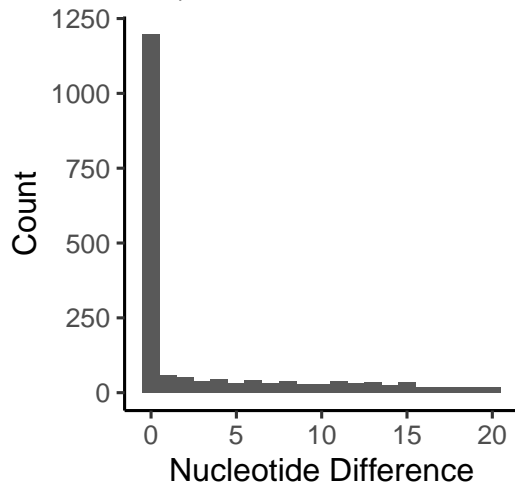


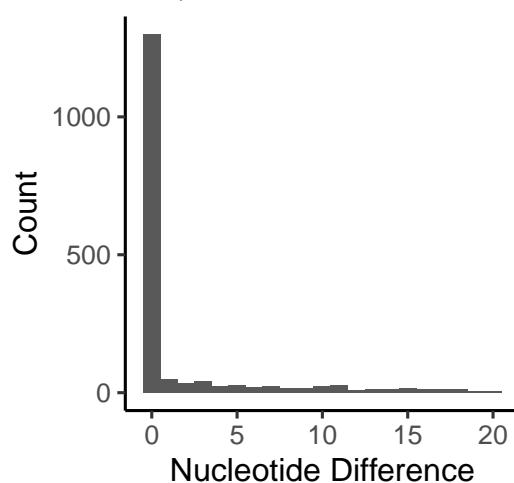
### IGHV1-2\*02

1961 sequences assigned  
1197 (61%) exact matches, in which:  
1187 unique CDR3  
6 unique J



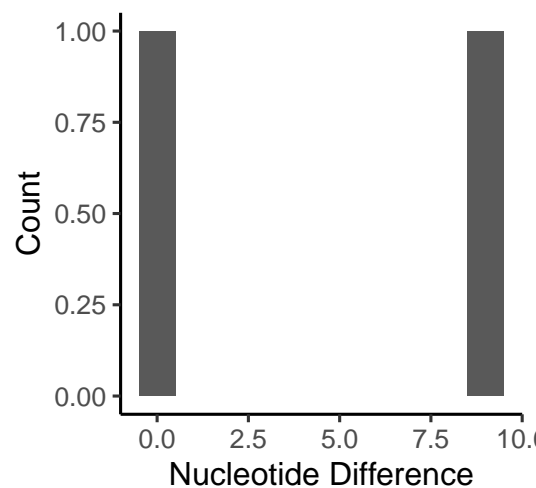
### IGHV1-8\*01

1740 sequences assigned  
1299 (74.7%) exact matches, in which:  
1297 unique CDR3  
6 unique J



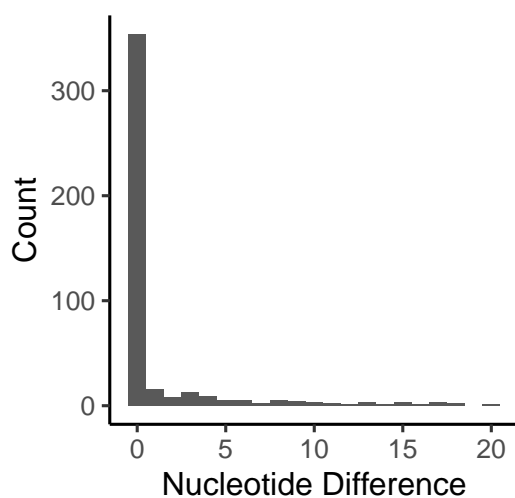
### IGHV1-45\*02

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



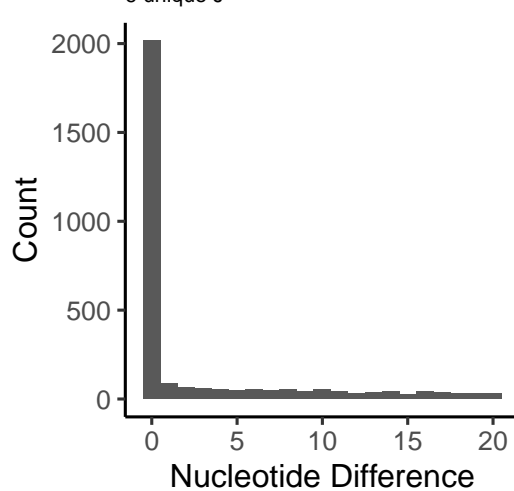
### IGHV1-2\*04

444 sequences assigned  
354 (79.7%) exact matches, in which:  
354 unique CDR3  
6 unique J



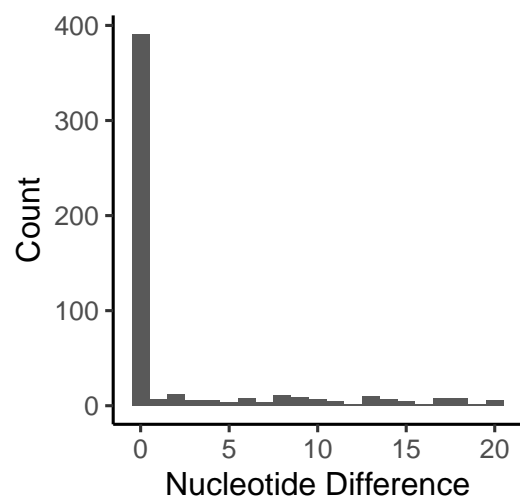
### IGHV1-18\*01

3125 sequences assigned  
2016 (64.5%) exact matches, in which:  
2008 unique CDR3  
6 unique J



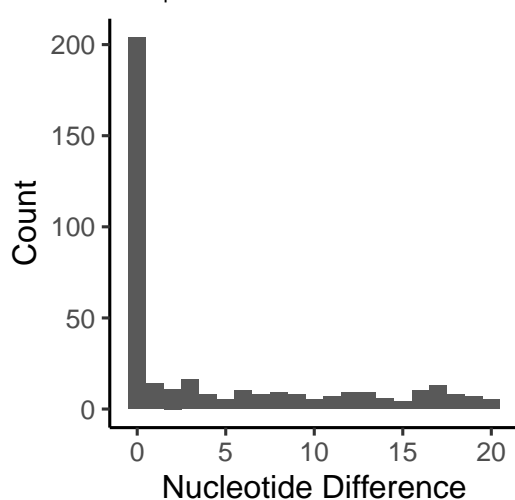
### IGHV1-46\*01

554 sequences assigned  
391 (70.6%) exact matches, in which:  
390 unique CDR3  
6 unique J



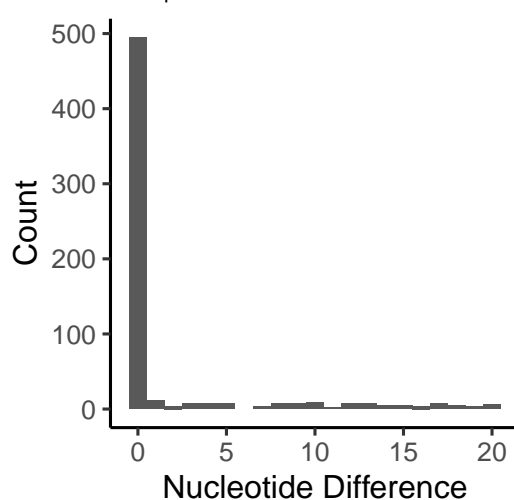
### IGHV1-3\*01\_05

423 sequences assigned  
204 (48.2%) exact matches, in which:  
204 unique CDR3  
6 unique J



