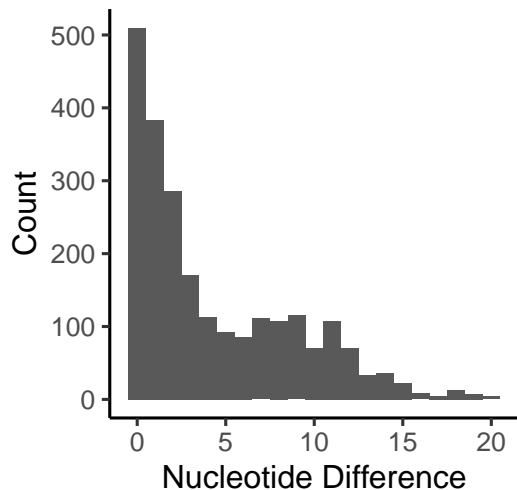


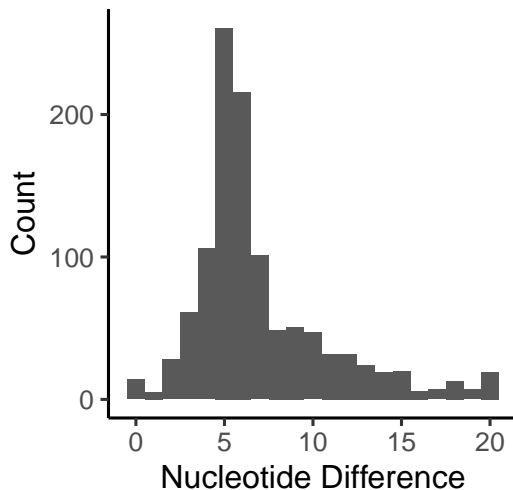
### IGHV1-2\*04

2397 sequences assigned  
510 (21.3%) exact matches, in which:  
451 unique CDR3  
6 unique J



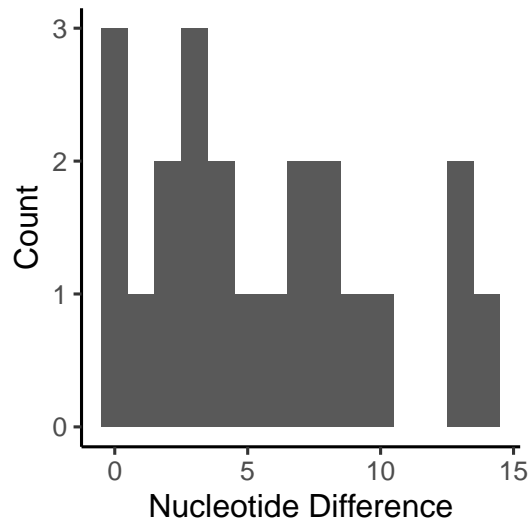
### IGHV1-8\*02

1163 sequences assigned  
14 (1.2%) exact matches, in which:  
14 unique CDR3  
5 unique J



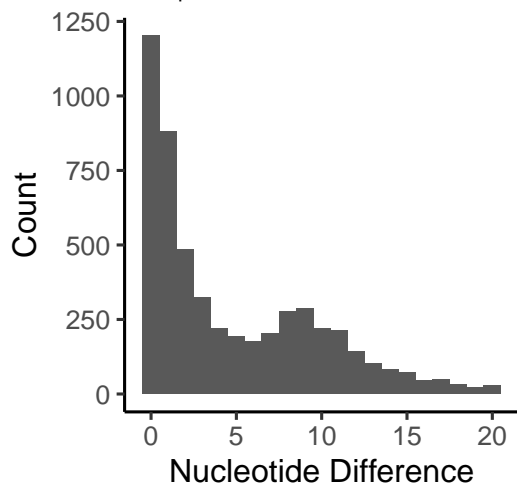
### IGHV1-45\*02

22 sequences assigned  
3 (13.6%) exact matches, in which:  
3 unique CDR3  
3 unique J



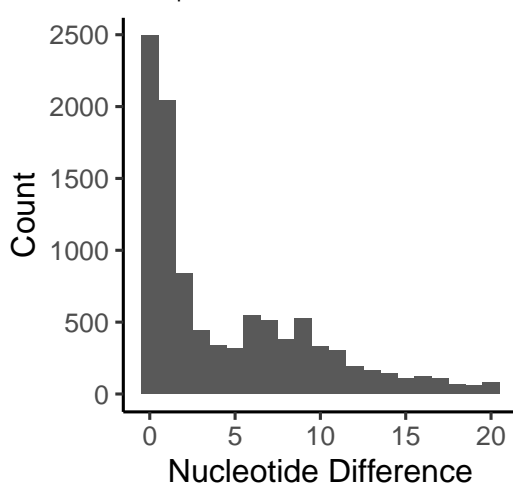
### IGHV1-3\*01\_05

6148 sequences assigned  
1202 (19.6%) exact matches, in which:  
1007 unique CDR3  
6 unique J



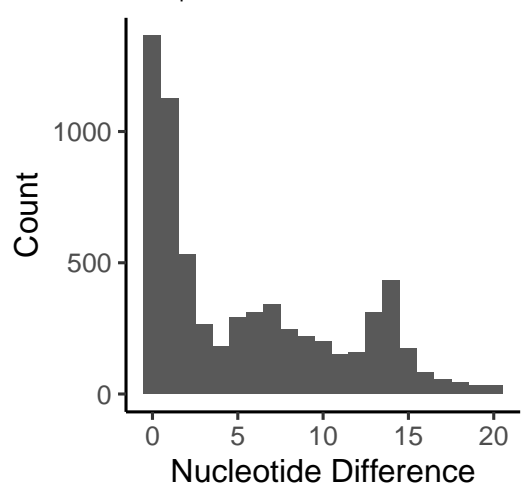
### IGHV1-18\*01

10885 sequences assigned  
2493 (22.9%) exact matches, in which:  
2189 unique CDR3  
6 unique J



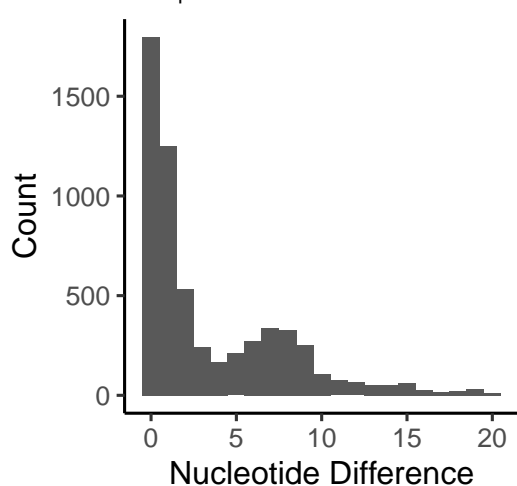
### IGHV1-46\*01

6742 sequences assigned  
1365 (20.2%) exact matches, in which:  
1228 unique CDR3  
6 unique J



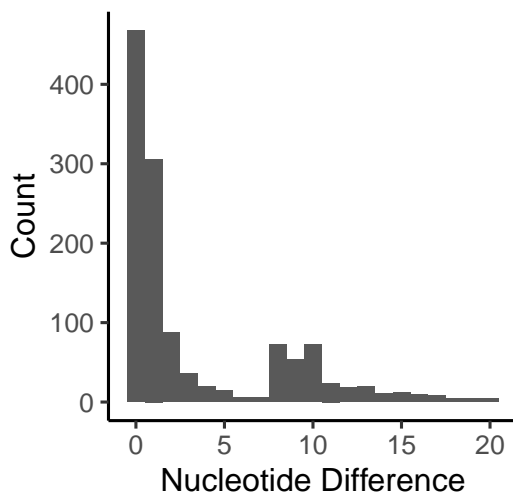
### IGHV1-8\*01

6173 sequences assigned  
1797 (29.1%) exact matches, in which:  
1588 unique CDR3  
6 unique J



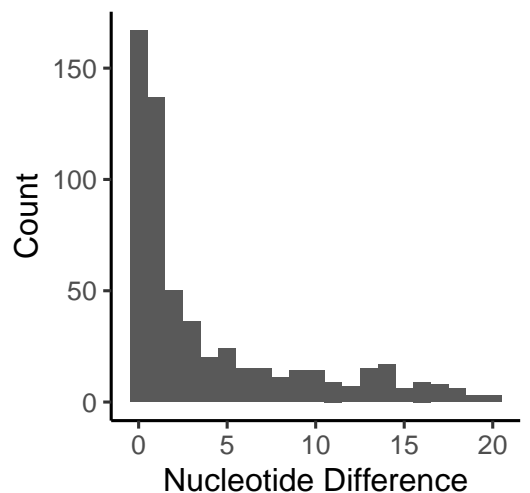
### IGHV1-24\*01

1282 sequences assigned  
468 (36.5%) exact matches, in which:  
414 unique CDR3  
6 unique J



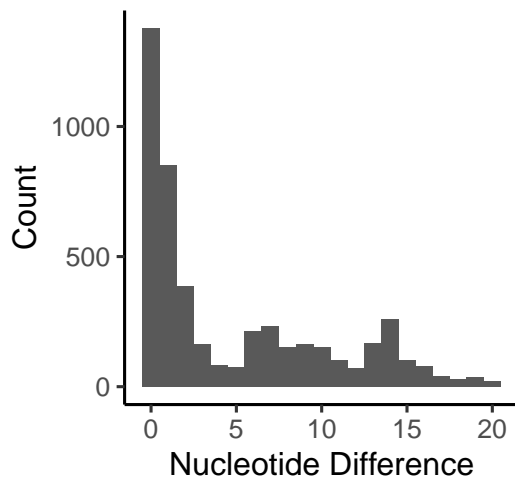
### IGHV1-58\*02

602 sequences assigned  
167 (27.7%) exact matches, in which:  
152 unique CDR3  
5 unique J



