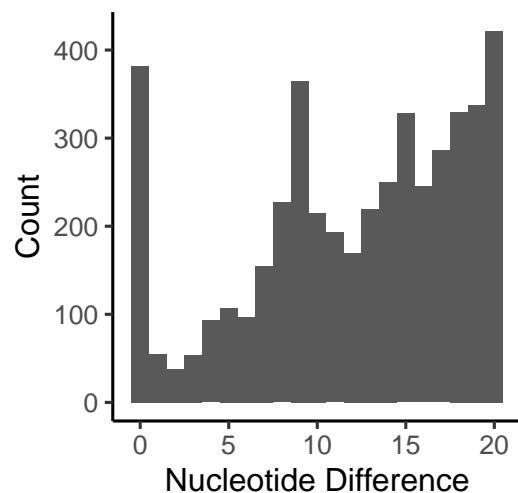


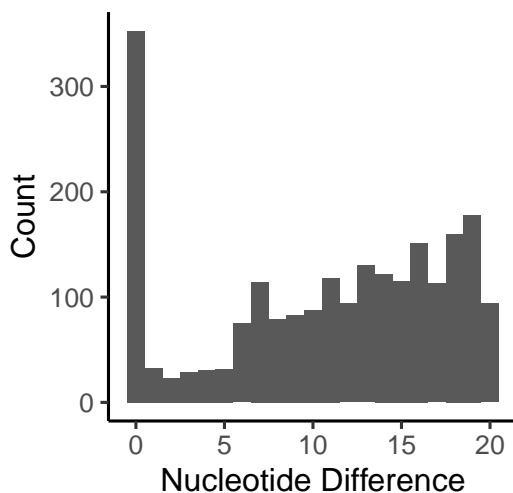
### IGHV1-2\*02

6890 sequences assigned  
382 (5.5%) exact matches, in which:  
353 unique CDR3  
6 unique J



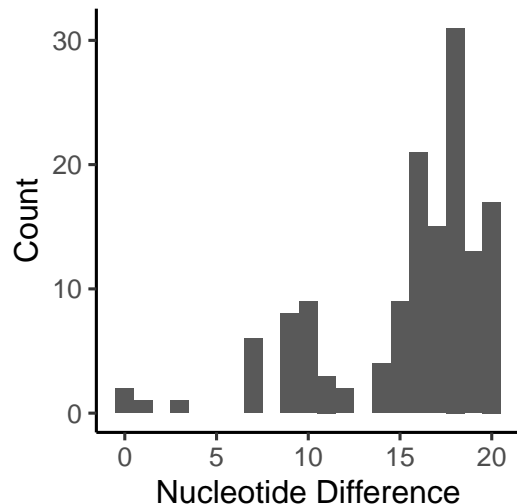
### IGHV1-8\*01

3322 sequences assigned  
353 (10.6%) exact matches, in which:  
331 unique CDR3  
7 unique J



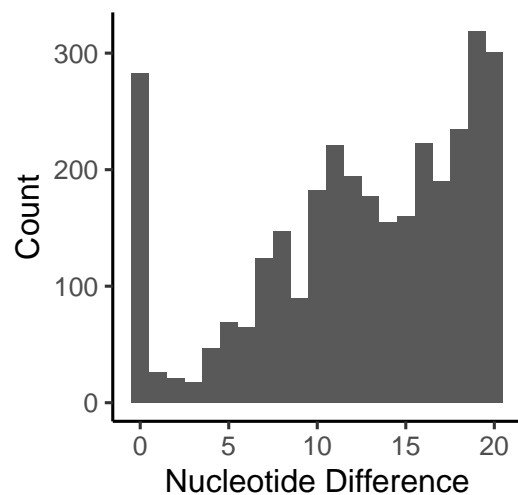
### IGHV1-45\*02

409 sequences assigned  
2 (0.5%) exact matches, in which:  
2 unique CDR3  
2 unique J



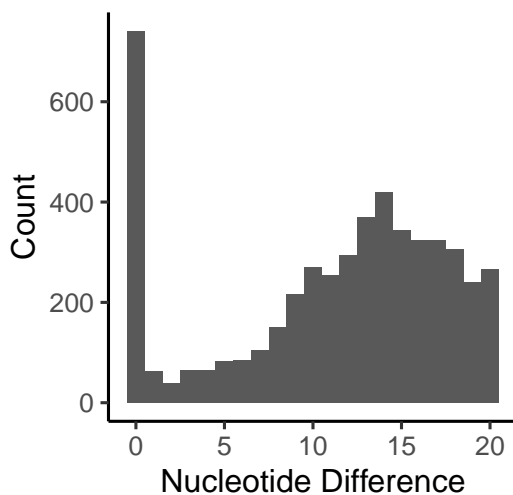
### IGHV1-2\*06

5383 sequences assigned  
283 (5.3%) exact matches, in which:  
268 unique CDR3  
6 unique J



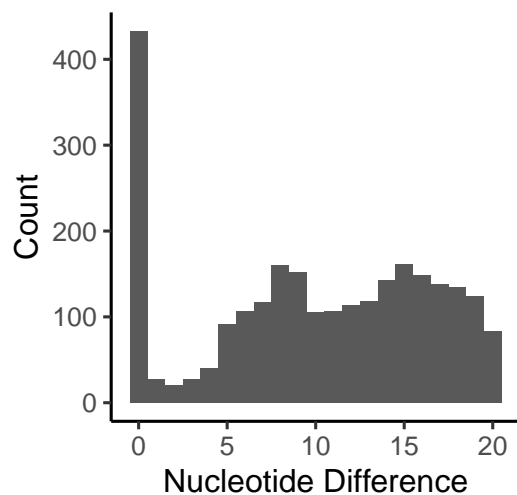
### IGHV1-18\*01

7569 sequences assigned  
741 (9.8%) exact matches, in which:  
691 unique CDR3  
6 unique J



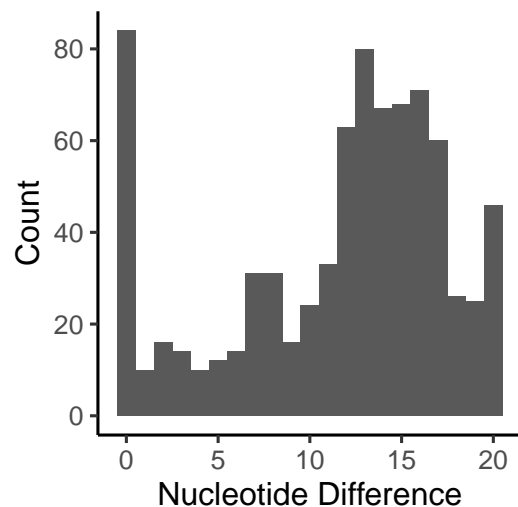
### IGHV1-46\*03

3883 sequences assigned  
433 (11.2%) exact matches, in which:  
396 unique CDR3  
6 unique J