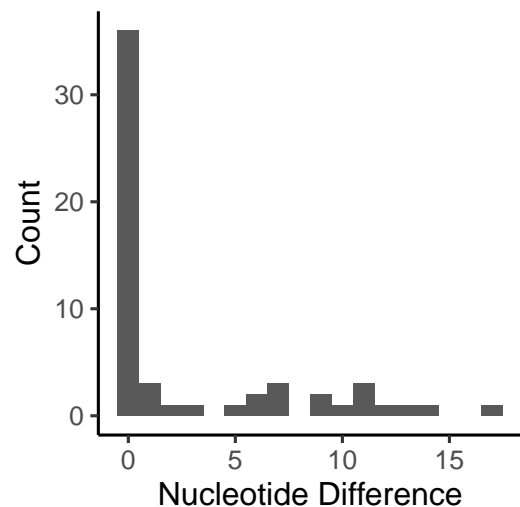
### IGHV1-24\*01

642 sequences assigned  
495 (77.1%) exact matches, in which:  
493 unique CDR3  
6 unique J



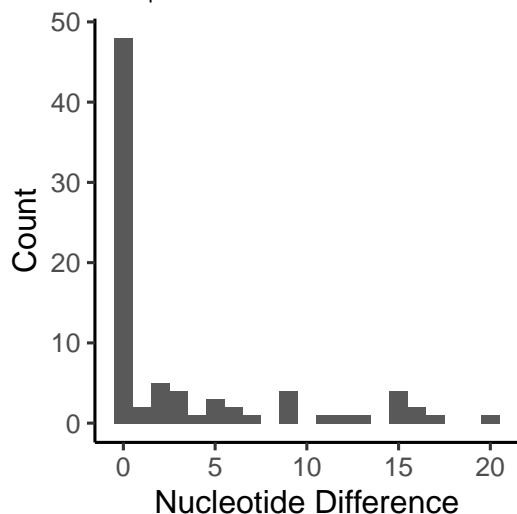
### IGHV1-58\*02

60 sequences assigned  
36 (60%) exact matches, in which:  
36 unique CDR3  
5 unique J



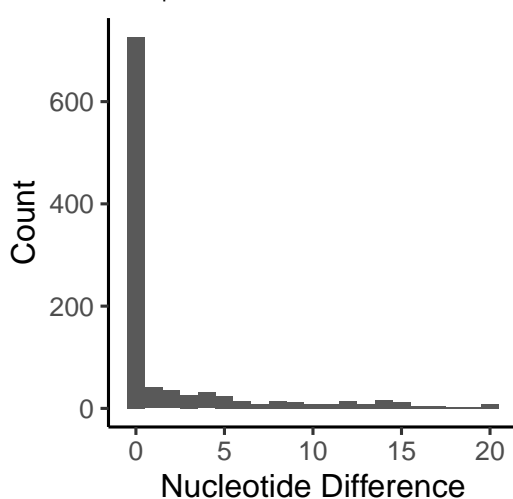
### IGHV1-58\*01\_03

91 sequences assigned  
48 (52.7%) exact matches, in which:  
48 unique CDR3  
5 unique J



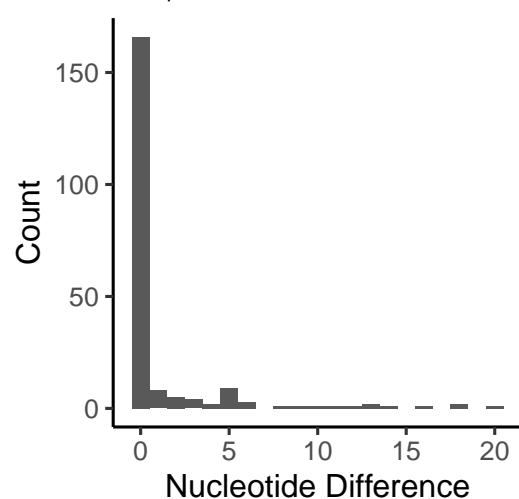
### IGHV2-5\*01

1048 sequences assigned  
727 (69.4%) exact matches, in which:  
724 unique CDR3  
6 unique J



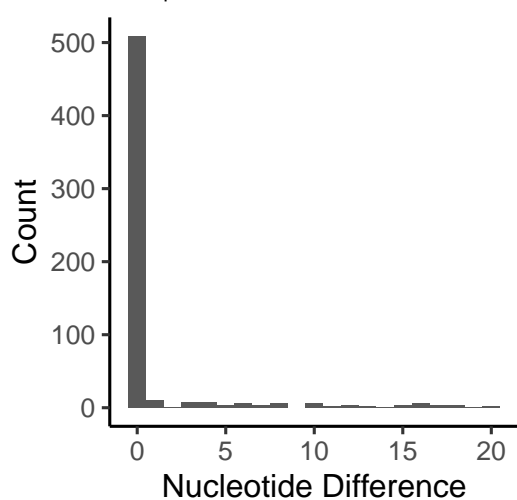
### IGHV2-70\*01

214 sequences assigned  
166 (77.6%) exact matches, in which:  
165 unique CDR3  
6 unique J



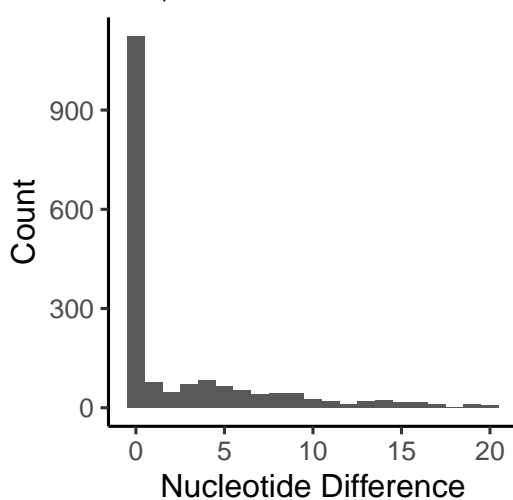
### IGHV1-69\*01\_12\_13

631 sequences assigned  
509 (80.7%) exact matches, in which:  
509 unique CDR3  
6 unique J



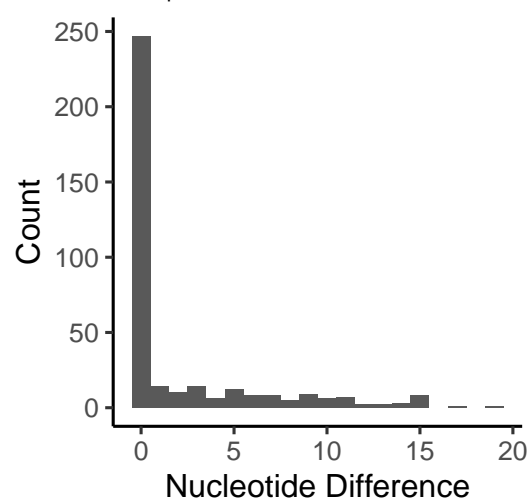
### IGHV2-5\*02

1858 sequences assigned  
1124 (60.5%) exact matches, in which:  
1117 unique CDR3  
6 unique J



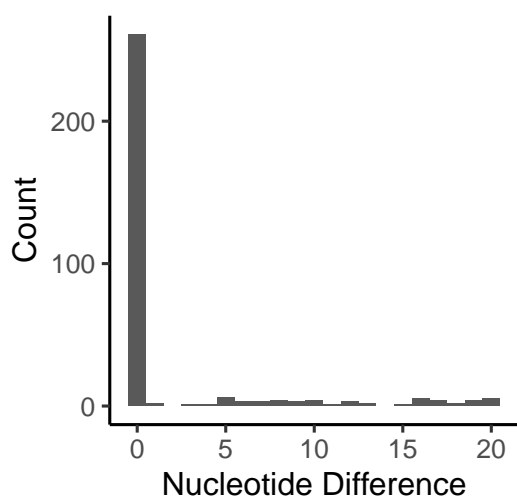
### IGHV2-70\*11\_15

368 sequences assigned  
247 (67.1%) exact matches, in which:  
246 unique CDR3  
5 unique J



