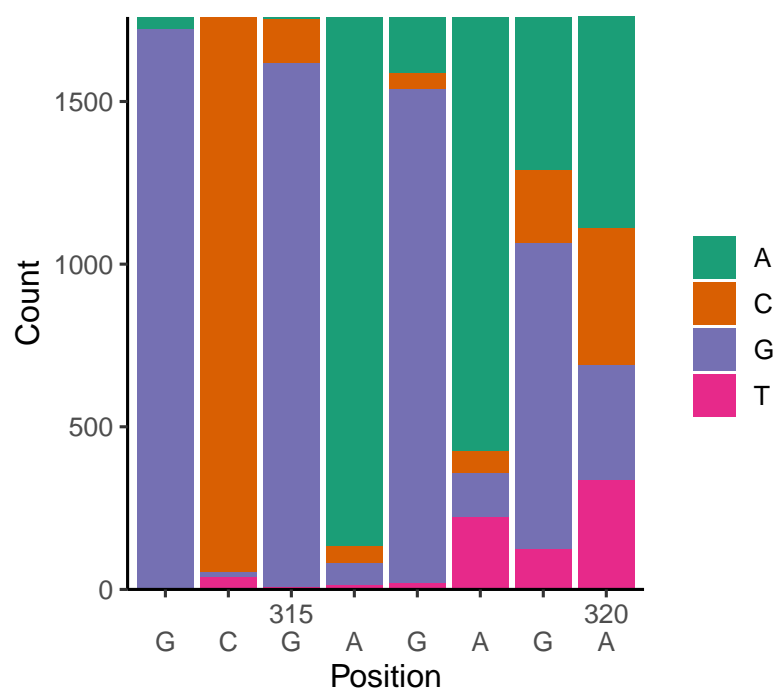


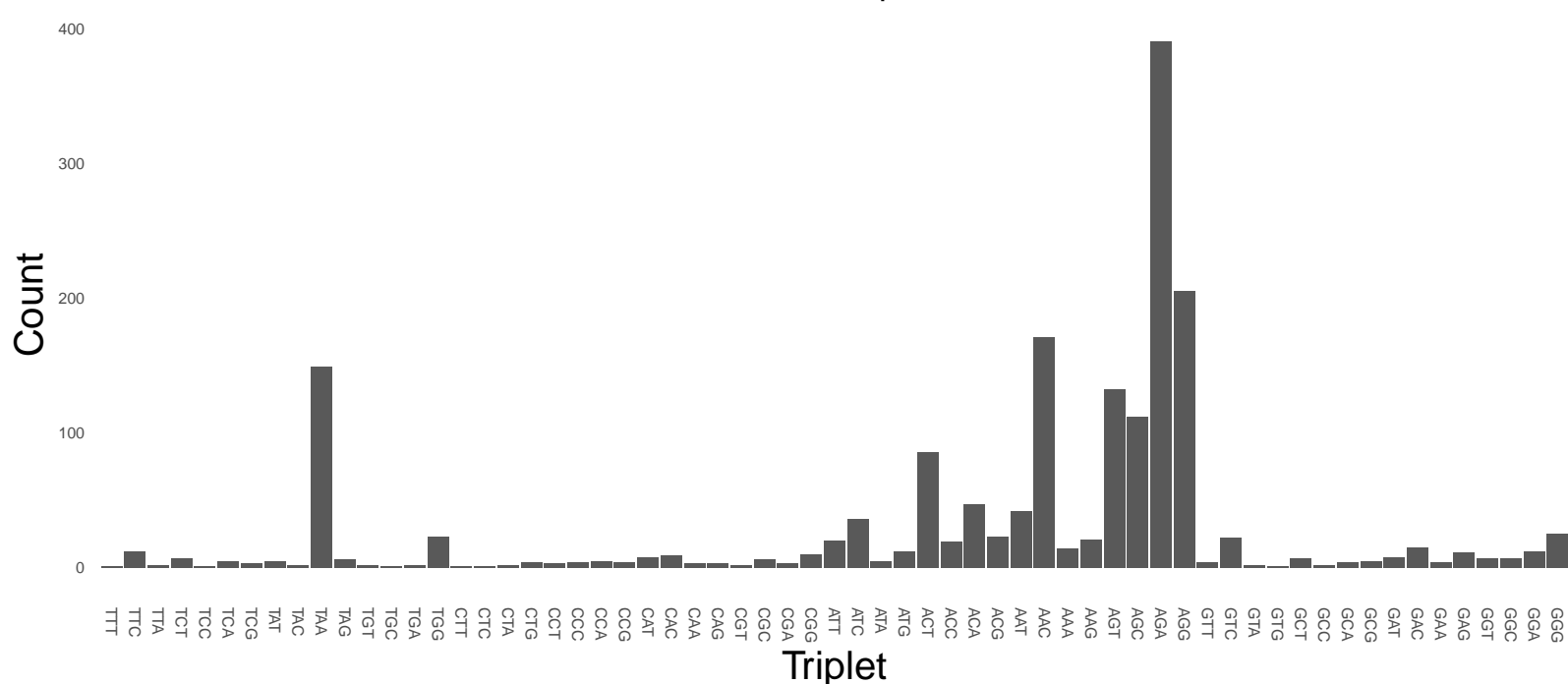
# Gene IGHV4-38-2\*02\_A70G



# Gene IGHV4-38-2\*02\_A70G

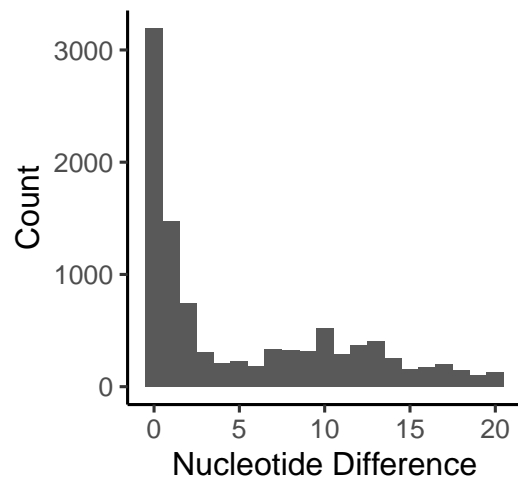


IGHV4-38-2\*02\_A70G- Final 3 nucleotides as a triplet



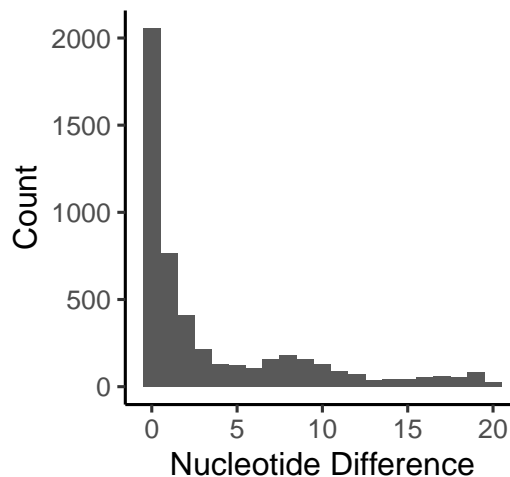
### IGHV1-2\*02

12373 sequences assigned  
3192 (25.8%) exact matches, in which:  
2993 unique CDR3  
6 unique J



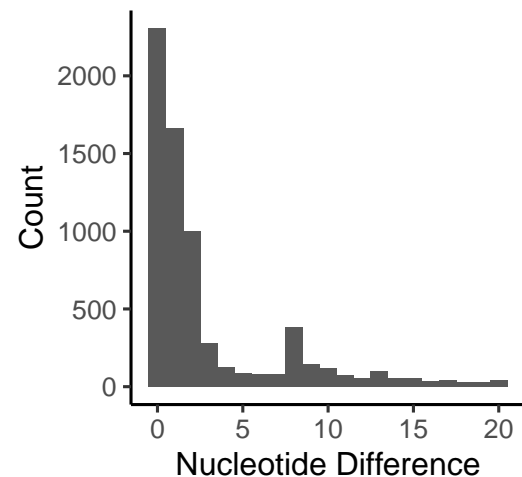
### IGHV1-8\*01

5183 sequences assigned  
2055 (39.6%) exact matches, in which:  
1980 unique CDR3  
6 unique J



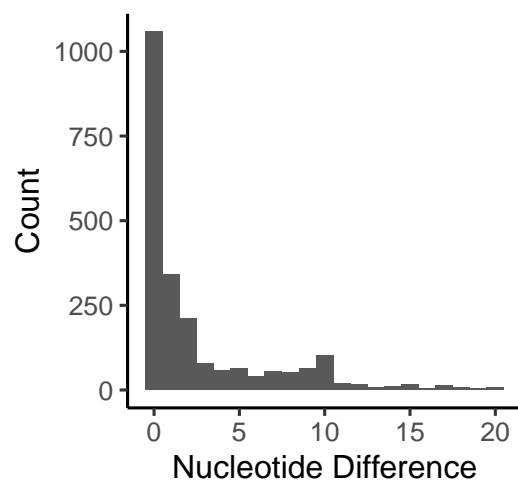
### IGHV1-18\*04

6994 sequences assigned  
2305 (33%) exact matches, in which:  
2071 unique CDR3  
6 unique J



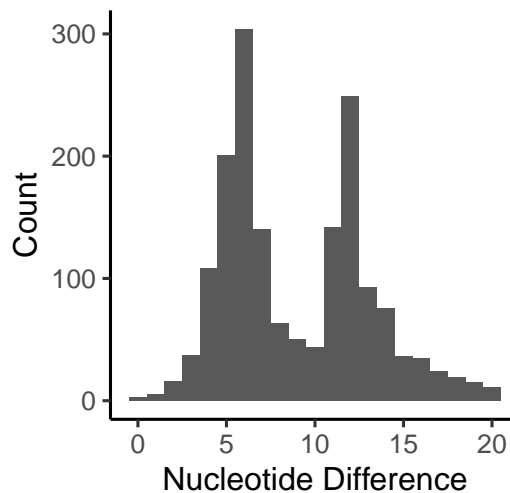
### IGHV1-2\*04

2257 sequences assigned  
1058 (46.9%) exact matches, in which:  
1029 unique CDR3  
6 unique J



