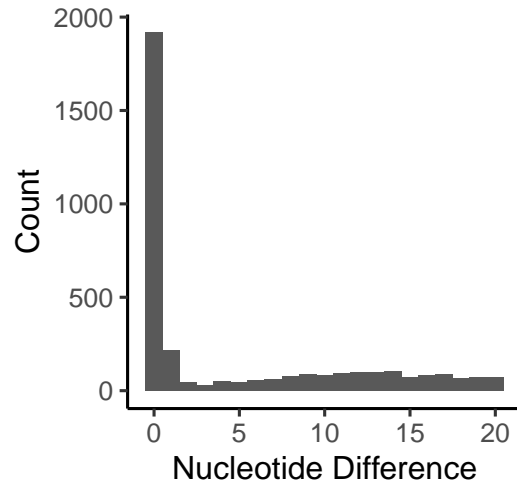


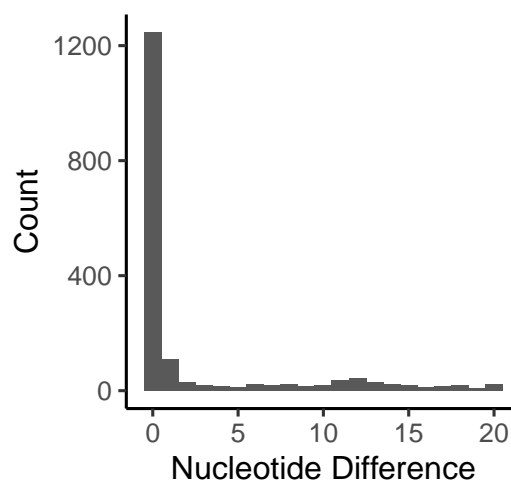
### IGHV1-2\*02

4599 sequences assigned  
1918 (41.7%) exact matches, in which:  
1896 unique CDR3  
7 unique J



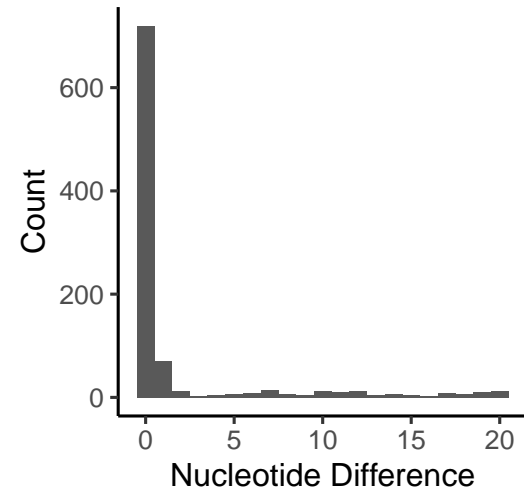
### IGHV1-8\*01

1976 sequences assigned  
1246 (63.1%) exact matches, in which:  
1229 unique CDR3  
7 unique J



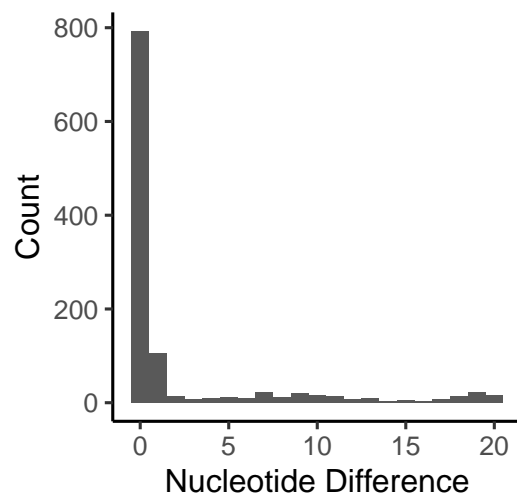
### IGHV1-24\*01

1019 sequences assigned  
720 (70.7%) exact matches, in which:  
714 unique CDR3  
7 unique J



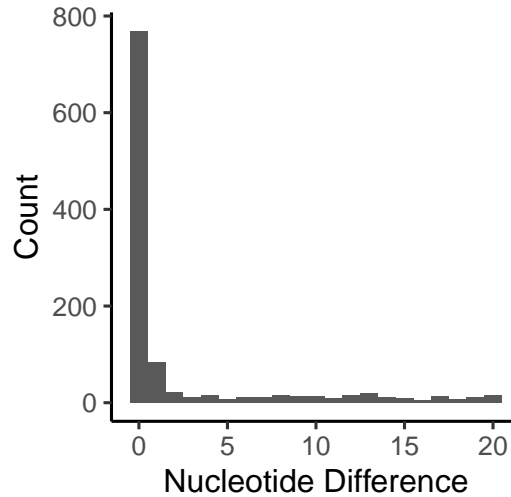
### IGHV1-2\*04

1203 sequences assigned  
793 (65.9%) exact matches, in which:  
772 unique CDR3  
7 unique J



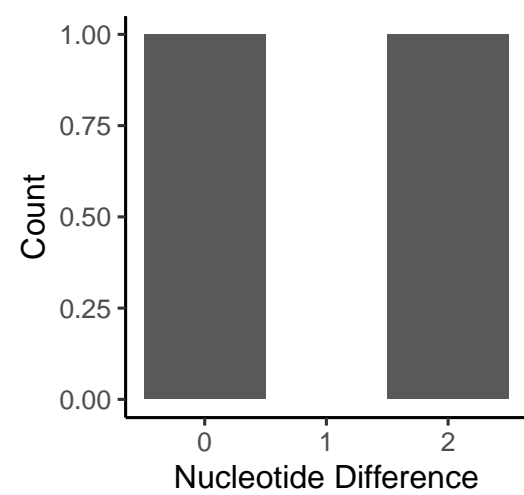
### IGHV1-8\*03

1154 sequences assigned  
769 (66.6%) exact matches, in which:  
762 unique CDR3  
6 unique J



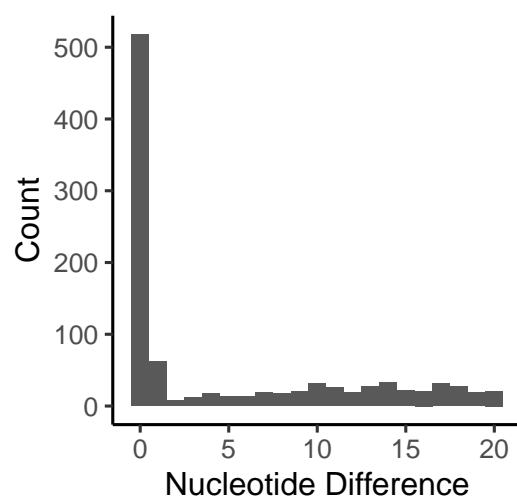
### IGHV1-45\*02

18 sequences assigned  
1 (5.6%) exact matches, in which:  
1 unique CDR3  
1 unique J



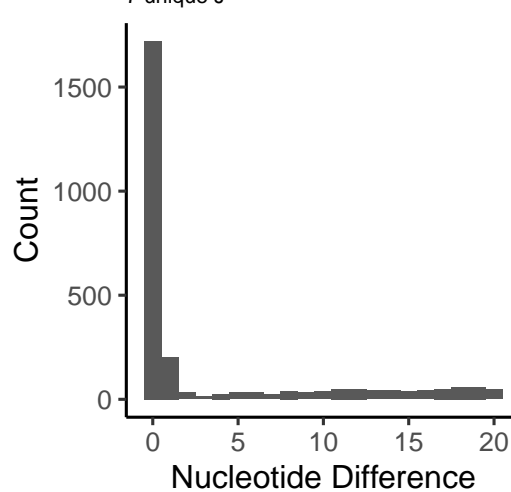
### IGHV1-3\*01

1344 sequences assigned  
518 (38.5%) exact matches, in which:  
513 unique CDR3  
6 unique J



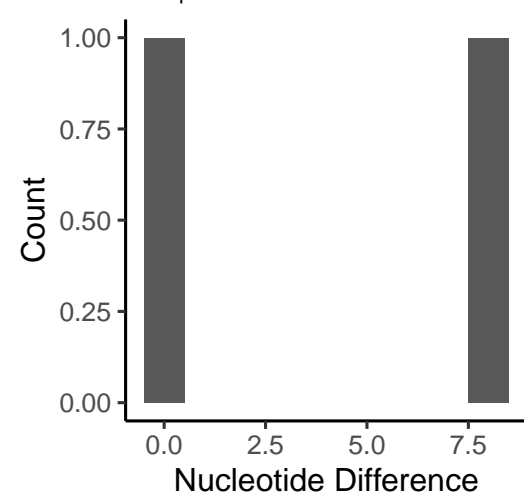
### IGHV1-18\*01

3370 sequences assigned  
1721 (51.1%) exact matches, in which:  
1707 unique CDR3  
7 unique J



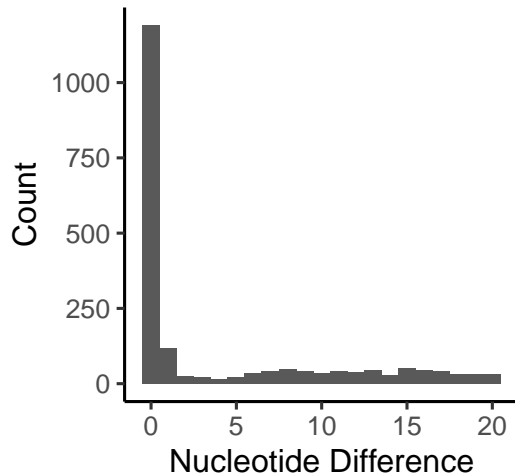
### IGHV1-45\*03

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



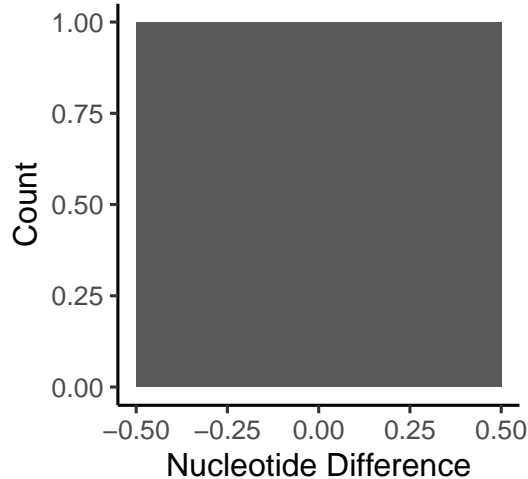
### IGHV1-46\*01

2670 sequences assigned  
1190 (44.6%) exact matches, in which:  
1178 unique CDR3  
7 unique J