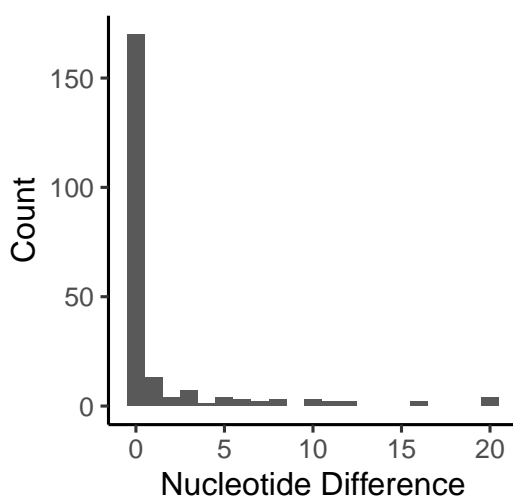
### IGHV1-69\*04\_09

343 sequences assigned  
261 (76.1%) exact matches, in which:  
261 unique CDR3  
6 unique J



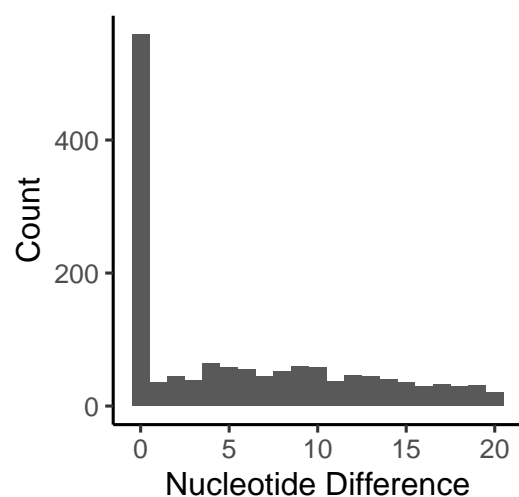
### IGHV2-26\*01

226 sequences assigned  
170 (75.2%) exact matches, in which:  
170 unique CDR3  
6 unique J



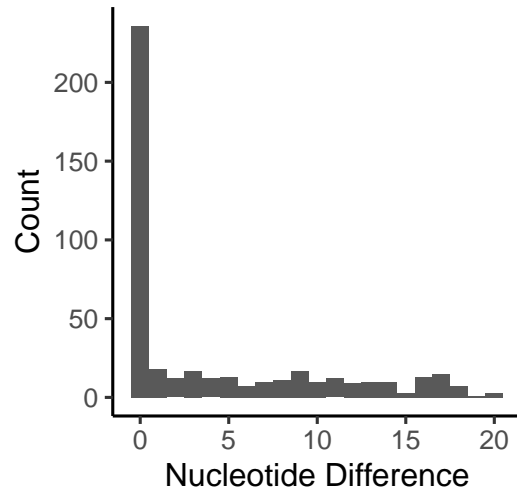
### IGHV3-7\*01

1540 sequences assigned  
559 (36.3%) exact matches, in which:  
556 unique CDR3  
6 unique J



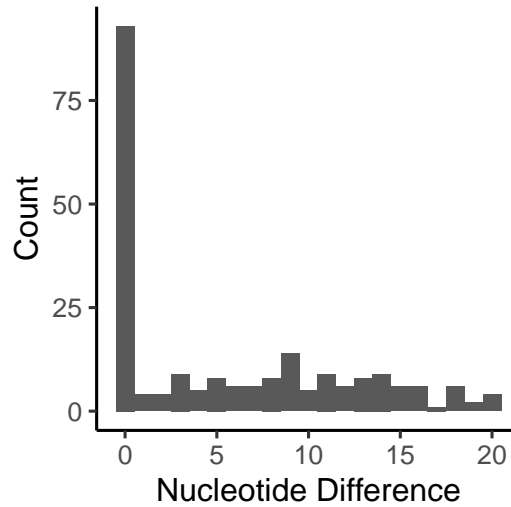
### IGHV3-9\*01

482 sequences assigned  
236 (49%) exact matches, in which:  
235 unique CDR3  
6 unique J



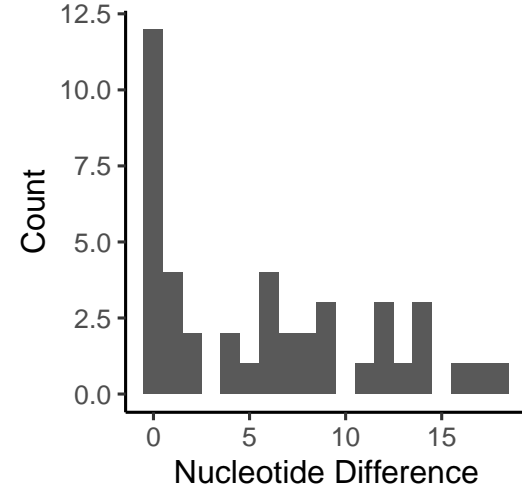
### IGHV3-15\*07

253 sequences assigned  
93 (36.8%) exact matches, in which:  
93 unique CDR3  
5 unique J



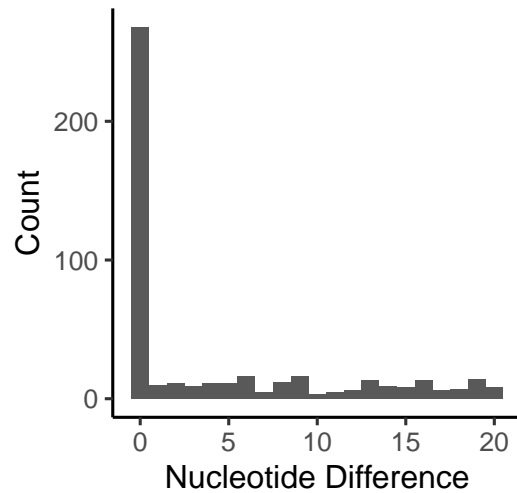
### IGHV3-20\*03\_04

45 sequences assigned  
12 (26.7%) exact matches, in which:  
12 unique CDR3  
5 unique J



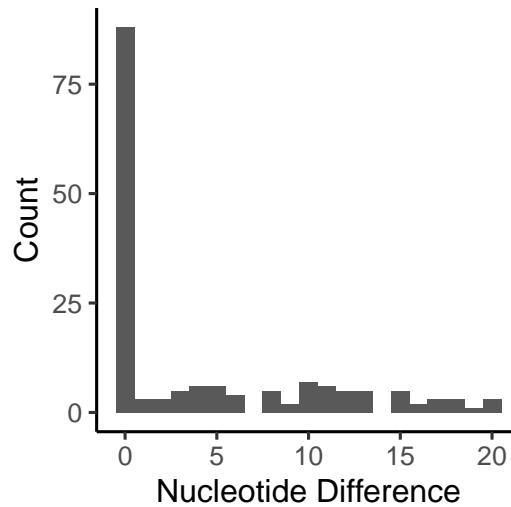
### IGHV3-11\*01

512 sequences assigned  
268 (52.3%) exact matches, in which:  
268 unique CDR3  
6 unique J



