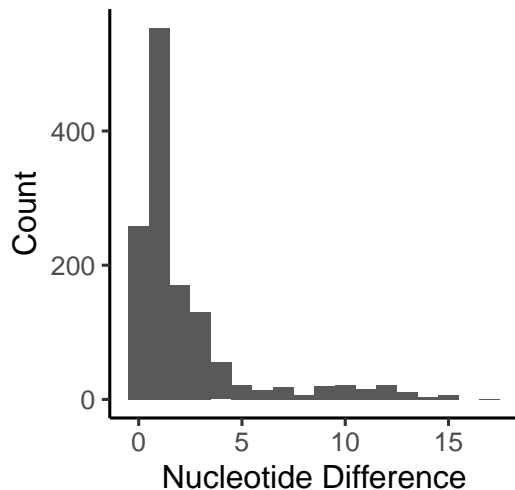


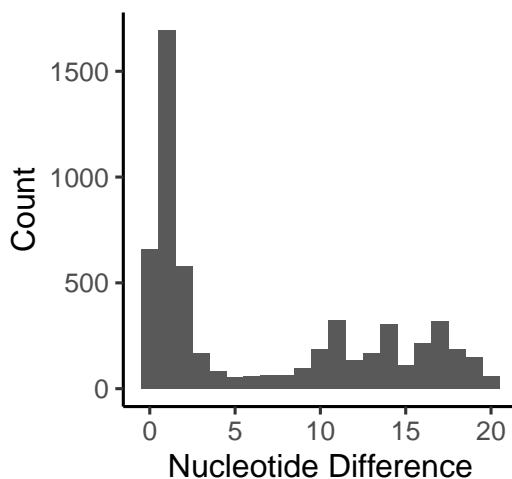
### IGHV1-2\*04

1334 sequences assigned  
259 (19.4%) exact matches, in which:  
187 unique CDR3  
6 unique J



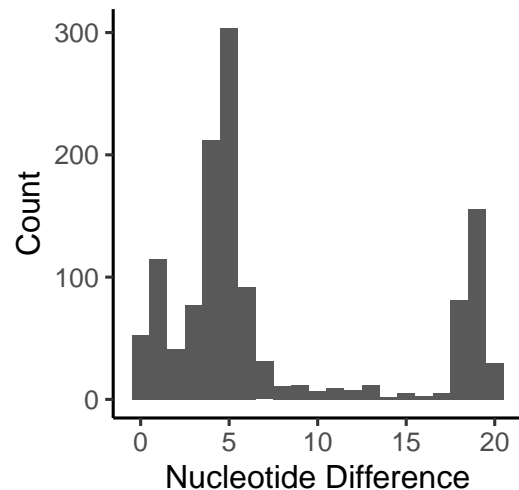
### IGHV1-18\*01

12617 sequences assigned  
658 (5.2%) exact matches, in which:  
434 unique CDR3  
6 unique J



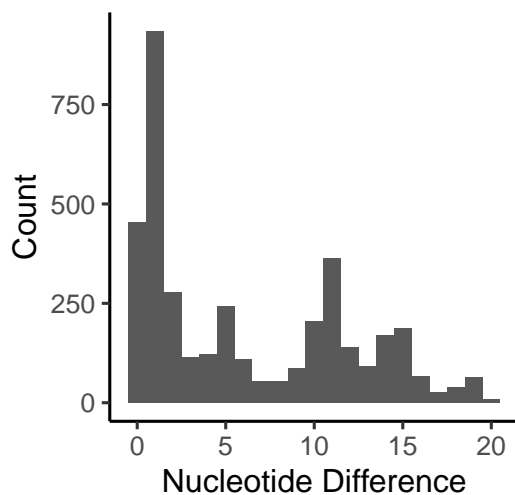
### IGHV1-46\*03

1399 sequences assigned  
53 (3.8%) exact matches, in which:  
39 unique CDR3  
4 unique J



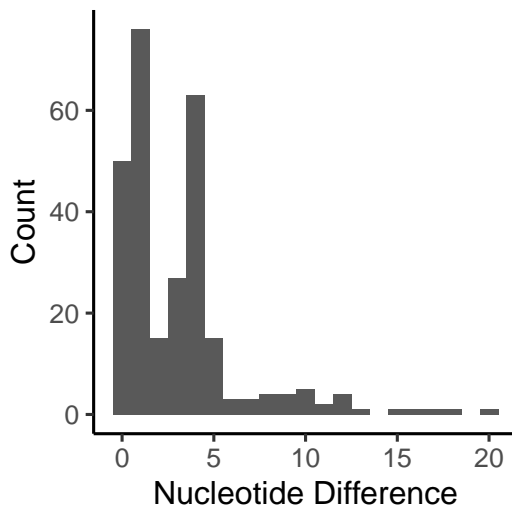
### IGHV1-3\*01\_05

3966 sequences assigned  
454 (11.4%) exact matches, in which:  
226 unique CDR3  
6 unique J



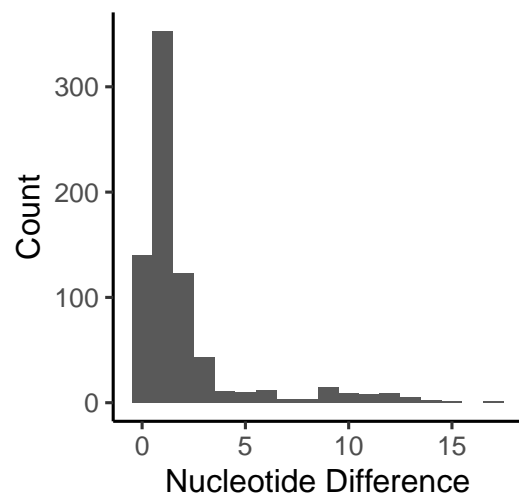
### IGHV1-24\*01

321 sequences assigned  
50 (15.6%) exact matches, in which:  
37 unique CDR3  
4 unique J



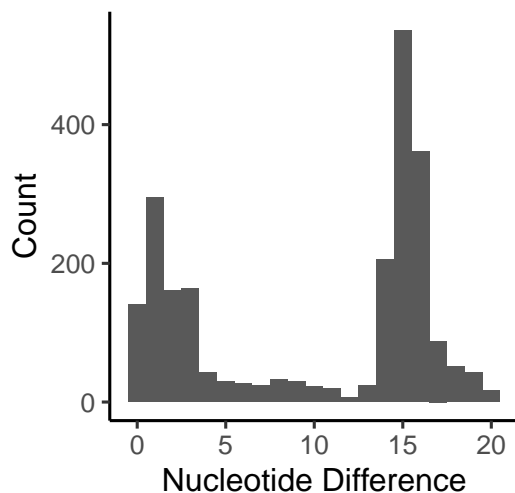
### IGHV1-58\*02

933 sequences assigned  
140 (15%) exact matches, in which:  
86 unique CDR3  
6 unique J



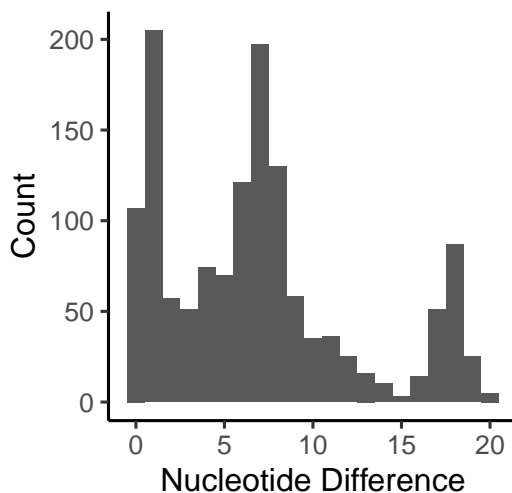
### IGHV1-8\*01

2369 sequences assigned  
141 (6%) exact matches, in which:  
99 unique CDR3  
6 unique J



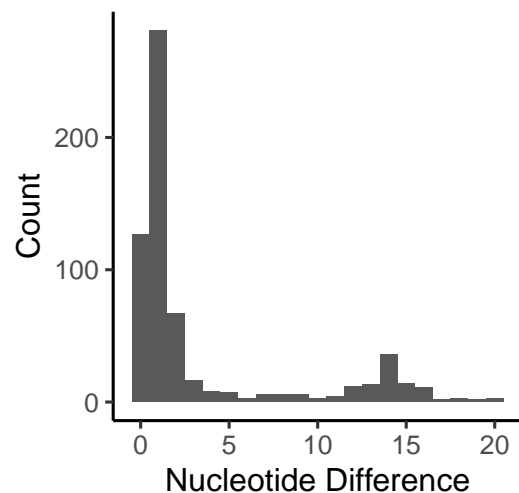
### IGHV1-46\*01

1398 sequences assigned  
107 (7.7%) exact matches, in which:  
69 unique CDR3  
6 unique J



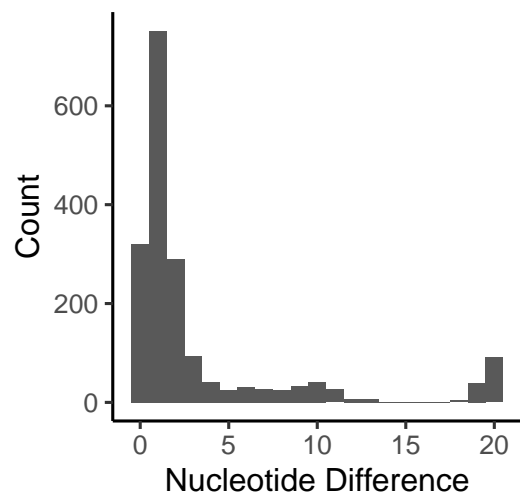
### IGHV1-69\*02

632 sequences assigned  
127 (20.1%) exact matches, in which:  
79 unique CDR3  
7 unique J



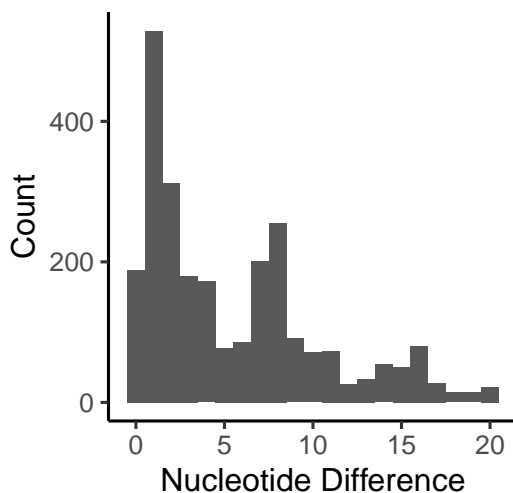
### IGHV1-69\*01\_12\_13

2010 sequences assigned  
321 (16%) exact matches, in which:  
202 unique CDR3  
6 unique J



