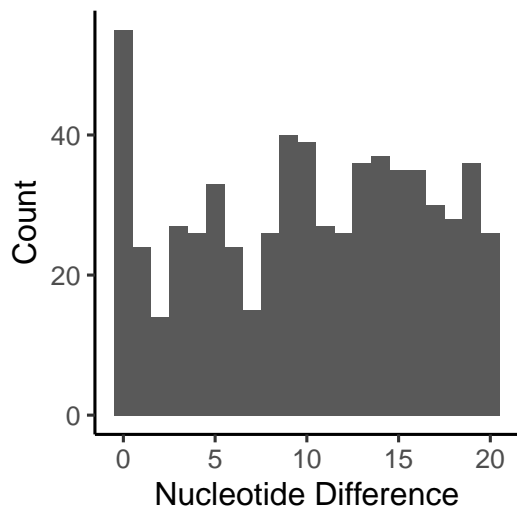


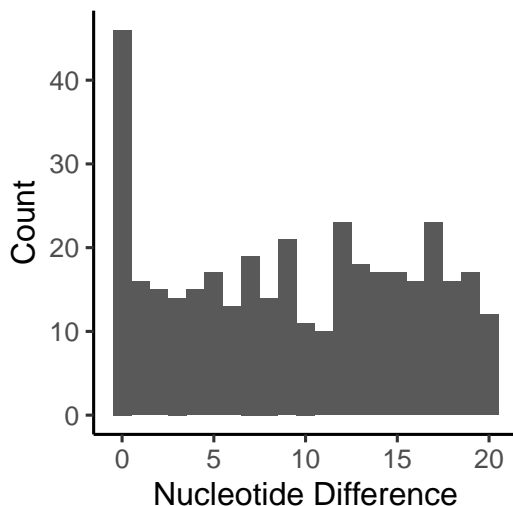
### IGHV1-2\*02

832 sequences assigned  
55 (6.6%) exact matches, in which:  
55 unique CDR3  
6 unique J



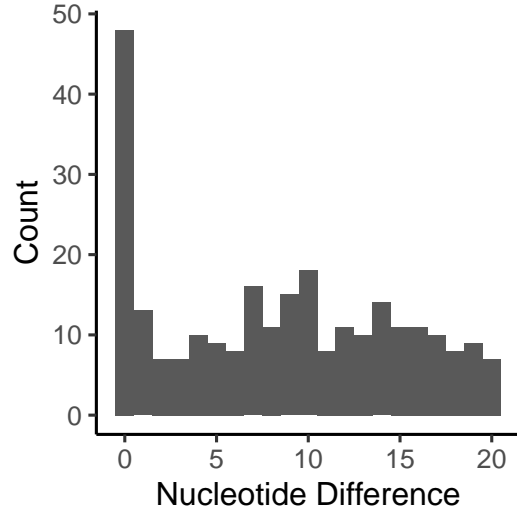
### IGHV1-8\*01

419 sequences assigned  
46 (11%) exact matches, in which:  
43 unique CDR3  
4 unique J



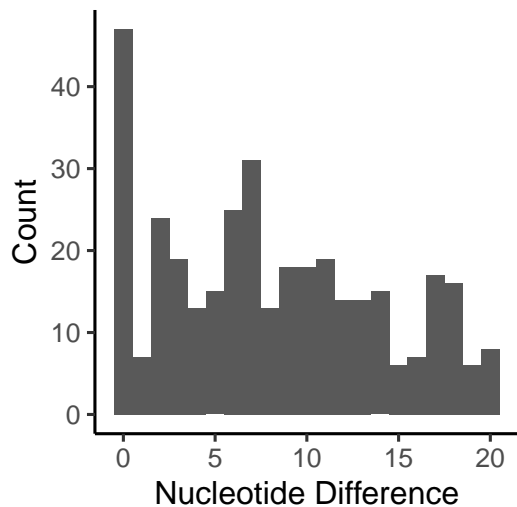
### IGHV1-46\*01

350 sequences assigned  
48 (13.7%) exact matches, in which:  
47 unique CDR3  
5 unique J



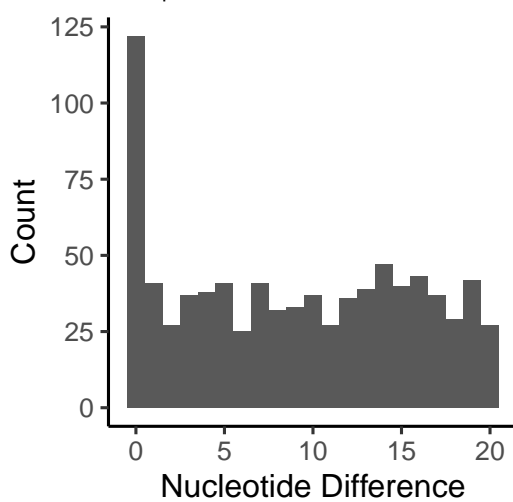
### IGHV1-2\*06

427 sequences assigned  
47 (11%) exact matches, in which:  
44 unique CDR3  
5 unique J



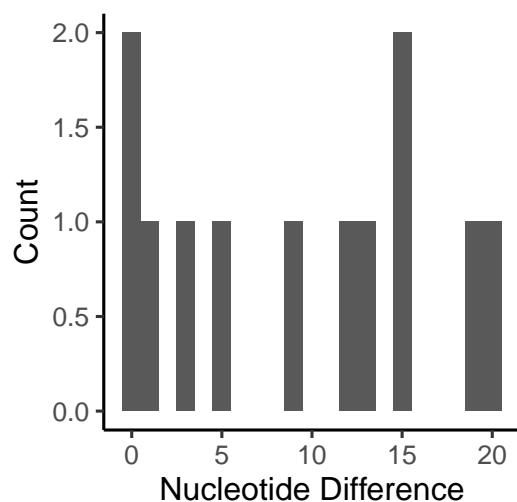
### IGHV1-18\*01

1059 sequences assigned  
122 (11.5%) exact matches, in which:  
112 unique CDR3  
4 unique J



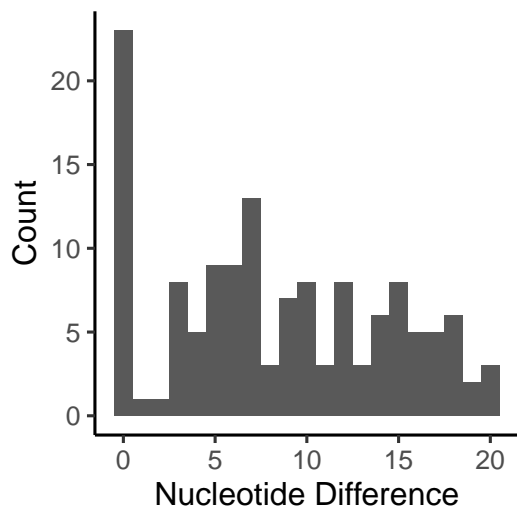
### IGHV1-58\*02

17 sequences assigned  
2 (11.8%) exact matches, in which:  
2 unique CDR3  
1 unique J



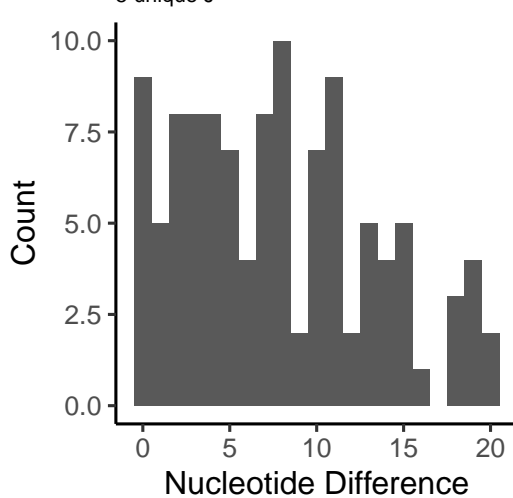
### IGHV1-3\*01\_05

151 sequences assigned  
23 (15.2%) exact matches, in which:  
23 unique CDR3  
5 unique J



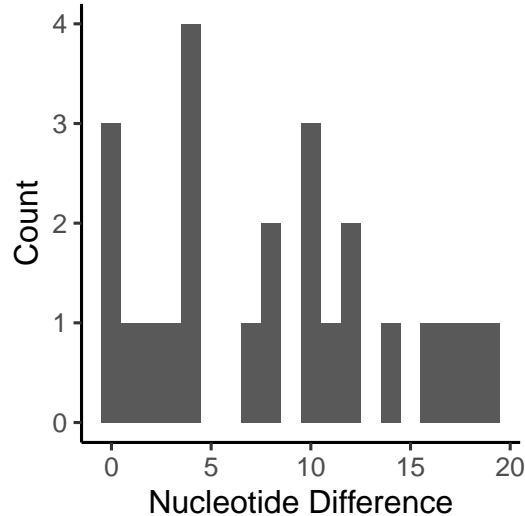
### IGHV1-24\*01

134 sequences assigned  
9 (6.7%) exact matches, in which:  
9 unique CDR3  
5 unique J



