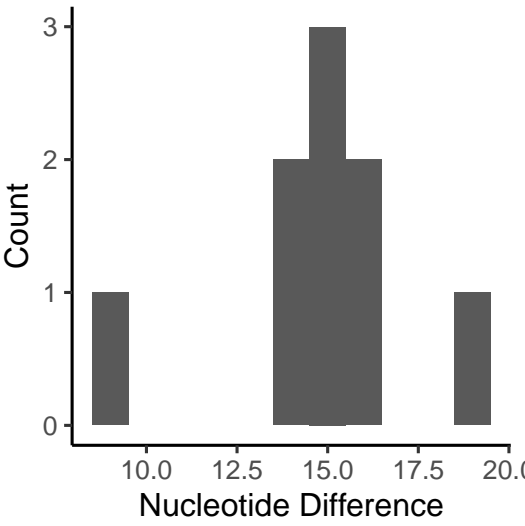


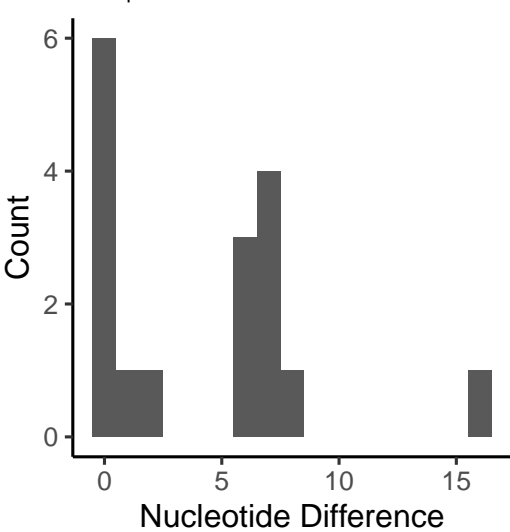
IGHV1-60\*01\_S7772

12 sequences assigned  
No exact matches.



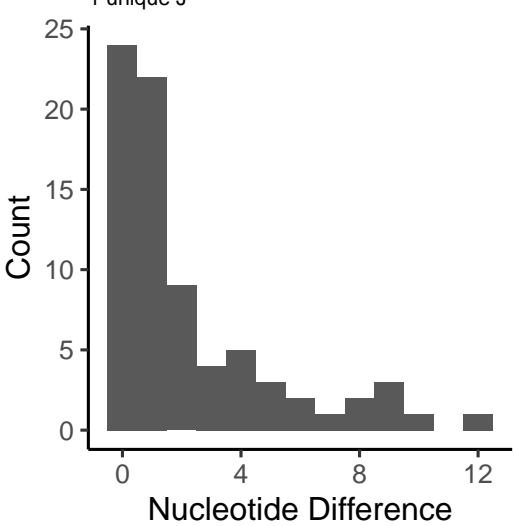
IGHV1-138\*01\_S3445

17 sequences assigned  
6 (35.3%) exact matches, in which:  
4 unique CDR3  
1 unique J



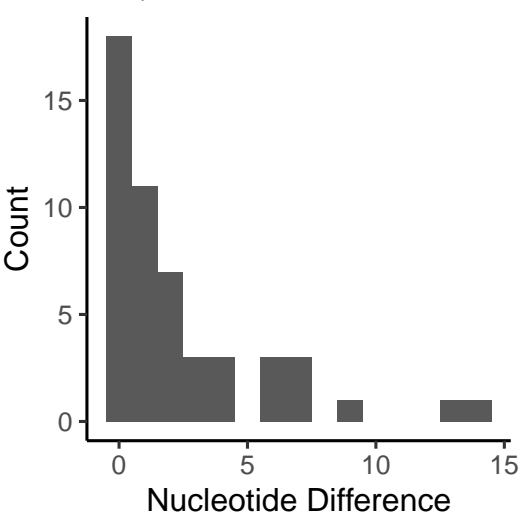
IGHV2-69\*01\_S2332

78 sequences assigned  
24 (30.8%) exact matches, in which:  
9 unique CDR3  
1 unique J



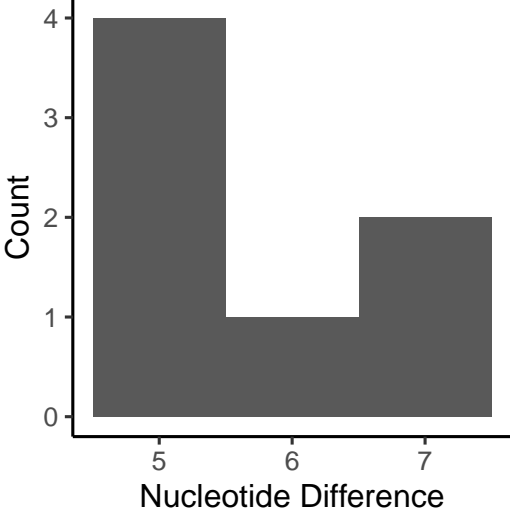
IGHV1-84\*01\_S4663

68 sequences assigned  
18 (26.5%) exact matches, in which:  
10 unique CDR3  
1 unique J



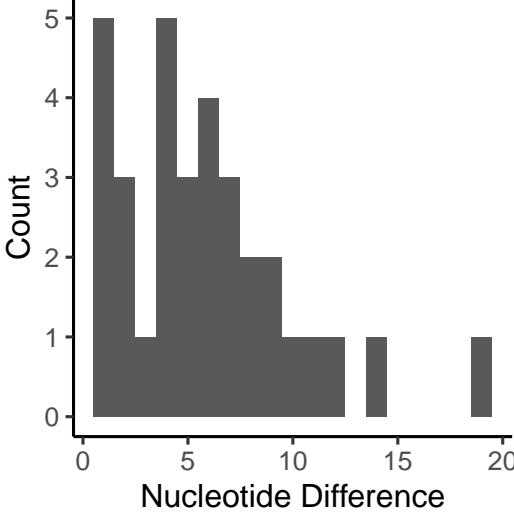
IGHV1-NL\_2\*01\_S0023

7 sequences assigned  
No exact matches.



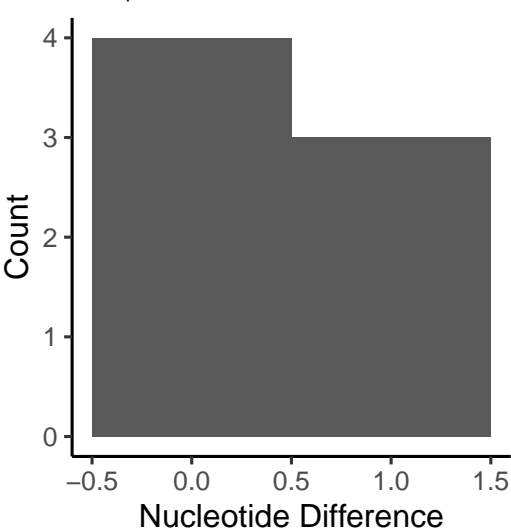
IGHV2-69\*02\_S0779

34 sequences assigned  
No exact matches.



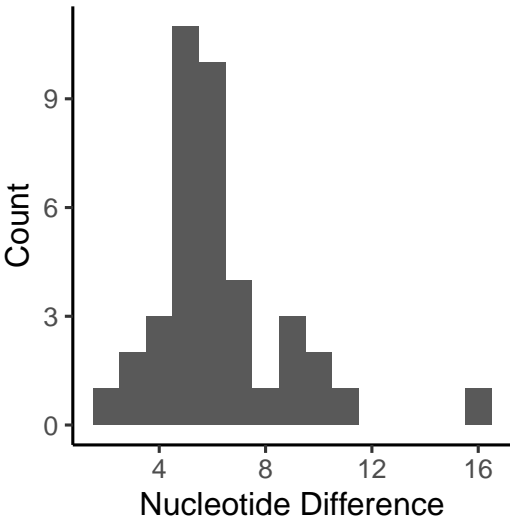
IGHV1-138\*01\_S2593

7 sequences assigned  
4 (57.1%) exact matches, in which:  
4 unique CDR3  
1 unique J



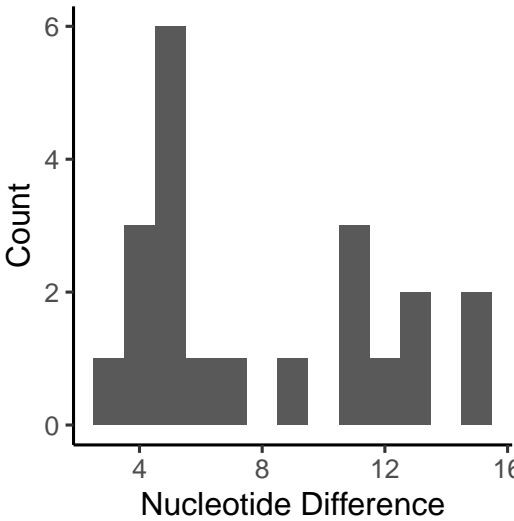
IGHV2-7\*02\_S4285

39 sequences assigned  
No exact matches.



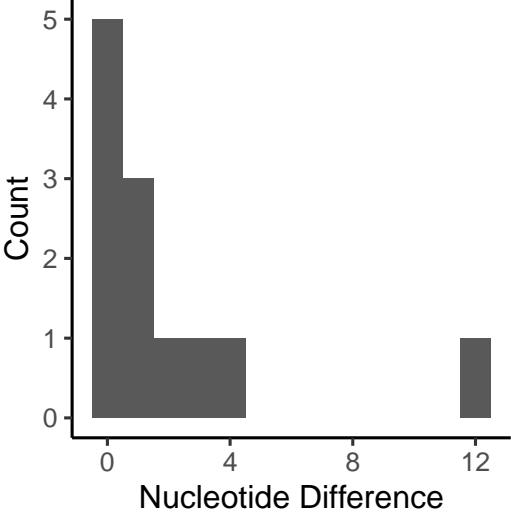
IGHV2-118\*01\_S4531

22 sequences assigned  
No exact matches.



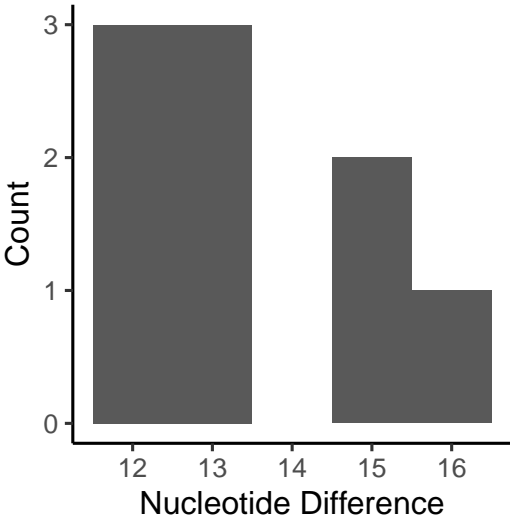
IGHV2-118\*01\_S6364

13 sequences assigned  
5 (38.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



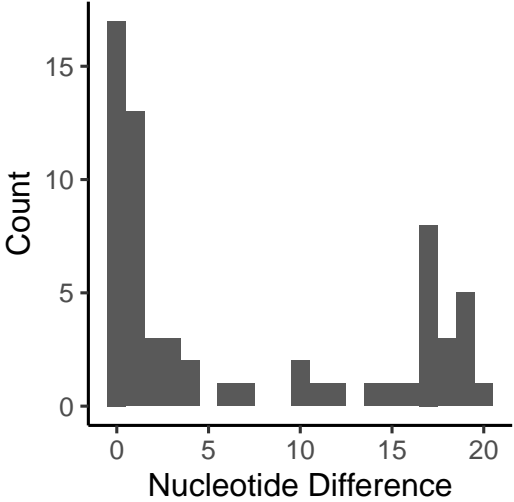
IGHV3-9\*01\_S8777

10 sequences assigned  
No exact matches.