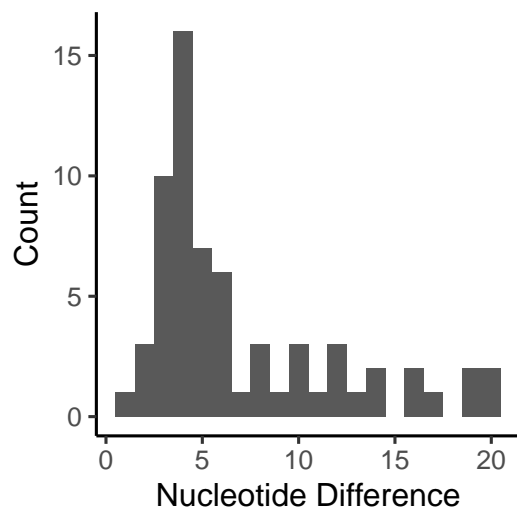
### IGHV2-5\*02

10392 sequences assigned  
188 (1.8%) exact matches, in which:  
113 unique CDR3  
4 unique J



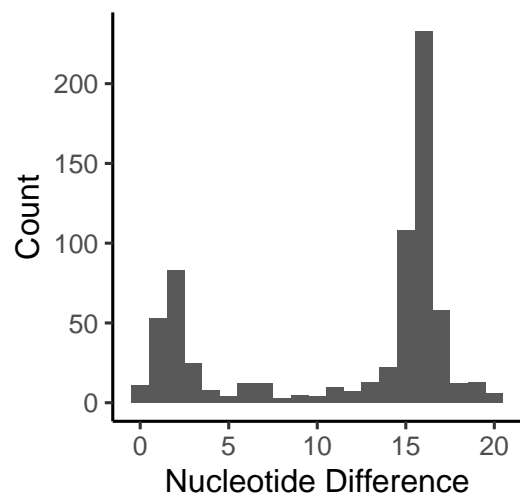
### IGHV2-70\*12

68 sequences assigned  
No exact matches.



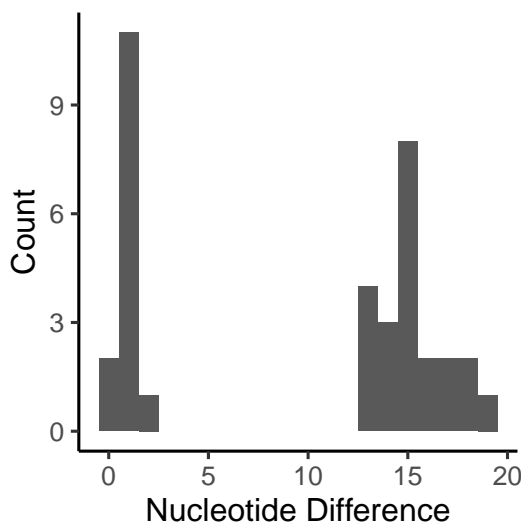
### IGHV1-69\*04\_09

708 sequences assigned  
11 (1.6%) exact matches, in which:  
9 unique CDR3  
3 unique J



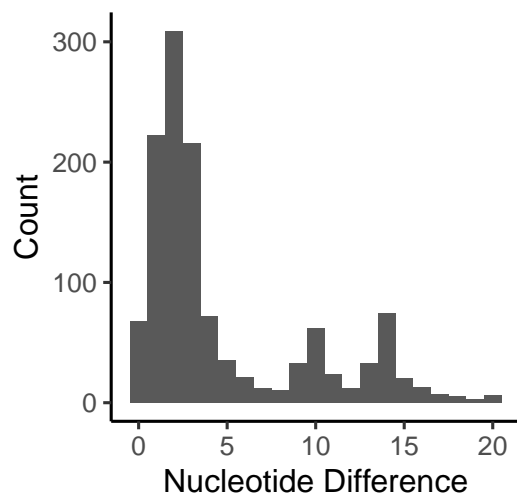
### IGHV2-26\*01

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



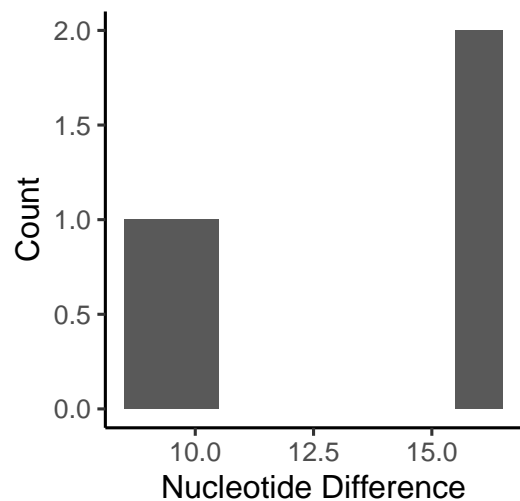
### IGHV2-70\*11\_15

1262 sequences assigned  
68 (5.4%) exact matches, in which:  
36 unique CDR3  
5 unique J



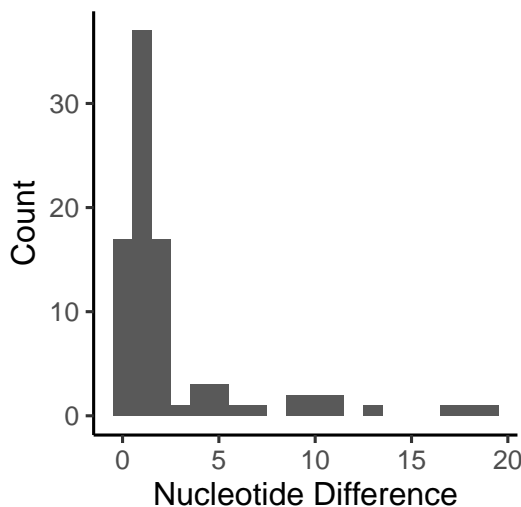
### IGHV1-NL1\*01

4 sequences assigned  
No exact matches.



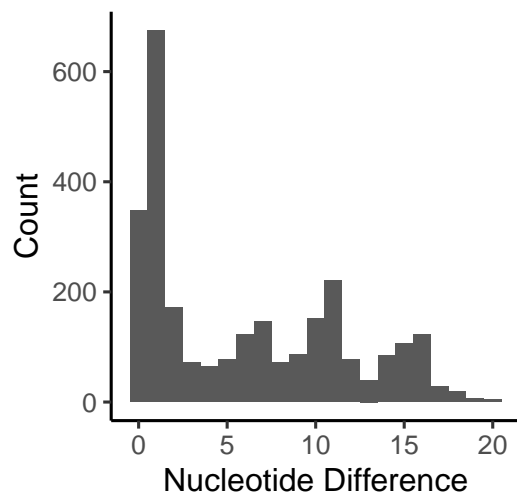
### IGHV2-70\*01

90 sequences assigned  
17 (18.9%) exact matches, in which:  
10 unique CDR3  
2 unique J



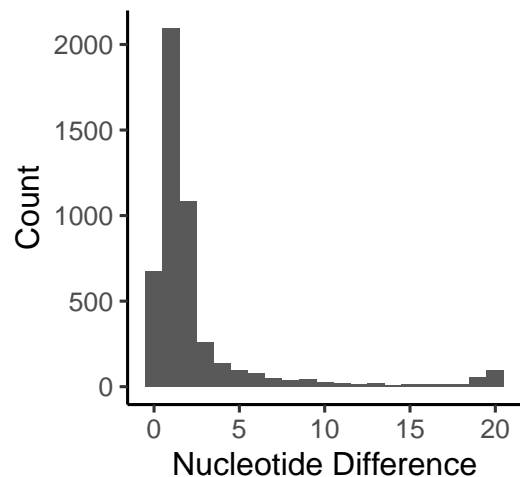
### IGHV3-7\*01

2711 sequences assigned  
348 (12.8%) exact matches, in which:  
210 unique CDR3  
6 unique J



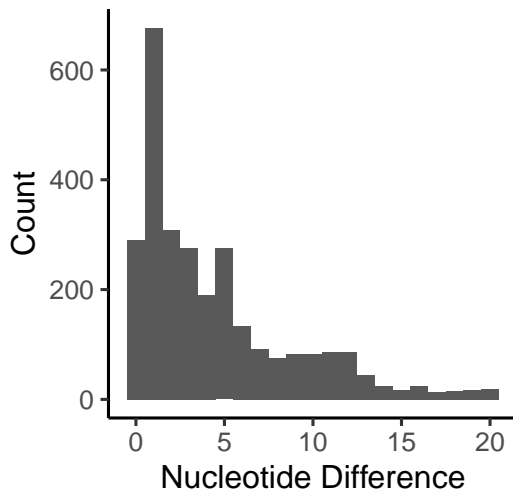
### IGHV3-7\*03

5911 sequences assigned  
678 (11.5%) exact matches, in which:  
273 unique CDR3  
6 unique J



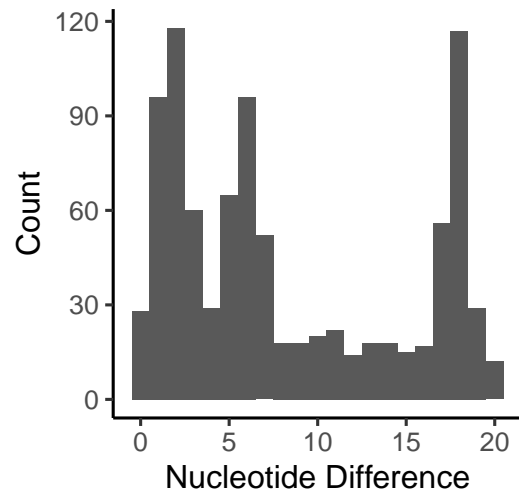
### IGHV3-9\*01

2870 sequences assigned  
291 (10.1%) exact matches, in which:  
157 unique CDR3  
6 unique J



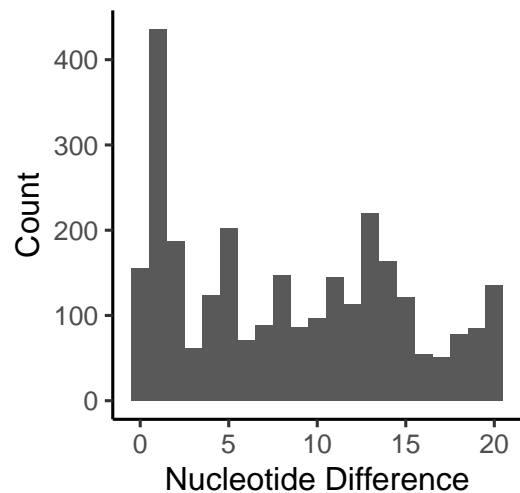
### IGHV3-11\*06

945 sequences assigned  
28 (3%) exact matches, in which:  
20 unique CDR3  
5 unique J