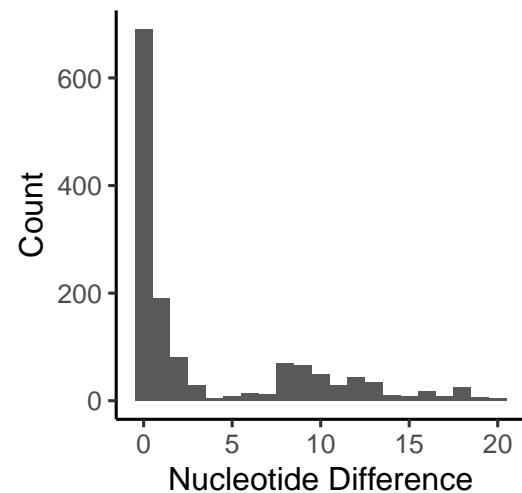
### IGHV1-8\*02

1728 sequences assigned  
3 (0.2%) exact matches, in which:  
3 unique CDR3  
2 unique J



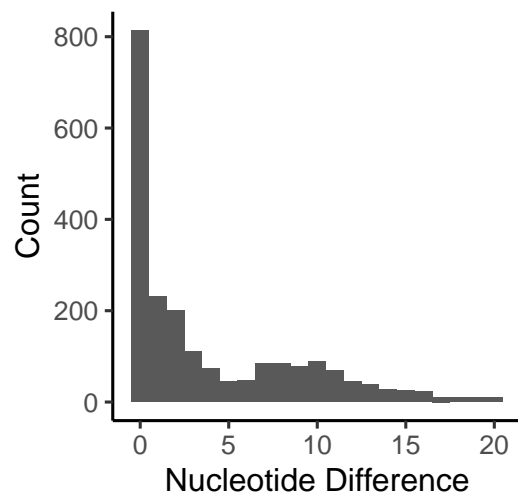
### IGHV1-24\*01

1463 sequences assigned  
691 (47.2%) exact matches, in which:  
659 unique CDR3  
6 unique J



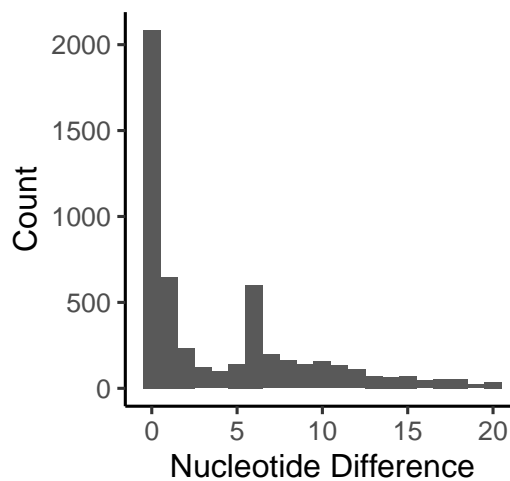
### IGHV1-3\*01\_05

2888 sequences assigned  
814 (28.2%) exact matches, in which:  
774 unique CDR3  
6 unique J



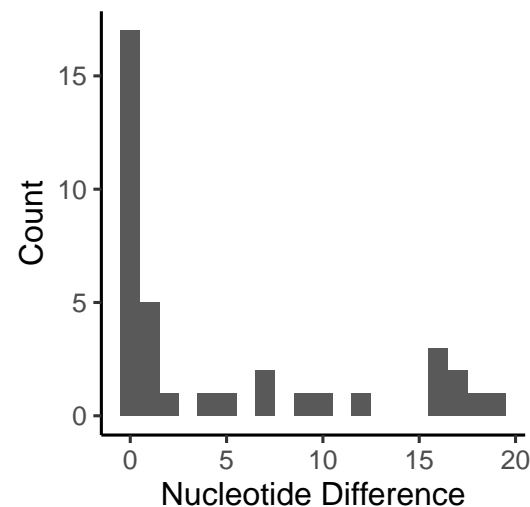
### IGHV1-18\*01

5711 sequences assigned  
2085 (36.5%) exact matches, in which:  
2021 unique CDR3  
6 unique J



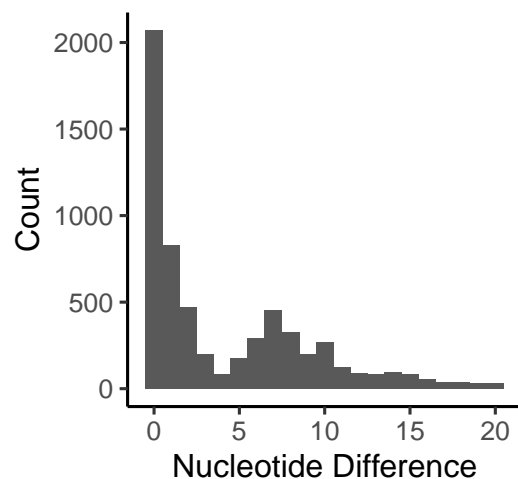
### IGHV1-45\*02

43 sequences assigned  
17 (39.5%) exact matches, in which:  
14 unique CDR3  
5 unique J



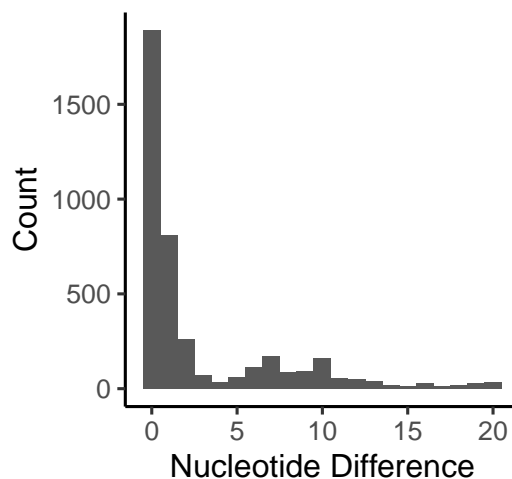
### IGHV1-46\*01

6249 sequences assigned  
2070 (33.1%) exact matches, in which:  
1983 unique CDR3  
6 unique J



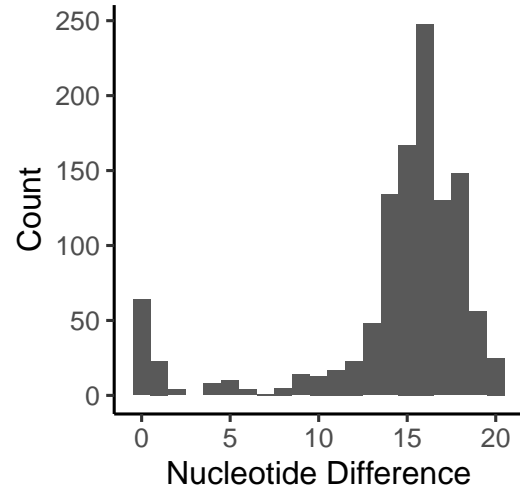
### IGHV1-69\*04\_09

4289 sequences assigned  
1890 (44.1%) exact matches, in which:  
1852 unique CDR3  
6 unique J



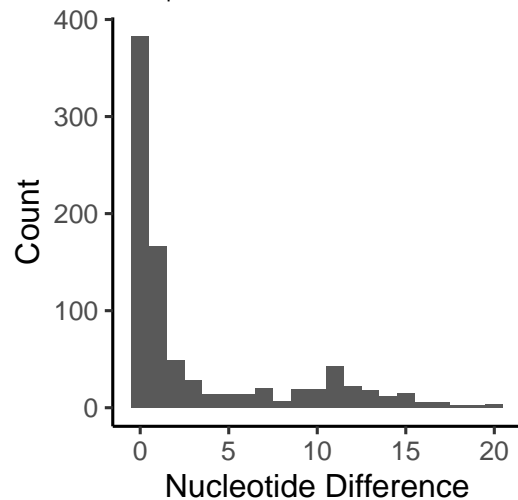
### IGHV2-5\*02

2012 sequences assigned  
64 (3.2%) exact matches, in which:  
63 unique CDR3  
6 unique J



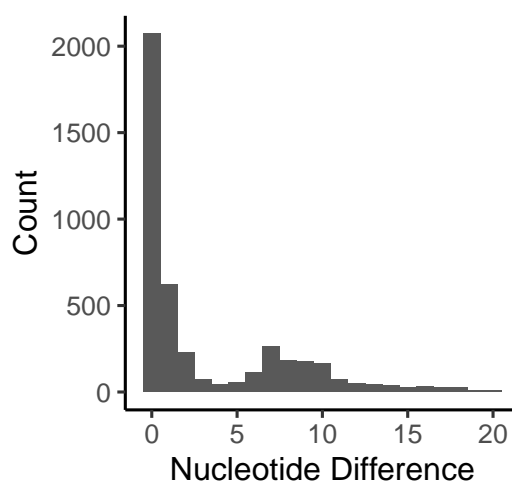
### IGHV1-58\*01\_03

901 sequences assigned  
383 (42.5%) exact matches, in which:  
373 unique CDR3  
6 unique J



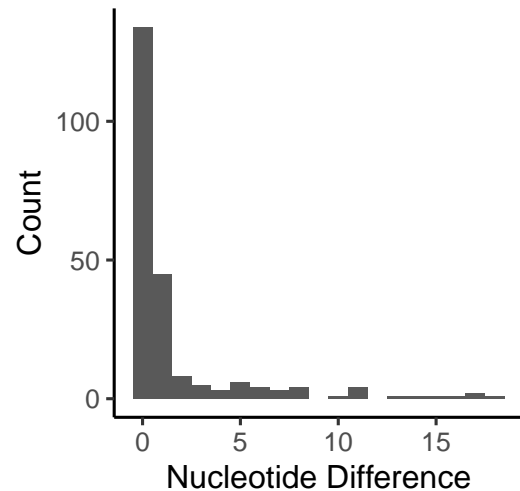
### IGHV1-69\*06\_14

4489 sequences assigned  
2072 (46.2%) exact matches, in which:  
2034 unique CDR3  
6 unique J



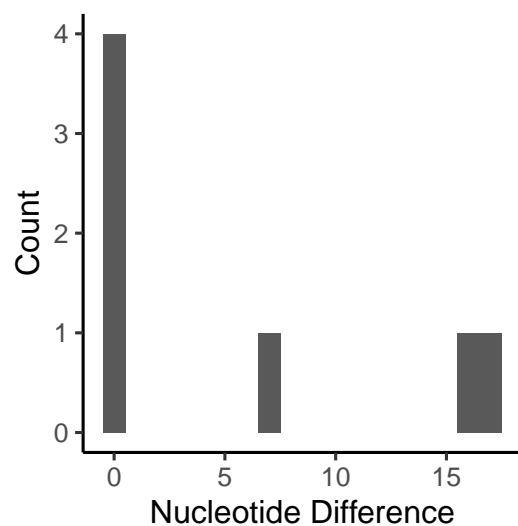
### IGHV2-26\*01

231 sequences assigned  
134 (58%) exact matches, in which:  
132 unique CDR3  
6 unique J