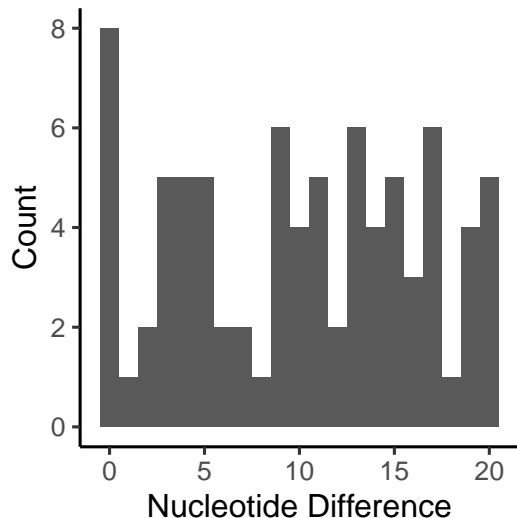
### IGHV1-58\*01\_03

24 sequences assigned  
3 (12.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



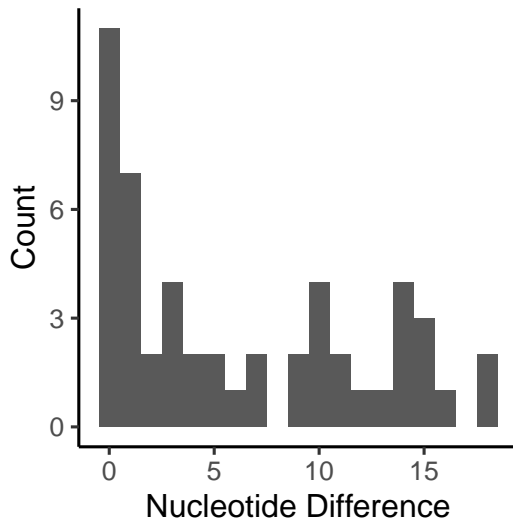
### IGHV1–69\*04\_09

134 sequences assigned  
8 (6%) exact matches, in which:  
7 unique CDR3  
2 unique J



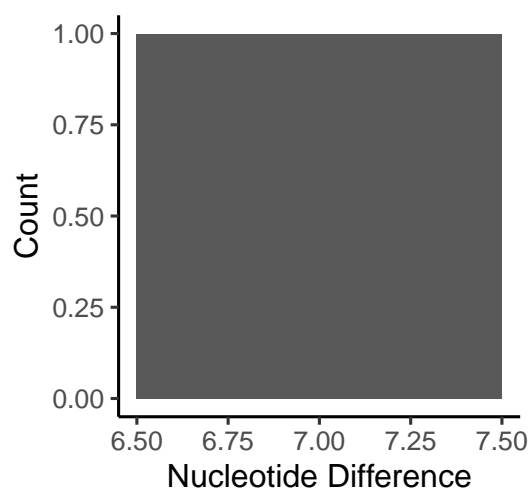
### IGHV2–26\*01

60 sequences assigned  
11 (18.3%) exact matches, in which:  
10 unique CDR3  
3 unique J



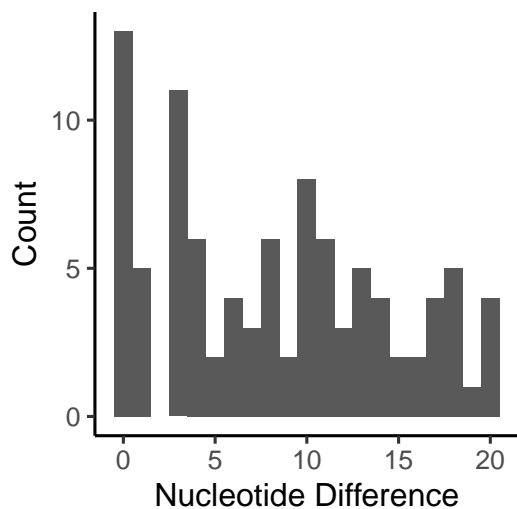
### IGHV2–70D\*04

1 sequences assigned  
No exact matches.



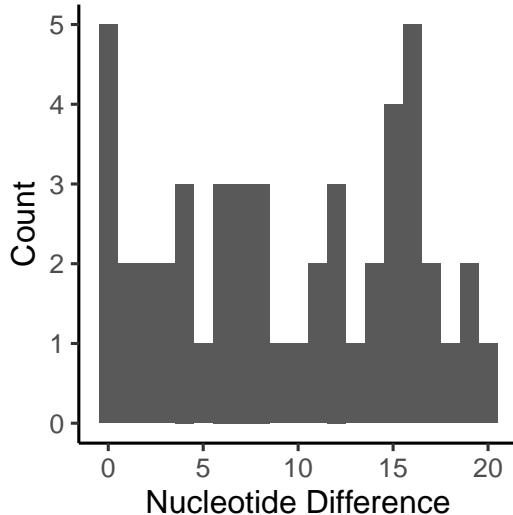
### IGHV2–5\*01

106 sequences assigned  
13 (12.3%) exact matches, in which:  
13 unique CDR3  
3 unique J



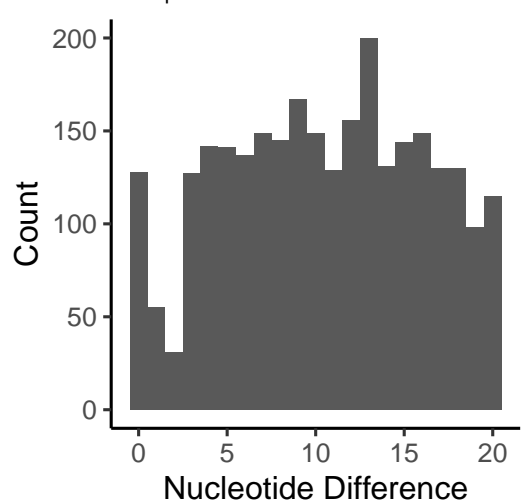
### IGHV2–70\*01

55 sequences assigned  
5 (9.1%) exact matches, in which:  
5 unique CDR3  
2 unique J



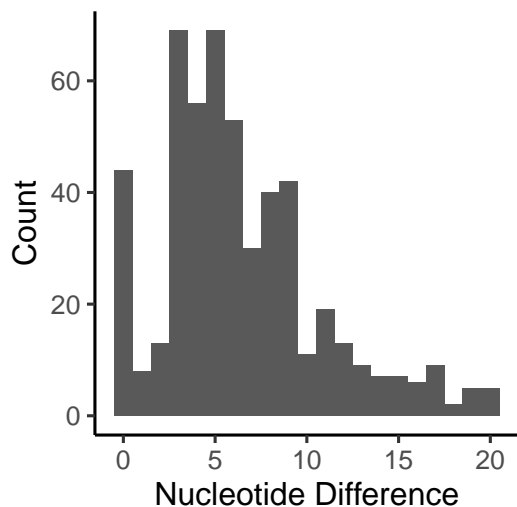
### IGHV3–7\*01

3144 sequences assigned  
128 (4.1%) exact matches, in which:  
69 unique CDR3  
5 unique J



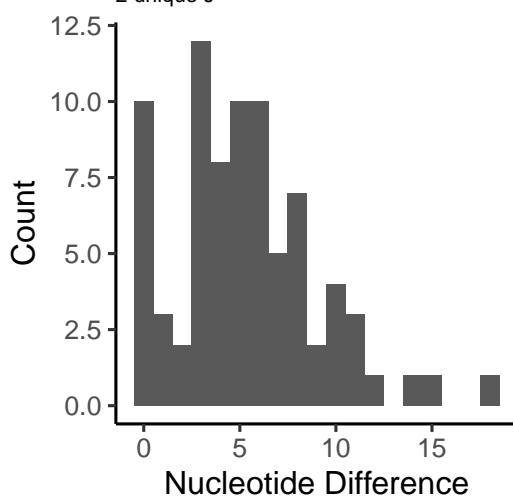
### IGHV2–5\*02

540 sequences assigned  
44 (8.1%) exact matches, in which:  
42 unique CDR3  
5 unique J