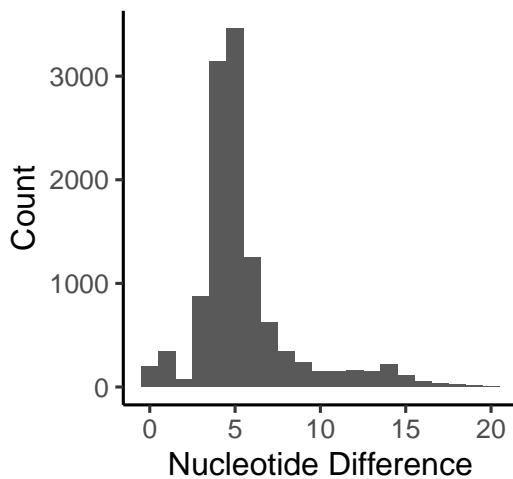
### IGHV3-7\*04

3043 sequences assigned  
155 (5.1%) exact matches, in which:  
85 unique CDR3  
7 unique J



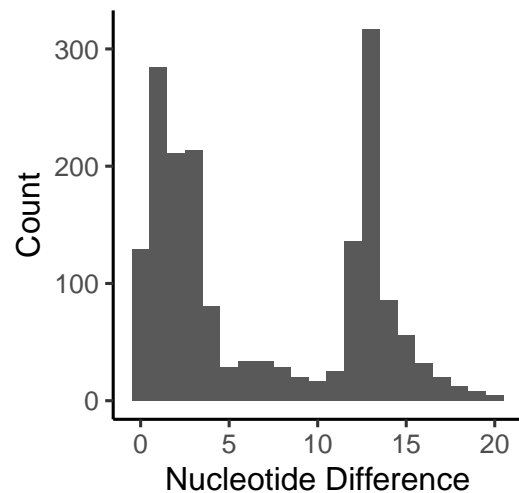
### IGHV3-11\*01

11670 sequences assigned  
196 (1.7%) exact matches, in which:  
123 unique CDR3  
6 unique J



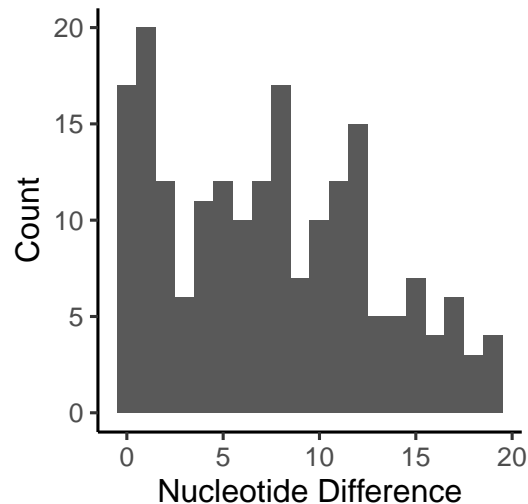
### IGHV3-11\*03\_05

1923 sequences assigned  
129 (6.7%) exact matches, in which:  
81 unique CDR3  
7 unique J



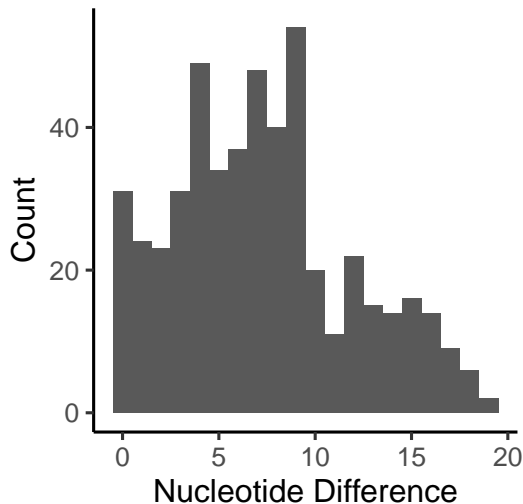
### IGHV3-7\*05

208 sequences assigned  
17 (8.2%) exact matches, in which:  
11 unique CDR3  
5 unique J



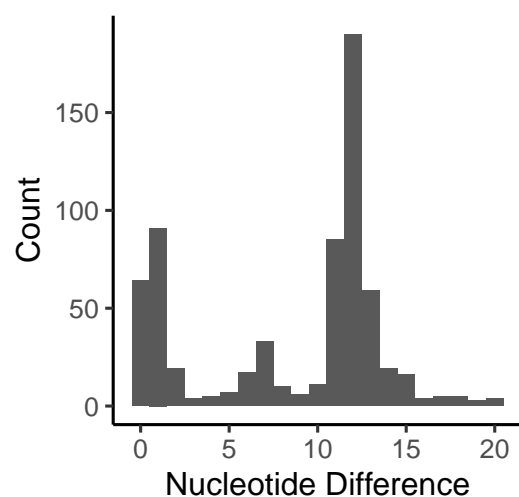
### IGHV3-11\*04

500 sequences assigned  
31 (6.2%) exact matches, in which:  
27 unique CDR3  
5 unique J



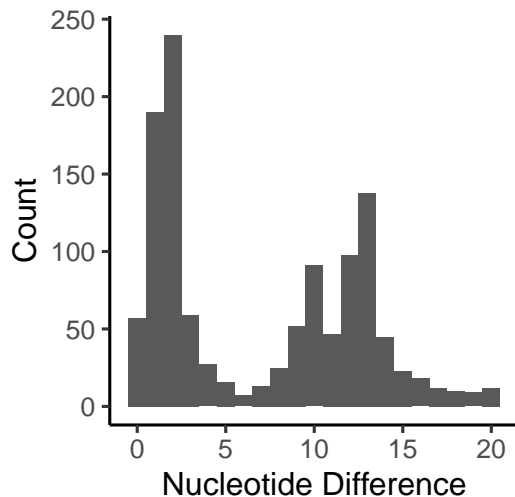
### IGHV3-13\*04

668 sequences assigned  
64 (9.6%) exact matches, in which:  
43 unique CDR3  
4 unique J



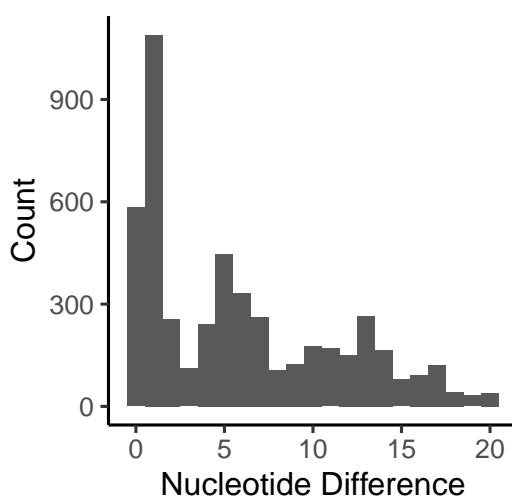
### IGHV3-15\*01\_02

1707 sequences assigned  
57 (3.3%) exact matches, in which:  
36 unique CDR3  
3 unique J



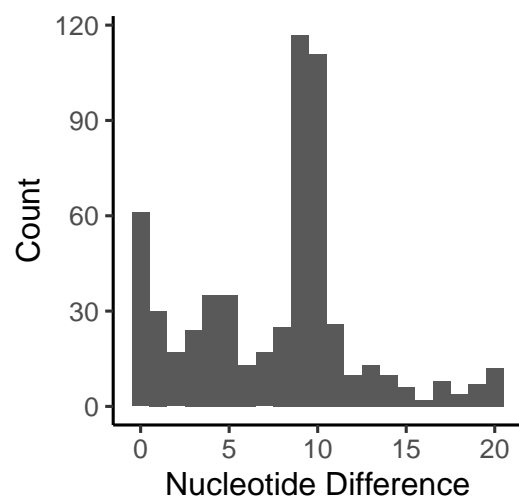
### IGHV3-21\*01\_02

5040 sequences assigned  
583 (11.6%) exact matches, in which:  
352 unique CDR3  
6 unique J



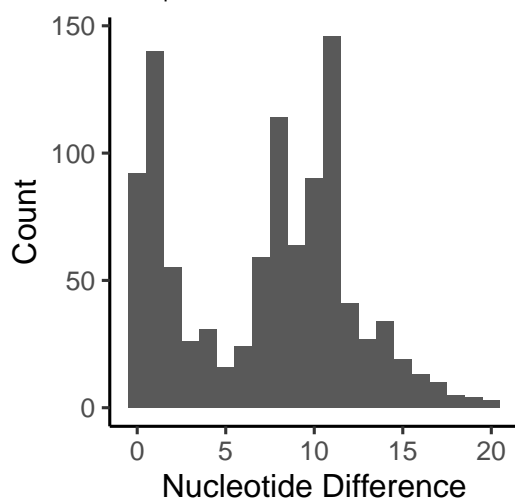
### IGHV3-30\*03

615 sequences assigned  
61 (9.9%) exact matches, in which:  
53 unique CDR3  
6 unique J



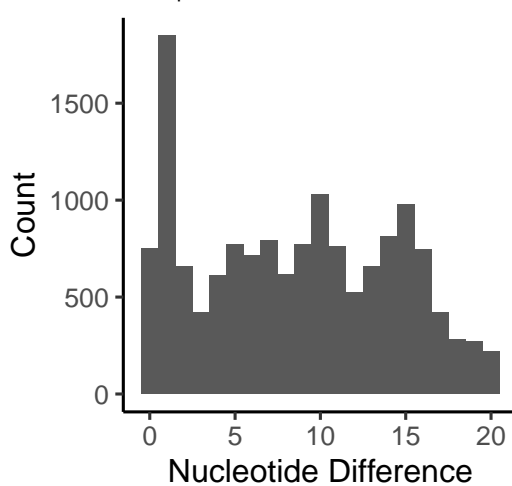
### IGHV3-20\*03\_04

1022 sequences assigned  
92 (9%) exact matches, in which:  
57 unique CDR3  
6 unique J



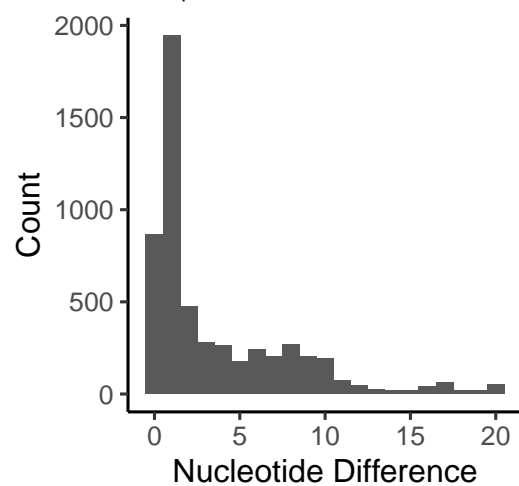
### IGHV3-23\*01\_04

30402 sequences assigned  
750 (2.5%) exact matches, in which:  
402 unique CDR3  
7 unique J