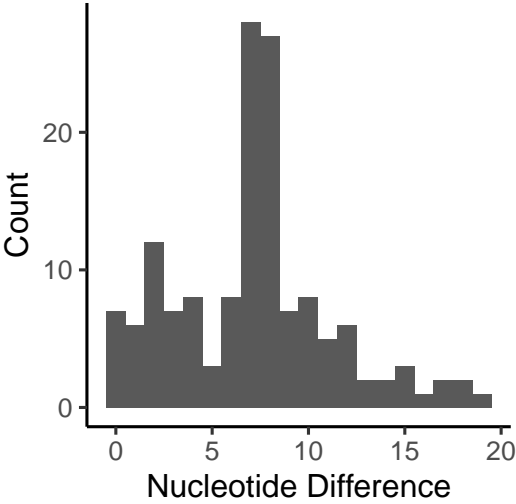
IGHV3-50\*01\_S1524

68 sequences assigned  
17 (25%) exact matches, in which:  
7 unique CDR3  
1 unique J



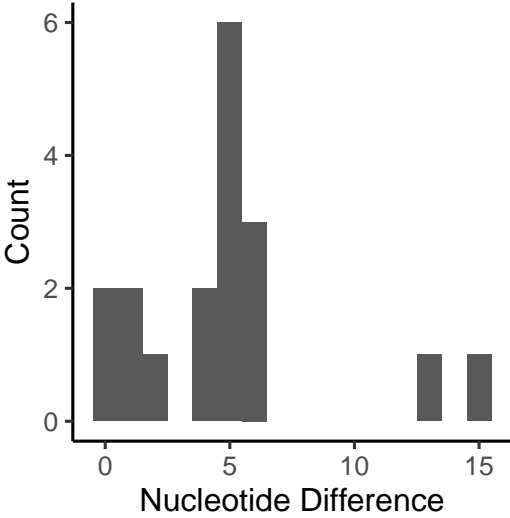
IGHV2-NL\_1\*01\_S7874

145 sequences assigned  
7 (4.8%) exact matches, in which:  
5 unique CDR3  
1 unique J



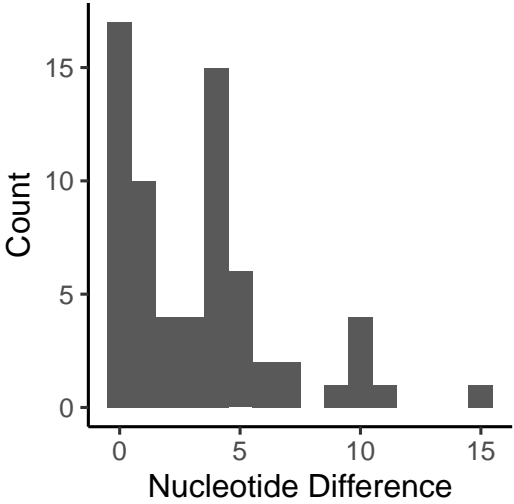
IGHV3-36\*01\_S6650

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



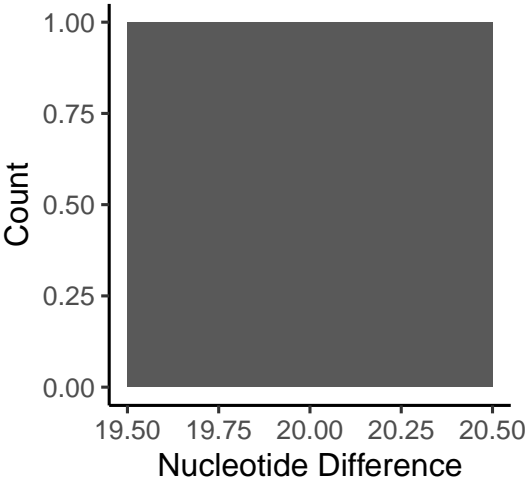
IGHV3-50\*01\_S1879

68 sequences assigned  
17 (25%) exact matches, in which:  
9 unique CDR3  
1 unique J



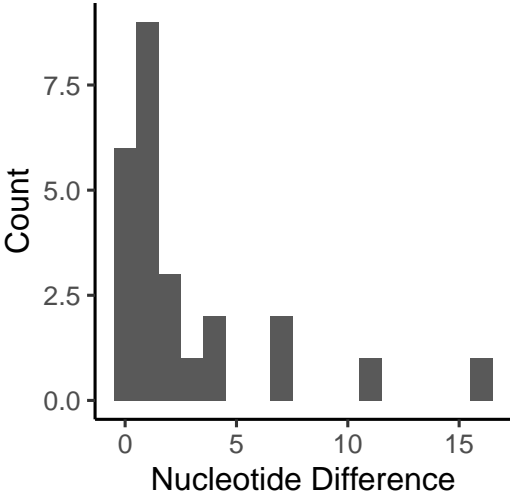
IGHV3-5\*01\_S4091

1 sequences assigned  
No exact matches.



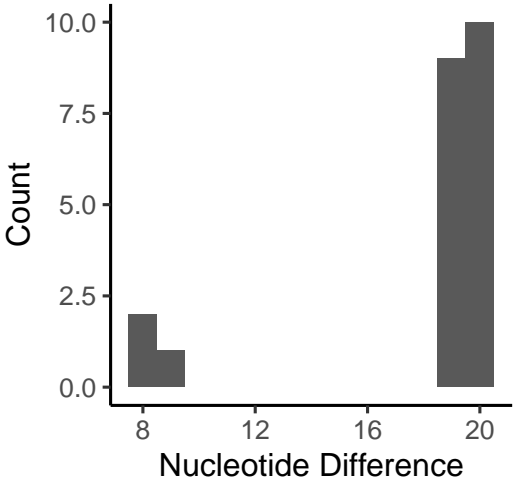
IGHV3-37\*01\_S6325

26 sequences assigned  
6 (23.1%) exact matches, in which:  
2 unique CDR3  
1 unique J



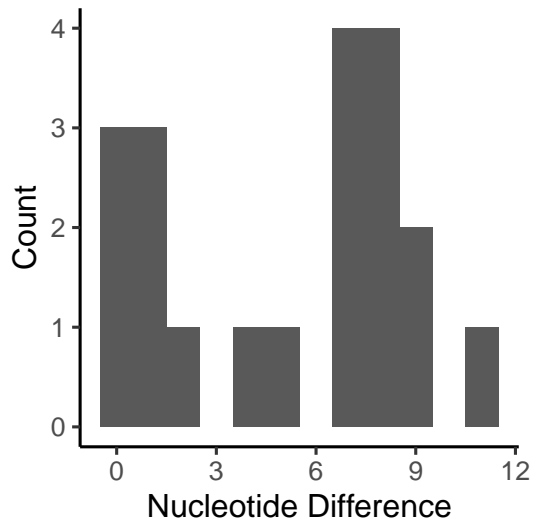
IGHV3-50\*01\_S7243

31 sequences assigned  
No exact matches.



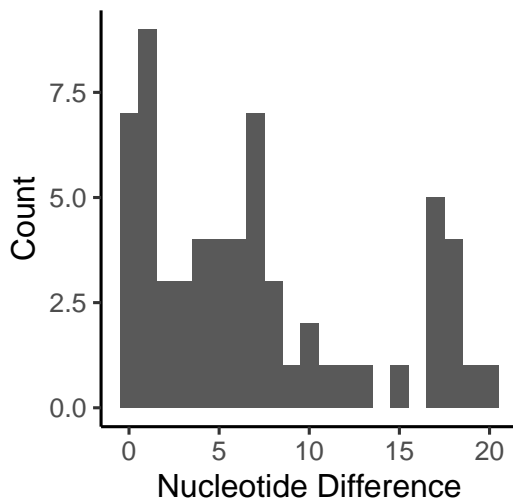
### IGHV3-53\*01\_S7463

26 sequences assigned  
3 (11.5%) exact matches, in which:  
1 unique CDR3  
1 unique J



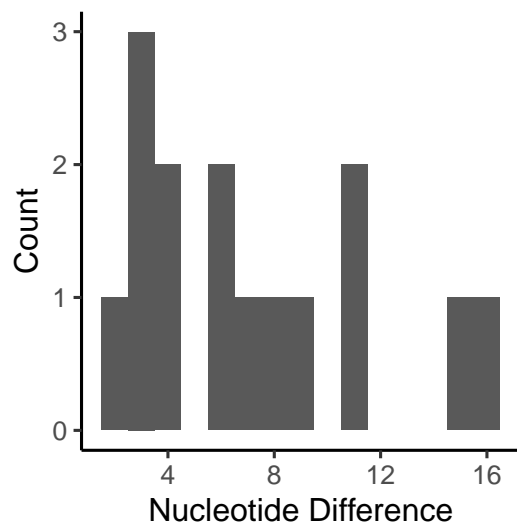
### IGHV3-88\*01\_S9470

67 sequences assigned  
7 (10.4%) exact matches, in which:  
3 unique CDR3  
1 unique J



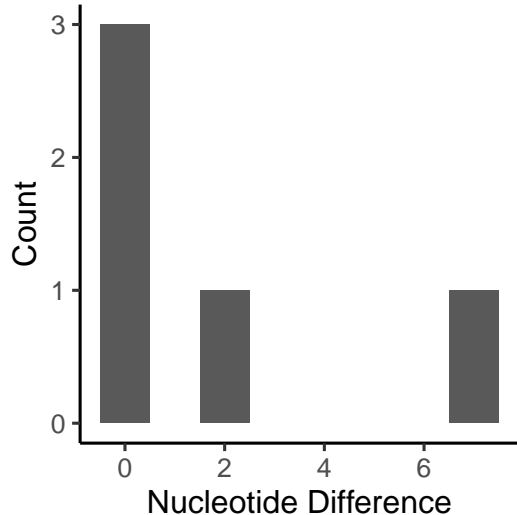
### IGHV3-122\*01\_S2730

16 sequences assigned  
No exact matches.



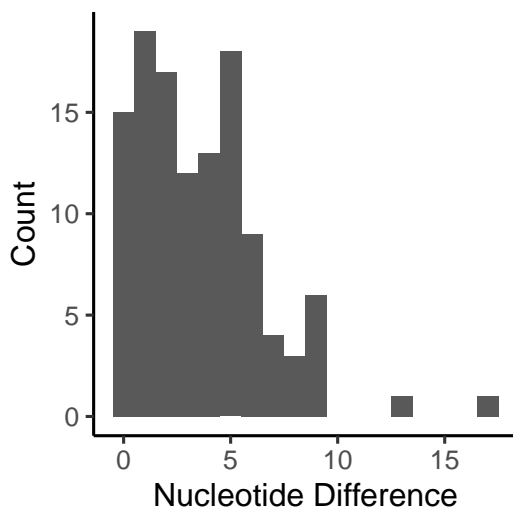
### IGHV3-73\*02\_S7884

5 sequences assigned  
3 (60%) exact matches, in which:  
2 unique CDR3  
1 unique J



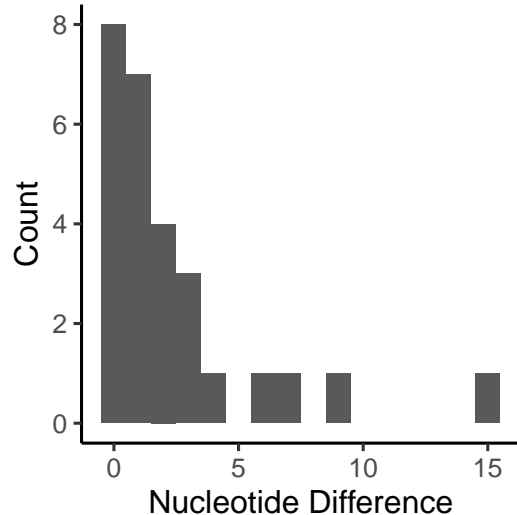
### IGHV3-94\*01\_S5120

124 sequences assigned  
15 (12.1%) exact matches, in which:  
8 unique CDR3  
1 unique J



