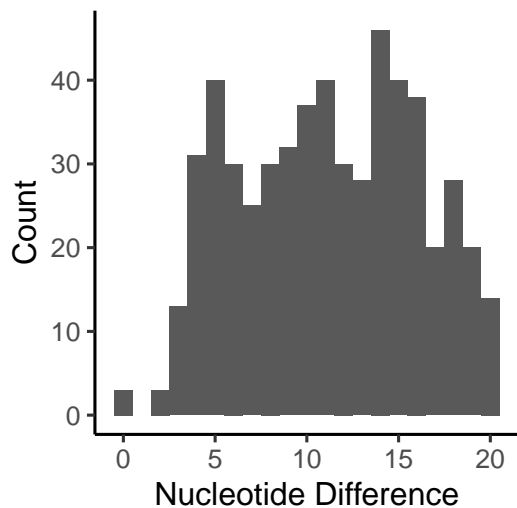


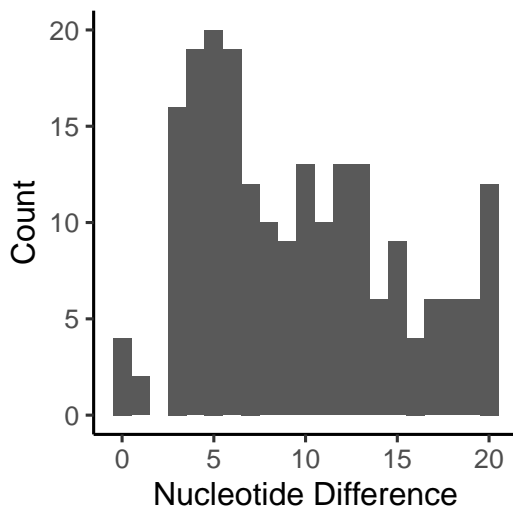
### IGHV1-2\*02

645 sequences assigned  
3 (0.5%) exact matches, in which:  
3 unique CDR3  
3 unique J



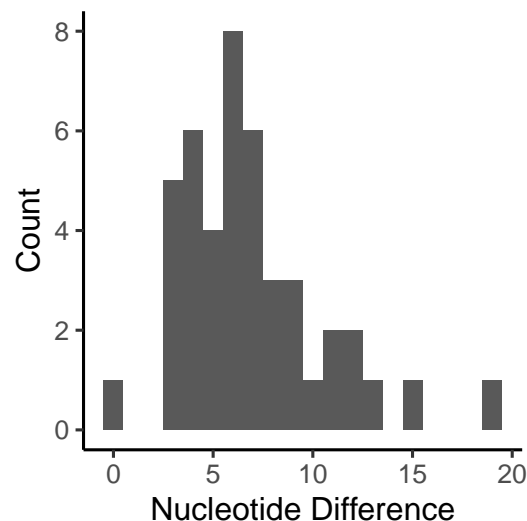
### IGHV1-3\*01\_05

240 sequences assigned  
4 (1.7%) exact matches, in which:  
4 unique CDR3  
2 unique J



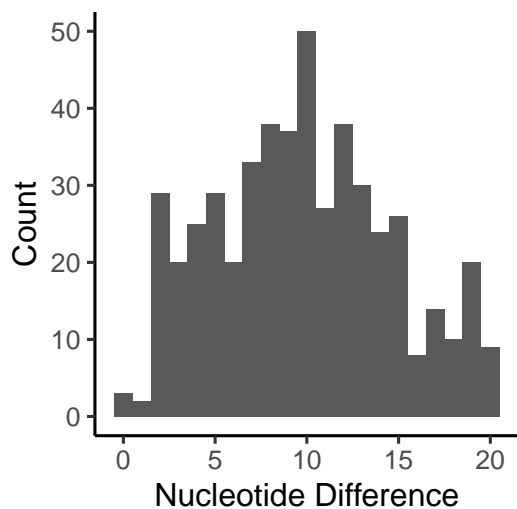
### IGHV1-24\*01

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



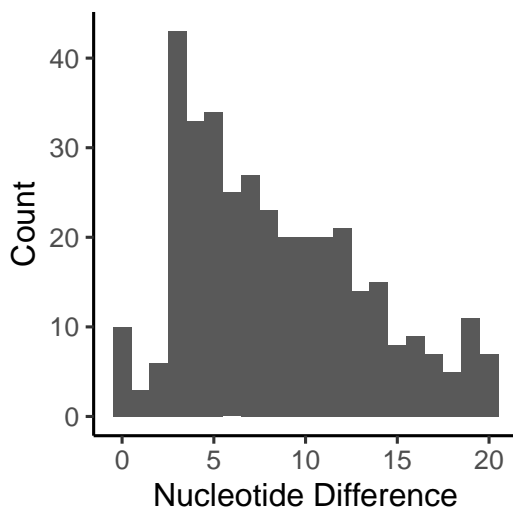
### IGHV1-2\*06

599 sequences assigned  
3 (0.5%) exact matches, in which:  
3 unique CDR3  
1 unique J



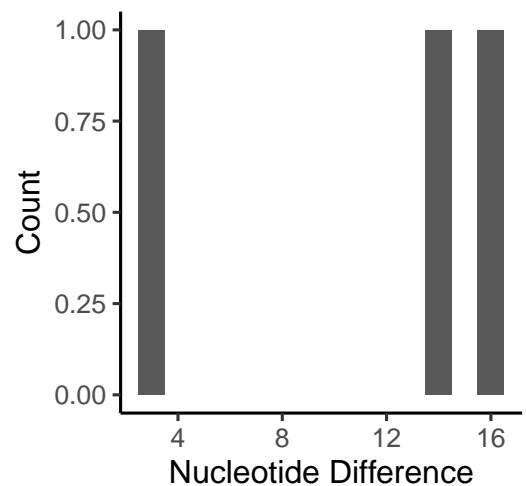
### IGHV1-8\*01

397 sequences assigned  
10 (2.5%) exact matches, in which:  
10 unique CDR3  
3 unique J



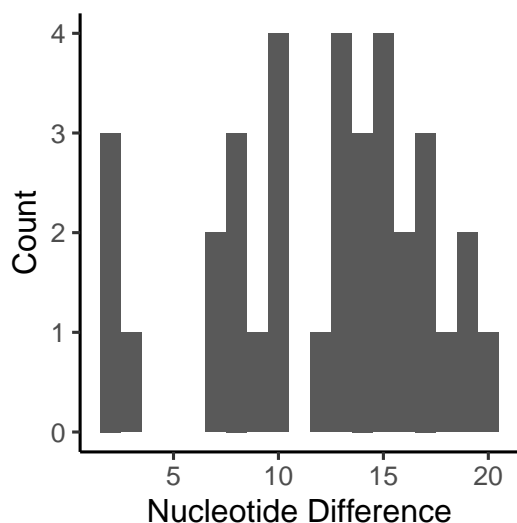
### IGHV1-45\*02

3 sequences assigned  
No exact matches.



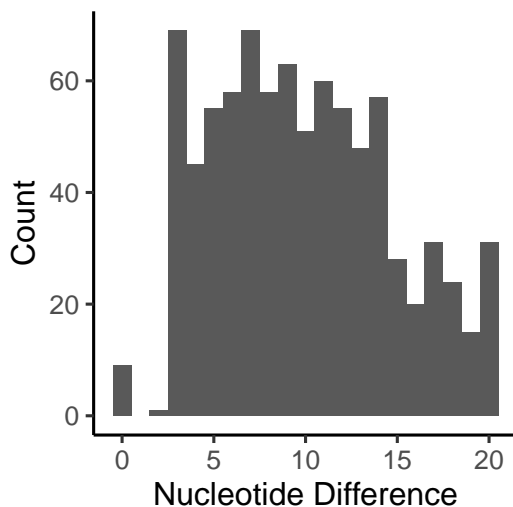
### IGHV1-3\*04

45 sequences assigned  
No exact matches.



