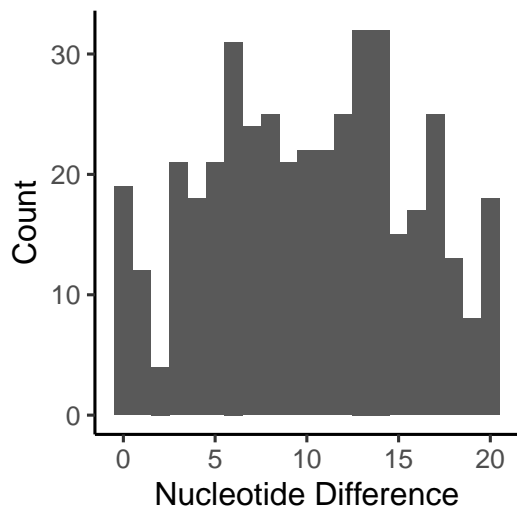


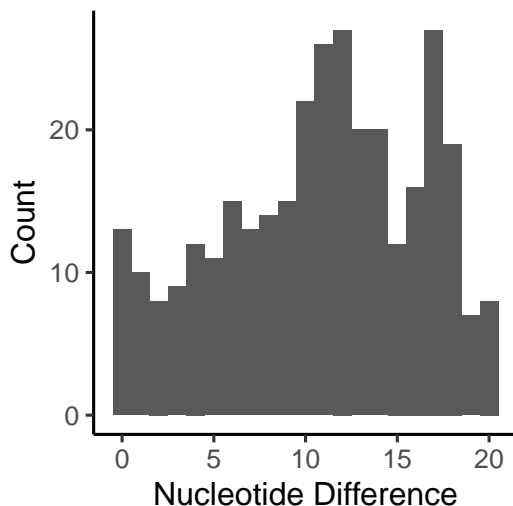
### IGHV1-2\*02

593 sequences assigned  
19 (3.2%) exact matches, in which:  
18 unique CDR3  
4 unique J



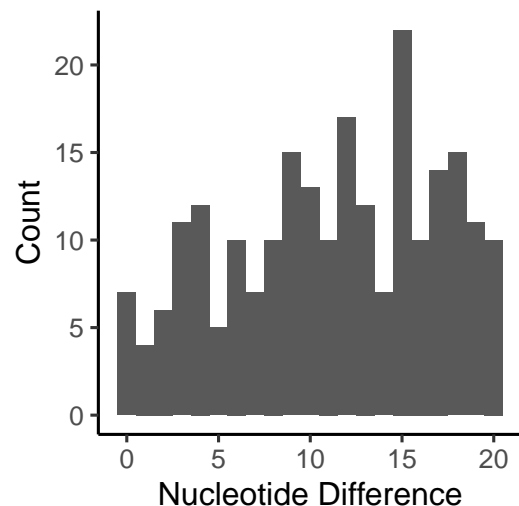
### IGHV1-3\*01\_05

385 sequences assigned  
13 (3.4%) exact matches, in which:  
13 unique CDR3  
4 unique J



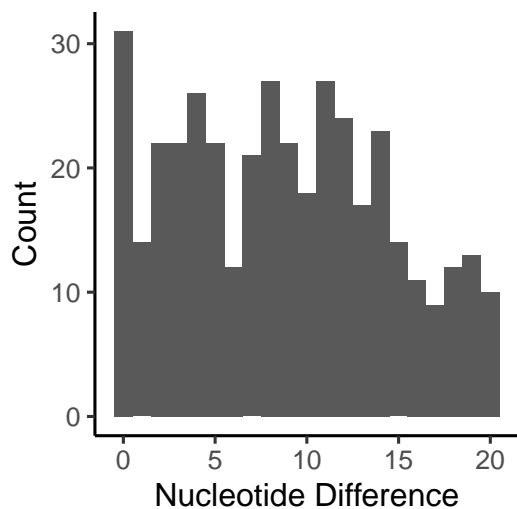
### IGHV1-18\*04

313 sequences assigned  
7 (2.2%) exact matches, in which:  
7 unique CDR3  
4 unique J



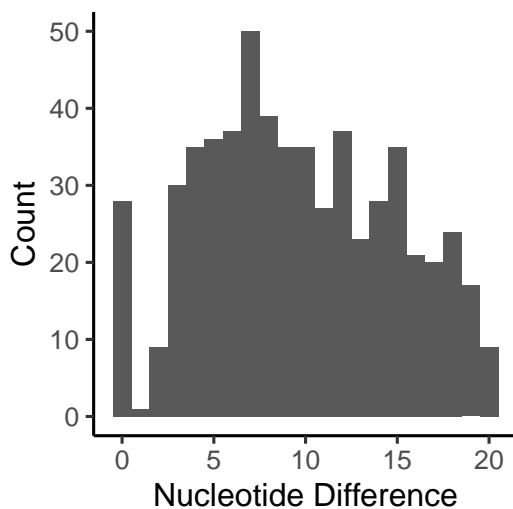
### IGHV1-2\*06

459 sequences assigned  
31 (6.8%) exact matches, in which:  
29 unique CDR3  
4 unique J



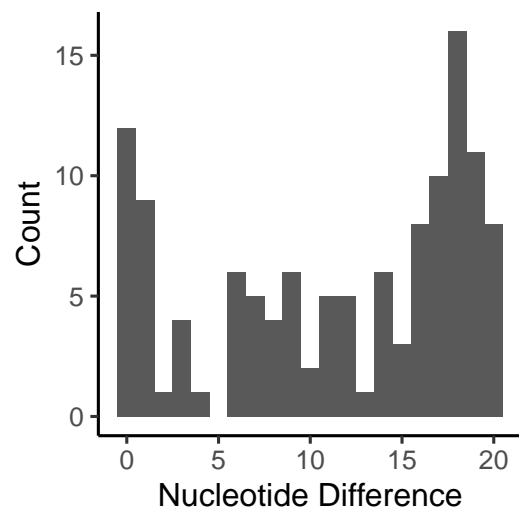
### IGHV1-8\*01

686 sequences assigned  
28 (4.1%) exact matches, in which:  
28 unique CDR3  
5 unique J



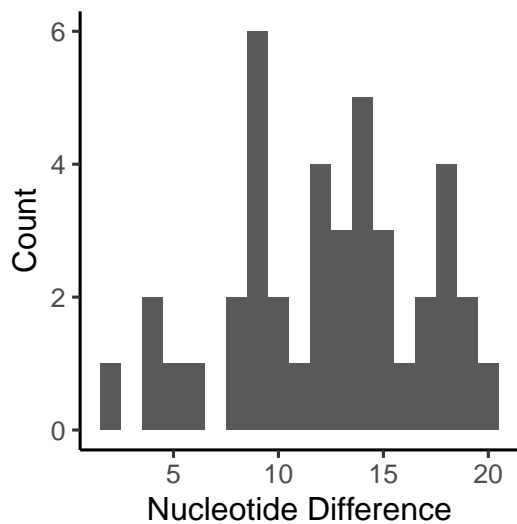
### IGHV1-24\*01

172 sequences assigned  
12 (7%) exact matches, in which:  
10 unique CDR3  
5 unique J



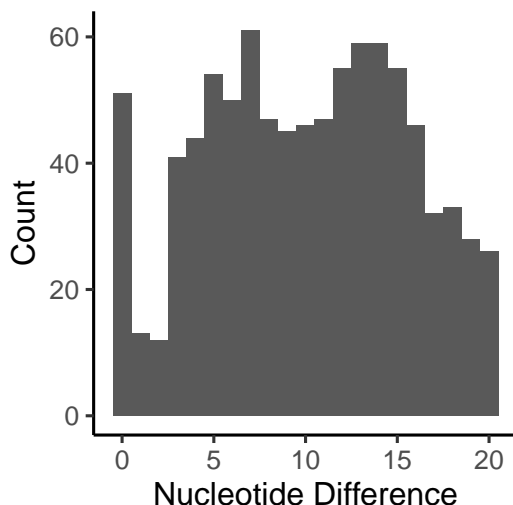
### IGHV1-3\*04

67 sequences assigned  
No exact matches.



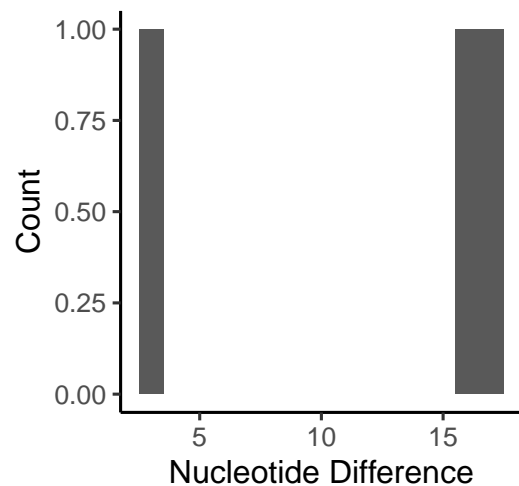
### IGHV1-18\*01

1181 sequences assigned  
51 (4.3%) exact matches, in which:  
49 unique CDR3  
6 unique J



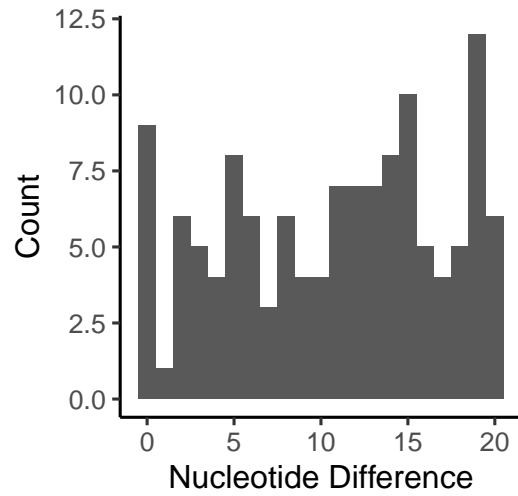
### IGHV1-45\*02

4 sequences assigned  
No exact matches.