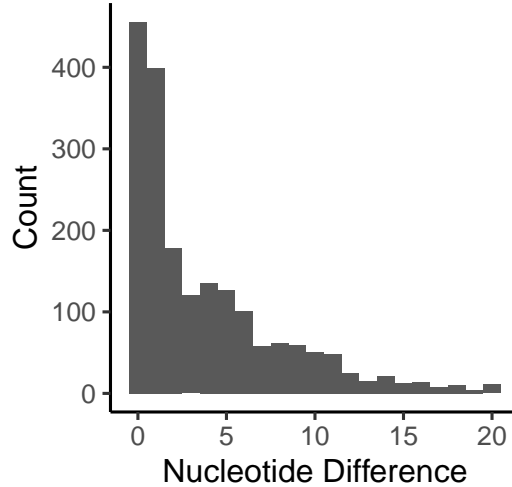
### IGHV1-69\*04\_09

4922 sequences assigned  
1377 (28%) exact matches, in which:  
1267 unique CDR3  
6 unique J



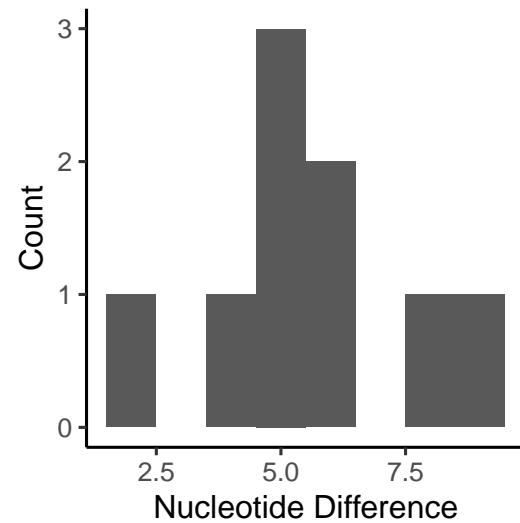
### IGHV2-5\*02

2357 sequences assigned  
456 (19.3%) exact matches, in which:  
399 unique CDR3  
6 unique J



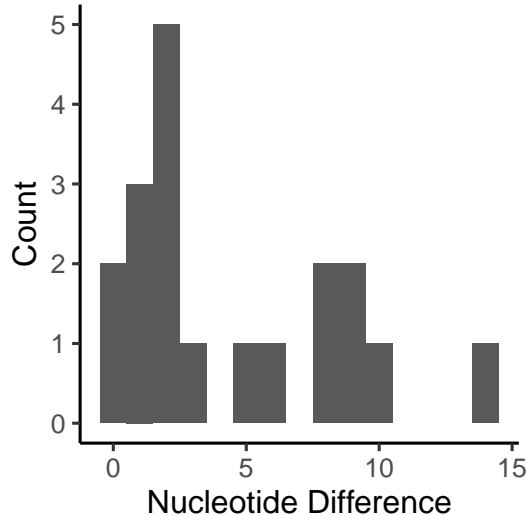
### IGHV2-70D\*04

9 sequences assigned  
No exact matches.



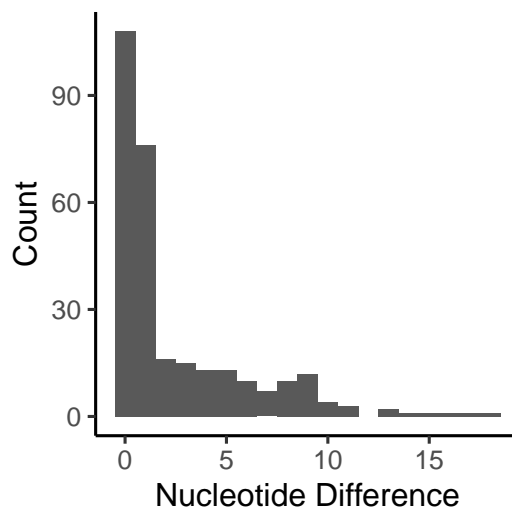
### IGHV1-69D\*01

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



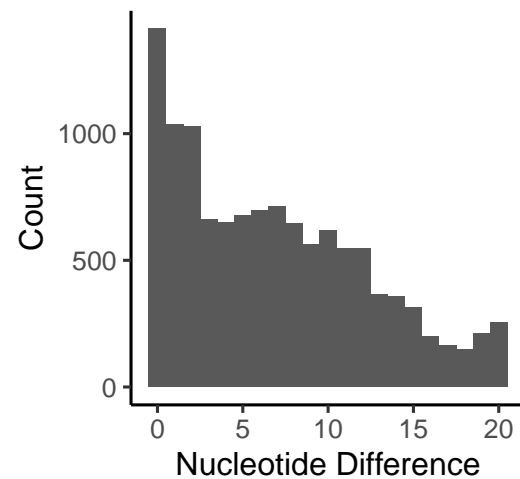
### IGHV2-26\*01

295 sequences assigned  
108 (36.6%) exact matches, in which:  
101 unique CDR3  
5 unique J



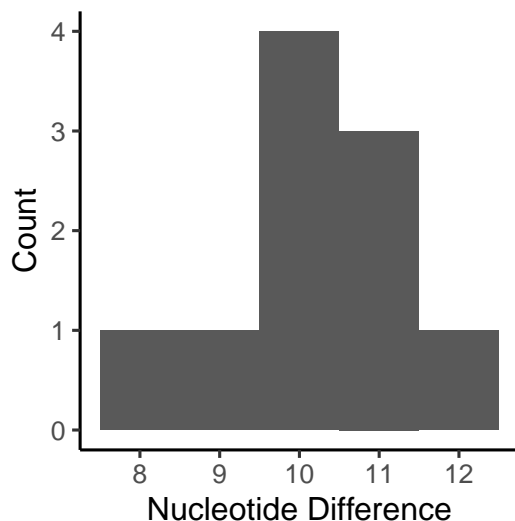
### IGHV3-7\*01

12646 sequences assigned  
1414 (11.2%) exact matches, in which:  
1044 unique CDR3  
6 unique J



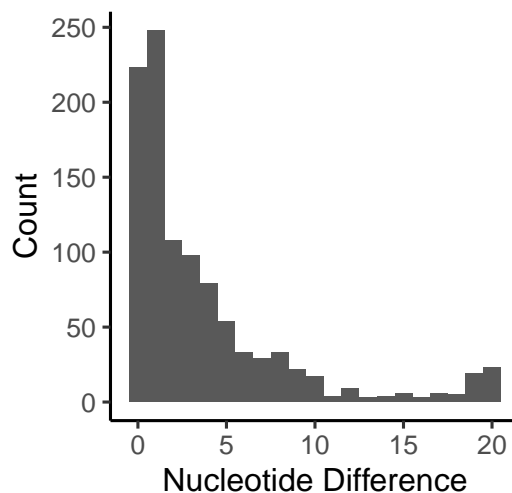
### IGHV1-NL1\*01

10 sequences assigned  
No exact matches.



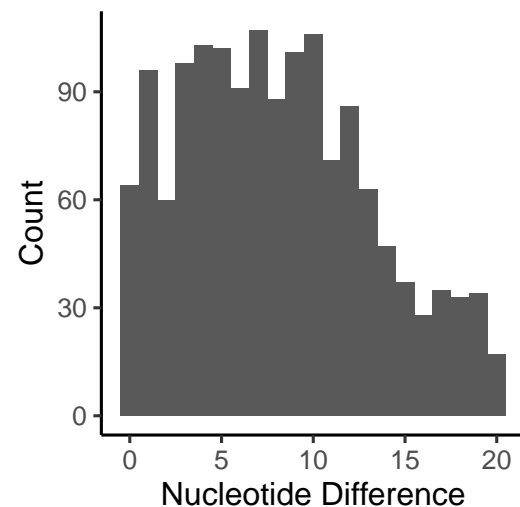
### IGHV2-70\*11\_15

1064 sequences assigned  
223 (21%) exact matches, in which:  
191 unique CDR3  
6 unique J



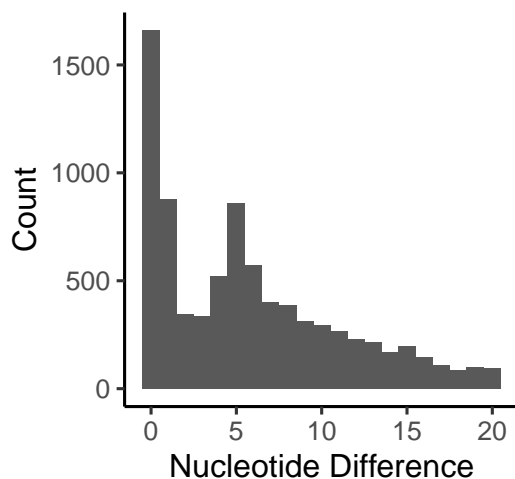
### IGHV3-7\*03

1574 sequences assigned  
64 (4.1%) exact matches, in which:  
59 unique CDR3  
6 unique J