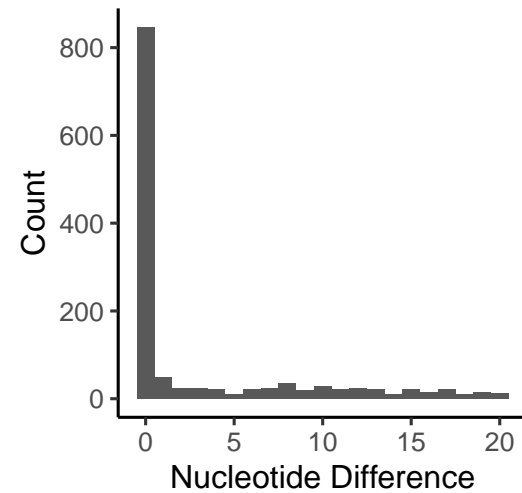
### IGHV3-15\*01\_02

183 sequences assigned  
88 (48.1%) exact matches, in which:  
88 unique CDR3  
5 unique J



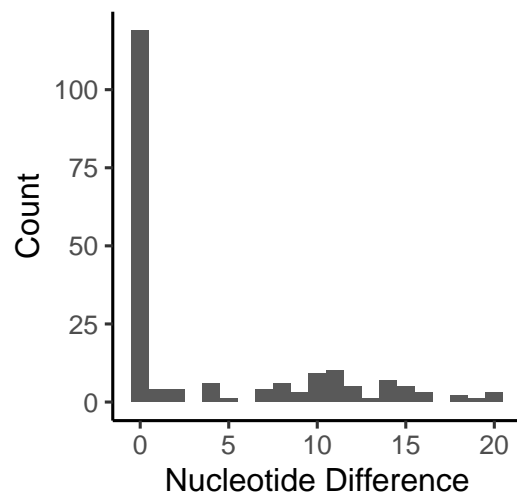
### IGHV3-21\*01\_02

1363 sequences assigned  
847 (62.1%) exact matches, in which:  
845 unique CDR3  
6 unique J



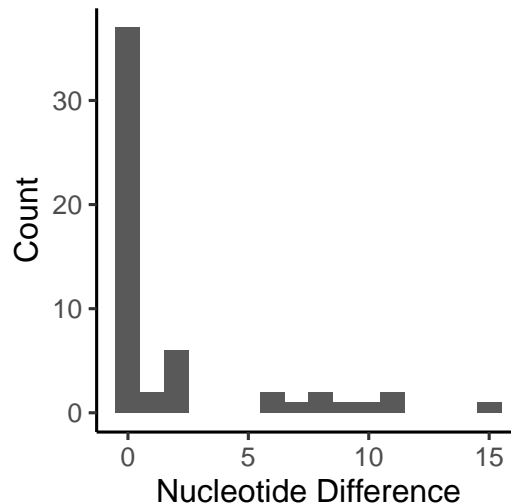
### IGHV3-13\*01

211 sequences assigned  
119 (56.4%) exact matches, in which:  
119 unique CDR3  
5 unique J



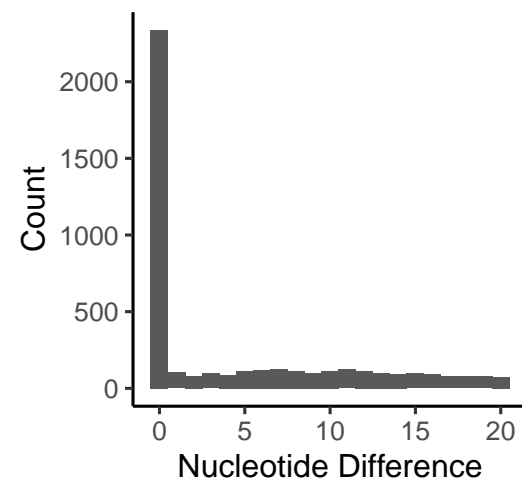
### IGHV3-20\*01\_02

57 sequences assigned  
37 (64.9%) exact matches, in which:  
37 unique CDR3  
5 unique J



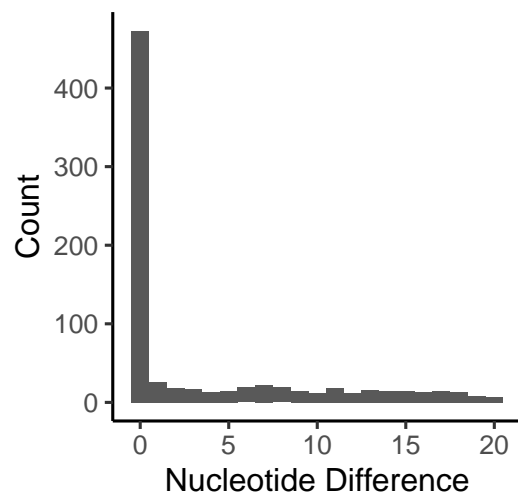
### IGHV3-23\*01\_04

4743 sequences assigned  
2337 (49.3%) exact matches, in which:  
2317 unique CDR3  
6 unique J



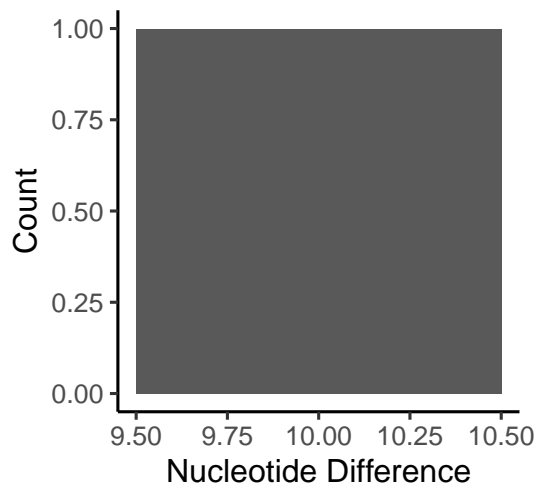
### IGHV3-30-3\*01

851 sequences assigned  
473 (55.6%) exact matches, in which:  
472 unique CDR3  
6 unique J



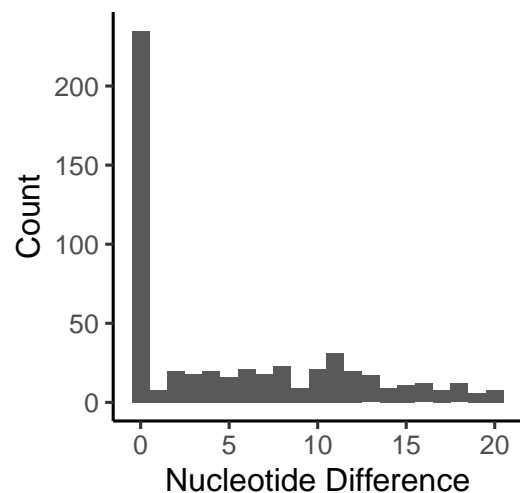
### IGHV3-35\*01

1 sequences assigned  
No exact matches.