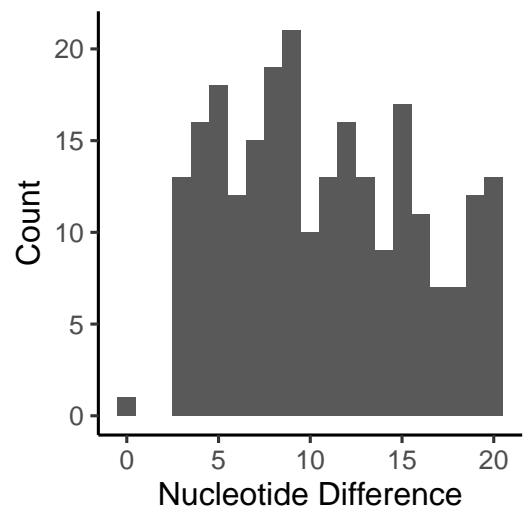
### IGHV1-18\*01

993 sequences assigned  
9 (0.9%) exact matches, in which:  
9 unique CDR3  
3 unique J



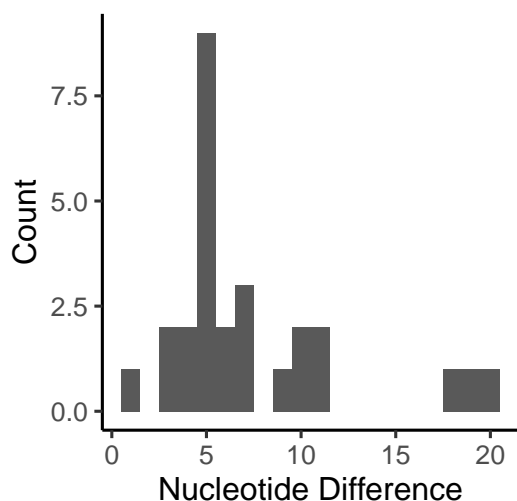
### IGHV1-46\*01

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



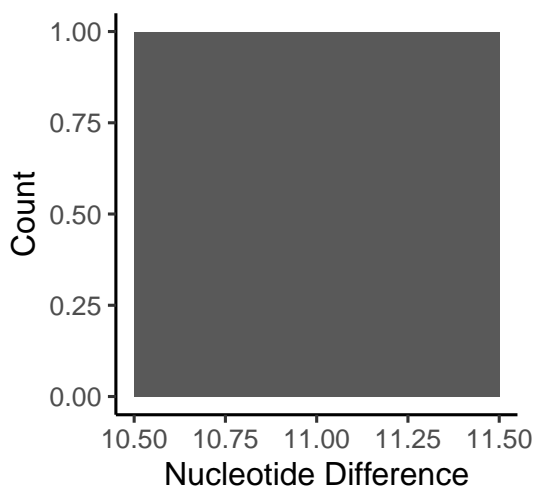
### IGHV1-58\*02

28 sequences assigned  
No exact matches.



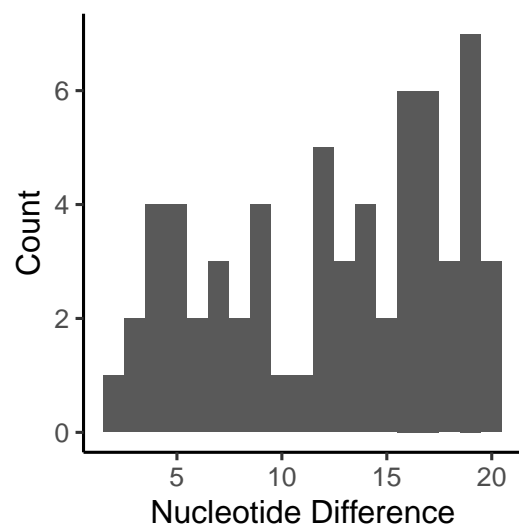
### IGHV1-69-2\*01

1 sequences assigned  
No exact matches.



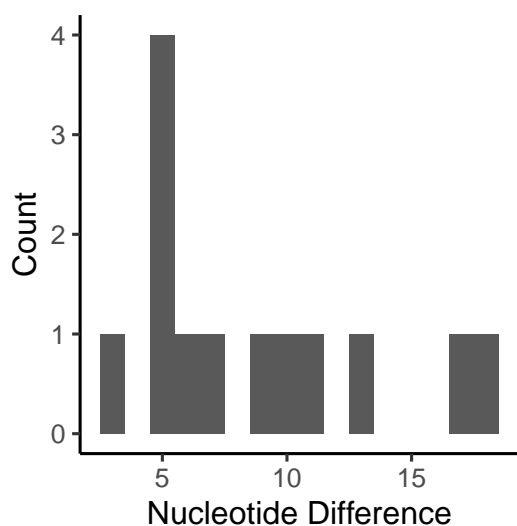
### IGHV1-69\*04\_09

79 sequences assigned  
No exact matches.



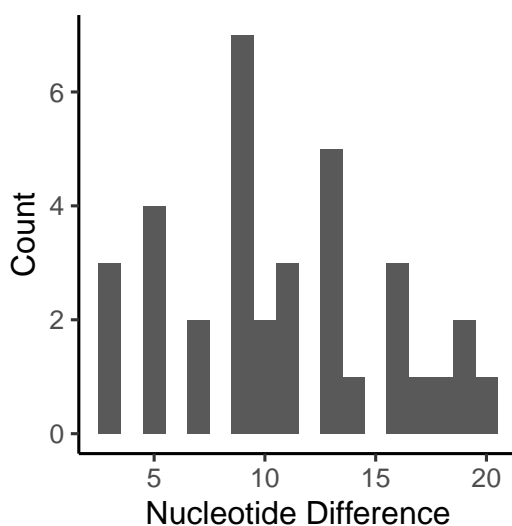
### IGHV1-58\*01\_03

13 sequences assigned  
No exact matches.



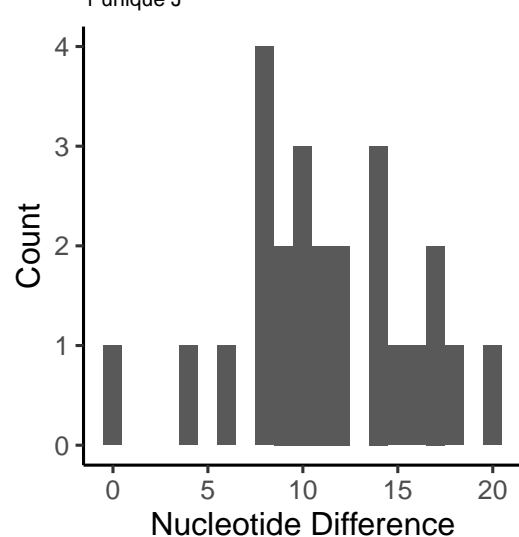
### IGHV1-69\*02

46 sequences assigned  
No exact matches.



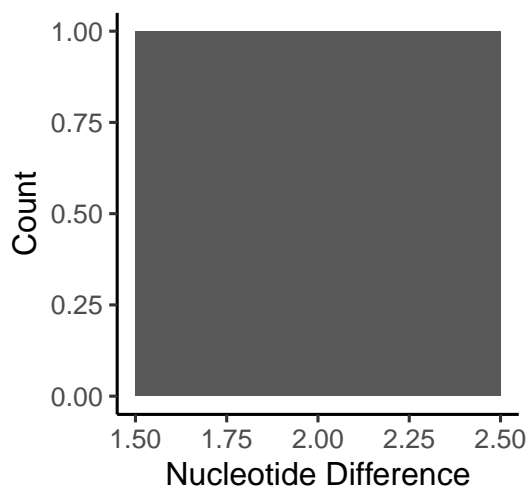
### IGHV1-69\*06\_14

29 sequences assigned  
1 (3.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



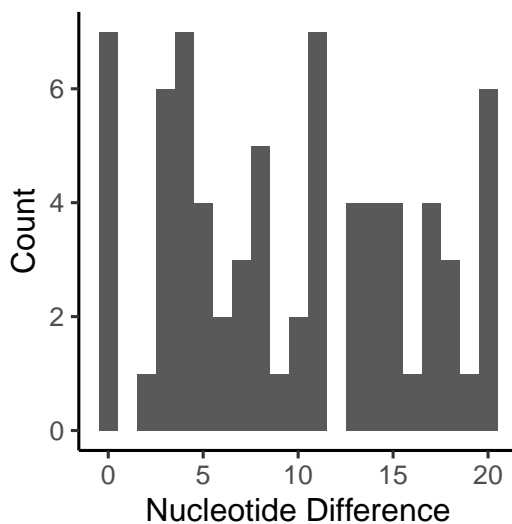
### IGHV1-68\*02\_03

1 sequences assigned  
No exact matches.



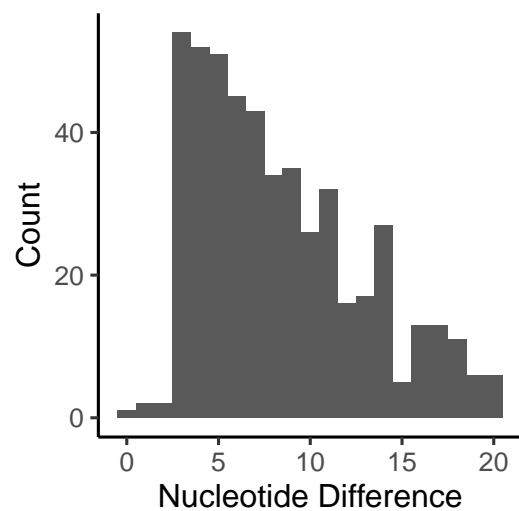
### IGHV1-69\*01\_12\_13

93 sequences assigned  
7 (7.5%) exact matches, in which:  
7 unique CDR3  
4 unique J



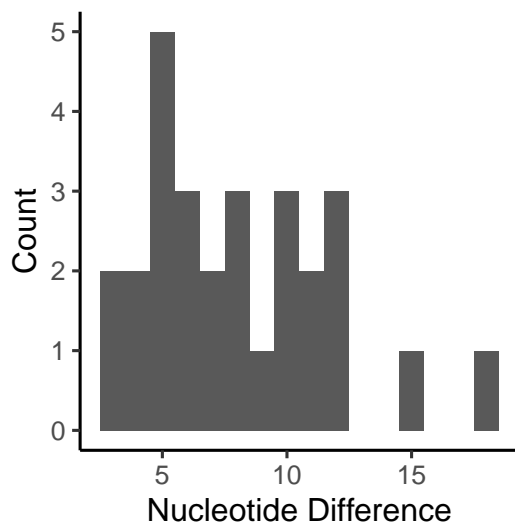
### IGHV2-5\*02

530 sequences assigned  
1 (0.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



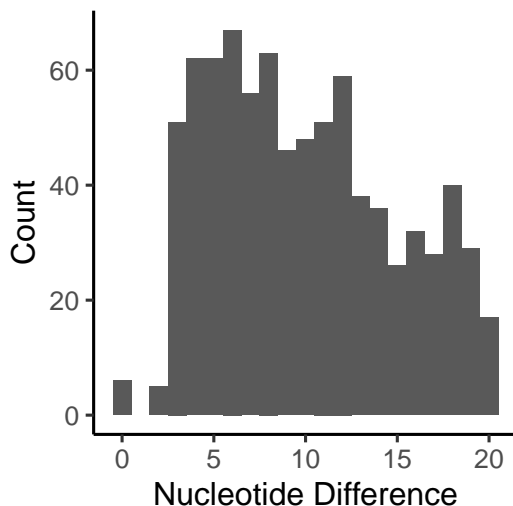
### IGHV2-26\*01

29 sequences assigned  
No exact matches.