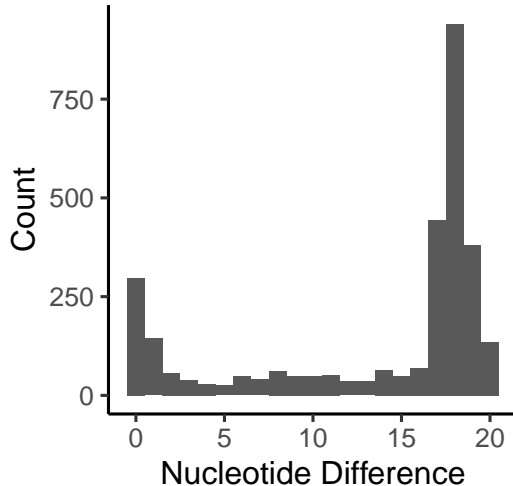
### IGHV3-9\*01

9375 sequences assigned  
1660 (17.7%) exact matches, in which:  
1109 unique CDR3  
6 unique J



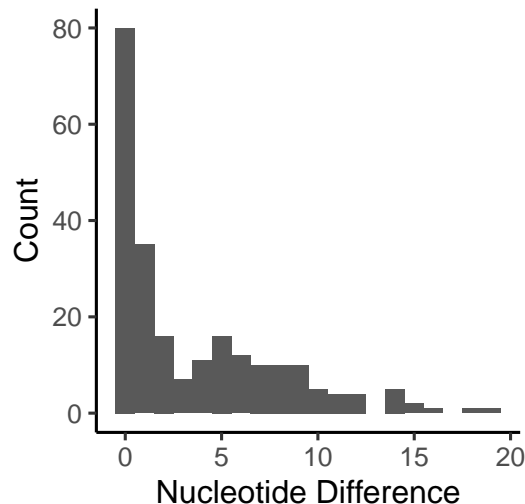
### IGHV3-13\*01

3342 sequences assigned  
297 (8.9%) exact matches, in which:  
215 unique CDR3  
6 unique J



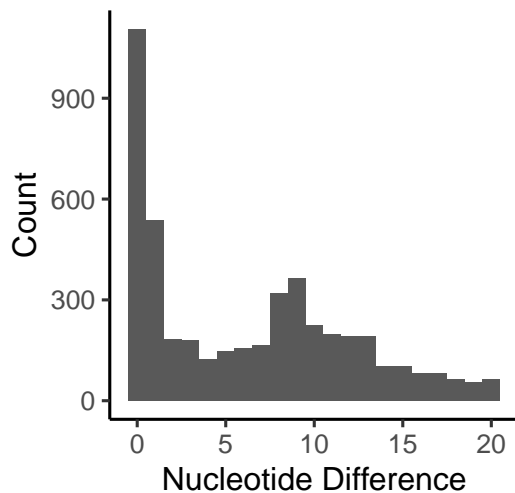
### IGHV3-20\*01\_02

232 sequences assigned  
80 (34.5%) exact matches, in which:  
53 unique CDR3  
5 unique J



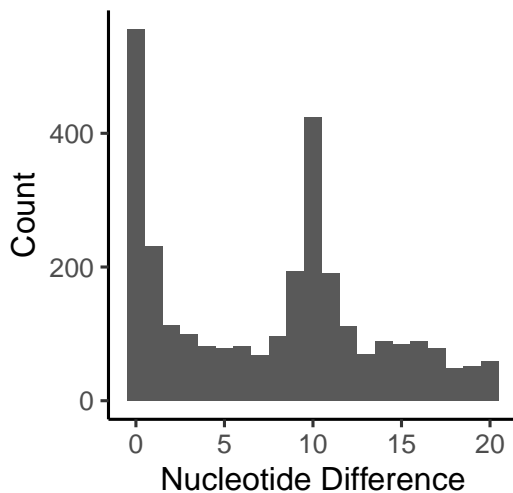
### IGHV3-11\*01

5333 sequences assigned  
1106 (20.7%) exact matches, in which:  
791 unique CDR3  
6 unique J



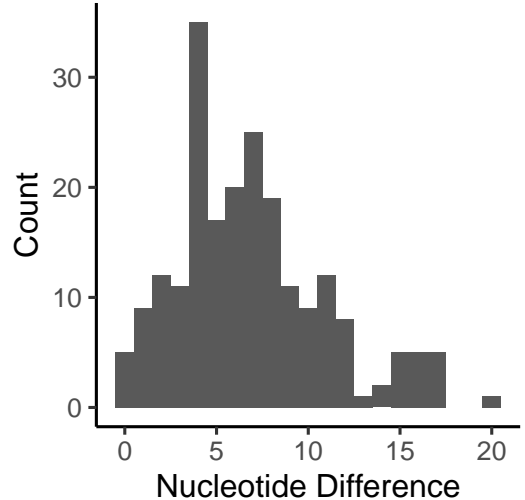
### IGHV3-15\*01\_02

3106 sequences assigned  
556 (17.9%) exact matches, in which:  
404 unique CDR3  
6 unique J



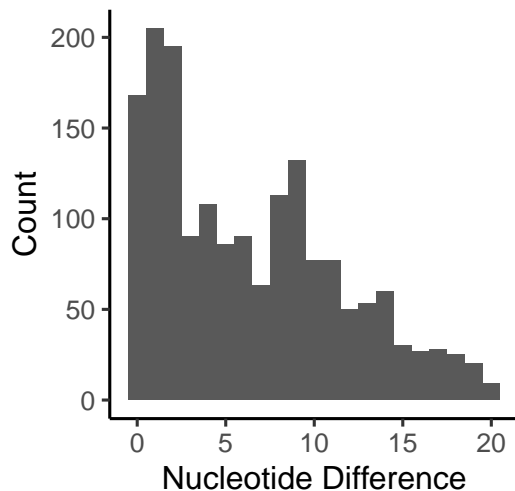
### IGHV3-20\*03\_04

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



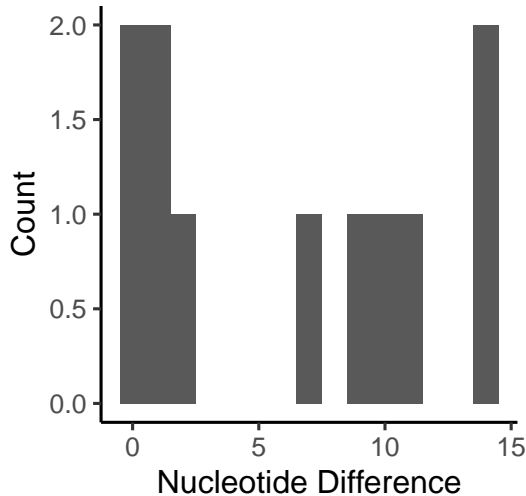
### IGHV3-11\*04

1781 sequences assigned  
168 (9.4%) exact matches, in which:  
162 unique CDR3  
6 unique J



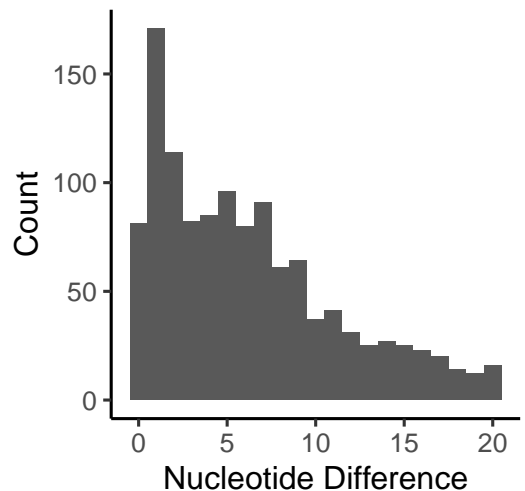
### IGHV3-19\*01

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



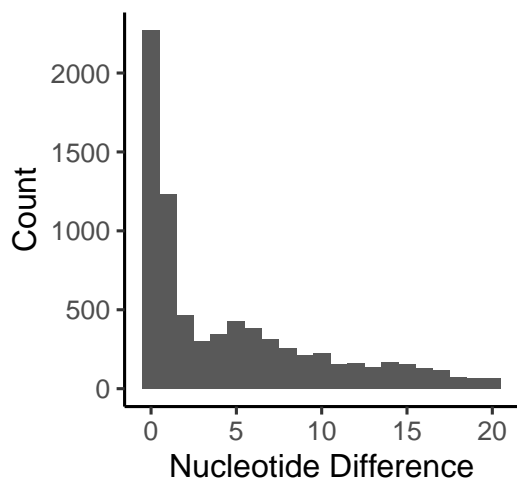
### IGHV3-21\*04

1291 sequences assigned  
81 (6.3%) exact matches, in which:  
77 unique CDR3  
6 unique J



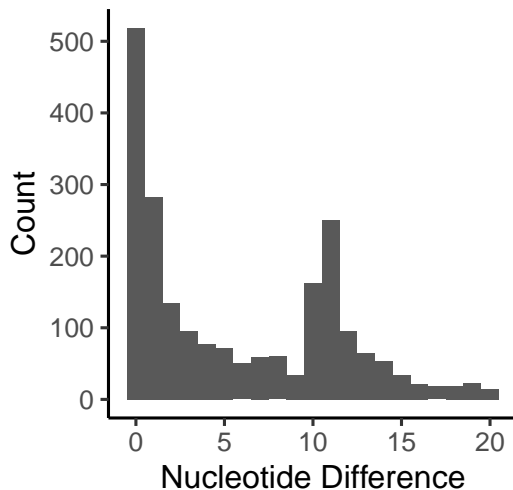
### IGHV3-21\*01\_02

8554 sequences assigned  
2270 (26.5%) exact matches, in which:  
1594 unique CDR3  
6 unique J