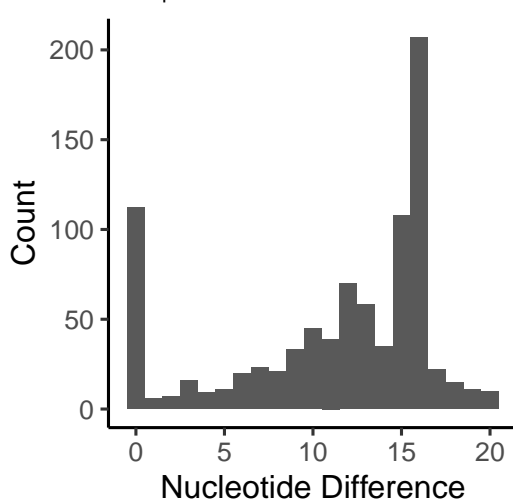
### IGHV1-3\*01

1255 sequences assigned  
84 (6.7%) exact matches, in which:  
81 unique CDR3  
6 unique J



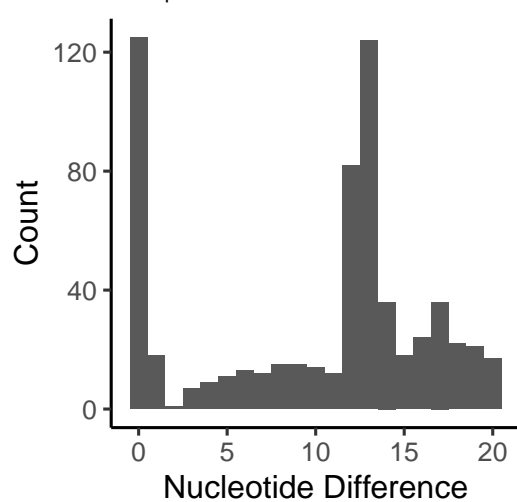
### IGHV1-24\*01

982 sequences assigned  
112 (11.4%) exact matches, in which:  
108 unique CDR3  
6 unique J



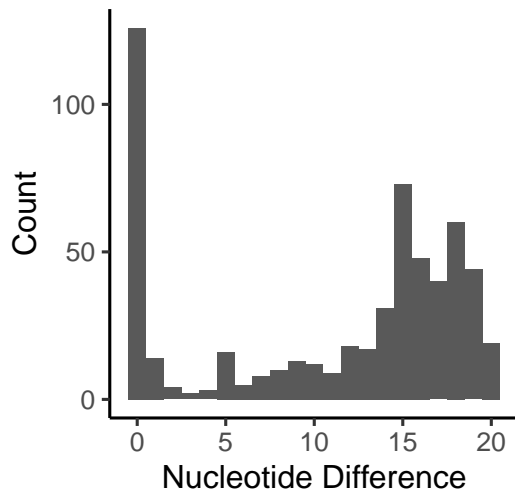
### IGHV1-58\*02

717 sequences assigned  
125 (17.4%) exact matches, in which:  
110 unique CDR3  
5 unique J



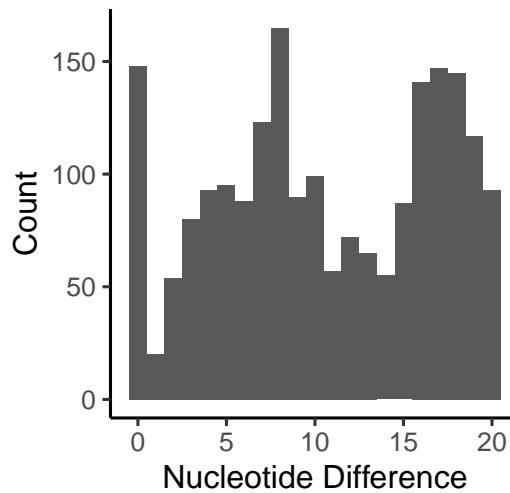
### IGHV1–69\*02

1921 sequences assigned  
126 (6.6%) exact matches, in which:  
122 unique CDR3  
5 unique J



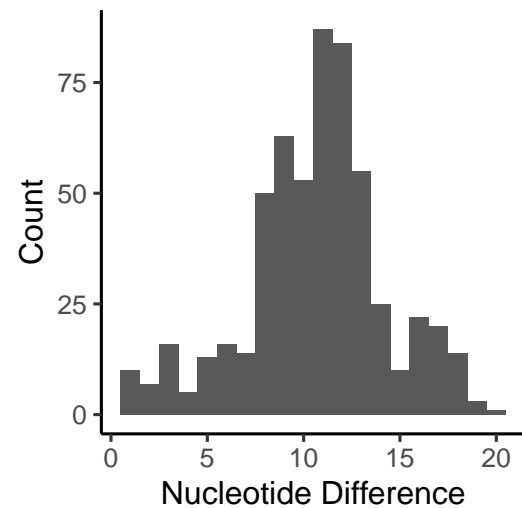
### IGHV2–5\*01

2334 sequences assigned  
148 (6.3%) exact matches, in which:  
127 unique CDR3  
5 unique J



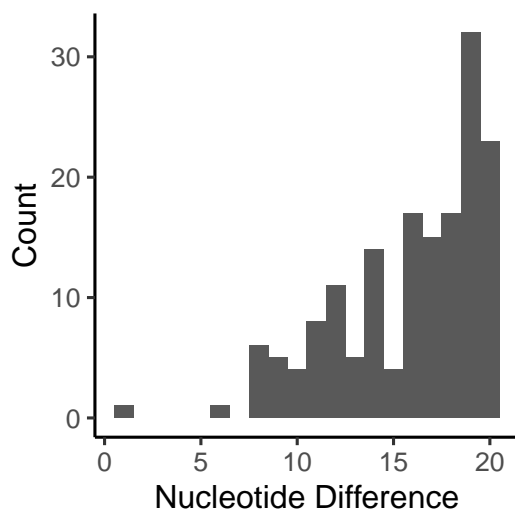
### IGHV2–70\*17

594 sequences assigned  
No exact matches.



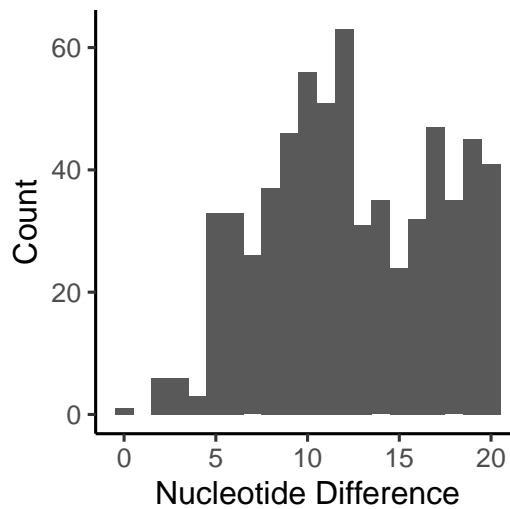
### IGHV1–69\*08

639 sequences assigned  
No exact matches.