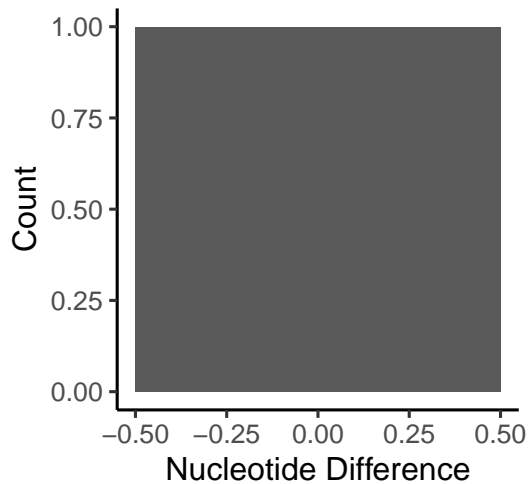
### IGHV3-122\*01\_S5299

27 sequences assigned  
8 (29.6%) exact matches, in which:  
5 unique CDR3  
1 unique J



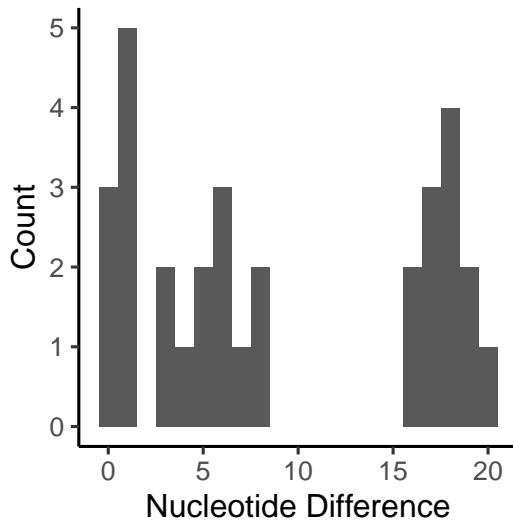
### IGHV3-83\*02\_S9518

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



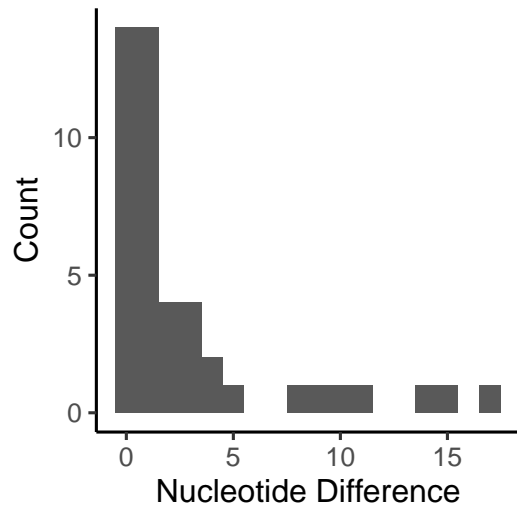
### IGHV3-100\*01\_S4375

34 sequences assigned  
3 (8.8%) exact matches, in which:  
2 unique CDR3  
1 unique J



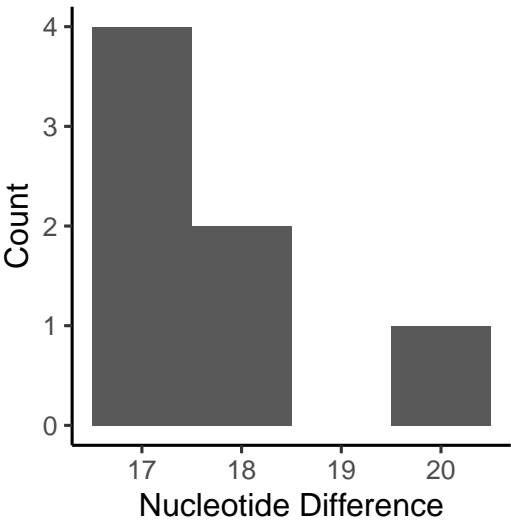
### IGHV3-122\*01\_S8388

47 sequences assigned  
14 (29.8%) exact matches, in which:  
7 unique CDR3  
1 unique J



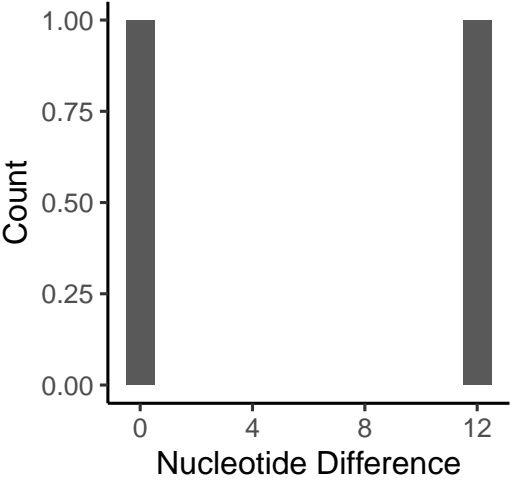
IGHV3-127\*01\_S2849

8 sequences assigned  
No exact matches.



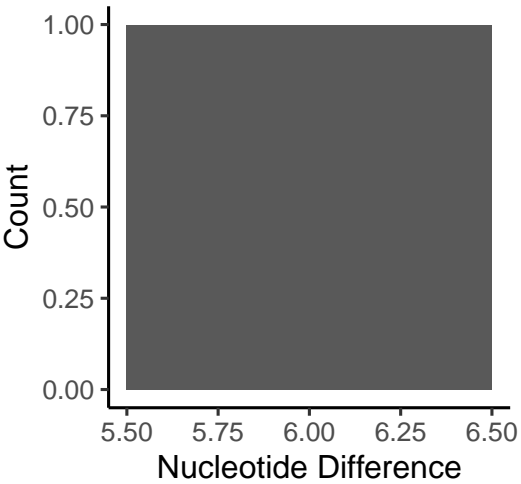
IGHV3-141\*01\_S2525

3 sequences assigned  
1 (33.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



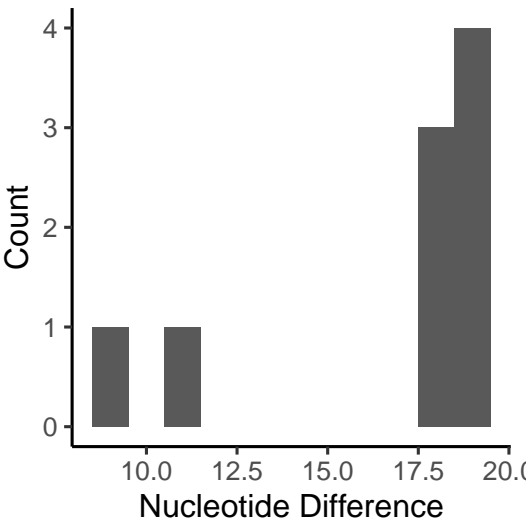
IGHV3-172\*01\_S0645

1 sequences assigned  
No exact matches.



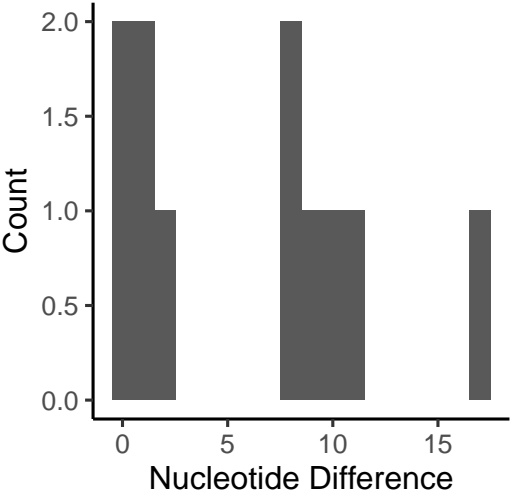
IGHV3-127\*01\_S9779

11 sequences assigned  
No exact matches.



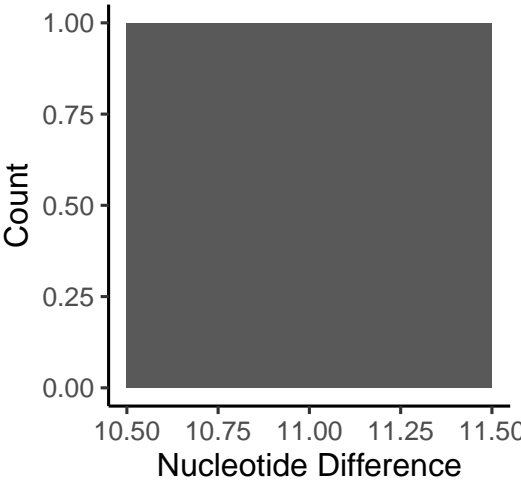
IGHV3-141\*02\_S2868

11 sequences assigned  
2 (18.2%) exact matches, in which:  
1 unique CDR3  
1 unique J



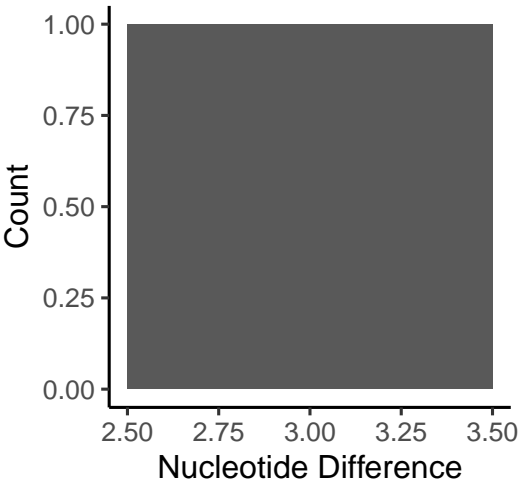
IGHV3-175\*01

1 sequences assigned  
No exact matches.



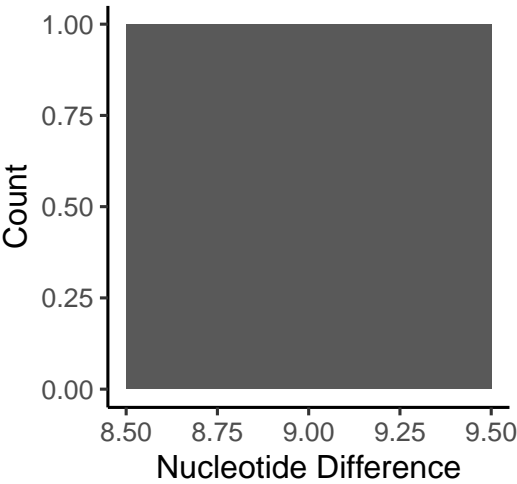
IGHV3-128\*02\_S0204

1 sequences assigned  
No exact matches.



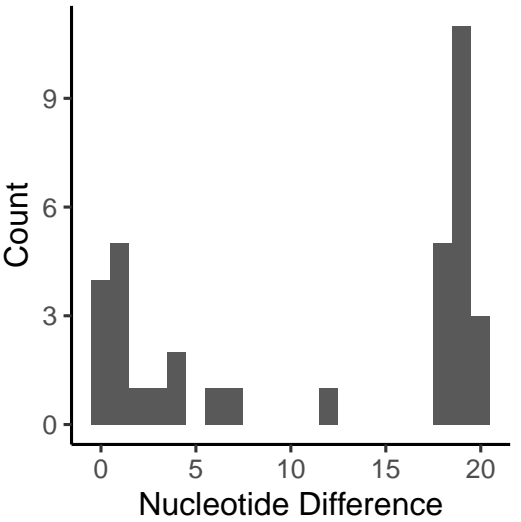
IGHV3-152\*01\_S7388

1 sequences assigned  
No exact matches.