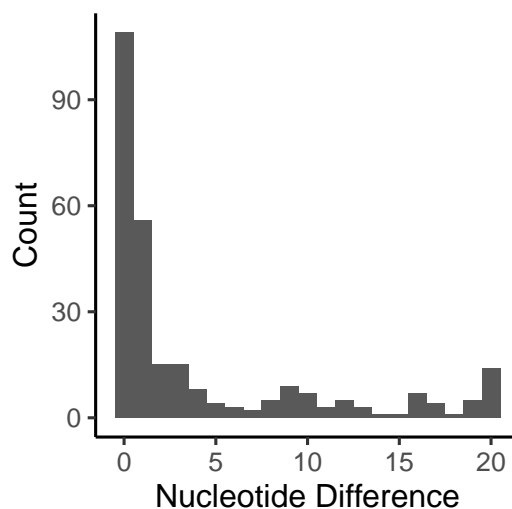
### IGHV1-69-2\*01

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



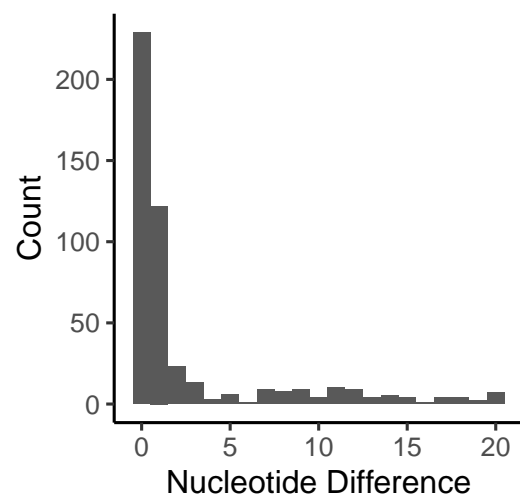
### IGHV2-5\*01

305 sequences assigned  
109 (35.7%) exact matches, in which:  
106 unique CDR3  
6 unique J



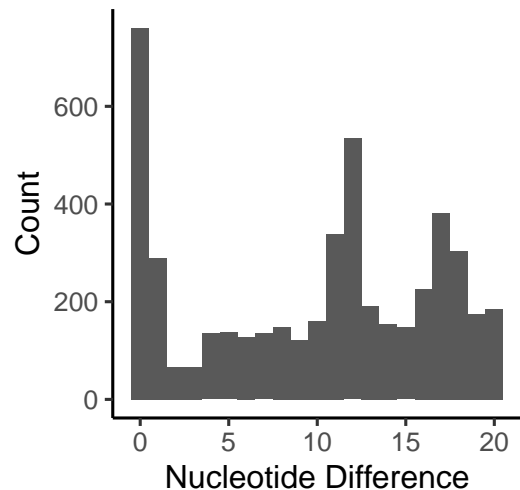
### IGHV2-70\*01

556 sequences assigned  
229 (41.2%) exact matches, in which:  
224 unique CDR3  
6 unique J



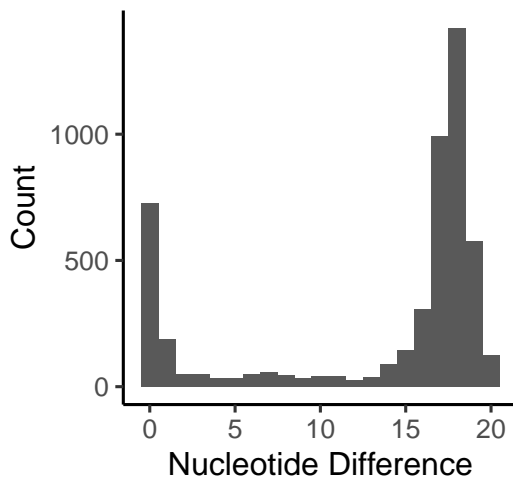
### IGHV3-7\*01

5421 sequences assigned  
761 (14%) exact matches, in which:  
682 unique CDR3  
6 unique J



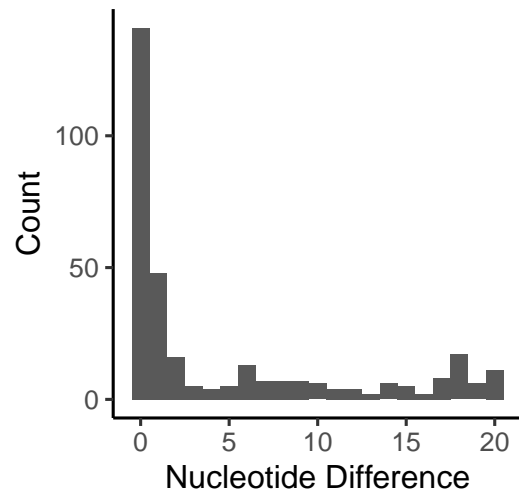
### IGHV3-11\*01

5885 sequences assigned  
725 (12.3%) exact matches, in which:  
642 unique CDR3  
6 unique J



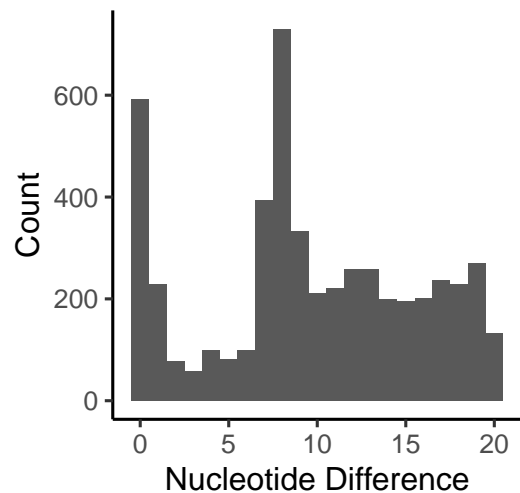
### IGHV3-13\*01

340 sequences assigned  
141 (41.5%) exact matches, in which:  
125 unique CDR3  
6 unique J



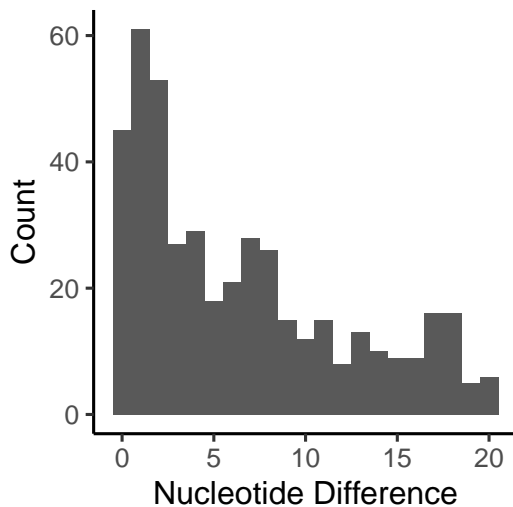
### IGHV3-7\*03

5542 sequences assigned  
592 (10.7%) exact matches, in which:  
507 unique CDR3  
6 unique J



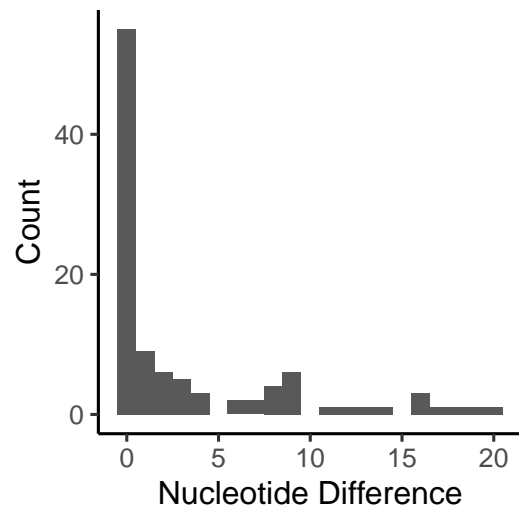
### IGHV3-11\*04

477 sequences assigned  
45 (9.4%) exact matches, in which:  
45 unique CDR3  
5 unique J



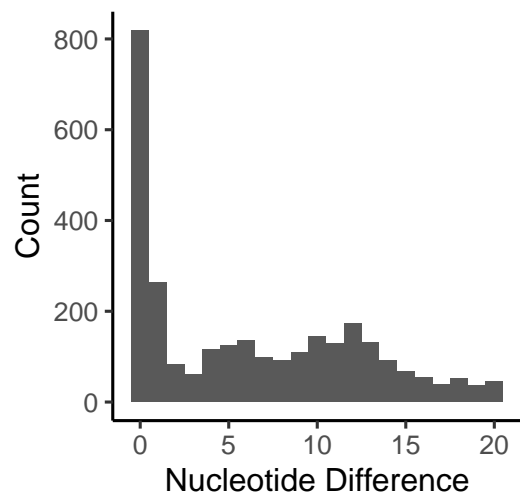
### IGHV3-13\*05

111 sequences assigned  
55 (49.5%) exact matches, in which:  
47 unique CDR3  
5 unique J



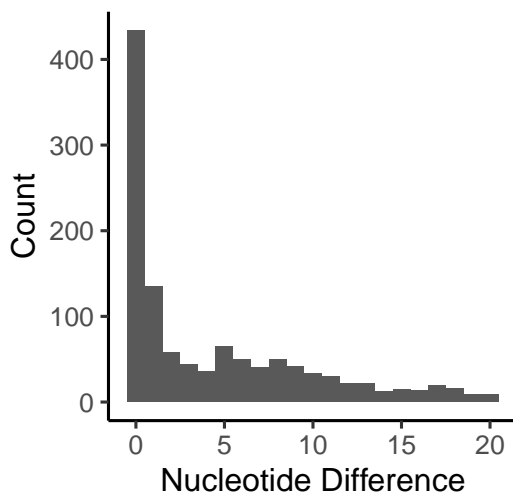
### IGHV3-9\*01

3428 sequences assigned  
819 (23.9%) exact matches, in which:  
706 unique CDR3  
6 unique J



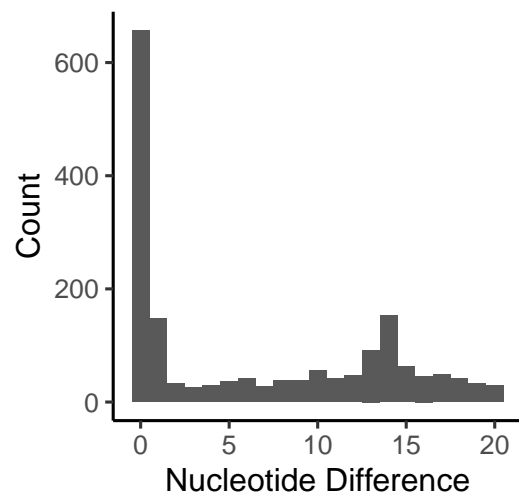
### IGHV3-11\*06

1388 sequences assigned  
434 (31.3%) exact matches, in which:  
380 unique CDR3  
6 unique J