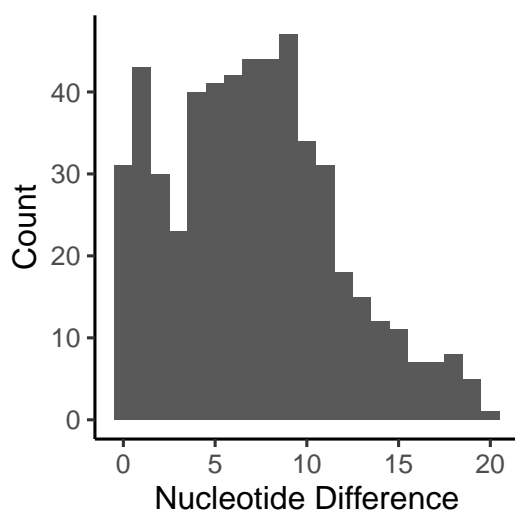
### IGHV3-33\*01

5781 sequences assigned  
863 (14.9%) exact matches, in which:  
463 unique CDR3  
7 unique J



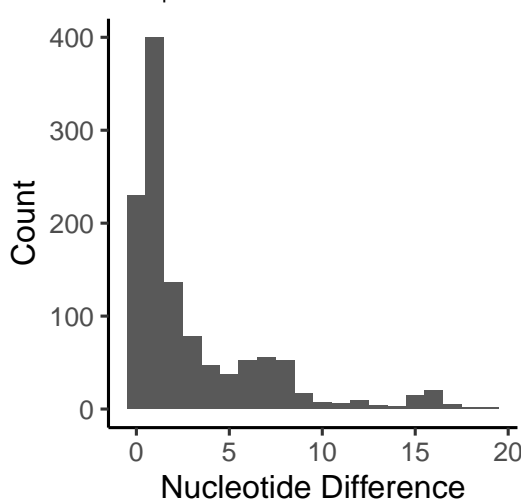
### IGHV3-21\*04

543 sequences assigned  
31 (5.7%) exact matches, in which:  
24 unique CDR3  
6 unique J



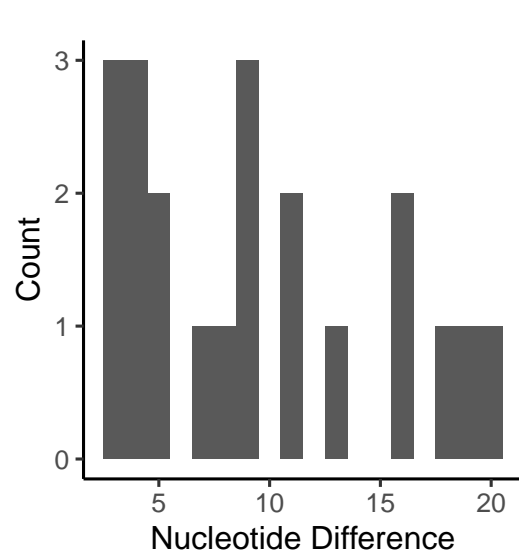
### IGHV3-30-3\*01

1280 sequences assigned  
230 (18%) exact matches, in which:  
148 unique CDR3  
6 unique J



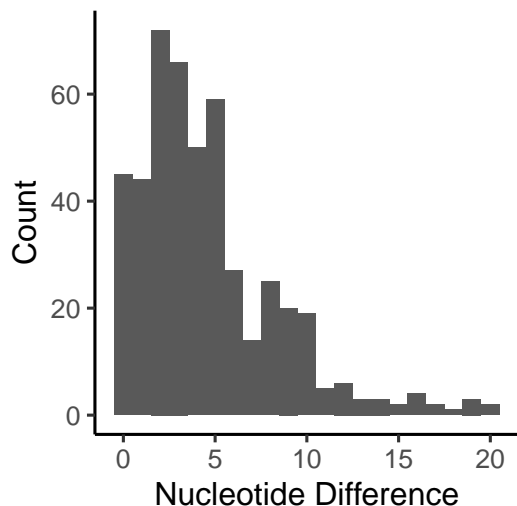
### IGHV3-33\*05

32 sequences assigned  
No exact matches.



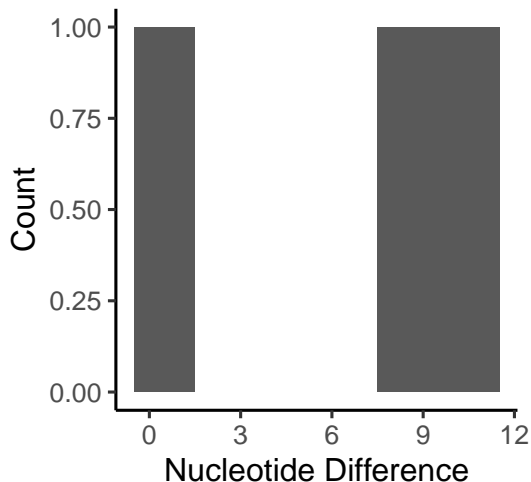
### IGHV3-33\*06

490 sequences assigned  
45 (9.2%) exact matches, in which:  
38 unique CDR3  
6 unique J



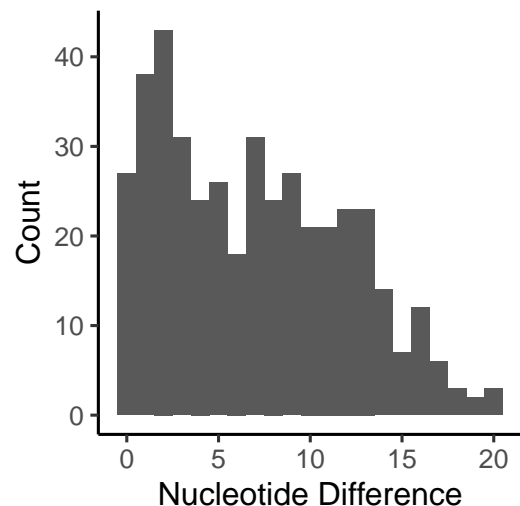
### IGHV3-47\*02

6 sequences assigned  
1 (16.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



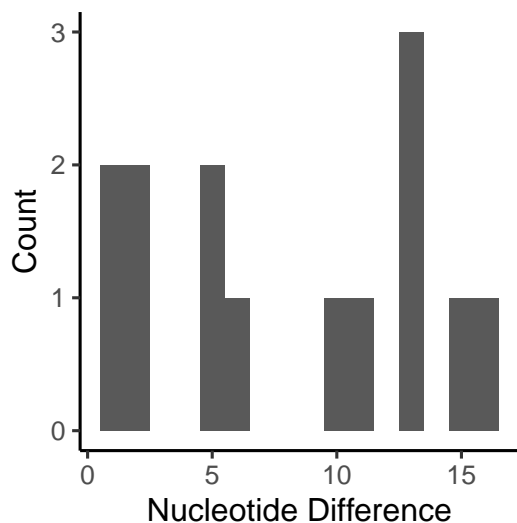
### IGHV3-48\*04

435 sequences assigned  
27 (6.2%) exact matches, in which:  
21 unique CDR3  
5 unique J



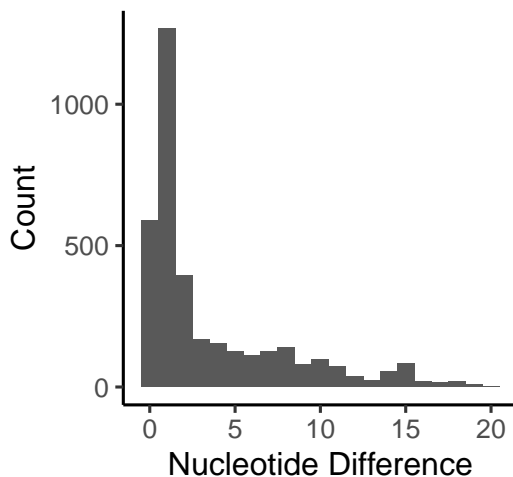
### IGHV3-43\*01

14 sequences assigned  
No exact matches.



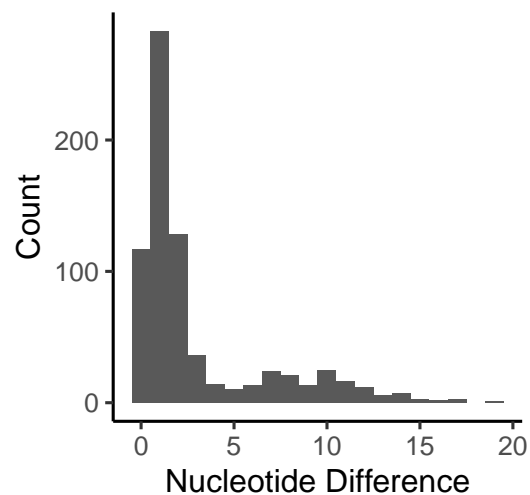
### IGHV3-48\*01

3851 sequences assigned  
589 (15.3%) exact matches, in which:  
302 unique CDR3  
7 unique J



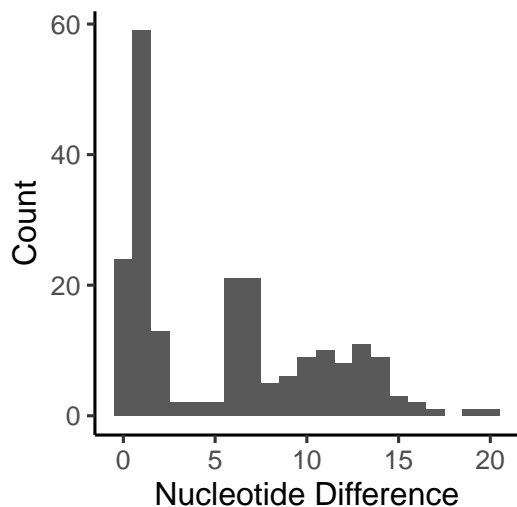
### IGHV3-49\*04

734 sequences assigned  
117 (15.9%) exact matches, in which:  
62 unique CDR3  
3 unique J



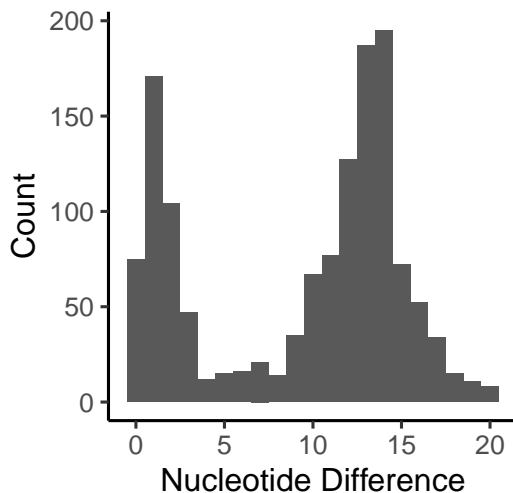
### IGHV3-43\*02

210 sequences assigned  
24 (11.4%) exact matches, in which:  
14 unique CDR3  
2 unique J