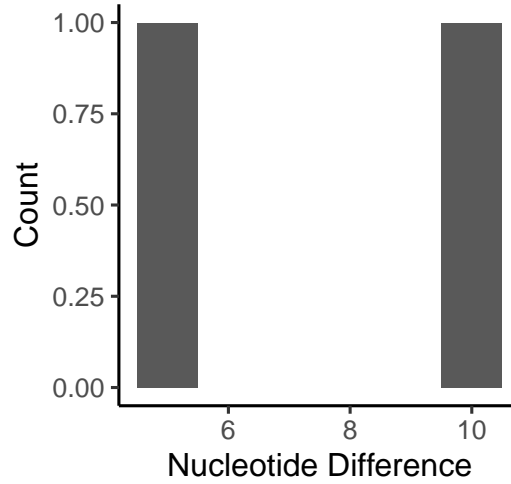
### IGHV1-46\*01

171 sequences assigned  
9 (5.3%) exact matches, in which:  
9 unique CDR3  
5 unique J



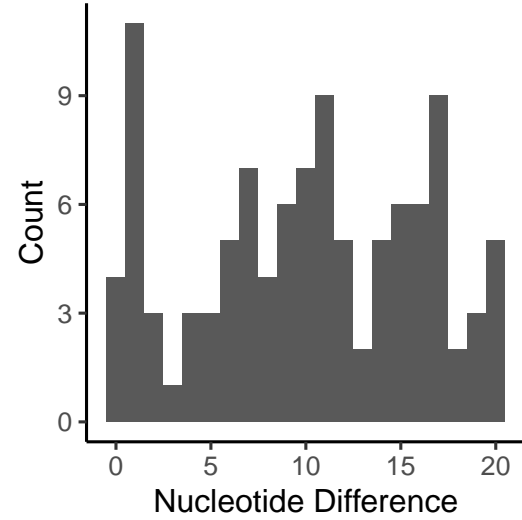
### IGHV1-58\*01\_03

4 sequences assigned  
No exact matches.



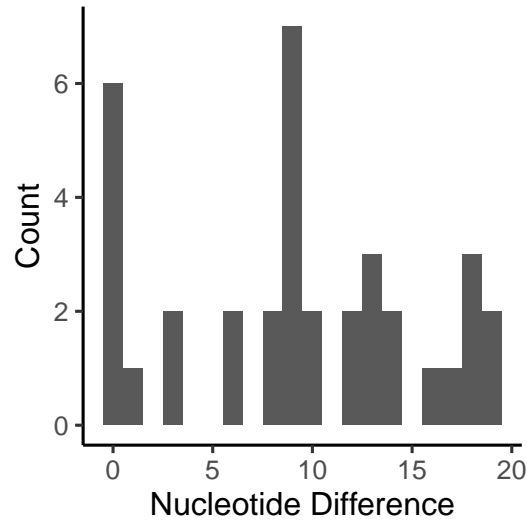
### IGHV1-69\*04\_09

150 sequences assigned  
4 (2.7%) exact matches, in which:  
4 unique CDR3  
1 unique J



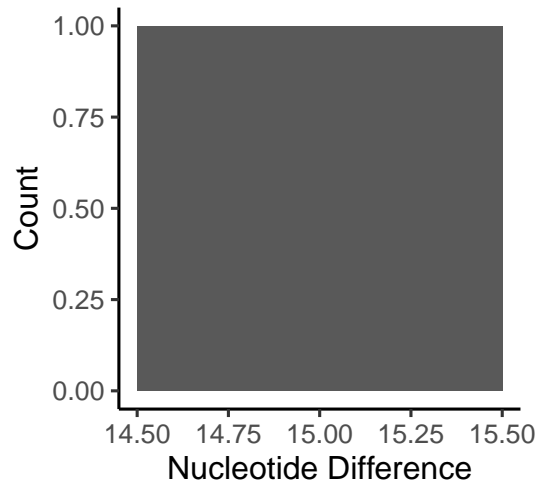
### IGHV1-46\*03

42 sequences assigned  
6 (14.3%) exact matches, in which:  
6 unique CDR3  
4 unique J



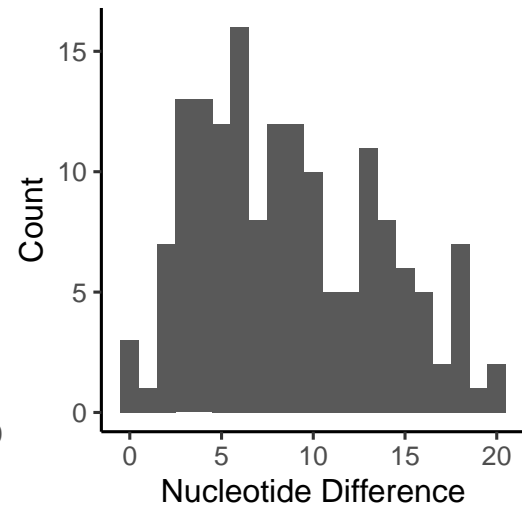
### IGHV1-69-2\*01

4 sequences assigned  
No exact matches.



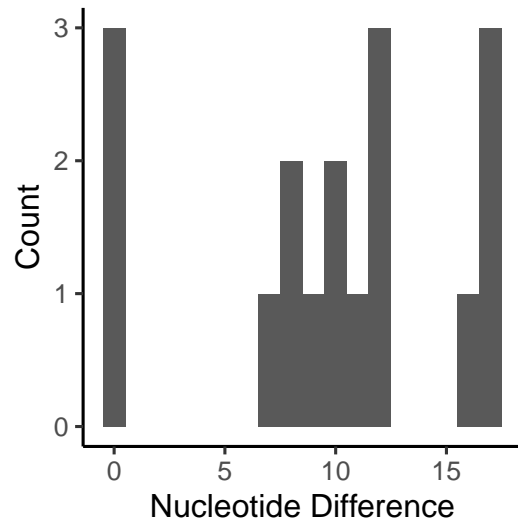
### IGHV2-5\*01

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



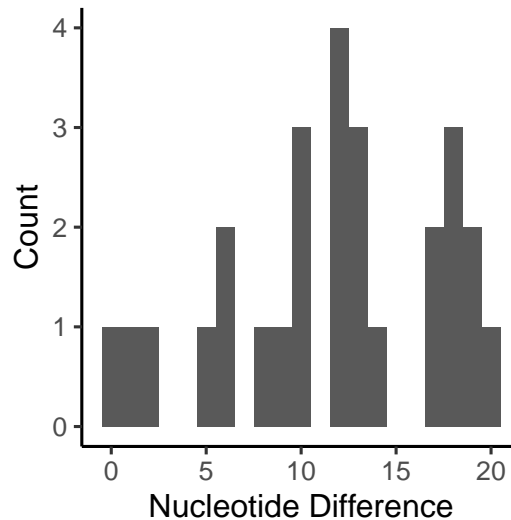
### IGHV1-58\*02

18 sequences assigned  
3 (16.7%) exact matches, in which:  
3 unique CDR3  
2 unique J



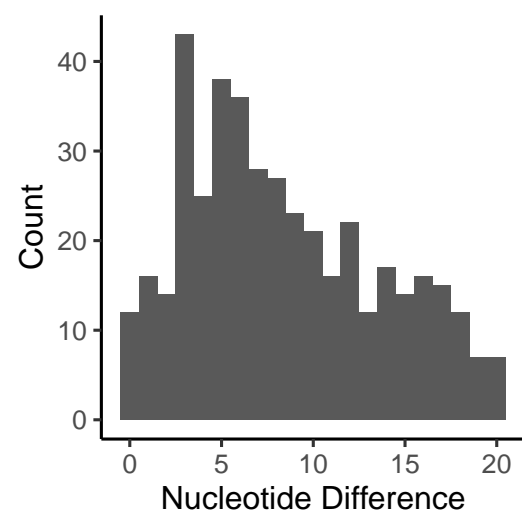
### IGHV1-69\*02

42 sequences assigned  
1 (2.4%) exact matches, in which:  
1 unique CDR3  
1 unique J



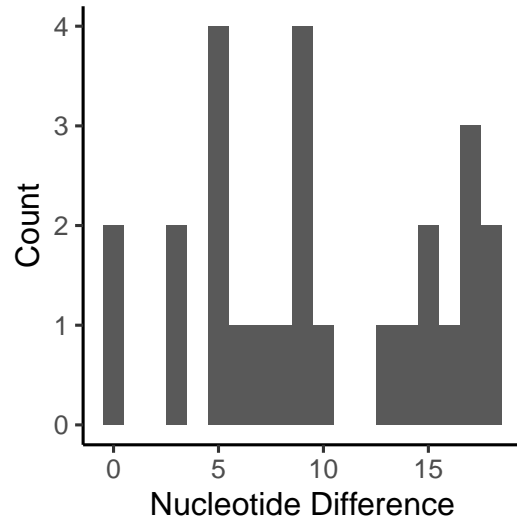
### IGHV2-5\*02

462 sequences assigned  
12 (2.6%) exact matches, in which:  
12 unique CDR3  
2 unique J