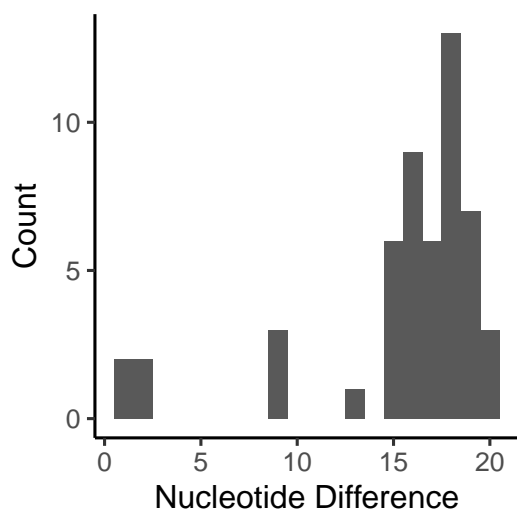
IGHV3-187\*01\_S2144

40 sequences assigned  
4 (10%) exact matches, in which:  
3 unique CDR3  
1 unique J



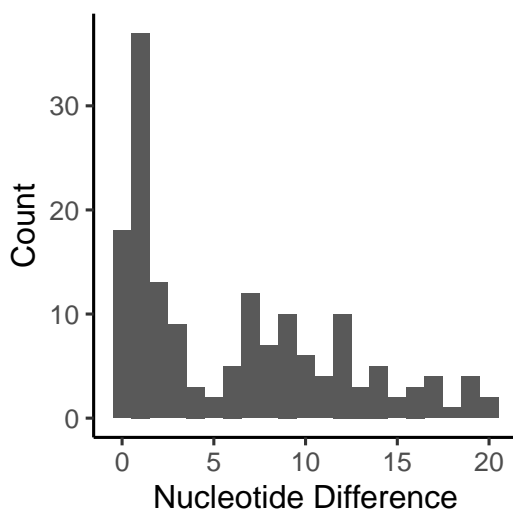
### IGHV3-NL\_1\*01\_S5238

57 sequences assigned  
No exact matches.



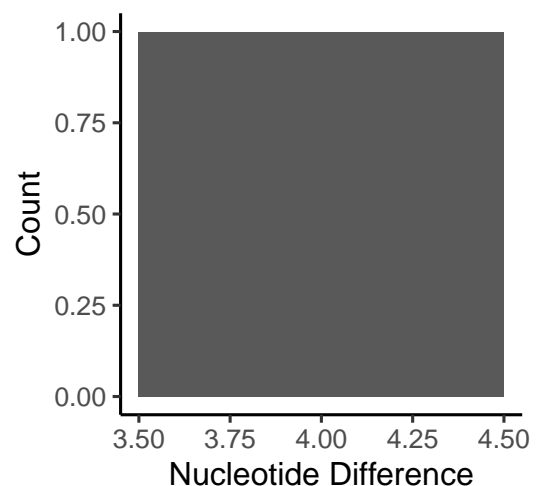
### IGHV3-NL\_11\*01\_S3736

185 sequences assigned  
18 (9.7%) exact matches, in which:  
8 unique CDR3  
1 unique J



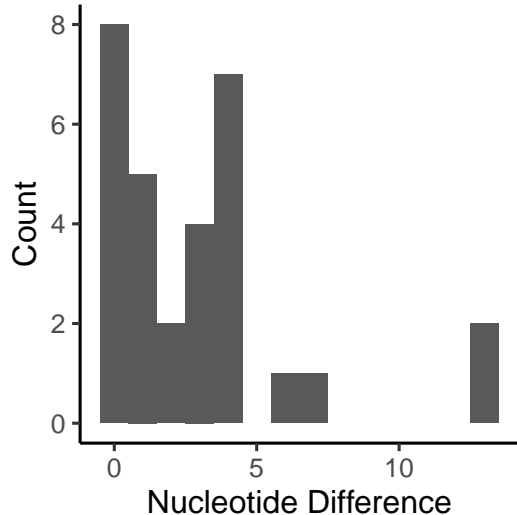
### IGHV3-NL\_17\*01\_S5770

1 sequences assigned  
No exact matches.



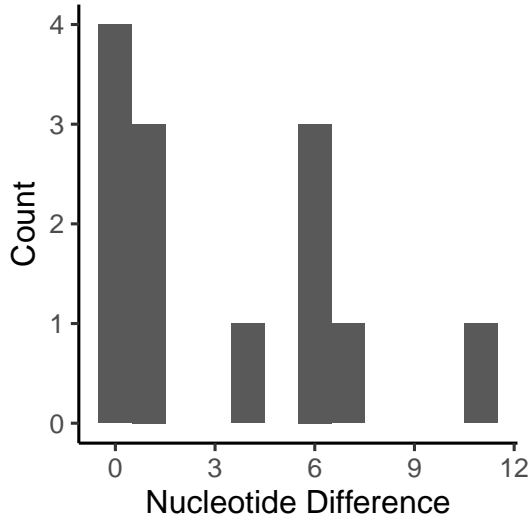
### IGHV3-NL\_1\*01\_S9854

31 sequences assigned  
8 (25.8%) exact matches, in which:  
3 unique CDR3  
1 unique J



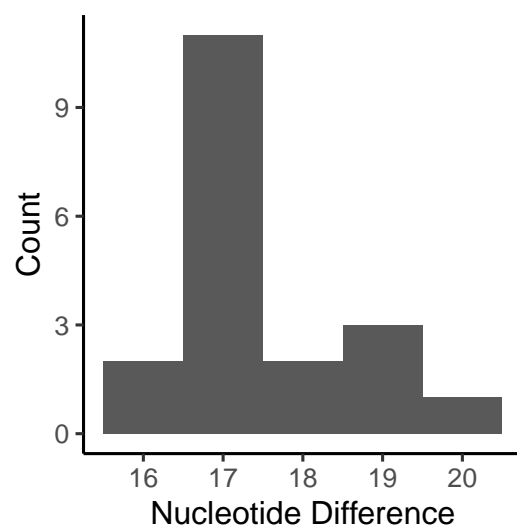
### IGHV3-NL\_14\*01\_S0218

13 sequences assigned  
4 (30.8%) exact matches, in which:  
3 unique CDR3  
1 unique J



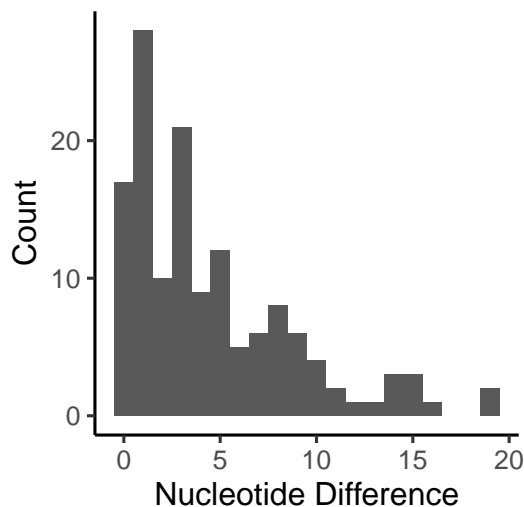
### IGHV3-NL\_2\*01\_S3900

21 sequences assigned  
No exact matches.



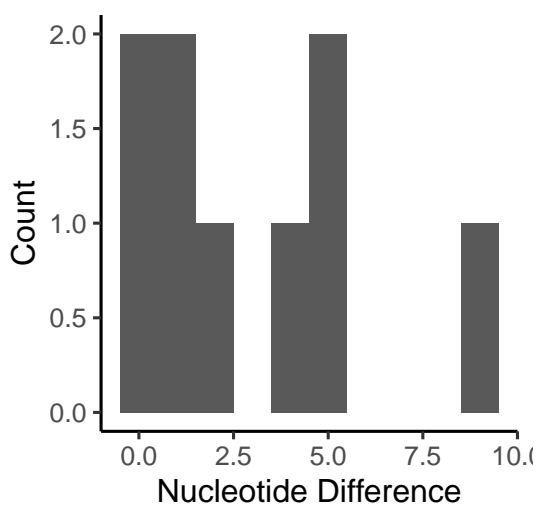
### IGHV3-NL\_10\*02\_S1970

161 sequences assigned  
17 (10.6%) exact matches, in which:  
8 unique CDR3  
1 unique J



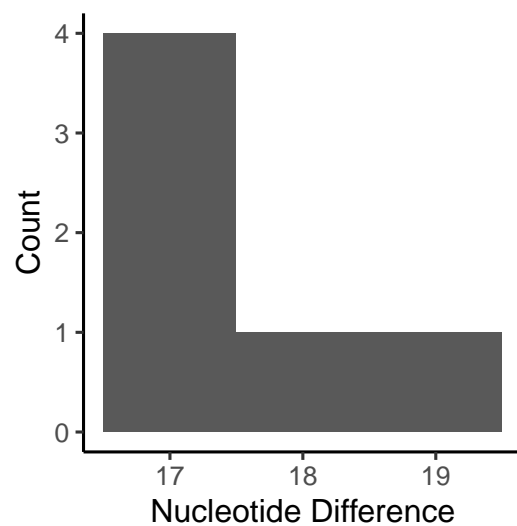
### IGHV3-NL\_17\*01\_S3909

9 sequences assigned  
2 (22.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



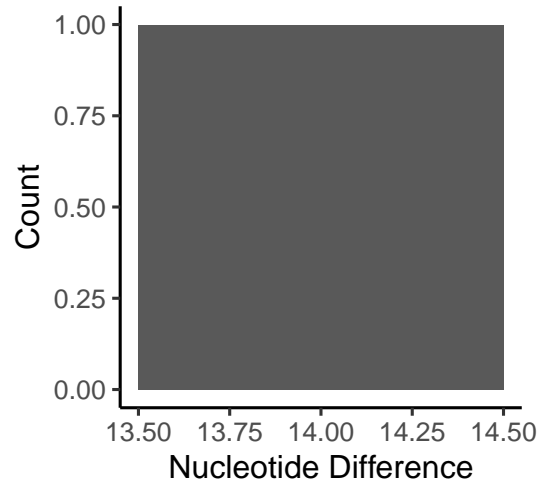
### IGHV3-NL\_2\*01\_S5884

8 sequences assigned  
No exact matches.



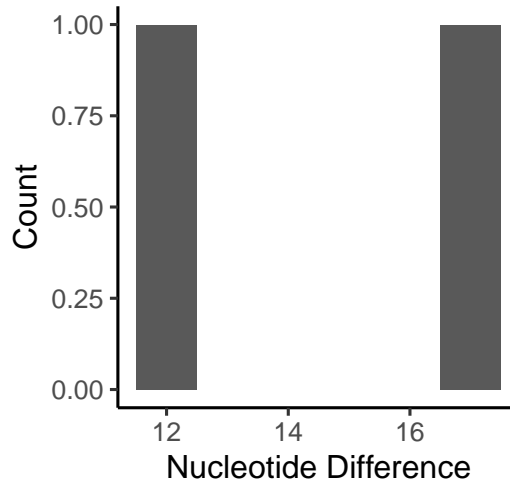
### IGHV3–NL\_4\*01\_S9392

1 sequences assigned  
No exact matches.



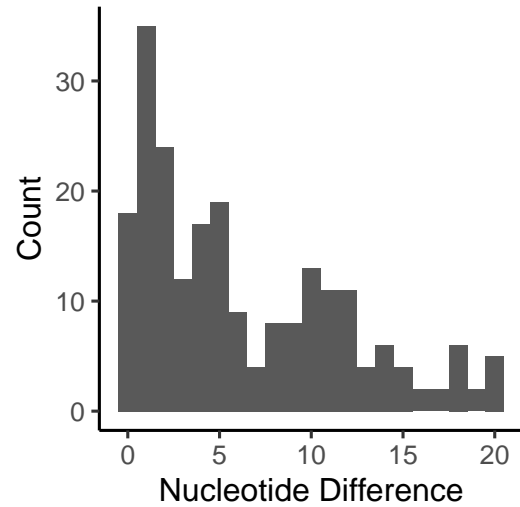
### IGHV4–79\*02\_S9501

3 sequences assigned  
No exact matches.