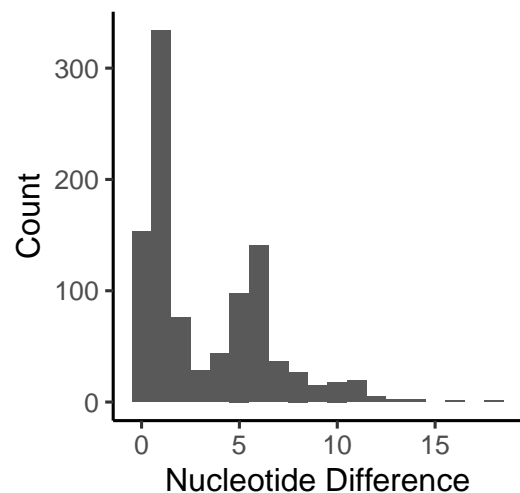
### IGHV3-48\*03

1378 sequences assigned  
75 (5.4%) exact matches, in which:  
49 unique CDR3  
5 unique J



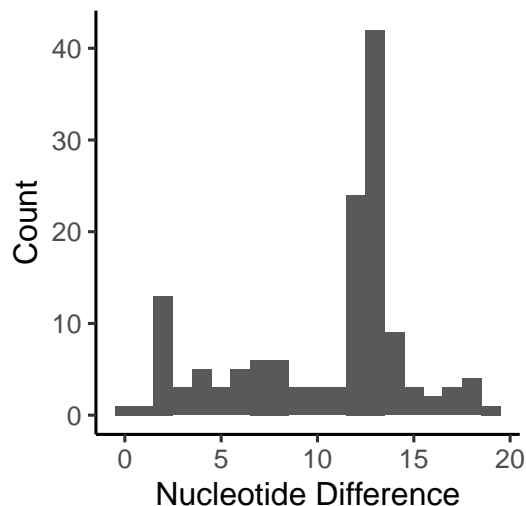
### IGHV3-49\*03\_05

1004 sequences assigned  
153 (15.2%) exact matches, in which:  
87 unique CDR3  
4 unique J



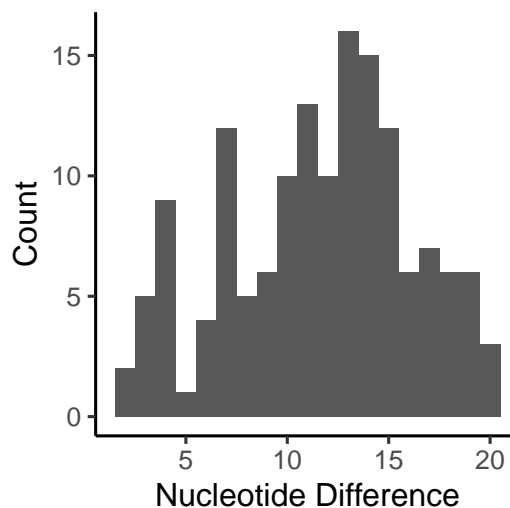
### IGHV3-53\*05

152 sequences assigned  
1 (0.7%) exact matches, in which:  
1 unique CDR3  
1 unique J



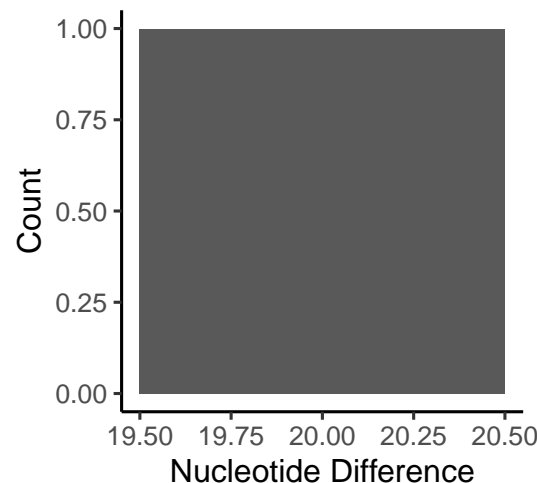
### IGHV3-64\*04

184 sequences assigned  
No exact matches.



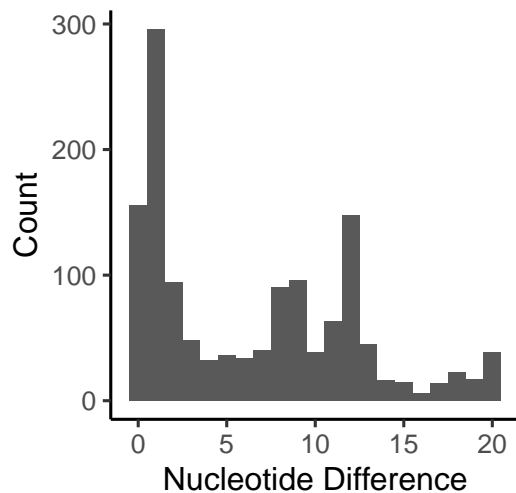
### IGHV3-69-1\*02

1 sequences assigned  
No exact matches.



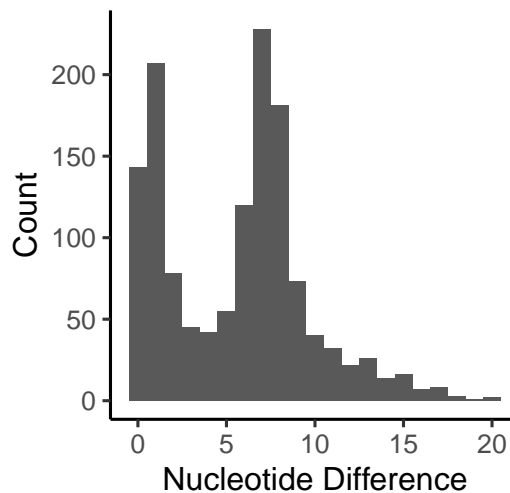
### IGHV3-53\*01\_02

1673 sequences assigned  
156 (9.3%) exact matches, in which:  
94 unique CDR3  
6 unique J



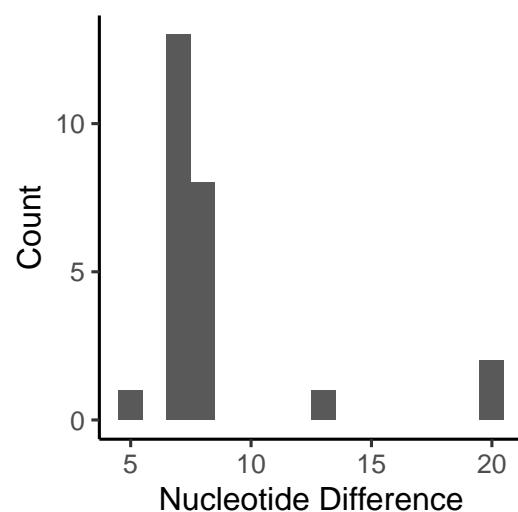
### IGHV3-66\*01

1436 sequences assigned  
143 (10%) exact matches, in which:  
104 unique CDR3  
7 unique J



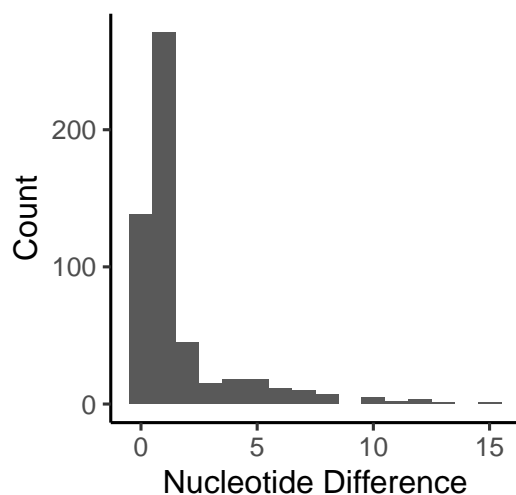
### IGHV3-72\*01

114 sequences assigned  
No exact matches.



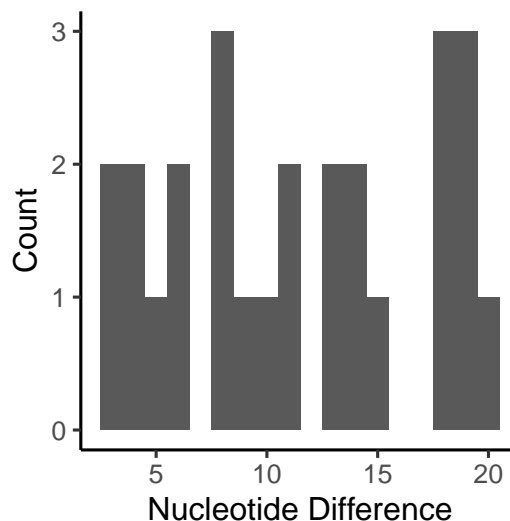
### IGHV3-64\*01

545 sequences assigned  
138 (25.3%) exact matches, in which:  
84 unique CDR3  
5 unique J



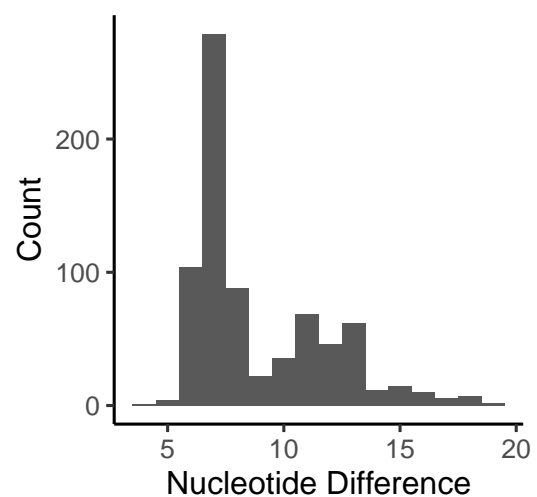
### IGHV3-69-1\*01

27 sequences assigned  
No exact matches.



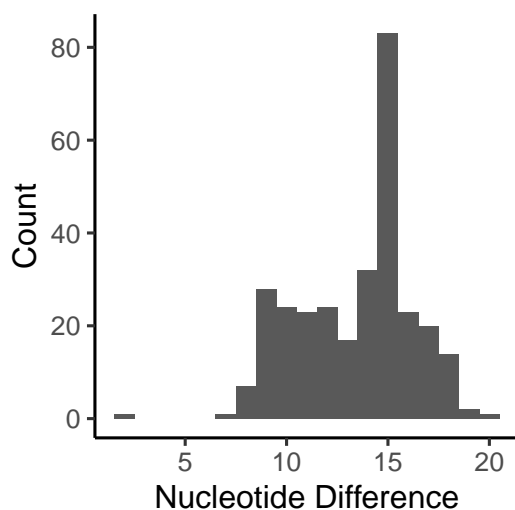
### IGHV3-73\*01\_02

789 sequences assigned  
No exact matches.