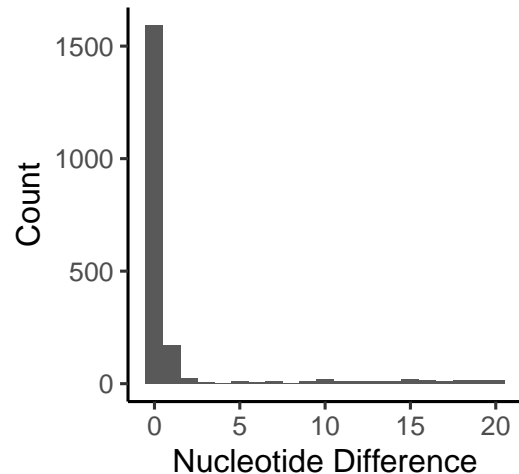
### IGHV1-68\*02

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



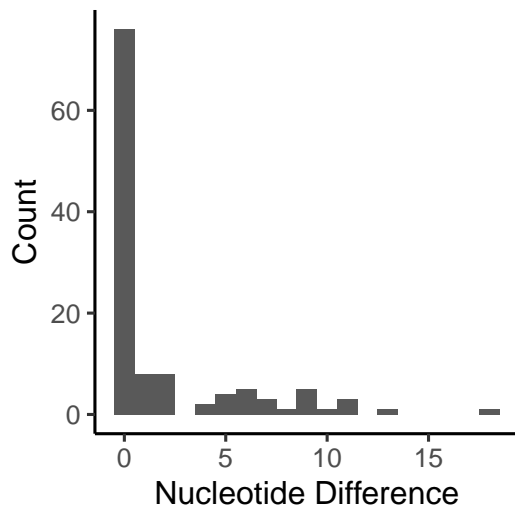
### IGHV1-69\*06

2334 sequences assigned  
1592 (68.2%) exact matches, in which:  
1571 unique CDR3  
7 unique J



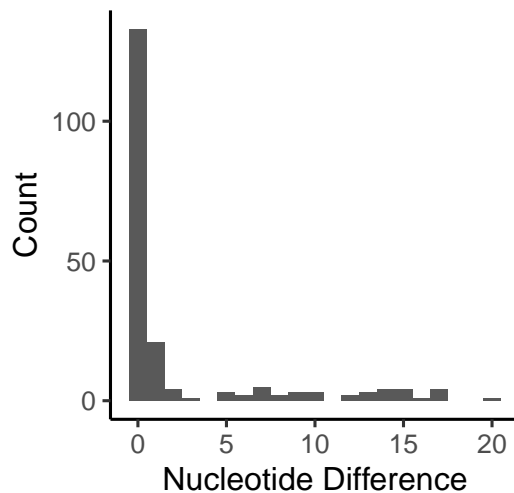
### IGHV1-58\*01

121 sequences assigned  
76 (62.8%) exact matches, in which:  
76 unique CDR3  
5 unique J



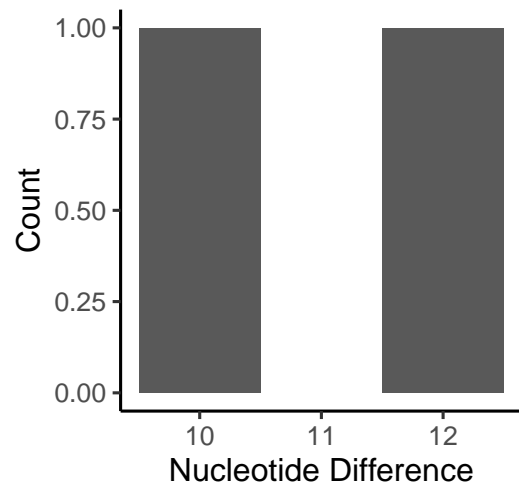
### IGHV1-69-2\*01

233 sequences assigned  
133 (57.1%) exact matches, in which:  
132 unique CDR3  
7 unique J



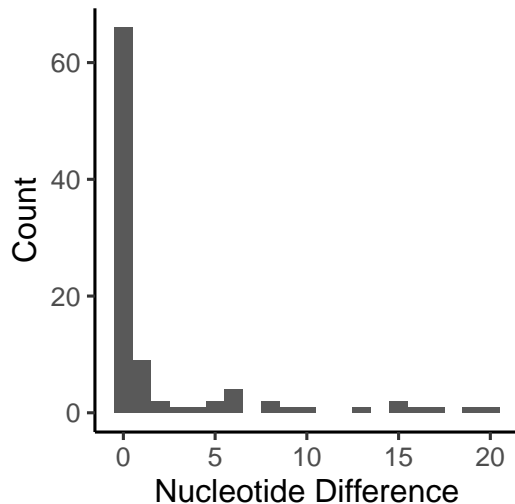
### IGHV1-NL1\*01

2 sequences assigned  
No exact matches.



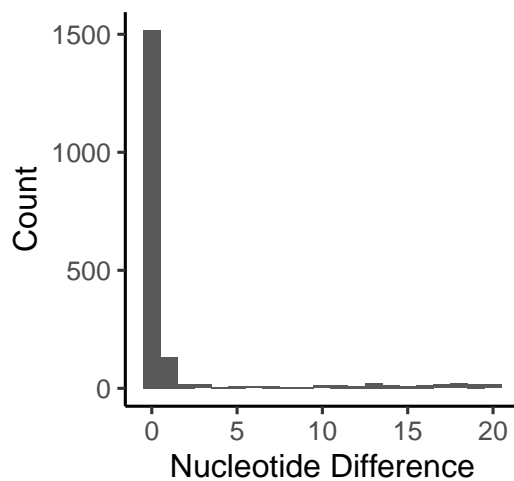
### IGHV1-58\*02

119 sequences assigned  
66 (55.5%) exact matches, in which:  
66 unique CDR3  
5 unique J



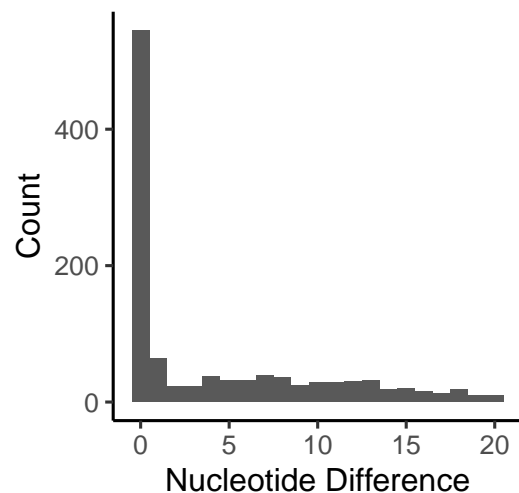
### IGHV1-69\*04

2246 sequences assigned  
1518 (67.6%) exact matches, in which:  
1494 unique CDR3  
6 unique J



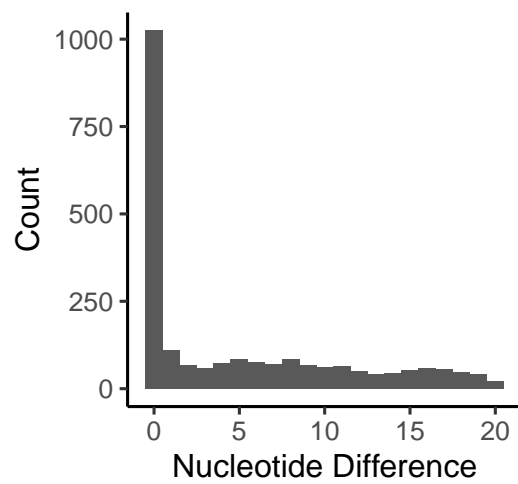
### IGHV2-5\*01

1170 sequences assigned  
545 (46.6%) exact matches, in which:  
543 unique CDR3  
6 unique J



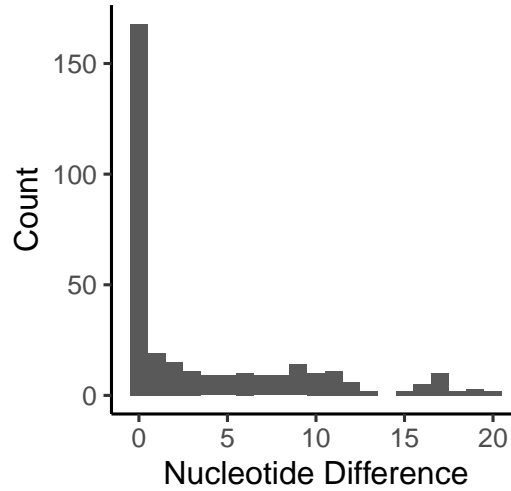
### IGHV2-5\*02

2489 sequences assigned  
1025 (41.2%) exact matches, in which:  
1019 unique CDR3  
6 unique J



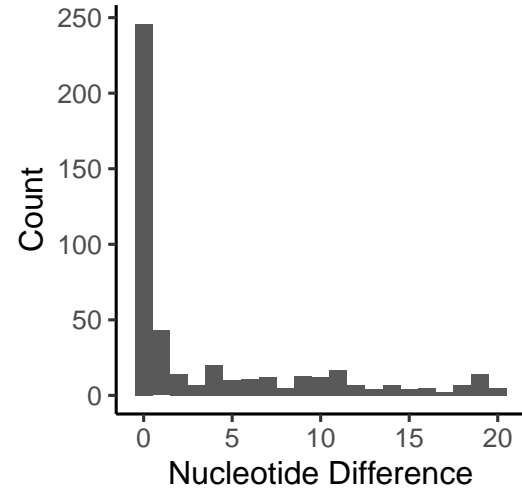
### IGHV2-70\*15

360 sequences assigned  
168 (46.7%) exact matches, in which:  
168 unique CDR3  
5 unique J



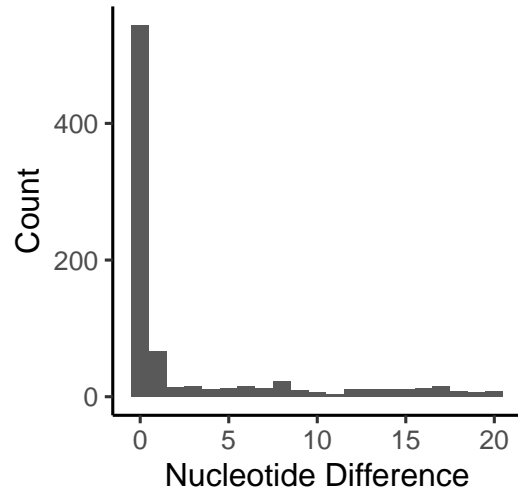
### IGHV3-9\*03

480 sequences assigned  
246 (51.2%) exact matches, in which:  
246 unique CDR3  
7 unique J



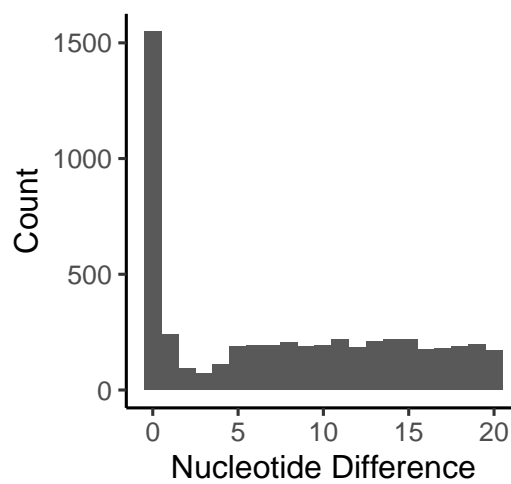
### IGHV2-26\*01

870 sequences assigned  
544 (62.5%) exact matches, in which:  
539 unique CDR3  
6 unique J