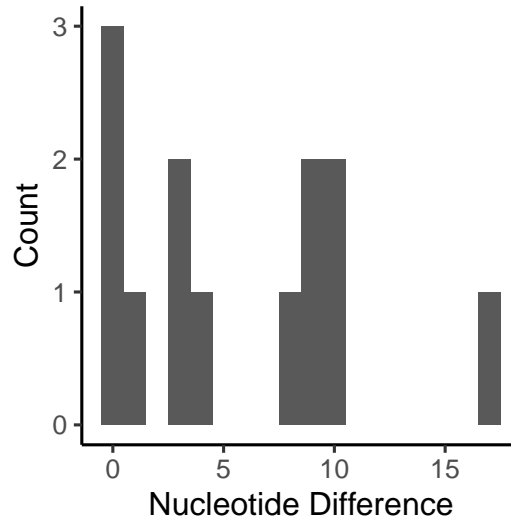
### IGHV2-26\*01

26 sequences assigned  
2 (7.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



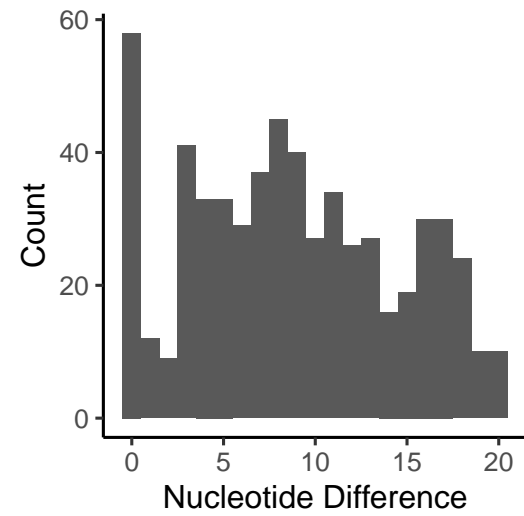
### IGHV2-70\*11\_15

13 sequences assigned  
3 (23.1%) exact matches, in which:  
3 unique CDR3  
1 unique J



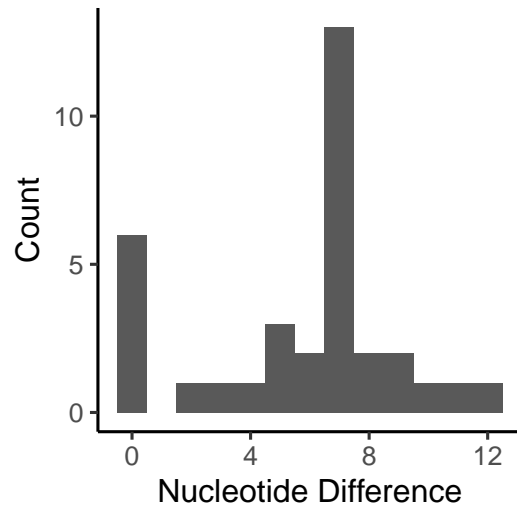
### IGHV3-9\*01

673 sequences assigned  
58 (8.6%) exact matches, in which:  
44 unique CDR3  
7 unique J



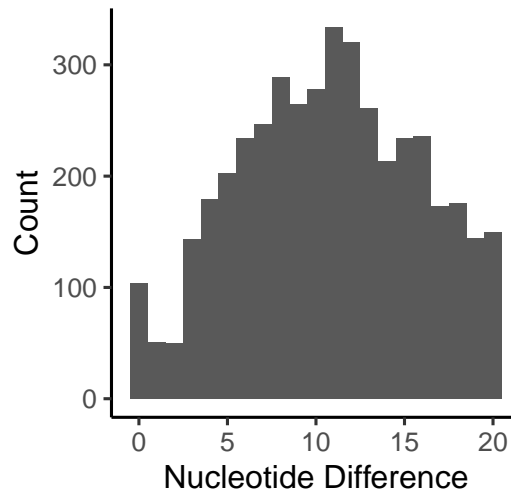
### IGHV2-70\*01

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



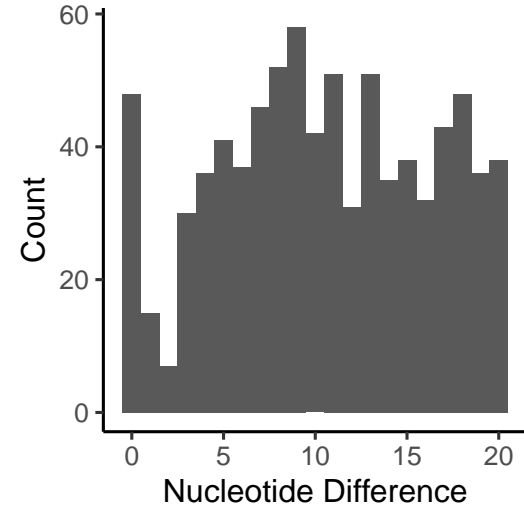
### IGHV3-7\*01

4922 sequences assigned  
104 (2.1%) exact matches, in which:  
56 unique CDR3  
7 unique J



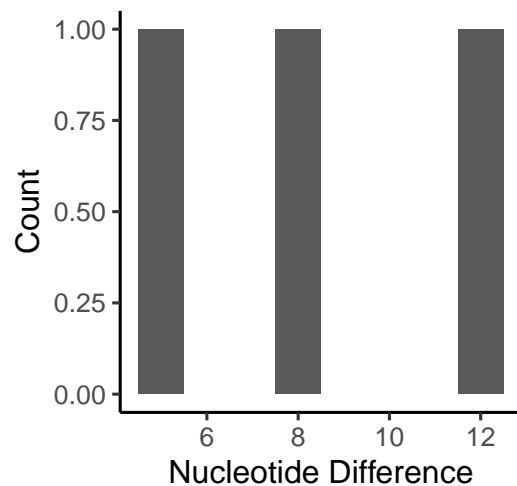
### IGHV3-11\*01

1062 sequences assigned  
48 (4.5%) exact matches, in which:  
26 unique CDR3  
5 unique J



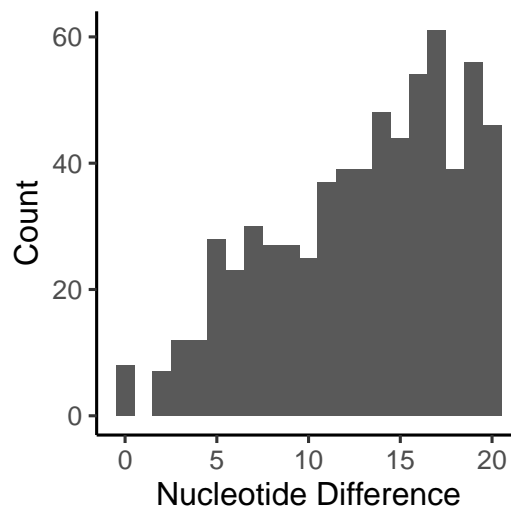
### IGHV2-70\*13

4 sequences assigned  
No exact matches.



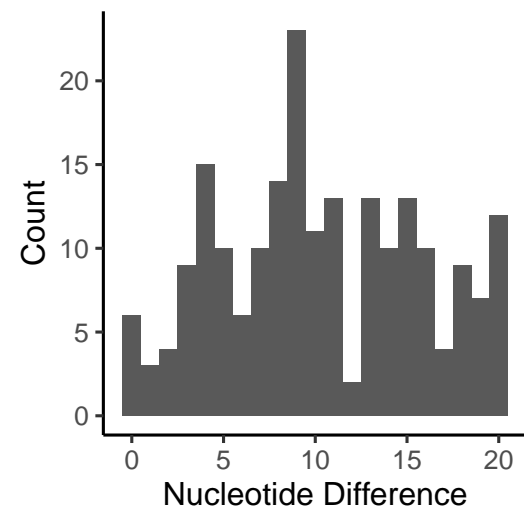
### IGHV3-7\*03

1029 sequences assigned  
8 (0.8%) exact matches, in which:  
4 unique CDR3  
4 unique J



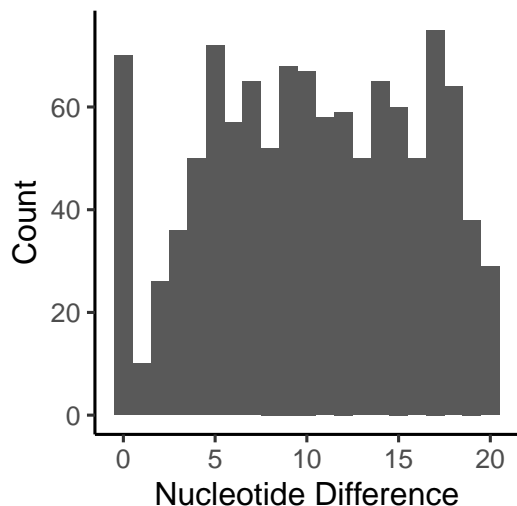
### IGHV3-13\*01

234 sequences assigned  
6 (2.6%) exact matches, in which:  
5 unique CDR3  
3 unique J