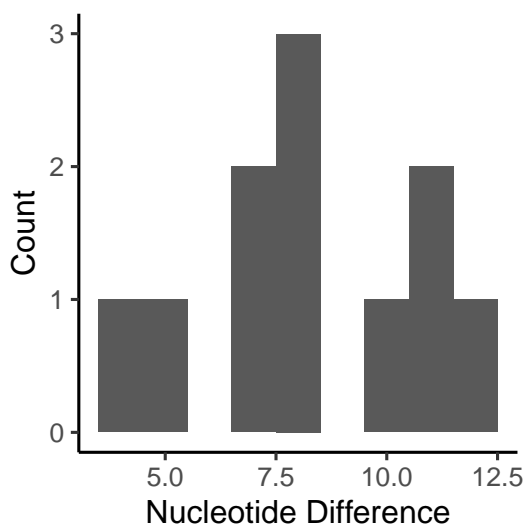
### IGHV3-74\*03

541 sequences assigned  
No exact matches.



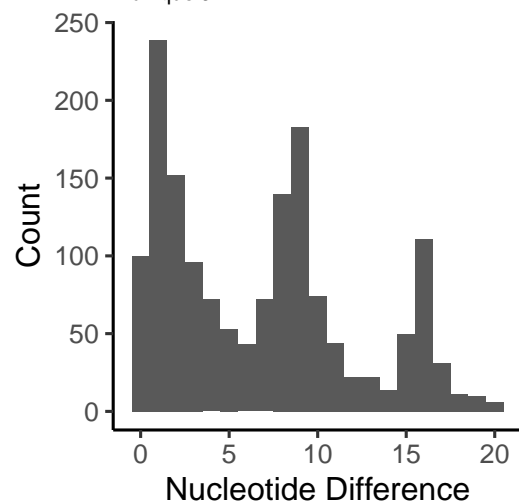
### IGHV3-NL1\*01

12 sequences assigned  
No exact matches.



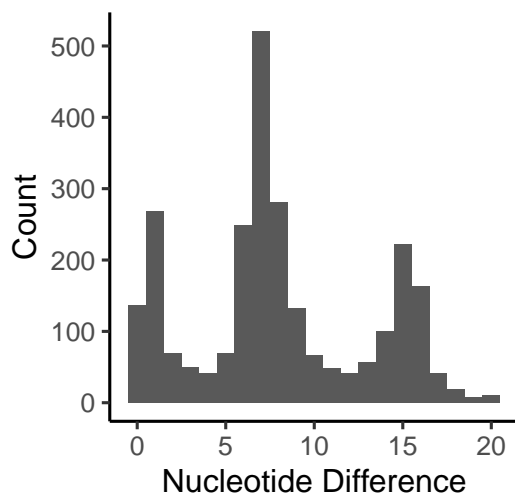
### IGHV4-30-4\*01

1572 sequences assigned  
100 (6.4%) exact matches, in which:  
63 unique CDR3  
7 unique J



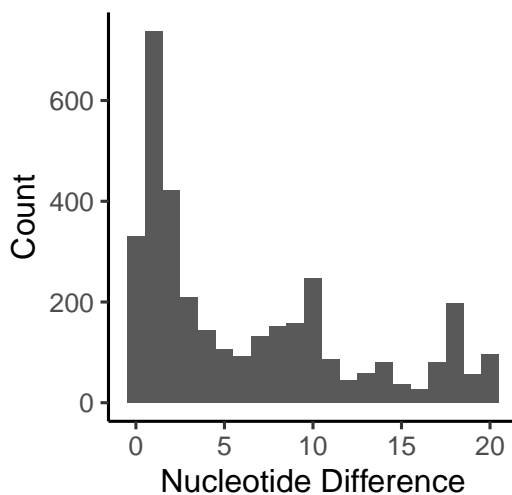
### IGHV3-74\*01\_02

2652 sequences assigned  
137 (5.2%) exact matches, in which:  
86 unique CDR3  
6 unique J



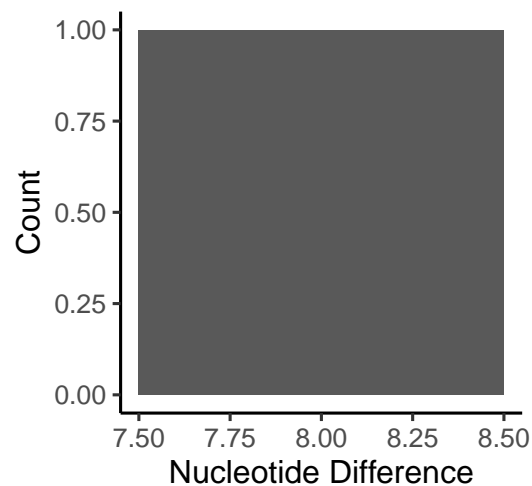
### IGHV4-4\*02\_03

4264 sequences assigned  
331 (7.8%) exact matches, in which:  
189 unique CDR3  
7 unique J



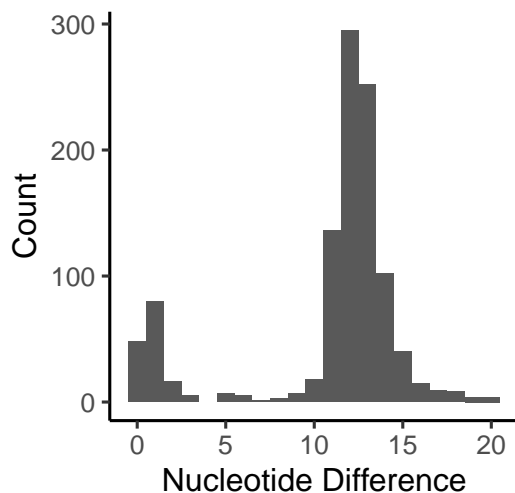
### IGHV4-30-2\*01

37 sequences assigned  
No exact matches.



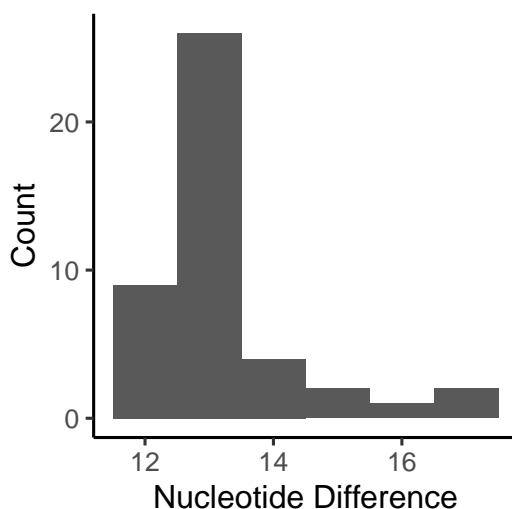
### IGHV3-64D\*06

2019 sequences assigned  
48 (2.4%) exact matches, in which:  
30 unique CDR3  
4 unique J



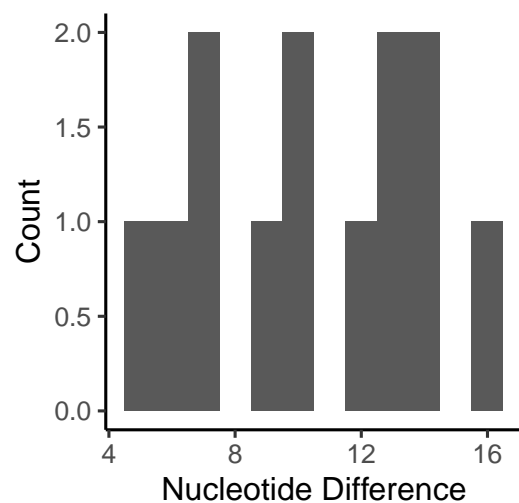
### IGHV4-28\*03

44 sequences assigned  
No exact matches.



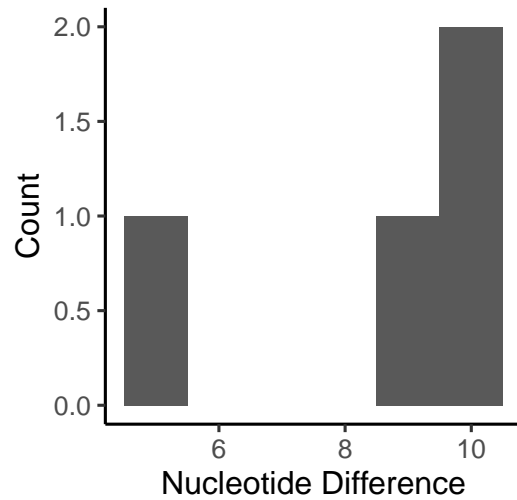
### IGHV4-30-2\*03

21 sequences assigned  
No exact matches.



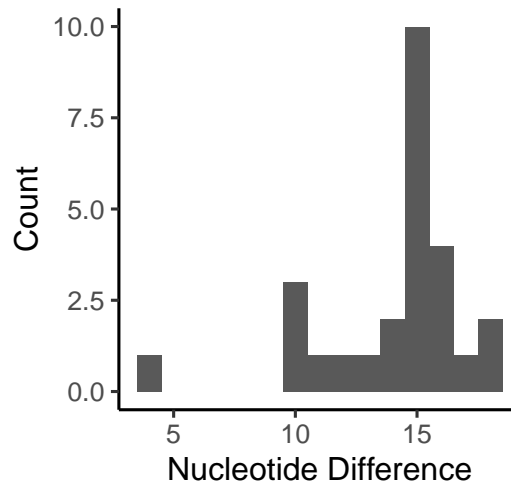
### IGHV4-30-2\*04

4 sequences assigned  
No exact matches.



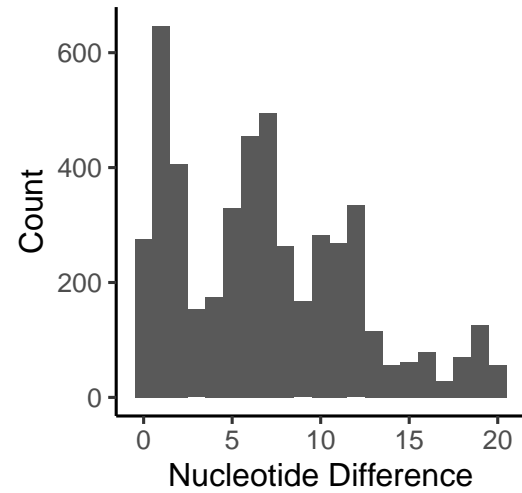
### IGHV4-38-2\*02

30 sequences assigned  
No exact matches.