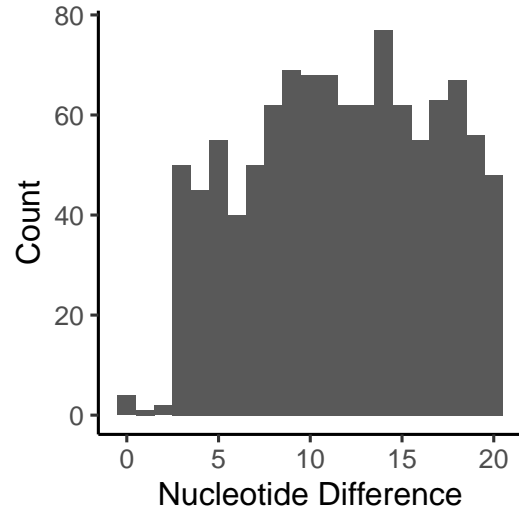
### IGHV3-9\*01

930 sequences assigned  
6 (0.6%) exact matches, in which:  
6 unique CDR3  
2 unique J



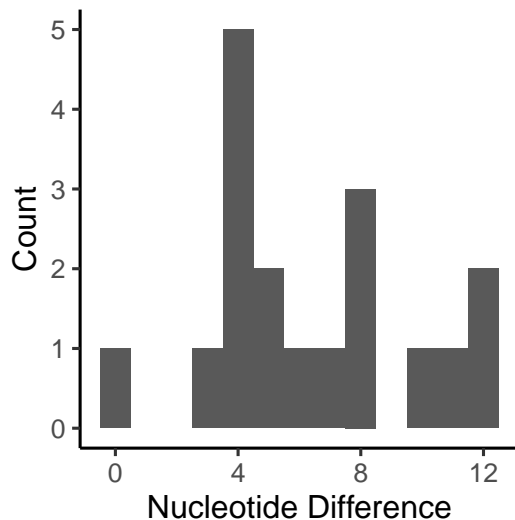
### IGHV3-15\*01\_02

1290 sequences assigned  
4 (0.3%) exact matches, in which:  
4 unique CDR3  
3 unique J



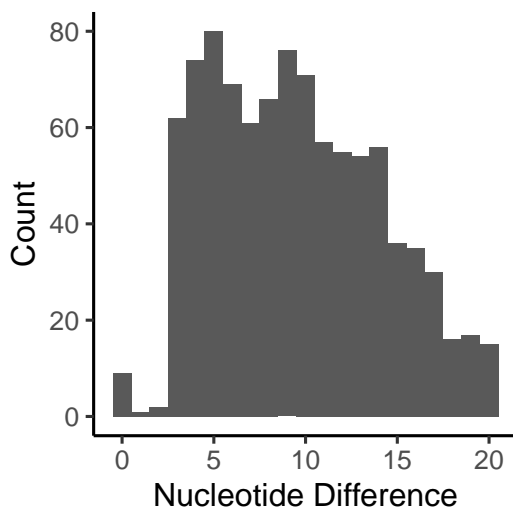
### IGHV2-70\*01

19 sequences assigned  
1 (5.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



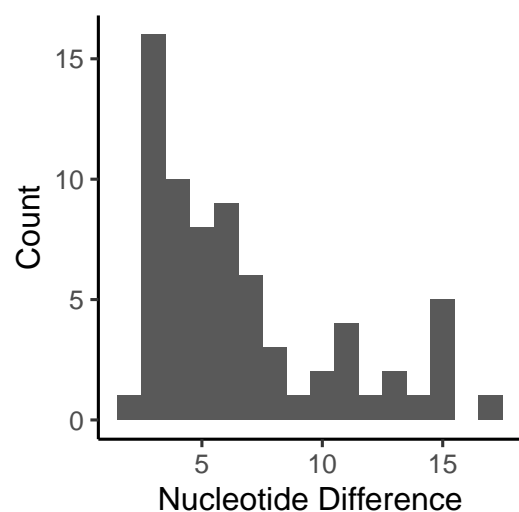
### IGHV3-11\*01

1025 sequences assigned  
9 (0.9%) exact matches, in which:  
8 unique CDR3  
3 unique J



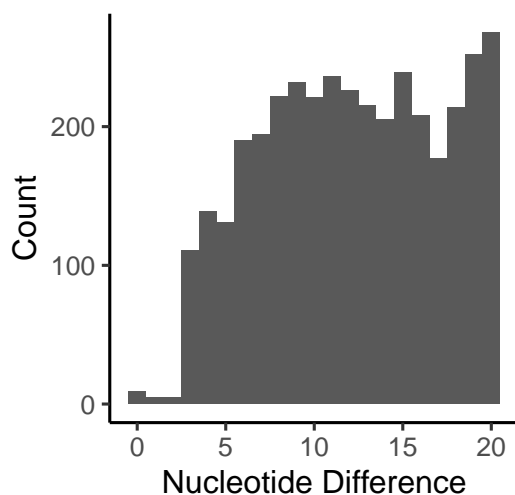
### IGHV3-20\*01\_02

70 sequences assigned  
No exact matches.



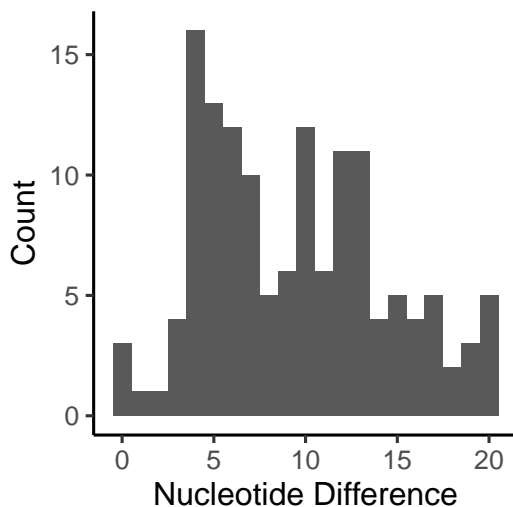
### IGHV3-7\*01

4737 sequences assigned  
9 (0.2%) exact matches, in which:  
8 unique CDR3  
3 unique J



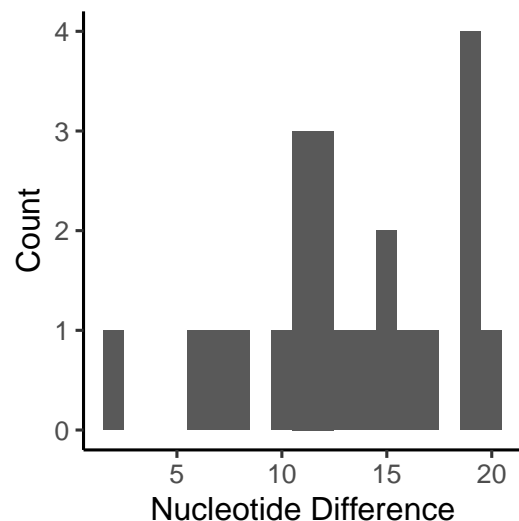
### IGHV3-13\*01

167 sequences assigned  
3 (1.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



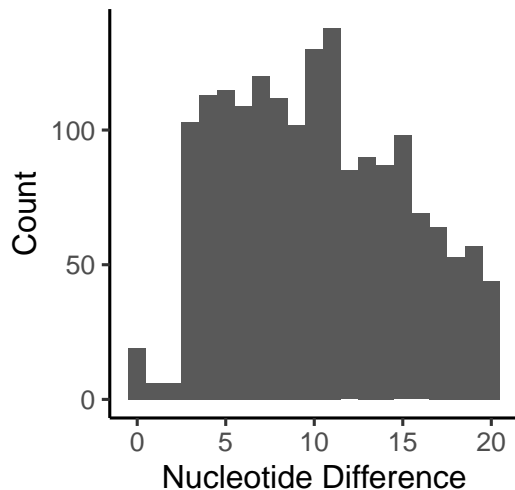
### IGHV3-20\*03\_04

24 sequences assigned  
No exact matches.