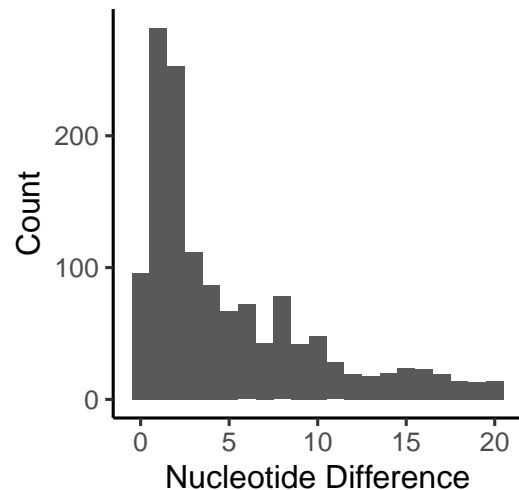
### IGHV3-30\*03

2455 sequences assigned  
519 (21.1%) exact matches, in which:  
481 unique CDR3  
6 unique J



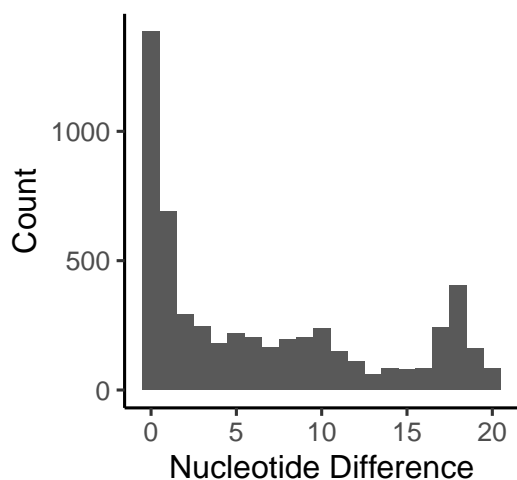
### IGHV3-33\*06

1424 sequences assigned  
96 (6.7%) exact matches, in which:  
94 unique CDR3  
6 unique J



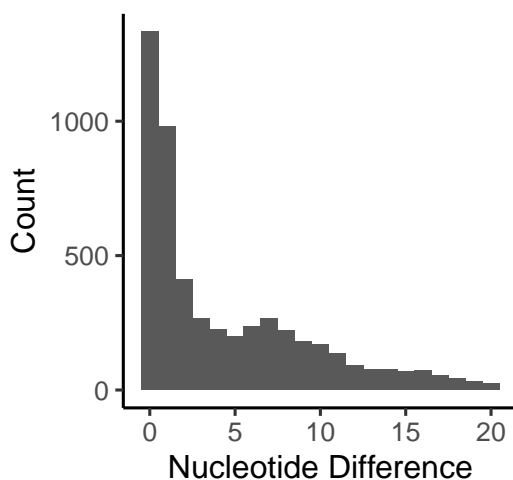
### IGHV3-30-3\*01

5956 sequences assigned  
1385 (23.3%) exact matches, in which:  
1016 unique CDR3  
6 unique J



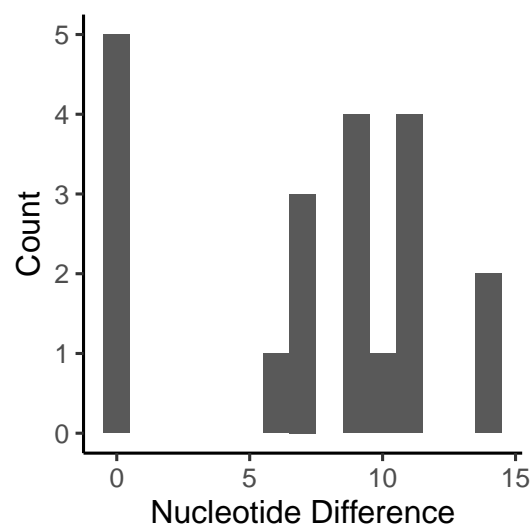
### IGHV3-33\*01

5385 sequences assigned  
1333 (24.8%) exact matches, in which:  
1004 unique CDR3  
6 unique J



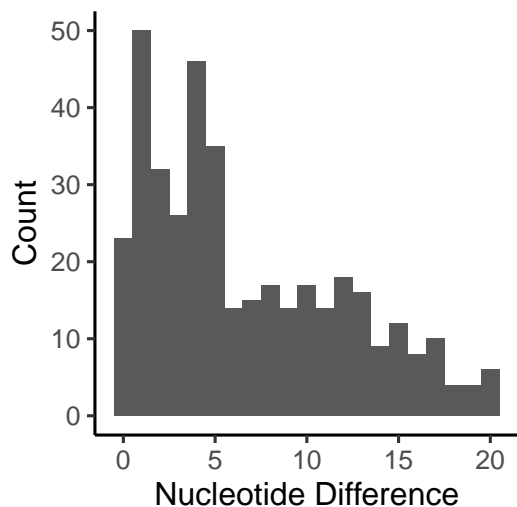
### IGHV3-35\*01

22 sequences assigned  
5 (22.7%) exact matches, in which:  
4 unique CDR3  
3 unique J



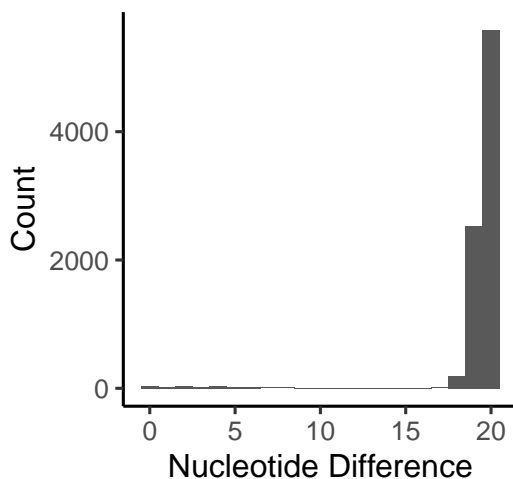
### IGHV3-30-3\*02

413 sequences assigned  
23 (5.6%) exact matches, in which:  
22 unique CDR3  
4 unique J



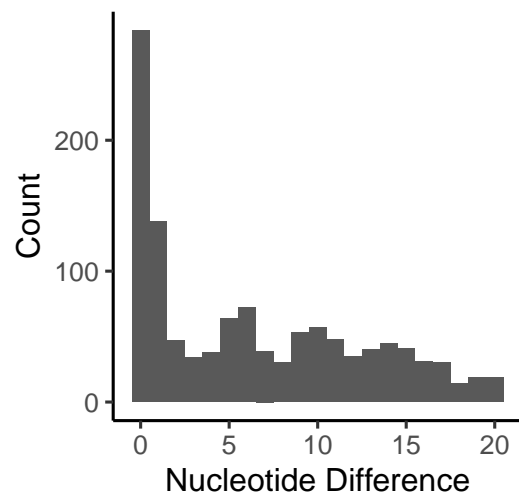
### IGHV3-33\*05

13018 sequences assigned  
37 (0.3%) exact matches, in which:  
37 unique CDR3  
5 unique J



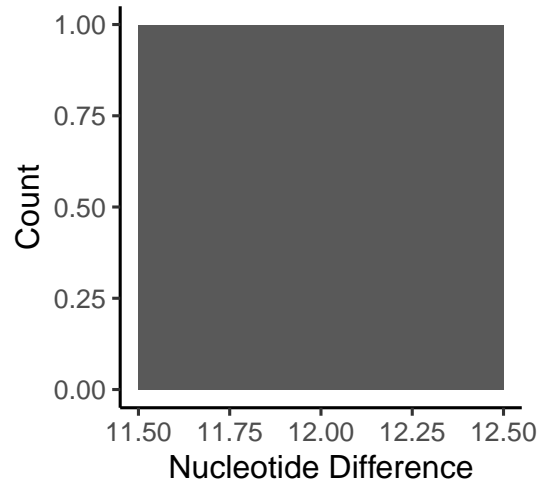
### IGHV3-43\*02

1568 sequences assigned  
284 (18.1%) exact matches, in which:  
197 unique CDR3  
6 unique J



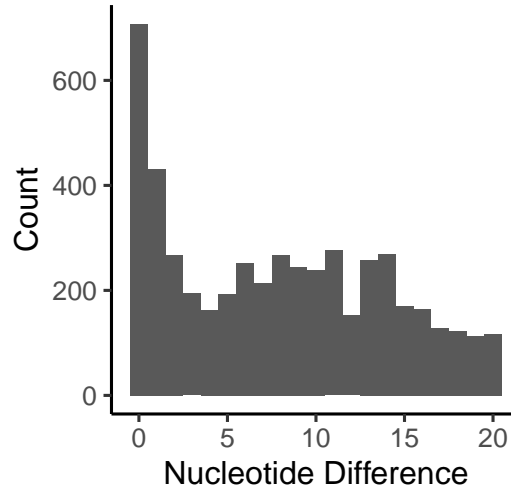
### IGHV3-47\*01

1 sequences assigned  
No exact matches.