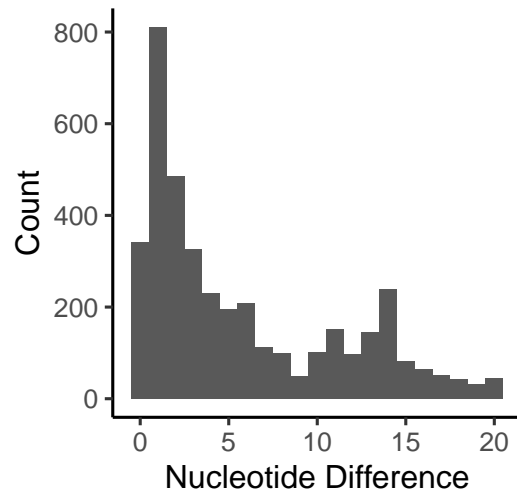
### IGHV4-59\*01\_07

5107 sequences assigned  
276 (5.4%) exact matches, in which:  
187 unique CDR3  
7 unique J



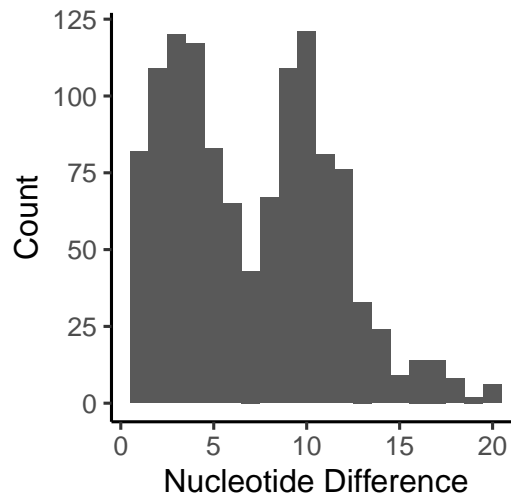
### IGHV4-31\*02

8186 sequences assigned  
342 (4.2%) exact matches, in which:  
232 unique CDR3  
7 unique J



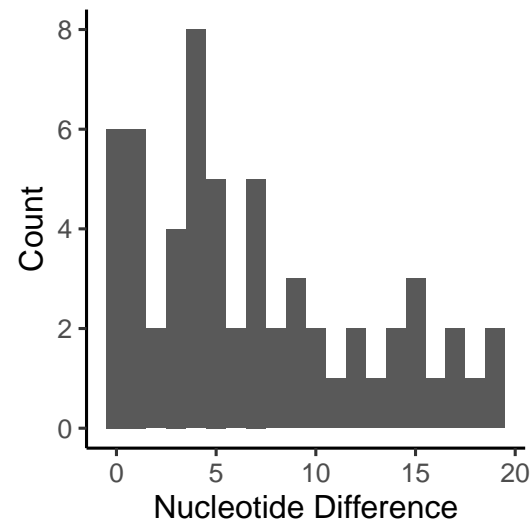
### IGHV4-39\*07

1260 sequences assigned  
No exact matches.



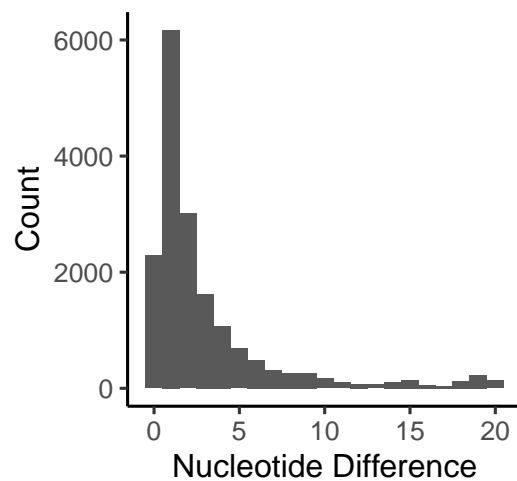
### IGHV4-59\*11

129 sequences assigned  
6 (4.7%) exact matches, in which:  
6 unique CDR3  
3 unique J



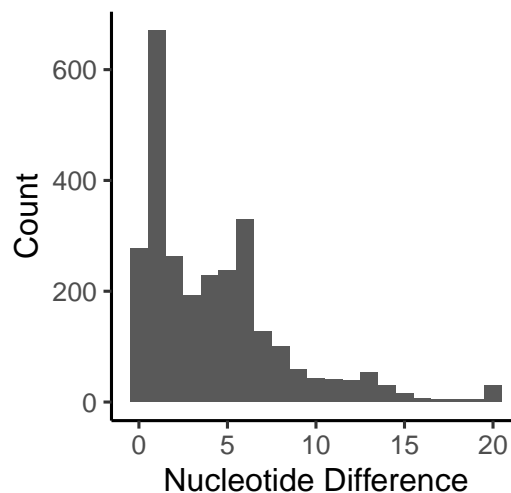
### IGHV4-34\*01\_02

17624 sequences assigned  
2288 (13%) exact matches, in which:  
1281 unique CDR3  
7 unique J



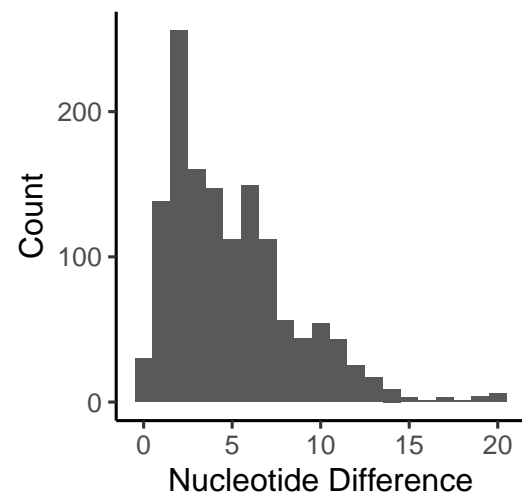
### IGHV4-59\*08

3633 sequences assigned  
277 (7.6%) exact matches, in which:  
173 unique CDR3  
7 unique J



### IGHV4-59\*12

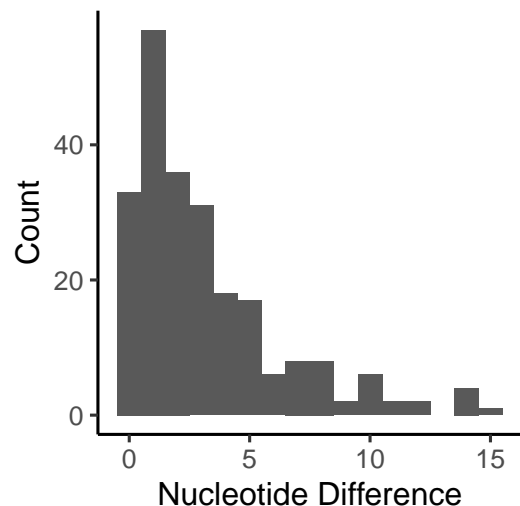
1549 sequences assigned  
30 (1.9%) exact matches, in which:  
26 unique CDR3  
6 unique J





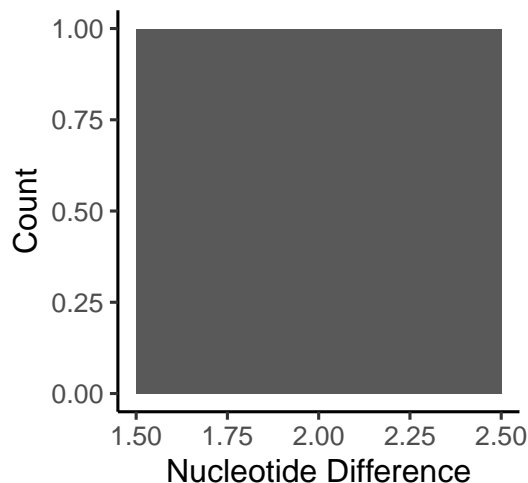
### IGHV4-61\*01

233 sequences assigned  
33 (14.2%) exact matches, in which:  
25 unique CDR3  
5 unique J



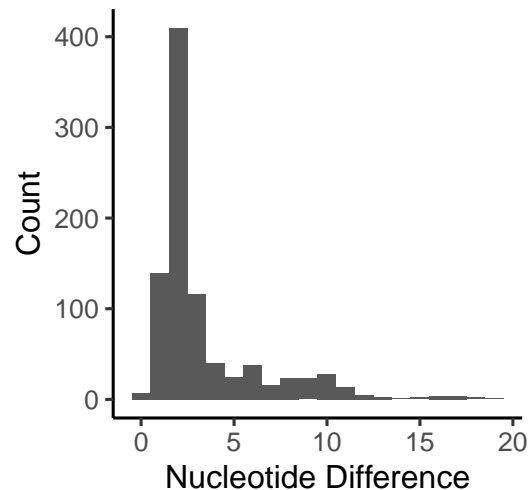
### IGHV1/OR15-3\*02

2 sequences assigned  
No exact matches.



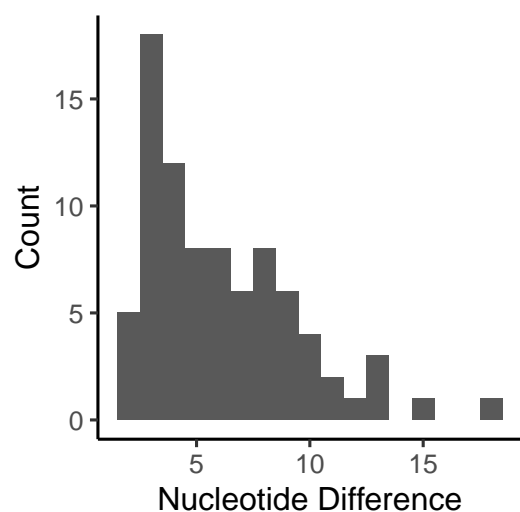
### IGHV5-51\*07

929 sequences assigned  
7 (0.8%) exact matches, in which:  
6 unique CDR3  
2 unique J



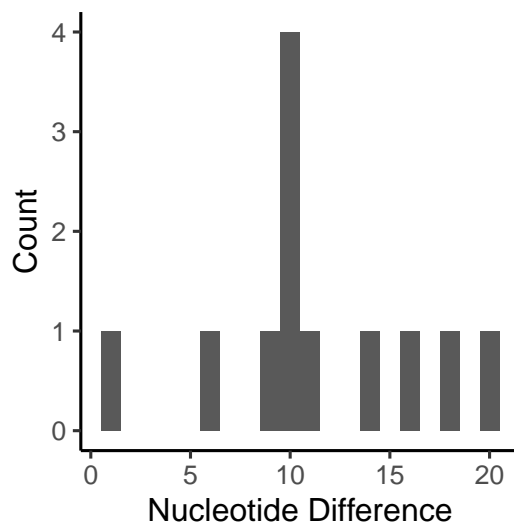
### IGHV4-61\*05

86 sequences assigned  
No exact matches.