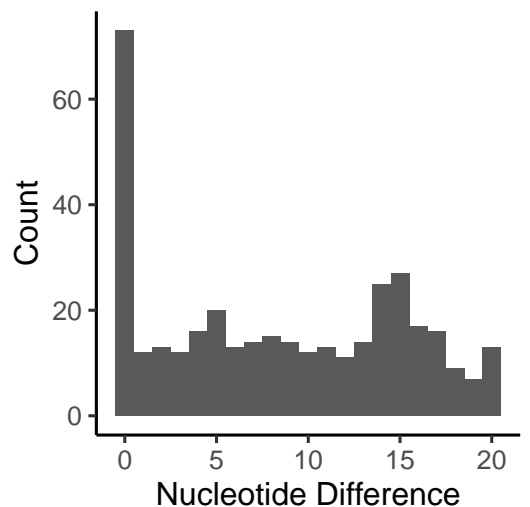
### IGHV2–70\*11\_15

81 sequences assigned  
10 (12.3%) exact matches, in which:  
9 unique CDR3  
2 unique J



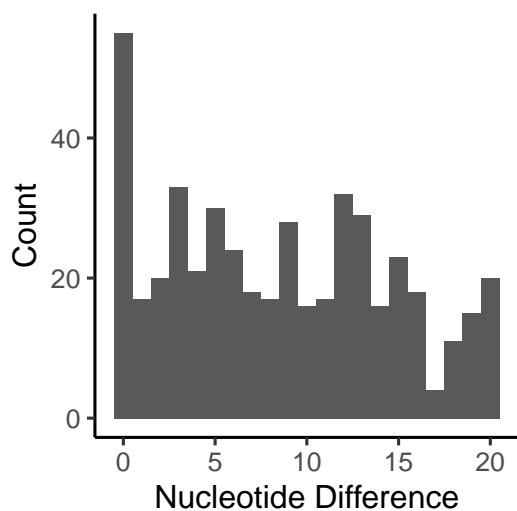
### IGHV3–9\*01

446 sequences assigned  
73 (16.4%) exact matches, in which:  
54 unique CDR3  
5 unique J



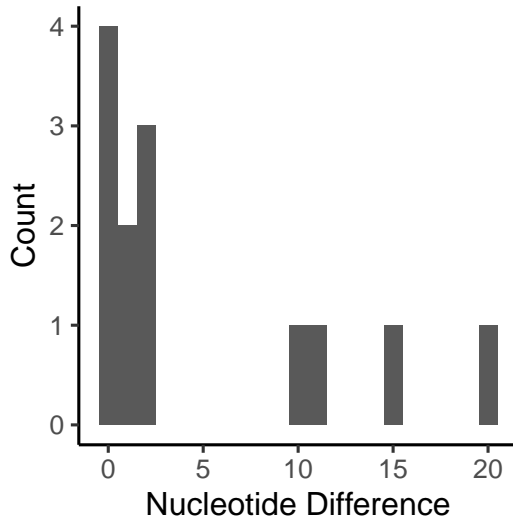
### IGHV3-11\*01

539 sequences assigned  
55 (10.2%) exact matches, in which:  
33 unique CDR3  
4 unique J



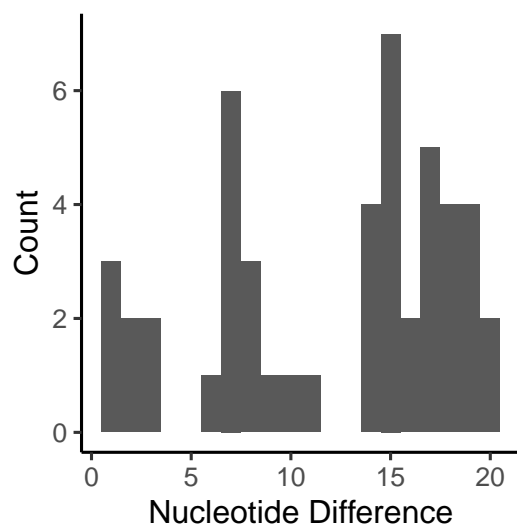
### IGHV3-13\*05

15 sequences assigned  
4 (26.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



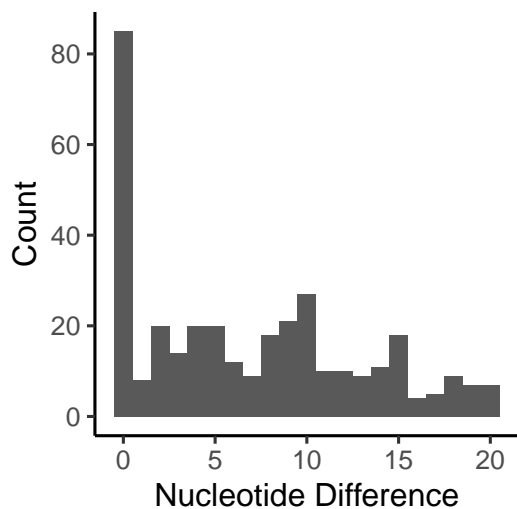
### IGHV3-20\*03\_04

77 sequences assigned  
No exact matches.



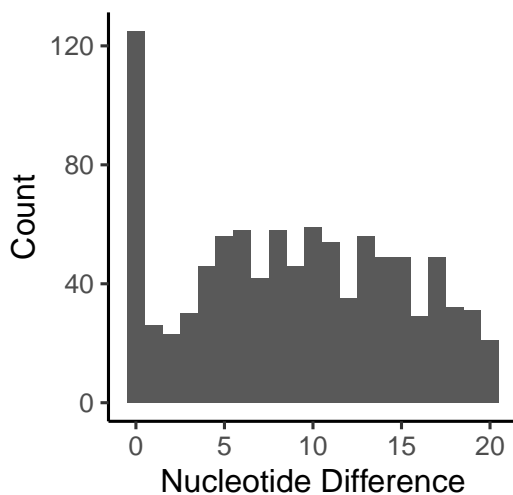
### IGHV3-11\*06

411 sequences assigned  
85 (20.7%) exact matches, in which:  
50 unique CDR3  
6 unique J



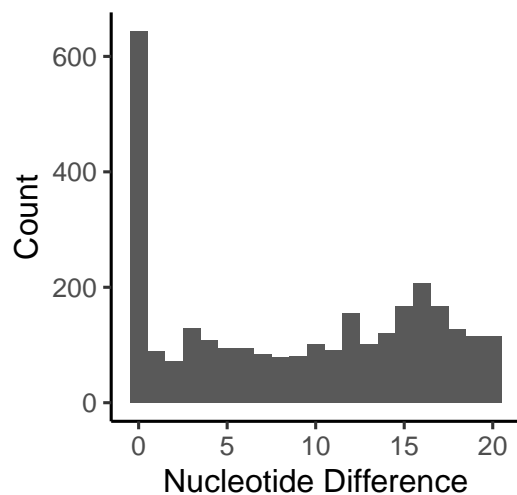
### IGHV3-15\*01\_02

1195 sequences assigned  
125 (10.5%) exact matches, in which:  
86 unique CDR3  
6 unique J



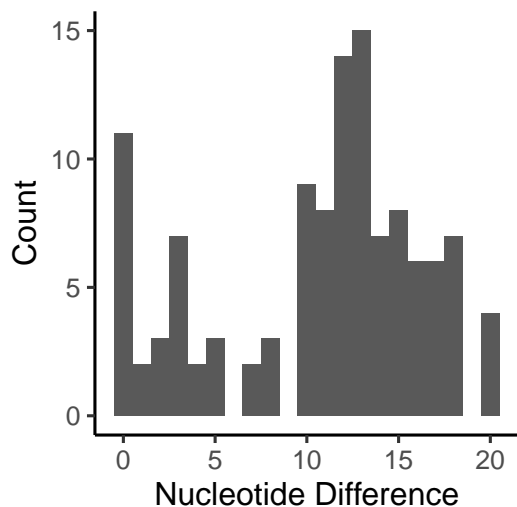
### IGHV3-21\*01\_02

3682 sequences assigned  
644 (17.5%) exact matches, in which:  
307 unique CDR3  
6 unique J



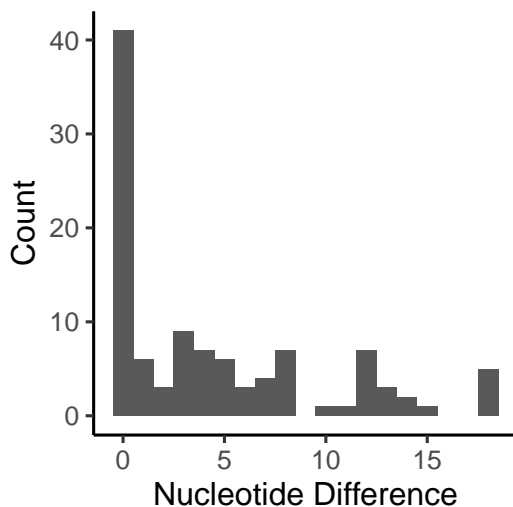
### IGHV3-13\*01

123 sequences assigned  
11 (8.9%) exact matches, in which:  
5 unique CDR3  
4 unique J



