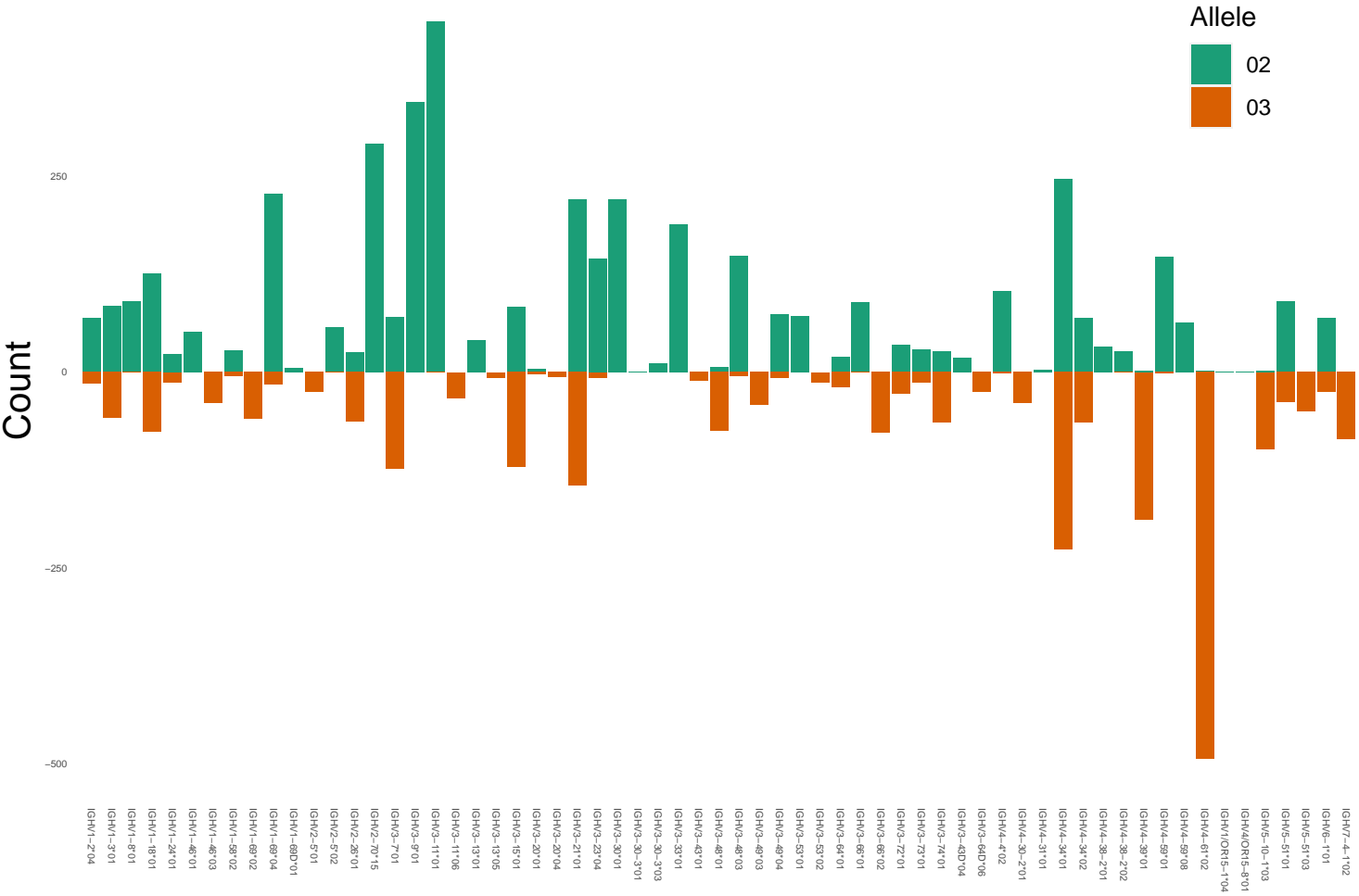
1 sequences assigned  
No exact matches.



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.