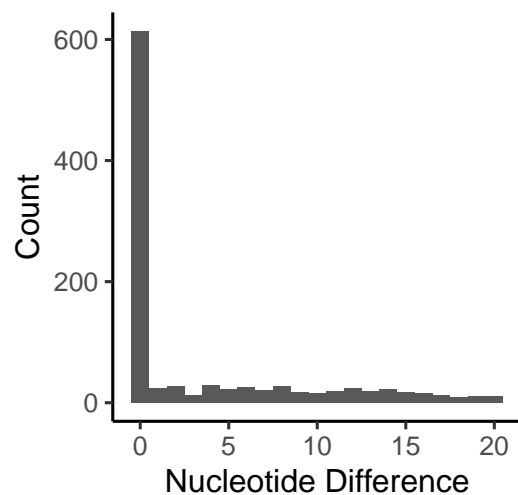
### IGHV3-48\*02

600 sequences assigned  
235 (39.2%) exact matches, in which:  
233 unique CDR3  
6 unique J



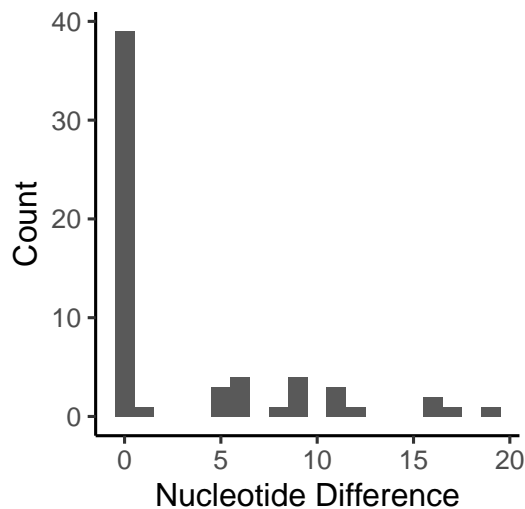
### IGHV3-30\*18

1105 sequences assigned  
614 (55.6%) exact matches, in which:  
614 unique CDR3  
6 unique J



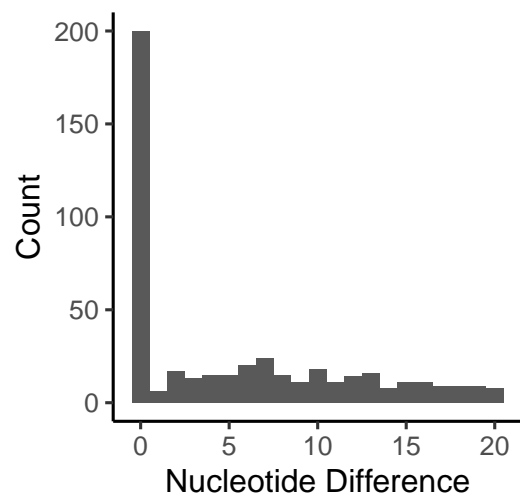
### IGHV3-43\*01

65 sequences assigned  
39 (60%) exact matches, in which:  
39 unique CDR3  
5 unique J



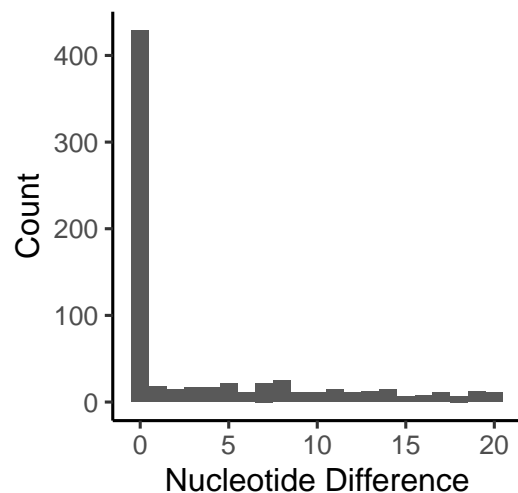
### IGHV3-48\*03

499 sequences assigned  
200 (40.1%) exact matches, in which:  
200 unique CDR3  
6 unique J



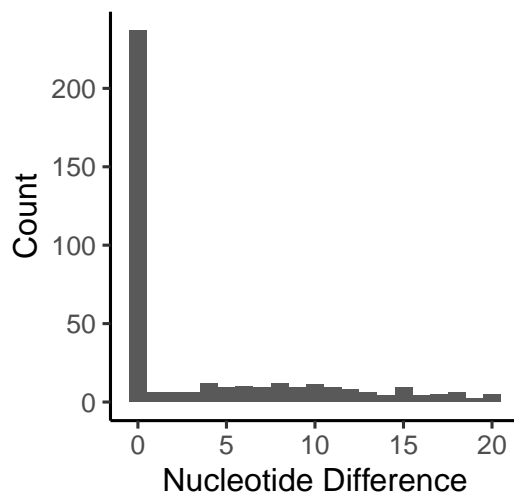
### IGHV3-33\*01

766 sequences assigned  
429 (56%) exact matches, in which:  
427 unique CDR3  
6 unique J



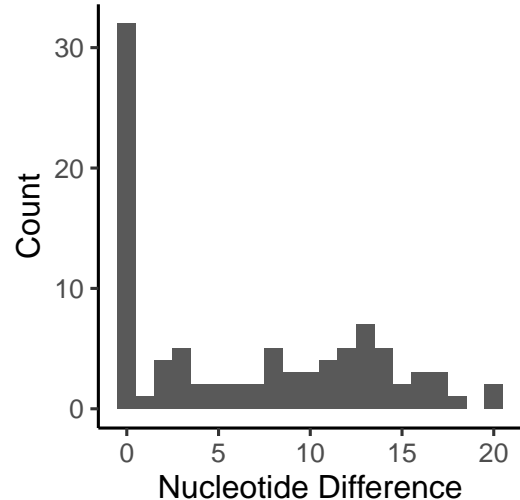
### IGHV3-43\*02

406 sequences assigned  
237 (58.4%) exact matches, in which:  
236 unique CDR3  
6 unique J



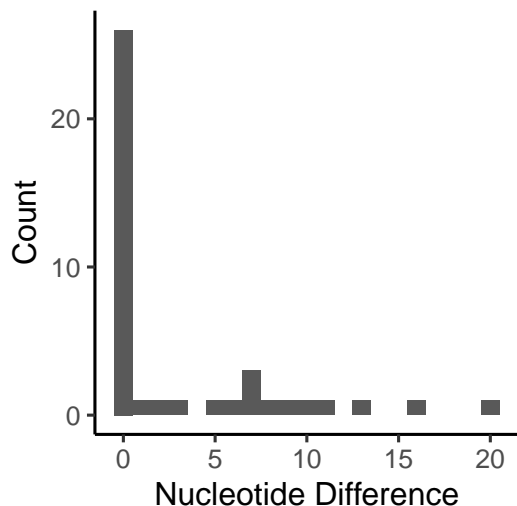
### IGHV3-49\*04

109 sequences assigned  
32 (29.4%) exact matches, in which:  
32 unique CDR3  
4 unique J



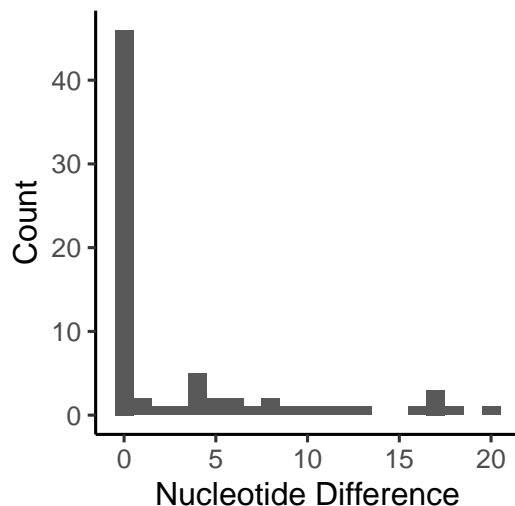
### IGHV3-49\*03\_05

43 sequences assigned  
26 (60.5%) exact matches, in which:  
26 unique CDR3  
5 unique J



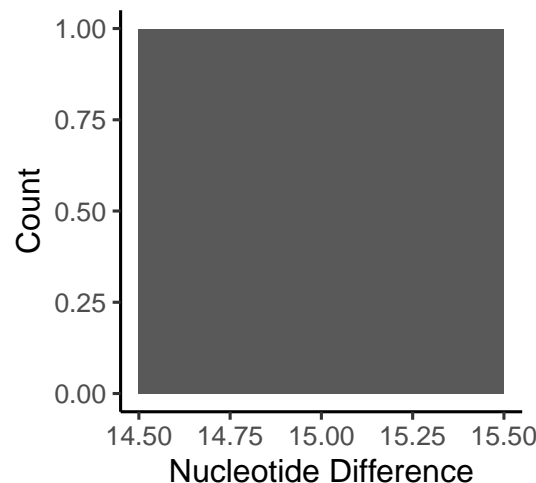
### IGHV3-64\*01

83 sequences assigned  
46 (55.4%) exact matches, in which:  
46 unique CDR3  
5 unique J