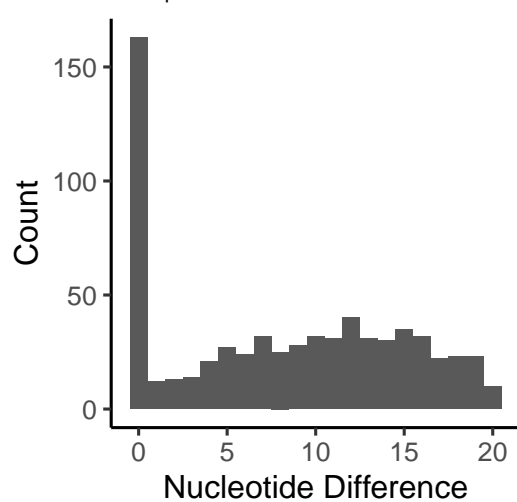
### IGHV3-20\*01\_02

112 sequences assigned  
41 (36.6%) exact matches, in which:  
19 unique CDR3  
5 unique J



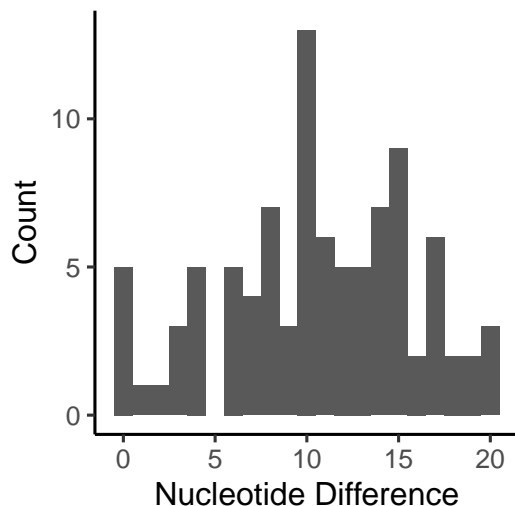
### IGHV3-30-3\*01

839 sequences assigned  
163 (19.4%) exact matches, in which:  
114 unique CDR3  
6 unique J



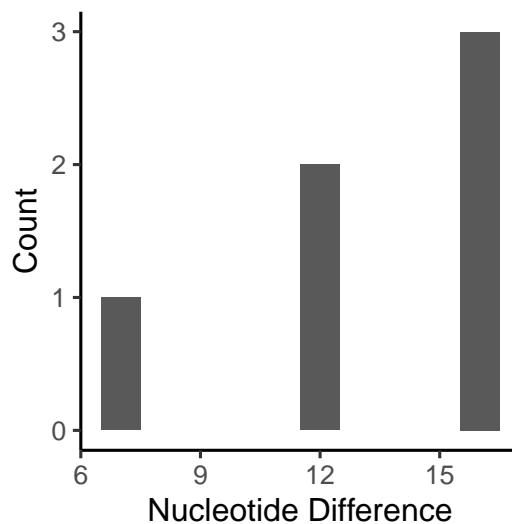
### IGHV3-30\*03

139 sequences assigned  
5 (3.6%) exact matches, in which:  
4 unique CDR3  
2 unique J



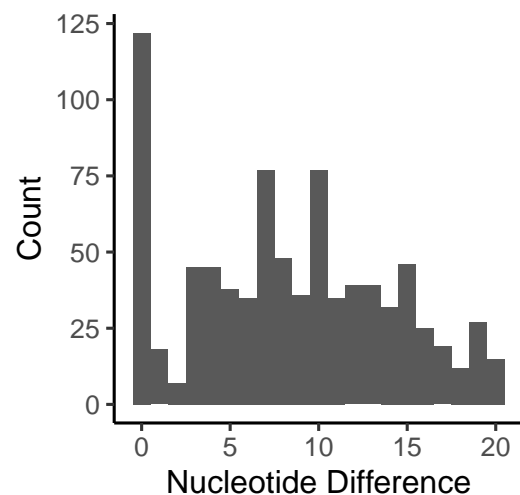
### IGHV3-33\*05

8 sequences assigned  
No exact matches.



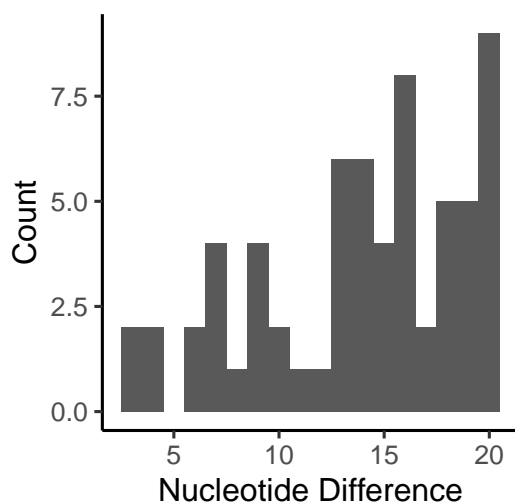
### IGHV3-48\*02

923 sequences assigned  
122 (13.2%) exact matches, in which:  
53 unique CDR3  
4 unique J



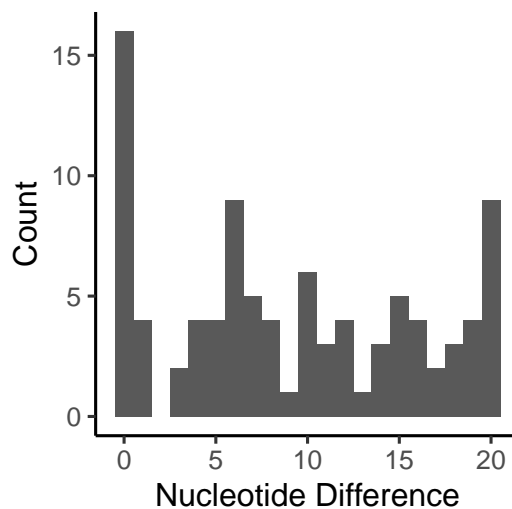
### IGHV3-30\*04

143 sequences assigned  
No exact matches.



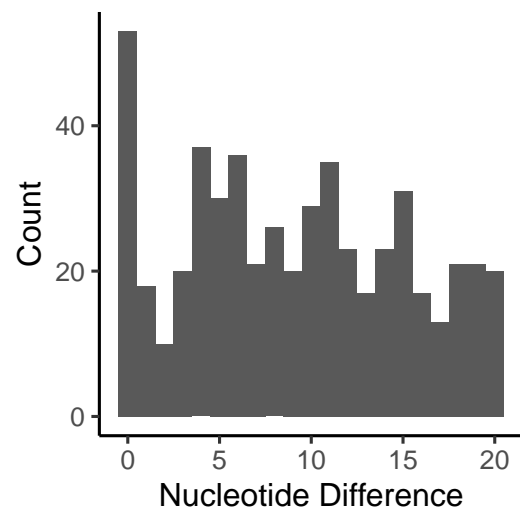
### IGHV3-43\*01

107 sequences assigned  
16 (15%) exact matches, in which:  
8 unique CDR3  
4 unique J



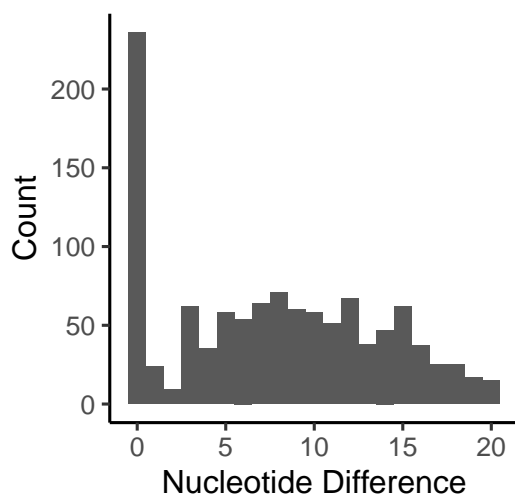
### IGHV3-48\*03

637 sequences assigned  
53 (8.3%) exact matches, in which:  
28 unique CDR3  
4 unique J