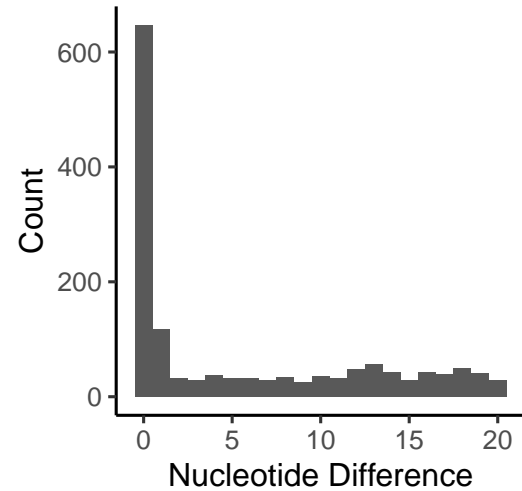
### IGHV3-7\*01

7031 sequences assigned  
1548 (22%) exact matches, in which:  
1509 unique CDR3  
7 unique J



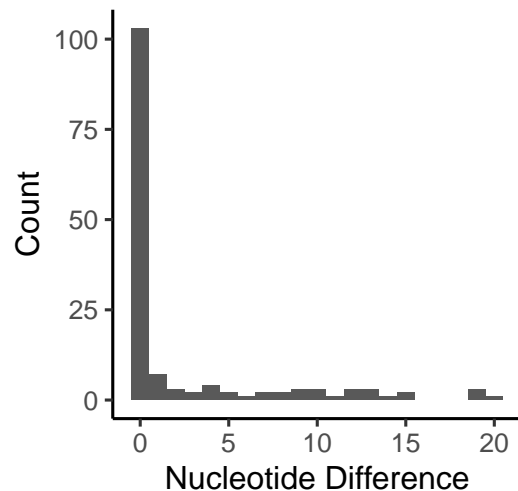
### IGHV3-11\*01

2012 sequences assigned  
647 (32.2%) exact matches, in which:  
639 unique CDR3  
6 unique J



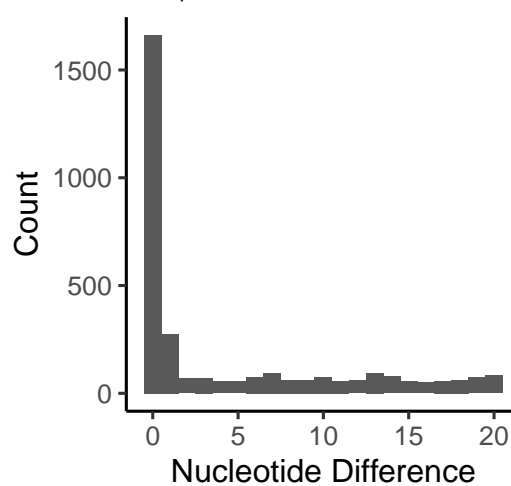
### IGHV2-70\*01

153 sequences assigned  
103 (67.3%) exact matches, in which:  
103 unique CDR3  
5 unique J



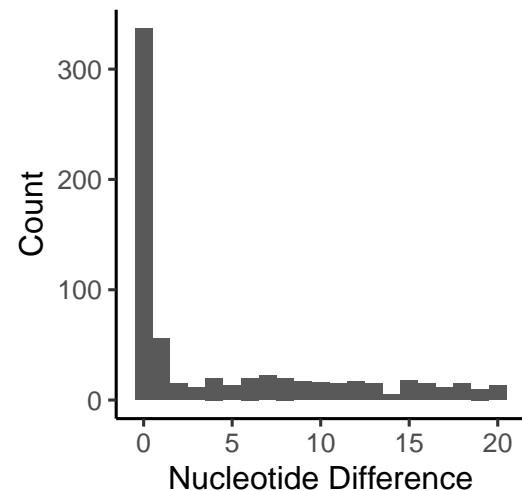
### IGHV3-9\*01

3714 sequences assigned  
1662 (44.7%) exact matches, in which:  
1640 unique CDR3  
6 unique J



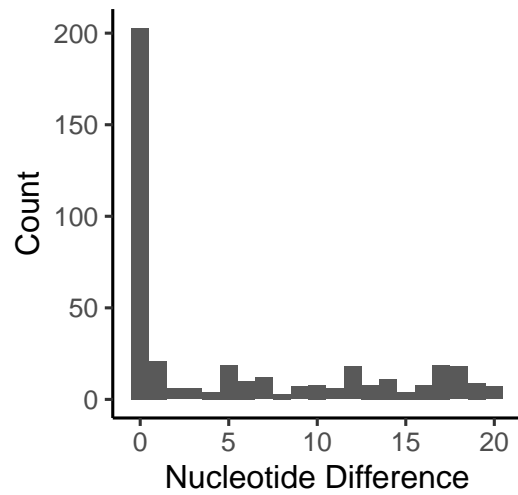
### IGHV3-11\*04

896 sequences assigned  
337 (37.6%) exact matches, in which:  
336 unique CDR3  
7 unique J



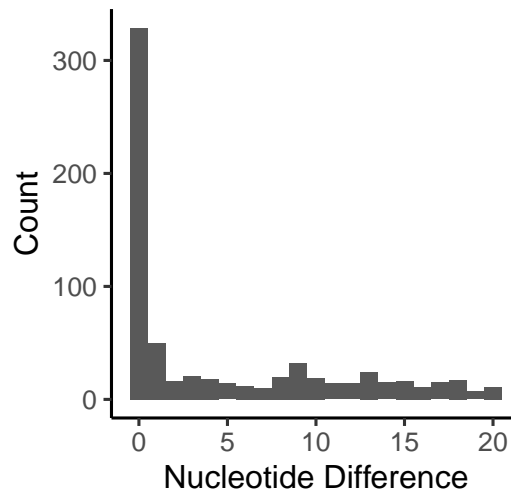
### IGHV3-13\*01

492 sequences assigned  
203 (41.3%) exact matches, in which:  
201 unique CDR3  
6 unique J



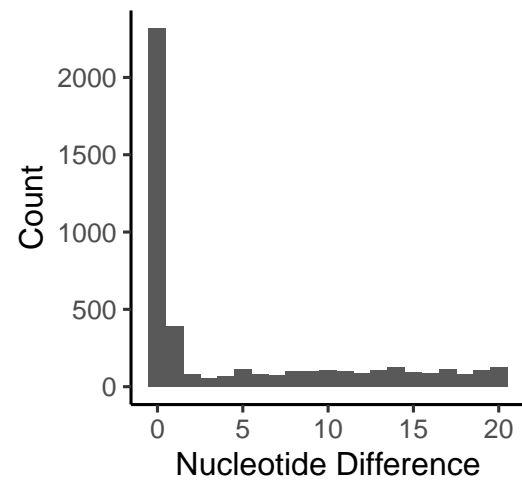
### IGHV3-20\*04

848 sequences assigned  
329 (38.8%) exact matches, in which:  
322 unique CDR3  
7 unique J



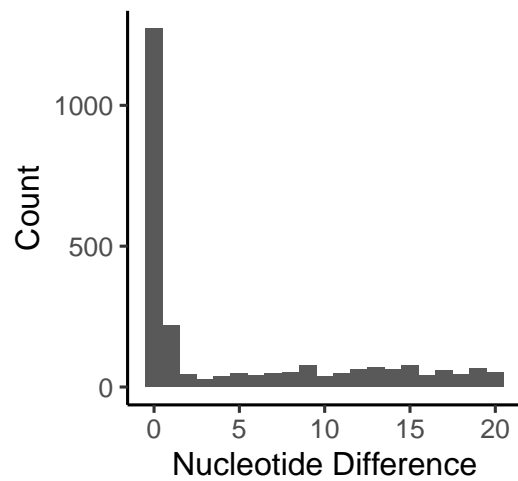
### IGHV3-33\*01

5474 sequences assigned  
2317 (42.3%) exact matches, in which:  
2280 unique CDR3  
7 unique J



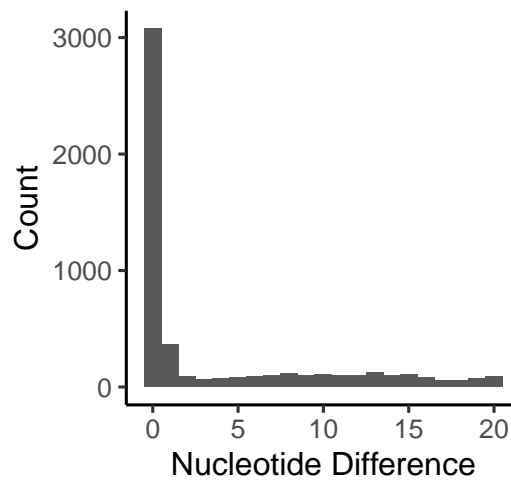
### IGHV3-15\*01

3082 sequences assigned  
1272 (41.3%) exact matches, in which:  
1243 unique CDR3  
7 unique J



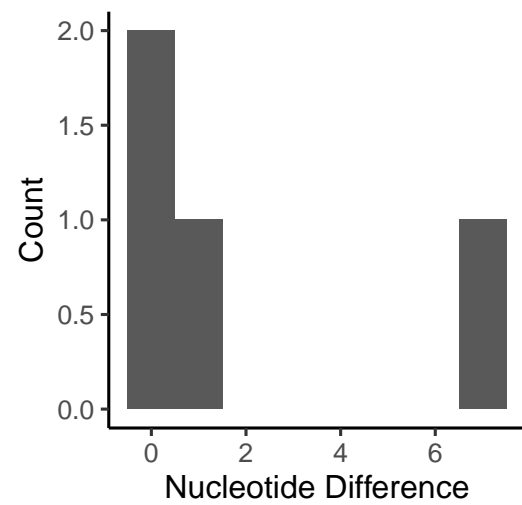
### IGHV3-21\*01

5900 sequences assigned  
3076 (52.1%) exact matches, in which:  
3026 unique CDR3  
7 unique J



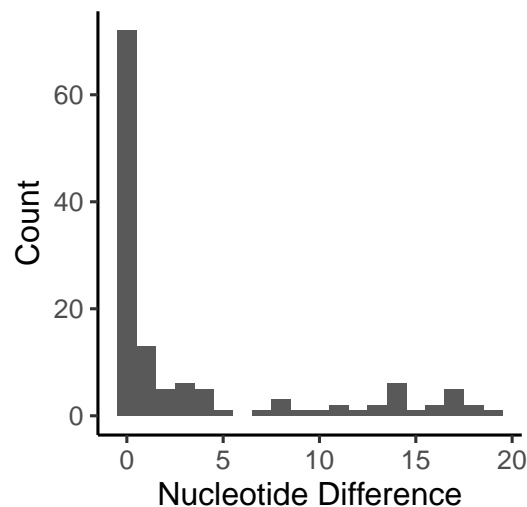
### IGHV3-35\*01

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



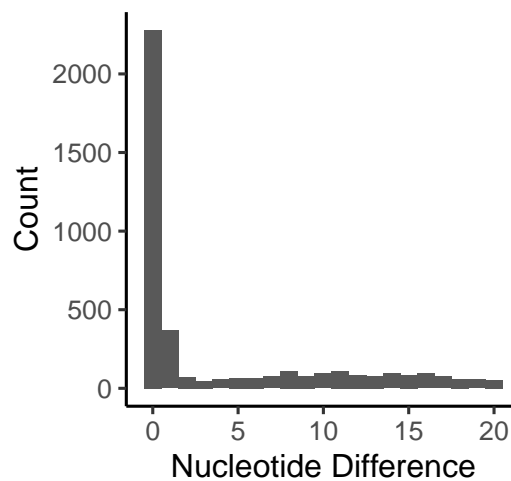
### IGHV3-20\*01

145 sequences assigned  
72 (49.7%) exact matches, in which:  
71 unique CDR3  
5 unique J