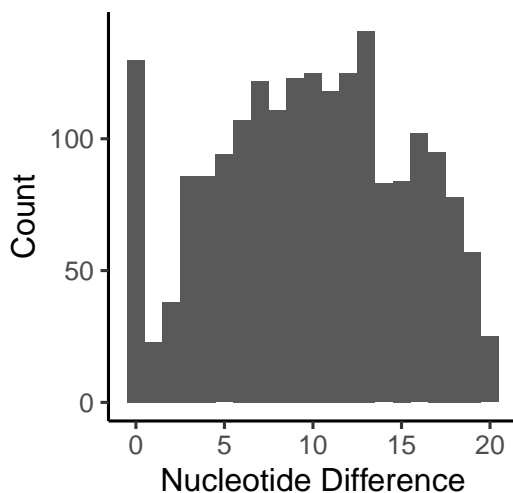
### IGHV3-15\*01\_02

1364 sequences assigned  
70 (5.1%) exact matches, in which:  
50 unique CDR3  
5 unique J



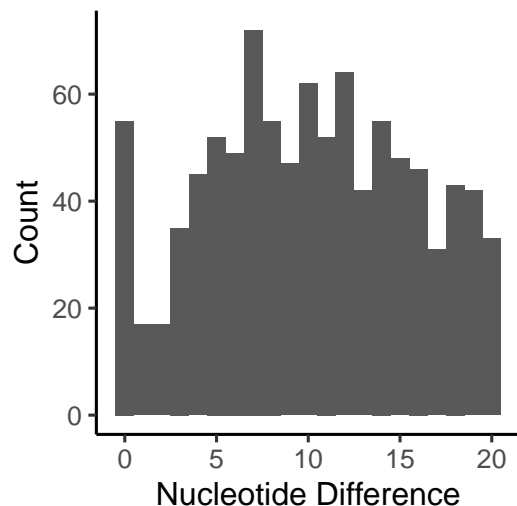
### IGHV3-21\*01\_02

2236 sequences assigned  
130 (5.8%) exact matches, in which:  
75 unique CDR3  
7 unique J



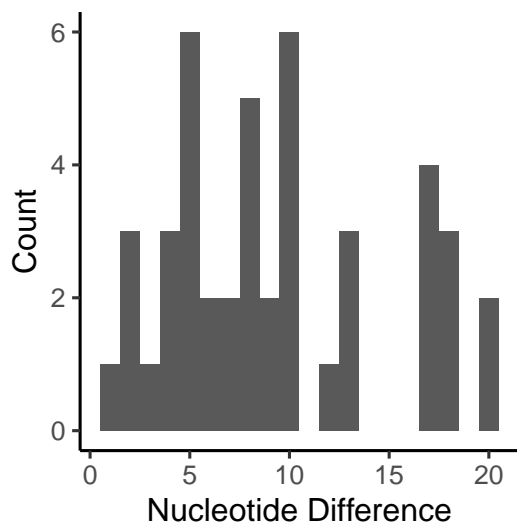
### IGHV3-33\*01

1219 sequences assigned  
55 (4.5%) exact matches, in which:  
42 unique CDR3  
6 unique J



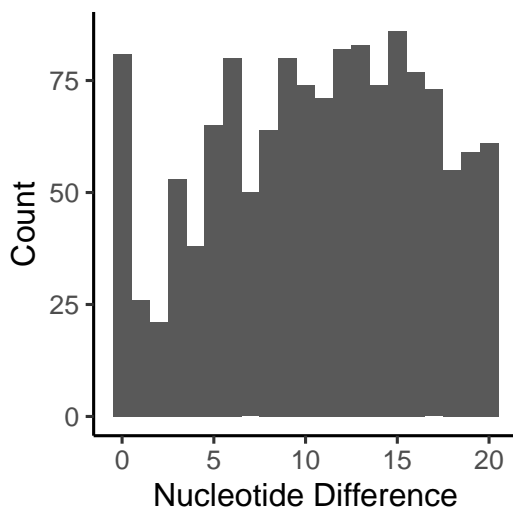
### IGHV3-20\*01\_02

45 sequences assigned  
No exact matches.



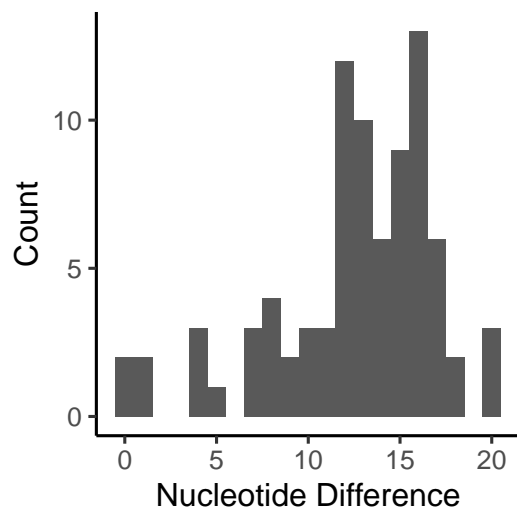
### IGHV3-30-3\*01

1632 sequences assigned  
81 (5%) exact matches, in which:  
59 unique CDR3  
6 unique J



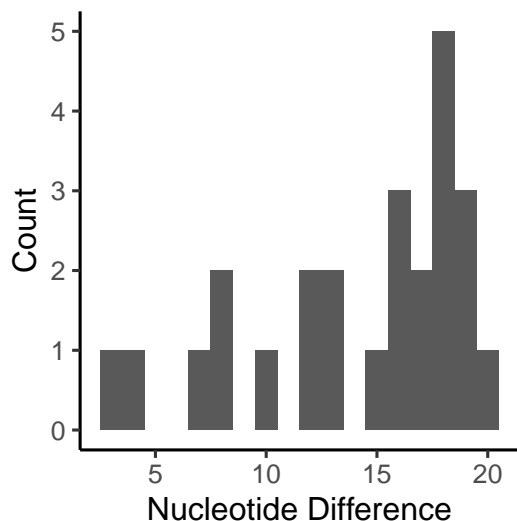
### IGHV3-43\*01

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



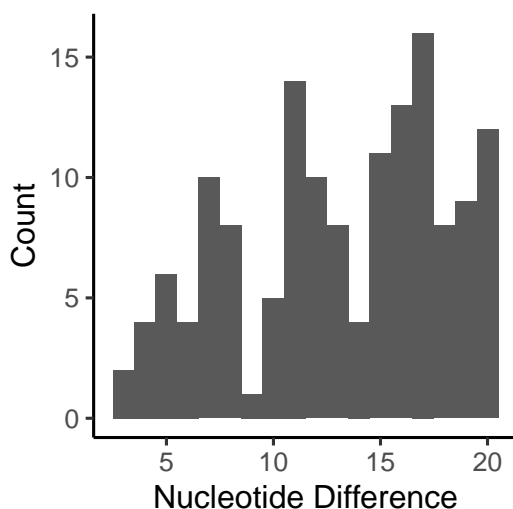
### IGHV3-20\*03\_04

33 sequences assigned  
No exact matches.



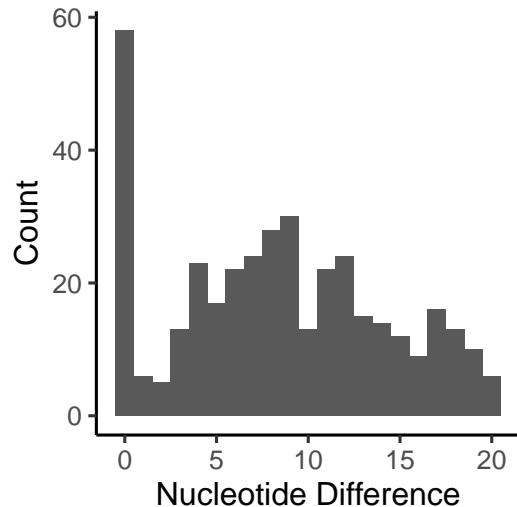
### IGHV3-30\*04

216 sequences assigned  
No exact matches.