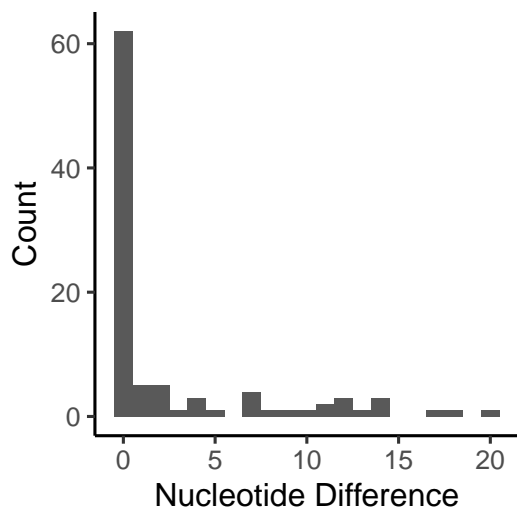
### IGHV3-69-1\*01

4 sequences assigned  
No exact matches.



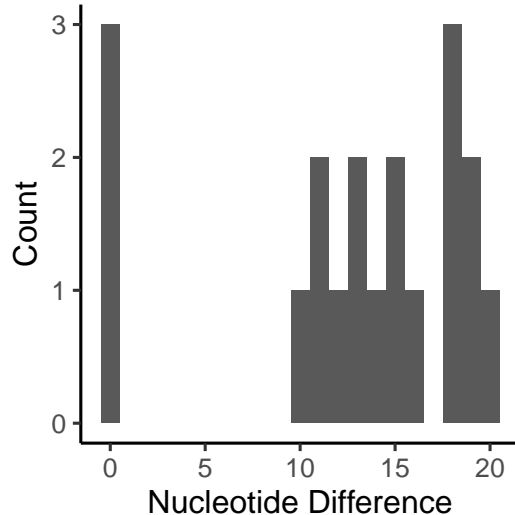
### IGHV3-53\*04

104 sequences assigned  
62 (59.6%) exact matches, in which:  
62 unique CDR3  
5 unique J



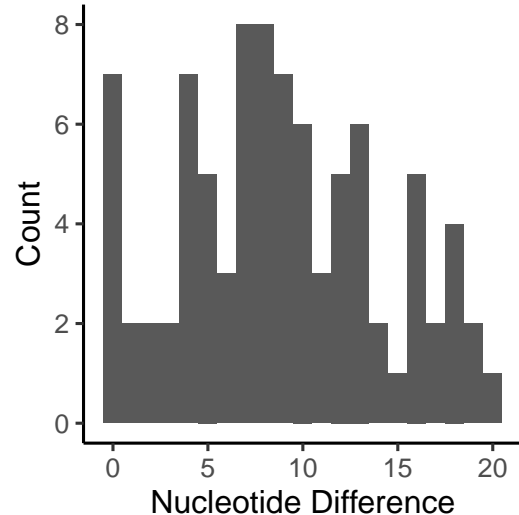
### IGHV3-64\*02\_07

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



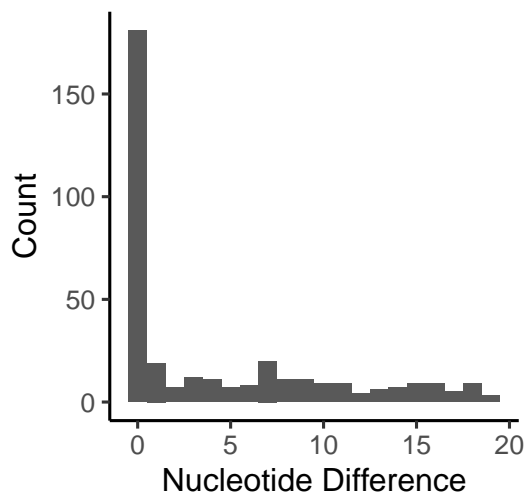
### IGHV3-72\*01

98 sequences assigned  
7 (7.1%) exact matches, in which:  
7 unique CDR3  
3 unique J



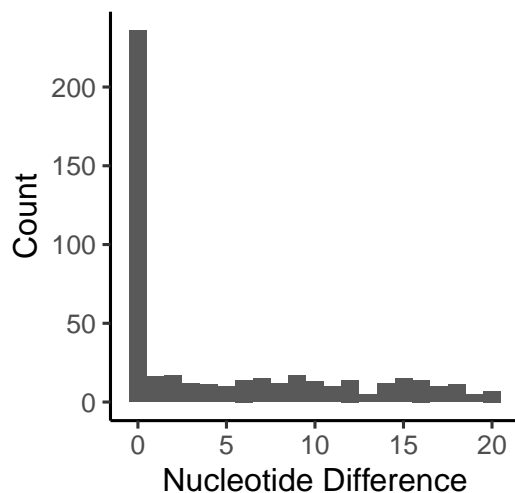
### IGHV3-53\*01\_02

379 sequences assigned  
181 (47.8%) exact matches, in which:  
179 unique CDR3  
5 unique J



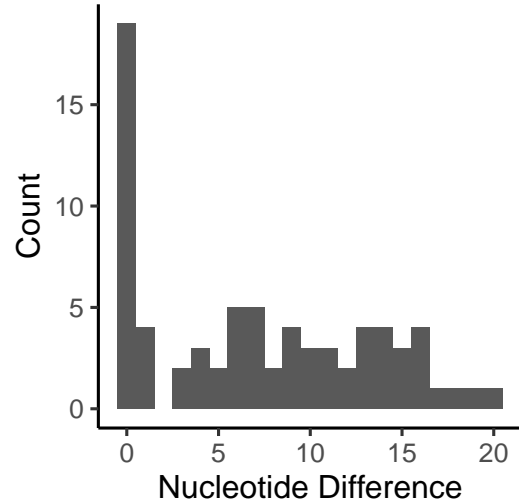
### IGHV3-66\*01

508 sequences assigned  
236 (46.5%) exact matches, in which:  
233 unique CDR3  
6 unique J



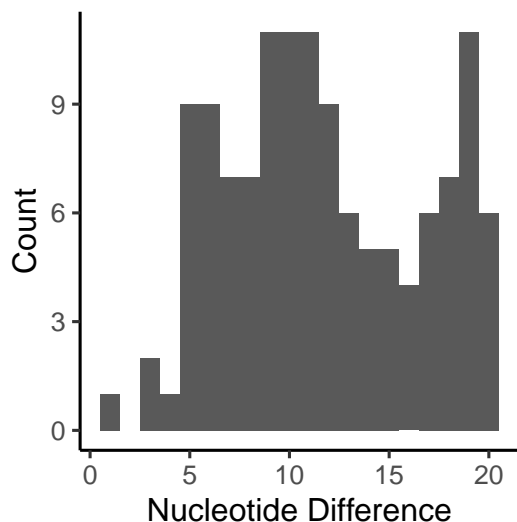
### IGHV3-73\*01\_02

88 sequences assigned  
19 (21.6%) exact matches, in which:  
18 unique CDR3  
4 unique J



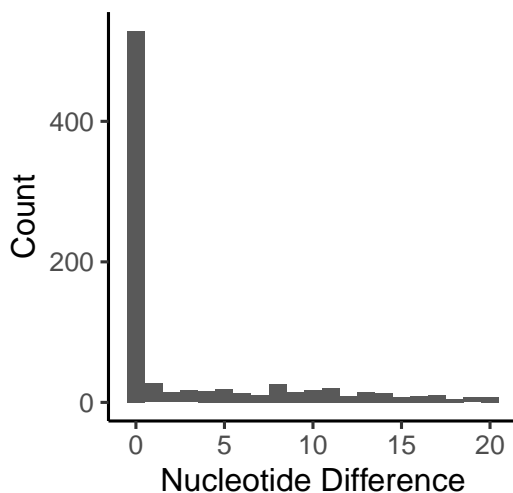
### IGHV3-74\*03

162 sequences assigned  
No exact matches.