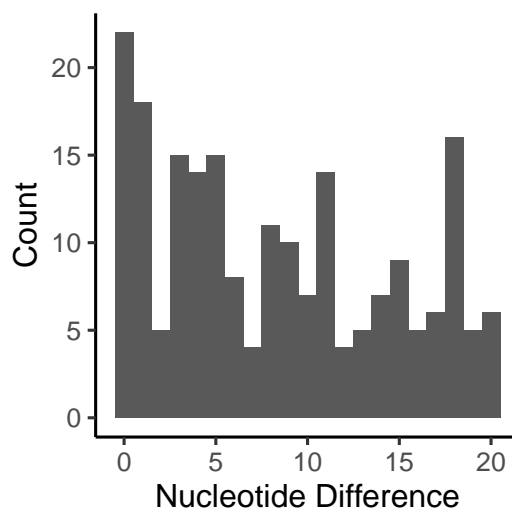
### IGHV3-33\*01

1231 sequences assigned  
236 (19.2%) exact matches, in which:  
143 unique CDR3  
5 unique J



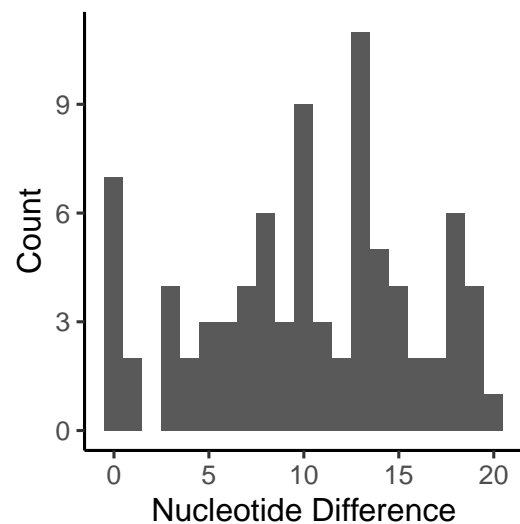
### IGHV3-43\*02

275 sequences assigned  
22 (8%) exact matches, in which:  
15 unique CDR3  
4 unique J



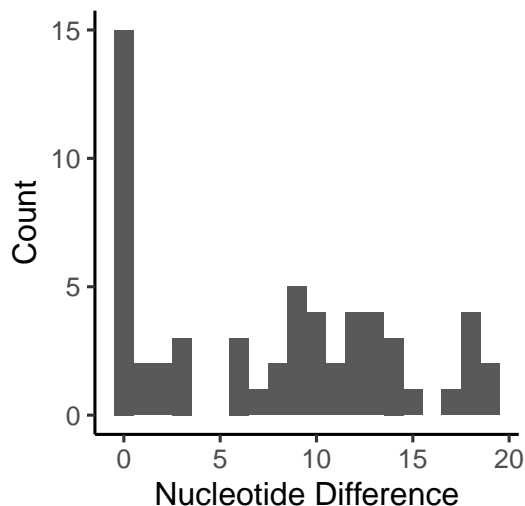
### IGHV3-49\*04

113 sequences assigned  
7 (6.2%) exact matches, in which:  
6 unique CDR3  
3 unique J



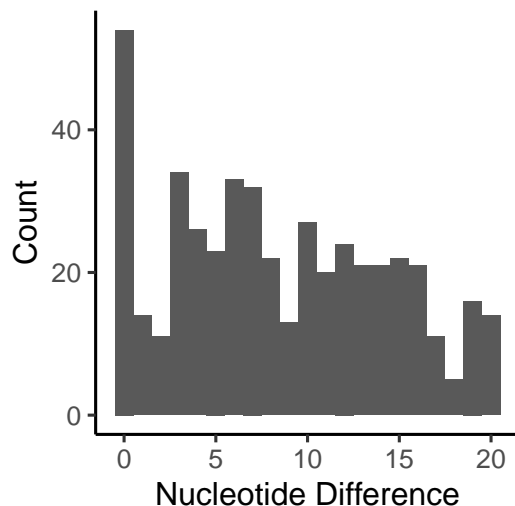
### IGHV3-49\*03\_05

64 sequences assigned  
15 (23.4%) exact matches, in which:  
14 unique CDR3  
3 unique J



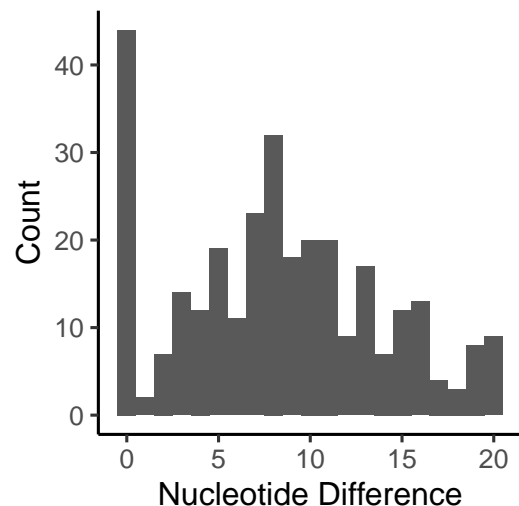
### IGHV3-53\*01\_02

538 sequences assigned  
54 (10%) exact matches, in which:  
31 unique CDR3  
4 unique J



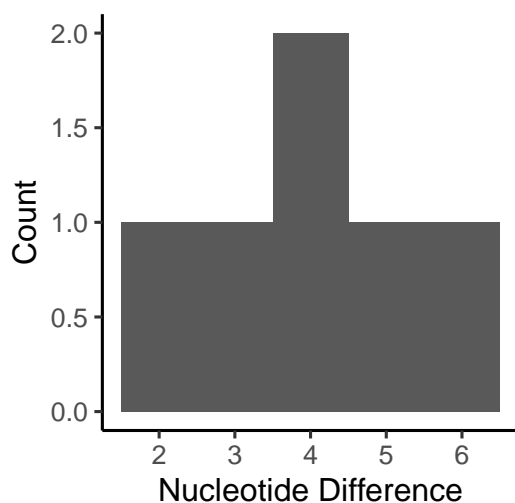
### IGHV3-66\*01

396 sequences assigned  
44 (11.1%) exact matches, in which:  
22 unique CDR3  
5 unique J



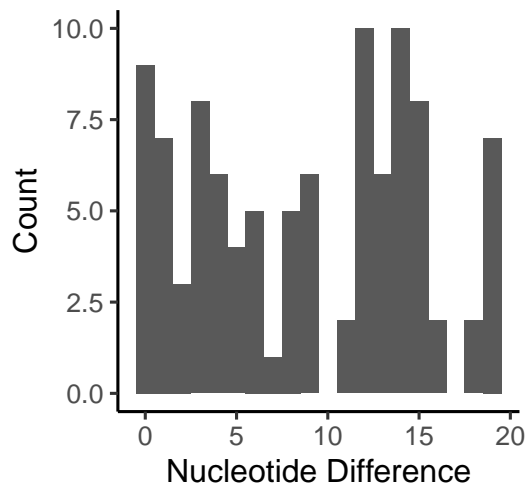
### IGHV3-52\*01\_03

6 sequences assigned  
No exact matches.



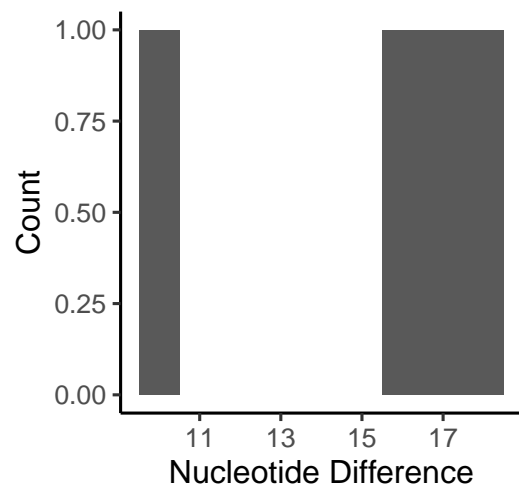
### IGHV3-64\*01

110 sequences assigned  
9 (8.2%) exact matches, in which:  
4 unique CDR3  
2 unique J



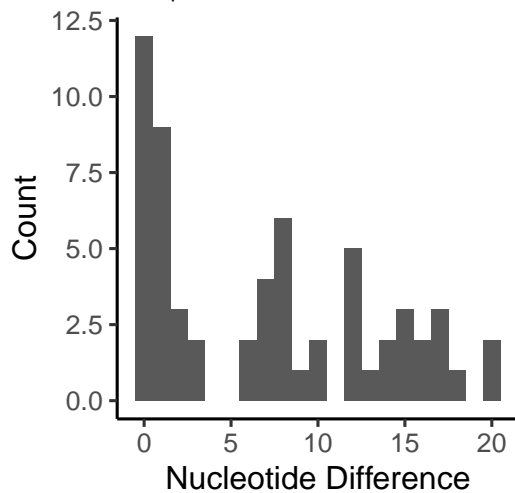
### IGHV3-69-1\*01

16 sequences assigned  
No exact matches.