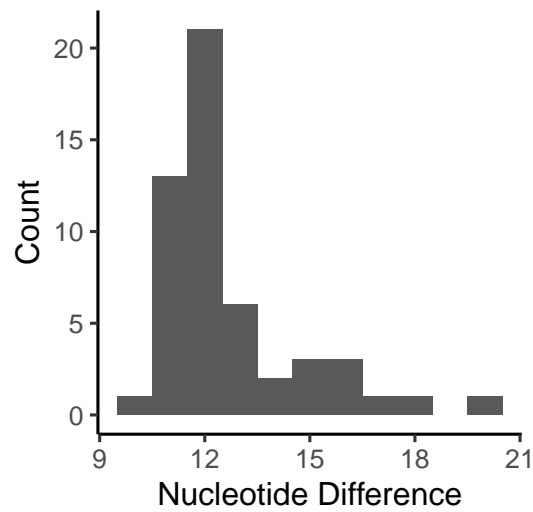
### IGHV4–117\*01\_S0312

247 sequences assigned  
18 (7.3%) exact matches, in which:  
13 unique CDR3  
1 unique J



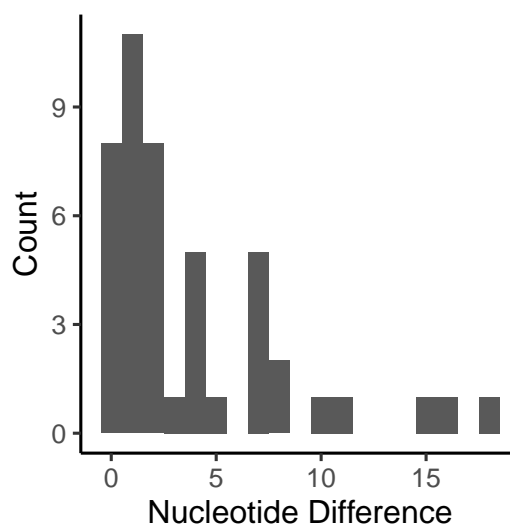
### IGHV3–NL\_9\*01\_S6098

56 sequences assigned  
No exact matches.



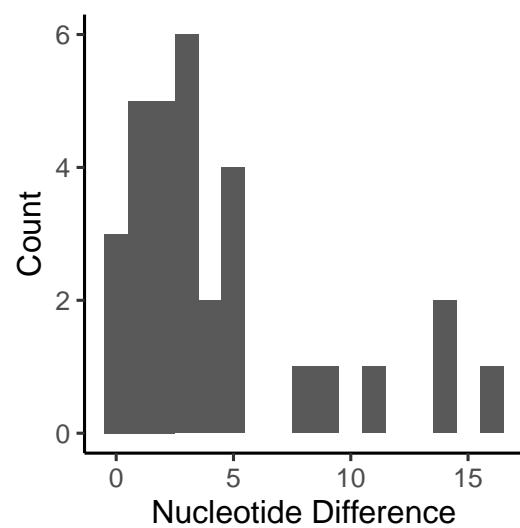
### IGHV4–93\*01\_S0998

47 sequences assigned  
8 (17%) exact matches, in which:  
7 unique CDR3  
1 unique J



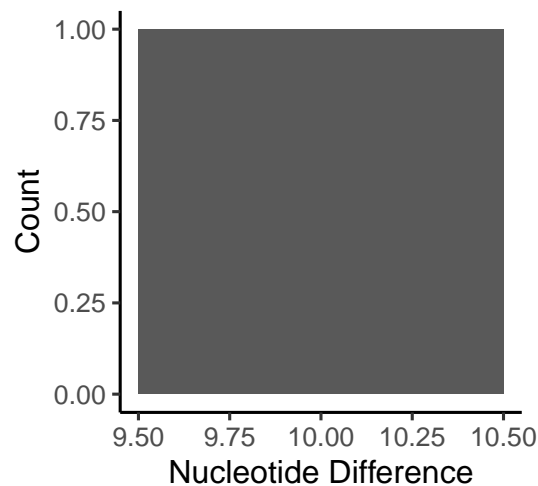
### IGHV4–117\*01\_S0992

31 sequences assigned  
3 (9.7%) exact matches, in which:  
3 unique CDR3  
1 unique J



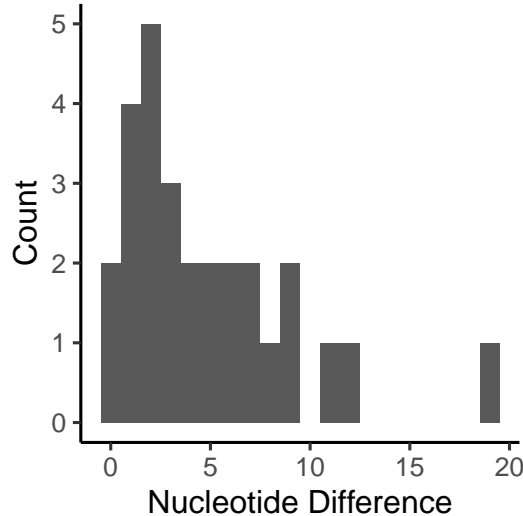
### IGHV4–67\*02\_S8103

1 sequences assigned  
No exact matches.



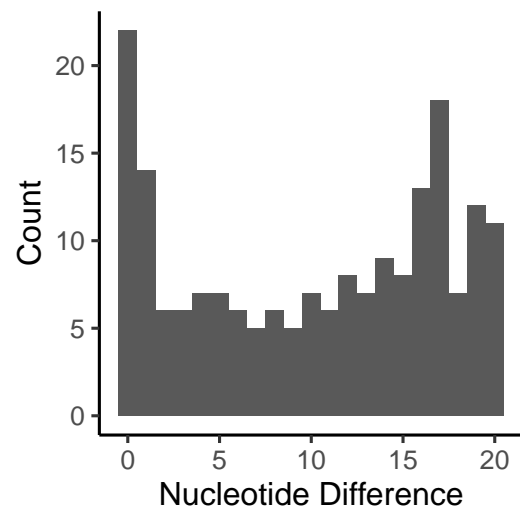
### IGHV4–93\*01\_S5203

32 sequences assigned  
2 (6.2%) exact matches, in which:  
2 unique CDR3  
1 unique J



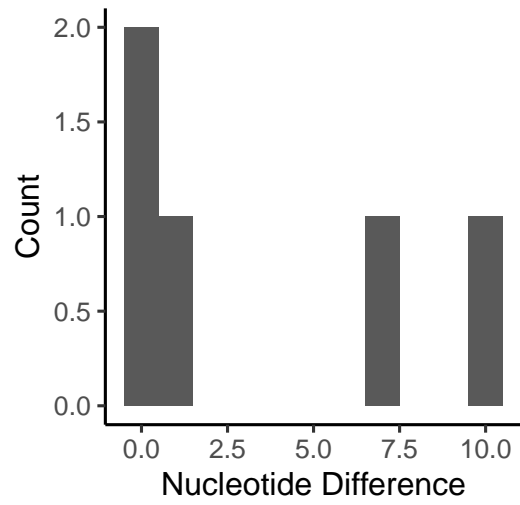
### IGHV4–149\*01\_S1166

241 sequences assigned  
22 (9.1%) exact matches, in which:  
14 unique CDR3  
1 unique J



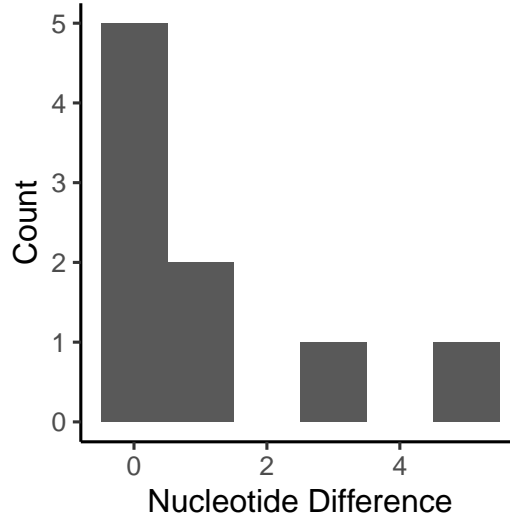
### IGHV4-150\*01\_S2067

5 sequences assigned  
2 (40%) exact matches, in which:  
2 unique CDR3  
1 unique J



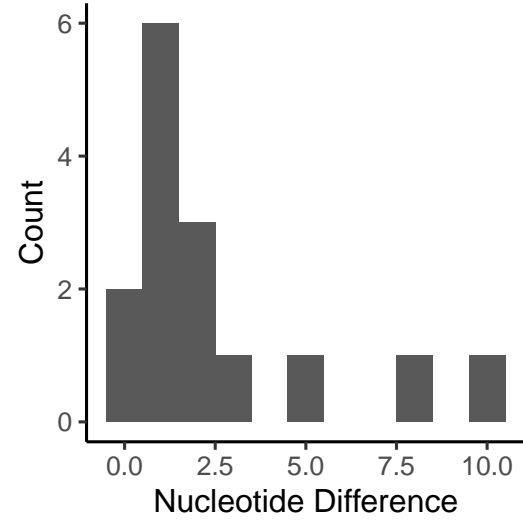
### IGHV4-NL\_1\*01\_S9508

9 sequences assigned  
5 (55.6%) exact matches, in which:  
5 unique CDR3  
1 unique J



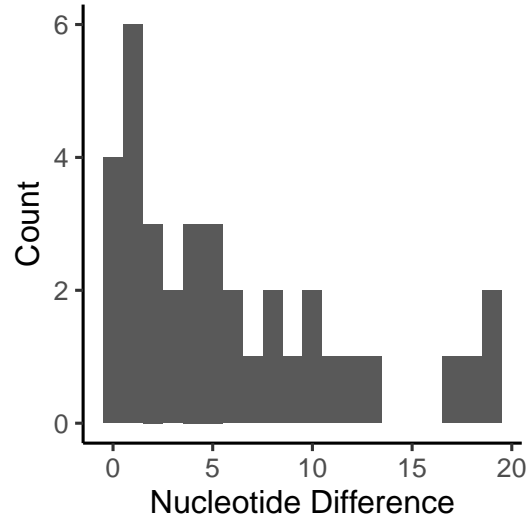
### IGHV4-NL\_11\*01\_S0325

16 sequences assigned  
2 (12.5%) exact matches, in which:  
2 unique CDR3  
1 unique J



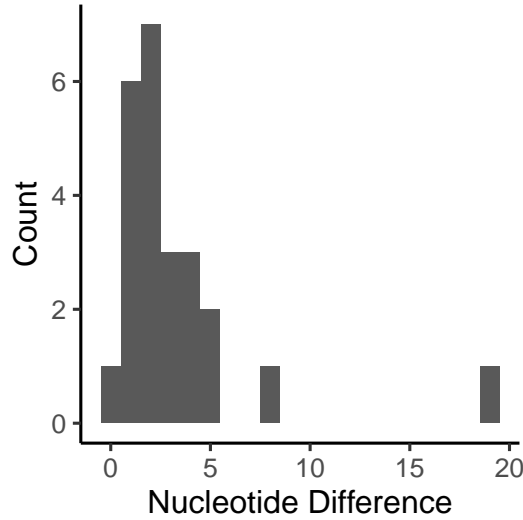
### IGHV4-NL\_1\*01\_S1593

37 sequences assigned  
4 (10.8%) exact matches, in which:  
4 unique CDR3  
1 unique J



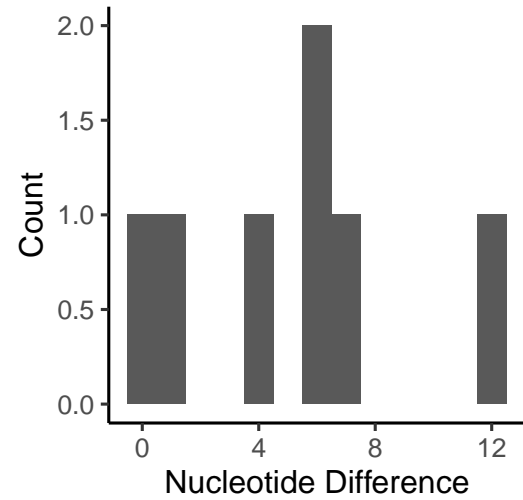
### IGHV4-NL\_1\*02\_S4188

28 sequences assigned  
1 (3.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



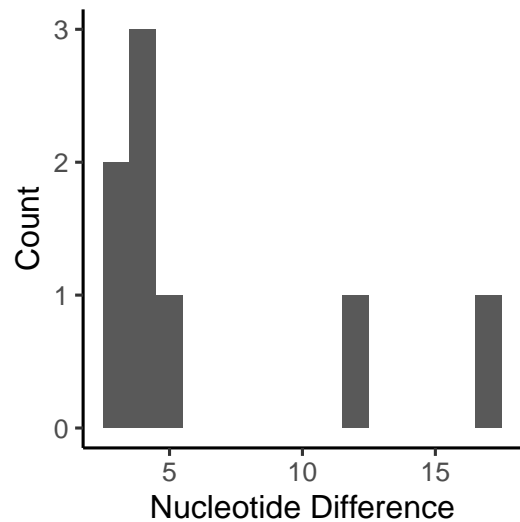
### IGHV4-NL\_12\*01\_S8068

7 sequences assigned  
1 (14.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



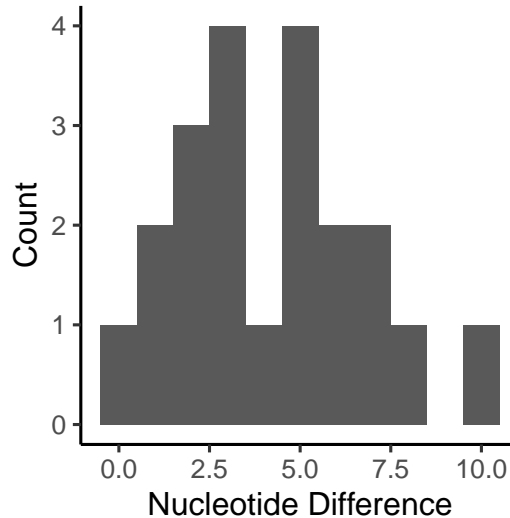
### IGHV4-NL\_1\*01\_S4155

8 sequences assigned  
No exact matches.