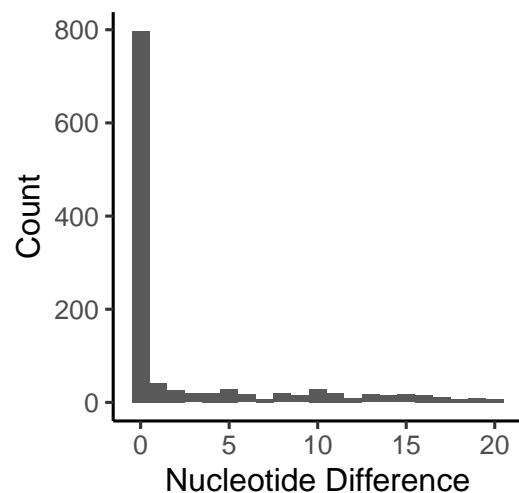
### IGHV4-4\*02\_03

864 sequences assigned  
529 (61.2%) exact matches, in which:  
526 unique CDR3  
6 unique J



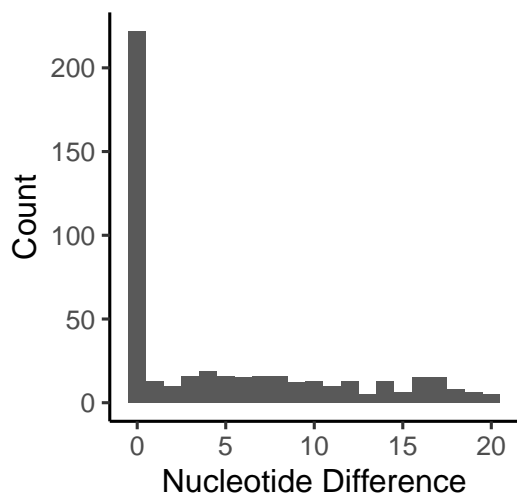
### IGHV4-30-4\*01

1224 sequences assigned  
798 (65.2%) exact matches, in which:  
789 unique CDR3  
6 unique J



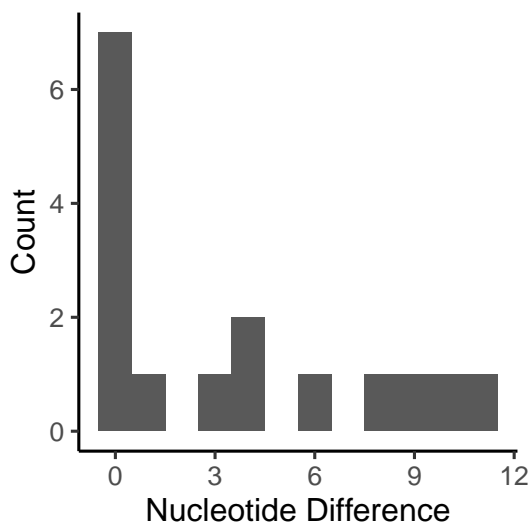
### IGHV3-74\*01\_02

487 sequences assigned  
222 (45.6%) exact matches, in which:  
217 unique CDR3  
5 unique J



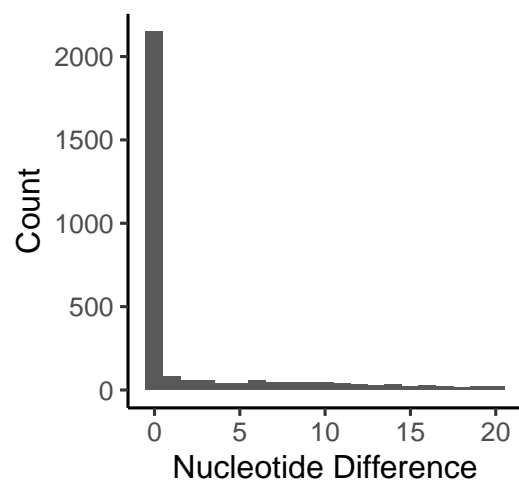
### IGHV4-28\*01\_07

20 sequences assigned  
7 (35%) exact matches, in which:  
7 unique CDR3  
5 unique J



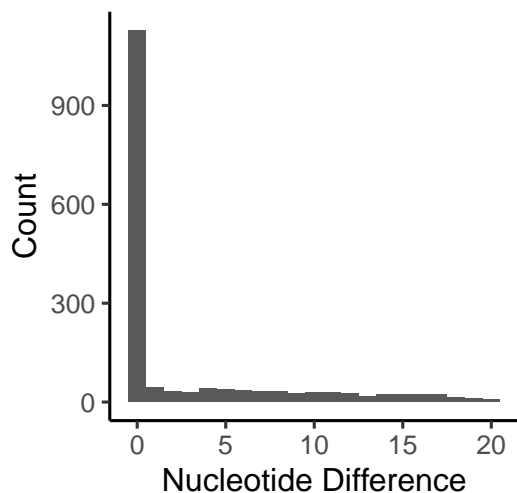
### IGHV4-31\*02

3034 sequences assigned  
2149 (70.8%) exact matches, in which:  
2127 unique CDR3  
6 unique J



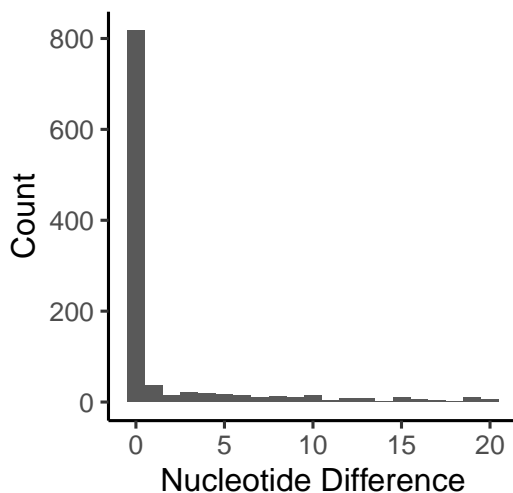
### IGHV4-4\*07

1719 sequences assigned  
1128 (65.6%) exact matches, in which:  
1110 unique CDR3  
6 unique J



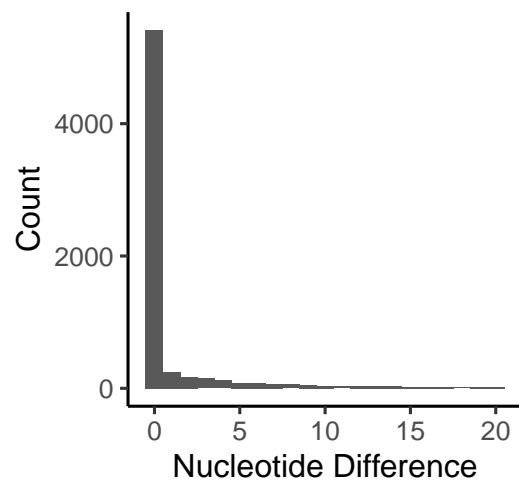
### IGHV4-30-2\*01

1077 sequences assigned  
818 (76%) exact matches, in which:  
785 unique CDR3  
6 unique J