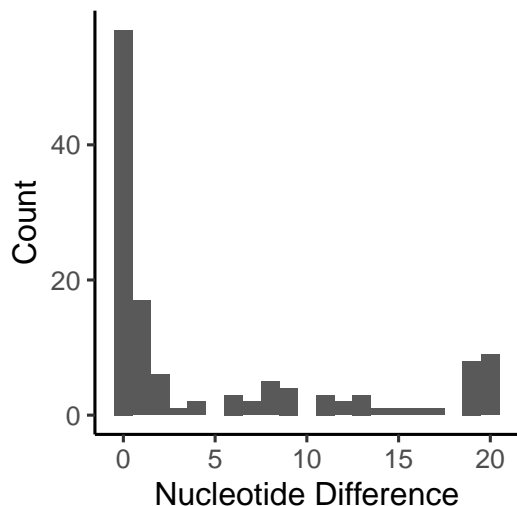
### IGHV3-15\*01\_02

2191 sequences assigned  
657 (30%) exact matches, in which:  
575 unique CDR3  
6 unique J



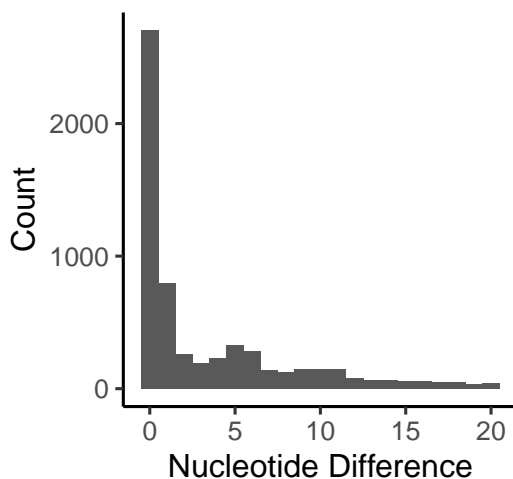
## IGHV3-20\*01\_02

139 sequences assigned  
57 (41%) exact matches, in which:  
52 unique CDR3  
5 unique J



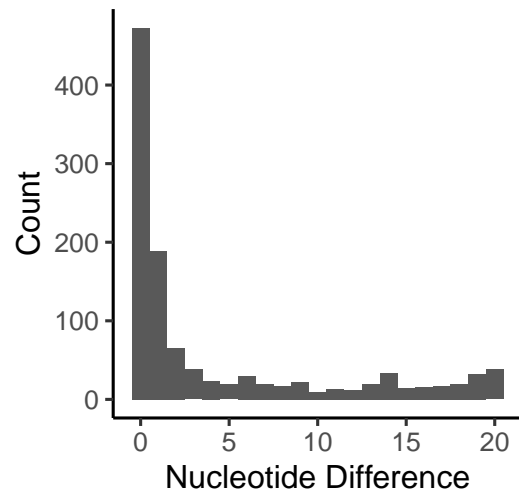
## IGHV3-21\*01\_02

6460 sequences assigned  
2703 (41.8%) exact matches, in which:  
2283 unique CDR3  
6 unique J



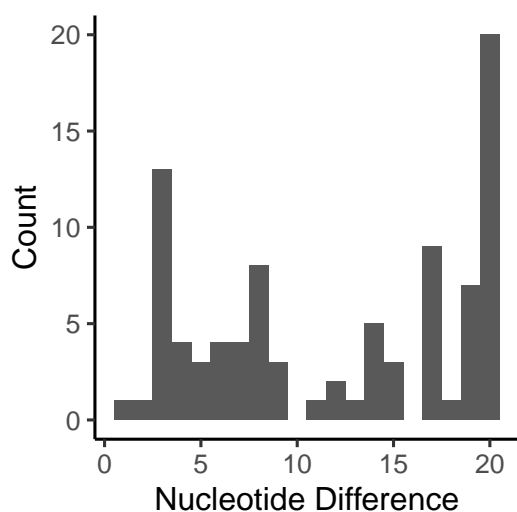
## IGHV3-30\*03

1338 sequences assigned  
473 (35.4%) exact matches, in which:  
460 unique CDR3  
6 unique J



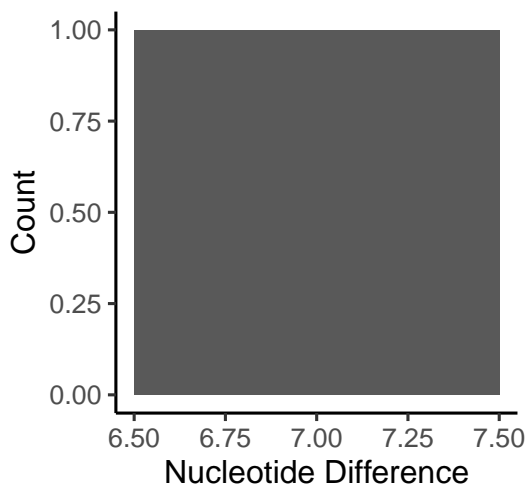
## IGHV3-20\*03\_04

421 sequences assigned  
No exact matches.



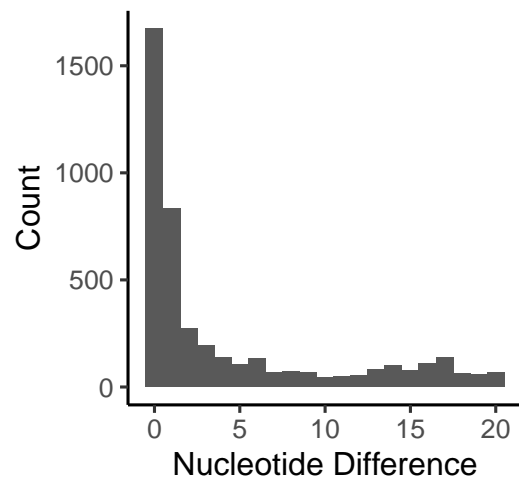
## IGHV3-22\*01\_02

1 sequences assigned  
No exact matches.



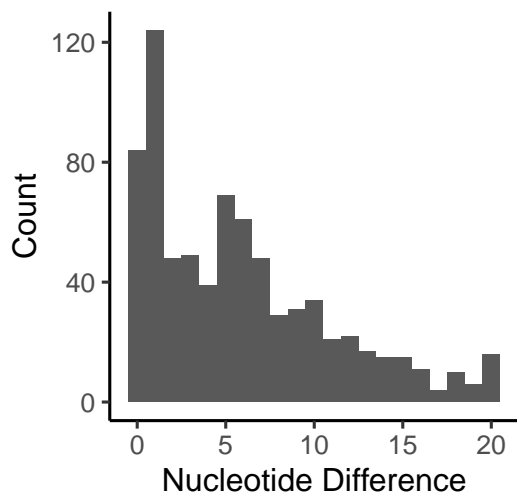
## IGHV3-33\*01

4728 sequences assigned  
1673 (35.4%) exact matches, in which:  
1486 unique CDR3  
6 unique J



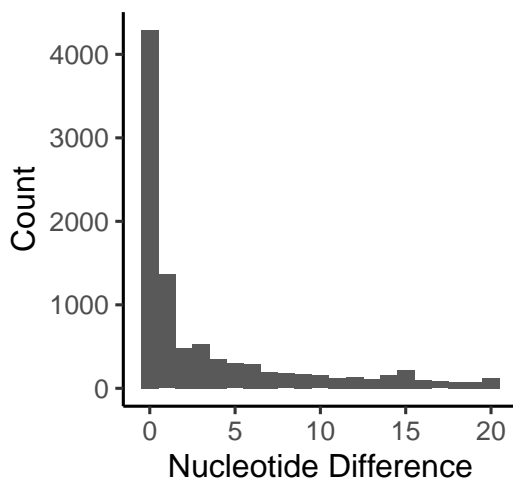
## IGHV3-21\*04

794 sequences assigned  
84 (10.6%) exact matches, in which:  
84 unique CDR3  
6 unique J



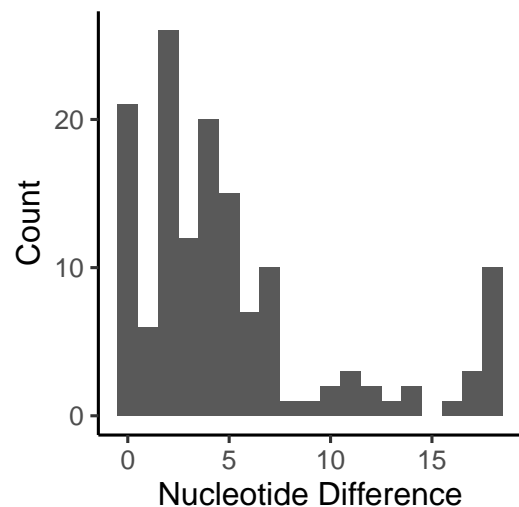
## IGHV3-30-3\*01

10896 sequences assigned  
4291 (39.4%) exact matches, in which:  
3725 unique CDR3  
6 unique J



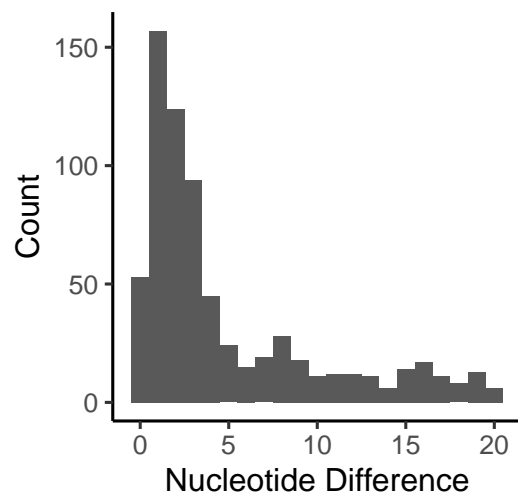
## IGHV3-33\*05

258 sequences assigned  
21 (8.1%) exact matches, in which:  
21 unique CDR3  
4 unique J