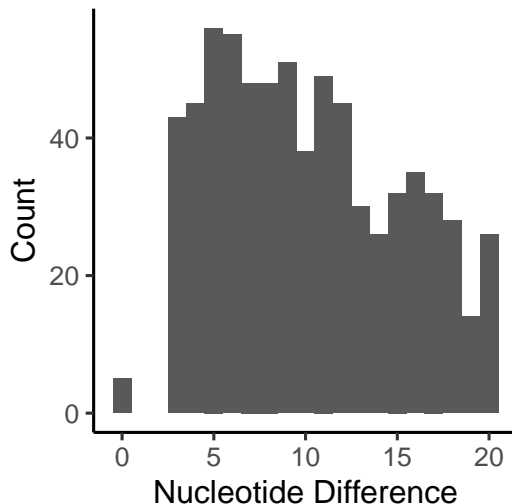
### IGHV3-21\*01\_02

1984 sequences assigned  
19 (1%) exact matches, in which:  
16 unique CDR3  
3 unique J



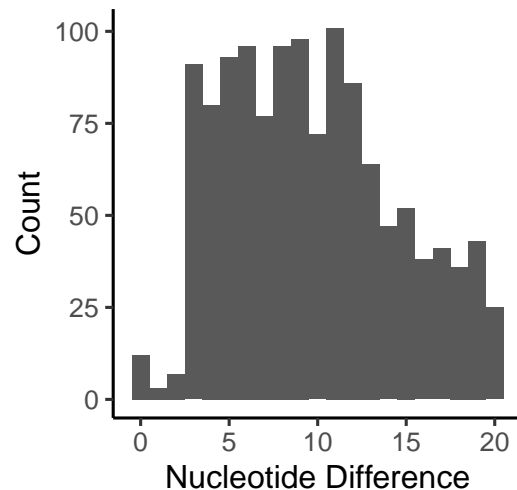
### IGHV3-33\*01

805 sequences assigned  
5 (0.6%) exact matches, in which:  
5 unique CDR3  
2 unique J



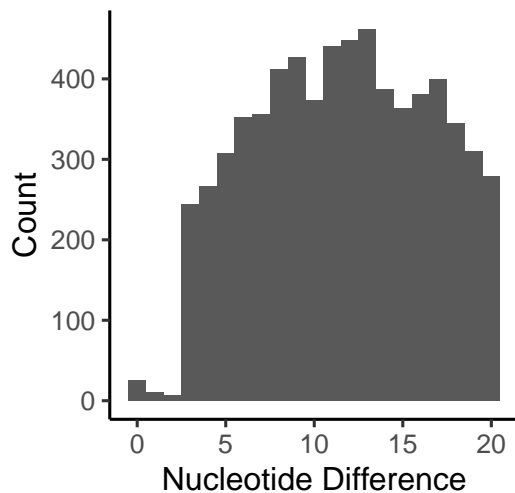
### IGHV3-48\*03

1398 sequences assigned  
12 (0.9%) exact matches, in which:  
10 unique CDR3  
1 unique J



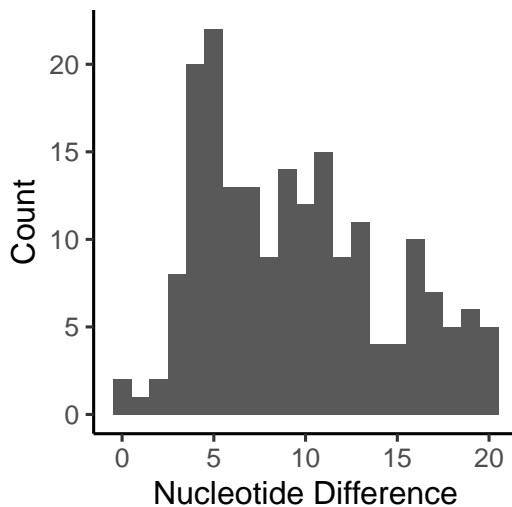
### IGHV3-23\*01\_04

7998 sequences assigned  
26 (0.3%) exact matches, in which:  
23 unique CDR3  
5 unique J



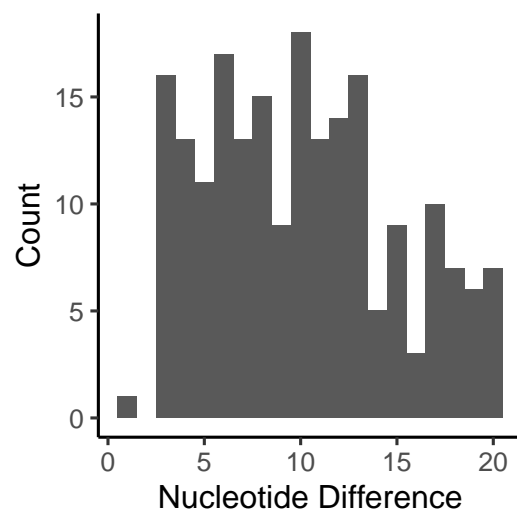
### IGHV3-43\*02

230 sequences assigned  
2 (0.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



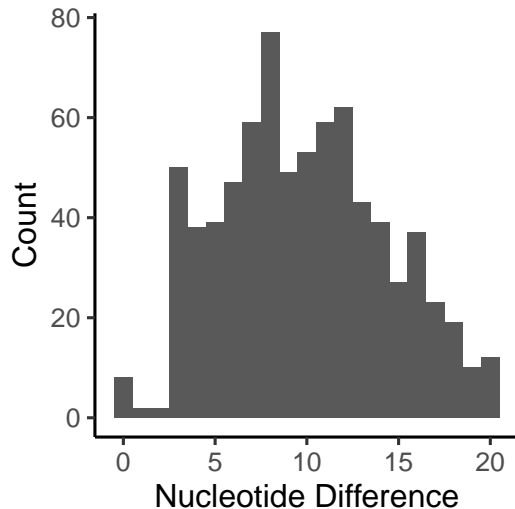
### IGHV3-49\*04

229 sequences assigned  
No exact matches.



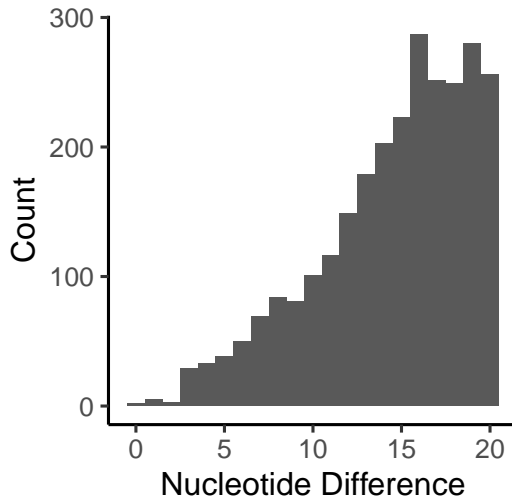
### IGHV3-30-3\*01

870 sequences assigned  
8 (0.9%) exact matches, in which:  
7 unique CDR3  
4 unique J



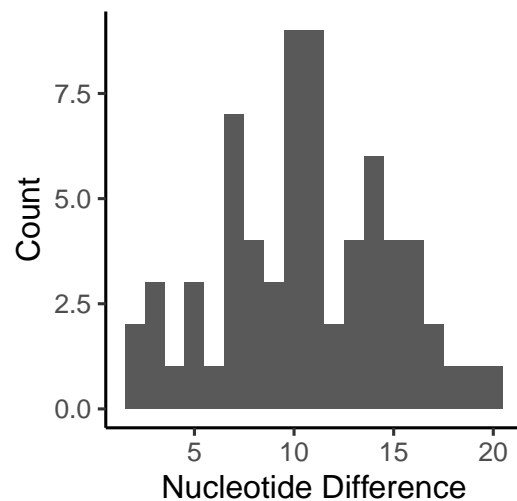
### IGHV3-48\*01

4119 sequences assigned  
2 (0%) exact matches, in which:  
2 unique CDR3  
2 unique J



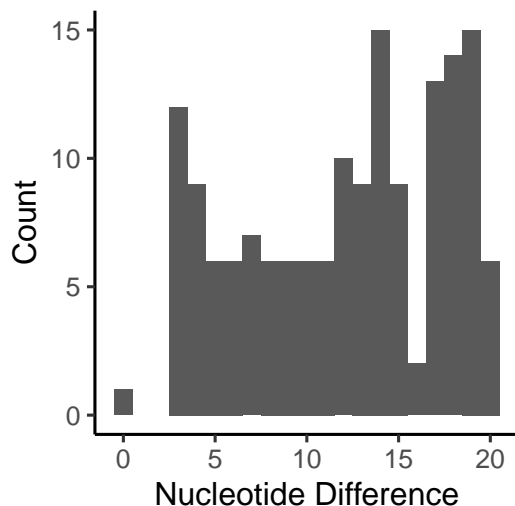
### IGHV3-49\*03\_05

99 sequences assigned  
No exact matches.