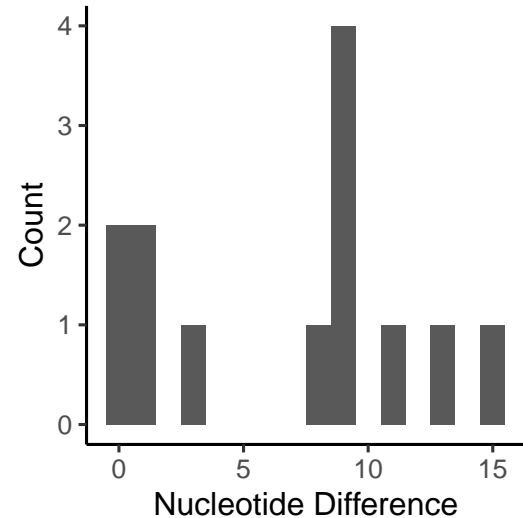
### IGHV4-NL\_10\*01\_S0458

21 sequences assigned  
1 (4.8%) exact matches, in which:  
1 unique CDR3  
1 unique J



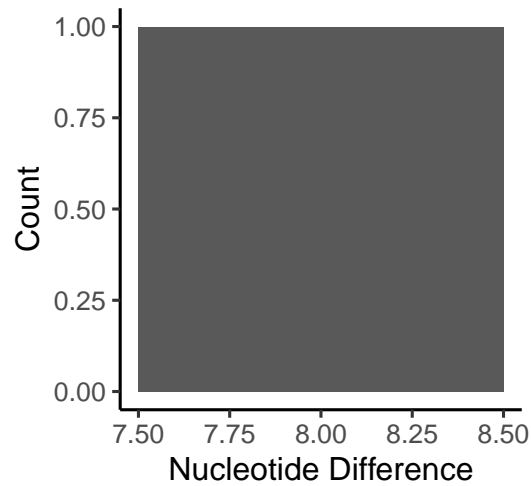
### IGHV4-NL\_13\*01\_S9744

14 sequences assigned  
2 (14.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



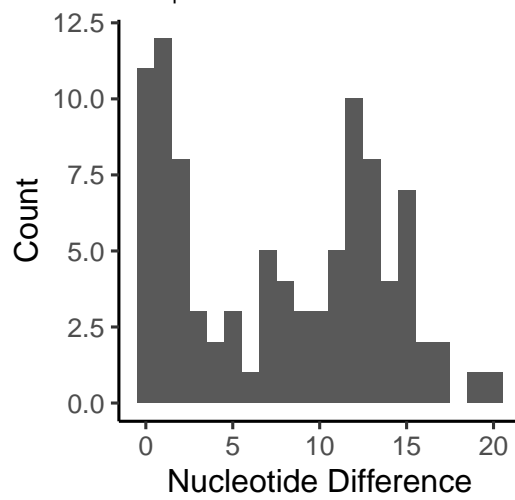
### IGHV4-NL\_15\*01\_S5717

1 sequences assigned  
No exact matches.



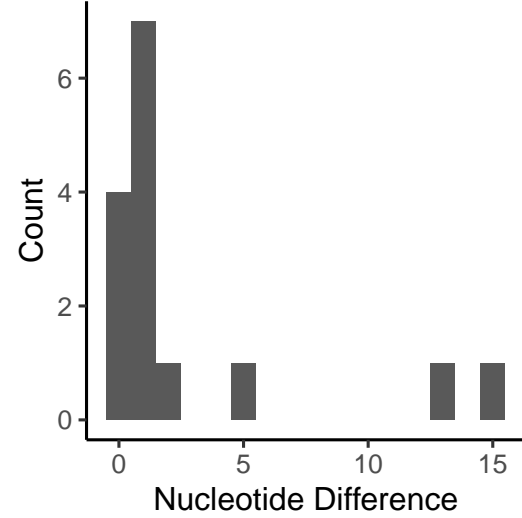
### IGHV4-NL\_17\*01\_S0936

110 sequences assigned  
11 (10%) exact matches, in which:  
9 unique CDR3  
1 unique J



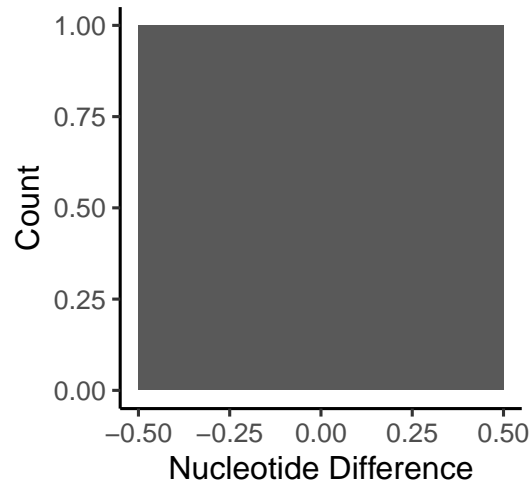
### IGHV4-NL\_21\*01\_S7469

46 sequences assigned  
4 (8.7%) exact matches, in which:  
4 unique CDR3  
1 unique J



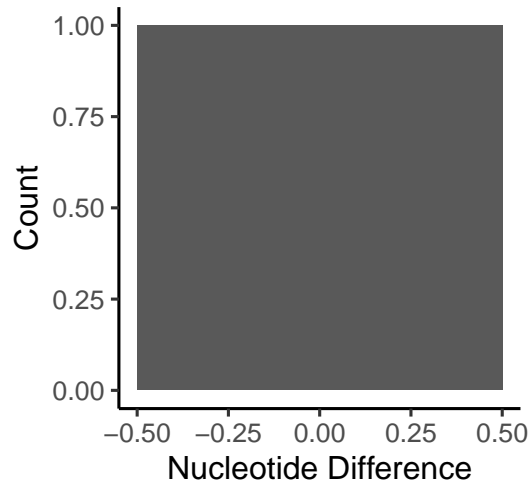
### IGHV4-NL\_16\*01\_S2136

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



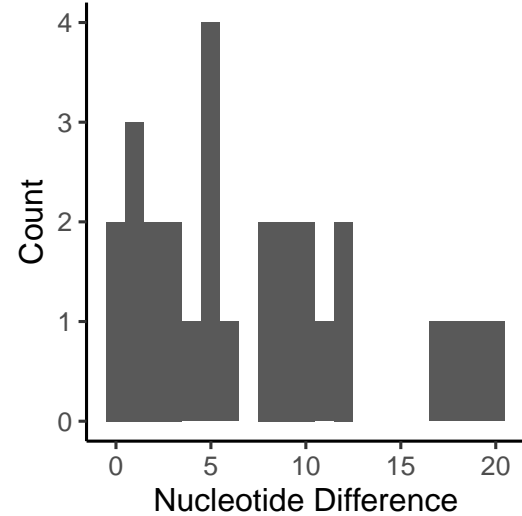
### IGHV4-NL\_20\*01\_S6186

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



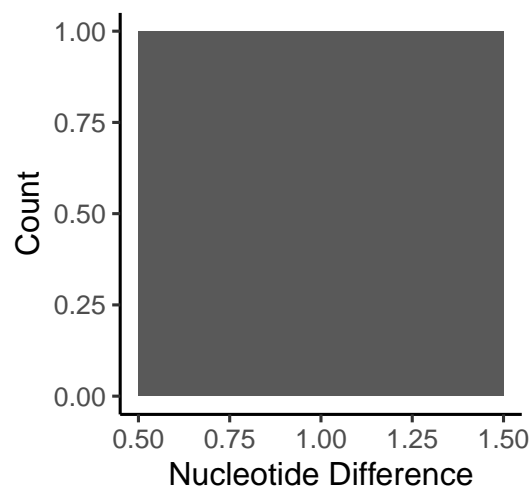
### IGHV4-NL\_22\*01\_S2393

29 sequences assigned  
2 (6.9%) exact matches, in which:  
2 unique CDR3  
1 unique J



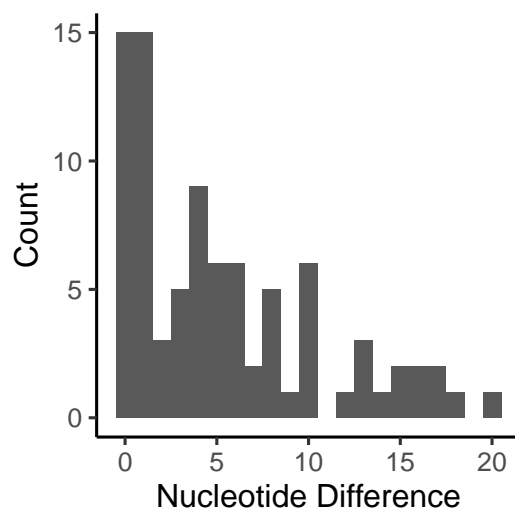
### IGHV4-NL\_16\*01\_S3062

1 sequences assigned  
No exact matches.



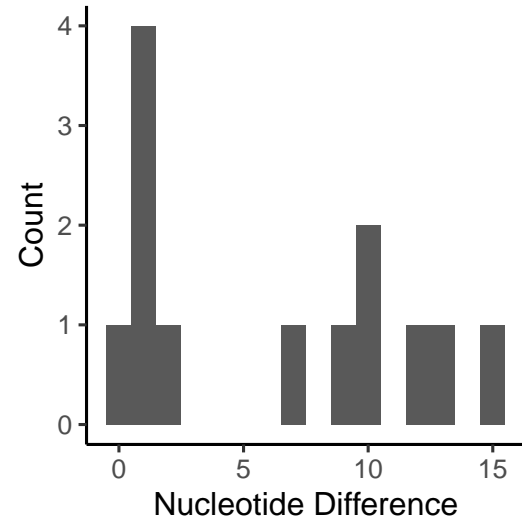
### IGHV4-NL\_21\*01\_S0138

87 sequences assigned  
15 (17.2%) exact matches, in which:  
12 unique CDR3  
1 unique J



### IGHV4-NL\_22\*01\_S6977

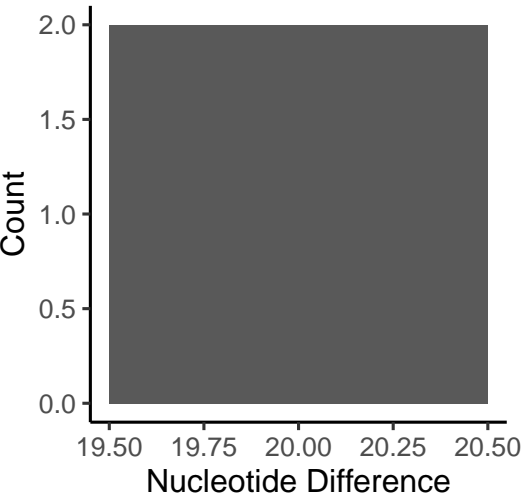
14 sequences assigned  
1 (7.1%) exact matches, in which:  
1 unique CDR3  
1 unique J





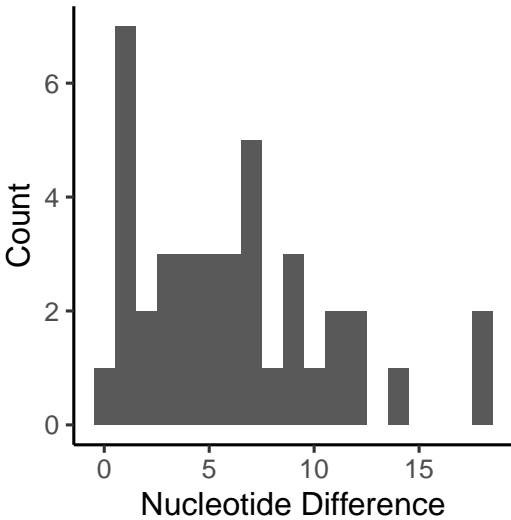
IGHV4–NL\_25\*01\_S9478

17 sequences assigned  
No exact matches.