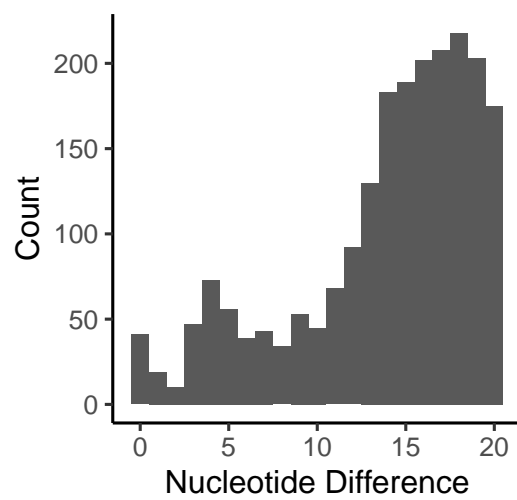
### IGHV3-43\*02

425 sequences assigned  
58 (13.6%) exact matches, in which:  
33 unique CDR3  
4 unique J



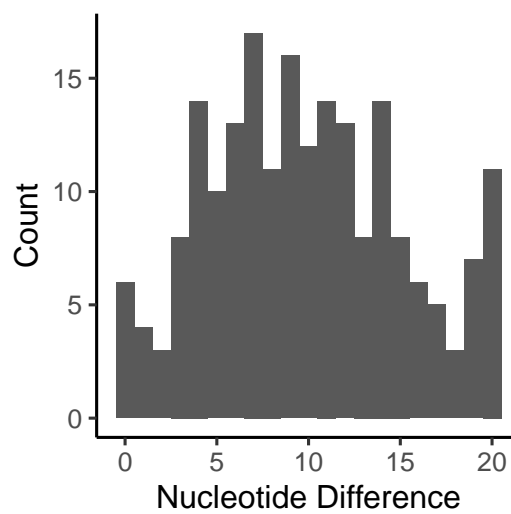
### IGHV3-48\*01

2974 sequences assigned  
41 (1.4%) exact matches, in which:  
19 unique CDR3  
3 unique J



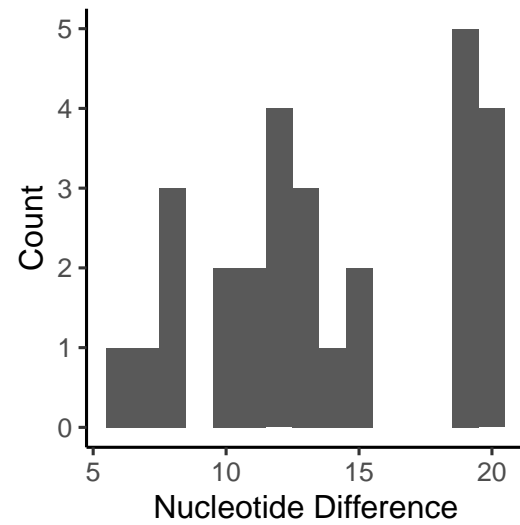
### IGHV3-49\*04

239 sequences assigned  
6 (2.5%) exact matches, in which:  
3 unique CDR3  
2 unique J



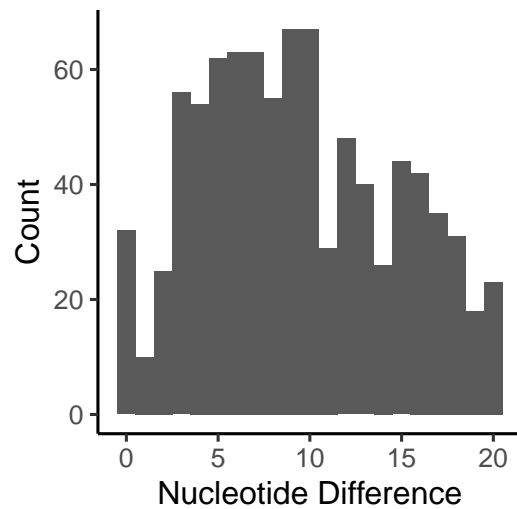
### IGHV3-53\*05

52 sequences assigned  
No exact matches.



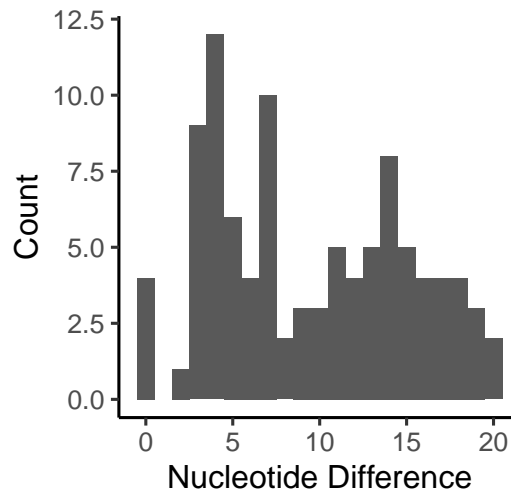
### IGHV3-48\*03

1060 sequences assigned  
32 (3%) exact matches, in which:  
22 unique CDR3  
4 unique J



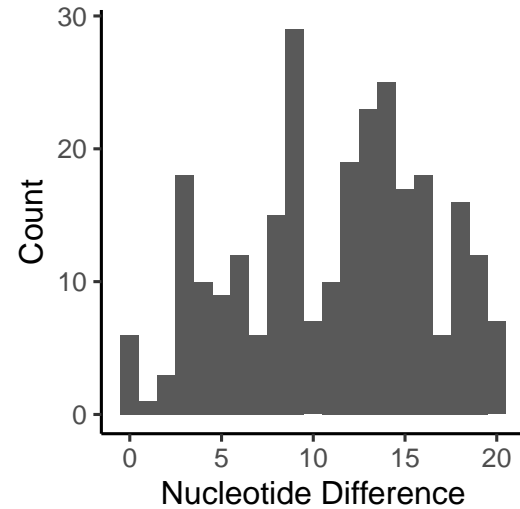
### IGHV3-49\*03\_05

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



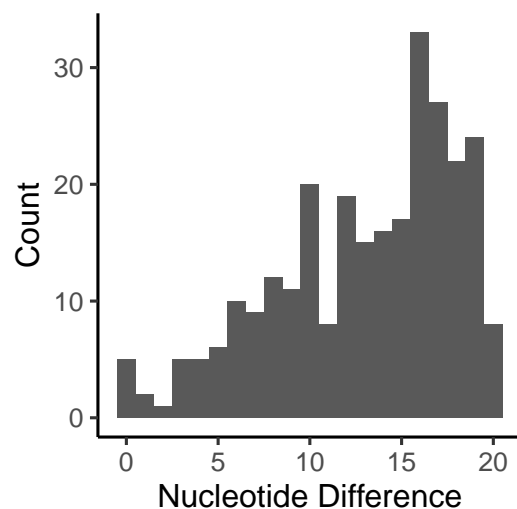
### IGHV3-53\*01\_02

317 sequences assigned  
6 (1.9%) exact matches, in which:  
2 unique CDR3  
2 unique J



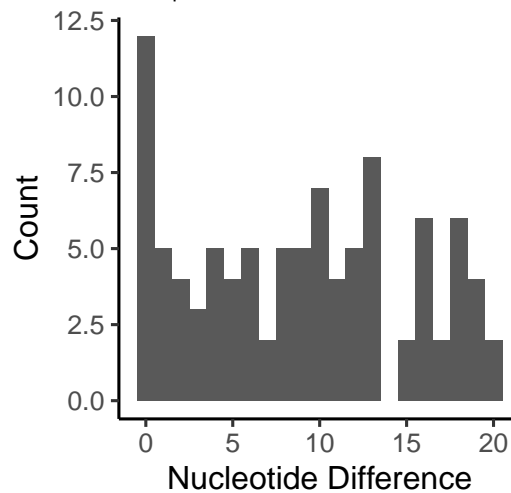
### IGHV3-48\*04

383 sequences assigned  
5 (1.3%) exact matches, in which:  
3 unique CDR3  
1 unique J



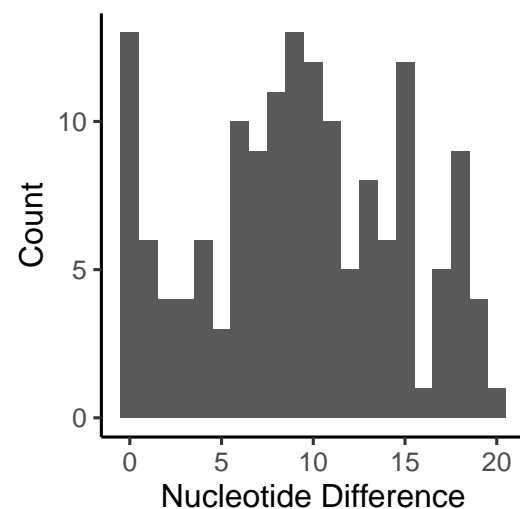
### IGHV3-53\*04

134 sequences assigned  
12 (9%) exact matches, in which:  
6 unique CDR3  
3 unique J



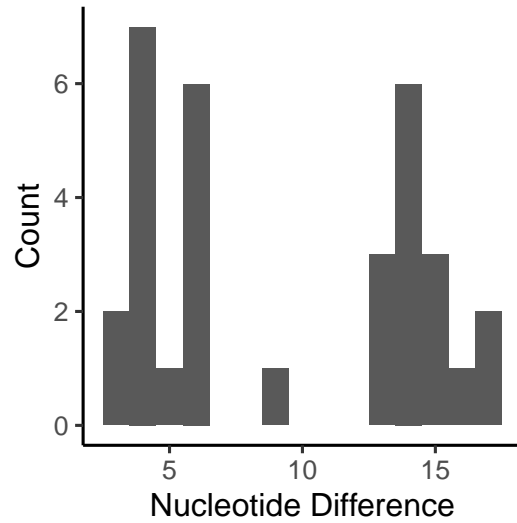
### IGHV3-64\*01

169 sequences assigned  
13 (7.7%) exact matches, in which:  
7 unique CDR3  
3 unique J



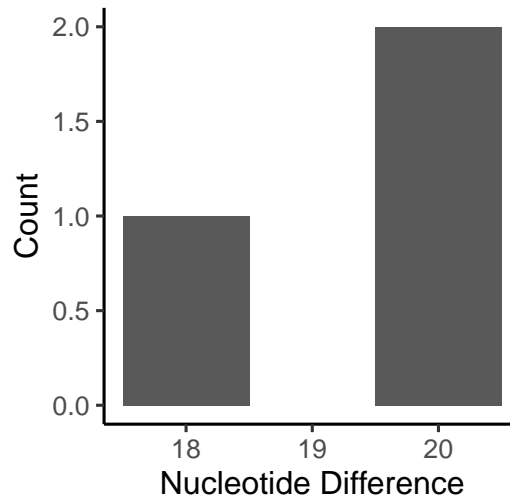
### IGHV3-64\*02\_07

43 sequences assigned  
No exact matches.