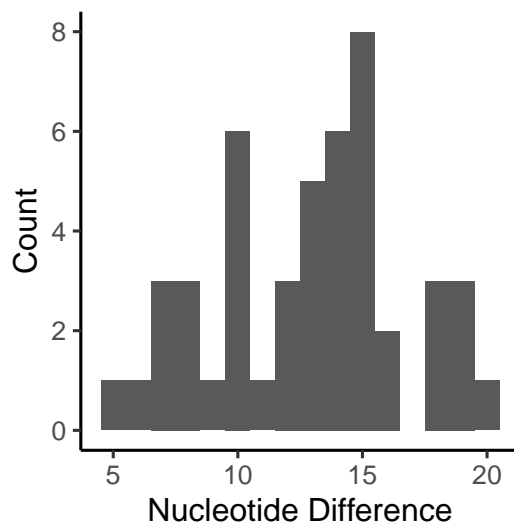
### IGHV3-53\*04

226 sequences assigned  
1 (0.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



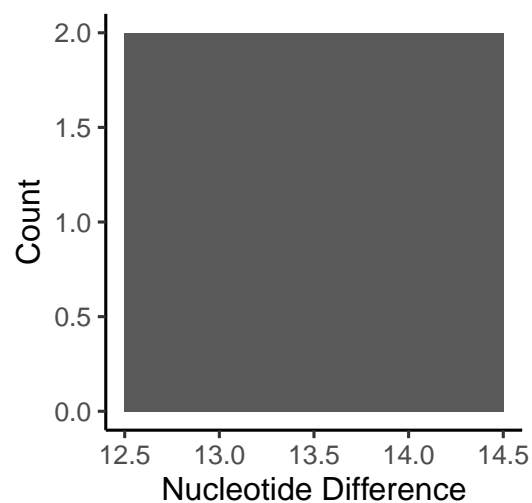
### IGHV3-64\*02\_07

105 sequences assigned  
No exact matches.



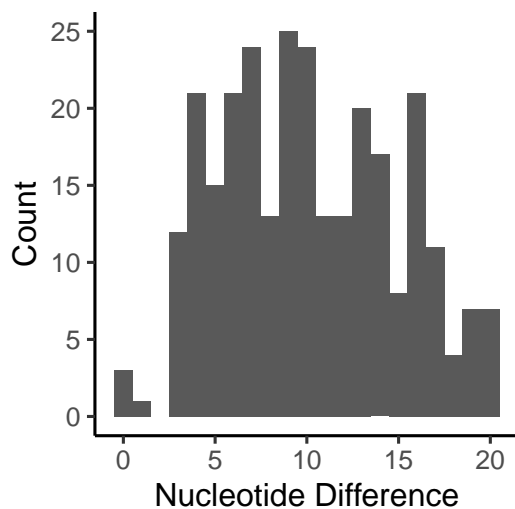
### IGHV3-69-1\*02

16 sequences assigned  
No exact matches.



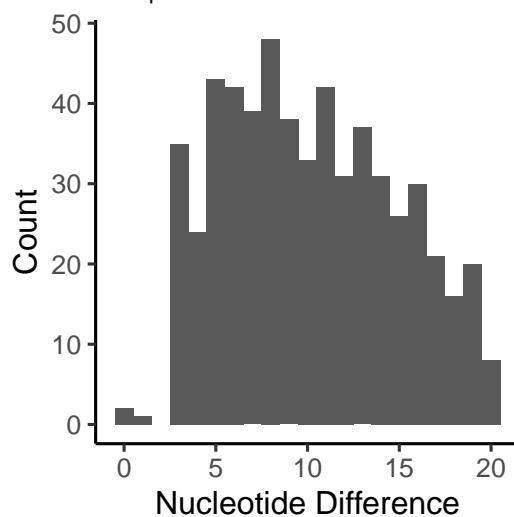
### IGHV3-53\*01\_02

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



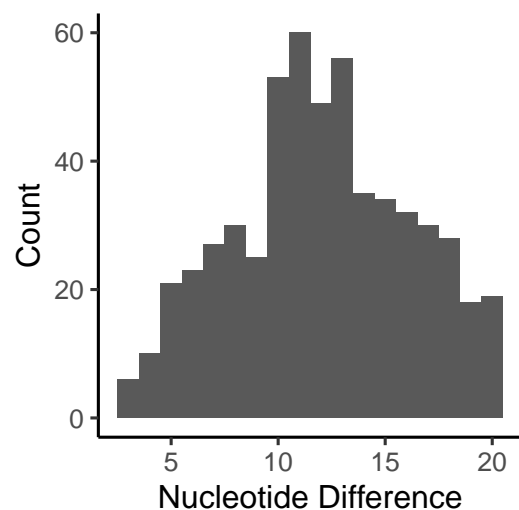
### IGHV3-66\*02

656 sequences assigned  
2 (0.3%) exact matches, in which:  
2 unique CDR3  
2 unique J



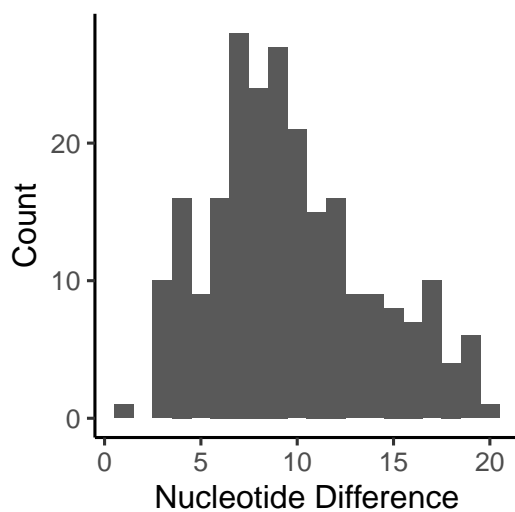
### IGHV3-72\*01

610 sequences assigned  
No exact matches.



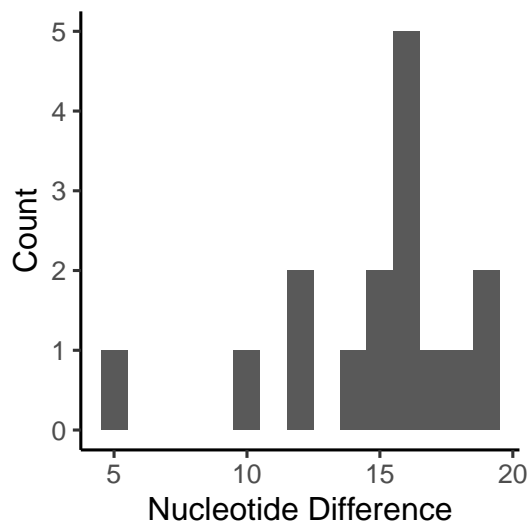
### IGHV3-64\*01

269 sequences assigned  
No exact matches.



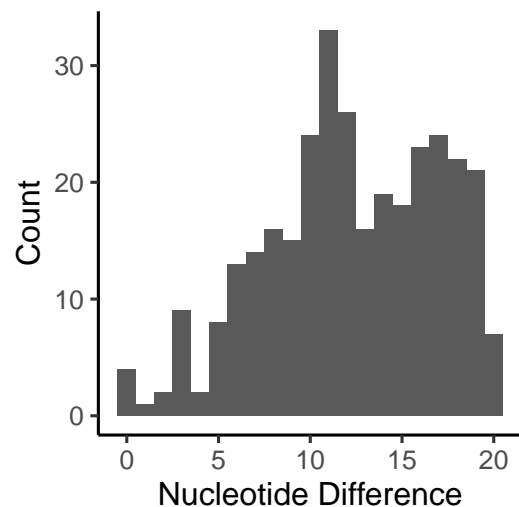
### IGHV3-69-1\*01

104 sequences assigned  
No exact matches.



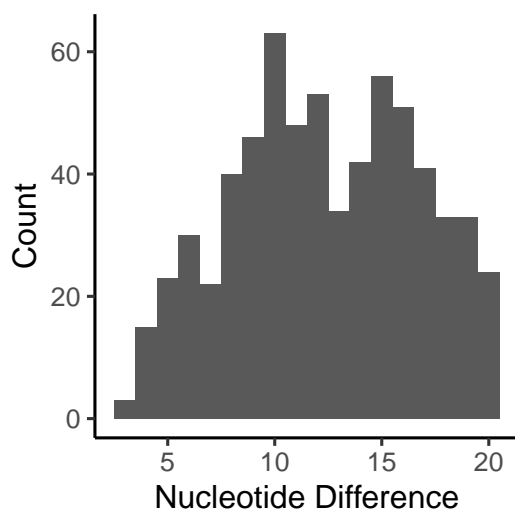
### IGHV3-73\*01\_02

345 sequences assigned  
4 (1.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



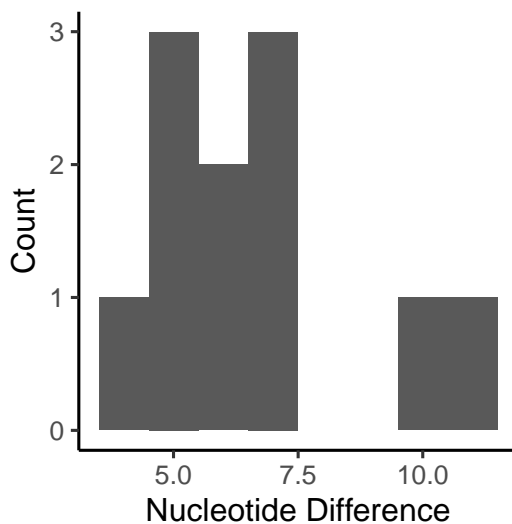
### IGHV3-74\*03

804 sequences assigned  
No exact matches.