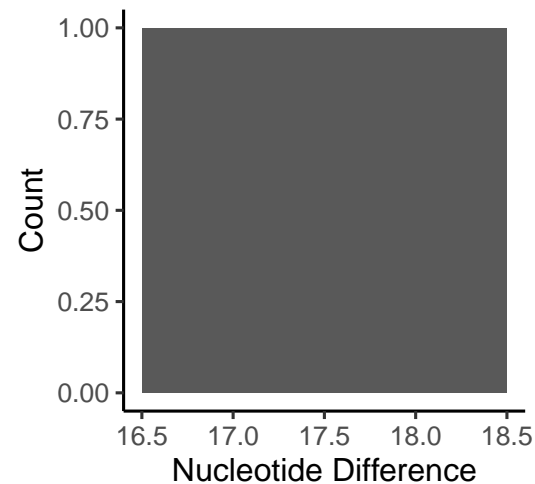
### IGHV2–5\*02

832 sequences assigned  
1 (0.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



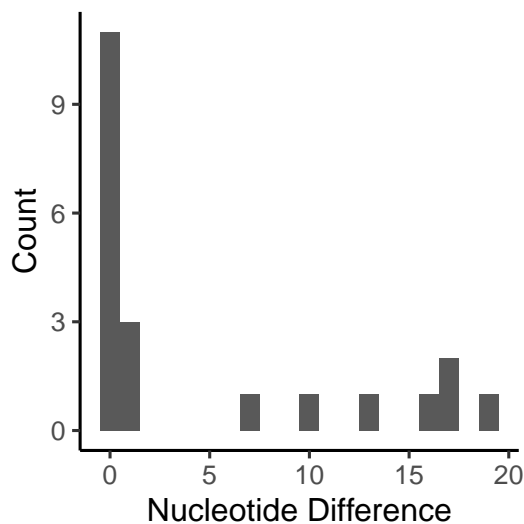
### IGHV2–70D\*04

5 sequences assigned  
No exact matches.



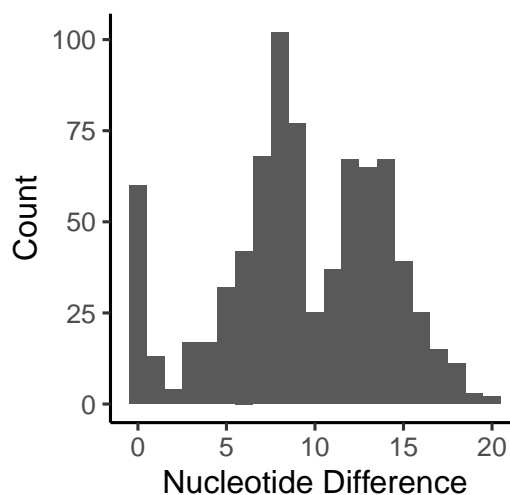
### IGHV1–69D\*01

80 sequences assigned  
11 (13.8%) exact matches, in which:  
11 unique CDR3  
4 unique J



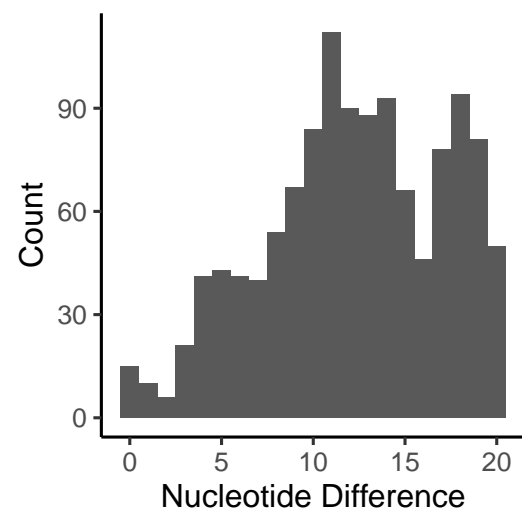
### IGHV2–26\*01

805 sequences assigned  
60 (7.5%) exact matches, in which:  
57 unique CDR3  
5 unique J



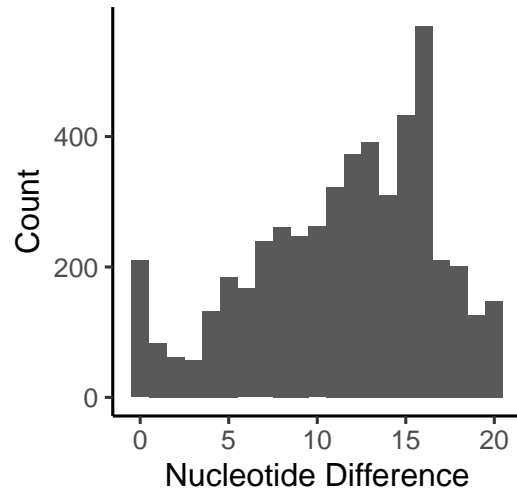
### IGHV3–7\*01

1551 sequences assigned  
15 (1%) exact matches, in which:  
12 unique CDR3  
3 unique J



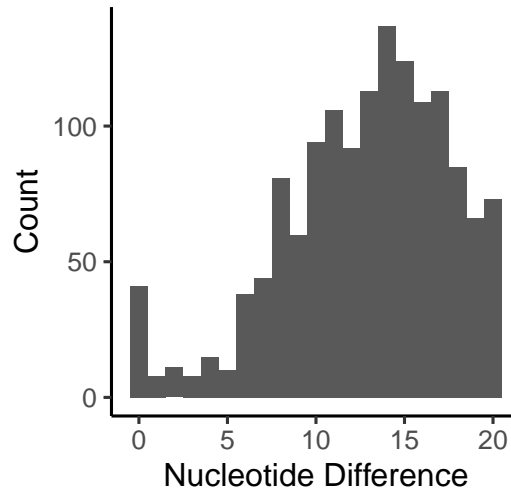
### IGHV3-9\*01

6125 sequences assigned  
210 (3.4%) exact matches, in which:  
181 unique CDR3  
6 unique J



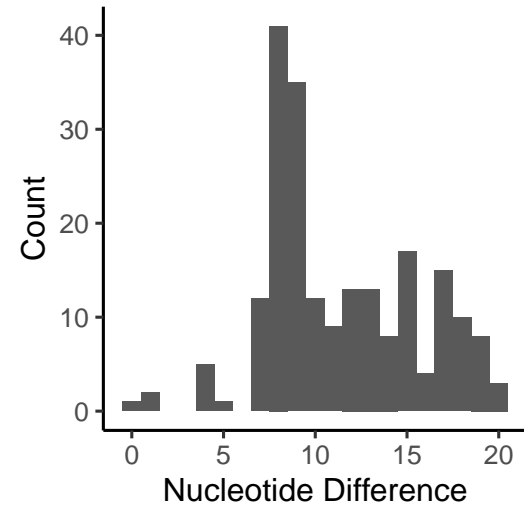
### IGHV3-15\*01

1929 sequences assigned  
41 (2.1%) exact matches, in which:  
36 unique CDR3  
4 unique J