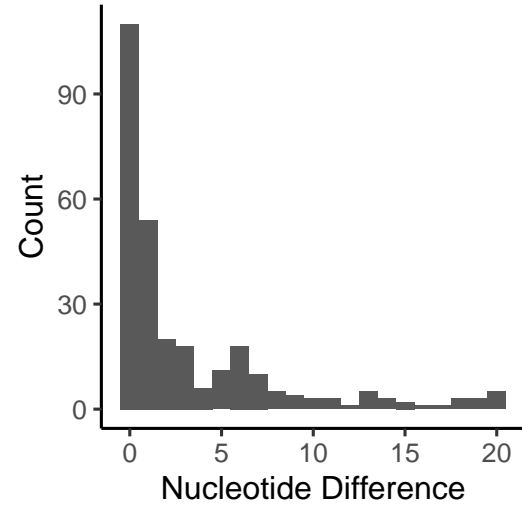
### IGHV3-48\*03

6679 sequences assigned  
708 (10.6%) exact matches, in which:  
509 unique CDR3  
6 unique J



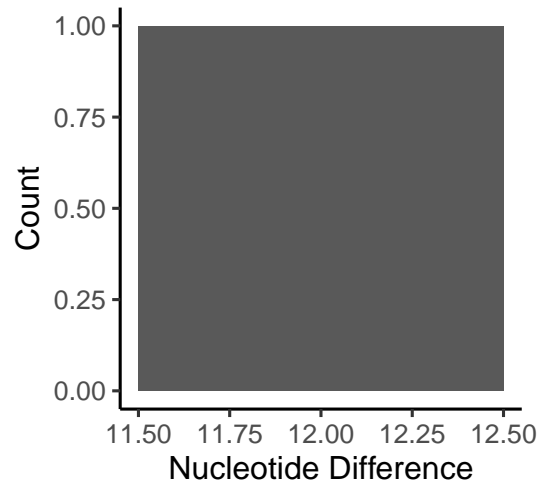
### IGHV3-49\*03\_05

295 sequences assigned  
110 (37.3%) exact matches, in which:  
76 unique CDR3  
5 unique J



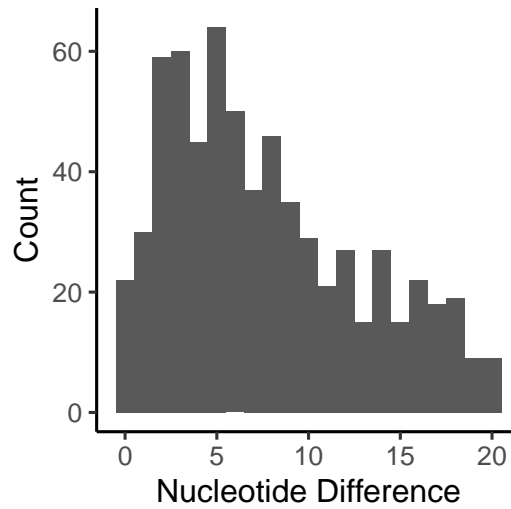
### IGHV3-47\*02

1 sequences assigned  
No exact matches.



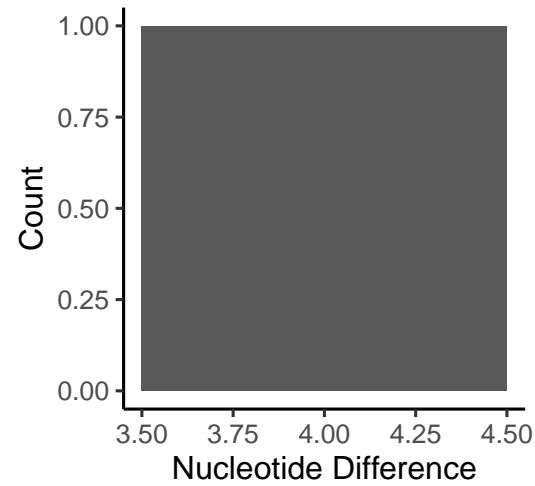
### IGHV3-48\*04

711 sequences assigned  
22 (3.1%) exact matches, in which:  
22 unique CDR3  
3 unique J



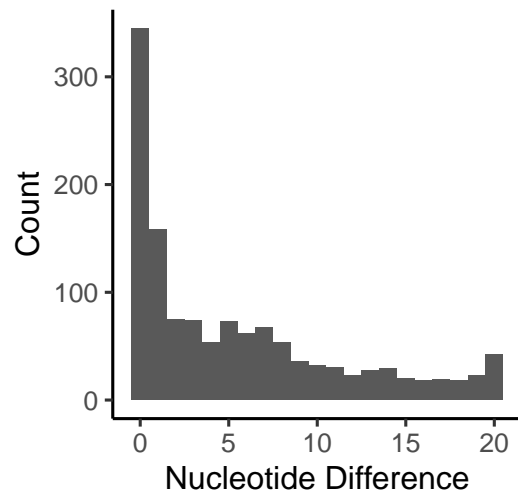
### IGHV3-52\*01\_03

1 sequences assigned  
No exact matches.



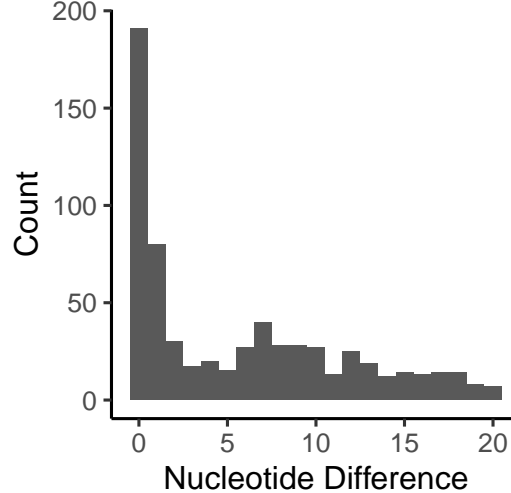
### IGHV3-48\*02

1367 sequences assigned  
345 (25.2%) exact matches, in which:  
243 unique CDR3  
6 unique J



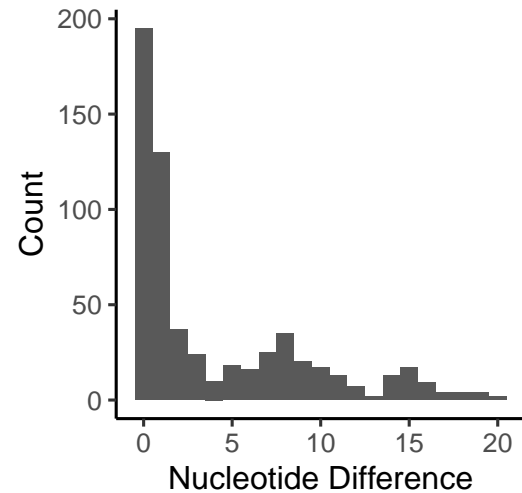
### IGHV3-49\*04

716 sequences assigned  
191 (26.7%) exact matches, in which:  
141 unique CDR3  
5 unique J



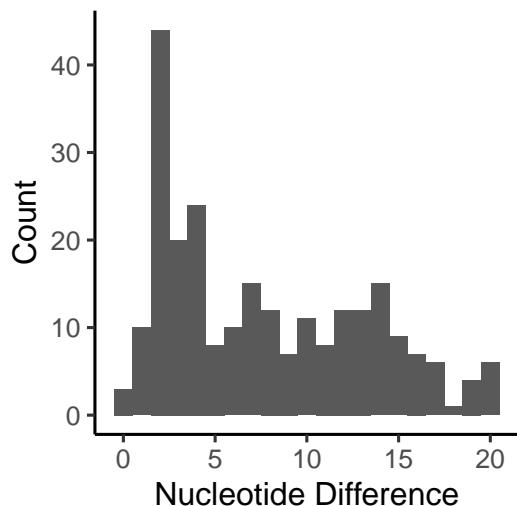
### IGHV3-53\*04

665 sequences assigned  
195 (29.3%) exact matches, in which:  
141 unique CDR3  
5 unique J



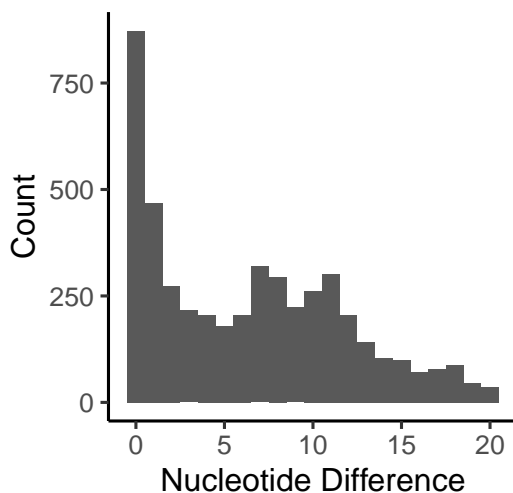
### IGHV3-53\*05

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



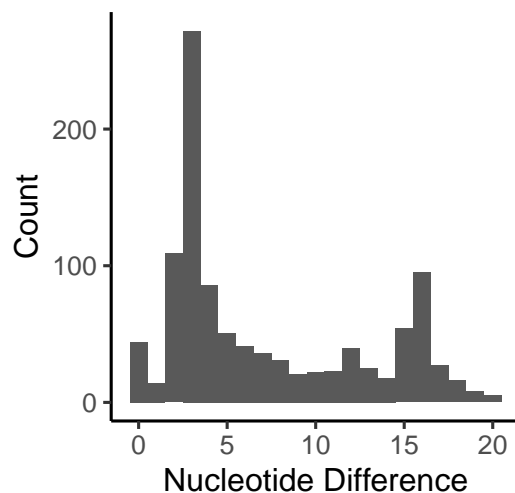
### IGHV3-66\*01

5101 sequences assigned  
873 (17.1%) exact matches, in which:  
644 unique CDR3  
6 unique J