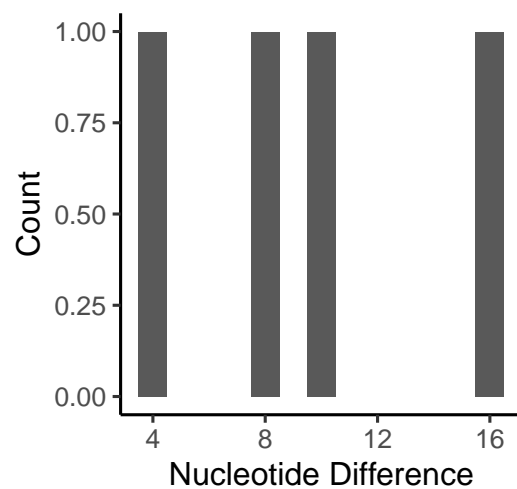
### IGHV3-43D\*04

12 sequences assigned  
No exact matches.



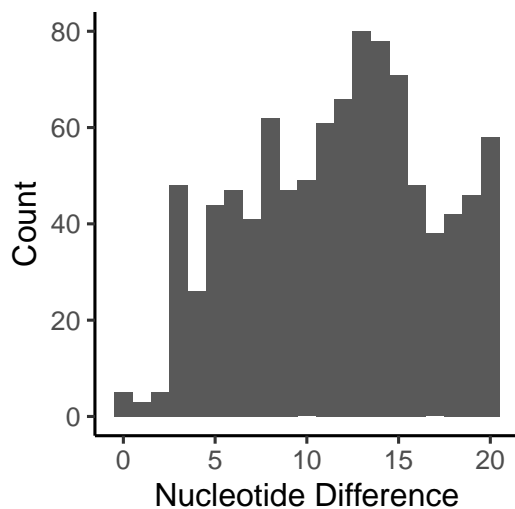
### IGHV4-28\*01\_07

4 sequences assigned  
No exact matches.



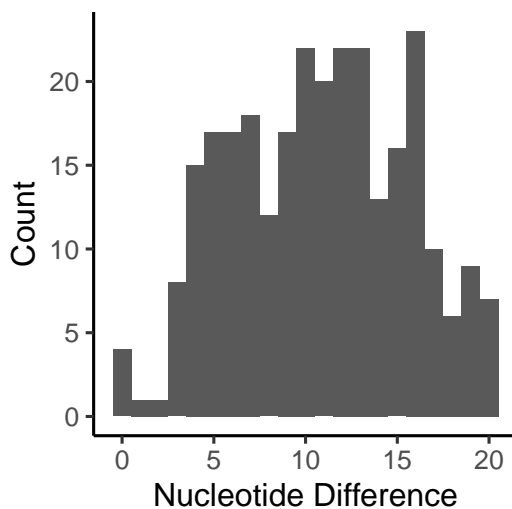
### IGHV3-74\*01\_02

1095 sequences assigned  
5 (0.5%) exact matches, in which:  
5 unique CDR3  
3 unique J



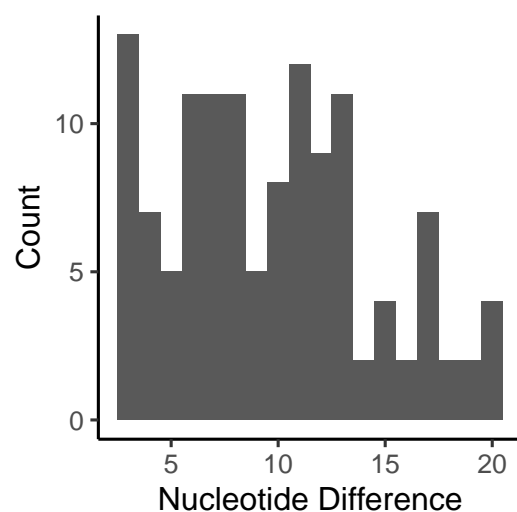
### IGHV4-4\*07

353 sequences assigned  
4 (1.1%) exact matches, in which:  
4 unique CDR3  
1 unique J



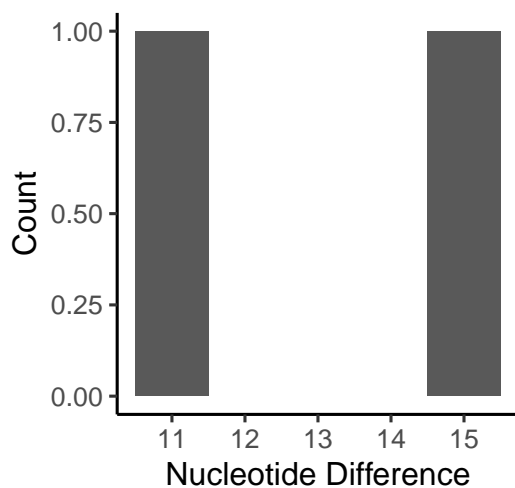
### IGHV4-30-2\*01

144 sequences assigned  
No exact matches.



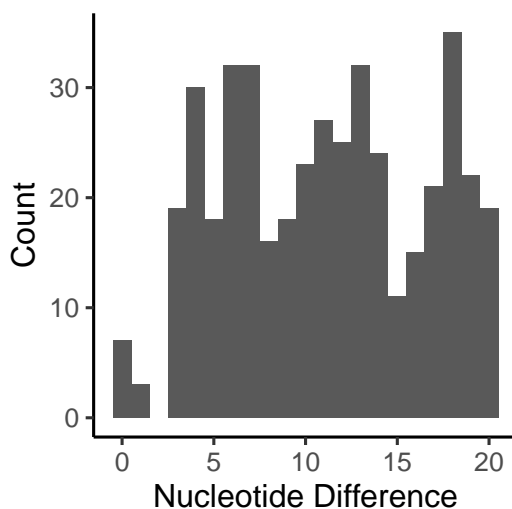
### IGHV3-43D\*03

3 sequences assigned  
No exact matches.



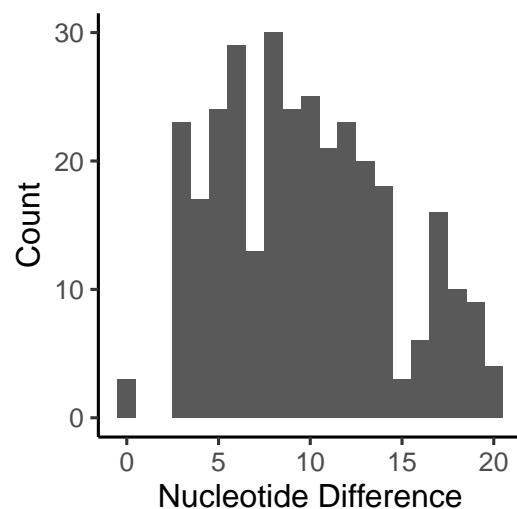
### IGHV4-4\*02\_03

495 sequences assigned  
7 (1.4%) exact matches, in which:  
7 unique CDR3  
4 unique J



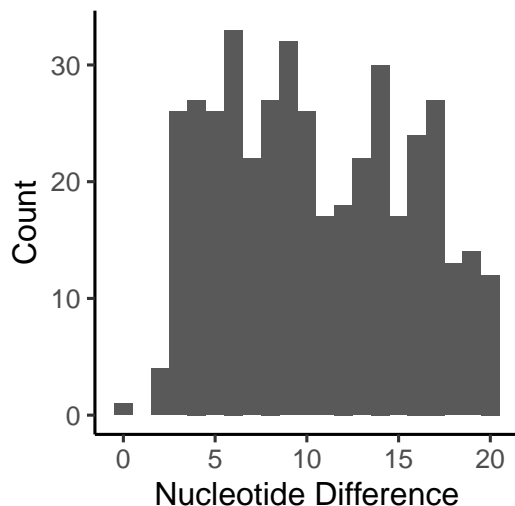
### IGHV4-30-4\*01

352 sequences assigned  
3 (0.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



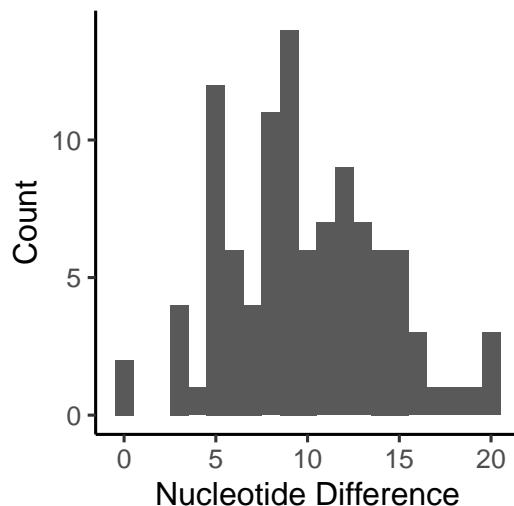
## IGHV4-31\*02

483 sequences assigned  
1 (0.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