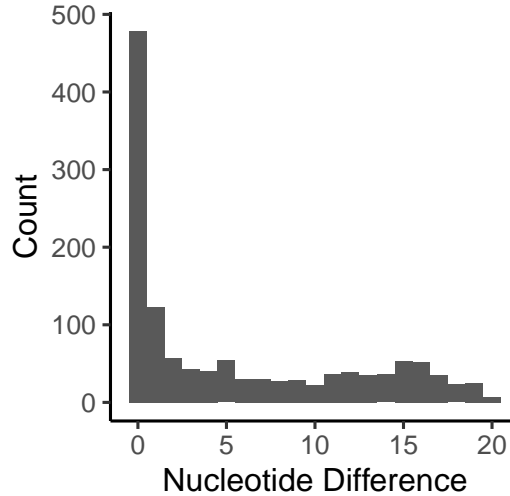
### IGHV3–33\*06

737 sequences assigned  
53 (7.2%) exact matches, in which:  
53 unique CDR3  
6 unique J



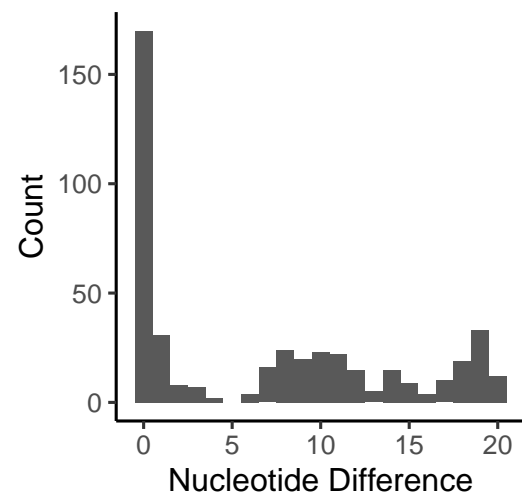
### IGHV3–48\*02

1379 sequences assigned  
479 (34.7%) exact matches, in which:  
406 unique CDR3  
6 unique J



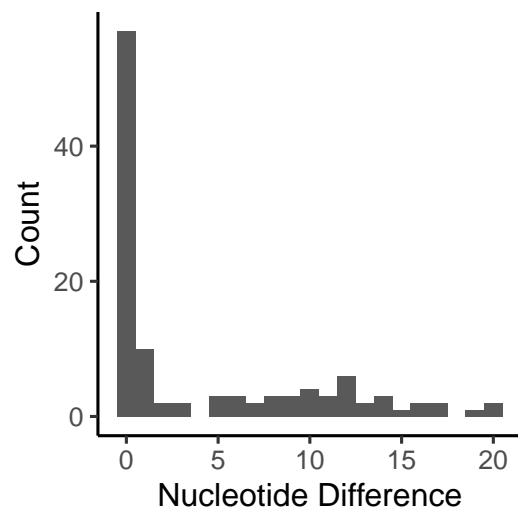
### IGHV3–49\*04

544 sequences assigned  
170 (31.2%) exact matches, in which:  
148 unique CDR3  
5 unique J



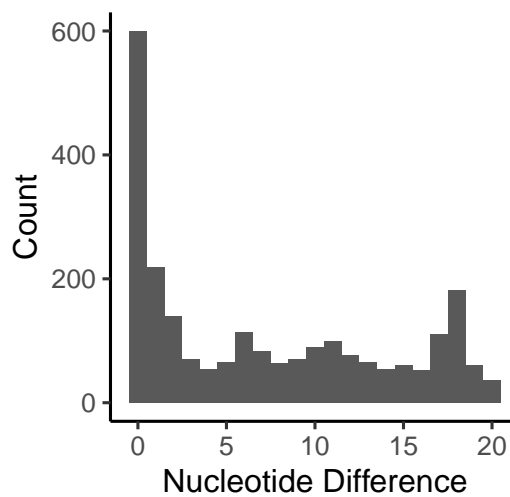
### IGHV3–43\*01

118 sequences assigned  
57 (48.3%) exact matches, in which:  
50 unique CDR3  
5 unique J



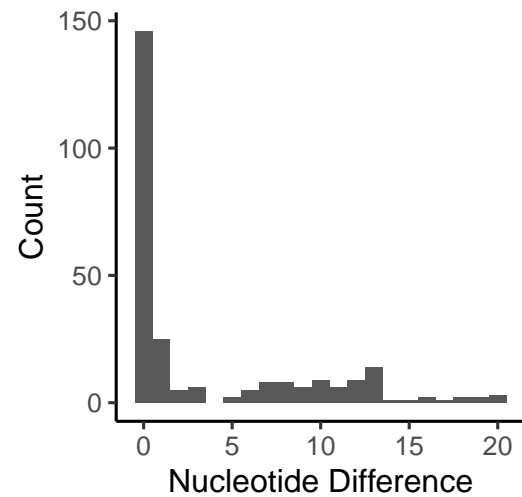
### IGHV3–48\*03

2561 sequences assigned  
600 (23.4%) exact matches, in which:  
520 unique CDR3  
6 unique J



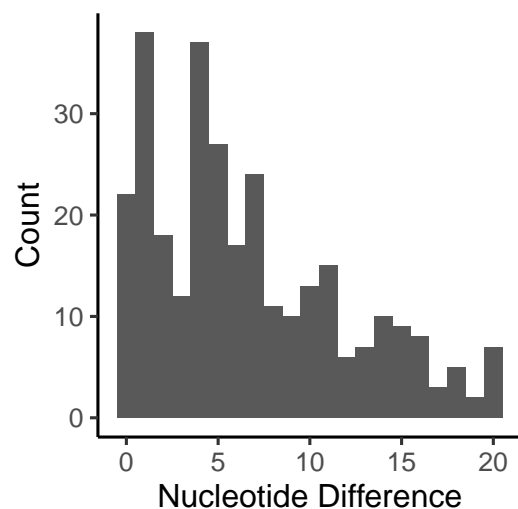
### IGHV3–49\*03\_05

283 sequences assigned  
146 (51.6%) exact matches, in which:  
129 unique CDR3  
6 unique J



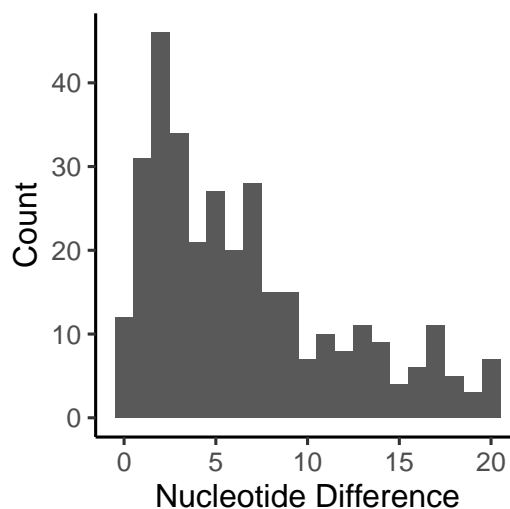
### IGHV3–48\*01

338 sequences assigned  
22 (6.5%) exact matches, in which:  
22 unique CDR3  
5 unique J



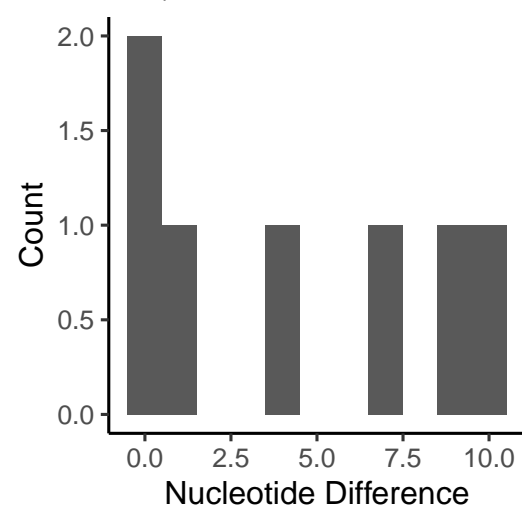
### IGHV3–48\*04

381 sequences assigned  
12 (3.1%) exact matches, in which:  
11 unique CDR3  
3 unique J



### IGHV3–52\*01\_03

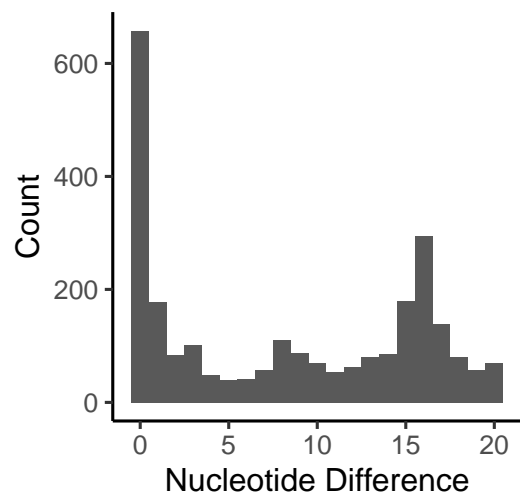
7 sequences assigned  
2 (28.6%) exact matches, in which:  
2 unique CDR3  
2 unique J





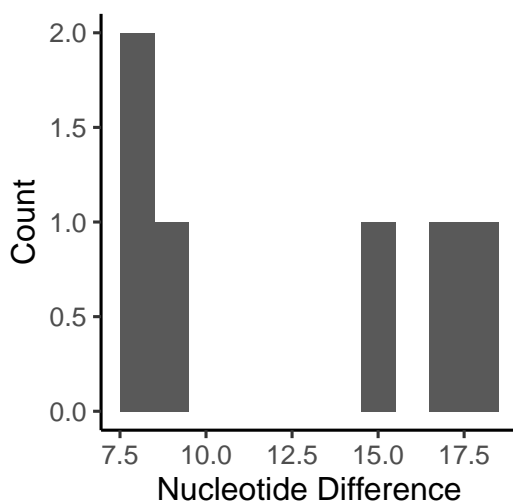
### IGHV3–53\*01\_02

3646 sequences assigned  
658 (18%) exact matches, in which:  
578 unique CDR3  
6 unique J



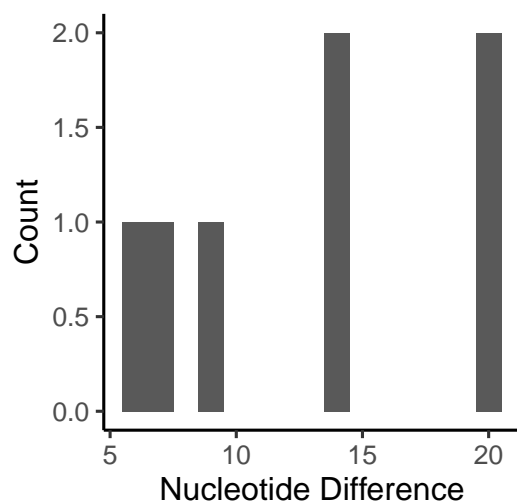
### IGHV3–66\*01

9 sequences assigned  
No exact matches.