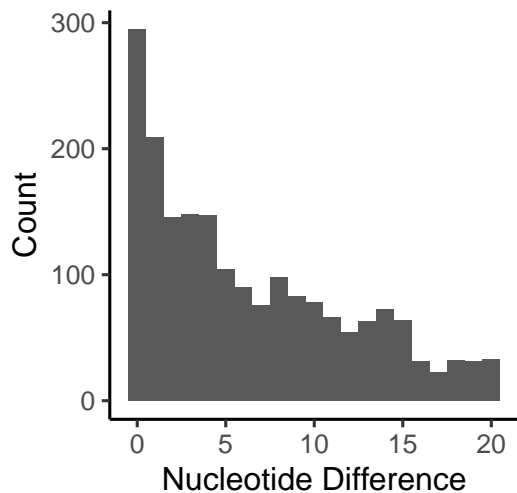
### IGHV3-72\*01

1122 sequences assigned  
44 (3.9%) exact matches, in which:  
33 unique CDR3  
4 unique J



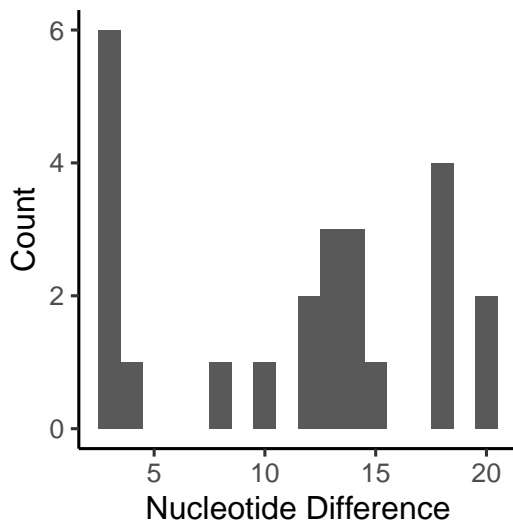
### IGHV3-53\*01\_02

2088 sequences assigned  
295 (14.1%) exact matches, in which:  
209 unique CDR3  
6 unique J



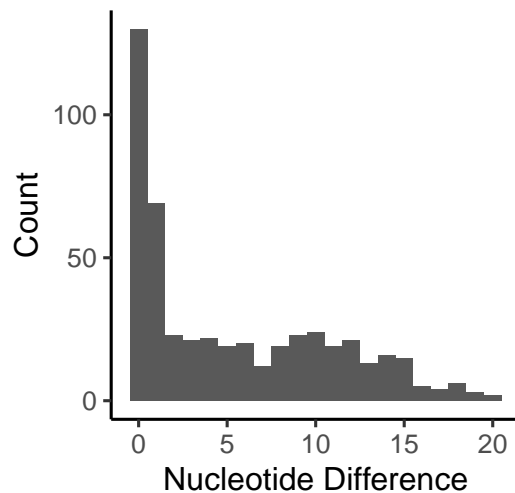
### IGHV3-69-1\*01

41 sequences assigned  
No exact matches.



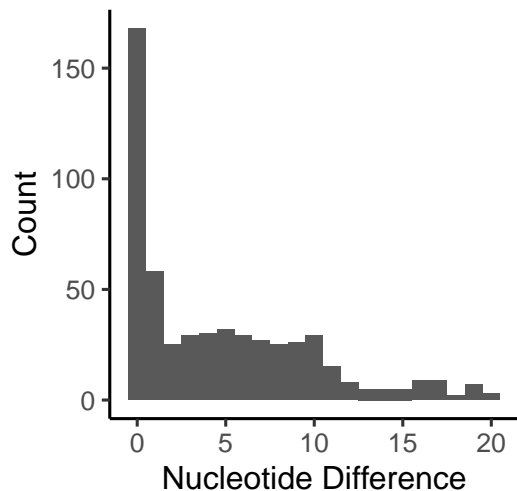
### IGHV3-73\*01\_02

507 sequences assigned  
130 (25.6%) exact matches, in which:  
83 unique CDR3  
5 unique J



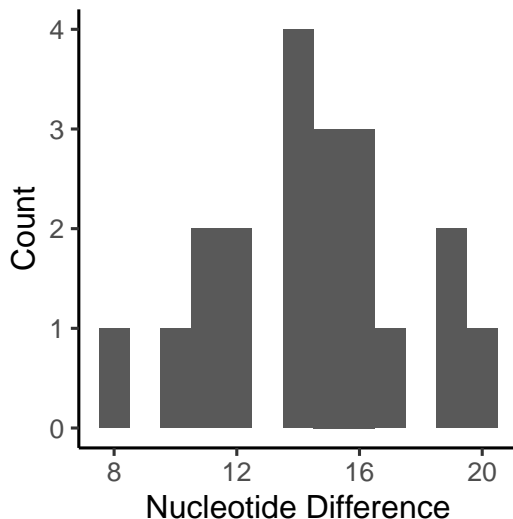
### IGHV3-64\*01

582 sequences assigned  
168 (28.9%) exact matches, in which:  
124 unique CDR3  
6 unique J



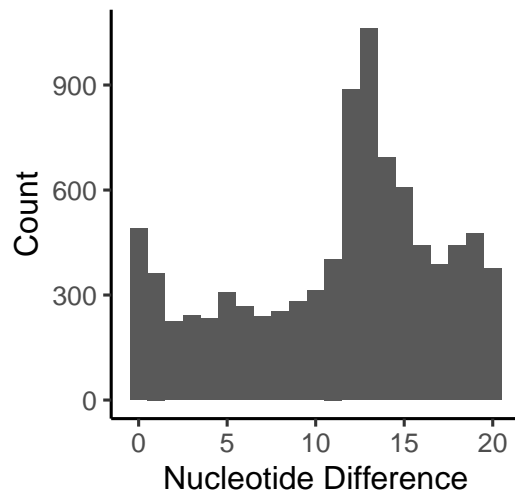
### IGHV3-69-1\*02

48 sequences assigned  
No exact matches.



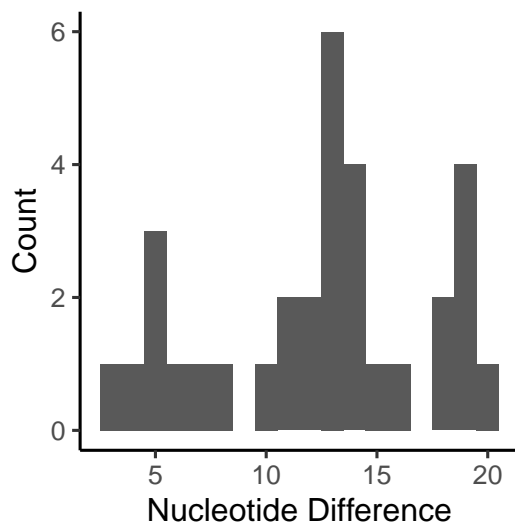
### IGHV3-74\*01\_02

10468 sequences assigned  
491 (4.7%) exact matches, in which:  
353 unique CDR3  
5 unique J



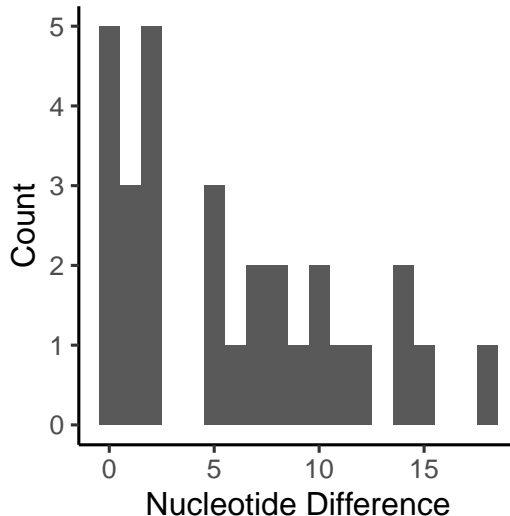
### IGHV3-43D\*04

34 sequences assigned  
No exact matches.



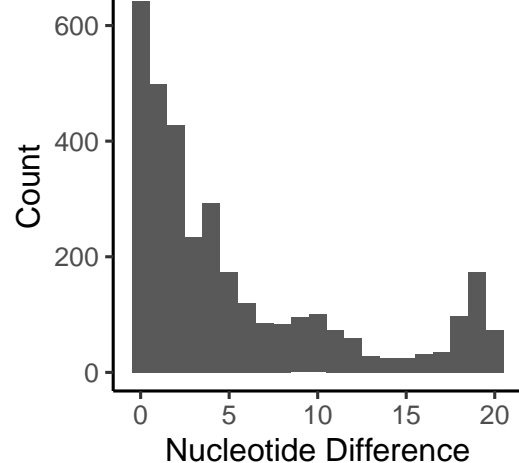
### IGHV4-28\*03

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



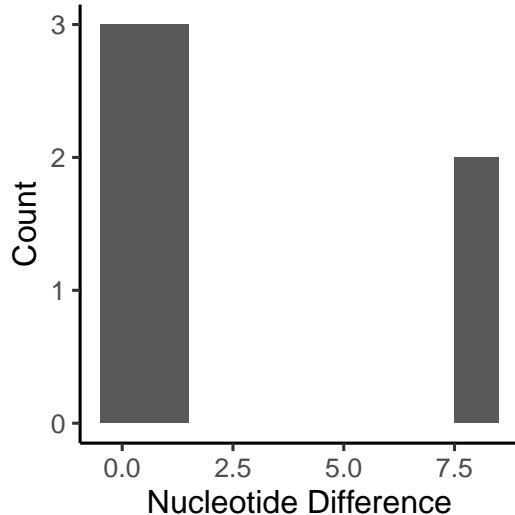
### IGHV4-30-2\*01

3647 sequences assigned  
643 (17.6%) exact matches, in which:  
518 unique CDR3  
6 unique J