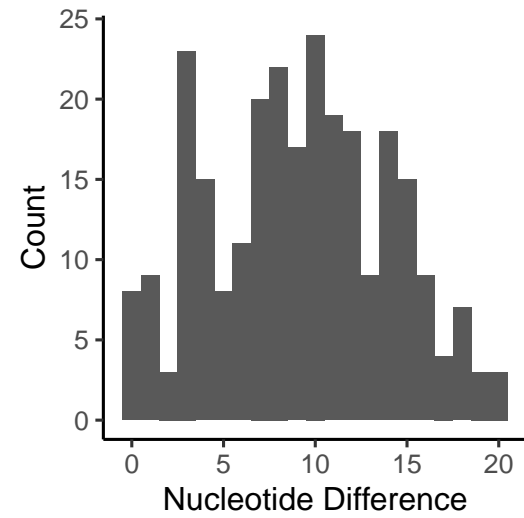
### IGHV3-69-1\*01

4 sequences assigned  
No exact matches.



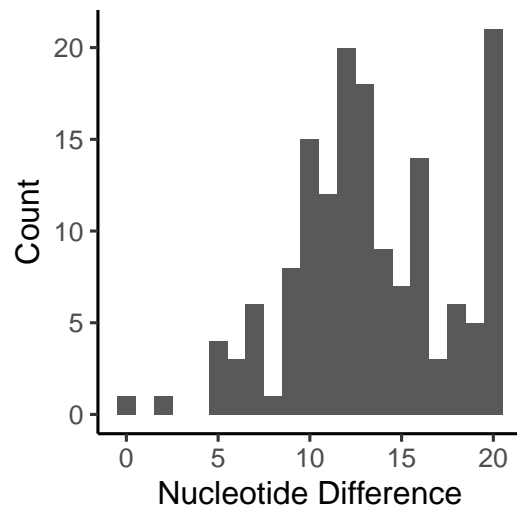
### IGHV3-73\*01\_02

298 sequences assigned  
8 (2.7%) exact matches, in which:  
5 unique CDR3  
2 unique J



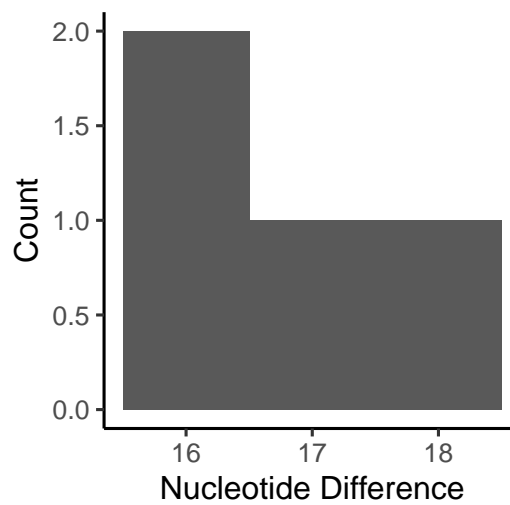
### IGHV3-66\*01

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



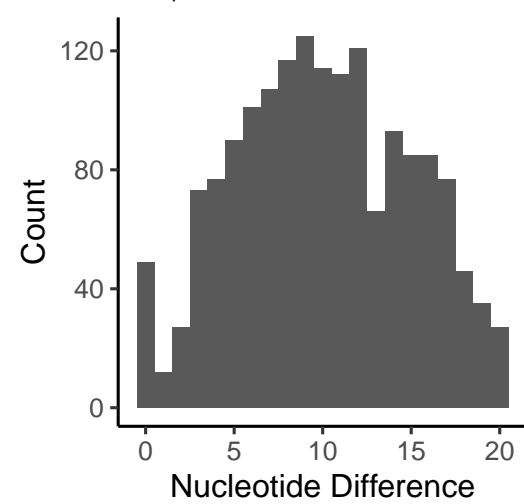
### IGHV3-69-1\*02

8 sequences assigned  
No exact matches.



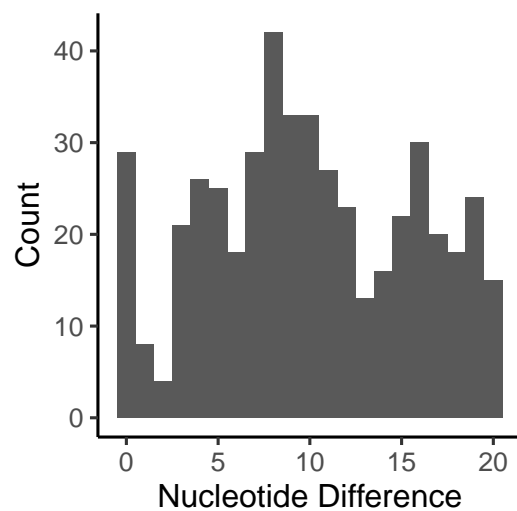
### IGHV3-74\*01\_02

1790 sequences assigned  
49 (2.7%) exact matches, in which:  
28 unique CDR3  
6 unique J



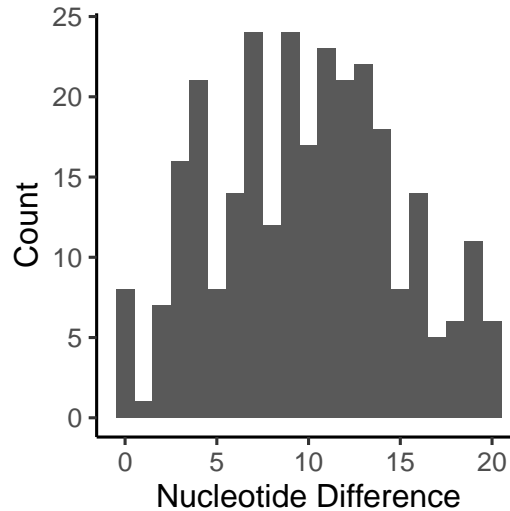
### IGHV3-66\*02

593 sequences assigned  
29 (4.9%) exact matches, in which:  
19 unique CDR3  
4 unique J



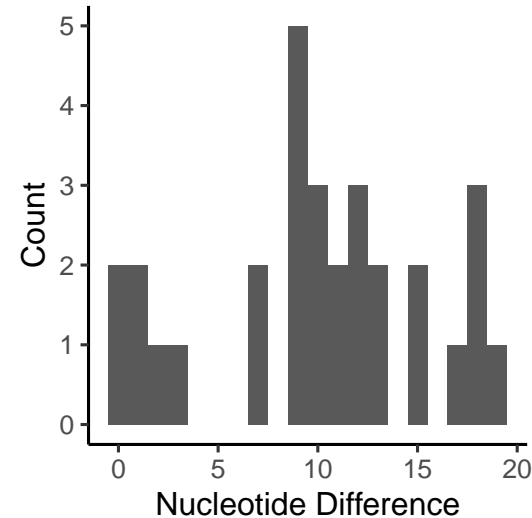
### IGHV3-72\*01

312 sequences assigned  
8 (2.6%) exact matches, in which:  
5 unique CDR3  
2 unique J



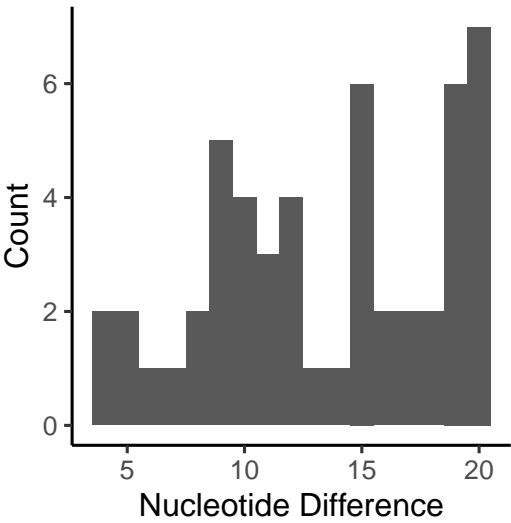
### IGHV3-43D\*03

34 sequences assigned  
2 (5.9%) exact matches, in which:  
2 unique CDR3  
1 unique J



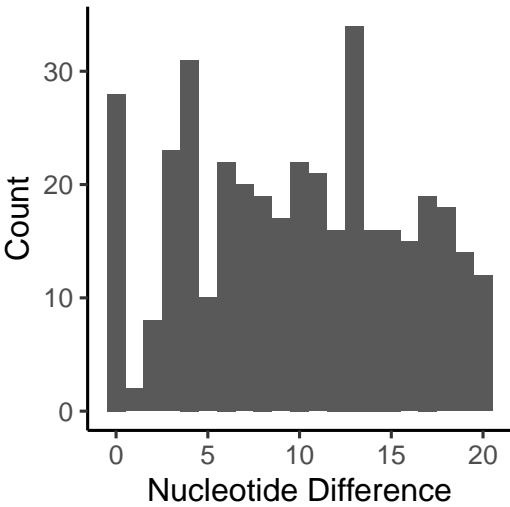
IGHV3-64D\*06

158 sequences assigned  
No exact matches.