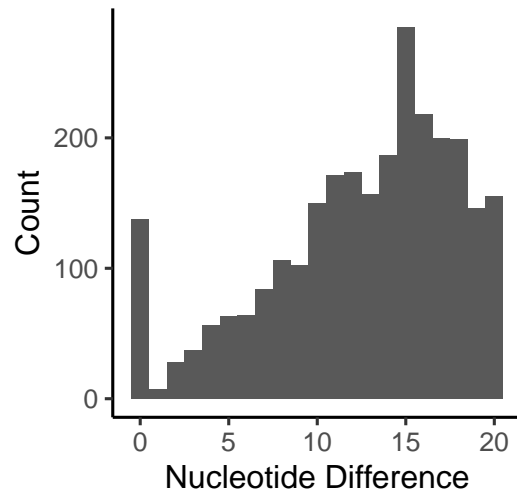
### IGHV3-21\*06

317 sequences assigned  
1 (0.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



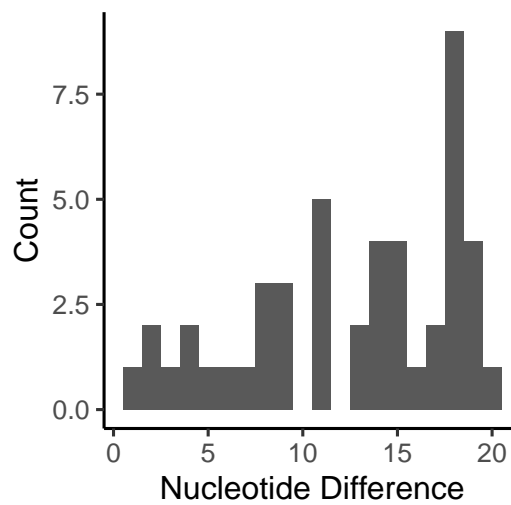
### IGHV3-11\*01

3814 sequences assigned  
138 (3.6%) exact matches, in which:  
125 unique CDR3  
6 unique J



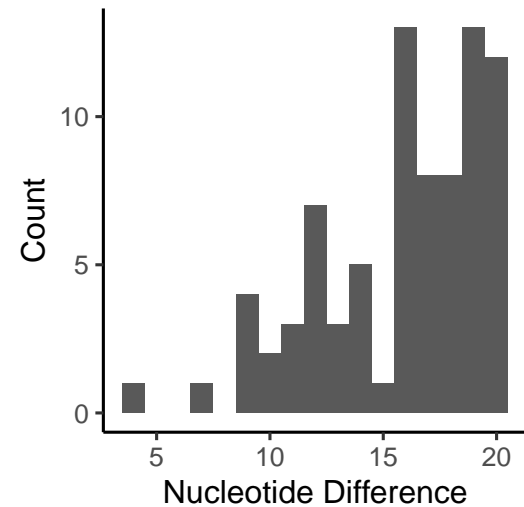
### IGHV3-20\*01

64 sequences assigned  
No exact matches.



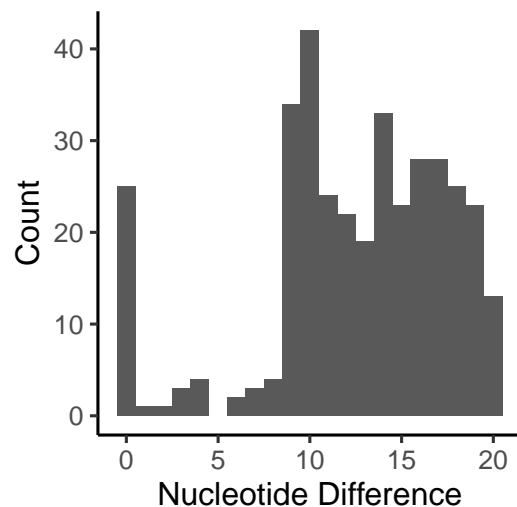
### IGHV3-30-5\*01

258 sequences assigned  
No exact matches.



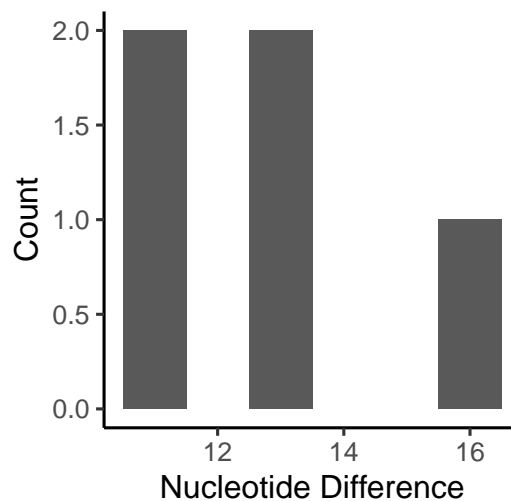
### IGHV3-13\*01

469 sequences assigned  
25 (5.3%) exact matches, in which:  
24 unique CDR3  
5 unique J



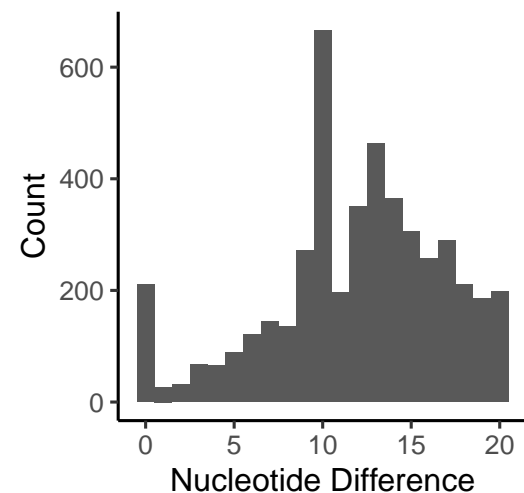
### IGHV3-20\*04

7 sequences assigned  
No exact matches.