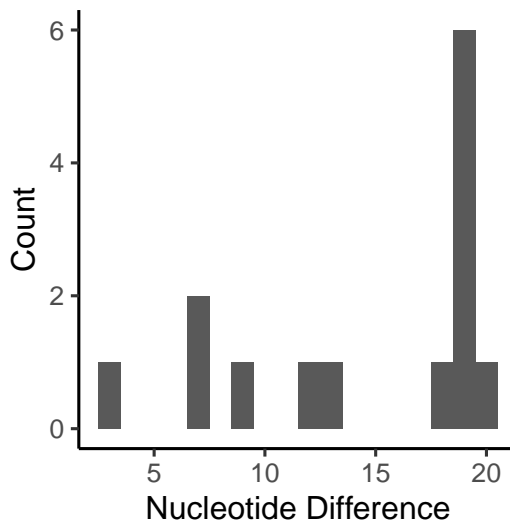
### IGHV3-64D\*06

28 sequences assigned  
3 (10.7%) exact matches, in which:  
2 unique CDR3  
2 unique J



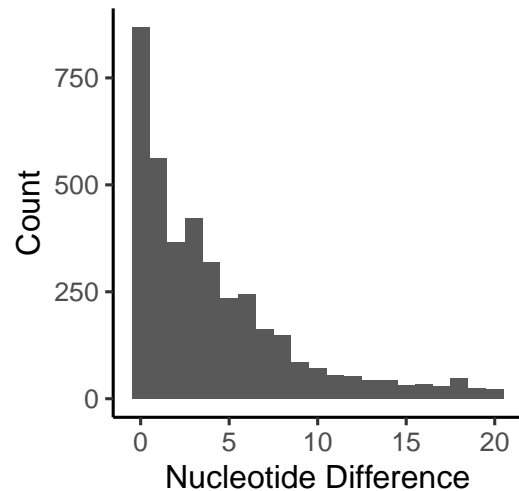
### IGHV4-28\*01\_07

16 sequences assigned  
No exact matches.



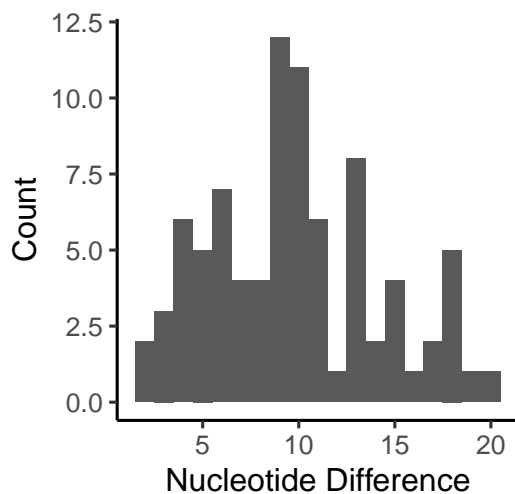
### IGHV4-31\*03\_04

4455 sequences assigned  
869 (19.5%) exact matches, in which:  
774 unique CDR3  
6 unique J



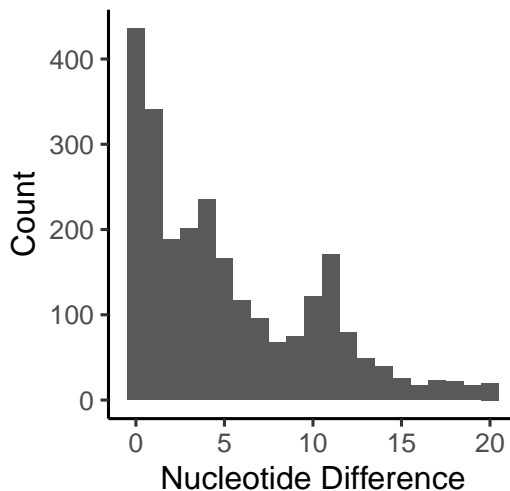
### IGHV3-NL1\*01

97 sequences assigned  
No exact matches.



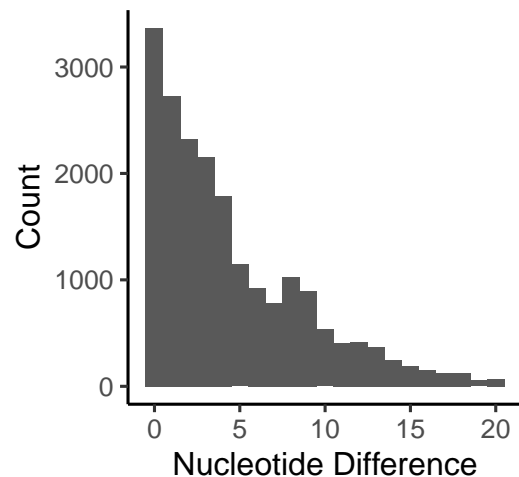
### IGHV4-30-4\*01

2646 sequences assigned  
436 (16.5%) exact matches, in which:  
392 unique CDR3  
6 unique J



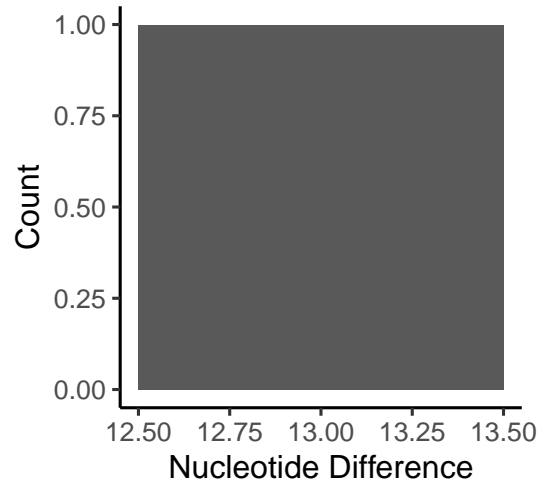
### IGHV4-34\*01\_02

20218 sequences assigned  
3366 (16.6%) exact matches, in which:  
2743 unique CDR3  
6 unique J



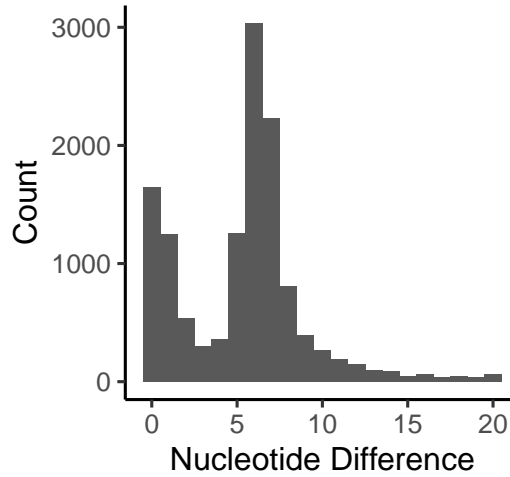
### IGHV4-38-2\*01

2 sequences assigned  
No exact matches.



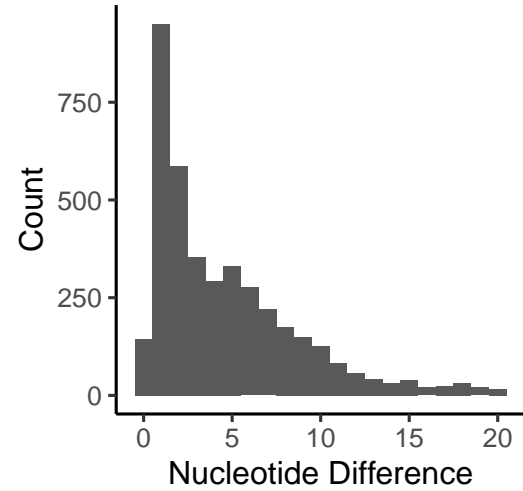
### IGHV4-39\*01\_05

13455 sequences assigned  
1647 (12.2%) exact matches, in which:  
1388 unique CDR3  
6 unique J



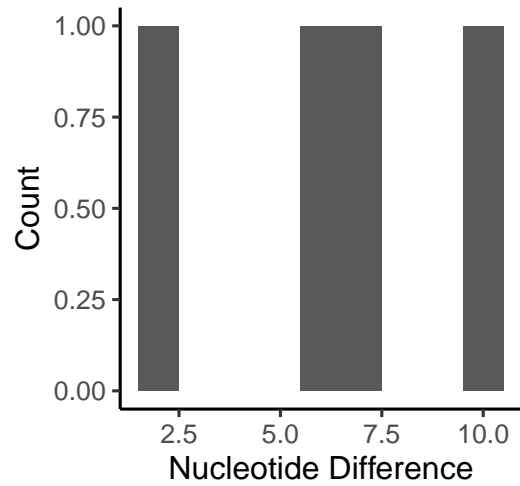
### IGHV4-59\*12

4070 sequences assigned  
144 (3.5%) exact matches, in which:  
144 unique CDR3  
5 unique J



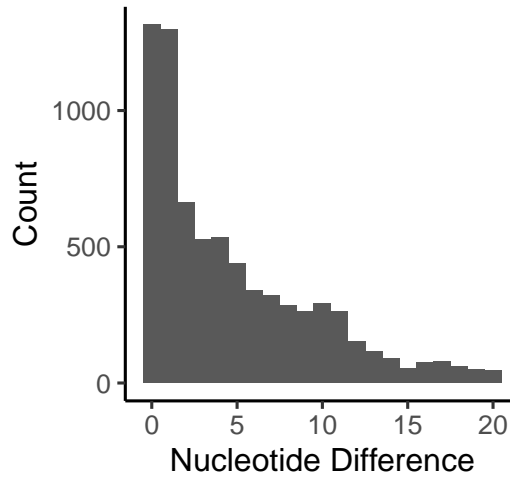
### IGHV4-38-2\*02

5 sequences assigned  
No exact matches.