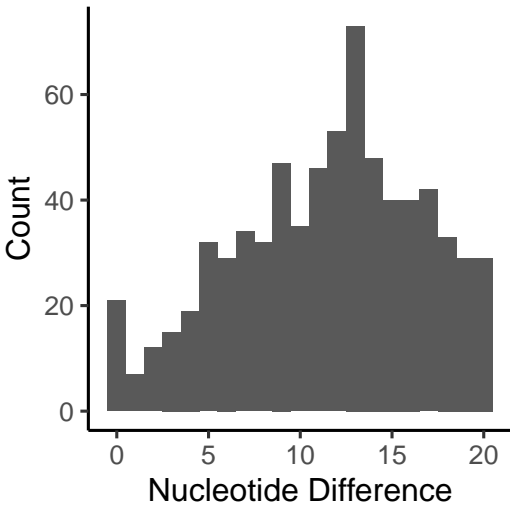
IGHV4-4\*07

454 sequences assigned  
28 (6.2%) exact matches, in which:  
16 unique CDR3  
3 unique J



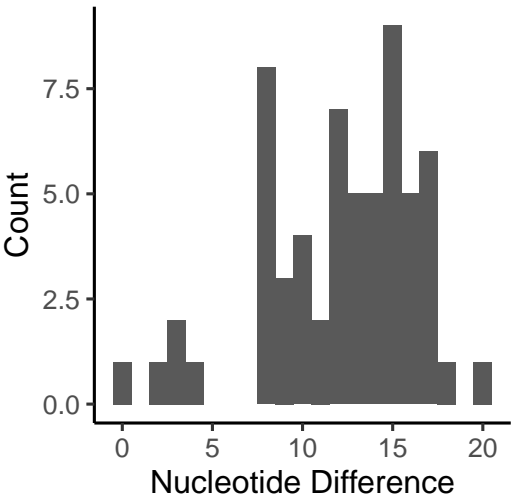
IGHV4-30-4\*01

892 sequences assigned  
21 (2.4%) exact matches, in which:  
15 unique CDR3  
3 unique J



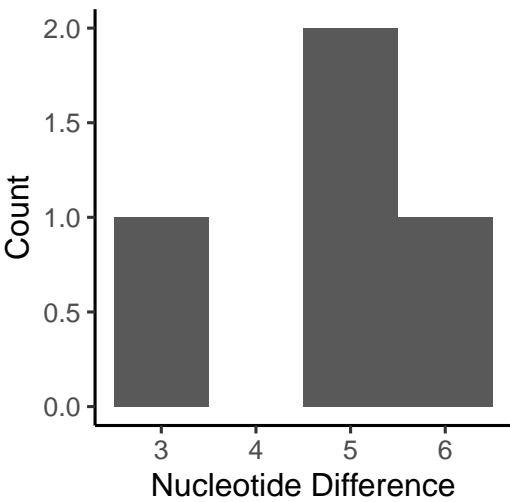
IGHV3-64D\*09

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



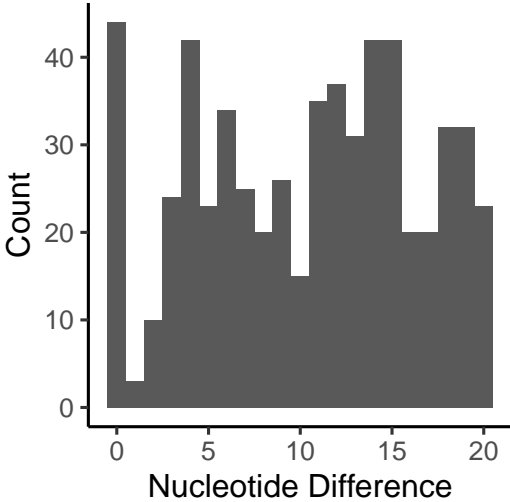
IGHV4-28\*01\_07

7 sequences assigned  
No exact matches.



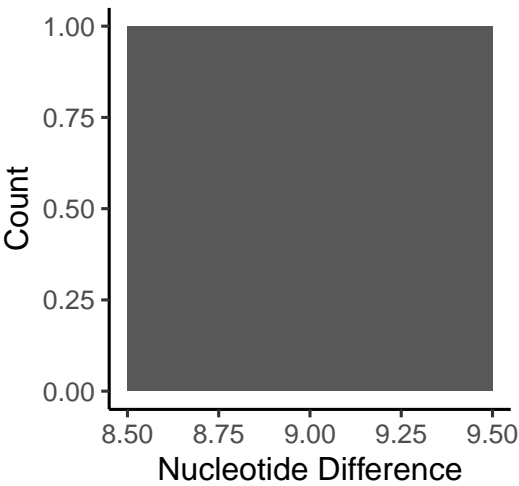
IGHV4-31\*03\_04

864 sequences assigned  
44 (5.1%) exact matches, in which:  
35 unique CDR3  
4 unique J



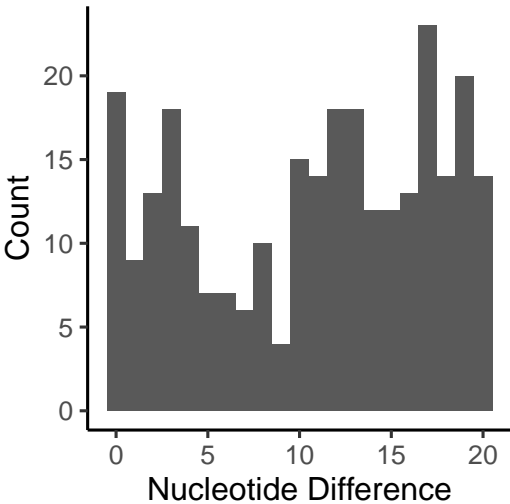
IGHV3-NL1\*01

1 sequences assigned  
No exact matches.



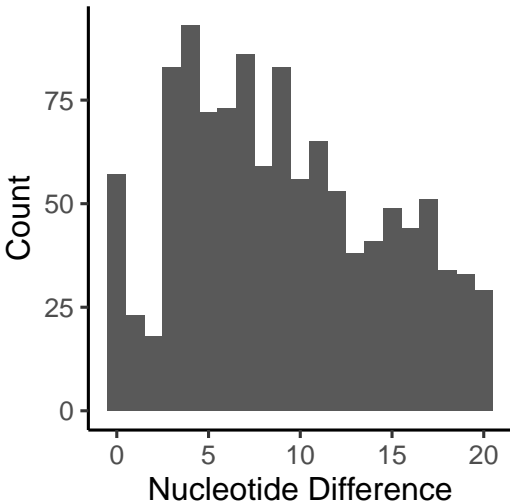
IGHV4-30-2\*01

481 sequences assigned  
19 (4%) exact matches, in which:  
12 unique CDR3  
3 unique J



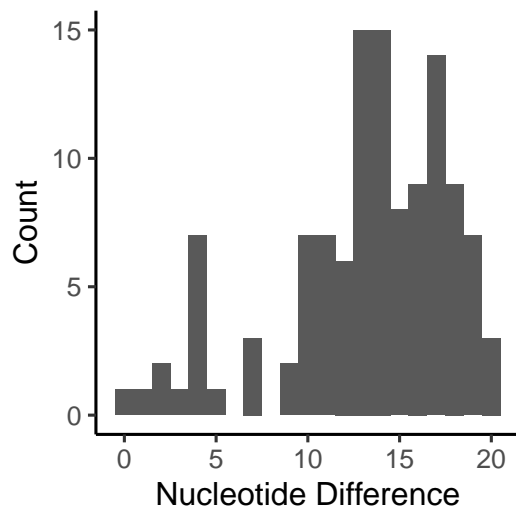
IGHV4-34\*01\_02

1414 sequences assigned  
57 (4%) exact matches, in which:  
36 unique CDR3  
6 unique J



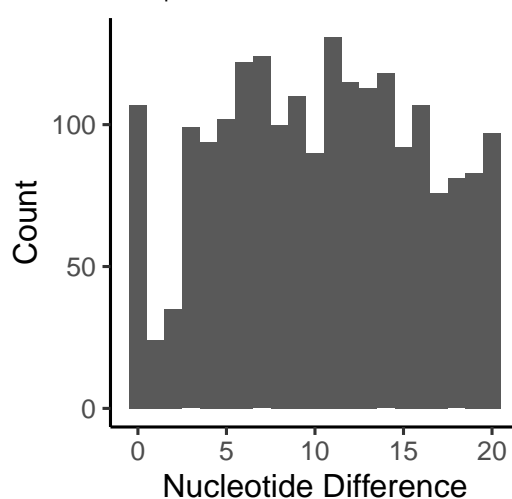
### IGHV4-38-2\*02

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



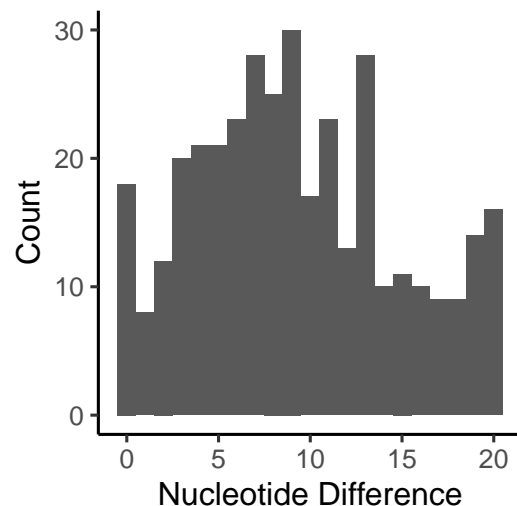
### IGHV4-59\*01\_07

3057 sequences assigned  
107 (3.5%) exact matches, in which:  
69 unique CDR3  
7 unique J