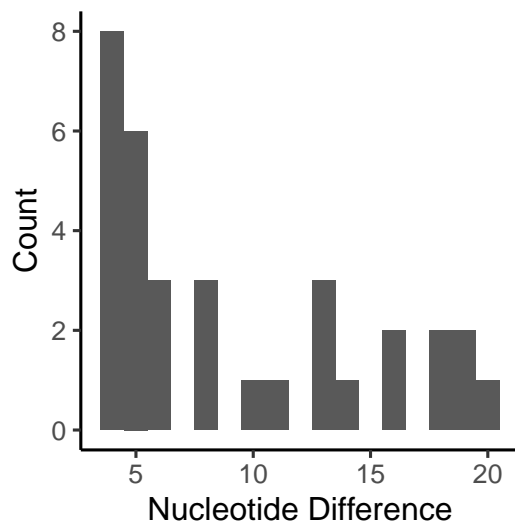
### IGHV3-53\*04

73 sequences assigned  
12 (16.4%) exact matches, in which:  
5 unique CDR3  
3 unique J



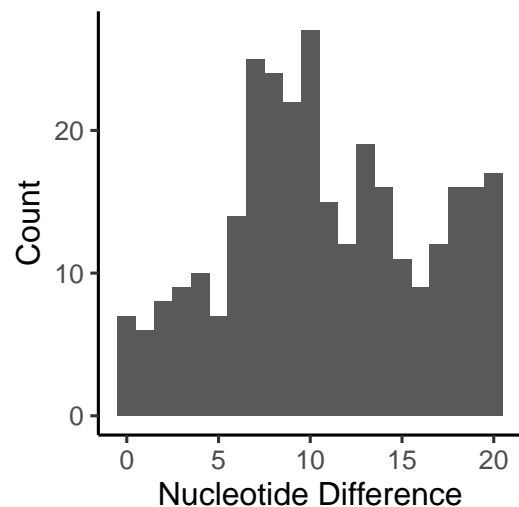
### IGHV3-64\*02\_07

43 sequences assigned  
No exact matches.



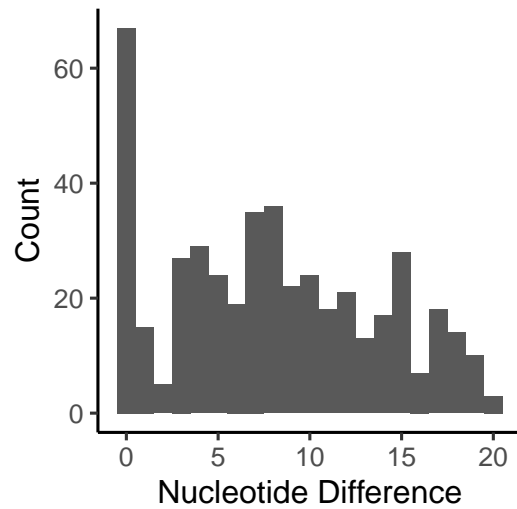
### IGHV3-72\*01

363 sequences assigned  
7 (1.9%) exact matches, in which:  
4 unique CDR3  
3 unique J



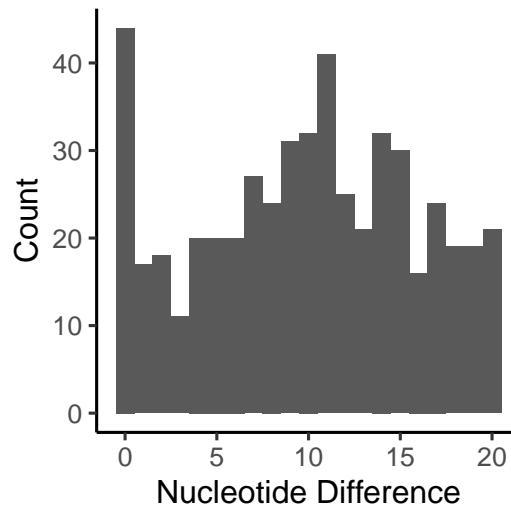
### IGHV3-73\*01\_02

510 sequences assigned  
67 (13.1%) exact matches, in which:  
31 unique CDR3  
4 unique J



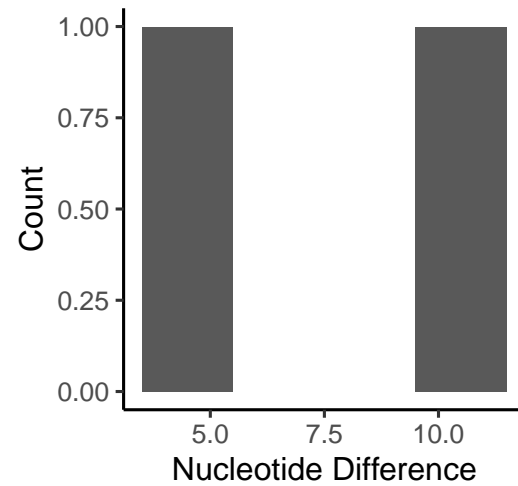
### IGHV3-64D\*06

619 sequences assigned  
44 (7.1%) exact matches, in which:  
23 unique CDR3  
6 unique J



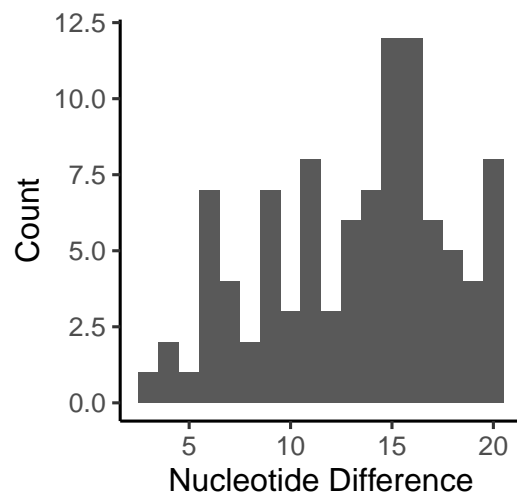
### IGHV4-28\*01\_07

5 sequences assigned  
No exact matches.



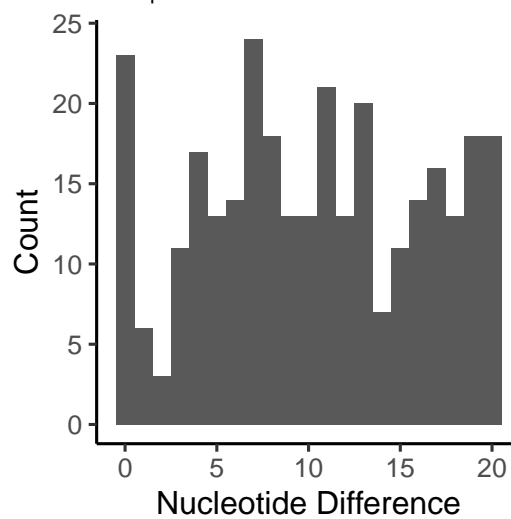
### IGHV3-74\*03

158 sequences assigned  
No exact matches.



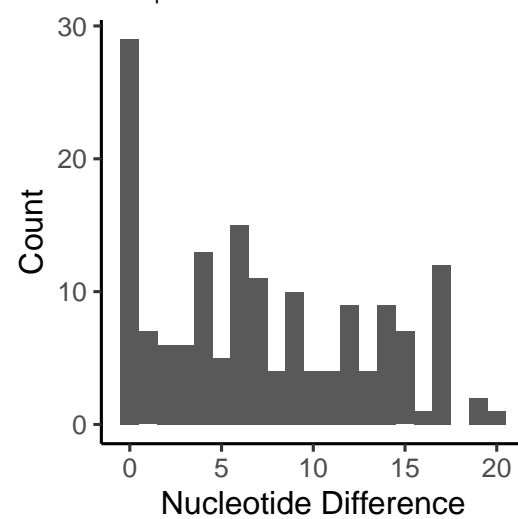
### IGHV4-4\*07

366 sequences assigned  
23 (6.3%) exact matches, in which:  
16 unique CDR3  
3 unique J