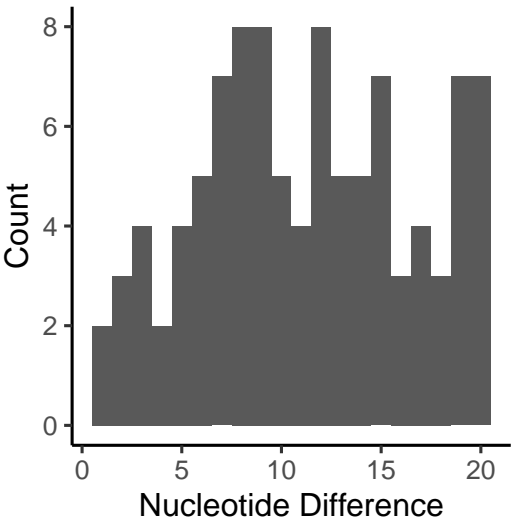
### IGHV4-34\*01\_02

6840 sequences assigned  
5415 (79.2%) exact matches, in which:  
5298 unique CDR3  
6 unique J



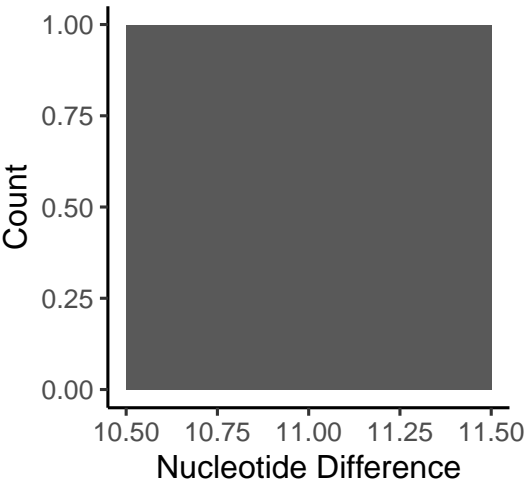
IGHV4–39\*02

142 sequences assigned  
No exact matches.



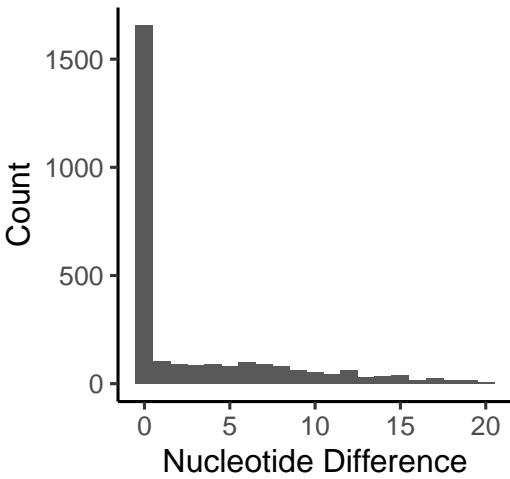
IGHV4/OR15–8\*01

2 sequences assigned  
No exact matches.



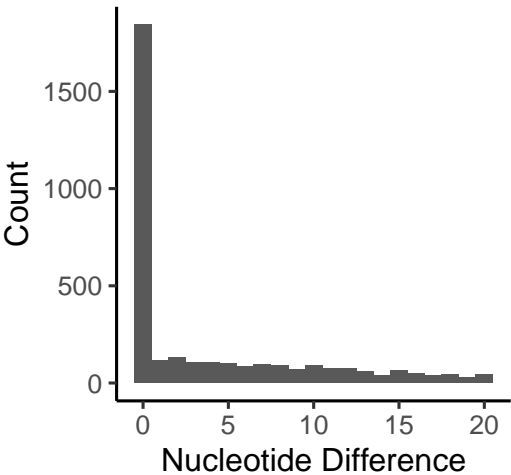
IGHV6–1\*01\_02

2856 sequences assigned  
1656 (58%) exact matches, in which:  
1630 unique CDR3  
6 unique J



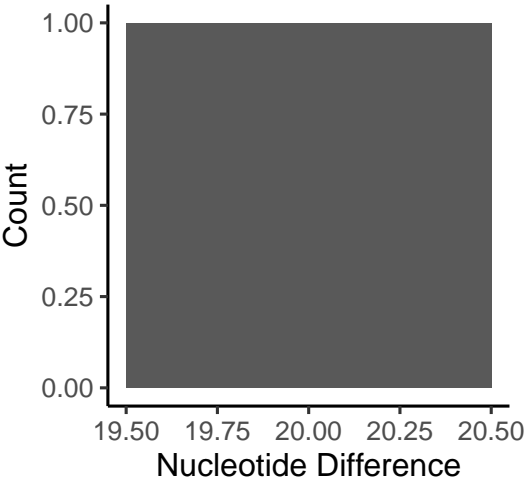
IGHV4–59\*08

3592 sequences assigned  
1843 (51.3%) exact matches, in which:  
1806 unique CDR3  
6 unique J



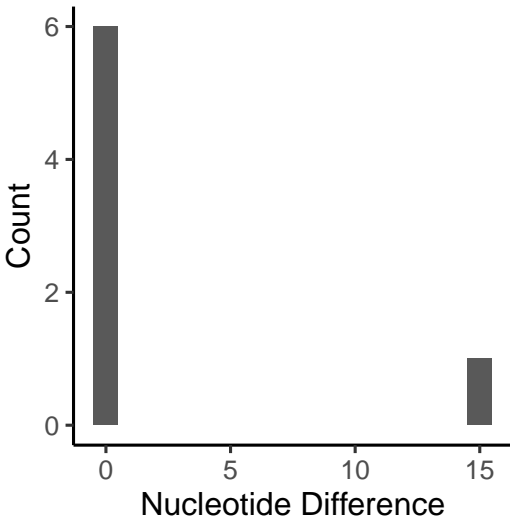
IGHV4/OR15–8\*02

3 sequences assigned  
No exact matches.



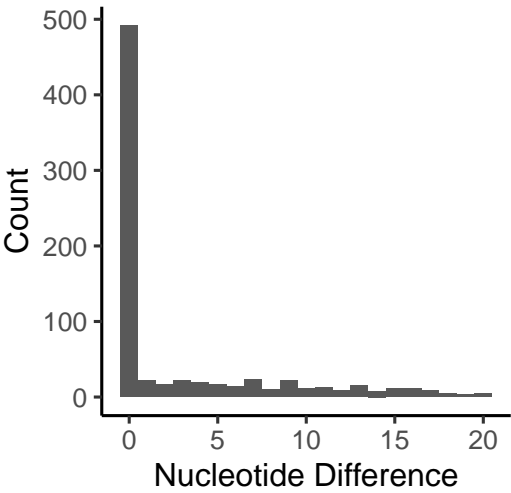
IGHV7–4–1\*01

7 sequences assigned  
6 (85.7%) exact matches, in which:  
6 unique CDR3  
2 unique J



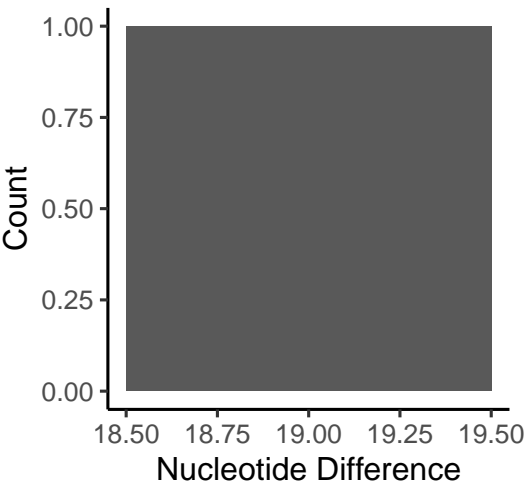
IGHV4–61\*01

799 sequences assigned  
492 (61.6%) exact matches, in which:  
483 unique CDR3  
6 unique J



IGHV5–51\*04

1 sequences assigned  
No exact matches.







Warning – no inferred sequences found.