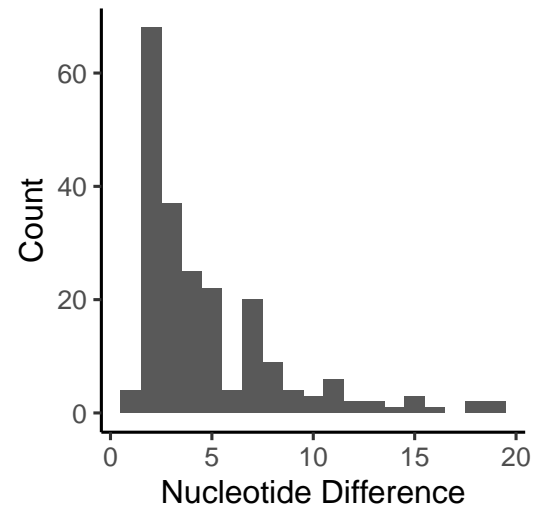
### IGHV4-59\*08

8092 sequences assigned  
1315 (16.3%) exact matches, in which:  
1146 unique CDR3  
6 unique J



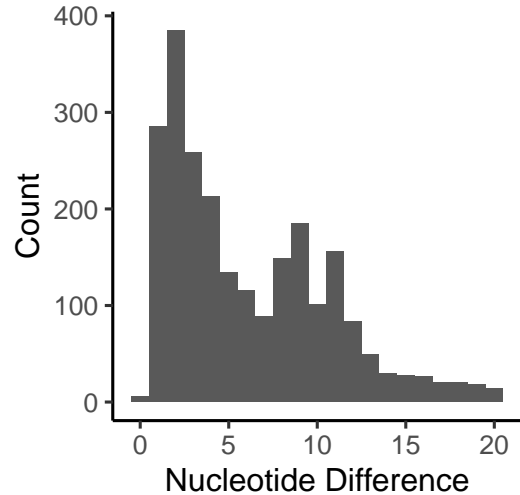
### IGHV4-61\*01

218 sequences assigned  
No exact matches.



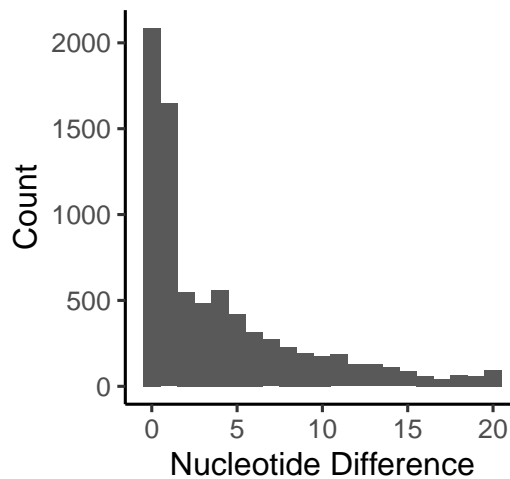
### IGHV4-39\*07

2409 sequences assigned  
6 (0.2%) exact matches, in which:  
6 unique CDR3  
2 unique J



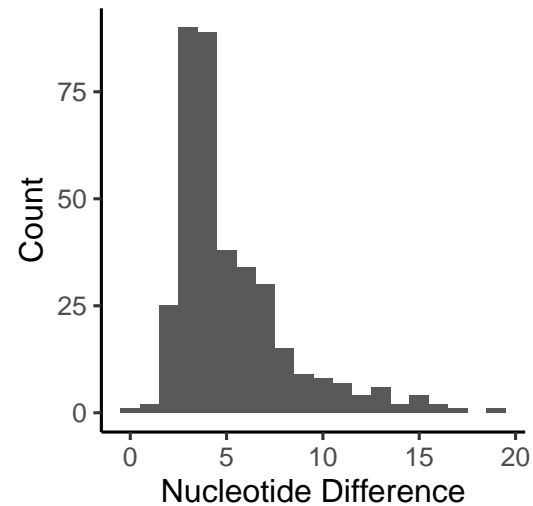
### IGHV4-59\*01\_07

8352 sequences assigned  
2086 (25%) exact matches, in which:  
1847 unique CDR3  
6 unique J



### IGHV4-61\*05

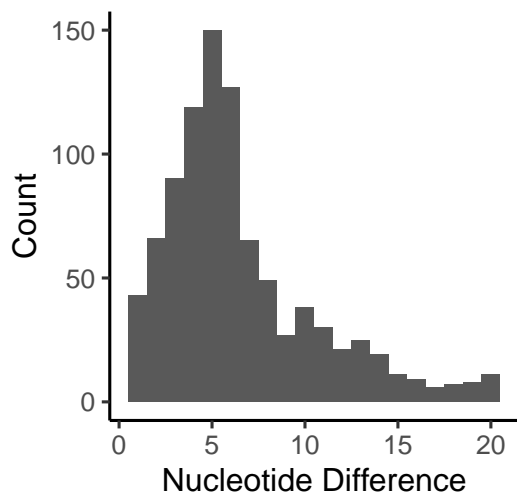
375 sequences assigned  
1 (0.3%) exact matches, in which:  
1 unique CDR3  
1 unique J





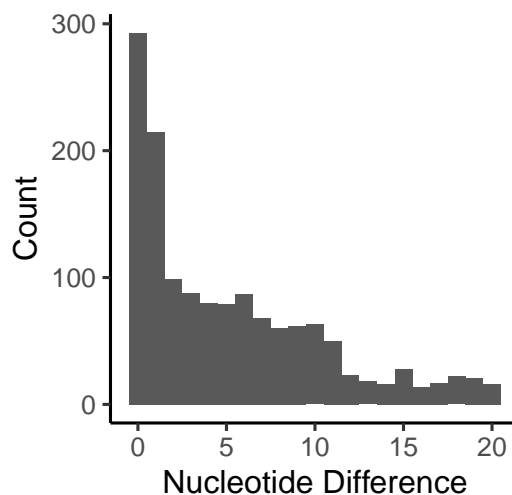
### IGHV4-61\*08

947 sequences assigned  
No exact matches.



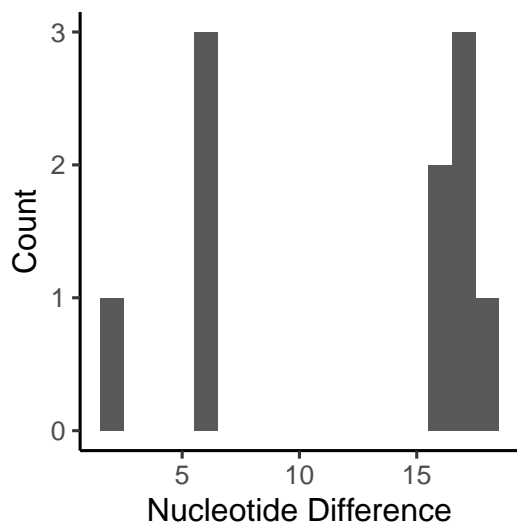
### IGHV6-1\*01\_02

1476 sequences assigned  
293 (19.9%) exact matches, in which:  
260 unique CDR3  
6 unique J



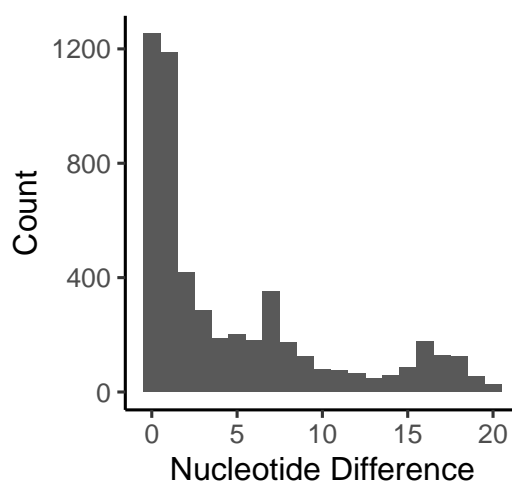
### IGHV5-10-1\*01\_03

13 sequences assigned  
No exact matches.



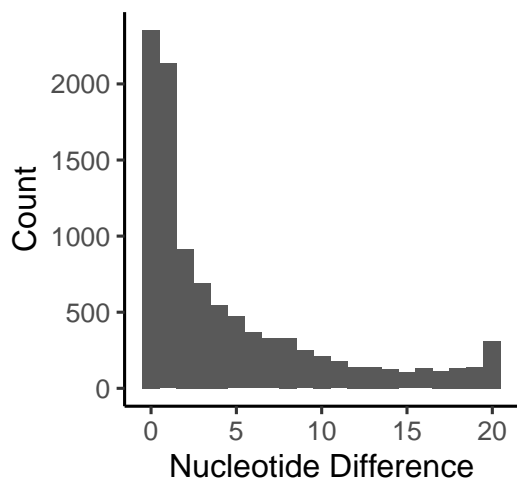
### IGHV7-4-1\*02

5355 sequences assigned  
1253 (23.4%) exact matches, in which:  
1076 unique CDR3  
6 unique J



### IGHV5-51\*01\_03

12735 sequences assigned  
2354 (18.5%) exact matches, in which:  
1487 unique CDR3  
6 unique J





Novel sequence(s)IGHV1–69\*01\_12\_13\_G238AIGHV3–48\*03\_T303G 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)IGHV5–51\*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.

Novel sequence(s)IGHV3–30–3\*01\_T288CIGHV4–59\*02\_G88AIGHV5–51\*07\_A128G are not listed in the genotype and will be ignored.