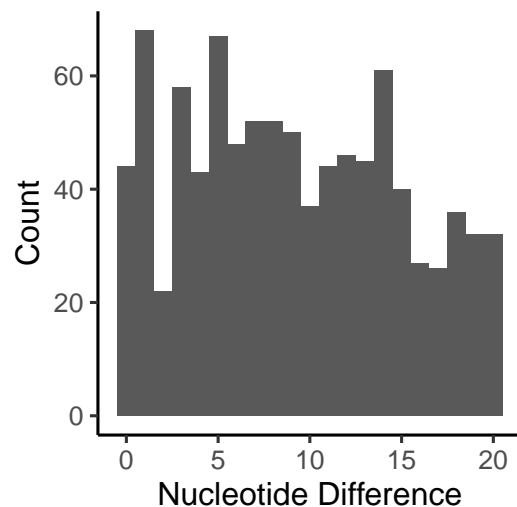
### IGHV4-30-2\*01

197 sequences assigned  
29 (14.7%) exact matches, in which:  
17 unique CDR3  
4 unique J



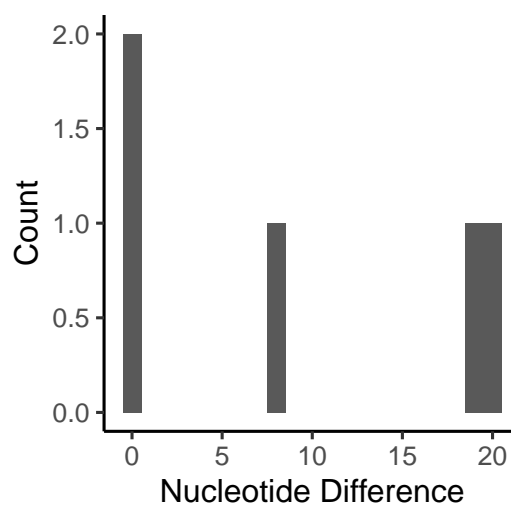
### IGHV3-74\*01\_02

1114 sequences assigned  
44 (3.9%) exact matches, in which:  
26 unique CDR3  
4 unique J



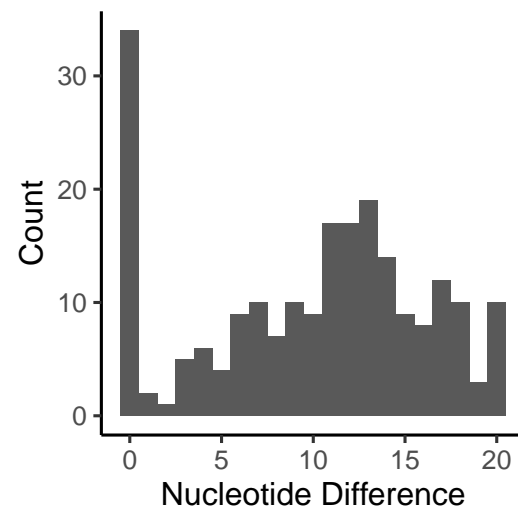
### IGHV4-28\*03

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



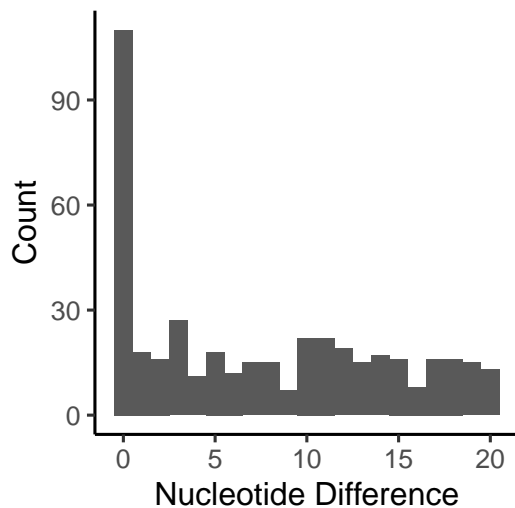
### IGHV4-30-4\*01

309 sequences assigned  
34 (11%) exact matches, in which:  
24 unique CDR3  
5 unique J



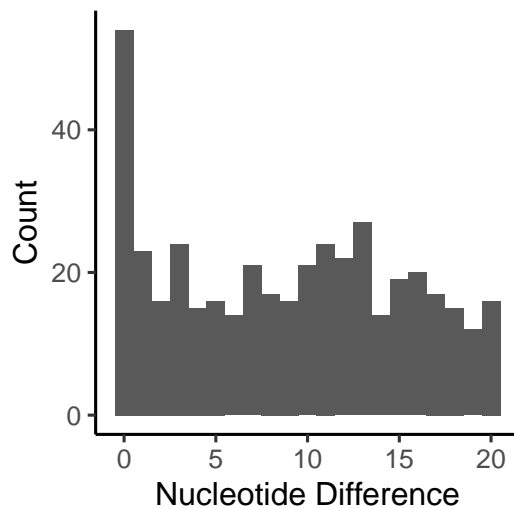
### IGHV4-31\*03\_04

523 sequences assigned  
110 (21%) exact matches, in which:  
79 unique CDR3  
5 unique J



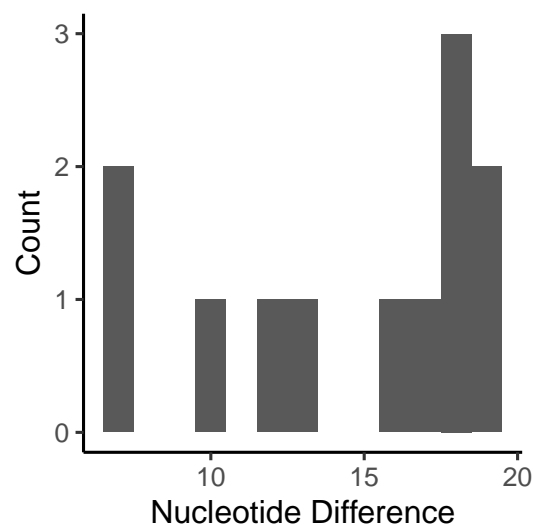
### IGHV4-59\*08

584 sequences assigned  
54 (9.2%) exact matches, in which:  
35 unique CDR3  
5 unique J



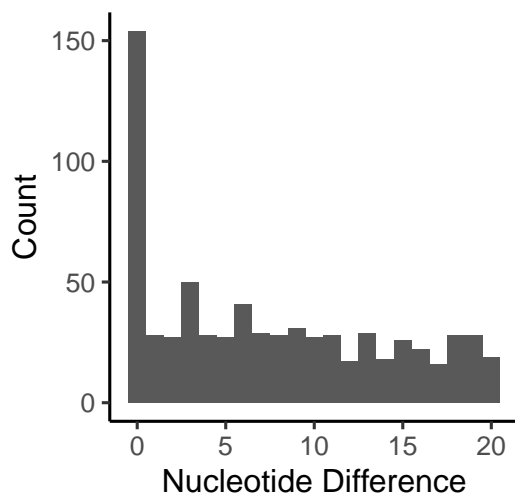
### IGHV4-61\*02

36 sequences assigned  
No exact matches.



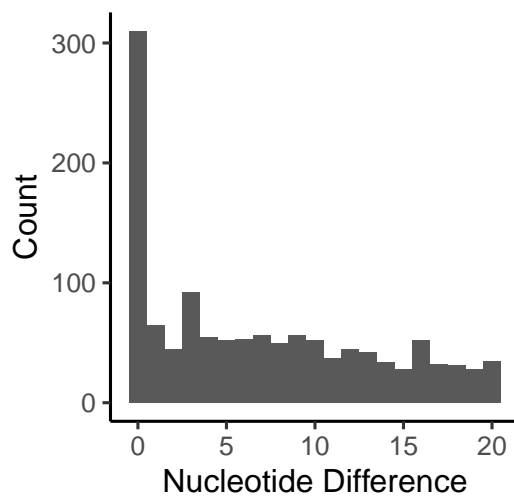
### IGHV4-34\*01\_02

879 sequences assigned  
154 (17.5%) exact matches, in which:  
86 unique CDR3  
4 unique J



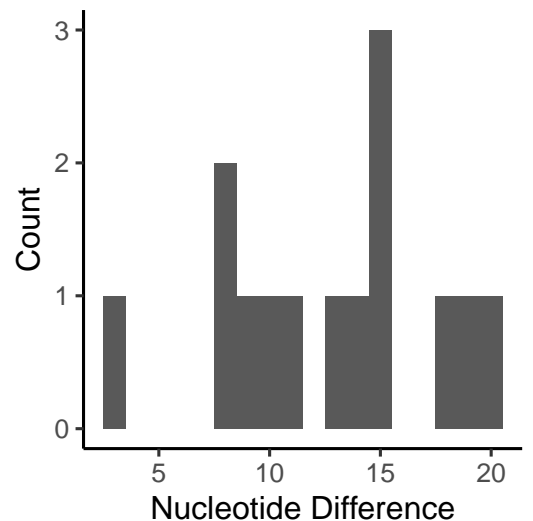
### IGHV4-59\*01\_07

1657 sequences assigned  
310 (18.7%) exact matches, in which:  
196 unique CDR3  
6 unique J



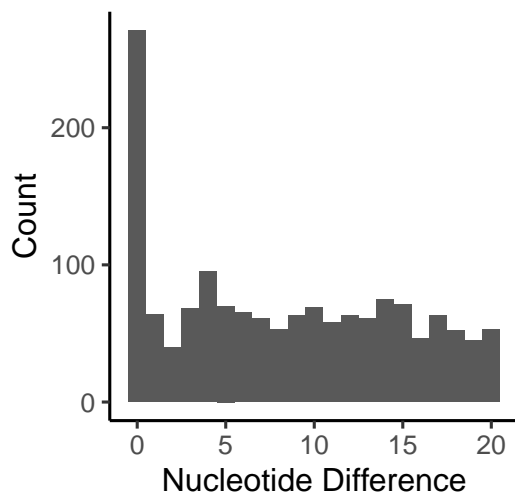
### IGHV4-61\*08

32 sequences assigned  
No exact matches.