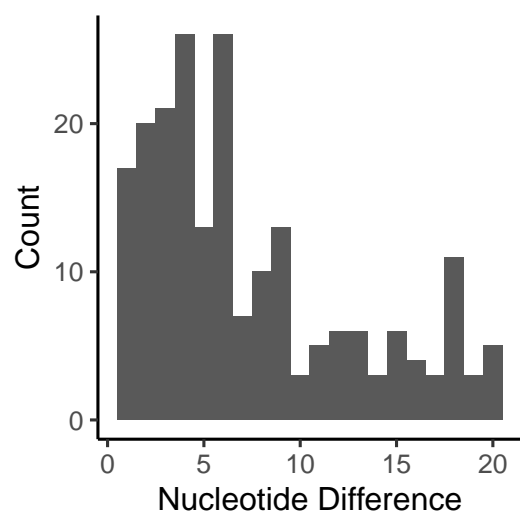
### IGHV3–66\*04

17 sequences assigned  
No exact matches.



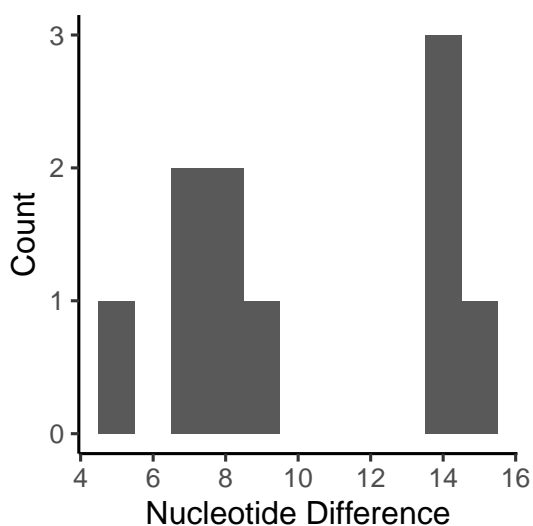
### IGHV3–64\*04

231 sequences assigned  
No exact matches.



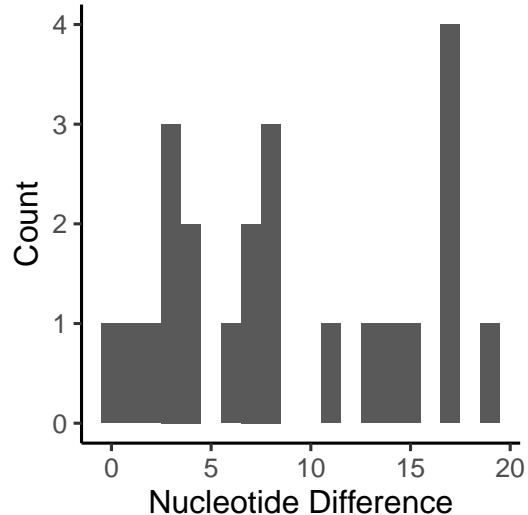
### IGHV3–66\*02

14 sequences assigned  
No exact matches.



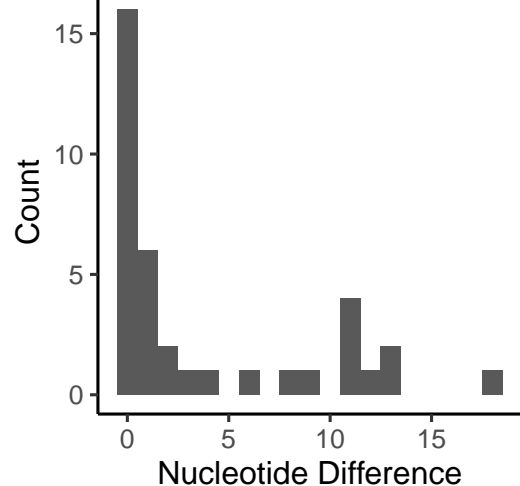
### IGHV3–69–1\*01

35 sequences assigned  
1 (2.9%) exact matches, in which:  
1 unique CDR3  
1 unique J



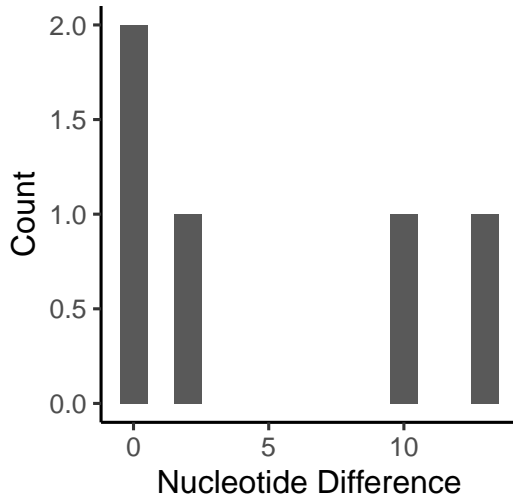
### IGHV3–64\*02\_07

53 sequences assigned  
16 (30.2%) exact matches, in which:  
15 unique CDR3  
3 unique J



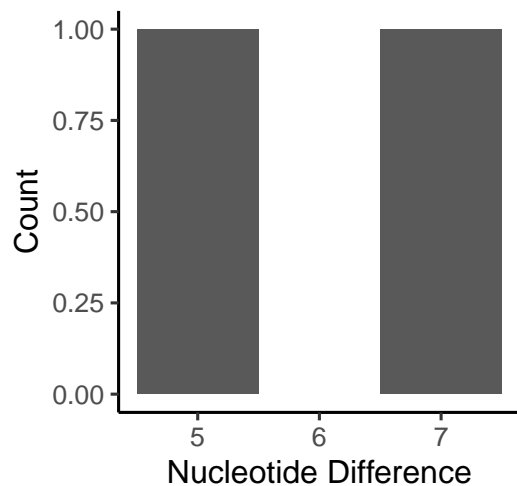
### IGHV3–66\*03

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



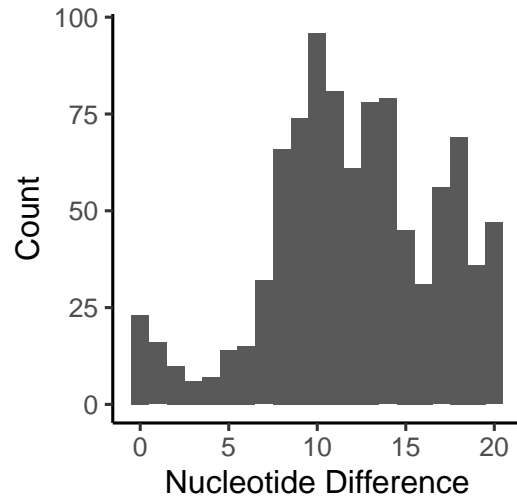
### IGHV3–69–1\*02

3 sequences assigned  
No exact matches.



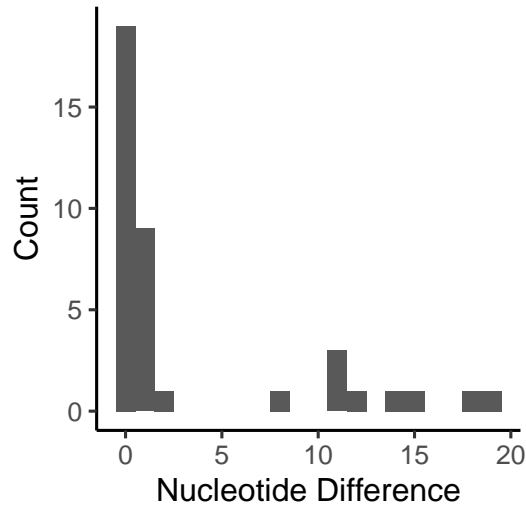
### IGHV3-72\*01

1062 sequences assigned  
23 (2.2%) exact matches, in which:  
21 unique CDR3  
4 unique J



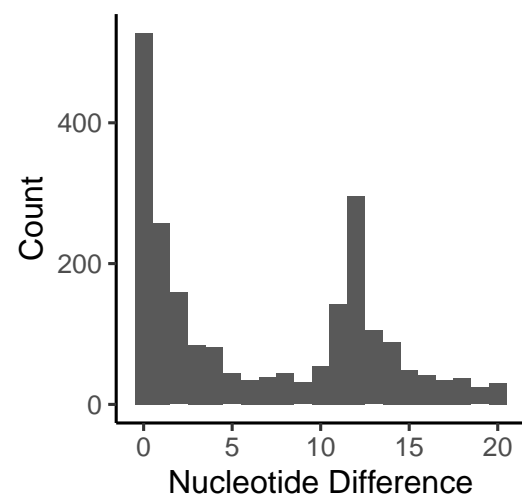
### IGHV3-43D\*04

58 sequences assigned  
19 (32.8%) exact matches, in which:  
16 unique CDR3  
4 unique J



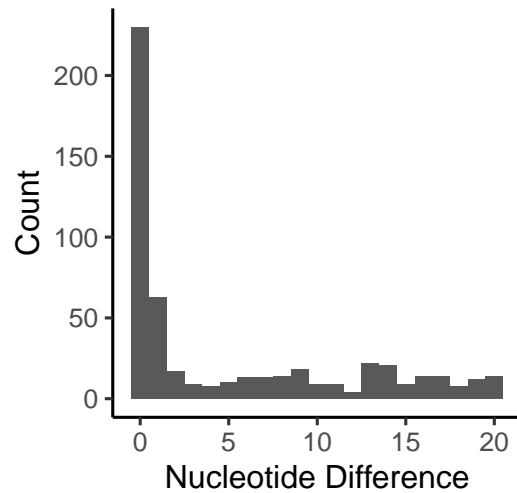
### IGHV4-4\*07

2450 sequences assigned  
528 (21.6%) exact matches, in which:  
512 unique CDR3  
6 unique J