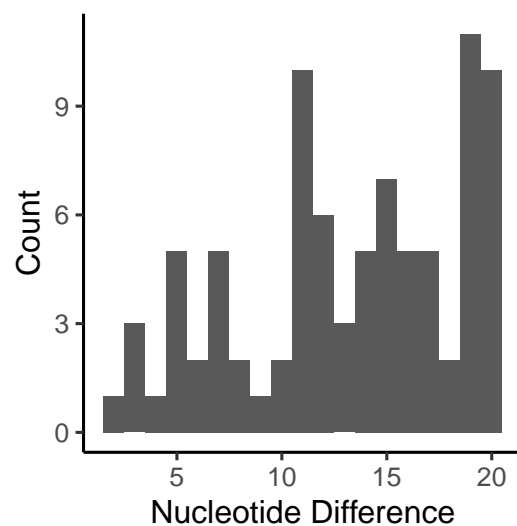
## IGHV4-38-2\*02

112 sequences assigned  
2 (1.8%) exact matches, in which:  
2 unique CDR3  
2 unique J



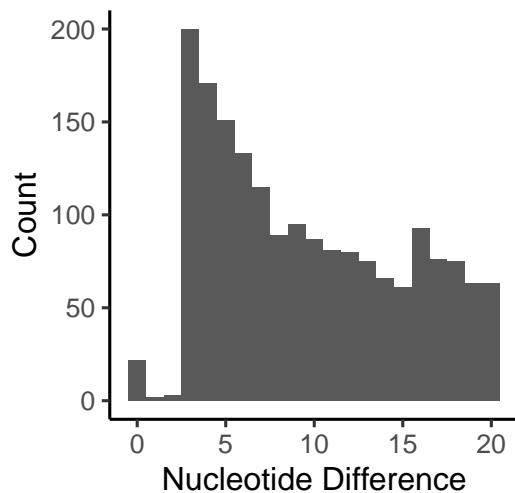
## IGHV4-59\*02

125 sequences assigned  
No exact matches.



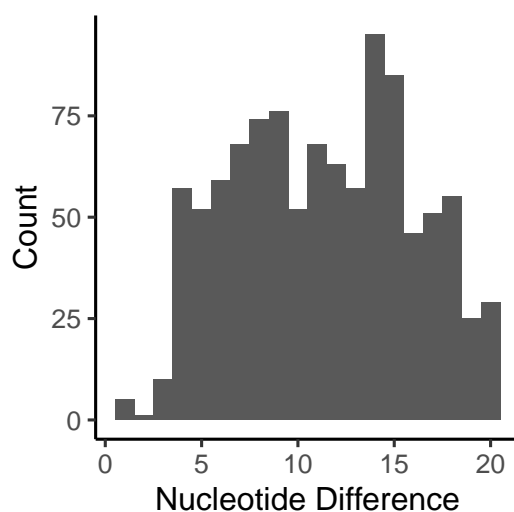
## IGHV4-34\*01\_02

2329 sequences assigned  
22 (0.9%) exact matches, in which:  
19 unique CDR3  
5 unique J



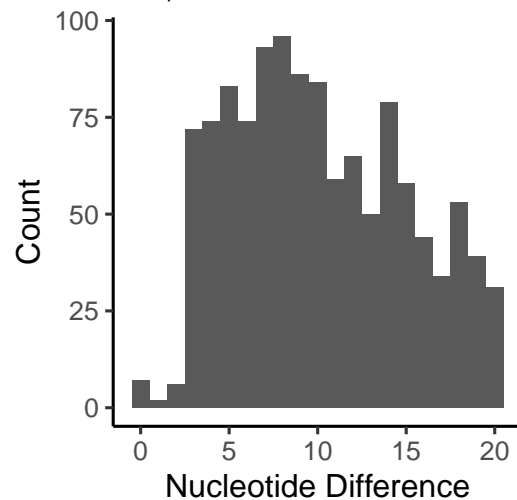
## IGHV4-39\*02

1803 sequences assigned  
No exact matches.



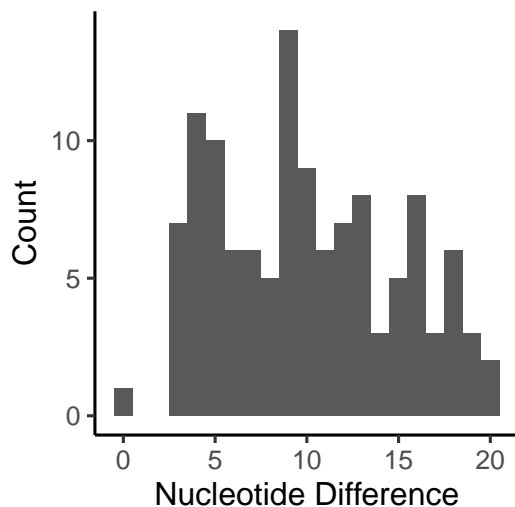
## IGHV4-59\*01\_07

1359 sequences assigned  
7 (0.5%) exact matches, in which:  
7 unique CDR3  
4 unique J



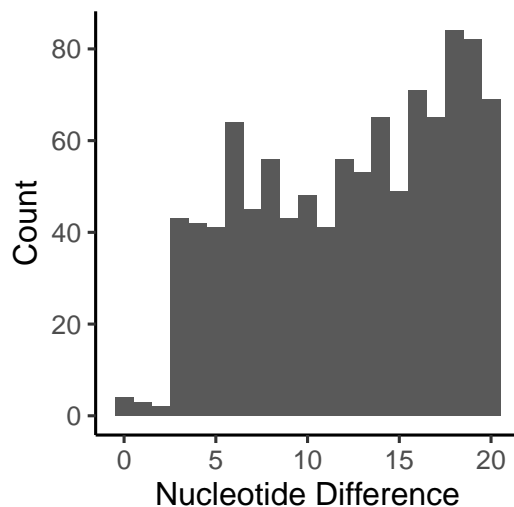
## IGHV4-38-2\*01

128 sequences assigned  
1 (0.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



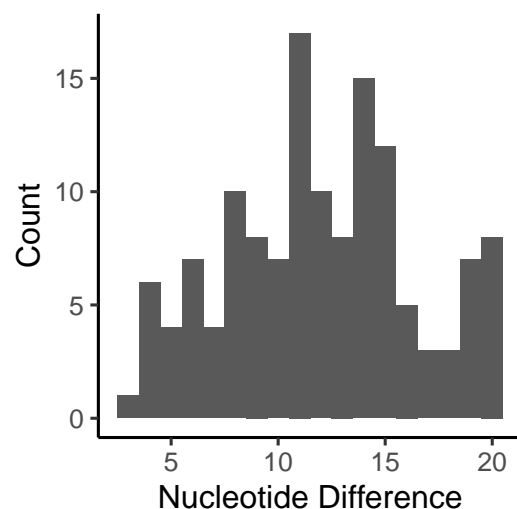
## IGHV4-39\*07

1933 sequences assigned  
4 (0.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



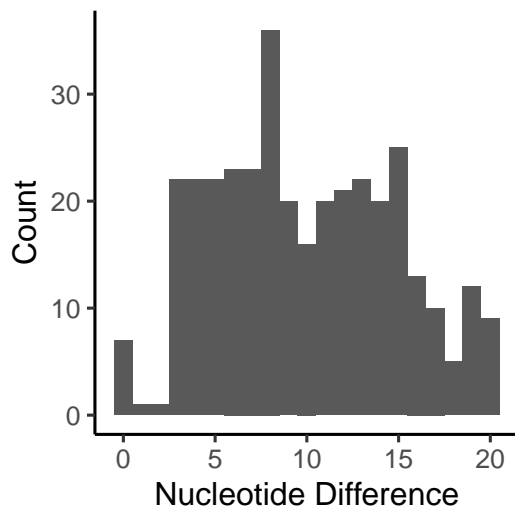
## IGHV4-59\*11

174 sequences assigned  
No exact matches.