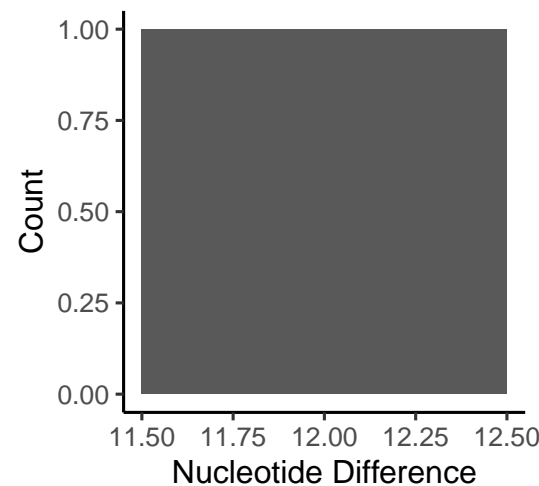
### IGHV3-30-3\*01

4860 sequences assigned  
2279 (46.9%) exact matches, in which:  
2247 unique CDR3  
6 unique J



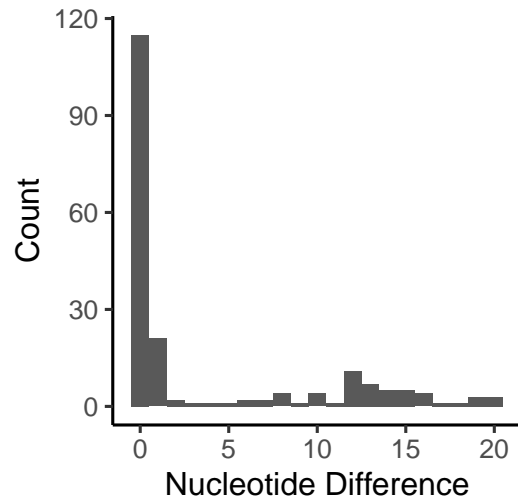
### IGHV3-41\*02

1 sequences assigned  
No exact matches.



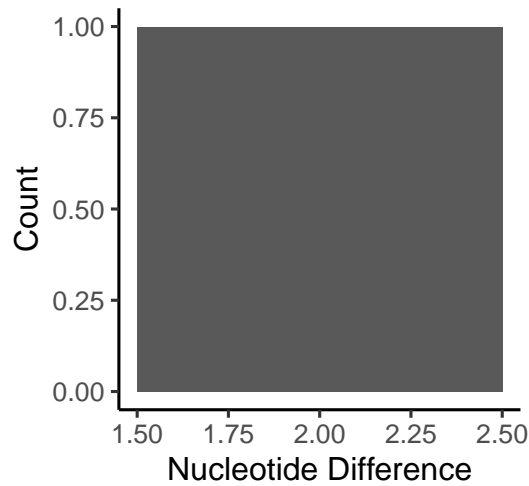
### IGHV3-43\*01

229 sequences assigned  
115 (50.2%) exact matches, in which:  
106 unique CDR3  
6 unique J



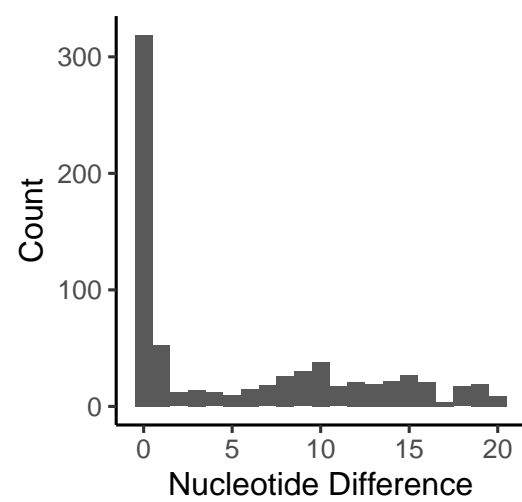
### IGHV3-47\*02

1 sequences assigned  
No exact matches.



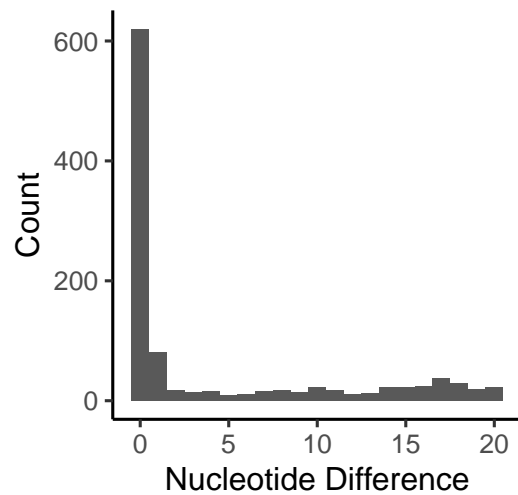
### IGHV3-49\*04

820 sequences assigned  
319 (38.9%) exact matches, in which:  
314 unique CDR3  
6 unique J



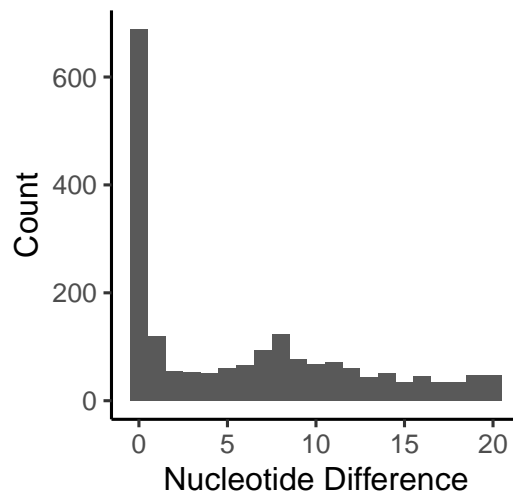
### IGHV3-43\*02

1281 sequences assigned  
620 (48.4%) exact matches, in which:  
614 unique CDR3  
7 unique J



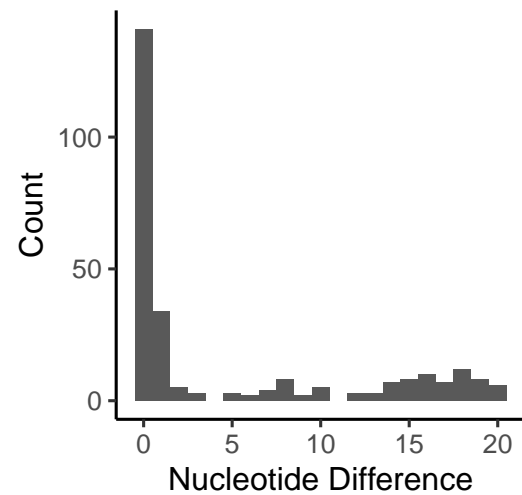
### IGHV3-48\*02

2482 sequences assigned  
689 (27.8%) exact matches, in which:  
655 unique CDR3  
7 unique J



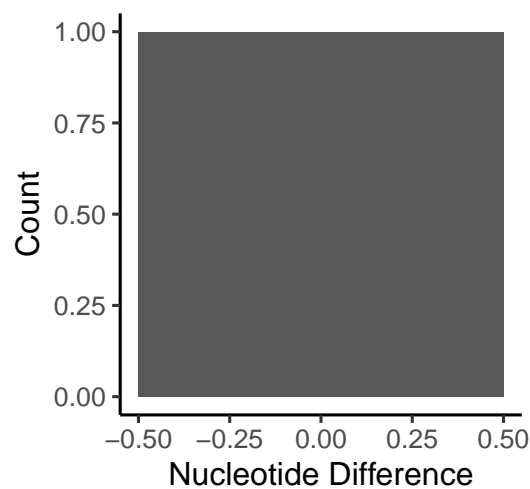
### IGHV3-49\*05

345 sequences assigned  
141 (40.9%) exact matches, in which:  
141 unique CDR3  
6 unique J



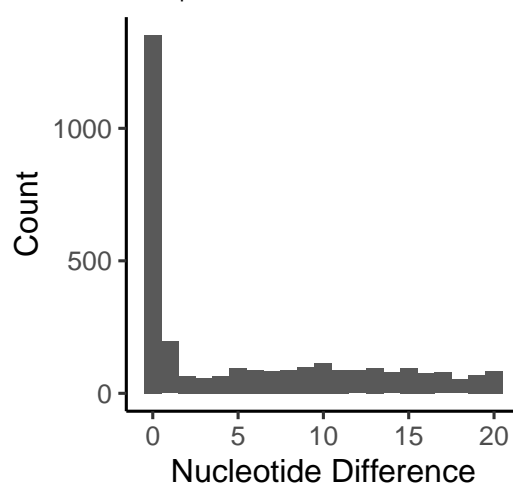
### IGHV3-47\*01

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



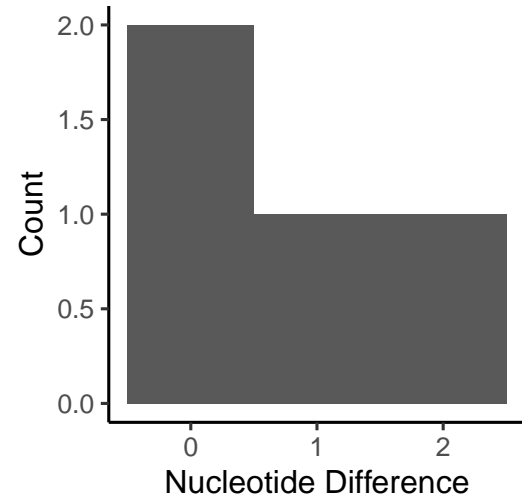
### IGHV3-48\*03

3659 sequences assigned  
1352 (36.9%) exact matches, in which:  
1324 unique CDR3  
7 unique J



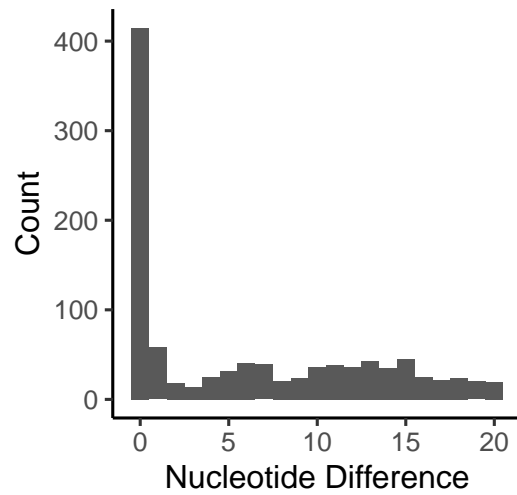
### IGHV3-52\*01

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



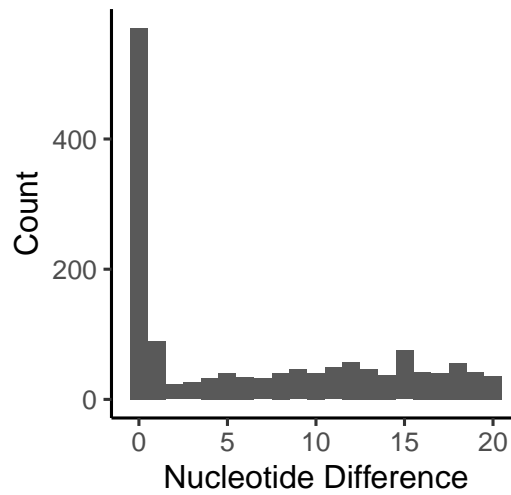
### IGHV3-53\*01

1375 sequences assigned  
415 (30.2%) exact matches, in which:  
411 unique CDR3  
7 unique J