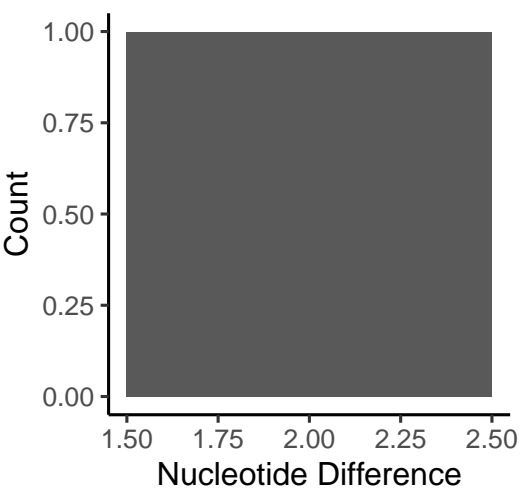
IGHV4–NL\_28\*01\_S2610

48 sequences assigned  
1 (2.1%) exact matches, in which:  
1 unique CDR3  
1 unique J



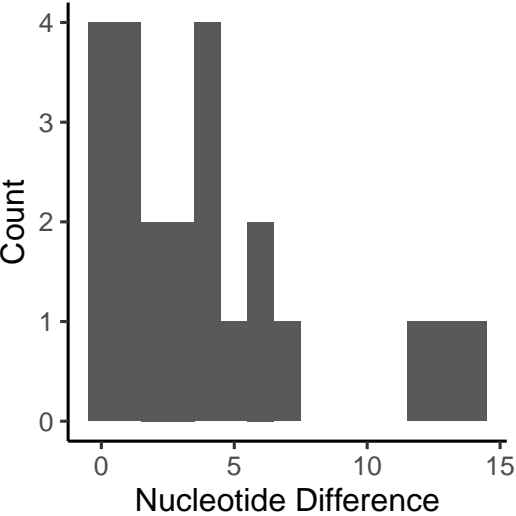
IGHV4–NL\_33\*01\_S4467

2 sequences assigned  
No exact matches.



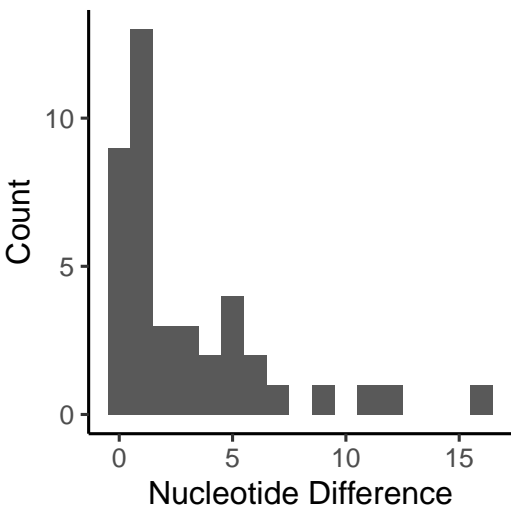
IGHV4–NL\_25\*01\_S9955

32 sequences assigned  
4 (12.5%) exact matches, in which:  
3 unique CDR3  
1 unique J



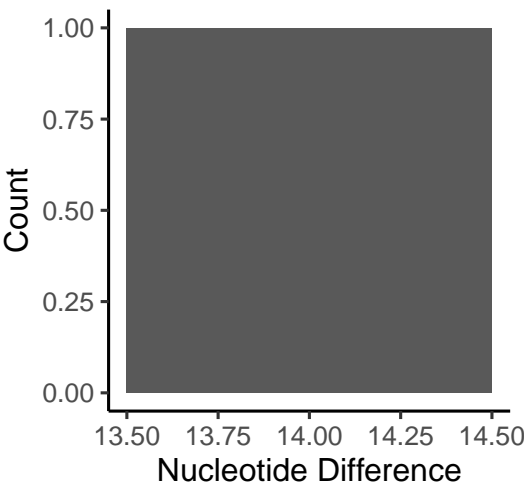
IGHV4–NL\_29\*01\_S9610

42 sequences assigned  
9 (21.4%) exact matches, in which:  
6 unique CDR3  
1 unique J



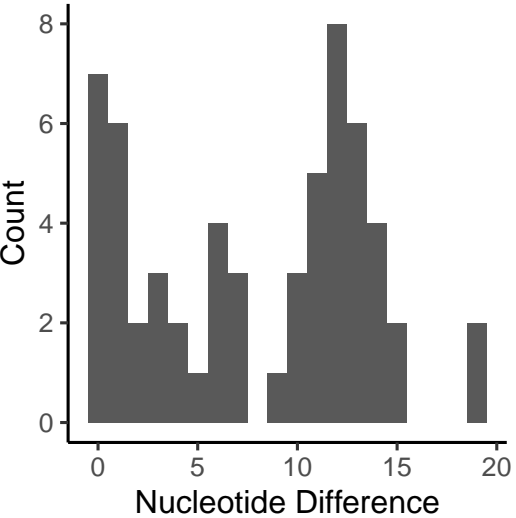
IGHV4–NL\_34\*01\_S4637

7 sequences assigned  
No exact matches.



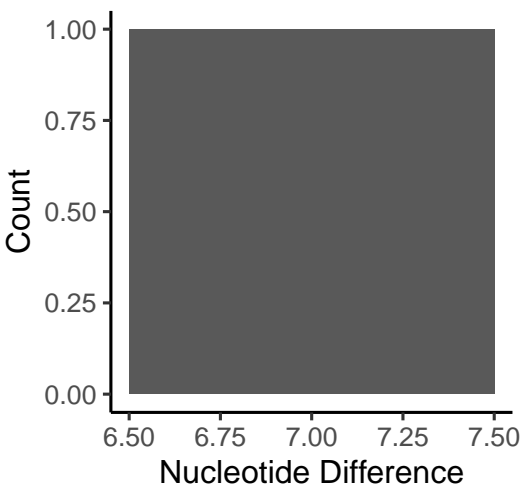
IGHV4–NL\_27\*01\_S3510

61 sequences assigned  
7 (11.5%) exact matches, in which:  
6 unique CDR3  
1 unique J



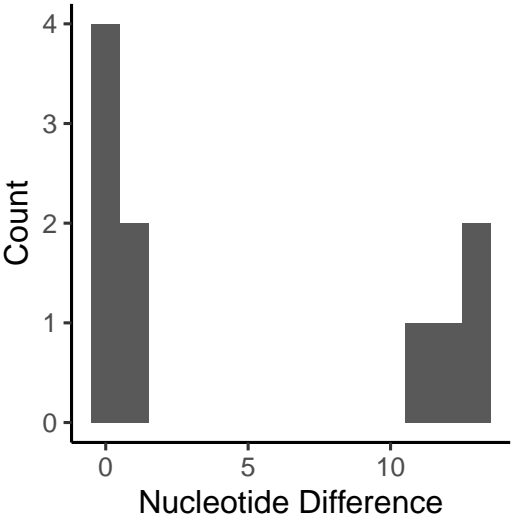
IGHV4–NL\_3\*01\_S7576

1 sequences assigned  
No exact matches.



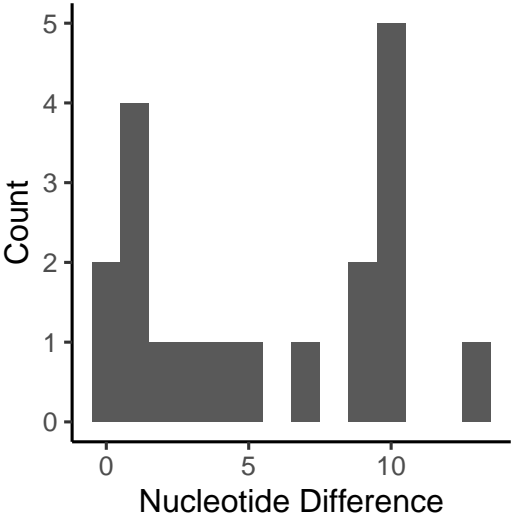
IGHV4–NL\_36\*01\_S3269

12 sequences assigned  
4 (33.3%) exact matches, in which:  
3 unique CDR3  
1 unique J



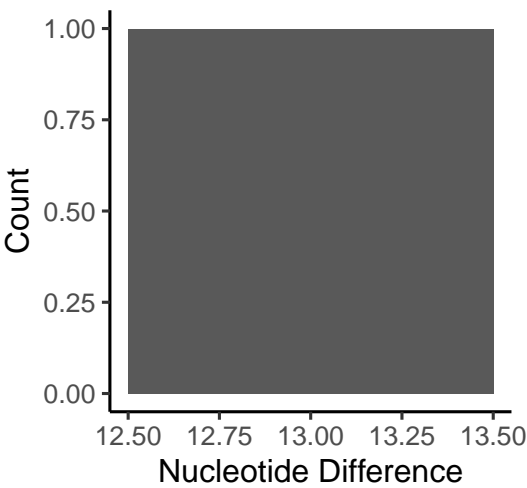
IGHV4–NL\_36\*01\_S5847

19 sequences assigned  
2 (10.5%) exact matches, in which:  
2 unique CDR3  
1 unique J



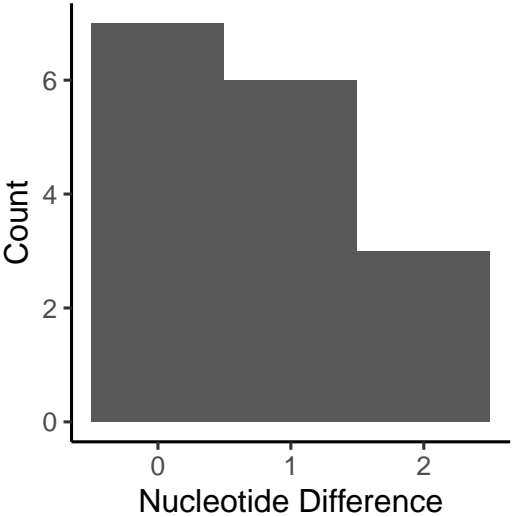
IGHV4–NL\_5\*01\_S6281

1 sequences assigned  
No exact matches.