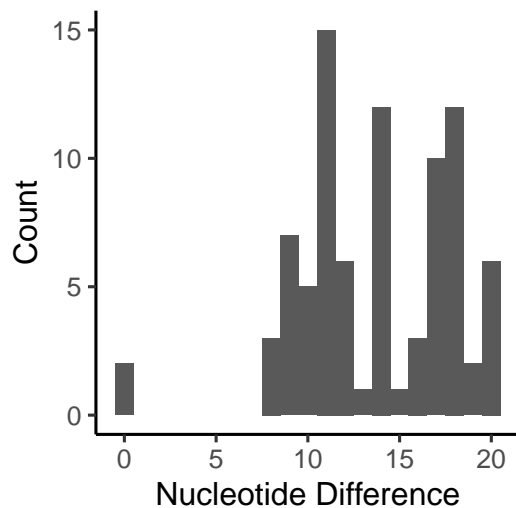
### IGHV3-33\*01

5866 sequences assigned  
210 (3.6%) exact matches, in which:  
190 unique CDR3  
6 unique J



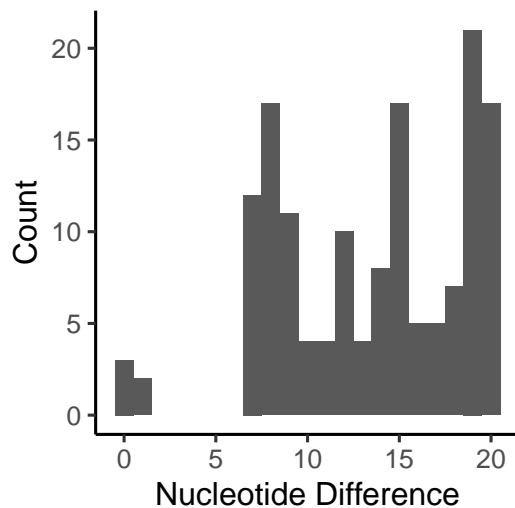
### IGHV3-43\*01

105 sequences assigned  
2 (1.9%) exact matches, in which:  
2 unique CDR3  
1 unique J



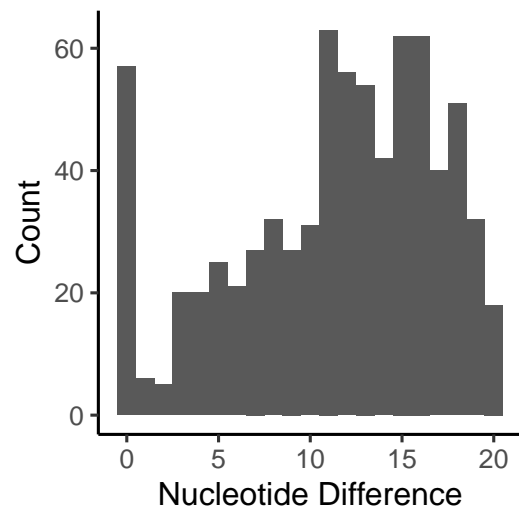
### IGHV3-53\*04

266 sequences assigned  
3 (1.1%) exact matches, in which:  
3 unique CDR3  
1 unique J



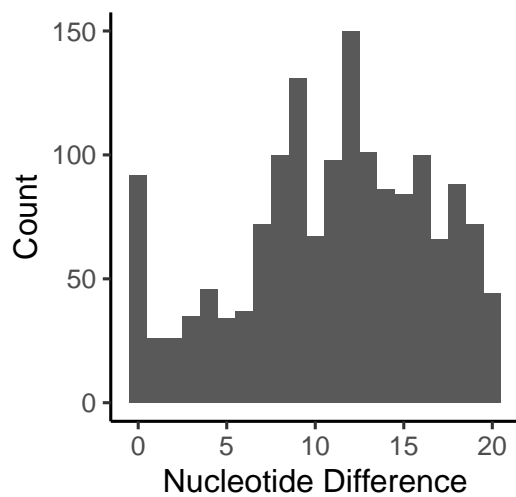
### IGHV3-66\*01

2119 sequences assigned  
57 (2.7%) exact matches, in which:  
52 unique CDR3  
4 unique J



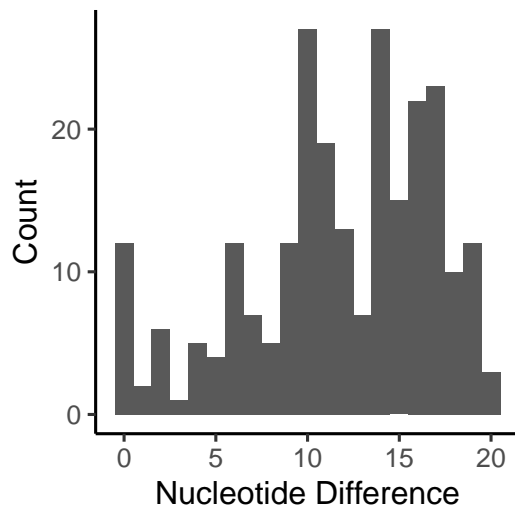
### IGHV3-48\*01

2027 sequences assigned  
92 (4.5%) exact matches, in which:  
72 unique CDR3  
5 unique J



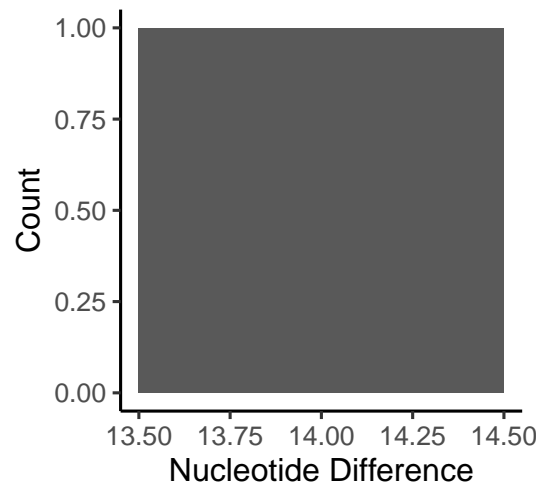
### IGHV3-64\*01

295 sequences assigned  
12 (4.1%) exact matches, in which:  
11 unique CDR3  
4 unique J



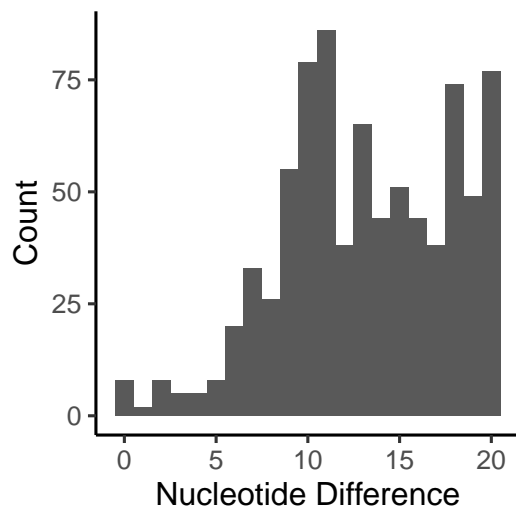
### IGHV3-69-1\*02

2 sequences assigned  
No exact matches.