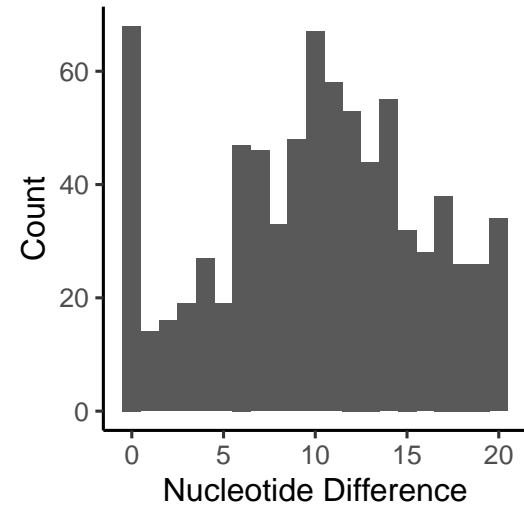
### IGHV3-66\*01

1851 sequences assigned  
571 (30.8%) exact matches, in which:  
564 unique CDR3  
6 unique J



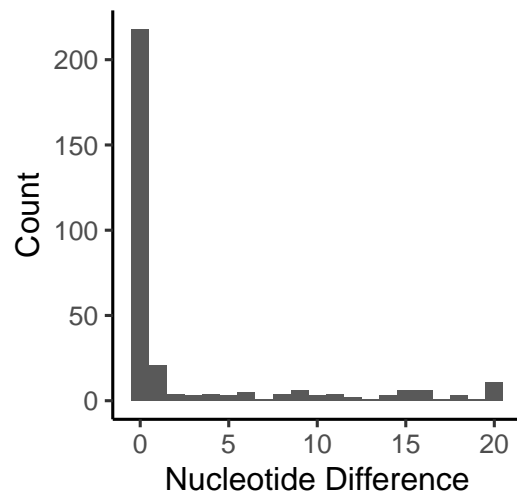
### IGHV3-72\*01

1018 sequences assigned  
68 (6.7%) exact matches, in which:  
68 unique CDR3  
6 unique J



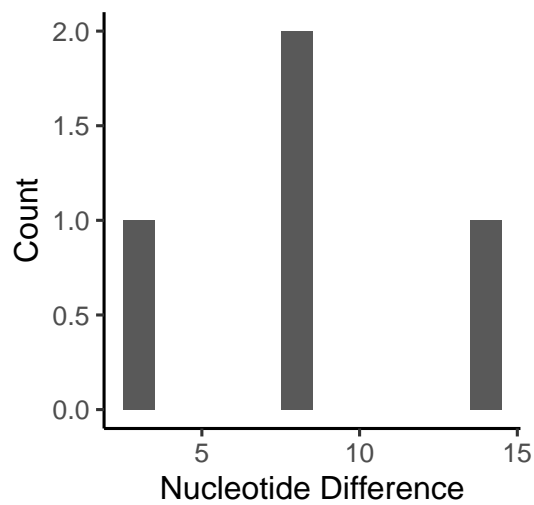
### IGHV3-53\*04

349 sequences assigned  
218 (62.5%) exact matches, in which:  
216 unique CDR3  
6 unique J



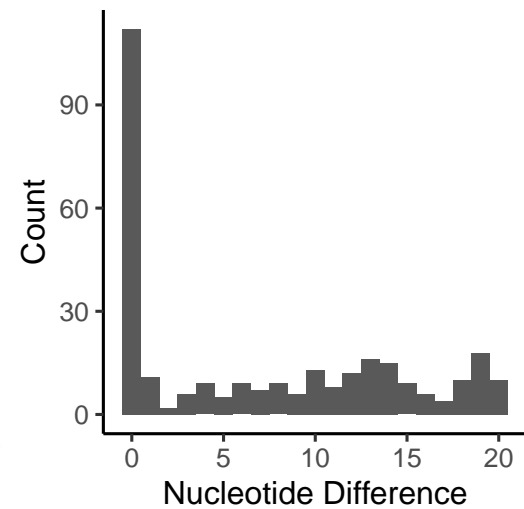
### IGHV3-69-1\*01

9 sequences assigned  
No exact matches.



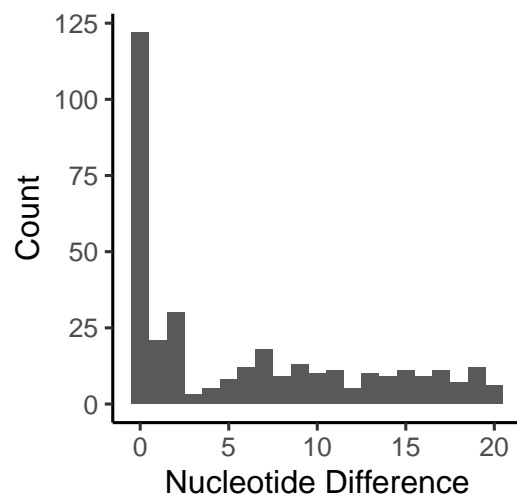
### IGHV3-73\*01

368 sequences assigned  
112 (30.4%) exact matches, in which:  
110 unique CDR3  
4 unique J



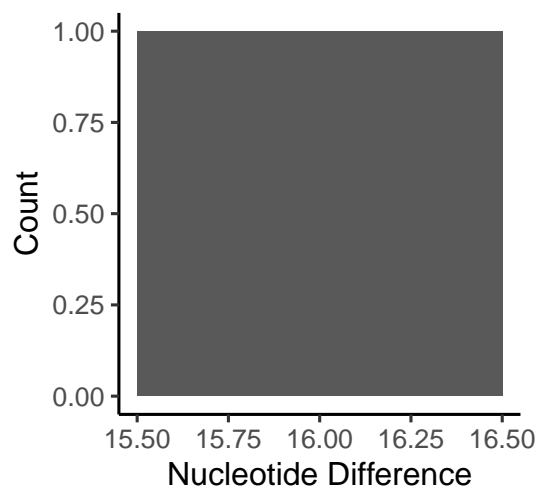
### IGHV3-64\*01

399 sequences assigned  
122 (30.6%) exact matches, in which:  
119 unique CDR3  
5 unique J



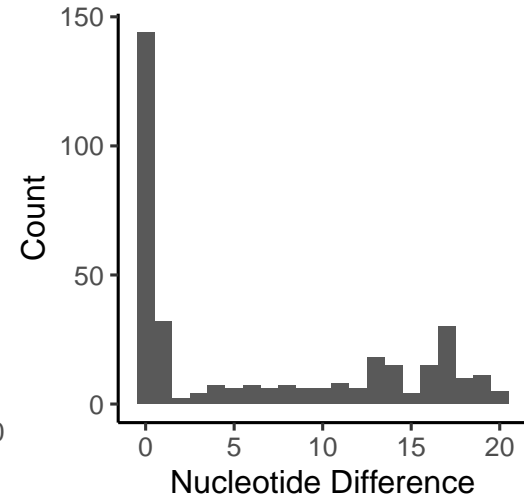
### IGHV3-69-1\*02

4 sequences assigned  
No exact matches.



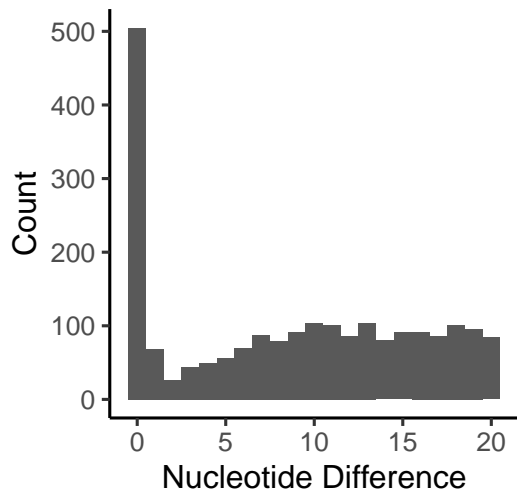
### IGHV3-73\*02

487 sequences assigned  
144 (29.6%) exact matches, in which:  
142 unique CDR3  
5 unique J



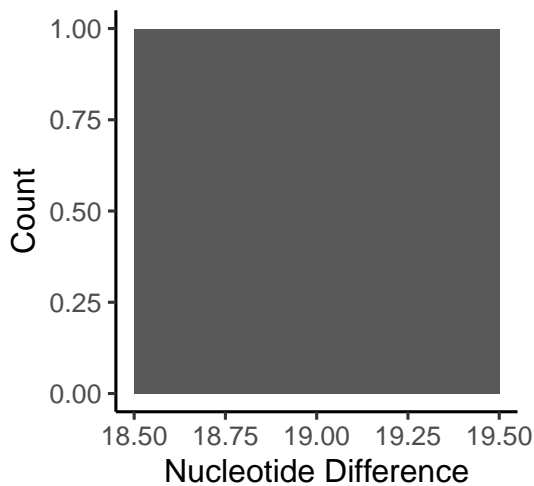
### IGHV3–74\*01

3073 sequences assigned  
505 (16.4%) exact matches, in which:  
498 unique CDR3  
7 unique J



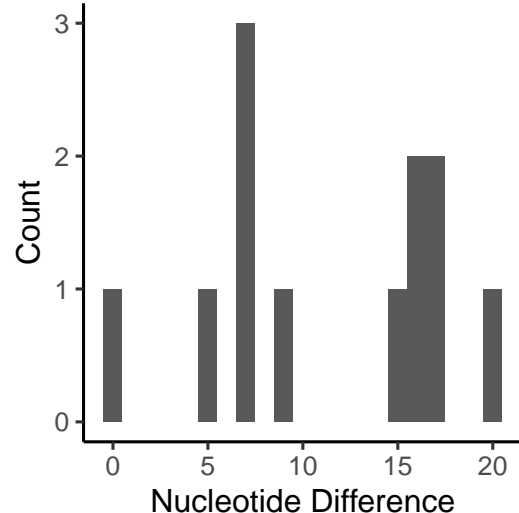
### IGHV3–NL1\*01

2 sequences assigned  
No exact matches.