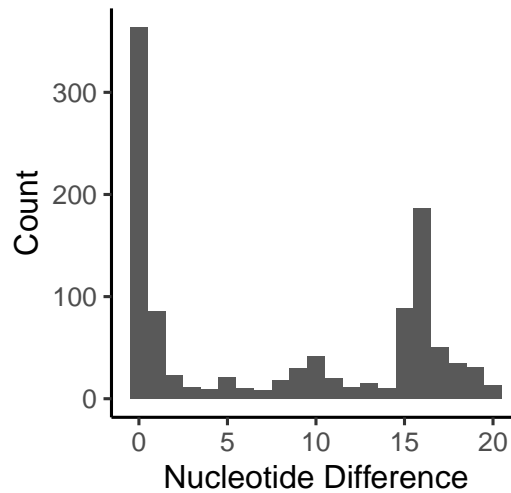
### IGHV3-73\*01\_02

555 sequences assigned  
230 (41.4%) exact matches, in which:  
206 unique CDR3  
6 unique J



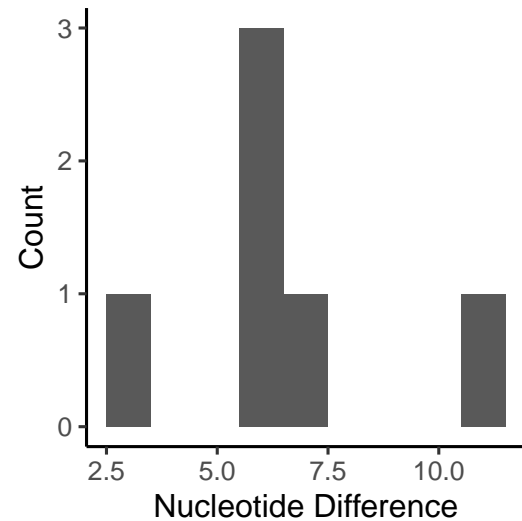
### IGHV3-64D\*06

1208 sequences assigned  
364 (30.1%) exact matches, in which:  
304 unique CDR3  
6 unique J



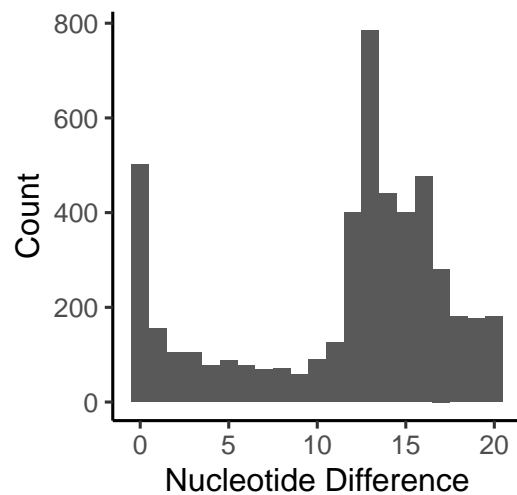
### IGHV4-28\*03

6 sequences assigned  
No exact matches.



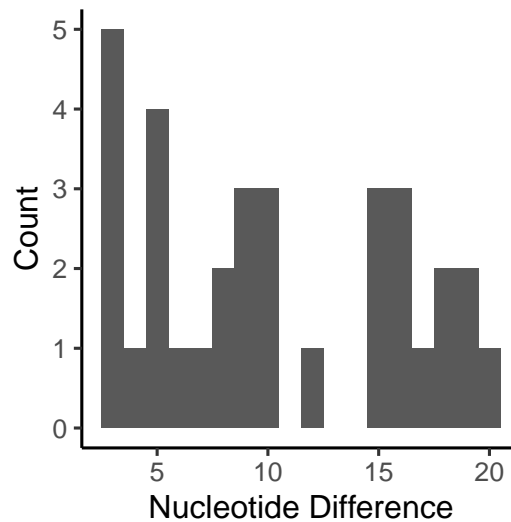
### IGHV3-74\*01\_02

5775 sequences assigned  
502 (8.7%) exact matches, in which:  
435 unique CDR3  
6 unique J



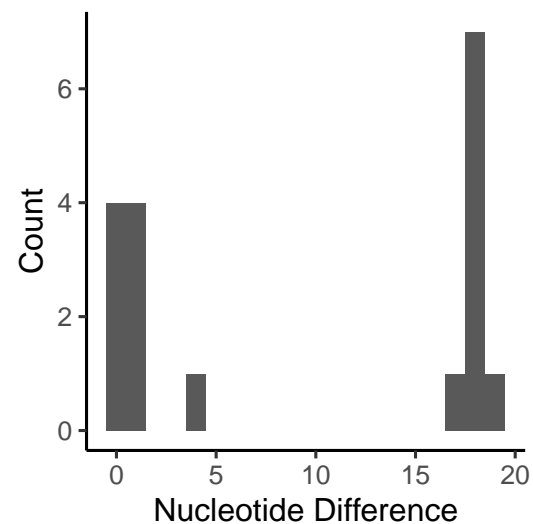
### IGHV3-NL1\*01

62 sequences assigned  
No exact matches.



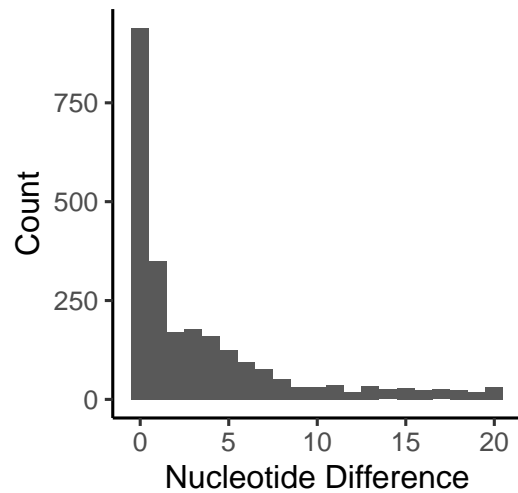
### IGHV4-28\*01\_07

18 sequences assigned  
4 (22.2%) exact matches, in which:  
4 unique CDR3  
3 unique J



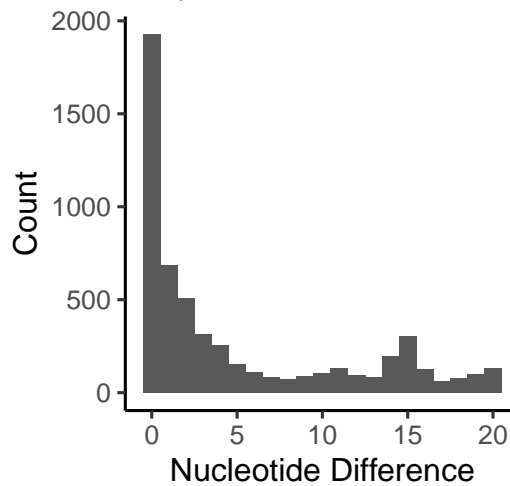
### IGHV4-30-4\*01

2709 sequences assigned  
940 (34.7%) exact matches, in which:  
909 unique CDR3  
6 unique J



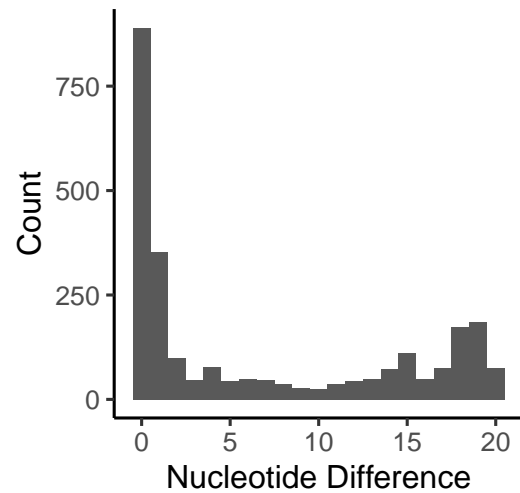
### IGHV4-34\*01\_02

6196 sequences assigned  
1927 (31.1%) exact matches, in which:  
1840 unique CDR3  
6 unique J



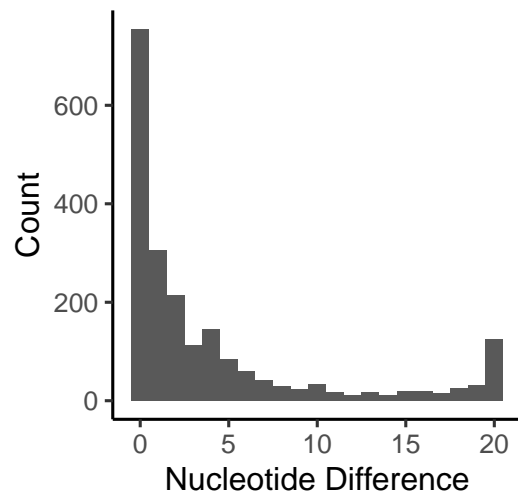
### IGHV4-39\*01\_05

3388 sequences assigned  
890 (26.3%) exact matches, in which:  
859 unique CDR3  
6 unique J



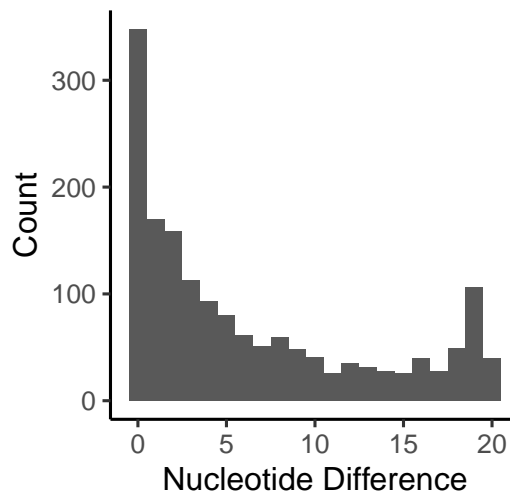
### IGHV4-30-2\*01

2784 sequences assigned  
755 (27.1%) exact matches, in which:  
707 unique CDR3  
6 unique J



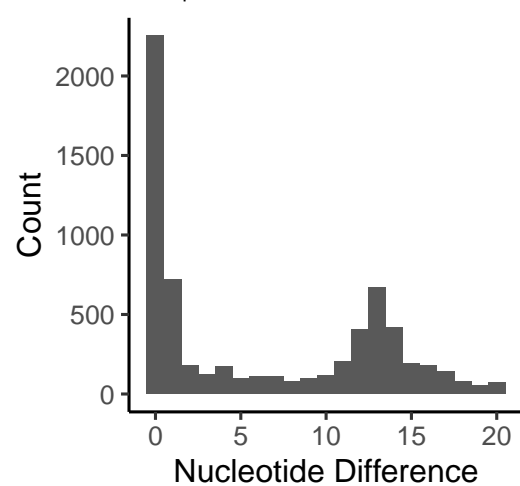
### IGHV4-38-2\*02\_A70G

1760 sequences assigned  
348 (19.8%) exact matches, in which:  
339 unique CDR3  
6 unique J