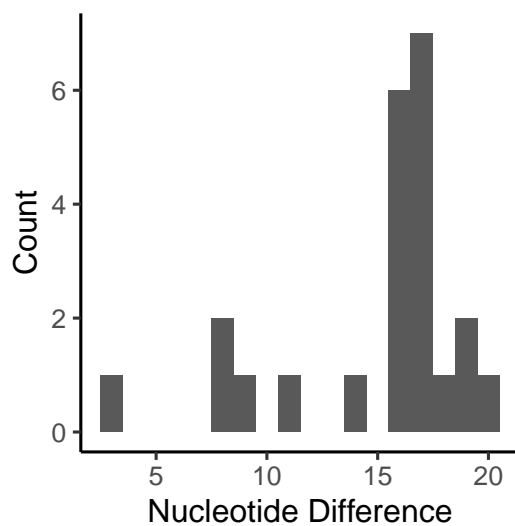
### IGHV3-49\*03

1421 sequences assigned  
8 (0.6%) exact matches, in which:  
7 unique CDR3  
2 unique J



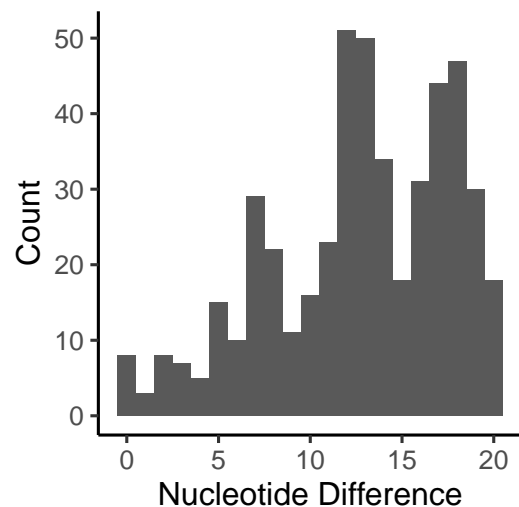
### IGHV3-64\*07

79 sequences assigned  
No exact matches.



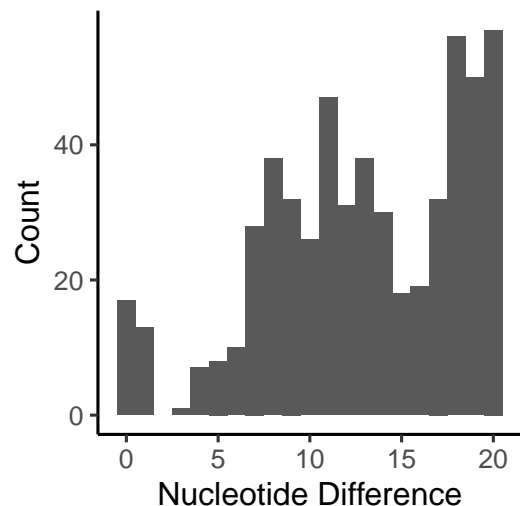
### IGHV3-72\*01

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



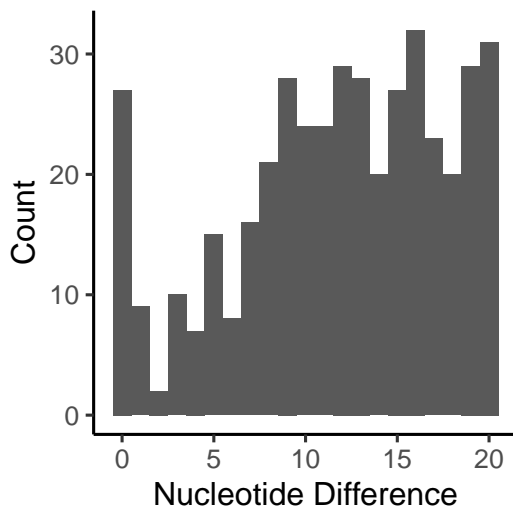
### IGHV3-73\*01

965 sequences assigned  
17 (1.8%) exact matches, in which:  
16 unique CDR3  
4 unique J



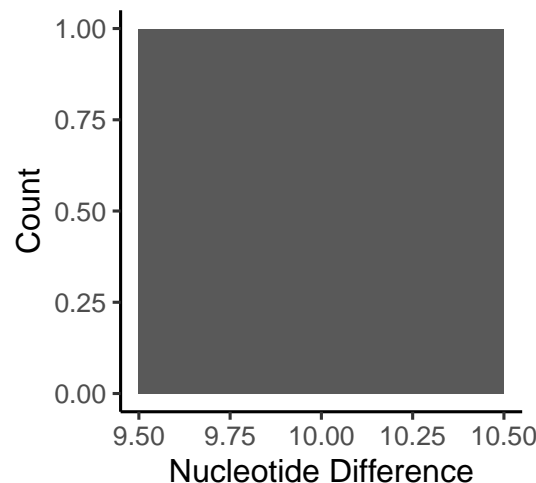
### IGHV4-4\*07

635 sequences assigned  
27 (4.3%) exact matches, in which:  
27 unique CDR3  
6 unique J



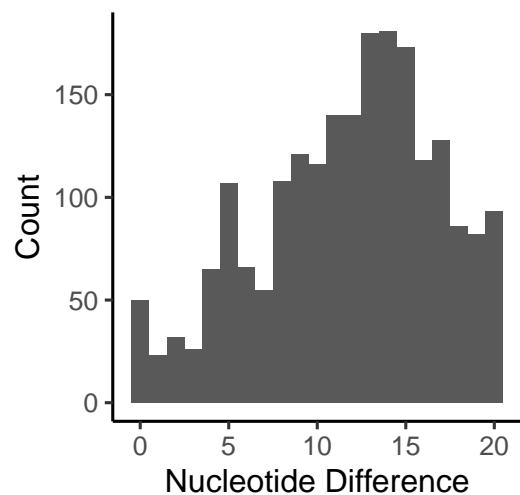
### IGHV4-30-4\*01

1 sequences assigned  
No exact matches.



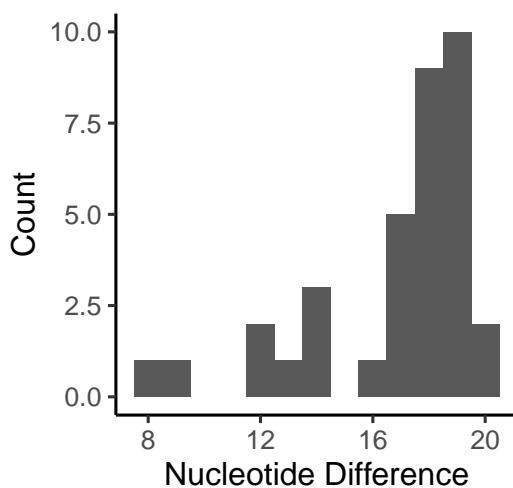
### IGHV3-74\*01

2769 sequences assigned  
50 (1.8%) exact matches, in which:  
35 unique CDR3  
5 unique J



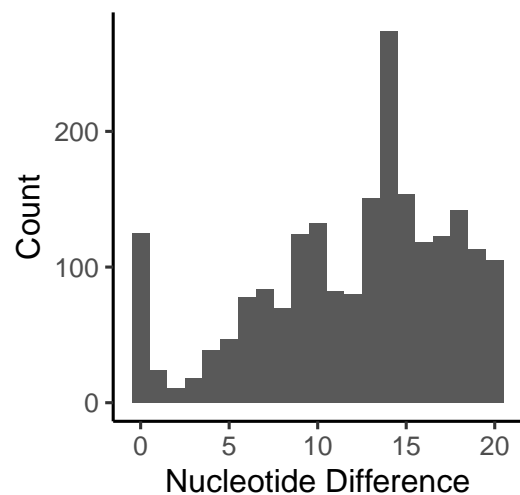
### IGHV4-4\*08

131 sequences assigned  
No exact matches.