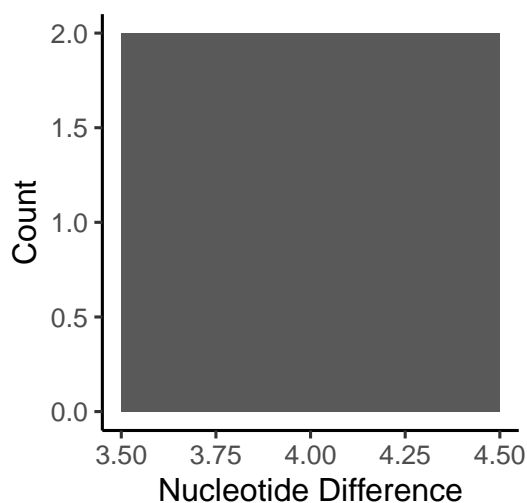
### IGHV4–28\*01

12 sequences assigned  
1 (8.3%) exact matches, in which:  
1 unique CDR3  
1 unique J



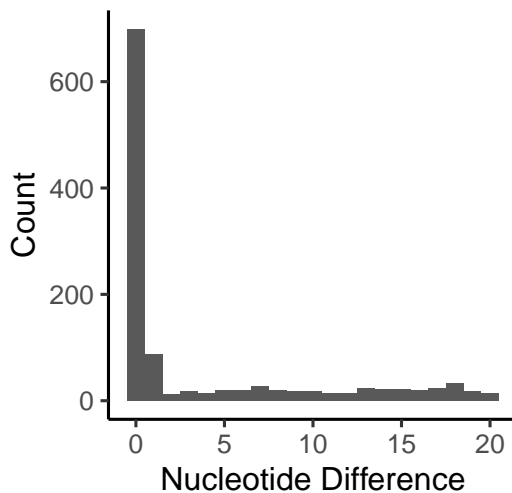
### IGHV3–43D\*04

2 sequences assigned  
No exact matches.



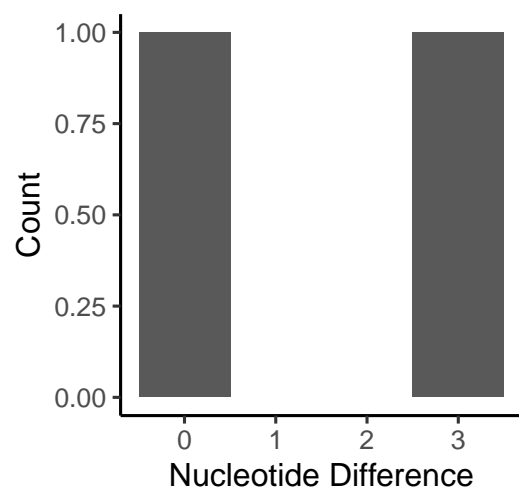
### IGHV4–4\*02

1392 sequences assigned  
699 (50.2%) exact matches, in which:  
696 unique CDR3  
6 unique J



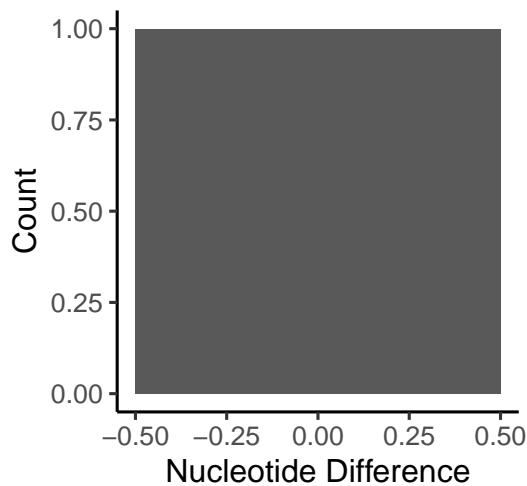
### IGHV4–28\*03

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



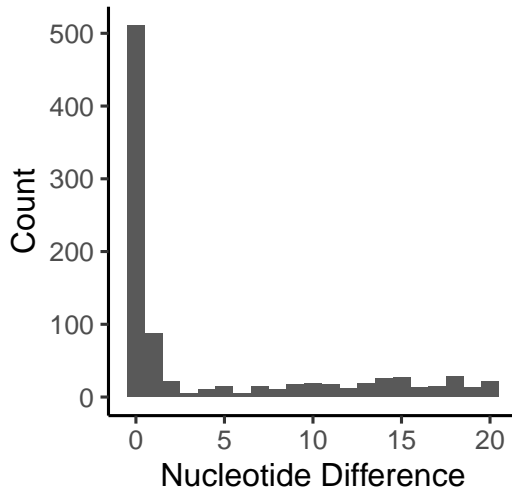
### IGHV3–64D\*06

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



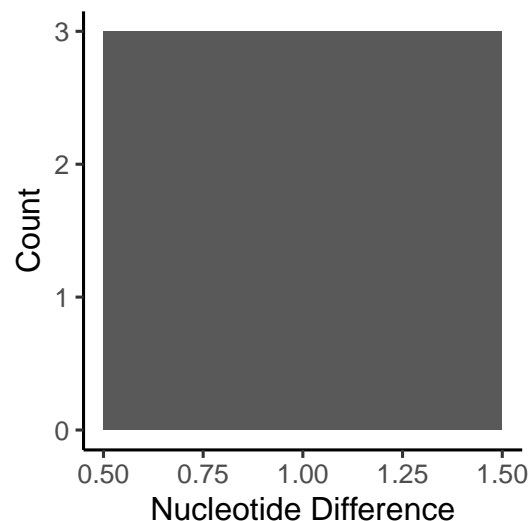
### IGHV4–4\*07

1120 sequences assigned  
511 (45.6%) exact matches, in which:  
506 unique CDR3  
7 unique J



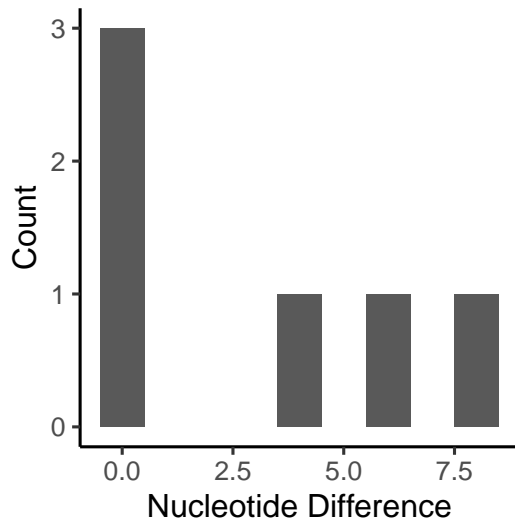
### IGHV4–28\*04

3 sequences assigned  
No exact matches.



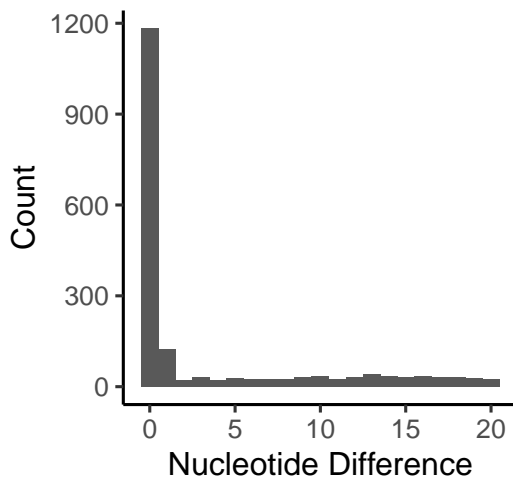
### IGHV4-28\*07

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



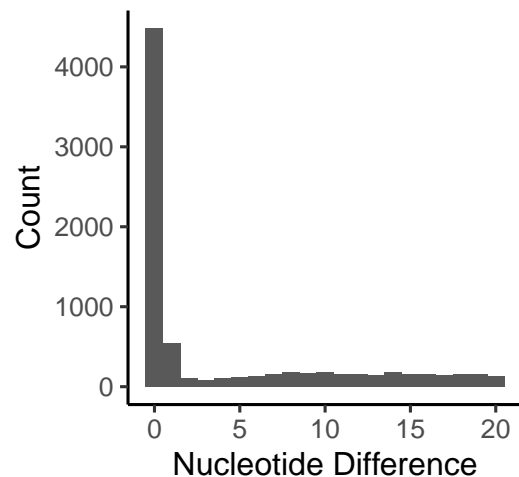
### IGHV4-31\*03

2231 sequences assigned  
1183 (53%) exact matches, in which:  
1174 unique CDR3  
7 unique J



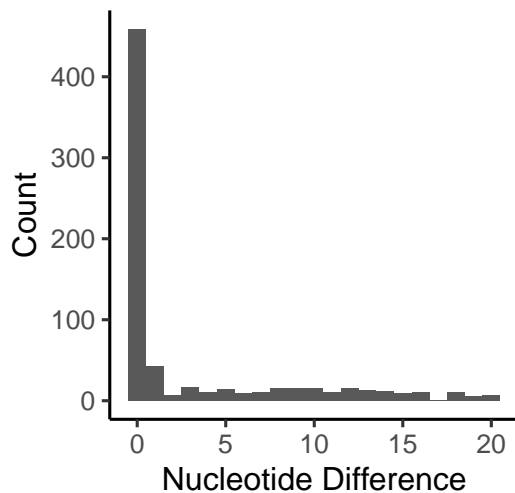
### IGHV4-39\*01

9492 sequences assigned  
4481 (47.2%) exact matches, in which:  
4441 unique CDR3  
7 unique J



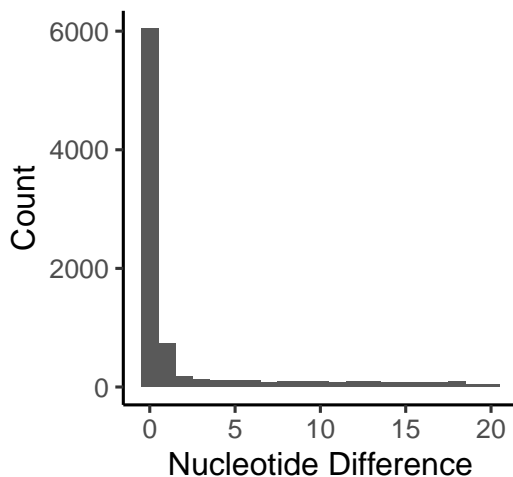
### IGHV4-30-4\*01

882 sequences assigned  
459 (52%) exact matches, in which:  
453 unique CDR3  
6 unique J



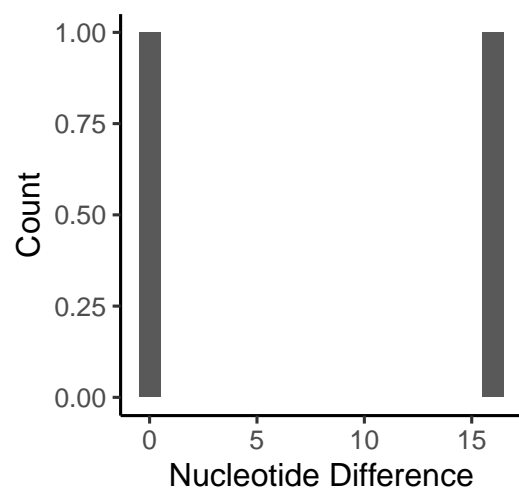
### IGHV4-34\*01

9135 sequences assigned  
6041 (66.1%) exact matches, in which:  
5907 unique CDR3  
7 unique J