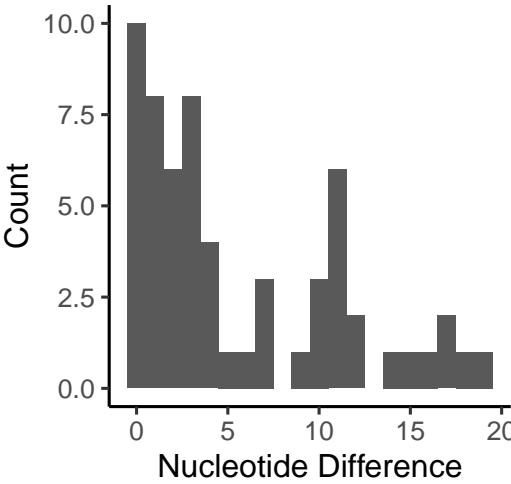
IGHV4–NL\_9\*01\_S4906

16 sequences assigned  
7 (43.8%) exact matches, in which:  
6 unique CDR3  
1 unique J



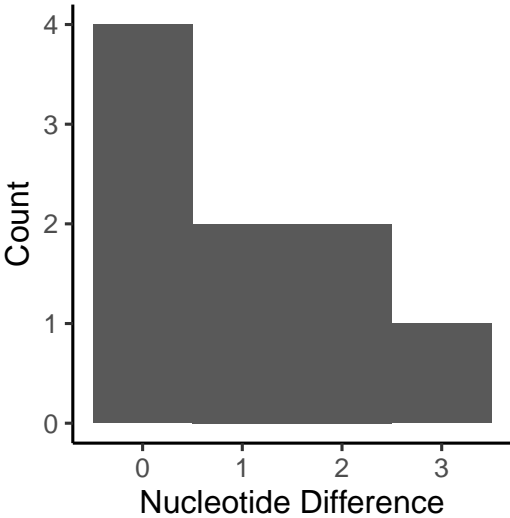
IGHV4–NL\_36\*01\_S9647

78 sequences assigned  
10 (12.8%) exact matches, in which:  
8 unique CDR3  
1 unique J



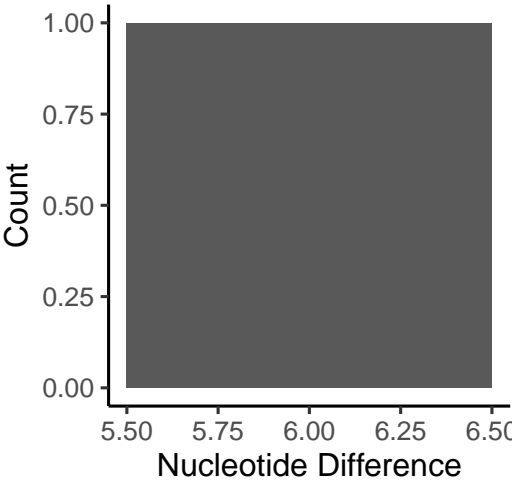
IGHV4–NL\_7\*02\_S0143

9 sequences assigned  
4 (44.4%) exact matches, in which:  
4 unique CDR3  
1 unique J



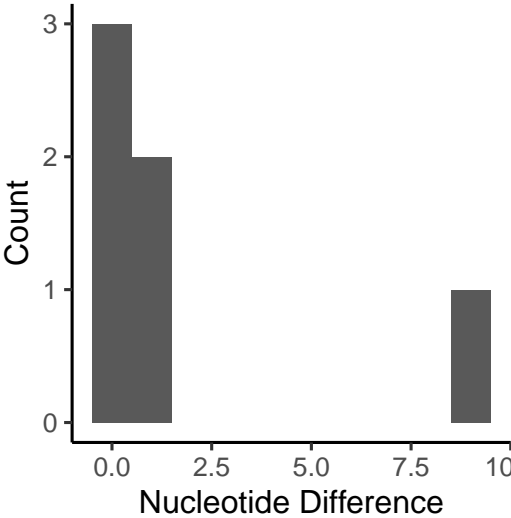
IGHV5–15\*01\_S4790

1 sequences assigned  
No exact matches.



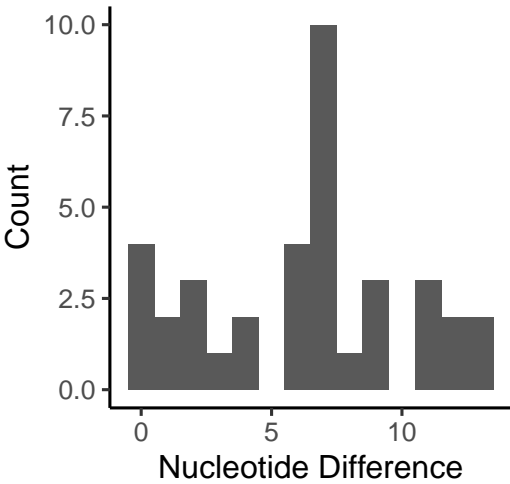
IGHV4–NL\_5\*01\_S4603

6 sequences assigned  
3 (50%) exact matches, in which:  
2 unique CDR3  
1 unique J



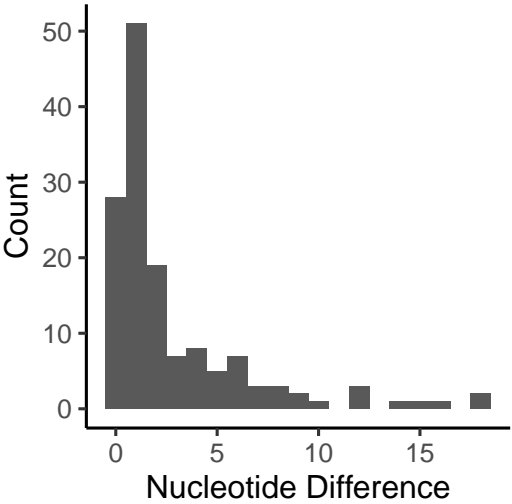
IGHV4–NL\_9\*01\_S1435

38 sequences assigned  
4 (10.5%) exact matches, in which:  
3 unique CDR3  
1 unique J



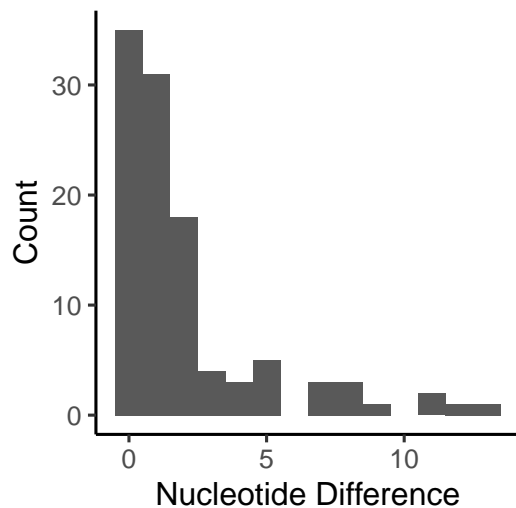
IGHV5–15\*01\_S9061

142 sequences assigned  
28 (19.7%) exact matches, in which:  
12 unique CDR3  
1 unique J



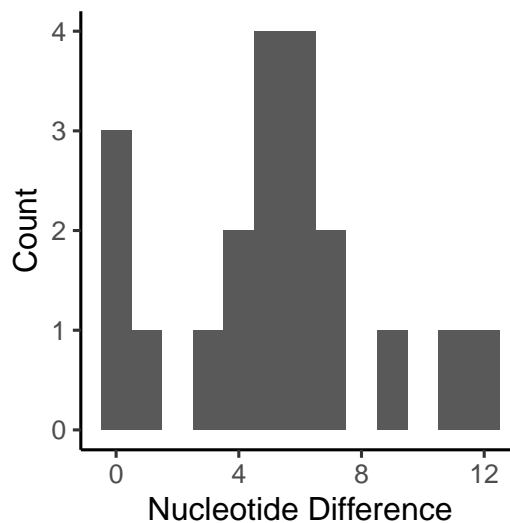
## IGHV5-157\*01\_S5960

107 sequences assigned  
35 (32.7%) exact matches, in which:  
22 unique CDR3  
1 unique J



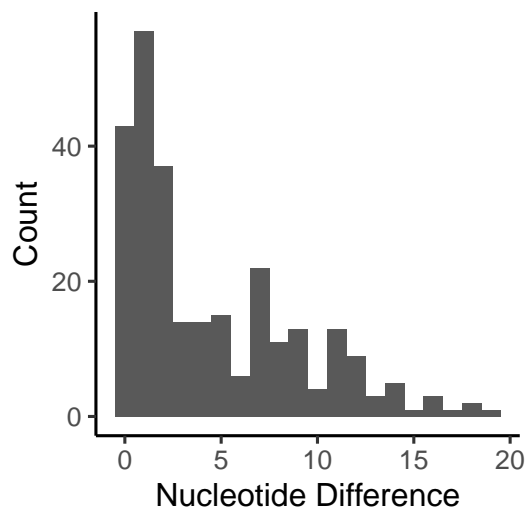
## IGHV7-135\*01\_S9086

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



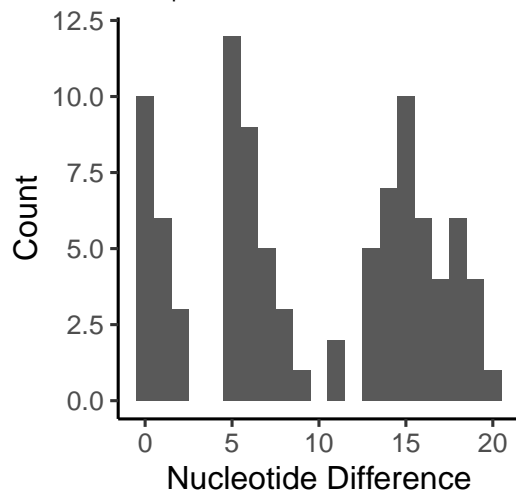
## IGHV5-157\*01\_S6479

277 sequences assigned  
43 (15.5%) exact matches, in which:  
17 unique CDR3  
1 unique J

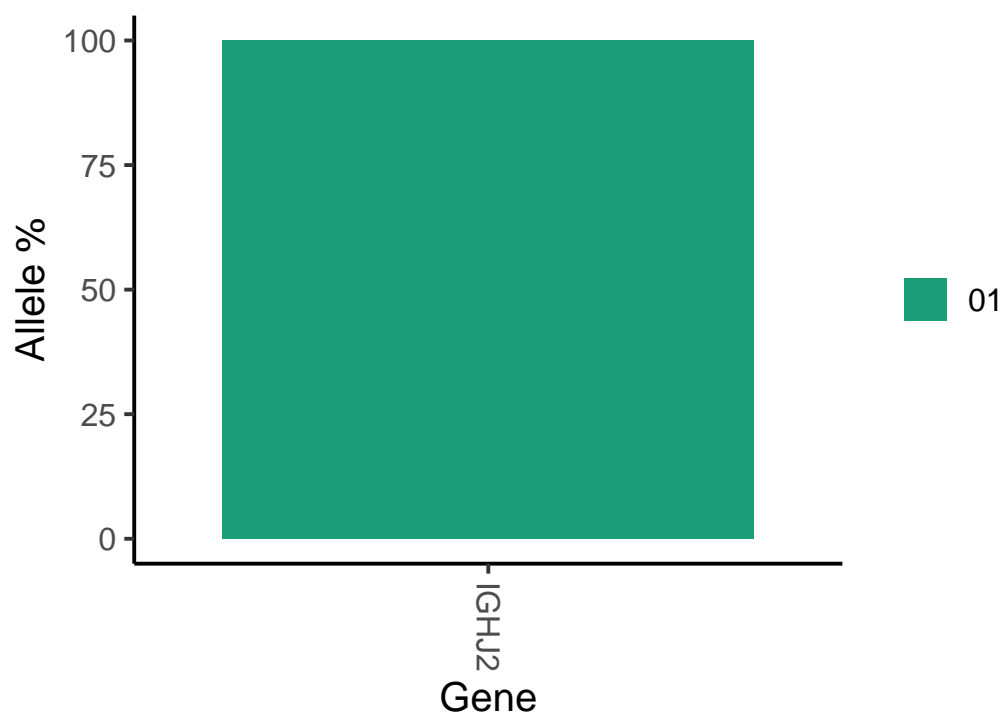


## IGHV7-86\*01\_S9209

99 sequences assigned  
10 (10.1%) exact matches, in which:  
4 unique CDR3  
1 unique J



# Allele Usage



Warning – no inferred sequences found.