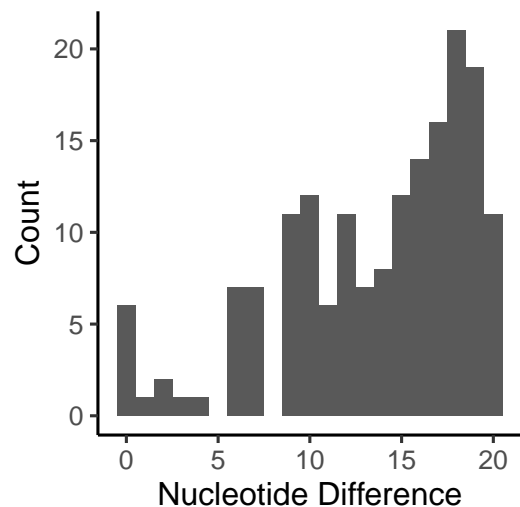
### IGHV4-31\*03

2780 sequences assigned  
125 (4.5%) exact matches, in which:  
109 unique CDR3  
5 unique J



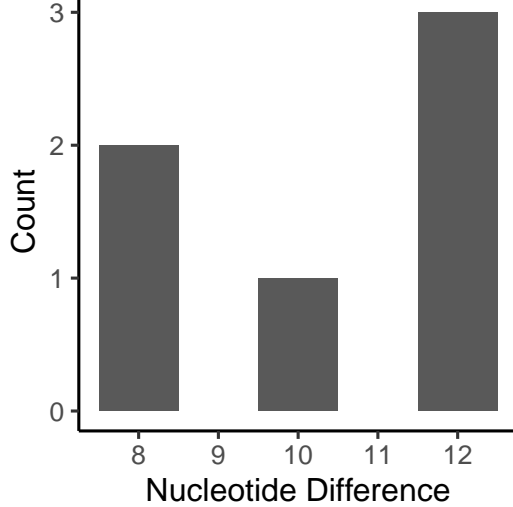
### IGHV4-4\*02

323 sequences assigned  
6 (1.9%) exact matches, in which:  
4 unique CDR3  
3 unique J



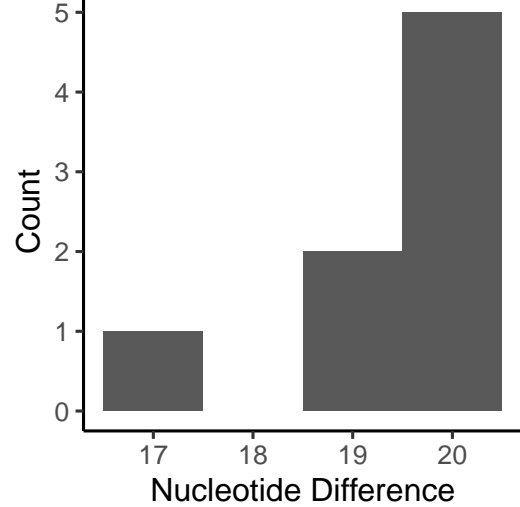
### IGHV4-28\*05

6 sequences assigned  
No exact matches.



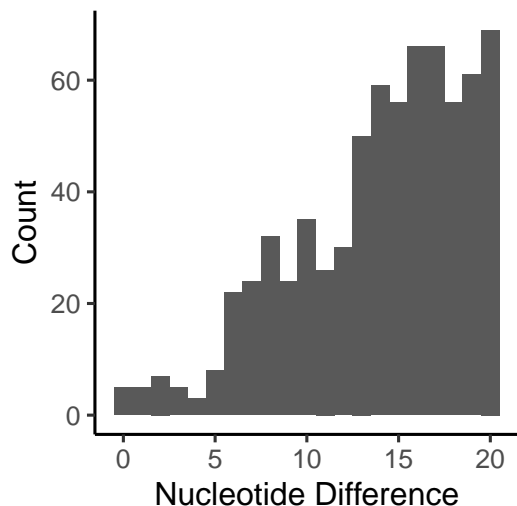
### IGHV4-38-2\*02

9 sequences assigned  
No exact matches.



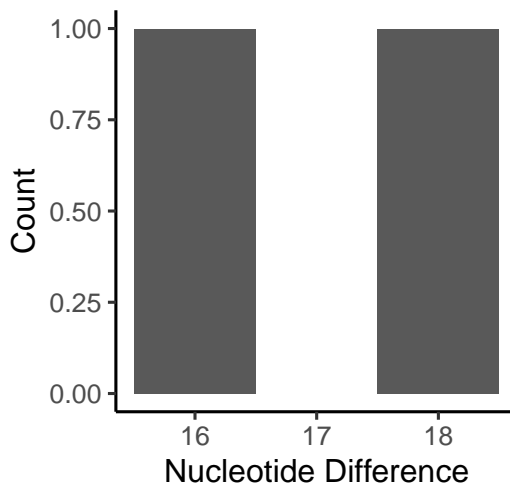
### IGHV4-39\*01

1591 sequences assigned  
5 (0.3%) exact matches, in which:  
5 unique CDR3  
3 unique J



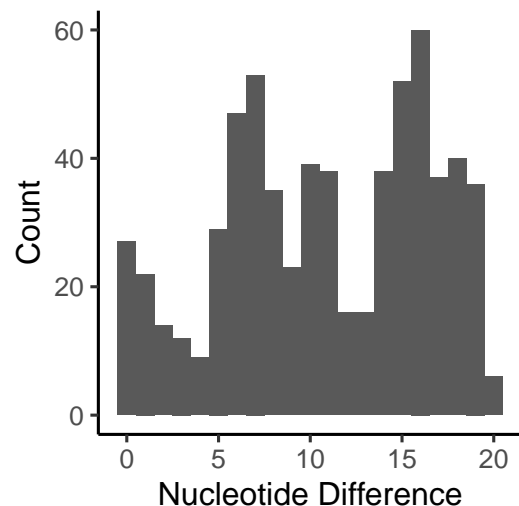
### IGHV4-61\*02

2 sequences assigned  
No exact matches.