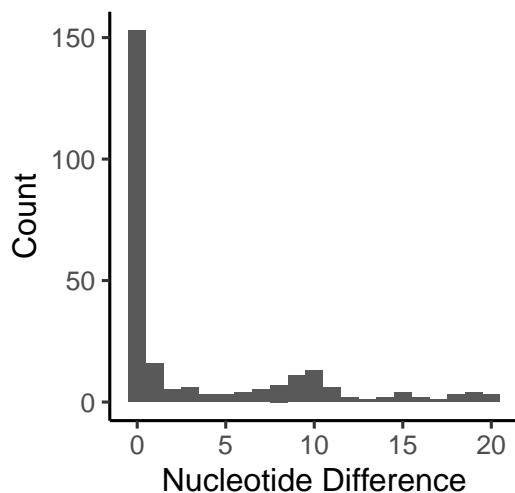
### IGHV4-55\*02

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



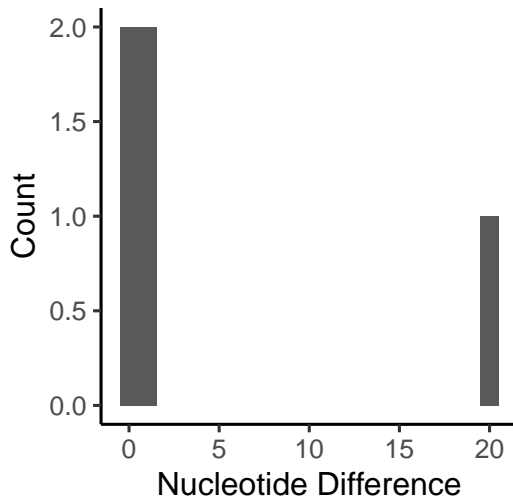
### IGHV4-30-2\*01

278 sequences assigned  
153 (55%) exact matches, in which:  
152 unique CDR3  
5 unique J



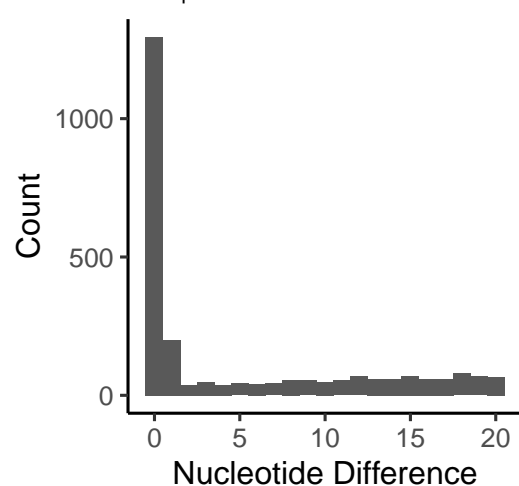
### IGHV4-38-2\*02

7 sequences assigned  
2 (28.6%) exact matches, in which:  
2 unique CDR3  
2 unique J



### IGHV4-59\*01

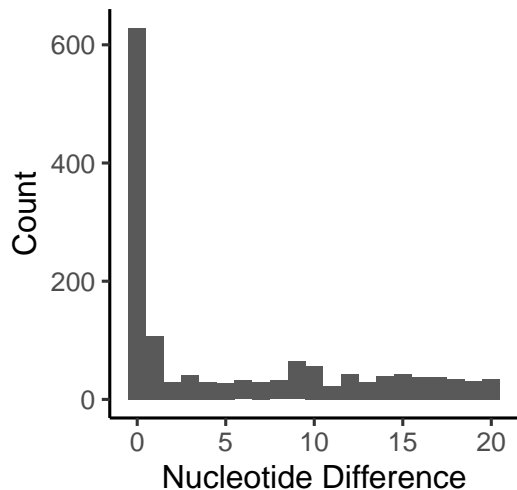
3185 sequences assigned  
1295 (40.7%) exact matches, in which:  
1287 unique CDR3  
7 unique J





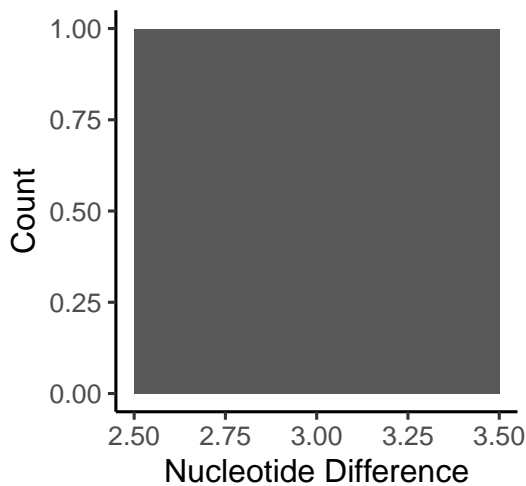
### IGHV4–59\*08

1850 sequences assigned  
629 (34%) exact matches, in which:  
626 unique CDR3  
7 unique J



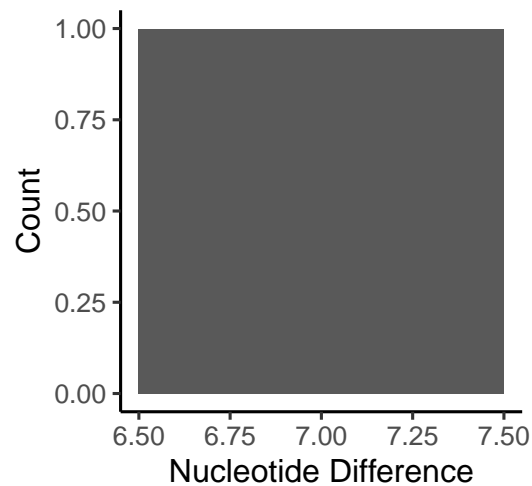
### IGHV1/OR15–3\*03

1 sequences assigned  
No exact matches.



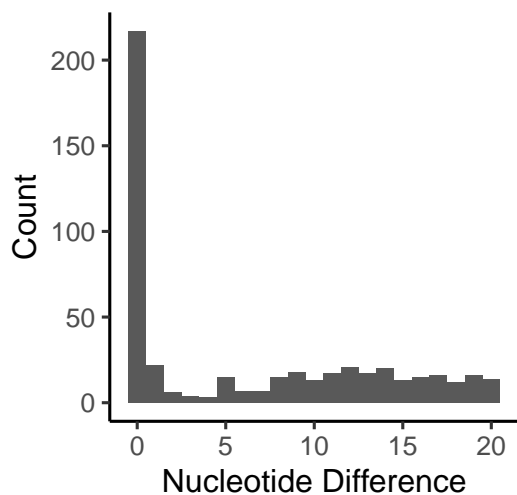
### IGHV1/OR15–9\*01

1 sequences assigned  
No exact matches.



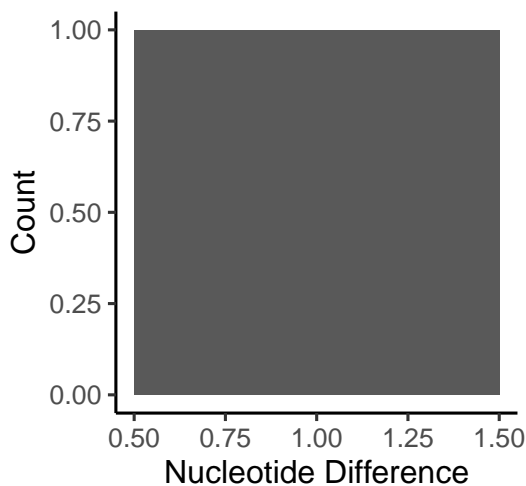
### IGHV4–61\*01

585 sequences assigned  
217 (37.1%) exact matches, in which:  
217 unique CDR3  
6 unique J



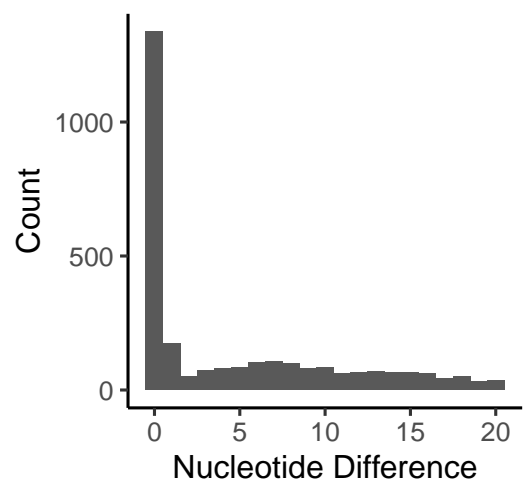
### IGHV1/OR15–4\*01

1 sequences assigned  
No exact matches.



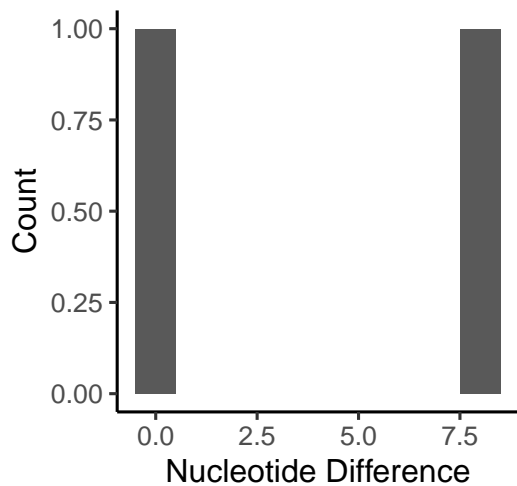
### IGHV5–51\*01

3200 sequences assigned  
1337 (41.8%) exact matches, in which:  
1320 unique CDR3  
7 unique J



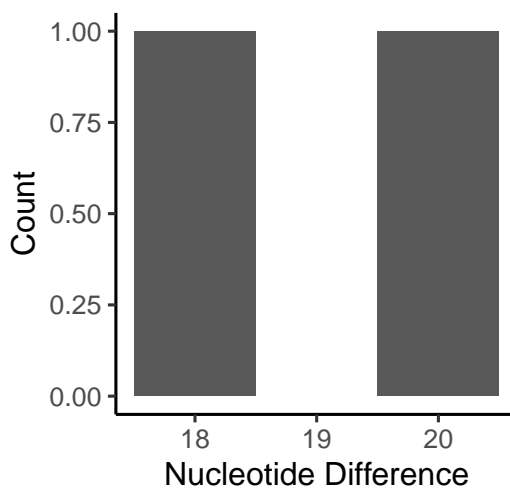
### IGHV1/OR15–1\*04

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



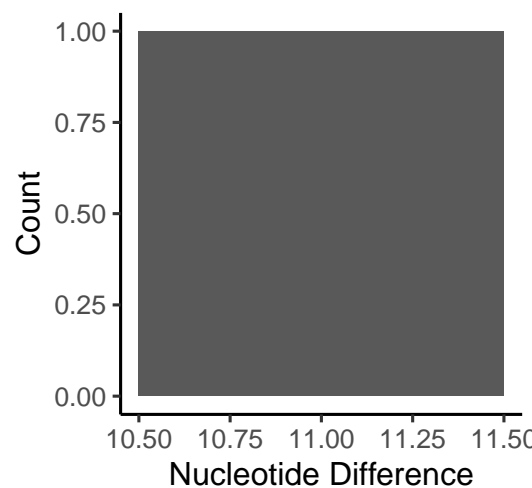
### IGHV4/OR15–8\*02

14 sequences assigned  
No exact matches.