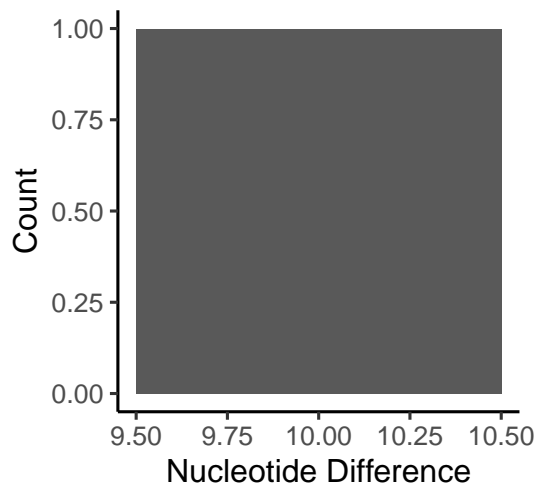
### IGHV4-61\*01

415 sequences assigned  
7 (1.7%) exact matches, in which:  
6 unique CDR3  
3 unique J



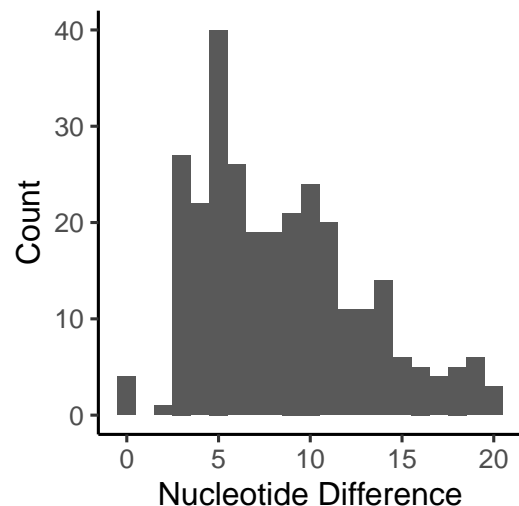
### IGHV4/OR15-8\*02

2 sequences assigned  
No exact matches.



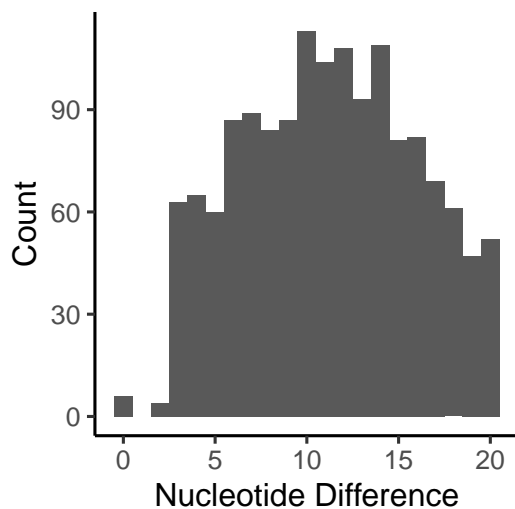
### IGHV5-51\*01\_03

321 sequences assigned  
4 (1.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



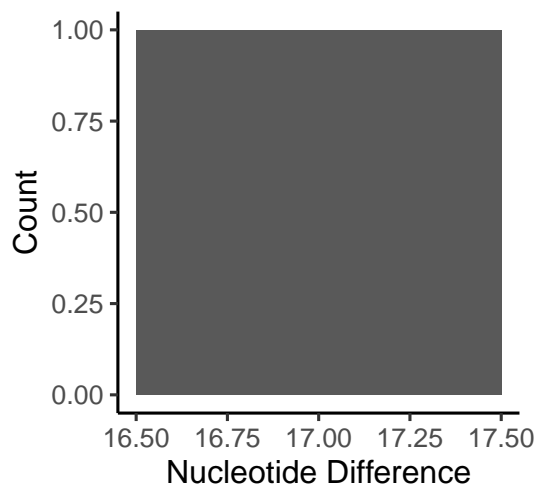
### IGHV4-61\*02

1660 sequences assigned  
6 (0.4%) exact matches, in which:  
5 unique CDR3  
3 unique J



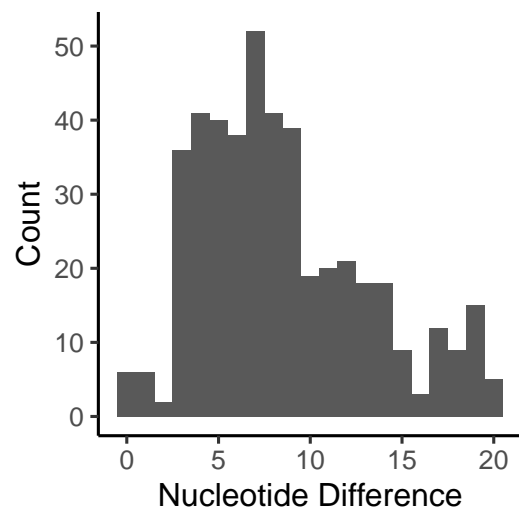
### IGHV4/OR15-8\*03

1 sequences assigned  
No exact matches.



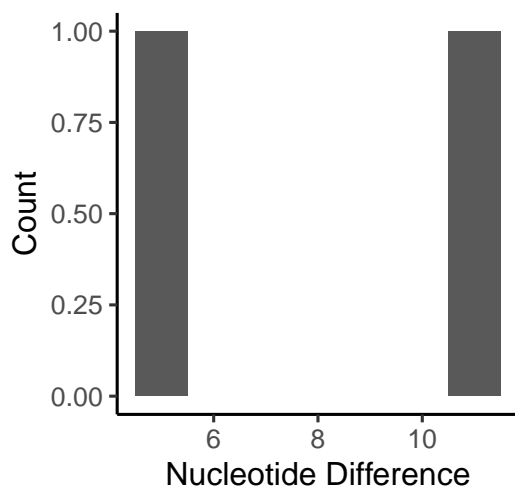
### IGHV6-1\*01\_02

468 sequences assigned  
6 (1.3%) exact matches, in which:  
6 unique CDR3  
1 unique J



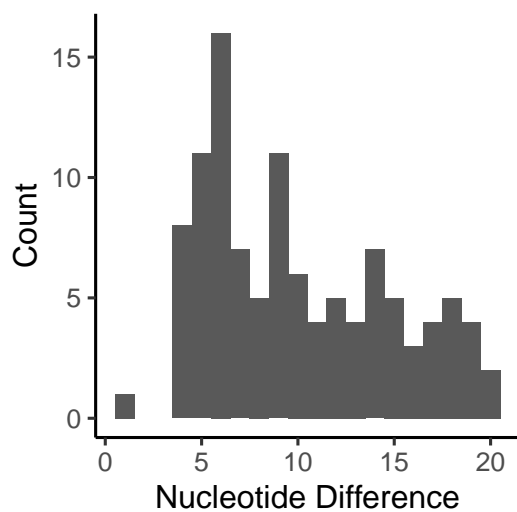
### IGHV4/OR15-8\*01

2 sequences assigned  
No exact matches.



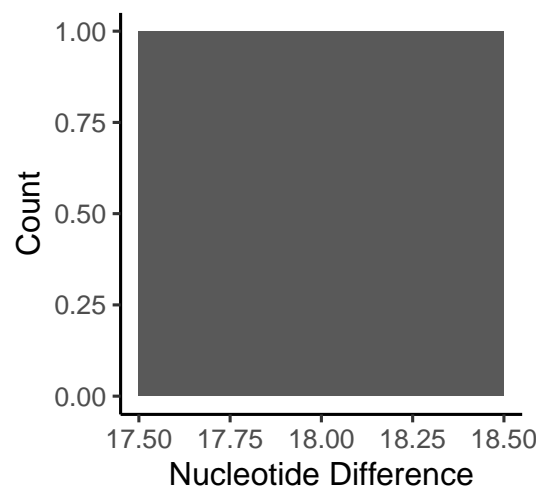
### IGHV5-51\*07

116 sequences assigned  
No exact matches.



### IGHV3/OR16-9\*01

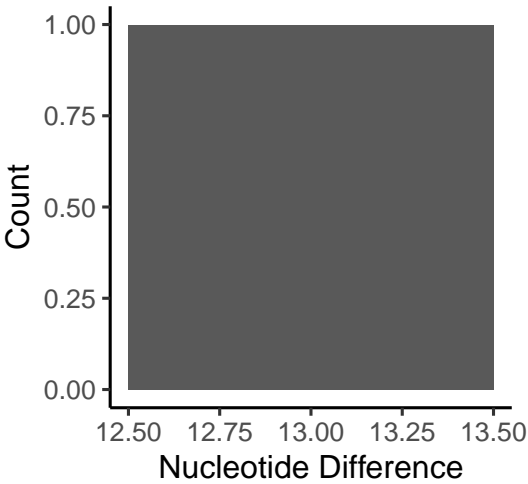
1 sequences assigned  
No exact matches.





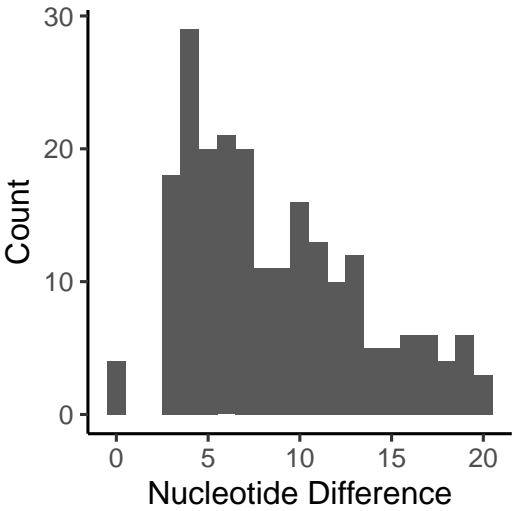
# IGHV3/OR16-13\*01

1 sequences assigned  
No exact matches.



# IGHV7-4-1\*02

261 sequences assigned  
4 (1.5%) exact matches, in which:  
4 unique CDR3  
2 unique J



Allele Usage