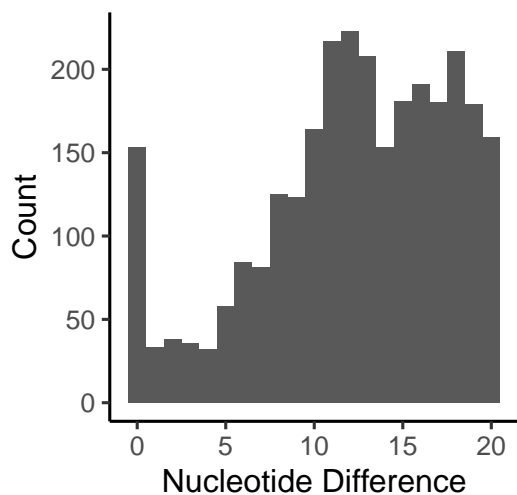
### IGHV6-1\*01

708 sequences assigned  
27 (3.8%) exact matches, in which:  
15 unique CDR3  
4 unique J



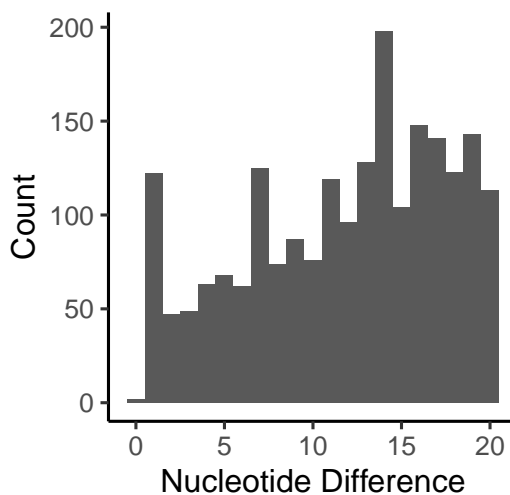
### IGHV4-59\*01

4020 sequences assigned  
153 (3.8%) exact matches, in which:  
132 unique CDR3  
5 unique J



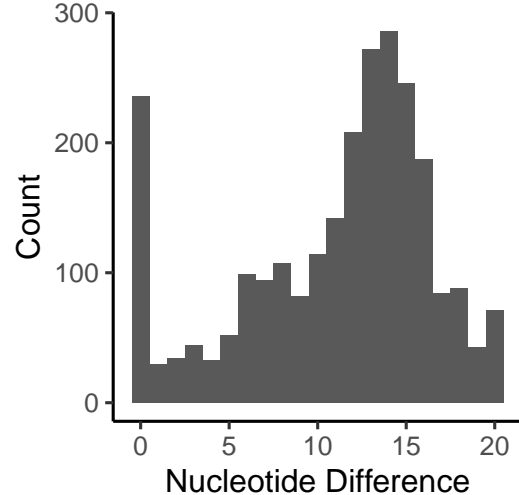
### IGHV5-51\*01

2732 sequences assigned  
2 (0.1%) exact matches, in which:  
2 unique CDR3  
2 unique J



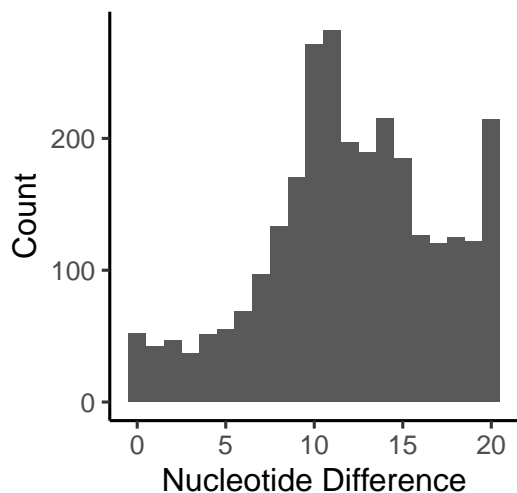
### IGHV7-4-1\*02

3231 sequences assigned  
236 (7.3%) exact matches, in which:  
211 unique CDR3  
5 unique J



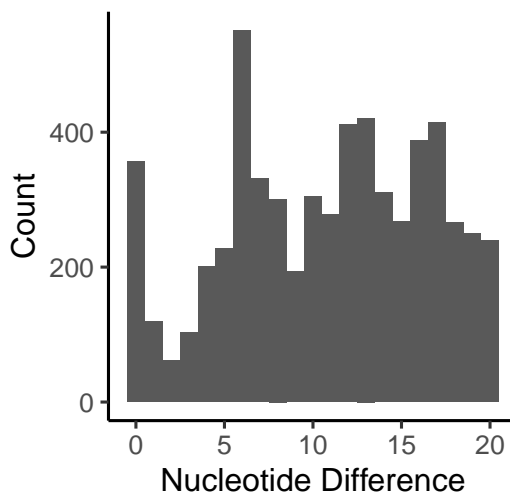
### IGHV4-59\*08

3915 sequences assigned  
52 (1.3%) exact matches, in which:  
39 unique CDR3  
5 unique J

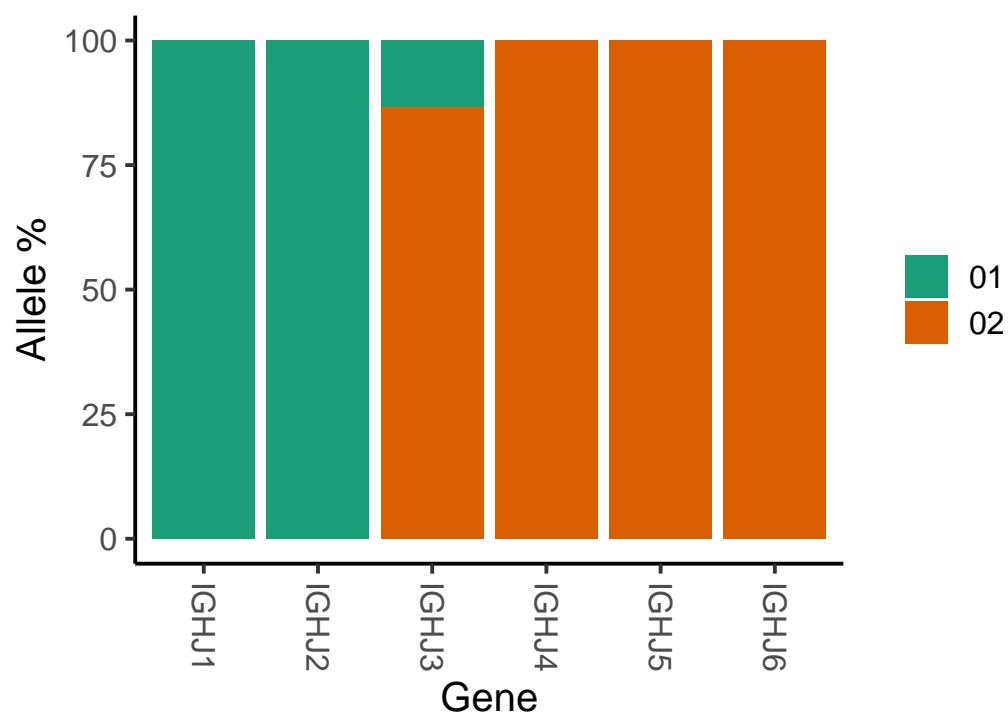


### IGHV5-51\*03

7321 sequences assigned  
357 (4.9%) exact matches, in which:  
297 unique CDR3  
6 unique J



Allele Usage



Warning – no inferred sequences found.