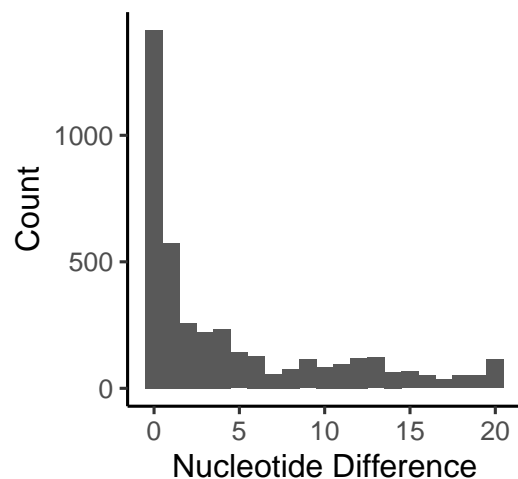
### IGHV4-59\*01\_07

7116 sequences assigned  
2253 (31.7%) exact matches, in which:  
2172 unique CDR3  
6 unique J



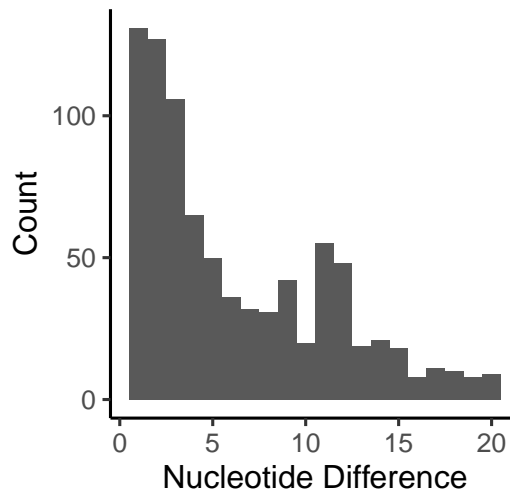
### IGHV4-31\*03\_04

4803 sequences assigned  
1416 (29.5%) exact matches, in which:  
1368 unique CDR3  
6 unique J



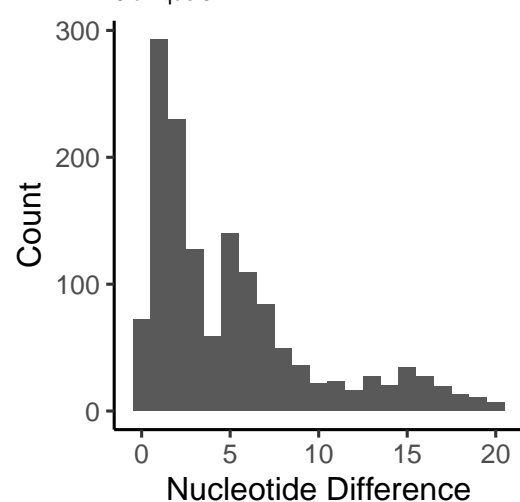
### IGHV4-39\*07

938 sequences assigned  
No exact matches.



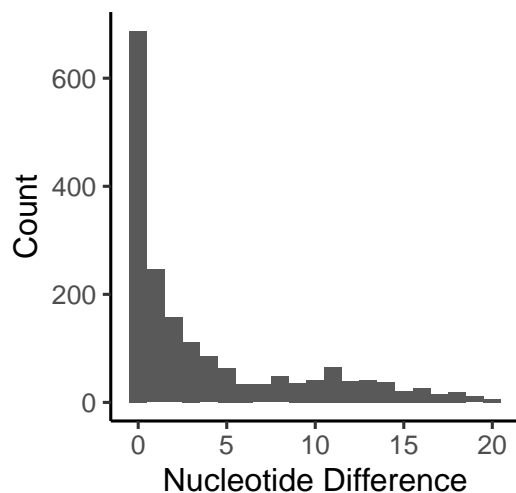
### IGHV4-59\*12

1470 sequences assigned  
72 (4.9%) exact matches, in which:  
72 unique CDR3  
6 unique J



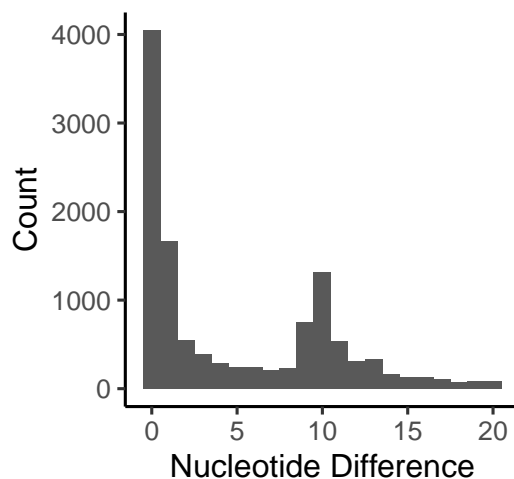
### IGHV4-61\*01

1999 sequences assigned  
688 (34.4%) exact matches, in which:  
675 unique CDR3  
6 unique J



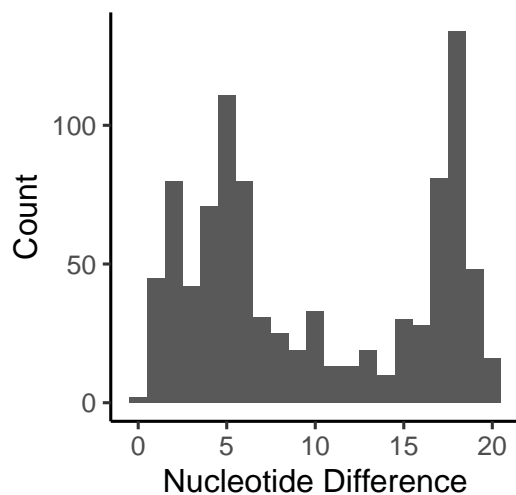
### IGHV5-51\*01\_03

12870 sequences assigned  
4046 (31.4%) exact matches, in which:  
3563 unique CDR3  
6 unique J



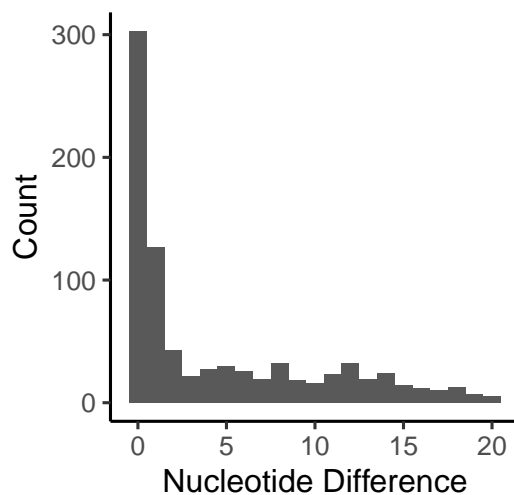
### IGHV4-61\*08

1153 sequences assigned  
2 (0.2%) exact matches, in which:  
2 unique CDR3  
2 unique J



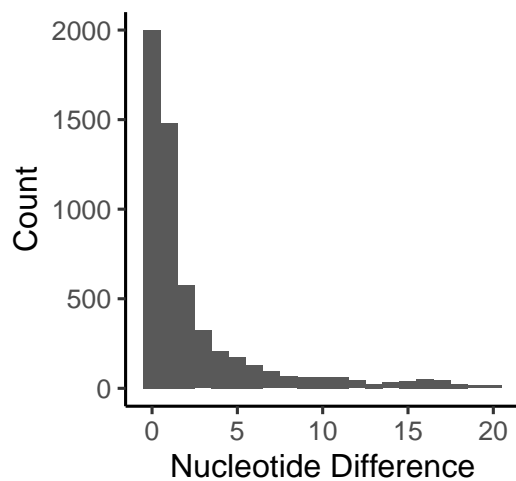
### IGHV6-1\*01\_02

1133 sequences assigned  
303 (26.7%) exact matches, in which:  
292 unique CDR3  
6 unique J



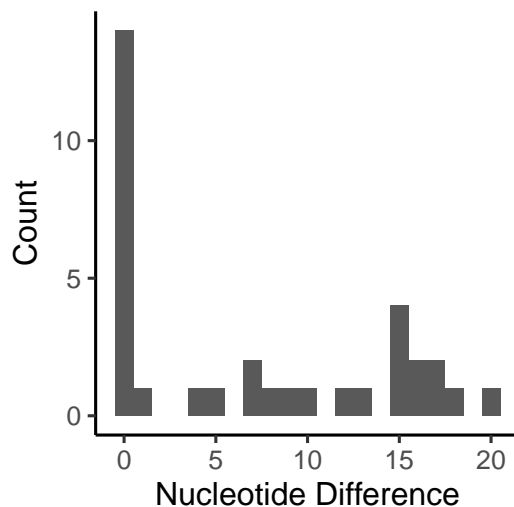
### IGHV5-10-1\*01\_03

5701 sequences assigned  
2000 (35.1%) exact matches, in which:  
1684 unique CDR3  
6 unique J



### IGHV7-4-1\*01

35 sequences assigned  
14 (40%) exact matches, in which:  
14 unique CDR3  
3 unique J





Warning - no inferred sequences found.

Novel sequence(s) IGHV3-30\*03\_T288C IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning: IGHV4-31\*02, IGHV4-31\*03\_04 have identical germline sequences.

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

Novel sequence(s) IGHV1-69\*04\_09\_G112A 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.

Novel sequence(s) IGHV1-69\*08\_C191T IGHV3-30\*03\_T288C IGHV3-30-3\*02\_G75C IGHV4-59\*02\_G88A 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.

Novel sequence(s) IGHV4-4\*02\_03\_C300T 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.

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

Novel sequence(s) IGHV1-69\*08\_C191T IGHV3-11\*06\_T300C IGHV3-30\*03\_T288C IGHV4-59\*02\_G88A 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) IGHV3-30\*03\_T288C IGHV3-30-3\*01\_T288C IGHV4-59\*02\_G88A IGHV5-10-1\*01\_03\_T258C IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Warning - no inferred sequences found.

Novel sequence(s) IGHV3-48\*04\_A193T\_C198T\_A200C\_C201T\_T210A 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) IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-33\*01\_C288T 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) IGHV3-33\*01\_T105C\_A173T\_T192G\_C288T are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-30\*04\_T288C IGHV3-33\*01\_G75C IGHV4-30-2\*03\_T288C IGHV4-59\*02\_G88A are not listed in the genotype and will be ignored.

Novel sequence(s) IGHV3-11\*06\_T300C 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 IGHV5-51\*07\_A128G are not listed in the genotype and will be ignored.