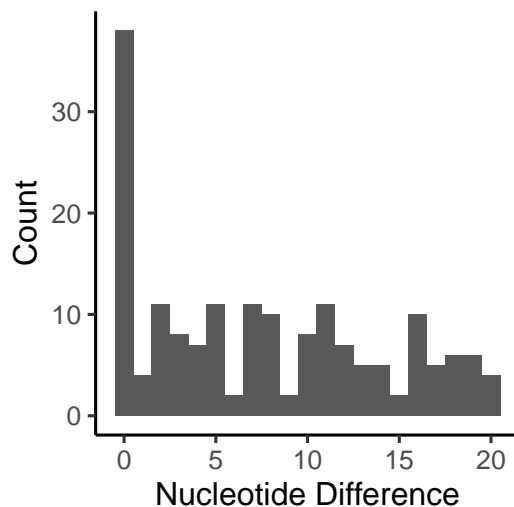
### IGHV4-39\*01\_05

1943 sequences assigned  
271 (13.9%) exact matches, in which:  
170 unique CDR3  
6 unique J



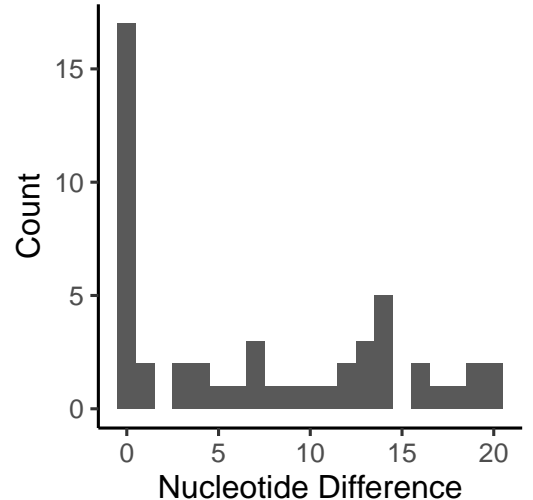
### IGHV4-61\*01

197 sequences assigned  
38 (19.3%) exact matches, in which:  
29 unique CDR3  
4 unique J



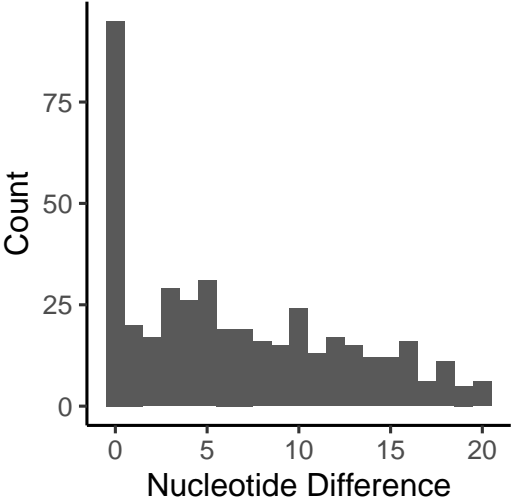
### IGHV5-10-1\*01\_03

65 sequences assigned  
17 (26.2%) exact matches, in which:  
17 unique CDR3  
4 unique J



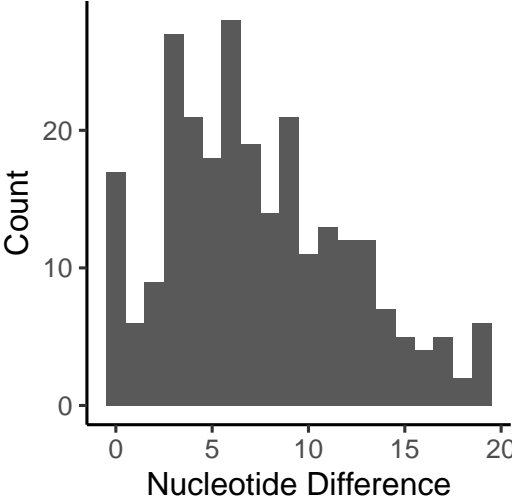
# IGHV5-51\*01\_03

452 sequences assigned  
95 (21%) exact matches, in which:  
95 unique CDR3  
6 unique J



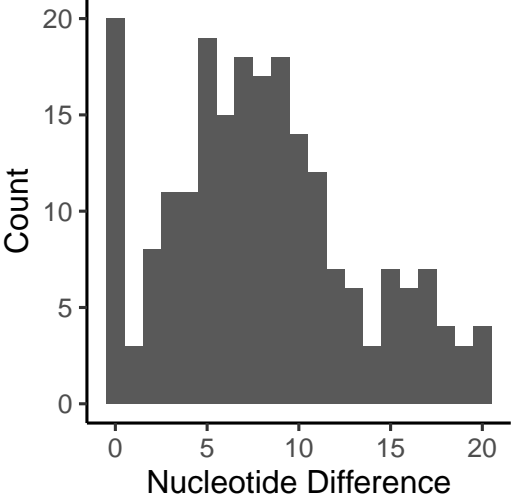
# IGHV6-1\*01\_02

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



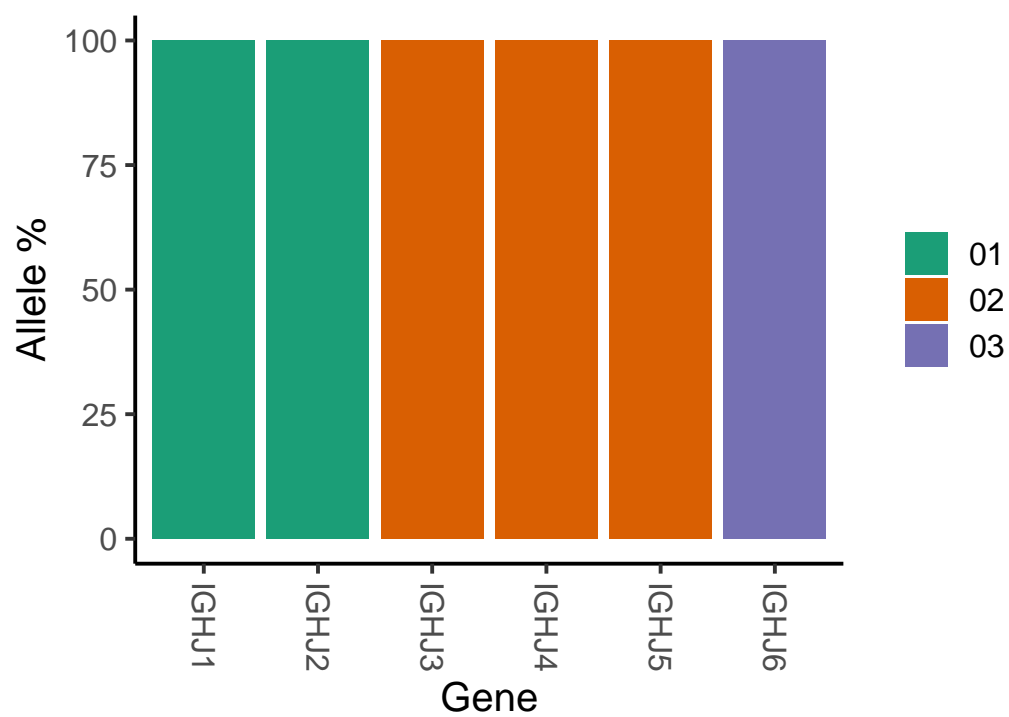
# IGHV7-4-1\*02

221 sequences assigned  
20 (9%) exact matches, in which:  
20 unique CDR3  
3 unique J





Allele Usage



Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-39\*02\_C258GIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV4-59\*02\_G88A are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.

Novel sequence(s)IGHV4-59\*02\_G88AIGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s)IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.