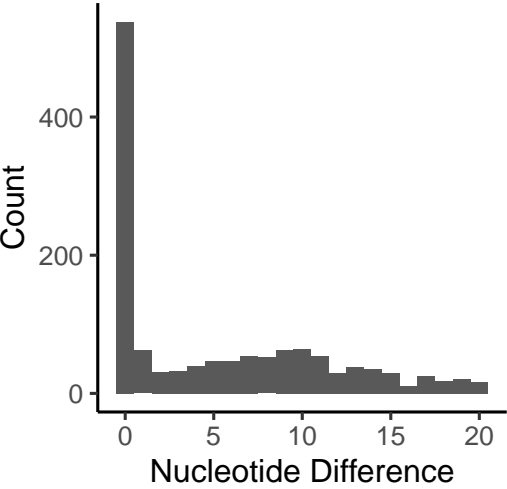
### IGHV5–78\*01

1 sequences assigned  
No exact matches.



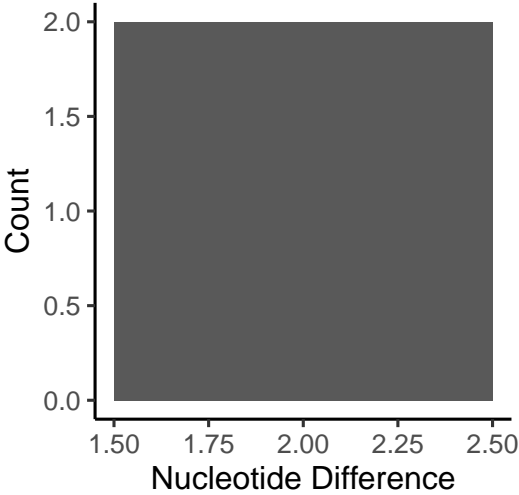
IGHV6-1\*01

1431 sequences assigned  
538 (37.6%) exact matches, in which:  
532 unique CDR3  
7 unique J



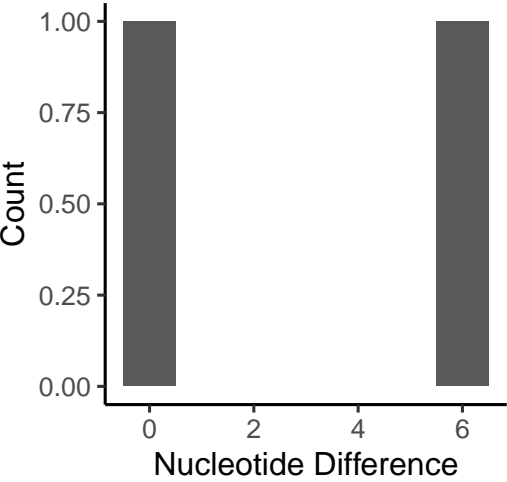
IGHV3/OR16-12\*01

2 sequences assigned  
No exact matches.



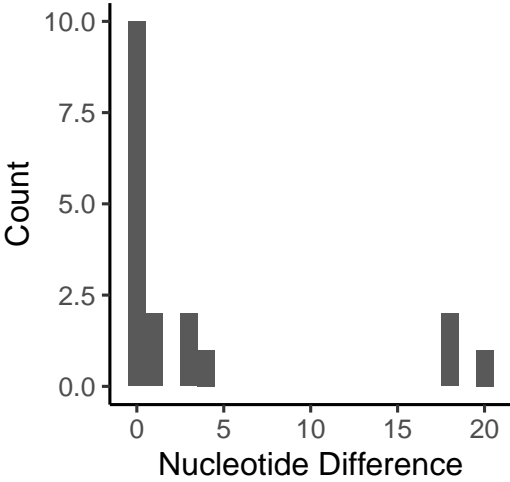
IGHV3/OR16-8\*01

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



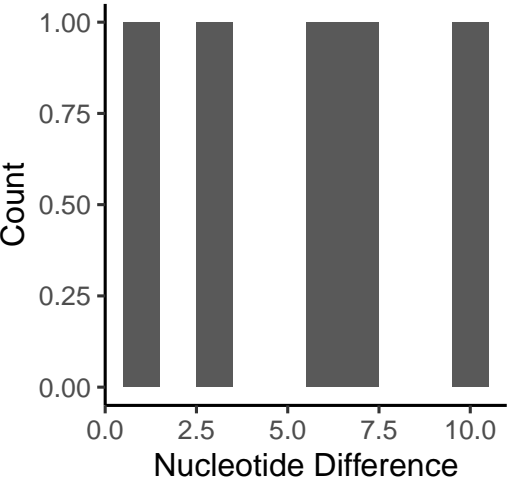
IGHV7-4-1\*01

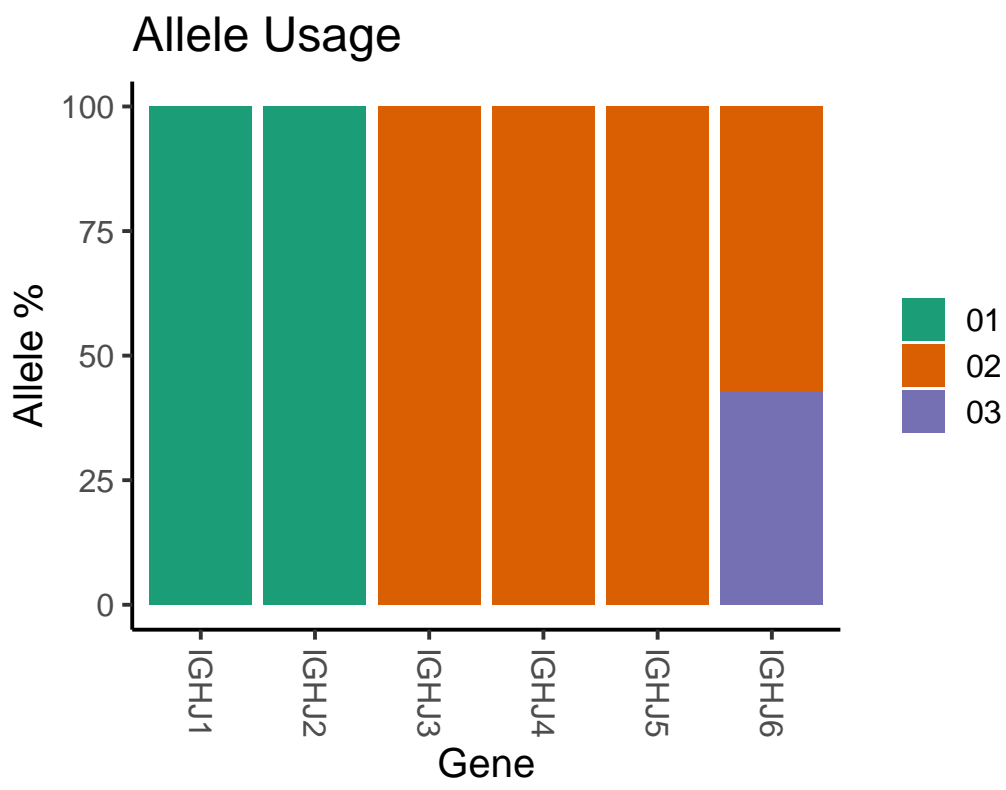
18 sequences assigned  
10 (55.6%) exact matches, in which:  
10 unique CDR3  
5 unique J



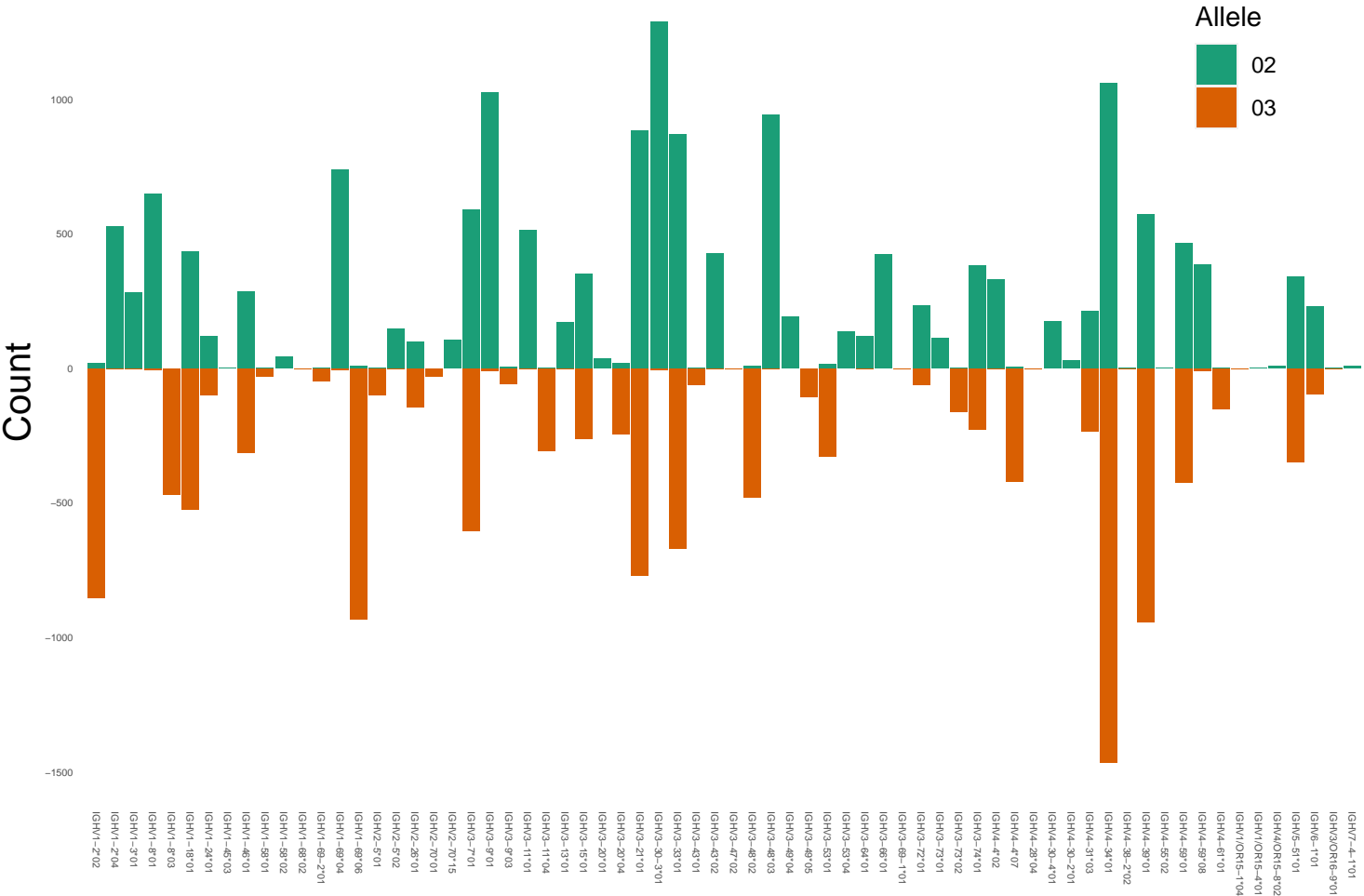
IGHV3/OR16-9\*01

5 sequences assigned  
No exact matches.





Sequence Count by IGHJ6 allele usage



Warning – no inferred sequences found.