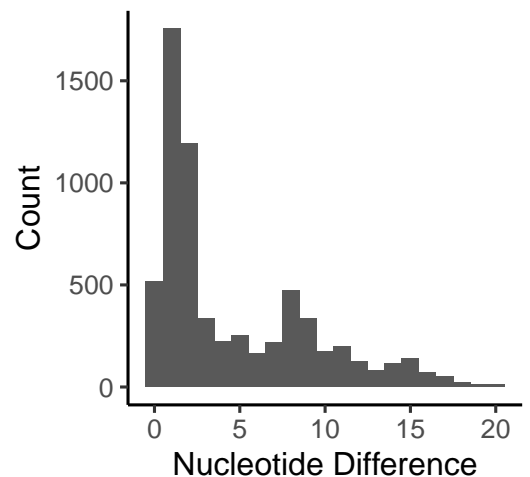
### IGHV4/OR15-8\*01

26 sequences assigned  
No exact matches.



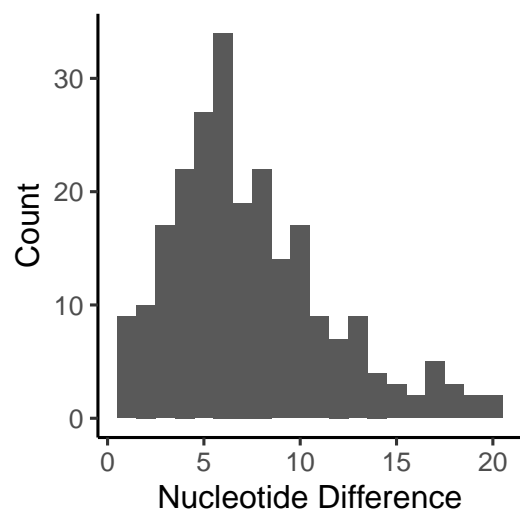
### IGHV5-51\*01\_03

7424 sequences assigned  
518 (7%) exact matches, in which:  
274 unique CDR3  
6 unique J



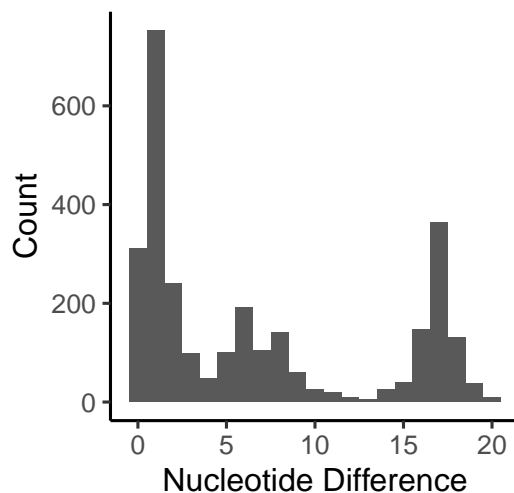
### IGHV4-61\*08

250 sequences assigned  
No exact matches.



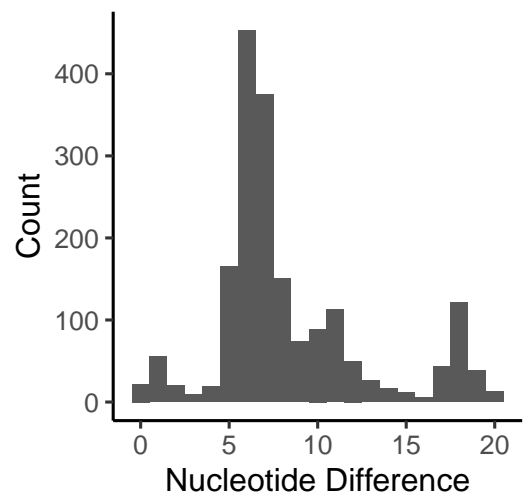
### IGHV5-10-1\*01\_03

2936 sequences assigned  
311 (10.6%) exact matches, in which:  
165 unique CDR3  
6 unique J



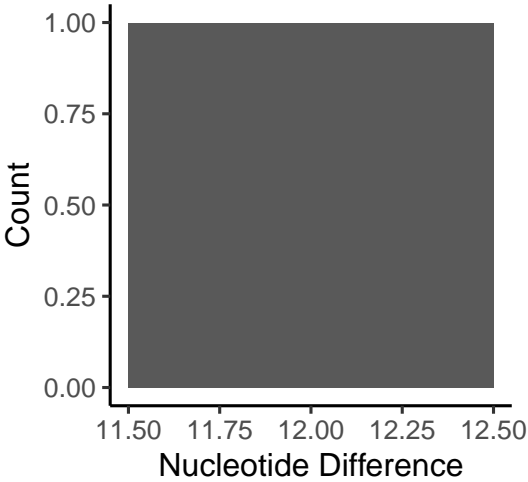
### IGHV6-1\*01\_02

1892 sequences assigned  
22 (1.2%) exact matches, in which:  
17 unique CDR3  
4 unique J

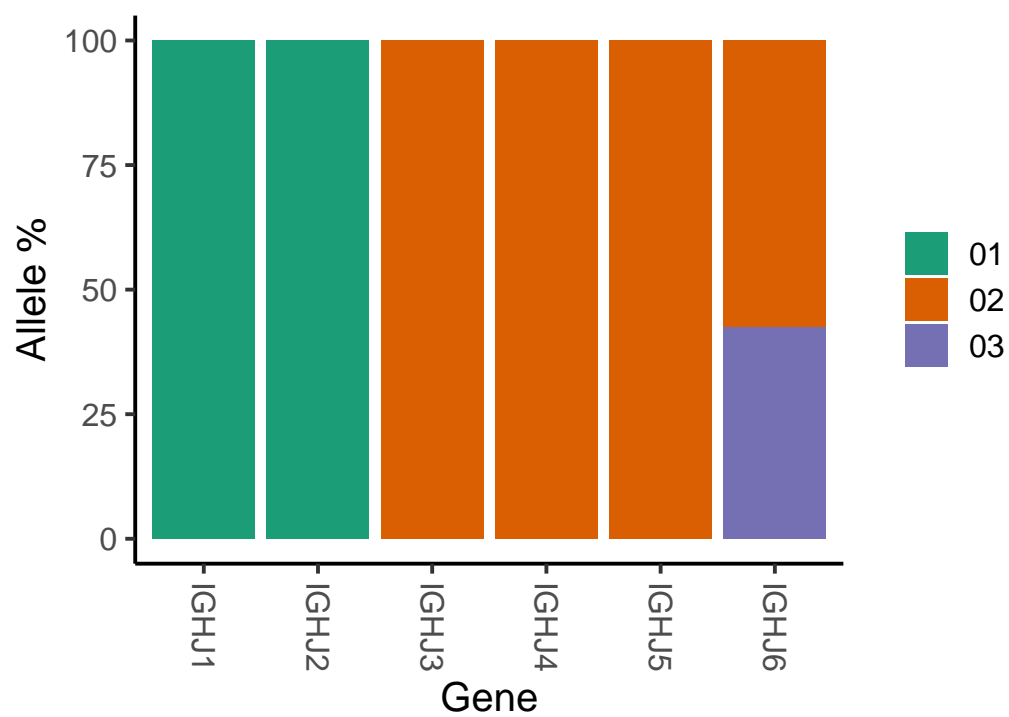


# IGHV7-4-1\*02

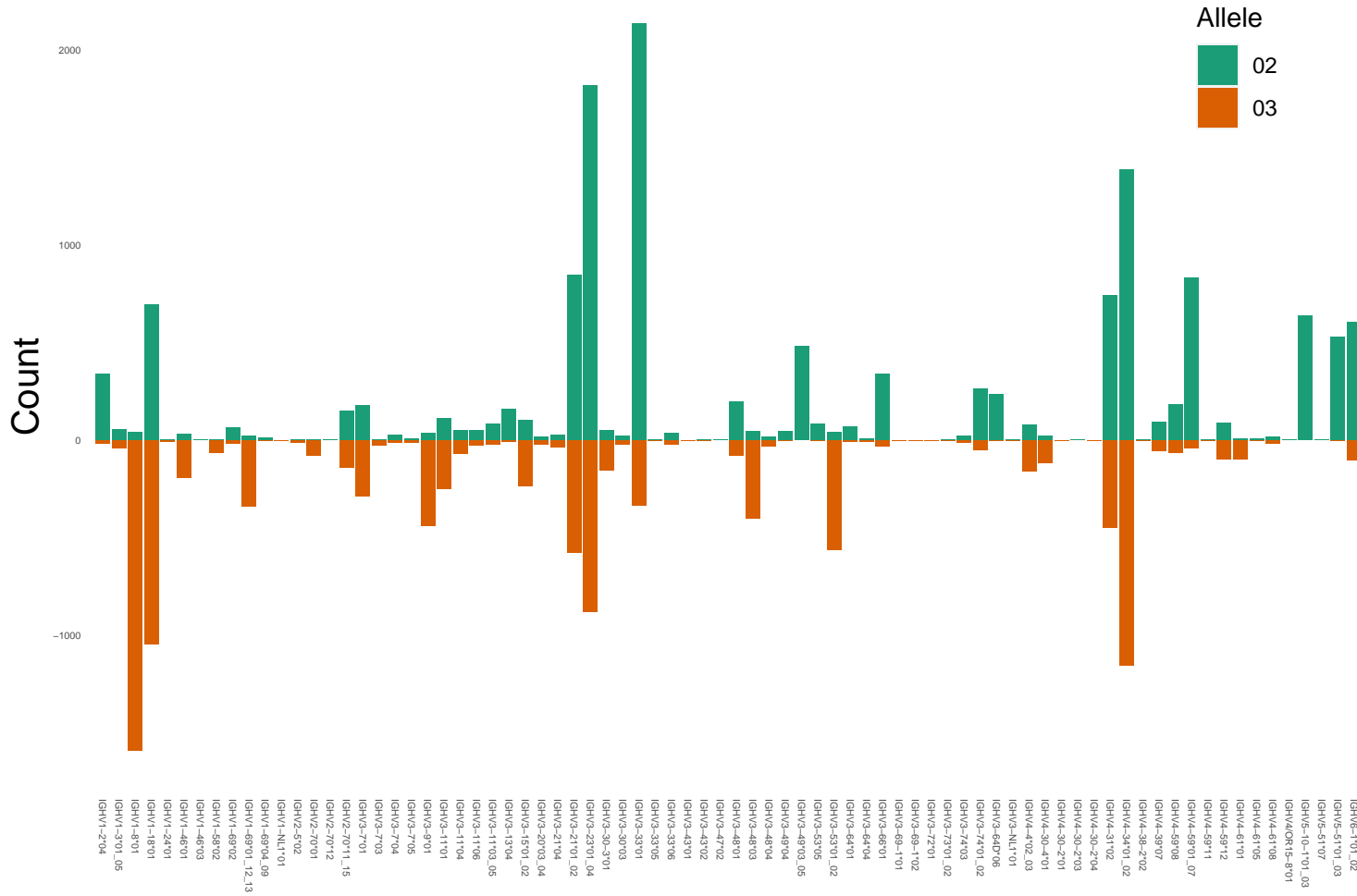
1 sequences assigned  
No exact matches.



Allele Usage



Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.