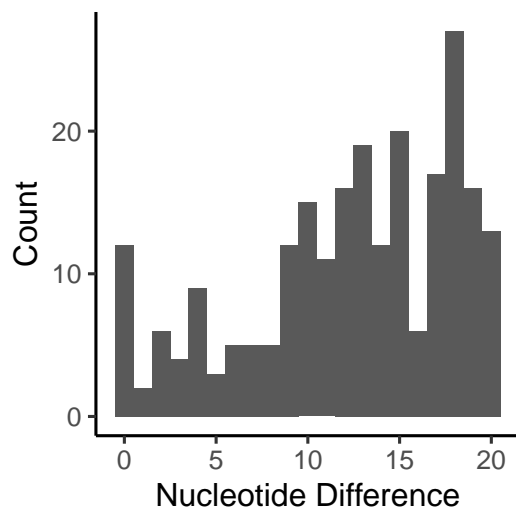
### IGHV5-51\*01\_03

401 sequences assigned  
18 (4.5%) exact matches, in which:  
18 unique CDR3  
4 unique J



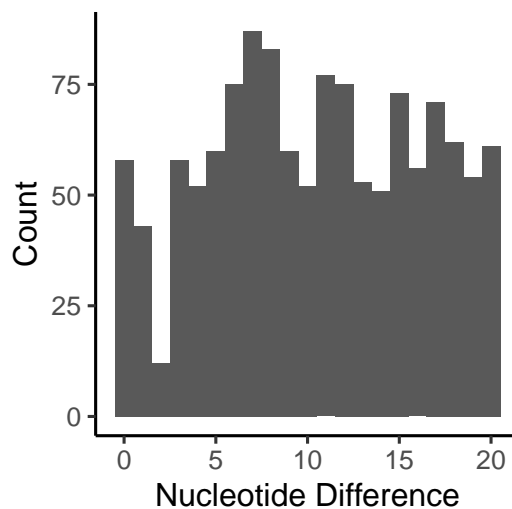
### IGHV4-39\*07

414 sequences assigned  
12 (2.9%) exact matches, in which:  
11 unique CDR3  
3 unique J



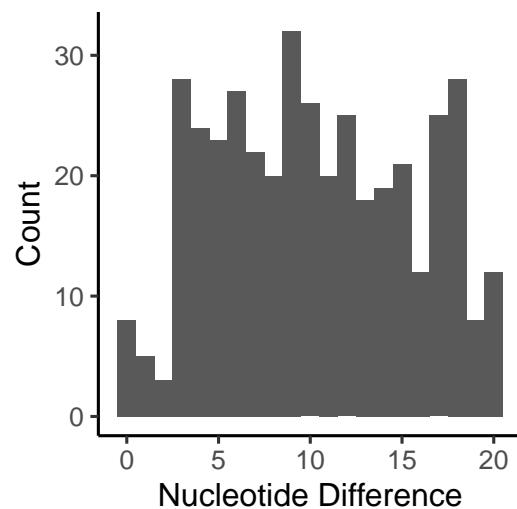
### IGHV4-61\*02

1668 sequences assigned  
58 (3.5%) exact matches, in which:  
45 unique CDR3  
5 unique J



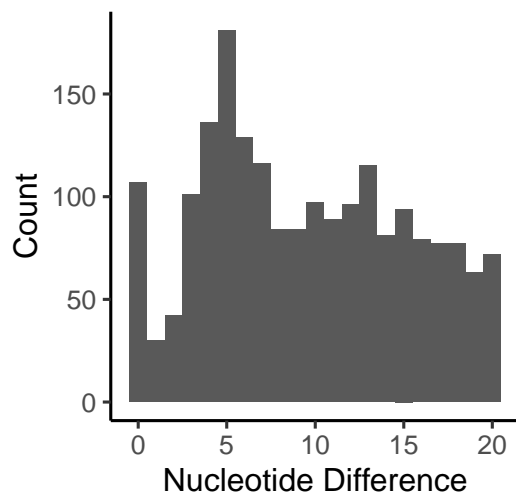
### IGHV6-1\*01\_02

465 sequences assigned  
8 (1.7%) exact matches, in which:  
8 unique CDR3  
5 unique J



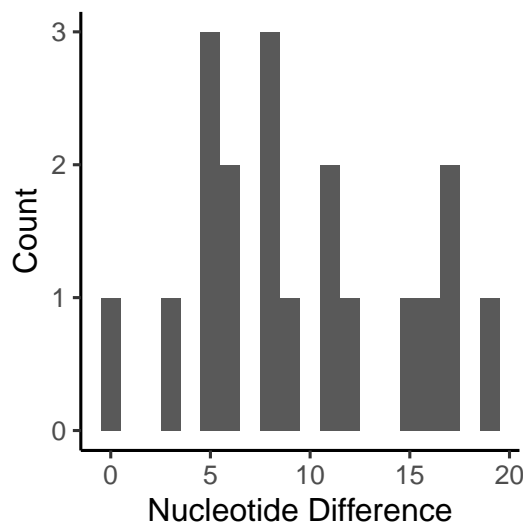
### IGHV4-39\*01\_05

2518 sequences assigned  
107 (4.2%) exact matches, in which:  
77 unique CDR3  
7 unique J



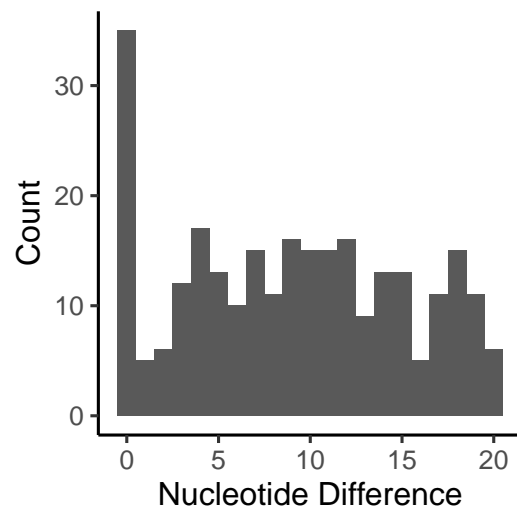
### IGHV5-10-1\*01\_03

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



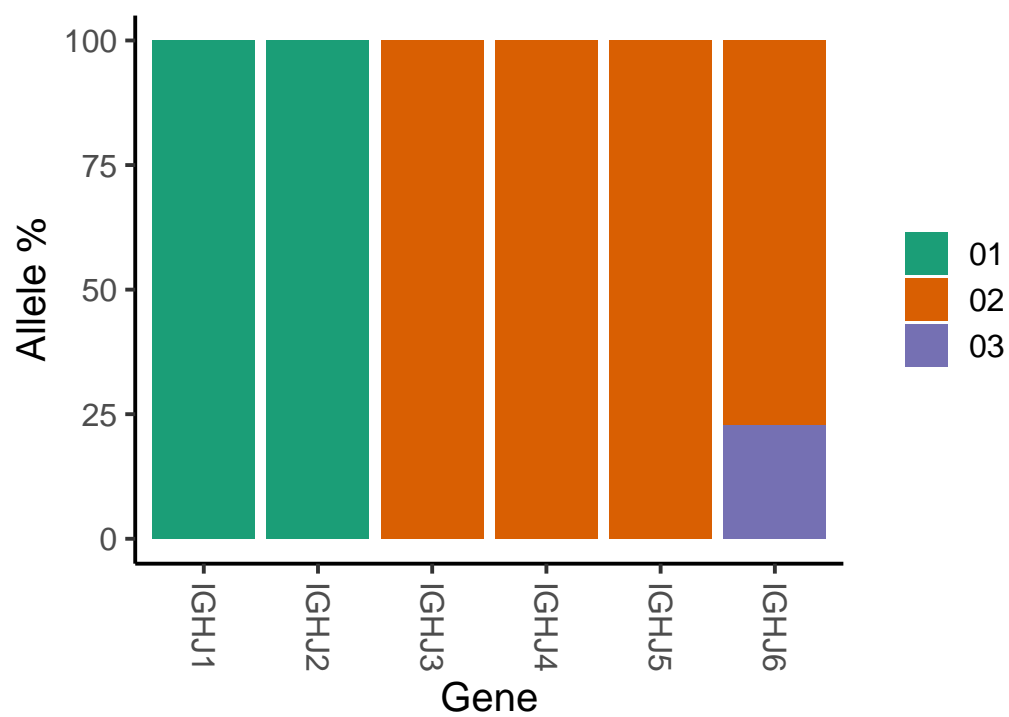
### IGHV7-4-1\*02

306 sequences assigned  
35 (11.4%) exact matches, in which:  
33 unique CDR3  
5 unique J





Allele Usage



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\_G88A IGHV5–51\*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\_G88A IGHV5–51\*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\_C258G IGHV5–51\*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\_G88A 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\_G88A 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\_G88A IGHV5–51\*07\_A128G are not listed in the genotype and will be ignored.

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Warning – no inferred sequences found.

Novel sequence(s) IGHV4–59\*02\_G88A IGHV5–51\*07\_A128G are not listed in the genotype and will be ignored.

Warning – no inferred sequences found.